




Q 1. *quality factor; quantity*. 2. Symbol for coulomb.

q Symbol for long arm of a chromosome.

Q angle SEE: under *angle*.


Qco₂ The number of microliters of CO₂ given off per milligram of dry weight of tissue per hour.

qd L. *quaque die*, every day.


 Most experts in the prevention of health care errors recommend that the abbreviation q.d. be written out as “daily” in order to prevent communication errors. q.d may be confused with q.i.d (four times a day), a mistake that could result in an unintentional overdose.

Q fever [Q is for *query* because its etiology was unknown] An acute infectious disease characterized by headache, fever, severe sweating, malaise, myalgia, and anorexia. Q fever is caused by rickettsia, *Coxiella burnetii*, an intracellular, gram-negative bacterium, and is contracted by inhaling infected dusts, drinking unpasteurized milk from infected animals, or handling infected animals such as goats, cows, or sheep. Transmission by human contact is rare but has occurred. An effective vaccine is available for the prevention of infection in persons who have a good chance of being exposed to the disease. Tetracyclines are used to treat the infection. SYN: *Query fever*.

qh, q1h L. *quaque hora*, every hour.

 For safety, hourly medications are almost always written as q1h.

q.i.d. L. *quater in die*, four times a day.

 To avoid medication errors, this order should be written “four times daily.”

qi gong, qigong (chē-gōng) An ancient Chinese approach to healing by harnessing internal energy sources, through movement, breathing exercises, meditation, and relaxation.

Qo₂ The number of microliters of O₂ taken up per milligram of dry weight of tissue per hour.

god *Every other day*. Like q.d., this is a discredited and dangerous abbreviation and should not be used in clinical practice. The “o” may be misinterpreted as a period or an “i.”

QRS complex The pattern traced on the surface electrocardiogram by depolarization of the ventricles. In the anterior chest leads (e.g., V₁ to V₃) the complex normally consists of a small initial downward deflection (Q wave), a large upward deflection (R wave), and a second downward deflection (S wave). The normal duration of the complex is 0.06 to 0.11 sec. Longer QRS complexes are seen in premature ventricular beats and ventricular arrhythmias.

QRST complex Q-T interval.

q.s. L. *quantum sufficit*, as much as suffices.

qt *quart*.

QTc In electrocardiography, the duration of the QT interval adjusted for the patient's heart rate. Prolonged QTc's are associated with an increased risk of ventricular dysrhythmia and sudden death.

Q-T dispersion (kū'té') The difference between the longest and the shortest Q-T interval recorded by electrocardiography. High levels of Q-T dispersion (e.g., greater than 100 msec) may be a risk factor for life-threatening ventricular arrhythmias.

Q-T interval, Q-T segment SEE: under *interval*.

quack (kwäk) [D. *kwaksalven*, to peddle salve] One who pretends to have knowledge or skill in medicine. SYN: *charlatan*.

quad (kwäd) Medical “shorthand” for quadriceps, quadrilateral, quadrant, quadriplegia.

quadrangular (kwöd-räng'ü-lér) [L. *quadri*, four, + *angulus*, angle] Having four angles.

quadrant (kwöd'ränt) [L. *quadrans*, a fourth] 1. One quarter or fourth of a circle. 2. One of four corresponding regions, as of the abdomen, divided for descriptive and diagnostic purposes.

dental q. One quarter of the mouth. Each arch is divided in half so that one can easily describe the location of teeth or soft tissue observations. Quadrants are labeled as maxillary right and left or mandibular right and left and are shown in diagram form for dental records.

quadrantanopia (kwöd'ränt-ä-nō'pē-ä) [“ + Gr. *an-*, not, + *opsis*, vision] Blindness or diminished visual acuity in one fourth of the visual field. SYN: *tetranopsia*.

quadrantanopsia (kwöd'ränt-än-öp'sē-ä) [“ + “ + *opsis*, vision] Loss of sight in approx. one fourth of the visual field.

quadrantectomy Surgical removal of a

defined segment of an organ, e.g., of part of the breast in a patient with breast cancer.

quadrate (kwöd'rät) [L. *quadratus*, squared] Square, or having four equal sides.

quadrate lobe A small lobe of liver located on the visceral surface and lying in contact with the pylorus and duodenum.

quadri-, quad- Combining forms meaning *four*.

quadribasic (kwöd'rī-bāsīk) [L. *quatuor*, four + basic] Having four replaceable atoms of hydrogen.

quadriceps (kwöd'rī-sēps) [ʹ + *caput*, head] Four-headed, as a quadriceps muscle.

quadriceps femoris A large muscle on the anterior surface of the thigh composed of the rectus femoris, vastus lateralis, vastus medialis, and vastus intermedius muscles. These muscles are inserted by a common tendon on the tuberosity of the tibia. The quadriceps femoris is an extensor of the leg.

quadricepsplasty (kwöd'rī-sēps'plās-tē) [ʹ + ʹ + Gr. *plassein*, to form] Plastic surgery to repair adhesions and scars around the quadriceps femoris muscle in order to restore function.

quadrucusp (kwöd'rī-kūs'pid) [ʹ + *cuspis*, point] Having four cusps, as a tooth.

quadridigitate (kwöd'rī-dij'ī-tāt) Having only four fingers on a hand or four toes on a foot.

quadrigeminal (kwöd'rī-jēm'in-āl) Fourfold; having four symmetrical parts; pert. to the corpora quadrigemina.

quadrigeminal bodies Four rounded projections from the roof of the midbrain. SEE: *colliculus inferior*; *colliculus superior*.

quadrilateral (kwöd'rī-lāt'er-āl) [ʹ + *latus*, side] Having four sides.

quadriocular (kwöd'rī-lök'ū-lār) [ʹ + *oculus*, a small space] Having four chambers, cavities, or spaces.

quadripara (kwöd-rīp'ā-rā) [ʹ + *parere*, to bring forth, to bear] A woman who has had four pregnancies that have continued beyond the 20th week of gestation. SYN: *quartipara*. SEE: *para*.

quadripartite (kwöd'rī-pār'tīt) [ʹ + *partire*, to divide] Divided into four parts.

quadriplegia (kwöd'rī-plē'jē-ā) [ʹ + Gr. *plege*, stroke] Paralysis of all four extremities, usually caused by an injury to or disease of the cervical spinal cord. Quadriplegia most often results from trauma to the neck, although it may occasionally result from spinal stenosis, infections, aneurysms, vasculitis, autoimmune diseases, neurosurgery, or mass lesions. The higher the injury (the closer it is to the brainstem) the less function will be present in the arms. In-

jury above the third cervical vertebra paralyzes the diaphragm; in patients with high cervical lesions, life can be sustained only with mechanical ventilation. SYN: *tetraplegia*. SEE: *Nursing Diagnoses Appendix*.

PATIENT CARE: Patients with quadriplegia benefit from physical therapy, occupational therapy, and respiratory care to regain optimal functioning. Assistance is provided with self-care deficits, including bladder paralysis, skin and oral care, feeding and nutrition, elimination, respiratory toilet, positioning, and exercise. The patency of the urinary catheter is checked, and a bulk diet is provided to prevent impaction. Both patient and family are encouraged to verbalize their concerns, and support is offered to help them cope with their grief and loss. Assistance is provided to help the family set realistic plans for the future in view of the patient's functional abilities, body image, and self-concept. The patient is urged to participate in a rehabilitation program as soon as stabilized. Rehabilitative care may be provided in a skilled nursing care facility, rehabilitation center, or in the home with home health care providers and family participation. SEE: *spinal cord injury, acute*.

transient q. The temporary state of absent or diminished sensory and motor function throughout the body caused by trauma to the cervical spine. Symptoms clear within 15 min to 48 hr.

quadripolar (kwöd'rī-pō'lār) Pert. to a cell having four poles.

quadrisect (kwöd'rī-sēkt) [ʹ + *sectio*, a cutting] To divide into four parts, usually of equal size.

quadrisection (kwöd'rī-sēk'shūn) Dividing into four sections or parts.

quadrivalent (kwöd'rī-vā'lēnt) [ʹ + *valens*, powerful] **1.** Having the ability to replace four atoms of hydrogen in a compound (i.e., a chemical valence of four). **2.** Having four components, e.g., a quadrivalent vaccine.

quadruped (kwöd'roo-pēd) [ʹ + *pes*, foot] **1.** A four-footed animal. **2.** Assuming a position with hands and feet on the floor.

quadrupedal reflex (kwöd-roop'ēd-āl) Extension of the flexed arm on assuming a quadrupedal posture.

quadruplet (kwöd'roo-plēt, kwō-droo'plēt) [L. *quadruplus*, fourfold] One of four children born of the same mother in the same confinement. SEE: *Hellin's law*.

quale (kwā'lē) [L. *qualis*, of what kind] The quality of anything, esp. of a sensation.

qualified mental retardation professional A person with more than one year's experience working with mentally retarded persons who has a bachelor's de-

gree, a nursing degree, or another form of professional education in health care.

qualitative (kwōl'ī-tā'tiv) [L. *qualitativus*] Referring to the quality of anything. SEE: *quantitative*.

qualitative analysis Determination of the presence of a substance in a test sample or of the physicochemical characteristics of a substance in a sample.

qualitative metasummary A technique used to gain insights from two or more descriptive analyses of the same phenomenon by listing common elements in a standardized format so that patterns in analytical thought can be highlighted.

quality (kwōl'ī-tē) [L. *qualitas*, quality]
1. That which constitutes or characterizes a thing; the natural character. **2.** In radiology, the energy or penetrating power of the x-ray beam, which is controlled by kilovoltage peak.

quality-adjusted life-years ABBR: QALY. A measure of health that combines the duration of life and its degradation by disease or death. A year in perfect health is considered to have a QALY of 1.0; a year of life in a coma is assigned a lower QALY approaching zero.

quality assurance Activities and programs designed to achieve desired levels of care.

quality factor ABBR: Q. In radiation science, a coefficient used to convert the absorbed dose of radiation (measured in grays or rads) to the toxic dose (in rems).

quality indicator Any measure of the process, performance, or outcome of health care delivery. In general, quality indicators are chosen because they correlate with greater patient safety and decreased mortality. In caring for patients with pneumonia, for example, the percentage of patients who have blood cultures drawn and antibiotics administered in the first hours of their arrival at a hospital was previously considered a marker of the quality of care that they receive.

quality of life The objective conditions, consequences, or subjective value or satisfaction experienced in life. The concept holds varying meanings for different people and may evolve over time. For some individuals it implies access to resources, autonomy, empowerment, capability, and choice; for others, security, social integration, or freedom from stress or illness.

health-related q.o.l. ABBR: HRQOL. The measurable impact of a person's perception of his or her health and the effect that produces on satisfaction with life and well-being. HRQOL is influenced by functional and socioeconomic status; by health risks; and by the beliefs, cultural milieu, policies, and practices of society.

quality management **1.** A measurement

and assessment system designed to regulate variations in equipment, procedures, processes, or evaluations. **2.** The oversight and supervision within health care institutions of programs that improve patient care, patient safety, resource utilization, and ancillary services.

quanta (kwōn'tā) [L.] Pl. of quantum.

quantitative (kwōn'tī-tā'tiv) [LL. *quantitativus*] **1.** Concerning measurement **2.** Capable of being counted. SEE: *qualitative*.

quantitative analysis Determination of the amount of a substance in a specified material. The amount may be represented in various ways: "x" grams, "x" g/L, kPa (i.e., an absolute quantity, a concentrational quantity, an intensive quantity).

quantity (kwōn'tī-tē) [L. *quantitas*, quantity] Amount; portion.

quantum (kwōn'tūm) *pl.* **quanta** [L., how much] **1.** A definite amount. **2.** A unit of radiant energy.

quantum mottle A phenomena where an insufficient number of x-ray photons strike the radiographic image receptor during an exposure. This phenomenon causes a speckled or snowy appearing nonuniform intensity over the areas of similar densities on the film. In radiography it is corrected by increasing milliamperere-seconds (mAS).

quarantine (kwōr'ān-tēn") [It. *quarantina*, 40 days] **1.** The period during which free entry to a country by humans, animals, plants, or agricultural products is prohibited, in order to limit the spread of potentially infectious diseases. **2.** A period of enforced isolation from public contact to prevent the spread of a contagious disease. Quarantine is typically used to isolate only those people, animals, or plants thought to pose significant health risks to the population at large. The duration of enforced detention is typically equal to the longest known incubation period of the disease. SEE: *contagious; isolation; notifiable disease*.

quart (kwōrt) [L. *quartus*, a fourth] ABBR: qt. A unit of fluid equal to one fourth of a gallon, or 2 pints, or 946 ml; in dry measure, one eighth of a peck.

quartan (kwōr'tān) [L. *quartana*, of the fourth] Occurring every fourth day. SEE: *malaria*.

quartile (kwōr'til) [L. *quartus*, a fourth] A 25% section, wedge, or slice of a consecutively arranged set of data.

quartz (kwārts) [Ger. *quarz*] Silicon dioxide, the principal ingredient of sandstone (crystallized silica; rock crystal). When crystal is clear and colorless, it permits the passage of large amounts of ultraviolet rays.

q. applicator A quartz rod containing various shapes and angles used to con-

duct, by total internal reflection, ultraviolet radiation from a water-cooled mercury arc quartz lamp.

q. glass Crystalline quartz used for prisms and lenses; fused quartz used for windows, through which ultraviolet radiations are freely transmitted.

quater in die (kwō'tēr in dē'ä) [L.] ABBR: q.i.d. Four times a day.

quaternary (kwō-tēr'nä-rē) [L. *quaternarius*, of four] **1.** The fourth in order. **2.** Composed of four elements.

Queckenstedt's sign (kwék'ën-stëts) [Hans Queckenstedt, Ger. physician, 1876–1918] In vertebral canal block, the cerebrospinal fluid pressure is scarcely affected by compression of the veins of the neck, unilaterally or bilaterally. In healthy persons, the pressure rises rapidly on compression, then disappears when the compression is released.

Queensland tick typhus (kwënz'länd') [Name of a state in Australia] ABBR: QTT. A febrile illness causing a spotted fever and transmitted to humans by the bite of *Ixodes* ticks infested with *Rickettsia australis*. The disease is found principally in eastern coastal Australia and is similar to Rocky Mountain Spotted Fever in the U.S.

quellung reaction (kwël'üng, kvël') [Ger. *Quellung*, swelling] The swelling of capsules of bacteria when they are mixed with their specific immune serum.

quenching (kwënc'h'ing) **1.** Cooling a hot object. **2.** Decreasing the energy released from a radioactive or fluorescent object. **3.** The ability of any material to decrease the toxicity of a poison. **4.** In MRI, the emergency release of cooling cryogens that maintain the necessary super-cooling condition of the primary magnet in order to turn off the magnetic field; used as a safety measure.

fluorescence q. A technique for investigating antigen-antibody reactions by measuring the light absorbed by an antigen mixed with a fluorescent-labeled antibody.

Quervain's disease (kär'vänz) [Fritz de Quervain, Swiss surgeon, 1868–1940] De Quervain's disease.

Query fever Q fever.

questionnaire A list of questions submitted to a patient or research subject in order to obtain data for analysis.

Quetelet index (kwät'lët) [Adolphe Quetelet, Belgian statistician, 1796–1874] Body mass index.

quick (kwik) [ME. *quicke*, alive] **1.** A part susceptible to keen feeling, esp. the part of a finger or toe to which the nail is attached. **2.** Pregnant and experiencing fetal movements.

quickening (kwik'ën-ing) A woman's initial awareness of the movement of the fetus within her womb (uterus). Most

commonly, fetal activity is first reported between 18 and 20 weeks' gestation.

quicklime (kwik'lím) CaO; calcium oxide (unslaked lime). It forms calcium hydroxide when water is added to it.

quick-look (kwik'look") A colloquial term for a rapid assessment, esp. of a cardiac rhythm during emergency cardiac resuscitation.

Quick Neurological Screening Test ABBR: QNST. A standardized test of neurological function for persons 5 years of age or older. It assesses various areas, including attention, balance, motor planning, coordination, and spatial organization.

Quick's test (kwiks) [Armand James Quick, U.S. physician, 1894–1978] **1.** A liver function test that measures the amount of hippuric acid excreted after a dose of sodium benzoate is given. **2.** A test for the amount of prothrombin present in plasma. **3.** Quick Neurological Screening Test.

quiescent (kwë-ës'sënt) The condition of being inactive or at rest. SYN: *dormant*; *latent*.

quinapril (kwín'ä-príl') An ACE inhibitor, administered orally to manage hypertension and congestive heart failure. Its therapeutic class is antihypertensive. SYN: *Accupril*.

Quincke's disease (kwink'ëz) [Heinrich I. Quincke, Ger. physician, 1842–1922] Angioedema.

Quincke's pulse Visible inflow and outflow of blood from the nailbed, a physical finding in patients with aortic regurgitation when their fingernails or toenails are gently depressed by the examiner's finger.

Quincke's puncture Lumbar puncture.

quinestrol (kwín-ës'tröl) An estrogen.

quinic acid (kwí'nik) C₇H₁₂O₆; a substance present in some plants, including cinchona bark, and berries.

quininism (kwí'nín-izm, kwí-nën'izm) Cinchonism.

quininium resin test (kwí-ní'në-üm, kwí-ní') ABBR: QRT. A tubeless (nonendoscopic) test for insufficient gastric acid secretion. The patient consumes quininium resin. If the pH of the stomach is less than 3.5, quinine is freed from the resin and absorbed. Its presence is detectable in the blood.

quinolone (kwín'ō-lón) Any of a class of antibiotics that inhibit bacterial DNA gyrase. Commonly prescribed agents include ciprofloxacin, levofloxacin, norfloxacin, and ofloxacin.

quinone (kwín'ōn) **1.** C₆H₄O₂; a yellow crystalline oxidation product of quinic acid. **2.** A class of organic compounds in which two atoms of hydrogen are replaced by two oxygen atoms.

quinqu- Combining form meaning *five*.

Quinquaud's disease (kän-köz') [Charles E. Quinquaud, Fr. physician,

1841–1894] Purulent inflammation of the hair follicles of the scalp, resulting in bald patches. SEE: *folliculitis*.

quinquina (kwīn-kwī'nā, kīn-kē'nā) Cinchona.

quinsy (kwīn'zē) [Gr. *kynanche*, sore throat] Peritonsillar abscess.

quintan (kwīn'tān) [L. *quintanus*, of a fifth] 1. Occurring every fifth day. 2. Trench fever.

quinti- [L. *quintus*, fifth] Combining form meaning *fifth*.

quintipara (kwīn-tīp'ā-rā) [r + *parere*, to bear] A woman who has had five pregnancies that have continued beyond the 20th week of gestation. SEE: *para*.

quintuplet (kwīn-tūp'lēt, kwīn-toop'lēt) [LL. *quintuplex*, fivefold] One of 5 children born of a single gestation. SEE: *Hellin's law*.

quit line (kwīt) [ME. fr. L. *quietare*, to put to rest] A means of aiding smoking cessation in which trained counselors staffing telephone lines assess smokers' needs and provide smoking-related advice, information, and pharmacological assistance.

Many states staff their own quit lines with money funded by the 1998 Master Settlement Agreement (between tobacco companies and state attorney generals). The federal government quit line in the U.S. is 1-800-QUITNOW.

quorum sensing (kwō'rūm sēns'ing) The ability of bacteria to sense cell density. SEE: *biofilm*.

quota (kwō'tū) [L. *quota* (pars), "how large (a part)?"] A numerical threshold, target, or limit.

quota sample A cohort of research subjects selected because a certain percentage of them has a desired characteristic.

quotidian (kwō-tīd'ē-ān) [L. *quotidianus*, daily] Occurring daily.

quotient (kwō'shēnt) [L. *quotiens*, how many times] The number of times one number is contained in another.

achievement q. A percentile rating of a child's score on a test with respect

to age, level of education, and peer performance.

hazard q. ABBR: HQ. A numerical ratio used to estimate whether a toxic exposure will prove harmful to an exposed person or ecosystem. The ratio is typically expressed as the measurable toxic exposure to a screening benchmark, such as the highest concentration of the toxicant known not to cause harm. An HQ greater than 1.0 is potentially toxic. An HQ less than 1.0 is not toxic, unless the toxic exposure is to multiple substances each with its own biological or ecological risk.

intelligence q. ABBR: IQ. An index of intelligence determined through a subject's answers to standardized test questions. It is the ratio of the individual's mental age, as determined by scoring on the test, to his or her age in years, multiplied by 100. Contemporary IQ tests, such as the Wechsler Intelligence Scale for Children or the Stanford-Binet test, measure both verbal ability, and performance (nonverbal) ability. The IQ is determined for each of these categories, and as an overall score.

The concept of the IQ, and the related concept of general intelligence, are controversial. Critics of IQ testing have argued that IQ tests are culturally biased; that they measure test-taking ability rather than intelligence; and that they favor speed rather than skill. Variations of IQ tests are used in clinical medicine as part of a battery of neuropsychiatric tests, e.g. in patients with learning disabilities, brain injury, and dementias, among other diseases and conditions. SEE: *intelligence*; *mental retardation*; *intelligence test*.

respiratory q. 1. The amount of energy derived from carbohydrate, rather than fat, metabolism. 2. The result of dividing the amount of carbon dioxide exhaled per minute by the amount of oxygen consumed each minute, normally 0.9.

q.v. L. *quantum vis*, as much as you please; *quod vide*, which see.

R

R 1. *respiration*; *right*; *roentgen*. 2. In chemistry, a radical. 3. In the ideal gas equation, $PV = nRT$, R is the gas constant. Its value is 0.082 liter-atmospheres per degree per mole. 4. An abbreviation for the transmissibility of a contagious illness. An $R = 1$ implies that a single infected person (on average) transmits a given infection to one additional person. A disease with an $R = 10$ would be more contagious; one infected individual would on average transmit the infection to ten others.

R- Abbr. used in organic chemistry to indicate part of a molecule.

R- Rinne negative. SEE: *Rinne test*.

R+ Rinne positive. SEE: *Rinne test*.

R Symbol for *L. recipe*, take. SEE: *prescription*.

R0 Meaning *complete resection* (of a tumor). It is used in surgical oncology.

RA *rheumatoid arthritis*; *right atrium*.

Ra Symbol for the element radium.

RabAvert (răb'ă-věrt") Rabies vaccine.

rabbetting (răb'ět-ing) [Fr. *raboter*, to plane] Interlocking of the jagged edges of a fractured bone.

rabbit fever Tularemia.

rabbitpox An acute viral disease of laboratory rabbits.

rabid (răb'id) Pert. to or affected with rabies.

rabies (ră'bēez) [L. *rabere*, to rage] A fatal infection of the central nervous system caused by the rabies virus. Human infection occurs as the result of a bite from a wild animal in which the virus is present. Rarely, it may be transmitted by inhalation of infectious aerosol particles or contamination of conjunctiva or other mucous membranes by the saliva of an infected animal. The long incubation period, before signs of rabies appear, is 3 to 12 weeks; this means that wild animals that are displaying no signs of the disease may still be infected, thereby increasing the risk of human infection. SYN: *hydrophobia*. SEE: *immune globulin*; *rabies vaccine*.

ETIOLOGY: Rabies is found almost exclusively in wild animals (e.g., raccoons, skunks, coyotes, foxes, and bats), which serve as reservoirs for infection. Domestic animal infections have been rare in the U.S. since 1960, but dogs and cats in developing countries may be infected. After infection, the virus replicates in the animal for several days to months; this period stimulates an immune response to viral antigens. The virus then spreads through the cytoplasm

of peripheral nerve axons to the central nervous system.

SYMPTOMS: Early symptoms in humans usually are nonspecific and include fever, malaise, and headache. Progressive signs of cerebral infection are those of encephalitis, including anxiety, confusion, insomnia, agitation, delirium, hallucinations, hypersalivation, hyperactive reflexes, and convulsions; periods of stupor alternate cyclically with episodes of extreme agitation. The classic symptom of hydrophobia (fear of water) is probably related to the painful contracture of the pharyngeal muscles that occurs during swallowing. Once clinical signs occur, the disease usually is fatal within days.

DIAGNOSIS: The diagnosis of rabies is made in animals by a direct fluorescent antibody test on brain tissue. In humans, brain biopsies, skin biopsies from the nape of the neck, corneal impression tests, and/or spinal fluid, blood, or salivary antibody tests are conducted.

PREVENTION: Veterinarians, animal handlers, and those who come in frequent contact with wild animals should receive preexposure prophylaxis with rabies vaccine. The vaccine does not prevent infection with rabies but simplifies treatment because it eliminates the need for immune globulin and decreases the amount of rabies vaccine required postexposure.

To decrease the spread of rabies, the Centers for Disease Control and Prevention recommends that all domestic animals be vaccinated routinely (consult local veterinarian and public health department) and that contact between pets and wild animals be minimized. Control of rabies in pets through vaccination and elimination of contact with stray animals significantly reduces the risk of human infection. Garbage containers should be designed to prevent attracting raccoons and skunks. Physical contact with raccoons, skunks, foxes, coyotes, and bats should be reported immediately. SEE: *Standard Precautions Appendix*.

TREATMENT: Physicians should contact the local or state health department to determine the need for postexposure prophylaxis. All wounds are vigorously cleaned. Intravenous immune globulin containing preformed antibodies and one dose of rabies vaccine are given immediately (day 1); an additional four doses of vaccine are administered on

days 3, 7, 14, and 28. No cases of rabies have occurred when this protocol has been followed promptly after exposure. Most fatalities occur when people do not seek medical assistance because they are not aware of the possibility of rabies infection.

rabies immune globulin, human rabies immune globulin ABBR: RIG, HRIG. A standardized preparation of globulins derived from blood plasma or serum from selected human donors who have been immunized with rabies vaccine and have developed high titers of rabies antibody. It is used to produce passive immunity in persons bitten by animals. SEE: *rabies*.

rabies virus group A genus of viruses whose official designation is *Lyssavirus*. The virus that causes human rabies is included in this group.

rabiform (rā'bi-form) [" + *forma*, shape] Resembling rabies.

raccoon sign [raccoons have distinctive periorbital coloration] Periorbital echymosis, which may be present in patients who have a basilar skull fracture.

race (rās) [Fr.] **1.** The descendants of a genetically cohesive ancestral group. **2.** A group of organisms identifiable within a species. **3.** A political or social designation for a group of people thought to share a common ancestry or common ethnicity. In contemporary societies, such designations have limited validity and value, although they are sometimes employed as a means of social, economic, or political discrimination.

racemase (rā'sē-mās) An enzyme that catalyzes racemization (i.e., the production of an optically inactive compound).

racemate (rā'sē-māt) A racemic compound.

racemic (rā-sē-mīk) Optically inactive; used of compounds.

racemization (rā'sē-mī-zā'shūn) The production of a racemic form of an optically inactive compound.

racemose (rās'ē-mōs) [L. *racemosus*, full of clusters] Resembling a clustered bunch of grapes, as a gland; divided and subdivided; ending in a bunch of follicles.

rachi-, rachio- [Gr. *rhachis*, spine] Combining forms meaning *spine*.

rachial (rā'kē-āl) [Gr. *rhachis*, spine] Spinal.

rachicele (rā'ki-sēl) [" + *kele*, tumor, swelling] Protrusion of the contents of the spinal canal in spina bifida cystica.

rachidial (rā-kīd'ē-āl) Spinal.

rachidian (rā-kīd'ē-ān) Pert. to the spinal column.

rachilysis (rā-kīl'i-sīs) [" + *lysis*, dissolution] The mechanical treatment of lateral curvature of the spine through traction and pressure.

rachimeter (rā-kē-ōm'ē-tēr) [" + *met-*

ron, measure] An instrument for measuring a spinal curvature.

rachiopagus (rā'kē-ōp'ā-gūs) [" + *pagos*, thing fixed] A conjoined twin deformity in which the two are joined at the vertebral column.

rachiotome (rā'kē-ō-tōm") [" + *tome*, incision] An instrument for dividing the vertebrae.

rachis (rā'kīs) *pl.* **rachises** [Gr. *rhachis*] The spinal column.

rachischisis (rā-kīs'kī-sīs) [" + *schisis*, a splitting] A congenital spinal column fissure (e.g., spina bifida).

posterior r. Spina bifida.

rachitic (rā-kīt'īk) Pert. to or affected with rickets.

rachitis (rā-kī'tīs) [" + *itis*, inflammatory] **1.** Inflammation of the spine. **2.** Rickets.

r. fetalis annularis Congenital enlargement of the epiphyses of the long bones.

r. fetalis micromelica Congenital shortness of the bones.

rachitome (rāk'i-tōm") [" + *tome*, incision] An instrument used to open the spinal canal.

rachitomy (rā-kīt'ō-mē) [" + *tome*, incision] Surgical cutting of the vertebral column.

rad *radiation absorbed dose.*

radectomy, radiectomy (rā-dēk'tō-mē, rā'dē-ēk'tō-mē) [L. *radix*, root, + Gr. *ektome*, excision] Surgical removal of all or a portion of a dental root.

radiability (rā'dē-ā-bīl'i-tē) [L. *radius*, ray, + *habilitas*, able] The capability of being penetrated readily by ionizing radiation. **radiable** (rā'dē-ā-bāl), *adj.*

radial (rā'dē-āl) **1.** Radiating out from a given center. **2.** Pert. to the radius.

radialis (rā'dē-ā'lis) [L.] Pert. to the radius bone.

radian (rā'dē-ān) **1.** A unit of angular measurement equivalent to 57.295 degrees. It is subtended at the center of a circle by an arc the length of the radius of the circle. **2.** In ophthalmometry, a lens of 1 radian would have one plane surface equal in length to the radius of curvature of the curved surface.

radiant (rā'dē-ānt) [L. *radians*, radiate] **1.** Emitting beams of light. **2.** Transmitted by radiation. **3.** Emanating from a common center. SEE: *energy; heat; radiation.*

radiate (rā'dē-āt) [L. *radiare*, to emit rays] To spread from a common center.

radiation (rā-dē-ā'shūn) [L. *radiatio*, to radiate] **1.** The process by which energy is propagated through space or matter. **2.** The emission of rays in all directions from a common center. **3.** Ionizing rays used for diagnostic or therapeutic purposes. Two types of radiation therapy are commonly used for patients with cancer: teletherapy and brachytherapy. SEE: *brachytherapy*. **4.** A gen-

eral term for any form of radiant energy emission or divergence, as of energy in all directions from luminous bodies, radiographical tubes, particle accelerators, radioactive elements, and fluorescent substances. **5.** In neurology, a group of fibers that diverge from a common origin.

acoustic r. Auditory r.

actinic r. Ionizing, electromagnetic radiation that can produce chemical changes, such as the damage done to skin by ultraviolet sunlight.

auditory r. A band of fibers that connect auditory areas of the cerebral cortex with the medial geniculate body of the thalamus. SYN: *acoustic radiation*.

background r. Total radioactivity from cosmic rays, natural radioactive materials, and other radiation that is present in a specific area.

bremsstrahlung r. Diagnostic radiation produced at the target of the anode in an x-ray tube. An electron is accelerated at high speed from the x-ray tube cathode filament. It interacts with the nuclear field of a target atom, changing direction and losing energy that is emitted in the form of an ionizing radiation photon. The result is a heterogeneous beam.

characteristic r. In radiology, the production of radiation in an anode caused by an interaction between an electron from the electron stream and an inner-shell electron of the target material. The result is an ejected electron, a positive atom, and an x-ray photon characteristic of the difference in binding energies between the atomic shells.

corpuscular r. Radiation composed of discrete elements or particles such as elements of atomic nuclei (i.e., alpha, beta, neutron, positron, or proton particles).

cosmic r. Ionizing radiation from the sun and other extraterrestrial sources. It has a short wavelength, high velocity, and an exceptional ability to penetrate tissue. It accounts for about one tenth of the yearly total of ionizing radiation exposure for each person. Colloquially, it is known as "cosmic rays."

electromagnetic r. Rays that travel at the speed of light. They exhibit both magnetic and electrical properties. SEE: *electromagnetic spectrum* for table.

heterogeneous r. Radiation containing waves of various wavelengths.

homogeneous r. Radiation containing photons of similar wavelength.

infrared r. Infrared ray.

interstitial r. Radiation treatment accomplished by inserting sealed sources of a particle emitter directly into tissues.

ionizing r. Electromagnetic waves capable of producing ions after interac-

tion with matter. Examples include x-rays, gamma rays, and beta particles. SEE: *radiation injury*, *ionizing*.

irritative r. An overdose of ultraviolet irradiation resulting in erythema and, in exceptional cases, blister formation.

low-level r. Electromagnetic waves at intensity levels below that known to cause obvious damage to living things. Low-level radiation includes that emitted by power lines, nuclear power plants, and appliances such as electric blankets, television sets, and computer terminals.

nonionizing r. ABBR: NIR. Electromagnetic radiation that does not readily ionize atoms such as that in visible light, ultraviolet light, infrared light, microwaves, ultrasound, and radiofrequency emissions.

optic r. A system of fibers extending from the lateral geniculate body of the thalamus through the sublentacular portion of the internal capsule to the calcarine occipital cortex (striate area). SYN: *geniculocalcarine tract*.

photochemical r. Light rays that penetrate tissues only fractions of a millimeter, are absorbed by cells, and cause physical and biological changes. This type of radiation causes surface heating.

photothermal r. Radiation of heat by a source of light, as that from an electric bulb.

primary r. That radiation being emitted directly to the patient from an x-ray source.

remnant r. Ionizing radiation that passes through the part being examined to make the radiographical image.

scattered r. X-rays that have changed direction because of a collision with matter.

secondary r. X-rays produced by the interaction between primary radiation and the substance being radiated.

solar r. Radiation from the sun; 60% is infrared and 40% is visible and ultraviolet.

striatomesencephalic r. Fibers originating in the corpus striatum and terminating principally in the substantia nigra of the midbrain.

striothalamic r. Groups of fibers connecting the corpus striatum with the thalamus and subthalamus.

synchrotron r. Radiation released by charged particles accelerated by a synchrotron. It may be used to obtain non-invasive images of body structures (e.g., the coronary arteries) or to study the structure of proteins, tissue samples, or other objects of biological or medical interest.

thalamic r. Groups of fibers connecting the thalamus with the cerebral hemispheres. These include frontal, parietal, occipital, and optic radiations.

thermal r. Heat radiation.

ultraviolet r. Radiant energy extending from 3900 to 200 angstrom units (A.U.) Divided into near ultraviolet, which extends from 3900 to 2900 A.U., and far ultraviolet, which extends from 2900 to 200 A.U.

visible r. The radiation of the visible spectrum, which may be broken up into different wavelengths representing different colors:

Violet, 3900–4550 angstrom units (A.U.)

Blue, 4550–4920 A.U.

Green, 4920–5770 A.U.

Yellow, 5770–5970 A.U.

Orange, 5970–6220 A.U.

Red, 6220–7700 A.U.

x r. 1. Electromagnetic waves or energy composed of x-rays. **2.** Treatment with or exposure to x-rays.

radiation injury, ionizing Damage to cells and intracellular molecules by x-rays, gamma rays, radionuclides, or other sources of radioactive energy. In sufficient doses, radioactive energy can damage the cytoplasm and the genetic material of the cell, leading to organ dysfunction (esp. in rapidly dividing tissues such as the skin and the lining of the gastrointestinal tract), mutations, inhibition of cell division, cell death, or carcinogenesis. When the developing fetus is exposed to radiation in the womb, developmental malformations may result. SEE: *low-level radiation; radiation syndrome.*

radiation protection Prophylaxis against injury from ionizing radiation. The only effective preventive measures are shielding the source and the operator, handlers, and patients; maintaining appropriate distance from the source; and limiting the time and amount of exposure. In general, the use of drugs to protect against radiation is not practical because of their toxicity. An exception is the use of orally administered potassium iodide to protect the thyroid from radioactive iodine.

radiation sickness Radiation syndrome.

radiation symbol An international symbol used to indicate radioactive sources, containers for radioactive materials, and areas where radioactive materials are stored and used. The presence of this symbol (a magenta or black propeller on a yellow background) on a sign denotes the need for caution to avoid contamination with or undue exposure to atomic radiation. The wording on the sign varies with the level of potential radiation in the area. SEE: *illus.*

radiation syndrome Illness due to overexposure to harmful electromagnetic waves, usually x-rays or gamma rays. Mild acute illness is manifested by anorexia, headache, nausea, vomiting, and diarrhea. Delayed effects resulting from repeated or prolonged exposure may re-



UNIVERSAL RADIATION SYMBOL

sult in skin ulcers, alopecia, proctitis, enteritis, amenorrhea, sterility, disturbances in blood cell formation, cataract formation, premature aging, and cancer. SYN: *radiation sickness.*

radiation therapist Radiation therapy technologist.

radiation therapy The use of energy from man-made ionizing radiation or from the radioactive decay of atomic nuclei to destroy diseased tissues, esp. cancers. SYN: *radiotherapy.*

conformal r.t. The application of radiation therapy to tumors that have been imaged three-dimensionally. The objective is to deliver the radiation directly to the tumor (to make the energy “conform” to the unique shape of the tumor), leaving neighboring healthy tissues unaffected by the damaging effects of radiation. SYN: *intensity-modulated radiation therapy.*

PATIENT CARE: Care is taken to direct therapeutic radiation toward diseased tissues (e.g. those infiltrated by cancer), leaving healthy tissues spared of its damaging effects. To accomplish this, the body is precisely measured and marked (“tattooed”), and cradles are designed to hold the patient in a precise position each time he receives a treatment. Systemic adverse effects of radiation therapy may include weakness, fatigue, anorexia, nausea, vomiting, and anemia. These may subside with antiemetics, steroids, frequent small meals, fluid maintenance, and added rest and are seldom severe enough to require discontinuing treatment although dosage adjustment may be required. Localized adverse effects of radiation depend on the organ system affected. For example, radiation of the breast may sometimes result in esophagitis or pneumonitis (inflammation of neighboring organs); cranial radiation may cause hair loss; radiation treatment of head and neck cancers may cause dry mouth (for which good oral hygiene or artificial saliva may be helpful). Because radiation may affect bone marrow, patients require frequent measurement of complete blood counts. Radiation also requires special skin care, and the patient should use a hypoallergenic moisturizer: Biaf-

ine, Radiacare Gel, and Aquaphor are popular brands. Many nurses and patients prefer using natural aloe (from the leaf of an aloe plant, split open to apply the gel from inside), or bottled aloe. Usually the radiation therapist will recommend that the skin be free of any such preparations at treatment time.

intensity-modulated r.t. ABBR: IMRT. Conformal radiation therapy.

intraoperative radiation therapy ABBR: IORT. The administration of a large dose of radiation to a malignant tumor during surgery. After the tumor is debulked, the surrounding tissues are displaced, temporarily sutured, or protected by the applicator shield. The applicator then delivers a large dose of radiation directly to the affected tissues. IORT is used, e.g., to manage otherwise unresectable tumors.

radiation therapy technologist ABBR: RT(T). A technologist who assists specialists in nuclear medicine in the proper and safe use of radiation for patient diagnosis and treatment. The roles of the radiation therapy technologist include the operation of radiation detection equipment, the administration of radiopharmaceuticals, and the recognition and early treatment of radiation-related emergencies, among others.

radiation treatment The administration of high-energy x-ray photons, electrons, or nuclear emissions for the cure of cancer or palliation of symptoms.

radiator (rā'dē-ā'tor) [LL. *radiatus*, radiate] A device for radiating heat or light.

infrared r. A device for transmitting infrared rays.

radical (rād'ī-kāl) [LL. *radicalis*, having roots] **1.** In chemistry, a group of atoms acting as a single unit, passing without change from one compound to another, but unable to exist in a free state. **2.** Oriented toward the origin or root. **3.** A foundation or principle.

acid r. The electronegative portion of a molecule when the acid hydrogen is removed.

alcohol r. The portion of an alcohol molecule left when the hydrogen of the OH-group is removed.

free r. A molecule containing an odd number of electrons. These molecules contain an open bond or a half bond and are highly reactive. The odd electron is represented in the chemical formula by a dot. If two radicals react, both are eliminated; if a radical reacts with a nonradical, another free radical is produced. This type of event may become a chain reaction. In ischemic injury to tissues (e.g., myocardial infarction), free radical production may play an important role at certain stages in the progression of the injury.

The body has developed methods of defending against the harmful effects of free radicals. Superoxide dismutases, enzymes in mitochondria, and antioxidants are effective in counteracting the harmful effects of free radicals. SEE: *antioxidant; oxidative stress; superoxide; superoxide dismutase.*

radical treatment An extensive or complete therapy, such as surgical removal of an entire diseased organ and its associated lymphatic drainage. Alternatives to radical treatment may include observation, palliation, modified procedures, lumpectomies, or conservative treatments.

radices (rād'ī-sēz) [L.] Pl. of *radix*.

radicle (rād'ī-kl) [L. *radicula*, little root] A structure resembling a rootlet, as a radicle of a nerve or vein. SYN: *radicula*.

radicotomy (rād'ī-kōt'ō-mē) [L. *radix*, root, + Gr. *tome*, incision] Rhizotomy. SEE: *radicectomy*.

radicul-, radiculo- Combining forms meaning *nerve root*.

radicula (rā-dīk'ū-lā) [L.] Radicle.

radiculalgia (rā-dīk'ū-lāl'jē-ā) [L. *radix*, root, + Gr. *algos*, pain] Neuralgia of nerve roots.

radicular (rā-dīk'ū-lār) [L. *radix*, root] **1.** Pert. to a root or radicle. **2.** Pert. to the tissues on or around a tooth root (e.g., radicular dentin, radicular bone).

radicectomy (rā-dīk'ū-lēk'tō-mē) [" + Gr. *ektome*, excision] **1.** Excision of a spinal nerve root. **2.** Resection of a posterior spinal nerve root. SEE: *rhizotomy*.

radiculitis (rā-dīk'ū-lī'tis) [L. *radicula*, little root, + Gr. *itis*, inflammation] Inflammation of the spinal nerve roots, accompanied by pain and hyperesthesia.

radiculoganglionitis (rā-dīk'ū-lō-gāng'glē-ō-nī'tis) [" + Gr. *ganglion*, knot, + *itis*, inflammation] Inflammation of the posterior spinal roots and their ganglia.

radiculomedullary (rā-dīk'ū-lō-mēd'ū-lēr'ē) [" + *medullaris*, marrow] Pert. to the nerve roots and the spinal cord.

radiculomeningomyelitis (rā-dīk'ū-lō-mē-nīng'ō-mī-ē-l-ī'tis) [" + Gr. *meninx*, membrane, + *myelos*, marrow, + *itis*, inflammation] Inflammation of the nerve roots, meninges, and spinal cord.

radiculoneuritis (rā-dīk'ū-lō-nū-rī'tis) [L. *radicula*, little root, + Gr. *neuron*, sinew, + *itis*, inflammation] Inflammation of the spinal nerve roots.

radiculopathy (rā-dīk'ū-lōp'ā-thē) [" + *pathos*, disease, suffering] Any disease of a nerve root.

radictory (rā'dē-ēk'tō-mē) [L. *radix*, root, + Gr. *ektome*, excision] SEE: *radectomy*.

radii (rā'dē-ī) [L.] Pl. of *radius*.

radio- [L. *radius*, ray] **1.** Combining form indicating *radiant energy, radioactive substances*. **2.** Combining form used as a prefix indicating *radioactive isotope*.

radioactive (rā'dē-ō-āk'tív) [L. *radius*, ray, + *activus*, acting] Capable of spontaneous emission of alpha, beta, or gamma rays as a result of the disintegration of the nucleus of an atom.

radioactive patient An individual treated or accidentally contaminated with radioactive materials. The patient should be told how long to avoid close contact with children and pregnant women.

radioactivity (rā'dē-ō-āk'tív'i-tē) Spontaneous disintegration of an atomic nucleus resulting in the emission of alpha, beta, or gamma rays.

artificial r. Radioactivity resulting from bombardment of a substance with high-energy particles in a cyclotron, betatron, or other apparatus.

induced r. Temporary radioactivity of a substance that has been exposed to a radioactive element.

natural r. Radioactivity emitted by elements in the environment, such as radon in soil. It may include alpha particles, beta particles, or gamma rays.

radioallergosorbent test (rā'dē-ō-äl'ēr-gō-sor'bēnt) ABBR: RAST. A blood test for allergy that measures minute quantities of immunoglobulin E in blood. People who have type I hypersensitivity reactions to common allergens (e.g., ragweed, trees, molds, milk, eggs, and animal dander) have elevated levels of IgE. For these individuals and others, RAST is safer than skin testing, because it carries no risk of systemic anaphylaxis. RAST is not as sensitive as skin testing, however.

radioautograph (rā'dē-ō-aw'tō-gráf) [" + " + *graphein*, to write] A photograph of a histologic section of a tissue showing the distribution of radioactive substances in the tissue.

radiobicipital (rā'dē-ō-bī-síp'i-tāl) Pert. to the radius and biceps muscle of the arm.

radiobiology (rā'dē-ō-bī-ōl'ō-jē) The branch of biology that deals with the effects of ionizing radiation on living organisms.

radiocarbon (rā'dē-ō-kār'bōn) A radioisotope of carbon; ^{13}C and ^{14}C are used in medical studies.

radiocardiogram (rā'dē-ō-kār'dē-ō-grām) [L. *radius*, ray, + Gr. *kardia*, heart, + *gramma*, something written] The record or film obtained during radiocardiography.

radiocardiography (rā'dē-ō-kār'dē-ōg'rā-fē) [" + " + *graphein*, to write] The investigation of the anatomy and function of the heart by obtaining a record or film of a radioactive substance as it travels through the heart.

radiocarpal (rā'dē-ō-kār'pāl) [" + Gr. *karpos*, wrist] Pert. to the radius and carpus.

radiochemistry (rā'dē-ō-kēm'is-trē) [" + Gr. *chemeia*, chemistry] The branch of chemistry dealing with radioactive phenomena.

radiocontrast (rā'dē-ō-kōn'trāst") Contrast medium.

radiocurable (rā'dē-ō-kūr'ā-bl) Curable by radiation therapy.

radiocystitis (rā'dē-ō-sīs-ti'tis) [" + Gr. *kystis*, bladder, + *itis*, inflammation] Inflammation of the bladder following radiation therapy as a result of cell and tissue damage.

radiodensity (rā'dē-ō-dēn'si-tē) The impenetrability of a substance or tissue by x-rays. SYN: *radiopacity*.

radiodermatitis (rā'dē-ō-dēr'mā-ti'tis) [" + Gr. *derma*, skin, + *osis*, condition] Radiation dermatitis.

radiodiagnosis (rā'dē-ō-dī'āg-nō'sis) [" + Gr. *dia*, through, + *gnosis*, knowledge] Diagnosis with radiological imaging.

radiodigital (rā'dē-ō-dig'i-tāl) Pert. to the radius and the fingers.

radioecology (rā'dē-ō-ē-kōl'ō-jē) [" + Gr. *oikos*, house, + *logos*, word, reason] Investigation of the effect of radiation on the living organisms in the environment.

radioelement (rā'dē-ō-ēl'ē-mēnt) [" + *elementum*, a rudiment] Any of the radioactive elements.

radioencephalogram (rā'dē-ō-ēn-sēf'äl-lō-grām") [" + Gr. *enkephalos*, brain, + *gramma*, something written] The record obtained when a radioactive tracer passes through the blood vessels of the brain.

radioencephalography (rā'dē-ō-ēn-sēf'äl-lōg'rā-fē) [" + " + *graphein*, to write] The recording of radio waves transmitted from the brain to a receiver but without electrodes being placed on the scalp.

radioepithelitis (rā'dē-ō-ēp'i-thē-lī'tis) [" + " + *thela*, nipple, + *itis*, inflammation] Radiation dermatitis.

radiofrequency identification (rā'dē-ō-frē'kwēn-sē) [" + "] ABBR: RFID. A method of labeling a drug or device with a unique electronic code to ensure that the object has been manufactured, stored, distributed, inventoried, and marketed legitimately. RFID devices provide electronic tags to prevent adulteration, counterfeiting, or theft of health care-related products.

radiogenic (rā'dē-ō-jēn'ik) [" + *genesis*, to produce] **1.** Producing radiation. **2.** Caused by radiation. SYN: *actinogenic*.

radiogold (rā'dē-ō-gōld) A radioisotope of gold.

radiograph (rā'dē-ō-gráf) [" + Gr. *graphein*, to write] **1.** An x-ray image or

photograph produced on photographic film or some other image receptor by x-rays or nuclear radiation that is passed through a structure to be imaged. SYN: *radiographic image*. SYN: *roentgenogram*. **2.** To make a radiograph. **3.** The film used to make a radiograph.

bitewing r. A radiograph that shows the crowns and upper third of the roots of upper and lower teeth. It is made by using a dental film with a tab (bitewing) or placement device that holds the film in place when the jaws are closed on the tab and is used to detect proximal caries and the interdental bone. SYN: *interproximal radiograph*.

body section r. Tomogram.

bregma-menton r. A radiograph taken in the submental-vertex plane, from below the chin to the top of the skull. It shows the contour of the zygomatic arches and the lateral separation of the mandibular condyles, coronoid processes, or both.

bucket-handle r. An informal term for radiograph taken with the beam aimed from beneath the chin toward the vertex of the skull. It is used to assess facial and orbital floor injuries.

cephalogram r. A radiograph of the jaws, teeth, and skull, used to demonstrate dental occlusion and its relation to other craniofacial structures.

dental r. A radiograph of dental structures made on x-ray film or stored as a digital image. The radiographs may be extraoral or intraoral. Three common types of intraoral dental images are periapical, interproximal, and occlusal radiographs.

interproximal r. Bitewing radiograph.

lateral cephalometric r. A radiograph of the entire head, taken from the side with the head in a fixed position and used to make definitive observations or measurements.

lateral oblique r. A radiograph used to examine the body of the mandible and the ramus. Projections may be performed with conventional dental radiographical film and may cover a broader area than a typical periapical radiograph. Also called *lateral jaw survey*.

lateral skull r. A radiograph of the sinuses and lateral aspects of the cranial skeleton.

maxillary sinus r. A frontal radiograph of the maxillary sinuses and the zygomas that allows direct comparison of both sides. SYN: *Water's projection*.

panoramic r. A type of extraoral curved-surface radiograph that shows the entire upper and lower jaws in a continuous single film. SYN: *panoraphy*; *pantomography*.

periapical r. An intraoral radiograph that depicts the tooth and surrounding

tissues extending to the apical region. SYN: *dental radiograph*.

posteroanterior r. A frontal radiograph of the skull. It is used to examine the skull for disease, trauma, and developmental abnormalities.

rotational r. Panoramic r.

transcranial r. A radiograph that includes views of the mouth in open, closed, and static positions.

radiographer (rā"dē-ōg'rā-fēr) A radiologic technologist specializing in the production of images for medical diagnosis. Such images include radiographs (x-ray images), computed-tomography (CT) scans, mammograms, and magnetic resonance images (MRIs).

radiography (rā-dē-ōg'rā-fē) The process of obtaining an image for diagnosis using a radiological modality.

body section r. Tomography.

direct r. The conversion of x-ray energy received from an imaged body part into digital format using semiconductors, without first collecting images on an image plate or as light.

radioguided surgery (rā'dē-ō-gīd'ēd) The use of radionuclides, such as isotopes of technetium, to locate lymph nodes or other tissues to excise during an operation.

radiohumeral (rā"dē-ō-hū'mēr-āl) [" + *humerus*, upper arm] Pert. to the radius and humerus.

radioimmunity (rā"dē-ō-ī-mū'nī-tē) [" + *immunitas*, immunity] Apparent decreased sensitivity to radiation that may follow repeated radiation therapy.

radioimmunoassay (rā"dē-ō-īm'ū-nō-ās'ā) ABBR: RIA. A method of determining the concentration of a substance, esp. hormones, based on the competitive inhibition of binding of a radioactively labeled substance to a specific antibody. Protein concentrations in the picogram (10^{-12} g) range can be measured by this technique.

radioimmunodiffusion (rā"dē-ō-īm'ū-nō-dīf-fū'zhūn) [" + " + *dis*, apart, + *fundere*, to pour] A method of studying antigen-antibody interaction by use of radioisotope-labeled antigens or antibodies diffused through a gel.

radioimmunoelectrophoresis (rā"dē-ō-īm'ū-nō-ē-lēk'trō-fō-rē'sis) [" + " + Gr. *elektron*, amber, + *phoresis*, bearing] Electrophoresis involving the use of a radioisotope-labeled antigen or antibody. An autoradiograph is taken of the electrophoretic pattern produced.

radioimmunoguided surgery (rā'dē-ō-īm'ū-nā-gīd'ēd, -ī-mūn'ā) ABBR: RIGS. The use of tumor-specific, radioactively labeled monoclonal antibodies to detect and stage cancers and distinguish malignant tissue from surrounding normal tissue. This improves the management of surgical tumors.

radioimmunoimaging (rā'dē-ō-īm'ū-nō-īm'ī-jīng) Immunoscintigraphy.

radioimmunosorbent test (rā'dē-ō-īm'ū-nā-sōr'bēnt, -ī-mūn'ā) ABBR: RIST. Use of radioimmunoassay to measure the immune globulin E (IgE) antibody in serum.

radioimmunotherapy (rā'dē-ō-īm'ū-nō-thēr'ā-pē) The use of radioactively labeled monoclonal antibodies to treat malignancies, e.g., breast cancers, non-Hodgkin's lymphoma, and prostate cancer. The monoclonal antibodies selectively bind with antigens on the tumor cells and deliver a dose of cell-killing radiation directly to those cells.

radioiodine (rā'dē-ō-ī'ō-dīn) A radioactive isotope of iodine, used in the diagnosis and treatment of thyroid disorders. The most commonly used isotope is ¹³¹I.

radioiron (rā'dē-ō-ī'ērən) A radioactive isotope of iron; ⁵⁵Fe and ⁵⁹Fe are used in medical studies.

radioisotope (rā'dē-ō-ī'sō-tōp) A radioactive form of an element.

radiolabel (rā'dē-ō-lā'bēl) Tag, radioactive.

radiolead (rā'dē-ō-lēd') A radioactive isotope of lead.

radiolesion (rā'dē-ō-lē'zhūn) An injury caused by radiation.

radioligand (rā'dē-ō-lī'gānd, rād'dē-ō-līg'ānd) A molecule, esp. an antigen or antibody, with a radioactive tracer attached to it.

radiological technologist A technologist trained in the safe application of ionizing radiation to portions of the body to assist the physician in the diagnosis of injuries and disease. This individual may also supervise or teach others. Technology programs approved by the Joint Review Commission on Education in the Radiologic Sciences are conducted in hospitals, medical schools, and colleges with hospital affiliations.

radiologist (rā-dē-ōl'ō-jīst) [L. *radius*, ray, + Gr. *logos*, word, reason] A physician who uses x-rays or other sources of ionizing radiation, sound, or radiofrequencies for diagnosis and treatment.

radiology (rā-dē-ōl'ō-jē) The branch of medicine concerned with radioactive substances, including x-rays, radioactive isotopes, and ionizing radiation, and the application of this information to prevention, diagnosis, and treatment of disease.

radiolucency (rā'dē-ō-lū'sēn-sē) [L. + *lucere*, to shine] The property of being partly or wholly penetrable by radiant energy.

radiolucient (rā'dē-ō-lū'sēnt) [L. + *lucere*, to shine] Penetrable by x-rays.

radiolus (rā-dē'ō-lūs) [L., a little ray] A sound or probe.

radiometer (rā-dē-ōm'ē-tēr) [L. + Gr.

metron, measure] An instrument for measuring the intensity of radiation.

radiomicrometer (rā'dē-ō-mī-krōm'ē-tēr) [L. + Gr. *mikros*, small, + *metron*, measure] An instrument for measuring small changes in radiation.

radiomimetic (rā'dē-ō-mīm-ēt'ik) [L. + Gr. *mimetikos*, imitation] Imitating the biological effects of radiation. Alkylating agents are examples of substances with this property. SEE: *alkylating agent*.

radiomuscular (rā'dē-ō-mūs'kū-lār) Pert. to the radius or radial artery and the muscles of the arm.

radiomutation (rā'dē-ō-mū-tā'shūn) The permanent alteration of the genetic material of a cell caused by the effects of ionizing radiation.

radionecrosis (rā'dē-ō-nē-krō'sis) [L. + Gr. *nekrosis*, state of death] The disintegration of tissue resulting from exposure to ionizing radiation.

radioneuritis (rā'dē-ō-nū-rī'tis) [L. + Gr. *neuron*, sinew, + *itis*, inflammation] Inflammation of a nerve caused by exposure to radioactivity.

radionitrogen (rā'dē-ō-nī'trō-jēn) A radioisotope of nitrogen.

radionuclide (rā'dē-ō-nū'klīd) An atom that disintegrates by emitting electromagnetic rays, known as gamma rays.

radiopacity (rā'dē-ō-pās'ī-tē) Radiodensity.

radiopaque (rā-dē-ō-pāk') [L. + *opacus*, dark] Impenetrable to x-rays or other forms of radiation.

radiopathology (rā'dē-ō-pā-thōl'ō-jē) [L. + Gr. *pathos*, disease, suffering, + *logos*, word, reason] The study of radiation injuries.

radiopelvimetry (rā'dē-ō-pēl-vīm'ēt-rē) [L. + *pelvis*, basin, + Gr. *metron*, measure] Measurement of the pelvis by use of x-rays.

radiopharmaceutical (rā'dē-ō-fārm'ā-sū'tī-kāl) A radioactive chemical or drug (e.g., an isotope of technetium or iodine) that has a specific affinity for a particular body tissue or organ. It can be used in nuclear medicine to obtain images of structures, or to treat radiation-sensitive diseases.



Radiopharmaceuticals must be handled in accordance with prescribed methods to prevent the patient or those treating the patient from being exposed to unnecessary ionizing radiation.

radiophosphorus (rā'dē-ō-fōs'fō-rūs) A radioactive isotope of phosphorus. ³²P is used in medical studies.

radiopotassium (rā'dē-ō-pō-tās'ē-ūm) A radioactive isotope of potassium. ⁴²K is used in medical studies.

radiopotentialion (rā'dē-ō-pō-tēn'shē-ā'shūn) [L. + *potentia*, power] The aug-

mentation of the effect of radiation. This may be produced by certain drugs and by oxygen.

radioprotective agent SEE: under *agent*.

radioreaction (rā'dē-ō-rē-āk'shūn) The reaction of the body to radiation.

radioreceptor (rā'dē-ō-rē-sēp'tor) Something that receives radiant energy such as light, heat, or x-rays.

radioresistant (rā'dē-ō-rē-zis'tānt) Resistant to the action of radiation; used esp. of a tumor that cannot be destroyed by radiation treatment.

radioresponsive (rā'dē-ō-rē-spōn'siv) Radiosensitive.

radioscopy (rā-dē-ōs'kō-pē) [L. *radius*, ray, + Gr. *skopein*, to examine] Inspection and examination of the internal structures of the body by fluoroscopic procedures. SYN: *fluoroscopy*.

radiosensitivity (rā-dē-ō-sēn-sī-bil'ī-tē) Radiosensitivity.

radiosensitivity (rā'dē-ō-sēn'sī-tiv'ī-tē) Reactiveness or responsiveness of a cell to radiation. SYN: *radiosensitivity*. SEE: table. **radiosensitive**, *adj.*

Radiosensitive Tumors

adenoid cystic carcinoma
breast cancer
Ewing's sarcoma
Hürthle cell tumor
lymphoma
Merkel cell tumor
prostate cancer
seminoma

radiosodium (rā'dē-ō-sō'dē-ūm) A radioisotope of sodium such as ²⁴Na and ²²Na.

radiostrontium (rā'dē-ō-strōn'shē-ūm) A radioisotope of strontium.

radiosulfur (rā'dē-ō-sūl'fūr) A radioisotope of sulfur.

radiosurgery (rā'dē-ō-sūr'jēr-ē) [+ Gr. *cheirurgia*, handwork] The use of ionizing radiation in surgery. SEE: *gamma knife surgery*.

radiotelemetry (rā'dē-ō-tēl-ēm'ē-trē) [+ Gr. *tele*, distant, + *metron*, measure] The transmission of data, including biological data, by radio from a patient to a remote monitor or recording device for storage, analysis, and interpretation.

radiotherapeutics (rā'dē-ō-thēr'ā-pū'tiks) **1.** Radiotherapy. **2.** The study of radiotherapeutic agents.

radiotherapist (rā'dē-ō-thēr'ā-pist) [+ Gr. *therapeia*, treatment] Someone trained in use of ionizing radiation for therapeutic purposes.

radiotherapy (rā'dē-ō-thēr'ā-pē) Radiation therapy.

radiothermy (rā'dē-ō-thēr'mē) [+ Gr. *therme*, heat] **1.** The use of radiant heat or heat from radioactive substances for therapeutic purposes. **2.** Short-wave diathermy.

radiothorium (rā'dē-ō-thō'rē-ūm) A radioisotope of thorium.

radiotoxemia (rā'dē-ō-tōk-sē'mē-ă) [+ Gr. *toxikon*, poison, + *haima*, blood] A rarely used term for radiation syndrome.

radiotransparent (rā'dē-ō-trāns-pār'ēt) [+ *trans*, across, + *parere*, to appear] Penetrable by radiation.

radioulnar (rā'dē-ō-ūl'nār) [+ *ulna*, arm] Concerning the radius and ulna.

radium (rā'dē-ūm) [L. *radius*, ray] SYMB: Ra. A metallic element found in very small quantities in uranium ores such as pitchblende; atomic number 88, atomic weight 226, half-life 1622 years. It is radioactive and fluorescent. Radon is produced by the breakdown of radium. The most stable isotope, ²²⁶Ra, has been used as a source of radioactivity in medical research and therapy.

radium beam therapy [+ Gr. *therapeia*, treatment] Radiotherapy.

radius (rā'dē-ūs) [L., ray] **1.** A line extending from a circle's center point to its circumference. **2.** The outer and shorter bone of the forearm. It revolves partially about the ulna. Its head articulates with the capitulum of the humerus and with the radial notch on the ulna and is encircled by the annular ligament. Its lower portion articulates with the ulna by the ulnar notch, and by another articulation with the navicular (scaphoid) and lunate bones of the wrist. **radial**, *adj.*

fracture of r. A break in the radius. A common fracture of the lower end of the radius is a Colles' fracture, caused by falling on the outstretched hand. Fractures also occur along the shaft or at the upper end frequently involving the radial head. SEE: *fracture*.

radix (rā'diks) *pl.* **radices** [L., root] **1.** The root portion of a cranial or spinal nerve. **2.** The root of a plant.

radon (rā'dōn) [L. *radius*, ray] SYMB: Rn. A radioactive gaseous element resulting from the disintegration of isotopes of radium; atomic weight 222, atomic number 86. Because radium is present in the earth's crust, radon and its disintegration products accumulate in caves, mines, houses (particularly those that are energy efficient), and any space where no free exchange exists between the air contained in it and the air outside it. Exposure to radon above acceptable limits is believed to be a risk factor for lung cancer.

PATIENT CARE: If the level of radon in a house is measured and exceeds acceptable limits, steps should be taken to reduce it. In some areas, this is a legal requirement for sale of a property. Methods for removing or decreasing radon exposure in buildings are available.

r. seed A tissue implant containing

radon that is used to treat internal malignancies.

radura (ră-dūr'ă) The internationally recognized symbol for irradiated food. It consists of a stylized representation of a flower surrounded by a dashed semicircle.

Raeder's paratrigeminal syndrome (ră'dēr) [J. G. Raeder, Norwegian ophthalmologist, 1889–1956] Unilateral ptosis and miosis with preserved facial sweating; an incomplete form of Horner's syndrome. It may result from aneurysms of, or injury to, the internal carotid artery, among other lesions.

raffinose (răf'i-nōs) A trisaccharide, melitose, present in certain plants, cereals, and fungi. Hydrolysis yields fructose and melibiose.

raft A liquid phase of a cholesterol-rich region on a cell membrane that carries specific chemicals across the membrane into the cell.

lipid r. A tiny cholesterol-rich region on a cell membrane that helps selected molecules enter the cytoplasm. SYN: *lipid domain*.

rage (răj') [ME.] Violent anger.

sham r. A rage reaction produced by stimuli in decorticated animals.

rag sorter's disease A febrile pulmonary disease that may occur in people who sort paper and rags. It is caused by inhalation of anthrax.

ragweed One of several species of the genus *Ambrosia*, whose pollen is an important allergen. The pollen-producing period of grasses in temperate zones is from the middle of August to the first hard frost. SEE: *allergy*.

Raillietina (rī'lē-ē-tī'nă) A genus of tapeworms belonging to the family Davaineidae.

R. demerariensis A species that infests humans, reported from several South American countries, esp. Ecuador.

Raimiste's phenomenon, Raimiste's sign An associated reaction in hemiplegia in which resistance to hip abduction or adduction in the noninvolved extremity evokes the same motion in the involved extremity.

raised (răzd) [ME. *reisen*, to rise] Elevated above a surface.

rale (răl) Crackle.

raloxifene (ră-lök'si-fēn') A selective estrogen receptor modulator administered orally to treat and prevent osteoporosis in postmenopausal women. Its therapeutic class is bone resorption inhibitor.

ramal (ră'mäl) [L. *ramus*, branch] Pert. to a ramus.

rami (ră'mi) [L.] Pl. of ramus.

ramicotomy (răm'ti-kōt'ō-mē) [L. *ramus*, branch, + Gr. *tome*, incision] Rami-section.

ramification (răm'ti-fī-kă'shūn) [L. *ram-*

ificare, to make branches] 1. The process of branching. 2. A branch. 3. Arrangement in branches.

ramify (răm'ti-fī) To branch; to spread out in different directions.

ramisection (răm'ti-sēk'shūn) [L. *ramus*, branch, + *sectio*, a cutting] The surgical division of a ramus communicans between a spinal nerve and a ganglion of the sympathetic trunk.

ramisectomy (răm-īs-ēk'tō-mē) [r + Gr. *ektome*, excision] Excision of a ramus, specifically a ramus communicans. SEE: *ramisection*.

ramitis (răm-i'tis) [r + Gr. *itis*, inflammation] Inflammation of a ramus.

ramose (ră'mōs) [L. *ramus*, branch] Branching; having many branches.

Ramsay Hunt syndrome (răm'zē) A condition caused by herpes zoster of the geniculate ganglion of the brain or neuritis of the facial nerve and characterized by severe facial palsy and vesicular eruption in the pharynx, external ear canal, tongue, and occipital area. Deafness, tinnitus, and vertigo may be present.

ramulus (răm-ū-lūs) [L.] A small branch or ramus.

ramus (ră'mūs) pl. **rami** [L., branch] A branch; one of the divisions of a forked structure. **ramal** (-mäl), *adj.*

anterior r. One of the primary branches of a spinal nerve that supplies the lateral and ventral portions of the body wall, limbs, and perineum.

r. communicans One of the primary branches of a spinal nerve that connects with a sympathetic ganglion. Each consists of a white portion (white ramus communicans) composed of myelinated preganglionic sympathetic fibers and a gray portion (gray ramus communicans) composed of unmyelinated postganglionic fibers.

dorsal r. Posterior ramus.

mandibular r. The vertical portion of the mandible.

meningeal r. One of the primary branches of a spinal nerve that reenters the vertebral foramen and supplies the meninges and vertebral column.

posterior r. The branch of a spinal nerve carrying motor axons to and sensory axons from the deep (intrinsic) muscles of the back and the skin that overlies them. SYN: *dorsal ramus*.

pubic r. Either of the two barlike processes of the pubic bone that extend laterally and posteriorly from the pubic symphysis. The inferior ramus articulates with the ischium; the superior ramus articulates with the ilium and forms the front of the acetabulum.

ventral r. The branch of a spinal nerve that carries motor axons to and sensory axons from all parts of the body except the deep (intrinsic) muscles of the back and their overlying skin.

Rancho Los Amigos Guide to Cognitive Levels A scale widely used to classify a neurological patient's level of cognitive dysfunction according to behavior. This scale provides eight levels with descriptors, progressing from level I (no response) to level VIII (purposeful and appropriate response), as follows:

1. No response: is unresponsive to any stimuli.

2. Generalized response: exhibits limited, inconsistent, nonpurposeful responses, often to pain only.

3. Localized response: displays purposeful responses; may follow simple commands; may focus on presented object.

4. Confused, agitated: demonstrates heightened state of activity; confusion, disorientation; aggressive behavior; inability to perform self-care; unawareness of present events; agitation, which appears as internal confusion.

5. Confused, inappropriate: is nonagitated; appears alert; responds to commands; is distractible; does not concentrate on task; demonstrates agitated responses to external stimuli; is verbally inappropriate; does not learn new information.

6. Confused, appropriate: demonstrates goal-directed behavior, needs cuing; can relearn old skills, such as activities of daily living; displays serious memory problems; exhibits some awareness of self and others.

7. Automatic, appropriate: appears appropriate, oriented; frequently acts robot-like in daily routine; has minimal or no confusion; demonstrates shallow recall; exhibits increased awareness of self, interaction in environment; lacks insight into condition; shows decreased judgment and problem-solving ability; lacks realistic planning for future.

8. Purposeful, appropriate: is alert, oriented; recalls and integrates past events; learns new activities and can continue without supervision; is independent in home and living skills; is capable of driving; demonstrates defects in stress tolerance, judgment, abstract reasoning; possibly functions at reduced levels in society.

rancid (răn'sid) [L. *rancidus*, stink] Having a disagreeable odor resulting from the breakdown of double bonds in fatty acids.

rancidity (răn-sid'î-tē) The condition of being rancid.

random (răn'düm) Without order; unpredictable; unintentionally complex.

randomization (răn'düm-î-ză'shün) In research, a method used to assign subjects to experimental groups without introducing biases into a study. SYN: *random sampling*. SEE: *clinical trial*; *double-blind technique*.

randomized controlled trial ABBR: RCT.

An experimental study to assess the effects of a particular variable (e.g., a drug or treatment) in which subjects are assigned randomly to an experimental, placebo, or control group. The experimental group receives the drug or procedure; the placebo group's medication is disguised to resemble the drug being investigated. The control group receives nothing. Members of each group are prevented from knowing whether they are receiving active therapy. The researchers gathering the data are also typically blinded to group assignment.



Although RCTs represent one essential element in proving clinical relationships (e.g., the relationship between the use of a new drug and the safe cure of a disease), most RCTs do not enroll enough patients for a long enough time to detect rare events.

random sample In experimental medicine and epidemiology, an unbiased selection of individuals or items. A random sample is chosen in research investigations so that study results will have a high probability of reflecting the variables under study rather than unintentionally reflecting an unanticipated characteristic of the research subjects.

range [ME., series] The difference between the highest and lowest in a set of variables or in a series of values or observations.

r. of accommodation The difference between the least and the greatest distance of distinct vision. SEE: *accommodation*.

continuous passive r. of motion Continuous passive motion.

r. of motion ABBR: ROM. **1.** The amount of excursion through which a joint can move, measured in degrees of a circle. SEE: *range-of-motion exercise* for illus.; *goniometer*. **2.** An exercise that moves a joint through the extent of its limitations. This exercise can be active, active assisted, or passive.

passive r. of motion ABBR: PROM.

1. The possible excursion of motion at a joint, accomplished by an examiner, without any muscle contraction by the patient. This can be measured by a goniometer. The excursion is normally slightly greater than active range of motion. The examiner assesses the end point. **2.** An exercise in which an external force moves a joint through its excursion without any effort by the patient. PROM exercise is used when the patient is unable to move or when active motion is prohibited.

ranine (răn'nîn) [L. *rana*, a frog] **1.** Pert. to a ranula, or the region beneath the tip of the tongue. **2.** The branch of the

lingual artery supplying that area.
3. Pert. to frogs.

ranitidine (ră-nî'tî-dēn) A histamine H₂ antagonist and antiulcer agent, administered orally or intravenously for short-term treatment of active duodenal ulcers and benign gastric ulcers.

ranula (răn'ū-lă) [L., little frog] A cystic tumor seen on the underside of the tongue on either side of the frenum; a retention cyst of the submandibular or sublingual ducts. The swelling may be small or large.

SYMPTOMS: The tumor is semitranslucent, with soft, dilated veins coursing over it. The patient experiences fullness and discomfort, but usually no pain. The tumor contains clear fluid owing to dilatation of the salivary glands and obstruction of the sublingual mucous glands.

TREATMENT: Periodic emptying of the sac by careful needle aspiration provides temporary relief. Surgical intervention is required for complete removal.

pancreatic r. Cystic disease of the pancreas caused by obstruction of its ducts.

Ranvier's node (rôn-vê-ăz') [Louis A. Ranvier, Fr. pathologist, 1835–1922] A space between adjacent Schwann cells along a nerve fiber; no myelin sheath is present. **SYN:** *neurofibril node*. **SEE:** *nerve fiber*; *neuron* for illus.; *Schwann cell*.

RAO *right anterior oblique* position.

rape (răp) [L. *rapere*, to seize] Sexual assault or sexual violence perpetrated on one person by another against the will of the victim. Rape involves an attempt at or actual penetration of the vagina or another body orifice by a penis, finger, other body part, or inanimate object. Complete penetration by the penis or emission of seminal fluid is not necessary to constitute rape. Most rapes include force, intimidation, or violence, but acquiescence because of verbal threats does not indicate consent. Some studies have indicated that an incident involving rape occurs about every 2.5 min, and that 1 out of 6 women will be raped sometime during her life. According to the National Sexual Assault Hotline in 2005, there were about 190,000 victims of rape, attempted rape, or sexual assault, annually. A majority of rapes are inflicted by someone known to the victim. **SEE:** *rape and sexual assault prevention*; *syndrome, rape-trauma*; *sexual abuse*; *Nursing Diagnosis Appendix*.

TREATMENT: The medical care of the rape victim must include timely prophylactic treatment for sexually transmitted diseases (including HIV/AIDS), prophylaxis against hepatitis B, and prophylaxis against pregnancy.

PATIENT CARE: The health care professional provides sensitive care, esp. psychological support, by remaining with the patient and by encouraging verbalization of feelings. If available, a Sexual Assault Nurse Examiner should be summoned. State regulations regarding the reporting of rape should be followed. The health care professional explains and assists with the psychological, oral, pelvic, and rectal examinations and diagnostic tests. Directions should be followed exactly in collecting rape evidence such as head and pubic hair combings, nail scrapings, and vaginal, oral, or anal specimens for police investigation. The patient should be allowed as much control as possible throughout examination, treatment, and interview procedures. An assault and sexual history is obtained, including whether the female rape victim was menstruating and, if so, the type of menstrual protection used.

Attempts are made to obtain as accurate a history of the rape as possible. Meticulous documentation is required. Medically relevant evidence of the patient's emotional reactions and state should be included, with care taken not to record one's own feelings or thoughts. The interviewer should be aware that medical records may be called in evidence in a court of law. Prior to the examination, the patient should be asked whether she has douched, bathed, or washed her perineal area before coming to the hospital. She may need to urinate, but should be cautioned not to wipe or clean the perineum in any way. As she changes into a hospital gown, her clothing is collected in paper bags, with each bag labeled accurately (with the patient's name, collector's name, chain of evidence, location, date, and time).

After determining the patient's allergy history, prescribed treatments of associated injuries are given. Topical ice packs may be used to reduce vulvar swelling and discomfort. Analgesics and sedatives or anti-anxiety agents are prescribed as needed. Photographs to document any injuries are taken. Crisis intervention services are offered to assist the patient. Assistance is offered to help the patient explain the rape to family. Arrangements are made for someone to escort the patient home. Follow-up services and written and verbal instructions for prescribed medications, including drug actions and possible side effects, are provided. The importance of returning for sexually transmitted disease testing is explained: some microbiological cultures take days or longer to reveal results. Psychological counseling is encouraged to help the patient cope with aftereffects of the rape-trauma. Legal proceedings may revive

the trauma of the event for the victim. Further counseling and support is provided as needed. Female victims should be referred to Women Organized Against Rape or a local rape crisis center for ongoing empathic care and advice.

date r. Nonconsensual, unsolicited, and unwelcome sexual relations between individuals who are currently or were previously romantically involved or sexually intimate.

gang r. Forcible sexual intercourse or other sexual activity committed on an individual by several persons. SEE: *rape*.

male r. Sexual assault, usually penetrative, of a man by a man. Estimating the prevalence of male rape is difficult because it often is not reported.

marital r. Forcible sexual assault by a spouse at a time when the sexual encounter was neither solicited nor welcome.

prison r. Rape that occurs when the victim is assaulted by another prisoner or by a prison employee.

statutory r. Sexual intercourse with an individual younger than the legal age of consent.

rape and sexual assault prevention The precautions taken to decrease the chances of one's being forced to engage in unwanted sexual behaviors. In the U.S., about 700,000 to 1,000,000 sexual assaults occur each year; 75% to 85% of all sexual assaults are committed by friends, family members, or sexual partners of the victim; 95% of all sexual assaults are committed against women, the majority of whom are under 18 years old. Because of this, a crucial element in the prevention of sexual assault is the education of young men and adolescent boys about respectful sexual interactions with women. In addition, women who feel threatened, dominated, or controlled by men or boys in their home, school, or work environments should proactively seek help from sexual assault crisis services in their neighborhood.

Personal safety tips. (1) Because alcohol consumption is a related factor in many rapes, it is advisable to keep alcohol intake to a minimum, not allow another person to handle anything you are drinking, to avoid drug addition, and not allow a companion who is intoxicated into one's home. (2) As much as possible, preventive measures should be directed at remaining in a well-secured area and being close to persons who can be called for assistance day or night. (3) Emergency police and fire department telephone numbers should be kept readily available. Help should be summoned without delay if it is suspected that one's apartment or home is being ille-

gally entered. (4) When preparing to enter a car or home, one should be constantly alert for the presence of strangers. (5) Before leaving a well-lighted and populated area, one should have the car keys in hand and ready for quick use. It is advisable to leave one arm free of packages, handbag, or other items and to carry a noise making device. (6) When driving, it is important to lock the car doors and close any open windows immediately, and stay on well-lit streets. (7) When returning home alone at night, one should enlist the assistance of a known neighbor, law enforcement officer, or friend to search the home if the door is unlocked or anything seems amiss. Once one is safely inside, the door should be locked securely. (8) If a stranger comes to the door, a security chain should be kept on and a peephole preferably used for communication until proper identification has been presented. If doubt exists about the credentials or demeanor of the stranger, admission should be refused and help summoned immediately. (9) Always walk quickly and with assurance. (10) Avoid automated teller machines at night. (11) If attacked, make as much noise and resist assault vigorously, unless you believe that to do so would increase the likelihood of physical harm or death. (12) Never leave children unattended. (13) Do not allow strangers to enter your car. (14) If you are assaulted, seek immediate help from local medical, social, and policing agencies. Do not wash or bathe. (15) Attempt to remember as many details as possible about the attacker: clothes, size, race, accent, hair color, identifying marks and scars, facial hair, vehicle, and evidence of drug or alcohol use.

rape counseling The provision of advice, comfort, and sources of therapy for victims of sexual assault. The emotional reaction and sequelae of rape may be devastating to the mental well-being of the victim. It is therefore important that the victim be reassured about what to expect from both internal feelings and the potential reactions of society. Historically, law enforcement officers have been less than sympathetic to rape victims, but now most police departments have officers trained in rape investigation who are sensitive to the emotional and physical trauma the victim has experienced. Frequently, specially trained Sexual Assault Nurse Examiners (SANE) are available to provide care and support. Various services are available to the victim, including advocate groups and health care professionals experienced in counseling rape victims.

rapeseed (rāp-sēd) [L. *rapa*, turnip] The seed of *Brassica campestris* and other *Brassica* species, whose oil is used

in the manufacture of lubricants and canola oil. The oil made from the seeds of the variety high in erucic acid is used as an industrial lubricant. Oil made from the seeds of the low-erucic-acid variety is relatively low in saturated fat and is commonly known as canola oil.

rape-trauma syndrome Sustained maladaptive response to a forced, violent sexual penetration against the victim's will and consent. SEE: *rape*; *Nursing Diagnoses Appendix*.

Like other posttraumatic stress disorders, this condition initially causes an acute phase of disorganization and involves a long-term reorganization of lifestyle. Sequelae may include marked changes in lifestyle and a variety of phobias.

Acute phase: Profound emotional responses mark the acute phase (i.e., fear, shame, and feelings of humiliation; self-blame and self-degradation; and anger and desire for revenge). Most commonly, rape victims exhibit crying, trembling, talkativeness, statements of disbelief, and emotional shock. Some may exhibit overt signs of hostility, which reflect their anger and feelings of powerlessness. Later, patient complaints of sleep pattern disturbances, gastrointestinal irritability, and genitourinary discomforts reflect physical responses to emotional trauma. Some victims may appear quiet, dispassionate, and smiling; however, these behaviors should not be misinterpreted as indicating a lack of concern; rather, they may represent an avoidance reaction.

Long-term phase: Many rape victims experience one or more of the following: nightmares; chronic suspicion, inability to trust, and altered interpersonal relationships; anxiety, aversion to men, and avoidance of sex; depression; and phobias. Paradoxically, patients express feelings of guilt and shame because they feel that either they invited the attack, should have prevented the episode, or that they deserved being punished.

PATIENT CARE: The nurse exhibits empathy and understanding and ensures privacy and a quiet supportive environment. The patient is encouraged to verbalize feelings, fears, and concerns. Positive self-perception and self-esteem are promoted and supported. The nurse emphasizes that rape usually is an expression of the rapist's overwhelming feelings of psychosocial impotence and anger and that the act conveys a sense of power over others; the woman was a victim of the rapist's inability to contain a violent personal rage that is not related to her or to sex. The patient is referred to community resources (support groups) and for psychological counsel-

ing. Most patients prefer to have a counselor of the same sex.

rape-trauma syndrome: compound reaction A nursing diagnosis accepted at the NANDA 13th Conference (1998); forced violent sexual penetration against the victim's will and consent. The trauma syndrome that develops from this attack or attempted attack includes an acute phase of disorganization of the victim's lifestyle and a long-term process of reorganization of lifestyle. SEE: *Nursing Diagnoses Appendix*.

rape-trauma syndrome: silent reaction A nursing diagnosis accepted at the NANDA 13th Conference (1998); forced violent sexual penetration against the victim's will and consent. The trauma syndrome that develops from this attack or attempted attack includes an acute phase of disorganization of the victim's lifestyle and a long-term process of reorganization of lifestyle. SEE: *Nursing Diagnoses Appendix*.

raphe (rā'fē) [Gr. *rhaphe*] A crease, ridge, or seam denoting union of the halves of a part.

abdominal r. Linea alba.

palatine r. A line or ridge in the median line of the palate. The raphe appears as a whitish line, which sometimes turns into a slight groove at its posterior end.

r. of penis A median ridge on the undersurface of the penis, a continuation of the raphe of the scrotum.

perineal r. A line or ridge in the midline of the perineum.

pterygomandibular r. A tendinous line of fusion between the buccinator and superior pharyngeal constrictor muscles that passes between the pterygoid process and the mandible, serving as an important landmark in dental anesthesia.

r. of scrotum A ridge in the midline of the scrotum.

r. of tongue A median groove on the dorsum of the tongue.

rapid antigen test Any laboratory test used to quickly identify the presence of a specific antigen in a body fluid sample. Rapid antigen tests are often used to assess whether disease-causing viruses or bacteria are present in samples of body fluids (instead of waiting for the results of microbiological cultures). A commonly employed rapid antigen test is used on saliva swabbed from the throat or tonsils of patients suspected of having streptococcal pharyngitis.

rapid cycling Four or more episodes of depression, mania, hypomania, or other alternating mood disturbances occurring in a single year. Roughly 10% of patients with bipolar illness have this condition; more men than women are affected. Lithium carbonate is less effec-



DIAPER RASH

(A) mild diaper rash, (B) severe yeast infection in diaper area

tive in treating rapid cycling than in treating other forms of bipolar disorder.

rapid surfactant test Shake test.

rappel (ră-pél') To slide down a rope, as in a lifesaving rescue.

rapport (ră-por') [Fr. *rapporter*, to bring back] A relationship of mutual trust and understanding, esp. between the patient and physician, nurse, or other health care provider.

rapture A state of great joy, delight, or ecstasy.

rarefaction (răr'ë-făk'shūn) [L. *rarefacere*, to make thin] The process of decreasing in density and weight.

r. of bone Osteoporosis.

rarefy (răr'ë-fi) To make less dense; to increase the porosity of something.

RAS *reticular activating system*.

rash (răsh) [O.Fr. *rasche*] A general term for any eruption that appears on the skin transiently (as opposed to durable skin lesions such as scars, tattoos, or moles). SYN: *exanthem*.

PATIENT CARE: Assessments are made of the location and characteristics of the lesion, such as color; size (height and diameter); pattern, whether discrete or coalesced; and any secondary changes (crusting, scaling, lichenification). Associated symptoms such as pruritus or discomfort, temporal elements, history of known allergies, drugs used, and contacts with communicable diseases during prior 2-week period also are assessed. Suspected drugs are discontinued, and the potential communicable disease patient is isolated and assessed. Cool compresses are applied to relieve itching. Topical preparations and dressings are applied and systemic medications administered as prescribed. The patient is instructed to keep hands clean and nails short and even, and to avoid scratching. The patient also is taught about the treatment

regimen, its actions, and its side effects and evaluates for desired effects and side effects.

butterfly r. A rash on both cheeks joined by an extension across the bridge of the nose. It is seen in systemic lupus erythematosus, esp. after the patient's face has been exposed to sunlight, and in seborrheic dermatitis, tuberous sclerosis, and dermatomyositis. SEE: *discoid lupus erythematosus*.

diaper r. Irritant contact dermatitis as a reaction to friction, maceration, and prolonged contact with urine, feces, soap retained in diapers, and topical preparations. A persistent diaper rash may be colonized by yeast or bacteria. SYN: *diaper dermatitis*. SEE: *illus*.

TREATMENT: Treatment is symptomatic. Diapers should be changed frequently. If washable cloth diapers are used, they should be thoroughly washed and rinsed; occlusive plastic pants should not be used over diaper; the perianal and genital areas should be washed with warm water and mild, non-perfumed soap. If these measures and application of a bland protective agent (e.g., zinc oxide paste) do not promote healing, then a small amount of 0.5% to 1% topical hydrocortisone cream should be applied to the area after each diaper change, until the rash has completely resolved.

drug r. Drug eruption.

gum r. A red papular eruption of an infant's chin and anterior chest area seen during teething. It is a form of miliaria due to excess saliva coming in contact with the skin. SYN: *red rash*; *tooth rash*.

heat r. Miliaria.

hemorrhagic r. A rash consisting chiefly of bleeding or bruising into or under the skin.

macular r. A rash in which the le-

sions are flat and level with the surrounding skin.

maculopapular r. A rash in which there are discrete macular and papular lesions or a combination of both.

mercurial r. A rash caused by local application of mercurial preparations.

mulberry r. A dusky rash seen in typhus.

red r. Gum r.

serum r. A pruritic, hivelike rash (urticaria or angioedema) or a vasculitis (palpable purpura) that accompanies serum sickness, which usually is caused by a hypersensitivity reaction to drugs or immune globulins obtained from animals. Malaise, joint pains, fevers, and other symptoms may accompany the rash. SEE: *serum sickness*.

sunburn-like r. A macular rash resembling the reddened skin characteristic of a severe sunburn. SEE: *exfoliative dermatitis*; *toxic shock syndrome*.

tooth r. Gum r.

wandering r. Geographic tongue.

Rashkind procedure (răsh'kind) **1.** Balloon atrial septostomy. **2.** The closure of an atrial septal defect, ventricular septal defect, or patent ductus arteriosus with a double disk prosthesis that is placed during cardiac catheterization. It is used as an alternative to septostomy.

rasion (ră'zhün) [L. *rasio*] The grating of drugs by use of a file.

raspatory (răs'pă-tō'rē) [L. *raspatorium*] A file used in surgery, esp. for trimming bone surfaces. SYN: *xyster*.

RAST (răst) *radioallergosorbent test*.

Rastafarian (răs-tă-fă'rē-ăn) A religious cult that originated in Jamaica in the 1930s and has members in the Caribbean, Europe, Canada, and the U.S. It is of medical importance because cult members' dietary practices may lead to vitamin B₁₂ deficiency with subsequent neurological disease, megaloblastic anemia, or both.

rat [ME.] A rodent of the genus *Rattus*, found in and around human habitations. In addition to causing economic loss from crop destruction, rats are of primary importance in the spread of human and animal diseases. They are hosts of various protozoans, flukes, tapeworms, and threadworms, and reservoirs of amebiasis, murine and scrub typhus, and bubonic plague. Typhus and plague are transmitted to people mainly by the rat flea. Rats also transmit rat-bite fever.

rat-bite fever Either of two infectious diseases transmitted by the bite of a rat. One is caused by *Streptobacillus moniliformis* and is marked by skin inflammation, fever, chills, headache, vomiting, and back and joint pain. The other is caused by *Spirillum minus* and is associated with ulceration, rash, and re-

current fever. The latter disease is rare in the U.S. SYN: *sodokosis*; *sodoku*.

TREATMENT: Both diseases are treated with penicillin. Therapy is most effective when penicillin is given intravenously for 1 week, then orally for 1 week. Tetanus prophylaxis is also administered.

rate (răt) [L. *rata*, calculated] The speed or frequency of occurrence of an event, usually expressed with respect to time or some other known standard.

acquisition r. In radiology, the speed with which medical images are recorded, usually expressed in images per second.

attack r. The rate of occurrence of new cases of a disease.

basal metabolic r. SEE: *basal metabolic rate*.

baseline fetal heart r. ABBR: FHR. Average range of beats per minute recorded within a 10-min time frame. Normal range is between 120 and 160 beats per minute.

birth r. The number of live births per 1000 in the population in a given year.

case r. Morbidity r.

case fatality r. The percentage of individuals afflicted with an illness who die as a result of it.

concordance r. The frequency with which a gene will be inherited or expressed by identical or fraternal twins.

death r. The number of deaths in a specified population, usually expressed per 100,000 population, over a given period, usually 1 year. SYN: *mortality rate*.

dose r. The quantity of medicine or radiation administered per unit of time.

erythrocyte sedimentation r. ABBR: ESR. SEE: *sedimentation r.*

false-negative r. The rate of occurrence of negative test results in individuals who actually have the attribute or disease for which they are being tested.

false-positive r. The rate of occurrence of positive test results in individuals who actually do not have the attribute or disease for which they are being tested.

fertility r. The number of births per year per 1000 women between ages 15 and 44 in a given population.

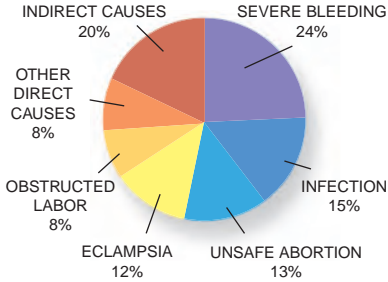
growth r. The rate at which an individual, tissue, or organ grows over time.

heart r. The number of heartbeats per unit of time, usually expressed or written as number per minute.

infant mortality r. The number of deaths per year of live-born infants less than 1 year of age divided by the number of live births in the same year. This value is usually expressed as deaths per 100,000 live births. SEE: *neonatal mortality r.*; *perinatal mortality r.*

maternal mortality r. The number of

maternal deaths in 1 year from puerperal causes (i.e., those associated with pregnancy, childbirth, and the puerperium) within 42 days after delivery divided by the number of live births in that same year. This value is usually expressed as deaths per 100,000 live births. **SEE: *illus.***



CAUSES OF MATERNAL DEATH

maximum midexpiratory flow r. ABBR: MMFR. The average airflow during the middle half of a forced vital capacity effort.

morbidity r. The number of cases per year of certain diseases in relation to the population in which they occur. SYN: *case rate*.

mortality r. Death r.

neonatal mortality r. SEE: *neonatal mortality rate*.

peak expiratory flow r. The maximum rate of exhalation during a forced expiration, measured in liters per second or liters per minute. It is used as a test of airway obstruction.

perinatal mortality r. The number of stillbirths (in which the gestation period was 28 weeks or more) in the first 7 days of life divided by the number of live births plus stillbirths in the same year. This value is usually expressed as deaths per 100,000 live births plus stillbirths. SEE: *infant mortality r.*; *neonatal mortality r.*

periodontal disease r. SEE: *periodontal (Ramfjord) index*.

pulse r. The number of heartbeats per unit of time that can be detected by palpating any accessible artery.

respiration r. The number of breaths per unit of time.

sedimentation r. ABBR: ESR (erythrocyte sedimentation rate). A nonspecific laboratory test used as a marker of inflammation. In this test, the speed at which erythrocytes settle out of unclotted blood is measured. Blood to which an anticoagulant has been added is placed in a long, narrow tube, and the distance the red cells fall in 1 hr is the ESR. Normally, it is less than 10 mm/hr in men and slightly higher in women.

The speed at which the cells settle depends on how many red blood cells clump together. Clumping is increased by the presence of acute-phase proteins, released during inflammation.

specific absorption r. The time rate at which electromagnetic energy is absorbed by a kilogram of tissue, usually expressed as the heat absorbed by the tissue, or as the power absorbed per unit of mass.

ventilation r. ABBR: VR. The number of breaths per minute.

rate of perceived exertion ABBR: RPE. A category and category-ratio scale developed by physiologist G. A. Borg, in which a patient reports his or her level of effort during exercise. The corresponding written descriptions range from "very light" to "very, very hard." The scale correlates well with cardiorespiratory and metabolic variables such as minute ventilation, heart rate, and blood lactate levels. SEE: *Borg's dyspnea scale*.

PATIENT CARE: This scale is helpful when patients are unable to take their own pulses during exercise or have abnormal heart rate responses to exercise.

ratio (rā'shē-ō) [L., computation] The relationship in degree or number between two things. Particular ratios are listed under the first word. SEE: e.g., *body weight ratio*; *international normalized ratio*; *sex ratio*.

ration (rā'shūn) A fixed allowance of food and drink for a certain period.

rational (rāsh'ūn-āl) [L. *rationalis*, reason] **1.** Of sound mind. SYN: *sane*. **2.** Reasonable or logical; employing treatments based on reasoning or general principles; opposed to empiric.

rationale (rāsh'ūn-āl') [L.] The logical or fundamental reason for a course of action or procedure.

rationalization (rāsh'ūn-āl-i-zā'shūn) In psychology, a justification for an unreasonable or illogical act or idea to make it appear reasonable.

rational treatment Treatment based on scientific principles.

rationing Resource allocation in health care, esp. in managed health care systems.

rattle (rāt'l) [ME. *ratelen*, to rattle] A coarse crackle heard during auscultation of the chest. This finding suggests excessive airway secretions are present.

death r. A colloquial term for gurgling noises caused by movements of secretions in the upper airways with inspiration and expiration in dying patients.

rattlesnake A poisonous snake of the genus *Crotalus*. Its bite may produce coagulation disorders, anaphylaxis, or injury to local tissues.

raucous (raw'kūs) [L. *raucus*, hoarse] Hoarse, harsh, as the sound of a voice.

Rauscher leukemia virus (rou'shēr)
[Frank J. Rauscher, U.S. virologist, b. 1931] A virus known to cause leukemia in mice.

rauwolfia serpentina (raw-wōlf'ē-ā)
[Leonhard Rauwolf, Ger. botanist, 1535–1596] The dried roots of a tropical shrub of the family Apocynaceae, whose extracts are potent hypotensive and sedative drugs. Derivatives include reserpine, serpentine, and serpentinine.

rave (rāv) [ME. *raven*, to be delirious]
1. To talk irrationally, as in delirium.
2. An all-night dance party at which mind-altering drugs, e.g., ecstasy or other amphetamines, are often used.

raving 1. Irrational utterance. 2. Talking irrationally.

RAW *airway resistance*.

raw (raw) [AS. *hrew*] 1. Of food: not cooked. 2. Of the skin: damaged by abrasion. 3. Of information or data: unstudied, unanalyzed, or unevaluated.

raw data The information obtained during an experiment, before the information has been analyzed or statistically manipulated.

ray (rā) [L. *radius*, ray] 1. One of several lines diverging from a common center. 2. A line of propagation of any form of radiant energy, esp. light or heat; loosely, any narrow beam of light.

actinic r. A solar ray capable of producing chemical changes. SYN: *chemical ray*.

alpha r. A ray composed of positively charged helium particles derived from atomic disintegration of radioactive elements. Its velocity is one tenth the speed of light. Alpha rays are completely absorbed by a thin sheet of paper and possess powerful fluorescent, photographic, and ionizing properties. They penetrate tissues less than beta rays.

beta r. A ray composed of negatively charged electrons expelled from atoms of disintegrating radioactive elements. SYN: *beta particle*.

border r. Grenz r.

cathode r. A ray composed of negatively charged electrons discharged by a cathode through a vacuum, moving in a straight line and producing x-ray photons upon hitting solid matter.

central r. The theoretical center of an x-ray beam. The term designates the direction of the x-ray photons as projected from the focal spot of the x-ray tube to the radiographical film.

characteristic r. A secondary photon produced by an electron giving up energy as it changes location from an outer to an inner shell in an atom. The wavelengths are characteristic of the difference in binding energies.

chemical r. Actinic r.

cosmic r. Cosmic radiation.

delta r. Highly penetrative waves emitted by radioactive substances.

erythema-producing r. Ultraviolet radiation (wavelengths between 2050 and 3100 A.U.) capable of reddening skin.

gamma r. Short wavelength, high-energy electromagnetic radiation emitted by disintegrating atomic nuclei.

grenz r. A low-energy x-ray photon with an average wavelength of 2 A.U. (range from 1 to 3 A.U.); obtained with peak voltage of less than 10 kV. Grenz rays lie between ultraviolet and x-rays. SYN: *border ray*.

hard r. An x-ray photon of short wavelength and great penetrative power.

heat r. Radiation whose wavelength is between 3,900 and 14,000 A.U. Shorter wavelength heat sources penetrate tissues better than longer (infrared) sources. SEE: *heat*.

infrared r. An invisible heat ray from beyond the red end of the spectrum. Infrared wavelengths range from 7700 angstrom units (A.U.) to 1 mm. Long-wave infrared rays (15,000 to 150,000 A.U.) are emitted by all heated bodies and exclusively by bodies of low temperature such as hot water bottles and electric heating pads; short-wave infrared rays (7,200 to 15,000 A.U.) are emitted by all incandescent heaters. The sun, electric arcs, incandescent globes, and so-called infrared burners are sources of infrared rays.

USES: Infrared ray energy is transformed into heat in a superficial layer of the tissues. It is used therapeutically to stimulate local and general circulation and to relieve pain. The infrared thermograph is useful in studying the heat of tissues. SEE: *radiation*; *thermography*.

luminous r. One of the visible rays of the spectrum.

medullary r. In the kidney, one of many slender processes composed of one or two collecting ducts and other straight tubules that project into the cortex from the bases of renal pyramids.

monochromatic r. Single wavelength electromagnetic radiation.

pigment-producing r. A ray between 2540 and 3100 A.U. that is most effective in stimulating pigment production in the skin. This is due to a local response to irritation of cutaneous prickle cells.

positive r. A ray composed of positively charged ions that in a discharge tube moves from the anode toward the cathode.

primary r. In radiographic imaging, the x-ray beam that originates at the source of radiation. It is usually used to differentiate those rays from the additional scatter radiation that constitutes the majority of the beam used to create images.

roentgen r. X-ray photon.

scattered r. SEE: under *radiation*.

secondary r. X-ray photons produced after the incoming, primary x-ray photons remove an inner-shell electron from the atom. They are of lower energy than the primary radiation and usually are absorbed in matter.

ultraviolet r. An invisible ray of the spectrum beyond the violet rays. The wavelengths of ultraviolet rays vary. They may be refracted, reflected, and polarized, but will not traverse many substances impervious to the rays of the visible spectrum. They rapidly destroy the vitality of bacteria, and are able to produce photochemical and photographic effects.

Raynaud, Maurice (rě-nō') French physician, 1834–1881.

R.'s disease A primary vasospastic disease of small arteries and arterioles; the cause is unknown. There is an exaggerated response of vasomotor controls to cold or emotion.

SYMPTOMS: Patients have intermittent vasospastic attacks of varying severity and frequency that affect the digits of the hands bilaterally; the toes are less commonly involved. Color changes occur in sequence, first white (pallor), then blue (cyanosis), and then red (hyperemia as blood flow returns). Initially, there is numbness and sensation of cold; during the red phase patients may have throbbing and paresthesia. Normal skin color returns after the attack. Patients with long-term disease may develop atrophy of the skin and subcutaneous tissues, brittle nails, and occasionally skin ulcerations or gangrene.

PATIENT CARE: Persons with this disease should maintain warmth in the extremities by wearing warm mittens or gloves and socks. They should avoid contact with cold materials and prolonged exposure to cold environments. Emotional stress should be avoided. Use of tobacco is contraindicated because of the vasoconstrictive effects of nicotine. Other aggravating factors include alcohol, caffeine, and medications such as beta blockers, adrenergic receptor agonists, sympathomimetic agents, ergotamine drugs, antineoplastic agents, estrogens, immunosuppressants, biologic response modifiers, and stimulants such as amphetamines and cocaine. Increasing hydrostatic pressure, and therefore circulation, by vigorous exercise of the arms may be useful. Exercise increases circulation, warms the body, and can prevent or limit vasoconstriction. If attacks are prolonged and frequent, vasodilator drugs, including calcium channel blockers and sympatholytic agents (alpha-adrenergic re-

ceptor blockers) may be helpful. Direct vasodilators may be effective in primary Raynaud phenomenon, but not in secondary Raynaud phenomenon. Transdermal nitroglycerin or a long-acting oral nitrate reduce the severity and frequency of attacks, and provide symptomatic relief in both conditions. Applying nitroglycerin cream to the fingers may help to heal skin ulcerations, which progress to necrosis if left untreated. Drugs being used investigatively include angiotensin II-receptor blockers such as oral losartin, intravenous prostaglandins, topical nitric acid gel, and cilostazol. A sympathectomy to prevent vasoconstriction may be tried but is not always successful.

Nonpharmacologic management include massaging the affected digits; placing hands under the armpits or placing hands and feet in warm (never hot) water; climate control (avoiding winter air and also air-conditioned rooms); dressing warmly in winter (coat with snug cuffs, hat, scarf, waterproof and insulated footwear, thermal underwear); clothing made of wool, silk, down, or polypropylene synthetics that retain warmth; running the car heater for a few minutes before beginning to drive and insulating the steering wheel; wearing socks and shoes or slippers indoors and keeping indoor temperatures above 70°F; handling cold drinks and frozen foods only with barrier hand protection (insulated glasses or sleeves, mittens, pot holders). Relaxation techniques such as structured relaxation exercises with concurrent biofeedback should be encouraged, as they can decrease the frequency, severity, and number of attacks. Feet and hands must be protected from injury, examined daily for skin changes, and lotion used to prevent drying. Pavlovian conditioning takes time to master but may be beneficial: the hands are immersed in 110°F water for 45 min while exposing the rest of the body to cold or freezing temperatures with the intent of conditioning peripheral vessels to dilate in response to cold rather than constricting. Complementary and alternative therapies include acupuncture, ginkgo biloba to increase blood flow in primary RP, omega-3 and omega-6 fatty acids (in flaxseed oil) to reduce red blood cell aggregation and improve blood flow, and niacin to dilate blood vessels and increase circulation to the skin.

R.'s phenomenon Intermittent attacks of pallor or cyanosis of the small arteries and arterioles of the fingers as the result of inadequate arterial blood flow. This condition is associated with scleroderma, systemic lupus erythematosus, Buerger's disease, nerve entrapment, and anorexia-bulimia. The signs,

symptoms, and treatment are identical to those of Raynaud's disease. **SEE:** *il-lus.; Nursing Diagnoses Appendix.*



RAYNAUD'S PHENOMENON

rayon, purified (rā-ōn) A fibrous form of regenerated cellulose manufactured by the viscose process, desulfured, washed, and bleached. Once used in surgical dressings and bandages.

Rb Symbol for the element rubidium.

RBBB *right bundle branch block.*

RBC, rbc *red blood cell; red blood count.*

R.B.E. *relative biological effectiveness.*

RBRVS *resource-based relative value scale.*

R.C.D. *relative cardiac dullness.*

RCMD *refractory cytopenia with multilineage dysplasia.*

RCP *Royal College of Physicians; Respiratory Care Practitioner.*

RCS *Royal College of Surgeons.*

R.D.A. *right dorsoanterior, presentation position of the fetus; recommended dietary allowance.*

RDMS *registered diagnostic medical sonographer.*

R.D.P. *right dorsoposterior, presentation position of the fetus.*

RDR *relative dose response.*

RDS *respiratory distress syndrome.*

Re Symbol for the element rhenium.

re- [L.] Prefix meaning *back, again.*

R.E. *radium emanation; right eye; reticuloendothelium.*

reabsorb (rē'āb-sorb') To absorb again.

reabsorption (rē'āb-sorp'shūn) The process of absorbing again. It occurs in the kidney when some of the materials filtered out of the blood by the glomerulus are reabsorbed as the filtrate passes through the nephron.

reacher (rē'chēr) A type of extension device for assisting persons with limited reach to grasp and manipulate objects in the performance of everyday tasks.

react (rē-ākt') [L. *re, again, + agere, to act*] **1.** To respond to a stimulus. **2.** To participate in a chemical reaction.

reactant (rē-āk'tānt) A chemical or substance taking part in a chemical reaction.

acute phase r. Acute phase protein.

limiting r. The substance with the

lowest concentration in a chemical reaction. Its amount determines the amount of product made from that reaction.

reaction (rē-āk'shūn) [LL. *reactus, re-acted*] **1.** The response of an organism, or part of it, to a stimulus. **2.** In chemistry, a chemical process or change; transformation of one substance into another in response to a stimulus. **3.** An opposing action or counteraction. **4.** An emotional and mental response to a stimulus. Particular reactions are listed under the first word. **SEE:** e.g., *adverse drug reaction; anaphylactoid reaction; late-phase reaction.*

reaction of degeneration A change in muscle reactivity to electricity, seen in lower motor neuron paralysis.

reactivate (rē-āk'tī-vāt') To make active again (e.g., to restore to a physiological response or to awaken a dormant infection).

reactivation (rē-āk'tī-vā'shūn) The process of making something active again.

reactive (rē-āk'tiv) **1.** Capable of participating in a chemical reaction. **2.** Emotionally or psychologically responsive. **3.** Triggered by an antigen, said of antibodies and some allergic and immune illnesses.

reactive airway disease Any disease in which there is reversible bronchospasm, such as asthma. **SEE:** *asthma.*

reactive attachment disorder A developmental disorder of infancy or early childhood marked either by social isolation and withdrawal or by indiscriminate sociability. The disorder may result from neglect of the child by his or her primary caregiver or from frequent changes in caregivers (esp. in children who have lost their parents or who have been moved frequently from one foster home to another).

reactivity (rē'āk-tiv'ī-tē) **1.** The ability to respond to a stimulus. **2.** In measurement of function or behavior, the influence that the presence of the examiner and the assessment process may have on performance and therefore on the outcome or finding.

cross r. The ability of an antibody to bind with more than one antigen or of an antigen to bind with more than one antibody.

read back (rēd bāk) A method of preventing errors in which information relayed to one person is repeated and verified in a slightly different form as a means of confirming its accuracy. For example, a respiratory therapist is asked to administer an aerosol to a patient named "Dabs." Before giving the medication, he repeats the name of the patient out loud as "Dabs...delta, alpha, bravo, sam. Have I spelled the name correctly?"

reading (rēd) Interpreting or perusing

written or printed characters or material. Reading may or may not include comprehension of the material.

lip r. SEE: *lip reading*.

pulse r. The assessment of the characteristics of the radial pulse as an aid in the diagnosis of disease, a technique used in traditional Chinese medicine, Ayurvedic medicine, among other healing traditions.

reading disorder A condition that interferes with or prevents comprehension of written or printed material; used esp. in reference to children. In some adults, the condition may have developed from a brain injury or may have persisted from infancy. SEE: *dyslexia*.

reading machine for the blind An electronic device that converts printed matter into speech. Several machines for home use are available. Information may be obtained from the Lighthouse National Center for Vision and Aging at (800) 334-5497 or the American Foundation for the Blind at (800) 232-5463.

reagent (rē-ā'jēnt) [L. *reagere*, to react]
1. A substance involved in a chemical reaction. **2.** A substance used to detect the presence or amount of another substance. **3.** A subject of a psychological experiment, esp. one reacting to a stimulus.

reagin (rē-ā-jīn) A type of immunoglobulin E (IgE) present in the serum of atopic individuals that mediates hypersensitivity reactions.

rapid plasma r. ABBR: RPR. A non-specific serological test for syphilis. The RPR titer is elevated in most patients with syphilis (and falsely elevated in some patients with other diseases). The titer decreases or returns to normal after successful eradication of the disease.

reaginic (rē-ā-jīn'ik), *adj.*

reality (rē-āl-i-tē) **1.** The quality of being real or actual. **2.** All that exists, as opposed to those ideas or mental images that are imagined.

reality orientation An intervention to orient people with early dementia or delirium. It involves repetition of verbal and nonverbal information. The environment remains constant, and the person is reminded about names, dates, weather, and other pertinent information.

reality principle (rē-āl-i-tē) In psychoanalysis, the idea that the striving for narcissistic pleasure can never be absolute, but instead must be balanced against competing demands placed on the self by other persons and situations.

reality testing The attempt by the individual to evaluate and understand the real world and his or her relation to it.

reality therapy A psychiatric treatment based on the concept that some patients deny the reality of the world around them. Therapy is directed to assist pa-

tients in recognizing and accepting the present, instead of dwelling on the past. Patients undergoing reality therapy are helped to cope with present demands, limit distortions, and anticipate future needs.

real-time 1. Pert. to technologies that report or record events and processes as they happen; said, e.g., of imaging procedures that take moving pictures rather than static images of body structures. **2.** Pert. to computer systems that analyze data at the same rate as data is received, allowing automatic control of a process.

reamer (rē'mēr) A small instrument used in dentistry for enlarging the root canal of a tooth.

reanastomosis, surgical (rē-ā-nās-tō-mō'sis) The rejoining of structures, esp. vessels or tubes, that had been previously ligated.

reanimate (rē-ān'i-māt) [L. *re*, again, + *animare*, fill with life] To reactivate, restore to life, revive, or resuscitate.

reapers' keratitis (rēp'ērs kēr-ā-tī'tis) Corneal inflammation caused by grain dust. SEE: *keratitis*.

reasonable and customary fees In health care finance, the prevailing reimbursement for health services or medical care in a specific region or state. The term is vague. It reflects the reality that in differing states, regions, or health care institutions, the economics of health care may vary, owing to regional attitudes about care, or differences in professional expertise or available technologies.

reasonable care In law, the degree of care that an ordinarily prudent or reasonable person would exercise under given circumstances.

reasonable certainty Epistemological likelihood based on considerable evidence or the opinion of most experts that an event has resulted from a specific cause. The concept of reasonable certainty is a legal one; it implies a measure of proof acceptable to a jury in a court of law rather than a proof that might be acceptable to the most stringent scientist.

reasonable cost The amount a third party (usually the medical insurer) will actually reimburse for health care. This amount is based on the cost to the provider for delivering that service.

reasoning The making of judgments or drawing of conclusions based on evidence, education, experience, training, and/or personal biases.

reasoning, narrative A means of understanding people and their behaviors in the context of their life histories and their interpretations of the important events in their lives.

reattachment (rē-ā-tāch'mēnt) **1.** Re-embedding of a dental crown. **2.** Re-embed-

ding of periodontal ligament fibers into the cementum of a tooth that has become dislodged. **3.** Rejoining of parts that have been separated, as a finger that has been traumatically detached. SEE: *limb replantation*.

reauthorization (rē'aw-thōr-ī-zā'shŭn)

The renewal of an act of legislation, e.g., one that authorizes certain forms of treatment or health care funding.

rebase (rē-bās') To refit a denture by replacing the base material without altering the occlusal characteristics.

rebound (rē'bōwnd) [ME. *rebounden*, to leap back] A reflex response in which sudden withdrawal of a stimulus is followed by increased activity, such as an increase in heart rate or blood pressure when beta-blocking drugs or clonidine are withheld.

rebreathing (rē'brē'thēng) The inhalation of gases that had been previously exhaled.

Rebuck skin window test (rē'bŭk) An in vivo method of assessing inflammation. A superficial abrasion is made in the skin and a glass coverslip applied to the area. Leukocytes accumulate at the site and adhere to the coverslip.

recalcification (rē'kāl-si-fi-kā'shŭn) [L. *re*, again, + *calx*, lime, + *facere*, to make] The restoration of calcium salts to tissues from which they have been withdrawn.

recalcification test A test for excessive blood clotting, used esp. in cancer-related thrombosis. Also known as the modified recalcification test.

recalcitrant Difficult to treat; resistant to commonly used treatments.

recall (rē'kawl, rē-kawl') [L' + AS. *ceallian*, to call] **1.** The act of bringing back to mind something previously learned or experienced. SEE: *memory*. **2.** To remove from use; to restrict marketing of a substance or product, usually as a result of problems with product safety.

24-hr dietary r. One means of obtaining a diet history in which the individual being assessed lists all the foods along with the portion size of everything eaten or drunk in the preceding 24 hr. The information obtained is rarely accurate enough to be valid.

recall bias Distortion introduced into a research investigation that relies on the memory of subjects, specifically, their recollections of elements that might have contributed to the eventual development of a disease or condition. A research subject's memories after the occurrence of an adverse event, e.g., the diagnosis of a serious ailment, may be unduly influenced by his or her assumptions, beliefs, expectations, or prior education about possible causes of that ailment and thus may not reflect the true breadth of exposure contributing to the occurrence of the disease.

recall rate In radiology, the percentage of individuals asked to return for follow-up imaging after an anomaly is found on an initial study, e.g., the number of women who are screened with mammography and who have to return for spot films, ultrasound, or magnetic resonance imaging.

recanalization (rē'kän-äl-ī-zā'shŭn) Reestablishment of an opening through a vessel that had been previously occluded.

receiver (rē-sēv'ēr) [L' + *capere*, to take]

1. A container for holding a gas or a distillate. **2.** An apparatus for receiving electric waves or current, such as a radio receiver.

receptaculum (rē'sēp-tāk'ŭ-lŭm) *pl.* **receptacula** [L.] A vessel or cavity in which a fluid is contained.

receptor (rē-sēp'tor) [L., a receiver]

1. In cell biology, a structure in the cell membrane or within a cell that combines with a drug, hormone, chemical mediator, or an infectious agent to alter an aspect of the functioning of the cell. **2.** A sensory nerve ending. SYN: *ceptor*.

accessory r. Proteins on the surface of T lymphocytes that enhance the response of the T-cell receptor to foreign antigens and stimulate signals from the receptor to the cytoplasm. SEE: *cell, antigen-presenting; T-cell receptor*.

adrenergic r. A cell membrane protein that mediates the effects of adrenergic stimulation on target organs by catecholamines.

alpha-adrenergic r. A site in autonomic nerve pathways responsive to the adrenergic agents norepinephrine and epinephrine; in general, alpha-1 receptors produce excitatory responses and alpha-2 receptors produce inhibitory responses. SEE: *beta-adrenergic r.*

antigen r. Receptors, primarily on white blood cells, that bind with the epitope on foreign antigens, stimulating an immune response. SEE: *epitope*.

auditory r. One of the hair cells in the organ of Corti in the cochlea of the ear.

beta-adrenergic r. A site in autonomic nerve pathways responsive to the adrenergic agents norepinephrine and epinephrine; in general, beta-1 receptors produce excitatory responses and beta-2 receptors produce inhibitory responses. SEE: *alpha-adrenergic r.*

cell r. Cell membrane proteins or intracellular proteins that react with chemicals (e.g., hormones) circulating in the cell's environment. The reaction triggers the cell's characteristic response to the hormone or other chemical. SEE: *drug r.*

chemokine r. ABBR: CCR. Any of several protein receptors for chemokines that spans the cell membrane and links to intracellular G proteins. The cell-to-cell signaling and regulating ef-

fects of chemokines (e.g., on inflammation or hematopoiesis) are mediated through chemokine receptors, which can be blocked with specific antagonist drugs. CCR5 and CXCR4 are chemokine receptors that are also receptors for the human immunodeficiency virus. The virus uses these receptors to gain entry into T cells, macrophages, and other CD4⁺ cells.

cholinergic r. A site in a nerve synapse or effector cell that responds to the effect of acetylcholine.

complement r. ABBR: CR. A receptor on neutrophils, macrophages, lymphocytes, and other cells that allows complement factors to bind, thus stimulating inflammation, phagocytosis, and cell destruction.

contact r. A receptor that produces a sensation such as touch, temperature, or pain that can be localized in or on the surface of the body.

cutaneous r. A receptor located in the skin.

distance r. Receptor.

dopamine r. One of at least six receptors that bind dopamine in the brain. They influence body movements and emotional states. The dopamine receptors are designated D1, D2a, D2b, D3, D4, and D5. Each has an identifiably different function. The D2a receptor, for example, has a strong affinity for antipsychotic drugs, such as haloperidol.

drug r. A protein-containing complex on a cell membrane that is capable of being stimulated by drugs in the extracellular fluid and translating that stimulation into an intracellular response. There may be thousands of such receptors on the surface of each cell. SEE: *cell r.*

estrogen r. A cellular protein that binds female sex steroid hormones. When estrogens attach to it, they stimulate cells to transcribe DNA and manufacture proteins, typically leading to cellular growth and proliferation.

gravity r. A macular hair cell of the utricle and saccule. It responds to changes in position of the head and linear acceleration.

homing r. An adhesion molecule on leukocytes that binds to endothelial cells in blood vessels. It is used by white blood cells to guide them to inflamed or infected tissues in the body.

immunologic r. A receptor on the surface of white blood cells that identifies the type of cell and links with monokines, lymphokines, or other chemical mediators during the immune response.

killer cell inhibitory r. ABBR: KIR. Molecules on the surface of natural killer (NK) cells that bind with major histocompatibility complex (MHC) class I markers and inhibit the ability of NK cells to destroy target cells. Different

groups of KIRs may create subsets of NK cells that bind to and destroy different targets. SEE: *natural killer cell.*

olfactory r. One of the bipolar nerve cells found in olfactory epithelium whose axons form olfactory nerve fibers.

optic r. A rod or cone cell of the retina.

proprioceptive r. A muscle or tendon spindle. These are the receptors for muscle stretching or kinesthetic stimuli.

rotary r. One of the hair cells in the cristae of the ampulla of the semicircular ducts of the ear. It is stimulated by angular acceleration or rotation.

ryanodine r. ABBR: RyR. The release channel for calcium ions that is found on the membranes of the sarcoplasmic reticulum of skeletal muscles.

sensory r. A sensory nerve ending, a cell or group of cells, or a sense organ that when stimulated produces an afferent or sensory impulse.

CLASSIFICATION: *Exteroreceptors* are receptors located on or near the surface that respond to stimuli from the outside world. They include eye and ear receptors (for remote stimuli) and touch, temperature, and pain receptors (for contact). *Interoceptors* are those in the mucous linings of the respiratory and digestive tracts that respond to internal stimuli; also called *visceroreceptors*. *Proprioceptors* are those responding to stimuli arising within body tissues.

Receptors also are classified according to the nature of stimuli to which they respond. These include *chemoreceptors*, which respond to chemicals (taste buds, olfactory cells, receptors in aortic and carotid bodies); *pressoreceptors*, which respond to pressure (receptors in the aortic and carotid sinuses); *photoreceptors*, which respond to light (rods and cones); and *tactile receptors*, which respond to touch (Meissner's corpuscle).

stretch r. A proprioceptor located in a muscle or tendon that is stimulated by a stretch or pull. SEE: *proprioceptor.*

taste r. A gustatory cell of a taste bud.

temperature r. Any of the free nerve endings in the dermis that detect heat and cold.

toll-like r. ABBR: TLR. 1. One of several receptors on macrophages and other immune and endothelial cells that recognizes pathogen components such as peptidoglycan or lipopolysaccharide. Activation of a receptor stimulates release of cytokines and other chemical signals that are part of innate immunity. 2. Receptors on the surface of immune cells that react with bacterial lipopolysaccharides and other antigens on pathogenic cells and stimulate innate immune responses.

touch r. A Merkel's disk, a Meissner's corpuscle, or a nerve plexus around a hair root.

receptor-binding screening A method of identifying useful drugs by exposing large numbers of chemicals to cellular receptors and selecting those agents that attach to and activate the receptors.

receptor trafficking The movement of chemical receptors from one cellular structure to another, e.g., from the cell membrane to the cytoplasm.

receptosome (rē-sĕp'tō-sōm) Endosome.

recess (rē'sĕs) [L. *recessus*, receded] A small indentation, depression, or cavity.

cochlear r. A small concavity, lying between the two limbs of the vestibular crest in the vestibule of the ear, that lodges the beginning of the cochlear duct.

epitympanic r. Attic.

hepatorenal r. A deep pocket inside the upper right peritoneal cavity between the liver and the peritoneal surface of the right kidney. When a person is lying on his back, fluid from the omental bursa will pool into the hepatorenal recess. SYN: *hepatorenal pouch*.

infundibular r. A small projection of the third ventricle that extends into the infundibular stalk of the hypophysis.

nasopalatine r. A small depression on the floor of the nasal cavity near the nasal septum, lying immediately over the incisive foramen.

omental r. One of three pocket-like extensions of the omental bursa. The superior recess extends upward behind the caudate lobe of the liver, the inferior recess extends downward into the great omentum, and the lineal recess extends laterally to the hilus of the spleen.

pharyngeal r. A recess in the lateral wall of the nasopharynx lying above and behind the opening to the auditory tube. SYN: *Rosenmüller's fossa*.

pineal r. Recess of the roof of the third ventricle extending into the stalk of the pineal body.

piriform r. A deep depression in the wall of the laryngeal pharynx lying lateral to the orifice of the larynx. It is bounded laterally by the thyroid cartilage and medially by the cricoid and arytenoid cartilages. It is a common site for lodgment of foreign objects.

sphenoethmoidal r. A small space in the nasal fossa above the superior concha. It lies between the ethmoid bone and the anterior surface of the body of the sphenoid bone and posteriorly receives the opening of the sphenoidal sinus.

umbilical r. A dilatation on the left main branch of the portal vein that marks the position where the umbilical vein was originally attached.

recession (rē-sĕsh'ūn) [L. *recessus*, recess] The withdrawal of a part from its normal position.

gingival r. Apical migration of the gingiva resulting from faulty tooth-brushing technique, tooth malposition, friction from soft tissues, gingival inflammation, and high frenum attachment. The incidence of recession may result in sensitivity, increased susceptibility to caries, and difficulty maintaining clean teeth. SEE: *gingivitis*.

recessive Tending to recede or go back; lacking control; not dominant; said, for example, of genes.

recidivation (rē-sīd'ī-vā'shūn) [L. *recidivus*, falling back] 1. The relapse of a disease or recurrence of a symptom. 2. The return to criminal activity.

recidivism (rē-sīd'ī-vī-zīm) Habitual criminality; the repetition of antisocial acts.

recidivist (rē-sīd'ī-vīst) 1. A confirmed criminal. 2. A patient, esp. one with mental illness, who has repeated relapses into behavior marked by antisocial acts.

recidivity (rē-sīd'īv'ī-tē) Tendency to relapse, or to return to a former condition.

recipe (rĕs'ī-pē) [L., take] 1. Take, indicated by the sign R. 2. A prescription or formula for a medicine. SEE: *prescription*. 3. A set of instructions for preparing food from multiple ingredients.

recipient (rī-sīp'ē-ĕnt) [L. *recipiens*, receiving] One who receives something, esp. blood, tissues, or an organ, provided by a donor, as in a blood transfusion or kidney transplant. SEE: *donor*.

reciprocal (rī-sīp'rō-kāl) [L. *reciprocus*, alternate] Interchangeable.

reciprocal inhibition 1. The inhibition of muscles antagonistic to those being facilitated; this is essential for coordinated movement. 2. Inhibition of a complementary nerve center by the one being stimulated (e.g., the inspiration center in the medulla generates impulses to the respiratory muscles to bring about inhalation, and inhibits the expiration center at the same time).

reciprocation (rī-sīp'rō-kā'shūn) [L. *reciprocare*, to move backward and forward] The countering of a reaction by an action. In dentistry, the action of one part of a dental device to counter the effect of another part.

reciprocity (rē-sī-prō'sī-tē) The recognition by one state of the license to practice granted to a health care professional by another state.

Recklinghausen, Friedrich D. von (rĕk'ling-how'zĕn) German pathologist, 1833–1910.

R.'s disease Type 1 neurofibromatosis.

R.'s tumor An adenoleiomyofibroma on the wall of the fallopian tube or the

posterior uterine wall. SYN: *von Recklinghausen's tumor*.

reclination (rĕk'li-nā'shŭn) [L. *reclinatio*, lean back] A cataract operation where the lens is turned over in the vitreous.

recline (rĕ-klīn') [L. *reclinare*] To be in recumbent position; to lie down.

Reclus' disease (rā-kloo'z') [Paul Reclus, Fr. surgeon, 1847–1914] Multiple benign cystic growths in the breast.

recognition (rĕk'ŏg-nīsh'in) The ability to identify a recently encountered item; the memory of a person, place, or thing as something familiar.

recoil (rĕ'koi'l, rī-koi'l') [ME. *recoilen*] The springing back of body tissues to their relaxed state after they have been squeezed or compressed.

recombinant (rĕ-kŏm'bī-nānt) In genetics and molecular biology, pert. to genetic material combined from different sources.

recombinant DNA Segments of DNA from one organism artificially manipulated or inserted into the DNA of another organism, using a technique known as gene splicing. When the host's genetic material is reproduced, the transplanted genetic material is also copied. This technique permits isolating and examining the properties and action of specific genes. SEE: *plasmid*; *gene splicing*.

recombinant tPA Tissue plasminogen activator.

recombinase (rĕ-kŏm'bīn-ās) [*recombinant*(t) + "n"] Any enzyme that catalyzes nucleic acid recombination, i.e., the rearrangement of genetic material on a strand of DNA or RNA.

recombination (rĕ'kŏm-bī-nā'shŭn) 1. Joining again. 2. In genetics, the joining of gene combinations in the offspring that were not present in the parents.

Recombivax HB (rī-kŏm'bī-vāks") Hepatitis B (recombinant) vaccine.

recomposition (rĕ-kŏm-pŏ-zī'shŭn) [L. *re*, again, + *composer*, to place together] The recombination of constituents or parts.

recompression [" + LL. *compressare*, press together] The resubjection of a person to increased atmospheric pressure, as in the treatment of caisson disease (the bends). SEE: *aeroembolism*; *hyperbaric chamber*.

reconcentration (rĕ-kŏn'sĕn-trā'shŭn) The process of repeated concentration.

reconditioning The process of restoring normal cardiovascular and neuromuscular function following injury, disease, or inactivity. SEE: *rehabilitation*.

reconstitution (rĕ'kŏn-stī-tū'shŭn) The return of a substance previously altered for preservation and storage to its original state, as is done with dried blood plasma.

reconstruction (rĕ-kŏn-strŭk'shŭn) 1. Surgical repair or restoration of a missing part or organ. 2. The manipulation of digitized information obtained during body imaging into interpretable pictures that represent anatomical details and diseases. Also known as image reconstruction.

r. of the knee Procedures to re-establish knee stability following injury, usually to the anterior or posterior cruciate ligaments or both.

neovaginal r. Construction of an artificial vagina after the vagina has been removed because of cancer, or trauma of the pelvic area. The tissue used may be obtained from muscle and skin tissue from the abdomen. Normal sexual function is possible after the area has healed.

recontamination (rĕ'kŏn-tām'ī-nā'shŭn) The contamination of a recently disinfected or sterilized instrument before its use in patient care. It may result from inadequate packaging or mishandling of instruments after they have been rid of microorganisms.

record (rĕk'ord) 1. A written account of something. SEE: *problem-oriented medical record*. 2. In dentistry, a registration of jaw relations in a malleable material or on a device.

anecdotal r. Notes used in nursing education to document observed incidents of a student's clinical behavior related to attainment of clinical learning objectives. Such anecdotal notes have been upheld in court as documented evidence for failing a student; the notes have not been treated as hearsay evidence.

functional chew-in r. A record of the natural chewing action of the mandible made on an occlusion rim by the teeth or scribing studs.

interocclusal r. Bite plate.

medication administration r. ABBR: MAR. A file maintained on hospital units that documents the schedule and dosing of medications given to patients.

recovery (rī-kŭv'ĕr) [O.Fr. *recoverer*] 1. To regain health after illness; to regain a former state of health. 2. To regain a normal state, as to recover from fright.

recovery (rī-kŭv'ĕr-ē) 1. The process or act of becoming well or returning to a state of health. 2. Compensation awarded by a court to individuals who prevailed in a lawsuit (e.g., those who had been injured as a result of the health care provider's negligence or malpractice). 3. Emergence from anesthesia.

inversion r. In magnetic resonance imaging, a standard pulse sequence used to produce T1 weighted images.

recovery position The position in which the patient is placed on the left side with

the left arm moved aside and supported to allow for lung expansion and the right leg crossed over the left. This position affords the unconscious, breathing patient the best protection from airway occlusion or aspiration of fluids into the lungs.

recreation (rĕk-rĕ-ā-shŭn) Participation in any endeavor that is entertaining, relaxing, or refreshing. Recreational activities may be personal or private (e.g., reading, painting), social (e.g., team sports or dance), physical (e.g., hunting), or mental (e.g., meditating or praying); they may be active or passive. Many recreational activities combine more than one of these elements.

recredentialing (rĕ-krĕ-dĕn'chāl-ĕng) The process whereby an individual certified in a profession completes the current requirements for certification in that profession.

recrudescence (rĕ"krōo-dĕs'ĕns) Relapse.

recrudescient (rĕ"krōo-dĕs'ĕnt) Assuming renewed activity after a dormant or inactive period.

recruitment (rĭ-kroō'mĕnt) [O.Fr. *recrute*, new growth] **1.** An increased response to a reflex when a stimulus is prolonged, even though the strength of the stimulus is unchanged, due to activation of increasingly greater numbers of motor neurons. **2.** In audiology, an increase in the perceived intensity of a sound out of proportion to the actual increase in the sound level. **3.** The addition of staff to a hospital or clinic during expansion of employment. **4.** The reopening of collapsed alveoli.

r. of end organs An increase in discharge from sensory end organs, resulting from an increase in the number of end organs discharging and an increase in frequency of discharge from each.

recruitment maneuver Any technique in which sustained high airway pressures are applied to the patent airway in order to diminish collapse of alveoli during mechanical ventilation.

rectal (rĕk'tāl) [L. *rectus*, straight] Pert. to the rectum.

rectalgia (rĕk-tāl'jĕ-ā) [L. *rectus*, straight, + Gr. *algos*, pain] Pain in the rectum.

rectal reflex The normal desire to evacuate feces present in the rectum.

rectification (rĕk'tĭ-fi-kā'shŭn) [" + *facere*, to make] **1.** The process of refining or purifying a substance. **2.** The act of straightening or correcting. **3.** The process of changing an alternating current into a pulsating direct current.

rectified (rĕk'tĭ-fĭd) Made pure or straight; set right.

rectifier (rĕk'tĭ-fi'ĕr) [L. *rectum*, straight, + *-ficare*, to make] In electricity, a device for transforming an al-

ternating current into a pulsating direct current.

rectitis (rĕk-tĭ'tĭs) Proctitis.

recto- Combining form meaning *straight*.
rectoabdominal (rĕk"tō-āb-dōm'ĭ-nāl) [L. *rectus*, straight, + *abdomen*, belly] Pert. to the rectum and abdomen.

rectocele (rĕk'tō-sĕl) [" + Gr. *kele*, tumor, swelling] Protrusion or herniation of the posterior vaginal wall with the anterior wall of the rectum through the vagina. SEE: *cystocele*.

rectoclysis (rĕk-tōk'lĭ-sĭs) [" + Gr. *klysis*, a washing] The slow introduction of fluid into the rectum.

rectococcygeal (rĕk-tō-kōk-sĭj'ĕ-āl) [" + Gr. *kokkyx*, coccyx] Pert. to the rectum and coccyx.

rectocolitis (rĕk"tō-kō-lĭ'tĭs) Proctocolitis.

rectocystotomy (rĕk"tō-sĭs-tōt'ō-mĕ) [" + Gr. *kystis*, bladder, + *tome*, incision] An incision of the bladder through the rectum, usually to remove a stone.

rectolabial (rĕk"tō-lā'bĕ-āl) [" + *labium*, lip] Pert. to the rectum and a labium of the vulva.

rectoperineorrhaphy (rĕk"tō-pĕr'ĭ-nĕ-or'ā-fĕ) Proctoperineoplasty.

rectopexy (rĕk'tō-pĕk-sĕ) Proctopexia.

rectoplasty (rĕk'tō-plās'tĕ) Proctoplasty.

rectorrhaphy (rĕk-tor'ā-fĕ) Proctorrhaphy.

rectoscope (rĕk'tō-skōp) [" + Gr. *skopein*, to examine] Proctoscope.

rectoscopy (rĕk-tōs'kō-pĕ) Proctoscopy.

rectosigmoid (rĕk"tō-sĭg'moyd) [" + Gr. *sigma*, letter S, + *eidos*, form, shape] The upper part of the rectum and the adjoining portion of the sigmoid colon.

rectosigmoidectomy (rĕk"tō-sĭg'moy-dĕk'tō-mĕ) [" + " + *ektome*, excision] Surgical removal of the rectum and sigmoid colon.

rectostenosis (rĕk"tō-stĕn-ō'sĭs) [" + Gr. *stenos*, narrow] Stricture of the rectum.

rectostomy (rĕk-tōs'tō-mĕ) Proctostomy.

rectotomy (rĕk-tōt'ō-mĕ) Proctotomy.

rectourethral (rĕk"tō-ū-rĕ'thrāl) [" + Gr. *ourethra*, urethra] Pert. to the rectum and urethra.

rectouterine (rĕk"tō-ū'tĕr'ĭn) [" + *uterus*, womb] Pert. to the rectum and uterus.

rectovaginal (rĕk"tō-vāj'ĭ-nāl) [" + *vagina*, sheath] Pert. to the rectum and vagina.

rectovesical (rĕk"tō-vĕs'ĭ-kāl) [" + *vesica*, bladder] Pert. to the rectum and bladder.

rectovestibular (rĕk"tō-vĕs-tĭb'ū-lār) [" + *vestibulum*, vestibule] Pert. to the rectum and vestibule of the vagina.

rectovulvar (rĕk"tō-vŭl'vār) [" + *vulva*,

covering] Pert. to the rectum and vulva.

rectum (rĕk'tŭm) [L., straight] The lower part of the large intestine, about 5 in (12.7 cm) long, between the sigmoid colon and the anal canal. Its smooth muscle layer is the effector for the defecation reflex, the reflex centers for which are in the second, third, and fourth sacral segments of the spinal cord. SEE: *colon* for illus. **illus.**



RECTUM

Rectum seen during colonoscopy

rectus (rĕk'tŭs) [L.] Straight; not crooked.

recumbency (rĭ-kŭm'bĕn-sĕ) [L. *recumbens*, lying down] The condition of leaning or reclining.

recumbent (rĕ-kŭm'bĕnt) **1.** Lying down. SEE: *position, left lateral recumbent; position, unilateral recumbent; prone*. **2.** Inactive, idle.

dorsal r. Lying on one's back. SYN: *supine* (1).

lateral r. Lying on one's side.

ventral r. Lying with one's anterior side down. SYN: *prone* (1).

recuperation (rĭ-kŭ'pĕr-ā'shŭn) [L. *recuperare*, to recover] The process of returning to normal health following an illness.

recurrence (rĭ-kŭr'ĕns) Relapse. **recurrent** (-ĕnt), *adj.*

recurrent pregnancy loss (rĭ-kŭr'ĕnt) ABBR: RPL. Three or more consecutive miscarriages that occur before the 20th week of gestation.

recurvation (rĭ'kŭr-vā'shŭn) [L. *recurvus*, bent back] The act of bending backward.

recurvatum (rĕ-kŭr-vā'tŭm) Backward bowing. At the knee, it is called genu recurvatum; at the elbow, it is called cubital recurvatum.

recurve (rĕ-kŭrv') To bend backward.

red (rĕd) [AS. *read*] A primary color of the spectrum that, when added to blue,

forms purple, and when added to yellow, forms orange.

Congo r. An odorless red-brown powder used in testing for amyloid. In polarized light, amyloid treated with Congo red produces a green fluorescence.

resol r. An indicator of pH. It is yellow below pH 7.4 and red above 9.0.

methy r. An indicator of pH. It is red at pH 4.4 and yellow at 6.2.

phenol r. Phenolsulfonphthalein.

scarlet r. A red azo dye used to stimulate healing of indolent ulcers, burns, wounds, and so on; in histology, used as a stain. SYN: *rubrum scarlatinum*.

vital r. A stain used in preparing tissues for microscopic examination.

red bag waste Medical refuse, including potentially infectious materials and other hazardous products, that is placed in special containers to prevent them from contaminating the environment or spreading disease. SEE: *Standard Precautions Appendix*.

red blood cell Erythrocyte.

spiculed r.b.c. Spiculed red cell.

redbug (rĕd'bŭg) Chiggers.

red cross **1.** A red cross on a white background; an internationally recognized sign of a medical installation or of medical personnel. **2.** The emblem of the American Red Cross.

redia (rĕ'dĕ-ā) *pl.* **rediae** [Francesco Redi, It. naturalist, 1626–1698] The stage in the life cycle of a trematode that follows the sporocyst stage. It is a sac-like form with an oral sucker and a blind gut. Rediae are produced within the sporocyst and in turn develop into second-generation rediae or cercariae.

redifferentiation (rĕ'dif'ĕr-ĕn'shĕ-ā'shŭn) The respecialization of dedifferentiated cells, as occurs in the regeneration of an amphibian limb.

red. in pulv. [L., *reductus in pulverum*] Let it be reduced to powder.

redintegration (rĕd-in'tĕ-grā'shŭn) [L. *redintegratio*] **1.** Restitution of a part. **2.** Restoration to health. **3.** Recall by mental association.

redistribution **1.** The matching of care personnel resources to the population's site of care. The term usually is used in discussing the maldistribution of in-hospital personnel compared with in-community personnel. **2.** The return of blood flow to an ischemic segment of myocardium. During exercise, regions of the heart supplied by partially occluded arteries are deprived of blood, a condition that may foster angina pectoris. With rest, healthy blood flow to the affected areas is restored. Radionuclide agents (e.g., thallium-201 or sestamibi) can be used to demonstrate regions of the coronary circulation where this effect occurs, and aid in the diagnosis and management of ischemic heart disease.

red lead Pb_3O_4 ; lead tetroxide.

red man (neck) syndrome An adverse anaphylactoid reaction to vancomycin therapy, causing pruritus, flushing, and erythema of the head and upper body. The condition is caused by release of histamine. It can be prevented by slowing the infusion rate.

re-do Reoperation, or a revision of an operation. A colloquial, but widely used term in health care. For example, a person who needs a prosthetic heart valve or hip replaced is scheduled for a "re-do" operation.

red-out (rĕd'owt) A term used in aerospace medicine to describe what happens to the vision and central nervous system (i.e., seeing red and perhaps experiencing unconsciousness) when the aircraft is doing part or all of an outside loop at high speed, or any other maneuver that causes the pilot to experience a negative force of gravity. The condition is due to engorgement of the vessels of the head including those of the retina.

redox (rĕ'dōks) Combined form indicating oxidation-reduction system or reaction.

red rice yeast extract An herbal remedy used to lower serum cholesterol and triglyceride levels. It contains 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors, is similar to the prescription drug lovastatin, and has similar effects and side effects (including muscle injury with elevation of serum creatine kinase levels). It is also known colloquially as Chinese red rice.

red rules Policies or procedures that must be adhered to without compromise to prevent avoidable error or harm.

red tide A dense growth of marine algae (dinoflagellates) in coastal waters. The tide may discolor the surface of the ocean, giving seawater a red, green, or brown appearance. The algae that cause the tide produce a variety of poisons which may kill marine vertebrates, accumulate in shellfish, and cause potential health hazards for humans who consume shellfish. Diseases associated with the consumption of shellfish during a red tide include amnesic shellfish poisoning and diarrheal shellfish poisoning, among others.

reduce (rĭ-dūs') [L. *re*, again, + *ducere*, to lead] **1.** To restore to usual relationship, as the ends of a fractured bone. **2.** To restore the normal alignment of a dislocated joint. **3.** To weaken, as a solution. **4.** To diminish, as bulk or weight.

reducible (rĭ-dūs'ī-bl) Capable of being replaced in a normal position, as a dislocated bone or a hernia.

reducing agent A substance that loses electrons easily and therefore causes other substances to be reduced (e.g., hy-

drogen sulfide, sulfur dioxide). SYN: *reducing substance*.

reducing substance Reducing agent.

reductant (rĭ-dŭk'tānt) The atom that is oxidized in an oxidation-reduction reaction.

reductase (rĭ-dŭk'tās) [*r*' + *ducere*, to lead, + *ase*, enzyme] An enzyme that accelerates the reduction process of chemical compounds.

reduction (rĭ-dŭk'shŭn) [L. *reductio*, leading back] **1.** Restoration to a normal position, as a fractured bone, dislocated joint, or a hernia. **2.** In chemistry, a type of reaction in which a substance gains electrons and positive valence is decreased. SEE: *oxidation*.

closed r. of fractures The treatment of bone fractures by placing the bones in their proper position without surgery.

fat r. Elimination or limitation of greasy, fatty, or oily foods from the diet (e.g., by substituting vegetables or legumes for cheeses and meats). Fat reduction is thought by some nutritionists to help reduce the risk of cancer.

fetal r. Pregnancy r.

open r. of fractures The treatment of bone fractures by the use of surgery to place the bones in their proper position.

pregnancy r. The intentional elimination of one or more fetuses carried by a woman with a multifetal pregnancy. SYN: *fetal reduction*.

risk r. **1.** A decrease in the probability of an adverse outcome. **2.** In biostatistics, $1 -$ the hazard ratio. **3.** Any lowering of factors considered hazards for a specified disease, such as wearing a condom to lower the risk for sexually transmitted diseases, ceasing smoking to prevent lung cancer or emphysema, or lowering the intake of dietary cholesterol and fats to prevent heart disease.

salt r. Limiting the quantity of sodium chloride in the diet, usually as a means of lowering blood pressure or preventing fluid retention.

selective r. **1.** In radiography, the reduction of exposed silver halide crystals to black metallic silver, creating a visible image. **2.** In oncology, killing or destroying tumor cells or their products with relatively little damage to healthy cells.

reduction division Meiosis.

redundant (rĭ-dŭn'dĕnt) [L. *redundare*, to overflow] More than necessary.

reduplicated (rĭ-dŭ'plĭ-kā'tĕd) [L. *re*, again, + *duplicare*, to double] **1.** Doubled. **2.** Bent backward on itself, as a fold.

reduplication (rĭ-dŭ'plĭ-kā'shŭn) **1.** A doubling, as of the heart sounds in some morbid conditions. **2.** A fold.

reduplicative paramnesia (rĭ-dŭop'lĭ-kāt'iv) A rare psychiatric disorder in which the patient is convinced that the environment in which he is living has

been duplicated brick by brick and leaf by leaf in another location. It is usually diagnosed in people who have suffered a focal brain injury (e.g., to the right hemisphere of the brain).

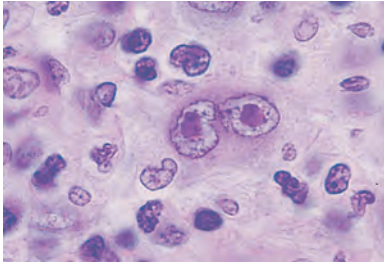
Reduviidae (rē'dū-vī'ī-dē) A family of the order Hemiptera, including the assassin bugs.

Reduvius (rē-dū'vē-ūs) A genus of true bugs belonging to the family Reduviidae.

R. personatus A species that normally feeds on other insects but sometimes preys on humans. In some cases the bite may transmit *Trypanosoma cruzi*, a protozoan responsible for Chagas' disease. SYN: *kissing bug*.

red wale markings Raised red streaks seen on esophageal or gastric varices during endoscopy. They suggest that the varices have a high likelihood of rupture and bleeding.

Reed-Sternberg cell (rēd-stērn-bērg) [Dorothy Reed, U.S. pathologist, 1874–1964; Karl Sternberg, Aust. pathologist, 1872–1935] A giant, malignant, multinucleated B lymphocyte, the presence of which is the pathologic hallmark of Hodgkin's disease. SEE: *illius*.



REED-STERNBERG CELL (CENTER)

(Orig. mag. ×600)

re-education (rē'ēd-ū-kā'shūn) [L. *re*, again, + *educare*, to educate] **1.** Training to restore competence to a person with functional limitations. **2.** A physical technique to facilitate restoration of motor control.

sensory r. A rehabilitation regimen used after sensation is impaired by peripheral nerve injuries or surgery to the hand. The purpose is to relearn the interpretation of sensory information related to pain, temperature, and object identification.

reef (rēf) A fold or tuck, usually taken in redundant tissue.

re-entry (rē-ēn'trē) In cardiology, the cycling of an electrical impulse through conductive tissue that has been recently stimulated. This is the cause of many tachycardic heart rhythms (e.g., those originating in the atrioventricular node).

re-experience (rē-ks'pēr'ē-ēns) To recall

an event, feeling, or thought; to have an intrusive memory or "flashback." Frequent re-experiencing of traumatic events is one of the symptoms of post-traumatic stress disorder.

refection (rē-fēk'shūn) [L. *reficere*, to refresh] **1.** Restoration after hunger or fatigue, esp. with food or drink. **2.** Recovery by laboratory rats from the symptoms of vitamin B deficiency caused by consuming a diet deficient in vitamin B, due to vitamin synthesis by intestinal flora.

refeeding syndrome The potentially fatal metabolic response of a starved individual to feeding, either enteral or parenteral. The correction of electrolyte imbalances is imperative before gradual refeeding to prevent hypophosphatemia, rhabdomyolysis, and other life-threatening complications.

refer (rī-fēr', rē-) [L. *referre*, to bring back] **1.** To allude to or mention. **2.** To direct attention to. **3.** To recommend someone to another health care provider for specific testing or treatment.

reference (rēf'ēr-ēns) [L. *referre*, to bring back, to report] **1.** A standard for the evaluation of objects, data, or ideas. **2.** A link or connection between data, ideas, or objects.

reference man A human being of statistically average size and physiology, used in research models of nutrition, pharmacology, population, radiologic dosimetry, or toxicology. The reference weight for men 19 and older is 76 kg. Also known as "refman" or "standard man." Similarly, *reference woman*.

reference pricing (pris'ing) A method of health care cost control in which the cost of all items in a class of roughly equivalent products or services is reimbursed at a fixed dollar amount. Patients or providers who seek care that is more expensive than the reference price pay additional fees. Those who agree to use standard services are reimbursed in full for the products or services they receive.

reference woman An idealized female, used in research models, described the same as reference man, except in weight (66 kg) and caloric intake (2000 kcal/day).

referral The practice of sending a patient to another practitioner or specialty program for consultation or service. Such a practice involves a delegation of responsibility for patient care, which should be followed up to ensure satisfactory care.

referral bias The difference that arises from the study of those patient populations who receive primary care as opposed to those who receive care at tertiary care centers.

refine (rē-fin') [L. *re*, again, + ME. *fin*, finished] To purify or render free from foreign material.

reflectance (rē-flĕk'tāns) The fraction of total light reflected after it hits a surface, and the angle at which it is reflected.

diffuse r. The reflectance of light from a rough or nonpolished surface in which the radiant energy tends to scatter. The angle of reflectance does not equal the angle of incidence.

r. photometer An instrument used to measure reflectance; used clinically in chemical analyzers, glucometers, and dipstick readers.

spectral r. The reflectance of light from a polished surface in which the angle of reflectance equals the angle of incidence.

reflection (rī-flĕk'shūn) [L. *reflexio*, a bending back] **1.** The condition of being turned back on itself, as when the peritoneum passes from the wall of a body cavity to and around an organ and back to the body wall. **2.** The throwing back of a ray of radiant energy from a surface not penetrated. **3.** Mental consideration of something previously considered.

diffuse r. The reflection of a light ray by a rough surface in which the angle of reflection is not equal to the angle of incidence. As opposed to *specular* reflection by a smooth surface in which the angle of reflection equals the angle of incidence. Employed in the analytical technique of reflectometry.

reflectometer (rē'flĕk-tōm'ĕ-tēr) An instrument that measures the light reflected by a surface. Reflectometers are used to analyze blood and urine specimens.

reflectometry A laboratory technique for analyzing thin layers of objects, such as biological membranes or layered metallic surfaces. It is performed by exposing an object to neutrons or x-rays, and measuring their scatter from the layered surface.

reflector (rī-flĕk'tor) [L. *re*, again, + *flectere*, to bend] A device or surface that reflects waves, radiant energy, or sound.

reflex (rē'flĕks) [L. *reflexus*, bend back] An involuntary response to a stimulus; an involuntary action. Reflexes are specific and predictable and are usually purposeful and adaptive. They depend on an intact neural pathway between the stimulation point and a responding organ (a muscle or gland). This pathway is called the reflex arc. In a simple reflex this includes a sensory receptor, afferent or sensory neuron, reflex center in the brain or spinal cord, one or more efferent neurons, and an effector organ (a muscle or gland). Most reflexes, however, are more complicated and include internuncial or associative neurons intercalated between afferent and efferent neurons. SEE: *arc*, *reflex* for *illus*.

abdominal r. SEE: *abdominal reflexes*.

abdominocardiac r. A change in heart rate, usually a slowing, resulting from mechanical stimulation of abdominal viscera.

accommodation r. One of the changes that take place when the eye adjusts to bring light rays from an object to focus on the retina. This involves a change in the size of the pupil, convergence or divergence of the eyes, and either a decrease or an increase in the convexity of the lens depending on the previous condition of the lens.

Achilles r. SEE: *Achilles tendon reflex*.

acoustic blink r. Involuntary closure of the eyelids after exposure to a sharp, sudden noise. This is a normal startle response that may be exaggerated in patients with anxiety disorders or hyperacusis or blunted in infants or adults with a hearing disorder or facial nerve paralysis.

acquired r. Conditioned r.

acromial r. Forearm flexion with internal rotation of the hand as a result of a quick blow to the acromion; elicited in hyperreflexic states.

adductor r. Contraction of the adductor muscles of the thigh on applying pressure to, or tapping, the medial surface of the thigh or knee.

allied r. Reflexes initiated by several stimuli originating in widely separated receptors whose impulses follow the final common path to the effector organ and reinforce one another.

anal r. Contraction of the anal sphincter, following irritation or stimulation of the skin around the anus. This reflex is lost if the second to fourth sacral nerves are injured. SYN: *anal wink*.

ankle r. Achilles tendon reflex.

antagonistic r. Two or more reflexes initiated simultaneously in different receptors that involve the same motor center but produce opposite effects.

asymmetrical tonic neck r. In an infant, extension of one or both extremities on the side to which the head is forcibly turned. Flexion of the extremities occurs on the other side.

attention r. Change in the size of the pupil when attention is suddenly fixed. SYN: *Piltz's reflex*.

audito-oculogyric r. The sudden turning of the head and eyes toward an alarming sound.

auditory r. Any reflex produced by stimulation of the auditory nerve, esp. blinking of the eyes at the sudden unexpected production of a sound.

auriculocervical nerve r. Snellen's reflex.

auriculopalpebral r. Kisch's reflex.

autonomic r. Any reflex involving the response of a visceral effector (car-

diac muscle, smooth muscle, or gland). Such reflexes always involve two efferent neurons (preganglionic and postganglionic).

axon r. A reflex that does not involve a complete reflex arc and hence is not a true reflex. Its afferent and efferent limbs are branches of a single nerve fiber, the axon (axon-like dendrite) of a sensory neuron. An example is vasodilation resulting from stimulation of the skin.

Babinski's r. SEE: *Babinski's reflex*.

Bainbridge r. An increase in heart rate caused by an increase in blood pressure or distention of the heart. SYN: *Bainbridge effect*.

Bechterew's r. SEE: *Bechterew's reflex*.

biceps r. Flexion of the forearm on percussion of the tendon of the biceps brachii.

blink r. Sudden closing of the eyelids in response to head turning, loud noises, bright lights, or visual threats. Absence of this reflex occurs in blindness and in injuries to cranial nerves III, V, and VII.

Brain's r. SEE: *Brain's reflex*.

bregmocardiac r. A reduced heart rate following pressure on the anterior fontanel.

Brissaud's r. SEE: *Brissaud's reflex*.

bulbocavernosus r. Contraction of bulbocavernosus muscle on percussing the dorsum of the penis.

bulbomimic r. In coma, contraction of facial muscles following pressure on the eyeball. SYN: *facial reflex*; *Mondonesi's reflex*.

bulbospongiosus r. Contraction of bulbospongiosus muscle on percussing the dorsum of the penis.

cardiac r. An involuntary response consisting of a change in cardiac rate. Stimulation of sensory nerve endings in the wall of the carotid sinus by increased arterial blood pressure reflexively slows the heart (Marey's law). Stimulation of vagus fibers in the right side of the heart by increased venous return reflexively increases the heart rate (Bainbridge's reflex).

cardiovascular r. 1. A sympathetic increase in heart rate when increased pressure in, or distention of, great veins occurs. 2. Reflex vasoconstriction resulting from reduced venous pressure.

carotid sinus r. A slowing of the heart rate along with a fall in blood pressure when the carotid sinus is massaged. Carotid sinus massage may be used therapeutically as a treatment for paroxysmal supraventricular tachycardia.

cat's eye r. In children, an abnormal pupillary flash or reflection from the eye that may be momentary; may be white, yellow, or pink; and is best seen under diminished natural illumination. This

reflex, which may be noticed first by a parent, may be caused by various conditions, the most important of which is retinoblastoma. It is also observed in tuberosus sclerosis, inflammatory eye diseases, and certain congenital malformations of the eye. SEE: *retinoblastoma*.

Chaddock's r. SEE: *Chaddock's reflex*.

chain r. A reflex initiated by several separate serial reflexes, each activated by the preceding one.

chemical r. Chemoreflex.

chin r. A clonic movement resulting from percussion or stroking of the lower jaw. SYN: *jaw jerk*; *jaw reflex*.

ciliary r. The normal contraction of the pupil in accommodation of vision from distant to near.

ciliospinal r. Dilation of the pupil following stimulation of the skin of the neck by pinching or scratching.

clasp-knife r. Quick inhibition of the stretch reflex when extensor muscles are forcibly stretched by flexing the limb.

conditioned r. A reflex acquired as a result of training in which the cerebral cortex plays an essential part. Conditioned reflexes are not inborn or inherited; rather, they are learned. SYN: *acquired reflex*.

conjunctival r. Closure of eyelids when the conjunctiva is touched or threatened.

consensual r. Crossed reflex.

convulsive r. A reflex induced by a weak stimulus and causing widespread uncoordinated and purposeless muscle contractions; seen in strychnine poisoning.

corneal r. Closure of eyelids resulting from direct corneal irritation.

cough r. SEE: *cough reflex*.

cranial r. Any reflex whose origin is in the brain.

cremasteric r. Retraction of the testis when the skin is stroked on the front inner side of the thigh.

crossed r. A reflex in which stimulation of one side of the body results in response on the opposite side. SYN: *consensual reflex*; *indirect reflex*.

crossed extension r. An extension of the lower extremity on the opposite side when a painful stimulus is applied to the skin.

deep r. Deep tendon reflex.

deep tendon r. ABBR: DTR. An automatic motor response elicited by stimulating stretch receptors in subcutaneous tissues surrounding joints and tendons. The assessment of DTRs typically is made by striking a tendon (e.g., Achilles, patellar, biceps, triceps, or brachioradialis tendons) with a weighted hammer. Brisk or hyperactive responses are seen in conditions such as

hyperthyroidism, stroke, pre-eclampsia, or spastic disorders; diminished responses may be seen in patients with hypothyroidism, drug intoxication, and flaccid neuromuscular disorders, among others. SYN: *deep reflex*. SEE: *clonus*; *knee-jerk reflex*.

delayed r. A reflex that does not occur until several seconds after the application of a stimulus.

digital r. Sudden flexion of the terminal phalanx of a finger or thumb when the nail is suddenly tapped.

diving r. Slowing of the heart rate when the head is immersed in water. This reflex helps to protect a person from drowning, esp. during immersion in cold water. SEE: *drowning*.

elbow r. An involuntary response in the elbow region to stimulation of the biceps and triceps muscles. SYN: *elbow jerk*. SEE: *biceps reflex*; *triceps reflex*.

elementary r. A typical reflex common to all vertebrates; includes the postural, flexion, stretch, and extensor thrust reflexes.

embrace r. Moro reflex.

extensor plantar r. Extension of the great toe when the sole of the foot is stimulated. SEE: *Babinski's reflex*.

extensor thrust r. A quick and brief extension of a limb on application of pressure to the plantar surface.

facial reflex Bulbomimic r.

fencing r. Tonic neck r.

flexor withdrawal r. Flexion of a body part in response to a painful stimulus. SYN: *withdrawal reflex*.

gag r. Gagging and vomiting resulting from irritation of the throat or pharynx.

gastrocolic r. Peristaltic wave in the colon induced by entrance of food into the stomach.

gastroileac r. The physiological relaxation of the ileocecal valve resulting from food in the stomach.

Gault's r. SEE: *Gault's reflex*.

Geigel's r. SEE: *Geigel's reflex*.

glabellar r. Blinking of the eyes (contraction of the orbicularis oculi muscle) when the forehead just above the bridge of the nose is tapped. In most people, blinking stops after a few taps on the forehead. If it does not, significant brain disease may be present, e.g., Parkinson's disease or any disease that causes frontal lobe atrophy.

gluteal r. Contraction of the gluteal muscles from stimulation of the overlying skin.

grasp r. The grasping reaction of the fingers and toes when stimulated. This reflex is normal in the newborn but disappears as the nervous system matures. It may reappear later in life if an individual suffers an injury to the frontal lobes of the brain.

Grünfelder's r. SEE: *Grünfelder's reflex*.

heart r. Any reflex in which the stimulation of a sensory nerve causes the heart rate to increase or decrease. An example is the Bainbridge reflex, in which stimulation of sensory receptors in the right atrium by increased venous return results in an increase in heart rate.

Hering-Breuer r. SEE: *Hering-Breuer reflex*.

Hoffmann's r. SEE: *Hoffmann's reflex*.

hung-up r. Slowness of the relaxation phase of deep tendon reflexes; present in hypothyroidism.

hypochondrial r. Sudden inspiration resulting from abrupt pressure below the costal border.

inborn r. An unconditioned reflex; an innate or inherited reflex.

indirect r. Crossed r.

inhibition of r. The prevention of a reflex action, as inhibiting a sneeze by pressure on a facial nerve as it passes just under the upper lip.

interscapular r. A scapular muscular contraction following percussion or stimulus between the scapulae.

intersegmental r. A reflex involving several segments of the spinal cord. SYN: *long reflex*.

intestinal r. Myenteric reflex.

intra-segmental r. Reflex that involves only a single segment of the spinal cord.

irradiation of r. The spreading of reflexes through the central nervous system whereby impulses entering the cord in one segment activate motor neurons located in many segments.

jaw r. Chin reflex.

kinetic r. Labyrinthine righting r.

Kisch's r. SEE: *Kisch's reflex*.

knee-jerk r. Extension of the leg resulting from percussion of the patellar tendon. This is one of the myotatic or stretch reflexes important in maintaining posture. SYN: *patellar reflex*.

labyrinthine righting r. A reflex, esp. a postural reflex, resulting from stimulation of receptors in the semicircular ducts, utricle, and saccule of the inner ear. This reflex helps orient the head in space and to the rest of the body. SYN: *kinetic reflex*; *optical righting reflex*.

lacrimial r. Secretion of fluid resulting from irritation of the corneal conjunctiva.

laryngeal r. Coughing as a result of irritation of the larynx or fauces.

letdown r. The movement of breast milk from the alveoli into the lactiferous ducts in response to oxytocin-stimulated contractions. The reflex may be stimulated by suckling or by infant crying. Stimulation of the nipple increases the secretion of oxytocin and this tech-

nique may be used to stimulate contraction of the postpartum uterus.

lid r. Closure of eyelids resulting from direct corneal stimulation. This reflex is mediated by the fifth cranial nerve. SYN: *corneal reflex*.

light r. Constriction of the pupil when light is flashed into the eye.

lip r. The reflex movement of the lips when the angle of the mouth is suddenly and lightly tapped during sleep.

local r. A reflex that does not involve the central nervous system (e.g., the myenteric reflex, which occurs even when extrinsic nerves to the intestine have been cut).

long r. Intersegmental r.

lumbar r. An irritation of the skin over the erector spinae muscles, causing contraction of the back muscles.

Magnus-de Kleijn r. In decerebrate rigidity, extension of the limbs on the side to which the chin is turned by rotating the head. There is flexion of the limbs on the opposite side.

mandibular r. Clonic movement resulting from percussing or stroking the lower jaw.

mass r. Autonomic dysfunction that may occur as a late consequence of transection of the spinal cord. It is marked by episodes of sweating, bradycardia, hypotension, urinary incontinence, and muscular spasms of the legs.

Mayer's r. Opposition and adduction of the thumb, flexion at the metacarpophalangeal joint, and extension at the interphalangeal joint in response to downward pressure on the index finger.

Mendel-Bekhterev r. Plantar flexion of the toes in response to percussing of the dorsum of the foot.

Mondonesi's reflex Bulbomimic r.

monosynaptic r. A reflex involving only two neurons, an afferent and an efferent.

Moro r. SEE: *Moro reflex*.

myenteric r. Reflex caused by distention of the intestine, resulting in contraction above the point of stimulation and relaxation below it. SYN: *intestinal reflex*.

myotatic r. Stretch r.

near r. Accommodation r.

neck-righting r. In a supine infant, rotation of the trunk in the same direction as that in which the head is turned. This reflex appears at age 4 to 6 months and is no longer obtainable by age 2 years.

nociceptive r. A reflex initiated by a painful stimulus.

obliquus r. Contraction of the entire external obliquus muscle on application of stimulus to the skin of the thigh below Poupart's ligament.

oculocardiac r. SEE: *Aschner's phenomenon*.

oculocephalic r. The deviation of a

person's eyes to the opposite side when the head is rapidly rotated. This is a normal finding in neonates; in adults it is indicative of coma. SYN: *doll's eye movement*.

optical blink r. Involuntary closure of the eyelids after exposure to a bright light source. Shining a bright light at an infant's eyes causes the eyes to blink and the head to flex backward. If this reflex is absent, further testing of cranial nerves II, III, IV, and VI is required.

optical righting r. Labyrinthine righting r.

palatal r. Swallowing induced by stimulation of the soft palate.

palmar grasp r. A normal newborn reflex in which the baby's fingers spontaneously curl around any object placed within them and do not spontaneously let go. This reflex usually diminishes by age 3 to 4 months and disappears before age 6 months. The reflex reappears later in life in diseases that affect the brain's frontal lobes.

palmar r. Swallowing induced by stimulation of the soft palate.

palmomental r. A contraction of the superficial muscles of the eye and chin produced on the same side as the palmar area that is stimulated by an examiner. This is an abnormal finding that indicates frontal disease.

parachute r. (response) Extension of the arms, hands, and fingers when the infant is suspended in the prone position and dropped a short distance onto a soft surface. This reaction appears at age 9 months and persists. An asymmetrical response indicates a motor nerve abnormality.

paradoxical r. A response to a stimulus that is unexpected and may be the opposite of what would be considered normal.

patellar r. Knee-jerk reflex.

pathological r. Any abnormal reflex due to disease.

penile r. 1. Sudden downward movement of the penis when the prepuce or gland of a completely relaxed penis is pulled upward. 2. Contraction of the bulbocavernosus muscle on percussing the dorsum of the penis. 3. Contraction of the bulbocavernosus muscle resulting from compression of the glans penis.

pharyngeal r. An attempt to swallow following any application of stimulus to the pharynx.

pilomotor r. Piloerection when skin is cooled or as a result of emotional reaction.

placing r. Flexion and then extension of an infant's leg that occurs when an infant is held erect and the dorsum of one foot is dragged along the underedge of a table top. This reflex lasts from birth until age 6 weeks.

plantar r. SEE: *plantar grasp*.
plantar grasp r. A grasp reflex resulting from light stimulation of the sole of the foot. This reflex lasts from birth until age 10 months. SYN: *sole r.*

platysmal r. Dilation of the pupil resulting from sharp pinching of the platysma myoides.

pneocardiac r. A change in the rate and rhythm of the heart and blood pressure when an irritant vapor is inhaled.

pneopneic r. A change in respiratory depth and rate, coughing, suffocation, and pulmonary edema when an irritant vapor is inhaled.

postural r. Any reflex that is concerned with maintaining posture.

pressor r. A reflex in which the response to stimulation is an increase in blood pressure brought about by constriction of arterioles.

proprioceptive r. A reflex initiated by body movement to maintain the position of the moved part; any reflex initiated by stimulation of a proprioceptor.

psychogalvanic r. Decreased electric resistance of the skin in response to emotional stress or stimuli.

pupillary r. 1. Constriction of the pupil upon stimulation of the retina by light. This reflex is mediated by the third cranial nerve. 2. Constriction of the pupil upon accommodation for near vision, and dilatation upon accommodation for far vision. 3. Constriction of the pupil of one eye in response to stimulation of the other by light. 4. Constriction of the pupil upon attempted closure of eyelids that are held apart.

quadriceps r. Knee-jerk r.

quadrupedal extensor r. Brain's reflex.

radial r. Flexion of forearm resulting when the lower end of the radius is percussed.

red r. The red light reflection seen in ophthalmoscopic examination of the eye.

righting r. Any of the reflexes that enable an animal to maintain the body in a definite relationship to the head and thus maintain its body right side up.

rooting r. The turning of an infant's mouth toward the stimulus when the infant's cheek is stroked. This reflex is present at birth; by age 4 months it is gone when the infant is awake; by age 7 months it is gone when the infant is asleep.

Rossolimo's r. SEE: *Rossolimo's reflex*.

scapular r. Muscular contraction following percussion or stimulus between the scapulae.

scapulohumeral r. A reflex in which the upper arm is adducted and rotated outward when the vertebral border of the scapula is percussed.

scrotal r. Slow vermicular contraction of the scrotal muscle when the perineum is stroked or cold is applied.

segmental r. A reflex in which afferent impulses enter the cord in the same segment or segments from which the efferent impulses emerge.

sexual r. A reflex concerned with sexual activities, esp. erection and ejaculation, which results from direct genital stimulation or indirectly from emotion, whether the individual is asleep or awake.

short r. A reflex involving one or a few segments of spinal cord.

simple r. A reflex in which only two or possibly three neurons are interposed between receptor and effector organs.

solar sneeze r. A sneeze that occurs following exposure to bright sunlight. This benign condition may affect a great number of normal people, and it may also be associated with rhinitis. The mechanism of the cause of this type of sneeze reflex is unknown.

sole r. Plantar grasp reflex.

somatic r. A reflex induced by stimulation of somatic sensory nerve endings.

spinal r. A reflex whose center is in the spinal cord.

startle r. Moro reflex.

static r. A reflex concerned with establishing and maintaining posture when the body is at rest.

statokinetic r. A reflex that occurs when the body is moving (e.g., walking or running).

stepping r. Movements of progression elicited by holding an infant upright, inclined forward, and touching the soles of the feet to a flat surface. This reflex lasts from birth to age 6 weeks.

stretch r. The contraction of a muscle as a result of quickly stretching the same muscle. Stretch reflexes are of primary importance in the maintenance of posture. SYN: *myotatic reflex*.

sucking r. A sucking movement of an infant's mouth produced by stroking the lips. A primitive form of this reflex is present in the fetus by the 16th week of gestation; it is fully developed by the time of birth. In adults, the presence of a sucking reflex is an indicator of severe dementia, frontal lobe disease, or extrapyramidal diseases.

superficial r. A cutaneous reflex caused by irritation of the skin or of areas that depend on the spinal cord as a motor center (e.g., the scapular, epigastric, abdominal, cremasteric, gluteal, and plantar reflexes) or on centers in the medulla (e.g., the conjunctival, pupillary, and palatal reflexes). This reflex is induced by a very light stimulus, such as stroking the skin lightly with a soft cotton swab.

supraorbital r. A contraction of the

orbicularis oculi muscle with closure of lids resulting from percussion above the supraorbital nerve.

suprapubic r. Deflection of the linea alba toward the stroked side when the abdomen is stroked above Poupart's ligament.

swallowing r. Involuntary muscular activity in the oropharynx and nasopharynx when foods, tongue depressors, or other objects stimulate the back of the throat. In humans swallowing is mediated by the deglutition center of the medulla oblongata (i.e., by cranial nerves VII, IX, X, and XI).

symmetrical tonic neck r. In an infant, flexion or extension of the arms in response to flexion and extension, respectively, of the neck.

tendon r. A deep reflex obtained by sharply tapping the skin over the tendon of a muscle. It is exaggerated in upper neuron disease and diminished or lost in lower neuron disease.

tonic neck r. The ipsilateral extension and contralateral flexion of the supine infant's extremities when the head is turned to one side. This normal newborn reflex may not be evident immediately after birth; however, once it appears, it persists until about the third postnatal month.

tonic vibration r. ABBR: T.V.R. A polysynaptic reflex believed to depend on spinal and supraspinal pathways.

triceps r. Sharp extension of the forearm resulting from tapping of the triceps tendon while the arm is held loosely in a bent position. SYN: *elbow reflex*.

triceps surae r. Achilles tendon reflex.

true autonomic r. A visceral response in which afferent impulses do not pass through the central nervous system, but instead enter prevertebral ganglia where connections are made with efferent neurons.

unconditioned r. A natural or inherited reflex action; one not acquired.

urinary r. The spinal cord reflex, initiated by accumulated urine stretching the bladder and the resulting contraction of the bladder to expel urine.

vascular r. Vasomotor r.

vasomotor r. The constriction or dilatation of a blood vessel in response to a stimulus, as in becoming pale from fright. SYN: *vascular reflex*.

vestibulocollic r. A reaction that stabilizes the position of the head according to sensory information from the labyrinth of the ear and the nerves in the neck.

visceral r. Any reflex induced by stimulation of the visceral nerves.

visceromotor r. Contraction or tenseness of the skeletal muscles re-

sulting from painful stimuli originating in visceral organs.

viscerosensory r. Pain or tenderness elicited in somatic structures (skin and muscle) caused by visceral disorder. SEE: *pain, referred*.

withdrawal r. Flexor withdrawal reflex.

zygomatic r. The movement of the lower jaw toward the percussed side when the zygomatic bone is percussed.

reflex decay test A test used in audiometry to see how the eardrum responds to a loud tone applied either directly to the ear of interest or to the opposite (contralateral) ear. The sonic stimulus makes the stapedius muscle contract. Data from the test help to determine whether abnormal responses to the tone are the result of damage to the acoustic nerve or to the cochlea.

reflexogenic (rĭ-flĕks'ō-jĕn'ĭk) [L. *reflexus*, bend back, + Gr. *gennan*, to produce] Causing a reflex action.

reflexogenous (rĭ'flĕks-ōj'ĕ-nŭs) Reflexogenic.

reflexograph (rĭ-flĕks'ō-grăf) [r + Gr. *graphein*, to write] A device for recording and graphing a reflex, esp. one produced by muscular activity.

reflexology (rĕ'flĕk-sŏl'ō-jĕ) [r + Gr. *logos*, word, reason] **1.** The study of the anatomy and physiology of reflexes. **2.** A system of massage in which the feet and sometimes the hands are massaged in an attempt to favorably influence other body functions.

reflexometer (rĕ'flĕks-ŏm'ĕ-tĕr) [r + Gr. *metron*, measure] An instrument that measures the force of the tap required to produce a reflex.

reflexophil (rĕ-flĕks'ŏ-fĭl) [r + Gr. *philēin*, to love] Marked by reflex activity or by exaggerated reflexes.

reflexotherapy (rĕ-flĕks'ŏ-thĕr'ă-pĕ) [r + Gr. *therapeia*, treatment] Treatment by manipulating, anesthetizing, or cauterizing an area distant from the location of the disorder. SEE: *spondylotherapy*.

reflex sympathetic dystrophy An abnormal response of the nerves of the face or an extremity, marked by pain, autonomic dysfunction, vasomotor instability, and tissue swelling. Although the precise cause of the syndrome is unknown, it often follows trauma, stroke, neuropathy, or radiculopathy. In about one third of all patients, the onset is insidious. Affected patients often complain of burning pain with any movement of an affected body part, excessive sensitivity to light touch or minor stimulation, temperature changes (heat or cold) in the affected limb, localized sweating, localized changes of skin color, or atrophic changes in the skin, nails, or musculature. SYN: *complex regional pain syndrome, type 1; shoulder-*

hand syndrome; Sudeck's disease. SEE: *Nursing Diagnoses Appendix.*

TREATMENT: Early mobilization of the body part, with multimodality therapy, may improve the symptoms of RSD. Drug therapies often include prednisone or other corticosteroids and narcotic analgesics; transcutaneous electrical stimulation, physical therapy, or nerve blocks may also prove helpful.

reflex testing, reflexive testing A laboratory test that is automatically obtained when the results of a screening test indicate the need for further study. Examples of reflex tests include determination of the antibiotic sensitivity of bacteria that are identified in culture specimens; and determination of an enzyme immunoassay test for HIV when an antibody test for the virus is present in a sample of body fluids.

reflux (rē'flüks) [L. *re*, back, + *fluxus*, flow] A return or backward flow. SEE: *regurgitation.*

cardioesophageal r. SEE: *gastroesophageal reflux disease.*

hepatojugular r. Distention of the veins of the neck when the liver is compressed during physical examination of the abdomen. Neck vein filling during liver examination commonly is seen in patients with congestive heart failure but also may be a normal finding.

vesicoureteral r. The backward flow of urine up the ureter during urination, instead of downward into the bladder. This condition may cause recurrent urinary tract infections in infants and children and may produce kidney scarring and failure if it is untreated. Depending on the underlying cause, treatment may include endoscopic or open surgical procedures.

refluxate (rē-flüks'āt') The acid, gas, and liquid that rise from the upper gastrointestinal tract into the esophagus in gastroesophageal reflux disease. Its components may include gastric acids, bile, and pepsin.

reflux disease Gastroesophageal reflux disease.

refract (rī-frākt') [L. *refractus*, broken off] **1.** To turn back; to deflect. **2.** To detect and correct refractive errors in the eyes.

refraction (rī-frāk'shūn) [LL. *refractio*, break back] **1.** Deflection from a straight path, as of light rays as they pass through media of different densities; the change in direction of a ray when it passes from one medium to another of a different density. **2.** Determination of the amount of ocular refractive errors and their correction.

coefficient of r. The quotient of the sine of the angle of incidence divided by the sine of the angle of refraction.

double r. Possession of more than one refractive index, resulting in a dou-

ble image. SEE: *birefractive; birefringence.*

dynamic r. The static refraction of the eye plus that accomplished by accommodation; the reciprocal of the near-point distance.

error of r. Ametropia.

r. of eye The refraction brought about by the refractive media of the eye (cornea, aqueous humor, crystalline lens, vitreous body). SYN: *ocular refraction.*

index of r. **1.** The ratio of the angle made by the incident ray with the perpendicular (angle of incidence) to that made by the emergent ray (angle of refraction). **2.** The ratio of the speed of light in a vacuum to its speed in another medium. The refractive index of water is 1.33; that of the crystalline lens of the eye is 1.413. SYN: *refractive index.*

ocular r. Refraction of eye.

static r. Refraction of the eye when accommodation is at rest or paralyzed.

refractionist (rī-frāk'shūn-ist) [LL. *refractio*, break back] A person skilled in determining and correcting ocular refractive errors.

refractive (rī-frāk'tiv) [L. *refractus*, broken off] Concerning refraction. SYN: *refrangent.*

refractive media The structures of the eye that deflect light: the cornea, aqueous, crystalline lens, and vitreous.

refractive power The degree to which a transparent body deflects a ray of light from a straight path. SEE: *dioptr.*

refractivity (rē'frāk-tiv'ī-tē) The quality of being refractive; the ability to refract.

refractometer (rē-frāk-tōm'ēt-ēr) [r' + Gr. *metron*, measure] A device for measuring refractive power, as of the eye.

refractometry (rē'frāk-tōm'ē-trē) Measurement of the refractive power of lenses.

refractory (rē-frāk'tō-rē) [L. *refractorius*] **1.** Obstinate; stubborn. **2.** Resistant to ordinary treatment. **3.** Resistant to stimulation; used of muscle or nerve.

refractory cytopenia with multilineage dysplasia ABBR: RCMD. In the World Health Organization classification of myelodysplastic syndromes, a disorder in which two or more blood cell lines form aberrantly. For example, the peripheral blood shows evidence of anemia and leukopenia, or of anemia, leukopenia, and thrombocytopenia; and the bone marrow shows abnormal precursors in two or more mature blood cell precursors.

refractory period, absolute The brief period during depolarization of a neuron or muscle fiber when the cell does not respond to any stimulus, no matter how strong.

refractory period, relative The brief period during repolarization of a neuron or muscle fiber when excitability is de-

pressed. If stimulated, the cell may respond, but a stronger than usual stimulus is required.

refracture (rē-frāk'chūr) [L. *refractus*, broken off] Rebreaking of a fracture united in a malaligned position.

refrangible (rē-frān'jī-bl) [L. *re*, again, + ME. *frangible*, breakable] Capable of being refracted.

refresh (rī-frēsh') [O.Fr. *refreschir*, to renew] **1.** To restore strength; to relieve from fatigue; to renew; to revive. **2.** To scrape epithelial covering from two opposing surfaces of a wound to facilitate healing and joining together.

refrigerant (rī-frīj'ēr-ānt) [L. *refrigerans*, making cold] **1.** Cooling. **2.** An agent that produces coolness or reduces fever. SYN: *algefacient*.

refrigeration (rī-frīj'ēr-ā'shūn) [L. *refrigeratio*, make cold] Cooling; reduction of heat.

refrigent (rē-frīn'jēnt) Refractive.

refuge A shelter; a safe place for persons fleeing danger or distress.

refugee A person fleeing danger or distress, esp. in times of war or political persecution.

refusal of therapy **1.** Denial of treatment to a patient. **2.** Unwillingness of a patient to participate in treatment.

refusal to treat A deliberate, conscious decision to withhold health care services from a patient.

refuse (rēf'yooos) Anything discarded; garbage, trash, waste.

regainer (rē-gān'ēr) **1.** A device that ameliorates or restores something that was lost. **2.** A device that applies pressure between teeth on either side of the space left by a missing tooth. It is used to move teeth away from the edentulous space.

regeneration (rē-jēn'ēr-ā'shūn) [L. *re*, again, + *generare*, to produce] The reconstitution of an injured or missing part of a cell, tissue, organ, or body. Opposite of degeneration.

guided tissue r. ABBR: GTR. Techniques used in periodontics to reconstruct lost or diseased periodontal tissue in people with gingival recession. GTR often involves the use of absorbable barrier membranes or collagen.

regimen (rēj'ī-mēn) [L., rule] A systematic plan of activities, treatments, diet, sleep, and exercise designed to improve, maintain, or restore health.

regio (rē'jē-ō) [L.] Region.

region (rē'jūn) [L. *regio*, boundary] A portion of the body with natural or arbitrary boundaries. SYN: *regio*. **regional** (-āl), *adj.*

chest r. The anterior, posterior, and lateral chest areas. Anterior divisions (right and left) are the clavicular, infraclavicular, and supraclavicular, the mammary and inframammary, and the upper and lower sternal. Posterior di-

visions (right and left) are the scapular, infrascapular, interscapular, and suprascapular. Lateral divisions are the axillary and infra-axillary.

region of interest In radiology the object of a study or a treatment designed to affect a limited part of the body.

register [LL. *regesta*, list] **1.** An official recording of vital statistics, including date and place of birth, marriage(s), and death. Recording these data is a legal requirement in the U.S. **2.** The compass or range of a voice. **3.** A series of tones of like quality or character, as low or high register, chest or head register.

registered physical therapist ABBR: RPT. Physical therapist.

registered pulmonary function technologist An individual who has completed the pulmonary function registry examination administered by the National Board for Respiratory Care.

registered record administrator ABBR: RRA. A person registered by the American Medical Records Association, who plans, supervises, designs, and develops medical records systems for health care facilities.

registrant (rēj'is-trānt) [L. *registrans*, registering] A nurse named on the books of a registry as being "on call" or available to be called for duty.

registrar (rēj'is-trār) [O.Fr. *registreur*] The official manager of a registry.

registration [L. *registratio*] The recording of information such as births or deaths; the recording of those who are registered or licensed to practice within a state.

registry (rēj'is-trē) [LL. *regesta*, list] **1.** An office or book containing a list of nurses ready for duty; a placement bureau for nurses. **2.** Any database that holds the names of patients who share common characteristics, usually diseases.

cancer r. A list of patients diagnosed with cancer, kept to facilitate patient follow-up, as well as research about cancer causes, therapies, and outcomes.

regression (rī-grēsh'ūn) [L. *regressio*, go back] **1.** A turning back or return to a former state. **2.** A return of symptoms. **3.** Retrogression. **4.** In psychology, an abnormal return to an earlier reaction, characterized by a mental state and behavior inappropriate to the situation. Regression may occur as a result of frustration or in states of fatigue, dreams, hypnosis, intoxication, illness, and certain psychoses (e.g., schizophrenia). **5.** In statistics, a procedure used to predict one variable on the basis of data about one or more other variables. **regressive** (-grēs'iv), *adj.*

regular (rēg'ū-lār) [L. *regula*, rule] **1.** Conforming to a rule or custom. **2.** Methodical, steady in course, as a pulse. SEE: *normal*; *typical*.

regulation **1.** The condition of being controlled or directed. **2.** A rule that directs or controls kinds of behavior. **3.** The ability of an organism (e.g., a developing embryo) to develop normally despite experimental modifications. **regulative**, *adj.*

regulation development In embryology, the condition in which a single blastomere or a portion of an embryo can give rise to a whole embryo; the opposite of mosaic development.

regulator **1.** A device for adjusting or controlling the rate of flow or administration of gases (e.g., oxygen) or fluids (including blood). **2.** SEE: under *gene*.

regulatory T cell ABBR: Treg. Suppressor T cells.

regurgitant (rē-gūr'jī-tānt) [L. *re*, again, + *gurgitare*, to flood] Throwing back or flowing in a direction opposite to normal.

regurgitation (rē-gūr'jī-tā'shūn) A backward flowing, as in the return of solids or fluids to the mouth from the stomach or the backflow of blood through a defective heart valve.

aortic r. Aortic insufficiency.

duodenal r. A return flow of chyme from the duodenum to the stomach.

functional r. Regurgitation caused not by valvular disorder but by dilatation of ventricles, the great vessels, or valve rings.



mitral r. ABBR: MR. A backflow of blood from the left ventricle into the left atrium, resulting from imperfect closure of the mitral (bicuspid) valve. It may result from congenital anomalies of the valve, connective tissue disorders (e.g., Marfan's disease), infective endocarditis, ischemic damage to the valve or its supporting chordae, rheumatic valvulitis, or other degenerative conditions.

Congestive heart failure or atrial fibrillation may be complications of severe MR. The degree of regurgitation can be judged by echocardiography or angiography. Valve reconstruction or valve replacement surgeries can be used to repair the defect.

pulmonic r. A backflow of blood from the pulmonary artery into the right ventricle.

tricuspid r. A backflow of blood from the right ventricle into the right atrium.

valvular r. A backflow of blood through a valve, esp. a heart valve, that is not completely closed as it would normally be.

REHABDATA (rē'hāb'dāt'ā) A computerized bibliographical database of rehabilitation information supplied by the National Rehabilitation Information Center (NARIC). Topics included in the REHABDATA database include vocational rehabilitation, the cost of rehabilitation and community-based services; medical rehabilitation and policy issues,

including health care policy and costs as they relate to people with disabilities; and community integration. For information, contact NARIC, 4200 Forbes Blvd., Suite 202, Lanham, MD 20706; (800) 346-2742; (301) 459-5984 (TTY); www.naric.com.

rehabilitation (rē'hā-bīl'i-tā'shūn) [L. *rehabilitare*] **1.** The processes of treatment and education that help disabled individuals to attain maximum function, a sense of well-being, and a personally satisfying level of independence. Rehabilitation may be necessitated by any disease or injury that causes mental or physical impairment serious enough to result in functional limitation or disability. The postmyocardial infarction patient, the posttrauma patient, patients with psychological illnesses, and the postsurgical patient need and can benefit from rehabilitation efforts. The combined efforts of the individual, family, friends, medical, nursing, allied health personnel, and community resources are essential to making rehabilitation possible. SYN: *care*, *restorative*. **2.** In dentistry, the methods used to restore dentition to its optimal functional condition. It may involve restoration of teeth by fillings, crowns, or bridgework; adjustment of occlusal surfaces by selective grinding; orthodontic realignment of teeth; or surgical correction of diseased or malaligned parts. It may be done to improve chewing, to enhance the aesthetic appearance of the face and teeth, to enhance speech, or to preserve the dentition and supporting tissues. Also called *occlusorehabilitation* and *mouth*, or *oral*, *rehabilitation*.

aquatic r. Aquatic therapy.

cardiac r. A structured, interdisciplinary program of progressive exercise, psychological support, nutritional counseling, and patient education to enable attainment of maximum functional capacity by patients who have experienced a myocardial infarction.

cognitive r. Cognitive retraining.

driver r. Specialized assistance provided to individuals who need to increase their skills and abilities to enable greater safety or independence in driving because of physical, cognitive, or perceptual deficits. Services typically include clinical assessment, assistance with seating and positioning, simulated driving practice, on-road evaluation and training, passenger car evaluation, and recommendations for vehicle modifications.

neurological r. A supervised program of formal training to restore function to patients who have neurodegenerative diseases, spinal cord injuries, strokes, or traumatic brain injury.

pool r. Aquatic therapy.

pulmonary r. A structured program

of activity, progressive breathing and conditioning exercises, and patient education designed to return patients with pulmonary disease to maximum function.

rehabilitée (rē'hă-bīl'ī-tē) A person who has been rehabilitated.

rehearse To practice or repeat an action, emotion, operation, phrase, or thought to attain mastery of it.

rehydration (rē'hī-dră'shūn) [" + Gr. *hydor*, water] The restoration of fluid volume to a dehydrated person, either orally or parenterally. SEE: *oral rehydration therapy*.

Reichert's cartilage (rī'kërts) [Karl Bogislau Reichert, Ger. anatomist, 1811–1883] The second branchial arch of the embryo, which gives rise to the stapes, styloid process, stylohyoid ligament, and lesser cornua of the hyoid bone.

Reid's base line (rēdz) [Robert William Reid, Scottish anatomist, 1851–1939] The line extending from the lower edge of the orbit to the center of the aperture of the external auditory canal and backward to the center of the occipital bone.

Reiki (rī'kē) A system of healing originating in Japanese metaphysics in which practitioners direct the *ch'i* to achieve natural healing.

Reil's island (rīlz) Island of Reil.

reimbursement (rē-īm-bŭrs'mēnt) Payment for health care services.

reimplantation (rē'īm-plān-tă'shūn) [L. *re*, again, + *in*, into, + *plantare*, to set] Replantation (2).

reimportation (rē'īm-pawr-tă'shūn) The purchase of drugs manufactured in their source nation by another nation to which the drugs are exported. At times it yields significant price advantages to the purchaser. Drugs manufactured in the U.S. are sometimes marketed abroad to other nations at low cost. The purchase of these drugs by American consumers from foreign pharmacies may yield cost savings accompanied by the risk that they may prove to be counterfeit or contaminated versions of the originals.

reincarnation (rē-īn-kăr-nă'shūn) [" + incarnation] **1.** The belief held by members of some religious groups that a person returns in physical or spiritual form to live again after death. **2.** A renewal of interest in an old or previously discarded idea. **3.** A psychological or spiritual reawakening of someone who had previously been engaged in a wholly different set of activities or interests.

reinfarction (rē'īn-fărk'shīn) [" + "] Repeat infarction (esp. myocardial infarction) after an initial infarct.

reinfection (rē'īn-fēk'shūn) [" + ME. *infecten*, infect] A second infection by the same organism. SEE: *superinfection*.

reinforcement (rē'īn-fors'mēnt) [" +

inforce, enforce] **1.** Strengthening; an augmentation of force, e.g. of a reflex. **2.** In educational theory, a reward given for an appropriate or desired response.

reinforcer (rē'īn-fors'ēr) Something that produces reinforcement.

reinfusion (rē'īn-fŭ'zhŭn) [" + *infusio*, to pour in] The reinjection of blood serum or cerebrospinal fluid.

reinnervation (rē'īn-ēr-vă'shŭn) [" + *in*, into, + *nervus*, nerve] **1.** Anastomosis of a paralyzed part with a living nerve. **2.** Grafting of a fresh nerve for restoration of function in a paralyzed muscle.

reinoculation (rē'īn-ök'ŭ-lă'shŭn) [" + *in*, into, + *oculus*, bud] A second inoculation with the same organism or its antigens. SEE: *reinfection*.

reintegration In psychology, the resumption of normal behavior and mental functioning following disintegration of personality in mental illness.

reinverson (rē'īn-vēr'shŭn) [" + *in*, into, + *versio*, turning] Correction of an inverted organ.

Reissner's membrane (rīs'nērzh) [Ernst Reissner, Ger. anatomist, 1824–1878] A delicate membrane separating the cochlear canal from the scala vestibuli.

Reiter's syndrome (rī'térzh) [Hans Conrad Julius Reiter, Ger. physician, 1881–1969] ABBR: RS. A syndrome consisting of urethritis, which usually occurs first; then arthritis and conjunctivitis. It occurs mainly in young men. When an organism is implicated, it is most frequently *Chlamydia*. The disease recurs frequently, and can produce debilitating arthritis and skin lesions. The prognosis is generally good; however, recurrences are common.

TREATMENT: There is no specific therapy. Tetracyclines or erythromycins are used for urethritis. The sexual partner should be treated if RS was transmitted sexually. Arthritis and conjunctivitis are treated symptomatically.

rejection [L. *rejicere*, to throw back]

1. Refusal to accept or to show affection. In animals, for example, the young may be ignored or driven away by their mother. **2.** In tissue and organ transplantation, destruction of transplanted material at the cellular level by the host's immune mechanism. Transplant rejection is controlled primarily by T cells, but macrophages and B lymphocytes are also involved. Maintenance immunosuppressive therapy with cyclosporine, mycophenolate, and tacrolimus, which inhibit or block T-cell activity, has markedly lowered the risk of transplant organ rejection. Monoclonal and polyclonal antibody therapies are saved for acute rejection.

acute r. The early destruction of grafted or transplanted material, usually beginning a week after implanta-

tion. Acute rejection is identified clinically by decreased function of the transplanted organ. High-dose corticosteroids are the first treatment of acute rejection; they are typically quite effective. Antilymphocyte globulin (ALG), the monoclonal antibody OKT 3, mycophenolate mofetil, and tacrolimus, among other agents, are used when corticosteroids are not effective. SEE: *suppressive immunotherapy; macrophage processing; major histocompatibility complex; T cell.*

chronic r. Late and ongoing destruction of grafted or transplanted tissue. It most commonly involves vascular changes and interstitial fibrosis. Immunosuppressive therapy with tacrolimus and cyclosporine has significantly reduced this T-cell-mediated rejection process.

hyperacute r. Immediate, intense, and irreversible destruction of grafted material due to preformed antibodies. These antibodies are most common in patients who have rejected a previously transplanted organ or who have received multiple blood transfusions. The risk of hyperacute rejection has been nearly eliminated by testing the recipient's blood for antibodies against donor lymphocytes before surgery.

parental r. The refusal of a parent to accept or show affection for a son or daughter.

rejuvenation (rĭ-jū"vē-nā'shūn) [L. *re*, again, + *juvenis*, young] A return to a youthful condition or to the normal.

rejuvenescence (rĭ-jū"vē-nēs'ēns) [" + *juvenescere*, to become young] The renewal of youth; the return to an earlier stage of existence.

relapse (rē-lāps') [L. *relapsus*] The recurrence of a disease or symptoms after apparent recovery.

relapsing (rē'lāp-sēng) Recurring after apparent recovery.

related identical donor, related HLA-identical donor ABBR: RID. A family member who donates an organ or tissue (e.g., a kidney or bone marrow stem cells) to another family member who shares perfectly matched human leukocyte antigens. Organ transplantations from RIDs have higher success rates than transplants obtained from mismatched related donors (MMRDs) or from matched unrelated donors (MUDs).

relation (rĭ-lā'shūn) [L. *relatio*, a carrying back] The condition, connection, or state of one thing compared with another.

jaw r. Any relation of the position of the maxilla to that of the mandible.

occlusal jaw r. The relation of the mandibular teeth to the maxillary teeth when the teeth are in contact.

unstrained jaw r. The position of the

jaw during normal tonus of all the jaw muscles.

relational disorder Marked impairments in communication or other aspects of interpersonal interactions among family members, spouses, or co-workers.

relative biological effect The effectiveness of types of radiation compared with that of x-rays or gamma rays.

relative dose response ABBR: RDR.

1. A progressively increasing reaction of a cell, tissue, or organism to a stimulus.

2. A test used to estimate liver stores of vitamin A in order to identify those with marginal vitamin A deficiency.

relax [L. *relaxare*, to loosen] To decrease tension or intensity; to be rid of strain, anxiety, and nervousness.

relaxant (rĭ-lāk'sānt) 1. Pert. to or producing relaxation. 2. A drug that reduces tension. 3. A laxative.

muscle r. A drug or therapeutic treatment that specifically relieves muscular tension.

neuromuscular r. A drug (e.g., succinylcholine) that prevents transmission of stimuli to muscle tissue, esp. striated muscle.

smooth muscle r. A drug that reduces the tension of smooth muscles such as those in the intestinal tract or bronchi.

relaxation (rē-lāk-sā'shūn) 1. A lessening of tension or activity in a part. 2. A phase or period in a single muscle twitch following contraction in which tension decreases, fibers lengthen, and the muscle returns to a resting position. 3. In magnetic resonance imaging, the return of an excited atom to alignment with the applied magnetic field.

general r. Relaxation of the entire body.

local r. Relaxation limited to a particular muscle group or to a certain part.

pelvic r. Diminished support of the pelvic tissues and organs, esp. in women; usually due to childbirth or aging. The organs affected and the pathological conditions associated with this condition are the bladder (cystocele), rectum (rectocele), uterus (uterine prolapse), small intestine (enterocele), and urethra (protrusion of the urethra into the vagina). Symptoms are related to the organ(s) affected. Treatment is determined by the severity of the relaxation. Medical treatments, including pelvic muscle exercises, pessaries, prompted voiding regimens, and estrogen therapy, may be helpful to patients; however, many patients require surgery.

relaxation response The physiological responses (slower heart rate, decreased blood pressure, lowered cutaneous resistance) produced by sitting quietly with the eyes closed and breathing slowly and methodically. A brief word or

phrase (in Hindu cultures, this is called a mantra) may be repeated to oneself to help focus the mind or reduce stray thoughts. This approach to meditation or stress reduction may be undertaken once or twice a day, usually for 10 to 30 min. The relaxation response helps reduce anxiety, high blood pressure, pain, postmenopausal symptoms, and medication use.

relaxin (rĭ-lāk'sĭn) A polypeptide hormone related to insulin in women secreted in the corpus luteum during pregnancy and by the prostate in men. It has many effects on breast, uterine, cardiac, and other tissues.

relaxometry (rĕ-lāk-sŏm'ĕ-trĕ) [" + "] In magnetic resonance imaging, the measurement of the time it takes for excited nuclei to return to their basal state.

relearning Acquiring a skill or ability that had been previously present but was lost or removed as a result of physical damage to the muscles or brain.

release **1.** A document that, if signed by the patient or the patient's legal representative, permits the treating health care provider to perform certain procedures (e.g., surgery, anesthesia, blood transfusion, removal of tissues or fluids for analysis). In addition to being signed by the patient, the release should also be signed by a witness. Most releases have a notation indicating the applicable time of the release. **2.** To discharge. **3.** To remove restraints.

myofascial r. ABBR: MFR. The manipulation of soft tissue to facilitate improved posture and range of motion and to decrease pain. SEE: *soft-tissue mobilization*.

sustained r. The delivery of a drug from a tablet or other reservoir over many hours or days (instead of minutes or hours), to provide a durable therapeutic effect.

reliability **1.** Dependability, accuracy or honesty. **2.** In statistics, the ability of a measuring instrument to produce reproducible results.

interrater r. The extent to which two independent parties, each using the same tool or examining the same data, arrive at matching conclusions. It is a measure of the agreement, consensus, or consistency of independent parties in using a common rating scale or instrument.

intrarater r. The extent to which a single individual, reusing the same rating instrument, consistently produces the same results while examining a single set of data.

test-retest r. The ability of a test to produce consistent results when it is used multiple times under nearly equivalent conditions. A test whose results

fluctuate minimally when it is reused is said to have good test-retest reliability.

relief (rĭ-lĕf') [ME.] **1.** The alleviation or removal of a distressing or painful symptom. **2.** Assistance given to the poor, homeless, or those whose lives have been changed by mass casualty incidents or other catastrophes. Relief may be provided in the form of food, clothing, shelter, loans, or cash, as well as other goods and services.

religiosity, impaired Impaired ability to exercise reliance on beliefs and/or participate in rituals of a particular faith tradition. SEE: *Nursing Diagnoses Appendix*.

religiosity, readiness for enhanced Ability to increase reliance on religious beliefs and/or participate in rituals of a particular faith tradition. SEE: *Nursing Diagnoses Appendix*.

religiosity, risk for impaired At risk for an impaired ability to exercise reliance on religious beliefs and/or participate in rituals of a particular faith tradition. SEE: *Nursing Diagnoses Appendix*.

reline (rĕ-lĭn') To replace or resurface the lining of a denture.

relinquishment, infant (rĕ-lĭnk'wĭsh-mĕnt) The psychological process experienced by a birth mother during adoption of her child by others.

relocation stress syndrome Physiological and/or psychosocial disturbances as a result of transfer from one environment to another. SEE: *Nursing Diagnoses Appendix*.

relocation test A clinical test used to identify the presence of anterior glenohumeral instability. The patient is placed supine, the glenohumeral joint abducted to 90 degrees with the elbow flexed to 90 degrees. While maintaining a posteriorly directed pressure on the humeral head, the examiner externally rotates the humerus. Used only following a positive apprehension test for glenohumeral instability, a positive relocation test is marked by decreased apprehension and pain, and increased range of motion relative to the apprehension test.

REM (rĕm) *rapid eye movement*.

rem (rĕm) *roentgen equivalent (in) man*. **Remak's sign** [Ernest Julius Remak, Ger. neurologist, 1849–1911] A sign or symptom pert. to perception of stimuli. It can be one of two types: a single stimulus may be perceived as if it were several stimuli applied in separate locations (polyesthesia), or there may be a delay in perception of stimuli. Both types are seen in *tabes dorsalis*.

REM behavior disorder, rapid eye movement sleep disorder ABBR: RBD. A relatively rare sleep disorder in which people act out their dreams during REM sleep, a phase of sleep during which most people are normally paralyzed. It

is found most often in men over the age of 60. Sudden and potentially dangerous limb movements, grunting vocalizations, and disruption of the normal continuity of sleep are common findings.

remedial (rĭ-mĕ'dĕ-ăl) [L. *remedialis*] Curative; intended as a remedy.

remedy (rĕm'ĕd-ĕ) [L. *remedium*, medicine] **1.** To cure or relieve a disease. **2.** Anything that relieves or cures a disease.

herbal r. Plant leaves, roots, seeds, or extracts used to prevent or treat human ailments.



Herbal remedies of unknown potency should not be taken during pregnancy, while nursing, or in place of other therapies if such therapies are known to be more effective. Patients with complex illnesses should consult licensed health care professionals before initiating, and while undertaking, herbal therapies.

home r. A traditional therapy often utilizing natural products, nutritional supplements, or physical measures. Its effectiveness may be supported by familial, local, or culturally accepted stories or rituals. Also called a folk remedy.

local r. An agent used to relieve a local condition such as a sore.

systemic r. An agent used to relieve or cure a disease affecting the entire organism.

remineralization (rĕ-mĭn'ĕr-ăl-ĭ-ză'shŭn) Therapeutic replacement of the mineral content of the body after it has been disrupted by disease or improper diet. Remineralization of bone, e.g., is accomplished by adding mineral ions to hydroxyapatite in the bony matrix.

reminiscence therapy (rĕm-in-'is'ĕns) A form of supportive psychotherapy for elderly patients experiencing depression or loss. Reminiscence therapy assists patients to review and highlight the meaningful components of their past. This is thought to increase self-esteem and life satisfaction. It can be conducted in groups or individually.

remission (rĭ-mĭsh'ŭn) [L. *remissio*, remit] **1.** A lessening in severity or an abatement of symptoms. **2.** The period during which symptoms abate. **3.** The period when no evidence of underlying disease exists.

remittance (rĕ-mĭt'ĕns) A temporary abatement of symptoms.

remittent (rĕ-mĭt'ĕnt) [L. *remittere*, to send back] **1.** Alternately abating and returning at certain intervals. SEE: *fever*. **2.** Episodic; periodic.

remnant Something that remains or is left over.

remnant removal disease A disorder of lipid metabolism in which the uptake of lipoproteins by the liver is impaired.

The condition increases levels of both cholesterol and triglycerides in the blood, resulting in an increased risk of both coronary and peripheral vascular disease.

remodeling 1. The reshaping or reconstruction of a part of the body, esp. to repair a part that has been injured (e.g., the walls of the heart after myocardial infarction or the airways in patients with asthma). **2.** Bone change or growth that is the net effect of all appositional growth and bone resorption and that continues throughout life to adapt individual bones to the changing forces of growth, muscular activity, gravity, or mechanical pressures.

bone r. The process in which bone is resorbed and new bone formed at the same site. This process keeps the calcium content of bone stable. Bone is a dynamic tissue: it responds continuously to mechanical stress, nutritional status, hormones, and concentrations of circulating calcium.

temporomandibular joint r. The slow changes in the articular surfaces of the temporomandibular joint as it adapts to changing occlusal forces, resulting in shape changes or irregularities of the condyle or articular eminence.

REM sleep behavior disorder A sleep disorder, most often identified in older men, in which there is frequent and sometimes violent motor activity during REM sleep, specifically during dreams. The condition often precedes the development of dementia with Lewy bodies, or other neurodegenerative disorders.

ren (rĕn) *pl.* **renes** [L.] The kidney.

renal (rĕ'năl) [LL. *renalis*, kidney] **1.** Pert. to the kidney. SYN: *nephric*. SEE: *kidney* for illus. **2.** Shaped like a kidney.

renal clearance test One of several kidney function tests based on the kidney's ability to eliminate a given substance in a standard time. Urea, phenolsulfonphthalein (PSP), and other substances are employed.

renal failure, acute ABBR: ARF. A sudden and significant decrease in the kidneys' filtration capabilities and, within hours or days, an increase in the levels of creatinine and other waste products in the systemic circulation. ARF occurs in approximately 5% of all patients admitted to hospitals. It often results from accidents (e.g., severe burns and trauma) that cause large losses in body fluid. A number of drugs can cause ARF. Hospital procedures can also cause ARF, and ARF happens to >25% of those surgical patients who require cardiopulmonary bypass and to almost 30% of patients in intensive care units. When ARF is the result of a decrease in blood volume without kidney damage,

the condition can often be quickly and completely reversed. When the kidneys have been injured, however, they must heal if the ARF is to resolve. SYN: *acute kidney failure*. SEE: *dialysis*; table; *Nursing Diagnoses Appendix*.

ETIOLOGY: *Prerenal:* Most ARF is caused by low perfusion of the kidneys due to problems that do not at first directly damage the kidneys: hypovolemia (e.g., burns, cirrhosis with portal hypertension and ascites, dehydration, diarrhea, excess diuresis hemorrhage, vomiting), low cardiac output (e.g., arrhythmias, cardiac tamponade, massive pulmonary embolus, mechanical ventilation, myocardial diseases, pulmonary hypertension), systemic vasodilation (e.g., anaphylaxis, anesthesia, antihypertensives, sepsis), or bilateral renal vascular blockage (e.g., emboli, stenosis, thrombi).

Intrarenal: A less common ARF is caused from direct damage to the kidneys. Ninety percent of these cases are caused either by ischemia (from prolonged prerenal ARF or from diseases of blood vessel walls, glomerulonephritis, hyperviscosity syndromes, malignant hypertension, thrombotic microangiopathies, or vasculitis) or by nephrotoxins.

Postrenal: The least common ARF (less than 5% of cases) is caused by urinary obstruction that leads to increased back-pressure in the kidney tubules, which, in turn, decreases the GFR. Urinary obstruction most often occurs at the bladder neck (anticholinergic drug therapy, neurogenic bladder, prostatic disease).

TREATMENT: Acute renal failure caused by urinary outlet obstruction (postrenal failure) often completely resolves when urinary flow is restored (i.e., after a urinary catheter is placed or a prostatectomy performed). Renal failure caused by prerenal conditions (i.e., from reduced blood flow to the kidneys [e.g., in dehydration or shock]) sometimes improves with fluid and pressor support but may require other therapies, including dialysis. The resolution of ARF caused by intrarenal diseases (e.g., acute tubular necrosis) and kidney toxins depends on the underlying

cause and the duration of the exposure. For example, immunosuppressant drugs may reverse ARF due to glomerulonephritis or renal vasculitis, whereas forced diuresis is the treatment for those whose disease is caused by rhabdomyolysis.

PATIENT CARE: Patients with ARF may stop making urine, have a sudden rise in BUN and creatinine levels, and develop metabolic acidosis and electrolyte imbalances (esp. hyperkalemia). Other complications may follow as uremia develops (e.g., altered mental status, anorexia, arrhythmias, and fluid overload). The specific cause is identified and removed if possible. The nurse instructs the patient regarding dietary and fluid restrictions and implements these restrictions, promotes infection prevention, and advises the patient about activity restrictions due to metabolic alterations.

Neurological status is assessed, and safety measures are instituted. Intake and output and daily weights (measures of fluid status) are monitored. Daily blood tests determine acid-base and electrolyte balance. Hyperkalemia is treated with dialysis, intravenous hypertonic glucose solutions, insulin infusion, sodium bicarbonate, or potassium exchange resins administered orally or by enema, depending on its severity. The nurse should assess the patient for edema in the legs and feet, hands and sacrum, and around the eyes. It is also usual to record urine color and clarity. The patient is assessed for gastrointestinal (GI) and cutaneous bleeding and anemia; blood components are replaced or erythropoietin therapy is administered as prescribed. Blood pressure, pulse, respiratory rate, and heart and lung sounds are regularly assessed (e.g., for evidence of pericarditis or fluid overload). Cardiac monitoring is used to detect changes in cardiac conduction related to hyperkalemia. Anorexia, nausea, and vomiting result from uremia and lead to poor nutrition with loss of body muscle and mass. Nutritional support is critical to combat malnutrition, infection, and to limit electrolyte imbalances. Protein calorie malnutrition is prevalent in ARF. Renal failure

Causes of Acute Renal Failure

Where	What's Responsible	Examples
Prerenal	Inadequate blood flow to the kidney	Severe dehydration; prolonged hypotension; renal ischemia or emboli; septic or cardiogenic shock
Renal	Injury to kidney glomeruli or tubules	Glomerulonephritis; toxic injury to the kidneys (e.g., by drugs or poisons)
Postrenal	Obstruction to urinary outflow	Prostatic hyperplasia; bladder outlet obstruction

diet requires careful management of total calories, protein, electrolytes, minerals, vitamins, and fluid volume. It should provide enough calories (30–35 kcal/kg) through fats and carbohydrates to limit muscle breakdown. At the same time, protein intake should be restricted to about 1.2 to 1.3 g/kg to minimize azotemia. Sodium intake should be limited to 2 to 4 g a day to limit water retention and hypertension. Potassium intake is restricted because, in renal failure, potassium is not excreted by the kidneys, and hyperkalemia may produce muscle weakness and cardiac rhythm disturbances. Oral intake of phosphorus must also be limited as prescribed; alternately, phosphorus-binding medications are taken with meals to prevent hyperphosphatemia. Oral calcium supplements are often used for this purpose. Vitamins B, C, and folate supplements are often given. Fluids are usually limited to the amount of the patient's urine output plus 500 to 700 ml for metabolic needs. Oral hygiene and misting provide relief for dry mucous membranes and help to prevent inflammation and infection. All stools are tested to monitor for GI bleeding. Aseptic technique is used in caring for this patient, who is extremely susceptible to infection. Other therapies include incentive spirometry, coughing, passive range-of-motion exercises, antiembolism stockings or pneumatic leg dressings, and ambulation. Acute renal failure often results in a protracted illness. Many patients with ARF requiring intensive care will die. As a result, the patient and family require continuous emotional support, and education about the treatment regimen (including dialysis if it is employed), nutritional restrictions, and the use of medications. Because some patients will eventually need to have arteriovenous fistula constructed for dialysis, intravenous access should be limited to the dorsal aspects of the hands whenever possible.

If ARF is not reversed but progresses to chronic (end-stage) renal failure, follow-up care with a nephrologist is arranged, and evaluation and teaching are provided for maintenance dialysis and/or possible kidney transplant. Referral is made for vocational or other counseling as needed.

renal papillary necrosis Destruction of the papillae of the kidney, usually as a result of pyelonephritis, diabetes mellitus, sickle cell disease, urinary obstruction, or the toxic effects of nonsteroidal anti-inflammatory drugs. If the necrotic tissue sloughs into the ureters, it may cause renal colic similar to the pain caused by a kidney stone.

renal scanning A scintigraphic method of determining renal function, size, and

shape. A radioactive substance that concentrates in the kidney is given intravenously. The radiation emitted from the substance as it accumulates in the kidneys is recorded on a suitable photographic film.

renal tubular acidosis ABBR: RTA. A group of non-anion gap metabolic acidoses marked by either loss of bicarbonate or failure to excrete hydrogen ions in the urine. Type I (distal RTA) is marked by low serum potassium, elevated serum chloride, a urinary pH greater than 5.5, nephrocalcinosis, and nephrolithiasis. Alkalis such as sodium bicarbonate or Shohl's solution are effective treatments.

Type II (proximal RTA) is caused by impaired reabsorption of bicarbonate by the proximal tubules. Its hallmarks include preserved glomerular filtration, hypokalemia, excessive bicarbonate excretion in the urine during bicarbonate loading, and a urinary pH less than 5.5. Osteopenia and osteomalacia are common clinical consequences. Treatments may include volume restriction and potassium and bicarbonate supplementation.

Type IV (hyperkalemia RTA) usually is associated with hyporeninemic hypoaldosteronism due to diabetic nephropathy, nephrosclerosis associated with hypertension, or chronic nephropathy. Affected patients have high serum potassium levels and low urine ammonia excretion. They do not have renal calculi. The hyperkalemia may be managed by administration of mineralocorticoids in combination with furosemide. Glomerular filtration is reduced in this disorder.

renaturation (rē-nā'chēr-ā'shūn) [*r* + (*de*)*naturation*] The reassembly of a molecule or of a molecule's shape, e.g., the rejoining of unraveled complementary strands of DNA into a double helix.

rendering, food The conversion of the waste products of animal butchery into feeds, bone meal, tallows, oils, and fertilizer. Consumption of rendered feed products sometimes results in animal and human infections, such as bovine spongiform encephalopathy (mad cow disease).

Rendu-Osler-Weber syndrome (rändyū'ōs'lēr-wē'bēr) Hereditary hemorrhagic telangiectasia.

renin (rēn'in) An enzyme produced by the kidney that splits angiotensinogen to form angiotensin I, which is then transformed to angiotensin II, which stimulates vasoconstriction and secretion of aldosterone. The blood renin level is elevated in some forms of hypertension.

renin substrate Angiotensinogen.

renipuncture (rēn'ī-pūnk'chūr) [*r* +

punctura, a piercing] Surgical puncture of the renal capsule.

rennet (rĕn'ĕt) [MĒ.] **1.** The lining of the fourth stomach of a calf. **2.** A fluid containing rennin (chymosin), a coagulating enzyme, used for making junket or cheese.

rennin (rĕn'in) Chymosin.

renninogen (rĕn-in'ō-jĕn) [MĒ. *rennet*, *rennet*, + Gr. *gennan*, to produce] The antecedent or zymogen from which rennin is formed; the inactive form of rennin.

reno-, ren- Combining forms meaning *kidney*. SEE: *nephro-*.

renocutaneous (rĕ'nō-kū-tā'nĕ-ūs) [r' + *cutis*, skin] Pert. to the kidneys and skin.

renogastric (rĕ'nō-gās'trĭk) [L. *ren*, kidney, + Gr. *gaster*, belly] Pert. to the kidneys and stomach.

renogram (rĕ'nō-grām) [r' + Gr. *gramma*, something written] A record of the rate of removal of an intravenously injected dose of radioactive iodine (¹³¹I) from the blood by the kidneys.

renography (rĕ-nōg'rā-fĕ) [r' + Gr. *graphein*, to write] Radiography of the kidney.

renointestinal (rĕ'nō-in-tĕs'tĭn-āl) [r' + *intestinum*, intestine] Pert. to the kidneys and intestine.

renoprival (rĕ'nō-prĭ'vāl) Pert. to loss of kidney function.

renovascular (rĕ'nō-vās'kū-lār) Pert. to the vascular supply of the kidney.

Renshaw cell (rĕn'shaw) [B. Renshaw, U.S. neurophysiologist, 1911–1948] An interneuron of the spinal cord that inhibits motor neurons.

reocclusion (rĕ'ō-kloo'zhŭn) Closure of a structure (e.g., a blood vessel) that had been previously stenosed and then unclogged by mechanical dilation or the use of medications.

Reoviridae (rĕ'ō-vĭr'ĭ-dĕ) [NL. fr. r(espiratory) + (e)nteric + orphan] A family of double-stranded RNA viruses that includes many members that produce human disease, including the rotaviruses (prominent causes of non-bacterial diarrhea in children) and coltivirus (the cause of Colorado tick fever).

reovirus (rĕ'ō-vĭ'rŭs) [*respiratory enteric orphan virus*] A double-stranded RNA virus found in the respiratory and digestive tracts of apparently healthy persons, and occasionally associated with respiratory, digestive, or neurological diseases.

repackaging The transfer of specified doses of a medication from a manufacturer's bulk container to smaller containers used by patients and/or dispensing institutions.

repair (rĭ-pār') [L. *reparare*, to prepare again] To remedy, replace, or heal, as in a wound or a lost part.

plastic r. Use of plastic surgery to repair tissue.

tooth r. Professional dental care that covers defects in an injured or carious tooth or replaces missing teeth (e.g. with a crown, a bridge, or an implant). This is usually accompanied by improved health of the gingiva and the periodontal ligament.

reparative medicine (rĭ-pār'ĭ-tĭv) [r']

1. Regenerative medicine. **2.** Medicine concerned primarily with repair, such as microsurgery for limb reattachment.

repeat open application test ABBR: ROAT. A skin test used to confirm or rule out the presence of allergic contact dermatitis, used after an initial patch test of a suspected allergen was negative or only weakly positive. The agent suspected of causing the reaction is applied to the skin twice a day for several days, and the skin is examined for eczema. The presence of a rash after ROAT implies the patient is truly allergic to the applied agent.

repellent [L. *repellere*, to drive back] An agent that repels noxious organisms such as insects, ticks, and mites. Repellents may be applied to the surface of the body as a liquid, spray, or dust, or they may be used to impregnate clothing.

insect r. A commercial preparation effective in repelling insects. Many insect repellents contain diethyltoluamide, an effective agent popularly known as DEET.



When applying insect repellent, do not allow it to contact the eyes.

repercolation (rĕ'pĕr-kō-lā'shŭn) [L. *re*, again, + *percolare*, to filter] Repeated percolation using the same materials.

repercussion (rĕ-pĕr-kŭsh'ŭn) [L. *repercussio*, rebound] **1.** A reciprocal action. **2.** An action involved in causing the subsidence of a swelling, tumor, or eruption. **3.** Ballottement.

repercussive (rĕ'pĕr-kŭs'ĭv) **1.** Causing repercussion. **2.** An agent that repels; a repellent.

reperfusion (rĕ-pĕr-fŭ'zhŭn) [L. *re*, back, + *perfundere*, to pour through] **1.** The restoration of blood flow to a part of the body previously deprived of adequate circulation, such as the heart muscle (in myocardial infarction) or the brain (in stroke). This may be accomplished through the use of thrombolytic agents, sometimes called "clot busters" (e.g., streptokinase or tissue plasminogen activator), or mechanical interventions (e.g., balloon angioplasty). The use of these interventions has improved patient outcomes in acute coronary syndromes and patients with stroke who come to medical attention in the first

few hours of their illness. **2.** The re-institution of blood flow to tissues that have been traumatized, esp. by a long period of crushing. SEE: *crush syndrome; rhabdomyolysis.*

r. injury Cellular damage that occurs after blood flow is restored to ischemic tissues.

repetitive motion injury Tissue damage caused by repeated trauma, usually associated with writing, painting, typing, athletic activities, or use of vibrating tools or hand tools. Almost any form of activity that produces repeated trauma to a particular area of soft tissue, including tendons and synovial sheaths, may cause this type of injury. Carpal tunnel syndrome, other nerve compression syndromes, and shin splints are examples of repetitive motion injuries. SYN: *cumulative trauma syndrome; repetitive strain injury; overuse syndrome.*

repetition maximum The greatest amount of weight a person can lift "n" number of times. The amount of weight that can be lifted exactly 10 times is 10 RM. The greatest amount of weight that can be lifted once is 1 RM. Repetition maximum can be used as a comparative measure of strength or as a technique in exercise prescription and strength training. During strength training 8 RM or 10 RM is used to develop strength, power, and muscle mass.

replacement **1.** The restoration of a structure to its original position. **2.** The repletion of lost fluids (e.g., by fluid infusions or blood transfusion).

meal r. A low-calorie snack or drink taken in place of breakfast, lunch, or dinner, often as part of a weight-loss regimen.

orthotopic bladder r. Neobladder.

replacement level fertility **1.** That level of reproduction in which a mother delivers a single daughter. **2.** That level of reproduction in which each mother has enough children to keep the population in which she lives stable.

replacement therapy The therapeutic use of a medicine to substitute for or replenish a natural substance that is either absent or diminished in disease (e.g., insulin in diabetes mellitus or thyroid hormone in hypothyroidism). SYN: *substitution therapy.*

replantation [L. *re*, again, + *planto*, to plant] **1.** Surgical reattachment or reconnection of something removed from the body, esp. the surgical procedure of rejoining a hand, arm, or leg to the body after its accidental detachment. **2.** In dentistry, the replacement of a tooth that has been removed from its socket. SYN: *reimplantation.*

repletion (rē-plē'shūn) [L. *repletio*, a filling up] The condition of being full or satisfied.

replication (rēp'li-kā'shūn) **1.** A dou-

bling back of tissue. **2.** In medical investigations, the repetition of an experiment. **3.** In genetics, the duplication process of genetic material.

replicon (rēp'li-kōn) A segment of DNA that includes the "start" and "stop" nucleotide sequences and can replicate as a unit. Self-replicating units of DNA include, for example, chromosomes, plasmids, and phages.

repolarization (rē'pō'lār-ī-zā'shūn) Restoration of the polarized state at a cell membrane (negative inside in relation to the outside) following depolarization as in muscle or nerve fibers.

report **1.** The account, usually verbal and often tape-recorded, that the nursing staff going off duty gives to the oncoming staff. The purpose is to provide continuity of care despite the change in staff. The information provided is of the utmost importance in caring for critically ill patients. **2.** A record of a drug reaction, illness, medical emergency, or other health-related statistic.

reportable disease Notifiable disease.

reporting (rī-pōrt'ing) Making a record of an observation available for review.

reposition (rē'pō-zish'ūn) [L. *repositio*, a replacing] Restoration of an organ or tissue to its correct or original position.

repositioning (rē'pō-zish'ūn-ing) Replacement of a structure to its original site or a new site.

jaw r. Changing of the position of the mandible in relation to the maxilla by altering the occlusion of the teeth.

muscle r. Surgical placement of a muscle to another attachment point to enhance function.

repositor (rē-pōz'ī-tōr) An instrument for restoring a tissue or an organ to its normal position.

inversion r. An instrument for replacing an inverted uterus.

uterine r. A lever for replacing the uterus when it is out of normal position.

repression (rē-prēsh'ūn) [L. *repressus*, press back] In psychology, the refusal to entertain distressing or painful ideas. In Freudian theory, repression involves the submersion of such thoughts in the unconscious, where they continue to influence the individual. Psychoanalysis seeks to discover and release repressions.

coordinate r. Simultaneous reduction of the enzyme levels of a metabolic pathway.

enzyme r. Interference with enzyme synthesis by a metabolic product.

repressor (rē-prēs'or) [L. *repressus*, press back] Something, esp. an enzyme, that inhibits or interferes with the initiation of protein synthesis by genetic material.

reprocessing Preparation of a dialysis membrane (or other medical device) for reuse with rinses and sterilizing solutions.

reprocessing of endoscopes Preparation of endoscopes for reuse by scrupulous cleaning and sterilization. Antimicrobial agents, such as glutaraldehyde, hydrogen peroxide, orthophthalaldehyde or peracetic acid, may be used.

PATIENT CARE: To protect patients from infections transmitted by reused endoscopes, the following procedure is followed when using glutaraldehyde:

1. The endoscope is manually cleaned externally;
2. Detergent is drawn through the accessory channel;
3. The accessory channel's chamber and valves are carefully brushed;
4. Reusable forceps are sterilized;
5. The endoscope is treated with a 2.4% solution of glutaraldehyde, heated to 25°C for 45 min;
6. The strength of the disinfectant solution is tested daily.

reproducibility (rē-prō-dooos-ī-bīl'ī-tē)

1. The quality of being provable again by repeated experimentation. SEE: *research*. 2. A quality control test of radiographical output for multiple exposures using the same exposure factors. These factors must not vary by more than $\pm 5\%$.

reproduction (rē-prō-dūk'shūn) [L. *re*, again, + *productio*, production]

1. The production of offspring by parents. SEE: *fertilization* for illness; *oogenesis* for illness. 2. The creation of a similar structure or situation; duplication.

asexual r. Reproduction without the union of gametes, as by fission, budding, or spore formation. SYN: *asexual generation*.

cytogenic r. Reproduction by asexual single germ cells.

sexual r. Reproduction by means of the union of germ or sex cells. Usually a male cell (spermatozoon) fuses with a female cell (egg or ovum). SYN: *sexual generation*; *syngamy*.

somatic r. Asexual reproduction by cloning of somatic cells.

reproductive (rē'prō-dūk'tīv) Pert. to or employed in reproduction.

reproductive age In women, those years of life between menarche and menopause, roughly from ages 12 to 49. The term is imprecise, since some women can become pregnant and bear children at younger or older ages. In men, those years between the onset of puberty and loss of fertility.

reproductive system The gonads and their associated structures and ducts. In the female, this system includes the ovaries, uterine tubes (oviducts), uterus, vagina, and vulva. In the male, it includes the testes, efferent ducts, epididymis, ductus deferens, ejaculatory duct, urethra and accessory glands (bulbourethral, prostate, seminal vesicles), and penis. SYN: *genital system*.

SEE: *female genitalia* and *male genitalia* for illness.

reproductive tract infection ABBR: RTI.

An infection of the genital organs as a result of a sexually transmitted disease, a medical error, or overgrowth of the reproductive organs by bacteria or fungi.

reptilase time (rēp'tī-lās") [Fr *reptile*(e)

(the enzyme is a derivative of snake venom) + "] ABBR: RT. A test that is used to identify hypofibrinogenemia or dysfibrinogenemia in plasma.

repulsion (rī-pūl'shūn) [L. *repulsio*, a

thrusting back] 1. The act of driving back. 2. The force exerted by one party on another to cause separation; the opposite of attraction.

request for production of documents and things A discovery technique in which

the plaintiff or defendant requests in a written form that the other party furnish information pertaining to the issues of the lawsuit.

In medical negligence cases, requests can be for: medical records, office records, facility policies and procedures, staffing schedules, personnel records, ambulance run sheets, and autopsy protocols, in addition to other items.

request for proposal ABBR: RFP. Notifi-

cation by a foundation or government agency that funds are available for research projects and that research sponsors are seeking applicants for those funds.

required service A service that must be included in a health program for it to qualify for federal funds.

rescue 1. To free a person from a hazardous situation such as entrapment in an automobile, trench, cave, or burning building, or from the site of a hazardous material spill. 2. To restore an organ to its normal function after an illness or a treatment that has damaged it.

abdominal r. Emergency cesarean delivery of a fetus jeopardized during labor or failed vaginal birth. Indications for surgical intervention include fetal distress associated with dystocia, arrested descent, abruptio placentae, or umbilical cord prolapse.

rescue tool (rēs'kyū) A piece of equipment used by rescuers in emergency medical service to free trapped victims. Rescue tools include a come-a-long, a hand-operated winch used to gain forceful entry during a rescue; cutting tools, used to cut open vehicles and metal to gain access to a person; a hydraulic jack, a hand-operated jack used to lift objects away from a person; pneumatic air bags, used to lift or spread heavy objects; and a power chisel, a pressure-operated device used to cut into sheet metal.

research (rī-sērč', rē'sērč) [O.Fr. *recherche*, research] Scientific study, investigation, or experimentation to es-

ublish facts and analyze their significance.

clinical r. Research based mainly on bedside observation of the patient rather than on laboratory work.

laboratory r. Research done principally in the laboratory.

medical r. Research concerned with any phase of medical science.

outcomes r. An analysis of the value of provided health care services. SEE: *outcome criteria*.

participatory r. A community process in which a group of people takes an active role in defining its own health needs and devising means to meet them, including setting priorities for public health, controlling health-enhancing techniques, and evaluating results.

preembryo r. Research involving the use of the fertilized egg from its unicellular zygote stage until the embryo stage (i.e., to the 14th day following fertilization), for example, for studies of in vitro fertilization, conception, gene therapy, or studies of cancer.

resect (rē-sēkt') [L. *resectus*, cut off] To cut off or cut out a portion of a structure or organ, as to cut off the end of a bone or to remove a segment of the intestine.

resectable (rē-sēk'tā-bl) Able to be removed surgically; usually used in reference to malignant growths.

resection (rē-sēk'shūn) [L. *resectio*, a cutting off] Partial excision of a bone or other structure.

gastric r. Surgical resection of all or a part of the stomach.

transurethral r. Surgical removal of the prostate using an instrument introduced through the urethra.

wedge r. Surgical removal of a triangular-shaped piece of tissue (e.g., from the lung, gastrointestinal tract, uterus, ovary, or other organs). Wedge resection is often used to remove malignant tissue.

window r. Resection of a portion of the nasal septum after reflection of a flap of mucous membrane.

resectoscope (rē-sēk'tō-skōp) [L. *resectus*, cut off, + Gr. *skopein*, to examine] An instrument for resection of the prostate gland through the urethra.

resectoscopy (rē'sēk-tōs'kō-pē) Resection of the prostate through the urethra.

resedation (rē'sē-dā'shūn) [" + "] Succumbing to the effects of a sedative, hypnotic, or anesthetic drug after the drug's action has been reversed with its antagonist. The effect may occur because the half-life of the drug exceeds that of the antagonist (e.g., when the drug re-enters the bloodstream after it is released from storage in fatty tissues).

ter their effects have been temporarily reversed, patients who have received these drugs should be monitored for several hours to ensure that they are maintaining an alert mental status, an open airway, and effective respiration.

reserve (rē-zērv') [L. *reservare*, to keep back] 1. Something held back for future use. 2. Self-control of one's feelings and thoughts.

alkali r. Alkaline r.

alkaline r. The amount of base in the blood, principally bicarbonates, available for neutralization of fixed acids (acetoacetate, β -hydroxybutyrate, and lactate). A fall in alkaline reserve is called acidosis; a rise, alkalosis. SYN: *alkali reserve*.

cardiac r. The ability of the heart to increase cardiac output to meet the needs of increased energy output.

reservoir (rēz'ēr-vvor) [Fr.] A place or cavity for storage.

cardiotomy r. A device used to salvage autologous blood lost by patients as they undergo cardiovascular surgery.

continent urinary r. A pouch made from the intestines used to hold urine in the abdomen, e.g., in patients who have had the urinary bladder removed. This internal pouch is an alternative to an ileostomy. It contains the urine and can be emptied by manual pressure or, more often, by catheterization. SYN: *Indiana continent urinary reservoir*.

Indiana continent urinary r. Continent urinary reservoir.

r. of infectious agents Any person, animal, arthropod, plant, soil, or substance in which an infectious agent normally lives and multiplies, on which it depends primarily for survival, and where it reproduces itself in a way that allows transmission to a susceptible host.

residency A period of at least 1 year and often 3 to 7 years of on-the-job training, usually postgraduate, that is part of the formal educational program for health care professionals.

resident (rēz'ī-dēnt) A physician obtaining further clinical training after internship, usually as a member of the house staff of a hospital.

residual (ri-zid'ū-āl) [L. *residuum*, residue] 1. Pert. to something left as a residue. 2. In psychology, any aftereffect of experience influencing later behavior.

residual function The functional capacity remaining after an illness or injury.

residue (rēz'ī-dū) The remainder of something after a part is removed.

residuum (rē-zid'ū-ūm) *pl.* **residua** [L.] Residue.

resilience (rē-zil'ē-ēns) [L. *resiliens*, leaping back] 1. Elasticity. 2. The ability to withstand mental or physical stress.



Because many sedative/hypnotic drugs, anesthetics, or narcotic analgesics may redistribute into the blood af-

resilient (rē-zil'ē-ənt) Elastic.

resin (rēz'in) [L. *resina*, fr. Gr. *rhetine*, resin of the pine] **1.** An amorphous, nonvolatile solid or soft-solid substance, which is a natural exudation from plants. It is practically insoluble in water but dissolves in alcohol. SEE: *rosin*. **2.** Any of a class of solid or soft organic compounds of natural or synthetic origin. They are usually of high molecular weight and most are polymers. Included are polyvinyl, polyethylene, and polystyrene. These are combined with chemicals such as epoxides, plasticizers, pigments, fillers, and stabilizers to form plastics.

acrylic r. Quick-cure r.

anion-exchange r. SEE: *ion-exchange r.*

cation-exchange r. SEE: *ion-exchange r.*

cold-cure r. Quick-cure r.

ion-exchange r. An ionizable synthetic substance, which may be acid or basic, used accordingly to remove either acid or basic ions from solutions. Anion-exchange resins are used to absorb acid in the stomach, and cation-exchange resins are used to remove basic (alkaline) ions from solutions.

quick-cure r. An autopolymer resin, used in many dental procedures, that can be polymerized by an activator and catalyst without applying external heat. SYN: *acrylic resin; cold-cure resin; self-curing resin*.

self-curing r. Quick-cure r.

resinoid (rēz'i-noyd) [r' + Gr. *eidōs*, form, shape] Resembling a resin.

resinous (rēz'i-nūs) Having the nature of or pert. to resin.

res ipsa loquitur (rēs-īp-sā-lō-kwī-tōr) [L.] Literally, "the thing speaks for itself." In malpractice this concept is used for cases in which an injury occurs to the plaintiff in a situation solely under the control of the defendant. The injury would not have occurred had the defendant exercised due care. The defendant must then defend his or her actions. In medicine the classic example of this situation is the leaving of an object such as a sponge or clamp in a patient's body after a surgical procedure, or the inadvertent removal of a healthy organ or extremity.

resistance (rī-zis'tāns) [L. *resistens*, standing back] **1.** Opposition to a disease, a toxin, or to a physical force. **2.** The force exerted to penetrate the unconscious or to submerge memories in the unconscious. **3.** In psychoanalysis, a condition in which the ego avoids bringing into consciousness conflicts and unpleasant events responsible for neurosis; the reluctance of a patient to give up old patterns of thought and behavior. It may take various forms such as silence, failure to remember dreams, forgetful-

ness, and undue annoyance with trivial aspects of the treatment situation. **4.** Force applied to a body part by weights, machinery, or another person to load muscles as an exercise to increase muscle strength.

airway r. The impedance to the flow of air into and out of the respiratory tract.

antibiotic r. Antibiotic resistant.

antiviral r. The developed resistance of a virus to specific antiviral therapy.

bacterial r. The ability of bacteria to survive and cause continuous infection in the presence of antibiotics. SEE: *antiviral r.; antibiotic r.; multidrug r.; transfer factor*.

cross r. Multidrug resistance.

drug r. The ability to withstand drug treatment.

expiratory r. The use of a restricted orifice, or flow resistor, during positive-pressure ventilation to retard the flow of exhaled gases.

insulin r. Cellular phenomena that prevent insulin from stimulating the uptake of glucose from the bloodstream and the synthesis of glycogen. Insulin resistance is one of the fundamental metabolic defects found in patients with type 2 diabetes mellitus.

multidrug r. ABBR: MDR. The ability of bacteria, viruses, or cancer cells to live and reproduce despite treatment with more than one drug.

peripheral r. The resistance of the arterial vascular system, esp. the arterioles and capillaries, to the flow of blood.

systemic vascular r. ABBR: SVR. The resistance to the flow of blood through the body's blood vessels. It increases as vessels constrict (e.g., when a drug like norepinephrine is given) and decreases when vessels dilate (e.g., in septic shock). Any change in the diameter, elasticity, or number of vessels recruited can influence the measured amount of resistance to the flow of blood through the body.

threshold r. The amount of pressure necessary in overcoming resistance to flow.

transthoracic r. The amount of resistance to the flow of electrical energy across the chest. This is an important factor to consider when electrical therapies such as defibrillation, cardioversion, and transthoracic pacing are used to treat abnormal cardiac rhythms.

viscous r. Nonelastic opposition of tissue to ventilation due to the energy required to displace the thorax and airways.

resistance exercise Exercise in which a muscle contraction is opposed by an outside force, to increase strength or endurance. If the resistance is applied by using weights, it is called mechanical

resistance; if applied by a clinician, it is called manual resistance.

resistance transfer factor ABBR: R factor. A genetic factor in bacteria that controls resistance to certain antibiotic drugs. The factor may be passed from one bacterium to another. This makes it possible for nonpathogenic bacteria to become resistant to antibiotics and to transfer that resistance to pathogens, thereby establishing a potential source for an epidemic. SEE: *plasmid*.

resistant (rê-zîs'tînt, rî-) [L. *resistere*, to stand back, to withstand] A lack of response to, or of influence by, a pathogen, toxin, treatment, or other stressor.

resistin (rê-zîs'tîn) A cysteine-rich peptide hormone, secreted by fat, that decreases cell sensitivity to the effects of insulin.

resolution (rêz-ô-lû'shûn) [L. *resolutio*, a relaxing] **1.** Decomposition; absorption or breaking down of the products of inflammation. **2.** Cessation of illness; a return to normal. **3.** The ability of the eye or a series of lenses to distinguish fine detail. **4.** In radiology, the ability to record small images placed very close together as separate images.

alternative dispute r. ABBR: ADR. Any of the methods of dealing with disputes and avoiding trial or litigation that are less threatening, less costly, and less time-consuming. Examples include arbitration, facilitation, negotiation, and mediation.

conflict r. SEE: *conflict resolution*.

resolve (rê-zôlv') [L. *resolvere*, to release] **1.** To return to normal as after a pathological process. **2.** To separate into components.

resonance (rêz'ô-nâns) [L. *resonantia*, resound] **1.** The quality or act of resounding. **2.** The quality of the sound heard on percussion of a hollow structure such as the chest or abdomen. An absence of resonance is termed *flatness*; diminished resonance, *dullness*. **3.** In physics, the modification of sound caused by vibrations of a body that are set up by waves from another vibrating body. **4.** In electricity, a state in which two electrical circuits are in tune with each other.

amphoric r. A sound similar to that produced by blowing across the mouth of an empty bottle.

bandbox r. The pulmonary resonance heard during chest percussion in patients with emphysema.

bell-metal r. The sound heard in pneumothorax on auscultation when a coin is held against the chest wall and struck by another coin.

cracked-pot r. The peculiar clinking sound sometimes heard on chest percussion in cases of advanced tuberculosis when cavities are present.

electron spin r. ABBR: ESR. A tech-

nique used in medical imaging that identifies atoms by their electron spin characteristics.

normal r. Vesicular r.

skodaic r. An increased percussion sound over the upper lung when there is a pleural effusion in the lower part.

tympanic r. A low-pitched, drumlike sound heard on percussion over a large air-containing space.

tympanitic r. The resonance obtained by percussion of a hollow structure, such as the stomach or colon, when it is moderately distended with air.

vesicular r. The resonance obtained by percussion of normal lungs. SYN: *normal resonance*.

vocal r. In auscultation, the vibrations of the voice transmitted to the examiner's ear, normally more marked over the right apex of the lung. These vibrations are abnormally increased in pneumonic consolidation, in lungs infiltrated with tuberculosis, or in cavities that communicate freely with a bronchus.

Vocal resonance is diminished or absent in pleural effusion (air, pus, serum, lymph, or blood); emphysema; pulmonary collapse; pulmonary edema; and egophony, a modified bronchophony characterized by a trembling, bleating sound usually heard above the upper border of dullness of pleural effusions and occasionally heard in beginning pneumonia.

whispering r. The auscultation sound heard when a patient whispers.

resonant (rêz'ô-nânt) Producing a vibrating sound on percussion.

resonating (rêz'ô-nât'îng) [L. *resonantia*, resound] Vibrating sympathetically with a source of sound or electrical oscillations.

resonator (rêz'ô-nâ'tôr) **1.** A structure that can be set into sympathetic vibration when sound waves of the same frequency from another vibrating body strike it. **2.** In electricity, an apparatus consisting of an electric circuit in which oscillations of a certain frequency are set up by oscillations of the same frequency in another circuit.

resorb (rê-sorb', rê-zorb') [L. *resorbere*, to suck in] **1.** To undergo resorption. **2.** To absorb again.

resorbent (rê-sor'bënt) [L. *resorbens*, sucking in] An agent that promotes the absorption of abnormal matters, as exudates or blood clots (e.g., potassium iodide, ammonium chloride).

resorcin (rê-zor'sîn) Resorcinol.

resorcinol (rê-zor'sî-nôl) An agent with keratolytic, fungicidal, and bactericidal actions, used in treating certain skin diseases. SYN: *resorcin*.

resorption (rê-sorp'shûn) [L. *resorbere*, to suck in] **1.** Removal by absorption, as of an exudate or pus. **2.** The removal of

enamel and other calcific portions of a tooth as a result of lysis and other pathological processes. It often results from pressure or vascular changes as in root resorption of deciduous teeth prior to shedding, or bone resorption on the pressure side during tooth movement.

bone r. The removal of bone by osteoclasts.

resource (rē'sōrs, rē-sōrs') [O. Fr. *resource*, relief, resource] **1.** An asset, valuable commodity, or service. **2.** Anything, e.g., medical supplies, held in reserve.

Resource, Conservation, and Recovery Act ABBR: RCRA. An act passed in 1976 that gave the Environmental Protection Agency the authority to control hazardous waste disposal, including the disposal of infectious and radioactive medical waste products.

resource allocation **1.** The management of economic and administrative reserves by choosing from among competing claims for assets and services. **2.** Health care rationing.

resource-based relative value scale ABBR: RBRVS. A measuring tool developed to increase payment to nonsurgeons for cognitive services (i.e., evaluation and management of patients). The scale is based on the total work required for a given service and on other considerations, including the cost of the physician's practice, the income lost during training, and the relative cost of liability insurance. This method of calculating medical care services was implemented by law in January 1992. SEE: *managed care; managed competition*.

resource depletion The dissipation of assets or reserves, esp. (in health care and the environment) those that affect public health.

respirable (rē-spīr'ā-bl, rēs'pēr-ā-bl) [L. *respirare*, breathe again] Fit or adapted for respiration.

respiration (rēs-pīr-ā'shūn) [L. *respiratio*, breathing] **1.** The interchange of gases between an organism and the medium in which it lives. **2.** The act of breathing (i.e., inhaling and exhaling) during which the lungs are provided with air through inhaling and the carbon dioxide is removed through exhaling. Normal respiratory exchange of oxygen and carbon dioxide in the lungs is impossible unless the pulmonary tissue is adequately perfused with blood. SEE: *diaphragm* for ill; *lung; ventilation*.

abdominal r. Respiration in which chiefly the diaphragm exerts itself while the chest wall muscles are nearly at rest; used in normal, quiet breathing—and in pathological conditions such as pleurisy, pericarditis, and rib fracture. SYN: *diaphragmatic respiration*.

absent r. Respiration in which respiratory sounds are suppressed.

accelerated r. Respiration occurring at a faster rate than normal, considered accelerated when it exceeds 25 per minute in adults. Increased frequency may result from exercise, physical exertion, excitement, fear, exposure to high altitudes, and many metabolic, hematological, cardiac, and pulmonary diseases.

aerobic r. Cellular respiration in which oxygen is used in the production of energy.

amphoric r. Respiration having amphoric resonance. SEE: *resonance, amphoric*.

anaerobic r. The release of energy from the reduction of metals (e.g., iron, manganese, or sulfur) by cells or organisms that do not use oxygen as their primary energy source.

apneustic r. Breathing marked by prolonged inspiration unrelieved by attempts to exhale. It is seen in patients who have had the upper part of the pons of the brain removed or damaged.

artificial r. Maintenance of respiratory movement by artificial means, such as rescue breathing, bag mask, pocket mask, automatic transport ventilator, manual transport ventilator, or a flow-restricted oxygen-powered ventilation device. SEE: *cardiopulmonary resuscitation*.

Biot's r. Biot's breathing.

Bouchut's r. SEE: *Bouchut's respiration*.

cell r. The gradual breakdown of food molecules in the presence of oxygen within cells, resulting in the formation of carbon dioxide and water and the release of energy in the forms of ATP and heat. In many intermediary reactions, substances other than oxygen act as oxidizing agents (i.e., hydrogen or electron acceptors). Reactions are catalyzed by respiratory enzymes, which include the flavoproteins, cytochromes, and other enzymes. Certain vitamins (nicotinamide, riboflavin, thiamine, pyridoxine, and pantothenic acid) are essential in the formation of components of various intracellular enzyme systems.

Cheyne-Stokes r. SEE: *Cheyne-Stokes respiration*.

cogwheel r. Interrupted r.

costal r. Respiration in which the chest cavity expands by raising the ribs.

cutaneous r. The transpiration of gases through the skin.

decreased r. Respiration at less than a normal rate for the individual's age. In adults, a respiratory rate of less than 12 breaths per minute. Slower than normal respiratory rates occur after opiate or sedative use, during sleep, in coma, and many other conditions, and may result in respiratory failure or carbon dioxide retention. SYN: *slow respiration*.

diaphragmatic r. Abdominal r.

direct r. Respiration in which an organism, such as a one-celled amoeba, secures its oxygen and gives up carbon dioxide directly to the surrounding medium.

electrophrenic r. Radiofrequency electrophrenic respiration.



external r. The exchange of gases in the lungs; oxygen diffuses from the air to the blood, and carbon dioxide diffuses from the blood to the air.

fetal r. Gas exchange in the placenta between the fetal and maternal blood. SYN: *placental respiration*.

forced r. Voluntary hyperpnea (increase in rate and depth of breathing).

internal r. The exchange of gases in body tissues; oxygen diffuses from the blood to the cells and carbon dioxide diffuses from the cells to the blood. Oxygen is carried in combination with hemoglobin. Oxyhemoglobin gives arterial blood its red color; reduced hemoglobin gives venous blood its dark red color. Most carbon dioxide is carried in the blood as bicarbonate ions; a small amount is bonded to hemoglobin. Normally the partial pressure of oxygen in the blood is 75 to 100 mm Hg, depending on age; for carbon dioxide it is 35 to 45 mm Hg. SYN: *tissue respiration*.

interrupted r. Respiration in which inspiratory or expiratory sounds are not continuous. SYN: *cogwheel respiration*.

intrauterine r. Respiration by the fetus before birth. SEE: *fetal respiration*.

Kussmaul's r. Kussmaul's breathing.

labored r. Dyspnea or difficult breathing; respiration that involves active participation of accessory inspiratory and expiratory muscles.

mitochondrial r. The stages of cell respiration (citric acid cycle and cytochrome transport system) that take place in the mitochondria. Water is formed from oxygen and hydrogen ions, and energy is released. SEE: *cell r.*

muscles of r. Any of the muscles used in breathing, including the diaphragm, the muscles of the rib cage (parasternal intercostals, scalenes, internal and external intercostals, triangularis sterni, and accessory muscles), and the abdominal muscles. SEE: *diaphragm*; *expiration*; *inspiration*.

The following accessory muscles may assist in depressing the ribs: serratus posterior inferior, quadratus lumborum.

paradoxical r. 1. Respiration occurring in patients with chest trauma and multiple rib fractures in which a portion of the chest wall sinks inward with each spontaneous inspiratory effort. 2. A condition seen in paralysis of the diaphragm in which the diaphragm ascends during inspiration.

periodic r. Periodic breathing.

placental r. Fetal r.

radiofrequency electrophrenic r. A method of stimulating respiration in cases of respiratory paralysis from spinal cord injury at the cervical level. Intermittent electrical stimuli to the phrenic nerves are supplied by a radiofrequency transmitter implanted subcutaneously. The diaphragmatic muscles contract in response to these stimuli.

slow r. Decreased respiration.

stertorous r. Respiration marked by rattling or bubbling sounds.

stridulous r. Respiration marked by high-pitched crowing or barking sound heard on inspiration, caused by an obstruction near the glottis or in the respiratory passageway.

thoracic r. Respiration performed entirely by expansion of the chest when the abdomen does not move. It is seen when the peritoneum or diaphragm is inflamed, when the abdominal cavity is restricted by tight bandages or clothes, or during abdominal surgery.

tissue r. Internal r.

vicarious r. Increased respiration in one lung when respiration in the other is lessened or abolished.

respirator (rēs'pī-rā'tor) [L. *respirare*, to breathe] 1. A mask used to protect the user from a dusty, infectious, toxic, or hypoxic atmosphere. Colloquially, a "gas mask." 2. A machine used to assist ventilation and/or oxygenation.

respiratory (rēs-pīr'ā-tō-rē, rēs'pī-rā-tō'rē) [L. *respiratio*, breathing] Pert. to respiration.

respiratory anemometer An obsolete form of respirometer formerly used in investigating pulmonary function.

respiratory apparatus Respiratory system.

respiratory center SEE: under *center*.

respiratory defense mechanisms Ciliated epithelium, mucus, immunoglobulins, and other devices present in the trachea, bronchi, and lungs, used to defend the respiratory tract against microorganisms and other inhaled particles.

respiratory distress syndrome of the preterm infant ABBR: RDS. Severe impairment of respiratory function in a preterm newborn, caused by immaturity of the lungs. This condition is rarely present in a newborn of more than 37 weeks' gestation or in one weighing at least 2.2 kg (5 lb). RDS is the leading cause of death in prematurely born infants in the U.S. SYN: *hyaline membrane disease*. SEE: *acute respiratory distress syndrome*; *preterm labor*; *Nursing Diagnoses Appendix*.

SYMPTOMS: Shortly after birth the preterm infant with RDS has a low Apgar score and obvious difficulty breathing. Tachypnea, tachycardia, re-

traction of the rib cage during inspiration, cyanosis, nasal flaring, and grunting during expiration are present. Blood gas studies reflect the impaired ventilatory function (abnormally low oxygen levels and respiratory acidosis).

TREATMENT: Preterm infants with RDS require treatment in a specially staffed and equipped neonatal intensive care unit. Therapy is supportive: humidified oxygen is supplied, the airways are ventilated, and adequate hydration and electrolytes are administered. If necessary, assisted ventilation with PEEP or CPAP is used to open alveoli. Care is taken to prevent the barotrauma: traumatic formation of pulmonary air leaks that could cause pulmonary emphysema and tension pneumothorax. Instillation of surfactant into the respiratory tract via an endotracheal tube is essential in managing RDS.

PATIENT CARE: To prevent RDS, as soon after birth as possible (preferably within 15 min), the health care professional administers neonatal lung surfactant intratracheally. The neonate's response to the medication is monitored carefully, and used to guide changes in ventilation (e.g., inspiratory pressures, tidal volume) and oxygenation.

The skin and mucous membranes are frequently inspected and lubricated with a water-soluble lubricant to prevent irritation, inflammation, and perforation.

The newborn is maintained in a thermoneutral environment to stabilize body temperature at 97.6°F (36.5°C). The newborn requires gentle and minimal handling, with assessment and care procedures separated by rest periods. Caloric intake is provided orally or by gavage feeding in quantity to prevent catabolic breakdown.

The neonate also is at risk for multiple complications, including bronchopulmonary dysplasia, intracerebral bleeding, learning disabilities, pneumomediastinum, pneumothorax, retinopathy of prematurity, and sepsis among others. His or her parents require ongoing support of family, friends, or clergy to help them deal with familial, financial, and emotional stresses imposed by the illness. The parents are encouraged to ask questions and raise concerns. The parents' presence at crib-side is encouraged to aid normal parent-infant bonding and they are shown ways to approach and be involved in the care of the infant (maintaining sterile technique) without adding to his or her stress.

respiratory failure, acute Any impairment in oxygenation or ventilation in which the arterial oxygen tension falls below 60 mm Hg, and/or the carbon di-

oxide tension rises above 50 mm Hg, and the pH drops below 7.35.

TREATMENT: In most cases, the patient will need supplemental oxygen therapy. Intubation and mechanical ventilation may be needed if the patient cannot oxygenate and ventilate adequately (i.e., if carbon dioxide retention occurs). Treatment depends on the underlying cause of the respiratory failure (e.g., bronchodilators for asthma, antibiotics for pneumonia, diuretics or vasodilators for congestive heart failure).

PATIENT CARE: Patients with acute respiratory failure are usually admitted to an acute care unit. The patient is positioned for optimal gas exchange, as well as for comfort. Supplemental oxygen is provided, but patients with chronic obstructive lung disease who retain carbon dioxide are closely monitored for adverse effects. A normothermic state is maintained to reduce the patient's oxygen demand. The patient is monitored closely for signs of respiratory arrest; lung sounds are auscultated and any deterioration in oxygen saturation immediately reported. The patient is also watched for adverse drug effects and treatment complications such as oxygen toxicity and acute respiratory distress syndrome. Vital signs are assessed frequently, and fever, tachycardia, tachypnea or bradypnea, and hypotension are reported. The electrocardiogram is monitored for arrhythmias. Serum electrolyte levels and fluid balance are monitored and steps are taken to correct and prevent imbalances. If mechanical ventilation or non-invasive support is needed, ventilator settings and inspired oxygen concentrations are adjusted based on arterial blood gas results. *SEE: ventilation.* To maintain a patent airway, the trachea is suctioned after oxygenation as necessary, and humidification is provided to help loosen and liquefy secretions. Secretions are collected as needed for culture and sensitivity testing. Sterile technique during suctioning and change of ventilator tubing helps to prevent infection. Using the minimal leak technique for endotracheal tube cuff inflation helps to prevent tracheal erosion. Positioning the nasoendotracheal tube midline within the nostril, avoiding excessive tube movement, and providing adequate support for ventilator tubing all help to prevent nasal and endotracheal tissue necrosis. Periodically loosening the securing tapes and supports prevents skin irritation and breakdown. The patient is assessed for complications of mechanical ventilation, including reduced cardiac output, pneumothorax or other barotrauma, increased pulmonary vascular resistance, diminished urine output, in-

creased intracranial pressure, and gastrointestinal bleeding.

All tests, procedures, and treatments should be explained to the patient and family to improve understanding and help reduce anxiety. Rationales for such measures should be presented, and concerns elicited and answered. If the patient is intubated (or has had a tracheostomy), the patient should be told why speech is not possible and should be taught how to use alternative methods to communicate needs, wishes, and concerns to health care staff and family members.

respiratory failure, chronic Chronic inability of the respiratory system to maintain the function of oxygenating blood and remove carbon dioxide from the lungs. Many diseases can cause chronic pulmonary insufficiency, including asthmatic airway obstruction, emphysema, chronic bronchitis, and cystic fibrosis; and chronic pulmonary interstitial tissue diseases such as sarcoidosis, pneumoconiosis, idiopathic pulmonary fibrosis, disseminated carcinoma, radiation injury, and leukemia.

PATIENT CARE: The focus of patient care is on relieving respiratory symptoms, managing hypoxia, conserving energy, and avoiding respiratory irritants and infections. The nurse, respiratory therapist, primary care physician, and pulmonologist carry out the prescribed treatment regimen and teach the patient and family to manage care at home.

Patients may require supplemental oxygen. The patient is taught how to use the equipment and the importance of maintaining an appropriate flow rate. Low flow rates (1–2 L/min) are often best for patients with chronic obstructive lung disease. Drug therapy can include inhaled bronchodilators (if bronchospasm is reversible), oral or inhaled corticosteroids, oral or inhaled sympathomimetics, inhaled mucolytic therapy, and prompt use of oral antibiotics in the presence of respiratory infection. The patient and family are taught the order and spacing for administering these drugs, as well as how to use a metered-dose inhaler (with spacer if necessary). They are taught the desired effects, serious adverse reactions to report, and minor adverse effects and how to deal with them. Patients are taught care of inhalers and other respiratory equipment and are advised to rinse the mouth after using these devices to help limit bad tastes, dryness, and *Candida* infections.

Unless otherwise restricted, the patient will benefit from increased fluid intake (to 3 L/day) to help liquefy secretions and aid in their expectoration. Deep-breathing and coughing tech-

niques are taught to promote ventilation and remove secretions. The patient also may be taught postural drainage and chest physiotherapy to help mobilize secretions and clear airways. Such therapy is to be carried out at least 1 hr before or after meals. Incentive spirometry may help to promote optimal lung expansion. A high-calorie, high-protein diet, offered as small, frequent meals, helps the patient maintain needed nutrition, while conserving energy and reducing fatigue.

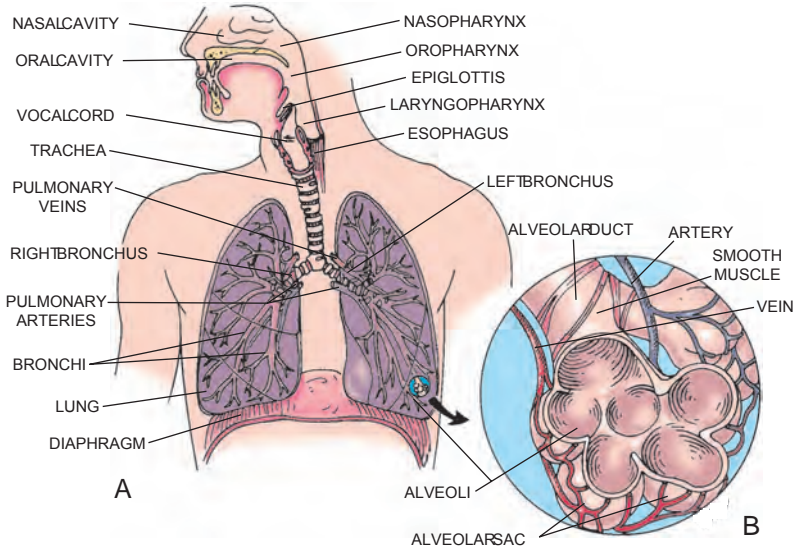
Daily activity is encouraged, alternating with rest to prevent fatigue. Patients may benefit from a planned respiratory rehabilitation program to teach breathing techniques, provide conditioning, and help increase exercise tolerance. Diversional activities also should be provided, based on the patient's interests.

The patient is assessed for changes in baseline respiratory function; restlessness, changes in breath sounds, and tachypnea may signal an exacerbation. Any changes in sputum quality or quantity are noted. The patient is taught to be aware of these changes.

Patients need help in adjusting to lifestyle changes necessitated by this chronic illness. Patients and their families are encouraged to ask questions and voice concerns; answers are provided when possible, and support is given throughout. The patient and family should be included in all care planning and related decisions. The patient also is taught to avoid air pollutants such as automobile exhaust fumes and aerosol sprays, as well as crowds and people with respiratory infections. Patients should obtain influenza immunization annually and pneumonia immunization every 6 years. The patient also may benefit from avoiding exposure to cold air and covering the nose and mouth with a scarf or mask when outdoors in cold, windy weather. Patients who smoke tobacco are advised to abstain, using nicotine replacement therapy, hypnosis, support groups, or other methods.

respiratory frequency to tidal volume ratio ABBR: f/VT. In mechanical ventilation, a measure of the speed and depth of spontaneous breathing, used to gauge a patient's dependency on life support. The higher the ratio, the less likely it is that the patient will be able to breathe without mechanical assistance.

respiratory function monitoring The use of various techniques to provide alarms that alert a patient's attendants to a change in the ability of the lungs to perform their functions. These techniques include noninvasive devices for measuring the oxygen content of the blood (e.g., pulse oximetry); methods of monitoring



RESPIRATORY SYSTEM

(A) anterior view, (B) alveoli and pulmonary capillaries

respiratory muscle function and breathing pattern; or devices for monitoring the carbon dioxide content of expired air (i.e., capnography). SEE: *apnea monitoring*.

respiratory myoclonus Leeuwenhoek's disease.

respiratory pump Those abdominal and thoracic structures that contribute to the expansion and contraction of the lungs. Movement of the chest and abdomen alters central pressures during inspiration and expiration. During inspiration decreases in intrathoracic pressure draw air into the trachea, bronchi, and lungs and blood into the vena cava and right atrium of the heart. During expiration intrathoracic pressures rise, and air is forced out of the lungs.

respiratory pump dysfunction Any disease or condition that impairs ventilation due to failure of the nerves, muscles, or skeleton of the abdomen and thorax to function properly. It may be caused by a variety of purely neurological diseases, such as the polyneuropathy that paralyzes respiration in Guillain-Barré syndrome. Alternatively it may be caused by skeletal conditions, such as multiple rib fractures or ankylosing spondylitis; by excessive adipose tissue, as in obesity/hypoventilation; or by diaphragmatic paralysis from surgical injury to the phrenic nerves.

respiratory system The organs involved in the interchange of gases between an organism and the atmosphere. In humans, this system consists of the air

passageways and organs (nasal cavities, pharynx, larynx, trachea, and lungs, including bronchi, bronchioles, alveolar ducts, and alveoli) and the respiratory muscles. SEE: *illus.*; *lung* for *illus.*

respiratory therapist A person skilled in managing the techniques and equipment used in treating those with acute and chronic respiratory diseases.

respiratory therapy Treatment to preserve or improve pulmonary function.

respiratory therapy technician A technician who routinely treats patients requiring noncritical respiratory care and who recognizes and responds to specified respiratory emergencies.

respiratory triggering In radiology, image acquisition that is synchronized to the patient's breathing, used to minimize motion artifact.

respire (rĕ-spir) To breathe and to consume oxygen and release carbon dioxide.

respirology (rĕs'pir-ol'ō-jĕ) [r + "] The study and treatment of diseases of the lungs and respiratory tract.

respirometer (rĕs'pir-om'ĕt-ēr) [L. *respirare*, to breathe, + Gr. *metron*, a measure] An instrument to ascertain the character of respirations. Several devices are available for measuring specific respiratory qualities such as minute ventilation and tidal volume. SEE: *respiratory anemometer*.

respirophasic (rĕs'pir-ō-fā'zĭk) [r + "] Varying with inspiration and expiration. Pleuritic chest pain is a respirophasic pain.

respite (rēs'pīt) Short-term, intermittent care, often for persons with chronic or debilitating conditions. One of the goals is to provide rest for family members or caregivers from the burden and stress of sustained caregiving.

respondeat superior (rē-spōn-dē-āt) [L., let the master answer] A Latin term meaning "Let the master answer." The "master," or employer, is held liable for negligent or wrongful acts of the "servant," or employee, in causing injury or damage during employed activities.

response [L. *respondere*, to reply] **1.** A reaction, such as contraction of a muscle or secretion of a gland, resulting from a stimulus. SEE: *reaction*. **2.** The sum total of an individual's reactions to specific conditions, such as the response (favorable or unfavorable) of a patient to a certain treatment or to a challenge to the immune system.

acute phase r. Acute phase reaction.

auditory evoked r. Response to auditory stimuli as determined by a method independent of the individual's subjective response. The electroencephalogram has been used to record response to sound. By measuring intensity of sound and presence of response, one can test the acuity of hearing of psychiatric patients, persons who are asleep, and children too young to cooperate in a standard hearing test.

complete r. ABBR: CR. In cancer care, the eradication by treatment of all readily identifiable tumor. A complete response differs from a cure in that microscopic amounts of tumor may remain in the patient and later produce a relapse.

conditioned r. SEE: *reflex, conditioned*.

durable r. In cancer care, a long-lasting positive reaction to tumor therapy, usually lasting at least a year.

duration of r. In cancer care, the time between an initial response to therapy and subsequent disease progression or relapse.

galvanic skin r. The measurement of the change in the electrical resistance of the skin in response to stimuli.

inflammatory r. Inflammation.

minor r. In cancer care, a reduction in tumor size by less than 50%, but more than 25%.

partial r. ABBR: PR. In cancer care, a reduction in the size of readily identifiable tumors by 50% or more.

physiological stress r. Stress r.

reticulocyte r. An increase in reticulocyte production in response to the administration of a hematinic agent.

stress r. The predictable physiological response that occurs in humans as a result of injury, surgery, shock, ischemia, or sepsis. SYN: *physiological stress response*.

This response is hormonally mediated and is divided into three distinct phases:

Ebb phase (lag phase): For 12 to 36 hr after the precipitating event, the body attempts to conserve its resources. Vital signs (heart, respiration, temperature) are less than normal. **Flow phase (hypermetabolic phase):** This stage peaks in 3 to 4 days and lasts 9 to 14 days, depending on the extent of the injury or infection and the person's physical and nutritional status. Carbohydrate, protein, and fat are mobilized from tissue stores and catabolized to meet the energy needs of an increased metabolic rate (hypermetabolism). Serum levels of glucose and electrolytes such as potassium can increase dramatically. If this stage is not controlled by removal of the cause or activator, multiple system organ failure or death can result. **Anabolic phase (recovery):** The anabolic, or healing, phase occurs as the catabolism declines, and electrolyte balances are restored. Often, aggressive nutritional support is necessary to promote a positive nitrogen balance.

triple r. The three phases of vasomotor reactions that occur when a sharp object is drawn across the skin. In order of appearance, these are red reaction, flare or spreading flush, and wheal.

unconditioned r. An inherent response rather than one that is learned. SEE: *reflex, conditioned*.

responsibility (rē-spōn'sī-bī'li-tē) **1.** Accountability. **2.** Trustworthiness.

responsible party The individual whose actions or inactions caused injury, harm, or damage to something or someone.

rest (rĕst) [AS. *raest*] **1.** Repose of the body caused by sleep. **2.** Freedom from activity, as of mind or body. **3.** To lie down; to cease voluntary motion. **4.** A remnant of embryonic tissue that persists in the adult.

restenosis (rĕ'stĕ-nō'sis) [L. *re*, again, + Gr. *stenos*, narrow] The recurrence of a stenotic condition as in a heart valve or vessel.

restiform (rĕs'tī-form) [L. *restis*, rope, + *forma*, shape] Ropelike; rope-shaped.

restiform body One of the inferior cerebellar peduncles of the brain, found along the lateral border of the fourth ventricle. These two bands of fibers, principally ascending, connect the medulla oblongata with the cerebellum.

resting Inactive, motionless, at rest.

resting cell **1.** A cell not in the process of dividing. SEE: *interphase*. **2.** A cell that is not performing its normal function (i.e., a nerve cell that is not conducting an impulse or a muscle cell that is not contracting).

restitutio ad integrum (rĕs'tī-tū'shĕ-ō ād

in-tě'grüm) [L.] Complete restoration to health.

restitution (rěs'ti-tū'shūn) [*L. restitutio*]

1. The return to a former status. 2. The act of making amends. 3. The turning of a fetal head to the right or left after it has completely emerged through the vagina.

restless legs syndrome A condition of unknown cause marked by an intolerable creeping sensation or itching in the lower extremities and causing an almost irresistible urge to move the legs. The symptoms are worse at the end of the day when the patient is seated or in bed and may produce insomnia.

TREATMENT: Treatments include levodopa/carbidopa, benzodiazepines, ropirinoles, and tricyclic antidepressants. **SYN:** *nocturnal myoclonus*.

restoration (rěs'tō-rā'shūn) [*L. restaurare, to fix*]

1. The return of something to its previous state. 2. In dentistry, any treatment, material, or device that restores a tooth surface, or replaces a tooth or all of the teeth and adjacent tissues.

temporary r. A temporary dental filling, bridge, crown or retainer, made, e.g., from zinc oxide, stainless steel, aluminum, resin, or cements. Temporary restorations are designed to last from days to years after placement.

tissue r. Biologically compatible materials used to replace missing body parts or to provide a scaffolding into which cells may grow and regenerate themselves.

vocal r. The technology used to improve speech in a patient who has had a laryngectomy.

restorative (rī-stor'ă-tiv) [*L. restaurare, to fix*]

1. Pert. to restoration. 2. An agent that is effective in the regaining of health and strength.

restraint (rī-strānt') [O.Fr. *restrainte*]

1. The process of refraining from any action, mental or physical. 2. The condition of being hindered. 3. In medicine, the use of major tranquilizers or physical means to prevent patients from harming themselves or others.

The Food and Drug Administration, which regulates medical devices, has defined restraint as "a device, usually a wristlet, anklet, or other type of strap intended for medical purposes and that limits a patient's movements to the extent necessary for treatment, examination, or protection of the patient." Protective devices include safety vests, hand mitts, lap and wheelchair belts, body holders, straitjackets, and protection nets.

Restraints should be fitted properly (i.e., neither too loose nor too tight). They should be applied in a manner that will protect the patient from accidental self-injury, such as strangling or

smothering themselves by slipping down in a bed, wheelchair, or chair.

Caregivers are legally and ethically responsible for the safety and well-being of patients in their care; however, when patient protection or achieving the therapeutic goal appears to require physical or pharmacological restraint, health care providers must consider that such action limits the patient's legal rights to autonomy and self-determination. Decisions to institute physical or pharmacological restraint must be based on a clear, identifiable, documented need for their use (i.e., that protecting the patient from harm or achievement of the therapeutic goals cannot be met in any other manner).

With many patients, effective alternatives to physical restraint include providing companionship and close supervision of activities; explaining procedures to reduce anxiety; when possible, removing indwelling tubes, drains, and catheters to reduce discomfort and the potential for displacement; providing good lighting, ensuring that pathways are clear, and that furniture is adequately secured to minimize potential environmental hazards; maintaining beds in low position and using bed alarm systems that signal if the patient's body is not in contact with the mattress; using an alarm system when the patient is in a chair or wheelchair; ensuring that the call button is easily accessible to facilitate patient requests for assistance with ambulation; reducing unwelcome distractions (e.g., background noise) and enabling patient access to diversions such as music and video movies to encourage relaxation; and encouraging ambulation and exercise to meet patient needs for mobility.



Informed consent must be obtained from the patient or guardian prior to use of restraints. Restraints should not be used without a specific order from the treating health care provider. Almost any type of restraint has the potential for harming the patient; thus it is extremely important to monitor use and be certain that it is applied correctly and removed periodically.

PATIENT CARE: The nurse records and reports patient behaviors that demonstrate a need for restraint to ensure safety and achievement of therapeutic goals; describes nursing actions designed to achieve care objectives without resort to restraint and their effects; suggests the minimum amount of restraint required to achieve the objectives of care (i.e., restriction of mobility only to the degree necessary); secures or reviews practitioner orders for specific

types of restraints; validates informed consent; explains the use of the specific type of restraint to the patient and family members as a "reminder" needed for protection; and encourages verbalization of feelings and concerns and provides emotional support.

The nurse follows these general guidelines for application of restraints: the device that is most appropriate for the purpose is selected (e.g., padded mitts protect against patient removal of intravenous or other invasive tubing by limiting the ability to manipulate equipment with fingers but do not elicit the restlessness and frustration that occurs when the hands are tied down with wrist restraints). The status of tissues is assessed and documented before application. Bony prominences that will be in contact with the restraining devices are padded before application of such restraints. Restraints are applied to maintain a comfortable normal anatomic position, and mobility is limited only as much as is necessary to protect the patient (i.e., the nurse may change the position without defeating the objectives of the restraint). The nurse anchors restraint devices securely and ensures that they do not interfere with blood flow to the limbs or trunk; ensures that the restraints can be released quickly in the event of emergency; documents application and evaluation of current status; assesses and records the effects of the restraint on patient behavior and on the neurovascular status distal to the site of the restraint at frequent intervals (e.g., every 30 min); reports signs of increased agitation promptly; releases restraints (one at a time if the patient is unreliable or combative) and allows or provides range-of-motion exercises two to four times each shift; and evaluates the need for continuing restraint at least once each shift, discontinuing the devices as soon as the patient's status permits.

r. in bed The therapeutic use of physical means to prevent limb or body motion in bed. Siderails are placed on the bed full or half-length to prevent a patient from falling out of bed. Beds are maintained in low position to limit falls and injuries. A mattress alarm system may be used to alert nursing personnel if a patient's body is not contacting the mattress or a foot pad alarmed to sound if the patient attempts to stand.

PATIENT CARE: The nurse follows general guidelines for restraint application. The nurse never ties restraints to bed siderails; rather, the restraints are anchored to a part of the bed that moves when the head is lowered or elevated; the nurse uses a clove hitch to secure restraints so they will not tighten if tension is applied and so that they can

be released rapidly if an emergency arises. A simple body restraint can be made by folding a sheet lengthwise to a 1-ft width. This restraint is placed under the patient's back and crossed in front below the armpits. The ends are secured to the side bar of the bed. This prevents some freedom in side-to-side movement.

clove hitch r. A device used to restrain a person's arm or leg. Gauze or other soft material is placed on a flat surface in a figure eight configuration. The loops are then lifted from the underside and the tops brought together. The extremity is placed through both loops at once and the loose ends of the material are tied to an immobile surface. It is important to check circulation regularly in any extremity restrained by this device.

r. of lower extremities The use of physical means to restrict movement of the legs and feet. A sheet is tied across the knees and the feet are tied together with a figure-of-eight bandage. The correct method is to start the loop under the ankles, cross it between the feet, bring the ends around the feet, and tie them on top.



The restraint should not interfere with blood circulation to an extremity and should be padded to prevent soft tissue injury.

mechanical r. Restraint by physical devices.

medicinal r. Anxiolytics, sedatives, or tranquilizers used to subdue combative or violent patients.

restrictive lung disease Any chest disease that results in reduced lung volumes.

resurfacing (rē-sūr'fā-sīng) Repair of damaged body surfaces, such as articular cartilage or skin. In cosmetic surgery, resurfacing of the skin may involve dermabrasion, chemical peels, cutaneous lasers, and other techniques.

laser r. of skin Use of laser treatments to repair wrinkled or photoaged skin for aesthetic purposes. Carbon dioxide and other lasers are used to remove the damaged dermis and repair underlying connective tissues. Whether these treatments have long-term adverse effects is unknown.

radiofrequency r. The treatment of wrinkles, scars, sun damage, and other minor cosmetic skin defects with radiofrequency energy. This method disintegrates tissues without the heat produced by laser resurfacing.

Resusci Anne (rē-sūs'ē) A mannikin used in cardiopulmonary resuscitation training.

resuscitation (rī-sūs'ī-tā'shūn) [L. *resuscitatio*] Revival after apparent

death; also called *anabiosis*. SEE: *cardiopulmonary r.*

active compression decompression cardiopulmonary r. SEE: *active compression decompression cardiopulmonary resuscitation.*

cardiopulmonary r. ABBR: CPR. Basic life support. In emergency cardiac care, CPR involves opening the airway, providing artificial breathing, and assisting circulation until definitive treatments can restore spontaneous cardiac, pulmonary, and cerebral function. When trained providers are available, CPR includes defibrillation with automated external defibrillators. In the U.S., the American Heart Association (AHA) develops and disseminates standard techniques for emergency cardiac care.

The first step in CPR is making certain that an unarousable patient is in need of cardiopulmonary support and not merely asleep or unconscious. If the patient does not respond to a loud voice or a gentle shake, the most important role for the rescuer is to call for skilled assistance, because the likelihood of a successful resuscitation usually depends on the speed with which the patient can be defibrillated.

Before the defibrillator arrives, the rescuer can position the patient and begin rescue breathing. The patient should be placed supine on a firm, flat surface, with care taken to protect his or her cervical spine if traumatic injury is suspected. Kneeling at the level of the patient's shoulder, the rescuer should open the patient's *airway*, either with the jaw-thrust or the head-tilt chin-lift technique. If foreign bodies are present in the airway, they must be removed; dentures are also removed if they interfere with resuscitation. Next *breathing* is assessed by listening for breath sounds at the nose and lips and watching for the rise and fall of the chest. If these signs are not present, the patient is apneic, and rescue breathing must begin.

Rescue breathing can be performed with mouth-to-mouth technique or through a mask with a one-way valve, if one is available. Two deep, slow positive-pressure breaths are given to the patient; the duration of each depends on the patient's age. If supplied breaths meet obvious resistance, an attempt should be made again to reopen the airway, and if this is ineffective, to clear the airway with the Heimlich maneuver in children and adults. Infants should receive chest thrusts and blows to the back instead of the Heimlich maneuver.

After the first two breaths, the American Heart Association formerly suggested checking the victim for a pulse. In guidelines revised in 2000, the pulse

check was eliminated. If the patient is not breathing on his own, rescue breathing continues. If there is no pulse, external chest compression begins and continues, with periodically interposed ventilations, until a defibrillator arrives or the patient revives. The precise number of ventilations and chest compressions per minute depend on the patient's age and the number of rescuers. For a single rescuer caring for an adult patient, two breaths are given for every 15 chest compressions. According to the AHA, for resuscitation purposes, infants are up to a year old, children are from 1 to 8 years old, and adults are over the age of 8.

Compressions are given to adults (the most common victims of cardiac arrest) at the center of the sternum between the nipples, using the heel of one hand below the other hand; the fingers of the two hands are interlaced for support and to minimize the possibility of fracturing the ribs. The elbows of the rescuer should be locked and straight, and the direction of compression should be exactly perpendicular to the patient's chest.

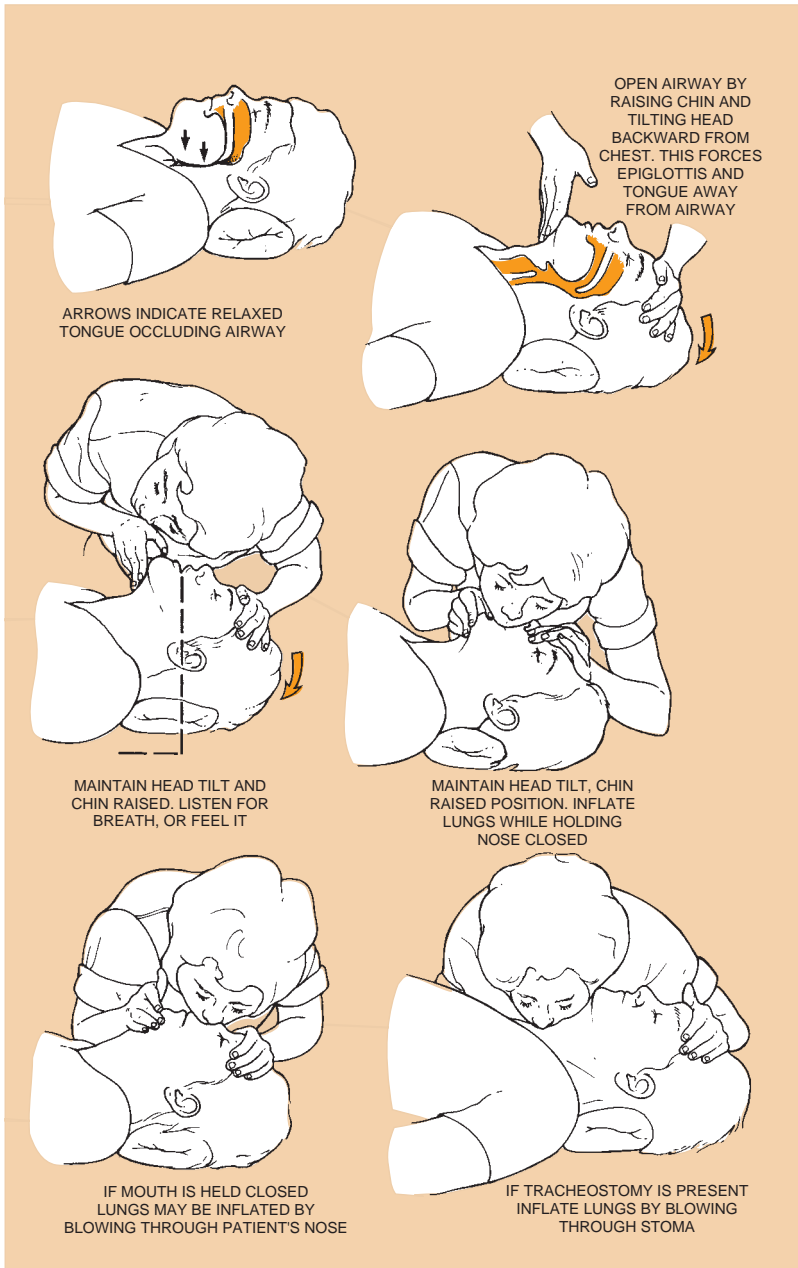
The chest is depressed 1.5 to 2.0 in for a normal-sized adult. For a child, the chest is depressed 1.0 to 1.5 in; for an infant, 0.5 to 1.0 in. The chest should return to its normally inflated position after each compression.

When professional rescuers arrive, the patient should be defibrillated immediately. If a defibrillator is not available, two-person CPR continues; the two rescuers alternate in giving rescue breaths and chest compressions to minimize rescuer fatigue. Ventilation and chest compressions are held for 5 sec at the end of the first minute, and every few minutes thereafter to determine whether the patient has responded. SEE: *illus.; advanced cardiac life support; defibrillation; emergency cardiac care; Standard and Universal Precautions Appendix.*

cerebral r. The restoration of a patient's normal neurological function due to effective revival from cardiopulmonary arrest.

goal-directed r. Making precise adjustments in a septic patient's hemodynamics, oxygenation, and volume status in an attempt to optimize his or her chances of survival.

mouth-to-mouth r. Providing respiratory gases, consisting of approximately 16% oxygen, to a patient in respiratory or cardiopulmonary arrest by exhaling directly into the open mouth of the unconscious victim. Because of potential infectious disease exposure, this technique is used only when a pocket mask or other barrier device is not immediately available. SEE: *artificial res-*

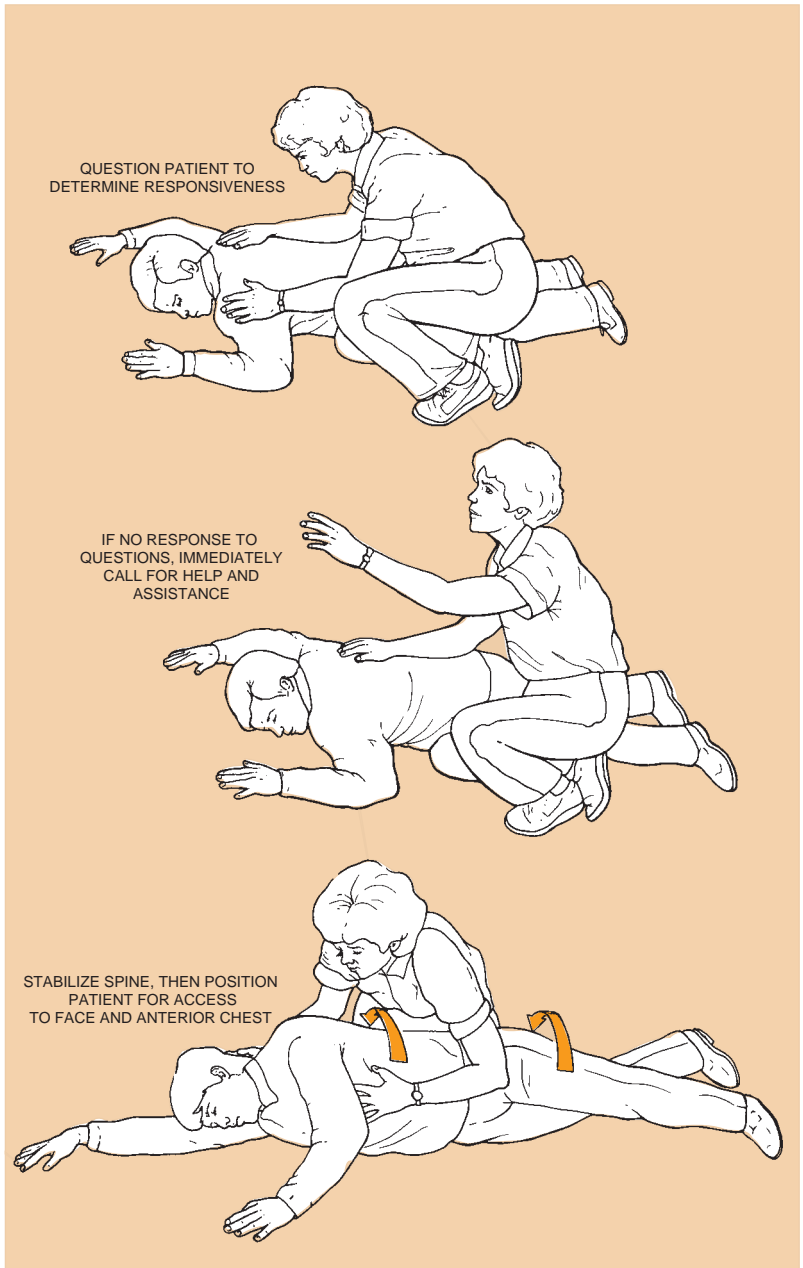


CARDIOPULMONARY RESUSCITATION

piration; cardiopulmonary resuscitation.

neonatal r. The prevention of death or injury to newborn infants with techniques to support the newborn's airway,

breathing, circulation, and body temperature. In the U.S. about 1% of all newborns require intensive resuscitative efforts in the period immediately after birth. The majority are infants born

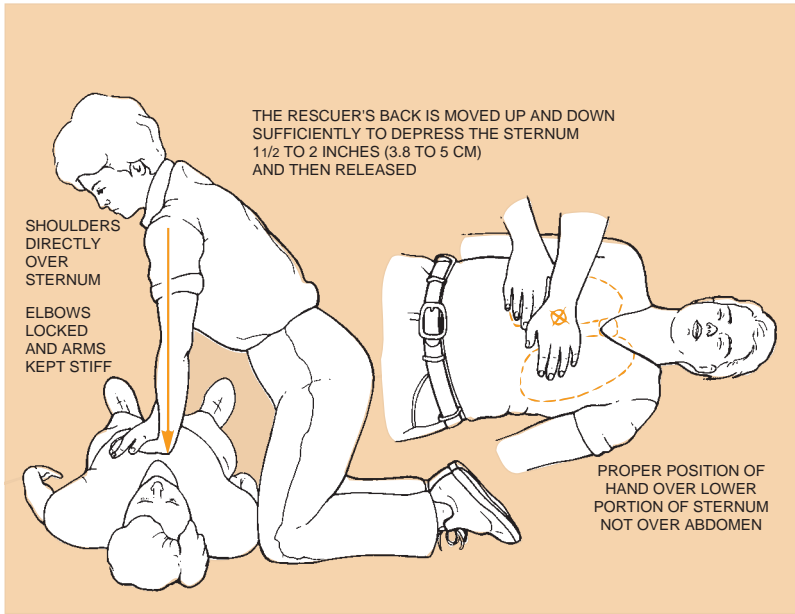


INITIAL APPROACH TO PATIENT WHO MAY NEED CARDIOPULMONARY RESUSCITATION

preterm (before 37 weeks' gestation). Failure to recognize and treat emergencies in the neonatal period may result in inadequate oxygen delivery to the brain, heart, lungs, and other organs. Sei-

zures, cognitive impairment, encephalopathy, or cerebral palsy may result from delayed recognition of asphyxia in the neonatal period.

PATIENT CARE: The cornerstone of



EXTERNAL CHEST COMPRESSION

neonatal resuscitation is the prompt recognition of the newborn who is failing to breathe and perfuse organs effectively. Immediately after birth, the newborn should be dried, gently suctioned, and assessed for 1. adequate respiratory effort (versus apnea); 2. a heart rate above 100 beats/min; 3. good muscle tone (as opposed to flaccidity); 4. skin color that indicates effective cardiac output (rather than cyanosis); 5. evidence of full-term versus pre-term birth.

The neonate who lacks some of these findings should be professionally managed, with warming, gentle stimulation (e.g., its back may be rubbed gently with a towel to stimulate effective breathing) and airway suctioning. When apnea, hypothermia, respiratory distress, bradycardia, or poor skin perfusion is evident, evidenced-based interventions (e.g., those recommended by the Neonatal Resuscitation Program of the American Academy of Pediatrics and the American Heart Association) should be begun immediately.

Positive-pressure ventilation (PPV), with breaths supplied via a bag mask device, effectively resuscitates most infants at risk for neonatal asphyxia. Those who have meconium in the upper airways (a clue is meconium staining of the amniotic fluid), as well as inadequate breathing, slow heart rate, and poor muscle tone, require endotracheal

intubation and suctioning, preferably by an experienced practitioner.

Most neonates respond favorably to airway and ventilatory management, breathe spontaneously, and maintain a heart rate above 100 beats/min. Chest compressions should be initiated only if the heart rate remains below 60 beats/min despite 30 sec of PPV with 100% oxygen. Chest compressions should cease when the heart rate is above 60 beats/min, but PPV should be continued until the heart rate is above 100 beats/min and the newborn has begun to breathe on his or her own. PPV should always accompany chest compressions and be coordinated so that a breath is provided after every third compression. After 30 sec of PPV and chest compressions, the compressions should be stopped and the heart rate evaluated while PPV is continued. If there is no palpable pulse at the base of the umbilical cord, PPV should be stopped and the chest auscultated to determine the heart rate.

Chest compressions are most effective when the sternum is depressed to a depth equal to one third of the antero-posterior chest diameter of the newborn. The preferred technique is to use the thumbs to depress the sternum, with the hands encircling the newborn's thorax. An alternative is to perform compressions with two fingers on the same hand, so that the umbilical vein

can be cannulated by another resuscitator. Ninety compressions a minute should be coordinated with 30 positive-pressure breaths, with care taken to avoid simultaneous compressions and ventilations.

Access to the circulation can be gained through the umbilical vein or intraosseously (into the tibia). Normal saline or lactated Ringer's solution is the preferred fluid. Narcotic antidotes should be given to reverse any depression in respiratory or neurological status from maternal narcotic overdose. Inotropes such as epinephrine should be used when ventilation and chest compressions do not revive the dying infant.

In prolonged resuscitations, blood gases should be drawn to help guide additional therapies.

Resuscitative interventions that have not proved to be helpful include the use of high-dose epinephrine, the induction of cerebral hypothermia, and the use of carbon dioxide detectors on the endotracheal tube.

Resuscitation should not be initiated for children born with severe anomalies incompatible with life (e.g., anencephaly, trisomy 13 or 18, or birth weights of less than 400 g). Resuscitative efforts that do not resolve apnea and pulselessness after more than 10 min are rarely successful in newborns. In these tragic circumstances, efforts may be discontinued.

oral r. SEE: *artificial respiration.*

resuscitator (ri-sūs 'i-tā'tor) [L. *resuscitare*, to revive] A breathing-assist device used to oxygenate and ventilate a patient who can no longer breathe spontaneously. Most resuscitators are portable and capable of delivering high concentrations of oxygen.

manual r. A hand-held mask with an attached self-inflating bag, that permits air to be forced into the lungs each time it is squeezed. Manual resuscitators can be difficult to use properly; complications can arise if the mask does not seal the patient's face properly; excessive pressure is used during ventilation; inadequate supplemental oxygen is provided; or the rate or volume of ventilations is excessive or insufficient to inflate the lungs and remove carbon dioxide.

resveratrol (rēs-vēr'ā-trōl) A plant-derived polyphenol that is structurally related to diethylstilbestrol. It is found in grapes and wine, and is believed to have antioxidant effects.

resynchronization therapy (rē-sīnk'rūn-ī-zā'shīn) The use of left and right ventricular pacemaking in patients with congestive heart failure and bundle branch block to restore the normal timing of ventricular depolarization. Re-

synchronization reduces symptoms of heart failure.

ret (rēt) *roentgen equivalent therapy.* It is analogous to rem, used in describing radiation protection or exposure.

retainer (ri-tān'ēr) **1.** Any device or attachment for keeping something in place. **2.** In dentistry, a fixed or removable appliance used in orthodontia for maintaining the teeth and jaws in position.

retardate (rī-tār'dāt) [L. *retardare*, to delay] One who is mentally retarded.

retardation (rē'tār-dā'shūn) [L. *retardare*, to delay] **1.** A holding back or slowing down; a delay. **2.** Delayed mental or physical response resulting from pathological conditions. SEE: *mental retardation.*

retarded ejaculation The inability of a male to achieve orgasm despite sexual arousal and stimulation, often after 30 min of sexual activity.

retarder (rē-tār'dēr) A biomaterial used in dentistry to slow the rate at which impression materials gel, set, or polymerize.

retch (rēch) [AS. *hraecan*, to cough up phlegm] To make an involuntary attempt to vomit.

retching (rēch'ing) Intense rhythmic contraction of the respiratory and abdominal muscles that may precede or accompany vomiting.

rete (rē'tē) *pl. retia* [L.] A network; a plexus of nerves or blood vessels.

arterial r. A vascular arterial network just before the point where arteries become capillaries. SEE: *arterial.*

r. cutaneum A network of blood vessels at the junction of the dermis and superficial fascia.

malpighian r. Stratum germinativum.

r. mirabile A plexus formed by the abrupt division of a vessel into capillaries that reunite to form one vessel, as in the glomeruli of the kidneys.

r. ovarii A layer of cells in the broad ligament and mesovarium of the ovary. It is homologous to rete testes in men.

r. subpapillare A network of vessels between the papillary and reticular layers of the dermis.

r. testis A network of tubules in the mediastinum testis that receives sperm through the tubuli recti from the seminiferous tubules. From the rete testis, efferent ducts convey sperm to the epididymis.

r. venosum Venous network.

vertebral r. One of two plexuses within the vertebral canal that extends from the foramen magnum to the coccyx. These retia lie posteriorly and laterally to the dura and between the dura and the arches of the vertebrae.

retention (ri-tēn'shūn) [L. *retentio*, a holding back] **1.** The act or process of

keeping in possession or of holding in place. **2.** The persistent keeping within the body of materials normally excreted, such as urine, feces, or perspiration. **3.** In dentistry, any of several procedures or materials used to keep a dental device or dentures in place. **4.** Memory or recall. **5.** Heavy sutures used to reinforce wound closures.

urinary r. SEE: *urinary retention*.

retention defect The inability to recall a name, number, or fact shortly after being requested to remember it.

retention with overflow A spasm of the urinary sphincter, causing failure to empty the bladder at one voiding, with only overflow dribbling away. It results from the same causes as urinary retention.

reteplase (rĕ'tĕ-plāz) A thrombolytic drug used to treat acute myocardial infarction.

rete ridge (rĕ'tĕ) One of the downgrowths of epithelium surrounding the connective tissue papillae in the irregular internal surface of the epidermis. Microscopic sections often appear as single downgrowths when in fact the epithelium is in a series of interconnecting ridges at the dermis-epidermis interface. SYN: *peg, rete*.

retia (rĕ'tĕ-ā) [L.] Pl. of rete.

retial (rĕ'tĕ-āl) Pert. to a rete.

reticula (rĕ-tĭk'ū-lā) [L.] Pl. of reticulum.

reticular (rĭ-tĭk'ū-lār) [L. *reticula*, net] Meshed; in the form of a network. SYN: *retiform*.

reticular activating system ABBR: RAS. The alerting system of the brain consisting of the reticular formation, subthalamus, hypothalamus, and medial thalamus. It extends from the central core of the brainstem to all parts of the cerebral cortex. This system is essential in initiating and maintaining wakefulness and introspection and in directing attention. Sedative and tranquilizing drugs may depress the RAS temporarily; some strokes may permanently injure it.

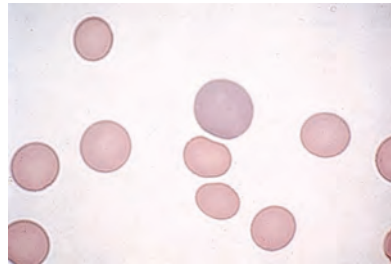
reticular fiber One of the extremely fine argyrophilic (silver-staining) fibers found in reticular tissue.

reticulation (rĕ-tĭk'ū-lā'shŭn) The formation of a network mass.

reticulin (rĕ-tĭk'ū-lĭn) [L. *reticula*, net] An albuminoid or scleroprotein in the connective tissue framework of reticular tissue.

reticulo- Combining form meaning *network*.

reticulocyte (rĕ-tĭk'ū-lō-sĭt) [r + Gr. *kytos*, cell] The last immature stage of a red blood cell. Its darkly staining granules are fragments of the endoplasmic reticulum. Reticulocytes normally constitute about 1% of the circulating red blood cells. SEE: *illust.*



RETICULOCYTE

reticulocyte hemoglobin content The amount of hemoglobin in newly circulating red blood cells. It is an early indicator of functional iron deficiency. SEE: *functional iron deficiency*.

reticulocytopenia (rĕ-tĭk'ū-lō-sĭ'tō-pĕ'nĕ-ā) [r + " + *penia*, poverty] A decreased number of the reticulocytes of the blood. SYN: *reticulopenia*.

reticulocytosis (rĕ-tĭk'ū-lō-sĭ'tō'sĭs) [r + " + *osis*, condition] An increased number of reticulocytes in the circulating blood. This condition indicates active erythropoiesis in the red bone marrow and the need for greater oxygen-carrying capacity of the blood. It occurs after hemorrhage, during acclimatization to high altitude, during any pulmonary disorder that induces hypoxia, and in all types of anemia.

reticuloendothelial (rĕ-tĭk'ū-lō-ĕn'dō-thĕ'lĕ-āl) [r + Gr. *endon*, within, + *thele*, nipple] Pert. to the reticuloendothelial system, which is the old name for the mononuclear phagocytic system.

reticuloendothelial system ABBR: RES. Old name for the system of monocytes, macrophages, and dendritic phagocytes and antigen-presenting cells found in the blood and lymphoid tissues. This system is now called the mononuclear phagocytic system. SEE: *macrophage*.

reticuloendothelioma (rĕ-tĭk'ū-lō-ĕn'dō-thĕ-lĕ-ō'mā) [r + " + " + *oma*, tumor] A neoplasm composed of cells of the mononuclear phagocytic system.

reticuloendotheliosis (rĕ-tĭk'ū-lō-ĕn'dō-thĕ-lĕ-ō'sĭs) [r + " + *thele*, nipple, + *osis*, condition] Hyperplasia of reticuloendothelium.

reticuloendothelium (rĕ-tĭk'ū-lō-ĕn'dō-thĕ'lĕ-ūm) The tissue of the reticuloendothelial system, which is the old name for the mononuclear phagocytic system.

reticulohistiocytoma (rĕ-tĭk'ū-lō-hĭs'tĕ-ō-sĭ-tō'mā) [L. *reticula*, net, + Gr. *histon*, little web, + *kytos*, cell, + *oma*, tumor] A malignant connective tissue tumor composed of multinucleated giant cells in the skin, mucous membranes, or synovium.

reticulohistiocytosis (rĕ-tĭk'ū-lō-hĭs'tĕ-ō-sĭ-tō'sĭs) [r + " + " + *osis*, condition] Reticuloendotheliosis.

reticuloid (rě-tík'ū-loyd) [r + Gr. *eidōs*, form, shape] Resembling reticulosis.

reticuloma (rě-tík'ū-lō'mā) [r + Gr. *ōma*, tumor] A neoplasm composed of cells of the mononuclear phagocytic system.

reticulopenia (rě-tík'ū-lō-pē'nē-ā) [r + Gr. *penia*, lack] Reticulocytopenia.

reticulopodium (rě-tík'ū-lō-pō'dē-ūm) A branching pseudopod.

reticulosarcoma (rě-tík'ū-lō-sār-kō'mā) [r + Gr. *sarx*, flesh, + *ōma*, tumor] A neoplasm composed of large monocyctic cells that originated in the mononuclear phagocyte of the lymph and other glands.

reticulosis (rě-tík'ū-lō'sīs) [r + Gr. *ōsis*, condition] Reticulocytosis.

histiocytic medullary r. A form of malignant histiocytosis marked by anemia; granulocytopenia; enlargement of the spleen, liver, and lymph nodes; and phagocytosis of red blood cells.

reticulum (rě-tík'ū-lūm) *pl.* **reticula** [L., a little net] A network. **reticulate**, **reticulated** (-lāt, -lāt'ēd), *adj.*

endoplasmic r. ABBR: ER. A cell organelle that is a complex network of membranous tubules in the cytoplasm between the nuclear and cell membranes; it is visible only with an electron microscope. One form with ribosomes attached is called *granular* or *rough ER*; another form that is free of ribosomes is called *agranular* or *smooth ER*. Rough ER transports proteins produced on the ribosomes; smooth ER synthesizes lipids. SEE: *cell* for illus.

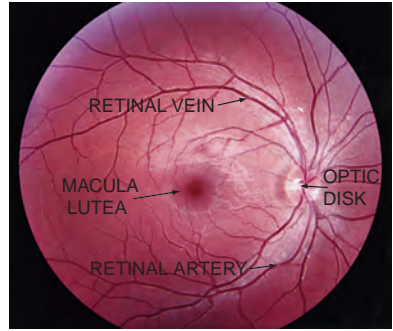
r. of nucleus The netlike contents of a nondividing nucleus of a cell; the chromatin, the long, uncoiled chromosomes.

sarcoplasmic r. The endoplasmic reticulum of striated muscle cells, surrounding the sarcomeres. In response to an action potential, it releases calcium ions to induce contraction, then reabsorbs calcium ions to induce relaxation.

stellate r. The enamel pulp of a developing tooth, consisting of stellate cells lying between the inner and outer epithelial layers of the enamel organ.

retina (rět'ī-nā) *pl.* **retinae** [L.] The innermost layer of the eye, which receives images transmitted through the lens and contains the receptors for vision, the rods and cones. SEE: *illus. (Retina of Right Eye)*. **retinal** (-nāl), *adj.*

The retina is a light-sensitive membrane on which light rays are focused. It extends from the entrance point of the optic nerve anteriorly to the margin of the pupil, completely lining the interior of the eye. It consists of three parts. The pars optica, the nervous or sensory portion, extends from the optic disk forward to the ora serrata, a wavy line immediately behind the ciliary process; the pars ciliaris lines the inner surface of the ciliary process; and the pars iri-



RETINA OF THE RIGHT EYE

dica forms the posterior surface of the iris. Slightly lateral to the posterior pole of the eye is a small, oval, yellowish spot, the macula lutea, in the center of which is a depression, the fovea centralis. This region contains only cones and is the region of the most acute vision. About 3.5 mm nasally from the fovea is the optic papilla (optic disk), where nerve fibers from the retina make their exit and form the optic nerve. This region is devoid of rods and cones and is insensitive to light; hence it is named the blind spot.

The layers of the retina, in the order light strikes them, are the optic nerve fiber layer, ganglion cell layer, inner synaptic layer, bipolar cell layer, outer synaptic layer, layer of rods and cones, and pigment epithelium. SEE: *illus. (Retina)*.

COLOR: The retina is normally red, reflecting blood flow, and is pale in anemia or ischemia.

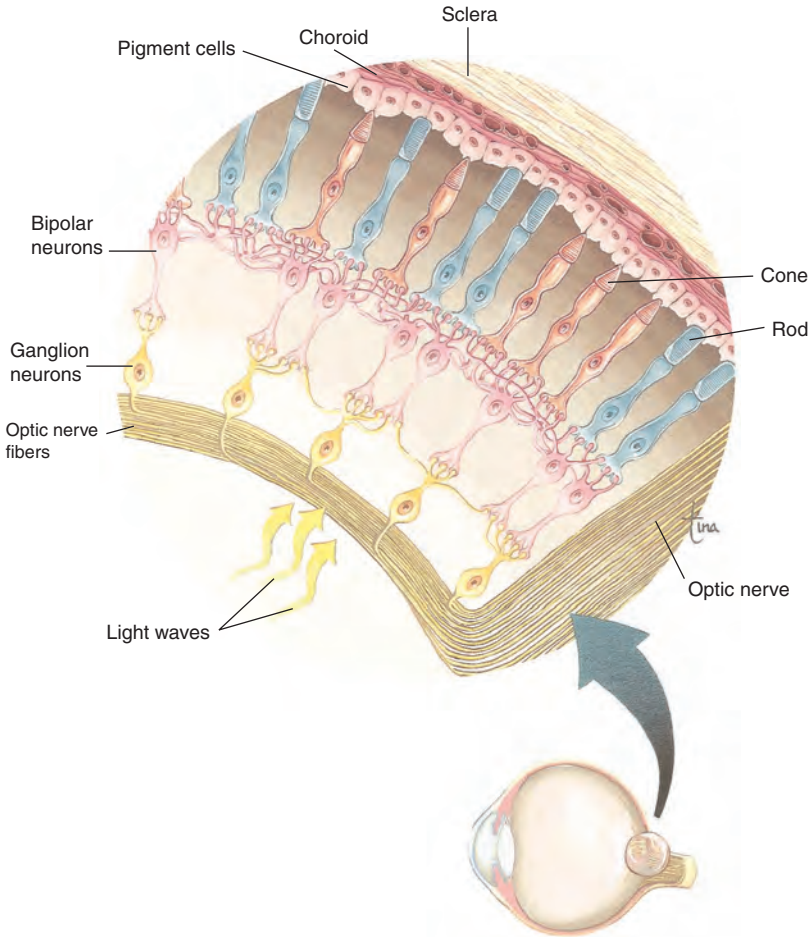
VESSELS: The arteries are branches of a single central artery, which is a branch of the ophthalmic artery. The central artery enters at the center of the optic papilla and supplies the inner layers of the retina. The outer layers, including rods and cones, are nourished by capillaries of the choroid layer. The veins lack muscular coats. They parallel the arteries; blood leaves by a central vein that leads to the superior ophthalmic vein.

coarctate r. A condition in which there is an effusion of fluid between the retina and choroid, giving the retina a funnel shape.

shot-silk r. A retina having an opalescent appearance, sometimes seen in young persons.

tigroid r. A retina having a spotted or striped appearance, seen in retinitis pigmentosa.

retinaculum (rět'ī-nāk'ū-lūm) *pl.* **retinacula** [L., halter] A band or membrane holding any organ or part in its place. Thickenings of the deep fascia in



RETINA

Microscopic structure of optic disk area

distal portions of limbs that hold tendons in position when muscles contract are called retinaculum tendinum.

r. cutis A fibrous band connecting the corium with underlying fascia.

extensor r. of ankle **1.** The superior extensor retinaculum, a band crossing the extensor tendons of the foot and attached to the lower portion of the tibia and fibula. **2.** The inferior extensor retinaculum, a band located on the dorsum of the foot. It consists of two limbs having a common origin on the lateral surface of the calcaneus. The upper limb is attached to the medial malleolus; the lower limb curves around the instep and is attached to the fascia of the abductor hallucis on the medial side of the foot.

extensor r. of wrist An oblique band attached medially to the styloid process

of the ulna, the hamate bone, and the medial ligament of the wrist joint. Laterally it is attached to the anterior border of the radius. It contains six separate compartments for passage of the extensor tendons to the hand.

flexor r. of ankle The retinaculum extending from the medial malleolus to the medial tubercle of the calcaneus.

flexor r. of hand The fascial band that holds down the flexor tendons of the digits.

flexor r. of wrist The retinaculum extending from the trapezium and scaphoid bones laterally to the hamate and pisiform bones medially.

r. of hip joint Any of three flat bands lying along the neck of the femur and continuous with the capsule of the hip joint.

r. mammae Strands of connective tissue in the mammary gland extending from glandular tissue through fat toward the skin, where they are attached to the dermis. Over the cephalic portion of the mammae, they are well developed and are called suspensory ligaments of Cooper.

patellar r. One of two fibrous bands (medial and lateral) lying on either side of the knee joint and forming part of the joint capsule. These bands are extensions of the insertions of the medial and lateral vastus muscles of the thigh.

peroneal r. One of two fibrous bands on the lateral side of the foot that contains the tendons of the peroneus longus and brevis muscles. The superior peroneal retinaculum extends from the lateral malleolus to the lateral surface of the calcaneus; the inferior peroneal retinaculum is attached below to the calcaneus and above to the lower border of the inferior extensor retinaculum.

r. tendinum The annular band of the wrist or ankle.

retinal (rĕt'ī-nāl) **1.** Pertaining to the retina. **2.** The light-absorbing portion of a photopigment, a derivative of vitamin A.

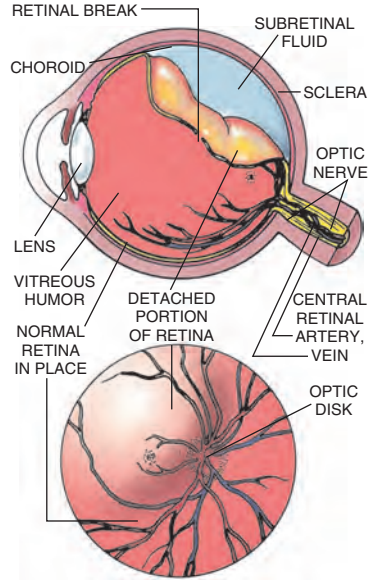
retinal break A break in the continuity of the retina, usually caused by trauma to the eye. Detachment of the retina may follow the appearance of the break.

retinal correspondence A condition in which simultaneous stimulation of points in the retina of each eye results in formation of a single visual sensation. These points, called corresponding points, lie in the foveae of the two retinas, or in the nasal half of one retina and the temporal half of the other. Abnormal correspondence results in double vision (diplopia) and usually is caused by imbalance of the ocular muscles. SEE: *strabismus*.

retinal cryopexy A treatment for a retinal tear in which the retina and choroid surrounding the tear are frozen. This scars the retina around the tear, sealing the defect. Cryopexy is typically used to treat lesions at the retinal periphery, which may be difficult to treat with a laser.

retinal detachment Separation of the inner sensory layer of the retina from the outer pigment epithelium. It is usually caused by a hole or break in the inner sensory layer that permits fluid from the vitreous to leak under the retina and lift off its innermost layer. Causes include trauma and any disease that causes retinopathy, such as diabetes or sickle cell disease. Symptoms are blurred vision, flashes of light, vitreous floaters, and loss of visual acuity. The location of holes must be determined so that they can be repaired by laser ther-

apy (i.e., photocoagulation). SEE: *illus.; Nursing Diagnoses Appendix*.



RETINAL DETACHMENT

TREATMENT: Scleral buckling techniques are used to treat retinal detachment in a large number of patients. Vitrectomy with laser and pneumatic retinopathy are occasionally employed as an alternative treatment.

retinal isomerase The enzyme in rods and cones that converts *trans*-retinal to *cis*-retinal, which then combines with the opsin present to form a photopigment responsive to light.

retinitis (rĕt-i-nī'tis) [L. *retina*, retina, + Gr. *itis*, inflammation] Inflammation of the retina. Symptoms include diminished vision, contractions of fields or scotomata, alteration in the apparent size of objects, and photophobia. SEE: *retinopathy*.

actinic r. Retinitis caused by exposure to intense light or other radiant energy.

albuminuric r. Hypertensive retinopathy.

apoptotic r. Hemorrhagic r.

circinate r. Circinate retinopathy.

circumpapillar r. Retinitis marked by a proliferation of the outer layers of retina about the optic disk.

cytomegalovirus r. ABBR: CMV retinitis. The most common eye infection in patients with acquired immunodeficiency syndrome. This opportunistic infection is responsible for visual impairment and blindness if left untreated.

diabetic r. Diabetic retinopathy.

disciform r. Wet macular degeneration.

exogenous purulent r. Retinitis from the introduction of infectious organisms into the eye as a result of a perforating wound or ulcer.

external exudative r. Retinitis in which large masses of white and yellow crystals occur beneath the retina due to organization of hemorrhages.

exudative r. Chronic retinitis with elevated areas around the optic disk.

hemorrhagic r. Retinitis with pronounced hemorrhage into the retina. SYN: *apoplectic retinitis*.

metastatic r. Acute purulent retinitis resulting from the presence of infective emboli in retinal vessels.

r. pigmentosa A group of hereditary degenerative retinal diseases marked by defective night vision followed by a progressive loss of the field of vision. Rod and cone photoreceptor degeneration is followed by degenerative changes in retinal neurons and the optic blood vessels and nerve head.

TREATMENT: No specific therapy is available, but professional and vocational guidance and genetic counseling can be provided. Family members should be examined to determine whether their vision is affected.

r. of prematurity Retinopathy of prematurity.

r. proliferans Retinitis marked by vascularized masses of connective tissue that project from the retina into the vitreous; the end result of recurrent hemorrhage from the retina into the vitreous.

r. punctata albescens A nonprogressive, degenerative familial disease in which innumerable minute white spots are scattered over the entire retina. There are no pigmentary changes. The disease usually starts early in life.

punctate r. Retinitis marked by numerous white or yellow spots in the fundus of the eye. SEE: *white dot syndrome*.

solar r. Solar retinopathy.

stellate r. Retinitis marked by exudates, hemorrhages, blurring of the optic disk, and formation of a star-shaped figure around the macula.

suppurative r. Retinitis associated with septicemia resulting from pyogenic organisms.

syphilitic r. Retinitis resulting from or associated with syphilis. It may also involve the optic nerve (syphilitic neuroretinitis).

retinoblastoma (rĕt'ī-nō-blās-tō'mă) [L. *retina*, retina, + Gr. *blastos*, germ, + *oma*, tumor] A malignant glioma of the retina, usually unilateral, that occurs in young children and usually is hereditary. One of hundreds of genetic mutations in a tumor regulatory protein (the retinoblastoma protein) may be respon-

sible. The initial diagnostic finding is usually a yellow or white light reflex seen at the pupil (cat's eye reflex). Several treatment options are available depending on the size and extent of the tumor, whether both eyes are involved, and the general health of the patient. Included are enucleation, radiation, scleral plaque irradiation, cryotherapy, photocoagulation, and chemotherapy.

retinochoroid (rĕt'ī-nō-kō'royd) [" + Gr. *chorioeides*, skinlike] Pert. to the retina and choroid. SYN: *chorioretinal*.

retinochoroiditis (rĕt'ī-nō-kō-royd-ī'tis) [" + " + *itis*, inflammation] Inflammation of the retina and choroid. SYN: *chorioretinitis*; *choroidoretinitis*.

r. juxtapapillaris Retinochoroiditis close to the optic nerve.

retinocystoma (rĕt'ī-nō-sīs-tō'mă) [" + Gr. *kysis*, sac, + *oma*, tumor] Glioma of the retina.

retinodialysis (rĕt'ī-nō-dī-ăl'ī-sīs) [" + Gr. *dialysis*, separation] Detachment of the retina at its periphery. SYN: *disinsertion*.

retinoic acid (rĕ-tī-nō-īk) A metabolite of vitamin A used in the treatment of cystic acne.

retinol (rĕt'ī-nōl) One of the active forms of vitamin A; it is stored in the body primarily in the liver and in adipose tissue. Sources of this 20-carbon alcohol include liver, egg yolk, chicken, whole milk, butter, and fortified breakfast cereal. Vitamin A activity in foods is expressed as retinol equivalents (RE), the resulting amount of retinol after conversion in the body.



Excessive consumption of retinol supplements, esp. by the elderly, can produce vitamin A toxicity.

retinopapillitis (rĕt'ī-nō-pă'pīl-ī'tis) [L. *retina*, retina, + *papilla*, nipple, + Gr. *itis*, inflammation] Inflammation of the retina and optic papilla extending to the optic disk. SYN: *papilloretinitis*.

retinopathy (rĕt'in-ōp'ă-thē) [" + Gr. *pathos*, disease, suffering] Any noninflammatory retinal damage or disease. It can cause gradual loss of vision or complete blindness if left untreated. It often results from another, systemic illness (e.g., hypertension or diabetes mellitus). SEE: table.

arteriosclerotic r. Retinopathy accompanying generalized arteriosclerosis and hypertension.

circinate r. A ring of degenerated white exudative area of the retina around the macula. SYN: *circinate retinitis*.

diabetic r. ABBR: DR. Retinal damage marked by microaneurysms, hemorrhage, macular edema or macular ischemia, or retinal exudates in patients

Common Findings on Fundoscopic Examination in Retinopathy

arteriovenous nicking
 blot hemorrhages
 flame-shaped hemorrhages
 focal or generalized arteriolar narrowing
 hard exudates
 macular edema
 microaneurysms
 soft exudates ("cotton-wool") spots

with longstanding diabetes mellitus. This common complication of longstanding diabetes may result in blindness. Strict control of blood sugar levels and of high blood pressure reduces the incidence of the disease. Regular ophthalmological screening helps to detect the disease before it causes irreversible visual loss. Treatment includes retinal laser surgery or vitrectomy.

DR is divided into two groups: non-proliferative diabetic retinopathy (NPDR) consisting of blot, dot hemorrhages, exudate, and macular edema; and proliferative diabetic retinopathy (PDR), consisting of abnormal new vessels and fibrotic tissue. Approximately 50% of patients who have had diabetes for more than 15 years will have some form of diabetic retinopathy. SEE: *visual field* for illus.

hypertensive r. Retinopathy associated with hypertension, toxemia of pregnancy, or glomerulonephritis. Findings on physical examination include a hazy retina, blurred disk margins, distention of retinal arteries, retinal hemorrhages, and white patches in the fundus, esp. surrounding the papilla and at the stellate figure at the macula. SYN: *albuminuric retinopathy*. SEE: *Keith-Wagener-Barker classification*.

r. of prematurity ABBR: ROP. A bilateral disease of the retinal vessels in preterm infants and the most prominent cause of blindness in this population. Its cause remains uncertain despite much research, but oxygen levels and other environmental factors may be factors. The disease is marked by retinal neovascularization in the first weeks of life. Retinal detachment may occur. Cryotherapy or laser photocoagulation can be curative if instituted early in the illness. SYN: *retrolental fibroplasia*.

In treating preterm infants, it is possible to prevent ROP by using only the lowest possible effective oxygen concentration that will not endanger the life of the infant. Monitoring arterial blood oxygen levels is essential in preventing ROP. Too much restriction of oxygen, however, increases the likelihood of hyaline membrane disease and neurological disorders. All preterm infants

treated with supplemental oxygen should be examined carefully by an ophthalmologist before discharge from the hospital. Once blindness develops, there is no effective treatment.

solar r. Pathological changes in the retina after looking directly at the sun. This condition is seen frequently following an eclipse of the sun. SEE: *scotoma*, *eclipse*.

retinopexy (rē-tī-nō-pĕk'sē) [r + Gr. *pexis*, fixation] A procedure involving diathermy, used in the treatment of retinal detachment to create the formation of adhesions between the detached portion and the underlying tissue.

pneumatic r. A treatment for retinal detachment, in which a bubble of gas is instilled into the vitreous. As the bubble attains equilibrium with body gases, it expands and forces the detached area back into place; then, cryotherapy or photocoagulation is used to reattach the retina permanently. SEE: *retinal detachment*.

retinoschisis (rĕt'ī-nōs'kī-sīs) [r + Gr. *schisis*, a splitting] A splitting of the retina into two layers with cyst formation between the layers.

retinoscope (rĕt'ī-nō-skōp) [r + Gr. *skopein*, to examine] An instrument used in performing retinoscopy.

retinoscopy (rĕt'īn-ōs'kō-pĕ) An objective method of determining refractive errors of the eye. The examiner projects light into the eyes and judges error of refraction by the movement of reflected light rays. SYN: *skiascopy* (1).

retinosis (rĕt'ī-nō'sīs) [r + Gr. *osis*, condition] Any degenerative process of the retina not associated with inflammation.

retinotomy (rĕt'īn-ōt'ā-mē) Surgical incision of the retina, e.g., to remove proliferating blood vessels in age-related macular degeneration.

retire 1. To discontinue formal employment or work at a specific place or task. In the past, in many industries, educational institutions, and public service, retirement was mandated when an employee had attained a specified age. This practice has lost its attractiveness to a large segment of the workforce, esp. among those who enjoy work. SEE: *recreation*. 2. To go to bed.

retort (rĕ-tōrt') [L. *retortus*, bent back] A flasklike, long-necked vessel used in distillation.

retract (rī-trākt') [L. *retractus*] To draw back.

retractile (rī-trākt'īl) [L. *retractilis*] Capable of being drawn back or in.

retraction (rī-trāk'shūn) A shortening; the act of drawing backward or the condition of being drawn back.

clot r. 1. The shrinking of the clot that forms when blood is allowed to stand, due to the fibrin network formed

in the clot. **2.** The platelet-mediated folding of fibrin threads in a formed clot, which diminishes the size of the damaged area.

genital r. Koro.

uterine r. The process by which the muscular fibers of the uterus remain permanently shortened to a small degree following each contraction or labor pain.

retraction ring A ridge sometimes felt on the uterus above the pubes, marking the line of separation between the upper contractile and lower dilatable segments of the uterus. SEE: *Bandl's ring*.

retractor (rē-trāk'tōr) **1.** An instrument for holding back the margins of a wound or structures within the wound. **2.** A muscle that draws in any organ or part.

retrain To instruct a person in a skill or trade different from the person's previous work.

retreat (rī-trēt') [ME. *retret*, draw back] A withdrawal (e.g., in psychology) from difficult life situations. This may be direct, as in physical flight, or indirect, as in malingering, illness, abnormal preoccupation, and self-deception.

retrenchment [Fr. *retrenchier*, to cut back] **1.** A budgetary reduction; a cut-back in the amount of funds allocated for a purpose. **2.** A procedure used in plastic surgery to remove excess tissue.

retrieval (rī-trē'vāl) **1.** In psychology, the process of bringing stored information to the conscious level. **2.** Gathering of an item or items from storage or a repository.

oocyte r. A procedure to collect eggs contained in the ovarian follicles for use in assisted reproduction.

retro- [L.] Prefix meaning *backward, back, behind*.

retroaction (rē'trō-āk'shūn) Action in a reverse direction.

retrobuccal (rēt'rō-būk'āl) [L. *retro*, back, + *bucca*, cheek] Pert. to the back part of the mouth or the area behind the mouth.

retrocecal (rēt'rō-sē'kāl) [L. *retro*, back, + *caecum*, cecum] Behind or pert. to the area posterior to the cecum.

retrocervical (rēt'rō-sēr'vī-kāl) [L. *retro*, back, + *cervix*, neck] Posterior to the cervix uteri.

retrocession (rēt'rō-sēsh'ūn) [L. *retro-cessio*, going back] **1.** A going back; a relapse. **2.** Metastasis from the surface to an internal organ. **3.** Backward displacement of the uterus.

retroclusion (rēt'rō-kloo'zhūn) [Fr. + *claudere*, to close] A method of stopping arterial bleeding. A needle is placed through the tissues over a severed artery and then turned around and down so that it is passed back through the tissues under the artery. This compresses the vessel.

retrocolic (rēt'rō-kōl'ik) [L. *retro*, back,

+ Gr. *kolon*, colon] Posterior to the colon.

retrocollic spasm, retrocollis Torticollis with spasms affecting the posterior neck muscles.

retroconduction (rēt'rō-kōn-dūk'shūn) [Fr. +] Backward conduction, i.e., a reversed flow of ions or electrical impulses, esp. used when speaking of disturbances in cardiac rhythm.

retrocursive (rēt'rō-kūr'siv) [L. *retro*, back, + *curro*, to run] Stepping or turning backward.

retrodeviation (rēt'rō-dē'vē-ā'shūn) [Fr. + *deviare*, to turn aside] Backward displacement, as of an organ.

retrodisplacement (rēt'rō-dīs-plās'mēnt) [Fr. + Fr. *desplacer*, displace] Backward displacement of a part.

retroesophageal (rēt'rō-ē-sōf'ā-jē'āl) [L. *retro*, behind, + Gr. *oisophagos*, gullet] Behind the esophagus.

retrofilling (rēt'rō-fil'ing) The placement of filling material in a root canal through an opening made in the apex of the tooth.

retroflexion (rēt'rō-flēk'shūn) A bending or flexing backward. **retroflexed**, *adj.*

r. of uterus A condition in which the body of the uterus is bent backward at an angle with the cervix, whose position usually remains unchanged.

retrognathia (rēt'rō-nāth'ē-ā) [L. *retro*, back, + Gr. *gnathos*, jaw] Location of the mandible behind the frontal plane of the maxilla.

retrognathism (rēt'rō-nāth'izm) [Fr. + Gr. *gnathos*, jaw] The condition of having retrognathia.

retrograde (rēt'rō-grād) [L. *retro*, backward, + *gradi*, to step] Moving backward; degenerating from a better to a worse state.

retrograde flow The flow of fluid in a direction opposite to that considered normal.

retrograde pyelography A surgical procedure used to visualize the renal pelvis and ureter in which an endoscope is placed through the urethra into the urinary bladder and a catheter is placed into the ureter to instill a contrast medium.

retrography (rēt'rōg'rā-fē) [Fr. + Gr. *graphein*, to write] Mirror writing, a symptom of certain brain diseases. It also may be present in persons with dyslexia.

retrogression (rēt'rō-grēsh'ūn) [L. *retrogressus*, go backward] A going backward, as in the involution, degeneration, or atrophy of a tissue or structure.

retrojection (rēt'rō-jēk'shūn) [Fr. + *jacio*, throw] Washing out a cavity from within by injection of a fluid.

retrolabyrinthine (rēt'rō-lāb'ī-rin'thīn) [L. *retro*, behind + Gr. *labyrinthos*, a maze] Located behind the labyrinth of the ear.

retrolental (rèt-rō-lèn'tāl) Behind the crystalline lens. SYN: *retrolenticular*.

retrolenticular (rèt'rō-lèn-tik'ū-lār) Retrolental.

retromammary (rèt'rō-mām'mā-rē) [" + *mamma*, breast] Behind the mammary gland.

retromandibular (rèt'rō-mān-dīb'ū-lār) [" + *mandibulum*, jaw] Behind the lower jaw.

retroanal (rèt'rō-nā'zāl) [L. *retro*, back, + *anus*, nose] Pert. to or situated at the back part of the nose.

retro-ocular (rèt'rō-ōk'ū-lar) [L. *retro*, behind, + *oculus*, eye] Behind the eye.

retroperitoneal (rèt'rō-pēr'tī-tō-nē'āl) [" + Gr. *peritonaion*, peritoneum] Behind the peritoneum and outside the peritoneal cavity (e.g., the kidneys).

retroperitoneal fibrosis Development of a mass of scar tissue in the retroperitoneal space. This may lead to physical compression of the ureters, vena cava, or aorta. This disease may be associated with taking methysergide for migraine, and with other drugs. SYN: *Ormond's disease*.

retroperitonitis (rèt'rō-pēr'tī-tō-nī'tīs) Inflammation behind the peritoneum.

retropharyngeal (rèt'rō-fār-īn'jē-āl) [L. *retro*, behind, + Gr. *pharynx*, throat] Behind the pharynx.

retropharyngitis (rèt'rō-fār-īn-jī'tīs) [" + " + *itis*, inflammation] Inflammation of the retropharyngeal tissue.

retropharynx (rèt'rō-fār'īnks) [" + Gr. *pharynx*, throat] The posterior portion of the pharynx.

retroplacental (rèt'rō-plā-sèn'tāl) [" + *placenta*, a flat cake] Behind the placenta, or between the placenta and the uterine wall.

retroplasia (rèt'rō-plā-zē-ā) [" + Gr. *plassein*, to form] The changing of a cell or tissue into a less specialized form.

retroposed (rèt-rō-pōsd') [L. *retro*, backward, + *positus*, placed] Displaced backward.

retroposition (rèt'rō-pō-zīsh'ūn) The backward displacement of a tissue or organ.

retropubic (rèt'rō-pū'bīk) [" + "] Located behind the pubic bone.

retropubic prostatectomy The removal of a diseased prostate gland through an incision made in the lower abdomen just above the pubic symphysis.

retropulsion (rèt'rō-pūl'shūn) [" + *pulsio*, a thrusting] **1.** The pushing back of any part, as of the fetal head in labor. **2.** A gait disturbance in which patients involuntarily walk backward, seen in some diseases of the central nervous system, including Parkinson's disease. SYN: *retropulsive gait*. **3.** Movement of intestinal contents backward (i.e., toward the mouth instead of the anus).

retrorunning (rèt-rō-rūn'ēng) The act of

running backwards, esp. for conditioning of the hamstring muscle groups for sport-specific training. [Because of the risk of falling, retrorunning regimens should be performed with close supervision when dealing with a nonathletic population.]

retrospective (rèt-rō-spèk'tiv) Looking backward.

retrospective study A clinical study in which patients or their records are investigated after the patients have experienced the disease, condition, or treatment. SEE: *prospective study*.

retrospodyololsthesis (rèt'rō-spōn'dī-lō-lis-thē'sis) [L. *retro*, behind + Gr. *spondylos*, vertebra, + *olsthesis*, a slipping] The posterior displacement of a vertebra.

retrosternal (rèt'rō-stēr'nāl) [" + Gr. *sternon*, chest] Behind the sternum.

retrosternal pulse A venous pulse felt over the suprasternal notch.

retrotarsal (rèt'rō-tār'sāl) [" + Gr. *tarsos*, a broad, flat surface] Behind the tarsus of the eyelid.

retrouterine (rèt'rō-ū'tēr-īn) [L. *retro*, backward, + *uterus*, womb] Behind the uterus.

retroversion of flexion (rèt'rō-vēr'sē-ō-flèk'shūn) [" + *versio*, a turning, + *flexio*, flexion] Retroversion and retroflexion of the uterus.

retroversion (rèt'rō-vēr'shūn) [L. *retro*, back, + *versio*, a turning] A turning, or a state of being turned back; esp., the tipping of an entire organ.

femoral r. A decrease in the head-neck angle of the femur, causing outward rotation of the shaft of the bone when the person is standing.

r. of uterus Backward displacement of the uterus with the cervix pointing forward toward the symphysis pubis. Normally the cervix points toward the lower end of the sacrum with the fundus toward the suprapubic region.

retroviruses (rèt'rō-vī'rūs-ēs) The common name for the family of Retroviridae. Some of these RNA-containing tumor viruses are oncogenic and induce sarcomas, leukemias, lymphomas, and mammary carcinomas in lower animals. These viruses contain reverse transcriptase, an enzyme essential for reverse transcription (i.e., the production of a DNA molecule from an RNA model).

retrude (rī-trood') [L. *re*, back, + *trudere*, to shove] In dentistry, to force backward.

retrotrusion (rī-troo'shūn) **1.** The process of forcing backward, esp. with reference to the teeth. **2.** A condition in which teeth are retrotruded.

Rett's syndrome (rèts) [Andreas Rett, contemporary Austrian physician] A multiple-deficit X-linked developmental disorder marked by mental retardation, impaired language use, breath holding

and hyperventilation, seizures, loss of communication skills, tremors of the trunk, difficulties walking, and abnormally small development of the head, among other clinical findings. It occurs almost exclusively in girls, after the age of 6 to 18 months, in about one of every 10,000 to 15,000 female children.

return of spontaneous circulation ABBR: ROSC. In cardiopulmonary resuscitation (CPR), the resumption of a normal heart rhythm with a perceptible pulse. ROSC differs from the ultimate goal of CPR, which is the survival of the patient, without injury to his or her brain, heart, kidneys, lungs, or other organs.

RET-Y (rèt'wí") A measure of the size and contents of the reticulocyte. It is used as an early indicator of iron deficiency.

Retzius, lines of (rèt'zē-ūs) [Gustav Magnus Retzius, Swedish anatomist, 1842–1919] Brownish incremental lines seen in microscopic sections of tooth enamel. They appear as concentric lines in transverse sections through the enamel crown.

revaccination (rē'vāk-sī-nā'shūn) An inoculation against a disease to sustain a passive immune response (protective antibodies) against a potentially infectious organism.

revascularization (rē-vās'kū-lār-ī-zā'shūn) Restoration of blood flow to a part. This may be done surgically or by removing or dissolving thrombi occluding arteries, esp. coronary or renal arteries.

cerebral r. The surgical restoration of blood flow to the brain (e.g., with an operation to bypass a blockage in the carotid or cerebral arteries).

transmyocardial r. ABBR: TMR. The use of a laser to bore tiny channels directly through the wall of the heart in an attempt to bring oxygen-rich blood from the left ventricular cavity to areas where the heart muscle is oxygen-deprived, or ischemic. TMR is a potential alternative to coronary bypass surgery or angioplasty, esp. in patients with complex plaques that would be difficult to reach with standard interventions or in patients who have already undergone many other procedures without effect. A variant of TMR is percutaneous myocardial revascularization.

reverberation (rī'vēr-bēr-ā'shūn) [L. *reverberare*, to cause to rebound] **1.** The process by which closed chains of neurons, when excited by a single impulse, continue to discharge impulses from collaterals of their cells. **2.** The repeated echoing of a sound.

Reverdin's needle (rā-vēr-dānz') [Jacques L. Reverdin, Swiss surgeon, 1842–1929] A needle with an eye at the tip that can be opened and closed by a lever.

reversal (rī-vēr'sāl) [L. *reversus*, revert] **1.** A change or turning in the opposite direction. **2.** In psychology, a change in an instinct or emotion to its opposite, as from love to hate.

sex r. The changing of an individual's sexual phenotype to that of the opposite sex. SEE: *sexual reassignment*.

reverse anorexia Muscle dysmorphia.

reverse herbology The study of the interactions between herbal and allopathic medications.

reverse PRN dosing A form of administration of medication in which dosages are given every few hours or *less often*.

reversible (rī-vēr'sī-bl) Able to change back and forth.

reversible ischemic neurological deficit ABBR: RIND. A transient stroke resulting from a decrease in cerebral blood flow. Symptoms typically last longer than 24 hr but less than 1 week.

reversion (rī-vēr'zhūn) **1.** A return to a previously existing condition. **2.** In genetics, the appearance of traits possessed by a remote ancestor. SEE: *atavism*.

revert (rē-věrt') [L. *revertere*, to turn back] To return to an earlier state or condition. SEE: *reversion*; *revertant*.

revertant (rē-vēr'tānt) An organism that has reverted to a previous phenotype by mutation.

review, chart A method of quality assurance (and sometimes clinical research) that relies on the systematic analysis of individual patient records. Data may be used to determine the incidence of adverse events, the allocation of resources, the employment of specific therapies, or the degree of compliance with specified standards of care.

review of systems ABBR: ROS. A series of questions concerning each organ system and region of the body, asked of the patient during history taking and physical examination for the purpose of gaining an optimal understanding of the patient's presenting illness and medical history.

An example of ROS follows: *General*. The examiner should determine any history of fatigue, travel to other climates or countries, recent weight change, chills, fever, and lifestyle change in the patient. How many persons occupy the patient's dwelling? What is the patient's relationship to the persons with whom he or she lives? Is it a happy home? What are the patient's hobbies and outside interests? How does the patient usually exercise? Does the patient have pets? Any history of military service? Any job-related illnesses? Any sexual partners? Any use of injected drugs? Any recent hospitalizations or illnesses?

Skin. Is the patient experiencing any

rash, itching, sunburn, change in the size of moles, vesicles, or hair loss?

Head, face, and neck. Does the patient have headaches, migraine, vertigo, stiffness, pain, or swelling? Has there been trauma to this area?

Eyes. Are glasses worn and when were the eyes last examined for visual acuity and glaucoma? Is the patient experiencing pain, diplopia, scotomata, itch, discharge, redness, or infection?

Ears. Does the patient have acute or chronic hearing loss, pain, discharge, tinnitus, or vertigo? Is there a history of failure to adjust to descent from a high altitude?

Nose. Is there any dryness, crust formation, bleeding, pain, discharge, obstruction, malodor, or sneezing? How acute is the patient's sense of smell?

Mouth and teeth. The patient should be asked about any soreness, ulcers, pain, dryness, infection, hoarseness, bleeding gums, swallowing difficulty, bruxism, or temporomandibular syndrome. What is the condition of the patient's teeth (real or false)?

Breasts. Has the patient had any pain, swelling, tenderness, lumps, bleeding from the nipple, infection, or change in the ability of the nipples to become erect? Has plastic surgery been done, and if so, were implants used?

Respiratory. Has there been any cough, pain, wheezing, sputum production (including character of sputum), hemoptysis, or exposure to persons with contagious diseases such as tuberculosis? Is there a history of occupational or other exposure to asbestos, silica, chickens, parrots, or a dusty environment? The presence of dyspnea, cyanosis, tuberculosis, pneumonia, and pleurisy should be determined. If pulmonary function tests were done, the date or dates should be recorded. The extent and duration of all forms of tobacco use should be determined.

Cardiac. The following should be determined: angina, dyspnea, orthopnea, palpitations, heart murmur, heart failure, myocardial infarction, surgical procedures on coronary arteries or heart valves, history of stress tests or angiography, hypertension, rheumatic fever, cardiac arrhythmias, exercise tolerance, history of athletic participation (including jogging and running) and if these are current activities, the dates of electrocardiograms if they were ever taken.

Vascular. Has the patient experienced claudication, cold intolerance (esp. of the extremities), frostbite, phlebitis, or ulcers (esp. of the extremities) due to poor blood supply?

Gastrointestinal. The examiner should assess the patient's appetite, history of recent weight gain or loss, and

whether the patient has been following a particular diet for gaining or losing weight. Is the patient a vegetarian? Has he or she had any difficulty in swallowing? Anorexia, nausea, vomiting (including the character of the vomitus), diarrhea and its possible explanation (such as foreign travel or food poisoning), belching, constipation, change in bowel habits, melena, hemorrhoids and history of surgery for this condition, use of laxatives or antacids, jaundice, hepatitis, and other liver disease should be determined.

Renal; urinary and genital tract. The examiner should take a history of kidney or bladder stones and date of last occurrence, dysuria, hematuria, pyuria, nocturia, incontinence, urgency, antibiotics used for urinary tract infections, bedwetting, sexually transmitted diseases, libido, sexual partners, penile or urethral discharge, and frequency of sexual activity.

Women should be questioned regarding any vulvar pruritus, vaginal discharge, vaginal malodor, history of menarche, frequency and duration of menstrual periods, amount of flow, type of menstrual protection used, type or types of contraception and douches used, and the total number of pregnancies, abortions, miscarriages, and normal deliveries. The number, sex, age, and health status of living children, and the cause of death of children who died, should be determined. Vaginal, cervical, and uterine infections; pelvic inflammatory disease; tubal ligation; dilation and curettement; hysterectomy; and dyspareunia should be recorded. Any history of the mother's use of diethylstilbestrol while pregnant with the patient should be determined.

Men should be asked about vasectomy, scrotal pain or swelling, and urinary hesitancy or double voiding.

Musculoskeletal. The examiner should ask about muscle twitches, pain, heat, tenderness, swelling, loss of range of motion or strength, cramps, sprains, strains, trauma, fractures, stiffness, back pain, osteoporosis, and character regarding time of day of onset and duration (esp. with respect to the effect of exercise, back pain, and osteoporosis).

Hematological. A history of anemia, bleeding, bruising, hemarthrosis, hemophilia, sickle cell disease or trait, recent blood loss, transfusions received, and blood donation should be recorded. Was a transfusion received at a time when blood was not being screened for hepatitis or AIDS? Was the patient ever turned down as a blood donor?

Endocrine. The patient should be questioned about sexual maturation and development, weight change, tolerance to heat or cold (esp. with respect to

other persons in the same environment), dryness of hair and skin, hair loss, and voice change. Any change in the rate of beard growth in men, development of facial hair in women, increase in or loss of libido, polyuria, polydipsia, polyphagia, pruritus, diabetes, exophthalmos, goiter, unexplained flushing, and sweating should be noted.

Nervous system. Has the patient experienced any recent change in ability to control muscular activity, or any syncope, stroke ("shock"), seizures, tremor, coordination, sensory disturbance, falls, pain, change in memory, dizziness, or head trauma?

Emotional and psychological status. Has there been a history of psychiatric illness, anxiety, depression, overactivity, mania, lassitude, change in sleep pattern, insomnia, hypersomnia, nightmares, sleepwalking, hallucinations, feeling of unreality, paranoia, phobias, obsessions, compulsions, criminal behavior, increase in or loss of libido, or suicidal thoughts? Is the patient satisfied with his or her occupation and life in general? What is his or her marital and divorce record? Has there been family discord? Does the patient attend church? The patient's employment history and any recent job changes, educational history and achievement, and self-image should be assessed.

Révilliod sign SEE: *wink*.

revised trauma score ABBR: RTS. Pediatric trauma score.

revivification (rē-viv'ī-fi-kā'shūn) [L. *re*, again, + *vivere*, to live, + *facere*, to make] **1.** An attempt to restore life to those apparently dead; restoration to life or consciousness; also the restoration of life in local parts, as a limb after freezing. **2.** The pairing of surfaces to facilitate healing, as in a wound.

revulsant (rī-vūl'sānt) [L. *revulsio*, pulling back] **1.** Causing transfer of disease or blood from one part of the body to another. **2.** A counterirritant that increases blood flow to an inflamed part.

revulsion (rī-vūl'shūn) **1.** Repugnance, hostility, or extreme distaste for a person or thing. **2.** The act of driving backward, as diverting disease from one part to another by a quick withdrawal of blood from that part—a treatment that has its origins in ancient medical care. **3.** Circulatory changes obtained by sudden and intense reactions to heat and cold. SEE: *counterirritation*.

revulsive (rī-vūl'siv) **1.** Causing revulsion. **2.** A counterirritant.

reward **1.** In behavioral science, a positive reinforcement. **2.** Something valuable given to recognize achievement, competence, or performance.

rewarming Restoring a hypothermic patient's body temperature to normal. Techniques used include removing wet

clothing; wrapping patients in blankets, hotpacks, or foils; infusing intravenous, nasogastric, or intraperitoneal fluids warmed to about 40°C; increasing the temperature of the patient's blood with extracorporeal bypass machines, or, rarely, immersing the patient in warm water.

Rey Auditory Verbal Learning Test (rā)

A neuropsychiatric test used to measure the ability to recall a list of heard words. The test is sometimes used to evaluate the memory of patients with dementia.

Reye's syndrome (rīz) [R. D. K. Reye, Australian pathologist, 1912–1977] A syndrome marked by acute encephalopathy and fatty infiltration of the liver and often of the pancreas, heart, kidney, spleen, and lymph nodes. It is seen primarily in children under age 18, after an acute viral infection such as chickenpox or influenza. The mortality rate depends on the severity of the central nervous system involvement but may be as high as 80%. Fortunately, the disease occurs rarely. The cause of the disease is unknown, but association with increased use of aspirin and other salicylates is evident from epidemiological studies. SEE: *Nursing Diagnostics Appendix*.

SYMPTOMS: The patient experiences a viral infection with a brief recovery period, followed in about 1 to 3 days by severe nausea and vomiting, a change in mental status (disorientation, agitation, coma, seizures), and hepatomegaly without jaundice in 40% of cases. The disease should be suspected in any child with acute onset of encephalopathy, nausea and vomiting, or altered liver function, esp. after a recent illness. The severity of the syndrome depends on how badly the brain swells during the illness, reflected in increased intracranial pressure (ICP).



Aspirin and other salicylates should not be used for any reason in treating children under age 18 with viral infections.

TREATMENT: Supportive care includes intravenous administration of fluids and electrolytes, administration of corticosteroids, and ventilatory assistance. Electrolytes should be controlled carefully, along with serum glucose and ammonia levels, and neurological status.

PATIENT CARE: Increased ICP resulting from increased cerebral blood volume results in intracranial hypertension. To decrease intracranial pressure and cerebral edema, fluids are provided at 2/3 maintenance level and an osmotic diuretic or furosemide is prescribed. The head of the bed is kept at a 30-degree angle. Fluid intake should

maintain urine output at 1.0 ml/kg/hour, plasma osmolality at 290 mOsm (normal to high), and blood glucose at 150 mg/ml (high), while preventing fluid overload. Proteins are restricted to keep ammonia levels low. Hypoprothrombinemia (resulting from liver injury) is treated with vitamin K, or fresh frozen plasma if needed. Temperature is monitored, and prescribed measures to alleviate hyperthermia are instituted. Seizure precautions are also instituted. Intake and output are monitored carefully. The patient is observed for evidence of impaired hepatic function, such as signs of bleeding or encephalopathy. All treatments are explained to parents and support is provided to them. The National Reye's Syndrome Foundation provides information and support.

RF, RF *rheumatoid factor*.

R.F.A. *right frontoanterior fetal position*.

R factor *resistance transfer factor*.

R.F.P. *right frontoposterior fetal position*.

R.F.T. *right frontotransverse fetal position*.

RH *releasing hormone*. SEE: under *hormone*.

Rh 1. Symbol for the element rhodium.

2. *Rhesus*, a monkey (*Macaca rhesus*) in which the Rh factor was first identified.

Rhabditiis (răb-dī'tis) [Gr. *rhabdos*, rod] A genus of small nematode worms, some of which are parasitic.

rhabdo- Combining form meaning *rod*.

rhabdoid (răb'doyd) [Gr. *rhabdos*, rod, + *eidōs*, form, shape] Resembling a rod.

rhabdomyoblastoma (răb'dō-mī'ō-blăs-tō'mă) Rhabdomyosarcoma.

rhabdomyolysis (răb'dō-mī-ōl'ī-sis) [" + " + *lysis*, dissolution] An acute, sometimes fatal disease in which the by-products of skeletal muscle destruction accumulate in the renal tubules and produce acute renal failure. Rhabdomyolysis may result from crush injuries, the toxic effect of drugs or chemicals on skeletal muscle, extremes of exertion, sepsis, shock, electric shock, and severe hyponatremia. Lipid-lowering drugs such as statins (pravastatin, simvastatin) and/or fibrates (gemfibrozil) are among the commonly prescribed drugs that put patients at risk for rhabdomyolysis. Kidney failure caused by "rhabdo" may produce life-threatening hyperkalemia and metabolic acidosis. The diagnosis is made in patients with appropriate histories or exposures who have elevated levels of serum or urine myoglobin or creatine kinase (CK). Management may include the infusion of bicarbonate-containing fluids (to enhance urinary secretion of myoglobin) or hemodialysis. SEE: *reperfusion*.

PATIENT CARE: The goals of treatment are to

1. prevent and treat renal dysfunction,

2. reverse electrolyte abnormalities, and

3. correct the underlying cause.

Patients are hydrated aggressively with a goal of achieving urine output between 200 and 300 ml/hr. If urine output does not increase with hydration, loop and osmotic diuretics are prescribed to promote diuresis. Dialysis may be needed for the 10% to 20% of patients with rhabdomyolysis who develop renal failure. Urinary alkalization (e.g., with sodium bicarbonate) increases myoglobin solubility in the urine and thus its elimination from the body. The patient with rhabdomyolysis should also be monitored closely for electrolyte disturbances (hypocalcemia, hyperkalemia) and dysrhythmias and corrections made as quickly as possible. When localized muscle injuries are present (e.g., after trauma) and compartment syndrome is suspected, direct measurement of compartment pressures is used to diagnose the need for fasciotomy. Bedrest is maintained throughout the acute illness phase. As the patient recovers, physical therapy will help maintain range of motion and prevent other complications of immobilization in hospital.

traumatic r. SEE: *crush syndrome; reperfusion* (2).

rhabdomyoma (răb'dō-mī-ō'mă) [" + " + *oma*, tumor] A striated muscular tissue tumor. SYN: *myoma striocellulare*.

rhabdomyosarcoma (răb'dō-mī-ō-săr-kō'mă) [" + " + *sarx*, flesh, + *oma*, tumor] A malignant neoplasm originating in skeletal muscle. SYN: *rhabdomyoblastoma*.

rhabdosarcoma, embryonal (răb'dō-săr-kō'mă) Botryoid sarcoma.

rhabdovirus (răb'dō-vī'rūs) [" + *L. virus*, poison] Any of a group of rod-shaped RNA viruses with one important member, the rabies virus, being pathogenic to humans. The virus has a predilection for the tissue of mucus-secreting glands and the central nervous system. All warm-blooded animals are susceptible to infection with these viruses.

rhachialgia (ră'kē-ăl'jē-ă) [Gr. *rhachis*, spine, + *algos*, pain] Pain in the spine.

rhachiocampsis (ră'kē-ō-kămp'sis) [" + *kampsis*, a bending] Curvature of the spine.

rhachioptegia (ră'kē-ō-plē'jē-ă) [" + *ptegē*, stroke] Spinal paralysis.

rhachioscoliosis (ră'kē-ō-skō'lē-ō'sis) [" + *skoliosis*, curvature] Curvature of the spine laterally.

rhachis (ră'kis) [Gr.] The spinal column.

rhabdomyolysis (ră-kis'kī-sis) [" + *schisis*, a splitting] A congenital cleft in

the spinal column. SYN: *spondyloschisis*.

Rhadinovirus (ră"đi-nō-vī'rūs) [Gr. *rhadinos*, fragile + ""] A genus of herpesviruses that includes human herpes virus 8.

rhagades (răg'ă-dēz) [Gr., tears] Linear fissures appearing in the skin, esp. at the corner of the mouth or anus, causing pain. If due to syphilis, they form a radiating scar on healing.

rhagadiform (ră-găd'ī-form) [Gr. *rhagas*, tear, + L. *forma*, shape] Fisured; having cracks.

-rhage, -rhagia SEE: *-rrhage; -rrhagia*.

Rh antiserum Human serum that contains antibodies to the Rh factor. SEE: *Rh_s(D) immune globulin*.

Rh blood group A group of antigens on the surface of red blood cells present to a variable degree in human populations. When the Rh factor (an antigen often called D) is present, an individual's blood type is designated Rh⁺ (Rh positive); when the Rh antigen is absent, the blood type is Rh⁻ (Rh negative). If an individual with Rh⁻ blood receives a transfusion of Rh⁺ blood, anti-Rh antibodies form. Subsequent transfusions of Rh⁺ blood may result in serious transfusion reactions (agglutination and hemolysis of red blood cells). A pregnant woman who is Rh⁻ may become sensitized by entry of red blood cells from an Rh⁺ fetus into the maternal circulation after abortion, ectopic pregnancy, or delivery. In subsequent pregnancies, if the fetus is Rh⁺, Rh antibodies produced in maternal blood may cross the placenta and destroy fetal cells, causing erythroblastosis fetalis. SEE: *Rh immune globulin*.

-rhea SEE: *-rrhea*.

rhegmatogenous (rĕg"mă-tō'jĕ-nus) [Gr. *rhegma*, a breaking, + *gen*, producing, forming] **1.** Caused by or pert. to a tear. **2.** Torn. The term refers almost exclusively to retinal detachment.

rhений (rĕ'nĕ-ŭm) SYMB: Re. A silvery-white polyvalent transition metal similar to manganese; atomic weight 186.2, atomic number 75. It is used as a radiopharmaceutical.

rheo- [Gr. *rheos*, current] Combining form meaning *current, stream, flow*.

rheobase (rĕ'ō-bās) [" + *basis*, base] In unipolar testing with the galvanic current using the negative as the active pole, the minimal voltage required to produce a stimulated response. Also called *threshold of excitation*. SEE: *chronaxie*.

rheobasic (rĕ"ō-bā'sĭk) Concerning the rheobase.

rheology (rĕ-ōl'ō-jĕ) [" + *logos*, word, reason] The study of the deformation and flow of materials.

rheophoresis, rheopheresis (rĕ"ō-fōr-ĕ'sĭs) [Gr. *rheos*, current, + *phoresis*,

a bearing] Membrane differential filtration.

rheostat (rĕ'ō-stăt) [" + *statos*, standing] A device maintaining fixed or variable resistance for controlling the amount of electric current entering a circuit.

rheostosis (rĕ-ōs-tō'sĭs) [" + *osteon*, bone] A hypertrophy and condensing osteitis occurring in streaks, involving the long bones; also known as melo-rheostosis.

rheotaxis (rĕ"ō-tăk'sĭs) [" + *taxis*, arrangement] A reaction to a current of fluid, in which an organism orients itself with the current.

rheumatic (roo-măt'ĭk) [Gr. *rheumatikos*] Pert. to connective tissue disease.

rheumatic disease, functional class Classifications created by the American Rheumatism Association (now the American College of Rheumatology) that define the capacity level at which a patient with rheumatic disease is capable of functioning. Class I is complete functional capacity with ability to carry on all usual duties without handicaps; class II is functional capacity adequate to conduct normal activities despite handicap or discomfort or limited mobility of one or more joints; class III is functional capacity adequate to perform only a few or none of the duties of usual occupations or of self-care; and class IV indicates a patient who is largely or wholly incapacitated and is bedridden or confined to a wheelchair, permitting little or no self-care.

rheumatic fever A multisystem, febrile inflammatory disease that is a delayed complication of untreated group A streptococcal pharyngitis. It is believed to be caused by an autoimmune response to bacterial antigens in the streptococci, although the precise mechanism responsible for the illness has not been identified. Primarily seen in children between ages 5 and 15, the disease is now uncommon in Western societies because of effective and prompt treatment for strep throat, but it remains a major cause of morbidity in the developing world. SEE: *illius; Nursing Diagnoses Appendix*.



RHEUMATIC FEVER
Erythema marginatum

SYMPTOMS: Following a pharyngeal infection with group A streptococci, some patients experience sudden fever and joint pain. Other symptoms include migratory joint pains, pain on motion, abdominal pain, chorea, and cardiac involvement (pericarditis, myocarditis, and endocarditis). Precordial discomfort and heart murmurs develop suddenly. Skin manifestations include erythema marginatum or circinatum and the development of subcutaneous nodules.

Rheumatic fever may occur without any sign or symptom of joint involvement. Two major manifestations (carditis, polyarthritides, chorea, erythema marginatum, subcutaneous nodules) or one major and two minor criteria (fever of at least 100.4°F [38°C], arthralgia, previous rheumatic fever, elevated erythrocyte sedimentation rate or positive C-reactive protein, prolonged P-R interval) are required to establish the diagnosis of acute rheumatic fever.

PROPHYLAXIS: Prompt and adequate treatment of streptococcal infections with oral penicillin or cephalosporin is given for at least 10 days. Erythromycin or sulfa drugs are substituted in patients with penicillin allergy.

To prevent recurrence of rheumatic fever in a patient who has already been affected by the disease, benzathine benzylpenicillin is given intramuscularly every 3 or 4 weeks. Low-dose oral penicillin, erythromycin, or sulfa drugs are alternatives for compliant patients.

TREATMENT: Salicylates, acetaminophen, and NSAIDs are used to lower fever, reduce inflammation, and alleviate pain. Corticosteroids may be needed if these do not relieve inflammation in patients with carditis. Diuretics and other cardiac medications are prescribed as necessary to treat heart failure. Severe heart valve dysfunction requires surgical correction, but usually not until late adolescence or adulthood. Patients known to have carditis who must undergo dental or surgical procedures (esp. those involving instrumentation of the urinary tract, rectum, or colon) should receive additional antibiotic coverage on the day of the procedure and for several days thereafter.

PATIENT CARE: During the acute phase, diversional activities that are not physically demanding are employed, family and friends are encouraged to visit, and a tutor provided to help the child stay current in school requirements. The child and family are taught about the disease and treatment, and all diagnostic measures are described. They also are taught about signs and symptoms of recurrent streptococcal infection and of heart failure, which require immediate reporting and treatment. Health care professionals advise

the patient about lifestyle and activity modifications, as well as the importance of taking prescribed antibiotics for the full course of treatment and prophylaxis. They also are informed about symptoms of hypersensitivity reaction to the antibiotic, and advised to stop the drug and immediately notify the primary care provider if a rash, fever, chills, or other signs of allergy develop anytime during the course of therapy. The importance of maintaining a salt-restricted diet and of adhering to treatment with diuretics, digoxin, or afterload-reducing drugs is emphasized for patients with congestive heart failure. The American Heart Association provides educational materials and current protocol for prevention of bacterial endocarditis, which is different from the RF regimen used to prevent recurrence. (800-AHA-USA1; www.americanheart.org).

rheumatid (roo'mā-tīd) A skin lesion associated with rheumatic disease.

rheumatism (roo'mā-tizm) [Gr. *rheumatismos*] A general, but somewhat archaic term for acute and chronic conditions marked by inflammation, muscle soreness and stiffness, and pain in joints and associated structures. It includes inflammatory arthritis (infectious, rheumatoid, gouty), arthritis due to rheumatic fever or trauma, degenerative joint disease, neurogenic arthropathy, hydroarthrosis, myositis, bursitis, fibromyalgia, and many other conditions. SEE: *arthritis; rheumatic fever*.

inflammatory r. An old term for any form of arthritis in which there is significant joint inflammation (e.g., gouty, infectious, or rheumatoid arthritis).

palindromic r. Intermittent migrating joint pain with tenderness, heat, and swelling that lasts from a few hours to as long as a week. The knee is most often involved, but each recurrence often involves a different joint. Between attacks there is no evidence of joint disease. The cause is unknown, and there is no specific treatment.

soft tissue r. Any of several localized or generalized conditions that cause pain around joints but are not related to or caused by joint disease (e.g., bursitis, tennis elbow, tendinitis, perichondritis, stiff man syndrome, Tietze's disease).

rheumatoid (roo'mā-toyd) [Gr. *rheuma*, discharge, + *eidōs*, form, shape] Of, or relating to, arthritis or connective tissue disease.

rheumatoid factor Antibodies raised by the body against immunoglobulins. They are present in roughly 80% of patients with rheumatoid arthritis and in many patients with other rheumatological and infectious illnesses. This factor is used, with other clinical indicators, in



the diagnosis and management of rheumatoid arthritis.

rheumatologist (roo"mă-tōl'ō-jīst) A physician who specializes in rheumatic diseases.

rheumatology (roo"mă-tōl'ō-jē) The study and treatment of connective tissue and joint diseases.

rhexis (rèk'sis) [Gr., rupture] The rupture of any organ, blood vessel, or tissue.

Rh factor SEE: under *factor*.

Rh gene Any of eight allelic genes that are responsible for the various Rh blood types. They have been designated as R¹, R², R⁰, R^c, r, r', r", and r_y. Genes represented by small r's are responsible for the Rh-negative (Rh⁻) blood type; those by capital R's, for the Rh-positive (Rh⁺) blood type.

rhigosis (rī-gō'sis) [Gr., shivering] Perception of cold.

rhinal (rī'nāl) Nasal.

rhinalgia (rī-nāl'jē-ă) [" + *algos*, pain] Pain in the nose; nasal neuralgia.

rhinedema (rī'nē-dē'mă) [" + *oidema*, swelling] Edema of the nose.

rhinencephalon (rī-nēn-sēf'ă-lōn) [" + *enkephalos*, brain] The portion of brain concerned with receiving and integrating olfactory impulses. It includes the olfactory bulb, olfactory tract and striae, intermediate olfactory area, pyriform area, paraterminal area, hippocampal formation, and fornix, and constitutes the paleopallium and archipallium.

rhinitis (rī-nī'tis) [" + *itis*, inflammation] Inflammation or irritation of the nasal passages, resulting in runny nose, nasal congestion, and/or postnasal drainage. SEE: *hay fever*.

acute r. Acute nasal congestion with increased mucus secretion. It is the usual manifestation of the common cold. SEE: *coryza*.

TREATMENT: General measures include rest, adequate fluids, and a well-balanced diet. Analgesics and antipyretics may be used to make the patient comfortable. Antibiotics are of no value and should not be administered. Antihistamines may relieve early symptoms but do not end or change the course. Inhaled ipratropium lessens secretions. Vasoconstrictors in the form of inhalants, nasal sprays, or drops may give temporary relief. Their use helps prevent the development of middle ear infections by helping to maintain the patency of the eustachian tubes.

allergic r. Hay fever.

atrophic r. Chronic inflammation with marked atrophy of the mucous membrane and disturbance in the sense of smell; usually accompanied by *ozena*. The throat is dry and usually contains crusts. A husky voice or hoarseness is common.

TREATMENT: The nose should be irrigated using warm alkalized saline

solution twice daily. Surgery is seldom helpful.

r. caseosa Rhinitis characterized by the accumulation of offensive cheese-like masses in the nose and sinuses and accompanied by a seropurulent discharge.

chronic hyperplastic r. Chronic inflammation of the nasal mucous membrane accompanied by polypoid formation and underlying sinus pathology. SEE: *sinus*.

chronic hypertrophic r. Inflammation of the nasal mucous membrane marked by hypertrophy of the mucous membrane of the turbinates and the septum. The symptoms are those of nasal obstruction, postnasal discharge, and recurrent head colds. The treatment is surgical removal of the hypertrophic or mulberry ends of the inferior turbinates and cauterization of the mucosa of the inferior turbinates and septum.

fibrinous r. Rhinitis marked by the formation of a false membrane in the nasal cavities. SYN: *pseudomembranous rhinitis*.

hypertrophic r. Rhinitis marked by thickening and swelling of the nasal mucosa.

infectious r. Rhinitis due to infections of the nasal mucosa.

membranous r. Chronic rhinitis accompanied by a fibrinous exudate, as was sometimes seen in patients with diphtheria.

perennial r. Year-round, rather than seasonal, rhinitis.

pseudomembranous r. Fibrinous r.

purulent r. Chronic rhinitis accompanied by pus formation.

vasomotor r. Nonallergic rhinitis.

rhino- [Gr. *rhis*] Combining form meaning nose. SEE: *naso-*.

rhinoantritis (rī'nō-ăn-trī'tis) [" + *antron*, cavity, + *itis*, inflammation] Inflammation of the nasal cavities and one or both maxillary sinuses (antra).

rhinocanthectomy (rī'nō-kăn-thèk'tō-mē) [Gr. *rhis*, nose, + *kanthos*, canthus, + *ektome*, excision] Surgical excision of the inner corner of the eye.

rhinocephalus (rī'nō-sēf'ă-lūs) [" + *kephale*, head] An individual with rhinocephaly. SYN: *rhinencephalus*.

rhinocephaly (rī'nō-sēf'ă-lē) [" + *kephale*, head] A congenital deformity in which the eyes are fused and the nose is present as a fleshy protuberance above the eyes.

rhinocheiloplasty (rī'nō-kī'lō-plăst'tē) [" + *cheilos*, lip, + *plastos*, formed] Plastic surgery of the nose and upper lip.

rhinodacryolith (rī'nō-dăk'rē-ō-lith) [" + *dakryon*, tear, + *lithos*, stone] A stone in the nasolacrimal duct.

Rhinoestrus (rī-nēs'trūs) A genus of flies

belonging to the family Oestridae. Larvae may be deposited in the eye or in the nasal or buccal cavity of mammals.

R. purpureus The Russian gadfly, whose larvae sometimes cause nasomyiasis and ophthalmomyiasis in humans.

rhinogenous (rī'nō-j'ēn-ūs) [" + *gennan*, to produce] Originating in the nose.

rhinokypnosis (rī'nō-kī-fō'sis) [" + *kypnos*, hump, + *osis*, condition] A deformity of the bridge of the nose.

rhinolalia (rī'nō-lā'lē-ā) [" + *lalia*, speech] A nasal quality of the voice.

r. aperta Rhinolalia caused by undue patency of the posterior nares.

r. clausa Rhinolalia caused by closure of the nasal passages.

rhinolaryngitis (rī'nō-lār'in-jī'tis) [" + *larynx*, larynx, + *itis*, inflammation] Simultaneous inflammation of the mucosa of the nose and larynx.

rhinolith (rī'nō-lith) [" + *lithos*, stone] A nasal stone.

rhinolithiasis (rī'nō-lith-i'ā-sīs) The formation of nasal stones.

rhinologist (rī-nōl'ō-jīst) [" + *logos*, word, reason] A specialist in diseases of the nose.

rhinology (rī-nōl'ō-jē) The science of the nose and its diseases.

rhinomanometry (rī'nō-mā-nōm'ē-trē) The measurement of air flow through and air pressure in the nose.

rhinometer (rī-nōm'ēt-ēr) A device for measuring the nose or its cavities.

rhinomycosis (rī'nō-mī-kō'sis) [" + *mykes*, fungus, + *osis*, condition] Fungi in the mucous membranes and secretions of the nose.

rhinonecrosis (rī'nō-nē-krō'sis) [" + *nekrosis*, state of death] Necrosis of the nasal bones.

rhinopathy (rī-nōp'ā-thē) [" + *pathos*, disease] Any nasal disease.

rhinopharyngeal (rī'nō-fār-in'jē-āl) Pert. to the nasopharynx.

rhinopharyngitis (rī'nō-fār-in-jī'tis) [" + *pharynx*, throat, + *itis*, inflammation] Inflammation of the nasopharynx.

rhinopharyngocele (rī'nō-fār-in'gō-sēl) [" + " + *kele*, tumor, swelling] A nasopharyngeal tumor.

rhinopharyngolith (rī'nō-fār-in'gō-lith) [" + " + *lithos*, stone] A stone in the nasopharynx.

rhinopharynx (rī'nō-fār'inks) Nasopharynx.

rhinophonia (rī'nō-fō'nē-ā) Rhinolalia.

rhinophycomycosis (rī'nō-fī'kō-mī-kō'sis) [" + *phykos*, seaweed, + *mykes*, fungus, + *osis*, condition] A fungal infection that may occur in humans or animals. It affects the nasal and paranasal sinuses and may spread to the brain. It is caused by the phycomycete *Entomophthora coronata*.

rhinophyma (rī'nō-fī'mā) [" + *phyma*, growth] Nodular swelling and conges-

tion of the nose associated with acne rosacea.

rhinoplasty (rī'nō-plās'tē) [" + *plastos*, formed] Plastic surgery of the nose.

rhinopneumonitis (rī'nō-nū'mō-nī'tis) [Gr. *rhis*, nose, + *pneumon*, lung, + *itis*, inflammation] Inflammation of the nasal and pulmonary mucous membranes.

rhinorrhagia (rī'nō-rā'jē-ā) Epistaxis.

rhinorrhea (rī'nō-rē'ā) [" + *rhoia*, flow] A thin watery discharge from the nose.

cerebrospinal r. A discharge of spinal fluid from the nose caused by a defect in or trauma to the cribriform plate.

gustatory r. A flow of thin watery material from the nose while one is eating.

rhinosalpingitis (rī'nō-sāl'pin-jī'tis) [" + *salpinx*, tube, + *itis*, inflammation] Inflammation of the mucosa of the nose and eustachian tube.

rhinoscleroma (rī'nō-sklē-rō'mā) [" + *skleros*, hard, + *oma*, tumor] A chronic, recurring granulomatous infection of the nasal passages and surrounding structures, sometimes leading to marked deformity of the nasal cavity, nasopharynx, paranasal sinuses, or eyes. The disease is caused by *Klebsiella rhinoscleromatis*, a gram-negative encapsulated bacillus.

TREATMENT: Surgical débridement is combined with prolonged antimicrobial therapy.

SYMPTOMS: The disease presents a hard, nodular growth, which usually begins at the anterior end of the nose and spreads to the lower respiratory tract. There usually is no pain and no tendency to ulceration.

rhinoscope (rī'nō-skōp) [" + *skopein*, to examine] An instrument for examining the interior of the nose.

rhinoscopy (rī-nōs'kō-pē) Examination of nasal passages. **rhinoscopic** (rī'nō-skōp'ik), *adj.*

anterior r. Examination through the anterior nares.

posterior r. Examination through the posterior nares, usually with a small mirror in the nasopharynx.

rhinosporidiosis (rī'nō-spō-rīd'ē-ō'sis) [" + *sporidion*, little seed, + *osis*, condition] A condition caused by *Rhinosporidium seebri*, and marked by development of pedunculated polyps on the mucous membranes of the nose, larynx, eyes, penis, vagina, and sometimes skin of various parts of the body. The disease is contracted from cattle and is found in India, Sri Lanka, and other parts of the world.

Rhinosporidium (rī'nō-spō-rīd'ē-ūm) A genus of pathogenic Mesomycetozoea closely related to protists and fungi but not classed in either category.

R. seebri The causative agent of rhinosporidiosis.

rhinostenosis (rī'nō-stēn-ō'sis) [" +

stenos, narrow, + *osis*, condition] Obstruction of the nasal passages.

rhinotomy (rī-nōt'ō-mē) [" + *tome*, incision] Incision of the nose for drainage purposes.

rhinotracheitis (rī-nō-trā'kē-ī'tīs) [" + *tracheia*, rough, + *itis*, inflammation] Inflammation of the nasal mucous membranes and the trachea.

rhinovirus (rī-nō-vī'rūs) One of hundreds of species of picornaviruses that are responsible for upper respiratory infections ("common cold") in humans. Rhinoviruses commonly produce runny nose and congestion, postnasal drainage, cough, malaise, and, in some cases, exacerbations of asthma. The symptoms of rhinoviral infection are treatable, through the use of oxymetazoline nasal spray, pseudoephedrine, or inhaled ipratropium bromide.

Rhipicephalus (rī'pī-sēf'ā-lūs) [Gr. *rhipis*, fan, + *kephale*, head] A genus of ticks belonging to the family Ixodidae. Several species, esp. *R. sanguineus*, are vectors for the organisms of spotted fever, boutonneuse fever, and other rickettsial diseases.

rhitidectomy (rīt'ī-dēk'tō-mē) Rhytidectomy.

rhitidosis (rīt-ī-dō'sīs) Rhytidosis.

rhizo- [Gr. *rhiza*] Combining form meaning *root*.

Rhizobium radiobacter (rī-zō'bē-ūm rā'dē-ō-bāk'tēr) [" + "; " + "] A gram-negative rod that is a rare cause of infection in hospitalized patients, esp. those treated with plastic tubes or catheters. It has long been recognized as a plant pathogen. It has been identified as a human pathogen only in patients with cancers, critical illness, or immunosuppressing illnesses. It was formerly known as *Agrobacterium radiobacter*.

rhizoid (rī'zoyd) [" + *eidōs*, form, shape] **1.** Rootlike. **2.** A rootlike structure, usually one-celled, occurring in lower forms of plant life. **3.** In bacteriology, a colony showing an irregular rootlike system of branching.

rhizome (rī'zōm) [Gr. *rhizoma*, mass of roots] A rootlike stem growing horizontally along or below the ground and sending out roots and shoots.

rhizomelic (rī'zō-mēl'īk) [Gr. *rhiza*, root, + *melos*, limb] Concerning the hip joint and the shoulder joint.

rhizomeningomyelitis (rī'zō-mē-nīn'gō-mī'ē-lī'tīs) Radiculomeningomyelitis.

Rhizopoda (rī-zōp'ō-dā) [" + *pous*, foot] A phylum of the kingdom Protista; unicellular amebas with pseudopod locomotion. It includes free-living and pathogenic species such as *Entamoeba histolytica*.

Rhizopus A genus of fungi, a mold that is usually saprophytic, but may be an opportunistic; a common cause of mucormycosis.

rhizotomy (rī-zōt'ō-mē) [" + *tome*, incision] Surgical section of a nerve root (e.g., the root of a spinal or dental nerve) to relieve pain or reduce spasticity.

anterior r. Surgical section of the ventral root of the spinal nerve.

posterior r. Surgical section of the dorsal root of the spinal nerve.

rhodium (rō'dē-ūm) SYMB: Rh. A rare silvery-white transition metal; atomic weight 102.905, atomic number 45. It is used in alloys with platinum and as a catalyst.

Rhodnius prolixus (rōd'nē-ūs prō-lik'sūs) [*L. prolixus*, extended] The bloodsucking insect that transmits South American trypanosomiasis to humans; colloquially called the "kissing bug." SEE: *trypanosomiasis*.

rhodo- (rō'dō) Combining form meaning *red*.

rhodogenesis (rō'dō-jēn'ē-sīs) [Gr. *rhodon*, rose, + *genesis*, generation, birth] Regeneration of rhodopsin that has been bleached by light.

rhodophylaxis (rō'dō-fī-lāk'sīs) [" + *phylaxis*, protection] The ability of the retinal epithelium to regenerate rhodopsin that has been bleached by light.

rhodopsin (rō-dōp'sīn) [" + *opsis*, vision] The glycoprotein opsin of the rods of the retina; combines with retinal to form a functional photopigment responsive to light. Formerly called visual purple.

Rhodotorula (rō'dō-tōr'ū-lā) [NL] A genus of yeasts that do not ferment carbohydrates. The yeasts are widely distributed in air, dairy products, soil, and water. They have been occasionally identified as a cause of opportunistic infection in compromised hosts.

rhombencephalitis, rhombencephalitis (rōmb'ēn-sēf-ā-lī'tīs, rōm'bō-ēn-sēf-ā-lī'tīs) Brainstem infection, a disease that is most often caused by the bacterium *Listeria monocytogenes* or by West Nile virus, Nipah viruses, or enteroviruses. The infection is often characterized by symptoms such as fever, malaise, headache, nausea, vomiting, altered mental status, ataxia, and stroke-like impairment of cranial nerves.

rhombencephalon (rōm'bēn-sēf'ā-lōn) Hindbrain.

rhomboid (rōm'boyd) [" + *eidōs*, form, shape] An oblique parallelogram.

rhomboideus (rōm-boyd'ē-ūs) [L.] One of two muscles beneath the trapezius muscle. SEE: *muscle* for illus.

rhombomere (rōm'bō-mēr) Neuromere.

rhoncal, rhonchial (rōng'kāl, rōng'kē-āl) [Gr. *rhonchos*, a snore] Pert. to or produced by a rattle in the throat.

rhonchi (rōng'kē) Pl. of rhonchus.

rhonchus (rōng'kūs) *pl.* **rhonchi** A low-pitched wheezing, snoring, or squeaking sound heard during auscultation of the

chest of a person with partial airway obstruction. Mucus or other secretions in the airway, bronchial hyperreactivity, or tumors that occlude respiratory passages can all cause rhonchi.

rhopheocytosis (rō'fē-ō-sī-tō'sīs) [Gr. *rhophein*, gulp down, + *kytos*, cell, + *osis*, condition] The mechanism by which ferritin is transferred from macrophages in the bone marrow to normoblasts. SEE: *pinocytosis*.

rhotacism (rō'tā-sīzm) [Gr. *rhotakizein*, to overuse letter "r"] Overuse or improper utterance of "r" sounds. SYN: *pararhotacism*.

rHu- (ār'hū') Abbreviation for *recombinant human* proteins or peptides formed by recombinant genetic technologies. Such proteins or peptides are produced by inserting a segment of human DNA into the genetic code of other organisms, e.g., bacteria or yeasts.

rhubarb (roo'bārb) [ME. *rubarbe*] An extract made from the roots and rhizome of *Rheum officinale*, *R. palmatum*, and other species, used as a cathartic and astringent. It is high in oxalic acid. The stems are used as food.

rHuEPO *recombinant human erythropoietin*.

Rhus (roos) [L.] Former name for the genus *Toxicodendron*, which includes poison ivy, poison oak, and poison sumac.

rhythm (rīth'ūm) [Gr. *rhythmos*, measured motion] **1.** A measured time or movement; regularity of occurrence of action or function. **2.** In electroencephalography, the regular occurrence of an impulse. **rhythmic** (-mīk), *adj.*

accelerated idioventricular r. ABBR: AIVR. An abnormal ectopic cardiac rhythm originating in the ventricular conducting system. This may occur intermittently after myocardial infarction at a rate of 60 to 100 beats per minute.

alpha r. In electroencephalography, oscillations in electric potential occurring at a rate of 8½ to 12 per second.

atrioventricular r. The rhythmic discharges of impulses from the atrioventricular node that occur when the activity of the sinoatrial node is depressed or abolished. SYN: *nodal rhythm*.

beta r. In electroencephalography, waves ranging in frequency from 15 to 30 per second and of lower voltage than alpha waves. This rhythm is more pronounced in the frontomotor leads.

bigeminal r. The coupling of extrasystoles with previously normal beats of the heart. SEE: *bigeminal pulse*.

biological r. The regular occurrence of certain phenomena in living organisms. SEE: *circadian r.*; *clock, biological*.

cantering r. Gallop.

cardiac r. The predominant electrical activity of the heart. It may be determined by recording an electrocardio-

gram or by evaluating tracings made by a cardiac monitor. SEE: *cardiac cycle*; *electrocardiogram*; *conduction system of the heart*.

circadian r. Diverse yet predictable changes in physiological variables, including sleep, appetite, temperature, and hormone secretion, over a 24-hr period. SYN: *diurnal rhythm*.

coupled r. A rhythm in which every other heartbeat produces no pulse at the wrist.

delta r. In electroencephalography, slow waves with a frequency of 4 or fewer per second and of relatively high voltage (20 to 200 μV). It may be found over the area of a gross lesion such as a tumor or hemorrhage.

diurnal r. Circadian r.

ectopic r. A heart rhythm originating outside the sinoatrial node.

escape r. A heart rhythm that arises from a junctional or ventricular source when impulses from the atria or atrioventricular node are blocked.

gamma r. The 50-per-second rhythm seen in the electroencephalogram.

idioventricular r. A cardiac rhythm that arises from pacemakers in ventricular muscle.

junctional r. An electrocardiographic rhythm arising in the atrioventricular junction. It appears as an electrocardiogram as a narrow QRS complex that lacks an upright P wave preceding it.

normal sinus r. The normal heart rhythm whose pacemaker is in the sinoatrial node and whose conduction through the atria, atrioventricular node, and ventricles is unimpaired. The interval between complexes is regular, the ventricular rate is 60 to 100, there are upright P waves in leads I and II, a negative P wave in lead AVR, a P-R interval of 0.12 to 0.20 sec, and one P wave preceding each QRS complex. SYN: *sinus rhythm*.

nyctohemeral r. Day and night rhythm.

sinus r. Normal sinus rhythm.

theta r. The 4- to 7-per-second rhythm seen in the electroencephalogram.

ventricular r. **1.** The pace and synchrony of ventricular depolarization. **2.** An escape rhythm that arises in the ventricles, typically with wide QRS complexes and a rate of 30 to 40 beats per minute.

rhythmicity (rīth-mīs'ī-tē) The condition of being rhythmic.

rhythm method of birth control A method preventing pregnancy that uses abstinence from sexual relations around the time of ovulation. SEE: *contraception*.

rhytide (rī'tīd) Wrinkle.

rhytidectomy (rī'tī-dēk'tō-mē) [Gr. *rhytis*, wrinkle, + *ektome*, excision] The excision of wrinkles by plastic surgery;



often called a "face-lift." SYN: *rhytidectomy*.

rhytidoplasty (rīt'ī-dō-plās'tē) [" + *plassein*, to form] The elimination of facial wrinkles by plastic surgery.

rhytidosis (rīt'ī-dō'sīs) [" + *osis*, condition] Wrinkling of the cornea, which occurs when tension in the eyeball is greatly diminished, particularly after the escape of aqueous or vitreous humor; usually a sign of impending death. SYN: *rhytidosis*.

RIA *radioimmunoassay*.

rib (rīb) [AS. *ribb*] One of a series of 12 pairs of narrow, curved bones extending laterally and anteriorly from the sides of the thoracic vertebrae and forming a part of the skeletal thorax. With the exception of the vertebral ribs, they are connected to the sternum by costal cartilages. SEE: *illus*.

bicipital r. An irregular condition resulting from the fusion of two ribs, usually involving the first rib.

cervical r. A supernumerary rib sometimes developing in connection with a cervical vertebra, usually the lowest.

false r. One of the lower ribs (8, 9, and 10) that do not join the sternum directly. Their cartilage connects to the cartilage of the seventh rib. The varia-

tion in the anatomy of the lower ribs may be considerable (i.e., there may be only two false ribs). SYN: *vertebrochondral rib*.

lumbar r. A rudimentary rib that develops in relation to a lumbar vertebra.

slipping r. A rib in which the costal cartilage dislocates repeatedly.

sternovertebral r. True r.

true r. Any of ribs 1-7, which articulate directly with the sternum. SYN: *sternal rib*; *sternovertebral rib*.

vertebral r. Any of ribs 1-7, which articulate directly with the sternum.

vertebrochondral r. False rib.

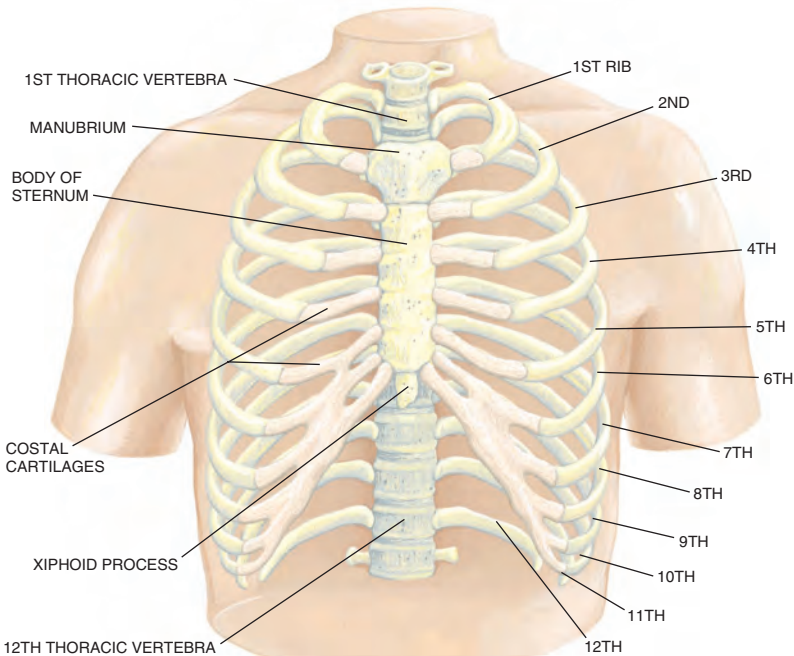
vertebrocostal r. Any of the three false ribs on each side.

ribbon (rīb'ūn) A long, thin, band-shaped structure.

riboflavin (rīb'ō-flā'vīn) $C_{17}H_{20}N_4O_6$; a water-soluble vitamin of the B complex group. It is an orange-yellow crystalline powder. Symptoms of riboflavin deficiency are photophobia, cheilosis, glossitis, and seborrheic dermatitis, esp. of the face and scalp. SYN: *vitamin B₂*.

FUNCTION: Riboflavin is a constituent of certain flavoproteins that function as coenzymes in cellular oxidation. It is essential for tissue repair.

SOURCES: Riboflavin is found in milk and milk products, leafy green vegeta-



RIB CAGE

Anterior view

bles, liver, beef, fish, and dry yeast. It is also synthesized by bacteria in the body.

DAILY REQUIREMENT: Adults require 0.6 mg/1000 kcal of food intake. Infants, children, and pregnant and lactating women require increased amounts.

ribonuclease (rī'bō-nū'klē-ās) ABBR: RNase. An enzyme that catalyzes the depolymerization of ribonucleic acid (RNA) with formation of mononucleotides.

ribonucleoprotein (rī'bō-nū'klē-ō-prō'tē-in) A compound containing both protein and ribonucleic acid.

ribonucleotide (rī'bō-nū'klē-ō-tīd) A nucleotide in which the sugar ribose is combined with the purine or pyrimidine base.

ribose (rī'bōs) C₅H₁₀O₅, a pentose sugar present in ribonucleic acids, riboflavin, and some nucleotides.

ribosome (rī'bō-sōm) A cell organelle made of ribosomal RNA and protein. Ribosomes may exist singly, in clusters called polyribosomes, or on the surface of rough endoplasmic reticulum. In protein synthesis, they are the site of messenger RNA attachment and amino acid assembly in the sequence ordered by the genetic code carried by mRNA.

ribosyl (rī'bō-sīl) The compound glycosyl, C₅H₉O₄, formed from ribose.

ribozyme (rī'bō-zīm) An RNA (ribonucleic acid) molecule that functions as an enzyme (catalyst) and either cleaves (breaks down) other forms of RNA or catalyzes other biochemical reactions occurring within cells. SYN: *catalytic RNA*.

RICE (rīs) Acronym for rest, ice, compression, and elevation, the elements of management of soft tissue stress or trauma, esp. sports injuries.

rice, polished Rice that has been milled to produce the commercially available white product commonly consumed in Western countries. This treatment removes most of the protein and vitamin B₁, thiamine, from the grain. When polished rice is the major source of calories in the diet, it is associated with the deficiency disease beriberi.

rice water, boiled The water remaining after rice has been cooked in it and removed; formerly used as an oral rehydration agent, esp. for children with diarrhea. The use of oral rehydration solutions, however, has provided a better supply of fluids and electrolytes and has replaced the practice of using boiled rice water for rehydration. SEE: *oral rehydration therapy*.

ricin (rī'sīn) A white, amorphous, highly toxic protein present in the seed of the castor bean, *Ricinus communis*. It has been used as a biological weapon.

ricinine (rīs'in-ēn, -īn) A poisonous alkaloid present in the leaves and seeds of the castor bean plant, *Ricinus communis*.

ricinoleic acid (rī-sēn-ō-lē'īk) C₁₉H₃₄O₃, 12-hydroxy-9-octadecanoic acid; an un-

saturated hydroxy acid comprising about 80% of fatty acids in the glycerides of castor oil. It has a strong laxative action.

rickets (rīk'ěts) A disease of bone formation in children, most commonly the result of vitamin D deficiency, marked by inadequate mineralization of developing cartilage and newly formed bone, causing abnormalities in the shape, structure, and strength of the skeleton. This condition may be prevented by exposure to ultraviolet light (sunlight or artificial light) and administration of vitamin D in quantities that provide 400 I.U. of vitamin D activity per day. Vitamin D deficiency disease in adults is known as osteomalacia. SYN: *rachitis* (2). SEE: *osteomalacia*; *Nursing Diagnoses Appendix*.

ETIOLOGY: Rickets has many causes, including diseases that affect vitamin D or phosphorus intake, absorption, and metabolism; renal tubular disorders; and diseases in which the child is chronically acidotic, among others.

FINDINGS: Affected children are often lethargic, and may have flaccid musculature and decreased muscular strength. On physical examination, multiple bony abnormalities are present, including frontal bossing, bowing of the long bones, flattening of the sides of the thoracic cavity, kyphosis, scoliosis, or lordosis.

TREATMENT: Treatment and prognosis depend on the correction of the underlying cause. Supplemental vitamin D therapy is appropriate for some patients.



Excessive use of vitamin D (in infants, more than 20,000 I.U. daily; in adults, more than 100,000 I.U. daily) should be avoided because of the risk of hypervitaminosis D.

adult r. Osteomalacia.

late r. Rickets that has its onset in older children.

renal r. A disturbance in epiphyseal growth during childhood due to severe chronic renal insufficiency resulting in persistent acidosis. Dwarfism and failure of gonadal development result. The prognosis is poor.

TREATMENT: Renal rickets is treated with a diet low in meat, milk, cheese, and egg yolk. Calcium lactate or calcium gluconate is given in large doses.

vitamin D refractory r. A rare form of rickets that is not caused by vitamin D deficiency and is thus not responsive to vitamin D treatment. It is caused by a defect in renal tubular function that results in excessive loss of phosphorus.

Rickettsia (rī-kět'sē-ā) [Howard T. Ricketts, U.S. pathologist, 1871–1910] A

genus of bacteria of the family Rickettsiaceae, order Rickettsiales. They are obligate intracellular parasites (must be in living cells to reproduce) and are the causative agents of many diseases. Their vectors are arthropods such as fleas, ticks, mites, and lice. SEE: *rickettsial disease*; *rickettsialpox*; *rickettsiosis*; *tick-borne rickettsiosis*.

R. africanae The causative agent of African tick bite fever, usually found only in sub-Saharan Africa.

R. akari The causative agent of rickettsialpox. The animal reservoir is the house mouse and the vector is a mite.

R. conorii The causative agent of boutonneuse fever found in the Mediterranean, parts of Africa, and India. The animal reservoirs are rodents and dogs and the vectors are ticks of several genera.

R. honei The causative agent of a spotted fever that clinically resembles Rocky Mountain spotted fever. It is found only in Australia and neighboring islands.

R. prowazekii The causative agent of epidemic typhus, spread by the human body louse. Unlike most other Rickettsia, humans are the primary reservoir for *R. prowazekii*, which was once thought to be a strictly human pathogen. Flying squirrels may be animal reservoirs, and humans acquire infection from their lice or fleas. SYN: *louse-borne typhus*.

R. rickettsii The causative agent of Rocky Mountain spotted fever. The animal reservoirs are rodents and dogs and the vectors are ticks of several genera.

R. typhi The agent that causes flea-borne murine (endemic) typhus.

rickettsia (rĭ-kĕt'sĕ-ă) *pl.* **rickettsiae** Term applied to any of the bacteria belonging to the family Rickettsiaceae.

rickettsial disease (rĭ-kĕt'sĕ-ăl) A disease caused by an organism of the family Rickettsiaceae. The most common types are the spotted-fever group (Rocky Mountain spotted fever and rickettsialpox), epidemic typhus, endemic typhus, Brill's disease, Q fever, scrub typhus, and trench fever.

rickettsialpox (rĭ-kĕt'sĕ-ăl-pŏks") An acute, febrile, self-limited disease caused by *Rickettsia akari*. It is transmitted from the house mouse to humans by a small colorless mite, *Allodermatys sanguineus*.

rickettsicidal (rĭ-kĕt'sĭ-sĭ-dăl) Lethal to rickettsiae.

rickettsiosis (rĭ-kĕt'sĕ-ŏ-sĭs) Infection with rickettsiae.

rickettsiostatic (rĭ-kĕt'sĕ-ŏ-stăt'ĭk) Preventing or slowing the growth of rickettsiae.

RID *related identical donor*.

ridge (rĭj) [ME. *rigge*] An elongated projecting structure or crest.

alveolar r. The bony process of the maxilla or mandible that contains the alveoli or tooth sockets; the alveolar process without teeth present.

basal r. An eminence on the lingual surface of the incisor teeth, esp. the upper ones. It is situated near the gum. SYN: *cingulum* (2).

carotid r. The sharp ridge between the carotid canal and the jugular fossa.

dental r. The raised junction between two planes meeting on the surface of a tooth.

dermal r. One of the ridges on the surface of the fingers that make up the fingerprints; also called *crista cutis*.

epicondylar r. One of two ridges for muscular attachments on the humerus.

external oblique r. An anatomical landmark that is a continuation of the anterior border of the mandibular ramus and extends obliquely to the region of the first molar. It serves as an attachment of the buccinator muscle and appears superior to the mylohyoid ridge on a dental radiograph.

genital r. A ridge that develops on the ventromedial surface of the urogenital ridge and gives rise to the gonads.

gluteal r. A ridge extending obliquely downward from the greater trochanter of the femur for attachment of the gluteus maximus muscle.

interosseous r. A ridge on the fibula for attachment of the interosseous membrane.

interureteric r. A ridge between the openings of the ureters in the bladder.

mammary r. In mammal embryos, a ridge extending from the axilla to the groin. The breasts arise from this ridge. In humans, only one breast normally remains on each side. SYN: *milk line*.

marginal r. Any elevation on the mesial or distal surface or the occlusal surface of a posterior tooth. These ridges resist occlusal loading.

mesonephric r. A ridge that develops on the lateral surface of the urogenital ridge and gives rise to the mesonephros.

mylohyoid r. The line of attachment on the medial aspect of the body of the mandible for the mylohyoid muscle, which forms the floor of the mouth.

superciliary r. Superciliary arch.

urogenital r. A ridge on the dorsal wall of the coelom that gives rise to the genital and mesonephric ridges. SYN: *urogenital fold*. SEE: *genital r.*; *mesonephric r.*

Rieder cell (rĕ'dĕr) A white blood cell with radially segmented nucleus, found in some T cells in patients with lymphoproliferative disorders.

Rift Valley virus (rĭft) SEE: *under virus*.

RIG *rabies immune globulin*.

Riga-Fede's disease (rĕ'gă fă'dăz) [An-

tonio Riga, It. physician, 1832–1919; Francesco Fede, It. physician, 1832–1913] Ulceration of the frenum of the tongue with membrane formation. It occurs after abrasion by the lower central incisors.

Riggs' disease (rĭgz) [John M. Riggs, U.S. dentist, 1810–1885] Periodontitis.

right (rīt) [AS. *riht*] ABBR: R; rt.

1. Pert. to the dextral side of the body (the side away from the heart), which in most persons is the stronger or preferred. SYN: *dexter*. 2. Legal authority to supervise and control one's own actions or the actions of others.

right-handedness The condition of greater adeptness in using the right hand. This characteristic is found in about 93% of the population. SYN: *dextrality*. SEE: *left-handedness*.

right to die The freedom to choose one's own end-of-life care by specifying, for example, whether one would permit or want life-prolonging treatments (e.g., intubation and mechanical ventilation); intravenous or enteral feedings; antibiotics (if infected); narcotic analgesics (if in pain); or medications to hasten death (e.g., in assisted suicide or euthanasia). The moral, ethical, or legal authority to make decisions about many of these issues is a topic of considerable controversy and confusion. Contemporary health care techniques often permit the prolongation of a patient's life, when, in the natural course of biological events, that life might have ended. The ability to postpone death, and the difficulty that health care providers have in predicting when death will occur, has generated many questions about the meaning of care and well-being at the margins of existence. Who should make decisions for patients when they cannot speak for themselves? How should one's wishes be expressed or codified? Who should carry them out if the patient cannot act on his or her own? When must a person's stated wishes be followed precisely, and when should they be factored in with the wishes of loved ones or of those acting on behalf of the patient? Should they ever be ignored or overruled? When does the aid given to a dying person compromise the moral or professional values of others or jeopardize the legal standing of the patient's caregiver? Many of these challenging questions remain unresolved. SEE: *advance directive*; *assisted suicide*; *care*; *end-of-life*; *euthanasia*; *suicide*.

rigid (rĭ'jĭd) [L. *rigidus*] Stiff, hard, unyielding.

rigidity (rĭ-jĭd'ĭ-tē) 1. Tenseness; immovability; stiffness; inability to bend or be bent. 2. In psychiatry, an excessive resistance to change.

cadaveric r. Rigor mortis.

cerebellar r. Stiffness of the body and extremities resulting from a lesion of the middle lobe of the cerebellum.

clasp-knife r. A condition in which passive flexion of the joint causes increased resistance of the extensors. This gives way abruptly if the pressure to produce flexion is continued.

cogwheel r. The condition that occurs when tremor coexists with rigidity as in Parkinson's syndrome. In this condition, manually manipulated body parts may take on the feel of a cogwheel. This can occur also as an extrapyramidal side effect of antipsychotic drug therapy.

decerebrate r. Sustained contraction of the extensor muscles of the limbs resulting from a lesion in the brainstem between the superior colliculi and the vestibular nuclei.

decorticate r. Decorticate posture.

lead-pipe r. Increased muscular tone in an extremity in which (as opposed to cogwheel rigidity) the affected muscle does not move in a discontinuous or jerking fashion as it is pulled back and forth. SEE: *cogwheel r.*

nuchal r. Inflexibility of the neck movement, esp. forward flexion of the neck. It is a sign of meningeal irritation.

penile r. The ability of the erect penis to resist bending or buckling forces applied to its long axis. The greater its resistance, the more effectively the penis can penetrate during intercourse.

rigid spine syndrome A rare form of muscular dystrophy in which the disease is limited to the paraspinal muscles of the neck and back. Unlike other forms of muscular dystrophy, the weakness and stiffness characteristic of this condition are not progressive.

rigor (rĭg'or) [L. *rigor*, stiffness] 1. A sudden paroxysmal shaking chill occurring during a febrile illness. Onset of rigors often corresponds to bacteremia. 2. A state of hardness and stiffness, as in a muscle.

r. mortis The stiffness that occurs in dead bodies. SYN: *cadaveric rigidity*. SEE: *Nysten's law*.

rim An edge or border.

alar r. The tissue at the nostrils that constitutes the external nasal valve.

bite r. Occlusion rim.

hypoechoic r. In ultrasonography, a thin border (2 mm or less) around a body part that produces few echoes. The rim is sometimes seen around abscesses, other inflamed structures, structures with many blood vessels at their edges, or the normal fetal heart.

occlusion r. The biting surfaces built on denture bases to make maxillomandibular relation records and to arrange teeth. SYN: *bite rim*.

orbital r. The anterior edge of the bony orbit, or eye socket, formed by the

maxilla and zygomatic bone inferiorly and the frontal bone superiorly.

rima (rī'mă) *pl.* **rimae** [L., a slit] A slit, fissure, or crack.

r. glottidis An elongated slit between the vocal folds. SYN: *rima vocalis*.

r. vestibuli The space between the false vocal cords.

r. vocalis *Rima glottidis*.

rimose (rī'mōs, rī-mōs') [L. *rimosus*] Fissured or marked by cracks.

rimula (rīm'ū-lă) *pl.* **rimulae** [L.] A minute fissure or slit, esp. of the spinal cord or brain.

RIND (rīnd) *Reversible ischemic neurological deficit*, a stroke whose clinical presentation lasts for a short time and then resolves. Despite the short duration of symptoms or signs, images of the brain taken after RIND often reveal infarction.

rind (rīnd) [AS.] A thick or firm outer coating of an organ, plant, or animal.

ring (rīng) [AS. *hring*] **1.** Any round area, organ, or band around a circular opening. SEE: *annulus*. **2.** In chemistry, a collection of atoms chemically bound in a circle.

abdominal inguinal r. The internal opening of the inguinal canal.

Albl's r. A curved thin shadow seen on a radiographic image of an intracranial aneurysm.

Bandl's r. SEE: *Bandl's ring*.

benzene r. The closed ring of six carbon atoms.

Cabot's r. SEE: *Cabot's rings*.

Cannon's r. A contracted band of muscles in the transverse colon near the hepatic flexure.

capsular tension r. A ring inserted into the capsule of the eye to maintain its shape or integrity, e.g., to compensate for zonular weakness or defects.

ciliary r. *Orbicular ciliaris*.

conjunctival r. A narrow ring at the junction of the edge of the cornea with the conjunctiva; also called *anulus conjunctiva*.

constriction r. A stricture of the body of the uterus; a circular area of the uterus that contracts around a part of the fetus.

deep inguinal r. The opening of the inguinal canal deep inside the abdominal wall.

femoral r. The superior aperture of the femoral canal, approx. 1 cm in diameter.

lymphoid r. of the pharynx A ring-like arrangement of lymphoid tonsillar tissue around the oronasal region of the pharynx. It consists of the palatine, pharyngeal, and lingual tonsils and provides protection against invading bacteria, viruses, and other foreign antigens.

pathologic retraction r. During delivery, a prolonged contraction of the

ring formed by the junction of the body and isthmus of the uterus. SYN: *Bandl's ring*.

physiologic retraction r. A normal contraction of the ring formed by the junction of the body and isthmus of the uterus.

Schatzki r. SEE: *Schatzki ring*.

subcutaneous inguinal r. Superficial inguinal ring.

superficial inguinal r. The opening of the inguinal canal that is just below the skin. SYN: *subcutaneous inguinal ring*. SEE: *abdominal ring*.

teething r. Any relatively soft object on which an infant may chew to relieve discomfort during the eruption of teeth. Teething rings and other teething devices small enough to be inhaled by an infant should never be used.

umbilical r. The opening in the linea alba of the embryo through which the umbilical vessels pass.

vaginal r. **1.** A flexible polymer impregnated with contraceptive hormones which a woman places inside her vagina and leaves in place for 21 or more days. When it is removed, withdrawal bleeding occurs. Side effects can include vaginitis or vaginal irritation. Like other forms of contraception, the ring increases a woman's risk of blood clotting. It should be avoided by smokers. It does not provide protection against sexually transmitted diseases. **2.** A similar device, impregnated with menopausal hormones and used to treat hot flashes, night sweats, and other menopausal symptoms. Like other forms of menopausal hormone replacement, it increases the risk of stroke, heart attack, deep venous thrombosis, breast, and uterine cancers.

vascular r. A congenital abnormality in which an arterial ring encircles the trachea and esophagus. This causes signs of compression of their structures. Surgery may be required to relieve the symptoms.

Ringer, Sydney (rīng'ēr) British physiologist, 1835–1910.

lactated R.'s solution A crystalloid electrolyte sterile solution of specified amounts of calcium chloride, potassium chloride, sodium chloride, and sodium lactate in water for injection. It is used intravenously to replace electrolytes.

R.'s solution A physiologic solution of distilled water containing 8.6 g sodium chloride, 0.3 g potassium chloride, and 0.33 g calcium chloride per liter; for topical (Ringer's irrigation) or intravenous use.

ring removal from swollen finger A technique for the removal of a ring from an injured or swollen finger. One method is described here: One end of a length of string is passed under the ring. The ring is pushed as far from the swollen area

toward the hand as possible; the string is wrapped on the side of the swollen area around the finger for about a dozen turns. The end of the string that extends under the ring is grasped. While being held firmly, the string is unwound from the hand side of the ring. This moves the ring toward the free end of the finger. This procedure should be continued until the ring is free. If this technique fails, the ring may have to be cut from the finger.

ringworm (rīng'wŭrm) The popular term for any contagious skin infection caused by fungi of the genera *Microsporum* or *Trichophyton*. The hallmark of these conditions is a well-defined red rash, with an elevated, wavy, or worm-shaped border. Ringworm of the scalp is called *tinea capitis*; of the body, *tinea corporis*; of the groin, *tinea cruris*; of the hand, *tinea manus*; of the beard, *tinea barbae*; of the nails, *tinea unguium*; and of the feet, *tinea pedis* or athlete's foot. **SEE:** *illus.*; *Nursing Diagnoses Appendix*.



RINGWORM

Rinne test (rīn'nē) [Heinrich Adolf Rinne, Ger. otologist, 1819–1868] The use of a tuning fork to compare bone conduction hearing with air conduction. The vibrating fork is held by its stem on the mastoid process of the ear until the patient no longer hears it. Then it is held close to the external auditory meatus. If the subject still hears the vibrations, air conduction exceeds bone conduction (this is the normal finding). **SEE:** *Weber test*.

rinse **1.** To wash lightly. **2.** A solution used for irrigation or bathing.

mouth r. A flavored or medicated solution swirled in the mouth, used to treat halitosis, oral infections, aphthous ulcers, stomatitis, or dental biofilm (plaque).



Some alcoholics may occasionally abuse alcohol-based mouth rinses.

sodium fluoride r. A 0.05% aqueous solution of sodium fluoride also containing coloring and flavoring agents, used as a mouth rinse to help prevent dental caries.

ripening **1.** Softening, effacement, and dilation before labor. **SEE:** *Bishop's score*; *prostaglandin*. **2.** Maturation of a cataract.

cervical r. The biochemical changes in the cervix that take place gradually over the last few weeks of gestation in preparation for childbirth. The cervix softens, and its potential for stretching increases. Normally this occurs naturally, but in postterm pregnancies it may be necessary to use mechanical dilators or drugs. Placement of *Laminaria digitata* or prostaglandin E analogs (e.g., misoprostol) in the vagina or cervical canal promotes cervical ripening and onset of labor but does not reduce the rate of cesarean deliveries.

PATIENT CARE: Fetal status is assessed by monitoring the heart rate for 30 min before gel insertion and for approx. 1 hr after the procedure. The woman is assessed for uterine contractions and signs of hyperstimulation, nausea, or vomiting. If hyperstimulation occurs, the gel is removed, and the primary health care provider is notified.

rippling muscle disease A rare autosomal dominant muscle disease whose symptoms include spontaneous muscle contraction when muscles are stimulated by stretching, percussion, or squeezing. Affected patients are usually recognized during childhood. They may demonstrate weakness of facial muscles, frequent falls, or difficulty walking on their heels or toes as a result of calf muscle weakness.

risk [origin obscure] The probability that a loss or something dangerous or harmful will occur.

acceptable r. A tolerable level of harm or potential harm.

r. assessment Quantitation of the risks to which people are exposed by compilation of morbidity and mortality data over specified periods of time.

attributable r. Attributable fraction.

material r. A significant potential for harm that a reasonable person would want to consider when making a decision about undergoing a medical or surgical treatment.

relative r. In epidemiological studies, the relative amount of disease occurring in different populations; the ratio of incidence rate in the exposed group to that in the unexposed group. **SEE:** *ratio*, *odds*.

risk-benefit analysis Examination of the

potential positive and negative results of undertaking a specific therapeutic course of action. For example, a man with a slowly growing, localized prostate cancer might want to know whether it is better to undergo surgery (and risk urinary incontinence and erectile dysfunction) or to manage his disease conservatively (and risk the spread of the disease). Factors influencing his decision include:

- 1 financial cost of the operation;
- 2 likelihood of disease spread;
- 3 likelihood of complications with or without the operation;
- 4 life expectancy;
- 5 overall state of health; and
- 6 alternative treatments for his disease.

risk factor An environmental, chemical, psychological, physiological, or genetic element that predisposes an individual to the development of a disease. For example, risk factors for coronary artery disease include hypertension, high circulating blood lipids and cholesterol, obesity, cigarette smoking, diabetes mellitus, physical inactivity, microalbuminuria, chronic kidney disease, and an early family history of atherosclerosis. SEE: *ratio, odds; risk, relative.*

risk for posttrauma syndrome A risk for sustained maladaptive response to a traumatic, overwhelming event. It is a nursing diagnosis accepted at the NANDA 13th Conference (1998).

risk management The methods used by health care organizations to defend their assets against the threats posed by legal liability. It includes

1. the identification of health care delivery problems in an institution (as evidenced by previous lawsuits, allegations, and patient or staff complaints);
2. the anticipation of problems that may arise in the future;
3. the development of standards and guidelines to enhance the quality of care.
4. Several of the most important issues in risk management for health care institutions are listed in the table. SEE: table.

risk perception Concern about the probability of succumbing to a potential illness.

risk ratio ABBR: RR. The probability of the occurrence of a disease in a group that has been exposed to some environmental, medicinal, microbial, or toxic influence, relative to its probability in a randomly selected population.

risk-taker An individual who willfully exposes himself or herself to activities that others regard as hazardous.

risorius (rī-sō'rē-ūs) [L., laughing] The muscular fibrous band arising over the masseter muscle and inserted into the tissues at the corner of the mouth.

Prominent Issues in Hospital Risk Management

Anesthesia	Intubation errors; medication side effects
Childbirth	Infant trauma or death; delayed responsiveness of staff
Confidentiality	Breaches of privacy
Consent	Failure to disclose risks of and alternatives to treatment
Death	Wrongful or unexpected deaths

Risperdal Risperidone.

risperidone (rīs-pēr'ī-dōn") A benzisoxazole administered orally to manage psychotic disorders. Its therapeutic class is antipsychotic.

RIST (rīst) *radioimmunosorbent test.*

ristocetin (rīs'tō-sē'tīn) An antibiotic obtained from cultures of *Nocardia lurida*.

risus (rī'sūs) [L.] Laughter; a laugh.

r. sardonicus A peculiar grin, as seen in tetanus, caused by acute facial spasm.

Ritgen's maneuver (rīt'jēnz) [A. M. F. von Ritgen, German obstetrician, 1787–1867] A manual method of controlling the delivery of the fetal head. The non-dominant hand exerts pressure against the fetal chin through the perineum. At the same time, the dominant hand exerts pressure against the fetal occiput. The maneuver should be performed slowly and between contractions to avoid perineal lacerations.

Ritter's disease (rīt'ērz) [Gottfried Ritter von Rittershain, Ger. physician, 1820–1883] A generalized form of impetigo of the newborn.

ritual (rīch'ū-äl) **1.** A customary or prescribed procedure of special, often social or religious, significance. **2.** In psychiatry, any activity performed compulsively to relieve anxiety.

ritualistic surgery Surgical procedures without scientific justification, performed in primitive societies without the purpose of treating or preventing disease. Included are alterations of the skin, ears, lips, teeth, genitalia, and head. In some cases, even in nonprimitive societies, surgical procedures without rational justification are considered ritualistic.

rivalry (rī'vāl-rē) Competition between two or more individuals, groups, or systems seeking to attain the same goal.

binocular r. The continuous alternation in the conscious perception of visual stimuli to the two eyes.

gender r. Competition between the

sexes for status and compensation, esp. in business, politics, and sports.

perceptual r. The conflicting perception of ambiguous sensory data, e.g., of light and dark interlocking images. The viewer sees first the light and then the dark parts of the image as dominant.

retinal r. Binocular rivalry.

sibling r. The competition between children for attention and affection from others, esp. their parents.

rivalry strife Alternate sensations of color and shape when the fields of vision of the two eyes cannot combine in one visual image.

Rivermead Motor Assessment (rĭv'ēr-mēd") An instrument used to assess the mobility of patients following a stroke. It includes assessments of gross motor function, fine motor function, and postural control.

Rivinus, August Quirinus (rĭ-vē'nūs) German anatomist, 1652–1723.

R.'s gland A sublingual gland.

rivus lacrimalis (rĭ'vūs) [L. *rivus*, little stream, + *lacrima*, tear] The pathway under the eyelids through which tears travel from their source in the lacrimal glands to the punctum lacrimale.

riziform (rĭz'ĭ-form) [Fr. *riz*, rice, + L. *forma*, form] Resembling rice grains.

RLE *right lower extremity*.

RLF *retrolental fibroplasia*.

RLL *right lower lobe of the lung*.

RLQ *right lower quadrant* (of abdomen).

RMA *right mentoanterior presentation* (of the fetal face).

RML *right middle lobe* (of the lung).

RMP *right mentoposterior presentation* (of the fetal face).

RMS *rhabdomyosarcoma*.

RMT *right mentotransverse* (fetal position).

Rn Symbol for the element radon.

RNA *ribonucleic acid*.

HIV RNA The genetic material of the human immunodeficiency virus. Its quantity in the bloodstream correlates with the severity and prognosis of the acquired immunodeficiency syndrome. Drug regimens for AIDS, esp. those that use a combination of protease inhibitors and reverse transcriptase inhibitors, aim to decrease the amount of HIV RNA in the blood to undetectable levels.

RNAi *RNA interference*.

RNA interference ABBR: RNAi. The blocking of gene expression by disrupting the translation of messenger RNA into proteins. SYN: *posttranscriptional gene silencing*.

RNase *ribonuclease*.

RNC *registered nurse certified*.

ROA *right occipitoanterior* (fetal position).

ROAT *repeat open application test*.

Robertson's pupil (rōb'ĕrt-sĭnz pū'pĭl) Argyll Robertson pupil.

robotics (rō-bō' tĭks) [Czech robot, robot]

1. The science and technology of using computerized or automated devices to perform functions that are either too difficult or too repetitive to perform manually. Robotics has numerous applications in health care. Surgeons use automated devices to improve control of their instruments, including scalpels and laparoscopes. Researchers use robots in experiments requiring repetitive tasks (e.g., sample analysis for the presence of minute concentrations of drugs or toxins). 2. The design, manufacture, and use of robots.

Rochalimaea (rō'chā-li-mē'ā) Former name for the genus *Bartonella*.

R. quintana SEE: *Bartonella quintana*.

Rocio (rō'syō) [Brazilian Portuguese] A mosquito-borne viral encephalitis found in Brazil.

rocker board A board with rockers or a partial sphere on the undersurface so that a rocking motion occurs when a person stands on it. It is used for proprioception and balance training, esp. in lower-extremity injuries and central nervous system disturbances. Also called *balance board*; *wobble board*.

rocker knife An assistive device for persons with limited upper-extremity function. It allows one-handed stabilization and cutting of food.

rocking A technique in neurodevelopmental rehabilitation for increasing muscle tone in hypotonic patients through vestibular stimulation.

body r. Rhythmic movements seen esp. in the bored, lonely, cognitively impaired, visually impaired, or disturbed.

Rocky Mountain spotted fever (rōk'ē mōwn'tĭn spōt'id fē'vēr) An infectious disease caused by the bacterium *Rickettsia rickettsii* and transmitted by the wood tick *Dermacentor andersoni* or *D. variabilis*. Originally thought to exist only in the western U.S., it can occur anywhere that the tick vector is present.

SEE: *illus*.



ROCKY MOUNTAIN SPOTTED FEVER

The organism causes fever, headache, myalgia, and a characteristic vasculitic rash. The rash appears several days af-

ter the other symptoms, first erupting on the wrists and ankles, then on the palms and soles. It is nonpruritic and macular and spreads to the legs, arms, trunk, and face. Disseminated intravascular coagulation or pneumonia may be serious complications. Tetracyclines are the drug of choice for treating this disease, but their use in pregnant women is not advised. Chloramphenicol may be substituted.

Persons living in areas with wood ticks should wear clothing that covers much of their bodies, including the neck, to prevent ticks carrying the disease from attaching to the skin. People who live in or travel to areas where ticks flourish should examine their scalps, skin, and clothing daily. Ticks should be grasped close to the mouthparts (not on the tick's body), as close to their point of attachment to their human host as possible. Pets should be examined regularly for ticks.

rod (rōd) [AS. *rodd*, club] **1.** A slender, straight bar. **2.** One of the sensory receptors in the retina that detects light. **3.** A bacterium shaped like a rod, a bacillus.

enamel r. One of the minute calcium-rich rods or prisms laid down by ameloblasts and forming tooth enamel. SYN: *enamel prism*.

retinal r. A receptor in the retina that responds to the presence of light. SEE: *retina* for illus.

rodent Any mammal of the Rodentia order, such as mice, rats, and squirrels.

rods and cones The photoreceptor cells of the retina. They are between the pigment epithelium and the bipolar layer of neurons. The rods contain rhodopsin, which is stimulated by light; the cones contain one of three other photopigments, which are stimulated by various wavelengths of visible light (colors). SEE: *cone* (2); *night vision*; *rod*.

Roentgen, Wilhelm Konrad (rĕnt'gĕn) German physicist, 1845–1923, who discovered roentgen rays (x-rays) in 1895. He won the Nobel Prize in physics in 1901.

roentgen (rĕnt'gĕn) [Wilhelm Konrad Roentgen, Ger. physicist, 1845–1923] ABBR: R. A unit for describing the exposure dose of x-rays or gamma rays. One unit can liberate enough electrons and positrons to produce emissions of either charge of one electrostatic unit of electricity per 0.001293 g of air (the weight of 1 cm³ of dry air at 0°C and at 760 mm Hg).

roentgen equivalent (in) man ABBR: rem. A measure of the effect that a specific dose of radiation has on human cells. It is expressed numerically as the product of the radiation absorbed dose (rad) and a quality factor (QF) specific for the type of radiation. The SI unit

equivalent to the rem is the sievert (Sv). One rem is equal to 0.01 sievert.

Roentgenium ABBR: Rg. A synthetic radioactive metal with a short-half life (formerly, Ununium; the symbol was Uuu); atomic number 111.

roentgenogram (rĕnt'gĕn'ō-grām, rĕnt'gĕn-ō-grām") Radiograph.

roentgenography (rĕnt'gĕn-ōg'rā-fĕ) Radiography.

body section r. Tomography.

mucosal relief r. An x-ray examination of the intestinal mucosa after ingested barium has been removed and air under slight pressure has been injected. This leaves a light coat of barium on the mucosa and permits x-ray pictures of the fine detail of the mucosa.

serial r. Repeated x-ray pictures taken of an area at defined but arbitrary intervals.

roentgenology (rĕnt'gĕn-ōl'ō-jĕ) Radiology.

roentgenometer (rĕnt'gĕ-nōm'ĕ-tĕr) Radiometer.

roentgenotherapy, roentgentherapy (rĕnt'gĕn-ō-thĕr'āp-ĕ) Radiotherapy.

Roger's disease (rō-zhāz') [Henri L. Roger, Fr. physician, 1809–1891] Ventricular septal defect.

Rogers, Martha (rōj'ĕrz) A nursing educator, 1914–1994, who developed the Science of Unitary Human Beings. SEE: *Nursing Theory Appendix*.

Rokitansky's disease (rō'kī-tān'skĕz) [Karl Freiherr von Rokitansky, Austrian pathologist, 1804–1878] Fulminant hepatitis.

Rolando's area (rō-lān'dōz) [Luigi Rolando, It. anatomist, 1773–1831] A motor area in the cerebral cortex, situated in the anterior central convolution in front of Rolando's fissure in each hemisphere.

Rolando's fissure The furrow between the frontal and parietal lobes of a cerebral hemisphere. SYN: *sulcus centralis*.

Rolando fracture A comminuted intra-articular fracture of the base of the first metacarpal with distal fragment subluxation. This fracture is similar to a Bennett's fracture but with more comminution.

role (rōl) [O.Fr. *rolle*, roll of paper on which a part is written] The characteristic social behavior of an individual in relationship to the group.

gender r. The characteristic lifestyle and behavior pattern of a person with respect to sexual and social conditions associated with being of a particular sex. Usually this behavior represents how the individual feels about his or her own sexual preference; it may not coincide with the true chromosomal and anatomical sexual differentiation of the person.

sick r. A dependent affect or behav-

ior, or both, associated with physical or mental illness.

role competence The ability to effectively and satisfactorily perform as expected within one's life roles. SEE: *occupational performance*.

role model One who serves as an example for others by demonstrating the behavior associated with a particular social position or profession.

role performance, ineffective A change in patterns of behavior and self-expression that do not match the environmental context, norms, and expectations. SEE: *Nursing Diagnoses Appendix*.

role playing The assignment and acting out of a role in a treatment setting to provide individuals an opportunity to explore the behavior and feelings of others or to see themselves as others see them. It is also used to teach such skills as interviewing, history taking, and doing a physical examination.

Rolfing (rɒl'fɛŋ) [Ida P. Rolf, U.S. biochemist, 1897–1979] A therapy designed to realign the body with gravity through fascial manipulation. SYN: *structural integration*.

roll A usually solid, cylindrical structure.

cotton r. A cylindrical mass of purified and sterilized cotton used as packing or absorbent material in various dental procedures.

ilial r. A sausage-shaped mass in the left iliac fossa. It is due to a collection of feces in or induration of the walls of the sigmoid colon.

lumbar r. A cushion placed behind and supporting the lower back, enabling a person with sciatica or other spinal problems to sit comfortably.

scleral r. SEE: *spur, scleral*.

roller (rɒl'ɛr) [O.Fr., roll] **1.** A strip of muslin or other cloth rolled up in cylinder form for surgical use. **2.** A roller bandage.

bandage r. A device for rolling bandages.

rolling timeframe In modular education, an approach to learning in which students complete objectives at their own pace and advance to new objectives (and ultimately, to graduation) only after demonstrating mastery of each prerequisite.

ROM (rɒm) *read-only memory; rupture of membranes*.

R.O.M., ROM *range of motion*.

Roman numeral (rɒ'mæn) One of the letters used by the ancient Romans for numeration, as distinct from the arabic numerals that we now use. In Roman notation, values are changed either by adding one or more symbols to the initial symbol or by subtracting a symbol to the right of it. For example, V is 5, IV is 4, and VI is 6. Hence, because X is 10, IX is 9 and XI is 11. SEE: Roman nu-

merals in *Latin and Greek Nomenclature Appendix*.

rombergism (rɒm'bɛrg-izm) The tendency to fall from a standing position when the eyes are closed and the feet are close together. SEE: *Romberg's sign*.

Romberg's sign (rɒm'bɛrgs) [Moritz Heinrich Romberg, Ger. physician, 1795–1873] The inability to maintain body balance when the eyes are shut and the feet are close together. The sign is positive if the patient sways and falls when the eyes are closed. This is seen in sensory ataxia and following traumatic brain injury.

rongeur (rɒn-zhūr') [Fr., to gnaw] An instrument for removing small amounts of tissue, particularly bone; also called *bone nippers*. A rongeur is a spring-loaded forceps with a sharp blade that may be either end cutting or side cutting.

roofer's knee SEE: under *knee*.

room [AS. *rum*] An area or space in a building, partitioned off for occupancy or available for specific procedures.

anechoic r. A room in which the boundaries are made so that all sound produced in the room is absorbed (i.e., not reflected).

clean r. A controlled environment facility in which all incoming air passes through a filter capable of removing 99.97% of all particles 0.3μ m and larger. The temperature, pressure, and humidity in the room are controlled. Clean rooms are used in research and in controlling infections, esp. for persons who may not have normally functioning immune systems (e.g., individuals who have been treated with immunosuppressive drugs in preparation for organ transplantation).

In very rare instances a child is born without the ability to develop an immune system. Such children are kept in a clean room while waiting for specific therapy such as bone marrow transplantation.

delivery r. A room to which an obstetrical patient may be taken for childbirth.

dust-free r. A type of room designed to eliminate or reduce circulating particulate matter, including airborne microorganisms. This kind of room is useful for housing burn patients, removing allergens from the air, providing an environment for transplantation surgery, and preparing drugs and solutions for intravenous use.

labor r. A room in which an obstetrical mother may be placed during the first stage of labor.

operating r. A room used and equipped for surgical procedures (e.g., in a hospital, surgicenter, or doctor's office).

recovery r. An area provided with

equipment and nurses needed to care for patients who have just come from surgery. Patients remain there until they regain consciousness, are no longer drowsy and stuporous from the effects of the anesthesia, and have stable vital signs. Patients who are being discharged from a short stay recovery area should also be able to tolerate oral fluids and void without difficulty.

rooming-in The practice of placing an infant in the same hospital room as the mother, beginning immediately after birth.

root (rüt) [AS. *rot*] **1.** The underground part of a plant. **2.** A bundle of pia-covered axons that emerges from or enters into the brain or spinal cord inside the dura; the central-most end of a peripheral nerve, inside the dura. **3.** A portion of an organ implanted in tissues. SYN: *radix*. **4.** The part of the human tooth covered by cementum; designated by location (mesial, distal, buccal, lingual). **5.** A hex or spell, esp. one that relies on herbal rituals to produce or heal disease; sorcery; voodoo. In the coastal regions of the southeastern U.S., esp. among those of Caribbean or African descent, "rootwork" is relied on as a traditional form of healing and hexing.

anterior r. One of the two roots by which a spinal nerve is attached to the spinal cord; contains efferent nerve fibers.

dorsal r. The *radix dorsalis* or sensory root of each spinal nerve. SYN: *sensory root*.

r. of mesentery The origin of the mesentery of the small intestine along the back wall of the abdomen.

motor r. The anterior root of a spinal nerve. SYN: *ventral root*.

r. of nose The top of the nose where it meets and makes an angle with the base of the forehead between the eyes.

posterior r. One of the two roots by which a spinal nerve is attached to the spinal cord; contains afferent nerve fibers.

sensory r. Dorsal r.

ventral r. Motor r.

root cause The source of a problem, that is, the underlying reason that it occurred.

root cause analysis In health care delivery a formal study of a problem used to determine how to avoid or prevent similar problems in the future.

root coverage A general term for one of several periodontal techniques used to treat gingival recession. Dental roots may be covered with tissue grafts, flaps, or tissue regenerative procedures.

root formation The development of tooth roots by Hertwig's root sheath and the epithelial diaphragm. It involves the formation of root dentin with a covering of cementum essential for the attach-

ment of the tooth to the surrounding bony tissues. Root formation or development continues for months or years after the tooth has erupted into the mouth.

root pick A dental instrument for retrieving root fragments resulting from tooth extraction; also called *apical elevator*.

root planing SEE: *planing* (2).

root resorption of teeth Degeneration of tooth roots caused by endocrine imbalance or excessive pressure of orthodontic appliances. Root resorption may be categorized as internal or external. Internal root resorption, sometimes called internal granuloma, is usually a result of pulpal trauma. Affected teeth demonstrate a radiolucent enlargement within the pulp canal on a dental radiograph. External root resorption has a variety of causes, including eruption pressure, localized infection, and forced orthodontic pressure. Radiographs demonstrate roots that appear to be sawed off or shortened.

ETIOLOGY: Traumatic sources of resorption may include pulpal trauma, eruption pressure, localized infection, previous injury, and forced orthodontic pressure; however, resorption has occurred with no identifiable source of trauma.

SYMPTOMS: Patients may be asymptomatic or they may experience localized sensitivity.

TREATMENT: The treatment includes eliminating the trauma, if possible.

R.O.P. right occipitoposterior. In this fetal presentation, the occiput of the fetus is in relationship to the right sacroiliac joint of the mother.

rope ladder A device that helps a person pull up from a supine to a seated position in bed. It is usually made of two strands of rope with several rigid plastic or wooden rungs strung at intervals. At one end is the first of several rungs that are used to grab and pull oneself up, and at the far end, the ropes attach to the bed frame at the foot of the bed.

Roper-Logan-Tierney Model of Nursing

A conceptual model of nursing developed and refined by Nancy Roper, Winifred W. Logan, and Alison J. Tierney. The model focuses on individualized activities of living. The goal of this model of nursing is to provide individualized care.

ropeway (röp'wā") A guidewire, esp. one used to cannulate a narrow orifice, such as the sphincter of Oddi.

Rorschach test (ror'shāk) [Hermann Rorschach, Swiss psychiatrist, 1884-1922] A psychological test consisting of 10 different inkblot designs. The subject is asked to interpret each design individually. The test has been used to reveal personality disturbances.

rosa (rō'zā) [L.] Rose.

rosacea (rō-zā'sē-ā) [L. *rosaceus*, rosy] A chronic rose-colored eruption, usually localized to the middle of the face (nose, cheeks, forehead, around the eyes, on the chin). There are four types named for the predominant skin finding—telangiectatic (marked by the appearance of spidery blood vessels on affected skin), papulopustular (bumpy/pustular lesions), phymatous (nasal scarring and deformity), and ocular (involving the lids, lashes, or conjunctiva). The condition is common, esp. in persons of Northern European ancestry. It usually is noted first between the ages of 30 and 50. Women are affected more often than men. **SEE: illus.**



ROSACEA

PATIENT CARE: Rosacea affects approximately 14 million Americans. In many the condition is quite mild; it may be mistaken for a sunburn, mild acne, or age-related changes in complexion. Treatments vary with the presenting findings. Electrolysis, lasers, and pulse light therapy can be used to treat telangiectases and rhinophyma. Topical medications, such as azelaic acid or metronidazole, are used to treat the papulopustular form of the disease. Oral antibiotics are also used in treatment-resistant disease. Aggravating factors may include ultraviolet light exposure, psychological stress, some foods and beverages, exercise, and skin care products. The health care provider should provide the patient with a list of the most common triggers and printed materials that offer tips for coping with them. Patients with rosacea should avoid irritating the skin of the face during cleansing and should wear a sunscreen that blocks both ultraviolet A and B rays, with a protection factor of 15 or higher on a year-round basis. Sunscreens containing micronized zinc oxide or titanium oxide to absorb photons may be less irritating to sensitive skin.

Topical or oral steroids worsen the condition. Actual or feared facial changes affect one's body image and may cause embarrassment, frustration, low self-esteem, anxiety, and depression. Empathic support can be helpful. Individuals who seek organized group support should contact the National Rosacea Society (www.rosacea.org). Telephone: 1-888-NO-BLUSH

steroid r. Acne caused by systemic or topical use of corticosteroid drugs. **SEE: illus.**



STEROID ROSACEA

Rosai-Dorfman disease (rō-sā'ē, sī'dōrfmān) ABBR: RDD. A nonmalignant, lymphoproliferative disorder characterized by painless lymph node enlargement, fever, and polyclonal hyperglobulinemia. **SYN:** *sinus histiocytosis with massive lymphadenopathy*.

rosaniline (rō-zān'ī-līn) A basic dye used in preparing other dyes.

rosary (rō'zā-rē) Something that resembles a string of beads.

rachitic r. Palpable areas at the juncture of the ribs with their cartilages. This is seen in conjunction with rickets. **SEE: rachitic disease.**

rose bengal sodium ¹³¹I (rōz) A standardized preparation of radioactive iodine and rose bengal used in photoscanning the liver and testing liver function.

rose fever Hay fever of early summer attributed to inhaling rose pollen. **SEE: hay fever.**

rose-handler's disease Sporotrichosis. **Rosenbach, Ottomar** (rō'zēn-bōk) German physician, 1851–1907.

R.'s sign **1.** A fine, rapid tremor of the closed eyelids, seen in hyperthyroidism. **2.** In functional disorders, the inability to obey a command to close the eyes. **3.** The absence of an abdominal skin reflex in intestinal inflammation or hemiplegia.

R.'s test An obsolete test for bile in the urine.

roseo- **1.** Combining form meaning *rose-colored*. **2.** A prefix in chemical terms.

roseola (rō-zē'ō-lā, rō'zē-ō'lā) [L. *roseus*, rosy] A skin condition marked by maculae or red spots of varying sizes on the skin; any rose-colored rash.

r. idiopathica A macular eruption

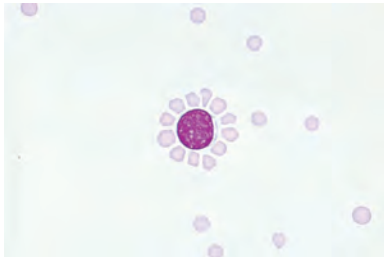
not associated with any well-defined symptoms.

r. infantum Exanthem subitum.

roseolovirus (rō'zē-ō'lō-vī'rūs) [r + v] A genus of herpesviruses that infect lymphocytes. Members of the genus include herpesvirus 6 and 7 (HHV-6 and HHV-7).

Rose's position (rōz) [Frank A. Rose, Brit. surgeon, 1873–1935] A fully extended position in which the patient's head is allowed to hang over the end of the operating room table to prevent aspiration of blood during surgery on the mouth and lips.

rosette (rō-zēt') [Fr., small rose] **1.** A structure that has a rose shape, such as an array of phagocytic cells around an object they are consuming. **2.** A spherical group of fine red vacuoles surrounding the centrosome of a monocyte. **SEE: illus. 3.** A mature schizont. **SYN:** *segmenter*.



ROSETTE OF RED BLOOD CELLS

rosin (rōz'īn) [L. *resina*] A substance distilled from pine trees, sometimes used in adhesives, plastics, or polishes, and occasionally causing allergic contact dermatitis.

Rossolimo's reflex (rōs'ō-lē'mōz) [Gregory I. Rossolimo, Russian neurologist, 1860–1928] Plantar flexion of the second to fifth toes in response to percussion of the plantar surface of the toes.

Ross River virus (rōs) An alphavirus transmitted by mosquito bite that causes fevers, rash, and "epidemic arthritis" in multiple joints. It is typically found in Australia and neighboring islands.

rostellum (rōs-tēl'lūm) *pl. rostellula* [L., little beak] A fleshy protrusion on the anterior end of the scolex of a tapeworm, bearing one or more rows of spines or hooks.

rostral (rōs'trāl) [L. *rostralis*] **1.** Resembling a beak. **2.** Toward the front or cephalic end of the body.

rostricaudal (rōs'trō-kawd'l) [L. *rostrum*, snout, beak (of bird), prow (of ship), speaker's platform + L. *cauda*, tail] In anatomy, along the long (head-to-tail) axis of the body.

rostrum (rōs'trūm) *pl. rostrums; rostra* [L. *rostrum*, snout, beak (of bird), prow

(of ship), speaker's platform] Any hooked or beaked structure.

rosulate (rōs'ū-lāt) [L. *rosulatus*, like a rose] Shaped like a rosette.

rot (rōt) [ME. *roten*] To decay or decompose.

jungle r. The common term for certain fungal skin diseases that occur in the tropics.

ROT *right occipito transverse* (fetal position).

rotameter (rō-tām'ē-tēr) A device for measuring the flow of a gas or liquid.

rotate (rō-tāt) [L. *rotare*, to turn] To twist or revolve.

RotaTeq (rōt'ā-tēk) Rotavirus vaccine, live, oral pentavalent.

rotation (rō-tā'shūn) [L. *rotatio*, a turning] The process of turning on an axis.

fetal r. Twisting of the fetal head as it follows the curves of the birth canal downward.

optical r. **SEE:** *optical activity*.

tooth r. The repositioning of a tooth by turning it on its long axis to a more normal occlusal position.

rotator (rō-tā'tor) *pl. rotatores* A muscle revolving a part on its axis.

rotavirus (rō'tā-vī'rūs) [L. *rota*, wheel, + *virus*, poison] Any of a group of double-stranded RNA viruses that worldwide is the most common cause of dehydrating diarrhea in children. In the U.S. during the peak season (October through May), these viruses account for one third of all hospitalizations for diarrhea in children under five. Five hundred or so rotavirus-associated deaths are reported annually, most in children under age two. The incubation period of the disease is short (1 to 3 days), and the transmission is the fecal-oral route. The first effective vaccine was withdrawn when its use in infants was associated with intussusception. In 2005 the FDA approved a new rotavirus vaccine.

röteln, rōtheln (rēt'ēln) Rubella.

Rothmund-Thomson syndrome (rōth'mōnd'tōm'sīn) **ABBR:** RTS. A rare autosomal recessive disease in which helicase is formed abnormally. Children affected by RTS have poikiloderma; deformities of bone, nails, and hair; premature aging; and a predisposition to cancer.

Roth's spots (rōths spōts) [Moritz Roth, Swiss physician and pathologist, 1839–1914] Retinal hemorrhages with pale centers, seen in subacute bacterial endocarditis, severe anemia, and leukemia. The condition is caused by a systemic infection, particularly acute infective endocarditis.

Rotor syndrome (rō-tōr) A benign form of hyperbilirubinemia transmitted as an autosomal recessive trait, in which there is jaundice, but normal aminotransferase levels and normal hepatic

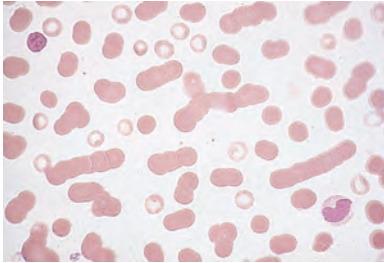
synthesis of albumin and clotting factors.

rototome (rō'tō-tōm) A device for cutting tissue, used in arthroscopic surgery.

rough (rūf) Not smooth.

roughage (rūf'āj) Food fiber that is largely indigestible. SEE: *cellulose; fiber, dietary*.

rouleau (roo-lō') *pl. rouleaux* [Fr., roll] A group of red blood cells that are stuck together, resembling a roll of coins. SEE: *illus*.



ROULEAUX FORMATION

rounds, grand A medical education procedure, used esp. in teaching hospitals, in which all aspects of a patient's condition, management, and problems encountered are presented to faculty members, medical students, and health care workers. This provides an opportunity for all concerned to ask questions and provide comments on the patient's diagnosis, care, and clinical program. The patient is usually, but not always, present during the conference. This method of teaching was begun in America by Sir William Osler at Johns Hopkins Hospital, Baltimore, Maryland.

roundworm Any member of the phylum Nematelminthes (Aschelminthes), esp. one belonging to the class Nematoda. SEE: *threadworm*.

routine **1.** A regularly performed behavioral sequence. **2.** A standard method of completing a procedure, based on rules or habit. In occupational therapy a customary morning routine might include toileting, bathing, grooming, dressing, eating breakfast, and reading the newspaper.

Roux-en-Y (roo'ēn-wī') An anastomosis of the distal divided end of the small bowel to another organ such as the stomach, pancreas, or esophagus. The proximal end is anastomosed to the small bowel below the anastomosis.

Roux-en-y gastric bypass A bariatric surgical procedure in which the superior portion of the stomach is isolated from the rest of the stomach and the jejunum is connected to it. As a result, food passes directly from the proximal stomach into the middle of the small in-

testine. It bypasses the majority of the stomach, which is isolated from the working portion of the stomach and from the duodenum. An opening is made in the duodenum and the jejunum, and the two organs are connected via a surgical stoma. This permits drainage into the jejunum of gastric secretions from the isolated greater curvature of the stomach. This form of gastric bypass is the most common bariatric surgical procedure and among the most successful. Since the duodenum absorbs many important vitamins and nutrients, including iron, vitamin B₁₂, and calcium, nutritional deficiencies and iron-deficiency anemia are common complications. Others include nausea, vomiting, ulcers, and anastomotic leaks.

Rovsing's sign (rōv'zīngz) [Niels Thor-kild Rovsing, Danish surgeon, 1862–1927] Pain referred to McBurney's point on palpation of the left lower abdomen. The sign suggests peritoneal irritation in appendicitis.

Roxicodone Oxycodone.

Roxicodone SR Oxycodone.

Roy, Callista (roy, kā-lis'tā) A nursing educator, born 1939, who developed the Roy Adaptation Model of Nursing. SEE: *Nursing Theory Appendix*.

Roy Adaptation Model (roy) A conceptual model of nursing developed by Callista Roy. Individuals and groups are adaptive systems with physiological/physical, self-concept/group identity, role function, and interdependence modes of response to focal, contextual, and residual environmental stimuli. The goal of nursing is promotion of adaptation through increasing, decreasing, maintaining, removing, altering, or changing environmental stimuli. SEE: *Nursing Theory Appendix*.

royal jelly (roi'il) [ME.] A collection of carbohydrates, lipids, minerals, pheromones, and proteins secreted by worker honeybees (*Apis mellifera*). It is used in the hive to nourish larvae, including those that develop into the queen bee. Its constituents affect blood-forming and immune cells. It is marketed as a nutritional supplement with numerous putative effects on aging and energy.



Allergic and anaphylactic reactions to this and other bee products are frequently reported.

RPF renal plasma flow.

RPFT registered pulmonary function technician.

R.Ph. registered pharmacist.

rpm revolutions per minute.

RPO right posterior oblique position.

RPR rapid plasma reagin.

R.Q. respiratory quotient.

-rrhage, -rhage Combining forms used as a suffix meaning *rupture, profuse fluid discharge*, as in hemorrhage.

-rrhagia, -rhagia (rā'jē-ă) [Gr. *rhegnynai*, to burst forth] Combining forms used as a suffix meaning *rupture, profuse fluid discharge*.

-rrhaphy [Gr. *raphe*, suture] Combining form used as a suffix meaning *suture, surgical repair*.

-rrhea, -rhea [Gr. *rhoia*, flow] Combining forms used as a suffix denoting *flow, discharge*.

-rrhexis, -rhexis [Gr. *rhexis*, a breaking, bursting] Combining forms used as a suffix meaning *rupture*.

rRNA ribosomal RNA.

RRT registered respiratory therapist.

RSA right sacroanterior (fetal position).

RScA right scapuloanterior (fetal position).

RScP right scapuloposterior (fetal position).

RSI rapid sequence induction; rapid sequence intubation.

RSP right sacroposterior (fetal position).

RST right sacrotransverse (fetal position).

RSV respiratory syncytial virus; Rous sarcoma virus.

RT radiation therapy; reading test; registered technologist.

RTA rapid trauma assessment.

RTS revised trauma scale. SEE: under trauma.

Ru Symbol for the element ruthenium.

RU 486 Mifepristone.

rub Friction of one surface moving over another. In auscultation, a roughened surface moving over another causes a characteristic sound.

pericardial r. The scratchy, leathery, or rasping sound heard when inflamed visceral and parietal surfaces move over each other. The sound may be heard when listening to the heart sounds of patients with pericarditis.

pleural friction r. The creaking, grating sounds made when inflamed pleural surfaces move during respiration. It is often heard only during the first day or two of a pleurisy.

rubber dam (rū'bēr) Dam (1).

rubedo (rū-bē-dō) [L. *ruber*, red] Redness of the skin that may be temporary.

rubefacient (roo'bē-fā'shēnt) [L. *rubefaciens*, making red] **1.** Causing redness, esp. of the skin. **2.** An agent that reddens the skin by increasing its blood flow (e.g., rubbing alcohol or capsaicin).

rubella (roo-bél'lā) [L. *rubellus*, reddish] A mild, febrile, highly infectious viral disease historically common in childhood prior to the advent of an effective vaccine. It still occurs among nonimmunized children and young adults, especially in cities of underdeveloped

regions. The virus is transmitted through contact with nasopharyngeal secretions, blood, urine, and stool of those already infected, and possibly via contact with contaminated clothing, tissues, etc. Humans are the only known host. The disease is contagious from about 10 days prior to appearance of the rash until about 5 days after its disappearance. SYN: *German measles; roeteln; röteln*. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: A variable 1- to 5-day prodromal period of drowsiness, mild temperature elevation, slight sore throat, Forschheimer spots (pinpoint reddish areas on the palate), and postauricular, postcervical, and occipital lymphadenopathy commonly precedes the rash and is the hallmark of the disease. The rash (described technically as maculopapular) resembles that of measles or scarlet fever, begins on the forehead and face, spreads downward to the trunk and extremities, and lasts about 3 days, accompanied by fever. The rash appears in only about 50% of infections.

INCUBATION: Infection occurs approx. 14 to 23 days before the advent of symptoms.

COMPLICATIONS: Complications seldom occur in children. Older patients may experience generalized lymphadenopathy and splenomegaly. A transient polyarthrits (inflammation of the wrist, finger, knee, toe, and ankle joints) may occur within 5 days of the rash, but usually lasts less than 2 weeks. Encephalomyelitis is rare and usually self-limiting. The disease is most important because of its ability to produce defects in the developing fetus. Rubella infection during the first trimester of pregnancy is of concern; transplacental transmission to the fetus may result in several types of congenital anomalies. SEE: *congenital r. syndrome*.

PREVENTION: Prophylaxis consists of childhood immunization with a combination measles, mumps, rubella (MMR) vaccine, usually administered between 12 and 15 months of age and repeated at age 4 to 6 years.



Administration of live virus vaccines is contraindicated during pregnancy.

PATIENT CARE: *Injection Site:* For 30 min after receiving the vaccine, the patient is observed for indications of anaphylaxis, and epinephrine 1:10,000 is kept readily available. Warmth should be applied to the injection site for 24 hr following immunization, to aid absorption. If swelling persists beyond the initial 24 hr, cold should be applied, to promote vasoconstriction and prevent

antigenic cyst formation. Acetaminophen (for children) or aspirin (for adults) can be taken for relief of fever.

Confirmed cases of rubella should be reported to local public health officials. Parents need to be taught about respiratory (droplet) isolation and why it is necessary, emphasizing the need to prevent exposure of pregnant women to this disease.

Children with rubella virus should be made as comfortable as possible, allowed to occupy themselves with age-appropriate books, games, and television. Adolescent or adult patients may experience fever and joint pain. If medication is needed for symptomatic relief, adults may use aspirin, but children and adolescents should use acetaminophen to lessen the risk of Reye's syndrome.

If a pregnant unimmunized woman develops rubella in her first trimester, she must be informed of the potential for fetal infection and its serious consequences. Generally speaking, the earlier the infection occurs during the pregnancy, the more severe the damage to the fetus. The combination of cataracts, deafness, and cardiac disease defines congenital rubella syndrome (CRS). Low birth weight, microcephaly, and mental retardation are other common findings. Appropriate immunoglobulin laboratory studies determine the presence of fetal infection. Counseling is offered regarding the woman's choice for aborting the pregnancy, and the patient is supported in her decision.

Infants born with congenital rubella require contact isolation until they are no longer excreting the virus. The duration of the viral excretion is variable: usually several months to a year. Parents are taught that congenital rubella is a lifelong disease, that many related disorders may not appear until later in life, and that cataract and cardiac surgery may be required. Emotional support is offered to parents of an affected child. A referral to social service agencies guides parents to appropriate community resources and organizations. A mental health referral may help them deal with their grief, frustration, and anxiety. Confirmed cases of rubella and congenital rubella syndrome should be reported to the local public health department.

congenital r. syndrome ABBR: CRS. Transplacental transmission of the rubella virus to a fetus, resulting in spontaneous abortion, stillbirth, or major birth defects of the heart, eyes, or central nervous system, including deafness. Women who become pregnant and have not received rubella immunization should be advised of the risk of fetal development of CRS. For unimmunized

women who develop rubella in the first trimester of pregnancy, the risk of CRS may be as high as 85%. The risk decreases sharply after the eighth week of pregnancy, and is absent after the 20th week of gestation. Fetal infection can be determined by serial studies of the immunoglobulin gamma M and immunoglobulin gamma G rubella antibodies. Prevention of CRS consists of active immunization of all children and of women of childbearing age.



Immunization with live rubella virus is contraindicated during pregnancy. It is recommended that women avoid pregnancy during the 3-month period after immunization. Infants with CRS are considered to be contagious. Only health care workers known to be immune to rubella (seropositive) should be permitted to care for infants with CRS.

rubella titer A blood test to determine a person's immune status to rubella.

rubella virus vaccine, live SEE: *vaccine, live rubella virus.*

rubeola (roo-bē'ō-lā, roo'bē-ō'lā) [*L. ru-beolus*, reddish] **1.** Measles. **2.** Term occasionally applied to an acute infectious disease with mild symptoms and a rose-colored macular eruption.

rubeosis iridis (rū-bē-ō'sis) A condition in which new blood vessels form on the anterior surface of the iris. Neovascularization is associated with diabetic retinopathy and central retinal vein occlusion. It can lead to neovascular glaucoma that is difficult to treat.

ruber (roo'bēr) [*L.*] Red.

rubescence (roo-bēs'ēnt) [*L. rubescere*, to grow red] Growing red; flushing.

rubidium (roo-bid'ē-ūm) [*L. rubidus*, red] SYMB: Rb. A soft, silvery metal; atomic weight 85.47, atomic number 37. Its salts are used medicinally.

rubiginous (roo-bij'ī-nūs) [*L. rubiginosus*] Rusty.

Rubin, Reva (rū-bin) A nursing educator, 1916–1995, who developed the Theory of Clinical Nursing. SEE: *Nursing Theory Appendix.*

Rubner's laws **1.** Law of constant energy consumption: rapidity of growth is proportional to intensity of the metabolic process. **2.** Law of constant growth quotient: the same proportional part, or growth quotient, of total energy is used for growth.

rubor (roo'bor) [*L.*] Discoloration or redness caused by inflammation. It is one of the four classic symptoms of inflammation. The others are calor (heat), dolor (pain), and tumor (swelling).

rubriblast (roo'brī-blāst) Pronormoblast.

rubricyte (roo'brī-sīt) [*L. ruber*, red, + *Gr. kytos*, cell] A polychromatic normoblast.

rubrospinal (roo"brō-spi'nāl) [r + spina, thorn] Pert. to a descending tract that consists of a small bundle of nerve fibers in the lateral funiculus of the spinal cord. Fibers arise in the cells of the red nucleus of the midbrain and terminate in the ventral horn of the gray matter.

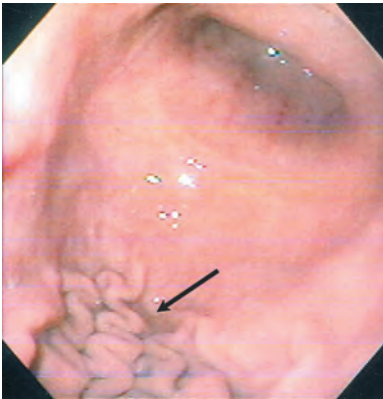
rudiment (roo'dī-měnt) [L. *rudimentum*, beginning] **1.** Something undeveloped. **2.** In biology, a part just beginning to develop. **3.** A structure that never develops fully.

rudimentary (roo'dī-měn'tă-rē) **1.** Elementary. **2.** Undeveloped; not fully formed.

Ruffini's corpuscle (roo-fē'nēz) [Angelo Ruffini, It. anatomist, 1864–1929] One of the encapsulated sensory nerve endings found in the dermis and subcutaneous tissue, once thought to mediate the sense of warmth, now believed to be a pressure receptor. SYN: *organ of Ruffini*.

rufous (roo'fūs) [L. *rufus*, red] Ruddy; having a ruddy complexion and reddish hair.

ruga (roo'gā) *pl.* **rugae** [L.] A fold or crease, esp. one of the folds of mucous membrane on the internal surface of the stomach. SEE: *illus.*



RUGAE

Rugae of stomach as seen through an endoscope

palatal r. One of the folds of the mucous membrane of the roof of the mouth. SYN: *palatine ruga*.

palatine r. Palatal r.

r. of vagina One of the small ridges on the inner surface of the vagina extending laterally and upward from the columna rugarum (long ridges on the anterior and posterior walls).

rugine (roo-zhēn') **1.** Periosteal elevator. **2.** A raspatory.

rugose, rugous (roo'gōs, -gūs) [L. *rugosus*, wrinkled] Having many wrinkles

or creases; used in describing microbiological colonies. SEE: *illus.*



RUGOSE

Rugose appearance of *Aspergillus* culture

rugosity (rū-gōs'y-tē) [L. *rugositas*] **1.** The condition of being folded or wrinkled. **2.** A ridge or wrinkle.

R.U.L. *right upper lobe* of lung.

rule (rool) [ME. *riule*] A guide or principle based on experience or observation.

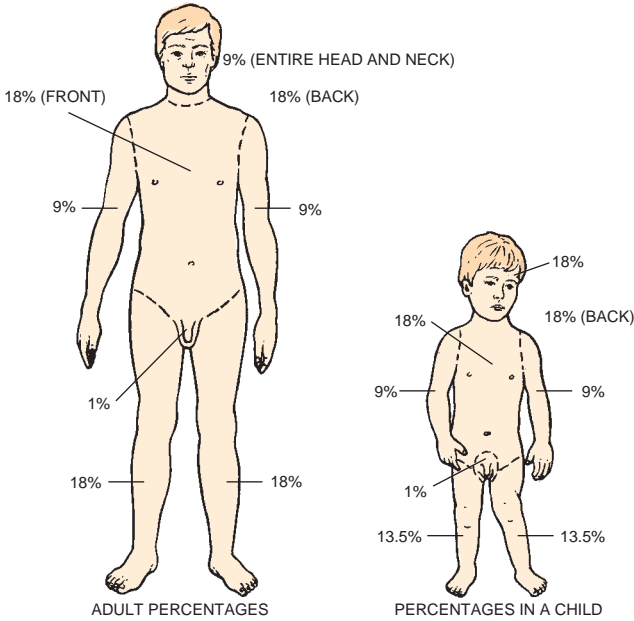
buccal object r. A dental radiographical technique used to identify the position of an object within a three-dimensional area. A reference radiograph is taken. The projection angle is changed and the resulting radiograph compared with the reference radiograph. If the image remains in the same position, the object is located buccal to the reference object. If the image changes position, the object is lingual to the reference object. Also called *Clark's rule*; *Clark's technique*; *tube shift technique*.

convex-concave r., concave-convex r. A law of joint kinematics that states that if a convex joint surface moves on a stationary concave surface, the convex joint will slide in the direction opposite that of the angular motion of the bone, and that if a concave joint surface moves on a stationary convex surface, the articular surface will slide in the same direction as the angular motion of the bone.

r. of nines A formula for estimating percentage of body surface areas, particularly helpful in judging the portion of skin that has been burned. For the adult, the head represents 9%; each upper extremity 9%; the back of the trunk 18%, and the front 18%; each lower extremity 18%; and the perineum the remaining 1%. SEE: *illus.*

r. of ten The criteria used to judge the readiness of an infant for surgical repair of a cleft lip. The infant must weigh 10 lb, be 10 weeks old, have a hemoglobin value of 10 g, and have a white blood cell count less than 10,000.

r. of thirds The classification of bone



RULE OF NINES

shaft fractures: proximal third, midshaft, and distal third. Midshaft fractures heal more slowly than other fractures because the blood supply in the middle of a bone is less than that at either end.

rule in A colloquial term for meeting the diagnostic criteria for a specific disease, esp. for a myocardial infarction.

rule out In medicine, to eliminate one diagnostic possibility from the list of causes of a patient's presenting signs and symptoms.

rum [origin obscure] **1.** An alcoholic beverage prepared from fermented sugar cane juice. **2.** Colloquially, any alcoholic beverage.

Rumex acetosella (roo'měks ä-sē'tō-sěl'ä) [NL] Sheep sorrel, a green leafy vegetable promoted for its anticancer effects.

rum fits A colloquial phrase for alcohol withdrawal seizures. Most occur during the 7- to 48-hr period following abstinence. There may be a single seizure, but most occur in bursts of two to six. These seizures do not represent latent epilepsy.

ruminant (roo'mī-nānt) An animal that regurgitates food in order to chew it again. This is called chewing the cud.

rumination (roo'mī-nā'shūn) [L. *ruminatio*] **1.** Regurgitation, esp. with re-chewing, of previously swallowed food. This condition may be present in otherwise normal individuals, in emotionally deprived or mentally retarded infants,

or in mentally retarded adults. Infants with rumination disorder often have weight loss, malnutrition, and failure to thrive. **2.** In psychiatry, an obsessional preoccupation by a single idea or a set of thoughts, with an inability to dismiss or dislodge them. Also called *mercyism*.

rummaging (rüm'ä-jīng) [Middle Fr. *ar-rumer*; to store cargo in the hold of a ship] Searching for lost objects, often in an aimless, repetitive, or fruitless manner. It is a characteristic of some patients affected by dementias and other brain diseases.

rump (rūmp) [ME. *rumpe*] The posterior end of the back, the gluteal region, or the buttocks.

Rumpf's symptom (roompfs) [Heinrich Theodor Rumpf, Ger. physician, 1851-1923] A quickening of the pulse when pressure is exerted over a painful spot.

run [AS. *rinnan*, run] To exude pus or mucus.

runaround, runround Whitlow.

runners' high Feelings of relaxation experienced by many persons who participate in an intensive aerobic exercise program.

rupia (roo'pē-ä) [Gr. *rhypos*, filth] A rash, usually caused by tertiary syphilis, first manifested by large elevations of the epidermis filled with a clear, bloodstained, turbid, or purulent serum. The bulla bursts and allows some fluid to escape. As it desiccates, it is covered with a crust that dries, accumulates

new layers, and becomes covered with greenish-brown scales, sometimes to a depth of $\frac{1}{2}$ in (13 mm). It is the thickest of all syphilides and presents the most extensive ulcerations. The condition is treated with antisyphilitic antibiotics.

rupioid (roo'pē-oyd) [*r* + *eidos*, form, shape] Resembling rupia.

rupture (rüp'chür) [L. *ruptura*, breaking] **1.** A breaking apart of an organ or tissue. **2.** Hernia.

r. of the Achilles tendon Disruption of the attachments of the gastrocnemius and soleus muscles to the posterior calcaneus, an injury that typically occurs in middle-aged male athletes participating in basketball or other ball sports, some divers, or patients treated with steroid injections for Achilles tendinitis.

ETIOLOGY: The injury typically occurs during sudden, forceful plantar flexion of the ankle.

SYMPTOMS: After an initial sensation of being struck in the back of the lower limb, the patient typically reports an inability to push up onto his or her tiptoes. The injury is distinguished from others by placing the patient in a prone position with feet extending off the foot of the examining table. The examiner then squeezes the calf muscle and observes the response: if plantar flexion occurs, the tendon is intact; if ankle dorsiflexion results, the tendon is partially intact; if no flexion of any kind occurs, the tendon is ruptured.

TREATMENT: Management may involve casting the lower extremity, but usually surgical repair or reinforcement of the damaged tendon is required.

PATIENT CARE: The patient is taught to keep the leg elevated for 48 to 72 hr following the injury, with ice applied intermittently to the joint (or cast) to help control swelling. Nonsteroidal anti-inflammatory drugs (NSAIDs) are provided for pain and inflammation. The patient is fitted for crutches or a walker-frame and instructed in gait training. Rehabilitation exercises consist of flexibility, strengthening, and balance exercises as tolerated. Assisted motion of the ankle reduces the duration of rehabilitation from Achilles tendon rupture, which may in some instances be prolonged or complicated by muscle atrophy or repetitive injury to the tendon.

cap r. Plaque r.

cardiac r. A tearing of the heart muscle that may occur after severe chest trauma (or in about 2% of patients who have suffered a myocardial infarction). It typically results in sudden cardiac death or tamponade. SYN: *myocardial rupture*.

r. of membranes The rupture of the amniotic sac as a normal result of dilata-

tion of the cervix uteri in labor. SEE: *premature rupture of membranes, preterm*.

myocardial r. Cardiac r.

r. of perineum Spontaneous laceration of the perineum during the second stage of labor. The event occurs more commonly in primiparas and may be avoided by having an episiotomy.

plaque r. The separation of a lipid-rich lesion from the wall of a blood vessel. The damage this does to the lining of a blood vessel triggers a cascade of events that result in blood clot formation within the vessel and its eventual obstruction. This is the immediate cause of acute myocardial infarction. SYN: *cap rupture*.

splenic r. An abdominal catastrophe marked by severe, often pleuritic pain, hemodynamic instability, blood loss into the peritoneum, and occasionally cardiovascular collapse and death. It may occur as a result of trauma or rarely in patients with infectious mononucleosis. Treatment may be conservative or may involve removal of the spleen. In delayed rupture of the spleen, a catastrophic illness may not present until days or weeks after the causative injury.

r. of tubes A rupture of a fallopian tube, a surgical emergency in ectopic pregnancy. This may occur without the woman's knowledge of her pregnancy.

r. of the tympanic membrane A disruption of the epithelium that separates the external auditory canal from the middle ear. This can occur as a result of trauma, or more often as a consequence of a middle ear infection.

r. of uterus A rare condition in which the uterine muscles are torn apart by the stresses of unrelieved obstructed labor, the parting of an old cesarean delivery scar, or aggressive induction or augmentation of labor. SEE: *cephalopelvic disproportion; induction of labor*.

RUQ *right upper quadrant* (of abdomen).

rush **1.** A strong contraction wave that moves down the small intestine. **2.** The first surge of pleasure produced by a drug, esp. a narcotic drug.

Russell body (rüs'ël) [William Russell, Scot. physician, 1852–1940] A small spherical hyaline body found in cancerous and simple inflammatory growths.

Russell's viper venom (rüs'ëlz) [Patrick Russell, Irish physician who worked in India, 1727–1805] The toxin from Russell's viper. It is used to investigate disorders of blood coagulation, such as are present in antiphospholipid antibody syndrome, factor V Leiden deficiency, and others.

rust One of several members of an order of parasitic fungi (Uredinales), all of which are parasitic on plants. Many of these are allergens.

Rust's disease (rüst's) [Johann N. Rust,

Ger. surgeon, 1775–1840] Tuberculosis of the cervical vertebrae and their articulations.

rusty (rúst'ē) [AS. *rustig*] Reddish; resembling or containing rust. SYN: *rustiginous*.

rut-formation (rüt'fôr-mā'shūn) In psychology, a loss of interest in the environment, the fixation on a single object, and the narrowing of concentration of emotional or other interests.

ruthenium (roo-thē'nē-ūm) SYMB: Ru. A hard, brittle, metallic element of the platinum group; atomic weight 101.07, atomic number 44.

rutherford (rūth'ēr-förd) [Ernest Rutherford, Brit. physicist, 1871–1937] ABBR: rd. A unit of radioactivity representing 10^6 disintegrations per second.

rutin (roo'tin) A flavonoid present in many plants including whole grains and the inner rind of lemons and oranges.

RV *residual volume; right ventricle.*

rye (rī) [AS. *ryge*] A cereal grass that produces a grain used in food and beverage production. When rye grain is infected with a certain fungus, ergot is produced.



Σ The capital of the Greek letter sigma. In statistics, this is the symbol for summation.

σ Sigma, the 18th letter of the Greek alphabet. In statistics, this is the symbol for standard deviation.

S [L. *signa*, mark, or let it be written] **1.** Symbol for the element sulfur. **2.** In prescription writing, the symbol indicating the instructions to the patient that the pharmacist will place on the dispensed medicine. **3.** *Smooth*, in reference to bacterial colonies. **4.** *Spherical or spherical lens*. **5.** *Subject* (pl. Ss); a participant in an experiment. **6.** Symbol for siemens.

s L. *semis*, half; *sinister*, left.

S, s Symbol for [L.] *sine*, without; used as a form of shorthand in hospital charts and clinical records.

S₁, S₂, etc. *first sacral nerve, second sacral nerve*, and so forth.

S₁, S₂ Normal first and second heart sounds.

S₃ Ventricular gallop heard after S₂, an abnormal heart sound.

S₄ Atrial gallop, heard before S₁, an abnormal heart sound.

S-A, SA, S.A. *sinoatrial*.

SAARD *slow-acting antirheumatic drug*.

Sabiá virus (să-bē-ă') An arenavirus that causes Brazilian hemorrhagic fever, a potentially fatal acute febrile disease. The reservoir for the virus is unknown. Ribavirin, which is effective against Lassa fever, also caused by an arenavirus, may be effective in this illness.

Sabin vaccine (să-bĭn) [Albert Bruce Sabin, Russian-born U.S. virologist, 1906–1993] SEE: *Live oral poliovirus vaccine*.

Sabouraud's dextrose agar (să-boo-rōz') An acidic agar with a high dextrose content. It is used in microbiology to cultivate fungi and yeasts.

sabulous (săb'ū-lūs) [L. *sabulosus*, sand] Gritty; sandy.

sac (săk) [L. *saccus*, sack, bag] A bag-like part of an organ, a cavity or pouch, sometimes containing fluid. SYN: *sacculus*. SEE: *cyst*.

air s. Alveolar sac.

allantoic s. The expanded end of the allantois, well developed in birds and reptiles.

alveolar s. The terminal portion of an air passageway within the lung. Its wall is made of simple squamous epithelium and is surrounded by pulmonary capillaries. This is the site of gas exchange. Each alveolar sac is con-

nected to a respiratory bronchiole by an alveolar duct. SYN: *air sac*.

amniotic s. The inner fetal membrane that encloses the developing fetus and produces amniotic fluid. SEE: *chorion*.

chorionic s. The outer fetal membrane that encloses the developing embryo.

conjunctival s. The cavity, lined with conjunctiva, that lies between the eyelids and the anterior surface of the eye.

dental s. The mesenchymal tissue surrounding a developing tooth.

endolymphatic s. The expanded distal end of the endolymphatic duct.

heart s. The pericardium.

hernial s. In the peritoneum, a sac-like protrusion containing a herniated organ. SEE: *hernia*.

lacrimal s. The upper dilated portion of the nasolacrimal duct situated in the groove of the lacrimal bone. The upper part is behind the internal tarsal ligament. It is 12 to 15 mm long.

lesser peritoneal s. Omental bursa.

peritoneal s. The enclosed, transparent mesothelial sac that is squeezed between the abdominal wall and the abdominal viscera.

vitelline s. Yolk s.

yolk s. In mammals, the embryonic membrane that is the site of formation of the first red blood cells and the cells that will become oogonia or spermatogonia. SYN: *vitelline sac*. SEE: *embryo* for *illus*.

saccades (să-kăds') [Fr. *saccade*, jerk] Fast, involuntary movements of the eyes as they change from one point of gaze to another. SEE: *nystagmus*; *vergence*. **saccadic**, *adj.*

saccate (săk'ăt) [NL. *saccatus*, baglike]

1. Encysted. **2.** In bacteriology, making a sac shape, as in a type of liquefaction.

saccharase (săk'ă-rās) [Sanskrit *sarkara*, sugar] An enzyme such as sucrase that catalyzes the hydrolysis of a disaccharide to monosaccharides.

saccharated (săk'ă-răt'əd) Containing sugar.

saccharide (săk'ă-rĭd) A group of carbohydrates that includes sugars. It includes: monosaccharides (single sugars), disaccharides (two sugars, covalently linked), oligosaccharides (a small number of linked sugars), and polysaccharides (multiple covalently linked sugars).

saccharin (săk'ă-rĭn) C₇H₅NO₃S; a sweet, white, powdered, synthetic product derived from coal tar, 300 to 500

times sweeter than sugar, used as an artificial sweetener.

saccharine (săk'ă-rĭn, -rĭn) [L. *saccharum*, sugar] Of the nature of, or having the quality of, sugar. SYN: *sweet*.

saccharo- Combining form meaning *sugar*.

saccharolytic (săk'ă-rō-lĭt'ĭk) [" + Gr. *lysis*, dissolution] Able to split up sugar.

Saccharomyces (săk'ă-rō-mĭ'sēz) [Sanskrit *sarkara*, sugar, + Gr. *mykes*, fungus] Yeast (1).

Saccharomyces cerevisiae (sēr'ă-vĭz'ē-ē) [L. "of beer"] A yeast used in recombinant DNA technology to manufacture proteins for medical use (e.g., in vaccine components).

saccharomycosis (săk'ă-rō-mĭ-kō'sĭs) [" + " + *osis*, condition] Any disease caused by yeasts (saccharomycetes).

saccharum (săk'ă-rŭm) [L.] Sugar.

sacciform (săk'sĭ-form) [L. *saccus*, sack, bag, + *forma*, shape] Bag-shaped or sacklike. SYN: *encysted*.

saccular (săk'ŭ-lăr) [NL. *sacculus*, small bag] Sac-shaped or sacklike.

sacculated (săk'ŭ-lăt'ĕd) [NL. *sacculus*, small bag] Consisting of small sacs or sacculi.

sacculation (săk'ŭ-lă'shŭn) **1.** Formation into a sac or sacs. **2.** Group of sacs, collectively.

sacculle (săk'ŭl) [NL. *sacculus*, small bag] **1.** A small sac. SYN: *sacculus*. **2.** The smaller of two sacs of the vestibular labyrinth in the vestibule of the ear. It communicates with the utricle, cochlear duct, and endolymphatic duct, all of which are filled with endolymph. In its wall is the macula sacculi, a sensory area containing hair cells that respond to gravity or bodily movement. SEE: *labyrinth* for illus.

laryngeal s. A small diverticulum extending ventrally from the laryngeal ventricle lying between the ventricular fold and the thyroarytenoid muscle.

sacculocochlear (săk'ŭ-lō-kōk'lē-ăr) [" + Gr. *kokhlos*, land snail] Concerning the sacculle and cochlea of the ear.

sachet (să-shă') [French, lit. "little sack"] Any material, e.g., paper, foil, or plastic, used to package doses of medication.

SACH foot *Solid ankle cushion heel* foot; a prosthetic (artificial) foot that has no definite ankle joint but is designed to absorb shock and allow movement of the shank over the foot during ambulation.

sacrad (să'krăd) [L. *sacrum*, sacred, + *ad*, toward] Toward the sacrum.

sacral (să'krăl) [L. *sacralis*] Relating to the sacrum.

sacral flexure Rectal curve in front of the sacrum.

sacralgia (să-krăl'jē-ă) [L. *sacrum*, sacred, + Gr. *algos*, pain] Pain in the sacrum.

sacral index Sacral breadth multiplied by 100 and divided by sacral length.

sacralization (să'krăl-ĭ-ză'shŭn) Fusion of the sacrum and the fifth lumbar vertebra.

sacral nerves Five pairs of spinal nerves, the upper four of which emerge through the posterior sacral foramina, the fifth pair through the sacral hiatus (termination of the sacral canal). All are mixed nerves (motor and sensory).

sacrectomy (să-krĕk'tō-mē) [L. *sacrum*, sacred, + Gr. *ektome*, excision] Excision of part of the sacrum.

sacro- (să'krō) Combining form meaning *sacrum*.

sacroanterior (să'krō-ăn-tē'rē-or) [L. *sacrum*, sacred, + *anterior*, before] Denoting intrauterine fetal position in which the fetal sacrum is directed anteriorly.

sacrococcygeal (să'krō-kōk-sĭj'ē-ăl) [" + Gr. *kokkyx*, coccyx] Concerning the sacrum and coccyx.

sacrococcygeus (săk'rō-kōk-sĭj'ē-ŭs) One of two small muscles (anterior and posterior) extending from the sacrum to the coccyx.

sacrocoxalgia (să'krō-kōks-ăl'jē-ă) [" + *coxa*, hip, + Gr. *algos*, pain] Pain in the sacroiliac joint, usually owing to inflammation. SEE: *sacrocoxitis*.

sacrocoxitis (să'krō-kōks-ĭ'tĭs) [" + " + Gr. *itis*, inflammation] Inflammation of the sacroiliac joint. SEE: *sacrocoxalgia*.

sacrodynia (să'krō-dĭn'ē-ă) [" + *odyne*, pain] Pain in the region of the sacrum.

sacroiliac (să'krō-ĭl'ē-ăk) [" + *iliacus*, hipbone] Of, or pert. to, the sacrum and ilium.

sacroiliitis (să'krō-ĭl'ē-ĭ'tĭs) [" + " + Gr. *itis*, inflammation] Inflammation of the sacroiliac joint.

sacroliathesis (să'krō-lis-thē'sĭs) [" + Gr. *olsthesis*, a slipping] A deformity in which the sacrum is anterior to the fifth lumbar vertebra. SEE: *spondylolisthesis*.

sacroposterior (să'krō-pōs-tē'rē-or) [" + *posterus*, behind] Denoting intrauterine fetal position in which the fetal sacrum is directed posteriorly.

sacrospinalis (să'krō-spĭ-năl'ĭs) [" + *spina*, thorn] A large muscle group lying on either side of the vertebral column extending from the sacrum to the head. Its two chief components are the iliocostalis and longissimus muscles.

sacroto (să-krōt'ō-mē) [" + Gr. *tome*, incision] Surgical excision of the lower part of the sacrum.

sacrum (să'krŭm) [L., sacred] The triangular bone situated dorsal and caudal from the two ilia between the fifth lumbar vertebra and the coccyx. It is formed of five united vertebrae and is wedged between the two innominate bones, its articulations forming the sacroiliac

joints. It is the base of the vertebral column and, with the coccyx, forms the posterior boundary of the true pelvis. The male sacrum is narrower and more curved than the female sacrum. SYN: *sacral bone*. SEE: *illus.*

sactosalpinx (săk'tō-sāl'pinks) [Gr. *saktos*, stuffed, + *salpinx*, tube] A dilated fallopian tube owing to retention of secretions, as in pyosalpinx or hydrosalpinx.

SAD (säd) *seasonal affective disorder; source-to-axis distance.*

saddle A surface or structure that resembles a seat used to ride a horse. The base of artificial dentures is often referred to as a saddle.

s. area The portion of the buttocks, perineum, and thighs that comes in contact with the seat of the saddle when one rides a horse.

s. back Lordosis.

S-adenosylmethionine (ä-dën'ō-sil'më-thi'ü-nën") ABBR: SAM-e. A compound that is synthesized naturally in the central nervous system when folate and vitamin B₁₂ levels are adequate. It is involved in the methylation of neurotransmitters, amino acids, proteins, phospholipids, and other neurochemicals. The chemical is used as a treatment for depression, liver disease, and osteoarthritis. It is an active sulfonium form of methionine that acts as a methyl group donor in various reactions

(such as the formation of epinephrine or creatine).

sadism (sä'dizm, säd'izm) [Comte Donatien Alphonse François de Sade, Marquis de Sade, 1740–1814] Conscious or unconscious sexual pleasure derived from inflicting mental or physical pain on others. SEE: *algolagnia; masochism.*

sadist (sä'dist, säd'ist) One who practices sadism.

sadness A normal emotional feeling of dejection or melancholy that one may experience after an unhappy event.

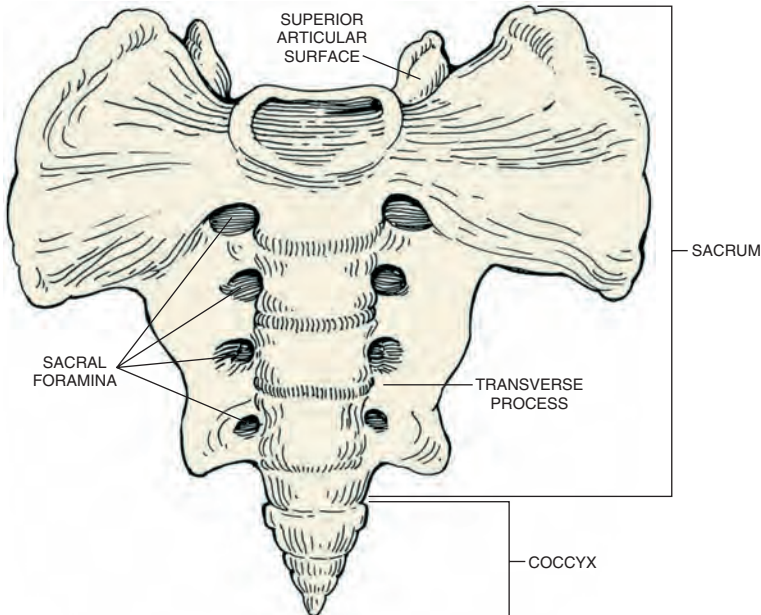
sadomasochism (sä'dō-mäs'ë-kizm, säd'ō-mäs'ë-kizm) Sexual pleasure related to both sadism and masochism.

sadomasochist (sä'dō-mäs'ë-kist) One whose personality includes sadistic and masochistic components.

Saemisch's ulcer (sä'mish-ës) [Edwin Theodor Saemisch, Ger. ophthalmologist, 1833–1909] Serpiginous infectious ulcer of the cornea.

safelight (säf'lit) A darkroom device that emits a light of a specified wavelength that causes less fogging of undeveloped film than white light does.

safe period The time during the menstrual cycle when conception is allegedly not possible. Because of the great variability of the menstrual cycle, it is either extremely difficult or impossible to predict the portion of the cycle in which intercourse may take place with no chance of conception.



SACRUM AND COCCYX
(ANTERIOR VIEW)

safe sex, safer sex The practice of protecting oneself and one's partner(s) (as much as one can) from sexually transmitted diseases (STDs), including chlamydia, gonorrhea, trichomoniasis, syphilis, herpesviruses, hepatitis viruses, and human immunodeficiency virus, or from unwanted pregnancy. Some experts find the term to be unsatisfactory, and contend that all forms of sexual behavior carry some risk or infection, injury, or pregnancy. Safer sexual practices involve avoiding contact with one's partner's blood or body fluids (e.g., seminal fluid) by wearing condoms during any form of oral, vaginal, or anal intercourse. The risks of transmitting STDs may be further classified as follows: *Safer*: Celibacy; masturbation; dry kissing; masturbation of a partner on healthy, intact skin; oral sex with use of a condom; touching; fantasy. *Possibly Safe*: Condom-protected vaginal or anal intercourse. *Risky*: Wet kissing, oral sex (without a dental dam or latex or plastic barrier or condom), masturbation of a woman without a latex barrier or use of latex gloves, masturbation on open or broken skin, and unprotected sex of any kind.



1. Alcohol and psychoactive drugs may impair one's judgment regarding the practice of safe sex, resulting in engagement in risky sexual activities.

2. If either partner has evidence of any infection, condoms should always be used even though failure rates for condoms vary from 2% to 12%, depending on the user's skill and experience. Any person having casual sexual contacts should avoid anal intercourse even with a condom, because of the high risk of this type of sexual activity and the low but finite condom-failure risk.

SEE: *AIDS*; *condom*; *sexually transmitted disease*.

safety (sāf'tē) [ME. *saufte*, safety, health] **1.** A practice that ensures protection from harm or injury. **2.** The condition of being protected. **3.** A device that prevents the unintended discharge of a firearm. **safe** (sāf), *adj.*

safety alert A report issued by a manufacturer of drugs or medical products about the risks associated with those drugs or products. SEE: *black box warning*.

safflower oil SEE: *under oil*.

safranin, safranin O A histological stain used in microscopy to highlight cell nuclei by counterstaining them red. It is used for many purposes, including the gram staining of body fluid specimens.

sagittal (sāj'i-tāl) [L. *sagittalis*] Arrowlike; in an anteroposterior direction.

sago (sā'gō) [Malay *sagu*] A substance prepared from various palms, consisting principally of starches; used as a demulcent and as a food with little residue.

Saint John's wort An herbal remedy (*Hypericum perforatum*) used to treat mild to moderate depression.



Caution should be used since this remedy interacts with many other medications.

SEE: *illus.*



SAINT JOHN'S WORT

Saint Vitus' dance Sydenham's chorea.

sal (sāl) [L.] Salt or a saltlike substance. **s. ammoniac** Chloride of ammonia.

salacious (sē-lā'shūs) [L. *salax*, lustful] Lustful or inciting to lust.

Salem sump tube A double-lumen nasogastric tube with an air vent, used to drain gastric or refluxed intestinal secretions or ingested air. The vent protects against damage to the gastric mucosa while facilitating drainage.

salicylate (sāl'ī-sil'āt, sāl-īs'il-āt) Any salt of salicylic acid.

sodium s. $C_7H_5NaO_3$, a white crystalline substance with a disagreeable, even nauseating, taste; used to reduce pain and temperature. SEE: *acetylsalicylic acid*. **salicylated** (-āt-id), *adj.*

salicylic acid (sāl'ī-sil'ik) $C_7H_6O_3$; a white crystalline acid derived from phenol used to make aspirin, as a preservative and flavoring agent, and in the topical treatment of some skin conditions, such as warts and wrinkles. SEE: *chemical peeling*.

salicylism (sāl'ī-sil'izm) Intoxication caused by an overdose of salicylic acid or its derivatives.

salicyluric acid (sāl'ī-sil'ūr'ik) Acid found in the urine after an individual takes salicylic acid or its derivatives.

salient (sā'lē-ēt) [L. *salio*, to spring, jump] Prominent, conspicuous.

saline (sā'lin, sā'lēn) [L. *salinus*, of salt] Containing or pert. to salt; salty.

s. cathartic A salt, such as epsom salts, used to produce evacuation of the bowel.

hypertonic s. An aqueous solution of sodium chloride of greater than 0.85%.

hypotonic s. An aqueous solution of sodium chloride of less than 0.85%.

saline load test The injection of normal saline into a vein or body part for diagnostic purposes.

PATIENT CARE: Intravenous saline load tests (fluid bolus) are used in cardiology to raise a person's blood pressure or the assess response to salty fluids in a patient with prerenal azotemia. In wound care, saline loading may be used to determine if a laceration has entered a nearby joint and therefore whether orthopedic surgery may be needed to repair the injury.

salinometer (sāl'i-nōm'ē-tēr) [L. *salinus*, of salt, + *metron*, measure] An instrument for determining the salt content of a solution.

saliva (sā-lī'vā) [L., spittle] Salivary gland and oral mucous gland fluid; the secretion that begins the process of digesting food. Saliva moistens food for tasting, chewing, and swallowing; initiates digestion of starches; moistens and lubricates the mouth; and acts as a solvent for excretion of waste products. SYN: *spit* (1); *spittle*.

CHARACTERISTICS: It is normally tasteless, clear, odorless, viscid, and weakly alkaline, being neutralized after being acted on by gastric acid in the stomach. Its specific gravity is 1.002 to 1.006. The amount secreted in 24 hr is estimated to be 1500 ml. The flow varies from 0.2 ml/min from resting glands to 4.0 ml/min with maximum secretion.

COMPOSITION: Saliva is 99.5% water. Inorganic constituents include salts (chlorides, carbonates, phosphates, sulfates) and dissolved gases. Organic constituents include enzymes (amylase and lysozyme), proteins (mucin, albumin, and globulins), small amounts of urea, and unusual waste products (e.g., acetone). Epithelial cells and leukocytes are also present.

DIAGNOSTIC TESTING: Like urine and blood, saliva is readily accessible and easy to transport and store. As a result it has become a target for clinical laboratory testing. In the year 2000, U.S. Food and Drug Administration–approved diagnostic tests on saliva include assays for antibodies to human immunodeficiency virus, estrogen levels, drugs of abuse, and alcohol levels. Other tests that are readily available but not FDA-approved include assays for hepatitis virus infections, prostate-specific antigen, and cholesterol.

artificial s. An aqueous solution or

gel that is useful in treating excessive dryness of the mouth (xerostomia). SYN: *saliva substitute*.

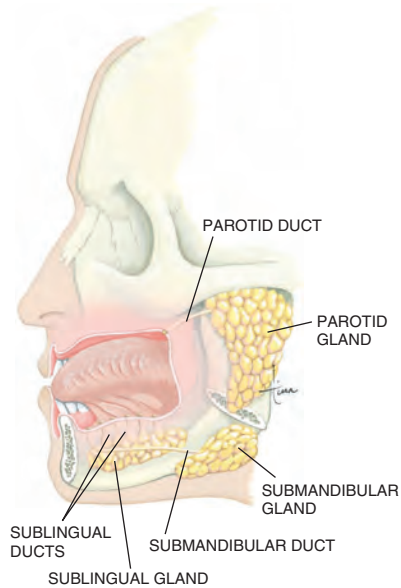
s. substitute Artificial saliva.

saliva ejector A device used during dental procedures to remove saliva.

salivant (sāl'i-vānt) [L. *saliva*, spittle] Something that stimulates the flow of saliva.

salivary (sāl'i-vēr-ē) [L. *salivarius*, slimy] Pert. to, producing, or formed from saliva.

salivary gland Any of the glands near the oral cavity that secrete saliva. The major glands are paired and include the parotid, below the ear and inside the ramus of the mandible; the sublingual, below the tongue in the anterior floor of the mouth; and the submandibular, below the posterior floor of the mouth, medial to the body of the mandible. Minor salivary glands are numerous in the oral cavity and are named according to their locations: lingual, sublingual, palatal, buccal, labial, and glossopharyngeal. SEE: *illus.*



SALIVARY GLANDS

Salivary secretion is under nervous control, reflexly initiated by mechanical, chemical, or radiant stimuli acting on gustatory receptors (taste buds) in the mouth, olfactory receptors, visual receptors (eyes), or other sense organs. Secretion may also occur as a result of conditioned reflexes, as when one thinks about food or hears a dinner bell. The nerve supply of the salivary glands is from the facial and glossopharyngeal nerves, which are parasympathetic and

increase secretion, and from the sympathetic nerves, which decrease secretion. The blood supply is from branches of the external carotid artery.

salivation (säl'ī-vā'shūn) [LL. *salivatio*, to spit out] 1. The act of secreting saliva. 2. Excessive secretion of saliva. SYN: *ptyalism*.

salivatory (säl'ī-vā-tor'ē) Producing the secretion of saliva.

Salk vaccine (sōlk) [Jonas E. Salk, U.S. microbiologist, 1914–1995] The first successful vaccine against poliomyelitis. It is now the only polio vaccine administered in the U.S.

Salla disease (säl'a) [Salla, a municipality in Finnish Lapland] A rare form of autosomal recessive mental retardation in which children develop poor muscle tone in the first years of life, ataxia, seizures, and coarsened facial features, among other variably expressed deficits. It is one of the lysosomal storage disorders.

sallow (säl'ō) [AS. *salō*] A sickly yellow color, usually describing complexion or skin color.

salmeterol (säl-mē-tēr'al) A long-acting β_2 -agonist used to treat patients with reactive airway disease. Its use is associated with decreased dependence on short-acting beta agonists, decreased nocturnal asthma, and decreased need for steroids in the treatment of asthma.

salmin(e) (säl'mēn, -mīn) [L. *salmo*, salmon] $C_{30}H_{57}N_{14}O_6$; a toxic protamine obtained from the spermatozoa of salmon. SEE: *protamine*; *protein*.

Salmonella (säl'mō-nēl'ă) [Daniel Elmer Salmon, U.S. veterinarian, 1850–1914] A genus of gram-negative, motile bacilli of the family Enterobacteriaceae. More than 1400 species have been classified. Several species are pathogenic, some producing mild gastroenteritis and others a severe and often fatal food poisoning. Those persons preparing food should cook all foods from animal sources thoroughly, refrigerate leftover cooked foods during storage, and wash hands before and after handling foods. Persons should avoid ingesting raw eggs in any form and using cracked eggs. SEE: ; *salmonellosis*.

PATIENT CARE: Patients who have contracted salmonella should drink clear fluids until abdominal pain has subsided. Fluid and electrolyte balance is monitored, hydration is maintained, and supportive therapy is maintained as indicated. Antimicrobial therapy is prescribed based on organism sensitivity. Contact precautions are used if the patient is diapered or incontinent; otherwise, standard precautions suffice, with gloves and gown used when disposing of feces or fecally contaminated objects. Precautions should continue until three consecutive stool cultures are

negative for salmonella. Patients whose stool cultures remain positive should be taught correct hand hygiene, should avoid preparing uncooked foods, and should not be employed in any capacity that involves handling food until cultures become negative. All cases of salmonella should be reported to the state health department.

S. arizonae A species that may infect animals and humans and cause gastroenteritis, urinary tract infection, bacteremia, meningitis, osteomyelitis, and brain abscess.

S. choleraesuis A species often found to be the cause of septicemia.

S. enteritidis A species that commonly causes gastrointestinal infections. Approx. 10% to 20% of food poisoning cases are caused by *S. enteritidis*. The organism lives in the ovaries of chickens and contaminates eggs before the shells are formed. The infection is passed to humans when they eat raw eggs (e.g., in homemade ice cream, salad dressings, eggnog) or cooked eggs in which the yolk is still runny. It also lives in the intestinal tracts of animals and may be found in water or meat that is contaminated with feces and is inadequately washed and cooked. Infants, elderly persons, and immunocompromised patients are at greatest risk. SEE: *diarrhea*; *raw egg*; *enterocolitis*.

S. paratyphi A group of organisms of *Salmonella*, types A, B, and C, that cause paratyphoid fever.

S. typhi A species causing typhoid fever in humans.

S. typhimurium A species frequently isolated from persons having acute gastroenteritis.

salmonellosis (säl-mō-nē-lō'sis) Infection with gram-negative bacteria of the genus *Salmonella*. In the U.S., the most common infection is acute gastroenteritis caused by *S. enteritidis*, *S. typhimurium*, or other strains. Typhoid fever, found in developing countries with inadequate sanitation, is caused by *S. typhi*.

SYMPTOMS: Salmonella gastroenteritis is characterized by fever, nausea and vomiting, watery diarrhea, and abdominal cramps 12 to 72 hr after consuming contaminated food or water. The illness usually is self-limiting and lasts from 4 to 7 days.

TREATMENT: Unless severe, salmonella gastroenteritis is treated with fluid replacement and antimotility drugs; antibiotics are not used. For immunocompromised patients, those with severe diarrhea and fever greater than 101°F, and elderly persons or infants, ciprofloxacin or trimethoprim-sulfamethoxazole may be prescribed for 3 to 7 days.

PREVENTION: To reduce the risk of *S. enteritidis* infection, eggs should be kept refrigerated at all times to prevent increased bacterial growth; cracked or dirty eggs should be discarded. Hands and equipment in contact with raw eggs should be washed thoroughly in soap and hot water before other foods are touched. Eggs should be cooked until the yolk is solid and eaten promptly; food containing cooked eggs should not be kept warm for more than 2 hr.

salpingectomy (säl'pīn-jék'tō-mē) [Gr. *salpinx*, tube, + *ektome*, excision] The surgical removal of a fallopian tube.

salpingemphraxis (säl'pīn-jēm-frāk'sīs) [" + *emphraxis*, a stoppage] An obstruction of the eustachian tube.

salpingian (säl-pīn'jē-än) Concerning the eustachian tube or a fallopian tube.

salpingitis (säl'pīn-jī'tīs) [Gr. *salpinx*, tube, + *itis*, inflammation] Inflammation of a fallopian tube, usually as a result of a sexually transmitted infection. The prognosis is affected by the virulence of the organism, degree of inflammation, and promptness of treatment. The long-term consequences of the infection may include scarring of the fallopian tubes and infertility.

ETIOLOGY: The most common causative organisms are *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. Additional microbes include *Staphylococcus aureus*, *Escherichia coli*, and other aerobic and anaerobic bacilli and cocci. Although common among other cultures, tubercular salpingitis is rare in the U.S.; it is most likely to be present in immunosuppressed women and some immigrant populations. Postpartum salpingitis often results from the upward migration of commensal vaginal streptococci.

SYMPTOMS: Although the disease may be asymptomatic, the patient often presents with signs of an acute pelvic infection. Complaints include unilateral or bilateral pelvic or lower abdominal pain, fever, and chills.

EXAMINATION: If an abscess has formed, bimanual palpation or ultrasonography may reveal a tender adnexal mass.

TREATMENT: Empirical antibiotic therapies may include fluoroquinolones or combination therapies using tetracycline derivatives and cephalosporins. Care must be taken to avoid using fluoroquinolones or tetracyclines in pregnancy. Bedrest and analgesics assist in pain management.

eustachian s. Eustachitis.

gonococcal s. Salpingitis due to gonococci.

salpingo- Combining form indicating tube.

salpingocele (säl-pīng'gō-sēl) [" + *kele*,

tumor, swelling] The hernial protrusion of a fallopian tube.

salpingocystis (säl-pīng'ō-sī-ē'sīs) [" + *kystis*, pregnancy] Tubal pregnancy.

salpingography (säl'pīng-gōg'rā-fē) [" + *graphein*, to write] Radiography of the fallopian tubes after the introduction of a radiopaque contrast medium; used in testing for patency of the tubes in investigating infertility.

salpingolithiasis (säl-pīng'gō-lī-thī'ā-sīs) [" + *lithos*, stone, + *iasis*, condition] The presence of stones in a fallopian tube.

salpingolysis (säl'pīng-gōl'i-sīs) [" + *lysis*, dissolution] The surgical disruption of adhesions in a fallopian tube.

salpingo-oophorectomy (säl-pīng'gō-ō'ōf-ō-rēk'tō-mē) [" + *oon*, egg, + *phoros*, a bearer, + *ektome*, excision] Excision of an ovary and a fallopian tube. SYN: *oophorosalingectomy*; *ovariosalingectomy*; *salpingo-ovariectomy*.

salpingo-oophoritis (säl-pīng'gō-ō'ōf-ō-rī'tīs) [" + " + " + *itis*, inflammation] Inflammation of a fallopian tube and an ovary. SYN: *salpingo-oothecitis*. SEE: *pelvic inflammatory disease*; *salpingitis*.

salpingo-oophorocele (säl-pīng'gō-ō'ōf-ō-rō-sēl) [Gr. *salpinx*, tube, + *oon*, egg, + *phoros*, a bearer, + *kele*, tumor, swelling] A hernia enclosing an ovary and a fallopian tube.

salpingo-oothecitis (säl-pīng'gō-ō'ō-thē-sī'tīs) [" + *ootheke*, ovary, + *itis*, inflammation] Salpingo-oophoritis.

salpingo-ovariectomy (säl-pīng'gō-ō'vār-ē-kē'tō-mē) [" + LL. *ovarium*, ovary, + Gr. *ektome*, excision] Salpingo-oophorectomy.

salpingoperitonitis (säl-pīng'gō-pēr'ī-tō-nī'tīs) [" + *peritonaion*, peritoneum, + *itis*, inflammation] Inflammation of the serosal covering of the fallopian tubes.

salpingopexy (säl-pīng'ō-pēk'sē) [" + *pexis*, fixation] Fixation of a fallopian tube.

salpingopharyngeus (säl-pīng'gō-fār-īn'jē-ūs) [" + *pharynx*, throat] The muscle near the opening of the eustachian tube that raises the nasopharynx and also may help open the eustachian tube.

salpingoplasty (säl-pīng'gō-plās'tē) [" + *plassein*, to form] Plastic surgery of a fallopian tube; used in treating female infertility. SYN: *tuboplasty*.

salpingorrhaphy (säl'pīng-gor'ā-fē) [" + *rhaphe*, seam, ridge] Suture of a fallopian tube.

salpingosalpingostomy (säl-pīng'gō-säl'pīng-gōs'tō-mē) [" + *salpinx*, tube, + *stoma*, mouth] The operation of attaching one fallopian tube to the other.

salpingoscope (säl-pīng'gō-skōp") [" + *skopein*, to examine] A device for examining the nasopharynx and the eustachian tube.

salpingoscopy (säl'pīng-gōs-kū-pē) Microendoscopic examination of the inside of the fallopian tubes, e.g., to diagnose or treat obstruction, adhesions, or other diseases and conditions.

salpingostomatomy (säl-pīng'gō-stō-māt'ō-mē) [*l'* + *stoma*, mouth, + *tome*, incision] The creation of an artificial opening in a fallopian tube after it has been occluded as a result of inflammation and scarring.

salpingostomy (säl-pīng-ōs'tō-mē) The surgical opening of a fallopian tube that has been occluded or for drainage purposes.

salpingotomy (säl'pīng-gōt'ā-mē) [*l'* + *tome*, incision] Incision of a fallopian tube.

salpinx (säl'pīnks) *pl.* **salpinges** [Gr., tube] A fallopian tube or the eustachian tube.

salt [AS. *sealt*] **1.** White crystalline compound occurring in nature, known chemically as sodium chloride, NaCl. **2.** Containing or treated with salt. **3.** To treat with salt. **4.** In the plural, any mineral salt or saline mixture used as an aperient or cathartic, esp. epsom salts or Glauber's salt. **5.** In chemistry, a compound consisting of a positive ion other than hydrogen and a negative ion other than hydroxyl. **6.** A chemical compound resulting from the interaction of an acid and a base.

Salts and water are the inorganic or mineral constituents of the body. They play specific roles in the functions of cells and are indispensable for life. The principal salts are chlorides, carbonates, bicarbonates, sulfates, and phosphates, combined with sodium, potassium, calcium, or magnesium.

In general, salts serve the following roles in the body: maintenance of proper osmotic conditions; maintenance of water balance and regulation of blood volume; maintenance of proper acid-base balance; provision for essential constituents of tissue, esp. bones and teeth; maintenance of normal irritability of muscle and nerve cells; maintenance of conditions for coagulation of the blood; provision for essential components of certain enzyme systems, respiratory pigments and hormones; and regulation of cell membrane and capillary permeability. SEE: *sodium chloride*.

acid s. A salt in which one or more hydrogen atoms remain unreplaced by the hydroxyl (OH) radical.

alkaline s. SEE: *hydrogen sulfide in Poisons and Poisoning Appendix*.

basic s. A salt retaining the ability to react with an acid radical.

bile s. A salt of glycocholic and taurocholic acid present in bile.

buffer s. A salt that fixes excess amounts of acid or alkali without a change in hydrogen ion concentration.

double s. Any salt formed from two other salts.

epsom s. Magnesium sulfate.

glow s. Rubbing of the entire body with moist salt for stimulation.

hypochlorite s. A salt of hypochlorous acid used in household bleach and as an oxidizer, deodorant, and disinfectant.

iodized s. A salt containing 1 part sodium or potassium iodide to 10,000 parts of sodium chloride. It is an important source of iodine in the diet. Its use prevents goiter due to iodine deficiency.

neutral s. An ionic compound containing no replaceable hydrogen or hydroxyl ions.

rock s. Natural sodium chloride.

sea s. Sodium chloride obtained from sea water.

smelling s. A colloquial term for aromatized ammonium carbonate.

substitute s. A chemical, such as potassium chloride, that has a flavor similar to that of salt but has negligible sodium content. It is used by individuals whose medical condition requires limited sodium intake.

saltation (säl-tā'shūn) [L. *saltatio*, leaping] Act of leaping or dancing, as in chorea.

saltatory (säl'tā-tō'rē) Marked by dancing or leaping.

saltatory conduction The transmission of a nerve impulse along a myelinated nerve fiber. The action potential occurs only at the nodes of Ranvier, making velocity faster than along unmyelinated fibers.

Salter-Harris fracture (säl'tēr-hār'īs) A classification system used to categorize growth plate fractures as one of five types based on the mechanism of injury and the relationship of the fracture line(s) to the epiphyseal plate. The original five types of fractures, since expanded by other authors, were type I—a transverse fracture across the physis; type II—a fracture through the physis and metaphysis but not the epiphysis; type III—a fracture through the physis and epiphysis; type IV—an intra-articular fracture involving the epiphysis, physis, and metaphysis and type V—a compression on the epiphyseal plate.

salting out A method of separating a specific protein from a mixture of proteins by the addition of a salt (e.g., ammonium sulfate).

salt-losing syndrome The condition of greatly increased sodium loss from the body as a result of renal disease, adrenocortical insufficiency, or gastrointestinal disease.

saltpeter, saltpetre (sawlt-pē'tēr) [L. *sal*, salt, + *petra*, rock] A common name for *potassium nitrate*.

Chile s. A common name for sodium

nitrate, NaNO_3 ; a crystalline powder, saline in taste and soluble in water.

salt poisoning Excessive intake of sodium chloride, which usually occurs in hospitalized patients treated with concentrated sodium solutions. It typically results in acute hypernatremia.

salubrious (să-lū'brē-ūs) [L. *salubris*, healthful] Promoting or favorable to health; wholesome.

saluretic Natriuretic.

salutary (säl'ū-tā'rē) [L. *salutaris*, health] Healthful; promoting health; curative.

salvage therapy Treatment that follows the relapse of an illness that had already been treated in standard fashion.

salve (säv) [AS. *sealf*] Ointment.

Salvia miltiorrhiza (mil'tē-ō-riz'ū) [NL fm. Gr. "of reddish root"] Danshen root, a traditional Chinese herbal remedy. It has been used to treat cardiovascular diseases. Its effectiveness is unproven in humans. It increases the risk of bleeding and should be avoided by patients taking aspirin, warfarin, and other antiplatelet or anticoagulant drugs. SYN: *danshen*.

samaritanism Compassion.

samarium (sä-mā'rē-üm) SYMB; Sm. A rare metallic element of the lanthanide series. Atomic weight 150.35; atomic number 62. Isotopes of samarium are used in nuclear medicine to identify and treat osteoblastic bone metastases and osteogenic sarcoma.

samarium-153 A radiopharmaceutical used to treat bone pain caused by cancer metastases.

SAM-e *S-adenosylmethionine*.

SAMPLE An acronym designed to remind the EMS provider the areas to explore in obtaining the patient's medical history. It stands for symptoms, allergies, medications, pertinent past medical history, last oral intake, and events leading up to the incident.

sample **1.** A piece or portion of a whole that demonstrates the characteristics or quality of the whole, such as a specimen of blood. **2.** In research, a portion of a population selected to represent the entire population.

biased s. In epidemiology or medical research, a sample of a group that does not equally represent the members of the group.

fetal blood s. A small amount of blood drawn from a fetal scalp vein to assess acid-base status. The normal fetal blood pH level is 7.25. Levels between 7.20 and 7.24 reflect a preacidotic state; levels below 7.20 indicate acidosis and fetal jeopardy.

grab s. In public health and medical statistics, a chaotic set of data from which conclusions are injudiciously drawn. Because the sample is not carefully randomized or scientifically se-

lected, the conclusions derived from such sample groups may be inaccurate.

sampling The process of selecting a portion or part to represent the whole.

random s. Randomization. SEE: *random sample*.

sanatorium (sän"ä-tō'rē-üm) [L. *sanatorium*, healing] Sanitarium.

sand (sänd) [AS.] Fine grains of disintegrated rock.

brain s. Concretion of matter near the base of the pineal gland. SYN: *corporea arenacea*.

sandflies Flies of the order Diptera belonging to the genus *Phlebotomus*. They transmit sandfly fever, Oroya fever, and various types of leishmaniasis.

sandfly fever A mild viral disease that clinically resembles influenza, with headache, sore throat, muscle aches, and malaise. The causative organism, any one of several species of Bunyaviridae viruses, is transmitted by the common sandfly *Phlebotomus papatasi*, a small, hairy, blood-sucking midge that bites at night. The disease occurs in tropical and subtropical areas that experience long periods of hot, dry weather. Several antiviral drugs (e.g., alpha interferon and ribavirin) have some activity against the disease. SYN: *pappataci fever*; *phlebotomus fever*; *three-day fever*.

Sandhoff's disease (sänd'höfs) A rare form of Tay-Sachs disease in which two essential enzymes (hexosaminidase A and B) for metabolizing gangliosides are absent. In Tay-Sachs disease only one enzyme, hexosaminidase A, is absent.

SANE (sän) *Sexual Assault Nurse Examiner*.

sane (sän) [L. *sanus*, healthy] Sound of mind; mentally normal.

Sanfilippo's syndrome (sän-ft-lip'öz) [S. J. Sanfilippo, contemporary U.S. pediatrician] Mucopolysaccharidosis III.

sanguinarine (säng'gwīn-ä-rīn) A benzophenanthridine alkaloid available as an oral rinse and toothpaste. It is used to treat dental plaque and gingivitis.

sanguine (säng'gwīn) [L. *sanguineus*, bloody] **1.** Optimistic; cheerful. **2.** Plethoric, bloody; marked by abundant and active blood circulation, particularly a ruddy complexion. **3.** Pert. to or consisting of blood.

sanguineous (säng-gwīn'ē-üs) [L. *sanguineus*, bloody] **1.** Bloody; relating to blood. **2.** Having an abundance of blood. SYN: *plethoric*.

sanguinopurulent (säng'gwīn-ō-pū-rū-lent) [" + *purulentus*, full of pus] Concerning or containing blood and pus.

sanguis (säng'gwīs) [L.] Blood.

sanies (sä'nē-ēz) [L., thin, fetid pus] A thin, fetid, greenish discharge from a wound or ulcer, appearing as pus tinged with blood.

saniopurulent (sä'nē-ō-pū'roo-lent) [L.

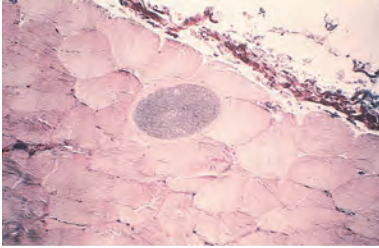
- sanies*, thin, fetid pus, + *purulentus*, full of pus] Having characteristics of sanies and pus; pert. to a fetid, serous, blood-tinged discharge containing pus.
- sanitarian** (sǎn'í-tā'rě-ăn) [L. *sanitas*, health] A person who by training and experience is skilled in sanitation and public health.
- sanitarium** (sǎn-ĩ-tā'rě-ũm) [L. *sanitas*, health] An institution for the treatment and recuperation of persons having physical or mental disorders. SYN: *sanatorium*.
- sanitary** (sǎn'ĩ-tā'rě) [L. *sanitas*, health] 1. Promoting or pert. to conditions that are conducive to good health. 2. Clean, free of dirt.
- sanitary napkin** Perineal pad, esp. one used for absorbing menstrual fluid. SEE: *menstrual tampon*; *menstruation*.
- sanitation** (sǎn'ĩ-tā'shũn) [L. *sanitas*, health] The formulation and application of measures to promote and establish conditions favorable to health, esp. public health. SEE: *hygiene*.
- sanitization** (sǎn'ĩ-tĩ-zǎ'shũn) [L. *sanitas*, health] The act of making sanitary.
- sanitize** (sǎn'ĩ-tĩz) 1. To make sanitary. 2. To inactivate or remove microorganisms from equipment and surfaces. Chemicals, heat, and ionizing radiation can be used for this purpose.
- sanitizer** An agent that reduces the number of bacterial contaminants to safe levels as judged by public health requirements.
- sanity** (sǎn'ĩ-tě) 1. Soundness of health or mind; mentally normal. 2. The ability to think logically or rationally.
- San Joaquin valley fever** Coccidioidomycosis.
- SA node** Sinoatrial node of the heart.
- SaO₂** Saturation, oxygen.
- saphena** (sǎ-fě'nǎ) *pl.* **saphenae** [Gr. *saphenes*, manifest] A saphenous vein.
- saphenectomy** (sǎf'ě-něk'tō-mě) [ʹ + *ektome*, excision] The surgical removal of a saphenous vein.
- saphenous** (sǎ-fě'nũs) Pert. to or associated with a saphenous vein or nerve in the leg.
- saphenous nerve** A deep branch of the femoral nerve. In the lower leg, it follows the great saphenous vein and supplies the medial side of the leg, ankle, and foot.
- saphenous opening** An oval aperture in the fascia in the inner and upper part of the thigh, transmitting the saphenous vein below Poupart's ligament. SYN: *fossa ovalis*.
- saphenous vein** SEE: *vein*, *great saphenous*; *vein*, *small saphenous*.
- saponification** (sǎ-põn'ĩ-fi-kǎ'shũn) [L. *sapo*, soap, + *facere*, to make] 1. Conversion into soap; chemically, the hydrolysis or the splitting of fat by an alkali yielding glycerol and three molecules of alkali salt of the fatty acid, the soap. 2. In chemistry, hydrolysis of an ester into its corresponding alcohol and acid (free or in the form of a salt).
- s. number** In analysis of fats, the number of milligrams of potassium hydroxide needed to saponify 1 g of oil or fat.
- saponify** (sǎ-põn'ĩ-fi) To convert into a soap, as when fats are treated with an alkali to produce a free alcohol plus the salt of the fatty acid. Thus, stearin, saponified with sodium hydroxide, yields the alcohol glycerol plus the soap sodium stearate.
- saponin** (sǎp'õ-nĩn) [Fr. *saponine*, soap] An unabsorbable glucoside contained in the roots of some plants that forms a lather in an aqueous solution. Saponins cause hemolysis of red blood cells even in high dilutions. When taken orally, they may cause diarrhea and vomiting. Mixtures of saponins are used as laboratory reagents to hemolyze specimens before analysis.
- sapophore** (sǎp'õ-for) [L. *sapor*, taste, + Gr. *phoros*, bearing] The component of a molecule that gives a substance its taste.
- saporific** (sǎp'õ-rĩf'ík) [NL. *saporificus*, producing taste] Imparting or affecting a taste or flavor.
- sapphism** (sǎf'ĩzĩm) [Sappho, Gr. poetess, 7th-century B.C.] Lesbianism.
- sapro-** Combining form meaning *putrid*, *rotten*.
- saprobe** (sǎ'prõb) [Gr. *sapros*, putrid, + *bios*, life] Saprophyte. **saprobic**, *adj.*
- saprogenic** (sǎp'rõ-jěn'ík) Causing putrefaction or resulting from it.
- saprophilous** (sǎp-rõf'il-ũs) [Gr. *sapros*, putrid, + *philein*, to love] Living on decaying or dead substances, as a microorganism.
- saprophyte** (sǎp'rõ-fit) [ʹ + *phyton*, plant] Any organism living on decaying or dead organic matter. Most of the fungi and bacteria are saprophytes. SYN: *saprobe*. SEE: *parasite*. **saprophytic** (fĩt'ík), *adj.*
- SAPS** *secondary antiphospholipid antibody syndrome*.
- SAR** *specific absorption rate*
- Sarcina** (sǎr'sĩ-nǎ) [L., bundle] A genus of gram-positive cocci of the family Micrococcaceae. These bacteria are saprophytes and tend to appear in packets of four or eight following binary fission.
- sarcina** (sǎr'sĩ-nǎ) *pl.* **sarcinassarcinae** Any organism of the genus *Sarcina*.
- sarcitis** (sǎr-sĩ'tis) [Gr. *sarx*, flesh, + *itis*, inflammation] Inflammation of muscle tissue. SYN: *myositis*.
- sarco-** Combining form meaning *flesh* or *muscle*.
- sarcoadenoma** (sǎr'kõ-ǎd'ěn-õ-mǎ) [Gr. *sarx*, flesh, + *aden*, gland, + *oma*, tumor] A fleshy tumor of a gland. SYN: *adenosarcoma*.
- sarcocarcinoma** (sǎr'kõ-kǎr'sĩn-õ-mǎ) [ʹ

+ *harkinos*, crab, + *oma*, tumor] A malignant tumor of sarcomatous and carcinomatous types.

sarcocele (sār'kō-sēl) [" + *kele*, tumor, swelling] A fleshy tumor of the testicle.

sarcocyst (sār'kō-sist) [" + *kystis*, bladder] An elongated tubular body produced by *Sarcocystis*.

Sarcocystis (sār'kō-sis'tis) [" + *kystis*, bladder] A genus of sporozoa found in the muscles of higher vertebrates (reptiles, birds, and mammals). **SEE: illus.**



SARCOCYSTIS INSIDE STRIATED MUSCLE

Sarcocystis hominis An intracellular protozoan parasite. It was formerly known as *Isospora hominis*.

S. lindemanni A species infesting the muscles of humans, causing myositis, eosinophilia, and fever.

sarcocystosis (sār'kō-sis-tō'sis) [" + "] Parasitic infection with members of the genus *Sarcocystis*, which causes sarcocysts.

Sarcodina (sār-kō-dī'nā) [" + *eidōs*, form, shape] A subphylum of protozoa that includes the order Amoebida. It is characterized by pseudopod locomotion.

sarcoid (sār'koyd) [" + *eidōs*, form, shape] 1. Resembling flesh. 2. A small epithelioid tubercle-like lesion characteristic of sarcoidosis.

Boeck's s. **SEE: *Boeck's sarcoid*.**

sarcoidosis (sār'koyd-ō'sis) [" + " + *ōsis*, condition] A chronic multisystem disease of unknown etiology, characterized by noncaseating (hard) granulomas and lymphocytic alveolitis. Sarcoidosis occurs most often in the southeastern U.S., is 10 times more common in blacks than whites, and is more common in women than men. **SEE: illus.**



SARCOIDOSIS

SYMPTOMS: The lungs are involved in 90% of cases of sarcoidosis and are the basis for the initial symptoms of fatigue, weight loss, anorexia, night sweats, shortness of breath, and a non-productive cough. Hilar lymphadenopathy may precede the development of respiratory symptoms from alveolitis. Peripheral lymphadenopathy, iritis, skin lesions, splenomegaly, hepatomegaly, interstitial nephritis, peritoneal disease, involvement of other visceral organs, and skeletal changes are seen in patients with widespread disease. Immunological abnormalities include T-cell lymphocytopenia, increased blood monocyte count, and anergic reactions to skin tests for common allergens. In approx. 60% to 70% of patients, no permanent damage to the lungs or other organs occurs. Approx. 20% develop residual lung or eye damage, and 10% die of progressive pulmonary fibrosis or associated right-sided heart failure (cor pulmonale).

DIAGNOSIS: Diagnosis is made through a combination of clinical, radiographical, and histological findings. Sarcoidosis must be differentiated from other diseases that cause granulomas, such as tuberculosis, histoplasmosis, and some other fungal infections.

TREATMENT: Sarcoidosis may progress insidiously or rapidly or may remit as the result of treatment with corticosteroids.

sarcolemma (sār'kō-lēm'ă) [" + *lemma*, husk] The cell membrane of a muscle cell. Invaginations called transverse tubules (T-tubules) penetrate the cytoplasm adjacent to the myofibrils and carry the action potential to the interior of the muscle cell.

sarcolemmopathy Any form of muscular dystrophy caused by protein defects within muscle cell membranes.

sarcology (sār-kōl'ō-jē) [" + *logos*, word, reason] The branch of medicine dealing with study of the soft tissues of the body.

sarcolysis (sār-kōl'ī-sis) [" + *lysis*, dissolution] Decomposition of the soft tissues or flesh.

sarcoma (sār-kō'mă) *pl. sarcomata* [" + *oma*, tumor] A cancer arising from mesenchymal tissue such as muscle or bone, which may affect the bones, bladder, kidneys, liver, lungs, parotids, and spleen. **SEE: Kaposi's sarcoma.**

botryoid s. A rare malignant connective tissue tumor occurring in the uterus, bladder, vagina, liver, or biliary tree. **SYN: rhabdosarcoma, embryonal.**

endometrial s. A malignant neoplasm of the endometrial stroma.

giant-cell s. Giant cell tumor.

osteogenic s. A sarcoma composed of bony tissue. It is the most common bony

cancer and typically afflicts adolescents. SYN: *osteosarcoma*.

reticulum cell s. A rare form of malignant large cell lymphoma.

spindle cell s. A sarcoma consisting of small and large spindle-shaped cells.

sarcomatoid (sar-kō'mā-toyd) [Gr. *sarx*, flesh, + *oma*, tumor, + *eidōs*, form, shape] Resembling a sarcoma.

sarcomatosis (săr'kō-mā-tō'sis) [" + " + *osis*, condition] A condition marked by the presence and spread of a sarcoma; sarcomatous degeneration.

sarcomatous (săr-kō'mā-tūs) Of the nature of, or like, a sarcoma.

sarcomere (săr'kō-mēr) [" + *meros*, a part] The unit of contraction of the myofibrils of a muscle cell, made of protein filaments arranged between two Z disks. Thick filaments are made primarily of myosin; thin filaments are made of actin, troponin, and tropomyosin. Desmin, myomesin, nebulin, and titin are stabilizing proteins.

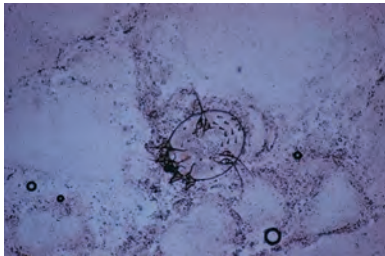
sarcopenia (săr'kō-pēn'ē-ā) Loss of muscular mass and strength, esp. in striated muscles. Sarcopenia commonly occurs with aging as a result of the combined effects of changes in exercise, nutrition, and hormonal activation of muscles (e.g., by growth and steroid hormones).

Sarcophagidae (săr'kō-fāj'ī-dē) [Gr. *sarx*, flesh, + *phagein*, to eat] The family of the order Diptera that includes the flesh flies. Females deposit their eggs or larvae on the decaying flesh of dead animals. Larvae of two genera, *Sarcophaga* and *Wohlfahrtia*, frequently infest open sores and wounds of humans, giving rise to cutaneous myiasis.

sarcoplasm (săr'kō-plāzm) [" + LL. *plasma*, form, mold] The cytoplasm of muscle cells, esp. striated muscle cells.

sarcoplasmic (săr'kō-plāz'mik) Concerning or containing sarcoplasm.

Sarcoptes (săr-kōp'tēz) A genus of Acarina that includes the mites that infest humans and animals. *Sarcoptes scabiei* causes scabies in humans. SEE: *illus.*



SARCOPTES SCABIEI

sarcosis (săr-kō'sis) [" + *osis*, condition] Abnormal formation of flesh.

sarcosporidiosis (săr'kō-spō-rīd'ē-ō'sis) [" + " + *osis*, condition] Infestation

with organisms of the order Sarcosporidia or the condition produced by them.

sarcostosis (săr'kōs-tō'sis) [" + *osteon*, bone, + *osis*, condition] Ossification of fleshy or muscular tissue.

sarcous (săr'kūs) [Gr. *sarkō*, flesh] Concerning flesh or muscle.

sarin (GB) (săr'īn) [An acronym of *Schrader, Ambros, Rüdiger*, and *Van der Linde*, its discoverers] Isopropylmethylphosphonofluoridate; an extremely toxic nerve gas.

SARS (sărz) Acronym for severe acute respiratory distress syndrome.

SARS-CoV (sărz'kō-vē') An abbreviation for SARS coronavirus (the cause of severe acute respiratory distress syndrome).

SART *Sexual Assault Response Team.*

sartorius (săr-tō-rē-ūs) [L. *sartor*, tailor] A long, ribbon-shaped muscle in the leg that flexes, abducts, laterally rotates the thigh, and flexes the lower leg. This muscle, the longest in the body, enables the crossing of the legs in the tailor's position, the function for which it is named.

sashimi (să-shī'mē) A traditional Japanese food made of raw fish, usually served as an appetizer. It can occasionally be a source of food-borne toxins or infections. Ingestion of raw fish has been associated with the parasitic infestation anisakiasis.

sat *saturated.*

satellite (săt'l-īt) [L. *satelles*, attendant] A small structure attached to a larger one, esp. a minute body attached to a chromosome by a slender chromatin filament.

bacterial s. A bacterial colony that grows best when close to a colony of another microorganism.

satellitosis (săt'l-īt-ō'sis) [" + Gr. *osis*, condition] The accumulation of neuroglial cells about neurons of the central nervous system. This condition is seen in certain degenerative and inflammatory conditions.

satiation (să'shē-ā'shūn) In nutritional science, a sense of satisfaction or fullness with a meal that keeps a person from wanting to eat any more food.

satiety (să-tī'ēt-ē) [L. *satietas*, enough] Being full to satisfaction, esp. with food.

saturated (săt'ū-rā'tēd) [L. *saturare*, to fill] Holding all that can be absorbed, received, or combined, as a solution in which no more of a substance can be dissolved. This term is applied to hydrocarbons in which the maximum number of hydrogen atoms is present and there are no double or triple bonds between the carbon atoms. It is also applied to the hemoglobin-oxygen complex found in red blood cells when no more oxygen can reversibly bind to the hemoglobin.

saturated compound An organic compound with all carbon bonds filled. It

does not contain double or triple bonds. SEE: *unsaturated compound*.

saturated hydrocarbon SEE: under *hydrocarbon*.

saturation (săt'ū-rā'shūn) **1.** State in which all of a substance that can be dissolved in a solution is dissolved. Adding more of the substance will not increase the concentration. **2.** In organic chemistry, to have all available carbon atom valences satisfied so that there are no double or triple bonds between the carbon atoms.

saturation index In hematology, the amount of hemoglobin present in a known volume of blood compared with the normal.

saturation time The time required for the arterial blood of a person inhaling pure oxygen to become saturated.


saturnine (săt'ūr-nīn) [L. *saturnus*, lead] Concerning or produced by lead.

saturnism (săt'ūr-nīzm) [' + Gr. *-ismos*, condition] Lead poisoning. SYN: *plumbism*.

satyriasis (săt-ī-rī'ā-sīs) [LL.] An excessive and often uncontrollable sexual drive in men. SEE: *nymphomania*.

saucerization (sav'ŝēr-ī-zā'shūn) The surgical creation of a shallow area in tissue to remove devitalized tissue and to facilitate drainage.

sauna (sav'nā) [Finnish] An enclosure in which a person is exposed to moderate to very high temperatures and often high humidity, produced by water poured on heated stones. A stay in the sauna may be followed by a cool bath or shower. Sauna water is not sterile and may contain harmful microorganisms, including yeasts and molds. Even though the sauna has no proven benefits in preventing illnesses or promoting fitness, the regimen does help to promote relaxation, relieve aches and pains, and loosen stiff joints.

 Saunas are not advised for those with fever, those who are dehydrated, or those who are unable to sweat. Those who have recently used alcohol or have participated in strenuous exercise should not use a sauna. If soft tissue has been traumatized in the past 24 to 48 hr, the sauna should not be used. Prolonged exposure to the sauna may be dangerous due to induced hyperpyrexia, dehydration, and renal failure.

savings account, medical A savings account in which deposits may accumulate tax-free and be used as self-financed health insurance to pay incurred or anticipated medical expenses. It is also called a "health-savings account."

saw [AS. *sagu*] A cutting instrument with an edge of sharp toothlike projec-

tions; used esp. for cutting bone in surgery.

saw palmetto A low-growing, spreading palm (*Serenoa repens*) native to Florida and the coastal southeastern U.S. whose extract is used as a treatment for benign prostatic hyperplasia. Some evidence suggests it is clinically effective, and some research indicates that it is not.



Saw palmetto should be avoided by women of childbearing age, especially women who are pregnant or breast-feeding.

saxitoxin (sāk'sī-tōk'sīn) A neurotoxin produced by some dinoflagellates and concentrated during feeding by mollusks such as mussels and clams. It causes paralytic shellfish poisoning.

Sb Symbol for the element antimony.

SbCl₃ Antimony trichloride.

SBE *subacute bacterial endocarditis*.

Sb₂O₅ Antimonic oxide; antimony pentoxide.

Sb₄O₆ Antimonious oxide.

Sc Symbol for the element scandium.

sc *subcutaneously*.

scab (skăb) [ME. *scabbe*] **1.** Crust of a cutaneous sore, wound, ulcer, or pustule formed by drying of the discharge. **2.** To become covered with a crust.

scabicide (skā'bi-sid) An agent that kills mites, esp. the causative agent of scabies.

scabies (skā'bēz) [L. *scabies*, itch] A contagious infestation of the skin with the itch mite, *Sarcoptes scabiei*. It typically presents as an intensely pruritic rash, composed of scaly papules, insect burrows, and secondarily infected lesions distributed in the webs between the fingers and on the waistline, trunk (esp. the axillae), penis, and arms. It readily spreads in households, among playmates, and between sexual partners—that is, among people having close physical contact. SEE: *illus.*; *Nursing Diagnoses Appendix*. **scabietic** (-ēt'ik), *adj.*



SCABIES

SYMPTOMS: An itchy rash that worsens at night and that involves multiple members of the same household is a common presentation.

DIAGNOSIS: Because the disease is often missed and occasionally overdiagnosed, scrapings from suspect lesions are examined microscopically to confirm the presence of the mite, its eggs, or its excretions.

TREATMENT: For children 2 months and older and nonpregnant adults, permethrin 5% cream is applied to the entire body surface, avoiding the eyes and the mouth. The cream is thoroughly washed off after about 8 to 14 hr. Retreatment is sometimes required in 14 days. Pregnant women and infants under 2 months of age should be treated with 6% precipitated sulfur in petrolatum, daily for 3 days.

scabrities (skā-brīsh'ē-ēz) [L. *scaber*, rough] A scaly, roughened condition of the skin.

s. unguium Morbid degeneration of the nails, making them rough, thick, distorted, and separated from the flesh at the root; symptomatic of syphilis and leprosy.

scala (skā'lā) [L. *scala*, staircase] Any one of the three spiral passages of the cochlea of the inner ear.

s. tympani The duct filled with perilymph that is below the organ of Corti. It extends from the round window to the tip of the cochlea.

s. vestibuli The duct filled with perilymph that is above the organ of Corti. It extends from the oval window to the tip of the cochlea, where it communicates with the scala tympani through an aperture, the helicotrema.

scald (sköld) [ME. *scalden*, to burn with hot liquid] 1. A burn of the skin or flesh caused by moist heat and hot vapors, as steam. 2. To cause a burn with hot liquid or steam.

When the heat applied is approx. equivalent, a scald is deeper than a burn from dry heat. Healing is slower and scar formation greater in scalds. Emergency treatment of a scalded area should include immediate application of cold in the most readily available form, (i.e., ice packs or immersion of the part in very cold water). This should be continued for at least 1 hr.

scale (skāl) [L. *scala*, staircase] A graduated or proportioned measure, a series of tests, or an instrument for measuring quantities or for rating some individual intelligence characteristics.

absolute s. Scale used for indicating low temperatures based on absolute zero. SYN: *Kelvin scale*. SEE: *absolute temperature*; *absolute zero*.

ASIA Impairment s. A method of assessing the degree of motor and sensory impairment in spinal cord injured pa-

tients. The assessment is based on an examination of the perineum and anus, i.e., on the S4-S5 level of the spinal cord. Grade: A – Complete: No motor or sensory function; Grade B – Incomplete, sensory function is intact, but motor function is absent below and including the S4-S5 level; Grade C – Incomplete, motor function is preserved below the neurological level and more than half of the primary muscles have a muscle grade test of less than 3; Grade D – Incomplete: Motor function is preserved and at least half of the muscles below the S4-S5 level have a muscle grade test of 3 or better; and Grade E – Normal.

Borg's dyspnea s. SEE: *Borg's dyspnea scale*.

Braden s. SEE: *Braden scale*.

centigrade s. Celsius scale.

s. of contrast The range of densities on a radiograph; the number of tonal grays that are visible.

hydrogen ion s. A scale used to express the degree of acidity or alkalinity of a solution. It extends from 0.00 (total acidity) to 14 (total alkalinity), the numbers running in inverse order of hydrogen ion concentration. The pH value is the negative logarithm of the hydrogen ion concentration of a solution, expressed in moles per liter.

As the hydrogen ion concentration decreases, a change of 1 pH unit means a 10-fold decrease in hydrogen ion concentration. Thus a solution with a pH of 1.0 is 10 times more acid than one with a pH of 2.0 and 100 times more acid than one with a pH of 3.0. A pH of 7.0 indicates neutrality.

As the hydrogen ion concentration varies in a definite reciprocal manner with the hydroxyl ion (OH⁻) concentration, a pH reading above 7.0 indicates alkalinity. In the human body, arterial blood is slightly alkaline, having a normal pH range of 7.35 to 7.45. SEE: *pH*.

pain s. An assessment tool used to measure the intensity of a patient's discomfort. SEE: *Numerical Rating Scale*; *visual analog s.*

Norton s. SEE: *Norton scale*.

Numerical Rating S., Numeric Rating S. ABBR: NRS. A variation of the visual analog scale that uses a scalar numbering system to objectify a patient's pain. Most numeric rating scales use a 10-cm line with tick marks spaced 1 cm apart. The leftmost mark is labeled "0" and has the notation "No Pain." The rightmost mark is labeled "10" and the notation "Worst pain imaginable." The patient is asked to indicate where on the continuum he or she would rate the current intensity of pain.

visual analog s. An instrument used to quantify a subjective experience, such as the intensity of pain. A commonly used visual analog scale is a 10-cm line

labeled with “worst pain imaginable” on the left border and “no pain” on the right border. The patient is instructed to make a mark along the line to represent the intensity of pain currently being experienced. The clinician records the distance of the mark in centimeters from the right end of the scale.

scale (skāl) [O.Fr. *escale*, husk] **1.** A small dry flake, shed from the upper layers of skin. Some shedding of skin is normal; scale increases in diseases like pityriasis rosea, psoriasis, and tinea pedis and after scratching the skin. **2.** A film of tartar encrusting the teeth. **3.** To remove a film of tartar from the teeth. **4.** To form a scale on. **5.** To shed scales.

scale (skāl) [ME. *scole*, balance] An instrument for weighing. **SEE: illus.**



SCALE FOR INFANTS

scalene (skā-lēn') [Gr. *skalenos*, uneven] **1.** Having unequal sides and angles, said of a triangle. **2.** Designating a scalenus muscle.

s. tubercle Lisfranc's tubercle.

scaleneotomy (skā'lē-nōt'ō-mē) [" + *ektome*, excision] Resection of any of the scalenus muscles.

scalotomy (skā'lē-nōt'ō-mē) [" + *tome*, incision] Surgical division of one or more of the scalenus muscles.

scalenus (skā-lē'nūs) [L., uneven] One of three deeply situated muscles on each side of the neck, extending from the tubercles of the transverse processes of the third through sixth cervical vertebrae to the first or second rib. The three muscles are the scalenus anterior (anticus), medius, and posterior.

scalenus syndrome A symptom complex characterized by brachial neuritis with or without vascular or vasomotor disturbance in the upper extremities. Also called *scalenus anticus syndrome*.

SYMPTOMS: The symptoms include pain, tingling, and numbness anywhere from the shoulder to the fingers. Small muscles of the hand or even the deltoid or other muscles of the arm atrophy.

TREATMENT: The posture should be corrected, and sometimes the arm and shoulder are immobilized. When relief is not obtained, surgical correction may

be required. **SYN:** *neurogenic thoracic outlet syndrome*.

scaler (skā'lēr) [O.Fr. *escale*, husk] **1.** A dental instrument used to remove calculus from teeth. **2.** A device for counting pulses detected by a radiation detector.

magnetostrictive s. An electrically powered device used for calculus and tartar removal as an alternative to ultrasonic scaling or manual curettage. Typical units use a stack of metal strips in the handpiece and move in an elliptical pattern.

sickle s. A manual device used to remove supragingival calculus. The instrument has two parallel cutting edges on the face of the blade that converge to form a point. It is effective but slow and damages enamel more than ultrasonic or magnetostrictive scalers.

sonic s. Ultrasonic scaler.

ultrasonic s. A device that uses high-frequency vibration to remove stains and adherent deposits on the teeth. **SYN:** *sonic scaler*.

scaling (skāl'ing) [O.Fr. *escale*, husk] The removal of calculus from the teeth.

scall (skawl) [Norse *skalli*, baldhead] Dermatitis of the scalp producing a crusted scabby eruption.

scalp (skālp) [ME., sheath] The hairy integument of the head. In anatomy, this includes the skin, dense subcutaneous tissue, the occipitofrontalis muscle with the galea aponeurotica, loose subaponeurotic tissue, and cranial periosteum.

scalpel (skāl'pēl) [L. *scalpellum*, knife] A small, straight surgical knife with a convex edge and thin keen blade. **SEE: illus.**

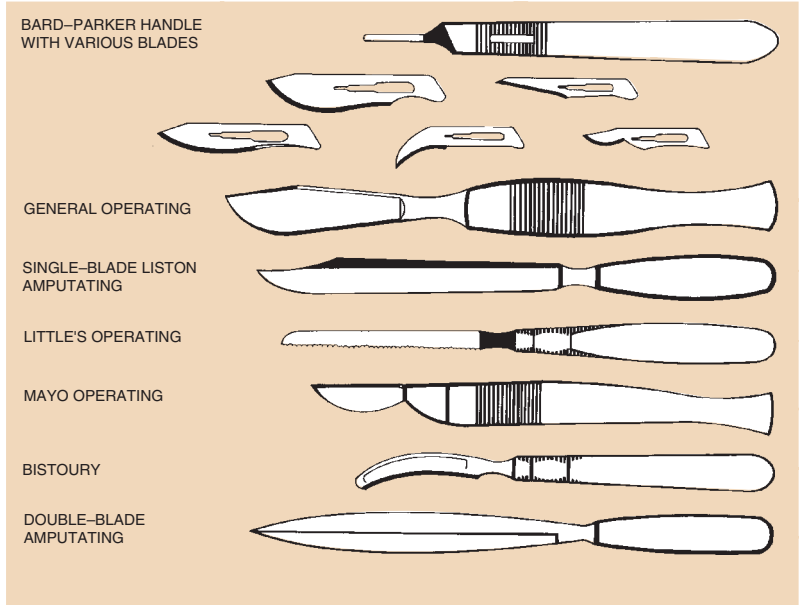
harmonic s. ABBR: HS. An ultrasonic dissecting device used in surgery to disrupt, disintegrate, or coagulate tissues, especially those with a high water or fat content. The device works by cavitating the tissues it contacts. When used laparoscopically, tissues destroyed by the scalpel are removed from the body by aspiration. **SYN:** *ultrasonic dissector*.

scalpriform (skāl'pri-form) [L. *scalprum*, knife, + *forma*, shape] Shaped like a chisel.

scalp tourniquet A tourniquet applied to the scalp during IV administration of antineoplastic drugs to restrict blood flow to the hair-bearing portion of the scalp. This procedure helps prevent the cranial alopecia that may accompany the chemotherapy used to treat certain types of cancer.

scaly (skā'lē) [O.Fr. *escale*, husk] Resembling or characterized by scales.

scan **1.** An image obtained from a system that compiles information in a sequence pattern, such as computed tomography,



SCALPELS

ultrasound, or magnetic resonance imaging. **2.** Scintiscan.



bone s. A nuclear medicine scan that uses short half-life radioactively labeled chemicals to make images of bones and bone diseases, such as occult fractures, osteomyelitis, or tumors. This is esp. useful in delineating osteomyelitis and metastases to the bone.

brain s. Any procedure for imaging the structure and function of the brain.

DEXA s. *Dual-energy x-ray absorptiometry scan.*

dual-energy x-ray absorptiometry s. ABBR: DEXA scan. SEE: under *absorptiometry*.

milk s. A colloquial term for radionuclide reflux imaging.

ventilation/perfusion s. V/Q s.

V/Q s. An imaging procedure used in the diagnosis of pulmonary embolism. The procedure has two parts: (1) the injection of microscopic spheres into the bloodstream to evaluate perfusion of the lung, then (2) the inhalation of xenon gas to assess pulmonary aeration. Certain patterns of mismatching between ventilation and perfusion of the lung are considered diagnostic of pulmonary embolism. SYN: *ventilation/perfusion scan*.

scandium (skän'dē-üm) [L. *Scandia*, Scandinavia] SYMB: Sc. A rare, soft, lightweight metallic element; atomic weight 44.956; atomic number 21. It is used in healthcare in alloys, nanomolecules, and some lasers.

scanning 1. Recording on an image receptor the emission of radioactive waves from a specific substance injected into the body. **2.** The process of obtaining different images of a specified anatomical part through a system that compiles information in a sequential pattern, such as computed tomography, ultrasound, or magnetic resonance imaging.

scanty (skän'tē) [ME. from O. Norse, *skamt*, short] Not abundant; insufficient, as a secretion.

Scanzoni maneuver (skän-zōn'ē) [Friedrich W. Scanzoni, Ger. obstetrician, 1821–1891] Double application of forceps, the first to rotate the fetal occiput from a posterior to an anterior position, and the second to assist fetal descent and birth.

scapha (skā'fā) [NL., *skiff*] An elongated depression of the ear between the helix and antihelix.

scapho- Combining form meaning *boat-shaped*.

scaphocephalism (skāf'ō-sēf'äl-izm) ["/ + " + *-ismos*, condition] Condition of having a deformed head, projecting like the keel of a boat. SYN: *scaphocephaly*.

scaphocephalic (-äl'ik), *adj.*

scaphocephalous (skāf'ō-sēf'äl-lūs) ["/ + *kephale*, head] SEE: *scaphocephalism*.

scaphocephaly (skāf'ō-sēf'äl-ē) ["/ + *kephale*, head] Scaphocephalism.

scaphocephaly (skāf'ō-hi'drō-sēf'äl-ē) ["/ + *hydor*, water, + *kephale*, head] Hydrocephalus combined with scaphocephalism.

scaphoid (skăf'oyd) [" + *eidōs*, form, shape] **1.** Boat-shaped, navicular, hollowed. **2.** SEE: under *bone*.

scaphoiditis (skăf'oyd-ī'tis) [" + " + *itis*, inflammation] Inflammation of the scaphoid bone.

scapula (skăpū-lă') [L., shoulder blade] The large, flat, triangular bone that forms the posterior part of the shoulder. It articulates with the clavicle and the humerus. SYN: *shoulder blade*. SEE: *il-lus.*; *triceps*.

plane of s. The angle of the scapula in its resting position, normally 30° to 45° forward from the frontal plane toward the sagittal plane. Movement of the humerus in this plane is less restricted than in the frontal or sagittal planes because the capsule is not twisted.

tipped s. A condition in which the inferior angle of the scapula is prominent, usually the result of faulty posture and a tight pectoralis minor muscle. Tipping is a normal motion when a person reaches with the hand behind the back.

winged s. Condition in which the medial border of the scapula is prominent, usually the result of paralysis of the serratus anterior or trapezius muscles. SYN: *angel's wing*.

scapular (skăp'ū-lăr) Of, or pert. to, the shoulder blade.

scapulary (skăp'ū-lărē) A shoulder bandage for keeping a body bandage in place. A broad roller bandage is split in half. The undivided section of the roller

bandage is fastened in front with the two ends passing over the shoulders and attached to the back of the body bandage.

scapulectomy (skăp'ū-lĕk'tō-mĕ) [L. *scapula*, shoulder blade, + Gr. *ektōme*, excision] Surgical excision of the scapula.

scapulo- Combining form meaning *shoulder*.

scapuloclavicular (skăp'ū-lō-klă-vĭk'ū-lăr) [L. *scapula*, shoulder blade, + *clavicula*, little key] Concerning the scapula and clavicle.

scapulodynia (skăp'ū-lō-dĭn'ĕ-ă) [" + *odyne*, pain] Inflammation and pain in the shoulder muscles.

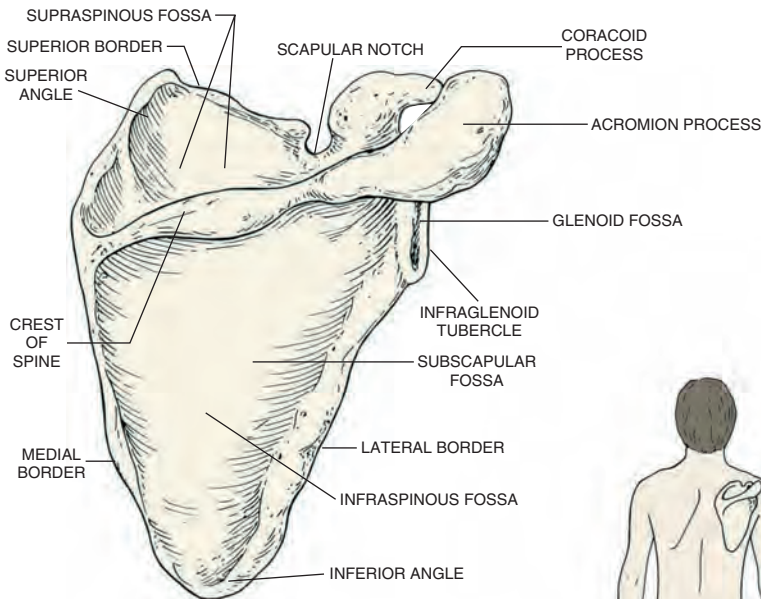
scapulohumeral (skăp'ū-lō-hū'mĕr-ăl) [" + *humerus*, upper arm] Concerning the scapula and humerus.

scapulopexy (skăp'ū-lō-pĕk'sĕ) [" + Gr. *pexis*, fixation] Fixation of the scapula to the ribs.

scapulothoracic (skăp'ū-lō-thō-răs'ĭk) [" + Gr. *thorax*, chest] Concerning the scapula and thorax.

scapus (skă'pūs) *pl.* **scapi** [L. *scapus*, stalk] A shaft or stem.

scar (skăr) [Gr. *eskhara*, scab] A mark left in the skin or an internal organ by the healing of a wound, sore, or injury because of replacement by connective tissue of the injured tissue. Scars may result from wounds that have healed, lesions of diseases, or surgical operations. When it first develops a scar is red or



SCAPULA

purple. It later takes on the skin color of the patient. SYN: *cicatrix*. SEE: *ke-loid*.

Scarf sign (skahrĕf) A newborn assessment finding in which the infant's elbow crosses the body midline without resistance as the examiner draws the arm across the chest to the opposite shoulder. This is characteristic of preterm infants born before 30 weeks gestation.

scarification (skär'ĭ-fi-kā'shŭn) [Gr. *skariphismos*, scratching up] The making of numerous superficial incisions in the skin.

scarificator (skär'ĭ-fi-kā'tor) An instrument used for making small incisions in the skin. SYN: *scarifier*.

scarifier (skär'ĭ-fi'ēr) Scarificator.

scarlatina (skär'lā-tē'nā) [NL., red] Scarlet fever.

s. anginosa A severe form of scarlatina with extensive necrosis and ulceration of the pharynx and in some cases with peritonsillar abscess.

s. hemorrhagica Scarlatina with hemorrhage into the skin and mucous membranes.

s. maligna A fulminant and usually lethal form of scarlatina. **scarlatinal** (-nāl), *adj.*

scarlatiniform (skär-lā-tĭn'ĭ-form) [L. *scarlatina*, red, + *forma*, shape] Resembling scarlatina or its rash.

scarlatinoid (skär-lāt'ĭ-noyd) [ʹ + Gr. *eidōs*, form, shape] Resembling scarlet fever.

scarlet fever [L. *scarlatum*, red] An acute, contagious disease characterized by pharyngitis and a pimply red rash. It is caused by group A beta-hemolytic streptococcus and usually affects children between the ages of 3 and 15. SYN: *scarlatina*. SEE: *Nursing Diagnoses Appendix*.

ETIOLOGY: The disease is caused by many strains (more than 40) of group A, beta-hemolytic streptococci that elaborate an erythrogenic toxin.

SYMPTOMS: After an incubation period of 1 to 7 days, children develop a fever, chills, vomiting, abdominal pain, and malaise. The pharynx and tonsils are swollen and red, and an exudate is present. Initially the tongue is white, with red, swollen papilla ("white strawberry tongue"); within 5 days, the white disappears, creating a red strawberry tongue. A red pinpoint rash that blanches on pressure with a sandpapery texture appears on the trunk (chest to neck, abdomen, legs and arms, sparing soles and palms) within 12 hr after the onset of fever. Cheeks are flushed, with pallor surrounding the mouth. Faint lines in the elbow creases, called Pastia's lines, are characteristic findings in full-blown disease. Over several days, sloughing of the skin begins, which lasts approx. 3 weeks.

INCUBATION: The incubation period is probably never less than 24 hr. It may be 1 to 3 days, and rarely longer.

TREATMENT: Scarlet fever is treated with 10 days of penicillin (or erythromycin in cases with penicillin allergy). A full course of therapy is vital to decrease the risk of rheumatic fever or glomerulonephritis. In general, patients are taught to isolate the infected child from siblings until they have received penicillin for 24 hr.

PATIENT CARE: Good hand hygiene techniques and proper disposal of tissues with purulent discharge are emphasized. The parents also are advised about the importance of administering the prescribed antibiotic as directed for the entire course of treatment, even if the child looks and feels better. Because the child may be irritable and restless, the parents are taught methods to encourage bedrest and relaxation. The child should be kept occupied with age-appropriate books, games, toys, and television.

scarlet rash A rose-colored rash, specifically that of German measles.

Scarpa, Antonio (skär'pā) Italian anatomist, 1752–1832.

SCAT *sheep cell agglutination test*.

scato- Combining form denoting *excrement, fecal matter*. SEE: *stercor-*.

scatologic (skāt'ō-lōj'ĭk) Concerning fecal matter.

scatology (skā-tōl'ō-jē) [Gr. *skato-*, dung, + *logos*, word, reason] **1.** Scientific study and analysis of the feces. SYN: *coprology*. **2.** Interest in obscene things, esp. obscene literature.

scatoma (skā-tō'mā) [ʹ + *oma*, tumor] A mass of inspissated feces in the colon or rectum, resembling an abdominal tumor. SYN: *fecaloma*.

scatophagy (skā-tōf'ā-jē) Coprophagy.

scatter (skāt'ēr) **1.** The diffusion of electromagnetic radiation when it strikes an object. **2.** The dispersion or showering of objects from an initial location after energy is applied to them.

coherent s. An interaction between x-rays and matter in which the incoming photon is absorbed by the atom and leaves with the same energy in a different direction. Fewer than 5% of the interactions between x-rays and matter in tissue are of this type.

scatter air ratio In radiation therapy, the ratio between the primary and scatter radiation in air at the point of calculation along the central ray of the treatment beam. Tables of values and irregular field algorithms are critical for devising patient treatment plans by using computer systems.

scattergram (skāt'ēr-grām) **1.** A graphical means of displaying information, in which multiple data points, representing the relation between two variables,

are clustered. **2.** A graphic interpretation of blood cell populations generated by some types of blood cell analyzers.

scatter photocoagulation SEE: *photocoagulation*.

scavenger cell (skāv'ən-jēr) [ME. *skawager*, toll collector] A phagocytic cell, such as a macrophage or a neutrophil, that cleans up disintegrating tissues or cells.

SCBA *self-contained breathing apparatus*.

SCD *Sequential compression device*.

Sc.D. *Doctor of Science* (degree).

SCE *saturated calomel electrode*.

Scedosporium (sēd'ō-spōr'ē-ūm) [NL]

A species of filamentous fungi that grow in soil and are occasionally responsible for fungal infections in humans, e.g., in the lung after inhalation, in skin, or in contaminated wounds.

scent (sēnt) Odor.

Schamroth sign (shahm'rōt, rawth) A method of assessing a patient for evidence of clubbing of the fingers. The patient is asked to place the nails of the right and left index fingers against each other. In health, a small diamond-shaped gap is seen between the proximal margin of the nails. In patients with clubbing, this gap is filled by tissue. Clubbing of the digits is found in some patients with serious lung diseases, such as lung cancers and chronic obstructive lung disease.

Schatzki ring (shäts'kē) [Richard Schatzki, U.S. radiologist, 1901–1992] A lower esophageal mucosal ring composed of a thin annular weblike tissue located at the squamocolumnar junction at or near the border of the lower esophageal sphincter. When the diameter of the ring is less than 1.3 cm, dysphagia is present. Treatment involves stretching the ring with dilators.

Schüffner's dots (shif'nēr) [Wilhelm P. A. Schüffner, Ger. pathologist, 1867–1949] Minute granules present in the red blood cells when they are infected by *Plasmodium vivax*.

schedule A timetable, usually written; a plan for action to achieve a certain goal.

fee s., fee sheet A list of charges for health care services. Health care providers keep fee schedules in their offices to specify the amount of compensation they want for providing selected services. Managed care organizations and other medical insurance providers publish lists representing the maximum charges they will reimburse for the same services. In many instances, the reimbursement offered by insurers is less than that charged by health care providers.

Scheie's syndrome (shīz) [Harold Glendon Scheie, U.S. ophthalmologist, 1909–1990] Mucopolysaccharidosis IS.

schema (skē'mā) [Gr., shape] Shape, plan, or outline.

schematic (skē-māt'ik) [NL. *schematicus*, shape, figure] Pert. to a diagram or model; showing part for part in a diagram.

scheroma (shē-rō'mā) Xerophthalmia.

Schäffer's reflex (shā'fērs) [Max Schäffer, Ger. neurologist, 1852–1923] Dorsiflexion of the toes and flexion of the foot resulting when the middle portion of the Achilles tendon is pinched.

Scheuermann's disease (shoy'ēr-mänz)

[Holger W. Scheuermann, Danish physician, 1877–1960] A spinal deformity with an autosomal dominant inheritance, occurring most commonly in early adolescence and characterized by a marked thoracolumbar kyphosis (an increased convexity of the back in the thoracic area, sometimes referred to as "round-back"). The incidence is about 0.4%, with no gender preference.

SYMPTOMS: About 50% of patients complain of back pain in the affected area; others complain of poor posture or fatigue. There are usually no neurological symptoms unless cord compression occurs.

DIAGNOSIS: The diagnosis is usually made from clinical presentation and the results of a standing x-ray examination of the spine.

TREATMENT: Symptomatic treatment may include nonsteroidal anti-inflammatory drugs, rest, and activity modification. Plaster casts and braces (including the Milwaukee brace) are used to correct the deformity and are usually successful if the child has not stopped growing. Operative treatment is reserved for those with a significant deformity and those who have stopped growing.

Schick test (shik) [Béla Schick, Hungarian-born U.S. pediatrician, 1877–1967] A test formerly used to determine the degree of immunity to diphtheria, in which a dilute toxin was injected intradermally. SEE: *diphtheria*.

Schilder's disease (shil'dērs) [Paul Ferdinand Schilder, Austrian-U.S. neurologist, 1886–1940] A rare demyelinating disease of the central nervous system (a variant of multiple sclerosis). It results in brain lesions that may resemble tumors or abscesses during neuroimaging. The disease may respond to treatment with immunosuppressing drugs. **SYN:** *myelinoclastic diffuse sclerosis*.

Schiller's test (shil'ērs) [Walter Schiller, Austrian-U.S. pathologist, 1887–1960] A test for superficial cancer, esp. of the uterine cervix. The tissue is painted with an iodine solution. Cells lacking glycogen fail to stain, and their presence may indicate a malignant change.

Schilling's classification (shil'ingz) [Vic-

tor Schilling, Ger. hematologist, 1883–1960] A method of classifying polymorphonuclear neutrophils into four categories according to the number and arrangement of the nuclei in the cells.

Schilling test (shil'ing) [Robert F. Schilling, U.S. hematologist, b. 1919] A test that uses oral, radioactive vitamin B₁₂ (cyanocobalamin) and injected, nonradioactive B₁₂ to assess the gastrointestinal absorption of the vitamin. It is used primarily to diagnose pernicious anemia but can also identify B₁₂ malabsorption caused by other agents, including bacterial overgrowth of the gut and pancreatic insufficiency. A person with normal cyanocobalamin absorption excretes between 8% and 40% of radiolabeled B₁₂ in a 24-hr urine collection taken after the injection. Those with decreased B₁₂ excretion are retested under several conditions:

1. after receiving intrinsic factor with radiolabeled cyanocobalamin;
2. after receiving antibiotics; and
3. after receiving pancreatic enzymes to distinguish between the possible cause of vitamin malabsorption.

schindylesis (skin'di-lē'sis) [Gr. *schindylesis*, a splitting] A form of wedge and groove suture in which a crest of one bone fits into a groove of another.

Schönlein-Henoch purpura (shän'līn-hēn-ōk) SEE: *Henoch-Schönlein purpura*.

Schiötz tonometer (shē'ēts) [Hjalmar Schiötz, Norwegian physician, 1850–1927] An instrument for measuring intraocular pressure by the degree of indentation produced by pressure on the cornea.

SCHIP *State Children's Health Insurance Program*.

Schirmer's test (shir'mērz) [Rudolph Schirmer, Ger. ophthalmologist, 1831–1896] The use of an absorbent paper placed in the conjunctival sac as a test for patients with ocular irritation and dry eye (e.g., keratoconjunctivitis sicca). The rate and amount of wetting of the paper provide an estimate of tear production.

schisto- (skīs'tō) Combining form meaning *split, cleft*.

schistocelia (skīs'tō-sē'lē-ā) [Gr. *schistos*, divided, + *koilia*, belly] A congenital abdominal fissure.

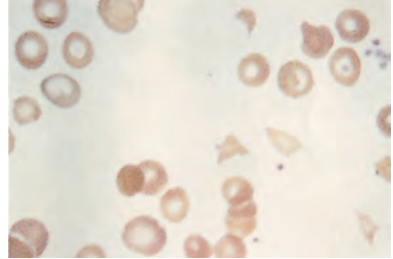
schistocephalus (skīs'tō-sēf'ā-lūs) [" + *kephale*, head] A fetus with a cleft head.

schistocormia (skīs'tō-kor'mē-ā) [" + *kormos*, trunk] A fetus with a cleft trunk.

schistocystis (skīs'tō-sīs'tīs) [" + *kystis*, bladder] A fissure of the bladder.

schistocyte (skīs'tō-sīt) [" + *kytos*, cell] A fragmented red blood cell that appears in the blood in a variety of bizarre shapes, from small triangular forms to

round cells with irregular surfaces. Schistocytes are found in patients with hemolytic anemias, severe burns, and several other conditions. SYN: *schizocyte*. SEE: *illus.*



SCHISTOCYTES

In peripheral blood (×600)

schistocytosis (skīs'tō-sī-tō'sis) [" + *osis*, condition] Schistocytes in the blood. SYN: *schizocytosis*.

schistoglossia (skīs'tō-glōs'ē-ā) [" + *glossa*, tongue] A cleft tongue.

schistomelus (skīs-tōm'ē-lūs) [" + *melos*, limb] A fetus with a cleft in a limb.

schistorachis (skīs-tor'ā-kīs) [" + *rhachis*, spine] Protrusion of membranes through a congenital cleft in the lower vertebral column. SYN: *spina bifida cystica*; *rachischisis*.

Schistosoma (skīs'tō-sō'mā) [" + *soma*, body] A genus of parasitic blood flukes belonging to the family Schistosomatidae, class Trematoda. SEE: *illus.*



SCHISTOSOMA

Female (larger) and male (×5)

S. haematobium A species common in Africa and southwestern Asia. Adults infest the pelvic veins of the vesical plexus. Eggs work their way through the bladder wall of the host and are discharged in the urine. Urinary schistosomiasis is caused by this organism.

S. japonicum A species common in

many parts of Asia. Adults live principally in branches of the superior mesenteric vein. Eggs work their way through the intestinal wall of the host into the lumen and are discharged with feces. Oriental schistosomiasis is caused by this species.

S. mansoni A species occurring in many parts of Africa and tropical America, including the West Indies. Adults live in branches of the inferior mesenteric veins. Eggs are discharged through either the host's intestine or bladder. This species causes bilharzial dysentery or Manson's intestinal schistosomiasis.

schistosomia (skīs'tō-sō'mē-ā) [*+ soma, body*] A deformed fetus with a fissure in the abdomen. The limbs are rudimentary if present.

schistosomiasis (skīs'tō-sō-mī'ās-īs) [Gr. *schistos*, divided, + *soma*, body, + *-iasis*, infection] One of several parasitic diseases due to infestation with blood flukes belonging to the genus *Schistosoma*. The flukes may colonize the urinary tract, mesenteries, liver, spleen, or biliary tree, causing symptoms from these organs. Although schistosomiasis rarely is encountered in the U.S., it is endemic throughout Asia, Africa, and South America, as well as some Caribbean islands. An estimated 200 million people are affected worldwide. Infestation occurs by wading or bathing in water contaminated by immature forms of the fluke called cercariae. SYN: *bilharziasis*.

TREATMENT: The drug of choice is praziquantel.

schistosomicide (skīs'tō-sō'mī-sī) [*+ + L. cidus, killing*] A drug or toxin that kills parasites of the genus *Schistosoma*.

schistosternia (skīs'tō-stēr'nē-ā) [*+ sternon, chest*] Schistothorax.

schistothorax (skīs'tō-thō'rāks) [*+ thorax, chest*] A fissure of the thorax. SYN: *schistosternia*.

schizamnion (skīz-ām'nē-ōn) [Gr. *schizein*, to divide, + *amnion*, lamb] An amnion formed by development of a cavity in the inner cell mass.

schizaxon (skīz-āk'sōn) [*+ axon, axle*] An axon that divides in two equal, or nearly equal, branches.

schizencephaly (skīz'ēn-sēf'ā-lē) [*+ enkephalos, brain*] The presence of one or more clefts running lengthwise through the cerebral hemispheres.

schizo- (skīz'ō) Combining form indicating *division*.

schizocyte (skīz'ō-sīt) [*+ kytos, cell*] Schistocyte.

schizocytosis (skīz'ō-sī-tō'sīs) [*+ + osis, condition*] Schistocytosis.

schizogenesis (skīz'ō-jēn'ēs-īs) [*+ genesis, generation, birth*] Reproduction by fission.

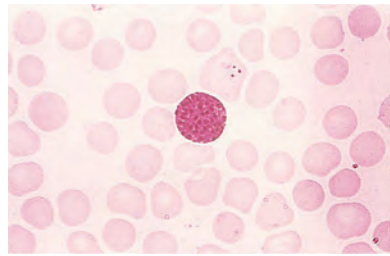
schizogony (skīz-ōg'ō-nē) [*+ gone,*

seed] Asexual reproduction by fission of a cell. Malarial parasites and species of sporozoa (such as *Cryptosporidia*) can reproduce using schizogony. They can also reproduce sexually.

schizogyria (skīz'ō-jī'rē-ā) [*+ gyros, a circle*] A cleft in the cerebral convolutions.

schizoid (skīz'oyd) [*+ eidos, form, shape*] 1. Severely introverted; socially isolated; lacking close personal relationships or the ability to form them. 2. Resembling schizophrenia.

schizont (skīz'ōnt) [*+ ontos, being*] 1. A stage appearing in the life cycle of a sporozoan protozoan resulting from multiple division or schizogony. 2. A stage in the asexual phase of the life cycle of *Plasmodium* organisms found in red blood cells. By schizogony, each gives rise to 12 to 24 or more merozoites. An early schizont is called a *presegmenter*; a mature schizont is called a *rosette* or *segmenter*. SEE: *illus.*



MATURE SCHIZONT IN PLASMODIUM VIVAX

schizonticide (skī-zōn'tī-sīd) [*+ + + L. cidus, killing*] Something that destroys schizonts.

schizonychia (skīz'ō-nīk'ē-ā) [*+ onyx, nail*] Splitting of the nails.

schizophasia (skīz'ō-fā'zē-ā) [*+ phasis, speech*] Speech marked by looseness of associations and flights of ideas.

schizophrenia (skīz'ō-frēn'ē-ā) [Gr. *schizein*, to divide, + *phren*, mind] A thought disorder affecting about 0.4% to 1.2% of the population, marked by delusions, hallucinations, and disorganized speech and behavior (the "positive" symptoms) and by flat affect, social withdrawal, and absence of volition (the "negative" symptoms). Schizophrenia involves dysfunction in one or more areas such as interpersonal relations, work or education, or self-care. Associated features include inappropriate affect, anhedonia, dysphoric mood, abnormal psychomotor activity, cognitive dysfunction, confusion, lack of insight, and depersonalization. Abnormal neurological findings may show a broad range of dysfunction including slow reaction time, poor coordination, abnor-

malities in eye tracking, and impaired sensory gating. Some individuals drink excessive amounts of water (water intoxication) and develop abnormalities in urine specific gravity or electrolyte imbalance. Because none of its clinical features are diagnostic, schizophrenia remains a diagnosis of exclusion. It is important to exclude psychoses with known organic causes such as temporal lobe epilepsy, metabolic disturbances, toxic substances, or psychoactive drugs. The onset of schizophrenia typically occurs between the late teens and the mid-30s; onset prior to adolescence is rare. Gender differences suggest that women are more likely to have a later onset, more prominent mood symptoms, and a better prognosis. Hospital-based studies show a higher rate of schizophrenia in men, whereas community-based studies suggest an equal sex ratio. SEE: *Nursing Diagnoses Appendix*. **schizophrenic** (-ik), *adj.*

ETIOLOGY: The cause of schizophrenia is unknown.

TREATMENT: Medications used to control schizophrenia include antipsychotic drugs that act on dopamine receptors in the brain, such as chlorpromazine, fluphenazine, haloperidol, clozapine, and risperidone. Each of these may be associated with significant side effects; as a result, drug treatment with any of them requires careful monitoring. Supportive psychotherapy or cognitive behavioral therapy may be helpful for the patient and family.

PROGNOSIS: After initial diagnosis, about one in five patients have well-controlled disease. Eighty percent of affected people suffer frequent relapses that may result in periodic hospitalizations, intensive treatment, or crisis management.

catatonic s. A schizophrenic disorder marked by motor immobility or stupor; excessive, purposeless motor activity; extreme negativism or mutism; echolalia or echopraxia; and peculiar voluntary movements such as posturing.

paranoid s. A type of schizophrenic disorder characterized by delusions of persecution, grandiosity, jealousy, or hallucinations with persecutory or grandiose content.

residual s. A schizophrenic disorder marked by continuing evidence of flat affect, impoverished or disorganized speech, and eccentric or odd behavior but showing no evidence of delusions, hallucinations, or disorganized speech.

schizotrichia (skīz'ō-trīk'ē-ā) [" + *thrix*, hair] Splitting of the tips of the hair.

schizozoite (skīz'ō-zō'it) [" + *zoon*, animal] Merozoite.

Schmorl's disease (shmorlz) [Christian G. Schmorl, Ger. pathologist, 1861–

1932] Herniation of the nucleus pulposus through a cracked vertebral end plate into the vertebral body. The resulting bone necrosis is detectable on radiograph and is called *Schmorl's nodes*.

Schmorl's nodes SEE: *Schmorl's disease*.

Schnyder's crystalline dystrophy [Walter F. Schnyder] An autosomal dominantly inherited corneal disease, characterized by ring-shaped deposits of cholesterol crystals in the anterior corneal stroma. The disease may cause visual impairment.

Schober's maneuver (shō'bérz) A test for flexibility of the lumbar spine; used to determine the presence of ankylosing spondylitis (AS) in patients with low back pain.

PATIENT CARE: The patient is asked to stand erect and a mark is placed on the skin overlying the second sacral vertebra. A second mark is placed on the skin 10 cm above the first. The patient then is asked to bend forward. A repeat measurement of the distance between the two marks should equal or exceed 15 cm. If it does not, the patient may have an inflexible or "bamboo" spine, characteristic of AS.

School Function Assessment ABBR: SFA. A rating scale used to measure a student's ability to function effectively on his or her own and with peers in elementary school. The SFA assesses a child's abilities in self-care, mobility, and social interaction and is used as a gauge for determining those children who qualify for special assistance in the classroom and the schoolyard.

school phobia, school refusal A child's avoidance of school, often through the simulation of physical ailments. It is considered to be a form of separation anxiety rather than truancy.

Schultze mechanism (shoolts'ē) Placental expulsion with the fetal surface presenting. This indicates placental separation progressed from the inside to the outer margins.

Schultz reaction (shoolts'is) [Werner Schultz, Ger. physician, 1878–1947] Dale reaction.

Schwalbe's ring (shvāl'bēz) [Gustav Albert Schwalbe, Ger. anatomist, 1844–1916] The thickened peripheral margin of the Descemet's membrane of the cornea of the eye; it is formed by a circular bundle of connective tissue. Also called *Schwalbe's line*.

Schwann cell (shvön) [Theodor Schwann, Ger. anatomist, 1810–1882] One of the cells of the peripheral nervous system that form the myelin sheath and neurilemma of peripheral nerve fibers. In the embryo, the Schwann cells grow around the nerve fiber, forming concentric layers of cell membrane (the myelin sheath). The cy-

toplasm and nuclei of the Schwann cells, external to the myelin sheath, form the neurilemma. SEE: *neuron* for ill.

schwannoma (shwōn-nō'mā) A benign tumor of the neurilemma of a nerve.

schwannosis (shwōn-nō'sis) Hypertrophy of the neurilemma of a nerve.

sciage (sē-āzh') [Fr., a sawing] A movement of the hand used in massage resembling that used in sawing.

sciatic (sī-āt'ik) [L. *sciaticus*] 1. Pert. to the hip or ischium. 2. Pert. to, due to, or afflicted with sciatica. SEE: *sciatica*.

sciatica (sī-āt'ī-kā) [L.] A condition in which pain emanating from the lower back is felt along the distribution of the sciatic nerve in the lower extremity. It typically occurs as a result of lumbar disk disease and is felt in the back of the thigh and sometimes the rest of the leg. In Western countries like the U.S., about 40% to 50% of the population will experience sciatica at some time during their lives. Recovery follows conservative treatment in 3 to 4 weeks in the vast majority of patients. SEE: *meralgia*; *piriformis syndrome*; *sciatic nerve*; *Nursing Diagnoses Appendix*.

ETIOLOGY: The condition may be caused by compression or trauma of the sciatic nerve or its roots, esp. that resulting from a ruptured intervertebral disk or osteoarthritis of the lumbosacral vertebrae; inflammation of the sciatic nerve resulting from metabolic, toxic, or infectious disorders; or pain referred to the distribution of the sciatic nerve from other sources.

SYMPTOMS: This condition may begin abruptly or gradually and is characterized by a sharp shooting pain running down the back of the thigh. Movement of the limb or lower back generally intensifies the suffering. Pain may be uniformly distributed along the limb, but frequently there are certain spots where it is more intense. Numbness and tingling may be present, and the skin innervated by the nerve may occasionally be hypersensitive to light touch.

DIAGNOSIS: Physical examination of the patient with sciatica may reveal pain in the lower back during straight leg raising or changes in lower extremity reflexes.

TREATMENT: Although sciatica may be extremely painful and temporarily disabling, in more than 80% of patients it gradually resolves with mild activity restrictions and nonsteroidal anti-inflammatories, narcotic analgesic drugs, or muscle relaxants. Patients whose symptoms do not improve with these therapies should be reevaluated professionally. Occasionally surgery of the lower back (e.g., to remove a herniated disk) is needed, although this interven-

tion is now used much less often than in the past.

PATIENT CARE: Patients with sciatica who have had a history of cancer, injecting drugs, have fevers associated with sciatica, or lose control of bowel or bladder function in association with the illness should be evaluated immediately with radiographic studies of the lower back (e.g., computerized tomographic or magnetic resonance scans). Elderly patients also may require earlier and closer follow-up care than younger patients. Patients for whom sciatic pain is disabling but in whom objective pathology is not easily demonstrated may benefit from multidisciplinary approaches to their symptoms (e.g., with referrals to chronic pain clinics, physical and occupational therapists, physiatrists, or other specialists).

extraspinal s. Piriformis syndrome.

sciatic nerve The thickest nerve in the body, the main trunk of the sciatic plexus and carrying axons from spinal segments L4-S3 to the hip and lower extremities. It emerges from the pelvic cavity in the back of the hip through the greater sciatic foramen. The nerve is composed of two side-by-side components, the tibial nerve and the common fibular (peroneal) nerve.

SCID *Severe combined immunodeficiency disease.*

science (sī'ēns) [L. *scientia*, knowledge] The intellectual process using all available mental and physical resources to better understand, explain, quantify, and predict normal as well as unusual natural phenomena. The scientific approach involves observation, measurement, and the accumulation and analysis of verifiable data.

life s. The scientific disciplines concerned with living things; included are biology, zoology, medicine, dentistry, surgery, nursing, and psychology.

Science Citations Index ABBR: SCI. An electronic database of scientific journal articles published and referred to by other authors.

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Science of Unitary Human Beings A conceptual model of nursing developed by Martha Rogers. The human being and the environment are conceived of as being unitary, patterned, open, and pan-dimensional energy fields. The goal of nursing is to promote human betterment wherever people are. SEE: *homeodynamics*; *Nursing Theory Appendix*.

scieropia (sī-ēr-ō'pē-ā) [Gr. *skieros*, shadow, + *opsis*, vision] Abnormal vision in which things appear to be in a shadow.

scimitar syndrome A rare congenital malformation of the heart and lungs, marked by dextroposition of the heart,

a malformed right lung, abnormal connections between the right pulmonary veins and the inferior vena cava, and abnormal pulmonary arterial connections to the right lung.

scintigram (sĭn'ti-grām) The record produced by a scintiscan.

scintigraphy (sĭn-tĭg'rá-fē) The injection and subsequent detection of radioactive isotopes to create images of body parts and identify body functions and diseases.

scintillation (sĭn'tĭ-lā'shŭn) [L. *scintillatio*] 1. Sparkling; a subjective sensation, as of seeing sparks. 2. The response of specific crystals to electromagnetic radiation, such as the emissions that come from radioactive substances.

scintimammography (sĭn'tĭ-mā-mŏg'rŏ-fē) [scinti(lation) + ""] Mammography enhanced by a radioactive isotope study of healthy and malignant breast tissue. The radioactive tracer is injected into a peripheral vein and is taken up by metabolically active cells. Breast cancer cells are metabolically more active than normal tissues, take up more tracer, and on the image appear brighter than the surrounding healthy cells. Scintimammography can be used to identify breast cancers that are otherwise difficult to visualize and to guide breast biopsies.

scintiphotography (sĭn'tĭ-fŏ-tŏg'rā-fē) Making images from radioactive emissions, for example, from radioisotopes injected into the body to determine the health or disease of body structures and functions. SEE: *scintigraphy*.

scintiscan (sĭn'tĭ-skān) The use of scintiphotography to create a map of scintillations produced when a radioactive substance is introduced into the body. The intensity of the record indicates the differential accumulation of a substance in the various parts of the body.

scintiscanner (sĭn'tĭ-skān'ēr) The device used in doing a scintiscan.

scirrho- A combining form meaning *hard*.

scirrhoid (skĭr'oĭd) [Gr. *skirrhos*, hard, + *eidōs*, form, shape] Pert. to or like a hard carcinoma.

scirrhoma (skĭr-ŏ'mā) [" + *oma*, tumor] A hard carcinoma, i.e., one with tough or dense connective tissue within it.

scirrhous (skĭr'rŭs) [NL. *scirrhosus*, hard] Hard, like a scirrhous.

scirrhus (skĭr'ŭs) [Gr. *skirrhos*, hard tumor] A hard, cancerous tumor caused by an overgrowth of fibrous tissue.

scission (sĭzh'ŭn) [L. *scindere*, to split] Dividing, cutting, or splitting.

scissors (sĭz'ŏrs) [LL. *cisorium*] A cutting instrument composed of two opposed cutting blades with handles, held together by a central pin. This allows

the cutting edge to be opened and closed.

scissura (sĭ-sŭ'rā) *pl. scissuræ* [L., to split] A fissure or cleft; a splitting.

sclera (sklĕr'ā) *pl. sclerae* [Gr. *skleros*, hard] The outer layer of the eyeball made of fibrous connective tissue. At the front of the eye, it is visible as the white of the eye and ends at the cornea, which is transparent. **scleral**, *adj.*

blue s. An abnormal thinning of the sclera through which a blue uveal pigment is seen. This may be found in people with disorders of collagen formation such as osteogenesis imperfecta.

scleradenitis (sklĕ'rād-ĕn-ĭ'tis) [" + *aden*, gland, + *itis*, inflammation] Inflammation and induration of a gland.

scleratogenous (sklĕ'rā-tŏj'ĕ-nŭs) Sclerogenous.

sclerectasia (sklĕ'rĕk-tā'zĕ-ā) [" + *ektasis*, dilatation] Protrusion of the sclera.

sclerectomy (sklĕ'rĕk'tŏ-mĕ) [" + *ektome*, excision] 1. Excision of a portion of the sclera. SYN: *scleroticectomy*. 2. Removal of adhesions in chronic otitis media.

scleredema (sklĕr'ĕ-dĕ-mā) [" + *oidema*, swelling] Induration of the skin of the upper back and neck, usually occurring in association with type 2 DM, and occasionally in patients after acute streptococcal infections. In diabetic patients it may regress with strict control of blood sugars. SEE: *illus.*



SCLEREDEMA

s. adultorum Buschke's scleredema. **Buschke's s.** SEE: *Buschke's scleredema*.

s. neonatorum Scleroderma neonatorum.

sclerema (sklĕ-rĕ'mā) [Gr. *skleros*, hard] Scleroderma.

s. neonatorum Hardening and tightening of the skin and subcutaneous tissue of the newborn. This is a rare disease, sometimes associated with premature birth, neonatal sepsis, and

dehydration. SYN: *sclerema adiposum*; *scleroderma neonatorum*.

sclerencephalia (sklĕ'rĕn-sĕ-fă'lĕ-ă) [" + *enkephalos*, brain] Sclerosis of the brain.

scleritis (sklĕ-rĭ'tis) [" + *itis*, inflammation] Inflammation of the sclera. SYN: *scleritis*. SEE: *episcleritis*.

annular s. Inflammation limited to the area surrounding the limbus of the cornea. A complete ring is formed.

anterior s. Scleritis of the area adjacent to the limbus of the cornea.

posterior s. Scleritis limited to the posterior half of the globe of the eye with loss of vision and ocular pain.

scleroblastema (sklĕ'rō-blăs-tĕ'mă) [Gr. *scleros*, hard, + *blastema*, sprout] The embryonic tissue from which formation of bone takes place.

scleroblastic (sklĕ'rō-blăs-tĕm'ĭk) Relating to or derived from scleroblastema.

sclerochoroiditis (sklĕ'rō-kō'royd-ĭ'tis) [" + *chorioeides*, skinlike, + *itis*, inflammation] Inflammation of the sclera and choroid coat of the eye.

posterior s. Posterior staphyloma.

scleroconjunctival (sklĕ'rō-kōn'jŭnk-tĭ'văl) [" + L. *conjunctivus*, to bind together] Pert. to the sclera and conjunctiva.

sclerocornea (sklĕ'rō-kor'nĕ-ă) [" + L. *corneus*, horny] The sclera and cornea together considered as one coat.

sclerodactylia (sklĕ'rō-dăk-tĭl'ĕ-ă) [" + *daktylos*, a finger] Induration of the skin of the fingers and toes. SYN: *acroscleroderma*.

scleroderma (sklĕ'ră-dĕr'mă) [Gr. *scleros*, hard, + *derma*, skin] A chronic manifestation of progressive systemic sclerosis in which the skin is taut, firm, and edematous, limiting movement. SEE: *illus.*; *sclerosis*, *progressive systemic*; *Nursing Diagnoses Appendix*. **sclerodermatous**, *adj.*



SCLERODERMA

circumscribed s. Localized patches of linear sclerosis of the skin. There is no systemic involvement, and the course of the disease is usually benign.

s. neonatorum *Sclerema neonatorum*.

sclerodermatitis (sklĕ'rō-dĕr-mă-tĭ'tis) [-

Gr. *scleros*, hard, + *derma*, skin, + *itis*, inflammation] Inflammation of the skin accompanied by thickening and hardening.

sclerogenic (sklĕ'rō-jĕn'ĭk) [" + *genan*, to produce] Sclerogenous.

sclerogenous (sklĕ'rō-jĕ-nŭs) [" + *genan*, to produce] Causing sclerosis or hardening of tissue. SYN: *sclerogenic*.

scleroid (sklĕ'rōyd) [" + *eidos*, form, shape] Having a hard or firm texture.

scleroiditis (sklĕ'rō-ĭ-rĭ'tis) [" + *iris*, colored circle + *itis*, inflammation] Inflammation of both the sclera and the iris.

sclerokeratitis (sklĕ'rō-kĕr-ă-tĭ'tis) [" + *keras*, horn, + *itis*, inflammation] Cellular infiltration with inflammation of the sclera and cornea. SYN: *sclerokeratosis*.

sclerokeratoiritis (sklĕ'rō-kĕr'ă-tō-ĭ-rĭ'tis) [" + " + *iris*, colored circle, + *itis*, inflammation] Inflammation of the sclera, cornea, and iris.

sclerokeratosis (sklĕ'rō-kĕr'ă-tō'sis) [" + " + *osis*, condition] Sclerokeratitis.

scleroma (sklĕ-rō'mă) [" + *oma*, tumor] Indurated, circumscribed area of granulation tissue in the mucous membrane or skin. SEE: *sclerosis*.

scleromalacia (sklĕ'rō-mă-lă'sĕ-ă) [Gr. *scleros*, hard, + *malakia*, softening] A softening of the sclera.

s. perforans Scleromalacia accompanied by perforation.

scleromyxedema (sklĕ'rō-mĭk'sĕ-dĕ'mă) [" + *myxa*, mucus, + *oidema*, swelling] A systemic form of papular mucinosis (also known as lichen myxedematosus), in which a scleroderma-like rash is accompanied by lesions of visceral organs and often paraproteinemia.

scleronychia (sklĕ'rō-nĭk'ĕ-ă) [" + *onyx*, nail] Thickening and hardening of the nails.

scleronyxis (sklĕ-rō-nĭk'sis) [Gr. *scleros*, hard, + *nyxis*, a piercing] Surgical puncture of the sclera. SYN: *scleroticonyxis*; *scleroticopuncture*.

sclero-oophoritis (sklĕ'rō-ō-ōf'ō-rĭ'tis) [" + *oophoros*, bearing eggs, + *itis*, inflammation] Induration and inflammation of the ovary.

sclerophthalmia (sklĕ'rōf-thăl'mĕ-ă) [" + *ophthalmos*, eye] A congenital condition in which opacity of the sclera advances over the cornea.

scleroplasty (sklĕ'rō-plăs'tĕ) [" + *plassein*, to form] Plastic surgery of the sclera.

scleroprotein (sklĕ'rō-prō'tĕ-ĭn) [" + *protos*, first] A group of proteins noted for their insolubility in most chemicals; found in skeletal tissue, cartilage, hair, and nails and in animal claws and horns.

sclerosal (sklĕ-rō'săl) Sclerous.

sclerosant (sklĕ-rō'sănt) [Gr. *scleros*,

hard] Something that produces sclerosis.

sclerose (sklĕ-rōs') [Gr. *skleros*, hard] To become hardened. **sclerosing**, **sclerosed**, *adj.*

sclerosis (sklĕ-rō'sis) [Gr. *sklerosis*, to harden] A hardening or induration of an organ or tissue, esp. that due to excessive growth of fibrous tissue. SEE: *arteriosclerosis*; *cerebroscclerosis*. **sclerotic** (-rōt'ik), *adj.*

amyotrophic lateral s. ABBR: ALS. Motor neuron disease. SEE: *Nursing Diagnoses Appendix*.

annular s. Sclerosis in which a hardened substance forms a band about the spinal cord.

arterial s. Arteriosclerosis.

arteriolar s. Sclerosis of the arterioles.

diffuse s. Sclerosis affecting large areas of the brain and spinal cord.

hyperplastic s. Medial s.

insular s. Multiple s.

intimal s. Atherosclerosis.

lateral s. Sclerosis of the lateral column of the spinal cord. SEE: *amyotrophic lateral sclerosis*.

lobar s. Sclerosis of the cerebrum resulting in mental disturbances.

medial s. Sclerosis involving the tunica media of arteries, usually the result of involuntional changes accompanying aging. SYN: *hyperplastic sclerosis*.

multiple s. SEE: *multiple sclerosis*.

myelinoclastic diffuse s. Schilder's disease.

neural s. Sclerosis with chronic inflammation of a nerve trunk with branches.

nuclear s. An increase in the refractive index of the eye's crystalline lens, which culminates in the development of nuclear cataracts. Before the cataract fully opacifies, the patient's near vision may improve, a phenomenon known as senopia or "second sight."

progressive systemic s. ABBR: PSS. SEE: *progressive systemic sclerosis*.

renal s. Nephrosclerosis.

systemic s. Progressive systemic sclerosis.

tuberous s. ABBR: TS. An autosomal dominant disorder in which multiple tumors appear in the skin, brain, heart, and kidneys of affected children. Infants born with this disease may have facial angiofibromas, astrocytomas of the central nervous system, hamartomas of the retina, and other lesions, producing hydrocephalus, mental retardation, autism, and seizures. SYN: *Bourneville disease*.

vascular s. Atherosclerosis.

venous s. Phlebosclerosis.

sclerostenosis (sklĕr'ō-stĕ-nō'sis) [" + *stenosis*, act of narrowing] Contraction

and induration of tissues, esp. those about an orifice.

sclerostomy (sklĕ-rōs'tō-mĕ) [" + *stoma*, mouth] The surgical formation of an opening in the sclera.

sclerotherapy (sklĕr'ō-thĕr'ā-pĕ) [" + *therapeia*, treatment] The injection of irritating chemicals into vascular spaces or body cavities to harden, fill, or destroy them. Sclerotherapy has been used to manage varicose veins, hemorrhoids, esophageal varices, benign hepatic cysts, malignant pleural effusions, and intracranial aneurysms, among other diseases. A common complication of the procedure is injury to neighboring tissues. Commonly used sclerosing agents include absolute ethanol and sodium tetradecyl sulfate.

sclerothrix (sklĕr'ō-thrĭks) [" + *thrix*, hair] Brittleness of the hair.

sclerotica (sklĕ-rōt'ī-kā) [L. *scleroticus*, hard] Sclera.

sclerotic dentin Areas of dentin where the tubules have been filled by mineralization, producing a denser, radiopaque dentin; it is often produced in response to caries, attrition, and abrasion.

sclerotium (sklĕ-rō'shĕ-ūm) A hardened mass formed by the growth of certain fungi. The sclerotium formed by ergot on rye is of medical importance due to its toxicity.

sclerotome (sklĕr'ō-tōm) [" + *tome*, incision] **1.** A knife used in incision of the sclera. **2.** One of a series of segmentally arranged masses of mesenchymal tissue lying on either side of the notochord. They give rise to the vertebrae and ribs.

sclerotomy (sklĕ-rōt'ō-mĕ) Surgical incision of the sclera.

anterior s. An incision made at the angle of the anterior chamber of the eye in glaucoma.

posterior s. An incision through the sclera into the vitreous for treatment of a detached retina or removal of a foreign body.

sclerous (sklĕr'ūs) Hard; indurated. SYN: *sclerosal*.

SCN5A sodium channel A sodium channel found in heart muscle cells. Mutations in this channel produce cardiomyopathy and dysrhythmias, including atrial fibrillation.

scoleciasis (skō-lĕ-sī'ā-sīs) [Gr. *skolex*, worm, + *-iasis*, condition] The presence of larval forms of butterflies or moths in the body.

scoleciform (skō-lĕs'ī-form) [" + L. *forma*, form] Resembling a scolex.

scolecoid (skō'lĕ-koyd) [" + *eidōs*, form, shape] Resembling a worm.

scolex (skō'lĕks) *pl.* **scolices** [Gr. *skolex*, worm] The headlike segment of a tapeworm, by which it attaches itself to the wall of the intestine. Scolices usually possess hooks, suckers, or grooves (bothria) for attachment.

scoli-, scolio- Combining forms meaning *crooked or bent*.

scoliometer (skō'lē-ōm'ēt-ēr) [*" + metron, measure*] A device for measuring curves, esp. the lateral ones of the spine.

scoliosis (skō'lē-ō'sīs) [Gr. *skoliosis, crookedness*] A lateral curvature of the spine. It usually consists of two curves, the original abnormal curve and a compensatory curve in the opposite direction. Scoliosis may be functional, structural, or idiopathic. Functional (postural) scoliosis usually occurs as a result of a discrepancy in leg length and corrects when the patient bends toward the convex side. Structural scoliosis is related to vertebral bone deformities and thus does not correct with posture changes. Idiopathic scoliosis (the most common kind) may be transmitted as an autosomal dominant or multifactorial trait. **SEE:** *illus.; Nursing Diagnoses Appendix.*



SCOLIOSIS

SYMPTOMS: Scoliosis rarely produces any symptoms until it is well established; then backache, fatigue, and dyspnea from ventilatory compromise may occur. Diagnosis is based on physical examination, anteroposterior and lateral spinal x-rays, and by using the Cobb method to measure the angle of curvature.

TREATMENT: Scoliosis may be treated through the use of a brace to straighten the abnormal spinal curvature or with corrective orthopedic surgery (e.g., the placement of a supportive rod along the spine or spinal fusion).

PATIENT CARE: Muscle strengthening exercises should be done daily while in and out of the brace. Follow-up as-

essment and brace adjustment should be done periodically. As the skeleton matures, brace wear is gradually reduced to night-time use only. Surgery is indicated for scoliosis that progresses despite bracing. Postoperative visits are required for several months to monitor correction stability. Provisions are made to assist the adolescent and family to meet the psychosocial needs associated with the illness. The patient and family are taught about treatment management (cast-care, brace-use, traction, electrical stimulation, or surgery), exercises, activity level, skin care, prevention of complications, and breathing exercises. When necessary, preoperative teaching is provided, including pre-anesthesia breathing exercises, post-operative use of an incentive spirometer, surgical pain management, and prevention of thromboembolic or other complications. Following surgery, all general patient care concerns apply.

Upon discharge, home-health care may be needed, and the school-age child or adolescent will require education in the home until he or she is able to return to school. Activity and activity limitations are explained, and diversional activities suggested. The patient is encouraged to provide self-care as much as possible. Wearing his/her own clothes, washing and styling his/her own hair, and applying make-up help to enhance morale. Educational and support resources are discussed with the patient and family. Nurses who work in educational settings routinely screen children for scoliosis during physical examinations.

cicatricial s. Scoliosis due to fibrous scar tissue contraction resulting from necrosis.

congenital s. Scoliosis present at birth, usually the result of defective embryonic development of the spine.

coxitic s. Scoliosis in the lumbar spine caused by tilting of the pelvis in hip disease.

empyematic s. Scoliosis following empyema and retraction of one side of the chest.

functional s. Scoliosis that is caused not by actual spinal deformity but by another condition such as unequal leg lengths. The curve reduces when the other condition is ameliorated.

habit s. Scoliosis due to habitually assumed improper posture or position.

inflammatory s. Scoliosis due to disease of the vertebrae.

ischiatric s. Scoliosis due to hip disease.

myopathic s. Scoliosis due to weakening of the spinal muscles.

neuropathic s. A structural scoliosis caused by congenital or acquired neurological disorders.

ocular s. Scoliosis from tilting of the

head because of visual defects or extraocular muscle imbalance.

osteopathic s. Scoliosis caused by bony deformity of the spine. SEE: *structural s.*

paralytic s. Scoliosis due to paralysis of muscles.

protective s. An acute side shifting of the lumbar spine, usually away from the side of pathology. The body is attempting to move a nerve root away from a bulging intervertebral disk herniation.

rachitic s. Scoliosis due to rickets.

sciatic s. The patient assumes a laterally bent posture to reduce sciatic nerve symptoms.

static s. Scoliosis due to a difference in the length of the legs.

structural s. An irreversible lateral spinal curvature that has a fixed rotation. The vertebral bodies rotate toward the convexity of the curve; the rotation results in a posterior rib hump in the thoracic region on the convex side of the curve. In structural scoliosis, the spine does not straighten when the patient bends.

scoliotic (skō-lē-ōt'ik) Suffering from, or related to, scoliosis.

scombroid (skōm'broyd) Fish of the suborder Scombroidea, including mackerel, tuna, bonito, albacore, and skipjack.

scombroid fish poisoning SEE: *under poisoning.*

scoop (skoop) [ME., a ladle] A spoon-shaped surgical instrument.

bone s. A curette for scraping or removing necrosed bone or the contents of suppurative tracts.

bullet s. An instrument for dislodging bullets.

cataract s. An instrument for removing fluids or foreign growths.

ear s. A curet for removing middle ear granulations.

lithotomy s. An instrument for dislodging encysted stones or debris.

mastoid s. An instrument used in mastoid operations.

renal s. An instrument used to dislodge or remove small stones from the pelvis of a kidney.

-scope [Gr. *skopein*, to examine] Combining form, used as a suffix, meaning *to view, to examine.*

scopophilia (skō'pō-fil'ē-ä) [" + *phil-ēin*, to love] The derivation of sexual pleasure from visual sources such as nudity and obscene pictures.

active s. Voyeurism.

passive s. Sexual pleasure derived from being observed by others.

-scopy [Gr. *skopein*, to examine] Combining form meaning *to examine*, esp. with a device or tool.

scorbutic (skor-bū'tik) [NL. *scorbuticus*, scurvy] Concerning or affected with scurvy.

scorbutigenic (skor-bū'ti-jën'ik) [LL. *scorbutus*, scurvy, + Gr. *gennan*, to produce] Something that causes scurvy.

scorbutus (skor-bū'tūs) [LL., scurvy] Scurvy.

score (skor) **1.** A rating tool or scale to assess the level of health or the severity of an illness. SEE: *index, DMF; periodontal (Ramfjord) index.* **2.** A rating or grade as compared with a standard of other individuals, esp. in a competitive event. **3.** To mark the skin with lines in order to have landmarks available, as in plastic surgery.

Bishop's s. SEE: *Bishop's score.*

C.R.O.P. S. A critical care assessment score that measures compliance, respiratory rate, oxygenation, and pressure values.

S. for Neonatal Acute Physiology A measure of the severity of illness in patients in neonatal intensive care.

scorpion (skor'pē-ōn) [Gr. *skorpis*, to cut off] An arthropod of the class Arachnida and order Scorpionida. It varies in length from less than 2 in (5 cm) for the small bark scorpions of Arizona to 8 in (20 cm) for some African scorpions. Most scorpions are nocturnal and reclusive and are most active when the night temperatures remain above 70°F (21°C). The tail of the scorpion contains two venom glands connected to the tip of the stinger.

scoto- (skō'tō) Combining form meaning *darkness.*

scotoma (skō-tō'mä) *pl. scotomata* [Gr. *skotoma*, to darken] An island-like blind spot in the visual field.

absolute s. An area in the visual field in which there is absolute blindness.

annular s. A scotomatous zone that encircles the point of fixation like a ring, not always completely closed but leaving the fixation point intact. SYN: *ring scotoma.*

arcuate s. An arc-shaped scotoma near the blind spot of the eye. It is caused by a nerve bundle defect on the temporal side of the optic disk.

central s. An area of depressed vision involving the point of fixation, seen in lesions of the macula.

centrocecal s. A defect in vision that is oval-shaped and includes the fixation point and the blind spot of the eye.

color s. Color blindness in a limited portion of the visual field.

eclipse s. An area of blindness in the visual field caused by looking directly at a solar eclipse.

flittering s. Scintillating s.

negative s. A scotoma not perceptible by the patient.

peripheral s. A defect in vision removed from the point of fixation of the vision.

physiological s. A blind spot caused by an absence of rods and cones where the optic nerve enters the retina.

positive s. An area in the visual field that is perceived by the patient as a dark spot.

relative s. A scotoma that causes the perception of an object to be impaired but not completely lost.

ring s. Annular s.

scintillating s. An irregular outline around a luminous patch in the visual field that occurs following mental or physical labor, eyestrain, or during a migraine.

scotometer (skō-tōm'ēt-ēr) [*l'* + *metron*, a measure] A device for detecting and measuring scotomata in the visual field.

scotometry (skō-tōm'ē-trē) The locating and measurement of scotomata.

scotopia (skō-tō'pē-ā) [*l'* + *ops*, eye] Adjustment of the eye for vision in dim light; the opposite of photopia. **scotopic** (-tōp'ik), *adj.*

scotopsin (skō-tōp'sin) The protein portion of the rods of the retina of the eye. It combines with 11-*cis*-retinal to form rhodopsin.

scout film In radiology, an x-ray film, esp. of the abdomen, for evaluating the condition of the body prior to beginning an invasive or potentially hazardous examination.

scr *scruple*.

scrape (skrāp) To remove from the surface with a scalpel or other edged instrument.

scraping (skrā'ping) Removal of cells, as from diseased tissue, with an edged instrument for cytologic examination. **SEE: illus.**



SCRAPING A BLISTER

scratch (skrāch) [ME. *cracchen*, to scratch] **1.** A mark or superficial injury produced by scraping with the nails on a rough surface. **2.** To make a thin, shallow cut with a sharp instrument. **3.** To rub the skin, esp. with the fingernails, to relieve itching. Scratching temporarily relieves itching by soothing the cutaneous nerves, but in the long run, it may worsen the condition that caused the itching. **SEE: pruritus.**

scratch test Placement of an appropriate

dilution of a test material suspected of being an allergen in a lightly scratched area of the skin. If the material is an allergen, a wheal will develop within 15 min. The scratch test is used to detect IgE antibody responses, (e.g., in patients with a history of allergy to penicillin). **SEE: skin test.**

screen [O.Fr. *escren*] **1.** To determine the presence of a disease or its characteristics in a broad community or a selected group. **2.** A structure or substance used to protect, guard, or shield from a damaging influence such as x-rays, ultraviolet light, or insects. **3.** A system used to select or reject personnel. **4.** In psychiatry, the blocking of one memory with another.

intensifying s. In radiography, a paired sheet of photostimulable (fluorescent) materials surrounding the x-ray film, used to translate an incoming image carried by x-ray photons into light. Light exposes x-ray film more readily than does photon radiation; the use of intensifying screens reduces the need for high levels of radiation exposure during imaging.

tangent s. A simple device used in perimetry to test the central portion of the visual field. **SEE: Bjerrum's screen.**

screening **1.** Evaluating patients for diseases such as cancer, heart disease, or substance abuse before they become clinically obvious. Screening can play an important part in the early diagnosis and management of selected illnesses and in some instances prolongs lives. **SYN: screening test.** **2.** In psychiatry, the initial examination to determine the mental status of a person and the appropriate initial therapy.

cancer screening A program to detect cancer before it causes symptoms or signs, esp. before it metastasizes and threatens life or health. Common modes of cancer screening include Pap testing for cervical cancer and mammography for breast cancer.

high-throughput s. The testing of the biological or pharmacological properties of molecules by immersion in a large number of chemical baths or cellular systems. It is used, e.g., to determine whether any of a group of chemicals has specific therapeutic actions.

newborn s. The testing of infants in the first days of life for serious illnesses (e.g., congenital deafness, cystic fibrosis, hemoglobinopathies, hypothyroidism, and phenylketonuria).

universal newborn hearing s. **ABBR: UNHS.** A public health effort to identify infants born with impaired hearing at the earliest possible age (e.g., before 6 months). UNHS has been implemented by most states in the U.S. to identify those infants whose hearing loss is more than 40 decibels below the

mean (i.e., those infants with the greatest risk of impaired speech acquisition in childhood). Children with profound hearing loss are at risk for poor achievement in school and diminished success in work as adults.

screening test Screening.

screening test, cholesterol A preventive strategy for measuring cholesterol levels in asymptomatic people to identify those with high cholesterol (who are at risk for cardiovascular disease) and begin therapy to lower these levels. SEE: *cholesterol* for table.

screening test, multiphasic A battery of tests used to attempt to determine the presence of one or more diseases.

screw (skroo) A cylindrical fastener with a spiral groove running along its surface, often used in surgeries as an internal fixator (e.g., to attach bones to plates or prostheses).

expansion s. A mechanical device set into a removable or fixed appliance to enlarge the dental arch.

screw-in Implanted; permanently fastened to tissue. Said, for example, of catheter leads used for permanent or semipermanent cardiac pacemaking.

Scribner shunt (skrīb'nēr) [Belding Scribner, U.S. physician, 1921–2003] A tube, usually made of synthetic material, used to connect an artery to a vein. It is used in patients requiring frequent venipuncture as in hemodialysis. The shunts may develop complications such as infection, thrombosis, and release of septic emboli.

scrobiculate (skrō-bīk'ū-lāt) [L. *scrobiculus*, little trench] Having shallow depressions; pitted.

scrobiculus (skrō-bīk'ū-lūs) [L., little trench] A small groove or pit.

scrofula (skrōf'ū-lā) [L., breeding sow] A form of extrapulmonary tuberculosis in which there is infection of the cervical lymph nodes. It is most common in children under age 15 and may be present without obvious disease in the lung. Like other forms of TB, it is treated with antitubercular drugs (e.g., isoniazid, rifampin, pyrazinamide). SEE: *lymphadenitis, tuberculosis*.

scrotoctomy (skrō-tēk'tō-mē) [ʹ + Gr. *ektome*, excision] Excision of part of the scrotum.

scrotoitis (skrō-tīt'īs) [ʹ + ʹ] Inflammation of the scrotum.

scrotocele (skrō'tō-sēl) [ʹ + Gr. *kele*, tumor, swelling] Hernia in the scrotum.

scrotoplasty (skrō'tō-plās'tē) [ʹ + Gr. *plassein*, to form] Plastic surgery on the scrotum.

scrotum (skrō'tūm) *pl. scrota, scrotums* [L., a bag] The pouch found in most male mammals that contains the testicles and part of the spermatic cord. Constituent parts of the scrotum are skin;

a network of nonstriated muscular fibers called dartos; cremasteric, spermatic, and infundibuliform fasciae; cremasteric muscle; and tunica vaginalis. **scrotal** (-tāl), *adj.*

scrubbing [MD. *schrubben*] **1.** Washing the hands, fingernails, and forearms, including the elbows, prior to donning appropriate gowns and gloves to participate in surgery or other sterile procedures. The precise procedure to follow usually is posted in a special area where the washing is done. It typically entails scrubbing with germicidal soap and water, and using a nail brush to remove debris. **2.** Preparing the skin of the patient for surgery with an antiseptic solution.

scrub typhus An acute febrile illness, occasionally complicated by pneumonia, meningoencephalitis, respiratory distress syndrome, or septic shock caused by *Orientia tsutsugamushi*. Generally limited to Asian and Pacific nations, the disease is transmitted to humans by the bites of infected mites and chiggers. It can be treated with tetracyclines or azithromycin. The mortality rate in untreated patients is about 1% to 4%. SYN: *mite-borne typhus; tsutsugamushi disease*.

scruple (skrū'pl) [L. *scrupulus*, small, sharp stone] ABBR: scr. Twenty grains in apothecaries' weight; 1.296 g.

scuba *self-contained underwater breathing apparatus*.

sculpt (skūlpt) [Fr. *sculpter*, to carve] To change the form or shape of a material, including a part of the body. In health care the term is applied to the contouring of both hard and soft tissues, e.g., using by exercise or cosmetic surgery.

Scultetus binder (skūl-tē'tūs) [Johann Schultes (Scultetus), German surgeon, 1595–1645] A many-tailed binder or bandage, applied around the abdomen so that the ends overlap each other as if they were roof shingles. The binder holds dressings in place and supports abdominal muscles postoperatively.

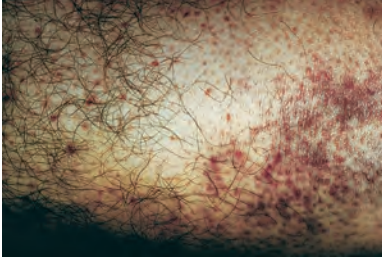
Scultetus position Position in which the head is low and the body is on an inclined plane.

scum (skūm) [ME. *scume*] Slimy floating islands of bacteria or impurities on the surface of a culture; an interrupted pellicle of bacterial growth.

scurf (skūrf) [AS. *scurf*] A branny desquamation of the epidermis, esp. on the scalp. SEE: *dandruff*.

scurvy (skūr'vē) [L. *scorbutus*] A disease caused by inadequate intake of ascorbic acid, whose symptoms include fatigue; skin, joint, and gum bleeding; impaired wound healing; dry skin; lower extremity edema; follicular hyperkeratosis; and coiling of body hairs. It is rare in Western nations, where it is

found primarily among alcoholics, the chronically mentally ill, and the socially isolated. It can be prevented with regular consumption of fruits and vegetables, foodstuffs that provide a rich source of dietary vitamin C. **SEE: illus.**



SCURVY

infantile s. A form of scurvy that sometimes follows the prolonged use of condensed milk, sterilized milk, or proprietary foods that do not contain supplementary vitamin C.

SYMPTOMS: This condition is characterized by anemia, pseudoparalysis, thickening of the bones from subperiosteal hemorrhage, ecchymoses, nonpitting edema, and a tendency toward fractures of the epiphyses. **SYN:** *Barlow's disease*.

rebound s. Ascorbic acid deficiency symptoms caused by discontinuation of megadoses of vitamin C.

scute (sküt) [L. *scutum*, shield] A thin plate or scale.

scutiform (skü'ti-form) [ʹ + *forma*, shape] Shield-shaped.

scutulum (skü'tü-lüm) *pl.* **scutula** [L., a little shield] A lesion of the scalp caused by the fungus *Trichophyton schoenleinii*. The lesion appears as a yellow cup-shaped crust consisting of a dense mass of mycelia and epithelial debris. The cup faces up, and its center is pierced by the hair around which it has developed. **SEE: favus.** **scutular** (-lär), *adj.*

scutum (skü'tüm) [L., shield] A plate of bone resembling a shield.

scybalous (sib'ä-lüs) [Gr. *skybalon*, dung] Of the nature of hard fecal matter.

scybalum (sib'ä-lüm) *pl.* **scybala** A hard, rounded fecal mass.

scyphoid (si'foid) [Gr. *skyphos*, cup, + *eidos*, form, shape] Cup-shaped.

S.D. 1. *skin dose*. 2. *standard deviation*.

SDA 1. *specific dynamic action*. 2. *Abbr. for Latin sacrodextra anterior*, the right sacroanterior fetal position.

SDMS *Society of Diagnostic Medical Sonographers*.

Se Symbol for the element selenium.

S.E. *standard error*.

sea cucumber A cylindrical marine invertebrate of the family Holothuria;

some species have tentacles that contain a mild venom. Contact with the organism may produce dermatitis.

seal 1. To close firmly. 2. A material such as an adhesive or wax used to make an airtight closure.

border s. The edge of a denture that contacts the tissues in order to close the area under the denture to entrance by food, air, or liquids.

posterior palatal s. A seal at the posterior border of a denture.

velopharyngeal s. A seal between the oral and nasopharyngeal cavities.

sealant A substance applied to prevent leakage into or out of an area.

dental s. A resin that bonds to the etched enamel of a tooth and forms a protective coating resistant to chemical or physical breakdown. The sealant is placed in the deep pits and fissures to prevent the accumulation of debris and bacteria in cavity-prone areas. Dental sealants are used in addition to fluorides to prevent caries (cavities). Also called *pit and fissure sealant*.

sealed source radiation Any radioactive material that is enclosed in a liner or case. Sealed source radioisotopes are used in clinical medicine as radioactive implants, e.g., in brachytherapy used to treat cancers of the prostate. Common radioisotopes used in sealed sources include strontium-90, cesium-137, and radium-226.

searcher (sërçh'ër) [ME. *serchen*] An instrument for locating the opening of the ureter previous to inserting a catheter or exploring the sinuses, and esp. for detecting stones in the bladder. **SYN:** *sound*.

seasickness [AS. *sae*, sea, + *seocness*, illness] A form of motion sickness due to the motion of a boat. **SEE: motion sickness**.

seasonal affective disorder **ABBR:** SAD. A mood disorder characterized by dysphoria or depression in fall and winter, and, sometimes, relative mania or hypomania in the spring and summer. The disorder is more common in women than men, and in younger persons than older ones. A characteristic of the disorder is its ability to be treated with bright ambient or artificially provided light. Antidepressant medications (e.g., fluoxetine or bupropion) are also helpful. **SYN:** *winter depression*.

PATIENT CARE: Treatment consists of phototherapy: using artificial bright light exposure or light-emitting diodes, esp. during the mornings of the shorter days of the year. Other therapies include antidepressant medications (e.g., bupropion) and psychiatric or psychological counseling (e.g., cognitive behavioral therapy). To increase exposure to natural light, health care professionals should encourage patients to engage in

outdoor daytime activities during fall and winter

seat A structure on which another structure rests or is supported.

basal s. Tissues in the mouth that support a denture.

bath tub s. 1. An assistive technology device that helps people with functional limitations to bathe. 2. A device for bathing infants. Some seats have modified features to help people transfer in and out of tubs, pools, or showers.



Infant drownings have occurred during bathtub seat use.

elevated toilet s. Raised toilet s.

raised toilet s. A device for raising the height of a toilet to facilitate use by persons with limited strength or movement. SYN: *elevated toilet seat*.

rest s. An area on which a denture or restoration rests.

seating system Adapted seating device.

Seattle foot [after the city Seattle, Washington, U.S., where it was developed] An artificial foot designed to absorb the impact of foot-to-floor contact with a dynamic elastic structure.

seatworm (sēt'wōrm) Pinworm.

sebaceous (sē-bā'shūs) [L. *sebaceus*, made of tallow] Containing, or pert. to, sebum, an oily, fatty matter secreted by the sebaceous glands.

sebaceous gland An oil-secreting gland of the skin. The glands are simple or branched alveolar glands, most of which open into hair follicles. They are holocrine glands; their secretion, known as sebum, arises from the disintegration of cells filling the alveoli. Some aberrant glands are found in the cheeks or lips of the oral cavity, well separated from hair follicles. SEE: *Fordyce's disease*.

sebiparous (sē-bīp'ā-rūs) [+ *parere*, to produce] Producing sebum or sebaceous matter.

sebo- Combining form meaning *fat, tallow*.

sebopsoriasis (sēb'ō-sō-rī'ā-sīs) [+ +] A red, scaly rash on the face and scalp having characteristics that resemble both seborrheic dermatitis and psoriasis.

seborrhea (sēb-or-ē'ā) [+ Gr. *rhoia*, flow] A disease of the sebaceous glands marked by an increase in the amount, and often an alteration of the quality, of the fats secreted by the sebaceous glands.

TREATMENT: Mild dandruff, a type of seborrhea, may be treated with a shampoo containing selenium sulfide or sulfur. Severe seborrhea is treated with a lotion or cream containing corticosteroids, rubbed into the affected areas two or three times a day.

s. capitis Seborrhea of the scalp.

s. corporis Dermatitis seborrheica.

s. faciei Seborrhea of the face.

s. furfuracea Dermatitis seborrheica.

s. nigricans Seborrhea with pigmented crusts.

s. oleosa Skin that appears shiny or oily.

s. sicca Dandruff.

seborrheic (sēb'ō-rē'ik) [L. *sebum*, tallow, + Gr. *rhoia*, flow] Afflicted with or like seborrhea.

seborrheid (sēb'ō-rē'id) [+ Gr. *rhoia*, flow] Dermatitis seborrheica.

sebum (sē'būm) [L., tallow] A fatty secretion of the sebaceous glands of the skin. It varies in different parts of the body. Sebum from the ears is called *cerumen*; that from the foreskin is called *smegma*.

s. palpebrale Lema.

Seckel syndrome (sēk'ēl) [H. P. G. Seckel, German Pediatrician, 1900–1960] A rare autosomal recessive developmental disorder characterized by intrauterine growth retardation, dwarfism, facial, skeletal and dental anomalies, and developmental and neurological deficits.

seclusion of pupil Annular synechia.

secodont (sē'kō-dōnt) [L. *secare*, to cut, + Gr. *odous*, tooth] Having molar teeth with cutting edges on the cusps.

secondary (sēk'ōn-dār'ē) 1. Next to or following; second in order. 2. Produced by a primary cause.

secondary antiphospholipid antibody syndrome ABBR: SAPS. Antiphospholipid antibody syndrome occurring in patients with systemic lupus erythematosus or other rheumatologic syndromes.

secondary nursing care Nursing care aimed at early recognition and treatment of disease. It includes general nursing intervention and teaching of early signs of disease conditions so that prompt medical care can be obtained. SEE: *preventive nursing*.

second cranial nerve The nerve carrying impulses for the sense of sight. It originates in the lateral geniculate body of the thalamus and travels by the optic tract and optic chiasma, where it enters the retina through the optic disk. SYN: *optic nerve*. SEE: *cranial nerve*.

secondhand smoking Passive smoking.

second opinion An independent professional review and assessment of a patient done to confirm, add to, or revise the diagnoses and proposed treatments of another medical professional.

secreta (sē-kre'tā) [L.] The products of secretion.

secretagogue (sē-kre'tā-gōg) [L. *secretum*, secretion, + Gr. *agogos*, leading] 1. That which stimulates secreting organs. 2. An agent that causes secretion. SYN: *secretogogue*.

secrete (sē-kre't) [L. *secretio*, separa-

tion] **1.** To separate from the blood, a living organism, or a gland. **2.** More specifically, to form a secretion.

secretin (sē-krē'tin) A hormone secreted by the duodenal mucosa that stimulates sodium bicarbonate secretion by the pancreas and bile secretion by the liver. It decreases gastrointestinal peristalsis and motility. SEE: *motilin*.

secretinase (sē-krē'tī-nās) An enzyme in blood that inactivates secretin.

secretin injection test Cholecystokinin-secretin test.

secretion (sē-krē'shūn) [L. *secretio*, separation] **1.** The making and release of substances by glands. **2.** The substance produced by glandular organs.

apocrine s. A secretion in which the apical end of a secreting cell is broken off and its contents extruded, as in the mammary gland.

constitutive s. Secretion of substances (typically proteins) from cells, either continuously or independently of cell-to-cell signaling.

eccrine s. Secretion of sweat from glands located in the skin, an important means of regulating temperature.

holocrine s. A secretion in which the entire cell and its contents are extruded as a part of the secretory product, as in sebaceous glands.

merocrine s. A secretion in which the product is elaborated within cells and discharged through the cell membrane, the cell itself remaining intact.

regulated s. The secretion of substances stored in intracellular vesicles after a cell receives a specific stimulus, either from a circulating hormone or from a nerve.

secretagogue (sē-krē'tō-gōg) [L. *secretio*, separation, + Gr. *agogos*, leading] Secretagogue.

secretoinhibitory (sē-krē'tō-īn-hīb'ī-tō'rē) Inhibiting secretion.

secretomotor (sē-krē'tō-mō'tor) Something, esp. a nerve, that stimulates secretion.

secretor (sē-krē'tor) [L. *secretio*, separation] A person who secretes ABO blood group antigens into mucous secretions such as saliva, gastric juice, or semen. The secretion of such substances is sometimes used for the legal identification of individuals in violent crimes (e.g., rape).

secretory (sē-krē'tō-rē, sē'krē-tō'rē) Pert. to or promoting secretion; secreting.

secretory fiber A peripheral motor nerve fiber that innervates glands and stimulates secretion.

sectile (sēk'til) [L. *sectilis*] Capable of being cut.

sectio (sēk'shē-ō) [L., a cutting] Section or cut.

section [L. *sectio*, a cutting] **1.** Process of cutting. **2.** A division or segment of a

part. SEE: *plane* for illus. **3.** A surface made by cutting. **4.** In radiology, a slice. SEE: *slice*.

abdominal s. Laparotomy.

cesarean s. SEE: *cesarean section*.

coronal s. Frontal s.

cross s. A section perpendicular to the long axis of an organ.

frontal s. A section dividing the body into two parts, dorsal and ventral. SYN: *coronal section*.

frozen s. A thin piece of surgically obtained tissue frozen to permit rapid examination of the specimen under the microscope by a pathologist. The specimen is usually obtained intraoperatively, while the patient is still anesthetized. The surgeon's further action (e.g., to operate, to obtain clear margins, or to close the incision) is influenced by the findings.

ground s. A section of bone or tooth prepared for histological study by polishing until thin enough for microscope viewing.

longitudinal s. A section parallel to the long axis of an organ.

midsagittal s. A section that divides the body into right and left halves.

paraffin s. A section of a tissue that has been infiltrated with paraffin.

perineal s. An external incision into the urethra to relieve stricture.

sagittal s. A section cut parallel to the median plane of the body.

serial s. One of the microscopic sections made and arranged in consecutive order.

vaginal s. Incision into the abdominal cavity through the vagina.

sectioning [L. *sectio*, a cutting] The slicing of thin sections of tissue for examination under the microscope. SEE: *microtome*.

ultrathin s. The cutting of sections extraordinarily thin (less than 1 μm thick), esp. for use in electron microscopy.

Section 504 of the Rehabilitation Act of 1973 A U.S. federal statute that prohibits discrimination against or denial of benefits to an individual on the basis of disability by any agency, business, or organization that receives federal support.

Section 508 of the Rehabilitation Act of 1973 A U.S. federal statute that makes it unlawful for a federal agency to deny a person access to electronic or information technology on the basis of disability.

sector (sēk'tor) [L., cutter] **1.** The area of a circle included between two radii and an arc. **2.** The physical location for a specific activity designated in the incident management system.

rehab s. The location at a multiple-casualty incident, fire, or hazardous materials incident where rescue personnel are sent to be medically monitored, re-

hydrated, cooled off, or warmed, as the situation warrants.

staging s. A location within a minute or two's response to the scene of a multiple-casualty incident, hazmat incident, or major fire where emergency vehicles and personnel are assigned to wait till they are needed at the location.

transport s. At a multiple-casualty incident, the place where ambulances or helicopters, or both, are brought in to transport patients to hospitals. At the transport sector, decisions are made regarding where to send patients with specialized problems, and the status of triaged patients is discussed with receiving facilities.

treatment s. The location at a multiple-casualty incident where patients' needs are prioritized and their injuries or illnesses are initially managed before they are taken to a hospital.

triage s. In a multiple-casualty incident, the place where patients are sorted and separated according to the acuity of their illnesses or injuries before they are transported to a treatment sector or hospital.

sectorial (sĕk-tō'rĕ-ăl) Having cutting edges, as teeth.

secundigravida (sĕ-kŭn"đĭ-grāv'ĭd-ă) [L. *secundus*, second, + *gravida*, pregnant] A woman in her second pregnancy.

secundines (sĕk'ŭn-dĭnz, sĭ-kŭn'dĭnz) [LL. *secundinae*] Afterbirth; the placenta and its membranes.

secundipara (sĕ"kŭn-dĭp'ă-ră) [L. *secundus*, second, + *parere*, to bring forth, to bear] A woman who has produced two infants at separate times that have weighed 500 g or more, regardless of their viability. SEE: *gravida*; *para*.

secundiparity (sĕ-kŭn'dĭ-păr'ĭ-tĕ) The condition of being a secundipara.

secure 1. Free from danger, fear, care, or worry. 2. Under lock and key. 3. Stable; protected.

S.E.D. *skin erythema dose.*

sedation (sĕ-dă'shŭn) [L. *sedatio*, from *sedare*, to calm] 1. The process of allaying nervous excitement. 2. The state of being calmed.

conscious s. A minimally depressed level of consciousness during which the patient retains the ability to maintain a patent airway and respond appropriately to physical or verbal commands. This is accomplished by the use of appropriate analgesics and sedatives. This type of sedation is used for a variety of procedures, including changing of wound or burn dressings and endoscopic examinations.

complications that require airway management, intubation, and resuscitation. Drugs to reverse the effects of opioids (such as naloxone) and benzodiazepines (such as flumazenil) are used to awaken sedated patients.

deep s. A depressed level of consciousness produced by medications that suppress anxiety, awareness, memory, or pain, in which a patient may not be able to protect his own airway, arouse easily, or respond purposefully to verbal commands or physical stimulation.

moderate s. A medically controlled depressed state of consciousness in which patients can maintain an open airway and protective airway reflexes; respond appropriately when stimulated physically or verbally; and spontaneously maintain a stable heart rate and blood pressure.

palliative s. SEE: *palliative sedation.*

sedation vacation A colloquial term for an interruption of the infusion of sedatives in a mechanically ventilated patient. Decreasing the depth of a critically ill patient's sedation facilitates weaning from mechanical ventilation.

sedative (sĕd'ă-tĭv) [L. *sedativus*, calming] 1. Quieting. 2. An agent that exerts a soothing or tranquilizing effect. Sedatives may be general, local, or vascular.

sedentary (sĕd'ĕn-tă-rĕ) [L. *sedentarius*] 1. Sitting. 2. Pert. to an occupation or mode of living requiring minimal physical exercise.

s. lifestyle A lifestyle involving little exercise, even of the least strenuous type. Sedentary living is associated with weight gain, obesity, type 2 diabetes mellitus, and, in many studies, an increased risk of coronary artery disease. SEE: *physical fitness*; *risk factor*.

sediment (sĕd'ĭ-mĕnt) [L. *sedimentum*, a settling] The substance settling at the bottom of a liquid. SEE: *precipitate*.

urinary s. Substances present in urine (i.e., bacteria, mucus, phosphates, uric acid, calcium oxalate, calcium carbonate, calcium phosphate, magnesium and ammonium phosphate; and more rarely, cystine, tyrosine, xanthine, hippuric acid, hematoïdin) that separate and accumulate at the bottom of a container of urine. This process may be accelerated by centrifuging the urine specimen.

sedimentation (sĕd'ĭ-mĕn-tă'shŭn) Formation or depositing of sediment. SEE: *sedimentation rate*.

seed (sĕd) [AS. *saed*] 1. The ripened ovule of a spermatophyte plant usually consisting of the embryo (germ) and a supply of nutrient material enclosed within the seed coat. It is a resting sporophyte. 2. Semen. 3. Capsule contain-



Conscious sedation must be closely monitored to prevent loss of protective airway reflexes. The health care team must be ready to recognize and respond to

ing radon or radium for use in the treatment of cancer. **4.** To introduce microorganisms into a culture medium.

seeker, bone An ion or compound that localizes preferentially in bone (e.g., strontium).

segment (sĕg'mĕnt) [L. *segmentum*, a portion] **1.** A part or section, esp. a natural one, of an organ or body. **2.** One of the serial divisions of an animal.

bronchopulmonary s. A small subdivision of the lobes of the lung.

PR s. The line on an electrocardiogram that begins with the end of the P wave and ends with the beginning of the QRS.

S-T s. The line on an electrocardiogram that begins with the end of the QRS complex and ends at the beginning of the T wave. The height of the ST segment is normally equal to that of the PR interval and the TP interval. ST segment elevation is found in patients with acute myocardial infarction and other conditions. ST segment depression is an indicator of coronary ischemia.

uterine s. One of the two functional divisions of the uterine musculature during labor. During labor the upper uterine segment forcibly contracts, becoming progressively shorter and thicker, exerting traction on the more passive lower segment, and increasing the hydrostatic pressure against the cervix. The combination of forces and traction gradually cause the lower segment to thin, resulting in cervical effacement and dilation. SEE: *physiologic retraction ring*.

segmental static reaction A postural reflex in which the movement of one extremity results in a movement in an opposite extremity.

segmentation (sĕg'mĕn-tā'shŭn) Cleavage.

segmenter (sĕg'mĕnt'ĕr) A stage in the development of malarial parasites (genus *Plasmodium*) in which the organism undergoes schizogony.

segregation [L. *segregare*, to separate] **1.** Setting apart, separating. **2.** In genetics, the process that takes place in the formation of germ cells (gametogenesis) in which each gamete (egg or sperm) receives only one of each pair of genes.

segregator An instrument composed of two urethral catheters for securing urine from each kidney separately.

SeHCAT ⁷⁵Selenium-labeled artificial bile salt; homologue to taurocholate.

seismesthesia (sīz'mĕs-the'zĕ-ă) [Gr. *seismos*, a shaking, + *aisthesis*, sensation] The perception of vibrations.

seizure (sĕ'zhŭr) [O.Fr. *seisir*, to take possession of] **1.** A convulsion or other clinically detectable event caused by a sudden discharge of electrical activity in the brain. **2.** A sudden attack of pain, disease, or specific symptoms.

absence s. Seizure in which there is a sudden, brief lapse of consciousness, usually for about 2 to 10 sec. The patient (typically a child) shows a blank facial expression that may be accompanied by movements such as repeated eye-blinking or rolling or lip-smacking and minor myoclonus of the upper extremities or neck. There is no convulsion or fall. The patient resumes activity as if the seizure had not occurred. The seizure may be induced by voluntary hyperventilation for 2 to 3 min. This type of attack is characteristic of petit mal epilepsy and may recur repeatedly if it is not recognized and treated. It also may progress to a generalized tonic-clonic seizure.

PATIENT CARE: The time, duration, patient's expression, and any repetitive movements occurring during the seizure are observed and documented, as is the patient's postseizure response. Prescribed medications are administered and evaluated for desired effects and adverse reactions. Support, reassurance, and education regarding the condition as well as drug actions and side effects are provided to the patient and family, and they are encouraged to discuss their feelings and concerns and to ask questions. SEE: *epilepsy*.

convulsive s. **1.** A convulsion. **2.** An attack of epilepsy. SEE: *epilepsy*.

grand mal s. SEE: under *epilepsy*.

jacksonian s. SEE: *jacksonian epilepsy*.

petit mal s. SEE: *epilepsy*.

Seldinger technique (sĕl'dīng-ĕr) [Sven I. Seldinger, Swedish physician, 1921–1998] A method of percutaneous introduction of a catheter into a vessel. The vessel is located and a needle is inserted. Once a good blood flow is obtained, a wire is threaded through the needle well into the vessel; the needle is then removed and the catheter threaded over the wire into the vessel. The wire assists in inserting the catheter and guiding it into the appropriate vessel. Once the catheter is positioned in the desired intravascular area, the wire is removed. Sterile technique is imperative.

selectins Any of a group of cell surface molecules that influence the attachment and movement of white blood cells to other cells and to the lining of blood vessels, e.g., in inflammatory diseases and conditions.

P-s. An adhesion receptor molecule for white blood cells that functions during inflammation and tissue repair. Binding with P-selectin glycoprotein ligand 1, it controls the flow of white blood cells and their adhesion to blood vessel walls. It is viewed as a key factor in thrombosis.

selection [L. *selectio*, choice] **1.** The pro-

cess of choosing or selecting; choice. **2.** In biology, the factors that determine the reproductive ability of a certain genotype.

artificial s. A process by which humans select desirable characteristics in animals and breed them for these phenotypes.

clonal s. **1.** The process by which T lymphocytes with receptors that react to self-antigens are destroyed in the thymus. **2.** The increase of particular B or T lymphocyte clones after recognition of a specific antigen to which the body has been exposed. SEE: *negative s.*; *clone*.

natural s. Natural selection.

negative s. The process by which immature T lymphocytes (thymocytes) with receptors for self-antigens are destroyed in the thymus. It is part of the mechanism that prevents autoimmune diseases. SEE: *autoimmunity*.

sexual s. **1.** The choice of the gender of an offspring through methods that increase the likelihood of conceiving either a girl or a boy. **2.** A theory originated to account for differences in secondary sex characteristics between male and female animals (including humans). It assumes that individuals preferentially mate with individuals of the opposite sex that possess identifiably distinct phenotypes.

selection pressure Any change in the environment that encourages particular mutations to succeed. For example, antibiotic use kills susceptible bacteria and allows microorganisms with resistant genes to survive and proliferate.

selective decontamination of the digestive tract The administration of non-absorbable antibiotics to reduce the burden of potentially infectious bacteria in the gastrointestinal tract.

It may be used to decrease the incidence of ventilator-associated pneumonia or to rid the gastrointestinal tract of bacteria before surgery.

selective estrogen receptor modulator Estrogen analog.

selective serotonin reuptake inhibitor



ABBR: SSRI. Any one of a class of drugs that interferes with serotonin transport, used in treating depression, obsessive-compulsive behaviors, eating disorders, and social phobias. Examples include fluoxetine (Prozac) and paroxetine (Paxil).



The use of SSRIs in the treatment of depression may sometimes be associated with an increased risk of suicide, especially during the initiation of treatment. The risk is greatest in the treatment of children and adolescents. All patients who begin treatment with SSRIs (including fluoxetine, paroxetine, sertraline, among others) should be monitored

closely for evidence that they intend to harm themselves.

selenium (sē-lē'nē-ŭm) [Gr. *selene*, moon] SYMB: Se. A chemical element resembling sulfur; atomic weight 78.96; atomic number 34. It is considered an essential trace element in the diet. Toxicity can occur when an excessive amount is ingested, characterized by a sour breath odor, nausea, vomiting, abdominal pain, restlessness, hypersalivation, and muscle spasms.

selenoid cell Achromocyte. SYN: *crenate body*.

selenomethionine Se 75 injection (sēl' ēn-ō-mē-thī'ō-nēn) Radioactive L-selenomethionine in which the sulfur atom in the methionine has been replaced by selenium. The compound is used intravenously to investigate methionine metabolism.

self **1.** In psychology, the sum of mind and body that constitutes the identity of a person. **2.** In immunology, an individual's antigenic makeup.

self-acceptance Being realistic about oneself and at the same time comfortable with that personal assessment.

self-care **1.** A concept in Dorothea Orem's Self-Care Framework and her Theory of Self-Care referring to actions that individuals initiate and perform on their own behalf in maintaining life, health, and well-being. **2.** In rehabilitation, the subset of activities of daily living that includes eating, dressing, grooming, bathing, and toileting. SYN: *personal care*.

s.-c. deficit Impaired ability to perform or complete feeding, bathing/hygiene, dressing and grooming, or toileting activities for oneself [on a temporary, permanent, or progressing basis] (Specify level of independence using a standardized functional scale). SEE: *health maintenance, altered*; *home maintenance management, impaired*; *Nursing Diagnoses Appendix*.

self-care, readiness for enhanced A pattern of performing activities for oneself that helps to meet health-related goals and can be strengthened. SEE: *Nursing Diagnoses Appendix*.

Self-Care Framework A conceptual model of nursing, also known as the Self-Care Deficit Theory of Nursing and the Self-Care Deficit Nursing Theory, developed by Dorothea Orem. The person is a self-care agent who has a therapeutic self-care demand made up of universal, developmental, and health deviation self-care requisites. The goal of nursing is to help people to meet their therapeutic self-care demands. SEE: *Nursing Theory Appendix*.

self-concept An individual's perception of self in relation to others and the environment. SEE: *self-esteem*.

self-concept, readiness for enhanced A pattern of perceptions or ideas about the self that is sufficient for well-being and can be strengthened. SEE: *Nursing Diagnoses Appendix*.

self-conscious Being aware of oneself, esp. overly aware of appearance and actions, and thus being ill at ease.

self-contained breathing apparatus ABBR: SCBA. A device that provides respiratory gases. It is used, for example, by rescue personnel, when they enter hazardous breathing environments.

self-contained underwater breathing apparatus ABBR: scuba. A device used by swimmers and divers that enables them to breathe underwater. The mask worn is watertight and is connected to a tank of compressed air. SEE: *bends*.

self-determination theory A theory of human motivation and personality that purports to understand and explain human choices in social contexts, as influenced by that person's beliefs, needs, and desire to influence or be affected by his or her environment.

self-differentiation The differentiation of a structure or tissue due to intrinsic factors.

self-digestion Autodigestion.

self-efficacy An aspect of self-perception postulated by Albert Bandura that pertains to one's belief in his or her ability to perform a given task or behavior.

self-esteem One's personal evaluation or view of self, generally thought to influence feelings and behaviors. One's personal successes, expectations, and appraisals of the views others hold toward oneself are thought to influence this personal appraisal. SYN: *self-concept*.

chronic low s.-e. Long-standing negative feelings about self or capabilities. SEE: *situational low s.-e.*; *Nursing Diagnoses Appendix*.

situational low s.-e. Episodic feelings about self or capabilities that develop in response to a loss or change. SEE: *chronic low s.-e.*; *Nursing Diagnoses Appendix*.

self-examination Inspection and palpation of a body part by the patient to screen for disease. SEE: *breast self-examination*; *testicle, self-examination of*.

self-governance 1. Self-rule; local responsibility for administration and functions of an organization, even though it is part of a larger entity. 2. A model of health care management in which the power base for decisions of patient care is decentralized. The responsibility and accountability for patient care rest directly with all levels of care providers through self-direction, self-regulation, and self-management. Advisory committees reflecting a cross section of caregivers (new graduates, experienced professionals, faculty, and managers) maintain final decision-making

authority within the work setting. SEE: *shared governance*.

self-help (sĕlf'hĕlp") Action taken by a person to improve his or her life educationally, emotionally, financially, interpersonally, or socially.

self-hypnosis Hypnotizing oneself.

self-insured Having personal financial responsibility for health care costs, as a result of dedicated savings or investments.

self-limited disease A disease that eventually goes away even if untreated.

self-management Active participation by a patient in his or her own health care decisions and interventions. With the education and guidance of professional caregivers, the patient promotes his or her own optimal health or recovery.

self-medication The use of mood-altering substances, such as alcohol or opiates, in an attempt to alleviate depression, anxiety, or other psychiatric disorders.

self-mutilation, risk for A state in which an individual is at high risk to perform a deliberate act upon the self with the intent to injure, not kill, which produces immediate tissue damage to the body. SEE: *Nursing Diagnoses Appendix*.

self-pity A mental defense mechanism involving self-blame, negativism, feelings of rejection, worthlessness, hopelessness, or isolation.

self-ranging Patient-administered passive or active assistive range-of-motion exercise. Patients can be taught to prevent contractures and facilitate movement by using their unaffected extremities and by means of specific techniques. Care should be taken to prevent injury, esp. at the shoulder.

self-soothing A deliberate effort to calm oneself. It is an alternative to the use of medications, alcohol, or drugs for managing anxiety and stress, eating disorders, or insomnia.

self-tolerance In immunology, the absence of an immune response to one's own antigens. SEE: *autoimmunity*.

sella turcica (sĕl'ă tŭr'sī-kă) [NL, Turkish saddle] A concavity on the superior surface of the body of the sphenoid bone that houses the pituitary gland.

Sellick's maneuver (sĕl'īks) [Brian A. Sellick, contemporary Brit. anesthetist] The application of digital pressure to the cricoid cartilage in the neck in an unconscious patient to reduce gastric distention and passive regurgitation during positive pressure ventilation, and to improve visualization of the glottic opening during endotracheal intubation.

semantic-pragmatic language disorder A childhood language disorder in which speech is fluent and complex but inappropriate to the meaning or context of a conversation.

semantics (sē-măn'tiks) [Gr. *semantikos*, significant] The study of the meanings of words.

semen (sē'měn) *pl.* **semina** [L., seed] A thick, opalescent, viscid secretion discharged from the urethra of the male at the climax of sexual excitement (orgasm). Semen is the mixed product of various glands (prostate and bulbourethral) plus the spermatozoa, which, having been produced in the testicles, are stored in the seminal vesicles.

Normal values for the seminal fluid ejaculate are as follows: volume, 2 to 5 ml; pH, 7.8 to 8.0; leukocytes, absent or only an occasional one seen per high-power field; sperm count, 60 to 150 million/ml; motility, 80% or more should be motile; morphology, 80% to 90% should be normal.

frozen s. Semen stored in a bank for future use in insemination. It offers a supply of donors in small communities where it would be impossible to maintain anonymity of local donors. However, in artificial insemination the number of successful pregnancies is lower with frozen semen than with fresh.

semenarche (sē'měn-ăr'kē) [*+* *arche*, beginning] During puberty, the beginning of the production of semen. SEE: *pubarche*; *thelarche*.

semenuria (sē'měn-ū'rē-ă) [L. *semen*, seed, + Gr. *ouron*, urine] Spermaturia.

semi- Prefix meaning *half*.

semicircular (sēm'ē-sūr'kū-lăr) [*+* *circulus*, a ring] In the form of a half circle.

semiconscious (sēm'ē-kōn'shūs) Not fully conscious.

-semide (sē'mīd") [Fm. (*furo*)*semide*] A suffix used in pharmacology to designate any loop diuretic similar in chemical structure to that of furosemide.

semierrection (sēm'ē-ēr-ēk'shūn) [*+* *erigere*, to erect] An incomplete erection.

semiflexion (sēm'ē-flēk'shūn) [*+* *flexio*, bending] Halfway between flexion and extension of a limb.

semilunar (sēm'ē-lū'năr) [L. *semis*, half, + *luna*, moon] Shaped like a crescent.

semilunar cusp One of the leaflets of the aortic valve between the left ventricle and the aorta or of the pulmonary valve between the right ventricle and the pulmonary artery.

semimembranous (sēm'ē-mēm'bră-nūs) [*+* L. *membrana*, membrane] Composed partly of a membrane.

seminal (sēm'ī-năl) [L. *seminalis*] Concerning the semen or seed.

seminal emission Discharge of semen.

semination (sēm-i-nă'shūn) [L. *seminatio*, a begetting] Insemination.

artificial s. Artificial insemination.

semiferous (sēm-in-if'ēr-ūs) [L. *semen*, seed, + *ferre*, to produce] Pro-

ducing or conducting semen, as the tubules of the testes.

seminoma (sēm'ī-nō'mă) [*+* Gr. *oma*, tumor] A cancer arising from male germ cells (in the testis) that makes up about half of all testicular malignancies.

TREATMENT: Seminomas that are confined to the testes are surgically removed. Metastatic disease is treated with surgery (to remove the testis) and radiation and chemotherapy.

semiose (sēm'ī-nōs) Mannose.

seminuria, semenuria (sē'mīn-ū'rē-ă) [L. *semen*, seed, + Gr. *ouron*, urine] Spermaturia.

semiotics (sēm'mē-ōt'iks) **1.** The study of signs and symbols in language. **2.** The study of signs and sign-systems that convey particular meanings in language and culture. This can include gestures, symbols, objects, mannerisms, clothing, and other means for conveying meaning.

semipermeable (sēm'ē-per'mē-ă-bl) [*+* *per*, through, + *meare*, to pass] Characteristic of cell membranes that permit the passage of some materials but not others; also called selectively permeable.

semipronation (sēm'ē-prō-nă'shūn) [*+* *pronus*, prone] **1.** A semiprone position. **2.** The act of assuming a semiprone position.

semiprone (sēm-ē-prōn') [*+* *pronus*, prone] In a position on left side and chest, with both thighs flexed on abdomen, the right higher than the left, and left arm back. SYN: *Sims' position*.

semirecumbent (sēm'ē-rē-kūm'bēnt) [*+* *recumbere*, to lie down] Reclining, but not fully recumbent.

semis (sē'mīs) [L.] ABBR: ss. Half.

semispinalis (sēm'ē-spī-năl'is) [L.] The deep layer of muscle of the back on either side of the spinal column. It is divided into the following three parts: the semispinalis capitis, semispinalis cervicis, and semispinalis thoracis.

semisupination (sēm'ē-sū-pīn-ă'shūn) [*+* *supinus*, lying on the back] A position halfway between supination and pronation.

semisupine (sēm'ē-sū-pīn) [*+* *supinus*, lying on the back] Not completely supine.

semisynthetic (sēm'ē-sīn-thēt'ik) [*+* Gr. *synthetikos*, synthetic] The chemical alteration of a portion of a natural substance.

semitendinosus (sēm'ē-tēn'dīn-ō'sūs) [L.] The fusiform muscle of the posterior and inner part of the thigh.

semitendinous (sēm'ē-tēn'dī-nūs) [L. *semis*, half, + *tendinosus*, tendinous] Of some muscles, partially tendinous.

Simmelweiss, Ignaz Philipp (zēm'ēl-vīs") Hungarian physician, 1818–1865, the discoverer of the mode of transmission of childbed fever (puerperal sepsis)

in the 19th century. Semmelweis is a seminal figure in the history of infection control.

senega root The dried root of the North American perennial herb, *Polygala senega*, traditionally used to treat asthma, bronchial infection, and pneumonia.

senescence (sē-nēs'ēns) [L. *senescens*, growing old] **1.** The process of growing old. **2.** The period of old age.

replicative s. Hayflick's limit.

Sengstaken-Blakemore tube (sēngz'tā-kēn-blāk'mor) [Robert W. Sengstaken, U.S. neurosurgeon, b. 1923; Arthur H. Blakemore, U.S. surgeon, 1897–1970] A three-lumen tube used in the past to treat bleeding esophageal varices by directly compressing the bleeding vessels.

senile (sē'nīl, sē'nīl) [L. *senilis*, old] Pert. to the debility sometimes associated with aging.

senility (sē-nīl'ī-tē) [L. *senilis*, old] Mental or physical weakness that may be associated with old age. Many specialists in aging find the term offensive.

premature s. Onset of senile characteristics before old age (e.g., in Down syndrome).

senior center A community building or meeting room where elderly persons congregate for services and activities that reflect their interests, enhance their dignity, support their independence, and encourage their involvement with the community. There are approx. 15,000 centers across the U.S.A., serving close to 10 million older adults annually. Most are supported by government and local nonprofit organizations. Since 1965, the Older Americans Act has provided some funding support to over 6000 senior centers through service contracts for program activities.

senior friendly Easy for senior citizens to use, e.g., certain forms of medication packaging.

senium (sē'nē-ūm) [L.] Old age, esp. its debility.

senna (sēn'ā) [Arabic *sana*] The dried leaves of the plants *Cassia acutifolia* and *C. angustifolia*; used as a cathartic.

Sennetsu fever (sēn-ēt-soo) [Sennetsu, Japan, where the disease was first observed] A form of ehrlichiosis first identified in Japan, transmitted to humans by tick bite or, possibly, consumption of infected raw fish, and caused by *Ehrlichia sennetsu*. Symptoms include fever, malaise, backache, and lymphadenopathy.

sennosides (sēn'ō-sīdz) Anthraquinone glucosides present in senna that are used as cathartics.

senopia (sēn-ō'pē-ā, sē-nō'-) [L. *senilis*, old, + Gr. *ops*, eye] Improvement in near vision of old people. Usually precedes the development of nuclear cataract. SYN: *sight, second*.

sensate (sēn-sāt') Perceived by the senses.

sensate focus An area, such as an erogenous zone, that is particularly sensitive to tactile stimulation.

sensation (sēn-sā'shūn) [L. *sentatio*] An awareness of conditions inside or outside the body resulting from the stimulation of sensory receptors.

cutaneous s. A sensation arising from the receptors of the skin.

delayed s. A sensation not experienced immediately following a stimulus.

gnostic s. One of the more finely developed senses such as touch, tactile discrimination, position sense, and vibration.

internal s. Subjective s.

phantom s. Phantom limb pain.

primary s. A sensation that results from a direct stimulus.

referred s. A sensation that seems to arise from one location in the body, even though it originates in another. SYN: *reflex sensation*.

reflex s. Referred s.

somesthetic s. Vibration sense; proprioception.

subjective s. A sensation that does not result from any external stimulus and is perceptible only by the subject. SYN: *internal sensation*.

tactile s. A sensation produced through the sense of touch.

sense, sensing (sēns) [L. *sensus*, a feeling] **1.** To perceive through a sense organ. **2.** The general faculty by which conditions outside or inside the body are perceived. The most important of the senses are sight, hearing, smell, taste, touch and pressure, temperature, weight, resistance and tension (muscle sense), pain, position, proprioception, visceral and sexual sensations, equilibrium, and hunger and thirst. **3.** Any special faculty of sensation connected with a particular organ. **4.** Normal power of understanding. **5.** The ability of an artificial pacemaker to detect an electrically conducted signal produced by the heart, such as a P wave or QRS complex. **6.** In nucleic acid chemistry, the strand of DNA whose nucleotide order codes for messenger RNA.

color s. The ability to distinguish differences in color; one of the three parts of visual function.

form s. The ability to recognize shapes; one of the three parts of visual function.

kinesthetic s. Motor sense.

muscular s. Motor sense.

posture s. Proprioception.

pressure s. The ability to feel various degrees of pressure on the body surface. SYN: *baresthesia*.

space s. The sense by which people

recognize objects in space, their relationship, and their dimensions.

special s. The senses of sight, touch, hearing, equilibrium, smell, and taste.

static s. The sense that makes it possible to maintain equilibrium.

stereognostic s. The ability to judge the consistency and shape of objects held in the fingers.

temperature s. The ability to detect differences of temperature.

time s. The ability to detect differences in time intervals.

tone s. The ability to distinguish between different tones.

visceral s. The subjective perception of the sensations of the internal organs.

sensibility (sĕn'si-bĭl'ĭ-tĕ) [L. *sensibilitas*] The capacity to receive and respond to stimuli.

deep s. 1. The sensibility existing after an area of the skin is made anesthetic. 2. The sensation by which the position of a limb and estimation of difference in weight and tension are apparent.

sensibilization (sĕn'si-bĭl'ĭ-zā'shŭn) 1. Sensitization. 2. The induction of susceptibility to or irritation by a foreign substance by injecting it or applying it to the body. SYN: *sensitization*.

sensible (sĕn'si-bl) [L. *sensibilis*, capable of being perceived] 1. Capable of being perceived by the senses; perceptible. 2. Having reason. 3. Measurable.

sensitogen (sĕn'si-tĭn'ō-jĕn) [n + Gr. *gennan*, to produce] The collective of antigens that sensitize the body.

sensitive (sĕn'si-tĭv) [L. *sensitivus*, of sensation] 1. Capable of perceiving or feeling a sensation. SYN: *sentient*. 2. Subject to destructive action of a complement. 3. Susceptible to suggestions, as a hypnotic. 4. Abnormally susceptible to a substance, as a drug or foreign protein. SEE: *allergy*.

sensitivity In assessing the value of a diagnostic test, procedure, or clinical observation, the proportion of people who truly have a specific disease and are so identified by the test. SEE: *specificity*, *diagnostic*.

sensitivity test, antimicrobial A laboratory method of determining the susceptibility of bacteria to antibiotics. The specimen obtained is cultured in various liquid dilutions or on solid media containing various concentrations of antimicrobial drugs in disks placed on the surface of the media. The disk-type test is not completely reliable. Also called *culture and sensitivity test*. SEE: *illus*.

sensitivity training A form of group therapy in which individuals are given the opportunity to relate verbally and physically with complete candor and honesty with other members of the group. The goals of therapy are to increase self-awareness, learn constructive ways of



ANTIMICROBIAL SENSITIVITY TEST

Zones of inhibited bacterial growth around antibiotic disks

dealing with conflicts, establish a better sense of inner direction, and relate to persons with feelings of warmth and affection.

sensitization (sĕn'si-tĭ-zā'shŭn) 1. The production by B lymphocytes of specific antibodies and by T lymphocytes of specific cellular reactions to a foreign antigen. When the antigen is encountered again, an immune response occurs. The production of antibodies by B lymphocytes or the activation of T lymphocytes when an allergen is first encountered. When the allergen is encountered again, an abnormal immune response occurs. SEE: *hypersensitivity*. 2. The process of making a person susceptible to a substance by repeated injections of it. SYN: *sensibilization*.

active s. Sensitization produced by injecting an antigen into a susceptible person.

autoerythrocyte s. A syndrome characterized by the spontaneous appearance of painful ecchymoses, usually at the site of a bruise. The areas itch and burn. The condition is commonly associated with headache, nausea, vomiting, and occasionally with intracranial, genitourinary, and gastrointestinal bleeding. With few exceptions, the disorder affects women of middle age. The cause is assumed to be autosensitivity to a component of the red blood cell membrane. There is no specific therapy. SYN: *purpura*; *psychogenic*.

passive s. Sensitization produced in a healthy person by injecting the person with the serum from a sensitized animal or human.

protein s. Sensitization as a result of previous injection of a foreign protein into the body.

sensitized (sĕn'si-tĭzd) Made susceptible, or immunoreactive, to an antigen.

sensitizer (sĕn'si-tĭ'zĕr) [L. *sensitivus*, of sensation] In allergy and dermatology, a substance that makes the susceptible individual react to the same or other irritants.

sensitometer (sĕn'si-tŏm'ĕ-tĕr) A cali-

brated instrument with an optical step wedge and light source that puts a graduated set of densities on a radiographic film; used in quality control monitoring for film processors.

sensitometry (sĕn'sī-tŏm'ĕ-trĕ) In radiography, the use of densities on an exposed and processed film to evaluate, monitor, and maintain processors, intensifying screens, film types, and exposure systems.

sensomobility (sĕn'sŏ-mŏ-bĭl'ĕ-tĕ) [L. *sensus*, a feeling, + *mobilis*, mobile] Movement in response to a stimulus.

sensor (sĕn'sŏr) **1.** A sense organ. **2.** A device sensitive to electricity, light, heat, pressure, radiation, sound, or other chemical, mechanical, or physical stimuli.

sensorimotor (sĕn'sŏ-rĕ-mŏ'tŏr) [L. *sensus*, a feeling, + *motus*, moving] Both sensory and motor.

sensorimascular (sĕn'sŏ-rĕ-mŭs'kŭ-lăr) [" + *muscularis*, muscular] Muscular activity in response to a sensory stimulus.

sensorineural (sĕn'sŏ-rĕ-nŭ'răl) [" + *neuralis*, neural] Concerning a sensory nerve.

sensorium (sĕn-sŏr'ĕ-ŭm) *pl.* **sensoriums, sensoria** [L., organ of sensation] **1.** That portion of the brain that functions as a center of sensations. **2.** The sensory apparatus of the body taken as a whole. **3.** Awareness; consciousness. **sensorial** (-sŏ'rĕ-ăl), *adj.*

sensorivasomotor (sĕn'sŏ-rĕ-văs'ŏ-mŏ'tŏr) [L. *sensus*, a feeling, + *vas*, vessel, + *motor*, a mover] Vascular changes induced by sensory nerve stimulation.

sensory (sĕn'sŏ-rĕ) [L. *sensorius*] **1.** Conveying impulses from sense organs to the reflex or higher centers. SYN: *afferent*. **2.** Pert. to sensation.

sensory area Any area of the cerebral cortex in which sensations are perceived.

sensory ending A termination of an afferent nerve fiber that upon stimulation gives rise to a sensation. SEE: *receptor, sensory*.

sensory epilepsy Disturbances of sensation without convulsions.

sensory integration Skill and performance required in the development and coordination of sensory input, motor output, and sensory feedback. It includes sensory awareness, visual spatial awareness, body integration, balance, bilateral motor coordination, visuomotor integration, praxis, and other components.

Sensory Integration and Praxis Tests ABBR: SIPT. A standardized battery of assessment tests to identify motor planning and sensory processing deficits in children 4 through 8 years of age. It includes 17 subtests.

sensory memory The momentary storage in the brain of images or sensations just felt, heard, seen, smelled, or tasted. Sensory memories typically last only a few seconds.

sensory overload A condition in which sensory stimuli are received at an excessive rate or intensity. Sensory overload can produce increases in heart rate, breathing, blood pressure, confusion, anxiety, mental distress, and/or erratic behavior.

sensory/perception, disturbed (specify: visual, auditory, kinesthetic, gustatory, tactile, olfactory) Change in the amount or patterning of incoming stimuli accompanied by a diminished, exaggerated, distorted, or impaired response to such stimuli. SEE: *Nursing Diagnoses Appendix*.

sensory registration The brain's ability to receive input and select that which will receive attention and that which will be inhibited from conscious attention.

sensory unit A single sensory neuron with its receptors.

sensual (sĕn'shŭ-ăl) [L. *sensus*, a feeling] Concerning or consisting of the gratification of the senses; indulgence of the appetites; not spiritual or intellectual; carnal, worldly.

sensualism (sĕn'shŭ-ăl-ĭzm) The state of being sensual, in which one's actions are dominated by the emotions.

sensuous (sĕn'shŭ-ŭs) [L. *sensus*, a feeling] **1.** Pert. to or affecting the senses. **2.** Susceptible to influence through the senses.

sentient (sĕn'shĕ-ĕnt) [L. *sentiens*, perceive] Capable of perceiving sensation. SYN: *sensitive*.

sentiment (sĕn'tĭ-mĕnt) [L. *sentio*, to feel] **1.** Feeling, sensibility; any emotional attitude toward objects or subjects. **2.** Tenderness.

sentinel event (sĕn'tĭn-ĭl) [Fm. Italian *sentinella*, fm. L. *sentire*, to observe] Any occurrence in a professional health care setting that causes serious injury or the risk of serious injury to patients. Most sentinel events occur because of unanticipated errors, e.g., neonatal kidnappings, patient suicides, and wrong-site surgeries.

separation **1.** The process of disconnecting, disuniting, or severing. **2.** The purification or isolation of a chemical compound from a mixture or solution. SEE: *centrifuge; electrophoresis; iontophoresis*.

acromioclavicular s. A sprain to the acromioclavicular and coracoclavicular ligaments, commonly caused by a fall or a blow directly to the shoulder (shoulder separation).

immunomagnetic s. The detection and/or harvesting of samples containing specific antigens based on their collec-

tion by antibodies attached to magnetized beads. The bead-bound antigens can be separated from materials that are not of interest in a magnetic field.

separator [LL. *separator*] 1. Anything that prevents two substances from mingling. 2. Any device or instrument used for separating two substances such as cream from milk.

separatorium (sĕp'ā-rā-tō'rĕ-ūm) [L.] An instrument for separating the pericranium from the skull.

sepsis (sĕp'sis) [Gr., putrefaction] A systemic inflammatory response to infection, in which there is fever or hypothermia, tachycardia, tachypnea, and evidence of inadequate blood flow to internal organs. The syndrome is a common cause of death in critically ill patients. Roughly 50% of patients with sepsis die; between 200,000 and 400,000 deaths due to sepsis occur annually in the U.S. Pathogenic organisms, including bacteria, mycobacteria, fungi, protozoa, and viruses, may initiate the cascade of inflammatory reactions that constitute sepsis. The number of patients with sepsis has increased significantly in the last 25 years as a result of several factors including the aging of the population; the increased number of patients living with immune suppressing illnesses (e.g., organ transplants); the increased number of patients living with multiple diseases; and the increased use of invasive or indwelling devices in health care, which serve as portals of entry for infection.

Complications of sepsis may include shock, organ failure (e.g., adult respiratory distress syndrome or acute renal failure), disseminated intravascular coagulation, altered mental status, jaundice, metastatic abscess formation, and multiple organ system failure.

ETIOLOGY: Sepsis results from the combined effect of a virulent infection and a powerful host response to the infection (e.g., the body's release of cytokines or chemokines such as tumor necrosis factor, nitric oxide, interleukins, and others). Infections of the lungs, abdomen, and urinary tract are implicated in sepsis more often than are infections at other body sites.

TREATMENT: The primary objectives are resuscitation of the patient, eradication of the underlying cause of infection, support of failing organ systems, and prevention of complications. Resuscitative efforts include maintaining an open airway; supporting ventilation; providing aggressive fluid support (especially in the first few hours); maintaining tight control of blood sugars (best if glucose levels are between 80 and 110 mg/dl); providing vasopressor drugs for persistent hypotension; and intensive monitoring. Eradicating the

underlying infection involves administering broad-spectrum antibiotics until a precise cause is identified, removing portals of infection or infected prostheses, and draining or debriding abscesses if any are present. Complications in septic patients are prevented with good supportive care: antiembolic stockings or pneumatic dressings and sometimes heparin to lessen the risk of venous thrombosis, skin care to prevent decubitus ulcers, enteral nutrition to prevent starvation, and aseptic technique to limit secondary hospital-acquired infections.

CRITICAL CARE: Invasive hemodynamic monitoring in patients with sepsis typically reveals an elevated cardiac index, decreased systemic vascular resistance, decreased oxygen delivery to tissues, and decreases in mixed venous oxygen saturation. Commonly, laboratory studies in sepsis will reveal leukocytosis (or severe leukopenia), thrombocytopenia, elevated liver enzymes, hypocalcemia, hypoalbuminemia, and increases in the prothrombin time and serum creatinine level.

PATIENT CARE: Specimens of blood and body fluids are collected and cultured. Two or three consecutive blood cultures are obtained while the patient is febrile. Patient symptoms and vital signs are carefully assessed, and lungs are auscultated for normal and adventitious lung sounds. The patient's urine output is monitored for oliguria, and the patient is observed for any change in mental status. The patient's daily fluid intake and output and body weight also are measured and recorded.

At least one large-bore intravenous catheter is placed, and prescribed antibiotic therapy is administered. The patient is given information about the therapy and assessed for desired responses and adverse effects. Antipyretics may be prescribed. Fluid and electrolyte therapy is prescribed to maintain desired balance or correct deficiencies. Oxygen is administered based on SaO_2 readings, tachypnea, and tachycardia. As soon as culture results permit, the patient's antibiotic regimen is revised to use specific drugs to which the offending organism is sensitive. After doses of these drugs are given, serum antibiotic levels (trough and peak) may be monitored to prevent toxicity and ensure effectiveness. The patient is assessed carefully for signs of disseminated intravascular coagulation, adult respiratory distress syndrome, renal failure, heart failure, gastrointestinal ulcers, and hepatic abnormalities, any of which can complicate the clinical picture.

If septic shock occurs, oxygenation and perfusion are vigorously supported. An arterial catheter may be placed to

measure blood pressure and provide access for arterial blood gas (ABG) samples. A pulmonary artery catheter may be used to monitor the patient's hemodynamic status. The health care team monitors closely for fluid overload. Nasoendotracheal intubation and mechanical ventilation may be necessary to overcome hypoxia, and ABGs are evaluated to determine FiO_2 and ventilatory volumes. If shock persists after volume expansion, vasopressor and inotropic therapy may sometimes be prescribed to maintain adequate renal and brain perfusion. During vasopressor administration, central pressures and cardiac rate and rhythm are closely monitored. Metabolic (lactic) acidosis may sometimes be corrected with IV bicarbonate therapy. A gram-negative endotoxin vaccine may be prescribed, as may other experimental treatments to block the rapid inflammatory process (corticosteroids, opiate antagonists, prostaglandin inhibitors, and calcium channel blockers). The patient's response is assessed, noting any adverse reactions.

A quiet and calm milieu is provided for the profoundly ill patient. Psychological support is provided. Oral hygiene is provided to prevent stomatitis, sordes, and salivary obstruction, esp. if the patient is permitted nothing by mouth. Nutritional needs are monitored, with consultations with the nutritional therapist to determine the need for enteral or parenteral nutrition. The patient's skin and joint function needs to be protected by assessing the skin and providing required care, as well as through frequent, careful repositioning, range-of-motion exercises, and correct body alignment, using supportive devices as necessary. The health care team should function as a liaison to family members, offering them emotional support and helping them to understand the patient's illness and the treatment regimen.

puerperals. Any infection of the genital tract that occurs within 6 weeks after childbirth or abortion. Although once the greatest killer of new mothers, the incidence of postpartum infection has dropped dramatically as a result of aseptic technique during and after childbirth and the use of antibiotic therapy and now occurs in only a small percentage of maternity patients. SYN: *childbed fever*. SEE: *Nursing Diagnoses Appendix*.

SIGNS AND SYMPTOMS: Clinical findings vary with the site and type of infection. *Local:* Infections of perineal lacerations, of an episiotomy, or of the abdominal incision for cesarean delivery exhibit the classic signs of wound infections: redness, edema, ecchymosis, discharge, and interrupted approxima-

tion. *Pelvic:* Women whose infections involve the uterus, fallopian tubes, ovaries, or parametrium usually exhibit fever, chills, tachycardia, and abdominal tenderness or pain. Endometritis is accompanied by changes in the character and amount of lochia related to the causative organism; lochia may be scant or profuse, odorless or foul-smelling, colorless or bloody.

ETIOLOGY: The most common causes are group A or B streptococci; coagulase-negative staphylococci, *Clostridium perfringens*, *Bacteroides fragilis*, *Escherichia coli*; and some other gram-negative bacteria. While most of these are a normal part of vaginal flora, they can become pathogenic in the presence of predisposing factors.

RISK FACTORS: Conditions that predispose to postpartum infection include anemia, malnutrition, prolonged and premature rupture of membranes, repeated vaginal examinations during labor, prolonged labor, invasive procedures, surgical interventions (esp. cesarean section), hemorrhage, retained products of conception, and breaks in aseptic technique. Common modes of transmission include upward migration of vaginal bacteria, autoinfection, and contact with infected personnel or contaminated equipment.

DIAGNOSIS: The primary diagnostic criterion is a temperature of 100.4°F (38°C) occurring on any two of the first 10 days after childbirth, exclusive of the first 24 hours. Cultures of any drainage and sensitivity tests identify the causative microbe and the appropriate therapeutic antibiotic.

PATHOLOGY: In minor cases of ulceration, the vaginal tract is covered by a dirty membrane. In streptococcal and staphylococcal infections, the endometrium is smooth and the lymphatics are congested with the invading organisms. As a rule, the uterine cavity is filled with very little lochia. The uterus shows poor involution. If the infection extends farther beyond the uterus, the parametrium or cellular tissues show edema, inflammation, and in some cases purulent infiltration. Extension of the process to the veins produces infectious thrombi, which in turn produce localized abscesses in other parts of the body.

TREATMENT: Treatment includes appropriate antibiotics, incision and drainage if abscess forms, and supportive therapy.

PATIENT CARE: Puerperal infection is prevented by maintaining strict asepsis during the entire labor, delivery, and postpartum period. Hand hygiene is stressed for all care providers. Preventive measures also include good prenatal nutrition; intranatal hemorrhage control; and avoidance of uterine dys-

tocia, prolonged labor (esp. if amniotic fluid is leaking), and traumatic vaginal delivery. Fluid and electrolyte balance is maintained and unusual blood loss replaced.

The health care professional assesses for and reports suspicious clinical findings, and administers prescribed broad-spectrum antibiotics intravenously, changing to specific therapy once cultures have established sensitivity. Analgesics and antiemetics are prescribed and administered as needed. The patient is isolated and separated from the infant while febrile, and other family members are encouraged to nurture the infant. The mother is provided with frequent reassurance about her neonate's status. The patient is given nutritional support, fluid intake and urinary output are measured, and care of the perineum, vaginal secretions, and breasts is provided. Milk is pumped and discarded throughout antibiotic therapy to maintain lactation for the woman who wants to breast feed. If surgery is required, the patient is prepared physically and psychologically for the necessary procedure and the family is given information and emotional support. Postpartum patients should be taught how to maintain good perineal hygiene and keep episiotomy sites clean. Because of early discharge to home and self-care, patients should be advised to report fever that occurs in the week or so following discharge as well as associated chills, headache, malaise and/or restlessness.

sepsis syndrome Septic shock.

septal (sĕp'tāl) Pert. to a septum or a layer of tissue that separates two body chambers.

septan (sĕp'tān) [L. *septem*, seven] Recurring every seventh day.

septate (sĕp'tāt) [L. *saepium*, a partition] Having a dividing wall.

septectomy (sĕp-tĕk'tō-mĕ) [" + Gr. *ektome*, excision] Excision of a septum, esp. the nasal septum or a part of it.

septi- Combining form meaning *seven*.

septic (sĕp'tik) [Gr. *septikos*, putrefying] 1. Pert. to sepsis. 2. Pert. to pathogenic organisms or their toxins.

septicemia (sĕp-tī-sĕ'mĕ-ă) [" + *haima*, blood] The presence of pathogenic microorganisms in the blood. SEE: *sepsis*; *Nursing Diagnoses Appendix*. **septicemic** (-ik), *adj.*

septimetritis (sĕp'tī-mĕ-trī'tīs) [Gr. *septos*, putrid, + *metra*, uterus, + *itis*, inflammation] An inflammation of the uterus caused by sepsis.

septipara (sĕp-tīp'ă-ră) [L. *septem*, seven, + *parere*, to bring forth] A woman who has had seven pregnancies, each of which produced an infant, alive or dead, weighing 500 g or more.

septivalent (sĕp-tī-vă'lĕnt, -tīv'ă-lĕnt) [" + *valere*, to be strong] Having a va-

lence of seven or combining with or replacing seven hydrogen atoms.

septonasal (sĕp-tō-nă'zāl) [L. *saepium*, a partition, + *nasus*, nose] Concerning the nasal septum.

septo-optic dysplasia A rare developmental disorder of the brain and eye in which the optic disk and septum pellucidum do not develop normally, resulting in blindness, hormonal deficiencies, learning disabilities, decreased muscular tone, and, occasionally, seizures.

septoplasty (sĕp'tō-plăs'tĕ) [" + Gr. *plassein*, to form] Plastic surgery of the nasal septum.

septostomy (sĕp-tōs'tō-mĕ) [" + Gr. *stoma*, mouth] Surgical formation of an opening in a septum.

amniotic s. Surgical puncturing of the membrane between twins affected by the twin oligohydramnios-polyhydramnios sequence.

balloon atrial s. The surgical enlargement of an opening between the cardiac atria for palliative relief of congestive heart failure in newborns with certain heart defects. A deflated balloon is inserted into a vein, passed through the foramen ovale, and then inflated and pulled vigorously through the atrial septum to enlarge the opening and improve oxygenation of the blood. SYN: *Rashkind procedure*.

surgical atrial s. The use of a specialized scalpel or knife to separate fused structures within the hearts of infants born with complex congenital cardiac defects.

septotome (sĕp'tō-tōm) [" + Gr. *tome*, incision] An instrument for cutting or removing a section of the nasal septum.

septulum (sĕp'tū-lŭm) *pl.* **septula** [L.] A small partition or septum.

septum (sĕp'tŭm) *pl.* **saepium**, a partition] A wall dividing two cavities. **septal** (-tāl), *adj.*

atrial s. Interatrial s.

atrioventricular s. The septum that separates the right and left atria of the heart from the respective ventricles.

deviated s. A nasal septum displaced to one side. It sometimes causes impaired air flow through a nostril.

interatrial s. The myocardial wall between the atria of the heart.

interdental s. The bony partition across the alveolar process between adjacent teeth that forms part of the tooth sockets.

intermuscular s. 1. A connective tissue septum that separates two muscles, esp. one from which muscles may take their origin. 2. One of two connective tissue septa that separate the muscles of the leg into anterior, posterior, and lateral groups.

interradicular s. One of the thin bony partitions between the roots of a multi-

rooted tooth that forms part of the walls of the tooth socket.

interventricular s. The myocardial wall between the ventricles of the heart.

lingual s. A sheet of connective tissue underlying the midline groove (median sulcus) separating the halves of the tongue.

mediastinal s. A partition between two parts of an organ or cavity.

nasal s. The partition that divides the nasal cavity into two nasal fossae. The bony portion is formed by the perpendicular plate of the ethmoid bone and the vomer. The cartilaginous portion is formed by septal and vomeronasal cartilages and medial crura of greater alar cartilages. Both sides of the septum are covered with mucous membranes.

orbital s. A fibrous sheet extending partially across the anterior opening of the orbit within the eyelids.

s. pellucidum A thin, translucent, triangular sheet of nervous tissue consisting of two laminae attached to the corpus callosum above and the fornix below. It forms the medial wall and interior boundary of the lateral ventricles of the brain.

s. primum In the embryonic heart, a septum between the right and left chambers.

rectovaginal s. The layer of fascia between the rectum and the vagina.

rectovesical s. The membranous septum between the rectum and the urinary bladder.

tracheoesophageal s. In the embryo, the partition that develops between the growing laryngotracheal tube (the future larynx, trachea, and lungs) and the developing esophagus.

ventricular s. Interventricular s.

septuplet (sĕp'tū-plĕt) [L. *septuplus*, sevenfold] One of seven children born from the same gestation.

sequel (sĕ'kwĕl) [L. *sequela*, sequel] Sequela.

sequela (sĕ-kwĕ'lă) *pl. sequelae* [L., sequel] A condition following and resulting from a disease.

sequence (sĕ'kwĕns) [L.] 1. The order or occurrence of a series of related events. 2. The arrangement of nucleotides in a nucleic acid molecule.

pulse s. In magnetic resonance imaging, a series of radio waves designed to produce proton stimulation necessary to create the image. **sequential, adj.**

sequencing (sĕ'kwĕn-sing) [L. *sequor*, to follow] 1. The application of particular treatments in a specific order rather than randomly or haphazardly. 2. The determination of the order of nucleotides in a gene or a genome. SYN: *gene sequencing*; *genetic sequencing*.

sequential Occurring in order (i.e., one after another).

sequential therapy Any treatment regimen in which the patient is given one treatment followed by another (e.g., two distinct but mutually reinforcing combinations of drugs).

sequester (sĕ-kwĕs'tĕr) [L. *sequestrare*, to separate] 1. To isolate. 2. Sequesterum.

sequestration (sĕ'kwĕs-tră'shŭn) [L. *sequestratio*, a separation] 1. The formation of sequesterum. 2. The isolation of a patient for treatment or quarantine. 3. Reduction of hemorrhage of the head or trunk by temporarily stopping the return of blood from the extremities by applying tourniquets to the thighs and arms. 4. Fragment of nucleus pulposus of the intervertebral disk separating and freely floating in the spinal canal.

pulmonary s. A nonfunctioning area of the lung that receives its blood supply from the systemic circulation.

sequestrectomy (sĕ'kwĕs-trĕk'tō-mĕ) [" + Gr. *ektome*, excision] Excision of a necrosed piece of bone. SYN: *sequestrotomy*.

sequestrotomy (sĕ'kwĕs-trōt'ō-mĕ) [" + Gr. *tome*, incision] Operation for removal of a sequesterum, a fragment of necrosed bone. SYN: *sequestrectomy*.

sequesterum (sĕ-kwĕs'trŭm) *pl. sequestra* [L., something set aside] A fragment of a necrosed bone that has become separated from the surrounding tissue. It is designated *primary* if the piece is entirely detached, *secondary* if it is still loosely attached, and *tertiary* if it is partially detached but still remaining in place. SYN: *sequester*. **sequestral** (-ăl), *adj.*

seralbumin (sĕr-ăl-bŭ'mĭn) [L. *serum*, whey, + *albumen*, white of egg] Serum albumin.

serendipity (sĕr'ĕn-dĭp'ĭ-tĕ) The gift of finding, by chance and insight, valuable or agreeable things not sought for. In medical research, an unexpected reaction or result may produce new insights into some area totally unrelated to that which prompted the investigation.

serglycin (sĕr-glĭ'sin) A proteoglycan found within many cells, esp. in the granule-containing vesicles of blood-forming cells and endothelial cells.

serial (sĕ'rĕ-ăl) [L. *series*, row, chain] In numerical order, in continuity, or in sequence, as in a series.

serial sevens test A test of mental status. The patient is asked to subtract 7 from 100 and to take 7 from that value and continue serially.

series (sĕr'ĕz) [L. *series*, row, chain] 1. Arrangement of objects in succession or in order. 2. In electricity, batteries or mode of arranging the parts of a circuit by connecting them successively end to end to form a single path for the current. The parts so arranged are said to be "in series."

acute abdomen s. A radiologic examination that usually includes an erect kidney, ureter, and bladder (KUB) projection, a recumbent KUB projection, and a left lateral decubitus image of the chest. It is used to assess patients with abdominal pain for free air (organ perforation), infection, intestinal obstruction, or stones.

aliphatic s. Chemical compounds with a structure of an open chain of carbon atoms.

aromatic s. Any series of organic compounds containing the benzene ring.

erythrocytic s. The group of immature cells that develop into mature red blood cells.

fatty s. Aliphatic series, esp. those similar to methane.

granulocytic s. The immature cells in the bone marrow that develop into mature granular white blood cells. SYN: *leukocytic series*.

homologous s. In chemistry, compounds that proceed from one to the next by some constant such as a CH₂ group.

leukocytic s. Granulocytic s.

monocytic s. The immature blood cells that grow in the bone marrow and other blood-forming organs into mature monocytes and macrophages.

thrombocytic s. The immature blood cells in the bone marrow that develop into megakaryocytes and ultimately form platelets.

upper GI s. Radiographical and fluoroscopic examinations of the stomach and duodenum after the ingestion of a contrast medium, such as barium sulfate or an iodinated glucose solution.

serine (sēr'ēn) 2-amino-3-hydroxypropionic acid; an amino acid present in many proteins, including casein, vitellin, and others.

serine protease inhibitor ABBR: SERPIN. Any of the compounds that inhibit platelet function and coagulation. SERPINs have been used to reduce deposition of microemboli in cases of disseminated intravascular coagulation associated with sepsis.

sero- [L.] Combining form meaning *serum*.

serocolitis (sēr'ō-kō-lī'tīs) [" + Gr. *kolon*, colon, + *itis*, inflammation] Inflammation of the serous layer of the colon. SYN: *pericolitis*.

seroconversion (sēr'ō-kōn-vēr'zhūn) The development of an antibody response to an infection or vaccine, measurable in the serum.

seroculture (sēr'ō-kūl-chūr) [L. *serum*, whey, + *cultura*, tillage] A bacterial culture on blood serum.

serocystic (sēr'ō-sīs'tīk) [" + Gr. *kystis*, bladder, sac] Composed of cysts containing serous fluid.

serodermatosis (sēr'ō-der-mā-tō'sīs) [" + Gr. *derma*, skin, + *osis*, condition] Skin disease with serous effusion into tissues of the epidermis.

serodiagnosis (sēr'ō-dī-āg-nō'sīs) [" + Gr. *dia*, through, + *gnosis*, knowledge] Diagnosis of disease based on tests of serum, esp. immunological tests.

seroenteritis (sēr'ō-ēn-tēr-ī'tīs) [" + Gr. *enteron*, intestine, + *itis*, inflammation] An inflammation of the serous covering of the intestine.

seroepidemiology (sēr'ō-ēp'ī-dē-mē-ōl'ō-jē) [" + *epi*, upon, + *demōs*, people, + *logos*, word, reason] A study of the epidemiological characteristics of a disease by reviewing blood samples for markers of the disease.

serofast (sēr'ō-fāst") Serum-fast.

serofibrinous (sēr'ō-fī'brīn-ūs) [" + *fibra*, fiber] 1. Composed of both serum and fibrin. 2. Denoting a serofibrinous exudate.

serofibrous (sēr'ō-fī'brūs) [" + *fibra*, fiber] Concerning serous and fibrous surfaces.

seroflocculation (sēr'ō-flōk'ū-lā'shūn) [" + *flocculus*, little tuft] Flocculation produced in serum by an antigen.

seroimmunity (sēr'ō-ī-mū'nī-tē) [" + *immunitas*, immunity] Immunity produced by the administration of an anti-serum.

serologic test (sēr'ā-lōj'īk tēst) Any test done on serum.

serologist (sēr-rōl'ō-jīst) [" + Gr. *logos*, word, reason] An individual trained in the science of serology.

serology (sēr-rōl'ō-jē) [" + Gr. *logos*, word, reason] The scientific study of fluid components of the blood, esp. antigens and antibodies. **serological** (-rō-lōj'īk, -rō-lōj'īk-āl), *adj.*

serolysin (sēr-rōl'īs-īn) [" + Gr. *lysis*, dissolution] A bactericidal substance or lysin found in serum.

seroma (sēr-rō'mā) [" + "] A mass caused by the accumulation of serum within a tissue or an organ. Seromas may accumulate as a complication of surgery or after other traumatic injuries to soft tissues.

seromembranous (sēr'ō-mēm'brān-ūs) [" + *membrana*, membrane] 1. Both serous and membranous. 2. Relating to a serous membrane.

seromucous (sēr'ō-mū'kūs) [" + *mucus*, mucus] Pert. to a secretion that is part serous and part mucous.

seromuscular (sēr'ō-mūs'kū-lār) [" + *muscularis*, muscular] Concerning the serous and muscular layers of the intestinal wall.

seronegative (sēr'ō-nēg'ā-tīv) Producing a negative reaction to serological tests.

seropositive (sēr'ō-pōz'ī-tīv) Having a positive reaction to a serological test

(i.e., showing the presence of a specific antigen or antibody).

seroprevention (sēr'ō-prē-vēn'shŭn) Seroprophylaxis.

seroprotection (sēr'ō-prō-tēk'shŭn) An antibody response capable of preventing infection, e.g., after a vaccination or a previous infection with a microorganism.

seropurulent (sēr'ō-pŭ'roo-lēnt) [" + *purulentus*, full of pus] Composed of serum and pus, as an exudate.

seroreaction (sēr'ō-rē-āk'shŭn) [" + "] **1.** Any reaction taking place in or involving serum. **2.** A reaction to an injection of serum marked by rash, fever, pain, arthralgia, or arthritis.

seroresistance (sēr'ō-rē-zis'tāns) The failure of serum antibody tests to return to normal after treatment or resolution of an infection.

seroresistant (sēr'ō-rē-zis'tānt) Concerning seroresistance.

serosa (sēr-ō'sā) [L. *serum*, whey] A serous membrane (e.g., the peritoneum, pleura, and pericardium).

serosanguineous (sēr'ō-sān-gwīn'ē-ūs) [L. *serum*, whey, + *sanguineus*, bloody] Containing or of the nature of serum and blood.

seroserous (sēr'ō-sē'rūs) [L. *serosus*, serous, + *serum*, whey] Pert. to two serous surfaces.

serositis (sēr'ō-sī'tis) *pl.* **serositides** [" + Gr. *itis*, inflammation] An inflammation of a serous membrane, such as the pleura, pericardium, or peritoneum. Serositis is one of the cardinal findings in connective tissue diseases like systemic lupus erythematosus.

serosurvey (sēr'ō-sŭr'vā) [" + "] Sampling of blood in a percentage of people living in a community to determine the percentage of those who are resistant or susceptible to a disease, esp. an infectious disease.

serosynovial (sēr'ō-sī-nō'vē-āl) [L. *serum*, whey, + *synovia*, joint fluid] Concerning serous and synovial material.

serosynovitis (sēr'ō-sīn'ō-vī'tis) [" + *synovia*, joint fluid, + Gr. *itis*, inflammation] Synovitis with an increase of synovial fluid.

serotherapy (sēr'ō-thēr'ā-pē) Passive immunization with antivenins. SYN: *serum therapy*.

serotonergic neuron (sēr'ā-tōn'ŭr'jīk) A nerve cell that uses serotonin as its neurotransmitter.

serotonin (sēr'ō-tōn'īn) A chemical, 5-hydroxytryptamine (5-HT), found in platelets, the gastrointestinal mucosa, mast cells, carcinoid tumors, and the central nervous system. Serotonin is a vasoconstrictor, and through its action on cellular receptors, it plays important roles in intestinal motility, nausea and vomiting, sleep-wake cycles, obsessive-

compulsive behaviors, depression, and eating. SEE: *carcinoid syndrome*; *selective serotonin reuptake inhibitor*.

serotonin and norepinephrine reuptake inhibitor ABBR: SNRI. An antidepressant medication (such as duloxetine or venlafaxine) that elevates mood by blocking neurons from taking up both norepinephrine and serotonin. Combined reuptake inhibitors differ from medications such as sertraline (Zoloft) or fluoxetine (Prozac), which are relatively selective serotonin reuptake inhibitors, and from tricyclic antidepressants, which primarily prevent the reuptake of norepinephrine by brain cells. SNRIs treat neuropathic pain as well as depression.

serotonin syndrome The adverse effects of excessive levels of serotonin in the brain, typically caused by exposure to multiple medications that alter the neuronal disposition of serotonin. Common findings are confusion, restlessness, hyper-reflexia, agitation, diaphoresis, tremor, and fever.

serotype (sēr'ō-tīp) In microbiology, a microorganism determined by the kinds and combination of antigens present on its cell surface.

serous (sēr'ūs) [L. *serosus*] **1.** Having the nature of serum. **2.** Thin or watery, rather than syrupy, thick, or viscous.

serovaccination (sēr'ō-vāk'sī-nā'shŭn) An injection combining serum (containing preformed antibodies to provide immediate passive immunity) and components of a vaccine (to stimulate long-term active immunity). It may be used for unimmunized patients after rabies or tetanus exposure and for neonates born of mothers who are hepatitis B carriers.

serovar (sēr'ō-vār') [*serological variation*] Variants within a species defined by variation in serological reactions. SEE: *biovar*; *morphovar*.

Serpent of the Nile A colloquial name for *Dracunculus medinensis*.

serpiginous (sēr-pī'jī-nūs) [L. *serpere*, to creep] Creeping from one part to another.

Serra do Navio virus [sēr'ā dō nah'vē-ō, -oo] [*Serra do Navio*, A region of the Amazonas, Brazil] ABBR: SDNV. A California serogroup virus of the Bunyviridae family. It causes a febrile encephalitis.

serrate (sēr'āt) [L. *serratus*, toothed] Dentate.

Serratia (sēr-ā'shē-ā) [Serafino Serrati, 18th-century Italian physicist] A genus of gram-negative bacilli of the family Enterobacteriaceae. It is a gram-negative rod.

S. liquefaciens A species that has caused septicemia and other hospital-acquired infections.

S. marcescens An opportunistic bac-

terium that causes septicemia and pulmonary disease, esp. in immunocompromised patients, and is found in water, soil, milk, and stools. In the proper environment, the organism will grow on food and produce the red pigment prodigiosin.

serration (sĕr-ā'shŭn) [L. *serratio*, a notching] **1.** A formation with sharp projections like the teeth of a saw. **2.** A single tooth or notch in a serrated edge.

serrefine (sār-fĕn') [Fr.] A small wire-spring forceps for compressing bleeding vessels.

serrulate (sĕr'ū-lāt) [L. *serrulatus*] Finely notched or serrated.

Sertoli cell (sĕr-tō'lĕz) [Enrico Sertoli, Italian histologist, 1842–1910] One of the supporting elongated cells of the seminiferous tubules of the testes to which spermatids attach to be nourished until they become mature spermatozoa. Sertoli cells produce the hormone inhibin. Also called *sustentacular cell*.

sertraline (sĕr'trā-lĕn) A selective serotonin reuptake inhibitor and antidepressant, administered orally to manage depression, panic, obsessive-compulsive disorder, and posttraumatic stress disorder. Trade name is Zoloft.

serum (sĕ'rŭm) *pl.* **serums, sera** [L., whey] **1.** Any serous fluid, esp. the fluid that moistens the surfaces of serous membranes. **2.** The watery portion of the blood after coagulation; a fluid found when clotted blood is left standing long enough for the clot to shrink. **3.** Fluid obtained from blood that contains antibodies against a specific microorganism. It is used to provide immediate passive immunity. SYN: *immune globulin*.

antilymphocyte s. [ān'tī-lĭm'fō-sīt'] ABBR: ALS. An antibody-containing serum used to reduce rejection of transplanted organs and tissues. Its immunosuppressive effects are directed against B and T lymphocytes, the cells that promote the formation of antibodies and of cell-mediated immunity. SYN: *antilymphocyte globulin*.

convalescent s. Serum from a person recovering from an infection.

foreign s. Serum from one species into another.

grouping s. A serum used for determining the blood group to which unknown cells belong. The grouping serums commonly used are human serums secured from donors and rabbit antisera prepared commercially.

immune s. Serum containing antibodies for specific antigens.

polyvalent s. Serum containing antibodies to several antigens.

pooled s. Serum collected from several donors.

pregnant mare's s. Serum derived

from the blood of pregnant mares; source of hormones, esp. gonadotropins.

serum bank A laboratory or storage facility where samples of serum are kept, typically at subfreezing temperatures, for their future value in the retrospective study of important or emerging diseases. The JANUS serum bank, in Norway, has one of the largest and best organized national collections of stored serum; its specimens have been used primarily in studies of tumor markers.

serum-fast Capable of resisting the antibodies present in serum. SYN: *sero-fast*.

serum glutamic-oxaloacetic transaminase ABBR: SGOT. Aspartate aminotransferase.

serum glutamic pyruvic transaminase ABBR: SGPT. Alanine aminotransferase.

serum protein-expression profiling Protein profiling.

serum protein profiling Protein profiling.

serum therapy Serotherapy.

serve To deliver a legal document to a person named in it. This is done formally to comply with due process of law.

service Help or assistance (e.g., for persons who are needy, sick, or injured).

service animal Any animal (often a dog) specially trained to assist a person who is blind, deaf, or in some manner disabled. Also called an *assistance animal*.

servomechanism (sŭr'vō-mĕk'ā-nĭzm) In biology and physiology, a control mechanism that operates by negative or positive feedback. For example, when in the normal person the blood glucose level rises, the pancreas responds by releasing insulin, which enables the glucose to be metabolized. The level of other hormones is also regulated by this mechanism.

SES *socioeconomic status*.

sesamoid (sĕs'ā-moyd) [L. *sesamoides*] Resembling a grain of sesame in size or shape.

sesamoiditis (sĕs'ā-moy-dī'tis) [ʹ + Gr. *itis*, inflammation] Inflammation of a sesamoid bone.

sesqui- [L.] Prefix meaning *one and one-half*.

sessile (sĕs'l) [L. *sessilis*, low] Having no peduncle but attached directly by a broad base.

session (sĕsh'ĭn) [Med. L. *sessio*, (law court) sitting] Any formal clinical encounter between a patient and a therapist. In psychology and psychiatry, each visit with a client constitutes a session. A meeting between the parties may have a single objective (e.g., to analyze feelings of loss or grief) or multiple goals (e.g., to quit smoking *and* increase exercise). Each chiropractic adjustment is a session, as is each whirlpool treatment provided to an injured athlete, or each

visit with a speech therapist for a patient with swallowing difficulties.

sestamibi Technetium Tc 99m sestamibi.

set **1.** To fix firmly in place, as to set a bone in reduction of a fracture. **2.** To allow an amalgam or plaster to harden. **3.** In psychology, a group of conditions or attitudes that favor the occurrence of a certain response. **4.** In resistance exercise, a grouping of repetitions of a specific exercise.

limited data s. Minimally identifying information about a patient's medical care (e.g., dates of admission and discharge from hospital; the patient's dates of birth, death, and age; and the zip code in which the patient resides). Under regulations of the Health Insurance Portability and Accountability Act (HIPAA), data that reveal more about a patient (e.g., name, address, social security number) cannot be divulged in communication between health care agencies or professionals without the patient's explicit approval.

seta (sĕ'tā) *pl.* **setae** [L., bristle] A stiff, bristle-like structure. SEE: *vibrissae*.

setaceous; setiferous (sĕ-tā'shūs), *adj.*

seton (sĕ'tŏn) [L. *seta*, bristle] **1.** A thread or threads drawn through a fold of skin to act as a counterirritant or as a guide for instruments. **2.** A suture tied about an anal fistula to maintain drainage while fibrosis gradually obliterates the fistulous tract.

setose (sĕ'tōs) Having bristle-like appendages.

set-point (sĕt'-poynt') The concept that homeostatic mechanisms maintain variables such as body temperature, body weight, blood glucose level, and hormone levels within a certain physiological range compatible with optimal function. SYN: *settling point*. SEE: *homeostasis*.

set sensitivity In mechanical ventilation, the inspiratory pressure at which the patient's respiratory effort triggers a breath from the ventilator.

set test A global (i.e., holistic) test of a patient's ability to make categories. It demonstrates motivation, alertness, concentration, short-term memory, and problem solving. The patient is asked to name 10 items in each of four groups: fruits, animals, colors, and towns or cities. Then the patient is asked to categorize, count, name, and remember the items listed. The test is scored by giving one point for each correctly recalled item. A maximum of 40 points is possible. Scoring less than 15 is associated with dementia; more than 25 indicates absence of dementia; and scores between 15 and 24 require further investigation to distinguish between mental changes and cultural, educational, and social factors.

settlement **1.** In health insurance, pay-

ment to the policyholder for claims made against the insurance company. **2.** In liability or malpractice litigation, an agreement between disputants that satisfies the needs of both parties.

viatical s. The purchase—at a discount—of a life insurance policy from a gravely ill patient. The buyer becomes the beneficiary of the policy; the viator receives a lump sum payment before dying.

settling point Set-point.

setup (sĕt'ŭp) The arrangement of teeth on a trial denture base.

Sever's disease (sĕ'vérz) [James W. Sever, U.S. orthopedist, 1878–1964] Apophysitis of the calcaneus in adolescent children who are actively engaged in sports. This overuse syndrome is best treated with icing, Achilles tendon stretching, anti-inflammatory medication, and rest from weight bearing. Heel lifts are usually used unless the child has pronated feet, in which case medial heel wedges are indicated.

severe acute respiratory distress syndrome ABBR: SARS. A highly contagious, potentially lethal viral respiratory illness first diagnosed in the People's Republic of China in November 2002, characterized by a fever of higher than 100.4°F, cough, difficulty breathing, or hypoxia. The severe variant of the syndrome is present when a person has a radiograph compatible with pneumonia or autopsy findings consistent with pneumonia. Instances of the disease without pneumonia are considered moderate infections. The disease should be strongly suspected in someone who has had close contact within the last 10 days with a person known to have or suspected of having SARS or in someone who has traveled within the last 10 days to a part of the world where SARS is currently reported. The disease is confirmed by the identification of antibody to the causative virus (SARS coronavirus) or the isolation of SARS coronavirus from the infected person.

severe combined immunodeficiency disease ABBR: SCID. A syndrome marked by gross functional impairment of both humoral and cell-mediated immunity and by susceptibility to fungal, bacterial, and viral infections. Although the disorder may occur sporadically, most commonly it is inherited and transmitted as an X-linked or autosomal recessive trait. If untreated, infants rarely survive beyond 1 year. It is important that the disease be recognized early and that patients not be given live viral vaccines or blood transfusions. The immunologic defects may be repaired by stem cell transplantation. The optimal donor is an HLA-identical family member of the patient.

Severinghaus electrode (sěv'ě-rīng-hows") Carbon dioxide electrode.

sewage The waste water that passes through sewers. It may be composed of bodily excretions, the waste water and solid waste of residential and commercial establishments, or the solvents and other toxic wastes of industry. Bodily excretions discharged as sewage are potentially infectious and may be the source of epidemic outbreaks of diarrhea or other contagious illnesses. Other sewage components, esp. toxic oils and solvents, may pollute rivers and beaches, destroying fishing and shellfish beds.

sex [L. *sexus*] **1.** The characteristics that differentiate males and females in most plants and animals. **2.** Gender.

chromosomal s. Sex as determined by the presence of the female XX or male XY genotype in somatic cells.

morphological s. The sex of an individual as determined by the form of the external genitalia.

nuclear s. The genetic sex of an individual determined by the absence or presence of sex chromatin in the body cells, particularly white blood cells.

oral s. Cunnilingus; fellatio.

psychological s. The individual's self-image of his or her gender, which may be at variance with the morphological sex.

sex clinic A clinic for the diagnosis and treatment of sexual dysfunction.

sex determination **1.** The identification of the gender of an animal or human with an ambiguous physical appearance or ambiguous genitalia. In colloquial speech, this process is sometimes referred to as "sex testing." **2.** The identification, during in vitro fertilization, of the gender of a human preimplantation embryo.

sex drive Motivation, both psychological and physiological, for behavior associated with procreation and erotic pleasure.

seduction (sěks-dŭk'shŭn) In bacteriology, the transfer of DNA, in combination with a fertility plasmid, from a donor bacterium to a recipient bacterium.

sexing (sěk'sīng) Determining the sex of a fetus or embryo.

sexism All of the actions and attitudes that relegate individuals of either sex to a secondary and inferior status in society.

sexivalent (sěks'ī-vă'lěnt, -iv'ăl-ěnt) [+ *valere*, to be strong] Capable of combining with six atoms of hydrogen.

sex-limited The expression of a genetic character or trait in one sex only.

sex-linked SEE: under *characteristic*.

sexology (sěks-ŏl'ŏ-jě) [L. *sexus*, sex, + Gr. *logos*, word, reason] Scientific study of sexuality.

sex ratio The ratio of males to females in

a given population, usually expressed as the number of males per 100 females. It is used in defining the proportion of births of the two sexes or in the representation by sexual distribution in certain diseases.

sextan (sěks'tăn) [L. *sextanus*, of the sixth] Occurring every sixth day.

sex test Sex determination.

sex therapy A form of psychotherapy involving sexual guidance for partners with sexual incompatibilities or sexual dysfunction.

sextuplet (sěks'tŭp-lět) [L. *sextus*, six] One of six children born of a single gestation.

sexual (sěks'ŭ-ăl) [L. *sexualis*] **1.** Pert. to sex. **2.** Having sex.

Sexual Assault Response Team ABBR: SART. A group of health care professionals who have had special preparation in the examination of rape victims. The training includes techniques for collecting, labeling, and storing evidence so it may be used in court proceedings concerning the person accused of rape and in psychological approaches to reduce the emotional trauma. SEE: *rape*.

sexual dysfunction The state in which an individual experiences a change in sexual function during the sexual response phases of desire, excitation, and/or orgasm which is viewed as unsatisfying, unrewarding, inadequate. There may be multiple causes, including lack of sexual interest or desire; impairments in sexual arousal (e.g., erectile function in men or vaginal lubrication or clitoral enlargement in women); inability to achieve orgasm or to delay orgasm until one's partner is satisfied; pain during intercourse; medical or hormonal conditions that impair sexual function; substance abuse issues; or prescription drug-related problems. A careful history and physical examination will help to determine the possible pathological aspects of the various phases. Is desire absent, overactive, or is there aversion? Is arousal sufficient to maintain desire and, in men, to attain erection? Does orgasm occur, and, if so, is it delayed or premature? Do the partners experience satisfaction at the completion of orgasm? Is pain present at any stage of the sexual activity?

The physical or mental factors that are involved should be treated and, when medications are responsible, alternate drugs should be substituted for those that appear to cause the disorder. SEE: *Nursing Diagnoses Appendix*.

sexual harassment Unsolicited and unwelcome verbal or physical sexually oriented conduct or innuendos. There are two types of sexual harassment: quid pro quo, in which compliance with a harasser's wishes may become a condition of continued employment or advance-

ment; and a hostile work environment in which the unwanted attentions of another person make the workplace a threatening, demeaning, or unsafe environment. A hostile work environment may also be created by offensive conduct that creates an intimidating atmosphere interfering with the work performance of the victim. The victim does not have to be the person harassed.

sexual health The World Health Organization has defined three elements of sexual health: a capacity to enjoy and control sexual behavior in accordance with a social and personal ethic; freedom from fear, shame, guilt, false beliefs, and other psychological factors inhibiting sexual response and impairing sexual relationships; and freedom from organic disorders, disease, and deficiencies that interfere with sexual and reproductive functions. Medical studies of human sexual function and activity have provided no evidence that having attained a certain age is, of itself, reason to discontinue participating in and enjoying sexual intercourse. SEE: *sexually transmitted disease*.

sexual intercourse Any sexual union between two or more partners in which at least one partner's genitalia are stimulated. SYN: *coition*; *coitus*; *copulation*; *pareunia*.

sexuality (sĕks-ŭ-ăl'ĭ-tē) [L. *sexus*, sex]

1. The state of having sex; the collective characteristics that mark the differences between the male and the female.

2. The constitution and life of an individual as related to sex; all the dispositions related to intimacy, whether associated with the sex organs or not.

sexuality patterns, ineffective Expressions of concern regarding one's own sexuality. SEE: *Nursing Diagnoses Appendix*.

sexually transmitted disease ABBR: STD. Any disease that may be acquired as a result of sexual intercourse or other intimate contact with an infected individual. A more inclusive term than "venereal disease," STDs include disease caused by bacteria, viruses, protozoa, fungi, and ectoparasites. SEE: table; *Nursing Diagnoses Appendix*.

sexual maturity rating The order and extent of the development of a patient's primary and secondary sexual characteristics as compared with the established norms for chronological age. In both sexes, the changes leading to puberty are the result of major hormonal changes that, although somewhat variable in age of occurrence, proceed in a predictable sequence. Assessing the degree of age-related sexual maturity enables the health care provider to detect abnormalities and to provide anticipatory guidance for the patient and family. An important and easily identified de-

velopment in a girl is the onset of menstruation. Physical changes in the male such as voice change, facial hair growth, and testicular and penile growth are obvious but occur over a prolonged period.

sexual offense registry A list of previously convicted sex offenders living or incarcerated in a community.

sexual preference The sexual orientation one prefers in choosing his or her sex partners.

sexual reassignment The legal, surgical, or social action or decision to assign the appropriate sexuality to an individual who has been considered previously to be of the opposite (or ambiguous) sex.

sexual stimulant Any drug (e.g., alcohol used in modest amounts) or pheromone that acts as an aphrodisiac for humans or animals.

Sézary cell (sā'zā-rē') [A. Sézary, Fr. dermatologist, 1880–1956] A T lymphocyte that contains an abundance of vacuoles filled with a mucopolysaccharide; present in the blood of patients with cutaneous T-cell lymphoma who develop Sézary syndrome. SEE: *illus.*

SGA *small for gestational age*.

SGO *Surgeon-General's Office*.

SGOT *serum glutamic-oxaloacetic transaminase*.

SGPT *serum glutamic pyruvic transaminase*. This liver enzyme is now called alanine aminotransferase.

SH *serum hepatitis*.

shadow [AS. *sceaduwe*] Achromocyte.

shadow-casting A technique to increase the definition of the material being examined by use of electron microscopy. The object is sprayed from an oblique angle with a heavy metal.

shadowing In radiology, loss of the ability to visualize a body structure because of interference by another part.

shadowing behavior Following another person quietly or disruptively, a characteristic of some people with dementia.

shaft [AS. *sceaft*] **1.** The principal portion of any cylindrical body. **2.** The diaphysis of a long bone.

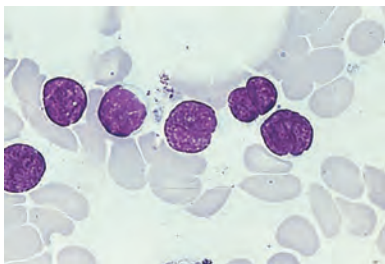
hair s. The keratinized portion of a hair that extends from a hair follicle beyond the surface of the epidermis. SEE: *hair*.

shaken-baby syndrome A syndrome seen in abused infants and children, sometimes referred to as "shaken impact syndrome" because of the accompanying impact injuries to the head. The patient has been subjected to violent, whiplash-type shaking injuries inflicted by an abuser. This may cause coma, convulsions, and increased intracranial pressure, resulting from tearing of the cerebral veins, with consequent bleeding into the subdural space. Retinal hemorrhages and bruises on the arms or trunk where the patient was forcefully grabbed are usually present.

Causative Agents of Sexually Transmitted Diseases

Organism	Associated Diseases
Bacteria	
<i>Klebsiella granulomatis</i>	Donovanosis (granuloma inguinale)
<i>Campylobacter</i> species	Enteritis, proctocolitis
<i>Chlamydia trachomatis</i>	Genital tract infections and Reiter's syndrome
<i>Gardnerella vaginalis</i>	Bacterial (nonspecific) vaginosis
Group B streptococcus	Neonatal sepsis
<i>Haemophilus ducreyi</i>	Chancroid
<i>Mycoplasma hominis</i>	Postpartum fever; meningitis
<i>Neisseria gonorrhoeae</i>	Genital tract infections, disseminated gonococcal infection
<i>Shigella</i> species	Shigellosis; gay bowel syndrome
<i>Treponema pallidum</i>	Syphilis
<i>Ureaplasma urealyticum</i>	Nongonococcal urethritis
Viruses	
Cytomegalovirus	Heterophile-negative infectious mononucleosis, birth defects, protean manifestations in the immunocompromised host
Hepatitis A	Acute hepatitis
Hepatitis B	Acute and chronic hepatitis B, cirrhosis, hepatocellular carcinoma
Hepatitis C	Acute and chronic hepatitis, cirrhosis, hepatocellular carcinoma
Herpes simplex	Genital herpes, aseptic meningitis
Human herpesvirus, type 8	Kaposi's sarcoma, lymphoma
Human immunodeficiency virus types 1 and 2	AIDS (acquired immunodeficiency syndrome)
Human papilloma (70 separate types)	Condyloma acuminata, cervical intraepithelial neoplasia and carcinoma, vulvar carcinoma, penile carcinoma
Human T-lymphotropic retrovirus, type 1	Human T-cell leukemia or lymphoma
A pox virus	Genital molluscum contagiosum
Protozoa	
<i>Entamoeba histolytica</i>	Amebiasis in people who have oroanal sex
<i>Giardia lamblia</i>	Giardiasis in people who have oroanal sex
<i>Trichomonas vaginalis</i>	Trichomonal vaginitis
Ectoparasites	
<i>Phthirus pubis</i>	Pubic lice infestation
<i>Sarcoptes scabiei</i>	Scabies

NOTE: Many of these diseases can be transmitted by contact that is not sexual.



SÉZARY CELLS

In peripheral blood ($\times 1000$)

INCIDENCE: About 50,000 cases are reported each year in the U.S. This number probably represents under-reporting.

DIAGNOSIS: The presence of retinal hemorrhage, cerebral edema, and subdural hematoma—either individually or in any combination—strongly suggests the diagnosis in the absence of other explanations for the trauma. Radiological imaging is used to identify the specific sites of injury.

PROGNOSIS: The prognosis for affected infants and children is extremely guarded. Only about 15% to 20% of them recover without sequelae, such as

vision and hearing impairments, seizure disorders, cerebral palsy, and developmental disorders requiring ongoing medical, educational, and behavioral management. SEE: *battered child syndrome; abuse, child.*



In domestic situations in which a child is abused, it is important to examine other children and infants living in the same home because about 20% of these children will have signs of physical abuse as well. That examination should be done without delay, to prevent further abuse.

shakes (shāks) [AS. *sceacen*] **1.** Shivering caused by a chill, esp. in intermittent fever. **2.** Colloquial term for state of tremulousness and extreme irritability often seen in chronic alcoholics. SYN: *jitters.*

shake test A quick test to estimate fetal lung maturity. A sample of amniotic fluid is diluted with normal saline, mixed with 95% ethyl alcohol, and shaken for 30 sec. The continued presence of small foamy bubbles in the solution after 15 min confirms the presence of pulmonary surfactant. SYN: *foam stability test; rapid surfactant test.*

shaking **1.** A passive large-amplitude vibratory movement used in massage. **2.** A vibratory technique used in chest physical therapy to facilitate pulmonary drainage.

shaman (shā'mūn, shō'-) [Russ., ascetic] A healer (usually from a tribal or pre-industrial culture) who uses non-Western practices and techniques, including faith healing, spirituality, psychological manipulation, chanting, rituals, magic, and culturally meaningful symbolism to restore health or well-being to the sick. SYN: *medicine man.* SEE: *shamanism.*

shamanism (shā'mūn-izm, shō'-) **1.** Religion of certain peoples of northern Asia who believe good and evil spirits pervade the world and can be influenced only by shamans acting as mediums. **2.** Any similar form of spiritual or magical healing, such as that practiced in many tribal cultures. SYN: *aboriginal healing.*

sham therapy Treatment that has no known therapeutic effect. Such treatment may be employed by clinical researchers who are trying to determine whether another intervention will be more effective than doing nothing. Sham therapies are also sometimes used by people engaging in health care fraud.

Shanghai fever (shāng'hī) A diarrheal illness caused by *Pseudomonas* species, associated with high fever, a rose-colored spotted rash that resembles ty-

phoid, and headache. The infection is usually contracted in the tropics.

shank (shāngk) [AS. *sceanca*] **1.** Shin.

2. The tapered portion of a dental hand instrument between the handle and the blade or nub. It may be straight or angled to provide better access or leverage in its use.

shape (shāp) [AS. *sceapan*] **1.** To mold to a particular form. **2.** Outward form; contour.

shared decision-making Any negotiated agreement between a patient, her family, and health care professionals. Successful shared decision-making is dependent on the good will, rationality and competence of all parties.

shared governance A model of nursing management in which the staff nurse shares responsibility and accountability for patient care with the clinical agency management. Shared governance assumes a participatory style of management and aims to achieve a high quality of patient care and professional nursing practice. Shared governance differs both from self-governance and from the traditional bureaucratic model of nursing management. SEE: *self-governance.*

sharkskin A condition seen in pellagra (nicotinic acid deficiency) in which openings of sebaceous glands become plugged with a dry yellowish material.

sharp end In a health care institution, those personnel and components that work in direct contact with patients.

sharps (shārpz) A colloquial term for medical articles that may cause punctures or cuts to those handling them, including all broken medical glassware, syringes, needles, scalpel blades, suture needles, and disposable razors. Potential infectious risks posed by injury with sharps include HIV, hepatitis B, and hepatitis C infections. SEE: *medical waste; red bag waste; Standard and Universal Precautions Appendix.*

shear (shēr) A frictional force per unit of surface area applied parallel to the planes of any object.

sheath (shēth) [AS. *sceath*] **1.** A covering structure of connective tissue, usually of an elongated part, such as the membrane covering a muscle. **2.** An instrument introduced into a vessel during angiographic procedures when multiple catheter changes are anticipated. It facilitates ease of change and decreases morbidity at the puncture site.

PATIENT CARE: The sheath introduced into the femoral artery, the preferred vascular access route for percutaneous coronary intervention, is a 4 to 6 French (1.35 to 2 mm) in size. The sheath remains in place after completion of the procedure and removal of the catheter until anticoagulation is reversed or anticoagulants are below peak action. The sheath is connected to high-

pressure tubing and a flushing system; manual or automatic flushing keeps the line patent. A stopcock connected to the system permits drawing of blood samples.

axon s. A myelin sheath or a neurilemma. SEE: *myelin s.*

carotid s. The portion of cervical or pretracheal fascia enclosing the carotid artery, interior jugular vein, and vagus nerve.

crural s. The fascial covering of femoral vessels.

dural s. A fibrous membrane or external investment of the optic nerve.

femoral s. The fascia covering the femoral vessels.

s. of Hertwig SEE: *Hertwig's root sheath.*

myelin s. Layers of the cell membrane of Schwann cells (peripheral nervous system) or oligodendrocytes (central nervous system) that wrap nerve fibers, providing electrical insulation and increasing the velocity of impulse transmission. SEE: *nerve fiber; neuron.*

periarterial lymphoid s. The tissue composed of T lymphocytes that surrounds each arteriole in the spleen. The sheaths are attached to lymphoid follicles containing B cells and make up much of the white pulp. SEE: *spleen.*

pial s. An extension of the pia that closely invests the surface of the optic nerve.

rectus s. A strong fibrous sleeve in which the rectus abdominis and pyramidalis muscles contract. The sheath is formed from the aponeuroses of the abdominal wall muscles as they meet in the linea alba at the abdominal midline.

root s. 1. One of the layers of a hair follicle derived from the epidermis. It includes the outer root sheath, which is a continuation of the stratum germinativum, and the inner root sheath, which consists of three layers of cells that closely invest the root of the hair. SEE: *hair.* 2. The epithelial covering that induces root formation in teeth. Also called *Hertwig's root sheath.*

tendon s. A dense fibrous sheath that confines a tendon to an osseous groove, converting it into an osteofibrous canal. It is found principally in the wrist and ankle. SEE: *synovial s.*

shedding [ME. *sheden*, shed] 1. A colloquial term for the loss of deciduous teeth. 2. Casting off of the surface layer of the epidermis. 3. The release of bacteria or viruses from a body surface.

Sheehan's syndrome (shē'ēnz) [Harold L. Sheehan, Brit. pathologist, 1900–1988] Hypopituitarism resulting from an infarct of the pituitary following postpartum shock or hemorrhage. Damage to the anterior pituitary gland causes partial to complete loss of thy-

roid, adrenocortical, and gonadal function.

sheep cell agglutination test ABBR: SCAT. A test for rheumatoid factor in serum. Sheep erythrocytes sensitized with rabbit antish sheep erythrocyte immune globulin will be agglutinated if serum containing the rheumatoid factor is added.

sheet (shēt) [AS. *sciete*, cloth] 1. A linen or cotton bedcovering. 2. Something that resembles a sheet (e.g., a sheet of connective tissue).

beta s. A protein structure in which parallel layers of linked peptides are folded across each other. This structure is characteristic of amyloid proteins.

draw s. A sheet folded under a patient so that it may be withdrawn without lifting the patient. This is accomplished by turning the patient to the side of the bed to allow one side of the sheet to be removed and replaced with a clean one. The patient is then turned to the other side of the bed. The soiled sheet is removed and replaced with a clean one. In most inpatient facilities, draw sheets have been replaced by paper and plastic pads that resemble disposable diapers.

flows s. A representation in outline or picture format of a technique or treatment.

lift s. Sheet folded under a patient over the bottom sheet to assist with moving the patient up in bed.

shelf Any shelflike structure.

dental s. SYN: *dental lamina.*

shelf life 1. The time a food may be kept in storage and still be considered safe to eat. 2. The time a substance, preparation, or medication can be kept without separation or chemical changes of its components. 3. The time that a drug or biomaterial will maintain its effectiveness or integrity.

shelf-life extension Preservation of the purity and potency of a therapeutic agent beyond its expected expiration date.

shell A hard covering, as that for an egg or turtle.

shellac (shē-lāk') A refined resinous substance obtained from plants that contain the secretions of certain insects. It is used in paints, varnishes, dry compounding, and in dentistry.



Some individuals may develop contact dermatitis after exposure to shellac.

shell shock A term used during World War I to designate a wide variety of psychotic and neurotic disorders associated with the stress of combat. SEE: *post-traumatic stress disorder.*

Shenton's line (shēn'tōnz) [Thomas

Shenton, Brit. radiologist, 1872–1955] A radiographical line used to determine the relationship of the head of the femur to the acetabulum. The line follows the inferior border of the ramus of the pubic bone and continued outward follows the curve down the medial border of the neck of the femur.

Sherrington phenomenon (shĕr'ing-tŏn) [Sir Charles Scott Sherrington, Brit. physiologist, 1857–1952] Contraction of denervated skeletal muscle by stimulating autonomic cholinergic fibers innervating its blood vessels.

shiatsu, shiatsu (shĕ'ät-soo) [Chinese, finger + pressure] In traditional Japanese culture, the therapeutic application of pressure to acupuncture points.

shield (shĕld) [AS. *scild*, shield] **1.** A cover or barrier; any layer or structure that limits exposure to a potentially toxic agent, such as a source of body fluids or radiation. **2.** In biology, a protective plate or hard outer covering.

face s. A mask, typically made of clear plastic, that protects the mucous membranes of the eyes, nose, and mouth during patient-care procedures and activities that carry the risk of generating splashes of blood, body fluids, excretions, or secretions. SEE: *Standard and Universal Precautions Appendix*.

gonadal s. A lead device that is placed over the gonadal area to help protect it during radiation exposure.

nipple s. SEE: under *nipple*.

shift [AS. *scifan*, to arrange] A change in position or direction.

antigenic s. A major change in the genetic makeup of an organism, usually resulting from gene reassortment or occurring when different species share genetic material. The influenza virus type A is the most common example of an organism that undergoes antigenic shift. This process may create a new pathogen against which there is no immunity in the population, and pandemics can result. SEE: *antigenic drift*.

chloride s. The shift of chloride ions from the plasma into the red blood cells upon the addition of carbon dioxide from the tissues, and the reverse movement when carbon dioxide is released in the lungs. It is a mechanism for maintaining constant pH of the blood.

s. to the left **1.** In hematology, an increase in the number of immature polymorphonuclear leukocytes in the blood. SEE: *Arneth's classification of neutrophils*. **2.** In acid-base physiology, a left-shifted oxyhemoglobin dissociation level, indicating an increased affinity of hemoglobin for oxygen.

s. to the right In hematology, an increase in the number of older polymorphonuclear leukocytes in the blood.

SEE: *Arneth's classification of neutrophils*.

shift work A staffing arrangement in which some employees work during the day and others in the evening or at night. Shift work is a common method of scheduling used in many industries to maximize productivity over a 24-hr day and in health care, where patients' needs may arise at any time of the day or night. A great number of persons work regularly at night, either on a permanent or rotating schedule. In most of these workers, adaptation to the altered work schedule is imperfect; sleep disturbances and other medical and psychosocial problems have often been found in shift workers. Among other problems, many night-time or rotating shift workers often have family obligations during the day, which compromise their ability to obtain adequate rest before or after work.

Shiga's bacillus (shĕ'gās) [Kiyoshi Shiga, Japanese physician, 1870–1957] *Shigella dysenteriae*.

Shiga toxin (shĕ'gā) [Kiyoshi Shiga, Japanese physician and bacteriologist, 1871–1951] An extremely poisonous compound secreted by certain enteric bacteria that causes hemorrhagic and necrotic colitis. The toxin was formerly called verotoxin because of its effect on Vero cells (lineages of cells used in cell cultures and isolated from kidney epithelial cells of the African green monkey [*Cercopithecus aethiops*]).

ETIOLOGY: The toxin acts on the endothelial cells lining the blood vessels. The B subunits of the toxin bind to a component of the cell membrane known as Gb3 and enter the cell. When the protein is inside the cell, the A subunit interacts with the ribosomes to stop protein synthesis. Like the ricin toxin, the A subunit of Shiga toxin is an N-glycosidase that modifies the RNA component of the ribosome to stop protein synthesis, leading to the death of the cell. The breakdown of the endothelial cell lining leads to hemorrhage.

SYMPTOMS: The first sign of shiga toxin activity is usually bloody diarrhea. This is because Shiga toxin is usually taken in with contaminated food or water.

Shigella (shĭ-gĕl'lā) [Kiyoshi Shiga, Japanese physician and bacteriologist, 1871–1951] A genus of gram-negative, non-lactose-fermenting bacilli of the family Enterobacteriaceae. It contains a number of species that cause digestive disturbance ranging from mild diarrhea to a severe and often fatal dysentery. SEE: *dysentery, bacillary*.

S. boydii A species that causes acute diarrhea in humans.

S. dysenteriae A species that causes severe, epidemic diarrhea.

S. flexneri A species that is a frequent cause of acute diarrhea in humans.

S. sonnei A species that is a frequent cause of bacillary dysentery.

shigellosis (shī'gĕl-lō'sīs) [*Shigella* + *osis*, condition] Infection of the gastrointestinal tract, esp. the distal colon, by *Shigella*. Common symptoms include fever, bloody diarrhea, and abdominal cramps. Because *Shigella* are transmitted from person to person by the fecal-oral route, prevention requires thorough handwashing after toileting by toddlers, young children, and adults. The disease may also be contracted by direct oroanal contact and from food or water contaminated by sewage.

shim (shīm) [Of uncertain origin] In magnetic resonance imaging, to improve the homogeneity of the main magnetic field.

shin (shīn) [AS. *scinu*, shin] The anterior edge of the tibia, the portion of the leg between the ankle and knee. SYN: *shank*.

saber s. A condition seen in congenital syphilis in which the anterior edge of the tibia is extremely sharp.

shiner (shī'nĕr) A slang term for a black eye, a dark or purplish hue to the skin seen just beneath the eyes. Black eyes may be seen in some people with nasal allergies or after facial injuries.

shingles (shīng'lz) [L. *cingulus*, a girdle] The colloquial name of the dermatomal rash caused by herpes zoster. SEE: *illus.*; *herpes zoster*.



SHINGLES

shinrin-yoku (shīn-rīn-yō'koo) [Japanese, "forest-air-bathing"] In traditional Chinese medicine, walking and bathing in the forest to promote good health and prevent the effects of aging. The air and aromas of the forest are also believed to be therapeutic.

shin splints (shīn'splīnts) A nondescript pain in the anterior, posterior, or posterolateral compartment of the tibia. It usually follows strenuous or repetitive exercise and is often related to faulty foot mechanics such as pes planus or pes cavus. The cause may be ischemia of the muscles in the compartment, minute

tears in the tissues, or partial avulsion from the periosteum of the tibial or peroneal muscles. Proper shoes and foot orthotics may help to prevent onset of the condition. A definitive diagnosis is required for proper treatment. Management may consist of ice packs, anti-inflammatory medications, decrease in the intensity of exercise (including the avoidance of hills and hard surfaces when running), and modification of footwear. SYN: *medial tibial syndrome*.

Shirodkar operation (shē'rōd-kār) [Shirodkar, Indian physician, 1900–1971] The surgical placement of a purse-string suture around an incompetent cervical os to attempt to prevent the premature onset of labor. The suture material used for this cerclage procedure is nonabsorbable and must be removed before delivery. SEE: *cervical incompetence*.

shiver (shiv'ēr) [ME. *chiveren*] **1.** Involuntary increased muscle activity in response to fear, onset of fever, or exposure to cold. The activity leads to increased heat production. **2.** To tremble or shake.

shock (shōk) [ME. *schokke*] **1.** A clinical syndrome marked by inadequate perfusion and oxygenation of cells, tissues, and organs, usually as a result of marginal or markedly lowered blood pressure.

ETIOLOGY: Shock may be caused by dehydration, hemorrhage, sepsis, myocardial infarction, valvular heart disease, cardiac tamponade, adrenal failure, burns, trauma, spinal cord injury, hypoxia, anaphylaxis, poisoning, and other major insults to the body.

SYMPTOMS: Shock results in failure of multiple organ systems, including the brain, heart, kidneys, lungs, skin, and gastrointestinal tract. Common consequences of shock are confusion, agitation, anxiety, or coma; syncope or presyncope; increased work of breathing; respiratory distress; pulmonary edema; decreased urinary output; and/or acute renal failure. Signs of shock include tachycardia, tachypnea, hypotension, and cool, clammy, or cyanotic skin.

TREATMENT: Attempts to restore normal blood pressure and tissue perfusion include fluid resuscitation (in hypovolemic shock); control of hemorrhage (in shock caused by trauma or bleeding); administration of corticosteroids (in adrenal failure); pressor support (in cardiogenic or septic shock); the administration of epinephrine (in anaphylaxis); antibiotic administration with the drainage of infected foci and administration of activated drotrecogin alfa (in sepsis); pericardiocentesis (in cardiac tamponade); transfusion; and oxygenation. Oral or parenterally administered sugars (typically glucose)

can treat hypoglycemia caused by insulin, oral hypoglycemic drugs, or insulinomas.

CRITICAL CARE: The shock syndrome is a life-threatening medical emergency and requires very careful therapy and monitoring. If the patient does not respond at once, treatment and monitoring in the best facility available (e.g., intensive care unit) are essential. It is important that the ECG, arterial and central venous blood pressures, blood gases, core and skin temperatures, pulse rate, blood volume, blood glucose, hematocrit, cardiac output, urine flow rate, and neurological status be monitored on an ongoing basis (e.g., hourly).

PATIENT CARE: Patients at risk for shock include, but are not limited to, those with severe injuries, external or suspected internal hemorrhage, profound fluid loss or sequestration (severe vomiting, diarrhea, burns), allergen exposures, sepsis, impaired left ventricular function, electrical and thermal injuries (including lightning strikes), and diabetes (if receiving supplemental insulin).

One, two, or more large-bore intravenous catheters are inserted, and prescribed fluid therapy is initiated. External monitoring of vital signs is instituted; a pulmonary artery catheter may be placed or impedance cardiography instituted for precise hemodynamic monitoring; and an indwelling urinary catheter is inserted to track urine output hourly. Prescribed oxygen therapy is provided; SaO_2 , arterial blood gas levels (ABGs), and ventilatory function are monitored to determine the need for ventilatory support. If occult bleeding is suspected, stools and gastric fluids are tested, and injured tissues and spaces are carefully assessed or imaged. Routine measures are taken to reduce the risk of decubitus ulcers, muscular atrophy, deep venous thrombosis, delirium, and contractures. The patient is maintained in a normothermic environment for comfort. Radiant warmers are useful in preventing hypothermia in patients who cannot be kept clothed or covered during assessment and treatment. The environment is kept as calm and controlled as possible. Procedures and treatments are explained to the patient in a simple, clear, easily understandable manner.

Positioning is based on the particular shock type. Although hypovolemic shock states respond best to supine positioning, or even elevation of the feet and lower legs, cardiac and anaphylactic shock states require head elevation to ease ventilatory effort. Correct body alignment should be maintained, whatever the necessary position. Oral fluids are often withheld to prevent vomiting

and aspiration. Oral care and misting are provided frequently to prevent dryness, stomatitis, sordes, and salivary obstructions. The patient's sensorium is closely assessed, and sensory overload is prevented as much as possible. Regular assessments are conducted for acute organ dysfunction (e.g., urine output below 0.5 ml/kg/hr, hypotension, hypoxemia, lactic acidosis, and low platelet count). While providing comfort measures and emotional support, the health care professional acts as a liaison to family members or significant others, providing them with information about the patient's status and the treatment regimen. If shock is irreversible, the family must prepare for the patient's death; family members are encouraged to be with, talk to, and touch the patient, and social work and mental health consultations or spiritual measures may be obtained for the patient and family as determined by their beliefs and desires.

2. An electrical shock, e.g., a discharge of electricity from a cardioverter or defibrillator. SEE: *Nursing Diagnosis Appendix*.

anaphylactic s. Rapidly developing, systemic anaphylaxis that produces life-threatening acute airway obstruction followed by vascular collapse within minutes after exposure to an antigen. SEE: *allergy; anaphylaxis*.

ETIOLOGY: The condition is the result of a type I allergic or hypersensitivity reaction during which the allergen is absorbed into the blood directly or through the mucosa. The most common agents are bee or wasp venoms, drugs (e.g., penicillins), and radiographic contrast media. It also can be triggered by severe food allergies (shellfish, peanuts) and by latex exposure. Individuals with a history of asthma, eczema, or hay fever are at increased risk. Chemical mediators released during the reaction cause constriction of the bronchial smooth muscle, vasodilation, and increased vascular permeability.

SYMPTOMS: Initial symptoms include anxiety, tingling, itching, or warm feelings and skin rash, a metallic taste, swelling of lips and tongue, dyspnea, wheezing, vomiting, abdominal cramps, diarrhea, light-headedness, dizziness, and chest pain. Severe symptoms include acute respiratory distress, hypotension, edema, rash, tachycardia, pale cool skin, convulsions, and cyanosis. If no treatment is received, unconsciousness and death may result. Tissue swelling can be life-threatening if the larynx is involved, since air flow is obstructed with even minimal swelling.

PREVENTION: A history of past allergic reactions, particularly to bee stings, drugs, blood products, or contrast me-

dia, is obtained. The at-risk patient is observed for reaction during and immediately after administration of any of these agents.

PATIENT CARE: At the first sign of life-threatening respiratory distress, an airway is established, the appropriate physician is notified, and oxygen is administered by non-rebreather mask. Venous access is established. Epinephrine is administered, and diphenhydramine and corticosteroids are administered per protocol. Drugs should be administered intravenously if the patient is unconscious or hypotensive, and subcutaneously or intramuscularly if the patient is conscious and normotensive. Airway patency is maintained, and the patient should be observed for early signs of laryngeal edema (e.g., stridor, hoarseness, and dyspnea). Endotracheal intubation or a surgical airway may be necessary. In addition to high-concentration oxygen for all patients in shock, cardiopulmonary resuscitation and defibrillation, as indicated, are initiated if the patient becomes pulseless. The patient is assessed for hypotension and shock; circulatory volume is maintained with prescribed volume expanders, and blood pressure is stabilized with prescribed vasopressors. Blood pressure, central venous pressure, and urinary output are monitored in the hospital setting. Once the initial emergency has subsided, prescribed drugs for long-term management and inhaled bronchodilators for bronchospasm may be considered. The patient is taught to identify and avoid common allergens and to recognize an allergic reaction. Sensitivity testing may be advised to help determine offending allergens. If a patient is unable to avoid exposure to allergens and requires medication, an emergency kit should be kept readily available. Typically, this contains epinephrine in an auto-injector and liquid diphenhydramine. Both patient and family are instructed in its use. The patient with known serious allergies should wear an identifying bracelet or carry a card in his/her wallet. Patients with food allergies should be advised to read labels and to ask about food preparation and content when eating out. Individuals with insect sting allergies should avoid wearing bright-colored clothing, scented cosmetics, hairsprays, or perfumes that attract insects and should use insect repellent and wear closed shoes outdoors.

anesthesia s. Shock due to an overdose of a general anesthetic. The anesthetic should be immediately withheld and oxygen, mechanical ventilation, and vapor drugs should be given.

cardiogenic s. Failure of the heart to pump an adequate supply of blood and

oxygen to body tissues. The most common cause of cardiogenic shock is acute myocardial infarction, but other causes include failure or stenosis of heart valves (e.g., aortic or mitral stenosis or regurgitation), cardiomyopathies, pericardial tamponade, and sustained cardiac rhythm disturbances, among others. Cardiogenic shock is often fatal; only about 20% of affected persons survive. Its incidence has declined as the care of patients with acute myocardial infarction has incorporated thrombolytic drugs and emergency angioplasties. SEE: *Nursing Diagnoses Appendix*.

PATIENT CARE: The patient is assessed for a history of any cardiac disorder that severely decreases left ventricular function, for anginal pain, dysrhythmias, reduced urinary output, respiratory effort and rate, blood pressure, pulse, dizziness, alterations in mental status, and perfusion of the skin. Signs of poor tissue perfusion include cold, pale, clammy skin; cyanosis; restlessness, mental confusion and obtundation; tachycardia; tachypnea; systolic blood pressure 30 mm Hg below baseline or below 80 mm Hg; and oliguria (urine output below 20 ml/hr). Heart sounds are auscultated for a gallop rhythm and murmurs, the lungs are checked for crackles and wheezes, and neck veins are assessed for distention.

Arterial blood gas values, electrolyte levels, cardiac rhythms, and hemodynamic values (pulmonary artery pressures, wedge pressures, and cardiac output) are monitored intensively. Echocardiography helps to determine left ventricular function and valve abnormalities. Treatment goals include enhancing cardiovascular status by increasing cardiac output, improving myocardial perfusion, and decreasing cardiac workload. Combinations of various cardiovascular drugs and mechanical assist techniques are used. Prescribed intravenous fluids are administered via a large-bore intravenous catheter (14 G to 18 G) according to hemodynamic patterns and urine output. Oxygen is administered by face mask or artificial airway to ensure adequate tissue oxygenation. Prescribed inotropic agents and vasopressors are administered and evaluated for desired effects and any adverse reactions.

Some patients will undergo emergent cardiac catheterization, coronary angioplasty, coronary stents, bypass surgery, or placement of intra-aortic balloon pumps, turbine pumps, or temporary or permanent ventricular assist devices. The ICU setting, special procedures, and equipment are explained to the patient and family to reduce their anxiety; a calm environment with as much privacy as possible and frequent rest

periods are provided; and frequent family visits are permitted. All invasive sites are assessed for infection and/or hematomas. When the patient's hemodynamic stability is restored, he/she is gradually weaned from supportive mechanical devices and drug therapies. The family is prepared for the possibility of a fatal outcome and assisted to find effective coping strategies.

compensated s. The early phase of shock in which the body's compensatory mechanisms (e.g., increased heart rate, vasoconstriction, increased respiratory rate) are able to maintain adequate perfusion to the brain and vital organs. Typically, the patient is normotensive in compensated shock.

decompensated s. The late phase of shock in which the body's compensatory mechanisms (e.g., increased heart rate, vasoconstriction, increased respiratory rate) are unable to maintain adequate perfusion to the brain and vital organs. Typically, the patient is hypotensive in decompensated shock.

deferred s. Shock occurring several hours to a day after an injury or illness. SYN: *secondary shock*.

distributive s. Shock in which there is a marked decrease in peripheral vascular resistance and consequent hypotension. Examples are septic shock, neurogenic shock, and anaphylactic shock.

electric s. Injury from electricity that varies according to type and strength of current and length and location of contact. Electric shocks range from trivial burns to complete charring and destruction of skin and injury to internal organs, including brain, lungs, kidneys, and heart. Approximately 1000 persons are electrocuted accidentally each year in the U.S., and 4000 persons are injured. Five percent of admissions to burn centers are related to electrical injury.

Whether or not an electric shock will cause death is influenced by the pathway the current takes through the body, the amount of current, and the skin resistance. Thus, a very small amount of electrical energy applied directly to the heart may be enough to stop it from beating or to trigger ventricular fibrillation.

SYMPTOMS: Burns, loss of consciousness, and/or cardiac arrest are symptoms of electrical injury.

FIRST AID: Rescuers of any electrical shock victim who is unconscious should immediately call for emergency assistance. SEE: *cardiopulmonary resuscitation; electrocution; lightning safety rules; shock*.

TREATMENT: The patient should be freed carefully from the current source by first shutting off the current. Pro-

longed support in a critical care unit may be needed.

endotoxic s. Septic shock due to release of endotoxins by gram-negative bacteria. Endotoxins are lipopolysaccharides in the cell walls that are released during both reproduction and destruction of the bacteria. They are potent stimulators of inflammation, activating macrophages, B lymphocytes, and cytokines and producing vasodilation, increased capillary permeability, and activation of the complement and coagulation cascades. SEE: *endotoxin; septic s.*

hemorrhagic s. Shock due to loss of blood. SEE: *Nursing Diagnoses Appendix*.

hypoglycemic s. Shock produced by extremely low blood sugars (e.g., less than 40 mg/dl), usually caused by an injection of an excessive amount of insulin, failure to eat after an insulin injection, or rarely by an insulin-secreting tumor of the pancreas. Insulin-related hypoglycemic shock may be intentionally induced in the treatment of certain psychiatric conditions. SYN: *insulin shock*. SEE: *hypoglycemia*.

PATIENT CARE: All unconscious patients should be treated for presumptive hypoglycemia with an injection of D₅₀. Once the patient is conscious, glucose is given by mouth to attain the desired glucose level. The rescue therapy is followed by a carbohydrate and protein snack to maintain the desired level.

The stabilized patient's immediate past history should be reviewed, looking for triggering factors. The patient and family can then be taught ways to avoid such situations in the future or to manage them before hypoglycemia again becomes this serious. If insulin levels need to be adjusted, the patient's preprandial glucose levels for the preceding 24 hr must be reviewed. The patient and family are assisted in processing the event. Their treatment actions are given positive reinforcement, correcting any errors such as inability to recognize early symptoms of insulin shock, overcorrection of insulin deficiency, or use of food products that are absorbed too slowly.

hypovolemic s. Shock occurring when there is an insufficient amount of fluid in the circulatory system. Usually this is due to bleeding, diarrhea, or vomiting. SYN: *oligemic shock*.

insulin s. Hypoglycemic s. SEE: *Nursing Diagnoses Appendix*.

irreversible s. Shock of such intensity that even heroic therapy cannot prevent death.

neurogenic s. A form of distributive shock due to decreased peripheral vascular resistance. Damage to either the brain or the spinal cord inhibits transmission of neural stimuli to the arteries

and arterioles, which reduces vasomotor tone. The decreased peripheral resistance results in vasodilation and hypotension; cardiac output diminishes due to the altered distribution of blood volume.

obstructive s. Circulatory collapse caused by conditions that block the flow of blood into or out of the heart, such as cardiac tamponade, cardiac tumors, massive pulmonary embolism, or tension pneumothorax. Obstructive shock is characterized by very low cardiac output and increased systemic vascular resistance.

oligemic s. Hypovolemic s.

protein s. Shock reaction resulting from parental administration of a protein.

psychogenic s. Shock due to emotional stress or to seeing an injury or accident. SEE: *psychic s.*

secondary s. Deferred s.

septic s. Hypotension and inadequate blood flow to organs, as the result of sepsis (the presence of pathogens in the bloodstream). The most common organisms are gram-negative and gram-positive bacteria, but fungi and other organisms may also be responsible. SEE: *sepsis.*

ETIOLOGY: Organisms and released endotoxins or exotoxins initiate a systemic inflammatory response. Chemical mediators of inflammation and the cell-mediated immune response (esp. tumor necrosis factor and interleukin 1) cause the physiological changes to septic shock. Initially, vasodilation, increased capillary permeability, and movement of plasma out of blood vessels produce hypovolemia and hypotension. Compensatory vasoconstriction occurs in an effort to maintain blood flow to vital organs. As sepsis progresses, secondary inflammatory mediators are released, increasing vascular endothelial damage.

Selective vasoconstriction produces tissue hypoxia and single or multiple organ dysfunction. Tissue hypoxia is increased by abnormal stimulation of the coagulation and kinin cascades in the capillaries, which produce microthrombi. Within the lung, damage to the capillary endothelium may cause adult respiratory distress syndrome. Septic shock often progresses to multiple organ dysfunction syndrome (MODS), which is the most common cause of death in surgical intensive care units.

SYMPTOMS: Confusion and other alterations of consciousness are common symptoms. Signs include hypotension, fever, tachypnea, tachycardia, decreased urinary output, and cold, clammy skin. Laboratory studies reveal acidosis and, sometimes, renal failure or coagulopathies.

TREATMENT: Empiric therapy with an extended-spectrum penicillin (e.g., ticarcillin/clavulanate, piperacillin/tazobactam) or third-generation cephalosporin (e.g., ceftriaxone), plus clindamycin or metronidazole, provide antibiotic coverage until an organism from the primary site of infection is positively identified. Intravenous resuscitation and if necessary, vasopressors such as dopamine or norepinephrine are used to stabilize blood pressure. Activated drotrecogin alfa, a recombinant form of human activated protein C (Xigris) is occasionally effective. Oxygen and other supportive interventions are used to minimize organ damage. Maintaining blood glucose levels between 80 and 110 mg/dl improves chances of survival significantly. Use of corticosteroids is not supported by research.

PATIENT CARE: Intensive care measures are instituted to monitor blood pressure, fluid and electrolyte balance, renal function, and changes in neurological status. Assessment of progressive agitation or confusion should emphasize the possibility of hypoxia. Routine measures to reduce the risk of decubitus ulcers, muscle atrophy, and contractures are needed. Repeated teaching is necessary for family members to understand the severity of the infection, the purpose of interventions, signs of improvement, and the possibility of death.

spinal s. Immediate flaccid paralysis and loss of all sensation and reflex activity below the level of injury in acute transverse spinal cord injury. Arterial hypotension may be present in this condition.

surgical s. Shock following operations and including traumatic shock. SEE: *traumatic s.*

traumatic s. Shock due to injury or surgery. In the abdomen, it may result from hemorrhage and/or peritonitis secondary to a disrupted or perforated viscus. Additional causes of traumatic shock include the following:

Cerebral injury: Shock from concussion of the brain secondary to cranial contusion or fracture or spontaneous hemorrhage. The shock may be evident immediately or later due to edema or delayed intracranial hemorrhage. **Chemical injury:** Shock due to physiological response to tissue injury, such as fluid mobilization, toxicity of the agent, and reflexes induced by pain due to the effect of chemicals, esp. corrosives. **Crushing injury:** Shock caused by disruption of soft tissue with release of myoglobulins, hemorrhage, and so forth, generally proportional to the extent of the injury. **Fracture (esp. open fracture):** Shock due to blood loss, fat embolism, and the physiological effects

of pain. **Heart damage:** Shock caused by myocardial infarction, myocarditis, pericarditis, pericardial tamponade, or direct trauma with ensuing cardiovascular effects. **Inflammation:** Shock caused by severe sepsis, for example, peritonitis due to release of toxins affecting cardiovascular function and significant fluid mobilization. **Intestinal obstruction:** Shock caused by respiratory compromise due to distention, fluid mobilization, release of bacterial toxins, and pain. **Nerve injury:** Shock caused by injury to the area controlling respirations (e.g., high cervical cord injury) or to highly sensitive parts, such as the testicle, solar plexus, eye, and urethra, or secondary to cardiovascular reflexes stimulated by pain. **Operations:** Shock that may occur even after minor operations and paracentesis or catheterization due to rapid escape of fluids resulting in abrupt alteration of intra-abdominal pressure dynamics and hemorrhage. **Perforation or rupture of viscera:** Shock resulting from acute pneumothorax, ruptured aneurysm, perforated peptic ulcer, perforation of appendical abscess or colonic diverticulum, or ectopic pregnancy. **Strangulation:** Shock resulting from strangulated hernia, intussusception, or volvulus. **Thermal injury:** Shock caused by burn, frostbite, or heat exhaustion secondary to fluid mobilization due to the physiological effects of pain. **Torsion of viscera:** Shock caused by torsion of an ovary or a testicle secondary to the physiological effects of pain.

shockable rhythm In emergency cardiac care, any of the following cardiac rhythm disturbances: ventricular fibrillation, pulseless ventricular tachycardia or some poorly tolerated supraventricular tachycardias (e.g., some instances of rapid atrial fibrillation, atrial flutter, or AV nodal re-entrant tachycardia). By contrast, asystole, pulseless electrical activity, heart blocks, and the bradycardias are not shockable. Defibrillation or cardioversion of these latter rhythms may result in injury to the patient.

shock dose In cardioversion and defibrillation, the energy in joules selected to terminate an abnormal heart rhythm.

shock therapy, shock treatment Electroconvulsive therapy.

shoemaker's cramp A spasm of the muscles of the hand and arm, esp. after repetitive use.

short bowel syndrome Inadequate absorption of ingested nutrients (esp. vitamin B₁₂, macronutrients, sodium, and magnesium) resulting from a surgical procedure in which a considerable length of the intestinal tract has been removed or bypassed. Aggressive enteral nutrition or creation of an antiper-

istaltic segment in the remaining intestine may replace the need for partial or total parenteral nutrition in the management of this syndrome. Transplantation of the small intestine would be ideal, but as yet has limited application. SEE: *total parenteral nutrition*.

shortening 1. Loss of bone length after a fracture, as a result of malunion or pronounced bony angulation. **2.** A decrease in the length of a contracting muscle fiber.

shortness of breath Breathlessness.

shortsightedness (short/'sit/'ēd-nēs) Myopia.

short stay A brief hospitalization for observation, for example, after a simple surgery, a biopsy, or a diagnostic study. The time spent in the hospital is typically limited to a few hours.

short-stay unit A ward or clinic used to manage patients requiring a short stay.

sho-saiko-to ABBR: SST. A traditional Chinese and Japanese herbal mixture used to treat chronic hepatitis and other illnesses.

shot A colloquial term for an injection.

shoulder (shōl/'dēr) [AS. *sculdor*] The region of the proximal humerus, clavicle, and scapula; a part of the shoulder girdle complex. SEE: *scapula*.

adhesive capsulitis of s. A condition that causes shoulder pain, with restricted movement even though there is no obvious intrinsic shoulder disease. This may follow bursitis or tendonitis of the shoulder or may be associated with systemic conditions such as chronic pulmonary disease, myocardial infarction, or diabetes mellitus. Prolonged immobility of the arm favors development of adhesive capsulitis. The condition is more common in women after age 50. It may resolve spontaneously 12 to 18 months after onset or may result in permanent restriction of movement. Treatment includes injection of glucocorticoids; use of nonsteroidal anti-inflammatory agents and physical therapy may provide symptomatic relief; early range-of-motion exercises following an injury may prevent development of the disease; and manipulation of the shoulder while the patient is anesthetized may be of benefit. SYN: *frozen shoulder; pericapsulitis*.

dislocation of s. Displacement of the head of the humerus beyond the boundaries of the glenoid fossa. SEE: *Bankart lesion; Hill-Sachs lesion*.

ETIOLOGY: The most common cause is from trauma with the arm in external rotation with abduction, causing the head of the humerus to sublux anteriorly; a posterior subluxation may occur from a fall on an outstretched arm. An inferior dislocation may occur from poor muscle tone as with hemiplegia and from the weight of the arm pulling the

humerus downward. Anterior glenohumeral dislocations are common among athletes, esp. football players.

SIGNS: A patient with a dislocated shoulder usually has a hollow in place of the normal bulge of the shoulder, as well as a slight depression at the outer end of the clavicle. Glenohumeral range of motion is restricted and such patients often cannot touch their opposite shoulder with the hand of the involved arm. Both shoulders should always be compared for symmetry. Vital signs are assessed to provide baseline data. The patient is assessed for pain, and analgesia prescribed and provided as needed.

TREATMENT/FIRST AID: Radiographs and/or MRI are needed to determine the type of dislocation and the presence of any fracture. If no fractures are present, one of several maneuvers can be used to reduce the humerus into the glenoid.

PATIENT CARE: Because of the potential damage to neurovascular structures as they cross the glenohumeral joint line, the vascular and neurological status of the arm and hand must be assessed. A decreased or diminished ulnar or radial pulse warrants immediate intervention and reduction of the dislocation. An anterior dislocation of the shoulder can be reduced, for example, with passive traction on the arm or by placing the patient in a supine position and medially displacing the scapula. A sling or other shoulder support is provided after reduction to limit shoulder mobility for the prescribed time, and activity is gradually resumed using a guided rehabilitation protocol. **SEE: illus.**



PASSIVE REDUCTION OF ANTERIOR SHOULDER DISLOCATION

frozen s. Adhesive capsulitis of s.

s. separation Acromioclavicular separation.

shoulder blade The scapula.

shoulder girdle syndrome Idiopathic brachial plexopathy.

shoulder-hand syndrome Reflex sympathetic dystrophy.

show (shō) [AS. *scewian*, to look at] The sanguiniferous discharge from the vagina during the first stage of labor or just preceding menstruation. Also called *bloody show*.

bloody s. Show.

show of force The recruitment of large numbers of powerful individuals to an emotionally escalating situation in an attempt to prevent violent action by an opponent.

shreds (shrēds) [AS. *screade*] Slender strands of mucus seen in freshly voided urine, indicative of inflammation of the urinary tract or associated organs.

shrink To reduce in size.

shudder [ME. *shuddren*] A temporary convulsive tremor resulting from fright, horror, or aversion.

shunt (shūnt) [ME. *shunten*, to avoid]

1. To turn away from; to divert. **2.** An anomalous passage or one artificially constructed to divert flow from one main route to another. **3.** An electric conductor connecting two points in a circuit to form a parallel circuit through which a portion of the current may pass.

anatomical s. A normal or abnormal direct connection between arterial and venous circulation. An example of a normal anatomical shunt is the bronchial and thebesian vein connection.

arteriovenous s. An abnormal connection between an artery and the venous system.

Blalock-Taussig s. **SEE: Blalock-Taussig shunt.**

cardiovascular s. An abnormal connection between the cavities of the heart or between the systemic and pulmonary vessels.

dialysis s. An arteriovenous shunt created for use during renal dialysis. **SEE: illus.**



DIALYSIS SHUNT

left-to-right s. The passage of blood from the left side of the heart to the right side through an abnormal opening (e.g., a septal defect).

physiological s. The route by which pulmonary blood perfuses unventilated alveoli. This process is caused by an imbalance between ventilation and perfusion.

pleuroperitoneal s. A conduit connecting the pleural space and the peritoneum, used to drain recurring pleural effusions, such as those that accumulate in patients with certain cancers in the chest. SYN: *Denver shunt*.

portacaval s. Surgical creation of a connection between the portal vein and the vena cava. SYN: *portacaval shunt*.

postcaval s. Portacaval s.

right-to-left s. The movement of blood or other body fluids backward through a shunt. The shunted blood has no opportunity to become oxygenated because of failure to pass through the lungs.



transjugular intrahepatic portosystemic s. ABBR: TIPS. A shunt that is inserted through the skin, jugular vein, and liver and then into the portal venous system to manage complications of portal hypertension, such as bleeding caused by esophageal varices or uncontrollable ascites. The shunt decreases pressure within the portal venous circulation (e.g., in patients with cirrhosis), bypassing the liver and allowing portal blood to flow directly into the vena cava. A common complication of the procedure is altered mental status, since blood that was previously detoxified by the liver is directed around it.

shunting A condition in which blood, by going through an abnormal pathway or bypass, does not travel its normal route. It may occur when an arteriovenous fistula forms or in congenital anomalies of the heart in which the blood passes from the right atrium or ventricle directly to the left atrium or ventricle respectively, through a defect in the wall (septum) that normally separates the atria and ventricles. SYN: *blood shunting*.

shuttered hospital A hospital that has been closed and is no longer in active, daily use. It may be reopened in times of crisis to care for the homeless, injured, or sick, esp. after a mass casualty incident.

shuttle (shüt'l) To transport an object back and forth; in cell biology or biochemistry, to carry a molecule repeatedly across a cell membrane.

shuttle vector A short DNA segment, such as may be found in a bacteriophage or a plasmid, that carries DNA between organisms of two different species.

shuttle walk test A test of aerobic power or exercise capacity in which a person is asked to walk back and forth between two points or around and around a

track, often incrementally increasing walking speed with each shuttle completion. The test has been used to assess respiratory function, cardiovascular reserve, fitness for surgery, or geriatric physical fitness. In a typical test the original shuttle speed is set between 0.6 and 6 km/hr and increased by 0.17 to 0.5 km/hr until the patient becomes fatigued or achieves 12 minutes of exercise.

Shy-Drager syndrome (shī'drā'gēr) [George Milton Shy, U.S. neurologist, 1919–1967; G. A. Drager, U.S. physician, 1917–1967] A rare neurodegenerative disease of middle-aged or elderly persons, marked by chronic orthostatic hypotension, muscular rigidity, slow initiation of body movement, urinary incontinence, bowel dysfunction, erectile dysfunction, episodic loss of consciousness, and cardiac arrhythmias. SYN: *multiple systems atrophy*.

shyness Timidity, esp. in an unfamiliar setting or when encountering strangers. It cannot be classed as abnormal unless it interferes with activities essential to employment or interpersonal relations. Pathological shyness, in which persons avoid all kinds of social interactions because of intense psychological distress, is known as social phobia.

SI *Système International*; International System of Measurement. SEE: SI Units Appendix.

Si Symbol for the element silicon.

SIADH *syndrome of inappropriate antidiuretic hormone*.

sialadenitis (sī'äl-äd"ë-nī'tis) [" + " + *itis*, inflammation] Inflammation of a salivary gland. SYN: *sialitis*.

sialadenosis (sī'äl-äd"ën-ō'sis) Painless enlargement of the salivary glands, occurring without findings that suggest salivary gland cancer, infection (sialadenitis), inflammation, or stone disease. It is most obvious in the parotid glands. Commonly associated conditions include alcoholic cirrhosis, breast feeding, diabetes mellitus, eating disorders, pregnancy, and malnutrition. SYN: *sialosis*.

sialagogue, sialogogue (sī-äl'ä-gög, sī-äl'ō-gög) [" + *agogos*, leading] 1. An agent increasing the flow of saliva. 2. Producing or promoting the secretion of saliva. SYN: *ptyalagogue*.

sialectasia, sialectasis (sī'äl-äk-tä'së-ä, sī'a-lëk'tä-sis) [" + *ektasis*, dilatation] Hypertrophy or swelling of the salivary glands.

sialemesis (sī'äl-ëm'ës-īs) [" + *emein*, to vomit] The vomiting of saliva or vomiting caused by an excessive secretion of saliva.

sialic (sī-äl'ik) Concerning or resembling saliva.

sialine (sī'ä-lin) [Gr. *sialon*, saliva] Concerning saliva.

sialism, sialismus (sī'āl-izm, sī-āl-iz'mūs) [" + *-ismos*, condition] Ptyalism.

sialitis (sī'ā-lit'tis) [" + *itis*, inflammation] Sialadenitis.

sialo-, sial- (sī'ā-lō) Combining forms meaning *saliva*.

sialoadenitis (sī'ā-lō-ād'ē-nī'tis) [" + *aden*, gland, + *itis*, inflammation] Sialadenitis.

sialoadenotomy (sī'ā-lō-ād'ē-nōt'ō-mē) [" + " + *tome*, incision] Incision of a salivary gland.

sialoaerophagy (sī'ā-lō-ēr'ōf'ā-jē) [" + *aer*, air, + *phagein*, to eat] Constant swallowing, thus taking saliva and air into the stomach.

sialoangiectasis (sī'ā-lō-ān'jē-ēk'tā-sis) [Gr. *sialon*, saliva, + *angeion*, vessel, + *ektasis*, dilatation] Dilation of a salivary duct.

sialoangiography (sī'ā-lō-ān'jē-ōg'rā-fē) [" + " + *graphein*, to write] Sialography.

sialoangitis, sialoangiitis (sī'ā-lō-ān'jī'tis, -ān'jē-ī'tis) [" + " + *itis*, inflammation] Inflammation of the salivary ducts. SYN: *sialodochitis*.

sialocele (sī'ā-lō-sēl) [" + *kele*, tumor, swelling] Cyst or tumor of a salivary gland.

sialodochitis (sī'ā-lō-dō-kī'tis) [" + *doche*, receptacle, + *itis*, inflammation] Sialoangitis.

sialodochoplasty (sī'ā-lō-dō'kō-plās'tē) [" + " + *plassein*, to form] Plastic surgery of a salivary gland.

sialoductitis (sī'ā-lō-dūk-tī'tis) [" + L. *ductus*, duct, + Gr. *itis*, inflammation] Inflammation of Stensen's duct.

sialogenous (sī'ā-lōj'ē-nūs) [" + *genan*, to produce] Forming saliva.

sialogogic (sī'ā-lō-gōj'ik) Producing or promoting a secretion of saliva.

sialogram (sī-āl'ō-grām) [" + *gramma*, something written] A radiograph of the ductal system of a salivary gland. A radiopaque fluid is instilled into the major duct to determine the presence or absence of calcareous deposits or other pathological changes.

sialography (sī'ā-lōg'rā-fē) [" + *graphein*, to write] Radiography of the salivary glands and ducts after injection of a radiopaque contrast medium. SYN: *ptyalography*; *sialoangiography*.

sialolith (sī-āl'ō-lith) [" + *lithos*, stone] A salivary stone.

sialolithiasis (sī'ā-lō-lī-thī'ā-sis) The presence of stones in the salivary ducts. SYN: *salivolithiasis*.

sialolithotomy (sī'ā-lō-lī-thōt'ō-mē) [Gr. *sialon*, saliva, + *lithos*, stone, + *tome*, incision] The removal of a stone from a salivary gland or duct.

sialorrhoea (sī'ā-lō-rē'ā) [" + *rhoia*, a flow] Ptyalism.

sialoschesis (sī'ā-lōs'kē-sis) [" +

schesis, suppression] Suppression or retention of saliva.

sialosemeiology (sī'ā-lō-sē'mī-ō'jē) [" + *semeion*, sign, + *logos*, word, reason] Diagnosis based on examination of saliva.

sialosis (sī-ā-lō'sis) [" + *osis*, condition] Sialadenosis.

sialostenosis (sī'ā-lō-stē-nō'sis) [" + *stenosis*, act of narrowing] Closure of a salivary duct.

sialosyrinx (sī'ā-lō-sī'rīnks) [" + *syrinx*, a pipe] **1.** A fistula into the salivary gland. **2.** A syringe for washing out salivary ducts. **3.** A drainage tube for a salivary duct.

sialotic (sī'ā-lōt'ik) [Gr. *sialon*, saliva] Concerning the flow of saliva.

Siamese twins (sī-ā-mēz') [After Chang and Eng, conjoined Chinese twins in Siam, 1811-1874] A culturally insensitive term for congenitally united twins. In some cases, the individuals are joined in a small area and are capable of activity, but the extent of union may be so great that survival is impossible. Nevertheless, modern surgical techniques have made it possible to separate infants who in the past would not have been expected to survive. SEE: *twin*.

sib (sīb) [AS. *sibb*, kin] **1.** Sibling. **2.** A blood relative.

sibilant (sīb'i-lānt) [L. *sibilans*, hissing] Hissing or whistling, as a sound heard in certain abnormal lung conditions or in the formation of certain letters in speech, such as the letter "s."

sibilation (sīb'i-lā'shūn) A hissing sound made while speaking.

sibling (sīb'ling) [AS. *sibb*, kin, + *ling*, having the quality of] One of two or more children of the same parents; a brother or sister. SYN: *sib*.

half s. A half brother or sister.

sibship (sīb'ship) Brothers and sisters of a single family.

siccant (sīk'ānt) [L. *siccus*, dry] Siccative.

siccative (sīk'ā-tīv) [L. *siccativus*, drying] Drying or that which dries. SYN: *siccant*.

sicolabile (sīk'ō-lā'bīl) [L. *siccus*, dry, + *labilis*, unstable] Altered or destroyed by drying.

siccostabile (sīk'ō-stā'bīl) [" + *stabilis*, stable] Resistant to drying.

siccus (sīk'ūs) [L.] Dry.

sick (sīk) [AS *seoc*, ill] **1.** Not well. SYN: *ill*. **2.** Mentally ill or disturbed. **3.** Nauseated.

sick building syndrome Symptoms of illness experienced by occupants of or workers in high-rise apartment or office buildings, for which a definite cause has not been established. Many causes have been suggested for the syndrome, including poor indoor air quality, poor lighting, molds; and fungi.

sickling (sĭk'ling) The tendency of red blood cells to change from a biconcave to an arched shape when oxygen tensions are low. The deformity results from the polymerization of abnormal hemoglobin molecules, such as hemoglobin S. Sickled red blood cells clog small blood vessels, producing tissue ischemia or infarction. SEE: *sickle cell anemia*.

sickling test A test that measures the propensity of red blood cells to sickle under conditions of reduced oxygen tension. The test may be performed by adding sodium metabisulfite to a drop of blood and examining the blood smear microscopically. Hemoglobin electrophoresis is an alternative test for sickle cell disease.

sickness (sĭk'nĕs) [AS. *seoc*, ill] A state of being unwell. SYN: *illness*.

acute mountain s. ABBR: AMS. Altitude sickness.

altitude s. Symptoms such as alterations in consciousness, headache, and shortness of breath that occur on exposure to high altitudes (e.g. during aviation or mountaineering). SYN: *acute mountain sickness*. SEE: *bends*; *altitude hypoxia*.

balloon s. SEE: *altitude sickness*.

car s. Motion sickness.

milk s. Intoxication by fresh raw milk obtained from cows that have eaten snakeroot (*Eupatorium rugosum*). The illness is colloquially referred to as the "slows." SEE: *slows*; *snakeroot*.

motion s. A syndrome, marked primarily by nausea and/or vomiting, due to a conflict between the true vertical axis and the subjective or perceived vertical axis. Motion sickness is a common illness experienced by car, boat, plane, or space travelers. It is also sometimes felt during motion picture viewing. Susceptibility to motion sickness is greatest between the ages of 2 and 12; it lessens with age but can be provoked in most people if the inciting stimulus is strong enough.

TREATMENT: Antimotion sickness medications include diazepam, diphenhydramine, meclizine, and scopolamine. Some patients with motion sickness benefit by eating small quantities of food when they begin to feel ill.

serum s. An adverse (type III hypersensitivity) immune response following administration of foreign antigens, esp. antiserum obtained from horses or other animals. Animal serum was formerly used for passive immunization against some infectious diseases but now has very limited use in antitoxins, monoclonal antibodies, and antilymphocyte globulin. Serum sickness can also occur after administration of penicillins and other drugs. Antigen-antibody complexes form and deposit on the walls of small blood vessels, stimulating an in-

flammatory response that produces a pruritic rash, fever, joint pain and swelling, myalgias, and enlarged lymph nodes 7 to 14 days after exposure. Treatment consists of salicylates (such as aspirin) and antihistamines to minimize inflammation; corticosteroids may be given for severe symptoms. SEE: *Nursing Diagnoses Appendix*.

sleeping s. 1. Encephalitis lethargica.

2. Infection with the African trypanosome, *Trypanosoma brucei rhodesiense* or *gambiense*, a parasitic protozoan introduced into the blood by the bite of a tsetse fly. The disease is marked by fever, protracted lethargy, weakness, tremors, and wasting.

space s. A transient form of motion sickness occurring in space travelers. SEE: *motion s.*

sick sinus syndrome ABBR: SSS. Any of several electrocardiographical abnormalities caused by a malfunction of the sinoatrial node of the heart, in which there are episodes of tachycardia alternating with episodes of heart block or severely decreased heart rate, often with loss of consciousness. SYN: *tachybrady syndrome*; *tachycardia-bradycardia syndrome*. SEE: *Nursing Diagnoses Appendix*.

TREATMENT: A pacemaker should be inserted. Anticoagulant therapy may be required to prevent thromboembolism.

SICU *surgical intensive care unit*.

SID *Society for Investigative Dermatology*; *source-to-image receptor distance*.

side (sĭd) [AS. *side*] **1.** The left or right part of the trunk of the body. **2.** An outer portion considered as facing in a particular direction.

side effect An action or effect of a drug other than that desired. Commonly it is an undesirable effect such as nausea, headache, insomnia, rash, confusion, dizziness, or an unwanted drug-drug interaction.

side-lyer A device for positioning the patient with central nervous system dysfunction in a lateral recumbent position in order to reduce decerebrate posturing and counteract the effects of the tonic labyrinthine (supine) reflex.

side-lying position A lateral recumbent position in which the individual rests on the right or left side, usually with the knees slightly flexed. This position may be used in persons with mild forms of sleep apnea, in some patients with dysphagia, and in patients predisposed to sacral decubitus ulcers, among other conditions.

sidero- (sĭd'ĕr-ō) Combining form meaning *iron*.

sideroblast (sĭd'ĕr-ō-blăst") [Gr. *sideros*, iron, + *blastos*, germ] A ferritin-containing normoblast in the bone marrow. Sideroblasts constitute from 20% to 90% of normoblasts in the marrow. The fer-



ritin gives a positive Prussian-blue reaction, indicating the iron is ionized and not bound to the heme protein.

siderocyte (sīd'ēr-ō-sīt) [*"* + *kytos*, cell] A red blood cell containing iron in a form other than hematin.

siderofibrosis (sīd'ēr-ō-fī-brō'sīs) [*"* + *L. fibra*, fiber, + *Gr. osis*, condition] Fibrosis associated with iron deposits.

siderogenous (sīd'ēr-ōj'ē-nūs) [*"* + *gennan*, to produce] Producing or forming iron.

sideropenia (sīd'ēr-ō-pē'nē-ā) [*"* + *penia*, poverty] Iron deficiency in the blood. **sideropenic**, *adj.*

siderophil (sīd'ēr-ō-fīl) A cell that has an affinity for iron. **siderophilous**, *adj.*

siderophilin (sīd'ēr-ō-fīl'īn) [*Gr. sideros*, iron, + *philein*, to love] Any of several iron-binding proteins in the body, e.g., transferrin.

siderophore (sīd'ēr-ō-for) [*"* + *phoros*, bearing] **1.** A macrophage that contains hemosiderin. **2.** An iron-binding protein, esp. one used by disease-causing bacteria to obtain iron stores from the host.

siderosis (sīd'ēr-ō'sīs) [*"* + *osis*, condition] **1.** A form of pneumoconiosis resulting from inhalation of dust or fumes containing iron particles. SEE: *hemosiderosis*. **2.** The abnormal deposition or accumulation of iron in the blood or body tissues. **siderotic**, *adj.*

s. of the central nervous system A rare neurological condition marked by bilateral sensorineural hearing loss, often with gait disturbance, cognitive impairment, and myoclonus. Excessive quantities of hemosiderin are found in the leptomeninges and subpial regions of the brain.

hepatic s. Excessive deposition of iron in the liver, found in patients with cirrhosis and hemochromatosis.

occupational s. SYN: *siderosis (1)*.

urinary s. Hemosiderin granules in the urine.

siderosome (sīd'ēr-ō-sōm') [*"* + *soma*, body] A reticulocyte in which iron-containing granules are present.

SIDS *sudden infant death syndrome*.

SIECUS *Sex Information and Education Council of the U.S.*

siemens (sē'mēnz) A unit of conductance derived from SI units. It is the reciprocal of the resistance in ohms. SYN: *mho*.

sieve (sīv) A device consisting of a mesh with holes of uniform size. It is used to separate particles above a certain size from solutions or powders.

molecular s. A type of sieve in which the molecular material present in the gel or crystal will adsorb molecules of a certain kind and let others pass.

sievert (sē'vert) [Rolf Maximilian Sievert, Swedish radiologist, 1896–1966] ABBR: Sv. A unit of absorbed radiation

energy derived from SI units. One sievert is equal to 1 J/kg or 100 rem.

sig *signa*.

sig [AS. *sican*] **1.** A deep inspiration followed by a slow audible expiration. **2.** In respiratory and critical care medicine, a mechanically generated breath with a high set tidal volume used to inflate collapsed lung segments and improve ventilation and oxygenation.

sight (sīt) [AS. *sighth*] **1.** The power or faculty of seeing. **2.** Range of sight. **3.** A thing or view seen. SYN: *vision*; *visual perception*.

blind s. The ability to see that occurs in persons who are blind because of a brain lesion rather than damage to the eye. It is manifested by their being able to reach for and track an object. These individuals apparently do not know they can see.

day s. Night blindness.

far s. Hyperopia.

near s. Myopia.

night s. Day blindness.

sighted guide technique A means of assisting a blind person's ambulation, e.g., through a cramped or difficult passage. A sighted person offers assistance and, if it is accepted, makes contact with the blind person by tapping him or her on the hand and offering an arm for support. The sighted person then walks just ahead of and to the side of the blind person to help avoid potential hazards.

sigma (sig'mā) **1.** The 18th letter, Σ or σ, in the Greek alphabet. **2.** In statistics, the symbol for standard deviation.

Sigma Theta Tau (sig'mā-thā'tā-tow') ABBR: STT. The international honor society of nursing, founded in 1922 by six students and one alumna of Indiana University Training School. There are 424 chapters in the U.S., Taiwan, Australia, Canada, and Korea. The national headquarters is at Indiana University in Indianapolis.

sigmatism (sig'mā-tīzm) [*Gr. sigma*, letter S, + *-ismos*, condition] Excessive or defective use of "s" sounds in speech. SEE: *sibilation*.

sigmoid (sig'moyd) [*Gr. sigmoides*] **1.** Shaped like the capital Greek letter sigma, Σ. **2.** Pert. to the sigmoid colon.

sigmoid colon The part of the colon that turns medially at the left iliac crest, between the descending colon and the rectum; shaped like the letter S.

sigmoidectomy (sig'moyd-ēk'tō-mē) [*"* + *ektome*, excision] Removal of all or part of the sigmoid colon.

sigmoiditis (sig'moyd-ī'tīs) [*"* + *itis*, inflammation] Inflammation of the sigmoid colon.

sigmoidopexy (sig-moy'dō-pēk'sē) [*"* + *pexis*, fixation] Fixation of the sigmoid colon by suturing it to the presacral fascia. SYN: *romanopexy*.

sigmoidproctostomy (sig-moy'dō-prōk-

tōs'tō-mē) [Gr. *sigmoeides*, shaped like Gr. letter S, + *proktos*, anus, + *stoma*, mouth] The establishment of an artificial passage by anastomosis of the sigmoid colon with the rectum.

sigmoidorectostomy (sīg-moy'dō-rēk-tōs'tō-mē) [" + L. *rectus*, straight, + Gr. *stoma*, mouth] Sigmoidoproctostomy.

sigmoidoscope (sīg-moy'dō-skōp) [" + *skopein*, to examine] A tubular speculum for examination of the sigmoid colon and the rectum.

flexible s. A sigmoidoscope that uses fiberoptics. This permits the tubular extension to flex, enabling the examiner to visualize a greater portion of the colon than would be possible with a rigid sigmoidoscope.

sigmoidoscopy (sīg'moy-dōs'kō-pē) [" + *skopein*, to examine] Use of a sigmoidoscope to inspect the sigmoid colon.

sigmoidosigmoidostomy (sīg-moy'dō-sīg-moy-dōs'tō-mē) [" + *sigmoeides*, sigmoid, + *stoma*, mouth] Surgical creation of a connection between two segments of the sigmoid colon.

sigmoidostomy (sīg-moyd-ōs'tō-mē) [" + *stoma*, mouth] Creation of an artificial anus in the sigmoid colon, that is, sigmoid colostomy.

sigmoidotomy (sīg-moyd-ōt'ō-mē) [" + *tome*, incision] Incision of the sigmoid.

sigmoidovesical (sīg-moy'dō-vēs'ī-kāl) [" + L. *vesica*, bladder] Concerning a pathological connection between the sigmoid colon and the urinary bladder secondary to malignancy, inflammatory bowel disease, or diverticulitis.

sign (sīn) [L. *signum*] **1.** Symbol or abbreviation, esp. one used in pharmacy. **2.** Any objective evidence or manifestation of an illness or disordered function of the body. Signs are apparent to observers, as opposed to symptoms, which may be obvious only to the patient. SEE: *symptom*. **3.** To use sign language to communicate.

air bronchogram s. Radiographic appearance of an air-filled bronchus as it passes through an area of increased atomic density as in pulmonary edema and pneumonia.

anterior drawer s. Anterior drawer test.

Auenbrugger's s. SEE: *Auenbrugger's sign*.

Aufrecht's s. SEE: *Aufrecht's sign*.

Babinski's s. SEE: *Babinski's sign*.

beaten-silver skull s. The thinned, irregular appearance of the skull, as seen on x-ray examination of children with obstructive hydrocephalus.

Cardarelli's s. SEE: *Cardarelli's sign*.

chandelier s. Intense pelvic and lower abdominal pain brought on by palpation of the cervix. The sign points

to the presence of pelvic inflammatory disease.

corona radiata s. Filaments extending outward from a radiographically visualized mass. The presence of such filaments suggests that the mass is growing centrifugally and therefore may be malignant.

hair collar s. In the newborn, a ring of long, dark, coarse hair surrounding a midline nodule on the scalp. This may indicate neural tube closure defect.

jersey finger s. The inability to flex the distal interphalangeal joint of a finger as the result of a rupture of the flexor digitorum profundus tendon. The patient is unable to make a fist.

jump s. During physical examination, an involuntary reaction to stimulation of a tender area or trigger point. This may take the form of wincing or sudden jerking of the part being examined, of adjacent areas, or even of the entire body. This sign should not be confused with the startle reaction seen in Jumping Frenchmen of Maine.

Levine s. Holding a clenched fist over the sternum, a characteristic gesture that individuals experiencing anginal chest pain use frequently.

naked facet s. The radiographical appearance of spinal facet joints that have been disrupted by flexion injuries to the thoracic or lumbar spine. CT scanning of the joints shows that the inferior facets of the upper vertebrae are not directly aligned above the superior facets of the lower vertebrae.

objective s. In physical diagnosis, a sign that can be seen, heard, measured, or felt by the diagnostician. Finding of such sign(s) can be used to confirm or deny the diagnostician's impressions of the disease suspected of being present. SYN: *physical sign*.

orbicular s. SEE: *wink*.

physical s. Objective sign.

Popeye s. A bulging of the body of the biceps brachii muscle that results from rupture of the muscle's tendon. It superficially resembles an exaggerated attempt to flex the biceps muscle.

positive s. of pregnancy Assessment findings present only during pregnancy: fetal heart tones, fetal movements felt by the examiner, and visualization by sonogram.

presumptive s. of pregnancy Signs and symptoms commonly associated with pregnancy that may be present in other conditions. SEE: *pregnancy*.

probable s. of pregnancy Objective assessment findings that strongly suggest but do not confirm pregnancy. SEE: *pregnancy*.

psaos s. Abdominal pain produced by extension of the hip. The sign indicates a retrocecal or retroperitoneal lesion.

- spinnaker sail s.** An outline of the thymus of a child by radiolucent lines. It is seen on chest x-ray examinations of children with pneumomediastinum.
- steeple s.** Narrowing of the column of subglottic air in the trachea, seen on anteroposterior radiographs of the neck in children with croup.
- sunset s.** Newborn assessment finding often associated with hydrocephaly; the newborn's eyes are open with the irises directed downward, resembling the sun setting below the horizon.
- vital s.** Those physical signs concerning functions essential to life (i.e., pulse, rate of respiration, blood pressure, and temperature). Some health care professionals consider a patient's level of pain to be a "fifth" vital sign, although this is not accepted by all parties. While all health care professionals agree that a patient's experience of pain is a critical feature of his or her adaptation to illness, the traditional vital signs are objectively measurable and verifiable, while the level of pain is considered by many to be experiential or subjective.
- signa** (sĭg'nā) [L.] ABBR: S or sig. A term used in writing prescriptions meaning to label the prescription according to the dose, route of administration, and frequency of medication.
- signal** Any form of communication that provides information. It is usually oral, written, visual, or electronic (i.e., transmitted by radio, telephone, television, laser, or optical fibers).
- cellular s.** A chemical released by cells and tissues to stimulate metabolic activities within those tissues or in other parts of the body. Neurotransmitters, hormones, peptides, cytokines, arachidonic acid derivatives, and other chemicals are all signaling molecules.
- s. void** A dark or blank space in a radiographic image of a fluid-filled structure. SEE: *filling defect*.
- signal-to-cut-off ratio** ABBR: S/co. A laboratory comparison of the optical density of a specimen taken from a patient to the optical density of the laboratory's positive control. In tests for antibodies to hepatitis C antibody, e.g., hepatitis C infection is not diagnosed unless a specific S/co is exceeded. Results that fall below the S/co can be found in noninfected patients and are considered to be false positive.
- signature** (sĭg'nā-tūr) [L. *signatura*, to mark] **1.** The part of a prescription giving instructions to the patient. **2.** The act of writing one's name on a document to certify its validity; the written name on the document.
- signer** (sĭ'nēr) A person who communicates using sign language.
- significant** (sĭg-nĭf'ĭ-kānt) Important or meaningful.
- significant other** A person with whom a patient has a close relationship, which may or may not include relatives or a spouse.
- signing** The use of sign language to communicate.
- sign language** Representing words by signs made with the position and movement of the fingers and hand. SEE: *American Sign Language*.
- sildenafil** (sĭl-dĕn'ā-fl) A phosphodiesterase type 5 inhibitor and anti-impotence agent, administered orally to treat erectile dysfunction.
- silencer** (sĭ'lĕn-sĕr) A sequence of base pairs in DNA that prevents the transcription of a gene.
- silent** Free from noise; mute; still.
- silent area** Any cortical area in the brain that on stimulation produces no detectable motor activity or sensory phenomenon, and in which a lesion may occur without producing detectable motor or sensory abnormalities.
- silent disease** A disease that produces no clinically obvious symptoms or signs. Examples include hypertension, many forms of cancer (including small lesions of the breast and prostate cancer), and hearing loss, which may be either not noticed or denied by the individual. Many diseases begin silently, becoming obvious only when they are advanced.
- silica** (sĭl'ĭ-kā) [L. *silex*, flint] SiO₂; silicon dioxide. SEE: *silicon*. **siliceous, siliceous** (sĭ-lĭsh'ūs), *adj.*
- silicate** (sĭl'ĭ-kāt) [L. *silicis*, flintlike] A salt of silicic acid.
- silicic** (sĭl'ĭs'ĭk) Pert. to silica or silicon.
- silicoanthracosis** (sĭl'ĭ-kō-ān'thrā-kō'sĭs) [L. *silex*, flint, + Gr. *anthrax*, coal, + *osis*, condition] Silicosis combined with anthracosis, in coal miners.
- silicofluoride** (sĭl'ĭ-kō-floo'ō-rĭ) A compound of silicon, fluorine, and the fluoride of a metal.
- silicon** (sĭl'ĭ-kōn) [L. *silex*, flint] SYMB: Si. A nonmetallic element found in the soil; atomic weight 28.086; atomic number 14; specific gravity 2.33. Silicon makes up approx. 25% of the earth's crust, being exceeded only by oxygen. It occurs in trace amounts in skeletal structures (bones and teeth). Silicon is commonly combined with oxygen to form silicon dioxide, SiO₂, which occurs in many forms, both crystalline and amorphous. In a pure state, it forms quartz or rock crystal. It is present in many abrasive materials and is the principal constituent of glass.
- silicone** (sĭl'ĭ-kōn") **1.** An organic compound in which all or part of carbon has been replaced by silicon. **2.** Any of a group of polymeric organic silicon compounds used in adhesives, lubricants, synthetic rubber, and prostheses.
- injectable s.** Medical-grade silicone used in the past for breast augmentation, and currently for short-term use in

retinal detachment and surgeries of the vitreous or the urethra. The more purified the silicone oils used, the better tolerated and the more biocompatible the implant application. Numerous prostheses are made of silicone and it is controversially used in breast implants. SEE: *breast implant*.

silicoideriosis (sīl'ī-kō-sīd'ēr-ō'sīs) [" + Gr. *sideros*, iron, + *osis*, condition] A type of pneumoconiosis in which the inhaled particles contain silicates and iron.

silicosis (sīl'ī-kō'sīs) [" + Gr. *osis*, condition] A form of pneumoconiosis resulting from inhalation of silica (quartz) dust, characterized by the formation of small discrete nodules. In advanced cases, a dense fibrosis and emphysema with impairment of respiratory function may develop.

silicotic (sīl'ī-kōt'īk) **1.** Relating to silicosis. **2.** One affected with silicosis.

siliquose (sīl'ī-kwōs) [L. *siliqua*, pod] Resembling a two-valve capsule or a pod.

siliquose desquamation Shedding of dried vesicles from the skin.

silofiller's disease, silo-filler's syndrome (sī'lō-fīl'ēr-z) A rare respiratory illness produced by exposure to nitrogen oxides released from fermenting organic matter in freshly filled, poorly ventilated farm silos. Silage gases irritate the mouth, nose, pharynx, bronchi, and lungs, interfering with oxygenation and gas exchange. Alveolar damage and hemorrhagic pulmonary edema may result; about 20% of affected persons die of the exposure. Delayed injury to the lungs, esp. emphysema or bronchiolitis obliterans, may occur long after the initial exposure to silage gases.

PREVENTION: No one should enter a silo until 7 to 10 days after it is filled. Good ventilation above the base of a silo should be maintained during the 7- to 10-day period. The area should be fenced in to prevent children or animals from straying into the space surrounding a silo. An exhaust fan should always be activated before a person enters a silo.

TREATMENT: Corticosteroids such as prednisone or methylprednisolone help prevent lung injury in patients exposed to silage gases.

silver (sīl'vēr) [AS. *siolfor*] SYMB: Ag. A white, soft, ductile, malleable metal, its salts being widely used in medicine for their caustic, astringent, and antiseptic effects. Its atomic weight is 107.870; atomic number is 47; and specific gravity is 10.5. In dentistry, silver is used in prosthetic devices, as an alloy with copper or mercury, as silver solder, and as tapering points to obliterate root canals in the endodontic treatment of teeth. SEE: *argyria*.

s. amalgam A colloquial term for dental amalgam.

s. chloride SYMB: AgCl. An insoluble salt of silver.

colloidal s. **1.** Silver preparations in which the particles of silver or silver proteinate are suspended in the solution rather than being dissolved in it. **2.** SEE: *colloidal silver*.

s. filling Dental amalgam.

s. halide The photosensitive crystals in a radiographic film emulsion that, when exposed to ionizing radiation and developed, form an image.

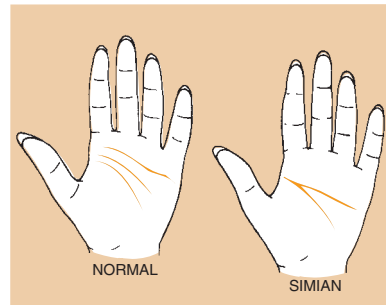
silverfish (sīl'vēr-fīsh') An insect, *Ctenolepisma longicaudata*, whose scales are often found in house dust, are antigenic, and may be a cause of childhood and adult perennial allergies and asthma. This house pest may be controlled with the use of insecticides.

Silybum marianum (sī-lē-būm') Milk thistle.

silymarin (sī-lē-mār'īn) Milk thistle.

simethicone (sī-mēth'ī-kōn) A mixture of liquid demethylpolysiloxanes that because of its antifoaming properties is used to treat intestinal gas.

simian crease A crease on the palm of the hand, so termed because of its similarity to the transverse flexion crease found in some monkeys. Normally the palm of the hand at birth contains several flexion creases, two of which are separate and approx. transverse. When these two appear to fuse and thus form a single transverse crease, a simian crease is present. The crease may be present in a variety of developmental abnormalities; including Down syndrome, rubella syndrome, Turner's syndrome, Klinefelter's syndrome, pseudohypoparathyroidism, and gonadal dysgenesis. SEE: *illus.*



SIMIAN AND NORMAL PALMAR CREASES

similia similibus curantur (sī-mīl'ē-ā sī-mīl'ī-būs kūr-ān'tūr) [L., likes are cured by likes] The homeopathic doctrine that a drug producing pathological symptoms in those who are well will cure such symptoms in persons with disease. **similimum**, *adj.*

Simmonds' disease (sīm'mōnds) [Mor-

- ris Simmonds, German physician, 1855–1925] Complete atrophy of the pituitary gland, producing loss of function of the thyroid, adrenals, and gonads, hair loss, hypotension, and cachexia. SYN: *pituitary cachexia*.
- Simon's position** (zē'móns) [Gustav Simon, German surgeon, 1824–1876] An exaggerated lithotomy position in which the hips are somewhat elevated and the thighs are strongly abducted. It is used in operations on the vagina. SYN: *Edebohls' position*.
- simple** (sím'pl) [L. *simplex*] **1.** Not complex; not compound. **2.** A medicinal plant.
- simple inflammation** Inflammation without pus or other inflammatory exudates.
- Simple Triage and Rapid Treatment** ABBR: START. A procedure for quickly classifying injured patients according to the severity of their injuries and for treating those who are most severely injured first.
- Sims' position** (símz) [James Marion Sims, U.S. gynecologist, 1813–1883] A semiprone position with the patient on the left side, right knee and thigh drawn well up, the left arm along the patient's back, and the chest inclined forward so that the patient rests on it. It is the position of choice for administering enemas because the sigmoid and descending colon are located on the left side of the body and fluid is readily accepted in this position. It is also used in curettage of the uterus, intrauterine irrigation after labor, flexible sigmoidoscopy, colonoscopy, rectal examination, and post-anesthesia recovery.
- simul** (sī'mül, sīm'ül) [L.] At once or at the same time; term used in signature of prescription.
- simulation** (sím-ū-lā'shūn) [L. *simulatio*, imitation] **1.** Pretense of having a disease; feigning of illness. SEE: *malingerer*; *Munchausen syndrome*. **2.** The imitation of symptoms of one disease by another. **3.** A replica. **4.** An educational or technological model of an actual situation (such as cardiac arrest) that is used to train new students or to predict or estimate outcomes that may be obtainable in practice.
- simulator** (sím"ū-lā'tor) Any situation or device that imitates or recreates a condition or situation similar to one that might be encountered by a student or trainee. Simulations are used to prepare learners for social, occupational, or educational roles.
- Simulium** (sī-mū'lē-ūm) A genus of insects of the order Diptera that includes the black flies (buffalo gnats). The females are blood suckers.
- S. damnosum** A species that is the intermediate host of the filarial worm *Onchocerca volvulus*.

- S. venustum** A species common in North America.
- simultanagnosia** (sī'mül-tăn"äg-nō'zē-ā) The failure to perceive simultaneously all the elements of a scene.
- simultaneous communication** In American Sign Language, the combined use of speech, finger spelling, and signing to convey ideas to another person.
- SIMV** *synchronized intermittent mandatory ventilation*.
- simvastatin** (sím'vā-stā-tín) An HMG-CoA reductase inhibitor and lipid-lowering agent. It is administered orally, as an adjunct to dietary therapy, to manage primary hypercholesterolemia and mixed dyslipidemias. Trade name is Zocor.
- sin-, sino-** Combining forms meaning *sinus* or *cavity*.
- Sinapis** (sín-ā'pīs) [Gr. *sinapi*, mustard] A genus of plants commonly known as mustard plants.
- sincipital** (sín-síp'ĭ-tāl) [L. *sinciput*, half a head] Concerning the sinciput.
- sinciput** (sín'síp-üt) [L., half a head] **1.** The fore and upper part of the cranium. **2.** The upper half of the skull. SYN: *calvaria*.
- Sinding-Larsen Johansson disease** (sín'ding-lär'sën jō-hän'són) Anterior knee pain caused by persistent traction on an immature inferior patellar pole. There is point tenderness at the bone-tendon junction, and Osgood-Schlatter disease may be present. The adult equivalent of this disease is patellar tendinitis. This condition occurs commonly in boys 10 to 12 years of age who are actively involved in running and jumping sports. It resolves eventually but can be treated with activity modification, a patella-stabilizing knee brace, ice, and nonsteroidal anti-inflammatory drugs.
- sinew** (sín'ū) [AS. *sinu*] A tendon.
- sine wave grating** (sīn) [L. *sinus*, curve, fold] A test pattern to assess visual contrast sensitivity.
- sing** [L., *singulorum*] Of each; used in writing prescriptions.
- single-blind** Pert. to a method, study, or clinical trial in which only the researcher knows what treatment or medication the subject receives. A single-blinded study attempts to eliminate subjective bias such as the placebo effect from the results. SEE: *blinded*; *double-blind*.
- singleton** (sīng'gl-tōn") One of something described, esp. a single infant rather than a twin.
- single-use device** A medical device used once for the care of a single patient and then immediately discarded.
- Singlair** (sīng'gū-lār') SEE: *montelukast*.
- singultation** (sīng'gūl-tā'shūn) [L. *singultus*, a hiccup] Hiccupping.

sinister (sīn-īś'tēr) [L.] In anatomy, left; or present on the left side of the body.
sinistrad, sinistral (sīn'īs-trād, sīn'īs-trāl), *adj.*

sinistrality (sīn'īs-trāl'ī-tē) Left-handedness.

sinistro- (sīn'īs-trō) Combining form meaning *left*.

sinistrocardia (sīn'īs-trō-kār'dē-ā) [L. *sinister*, left, + Gr. *kardia*, heart] Displacement of the heart to left of the medial line; the opposite of dextrocardia.

sinistroucularity (sīn'īs-trōk'ū-lār'ī-tē) Condition in which the left eye is dominant. **sinistroucular** (sīn'īs-trōk'ū-lār), *adj.*

sinistroygration (sīn'īs-trō-jī-rā'shūn) [ʹ + Gr. *gyros*, a circle] Inclination to the left.

sinistromanual (sīn'īs-trō-mān'ū-āl) [ʹ + *manus*, hand] Left-handed.

sinistropedal (sīn'īs-trōp'ēd-āl) [ʹ + *pes*, foot] Left-footed.

sinistrotorsion (sīn'īs-trō-tor'shūn) [ʹ + *torsio*, a twisting] A twisting or turning toward the left.

sinistrous (sīn'īs-trūs) Awkward, clumsy, unskilled; the opposite of dextrous.

sinoatrial (sīn'ō-ā-trē-āl) Pert. to the sinus venosus and atrium.

sinobronchitis (sī'nō-brōng-kī'tīs) [L. *sinus*, curve, + *bronchos*, windpipe, + Gr. *itis*, inflammation] Paranasal sinusitis with bronchitis.

sinogram (sī'nō-grām) [L. *sinus*, curve, + Gr. *gramma*, something written] A radiograph of a sinus tract filled with a radiopaque contrast medium to determine the range and course of the tract.

sinter (sīn'tēr) **1.** The calcium or silica deposits formed from water obtained from mineral springs. **2.** To reduce material to a solid form by heating without melting.

sinuous (sīn'ū-ūs) [L. *sinuosus*, winding] Winding; wavy; tortuous.

sinus (sī'nūs) *pl.* **sinuses, sinus** [L., curve, hollow] **1.** A cavity within a bone. **2.** A dilated channel for venous blood. **3.** A canal or passage leading to an abscess. **4.** Any cavity having a relatively narrow opening.

anal s. The saclike recesses behind the anal columns.

aortic s. 1. The area in the wall of the aortic arch that contains pressoreceptors innervated by the vagus nerves. These receptors detect changes in blood pressure and bring about reflex changes in heart rate and arterial diameter. **2.** A dilatation of the aorta opposite the segment of the semilunar valve.

basilar s. Transverse s. (2).

carotid s. The site at the base of the internal carotid artery of pressoreceptors innervated by the glossopharyngeal nerve. These receptors detect changes in blood pressure and bring about reflex

changes in heart rate and arterial diameter.

s. cavernosus A large sinus from the sphenoidal fissure to the apex of the petrous portion of the temporal bone.

circular s. A venous sinus around the pituitary gland, communicating on each side with the cavernous sinus.

coccygeal s. A sinus in the midline of the gluteal cleft just over the coccyx.

coronary s. of heart A vein in the transverse groove between the left cardiac atrium and ventricle.

cranial s. One of the large veins between the two layers of the cranial dura mater.

dermal s. A congenital sinus tract connecting the surface of the body with the spinal canal.

draining s. An abnormal passageway leading from inside the body to the outside. This is usually due to an infectious process.

dural venous s. One of several large endothelium-lined collecting channels into which veins of the brain and inner skull empty and which then empty into the internal jugular vein. These venous sinuses are found between the two layers (periosteal and meningeal) of the dura mater; their walls have no muscle, and they have no valves to give direction to the blood flow. The major venous sinuses in the skull are the superior sagittal, inferior sagittal, straight, transverse, and cavernous.

ethmoidal s. One of the air cavities in the ethmoid bone. SEE: *paranasal s.*

hair s. The sinus formed when hair is embedded in the skin and acts as a foreign body.

inferior petrosal s. A large venous sinus from the cavernous sinus, running along the lower margin of the petrous portion of the temporal bone.

inferior sagittal s. A venous sinus in the inferior margin of the falx cerebri.

lymph s. A pathway for lymph through a lymph node. SYN: *lymph channel*.

marginal s. 1. A large venous sinus around part of the margin of the placenta. **2.** One of the small bilateral venous sinuses of the dura mater at the edge of the foramen magnum. **3.** A venous sinus around a portion of the white pulp of the spleen.

maxillary s. A cavity in the maxillary bone communicating with the middle meatus of the nasal cavity. SYN: *antrum of Highmore*.

paranasal s. One of the air cavities in the frontal, maxillary, sphenoid, or ethmoid bones. The anterior group consists of the frontal, maxillary, and anterior ethmoids; the posterior group includes the posterior ethmoids and sphenoid. These sinuses develop embryologically from nasal cavities, are lined

with the same type of ciliated epithelium, are filled with air, and communicate with nasal cavities through their various ostia. They lighten the skull, being lighter than dense bone, and are resonating chambers for the voice. **SEE: il-lus.**

pilonidal s. Pilonidal fistula.

pleural s. One of the spaces in the pleural sac along the lower and inferior portions of the lung that the lung does not occupy.

s. of the pulmonary trunk One of the dilatations in the pulmonary trunk, across from a cusp of the pulmonary valve of the heart. The sinuses in the pulmonic trunk are smaller than those in the aorta.

s. rectus A venous sinus at the junction of the falx cerebri and the cerebellar tentorium. **SYN:** *straight sinus*.

renal s. The area in the kidney composed of the renal pelvis, renal calices, vessels, nerves, and fatty tissue.

sigmoid s. In the venous circulation of the brain, the continuation, on both sides, of the transverse sinuses down along the posterior border of the petrous part of the temporal bone to the jugular foramen and jugular veins.

sphenoidal s. One of the air sinuses that occupy the body of the sphenoid bone and connect with the nasal cavity. **SEE:** *paranasal s.*

s. of spleen A large-capacity venous channel in the spleen.

straight s. Sinus rectus.

superior petrosal s. A venous canal running in a groove in the petrous portion of the temporal bone.

superior sagittal s. A large venous sinus along the attached border of the falx cerebri from the crista galli to the internal occipital protuberance, where it joins either the right or left transverse sinuses or both. At its caudal end (at the back of the tentorium cerebelli), the superior sagittal sinus joins the straight sinus to form the confluence of the sinuses, from which the right and left transverse sinuses carry the accumulated venous blood toward the internal jugular veins.

transverse s. 1. A sinus that unites the two inferior petrosal sinuses of the cranium. **2.** Venous network in the dura over the basilar process of the occipital bone. **SYN:** *basilar sinus*.

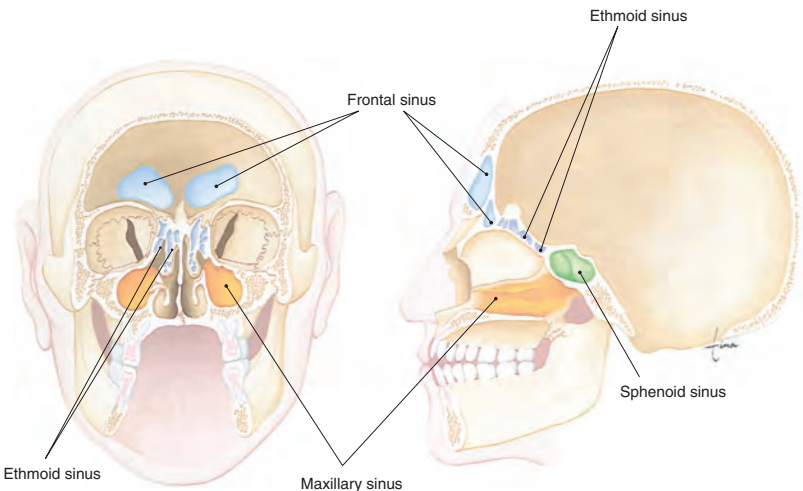
transverse s. of the dura mater One of the large, bilateral venous sinuses along the attached margin of the cerebellar tentorium. They receive the superior sagittal and straight sinuses and drain into the sigmoid sinuses and then into the jugular veins.

transverse s. of the pericardium A channel posterior to the aorta and the pulmonary trunk but in front of the atria.

urogenital s. 1. A duct into which, in the embryo, the wolffian ducts and bladder empty; it opens into the cloaca. **2.** The common receptacle of the genital and urinary ducts.

uterine s. One of the venous channels in the walls of the uterus during pregnancy.

uteroplacental s. One of the slanting venous channels from the placenta serving to convey the maternal blood from



PARANASAL SINUS

(A) anterior, (B) left lateral

the intervillous lacunae back into the uterine veins.

s. venosus In the embryo, a large venous sac just caudal to the developing heart that receives the blood from the umbilical, vitelline, and common cardinal veins. At first, this sac is a separate chamber emptying into the primitive right atrium, but eventually the left part of the sinus venosus forms the coronary sinus (emptying into the right atrium).

sinus-, sinuso- Combining forms meaning *sinus* or *cavity*.

sinus histiocytosis with massive lymphadenopathy Rosai-Dorfman disease.

sinusitis (sī-nūs-ī'tis) [L. *sinus*, curve, hollow, + Gr. *itis*, inflammation] Inflammation of a sinus, esp. a paranasal sinus. It may be caused by various agents, including viruses, bacteria, or allergy. Predisposing factors include inadequate drainage, which may result from presence of polyps, enlarged turbinates, or a deviated septum; chronic rhinitis; general debility; or dental abscess in maxillary bone.

acute suppurative s. Purulent inflammation with pain over the facial sinuses, often accompanied by fever, chills, and headache.

TREATMENT: Therapy is conservative. Shrinkage in the nasal mucosa is useful to facilitate ventilation and drainage of the sinuses. The patient should rest, force fluids, take decongestants, and apply hot packs. If inflammation is due to bacterial infection, antibiotic therapy is indicated.

allergic fungal s. Chronic nasal obstruction with symptoms that include a runny nose and postnasal discharge that is caused by allergies to soil-based fungi (such as *Curvularia* or *Alternaria*). The condition is occasionally diagnosed in patients with an allergic history and nasal polyposis who have failed treatments for other sinus diseases. Tenacious mucus with a large number of eosinophils are often present.

chronic hyperplastic s. Polyps present in sinuses and nose and underlying osteitis of sinus walls.

TREATMENT: This condition is treated surgically. Conservative surgery involves the removal of polyps and intranasal opening into sinuses for adequate ventilation and drainage. Radical surgery would involve the complete removal of sinus mucosa through either the external or the intranasal route.

invasive fungal s. Sinus, ophthalmic, and cerebral invasion by opportunistic fungi. The disease usually occurs in immunosuppressed patients (such as diabetic or neutropenic patients) and is frequently fatal despite aggressive medical and surgical therapies. *Aspergillus*, *Mu-*

cor, and *Rhizopus* are the most commonly implicated causes.

sinusoid (sī'nūs-oyd) [n° + Gr. *eidōs*, form, shape] **1.** Resembling a sinus. **2.** A large, permeable capillary, often lined with macrophages, found in organs such as the liver, spleen, bone marrow, and adrenal glands. Their permeability allows cells or large proteins to easily enter or leave the blood. **sinusoidal, adj.**

sinusoidal current Alternating induced electric current, the two strokes of which are equal.

sinusoidal pattern An abnormal fetal heart rate finding in which the monitor records a consistent rhythmic, uniform, undulating wave. Although the number of beats per minute is within normal limits and the recording shows long-term variability, beat-to-beat variability is absent and no accelerations in heart rate occur with fetal movement.

sinusotomy (sī-nūs-ōt'ō-mē) [n° + Gr. *tōmē*, incision] The incising of a sinus.

SiO₂ Silicon dioxide.

sip (sĭp) [ME. *sippen*] **1.** To take a small quantity of liquid or nourishment into the mouth. **2.** A small quantity of liquid, i.e., the amount that can be taken into the mouth with gentle suction.

sip and puff A method of controlling assistive technology devices by blowing or sucking through a tube.

siphon (sī'fūn) [Gr. *siphon*, tube] A tube bent at an angle to form two unequal lengths for transferring liquids from one container to another by atmospheric pressure. One container must be higher than the other for this to work.

siphonage (sī'fūn-ij) Use of a siphon to drain a body cavity such as the stomach or bladder.

Siphonaptera (sī'fō-nāp'tēr-ā) [n° + *apteros*, wingless] An order of insects commonly called fleas. They are wingless, undergo complete metamorphosis, and have piercing and sucking mouth parts. The body is compressed laterally, and the legs are adapted for leaping. Fleas feed on the blood of birds and mammals. They transmit the causative organisms of several diseases (bubonic plague, endemic or murine typhus, and tularemia) and are also the intermediate hosts of certain tapeworms. SEE: *flea*.

Sipple syndrome (sĭp'l) [John H. Sipple, U.S. physician, b. 1930] Multiple endocrine neoplasia type IIA. SEE: *multiple endocrine neoplasia*.

siRNA *short, interfering ribonucleic acid*. **sirtuins** (sir'too-in) Any of a class of proteins that deacetylate histones and keep chromatin from being transcribed. Also known as Sir proteins, members of this class of chemicals may contribute to longevity.

-sis [Gr.] Suffix meaning *condition, state*.

Depending on the preceding vowel, it may appear in the form of *-asis*, *-esis*, *-iasis*, or *-osis*.

sister A term used by the British for *nurse*, esp. a senior or head nurse.

Sister Mary Joseph nodule A hard, periumbilical lymph node sometimes present when pelvic or gastrointestinal tumors have metastasized.

site [L. *situs*, place] Position or location.
active s. The reactive portion of an enzyme, in which the substrate molecules fit and form temporary bonds.

antibody combining s. SEE: *antibody combining site*.

antigen binding s. Antigenic determinant.

binding s. The particular location on a cell surface or chemical to which other chemicals bind or attach.

cleavage s. The location on a polypeptide molecule where peptide bonds are broken down by hydrolysis.

exit s. The location on the skin where an implanted device (e.g., a surgical drain) leaves the body.

implant s. The location in a jaw bone where a dental prosthesis will be or is seated.

port s. The location on the skin where a laparoscope or other device (e.g., subcutaneously implanted medicine reservoir) is inserted into the body.

primary s. The tissue of origin of a metastatic tumor.

receptor s. The particular component of a cell surface that has the ability to react with certain molecules, such as proteins or a virus.

splice s. The location on a strand of messenger RNA where the molecule can be cut and reannealed during the regulation of protein synthesis by cells.

site-specific Properties of cellular receptors that vary with their body location or milieu.

sitio-, sito- Combining form meaning *bread, made from grain, food*.

sitosterols (sī-tōs'tēr-ōls) A group of similar organic compounds that occur in plants. They contain the steroid nucleus, perhydrocyclopentanophenanthrene.

sitotherapy (sī'tō-thēr'ā-pē) [" + *therapeia*, treatment] The therapeutic use of diet and nutrition.

sitotoxin (sī'tō-tōk'sin) [" + *toxikon*, poison] Any poison developed in food, esp. one produced by bacteria growing in a cereal or grain product.

sitotoxism (sī'tō-tōks'izm) [" + " + *-ismos*, condition] Poisoning by vegetable foods infested with molds or bacteria. SEE: *aflatoxin*; *food poisoning*.

situation 1. A set of circumstances.
2. The location of an entity in relation to other objects.

situs (sī'tūs) [L.] A position.
s. inversus The abnormal relation

and displacement of viscera to the opposite side of the body.

s. inversus viscerum A less common term for *situs inversus*.

SI units Any of the units specified by the International System of Units adopted by the International Conference of Weights and Measures in 1960 and updated since then. SEE: tables; *International System of Units*; SI Units Appendix.

sixth disease An acute disease of infants, caused by herpesvirus 6. SYN: *exanthem subitum*; *Zahorsky disease*. SEE: *roseola infantum*.

size-up The assessment of the safety of a scene for rescuers and patients before proceeding with the initial patient assessment.

Sjögren's syndrome (shō'grēnz) ABBR: SS. An autoimmune disorder marked by decreased lacrimal and salivary secretions, resulting in dry eyes (keratoconjunctivitis sicca) and dry mouth (xerostomia). In 50% of patients it occurs alone; in the other 50% it is seen in conjunction with other autoimmune diseases, such as systemic lupus erythematosus, thyroiditis, scleroderma, and esp. rheumatoid arthritis. It occurs primarily in middle-aged women.

In Sjögren's syndrome, the lacrimal and salivary glands are destroyed by autoantibodies and T lymphocytes. Approx. 90% of patients have antiribonucleoprotein antibodies in the blood (anti-Ro or anti-La), which are considered diagnostic markers; approx. 75% also have rheumatoid factor, even if there is no evidence of rheumatoid arthritis. Patients with Sjögren's syndrome have a 40% to 60% increased risk of developing non-Hodgkin lymphoma, cancer of the lymph glands.

SYMPTOMS: The most common signs and symptoms are blurred vision, thick secretions, itching and burning of the eyes, decreased sense of taste, difficulty swallowing, and dry, cracked oral mucous membranes. Enlarged parotid glands, dry nasal membranes, bronchi-

International System of Units (SI Units)

Basic Quantity	Basic Unit	Symbol
Length	meter	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Prefixes and Their Symbols Used to Designate Decimal Multiples and Submultiples in SI Units

Prefix	Symbol		Factor
tera	T	10 ¹²	1 000 000 000 000
giga	G	10 ⁹	1 000 000 000
mega	M	10 ⁶	1 000 000
kilo	k	10 ³	1 000
hecto	h	10 ²	100
deka	da	10 ¹	10
deci	d	10 ⁻¹	0.1
centi	c	10 ⁻²	0.01
milli	m	10 ⁻³	0.001
micro	μ	10 ⁻⁶	0.000 001
nano	n	10 ⁻⁹	0.000 000 001
pico	p	10 ⁻¹²	0.000 000 000 001
femto	f	10 ⁻¹⁵	0.000 000 000 000 001
atto	a	10 ⁻¹⁸	0.000 000 000 000 000 001

tis and pneumonitis, synovitis, vaginal dryness, superimposed *Candida* infections, and vasculitis also may occur. Patients usually have anemia, leukopenia, and an elevated erythrocyte sedimentation rate.

TREATMENT: Sjögren's syndrome can be controlled with symptomatic treatment. Careful oral hygiene, using fluoride toothpaste and mouthwash as well as chlorhexidine rinses, and routine dental examinations are essential to minimize oral infection and tooth decay. Sugarless gum or candies, frequent sips of water, and pilocarpine may help relieve the xerostomia; artificial saliva is not tolerated by most patients. Artificial tears are effective for dry eyes, and glasses are recommended to block the wind when the patient is outside. Clinical manifestations of concurrent autoimmune diseases are treated symptomatically.

skateboard (skāt'bord) **1.** A therapeutic device used for upper or lower extremity rehabilitation. It consists of a platform mounted on ball-bearing rollers. It assists the patient in making coordinated movements. **2.** A recreational device often used by children and adolescents, consisting of a long, narrow platform mounted on wheels. Skateboard use is often associated with high-energy trauma. Common injuries associated with the use of the device are fractures, traumatic brain injury, contusions, and lacerations.

skatol(e) (skāt'öl) [Gr. *skatos*, dung] C₉H₉N; beta-methyl indole; a malodorous, solid, heterocyclic nitrogen compound found in feces, formed by protein decomposition in the intestines and giving them their odor.

skatoxyl (skä-tök'sil) A derivative of skatole.

skein (skān) A continuous tangled thread.

skeletal (skēl'ē-tāl) [Gr. *skeleton*, a dried-up body] Pert. to the skeleton.

skeletal survey A radiographic study of the entire skeleton to look for evidence of occult fractures, multiple myeloma, metastatic tumor, or child abuse.

skeletal system The bony framework of the body. SEE: *skeleton*.

skeletal traction SEE: under *under traction*.

skeletization (skēl'ēt-ī-zā'shūn) Excessive emaciation.

skeleto- Combining form meaning *skeleton*.

skeletogenous (skēl-ē-tōj'ē-nūs) [Gr. *skeleton*, a dried-up body, + *gennan*, to produce] Forming skeletal structures or tissues.

skeleton (skēl'ēt-ōn) [Gr., a dried-up body] The bony framework of the body consisting of 206 bones: 80 axial or trunk and 126 of the limbs (appendicular). This number does not include teeth or sesamoid bones other than the patella. SEE: *illus.*; table.

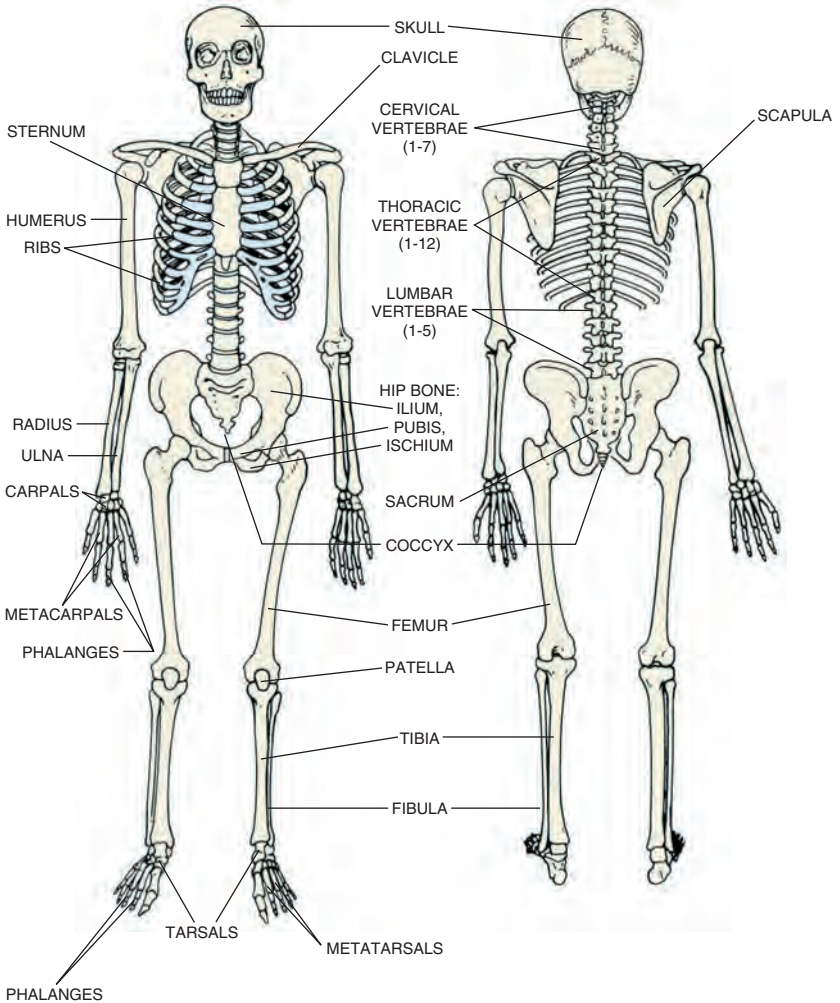
appendicular s. The bones that make up the shoulder girdle, upper extremities, pelvis, and lower extremities.

axial s. Bones of the head and trunk.

cartilaginous s. The part of the skeleton formed by cartilage; in the adult, the cartilage of the ribs and joints. Cartilage is more flexible and resistant to resorption due to pressure than bone.

Skene's duct One of the two slender ducts of Skene's glands that open on either side of the urethral orifice in women. SYN: *paraurethral duct*.

Skene's glands (skēns) [Alexander Johnston Chalmers Skene, Scot.-born U.S. gynecologist, 1837–1900] Glands lying just inside of and on the posterior area of the urethra in the female. If the margins of the urethra are drawn apart and the mucous membrane gently everted, the two small openings of Skene's tubules or glands, one on each



SKELETON

side of the floor of the urethra, become visible. Trauma frequently causes a gaping of the urethra and ectropion of the mucous membrane. In acute gonorrhoea, these glands are almost always infected. SYN: *paraurethral glands*.

skenitis (skē-nī'tis) [*Skene* + Gr. *itis*, inflammation] Inflammation of Skene's glands.

skew (skyū) [*ME. skewen*, to escape] Turned to one side; asymmetrical.

skew deviation A condition in which one eyeball is directed upward and outward, the other inward and downward.

skia- (skī'ā) [*Gr.*] Combining form meaning *shadow*.

skiascopy (skī-ās'kō-pē) 1. Retinoscopy. 2. Fluoroscopy.

skill Proficiency in a specific task.

savant s. Splinter skill.

splinter s. A precocious, highly developed behavior or talent that occurs in isolation, i.e. one that is not associated with other cognitive, manual, social, or verbal skills. Splinter skills are often found in children with autistic spectrum disorders. SYN: *savant skill*.

skilled attendant A person formally trained in the care of women during labor and delivery.

skill mix The varied human resources needed to accomplish a clinical task. To provide postoperative care of a cardiac surgery patient, e.g., a surgeon, anesthesiologist, critical care nurses, nursing aides, respiratory therapists, and

Bones of the Human Skeleton

Axial (80 bones)		Appendicular (126 bones)	
Head (29 bones)	Trunk (51 bones)	Upper Extremities (64 bones)	Lower Extremities (62 bones)
Cranial (8)	Vertebrae (26)	Arms and shoulders (10)	Legs and hips (10)
Frontal—1	Cervical—7	Clavicle—2	Innominate or hip bone (fusion of the ilium, ischium, and pubis)—2
Parietal—2	Thoracic—12	Scapula—2	Femur—2
Occipital—1	Lumbar—5	Humerus—2	Tibia—2
Temporal—2	Sacrum—1	Radius—2	Fibula—2
Sphenoid—1	Coccyx—1	Ulna—2	Patella (kneecap)—2
Ethmoid—1			
Facial (14)	Ribs (24)	Wrists (16)	Ankles (14)
Maxilla—2	True rib—14	Scaphoid—2	Talus—2
Mandible—1	False rib—6	Lunate—2	Calcaneus (heel bone)—2
Zygoma—2	Floating rib—4	Triquetrum—2	Navicular—2
Lacrimal—2		Pisiform—2	Cuboid—2
Nasal—2	Sternum (1)	Trapezium—2	Cuneiform, internal—2
Turbinate—2		Trapezoid—2	Cuneiform, middle—2
Vomer—1		Capitate—2	Cuneiform, external—2
Palatine—2		Hamate—2	
Hyoid (1)		Hands (38)	Feet (38)
Auditory ossicles (6)		Metacarpal 10	Metatarsal—10
Malleus—2		Phalanx (finger bones)—28	Phalanx (toe bones)—28
Incus—2			
Stapes—2			

other personnel must be assembled. A different level of care and a different allocation of health care human resources are needed to provide care to an outpatient with an upper respiratory infection. Assembling the appropriate staffing for health care services is a function that depends on issues such as the demands of the patient's illness, the specialization and availability of health care providers, the institution in which care is provided, and the available financial resources. In military medicine, a broad array of services is provided by medics; patients with similar injuries and illnesses in urban medical centers would likely have access to a wider variety of professionals, each with a more limited set of skills.

skimming In health care, the practice of a for-profit corporation entering the market, attracting the business of patients who can pay, and avoiding treating the indigent.

skin (skin) [Old Norse *skinn*] The organ that forms the outer surface of the body. It shields the body against infection, dehydration, and temperature changes; provides sensory information about the environment; manufactures vitamin D; and excretes salts and small amounts of urea.

Skin consists of two major divisions: the epidermis and the dermis. Depending on its location and local function, skin varies in terms of its thickness, strength, presence of hair, nails, or glands, pigmentation, vascularity, nerve supply, and keratinization. Skin may be classified as thin and hairy or thick and hairless (glabrous). Thin hairy skin covers most of the body. Glabrous skin covers the surface of the palms of the hands, soles of the feet, and flexor surfaces of the digits. **SEE: illus.; hair for illus; burn; dermatitis; dermis; eczema; epidermis; rash.**

alligator s. Severe scaling of the skin with formation of thick plates resembling the hide of an alligator. **SEE: ichthyosis.**

artificial s. Human s. equivalent.

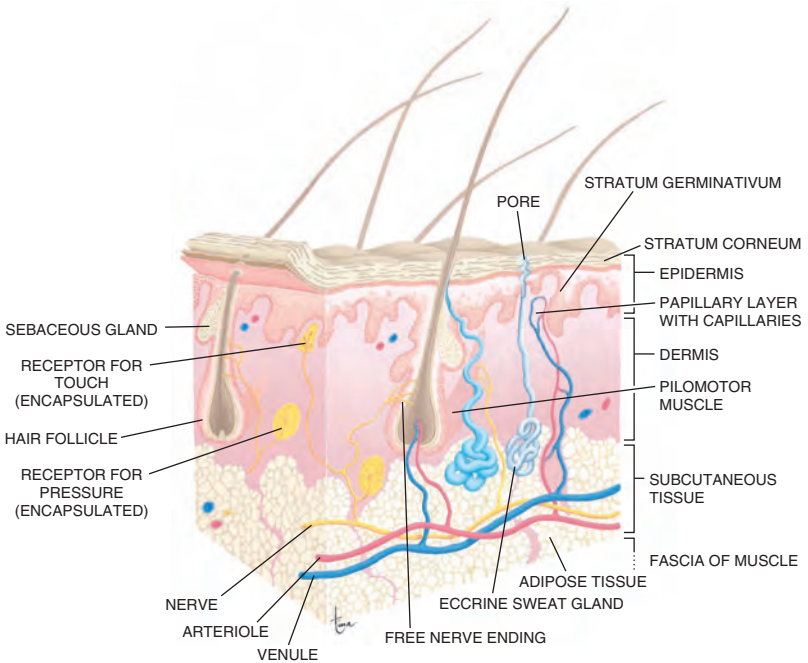
bronzed s. A condition seen in chronic adrenocortical insufficiency (Addison's disease) and in hemochromatosis, some cases of diabetes mellitus, and cirrhosis of the liver.

deciduous s. Keratolysis.

elastic s. Ehlers-Danlos syndrome.

glabrous s. Skin that does not contain hair follicles, such as that over the palms and soles.

glossy s. Shiny appearance of the skin due to atrophy or injury to nerves.



SKIN SECTION

hidebound s. Scleroderma.

human s. equivalent Graft made of living human skin grown in a laboratory and used, e.g., to treat leg ulcers in patients with peripheral vascular disease or diabetes mellitus. The graft bonds with healthy tissue in a wound from which necrotic tissue has been removed, improving healing. It is grown from foreskin removed from neonates but also contains bovine (cow) proteins, limiting its use to those with no allergy to these proteins. SYN: *artificial skin*; *tissue-engineered skin*.

loose s. Hypertrophy of the skin.

parchment s. Atrophy of the skin with stretching.

photoaged s. Skin changes caused by chronic sun exposure. This condition is prevented by avoiding suntanning and sunburning and has been treated with topical tretinoin and chemical peels. SYN: *photodamaged skin*.

photodamaged s. Photoaged s.

piebald s. Vitiligo.

scarf s. The cuticle, epidermis; the outer layer of the skin.

sun-damaged s. Photoaged s.

tissue-engineered s. Human s. equivalent.

true s. The dermis or corium, the inner layer of the skin.

skin, chemical peel of The use of chemicals to erode superficial skin layers;

used to treat acne, wrinkles, and blemishes. SEE: *dermabrasion*.



This technique can cause skin injury. It must be done under the supervision of a person skilled in this type of therapy.

skin, tenting of A delay in the return of pinched skin to a flat position, after it has been tugged, elevated above the rest of the epidermis, and released. The return becomes progressively slower as the skin ages and subcutaneous elastic tissue decreases. It is also slowed in dehydrated persons. SEE: *dehydration*.

skin autofluorescence The abnormal fluorescence of the skin of patients with either diabetes mellitus or excessive oxidative stress when exposed to ultraviolet light. It results from the accumulation of advanced glycosylation end products (AGE) in tissues. AGE accumulation has been linked to cardiovascular diseases, impairments in glucose tolerance, and renal failure.

skin cancer A broad term that includes basal cell carcinomas, squamous cell carcinomas, and melanomas. Together, these skin cancers are the most common cancers in the U.S. They are all associated with excessive exposure to ultraviolet light (e.g., sun exposure). SEE:

basal cell carcinoma; squamous cell carcinoma; melanoma.

PATIENT CARE: According to U.S. Preventative Services Task Force (USPSTF), benefits from routine screening for skin cancers using a total body skin examination are unproven, even in high-risk patients.

skinfold tenderness Tenderness elicited by the examiner's rolling the skin and subcutaneous tissues over the upper border of the trapezius muscle. Normally, this produces minor discomfort, but in patients with nonarticular rheumatic disorders, rolling of the skin consistently produces pain.

skinfold thickness An anthropometric measurement used to evaluate nutritional status by estimating the amount of subcutaneous fat. Calibrated calipers are used to measure the thickness of a fold of skin at defined body sites that include upper arm or triceps, subscapular region, and upper abdomen.

skin integrity, impaired A state in which an individual has altered epidermis and/or dermis. SEE: *Nursing Diagnoses Appendix.*

skin integrity, impaired, risk for A state in which an individual's skin is at risk of being adversely altered. SEE: *Nursing Diagnoses Appendix.*

skin marking The application of nontoxic, temporary paints or dyes to the skin to provide landmarks (as in plastic surgery), to permit accurate alignment of wound edges at the time the skin is closed, or to align the treatment beam accurately during radiotherapy.

Skinner box (skín'ér) [Burrhus Frederic Skinner, U.S. psychologist, 1904–1990] A device used in experimental psychology in programmed learning. It is designed so that an animal that performs a desired behavior is rewarded, for example, by receiving food.

skin popping The subcutaneous injection of illicit drugs, a practice that may result in localized abscesses, limb cellulitis, fasciitis, sepsis, or death. Injection drug users who skin pop may be recognized by the presence of atrophied circular lesions on the skin, usually of the forearms.

skin test Any test in which a suspected allergen is applied to the skin. A variety of tests have been developed to detect the presence of IgE antibodies to specific substances. Cutaneous tests include the *scratch test*, in which a tiny amount of dilute allergen solution is placed on a 1-cm skin scratch created by a sterile needle, and the *prick* or *puncture test*, in which a drop of allergen solution is placed on the skin and a needle prick is made in the center of the drop. These tests are performed on the back or arm and are unlikely to produce systemic anaphylaxis. For an intradermal test, ap-

prox. .01 ml of dilute solution is injected into the skin on the arm using a tuberculin syringe with a 25- to a 27-gauge needle; the patient must be monitored for an anaphylactic reaction.

The appearance of a wheal and flare 15 to 20 min after injection indicates a positive response to cutaneous or intradermal tests; the size of the wheal and intensity of erythema are graded on a scale of 1+ to 4+. Simultaneous tests assess normal skin reactivity. Histamine or another substance known to produce a wheal and flare serves as a positive control; normal saline is usually used for the negative control. Antihistamines inhibit these skin tests and must be discontinued before testing begins.

Delayed hypersensitivity tests are intradermal tests used to assess T cell-mediated responses rather than IgE-mediated responses. They are used to assess for anergy (inability to respond to common antigens) and as the basis for tuberculosis testing with PPD. The response is read 24 and 48 hr after the antigen is injected. Positive response is indicated by skin induration greater than 5 mm; a wheal and flare may occur shortly after the injection but fade within 12 hr. Corticosteroid drugs interfere with the test and should be discontinued before testing.

Patch tests are performed to identify allergens producing IgE-mediated contact dermatitis. A dilute solution of suspected allergen is applied using a patch taped to the skin. After 48 hr, the skin is inspected for a positive response marked by erythema, vesicles, or papules. Multiple tests are performed at once, usually on the back or upper arms. False-positive and false-negative reactions are common if the concentration of allergen is too high or too low.

skin tightening A loss of normal skin folds and shrinkage of collagen either as a result of overly aggressive resurfacing of the skin or as a consequence of a sclerosing disorder such as progressive systemic sclerosis.

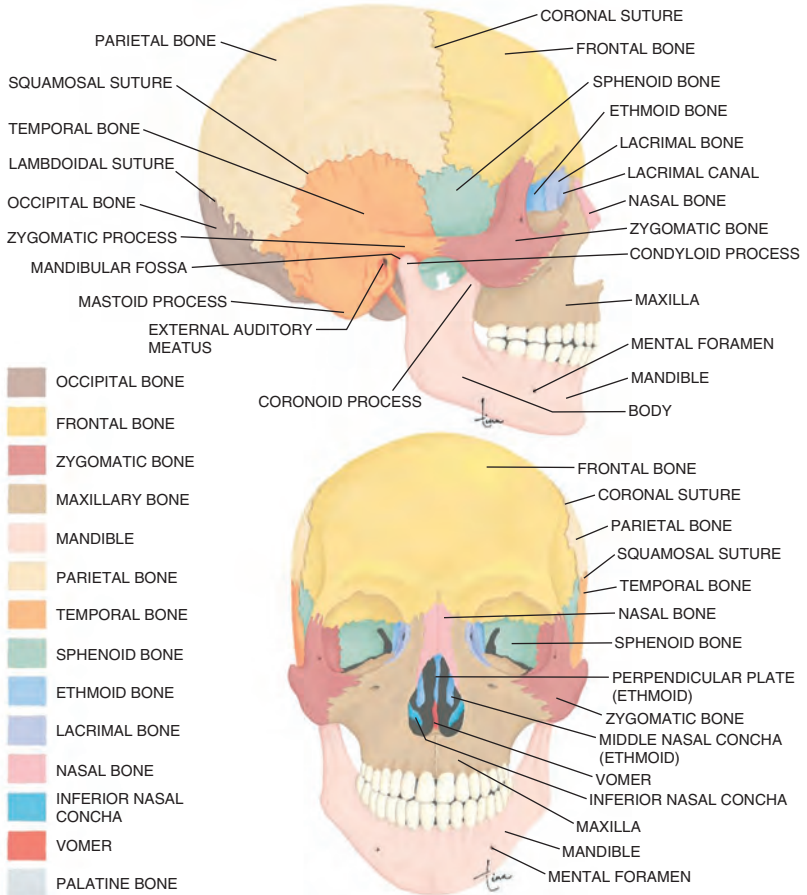
Skoda, Josef (skó'dá) Austrian physician, 1805–1881.

S.'s crackles Bronchial crackles heard through consolidated tissue of the lungs in pneumonia.

S.'s resonance Tympanic resonance above the line of fluid in pleuritic effusion or above consolidation in pneumonia.

skull (skül) [ME. *skulle*, bowl] The bony framework of the head, composed of 8 cranial bones, the 14 bones of the face, and the teeth. It protects the brain and sense organs from injury. SYN: *calvaria; cranium.* SEE: *illus.; skeleton.*

fracture of s. Loss of the integrity of one or more bones of the cranium. A



BONES OF SKULL

Right lateral and anterior views

fracture is classified according to whether it is in the vault or the base but, from the point of view of treatment, a more useful classification is differentiating between a *simple fracture* (uncommon) and a *compound fracture*. When a compound fracture occurs in the vault of the skull, the bone is depressed and driven inward, possibly damaging the brain. Treatment is operative. SEE: *fracture*.

skullcap (skŭl'kăp) The upper round portion of the skull covering the brain. Also called *calvaria*.

skyline view Sunrise view.

slander (slăn'dēr) [LL. *scandalum*, cause of offense] Defaming the character of another through injurious speech. To qualify legally for slander, speech must intentionally impugn the reputa-

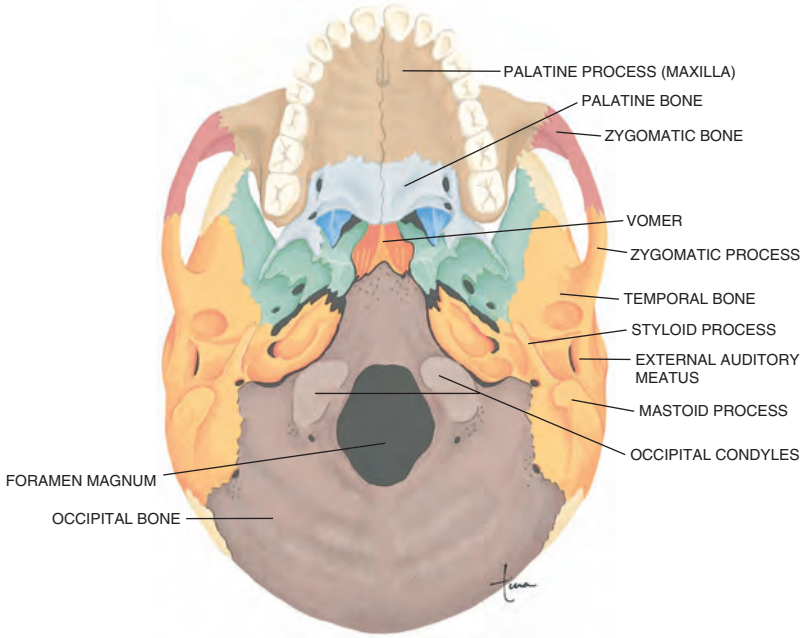
tion of another and be both malicious and demonstrably false.

slant A tube of solid culture medium that is slanted to increase the surface area of the medium; used in culturing bacteria. SYN: *slope* (2).

slave A device that allows body movements to be transferred to a machine either directly or by remote control (e.g., an apparatus for lifting, squeezing, and turning laboratory equipment containing radioactive materials). The remote "hands" are controlled by the operator from a sufficient distance, and proper shielding is used to prevent the operator from being exposed to radiation or other highly toxic materials.

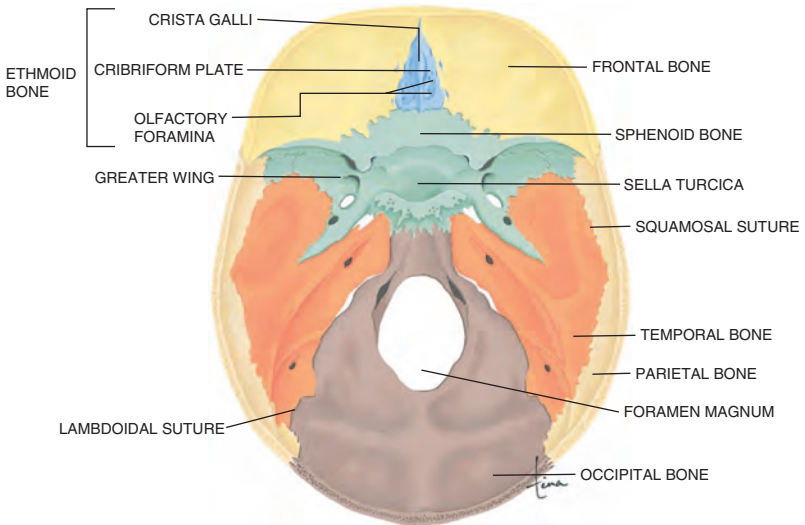
SLE *systemic lupus erythematosus*.

sleep (slēp) [AS. *slæp*] A periodic state of rest accompanied by varying degrees



SKULL

Inferior view with mandible removed



SKULL

Superior view with top of cranium removed

of unconsciousness and relative inactivity. Although sleep is thought of as something that occurs once each 24-hr period, at least half of the world's pop-

ulation has an afternoon nap or siesta as part of their lifelong sleep-wake pattern. The need for and value of sleep is obvious, yet the explanation of why it is

so effective in providing a daily renewal of a feeling of health and well-being is lacking.

The sleep-wake cycle varies in relation to the age and gender of the individual. The newborn may sleep as much as 20 hr each day; a child, 8 to 14 hr, depending on age; adults, 3 to 12 hr with a mean of 7 to 8 hr, and this may decrease to 6.5 hr in the elderly. Women past age 35 tend to sleep more than men. There is great individual variation in the amount and depth of sleep.

Sleep has been found to have two states: one with no rapid eye movements (NREM or synchronized sleep, which involves four stages) and one with rapid eye movements (REM or dreaming sleep). NREM and REM sleep alternate during the night; each cycle requires 90 to 100 min. NREM sleep composes approx. 75% of the sleep cycle and REM sleep approx. 25%, with variations among individuals.

People deprived of sleep for several days or more become irritable, fatigued, unable to concentrate, and usually disoriented. Performance of mental and physical tasks deteriorates. Some people experience paranoid thoughts and auditory, visual, and tactile illusions or hallucinations. Deprivation of REM sleep may cause anxiety, overeating, and hypersexuality. The effects of sleep deprivation are reversed when the normal sleep-wake cycle is resumed. SEE: *non-rapid eye movement s.*; *rapid eye movement s.*

PHYSIOLOGICAL CHANGES DURING SLEEP: The following physiological changes occur during sleep: body temperature falls; secretion of urine decreases; heart rate and respiration become slower and more regular during NREM sleep, then more rapid and less regular during REM sleep. During REM sleep, blood flow to the brain is increased; breathing is more irregular; heart rate and blood pressure vary; cerebral blood flow and metabolic rate increase; and penile erections may occur. There is an increased secretion of growth hormone during the first 2 hr of sleep; surges of adrenocorticotropic hormone (ACTH) and cortisol secretion occur in the last half of the sleep period. Luteinizing hormone secretion is increased during sleep in pubescent boys and girls, and prolactin secretion is increased in men and women, esp. immediately after the onset of sleep.

In evaluating sleep, it is important to know that hand waving, arm swinging, laughing, and flatus occur during normal sleep. Snoring may be clinically insignificant but, when accompanied by apnea, can be harmful.

s. debt The consequences (e.g., fatigue, loss of concentration, or difficul-

ties in coping or job performance) of getting less than an optimal amount of sleep. Most people feel and perform best with 6 to 8 hours of sleep each night.



Driving a car or operating machinery after less than 5 hours of sleep increases the risk of accidents and injury.

s. deprivation Prolonged periods of time without sleep (sustained natural, periodic suspension of relative consciousness). SEE: *Nursing Diagnoses Appendix.*

s. disorder Any condition that interferes with sleep, excluding environmental factors such as noise, excess heat or cold, movement (as on a train, bus, or ship), travel through time zones, or change in altitude. The major classes of sleep disorders are dyssomnias, parasomnias, and sleep pattern disruption associated with medical illness. Other factors that may interfere with sleep include poor sleep hygiene, effects of drugs or alcohol, and dietary changes. SEE: *s. hygiene.*

Dyssomnias, sleep disturbances or excessive sleepiness, include various types of insomnia, hypersomnia, narcolepsy, sleep apnea, brief limb jerks, and restless legs syndrome. In insomnia, an inability to sleep when sleep would normally occur, the difficulty may be in falling asleep, remaining asleep, or both. The disorder may be caused by physical illness or pain, psychological factors such as stress or anxiety, medication that interferes with sleep, or a combination of these factors.

A person with insomnia should be advised that the body will eventually get as much sleep as is needed and that part of the treatment schedule should include not going to bed until drowsiness is present; if wakefulness occurs, it is appropriate to stay awake and do something pleasurable, such as read, work, or study. Other self-help measures include reduction of tension in one's lifestyle, establishment of a regular sleep routine, and avoidance of stimulants (e.g., coffee, tea, or cola) and strenuous exercise before bed. A warm bath just before going to bed relaxes tense muscles. Afternoon naps should be avoided. One should sleep in a quiet, clean, cool, dark environment. A snack or glass of warm milk prior to going to bed will do no harm, but evidence that this practice helps to induce sleep is lacking.



Some drugs used to treat insomnia are less rapidly biotransformed in elderly patients than in the young. These drugs have been associated with delirium, increased risk of falls and hip fractures,

sleepwalking, motor vehicle accidents, and excessive sedation in elderly patients.

Parasomnias include night (sleep) terrors, nightmares, sleepwalking, and disorders related to mental illness.

Factors associated with medical illness may include neurological, cerebrovascular, or endocrine disorders, infection, musculoskeletal disorders, or pulmonary disease.

s. drunkenness A condition in which one requires a long period of time to become fully alert upon awakening from deep sleep. During the transition period, the affected person may become ataxic, disoriented, or aggressive. Persons whose usual awakening sequence includes sleep drunkenness should not attempt to make decisions until they are fully alert and awake.

s. hygiene The influence of behavioral patterns or sleeping environment on the quality and quantity of sleep. Persons with insomnia not caused by a known disease may find that the following may assist in obtaining a good night's sleep: establishing a routine time to go to bed; avoiding trying to sleep; using practices that assist in going to sleep such as reading, watching television, or listening to music; sleeping in a dark room, free of noise; and avoiding caffeine and excessive food or drink before bedtime.

hypnotic s. 1. Sleep induced by hypnotic suggestion. 2. Sleep induced by the use of medicines classified as hypnotics.



Many hypnotic drugs are habit-forming.

s. latency SEE: under *latency*.

non-rapid eye movement s. ABBR: NREM sleep. Sleep during which non-rapid eye movements occur. In NREM stage 1, the transition from wakefulness to sleep occurs. Eye movements are slow, and an electroencephalogram (EEG) shows low brain wave activity. In stage 2, EEG activity is increased, with the appearance of spikes called K complexes. Eye movement ceases in stage 3; wave frequency is reduced and amplitude increased. In stage 4, the EEG is dominated by large spikes, or delta activity. Stages 3 and 4 are considered deep sleep. SEE: *rapid eye movement s.; sleep*.

pathological s. Excessive or disordered sleep.

paradoxical s. A term sometimes used as a synonym for rapid eye movement (REM) sleep. REM sleep is the preferred term.

rapid eye movement s. ABBR: REM

sleep. Sleep during which rapid eye movements occur. In REM sleep, which follows stage 4 of non-rapid eye movement (NREM) sleep, electroencephalographic activity is similar to that of NREM stage 1, and muscle paralysis normally occurs. SEE: *non-rapid eye movement s.; sleep*.

sleep, readiness for enhanced A pattern of natural, periodic suspension of consciousness that provides adequate rest, sustains a desired lifestyle, and can be strengthened. SEE: *Nursing Diagnoses Appendix*.

sleep apnea The temporary absence of breathing during sleep. This common disorder, which affects about 10% of all middle-aged men, and about 5% of middle-aged women, in the U.S. is classified according to the mechanism involved and by whether or not it is associated with daytime sleepiness.

In obstructive sleep apnea, vigorous respiratory efforts are present during sleep but the flow of air in and out of the airways is blocked by upper airway obstruction. Patients with obstructive apnea are usually middle-aged, obese men who make loud snorting, snoring, and gasping sounds during sleep. By contrast, central sleep apnea is marked by absence of respiratory muscle activity. Patients with central apnea may exhibit excessive daytime sleepiness, but snorting and gasping during sleep are absent. Occasionally life-threatening central apneas occur as a result of strokes.

Mixed apnea begins with absence of respiratory effort, followed by upper airway obstruction. Whenever apneas are prolonged, oxygenation drops and carbon dioxide blood levels rise. Patients often awaken many times during the night or have fragmented sleep architecture. In the morning, many patients complain of headache, fatigue, drowsiness, or an unsatisfying night's rest. In addition, these individuals often have hypertension, arrhythmias, type 2 diabetes mellitus, or signs and symptoms of right-sided heart failure. Although these findings may suggest the diagnosis, formal sleep studies in a laboratory are needed to document the disorder and to measure the effects of apneas on oxygenation and other physical parameters.

SYMPTOMS: Partners of patients with sleep apnea are often the first to notice the patient's disordered breathing during sleep. Occasionally patients see their health care providers because of hypersomnolence: they may report falling asleep during the daytime in unusual circumstances (e.g., at traffic lights or whenever seated in a quiet room).

TREATMENT: Optimal therapy of obstructive sleep apnea is to assist

breathing with continuous positive airway pressure (CPAP) if the patient cannot correct the condition by losing weight. CPAP provides a pneumatic splint that maintains airway patency during sleep. Palatal obstruction, a finding in a small number of patients, can be surgically corrected. Medroxyprogesterone may be of some benefit but is clearly less effective than CPAP. SYN: *obstructive sleep apnea*.

sleep architecture The organization of brain wave activity characteristic of each of the stages of sleep.

sleep driving Operating a motor vehicle without being fully awake and alert, esp. when consciousness is affected by sedative or hypnotic drugs.

sleep interruption Sleep fragmentation.

sleep maintenance Staying asleep after initially falling asleep. Patients with sleep maintenance insomnia fall asleep easily but then awaken in the middle of the night and have difficulty resting or sleeping after that.

sleep pattern, disturbed Time-limited disruption of sleep (natural, periodic suspension of consciousness) amount and quality. SEE: *Nursing Diagnoses Appendix*.

sleep-phase syndrome An autosomal dominant condition in which the person sleeps well and for a normal amount of time but not at the usual bedtime hours. Those with delayed sleep-phase syndrome may function best if they go to sleep about the time most people are awakening. Those with advanced sleep-phase syndrome do best when they go to sleep in late afternoon or early evening and arise about midnight. When allowed to sleep at these hours, persons with this condition function normally. SYN: *advanced sleep-phase syndrome*.

sleep start (stǎrt) [ME. *sterten*] Muscle jerking or shortening that occurs at the onset of sleep, usually involving the legs but occasionally the arms, neck, or head.

sleep state misperception (mĭs'pĕr-sĕp'shĭn) [ME. *mis-*, prefix meaning "wrongly" or showing negation + "] The subjective sense that one has disordered sleep without objective findings of insomnia, hypersomnia, narcolepsy, sleep apnea, or other sleep disorders.

sleep technologist A technologist who monitors night-time sleep patterns in a formal sleep test (a polysomnogram). He or she makes audiovisual recordings as well as noninvasive records of the patient's breathing, oxygenation, electrical brain activity, heart rate, and muscle movements. SYN: *polysomnographer*.

sleep-wake cycle The amount of time spent asleep and awake and the cycle of that schedule from day to day.

sleepwalking Autonomic actions per-

formed during sleep. This condition occurs mostly in children, each episode lasting less than 10 min. The eyes are open and the facial expression is blank. The patient appears to awaken, sits on the edge of the bed, and may walk or talk. Activity may cause trauma to the patient and others. The principal aim is to prevent injury by removing objects that could be dangerous, locking doors and windows, and preventing the person from falling down stairs. Night terrors may accompany sleepwalking. There is little or no recollection of the event the next day. Children usually outgrow this condition. SYN: *somnambulism*.

slice In radiology, any plane of the body selected for imaging.

slice culture (slĭs) [ME.] A means of studying living tissues by obtaining specimens from approx. 100 to 400 μ m in thickness and maintaining them in vitro in a nutrient bath. The technique is used in investigations of brain or liver diseases.

slide **1.** A thin glass plate on which an object is placed for microscopic examination. **2.** A photograph prepared so that it may be used in a film slide projector. **3.** To move along a smooth surface in continuous contact, as the movement in dentistry of the mandibular teeth toward a centric position with the teeth in contact before closing completely in occlusion.

slider board (slĭd'ĕr) [AS *slidan*] A flat slab of metal, plastic, or wood used to transfer a patient horizontally from one surface to another, e.g., from a gurney to a hospital bed. Slider boards or patient transfer boards are used to prevent musculoskeletal injuries sustained while mobilizing patients.

slimy (slĭ'mĕ) [AS. *slim*, smooth] Resembling slime or a viscid substance; regarding a growth, the ability to adhere to a needle so it can be drawn out as a long thread.

sling (slĭng) [AS. *slingan*, to wind] A support for an injured upper extremity. SEE: *bandage, triangular* for illus.; *bandage*.



Prolonged skin-to-skin contact should be avoided while a sling is in use.

clove-hitch s. A sling made by placing a clove hitch in the center of a roller bandage, fitting it to the hand, and carrying the ends over the shoulder. The sling is tied beside the neck with a square knot, making longer ends. These may be carried over and behind the shoulders, brought under each axilla, and tied over the chest.

counterbalanced s. A rehabilitation

device to assist upper extremity motion; it suspends the arm by way of an overhead frame and a pulley and weight system. SYN: *suspension sling*.

cravat s. A sling made by placing the center of the cravat under the wrist or forearm with the ends tied around the neck.

folded cravat s. A lower-arm sling made by placing a broad fold of cloth in position on the chest with one end over the affected shoulder and the other hanging down in front of the chest. The arm is flexed as desired across the sling. The lower end is brought up over the uninjured shoulder and secured with a knot located where it will not press on the affected shoulder.

infant s. A sling used to carry a newborn or young child on the chest or back of an adult. Some evidence suggests that slings improve emotional bonding between parent and child.

open s. A sling made by placing the point of a triangular cloth at the tip of the elbow. The ends are brought around at the back of the neck and tied. The point should be brought forward and pinned or tied in a single knot, forming a cup to prevent the elbow from slipping out.

reversed triangular s. A sling made as follows: A triangular bandage is applied with one end over the injured shoulder, point toward the sound side, the base vertical under the injured elbow. The arm is flexed acutely over the triangle. The lower end is brought upward over the front of the arm and over the sound shoulder. The ends are pulled taut and tied over the sound shoulder. The point is pulled taut over the forearm and fixed to the anterior and posterior layers between the forearm and arm. This sling holds the elbow more acutely flexed—the weight is supported by the elbow.

simple figure-of-eight roller arm s. A sling made as follows: The arm is flexed on the chest in the desired position, then a bandage is fixed with a single turn toward the uninjured side around the arm and chest, crossing the elbow just above the external epicondyle of the humerus. A second turn is made, overlapping two thirds of the first, and the bandage is brought forward under the tip of the elbow, then upward along the flexed forearm to the root of the neck of the sound side. Then it is brought downward over the scapula, crossing the chest and arm horizontally, overlapping, turning above, and continued as in a progressive figure-of-eight.

St. John's s. A sling made by applying a triangular bandage with the point downward under the elbow, the upper end over the sound shoulder. The arm is flexed acutely on the chest. The lower

end is brought under the affected arm and around the back to knot with the upper end on the sound shoulder. The point is brought up over the elbow and fastened to the base. Support is wholly for the injured shoulder.

suspension s. Counterbalanced sling.
swathe arm s. A sling for support of the arm that is made as follows: The center of a folded cloth band is placed under the acutely flexed elbow. One end of the sling is then carried to the front and upward across the forearm and over the affected shoulder. Then it is brought obliquely across the back to the sound axilla. Next, the other end of the sling is brought around the front of the arm and across the body to the sound axilla, where it is pinned to the first end of the sling and then continued around the back to the part of the sling surrounding the affected elbow, where it is pinned again.

triangular s. A sling for the arm that is made with suspension from the uninjured side. The triangle is placed on the chest with one end over the sound shoulder, the point under the affected extremity, and the base folded. The injured arm is flexed outside of the triangle. The lower end is carried upward under the axilla of the injured side, back of the shoulder, and tied with the upper end behind the back. The point of the triangle is brought anteriorly and medially around the back of the elbow and fastened to the body of the bandage. This bandage changes the point of carrying and also relieves the clavicle on the injured side of the load. SEE: *bandage, triangular* for illus.

slip [ME. *slippen*] **1.** To move out of a customary place; to dislocate (to *slip* a disk). **2.** To slide into or on top of.

slippery elm An herbal remedy used as a demulcent or as a poultice.

SLIT *sublingual immunotherapy*.

slit (slīt) [ME. *slitte*] A narrow opening.

slope **1.** An inclined plane or surface.
2. Slant.

lower ridge s. The slope of the crest of the mandibular residual ridge from the third molar forward as viewed in profile.

slough (slūf) [ME. *slughe*, a skin]

1. Dead matter or necrosed tissue separated from living tissue or an ulceration. **2.** To separate in the form of dead or necrosed parts from living tissue. **3.** To cast off, as dead tissue. SEE: *escharotic*.

sloughing (slūf'ing) The formation of a slough; separation of dead from living tissue.

slow (slō) [AS. *slaw*, dull] **1.** Mentally dull. **2.** Exhibiting retarded speed, as the pulse. **3.** Said of a morbid condition or of a fever when it is not acute.

slowing In neurology, a decrease in the frequency or rate of brain waves as seen on an electroencephalogram. It may result from brain injury, drugs that alter consciousness, drowsiness, seizures, or sleep.

slow-reacting substance of anaphylaxis ABBR: SRS-A. Old name given to leukotrienes C₄, D₄, and E₄, arachidonic acid metabolites that contribute to the pathophysiology of asthma, causing prolonged bronchoconstriction, increased vascular permeability, increased bronchial mucous secretion, and vasoconstriction. SYN: *leukotriene*. SEE: *arachidonic acid*; *asthma*.

slows (slōz) A condition resulting from ingestion of plants such as snakeroot (*Eupatorium urticaefolium*) or jimmyweed (*Haplopappus heterophyllus*). It is common in domestic animals and may occur in humans as a result of ingesting the plants or, more commonly, from drinking milk or eating the meat of poisoned animals. Symptoms are weakness, anorexia, nausea and vomiting, prostration, and possibly death. SYN: *trembles*.

sludge (slūjh) Under the Resource Conservation and Recovery Act of 1976, any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant or air pollution control facility.

slump test A test used to assess the effects of tension on the neuromeningeal tract (e.g., in nerve root injury, meningeal irritation, meningitis, disk disease, or central nervous system tumors). The patient is directed to sit slumped forward, flexing the entire trunk. The patient's foot is dorsiflexed and the knee is then extended. Inability to extend the knee fully or production of back or leg pain symptoms, or both, are positive signs. If no positive sign is elicited, then the patient actively extends the neck, and knee extension and pain are then reassessed. Variations of this test are used to target injuries to specific spinal nerves.

slurry (slūr'ē) [ME. *slory*] A thin, watery mixture.

Sly disease Mucopolysaccharidosis VII.

Sly syndrome Mucopolysaccharidosis VII.

Sm Symbol for the element samarium.

small for gestational age ABBR: SGA.

1. Term describing an infant whose birth weight is at or below the 10th percentile, as correlated with the number of weeks in utero on the intrauterine growth chart. 2. A fetus that is more than two standard deviations smaller than the mean size of fetuses in its population.

smallpox (smawl'pōks) [AS. *smael*, tiny, + *poc*, pustule] An acute, highly contagious, and frequently fatal viral ill-

ness caused by the variola virus. SYN: *variola*. SEE: *smallpox vaccine*.

SYMPTOMS: Influenza-like symptoms, esp. high fever, chills, headache, backache, and prostration, are commonly the first sign of infection. These symptoms constitute the *pre-eruptive* stage of smallpox, i.e., the stage that precedes the appearance of the rash. The pre-eruptive phase lasts about 72 hours and is followed by a maculopapular rash that changes over the next couple of weeks to papules, small blisters, pustules, and then scabs. This *eruptive* phase of the illness usually begins on the mouth, face, and arms and then spreads to other body parts, such as the back and chest.

INCUBATION: The disease typically begins 12–14 days after exposure to the virus.

PATIENT CARE: Patients diagnosed with smallpox require airborne precautions with special ventilation and engineering requirements. The patient must be placed in a monitored negative-air-pressure room that allows 6 to 12 air changes per hour. The room door must remain closed except for entering and exiting. Anyone entering must wear adequate droplet protection. Contact precautions require wearing clean gloves and gown during all patient contact; these barriers must be removed before leaving the room. All contaminated instruments, surfaces, excretions, fluid, or other materials require decontamination with chemicals or heat or incineration. Clothing and bedding should be washed in hot water with hypochlorite bleach or may be incinerated. If the patient dies, droplet and contact precautions should be used throughout post-mortem care, treating body bags with hypochlorite bleach. Eating and drinking may be difficult because of painful lesions in the mouth and oropharynx. This discomfort may be alleviated with frequent oral hygiene and a prescribed mouth rinse. Pain is assessed and managed with prescribed analgesic drugs. Intravenous fluids are prescribed as required to prevent dehydration and antipyretic drugs to control high fever. Skin lesions are kept clean and dry. Antipruritics usually are required during the pustular stage. Secondarily infected lesions may need antibiotic therapy. The patient, family, and significant others may need assistance in coping with the psychosocial implications of smallpox, including disfigurement, fear of contagion, fear of death, and grief. Whenever possible, smallpox victims who die should be cremated. Variola virus, which no longer exists in the wild, has been preserved in laboratories and has been considered a bioterrorism threat. Although smallpox vaccination

is not required, it has been offered to the military, health department, first responders and key health care workers because of this threat.

smear (smēr) [AS. *smerian*, to anoint]

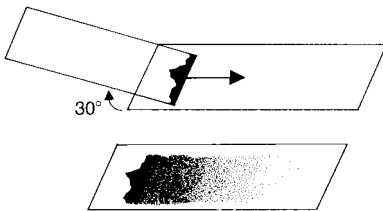
1. In bacteriology, material spread on a surface, as a microscopic slide or a culture medium. **2.** Material obtained from infected matter spread over solid culture media. **3.** Cellular material obtained from a body structure by swabbing, gently scraping, or scratching.

blood s. A drop of (anticoagulated) whole blood spread thinly on a glass microscope slide so that blood cell types can be examined, counted, and characterized. SYN: *peripheral blood smear*.

Procedure:

The slide must be grease-free. It is cleaned with alcohol, rinsed in warm water, and wiped clean with a lint-free towel or lens paper.

A small drop of blood is placed on the slide; the end of another slide (spreader slide) is placed against the first slide at a 45° angle and pulled back against the drop of blood so that the drop spreads between the point of contact of the two slides. Then the spreader slide is pushed forward against the first slide; the blood will form an even, thin smear. The slide is dried by waving it in the air; it should not be heated. The blood smear is covered with Wright's stain and allowed to stand 2 min. An equal amount of distilled water or buffer solution is added and mixed uniformly. It is allowed to stand 5 min. The stain is gently washed off and the slide is allowed to dry. SEE: *illus.*



PREPARATION OF BLOOD SMEAR

buccal s. A sample of cells taken from the mucosa lining the cheek for chromosomal studies.

Pap s. Papanicolaou test.

peripheral blood s. SYN: *blood smear*.

smegma (smĕg'mă) [Gr. *smegma*, soap] Secretion of sebaceous glands, specifically, the thick, cheesy, odoriferous secretion found under the labia minora about the clitoris or under the male prepuce. **smegmatic** (-măt'ĭk), *adj.*

smegmolith (smĕg'mō-lith) [Gr. *smegma*, soap, + *lithos*, a stone] A calcified mass in the smegma.

smell (smĕl) [ME. *smellen*, to reek]

1. To perceive by stimulation of the olfactory nerves. The sense of smell is a chemical sense dependent on sensory cells on the surface of the upper part of the nasal septum and the superior nasal concha. These sensory cells live for an average of 30 days and are affected by a variety of factors, including age, nutritional and hormonal states, drugs, and therapeutic radiation. SYN: *olfactory perception*. **2.** The property of something affecting the olfactory organs. In clinical medicine, the smell arising from the patient's body, feces, breath, urine, vagina, or clothing may provide information concerning diagnosis. The smell on a patient's clothing, for example, may be due to a toxic chemical that spilled on the clothes. A patient may attempt to alter or mask the smell of alcohol on the breath by using medicated or flavored lozenges, mouthwashes, sprays, or mints. Even though our sense of smell is relatively weak compared with that of some animals, humans have the capacity to distinguish among as many as 10,000 different odors. The inhaled substance must be volatile (i.e., capable of diffusing in air) for us to perceive it, and the volatile chemical must also be soluble in water. SEE: *odor*.

Abnormalities in the sense of smell include: **Anosmia:** A loss of the sense of smell. It may be a local and temporary condition resulting from acute and chronic rhinitis, mouth breathing, nasal polyps, dryness of the nasal mucous membrane, pollens, or very offensive odors. It may also result from disease or injury of the olfactory tract, bone disease near the olfactory nerve, disease of the nasal accessory sinuses, meningitis, or tumors or syphilis affecting the olfactory nerve. It may rarely represent a conversion disorder. Disease of one cranial hemisphere or of one nasal chamber may also account for anosmia. SYN: *anodmia*; *anosphrasia*.

Hyperosmia: An increased sensitivity to odors.

Kakosmia: The perception of bad odors where none exist; it may be due to head injuries or occur in hallucinations or certain psychoses. SYN: *cacosmia*.

Parosmia: A perverted sense of smell. Odors that are considered agreeable by others are perceived as being offensive, and disagreeable odors are found pleasant. SYN: *parosphresia*.

smile A facial expression that may represent pleasure, amusement, derision, or scorn. The corners of the mouth are turned up in expressions of pleasure or amusement, and the eyes usually appear to be warm and friendly.

Smith's fracture (smĭths) [Robert W. Smith, Irish physician, 1807–1873] A fracture of the lower end of the radius,

with anterior displacement of the lower fragment.

Smith-Petersen nail (smīth'pē'tēr-sén) [Marius N. Smith-Petersen, U.S. orthopedic surgeon, 1886–1953] A special nail that on cross-section has three flanges, used for stabilizing fractures of the neck of the femur.

smog [blend of *smoke* and *fog*] Dense fog combined with smoke and other forms of air pollution.

smoke (smök) Any suspension in the air of particles produced by combustion.

smoke inhalation injury Damage to the respiratory tract (i.e., upper airway inflammation and swelling) as a result of inhaling hot gases that may contain toxic substances. Persons exposed to gases produced by burning materials are at risk of developing acute injury to their lungs, and, depending on the composition of the smoke and the duration of the exposure, the combination of heat and gases may be lethal. Firefighters are esp. at risk from this kind of exposure. Construction and decorating materials produce a variety of volatile and irritating substances when burned. Repeated exposure to some of these gases may lead to chronic irritation of the respiratory tract. Firefighters should be aware that the appearance of smoke produced by a fire may not be a true indicator of the amount of toxic substances, including carbon monoxide, in the smoke. SEE: *carbon monoxide*.

SYMPTOMS: Patients who have suffered smoke inhalation injury may complain of dyspnea, cough, and black sputum. Stridor may be present if the upper airway is narrowed as a result of inflammation. Confusion may occur if carbon monoxide poisoning is also present.

smoldering Of some cancers, growing or progressing slowly.

SMON *subacute myelo-optic neuropathy*. SEE: under *neuropathy*.

smudging (smūj'ing) A speech defect in which difficult consonants are omitted.

Sn [L. *stannum*] Symbol for the element tin.

snail [ME.] A small mollusk having a spiral shell and belonging to the class Gastropoda. Snails are important as intermediate hosts of many species of parasitic flukes.

s. fever Schistosomiasis.

snake [ME.] A reptile possessing scales and lacking limbs, external ears, and functional eyelids. In poisonous snakes, venom is produced in a poison gland, which is connected by a tube or groove to a poison fang, one of two sharp elongated teeth present in the upper jaw. In the U.S., the coral snake, copperhead, water moccasin (cottonmouth), and rattlesnake, of which there are 15 species, are poisonous. All except the coral snake belong to the pit viper group, be-

cause they possess a sensory pit between the eye and nostril. SEE: *illus.*

s. bite SEE: under *bite*.

snakeroot (snāk'rüt) A toxic plant (*Eupatorium rugosum* *Houtt*) once thought to be useful as a remedy for snakebites. Animals that eat snakeroot get trembling disease (or the trembles), and humans who consume fresh raw milk obtained from intoxicated cows or goats develop milk sickness.

snap A sharp cracking sound.

closing s. The intense first heart sound heard in mitral stenosis.

snapping hip A slipping of the soft tissue around the hip joint, producing an palpable snapping sensation or audible snapping sound. Snapping hip syndrome may be caused by internal, external, or intra-articular factors.

external s. A popping sound heard and felt at the hip joint. It is usually caused by the iliotibial tract or the anterior border of the gluteus maximus passing over the greater trochanter as the hip moves from extension to flexion.

internal s. A popping sound heard and felt at the hip joint. It is usually produced by the iliopsoas tendon passing over the iliopsoas eminence as the hip moves from flexion to extension. The iliopsoas bursa may also be implicated in cases of internal snapping hip syndromes.

intra-articular s. Snapping hip syndrome caused by an intra-articular lesion, including loose bodies within the joint space or folds in the synovial capsule. Labral tears may also be implicated but tend to produce significant pain.

snare (snār) [AS. *sneare*, noose] A device for excision of polyps or tumors by tightening wire loops around them. A snare may be connected to an electro-surgical unit, which may facilitate cutting and coagulation.

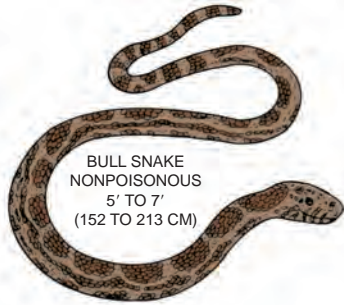
Sneddon syndrome (snē'dŏn) [Ian Bruce Sneddon, Br. dermatologist, 1915–1987] A rare condition marked by multiple strokes in persons who have lived reticularis and high blood pressure. Coagulation abnormalities, including antiphospholipid antibodies, are often found in this condition.

sneeze (snēz) [AS. *fneosan*, to pant]

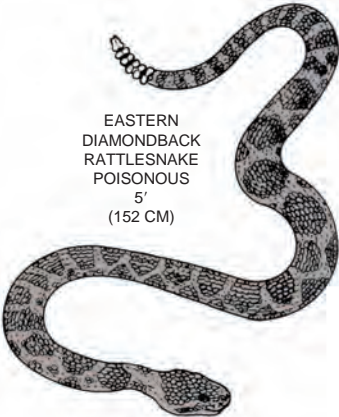
1. To expel air forcibly through the nose and mouth by spasmodic contraction of muscles of expiration caused by an irritation of nasal mucosa. The sneeze reflex may be produced by a great number of stimuli. Placing a foot on a cold surface will provoke a sneeze in some people, whereas looking at a bright light or sunlight will cause it in others. Firm pressure applied to the middle of the upper lip and just under the nose will sometimes prevent a sneeze that is about to occur. SEE: *photic sneezing*;



WATER SNAKE
NONPOISONOUS 3-1/2' TO 5'
(107 TO 152 CM)



BULL SNAKE
NONPOISONOUS
5' TO 7'
(152 TO 213 CM)



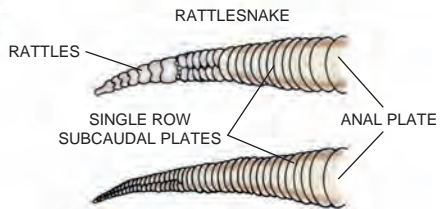
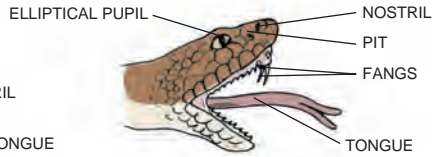
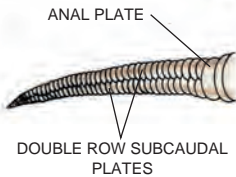
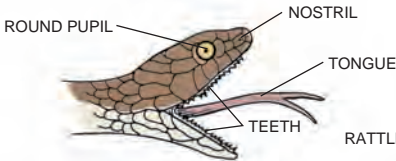
EASTERN
DIAMONDBACK
RATTLESNAKE
POISONOUS
5'
(152 CM)



SCARLET KING SNAKE
NONPOISONOUS 18"
(40 CM)

GENERAL CHARACTERISTICS
OF POISONOUS SNAKES:
(PIT VIPERS)

GENERAL CHARACTERISTICS
OF HARMLESS SNAKES:



NO RATTLES
COPPERHEADS AND COTTONMOUTHS

SNAKES

ptarmus. 2. The act of sneezing. SEE: *sternutation*; *sternutatory*.
Snellen, Herman (snĕl'ĕn) Dutch ophthalmologist, 1834–1908.
S.'s chart A chart imprinted with lines of black letters graduating in size

from smallest on the bottom to largest on top; used for testing visual acuity.
S.'s reflex Congestion of the ear on the same side upon stimulation of the distal end of the divided auriculotemporal nerve.
SYN: *reflex*, *auriculocervical nerve*.

- S.'s test** A test for visual acuity in which the patient reads a Snellen's chart at a certain distance with one eye, then with the other eye, and then with both eyes.
- sniff test** A test used to detect bacterial vaginosis. The discharge from the vaginal area is swabbed, placed on a slide, and 10% KOH (potassium hydroxide) is added. The presence of a fishy odor is indicative of bacterial vaginosis.
- snore** [AS. *snora*] The noise produced while breathing through the mouth during sleep, caused by air passing through a narrowed upper airway. Most people snore to some extent. Snoring is of no clinical importance to the snorer unless it is prolonged, chronic, and related to other symptoms such as sleep apnea or excessive daytime sleepiness. It may be important to the snorer's partner if the snoring is so loud as to disrupt the sleep of those sharing the sleeping space. In some cases, the snoring is of such clinical or social importance that plastic or laser surgery to remove redundant tissue in the pharynx is indicated SYN: *stertor*. SEE: *sleep apnea*.
- snort** (snört) [ME. *snorten*] A slang term for *inhale*, esp. for the inhalation of illicit drugs.
- snow, carbon dioxide** Carbon dioxide solid therapy.
- snowball sample** A group of research subjects who help, through word of mouth or casual contact, to select other research subjects.
- snowbank** Colloquial term for a massive exudate found over the pars plana of the eye in pars planitis.
- snow-plowing** In arterial angioplasty, the pushing of intravascular debris from one occluded vessel into the opening of an adjacent vessel, causing that vessel to close and the tissue it supplies with blood to infarct.
- SNRI** *serotonin and norepinephrine reuptake inhibitor*.
- snRNA** Small nuclear ribonucleic acids. They are small RNA molecules that are confined to the cell nucleus. They initiate protein transcription, remove introns from RNA molecules, and add methyl (-CH₃) groups to molecules.
- SNS** *Society of Neurological Surgeons*.
- snuff** **1.** A medicinal powder inhaled through the nose. **2.** A powdered form of tobacco inhaled through the nose or placed in the oral cavity. SYN: *tobacco, smokeless*.
- snuffles** (snü'f'ls) [D. *snuffelen*, to snuff] Obstructed nasal breathing with discharge from the nasal mucosa, esp. in infants, chiefly in congenital syphilis.
- snurps** (snürps) A colloquial term for "small nuclear ribonucleoproteins," more commonly known as snRNA.
- SOAP** (söp) Acronym for an organized structure for keeping progress notes in the chart. Each entry contains the date, number, and title of the patient's particular problem, followed by the SOAP headings: Subjective findings; Objective findings; Assessment, the documented analysis and conclusions concerning the findings; and Plan for further diagnostic or therapeutic action. If the patient has multiple problems, a SOAP entry on the chart is made for each problem.
- soap** (söp) [AS. *sape*] A cleansing chemical compound formed by an alkali acting on a fatty acid, such as sodium stearate, NaC₁₈H₃₅O₂. Castile soap is made by saponifying olive oil with sodium hydroxide and contains mainly sodium oleate, NaC₁₈H₃₃O₂. SEE: *detergent; saponification*.
- antibacterial s.** A cleanser chemically altered to increase its ability to kill microorganisms.
- SOB** *short of breath*.
- sob** [ME. *sobben*, to catch breath] **1.** To weep with convulsive movements of the chest. **2.** A cry or wail resulting from a sudden convulsive inspiration accompanied by spasmodic closure of the glottis. SEE: *sigh*.
- social capital** (sō'shīl) [L. *socialis*] Community assets, i.e., interpersonal networks, bonds, and institutions that support communities, maintain their cohesiveness, and help them weather crises.
- social class** **1.** Social standing or position. SYN: *socioeconomic status*. **2.** A group of people with shared culture, privilege, or position.
- social engagement** engagement (2)
- social functioning** The ability of a person to interact easily and successfully with other people.
- social influence** The impact of peers, family members, educators, or colleagues on a person's thoughts, feelings, and behaviors.
- social interaction, impaired** The state in which an individual participates in an insufficient or excessive quantity or ineffective quality of social exchange. SEE: *Nursing Diagnoses Appendix*.
- social isolation** Aloneness experienced by the individual and perceived as imposed by others and as a negative or threatened state. SEE: *Nursing Diagnoses Appendix*.
- socialization** (sō'shā-lī-zā'shūn) The process of adapting an individual to the social customs of society; in the process he or she becomes an integrated member of the society.
- social network** A group of individuals who are linked by behaviors (e.g., drug abuse), diseases (e.g., a cancer support group), hobbies or lifestyles (e.g., participation in sports), family ties, or professions (e.g., nursing).
- social reasoning** The processing of inter-

personal cues as a means of copying or learning acceptable behavior.

social relatedness Interpersonal intimacy; empathy; shared subjectivity.

Society for Assisted Reproductive Technology ABBR: SART. An affiliate of the American Society for Reproductive Medicine consisting of clinics and programs that provide assisted reproductive technology. SART reports annual fertility clinic data to the Centers for Disease Control and Prevention.

socioacusic (sō'sē-ō-ā-kū'sis) [L. *socius*, companion, + Gr. *akoustikos*, hearing] The long-range ill effects of environmental noise on auditory acuity.

sociobiology (sō'sē-ō-bī-ōl'ō-jē) [" + "] Analysis of social behavior in terms of evolutionary theory. It assumes that animal or human populations evolve and adapt to their environments in different ways (e.g., through individual learning, cultural tradition, or genetic inheritance).

socioeconomic status ABBR: SES. The relative position attained by an individual in a cultural and financial hierarchy. Differences in socioeconomic status are responsible for important disparities in the nutrition, housing, safety, and health of large groups of people. In general, the lower one's SES, the greater one's risk of malnutrition, heart disease, infectious diseases, and early mortality from all causes. Income, education, occupation, vocation, and wealth all contribute to SES.

sociogram (sō'sē-ō-grām) A diagram used in group analysis and group therapy that shows patterns of relationships between participants or variables.

sociology (sō'sē-ōl'ō-jē) [" + *logos*, word, reason] The study of human social behavior and the origins, institutions, and functions of human groups and societies.

sociomedical (sō'sē-ō-mēd'ī-kāl) Pert. to sociology and medicine, esp. the interrelationships between the two.

sociometry (sō'sē-ōm'ē-trē) [" + Gr. *metron*, measure] The science concerned with measuring social behavior.

sociopath (sō'sē-ō-pāth) [" + Gr. *pathos*, disease, suffering] An individual with antisocial personality disorder. SEE: *personality disorder, antisocial*.

sociopathy (sō'sē-ōp'ā-thē) [" + Gr. *pathos*, disease, suffering] The condition of being antisocial.

socket (sōk'ēt) [ME. *soket*, a spearhead] **1.** A hollow in a joint or part for another corresponding organ, as a bone socket or an eye socket. SEE: *acetabulum*. **2.** The proximal portion of a prosthesis, into which the stump of an amputated extremity is fitted.

alveolar s. The bony space occupied by the tooth and periodontal ligament.

dry s. Localized alveolar osteitis.

tooth s. A dental alveolus of the maxilla or mandible; a cavity that contains the root of a tooth.

soda (sō'dā) [Med. L., *barilla*, from which soda is made] A term loosely applied to various salts of sodium, esp. to caustic soda (sodium hydroxide) and baking soda (sodium bicarbonate). SEE: *sodium*.

baking s. Sodium bicarbonate.

caustic s. Sodium hydroxide.

sodio- Combining form denoting a compound containing sodium.

sodium (sō'dē-ŭm) [LL.] SYMB: Na. The most abundant cation in extracellular fluids. It is the main contributor to osmotic pressure and hydration; participates in many specialized pumps and receptors on cell membranes; and plays a fundamental part in the electrical activities of the body (e.g., nerve impulse transmission and muscular contraction).

Sodium is an inorganic metal with a strong affinity for oxygen and other non-metallic elements. It has an atomic weight of 23; atomic number of 11; and specific gravity of 0.971. Sodium constitutes about 0.15% of the mass of the body.

The normal sodium level in serum is 135 to 145 mmol/L. A decreased level of sodium in the serum is called hyponatremia. An increased level of sodium in the serum is called hypernatremia. These conditions are not usually excesses or deficiencies of sodium per se but rather disturbances in the body's regulation of water (i.e., a change in measured sodium concentrations usually results from water retention or water depletion and not from too little or too much sodium in the body). SYN: *natrium*.

HYPONATREMIA: Low serum sodium levels are extremely common in clinical medicine and are caused by one of the following conditions: congestive heart failure, renal failure, cirrhosis; syndrome of inappropriate antidiuretic hormone (SIADH); dehydration; thyroid or adrenal hormone dysfunction; side effects of drugs; psychogenic polydipsia; laboratory error (i.e., pseudohyponatremia). Symptoms of hyponatremia include weakness, confusion, and anorexia. If serum sodium levels drop rapidly, seizures may occur. Treatment of hyponatremia depends on the underlying cause.

HYPERNATREMIA: Elevated serum sodium levels are almost always the result of free water deficits (dehydration) and are treated with intravenous or oral replacement of water. Rarely, hypernatremia may develop after intravenous infusions of solutions with high concentrations of sodium. Symptoms of hypernatremia include thirst, orthostatic diz-

ziness, altered mental status, and neuromuscular dysfunction.

s. acetate A chemical compound that is used to alkalize the urine and kidney dialysis solutions. It is also used as a component in many laboratory reagents, such as various buffers.

s. alginate A purified carbohydrate product extracted from certain species of seaweed. It is used as a food additive and as a pharmaceutical aid.

s. ascorbate The sodium salt of ascorbic acid, vitamin C. It may be used in a sterile solution when parenteral administration of vitamin C is required.

s. benzoate A white, odorless powder with sweet taste; used as a food preservative.

s. bicarbonate NaHCO_3 ; a white odorless powder with saline taste. It is incompatible with acids, acid salts, ammonium chloride, lime water, ephedrine hydrochloride, and iron chloride. It is used to treat acidosis (e.g., in renal failure). Orally it is used as an antacid, although its effectiveness for this purpose is questionable. Externally, it is used as a mild alkaline wash. It is also used as a component in many laboratory reagents, such as various buffers, microbiologic media, and control materials.

s. carbonate Na_2CO_3 ; a white crystalline powder (washing soda), used as an alkali employed chiefly in alkaline baths.

carboxymethylcellulose s. A chemical used as a pharmaceutical aid and a food additive.

s. chloride NaCl ; common table salt. It is used in preparation of normal saline solution, as an emetic, and to add flavor to foods. It is incompatible with silver nitrate. In aqueous solution, sodium chloride, a neutral salt, is a strong electrolyte, being almost completely ionized. The sodium and chlorine ions are important in maintaining the proper electrolyte balance in body fluids. The kidneys regulate retention or excretion of sodium chloride in urine; aldosterone directly increases the renal reabsorption of sodium ions.

s. citrate A white granular powder, saline in taste and soluble in water. Used as an anticoagulant for blood collected for laboratory analysis or used for transfusion.

s. fluoride NaF ; a white crystalline powder, saline in taste, soluble in 25 parts of water. It is added to drinking water and used in solution for local application to teeth to prevent dental caries, and it is an effective and inexpensive treatment used in the treatment of osteoporosis. SEE: *fluoridation*; *sodium fluoride poisoning*.

s. hydroxide NaOH ; a whitish solid that is soluble in water, making a clear solution. It is an antacid and a caustic.

It is used in laundry detergents and in commercial compounds used to clean sink traps, toilets, and in the preparation of soap. It is also used as a component in any laboratory reagent that needs pH balancing. SYN: *caustic soda*.



Great care must be taken in handling sodium hydroxide, as it rapidly destroys organic tissues. Protective glasses should be worn while working with this chemical. If splashed in the eye, it may cause blindness.

s. hypochlorite [solution] An antiseptic used in root canal therapy. This solution is not suitable for application to wounds.

s. iodide NaI ; a colorless crystalline solid that is used as an expectorant.

s. lactate [injection] Sodium salt of inactive lactic acid. In one-sixth or one-fourth molar solution, it is used intravenously to control electrolyte disturbances, esp. acidosis.

s. lauryl sulfate An anionic surface-active agent that is used as a pharmaceutical aid.

s. monofluoroacetate A toxic pesticide, once banned in the U.S., that inhibits cellular metabolism, esp. in the most metabolically active organs (i.e., brain and heart). In humans it causes arrhythmias, seizures, coma, and occasionally death. It is used commercially to kill rodents and large animals.

s. monofluorophosphate An agent suitable for topical application to teeth to prevent dental caries.

morrhuate [injection] s. The sodium salt of the fatty acids, found in cod liver oil; used as a sclerosing agent for the obliteration of varicose veins, including esophageal varices.

s. phosphate P 32 [solution] A standardized preparation of radioactive phosphorus (^{32}P).

s. thiosulfate A white crystalline substance used externally to remove stains of iodine and intravenously as an antidote for cyanide poisoning.

sodium modeling Titration of sodium concentrations during hemodialysis to relieve the muscle cramping, nausea, vomiting, and blood pressure fluctuations sometimes seen during the procedure.

sodium polyanethol sulfonate (pól'è-àn'è-thól) [$^{\text{r}}$ + L. fm Gr. *anethon*, anise] ABBR: SPS. A polyanionic detergent and antimicrobial agent used in microbiological assays to identify anaerobic bacteria.

sodomy (sód'ò-màl) [LL. *Sodoma*, Sodom] Anal or oral intercourse.

Soemmering, Samuel T. von (sém'er-ìng) German anatomist, 1755–1830.

S's ring An annular swelling of the periphery of the lens capsule.

SOFAS *Social and Occupational Functioning Assessment Scale.*

soft (sɒft) [AS. *softe*] Not hard, firm, or solid.

soft-calorie syndrome Weight gain in persons who have undergone gastric stapling, gastric bypass, or jaw-wiring, but who consume an excessive amount of calories through the consumption of liquids and/or mechanically soft foods like refined breads, cereals, ice creams, and custards, as opposed to raw fruits, vegetables, and whole grain products.

soft copy A radiological image visible on a computer screen instead of film.

softening (sɒf'ɛn-ɪŋ) [AS.] The process of becoming soft. SYN: *malacia*.

s. of bones Osteomalacia.

soft sign Any of a number of signs that, when considered collectively, are felt to indicate the presence of damage to the central nervous system. These signs include incoordination, visual motor difficulties, nystagmus, the presence of associated movements, and difficulties with motor control.

soft sore Chancroid.

sol (sɒl, sɔl) [Gr. *sole*, salt water]

1. State of a colloid system in which the dispersion medium or solvent forms a continuous phase in which the particles of the solute are dispersed, forming a fluid mass. It is called a hydrosol if the dispersion medium is a liquid and an aerosol if a gas. SEE: *gel*. 2. Solution.

solace (sɒ'lās) An object or resource that soothes pain or mental stress. In children a teddy bear or a "security" blanket may provide solace. In later life, one's spouse, a friend, or a hobby may be a source of comfort and security.

Solanaceae (sɒl'ā-nā'sē-ē) A family of herbs, shrubs, and trees from which several important drugs such as scopolamine and belladonna are derived. The potato is one of the species.

solanaceous (sɒl'ā-nā'shūs) Concerning the family Solanaceae.

s. glycoalkaloids ABBR: SGAs. Steroid chemicals found in plants like potatoes, tomatoes, and eggplants that may prolong the action of some anesthetics and opiates. SGAs inhibit two enzymes, butyrylcholinesterase and acetylcholinesterase, effectively decreasing the metabolism of anesthesia.

solanine (sɒ'lā-nēn) A poisonous alkaloid found in potatoes, tomatoes, and other members of the nightshade family. SEE: *poisoning, potato*.

solar (sɒ'lār) [L. *solaris*] Pert. to the sun or its rays.

solarium (sɒ-lā'rē-ūm) [L. *solarium*, terrace] 1. A room or porch exposed to the sun. 2. A room designed for heliotherapy or for the application of artificial light. 3. A day or recreational room for

patients; often used as a waiting area for family or visitors.

solar plexus The celiac plexus, located behind the stomach and between the suprarenal glands and consisting of two large ganglia, the celiac and superior mesenteric ganglia, from which sympathetic fibers pass to visceral organs.

solar therapy Treatment with the sun's rays. SYN: *heliotherapy*.

solution (sɒ-lā'shūn) In colloidal chemistry, the transformation of a gel into a sol.

solder (sɒd'ər) Any fusible alloy usually made of tin and lead but may be mostly silver or gold for use in dentistry. The alloy is applied in a molten state to build up or join metal parts.

building s. An alloy of silver with large amounts of copper used to increase the height or bulk of contact areas of dental inlays or crowns; also called *sticky solder*.

gold s. A solder alloy containing a high proportion of gold.

hard s. A solder that is used in dentistry, has a high fusion point, and is stronger and more tarnish-resistant than softer, low-melting-point solders. This class of solders has increased compressive strength and reduced tensile strength. The increased strength is a result of increased platinum or palladium content within the alloy. This class of alloys is used for appliances that span large distances in the oral cavity.

soft s. A low-melting-point solder with less strength or tarnishing resistance than hard solder.

soldering (sɒd'ər-ɪŋ) The joining of two pieces of metal by use of a lower-melting-point alloy. When the melted solder cools and solidifies, it joins the parts together. Soldering is used to join many components of dental appliances or orthodontic bands and to add bulk or contours to crowns or inlays.

sole (sɔl) [AS. *sole*] 1. The underpart of the foot. SYN: *planta pedis*. 2. The portion of a synaptic knob at the termination of a motor nerve fiber that is directly adjacent to the sarcolemma of a muscle fiber.

solenoid (sɒl'lē-noyd) A coil of insulated wire in which a magnetic force is created in the long axis of the coil when an electric current flows through the wire. It may be used to activate switches.

Solenopsis invecta (sɒ-lēn-ɒp'sis in-vik'tah) The primary species of fire ant that resides in the southern U.S. Its bite can cause welts or, in some instances, generalized anaphylaxis. SEE: *fire ant bite*.

soleus (sɒ'lē-ūs) [L. *solea*, sole of foot] A flat, broad muscle of the calf of the leg.

solid (sɒl'ɪd) [L. *solidus*] 1. Not gaseous, hollow, or liquid. 2. A substance not gaseous, liquid, or hollow.

solipsism (sōl'ip-sīzm) [L. *solus*, alone, + *ipse*, self] The theory that the self may know only its feelings and changes and there is then only subjective reality.

solitary (sōl'ī-tār-ē) [L. *solitarius*, aloneness] Alone; single or existing separately.

solitary lymph nodule One of the small spherical lymphatic nodules found in the lamina propria of the small and large intestine.

solitude Isolation; aloneness.

solo practitioner A physician, dentist, or other practitioner who practices alone rather than with a group or partner.

solubility (sōl'ū-bil'ī-tē) [LL. *solubilis*, to loosen, dissolve] The capability of being dissolved.

aqueous s. The ability of a substance to dissolve in water. The aqueous solubility of a medication determines its ability to be compounded, administered, and absorbed.

soluble (sōl'ū-bl) Able to be dissolved.

soluble fms-like tyrosine kinase 1 ABBR: sFlt-1. An antiangiogenic protein found in the serum of women who subsequently develop pre-eclampsia. It may contribute to the development of this syndrome.

soluble immune response suppressor ABBR: SIRS. A term previously used for circulating IgG antibodies that suppress antibody production.

soluble transferrin receptor ABBR: sTfR. A membrane-bound receptor expressed on the surfaces of cells that take up iron from the blood. Levels of this receptor are increased in iron-deficiency anemia. Measurement of circulating levels of the receptor are esp. useful in the diagnosis of iron deficiency in patients who also have anemia of chronic disease.

solute (sōl'ūt) [L. *solutus*, to loosen, dissolve] The substance that is dissolved in a solution.

solution (sō-lū'shūn) [L. *solutus*, to loosen, dissolve] **1.** A liquid containing a dissolved substance. **2.** The process by which a solid is homogeneously mixed with a fluid, solid, or gas so that the dissolved substances cannot be distinguished from the resultant fluid. **3.** A mixture formed by dissolution of substances.

The liquid in which the substances are dissolved is called the *solvent* and the substance dissolved, the *solute*.

aqueous s. A solution containing water as the solvent.

balanced s. 1. A synonym for isotonic solution. **2.** A solution whose concentrations are matched physiologically to the part of the body in which it will be infused or used for irrigation. SEE: *isotonic s.*

Benedict's s. SEE: *Benedict's solution*.

buffer s. A solution of a weak acid

and its salt (e.g., carbonic acid, sodium bicarbonate) of importance in maintaining a constant pH, esp. of the blood.

Burow's s. SEE: *Burow's solution*.

citrate s. A solution used to prevent clotting of the blood. Its use permits whole blood to be stored in a refrigerator until it is needed for transfusion.

cobra venom s. Minute quantities of cobra venom in sterile physiological salt solution.

colloidal s. A solution in which the solute is suspended and not dissolved, such as gelatin or albumin.

heparin lock flush s. A solution of unfractionated heparins that was used in the past to keep intravenous infusion devices from clotting. Heparin flushes are now infrequently used because they are more expensive than saline flushes and because they pose a risk of heparin-related thrombocytopenia, a potentially life-threatening allergy.

hyperbaric s. A solution with a specific gravity greater than one, or greater than the solution to which it is being compared. This is important in injecting medicines or anesthetic agents into the spinal fluid in the spinal canal.

hypertonic s. A solution having a greater osmotic pressure than that of cells or body fluids; a solution that draws water out of cells, thus inducing plasmolysis.

hypotonic s. A solution having an osmotic pressure less than that of cells or body fluids; a solution that will cause water to enter cells, thus inducing swelling and possibly lysis.

iodine s. A solution of iodine or potassium iodine used as a source of iodine.

isobaric s. A solution with a specific gravity equal to one or equal to the solution with which it is being compared. SEE: *hyperbaric s.*

isohydric s. A solution having the same hydrogen ion concentration or pH as another.

isosmotic s. A solution with the same osmotic pressure as the solution with which it is being compared.

isotonic s. A solution that has a concentration of electrolytes, nonelectrolytes, or both that will exert osmotic pressure equivalent to that of the solution with which it is being compared. Either 0.16 molar sodium chloride solution (approx. 0.95% salt in water) or 0.3 molar nonelectrolyte solution is approx. isotonic with human red blood cells.

Jessner's s. SEE: *Jessner's solution*.

Locke-Ringer's s. A buffered isotonic solution containing 9.0 g sodium chloride, 0.42 g potassium chloride, 0.24 g calcium chloride, 0.5 g sodium bicarbonate, 0.2 g magnesium chloride, 0.5 g dextrose, and distilled water to make 1000 ml.

molar s. A solution containing a gram molecular weight or mole of the reagent dissolved in 1 L (1000 ml) of solution; designated 1 M.

normal s. An obsolete term for a solution in which 1 L contains 1 g equivalent of the solute. The use of this terminology is discouraged in the SI system.

normal saline s. An isotonic saline solution. SEE: *isotonic s.*

ophthalmic s. A sterile preparation suitable for instillation in the eye.

oral rehydration s. A solution used to prevent or correct dehydration due to diarrheal illnesses. The World Health Organization recommends that the solution contain 3.5 g sodium chloride; 2.9 g potassium chloride; 2.9 g trisodium citrate; and 1.5 g glucose dissolved in each liter (approx. 1 qt) of drinking water.

physiological saline s. Normal saline s.

repair s. Any solution given intravenously to treat an electrolyte or metabolic disturbance.

Ringer's s. SEE: under *Ringer, Sydney*.

saline s. A solution of a salt, usually sodium chloride, and distilled water. A 0.9% solution of sodium chloride is considered isotonic to the body. A normal saline solution (one having an osmolality similar to that of blood serum) consists of 0.85% salt solution, which is necessary to maintain osmotic pressure and the stimulation and regulation of muscular activity.

saturated s. A solution containing all the solute it can dissolve. This limit is called the *saturation point*.

sclerosing s. Sclerosant.

seminormal s. ABBR: 05N or N/2. A solution containing one-half of a gram equivalent weight of reagent in 1 L (1000 ml) of solution.

sodium iodide I 125 s. A standardized solution of radioactive iodide, ¹²⁵I.

standard s. A solution containing a definite amount of a substance; used for comparison or analysis.

supersaturated s. A solution in which the saturation point is reached but when it is heated it is possible to dissolve more of the solute.

test s. A dissolved reagent used for a specific laboratory purpose.

Tyrode's s. A modified Ringer's solution containing, in addition, a small amount of magnesium chloride and acid and sodium phosphates.

volumetric s. A standard solution containing a definite amount of a substance in 1 L (1000 ml) of solution; used in volumetric analysis.

solvate (sól'vāt) A compound formed by reaction between solvent and solute.

solvation The interaction of solvent mol-

ecules with the molecules or ions dissolved in them.

solvent (sól'vent) [L. *solvens*] **1.** Producing a solution, dissolving. **2.** A liquid holding another substance in solution. **3.** A liquid that reacts with a solvent, bringing it into solution.

solvent abuse Glue-sniffing.

solvent/detergent treated ABBR: SD. Exposed to, soaked in, or washed in chemicals that remove or inactivate lipid-soluble components from solution. Blood products (e.g., coagulation factor concentrates or fresh frozen plasma) are SD-treated to reduce potential contamination of these products by lipid-enveloped viruses (e.g., hepatitis B, hepatitis C, or HIV).



Reported complications resulting from the use of SD plasma include clotting in some patients (thromboembolism) and bleeding in others.

solvolysis (söl-vól'i-sis) A general term for reactions involving decomposition by hydrolysis, ammonolysis, and sulfolysis.

-som A combining form used in pharmacology to designate any growth hormone derivative.

soma (sō'mā) [Gr. *soma*, body] **1.** The body as distinct from the mind. **2.** All of the body cells except the germ cells. **3.** The body of a cell; the portion containing the nucleus.

soman (sō'mān) Pinacolyl methylphosphonofluoridate; an extremely toxic nerve gas.

somatesthesia (sō'māt-ēs-thē'zē-ä) [+ *aisthesis*, sensation] The consciousness of the body; bodily sensation.

somatic (sō-māt'ik) [Gr. *soma*, body]

1. Pert. to nonreproductive cells or tissues. **2.** Pert. to the body. **3.** Pert. to structures of the body wall, such as skeletal muscles (somatic musculature) in contrast to structures associated with the viscera, such as visceral muscles (splanchnic musculature). **4.** Pert. to sensations perceived as originating from superficial or muscular structures of the body rather than sensations seeming to come from the internal organs (the viscera).

somatization (sō'mā-tī-zā'shūn) The process of expressing a mental condition as a disturbed bodily function.

somatization disorder A condition of recurrent and multiple somatic complaints of several years' duration for which medical attention has been sought but no physical basis for the disorder has been found. The disorder impairs social, occupational, or other forms of functioning. The age of onset is usually prior to 30. The somatic complaints may be related to virtually any organ system. If these occur in associa-

tion with a general medical condition, the physical complaints must be in excess of what would be expected from the medical illness. There must be a history of pain related to at least four different sites or functions such as menstruation, sexual intercourse, or urination. There also must be a history of at least two gastrointestinal symptoms other than pain. There must be a history of at least one sexual or reproductive symptom other than pain (e.g., nausea, vomiting, bloating). In women, this may consist of irregular menses, menorrhagia, or vomiting throughout pregnancy. In men, there may be symptoms such as erectile or ejaculatory dysfunction. Both sexes may be subject to sexual indifference. And there must also be a history of at least one symptom, other than pain, that suggests a neurological condition such as impaired coordination or balance, paralysis or localized weakness, difficulty in swallowing or speaking, urinary retention, hallucinations, loss of touch or pain sensation, double vision, blindness, deafness, seizures, amnesia, and loss of consciousness other than fainting. The unexplained symptoms are not intentionally feigned or produced. SEE: *somatiform disorder*.

somato-, somat- (sō'mā-tō) Combining form meaning *body*.

somatochrome (sō-māt'ō-krōm) [*"* + *chroma*, color] A nerve cell in which the nucleus is completely surrounded by cytoplasm.

somatocitrin (sō'māt-ō-krīn'īn) Growth hormone-releasing hormone.

somatiform disorder (sō-māt'ā-fōrm") A psychological disorder in which the physical symptoms suggest a general medical condition and are not explained by another condition such as a medication or another mental disorder. The symptoms must be clinically significant enough to impair function. A variety of conditions are included in this classification, including somatization disorder, conversion disorder, pain disorder, and hypochondriasis. Psychological factors are associated with and precede the condition. Symptoms may include loss of sense of touch, double vision, blindness, deafness, paralysis, and hallucinations. Individuals with conversion symptoms show "la belle indifference" or a relative lack of concern for their symptoms. The symptoms are not intentionally produced or feigned. The diagnosis cannot be established if the condition can be explained by the effects of medication or a neurological or other general medical condition. SYN: *conversion disorder*; *psychosomatic disease*. SEE: *Nursing Diagnoses Appendix*.

TREATMENT: The patient may benefit from reassurance, esp. when it is

provided by a trusted health care professional.

somatogenic (sō'mā-tō-jěn'īk) [*"* + *gennan*, to produce] Originating in the body. SEE: *psychogenic*.

somatome (sō'mā-tōm) [*"* + *tome*, incision] 1. A device for cutting the body of the fetus. 2. A somite.

somatomedin (sō'māt-ō-mē'dīn) Any of a group of insulin-like growth factors (somatomedin C and somatomedin A) that require growth hormone in order to exert their function of stimulating growth. These proteins are produced in the liver and other tissues.

somatometry (sō'mā-tōm'ē-trē) [*"* + *metron*, measure] Measurement of the body.

somatopathic (sō'mā-tō-pāth'īk) [*"* + *pathos*, disease, suffering] Pert. to organic illness, as distinguished from functional illness.

somatopause (sō-mā'tō-pawz) [*Gr. soma*, body, + *pausis*, cessation] The age-related decline in the secretion of growth hormone, typically noticeable after age 60. Treatments may include formal exercise programs or, in some instances, growth hormone replacement.

somatoplasm (sō-māt'ō-plāzm) [*Gr. soma*, body, + *LL. plasma*, form, mold] The cytoplasm of all the body cells as distinguished from that of the germ cells.

somatopsychic (sō'māt-ā-sī'kīk) [*"* + *psyche*, mind] Pert. to both body and mind.

somatopsychosis (sō'mā-tō-sī-kō'sīs) [*"* + *"* + *osis*, condition] Any psychological disorder that is a symptom of a bodily disease.

somatosensory evoked response (sō'mā-tō-sēn'sā-rē) ABBR: SER. Response produced by small, painless electrical stimuli administered to large sensory fibers in mixed nerves of the hand or leg. The electroencephalographical record of the character of the subsequent waves produced helps to determine the functional state of the nerves involved. SEE: *brainstem auditory evoked potential*; *evoked response*; *visual evoked response*.

somatosexual (sō'mā-tō-sēks'ū-āl) [*"* + *L. sexus*, sex] Concerning the body and sexual characteristics.

somatostatin (sō-māt'ō-stāt'īn) A peptide that regulates and inhibits the release of hormones by many different neuroendocrine cells in the brain, pancreas, and gastrointestinal tract. Somatostatin inhibits gastric motility and gastric acid secretion, blocks the exocrine and endocrine function of the pancreas, and inhibits the growth and release of hormones by neuroendocrine tumors. It is also used to treat variceal hemorrhage in patients with cirrhosis

and to treat pancreatitis. Octreotide is a synthetic version of somatostatin.

somatostatinoma (sō-măt'ō-stăt'ēn-ō-mă) An islet cell tumor that secretes somatostatin.

somatotonia (sō'mă-tō-tō'nē-ă) [" + *L. tonus*, a stretching] A personality type in which there is a predominance of physical assertiveness and activity.

somatotopic (sō'mă-tō-tōp'ik) [" + *topos*, place] Concerning the correspondence between a particular part of the body and a particular area of the brain.

somatotroph (sō-măt'ō-trōf) A cell or adenoma in the pituitary gland that secretes growth hormone.

somatotrophic (sō'mă-tō-trōf'ik) [" + *tropos*, a turning] 1. Having selective attraction for or influence on body cells. 2. Stimulating growth.

somatotropic (sō'mă-tō-trōp'ik) [" + *trope*, a turn] Influencing the body or body cells.

somatotropin (sō'măt-ō-trō'pin) [" + *tropos*, a turning] Human growth hormone. It increases the rate of cell division and protein synthesis in growing tissues, mobilizes stored fats, and limits glucose production.

bovine recombinant s. A growth hormone made by recombinant methods. Its use in dairy cattle to increase milk production is controversial.

somatotype (sō-măt'ō-tīp) A particular build or type of body, based on physical characteristics. SEE: *ectomorph*; *endomorph*; *mesomorph*.

somesthetic (sō-mēs-thēt'ik) Pert. to sensations and sensory structures of the body.

somesthetic area The region in the parietal lobe of the cerebral cortex in which lie the terminations of the axons of general sensory conduction pathways. This area feels and interprets the cutaneous senses and conscious proprioceptive sense.

somesthetic path General sensory conduction path leading to the cortex.

somite (sō'mit) [Gr. *soma*, body] Embryonic blocklike segment formed on either side of the neural tube and its underlying notochord. Each somite gives rise to a muscle mass supplied by a spinal nerve and each pair gives rise to a vertebra. The ventromedial portion of each somite differentiates into a sclerotome, and the remainder (the dorsolateral portion) becomes a dermomyotome. The sclerotomal cells surround the notochord and the neural tube to form the precursors of the ribs and vertebrae. The dermomyotomes give rise to the dermis and the dorsal muscles.

-somm Combining form meaning *sleep*.

somnambulism (sōm-năm'bū-līzm) [*L. somnus*, sleep, + *ambulare*, to walk] Sleepwalking.

somnifacient (sōm-nī-fă'shēnt) [" + *fa-*

cere, to make] 1. Producing sleep. SYN: *hypnotic*. 2. A drug producing sleep. SYN: *soporific*.

somniferous (sōm-nīf'ēr-ūs) [" + *ferre*, to bear] Sleep-producing; pert. to that which promotes sleep.

somniloquism (sōm-nīl'ō-kwīzm) [" + " + *-ismos*, condition] Talking in one's sleep.

somnolence (sōm'nō-lēns) [*L. somnolentia*, sleepiness] Prolonged drowsiness or sleepiness. **somnolent**, *adj.*

somnolence syndrome Excessive drowsiness, impaired concentration, fatigue, and low-grade fevers in individuals exposed to radiation therapy, esp. radiation to the head.

somnolentia (sōm'nō-lēn'shē-ă) [*L.*] 1. Drowsiness. 2. The sleep of drunkenness in which the faculties are only partially depressed.

somnolism (sōm'nō-līzm) [" + *-ismos*, condition] The condition of being in a hypnotic trance.

Somogyi phenomenon (sō'mō-jē) [Michael Somogyi, U.S. biochemist, 1883–1971] In diabetes mellitus, rebound hyperglycemia following an episode of hypoglycemia caused by counterregulatory hormone release. Reduction of the insulin dose will help control this condition. SEE: *dawn phenomenon*; *diabetes mellitus*.

son-, sono- Combining forms meaning *sound*.

sone (sōn) [*L. sonus*, sound] A unit of loudness; the loudness of a pure tone of 1000 cycles per second, 40 decibels above the listener's threshold of hearing.

sonic (sōn'ik) [*L. sonus*, sound] Pert. to sound.

sonicate (sōn'ī-kăt) [*L. sonus*, sound] To expose to sound waves.

sonication (sōn'ī-kă'shūn) Exposure to high-frequency sound waves. The technique is used to destroy bacteria, hemolyze blood, and loosen substances adhering to materials such as surgical instruments.

sonogram (sō'nō-grăm) [*L. sonus*, sound, + Gr. *gramma*, something written] The record obtained by use of ultrasonography. SYN: *echogram*.

sonographer (sō-nōg'ră-fēr) An individual professionally trained to use ultrasound in the setting of other available clinical information to obtain images of anatomical structures, physiological processes, and disease states for diagnostic purposes. In the U.S., professional societies of sonographers include the Society of Diagnostic Medical Sonographers and the American Society of Echocardiography. Professionally certified sonographers are credentialed by the American Registry of Diagnostic Medical Sonographers.

diagnostic medical s. One who pro-

vides patient services for those using diagnostic ultrasound under the supervision of a doctor of medicine or osteopathy.

ophthalmic s. An individual professionally trained to perform diagnostic evaluations of the eye and its diseases, including examinations for ophthalmic foreign bodies, tumors, radiation injuries, inflammatory diseases, and vascular lesions as well as measurements of axial length (e.g., in cataract surgeries and intraocular lens implantation). In the U.S., professionally trained ophthalmic sonographers are certified in their specialty by the American Registry of Diagnostic Medical Sonographers.

sonography (sō-nōg'rá-fē) [*ʹ* + Gr. *graphein*, to write] Ultrasonography.

sonohysterography (sō'nō-his'tē-rōg'rā-fē, sō'nō) [L. *sonus*, sound + *ʹ*] Instillation of 10 to 20 ml of saline into the uterus to enhance ultrasonic imaging and help determine the cause of abnormal uterine bleeding, female infertility, or to identify uterine masses.

sonolucent (sō'nō-loo'sént) Capable of transmitting sound waves, rather than reflecting them to an ultrasound transducer. Said of anatomical structures that are fluid-filled rather than solid, such as the gallbladder or urinary bladder. In ultrasonography, these structures appear dark. SYN: *anechoic*.

sonometer (sō-nōm'ě-tēr) [*ʹ* + Gr. *metron*, a measure] A noninvasive device that uses ultrasonic energy to measure bone mineral density.

sonorous (sō-nō'rūs) [L.] Giving forth a loud and rounded sound.

sopor (sō'por) [L.] Stupor. **soporose**, **soporous**, *adj.*

soporific (sō-pō-rif'ik) [*ʹ* + *facere*, to make] 1. Inducing sleep. 2. Narcotic; a drug producing sleep. SYN: *sonnifacient*.

SOR Sexual offense registry.

sorbefacient (sor'bē-fā'shént) [L. *sorbere*, to suck up, + *facere*, to make] Causing or that which causes or promotes absorption.

sorbitol (sor'bi-tōl') C₆H₁₄O₆; a crystalline alcohol present in some berries and fruits. It is used as a sweetening agent and as an excipient in formulating tablets. Ingesting large amounts of sorbitol can produce abdominal cramps, gaseous distention of the intestines, and diarrhea.

sordes (sor'dēz) [L. *sordere*, to be dirty] Crusts or accumulations of food and bacteria on the teeth and about the lips.

PATIENT CARE: The nurse prevents this condition by providing frequent oral hygiene for mouth breathers, patients who cannot drink or are not permitted oral fluids, and debilitated patients. A hydrogen peroxide mouthwash (one part hydrogen peroxide to three

parts water) or glycerin applied with a soft brush or sponge-stick may be used to remove crusts. Either treatment should always be followed by rinsing with clear water (mouthwashes are astringent, and glycerin dries the mucous membranes). The nurse encourages oral intake if permitted and positions the patient to discourage mouth breathing. If fluids are restricted, the patient or care provider should use a water mist or spray to moisten membranes.

sore (sor) [AS. *sar*, sore] 1. Tender; painful. 2. Any type of tender or painful ulcer or lesion of the skin or mucous membrane.

bed s. Decubitus ulcer.

canker s. Aphthous ulcer.

cold s. Thin-walled blister at the junction of the mucous membranes of the mouth and lips, caused by recurrent infection with herpes simplex virus (HSV) in persons who already have antibodies to HSV. Treatment is recommended only for immunocompromised patients, who are given acyclovir. SEE: *fever blister*.

Delhi s. Cutaneous leishmaniasis.

desert s. An ulcer of the skin of the arms or legs, sometimes caused by diphtheria or staphylococci, and typically contracted in Australia or Burma.

hard s. A syphilitic chancre; primary lesion of syphilis.

jungle s. Infection of the skin or of poorly tended wounds by *Corynebacterium diphtheriae*, esp. in warm, moist, tropical climates.

Oriental s. Cutaneous leishmaniasis.

pressure s. SEE: *pressure sore*.

tropical s. Cutaneous leishmaniasis.

sore throat Inflammation of the tonsils, pharynx, or larynx.

septic s.t. Bacterial pharyngitis.

streptococcal s.t. Pharyngitis caused by group A beta-hemolytic streptococci. SEE: *scarlet fever*.

sorption (sorp'shūn) [L. *sorbere*, to suck in] The condition of being absorbed.

s.o.s. [L., *si opus sit*] If necessary or required.

Sotos syndrome (sō'tōs) A rare developmental disorder in which cerebral gigantism is associated with scoliosis. Affected children often have behavioral and psychiatric problems, mental retardation, and seizures.

souffle (soof'fl) [Fr. *souffler*, to puff] A soft blowing sound heard in auscultation; a bruit; an auscultatory murmur.

cardiac s. Cardiac murmur.

fetal s. A purring sound heard over the pregnant uterus and having the same rate as the fetal heartbeat. The sound is caused by blood flowing through vessels in the umbilical cord. SYN: *funic souffle*.

funic s. Fetal s.

placental s. The loud blowing mur-

mur heard along the side of the uterus, caused by blood entering the dilated arteries of the uterus in the last months of pregnancy and synchronous with the maternal pulse. SYN: *uterine souffle*.

splenic s. The sound heard over the spleen in various diseases.

umbilical s. SEE: *umbilical souffle*.

uterine s. Placental s.

sound (sownd) [L. *sonus*, sound] **1.** Auditory sensations produced by vibrations; noise. It is measured in decibels (dB), which is the logarithm of the intensity of sound; thus 20 dB represents not twice 10 dB but 10 times as much. Repeated exposure to excessively loud noises, esp. in certain frequencies, will cause permanent injury to the hearing. SEE: *decibel*; *noise*; *sonic boom*. **2.** A form of vibrational energy that gives rise to auditory sensations. SEE: *cochlea*; *ear*; *organ of Corti*; *sonic boom*. **3.** Healthy, not diseased. **4.** Heart sounds. SEE: *diastole*; *systole*. **5.** A long, cylindrical tool used in invasive procedures to explore or measure body cavities.

absent breath s. The lack of any sound heard over the chest of the patient during auscultation.

ETIOLOGY: Absent breath sounds can be caused by a lack of breathing (apnea) or by lung disorders that block the transmission of the sounds to the surface of the chest (e.g., pneumothorax, pleural effusion).

adventitious lung s. Crackles and wheezes superimposed on the normal breath sounds; indicative of respiratory disease. Most adventitious lung sounds can be divided into continuous (wheezing) and discontinuous (crackles) according to acoustical characteristics.

blowing s. An organic murmur as of air from an aperture expelled with moderate force.

bottle s. A noise such as fluid in a bottle. SEE: *amphoric*.

bowel s. The normal sounds associated with movement of the intestinal contents through the alimentary tract. Auscultation of the abdomen for bowel sounds may provide valuable diagnostic information. Absent or diminished sounds may indicate paralytic ileus or peritonitis. High-pitched tinkling sounds are associated with intestinal obstruction.

breath s. Respiratory sounds heard on auscultation of the chest. In a normal chest, they are classified as vesicular, tracheal, and bronchovesicular.

bronchial s. Sounds not heard in the normal lung but occurring in pulmonary disease, indicating infiltration and solidification of the lung. SEE: *bronchial breathing*.

bronchovesicular s. A mixture of bronchial and vesicular sounds.

coarse breath s. A vesicular lung

sound that is lower pitched and louder than normal.

ETIOLOGY: Pneumonia, atelectasis, pulmonary edema, and other conditions may cause this type of breath sound.

cracked-pot s. A tympanic resonance heard over air cavities. This percussion sound resembles that made by striking a cracked pot.

diminished breath s. A soft, decreased, or distant vesicular lung sound as heard through a stethoscope.

ETIOLOGY: Diminished breath sounds are common in patients with poor respiratory effort, splinting, emphysema, and other lung conditions.

ejection s. Any noise made during cardiac systole by the valves of the heart or the root of the aorta.

fetal heart s. The sound made by the fetal heart.

friction s. A sound produced by rubbing together two inflamed mucous surfaces.

heart s. The two sounds "lubb" and "dupp" heard when listening to the heart with a stethoscope. They arise from valve closure and muscular structures in the heart and are technically called S₁ and S₂. Third and fourth heart sounds may be present in some heart diseases.

physiological s. A sound perceived when the auditory canals are closed. The sound is produced by the blood flowing through adjacent vessels.

respiratory s. Any sound heard over the lungs, bronchi, or trachea.

succussion s. A splashing sound heard over a cavity with fluid in it.

to-and-fro s. Rasping friction sounds of pericarditis.

tracheal s. A sound normally heard over the trachea or larynx.

tubular s. A sound heard over the trachea or large bronchi.

urethral s. A device suitable for use in exploring the urethra.

vesicular s. A normal breath sound heard over the entire lung during breathing.

white s. A sound made up of all audible frequencies.

sound [Fr. *sonder*, to probe] An instrument for introduction into a cavity or canal for exploration. SYN: *searcher*.

sound-conducting apparatus Those parts of the acoustic apparatus that transmit sound.

Souques' phenomenon (soo-kēz') [A. A. Souques, Fr. neurologist, 1860–1944] Finger extension on the involved side of a hemiplegic patient when the extremity is raised to a position 90° above shoulder flexion or abduction.

source The initiator of an epidemic disease, e.g., the patient who spreads an illness to others, or the location from which an epidemic spreads (e.g., a

"food source," a "source of contaminated water").

Southern Blot test An analytical method traditionally used in DNA analysis. After a sample of DNA fragments is separated by agarose gel electrophoresis, the fragments are transferred to a solid cellulose support by blotting. The gel is placed between a concentrated salt solution and absorbent paper. Capillary action draws the fragments onto the solid support. The support is then treated with radiolabeled DNA probes.

Southern tick-associated rash illness ABBR: STARI. An expanding red rash, similar in appearance to erythema migrans, the rash found in Lyme disease. It results from the bite of the tick *Amblyomma americanum*, found in the southeastern U.S. Ticks of this species may harbor the spirochete *Borrelia lonestari*, which produces the rash.

Southey's tube (süth'ēz) A very small tube pushed into tissue to help drain edema fluid. It is used in severe congestive heart failure to relieve edema of the legs.

sowda (sou'dah) Onchocerciasis; river blindness.

soybean (soy'bēn') [via Dutch or NL. fm. Japanese fm. Chinese + bean] A legume (*Glycine max*) used as a source of several nitrogen-rich foods, including beverages, curd (tofu), flour, textured meat substitutes, and oils. Forty percent of raw soybean is protein. The bean can be processed to remove its oils and carbohydrates to isolate soy protein, a foodstuff containing all of the essential amino acids. In the U.S., most of the soybean crop has been genetically modified to make the plant resistant to commercial weed killers.

soybean oil A commonly used oil obtained from the seeds of the soya plant that is low in unsaturated fat and rich in linolenic acid, an essential fatty acid.

sp [L., *spiritus*] *spirit*; *species*.

spa (spá) [Spa, a Belgium resort town] A mineral spring, esp. one allegedly having healing properties.

space (spás) [L. *spatium*, space] **1.** An area, region, or segment. **2.** A cavity of the body. SYN: *spatium*. **3.** The expanse in which the solar system, stars, and galaxies exist; outside the Earth's atmosphere.

anatomical dead s. The area in the trachea, bronchi, and air passages containing air that does not reach the alveoli during inspiration and is not involved in gas exchange. SYN: *dead space*; *deadspace*. SEE: *physiological dead s.*

circumlental s. The space between the equator of the lens and the ciliary body.

closest speaking s. The space between the teeth during casual repetition

of the sound "s." This is considered the closest relationship of the occlusal surfaces and incisal edges of the mandibular teeth to the maxillary teeth during function and rapid speech.

dead s. **1.** Anatomical dead s. **2.** The unobliterated space remaining after closure of a surgical wound. This space favors the accumulation of blood and eventually infection.

EC s. *extracellular space.*

epidural s. The space outside the dura mater of the brain and spinal cord.

extracellular s. The space between cells. It contains tissue fluid, the water derived from plasma in the adjacent capillaries. The water flows among capillaries, tissue spaces, and cells. SEE: *extracellular fluid.*

s. of Fontana Spaces in scleral meshwork in angle of the iris through which the aqueous humor passes from the anterior chamber to the canal of Schlemm.

intercostal s. The interval between ribs, filled by the intercostal muscles.

interfascial s. Tenon's space.

interglobular s. Czernak's spaces.

interpleural s. Mediastinum.

interproximal s. The space between the surfaces of adjacent teeth in the dental arch. It is divided into the septal space, gingival to the contact point of the teeth and occupied normally by the interdental papilla of the gingiva, and the embrasure, the space occlusal to the contact point of the teeth.

interradicular s. The area between the roots of a multiradical tooth, which contains an alveolar bony septum and the periodontal ligament.

intervillous s. Any area of the maternal side of the placenta where transfer of maternal oxygen, nutrients, and fetal wastes occurs.

joint s. Joint cavity.

loose s. A distensible lung interstitial tissue surrounding the acinus and terminal bronchioles.

Meckel's s. Cavum trigeminale.

medullary s. The marrow-containing area of cancellous bone.

palmar s. The midpalmar and thenar spaces of the hand.

parasinoideal s. Lateral spaces in the dura mater adjacent to the superior sagittal sinus that receive meningeal and diploic veins.

perforated s. The space pierced by blood vessels at the base of the brain.

periodontal ligament s. ABBR: PDL space. A radiolucent space that appears on a dental radiograph between the tooth and the adjacent lamina dura. The space is occupied by the periodontal ligament, which lacks the density to be radiopaque.

perivascular s. The spaces within adventitia of larger blood vessels of the

brain. They communicate with the subarachnoid space.

personal s. In psychiatry, an individual's personal area and the surrounding space. This space is important in interpersonal relations and in personal feelings of security and privacy.

physiological dead s. In the respiratory tract, any nonfunctional alveoli that do not receive air that participates in gas exchange. Possible causes include emphysema, pneumothorax, pneumonia, pulmonary edema, and constriction of bronchioles. SEE: *anatomical dead s.*

plantar s. One of four spaces between the fascial layers of the foot. When the foot is infected, pus may be found there.

pleural s. The potential space between the visceral and parietal pleura. In some diseases and conditions the space fills with air, blood, lymph, or malignant tumors. Air in the pleural space is called *pneumothorax*. Blood in the space is called *hemothorax*. Lymph accumulations in the pleural space are called *chylothorax*. Malignant tumors that may fill the pleural space include mesothelioma or metastatic lung or breast cancers, among others.

pneumatic s. Air-containing spaces in bone, esp. those in the paranasal sinuses.

popliteal s. The space in back of the knee joint, containing the popliteal artery and vein and small sciatic and popliteal nerves.

prezonular s. The anterior portion of the posterior chamber of the eye.

retroperitoneal s. The potential space outside the parietal peritoneum of the abdominal cavity.

retropharyngeal s. The space behind the pharynx separating prevertebral from visceral fascia. Important as a possible path for the spread of infection from oral cavity trauma downward to visceral organs of the mediastinum.

subarachnoid s. The space between the pia mater and the arachnoid, containing the cerebrospinal fluid.

subumbilical s. The triangular space within the body cavity below the navel.

suprasternal s. Triangular space immediately above the sternum between layers of deep cervical fascia.

Tenon's s. SEE: under *Tenon, Jacques R.*

thenar s. A deep fascial space in the hand lying anterior to the adductor pollicis muscle.

tissue s. Any space within tissues not lined with epithelium and containing tissue fluid.

zonular s. Spaces within the zonule (suspensory ligament of lens). SEE: *dead space.*

space maintainer Device fashioned to keep teeth separated when placed across an edentulous segment of the

dental arch. It may consist of bands, bars, springs, or other materials, and is cemented or soldered to orthodontic bands or crowns on the adjacent teeth.

space medicine The branch of medical science concerned with the physiological and pathological problems encountered by humans who enter the area beyond the earth's atmosphere. Included in space medicine are investigation of effects of weightlessness (zero gravity), sensory deprivation, motion sickness, enforced inactivity during lengthy travels in space, and the heat and decelerative forces encountered at the time of reentry into the earth's atmosphere. With prolonged flights into space, a number of medical problems have arisen, including anemia and loss of blood volume, and loss of bone and muscle mass. These changes also make adjustment to gravity after returning to earth difficult.

spacer (spā'sēr) A hollow tube that improves the delivery of inhaled aerosols, such as beta₂ agonists, steroids, and other antiasthmatic drugs, to the bronchi and lungs. Spacers form a channel between metered dose inhalers and the mouth through which medicated mists can be inhaled. They improve the performance of antiasthmatic drugs because without them, a large quantity of inhaled medications end up in the mouth, on the palate, on the buccal mucosa, or on the tongue and fail to reach their intended target in the lower airways.

spacer oligotyping Spoligotyping.

spacer sequence, spacer DNA The genetic material on a chromosome that separates actively transcribed genes. It may make up the largest part of the genome of some eukaryotic organisms and often consists of tandem repeats of DNA.

spallation (spawl-lā'shūn) **1.** The process of breaking into very small parts. The term may be applied to gross structures or to atomic particles. **2.** The release of inert particles into the bloodstream. An example would be the splintering of bits of plastic from the pump used in hemodialysis.

span 1. The distance from one fixed point to another, as the distance, when the hand is fully expanded, from the tip of the thumb to the tip of the little finger. **2.** A length of time. The duration of a process.

attention s. The duration of sustained concentration on a task or activity. SEE: *hyperactivity (2); attention deficit-hyperactivity disorder.*

digit s. A test of memory and attention. SEE: *digit span test.*

memory s. The number of words or objects one can store and recall when asked to do so. SEE: *digit span test.*

sparer (spär'ēr) [AS. *sparian*, to refrain] A substance destroyed by catabolism that decreases catabolic action on other substances.

nitrogen s. Protein s.

protein s. Carbohydrates and fats, so designated because their presence in the diet prevents tissue proteins from being used as a source of energy.

sparganosis (spär'gā-nō'sis) Infestation with spirometra.

sparing 1. The use of one medicine in place of another, usually to prevent side effects from high doses of the first medicine (e.g., steroid-sparing). 2. Protective; said of certain surgical operations that preserve vital tissues and their function.

spasm (spāzm) [Gr. *spasmos*, convulsion] An involuntary sudden movement or muscular contraction that occurs as a result of some irritant or trauma. Spasms may be clonic (characterized by alternate contraction and relaxation) or tonic (sustained). They may involve either visceral (smooth) muscle or skeletal (striated) muscle. When contractions are strong and painful, they are called cramps. The effect depends on the part affected. Asthma is assumed to be associated with spasm of the muscular coats of smaller bronchi; renal colic to spasm of the muscular coat of the ureter.

TREATMENT: General measures to reduce tension, induce muscle relaxation, and improve circulation are needed. Specific measures include analgesics, massage, relaxation exercises, therapeutic modalities such as heat, cold, or electrotherapy, and, in some cases, gentle therapeutic exercises. Special orthopedic supports or braces are sometimes effective. For vascular spasm, chemical sympathectomy may give relief.

bronchial s. Bronchospasm.

carpal s. Involuntary contraction of the muscles of the hand. SEE: *tetany*.

carpopedal s. Involuntary muscular contraction of the hands and feet, sometimes seen in hyperventilation syndrome. It is caused by hypocalcemia and commonly encountered during hyperventilation because the lowered carbon dioxide alters the level of ionized calcium. SEE: *hyperventilation tetany*.

choreiform s. Spasmodic movements resembling chorea.

clonic s. Intermittent contractions and relaxation of muscles. SYN: *clonospasm*.

coronary s. Muscular closure of the coronary arteries, causing angina, ischemia, or myocardial infarction. SEE: *Prinzmetal's angina*.

diffuse s. An esophageal motor disorder characterized by dysphagia, odynophagia, and chest pain.

esophageal s. Intermittent inability to swallow, often associated with intense chest pain, gagging, or difficulty breathing. It can occur after swallowing cold liquids taken through a straw or may occur in such diverse diseases as rabies, anxiety or depression, or achalasia. In most patients, it is caused by excessive motor function of the esophageal muscles.

TREATMENT: Nitrates or tricyclic antidepressants are sometimes used to treat the symptoms. Diffuse esophageal spasms can also be treated by surgical division of the esophageal muscles.

habit s. Tic.

hemifacial s. Twitching of facial muscles that usually begins in one eyelid but may generalize after many years to half of the face or even to both sides of it. It usually results from an aneurysm of the vertebral or basilar artery or a tumor of the cerebellopontine angle. In some patients, the twitching can be treated with injections of botulinum toxin if the underlying cause is not treatable.

infantile s. Seizure activity marked by momentary flexion or extension of the neck, trunk, extremities, or any combination, with onset occurring in the first year of life. Although infantile spasms subside in late infancy, many affected children develop other types of seizure activity and may be severely retarded.

nodding s. A psychogenic condition in adults, causing nodding of the head from clonic spasms of the sternomastoid muscles. A similar nodding occurs in babies, with the head turning from side to side. SYN: *salaam convulsion*.

saltatory s. A tic of the muscles of the lower extremity, causing convulsive leaping upon attempting to stand. SEE: *Jumping Frenchmen of Maine*; *miryachit*; *palmus* (2); *Tourette's syndrome*.

tetanic s. A spasm in which contractions occur repeatedly and without interruption.

tonic s. Continued involuntary contractions.

torsion s. A spasm characterized by a turning of a part, esp. the turning of the body at the pelvis.

toxic s. Convulsions due to poison.

winking s. Blepharospasm.

spasmogen (spāz'mō-jën) [n + *gennan*, to produce] Something that causes spasms or constrictions, such as in the bronchospasm associated with asthma.

spasmolytic (spāz-mō-lit'ik) [n + *lysis*, dissolution] Arresting spasms or that which acts as an antispasmodic.

spasmophilia (spāz-mō-fil'e-ä) [n + *philein*, to love] Tetany.

spasmous (spāz'mūs) [Gr. *spasmos*, convulsion] Of the nature of a spasm.

spastic (spās'tik) [Gr. *spastikos*, convul-

side] 1. Resembling or of the nature of spasms or convulsions. 2. Produced by spasms. 3. One afflicted with spasms.

spastic colon Irritable colon.

spastic gait SEE: under *gait*.

spastic hemiplegia SEE: under *hemiplegia*.

spasticity (späs-tīs'ī-tē) A motor disorder characterized by velocity-dependent increased muscle tone, exaggerated tendon jerks, and clonus. Spasticity is the result of an upper motor neuron lesion (i.e., found in the spinal cord or brain rather than in one of the peripheral nerves).

PATIENT CARE: Spasticity can cause abnormal and variable movement patterns and restriction of range of motion. Physical and occupational therapy are used to improve range of motion and use of affected limbs. Medications, such as muscle relaxants (baclofen or diazepam) or botulinum toxin can alleviate spasticity and improve function.

spatial (spā'shāl) Pert. to space.

spatial discrimination The ability to perceive as separate points of contact the two blunt points of a compass when applied to the skin.

spatial localization disorder An inability to describe or to find the way even though in familiar surroundings. This neurological condition is usually due to bilateral occipitoparietal lesions of the brain.

spatial resolution In radiology, the ability to distinguish two adjacent points of similar density as being separate.

spatium (spā'shē-ūm) *pl.* **spatia** [L.] Space.

spatter (spät'ēr) The distribution of droplets into the air or onto solid surfaces, as a result of injuries to blood vessels (blood spatter) or during dental or surgical procedures. In health care, spatter is a potential source of exposure to infectious body fluids. In forensic medicine, the characteristics of spattered fluids are used to reconstruct crime scenes.

spatula (späch'ū-lā) [L. *spatula*, blade] An instrument for spreading or mixing semisolids. It is usually flat, thin, somewhat flexible, and shaped like a knife without a cutting edge. It may be used in blunt dissection of soft tissues (e.g., brain).

cervical s. A blade, often made of wood or plastic, with an indented tip adapted to ensure sampling during a Papanicolaou test of the squamous cells of the endocervix of the uterus.

nasal s. A device for holding mucous flaps in place or to guard against burning from cautery.

spatulate (späch'ū-lāt) To mix something by use of a spatula. In dentistry, to mix or manipulate certain dental ma-

terials with a spatula to achieve a uniform, homogeneous mass.

spay, spaying (spā, spā'ing) [Gael. *spoth*, castrate] Surgical removal of ovaries, usually said of animals. SEE: *castration*.

SPCA *Society for the Prevention of Cruelty to Animals.*

spear tackler's spine Injury to the cervical spine resulting from players using their heads as a primary point of impact with their opponents' bodies in contact sports such as football or soccer. This condition is considered an absolute contraindication to participation in contact sports in which high-energy axial loads may be applied to the cervical spine because it markedly heightens the risk of nerve injury or paralysis. Spear tackler's spine is based on four criteria identified by Joseph Torg:

1. developmental stenosis of the cervical vertebral canal;

2. loss of the normal lordotic cervical curvature;

3. roentgenographic evidence of post-traumatic abnormalities of the cervical spine; and

4. a history of axial loads delivered to the cervical spine.

specialist (spësh'äl-ist) [L. *specialis*] A dentist, nurse, physician, or other health professional who has advanced education and training in one clinical area of practice such as internal medicine, pediatrics, surgery, ophthalmology, neurology, maternal and child health, or cardiology. In most specialized areas of health care, there are organizations offering qualifying examinations. When an individual meets all of the criteria of such a board, he or she is called "board certified" in that area.

specialization (spësh'äl-i-zā'shūn) The limitation of one's practice to a particular branch of medicine, surgery, dentistry, or nursing. This is customarily done after having received postgraduate training in the area of specialization.

special need Any disability or functional limitation, e.g., attention deficit disorder, autism, blindness, deafness, or impaired mobility.

specialty (spësh'äl-tē) The branch of medicine, surgery, dentistry, or nursing in which a specialist practices.

specialty hospital 1. A hospital that provides a limited range of services (e.g., orthopedic surgery, ophthalmology, or obstetrics). 2. A hospital in which two thirds of Medicare patients receive care for just two Diagnosis-Related Groups (DRGs), or a hospital in which two thirds of patients are assigned for outpatient surgical procedures.

speciation (spē'sē-ā'shūn) [L. *species*, a kind] 1. The evolutionary process by which new species of living organisms are formed. 2. The identification of the

species of an organism, e.g., of an infectious bacterium.

species (spē'shēz) [L. *species*, a kind] In biology, a category of classification for living organisms. This group is just below the genus and is usually capable of interbreeding.

species jump The transfer of a pathogen, especially one considered species-specific, to a new host species, e.g., Hantavirus from mice to humans.

species-specific The characteristics of a species, esp. the immunological nature that differentiates that species from another.

species type The original species that served as the basis for identifying a new genus or subgenus.

specific (spē-sif'ik) [L. *specificus*, pert. to a kind] **1.** Referring to a remedy having a curative effect on a particular disease or symptom. **2.** Pert. to a species. **3.** Referring to a disease always caused by the same organism. **4.** Restricted, explicit; not generalized.

specific dynamic action of food Thermic effect of food.

specific gravity ABBR: sp. gr. The weight of a substance compared with the weight of an equal volume of water. For solid and liquid materials, water is used as a standard and considered to have a specific gravity of 1.000. For gases, the weight per unit volume is compared with that of dry air at a specified temperature and usually at atmospheric pressure.

specificity (spē-si-fis'ī-tē) The state of being specific; having a relation to a definite result or to a particular cause.

antigenic s. The property of mature B and T lymphocytes that enables them to respond to specific foreign antigens entering the body. Antigen specificity requires mature B and T cells that have been previously exposed to the antigen and, therefore, are able to recognize it again and respond by neutralizing or destroying it. The exact process by which B lymphocytes become capable of recognizing and responding to antigens is unknown. Development of antigen specificity by T cells requires macrophage processing of the antigen for recognition.

diagnostic s. For a diagnostic or screening test, the proportion of people who are truly free of a specific disease and are so identified by the test. SEE: *sensitivity*.

s. of exercise The design of exercises to stress muscles in a manner similar to the way in which they are to perform. This technique helps the muscle to meet specific demands, including speed and type of contraction, strength and endurance requirements, stabilization, and mobility activities.

specific therapy Administration of a rem-

edy acting directly against the cause of a disease, as penicillin for syphilis or acyclovir for herpes simplex virus. SEE: *nonspecific therapy*.

specific treatment Treatment directed at the cause of a disease.

specimen (spēs'ī-mēn) [L. *specere*, to look] A part of something, intended to show the kind, quality, and other characteristics of the whole. Collected urine, feces, cerebrospinal fluid, sputum, blood, skin, or tissues are all considered to be specimens.



Persons handling specimens of blood, body fluids, or other excretions should wear protective gloves to limit exposure to infectious agents, such as the hepatitis viruses.

The following information is important in obtaining, containing, and handling biological and forensic samples.

Sterilization of glassware: This is accomplished by the use of hot air or dry heat, boiling water, flowing steam, steam under pressure, certain gases, and germicidal chemicals.

Labels: All containers should be labeled with the names of the patient and attending physician and the room number. Labels should be placed on the container, not on the lid. Request forms, sometimes used as labels, are made up to suit the individual laboratory or hospital. Provision is made for recording necessary data as indicated, including the date the specimen was taken, the circumstances, the substances for which the examination is being performed, and any other information desired. SEE: *chain of custody*.

Time: If the required specimen cannot be furnished at once, one should note what is needed and inform the patient, supervisor, and any other caregiver who may attend the patient in one's absence.

Charting: The chart should record all specimens sent to the laboratory, when they were sent, and any other data that seem pertinent such as the appearance of the specimen or unusual occurrences while it was being obtained.

Care of specimen: The specimen should be covered immediately after it is deposited in the container. The label or request form should be checked. One should make sure that the container is intact and in no danger of spilling while in transit. Some types of specimens (e.g., blood, urine, tissues) will need special care with respect to the temperature to be maintained while they are stored or transported and the time allowed before being analyzed. SEE: *Standard and Universal Precautions Appendix*.

speckle A grainy distortion (a kind of "noise") in an ultrasonographic image.

spectacles (spĕk'tāk-lz) [L. *spectare*, to see] Glasses.

spectating (spĕk'tā-tĕr-ĭng) Paying excessive attention to oneself; excessive self-monitoring or self-absorption. It is a psychological characteristic of some individuals with social anxiety and/or sexual dysfunction.

spectral (spĕk'trāl) [L. *spectrum*, image] Concerning a spectrum.

spectrin (spĕk'trĭn) An intracellular, calcium-dependent contractile protein that helps maintain the structure and shape of cells, esp. red blood cells.

spectro- Combining form meaning *appearance, image, form, or spectrum*.

spectrocolorimeter (spĕk-trō-kŭl-or-ĭm'ĕ-tĕr) [L. *spectrum*, image, + *color*, color, + Gr. *metron*, measure] A device for detecting color blindness by isolating a single spectral color.

spectrofluorometer (spĕk'trō-floo'or-ōm'ĕ-tĕr) An instrument that measures the degree and frequencies of fluorescence of compounds in chemical reactions or in solution.

spectrograph (spĕk'trō-grāf) [ʹ + Gr. *graphein*, to write] An instrument designed to photograph spectra on a sensitive photographic plate.

mass s. A device that separates ions of different masses by employing a magnetic field to deflect them as they travel along a given path.

spectrometer (spĕk-trōm'ĕt-ĕr) [ʹ + Gr. *metron*, measure] A spectroscopy so constructed that angular deviation of a ray of light produced by a prism or by a diffraction grating thus indicates the wavelength.

spectrometry (spĕk-trōm'ĕ-tĕrĕ) [ʹ + Gr. *metron*, measure] The process of determining the wavelength of light rays by use of a spectrometer.

mass s. A process that separates and identifies molecules by ionizing them, assessing their ratio of mass to ionic charge, and measuring the electrical current they generate.

tandem mass s. ABBR: MS/MS. An analytical device that can rapidly assess the biochemical makeup of hundreds of specimens by measuring the mass-to-charge ratio of molecules. SYN: *tandem mass assay*. SEE: *high-performance liquid chromatography*; *mass spectrometry*.

PATIENT CARE: It is used in clinical laboratories to screen newborn infants for metabolic disorders such as fatty acid oxidation deficiencies, organic acid disorders, and congenital adrenal hyperplasia.

spectrophotometer (spĕk'trō-fō-tōm'ĕt-ĕr) [ʹ + Gr. *photos*, light, + *metron*, measure] An instrument that measures the transmission of a specified

light wavelength through a material (e.g., a material in solution). Contrasting the light transmission through a standard solution and the test solution, one can determine a variety of characteristics of the material, esp. its concentration.

spectrophotometric analysis (spĕk'trō-fō'tō-mĕ'trĭk) Determination of materials in a compound by measuring the amount of light they absorb in the infrared, visible, or ultraviolet region of the spectrum.

spectrophotometry (spĕk'trō-fō-tōm'ĕt-rĕ) An estimation of coloring matter in a solution by use of the spectroscopy or spectrophotometer.

spectropolarimeter (spĕk'trō-pō'lār-ĭm'ĕ-tĕr) [ʹ + *polaris*, pole, + *metron*, measure] A device for measuring the rotation of light rays of a specific wavelength by passage through a translucent solid.

spectroscope (spĕk'trō-skōp) [ʹ + Gr. *skopein*, to examine] An instrument for separating radiant energy into its component frequencies or wavelengths by means of a prism or grating to form a spectrum for inspection.

spectroscopic (spĕk'trō-skōp'ĭk) Concerning a spectroscopy.

spectroscopy (spĕk-trōs'kō-pĕ) **1.** The branch of physical science that treats the phenomena observed with the spectroscopy, or those principles on which the action is based. **2.** The art of using the spectroscopy.

infrared absorption s. A technique that uses the infrared absorbing properties of molecules to determine their presence in tissues or body fluids. A common clinical application is in the design of oximeters. SEE: *oximeter*.

nuclear magnetic resonance s. ABBR: NMR spectroscopy. A technique that uses the characteristic absorption of nuclei inside a strong magnetic field to identify and characterize molecules.

spectrum (spĕk'trŭm) *pl.* **spectra** [L., image] **1.** The charted band of wavelengths of electromagnetic vibrations obtained by refraction and diffraction of rays of white light. **2.** The range or breadth of a phenomenon; the distribution of values in an array.

absorption s. Spectrum recorded after light rays have passed through a substance capable of absorbing some of the wavelengths passing through. This spectrum is specific for various chemicals.

broad s. Having the ability to treat a wide variety of conditions or infections.

chromatic s. The portion of the spectrum that produces visible light. Wavelengths of about 3900 Å to 7700 Å are visible.

invisible s. The portion of the spectrum either below the red (infrared) or

above the violet (ultraviolet), which is invisible to the eye, the waves being too long or too short to affect the retina. The invisible spectrum includes rays less than 3900 Å in length (ultraviolet, roentgen or x, gamma, and cosmic rays) and those exceeding 7700 Å in length (infrared, high-frequency oscillations used in short- and long-wave diathermy, radio, hertzian, and very long waves). These range in length from 7700 Å to 5,000,000 m.

narrow s. Having a limited span of action against only a few diseases, conditions, or pathogens.

visible s. The portion of the spectrum that is detectable by the human eye. The visible spectrum consists of the colors from red to violet with wavelengths of 3900 Å to 7700 Å.

visible electromagnetic s. The complete range of wavelengths of electromagnetic radiation.

spectrum bias Variation in the performance of a diagnostic test due to its application to people of differing ages, genders, nationalities, or specific disease manifestations. A test's sensitivity and specificity may increase or decrease, depending on the population to which it is applied. SYN: *case-mix bias*.

spectrum emission 1. In spectroscopy and fluorometry, the range of wavelengths emitted by a substance. 2. In the case of atoms, the lines of emission.

speculum (spĕk'ū-lŭm) *pl.* **specula** [L., a mirror] 1. An instrument for examination of canals or hollow organs. SEE: **illus.** 2. The membrane separating the anterior cornua of lateral ventricles of the brain. SYN: *septum pellucidum*.



NASAL SPECULUM

bivalve s. A speculum with two opposed blades that can be separated or closed. SEE: *vaginal s.*

duck-bill s. A bivalve speculum with wide blades.

ear s. A short, funnel-shaped tube, tubular or bivalve (the former being preferable), used to examine the external auditory canal and eardrum.

eye s. A device for separating the eyelids. Plated steel wire, plain, Luer's,

Von Graefe's, and Steven's are the most common types.

Pedersen s. A small vaginal speculum for examining prepubertal patients or others with small vaginal orifices.

vaginal s. A speculum, usually with two opposing portions that, after being inserted, can be pushed apart for examining the vagina and cervix. It should be warmed before use. SEE: **illus.**



VAGINAL SPECULUM

speech [AS. *spæc*] 1. The oral expression of one's thoughts. 2. The utterance of articulate words or sounds. 3. The words spoken for communication.

aphonic s. Whispering. SEE: *aphonia*.

ataxic s. Defective speech due to muscular incoordination, usually the result of cerebellar disorder.

clipped s. Scamping s.

cued s. Cued speech.

dyspraxia of s. In people with normal muscle tone and speech muscle coordination, partial loss of the ability to pronounce words consistently, resulting from injury to the central nervous system or stroke.

echo s. Echolalia.

esophageal s. In people who have had laryngectomies, the modulation by the pharynx, mouth, and tongue of air expelled from the esophagus to produce speech.

explosive s. Sudden, loud speech.

interjectional s. Speech into which gestures, ejaculatory sounds, and other nonverbal mannerisms are introduced.

mirror s. Speech characterized by reversing the order of syllables of a word.

nasal s. Speech in which air from the oropharynx enters the nasopharynx, usually resulting in abnormal resonance. Emission of air through the nose, weak pressure in articulating consonants, and attempts by the patient to stifle the abnormally spoken air column are also characteristic.

paraphasic s. SEE: *paraphasia*.

scamping s. Speech characterized by omission of consonants or syllables when the person is unable to pronounce them. SYN: *clipped speech*.

scanning s. The pronunciation of words in syllables, or slowly and hesitatingly. Pauses between the syllables result in staccato-like speech. It is a symptom of certain diseases of the cerebellum and advanced multiple sclerosis. SYN: *staccato speech*.

staccato s. Scanning s.

telegraphic s. Nonfluent or halting speech, in which some nouns or verbs are uttered but other elements of normal sentence structure are replaced by pauses or gaps. This type of aphasia is a hallmark of Broca's aphasia.

speech abnormality Any disorder, dysfunction, or impairment of speech. Speech abnormalities include expressive and receptive aphasias, dysarthrias, labialism, stammering, stuttering, and word deafness.

speech and language pathologist ABBR: SLP. A health care professional trained to evaluate and treat people who have voice, speech, language, swallowing, or hearing disorders, esp. those that affect their ability to communicate or consume food.

speech delay Any disorder of childhood in the acquisition and use of spoken language.

speech disorder Any abnormality that prevents a person from communicating through spoken words. The disorder may develop from brain injury, stroke, muscular paralysis of the organs of speech, structural defects of the mouth, teeth, or tongue, somatization disorders, or cognitive deficits.

speech processor A miniature computer within a cochlear implant that analyzes sounds and converts them into digital signals.

speechreading Lip reading.

speech recognition The ability of a machine or computer to interpret human speech. Also known as voice recognition and speech understanding.

speech synthesizer An electronic device for producing speech. Activated by a keyboard, it permits persons lacking the ability to speak to communicate.

speech therapist A speech and language pathologist.

speech therapy The study, diagnosis, and treatment of defects and disorders of the voice and of spoken and written communication.

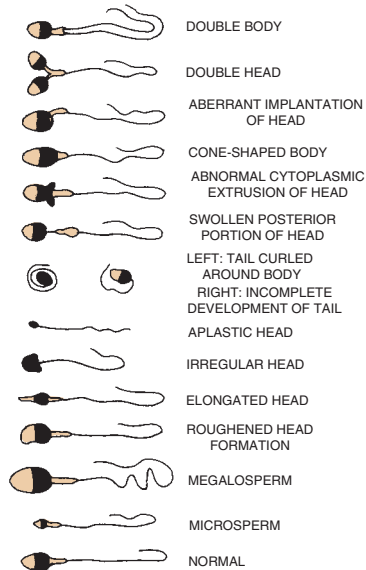
speedball A slang term for a combination of cocaine and heroin taken intravenously.

spend down, spend-down The deliberate depletion of one's financial assets in order to meet the criteria for insurance support from Medicaid.

sperm (spĕrm) [Gr. *sperma*, seed] 1. Semen. 2. Spermatozoa. SEE: *illus.*

sperma (spĕr'mă) [Gr.] 1. Semen. 2. Spermatozoa.

sperma- SEE: *spermato-*.



NORMAL AND ABNORMAL SPERM

spermacrasia (spĕr'măk-ră-zĕ-ă) [Gr. *sperma*, seed, + *akrasia*, bad mixture] Aspermia.

spermagglutination (spĕr'mă-gloo'ti-nă'shŭn) Agglutination of spermatozoa.

spermat- SEE: *spermato-*.

spermatic (spĕr-măt'ik) [Gr. *sperma*, seed] Pert. to semen or sperm.

spermaticide, spermatocide (spĕrm'ăt-ĭ-sĭd, spĕrm'ăt-ō-sĭd) [Gr. *sperma*, seed, + L. *cidus*, kill] Spermicide. **spermatocidal** (-sĭd'ăl), *adj.*

spermatic vein One of two veins draining the testes. The right one empties into the inferior vena cava, the left into the left renal vein. In the spermatic cord, each forms a dilated pampiniform plexus.

spermatid (spĕr'mă-tĭd) A cell arising by division of the secondary spermatocyte to become a spermatozoon. SYN: *spermatoblast*.

spermatin (spĕr'mă-tĭn) A mucilaginous substance in the semen.

spermatitis (spĕr'mă-tĭ'tĭs) [ʹ + *itis*, inflammation] Inflammation of the spermatic cord or of the ductus deferens. SYN: *deferentitis*; *funiculitis*.

spermato-, spermat-, sperma- Combining form meaning *seed*.

spermatoblast (spĕr-măt'ō-blăst) [Gr. *sperma*, *spermato*, seed, + *blastos*, germ] Spermatid.

spermatocèle (spĕr-măt'ō-sĕl) [ʹ + *kele*, tumor, swelling] A cystic tumor of the epididymis containing spermatozoa.

spermatocidal (spĕr'mă-tō-sĭ'dăl) [ʹ + L. *cidus*, kill] Destroying spermatozoa.

spermatocyst (spér-mät'ō-sist) [" + *kystis*, bladder] **1.** A seminal vesicle. **2.** Tumor of the epididymis containing semen. SEE: *spermatocoele*.

spermatocystectomy (spér'mät-ō-sis-ték'tō-mē) [" + " + *ektome*, excision] Removal of the seminal vesicles.

spermatocystitis (spér'mät-ō-sis-tī'tis) [" + " + *itis*, inflammation] Inflammation of a seminal vesicle.

spermatocystotomy (spér'mä-tō-sis-tót'ō-mē) [" + " + *tome*, incision] Drainage of the seminal vesicles by use of a surgical incision into the vesicle.

spermatocytal (spér'mä-tō-si'täl) [" + *kytos*, cell] Concerning spermatocytes.

spermatocyte (spér-mät'ō-sīt) [" + *kytos*, cell] A cell originating from a spermatogonium that divides to form spermatids, which become spermatozoa.

primary s. A cell formed by mitosis of a spermatogonium.

secondary s. A cell formed by meiosis of a primary spermatocyte. It undergoes a second meiotic division to form two spermatids, each with the haploid number of chromosomes.

spermatogenesis (spér'mät-ō-jěn'ē-sīs) [" + *genesis*, generation, birth] The formation of mature functional spermatozoa. In the process, undifferentiated spermatogonia become primary spermatocytes, each of which divides to form two secondary spermatocytes. Each of these divides to form two spermatids, which transform into functional motile spermatozoa. In the process, the chromosome number is reduced from the diploid to the haploid number. SEE: *illus.*; *gametogenesis*; *maturation*; *meiosis*.

spermatogenic, spermatogenous (spér'mä-tō-jěn'ík, spēr'mä-tōj'ē-nūs) Producing sperm.

spermatogonium (spér'mät-ō-gō'nē-ŭm) *pl. spermatogonia* [" + *gone*, generation] A large unspecialized germ cell that in spermatogenesis divides by mitosis to form primary spermatocytes. SEE: *spermatogenesis*.

spermatoid (spér'mä-toyd) [" + *eidōs*, form, shape] Resembling a spermatozoon.

spermatology (spér'mä-tōl'ō-jē) [" + *logos*, word, reason] The study of the seminal fluid.

spermatolysin (spér'mät-ōl'i-sin) [" + *lysis*, dissolution] A lysin destroying spermatozoa.

spermatolysis (spér'mät-ōl'i-sīs) [" + *lysis*, dissolution] The dissolution or destruction of spermatozoa.

spermatolytic (spér'mät-ō-lit'ik) Destroying spermatozoa.

spermatopathia, spermatopathy (spér'mä-tō-pāth'ē-ā, spēr-mä-tōp'ā-thē) [Gr. *spermatos*, seed, + *pathos*, disease] A disease of sperm cells or their secreting glands or ducts.

spermatopoeitic (spér'mät-ō-poy-ēt'ik) [" + *poiein*, to make] Promoting the formation and secretion of semen.

spermatorrhoea (spér'mä-tō-rē'ä) [" + *rhoia*, flow] An abnormally frequent involuntary loss of semen without orgasm.

spermatotoxin (spér'mä-tō-tōk'sin) [" + *toxikon*, poison] Spermatoxin.

spermatoxin (spér'mä-tōk'sin) [" + "] A toxin that destroys spermatozoa. SYN: *spermatotoxin*.

spermatozoa (spér'mät-ō-zō'ä) *Pl.* of spermatozoon.

spermatozoal (spér'mä-tō-zō'äl) [" + *zoon*, life] Concerning spermatozoa.

spermatozoicide (spér'mä-tō-zō'i-sī) [" + " + *L. cidus*, kill] Spermicide.

spermatozoon (spér'mät-ō-zō'ōn) *pl. spermatozoa* [" + *zoon*, life] The

mature male sex or germ cell formed within the seminiferous tubules of the testes. The spermatozoon has a broad oval flattened head with a nucleus and a protoplasmic neck or middle piece and tail. It is about 51 μ m long and resembles a tadpole. It has the power of self-propulsion by means of a flagellum. It develops after puberty from the spermatids in the testes in enormous quantities. The head pierces the envelope of the ovum and loses its tail when the two cells fuse. This process is called fertilization. SEE: *illus.*; *sperm* for *illus.*; *fertilization*.

spermaturia (spér'mä-tū'rē-ä) [" + *ouron*, urine] Semen discharged with the urine. SYN: *seminuria*.

spermectomy (spér-měk'tō-mē) [" + *ektome*, excision] Resection of a portion of the spermatic cord and duct.

spermic (spér'mik) Concerning sperm, male reproductive cells.

spermicide (spér'mi-sid) An agent that kills spermatozoa. Two spermicides used in contraceptive products are nonoxynol 9 and octoxynol 9. SYN: *spermicide*; *spermatozoicide*. **spermicidal** (spér'mi-sid'äl), *adj.*

spermidine (spér'mi-din) An amine present in semen.

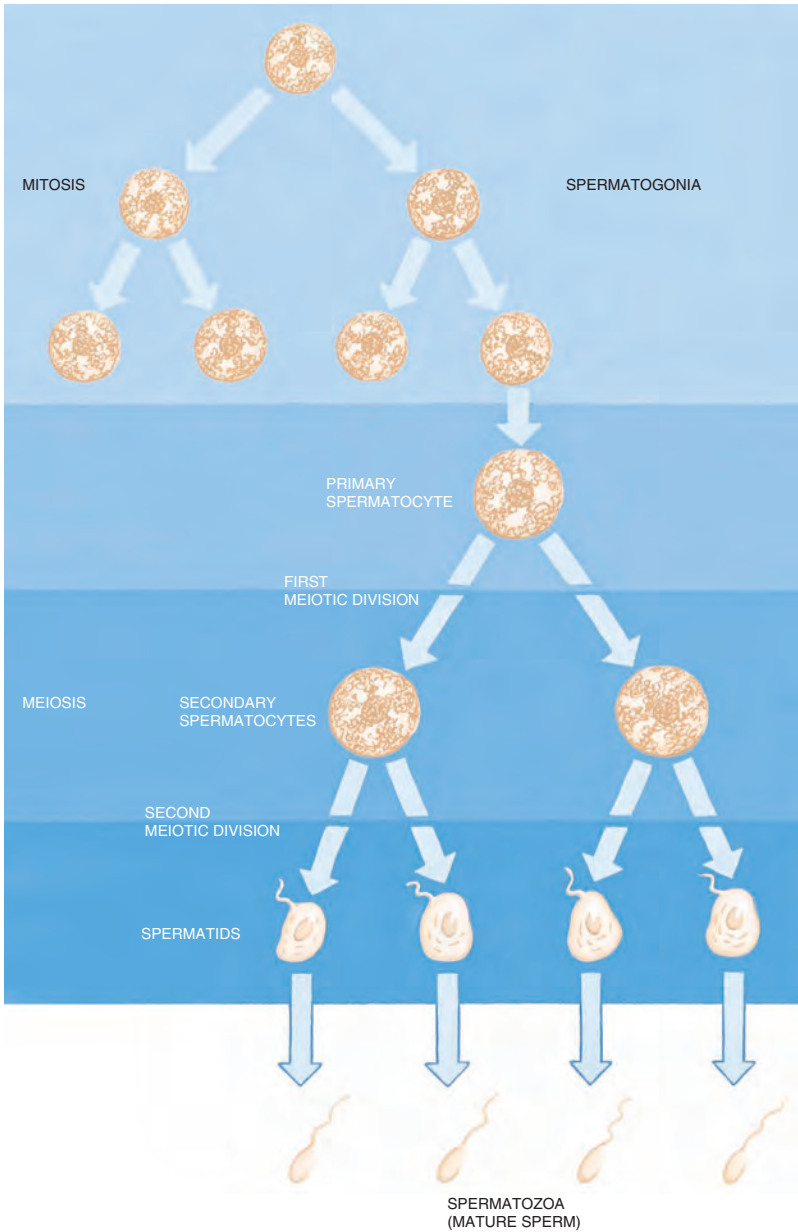
spermiduct (spér'mi-dükt) [" + *L. ductus*, a duct] The ejaculatory duct and ductus deferens considered as one.

spermine (spér'min) An amine present in semen and other animal tissues.

spermiogenesis (spér'mē-ō-jěn'ē-sīs) The processes involved in the transformation of a spermatid to a functional spermatozoon.

spermiogram (spér'mē-ō-grām) [" + *gramma*, something written] A record of examining and classifying sperm in a semen sample.

sperm mucus penetration test A test used to evaluate male infertility. During the female partner's ovulation, a sample of mucus from the uterine cervix and a sample of the male's sperm are combined in a test tube. The distance



SPERMATOGENESIS

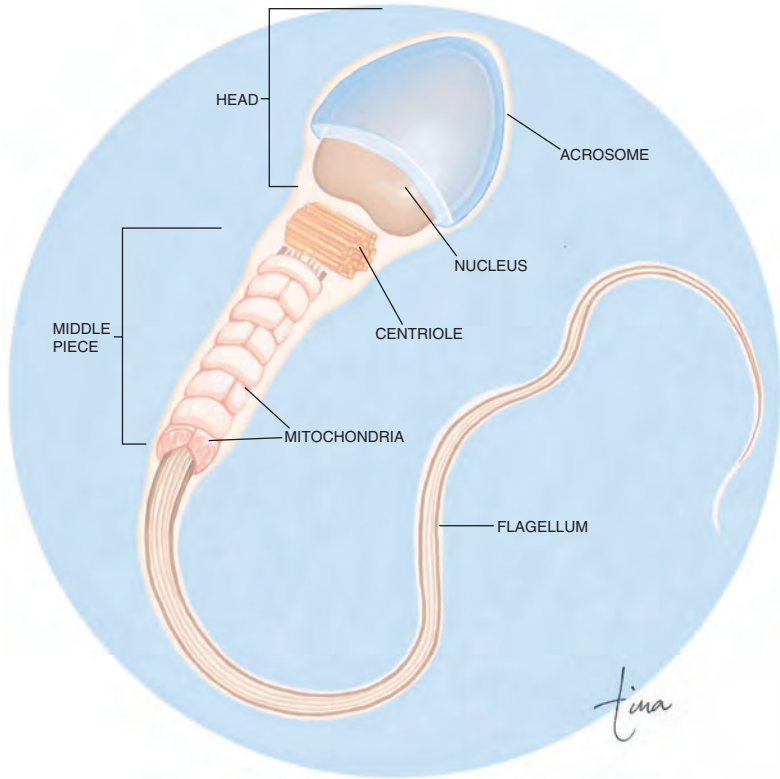
that the sperm travel in 90 minutes is measured. Sperm penetration is considered to be normal when sperm easily travel through the cervical mucus during the allotted time.

spermolith (spĕr'mō-līth) [ʹ + *lithos*, stone] A stone in the seminal vesicles or spermatic ducts.

spermyolytic (spĕr-mō-līt'ik) [ʹ + *lysis*, dissolution] Causing spermatozoa destruction.

spermophlebectasia (spĕr'mō-flĕ'běk-tā'zē-ā) [ʹ + *phlebos*, vein, + *ektasis*, dilatation] Varicosity of the spermatic veins.

spermosphere (spĕr'mō-sfĕr) [ʹ +

**SPERMATOZOON**

Mature sperm cell

sphaira, a circle] A mass of spermatids derived from spermatogonia.

spermotoxin (spēr"mō-tōk'sin) [" + *toxikon*, poison] Spermatoxin.

sperm penetration assay A test used to evaluate male fertility in which a sample of a male's sperm is added to hamster eggs that have had their outer membranes (*zona pellucida*) removed. The number of sperm that penetrate each egg is measured and compared to a normal value. SYN: *hamster zona-free ovum test*.

sperm retrieval, posthumous Obtaining sperm from a body shortly after death in an attempt to use the specimen to impregnate the fiancée or wife of the deceased. The sperm may be frozen for later use.

sp. gr. *specific gravity*.

sph *spherical*.

sphacelate (sfās'ēl-āt) [Gr. *sphakelos*, gangrene] 1. To develop gangrene. 2. Gangrenous. SYN: *mortification*; *necrosis*.

sphacelation (sfās'ēl-ā'shūn) Mortifica-

tion; formation of a mass of gangrenous tissue. SYN: *gangrene*; *necrosis*.

sphacelism (sfās'ēl-izm) [" + *-ismos*, condition] Condition of being affected with sphacelus or gangrene. SYN: *necrosis*.

sphacelous (sfās'ēl-ūs) [Gr. *sphakelos*, gangrene] Pert. to a slough or patch of gangrene. SYN: *gangrenous*; *necrosis*; *necrotic*.

sphacelus (sfās'ēl-ūs) A necrosed mass of tissue. SYN: *gangrene*; *mortification*; *necrosis*; *slough*.

spheno- Combining form meaning *wedge* or indicating a relationship to the sphenoid bone.

sphenobasilar (sfē'nō-bās'ī-lār) [Gr. *sphen*, wedge, + L. *basilaris*, basal] Concerning the sphenoid bone and basilar portion of the occipital bone.

sphenoid (sfē'noyd) [" + *eidos*, form] Cuneiform or wedge-shaped.

sphenoidal (sfē-noy'däl) Concerning the sphenoid bone.

sphenoiditis (sfē'noy-dī'tīs) [" + " + *itis*, inflammation] 1. Inflammation of

the sphenoidal sinus. **2.** Necrosis of the sphenoid bone.

sphenoidostomy (sfē'noy-dōs'tō-mē) [" + " + *stoma*, mouth] Surgically producing an opening into the sphenoid sinus.

sphenoidotomy (sfē'noyd-ōt'ō-mē) [" + " + *tome*, incision] Incision into the sphenoid bone.

sphenomaxillary (sfē'nō-māk'sī-lā-rē) [" + *L. maxilla*, jawbone] Concerning the sphenoid bone and the maxilla.

spheno-occipital (sfē'nō-ōk-sīp'ī-tāl) [" + *L. occipitalis*, occipital] Concerning the sphenoid and occipital bones.

sphenopalatine (sfē'nō-pāl'ā-tēn) [" + *L. palatum*, palate] Concerning the sphenoid and palatine bones.

sphenoparietal (sfē'nō-pā-rī'ē-tāl) [" + *L. paries*, a wall] Pert. to the sphenoid and parietal bones.

sphenosquamosal (sfē'nō-skwā-mō'sāl) [Gr. *sphen*, wedge, + *L. squamosa*, scaly] Concerning the sphenoid bone and the squamous portion of the temporal bone.

sphere (sfēr) [Gr. *sphaira*, a globe] A ball or globelike structure.

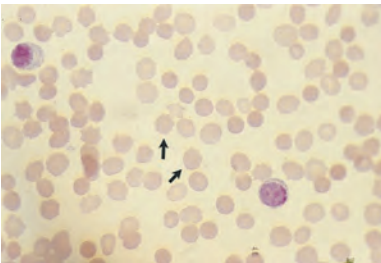
attraction s. A clear region in the cytoplasm close to the nucleus and usually containing a centriole or diplosome (a divided centriole).

segmentation s. The segmented ovum or morula.

spherical (sfēr'ī-kāl) [Gr. *sphairikos*] Having the form of or pert. to a sphere. SYN: *globular*.

sphero-cylinder (sfēr'ō-sil'in-dēr) [Gr. *sphaira*, globe, + *kylindros*, cylinder] A lens with a spherical surface and a cylindrical surface.

spherocyte (sfēr'ō-sīt) [" + *kytos*, cell] An erythrocyte that assumes a spheroid shape, and has no central pallor. SEE: *illius*.



SPHEROCYTES

In peripheral blood (×400)

spherocytosis (sfēr'ō-sī-tō'sīs) [" + " + *osis*, condition] A condition in which erythrocytes assume a spheroid shape. It occurs in certain hemolytic anemias.

hereditary s. An autosomal dominant hemolytic anemia caused by a defect in the red blood cell membrane that

makes the cell abnormally fragile and esp. susceptible to changes in the concentration of osmoles in the blood. Affected cells are gradually destroyed in the spleen, resulting in splenic enlargement, jaundice, and anemia as well as a high incidence of gallstone disease. Surgical removal of the spleen prevents many of this condition's complications but carries with it a risk of postoperative immune suppression.

spheroid (sfē'royd) [" + *eidōs*, form, shape] **1.** A body shaped like a sphere. **2.** Sphere-shaped.

spheroidal (sfē-roy'dāl) Sphere-shaped. **spherolith** (sfēr'ō-līth) [" + *lithos*, stone] A minute stone in the kidney of the newborn.

spheroma (sfēr'ō'mā) [" + *oma*, tumor] A tumor of spherical form.

spherometer (sfēr'ōm'ēt-ēr) [" + *metron*, measure] A device to ascertain the curvature of a surface.

spheroplast (sfēr'ō-plāst) In bacteriology, the cell and partial cell wall remaining after the organism's cell-wall synthesis has been prevented. Spheroplasts may be formed when synthesis of the cell wall is prevented by the action of certain chemicals, e.g., penicillin, while cells are growing. SEE: *protoplast*.

spherospermia (sfēr'ō-spēr'mē-ā) [" + *sperma*, seed] Round spermatozoa without tails.

spherule (sfēr'ūl) [LL. *sphaerula*, little globe] **1.** A very small sphere. **2.** A minute granule found in the center of a centromere of a chromosome. **3.** The structures present in tissues infected with *Coccidioides immitis*. These spherules contain up to hundreds of endospores.

sphincter (sfīngk'tēr) [Gr. *sphinkter*, band] A circular muscle constricting an orifice. In normal tonic condition, it closes the orifice, i.e., the muscle must relax to allow the orifice to open.

s. ani A sphincter that closes the anus, composed of two parts: the external one being of striated muscle, the internal one, of smooth muscle.

bladder s. The smooth muscle surrounding the opening of the bladder into the urethra.

cardiac s. Lower esophageal sphincter.

s. choledochus The smooth muscle investing the common bile duct just before its junction with the pancreatic duct; a part of the sphincter of Oddi.

ileo-cecal s. A projection of the ileum into the cecum that acts as a sphincter. SEE: *valve, ileocecal*.

lower esophageal s. The smooth muscle surrounding the opening of the esophagus into the stomach. In health, it separates these linked organs from each other, preventing the reflux of

stomach acids into the esophagus. SYN: *cardiac sphincter*.

s. of Oddi A contracted region at the opening of the common bile duct into the duodenum at the papilla of Vater.

s. pancreaticus The smooth muscle encircling the pancreatic duct just before it joins the ampulla.

precapillary s. A smooth muscle cell found at the beginning of a capillary network. It regulates capillary blood flow. SEE: *artery for illus*.

pyloric s. The thickened circular smooth muscle around the pyloric orifice at the junction of the stomach and duodenum. The sphincter is usually contracted but relaxes at intervals (when gastric pressure exceeds duodenal pressure) to permit acid chyme to enter the duodenum. It then contracts to prevent backup of chyme to the stomach.

upper esophageal s. A sphincter that keeps the opening between the posterior pharynx and the proximal esophagus closed, except during swallowing. It is maintained principally by the cricopharyngeal muscle.

sphincteralgia (sfɪŋk'tēr-āl'jē-ā) [Gr. *sphinkter*, band, + *algos*, pain] Pain in the sphincter ani muscles.

sphincterectomy (sfɪŋk'tēr-ĕk'tō-mē) [" + *ektome*, excision] 1. Excision of any sphincter muscle. 2. Excision of part of the iris' pupillary border.

sphincterismus (sfɪŋk'tēr-iz'mūs) [" + *-ismos*, condition] A spasm of the sphincter ani muscles.

sphincteritis (sfɪŋk'tēr-ī'tīs) [" + *itis*, inflammation] Inflammation of any sphincter muscle.

sphincterolysis (sfɪŋk'tēr-ōl'ī-sīs) [" + *lysis*, dissolution] Freeing of the iris from the cornea in anterior synechia affecting only the pupillary border.

sphincteroplasty (sfɪŋk'tēr-ō-plās'tē) [" + *plassein*, to form] Surgical repair of any sphincter.

sphincteroscope (sfɪŋk'tēr-ō-skōp") [" + *skopein*, to examine] An instrument for inspection of the anal sphincter.

sphincteroscopy (sfɪŋk'tēr-ōs'kō-pē) Inspection of the internal anal sphincter. The internal anal sphincter is covered by anodermal and mucous membrane tissues that cannot be seen unless exposed surgically.

sphincterotome (sfɪŋk'tēr-ō-tōm") [" + *tome*, incision] A surgical instrument for cutting a sphincter.

sphincterotomy (sfɪŋk'tēr-ōt'ō-mē) [" + *tome*, incision] The cutting of a sphincter muscle; done, for example, in eye surgery to enlarge the pupil.

Sphingobacterium (sfɪŋg'ō-bāk-tēr-ūm) A genus of gram-negative bacilli formerly identified as *Flavobacterium*. It is commonly present in soil and may

occasionally cause skin infections and sepsis.

sphingolipid (sfɪŋg'ō-lip'īd) [Gr. *sphingein*, to bind, + *lipos*, fat] A lipid containing one of several long-chain bases such as sphingosine or dihydrosphingosine or bases of similar chemical structure but containing longer chains.

sphingolipidosis (sfɪŋg'ō-lip'ī-dō'sīs) [" + " + *osis*, condition] Any disease marked by a defective metabolism of sphingolipids. These genetically determined errors of metabolism include Sandhoff's disease, Fabry's disease, Tay-Sachs disease, Kufs' disease, Gaucher's disease, Krabbe's leukodystrophy, Niemann-Pick disease, Batten disease, and Spielmeyer-Vogt disease. They are marked by neurological deterioration, usually beginning a few months after birth and eventually leading to death except in the adult form of Gaucher's disease. These diseases can be detected by examining fluid obtained by amniocentesis.

sphingolipodystrophy (sfɪŋg'ō-lip'ō-dīs'trō-fē) [" + *dys*, bad, + *trophe*, nutrition] A group of diseases caused by defective sphingolipid metabolism.

sphingomyelins (sfɪŋg'ō-mī'ēl-īns) A major group of phosphorus-containing sphingolipids. They are found primarily in nervous tissue and in lipids in the blood. They are derived from choline phosphate and a ceramide. Deficiencies in sphingomyelin manufacturing are found in many diseases. SEE: *sphingolipidosis*.

sphingosine (sfɪŋg'ō-sīn) A long-chain base, C₁₈H₃₇O₂N, present in sphingolipids. SEE: *dihydrosphingosine*; *sphingolipid*.

sphygmik (sfɪg'mik) [Gr. *sphygmikos*] Rel. to the pulse.

sphygmo- Combining form meaning *pulse*.

sphygmobolometer (sfɪg'mō-bō-lōm'ē-tēr) [Gr. *sphygmos*, pulse, + *bolos*, mass, + *metron*, a measure] A device used to measure the force of the pulse rather than the blood pressure.

sphygmogram (sfɪg'mō-grām) [" + *gramma*, something written] A tracing of the pulse made by using the sphygmograph.

sphygmograph (sfɪg'mō-grāf) [" + *graphein*, to write] Polygraph.

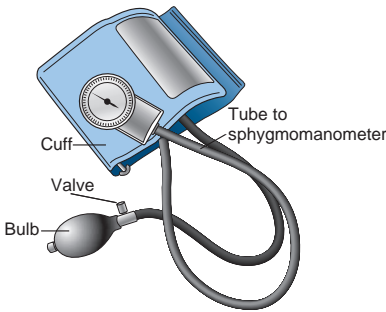
sphygmography (sfɪg'mōg'rā-fē) Recording the arterial pulse by use of a polygraph.

sphygmoid (sfɪg'moyd) [Gr. *sphygmos*, pulse, + *eidōs*, form, shape] Resembling the pulse.

sphygmology (sfɪg'mōl'ō-jē) [" + *logos*, word, reason] The scientific study of the pulse.

sphygmomanometer (sfɪg'mō-mān-ōm'ēt-ēr) [" + *manos*, thin, + *metron*, measure] An instrument for deter-

mining arterial blood pressure indirectly. The two types are aneroid and mercury. **SEE: illus.; blood pressure.**



SPHYGMOMANOMETER

sphygmometer (sfīg-mōm'ēt-ēr) [" + *metron*, measure] An instrument for measuring the pulse. **SYN:** *polygraph*.

spica (spī'kā) [L., ear of grain] **SEE:** *bandage, spica*.

spicular (spīk'ū-lar) [L. *spiculum*, a dart] Pert. to or resembling a spicule; dartlike.

spicule (spīk'ūl) A small, needle-shaped structure. **SYN:** *spiculum*.

bony s. A thin island of developing bone.

cemental s. An excementosis or pointed protuberance extending from the surface cementum of a tooth root.

spiculed red cell Crenated red blood cells with surface projections. It often instances, this is a normal variation in red cell equilibrium and is reversible. **SEE:** *acanthocyte*.

spiculum (spīk'ū-lūm) *pl.* **spicula** [L., a dart] Spicule.

spider (spī'dēr) **1.** An arachnid, belonging to the order Araneae, class Arachnida, phylum Arthropoda. The body is divided into cephalothorax and abdomen joined by a narrow waist. A spider usually possesses four pairs of legs as well as poison fangs. It often possesses spinnerets. **2.** Anything resembling a spider in appearance.

arterial s. **SEE:** *nevus, spider*.

s. bite **SEE:** under *bite*.

black widow s. The female of *Latrodectus mactans*. It is native to the southern U.S. but has been reported throughout the country. It prefers to live in woodpiles and other locations where it is well hidden. It is glossy black with a brilliant red spot, usually shaped like an hourglass or two triangles, on the undersurface of the abdomen (Southern black widow), or a row of red, white or yellow spots down the middle of the abdomen with two crosswise bars (Northern black widow). Its body mea-

sures about 1 cm and its leg spread can reach 5 cm.

The bite of a black widow spider initially produces a sensation resembling the prick of a pin and may be mistaken for a flea bite. A numbing pain usually lasts for a short time and then subsides; later the abdominal muscles become rigid and the patient becomes severely diaphoretic. Within 1/2 hr, severe abdominal cramps begin. The venom, which is neurotoxic, causes an ascending motor paralysis. Because of the severity of abdominal pain caused by the bite, the patient may be suspected of having an acute abdomen. Severe cases, esp. in children, can result in death; however, healthy patients usually respond to treatment, and most victims recover completely.

PATIENT CARE: Intravenous access should be established in order to administer fluids, antiemetics, and/or analgesics as prescribed. Stimulant drugs should not be given to patients who have been bitten by a black widow spider. Local suction is of little value as the toxin is rapidly absorbed. Symptomatic treatments include intravenous, intramuscular, or oral muscle relaxants, antihistamines, and benzodiazepines. Tetanus prophylaxis should be administered. Specific antivenins may be used when envenomation has severe neurological consequences.



Respiratory status must be carefully monitored when morphine or a benzodiazepine is used.

Antivenin generally is used only for very young or very elderly patients experiencing respiratory distress or when severe pain and muscle spasms are not controlled by other measures. Prior to its administration, a skin test is performed to assess for allergic reaction to the horse serum used in making the antivenin. Even if the test is negative, resuscitative medications and equipment should be readily at hand to manage an anaphylactic reaction to the antivenin. In addition to the risk of acute hypersensitivity, delayed serum sickness can occur 7 to 12 days after antivenin administration.

brown recluse s. *Loxosceles reclusa*, 3/8-in (10 mm) long spider native to North America. The venom of the brown recluse spider is toxic and can be lethal. It may produce a large area of necrosis at the site of the bite.

TREATMENT: Dapsone, antivenins, and steroids are often used to treat the envenomation; however, before using dapsone, the patient should be tested for glucose-6-phosphate dehydrogenase

deficiency. Tetanus prophylaxis should be administered.

hobo s. A 5-in (45 mm) long brown spider with gray markings found in northwestern North America. Males are more venomous than females. A bite causes erythema, blisters, subsequent necrosis of the skin, and sometimes severe, persistent headaches. Systemic corticosteroid therapy may be helpful. Aplastic anemia, intractable diarrhea, or vomiting may occur and, although rare, may be fatal.

spider-burst An area on the leg in which capillaries radiate from a central point. The veins, though dilated, are not varicosities.

spider fingers Arachnodyctyly.

sigelian line (spī-jē'lē-ān) [Adriaan van den Spieghel, Flemish anatomist, 1578–1625] A line on the abdomen lying parallel to the median line and marking the edge of the rectus abdominis muscle. SYN: *linea semilunaris*; *semilunar line*.

sigelian lobe SEE: under *lobe*.

spike **1.** The dominant peak in the record of an action potential or electroencephalogram. **2.** The narrow vertical tracing left on an electrocardiogram by the impulse generator of an electronic pacemaker. **3.** A needle used to puncture an object (e.g., a bag of intravenous fluids or a cyst), permitting fluids within the object to flow out. **4.** Any of the structural units that facilitate attachment of viruses to host cell receptors.

spike and wave Electroencephalic evidence of grand mal seizures.

spikeboard (spīk'bōrd) An assistive technology device for persons with limited upper extremity or one-handed function that allows food to be held in place while it is being prepared.

spill (spil) [AS. *spillan*, to squander] **1.** To flow out of or release; in medicine, said of a substance that cannot be maintained in the body by one of its organs, esp. the kidneys. In diabetes mellitus, for example, the kidneys spill sugar into the urine. In the nephrotic syndrome, they spill protein. **2.** An overflow.

cellular s. A dissemination of cells through the lymph or the blood resulting in metastasis.

radioactive s. A release of radioactive materials into the environment.

spillway (spil'way) The contour of the teeth that allows food to escape from the cusps during mastication.

spina (spī'nā) *pl.* **spinæ** [L., thorn] **1.** Any spinelike protuberance. **2.** The spine.

s. bifida *Spina bifida cystica*.

s. bifida cystica A congenital defect in the walls of the spinal canal caused by a lack of union between the laminae of the vertebrae. The lumbar portion is the section chiefly affected. The conse-

quences of this defect may include urinary incontinence, saddle or limb anesthesia, gait disturbances, and structural changes in the pelvis. SYN: *rachischisis*.

s. bifida occulta A failure of the vertebrae to close without hernial protrusion.

spinal (spī'nāl) [L. *spinalis*] Pert. to the spine or spinal cord. SYN: *rachial*; *rachidial*.

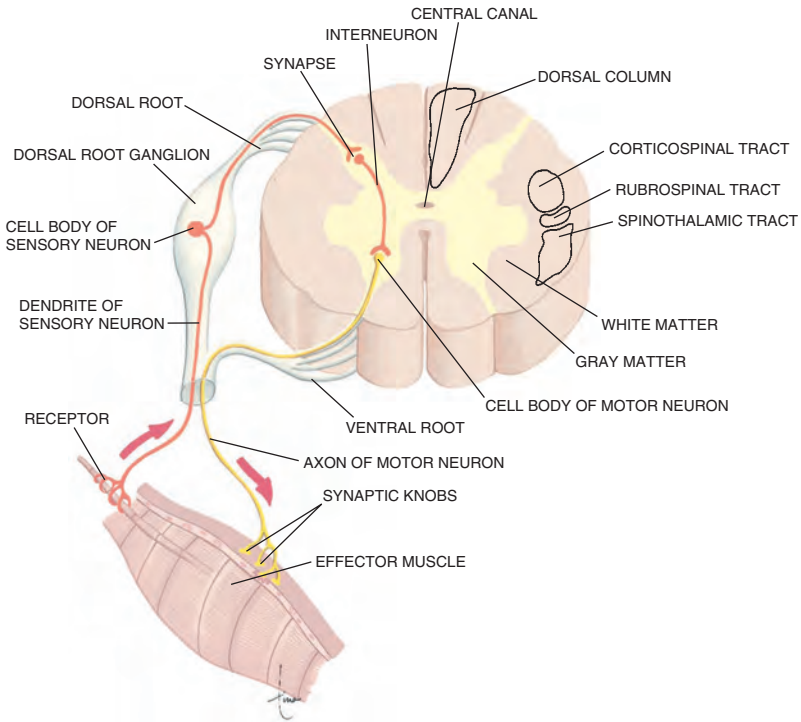
spinal accessory nerve Accessory nerve.

spinal cord Part of the central nervous system, the spinal cord is an ovoid column of nerve tissue 40 to 50 cm long that extends from the medulla to the second lumbar vertebra; it is within the spinal (vertebral) canal, protected by bone, and directly enclosed in the meninges. The center of the cord is gray matter in the shape of the letter H; it consists of the cell bodies and dendrites of neurons. The ventral (anterior) horns of the gray matter contain cell bodies of somatic motor neurons; the dorsal (posterior) horns contain cell bodies of interneurons. The white matter is arranged in tracts around the gray matter. It consists of myelinated axons that transmit impulses to and from the brain, or between levels of gray matter in the spinal cord, or that will leave the cord as part of peripheral nerves. The spinal cord is the pathway for sensory impulses to the brain and motor impulses from the brain; it also mediates stretch reflexes and the defecation and urination reflexes. Thirty-one pairs of spinal nerves emerge from the spinal cord and innervate the trunk and limbs. SEE: *illus.*

spinal cord injury, acute Acute traumatic injury of the spinal cord. Signs and symptoms depend upon the vertebral level injured and degree of injury. Damage may occur both as a result of the initial injury and any inflammatory response or swelling that occurs in the next 48 to 72 hr. Therapy for this condition includes immobilization, high doses of corticosteroids, airway maintenance, cardiovascular resuscitation, and insertion of an indwelling catheter. The use of intravenous methylprednisolone given as a bolus dose of 30 mg/kg and then a maintenance dose of 5.4 mg/kg/hr for 24 to 48 hr during the acute phase improves neurological recovery and may reduce edema.

PATIENT CARE: Cooling the patient or the spinal cord has theoretical advantages; clinical benefit has been difficult to document. Immediately after spinal cord injury emphasis is placed on stabilizing the spine, maintaining adequate ventilation and circulation, and assessing and treating problems with thermoregulation and urinary retention. After initial stabilization, all general patient care concerns apply. The





SPINAL CORD

Cross-section with nerve roots on left side and examples of tracts on right side

patient is assessed for evidence of paralysis, loss of sensation or reflexes, pneumonia, deep vein thrombosis, pulmonary embolism, decreased peristalsis, gastrointestinal bleeding, and problems associated with immobilization. Explanations of all procedures and support are provided to the patient and his or her supporters. Anxiolytics (if needed) should be administered as prescribed, and their effects evaluated. The patient who suffers serious trauma to the spinal cord may suddenly confront many challenges to body image and functional independence, including changes in mobility, urinary and fecal continence, erectile function, skin integrity, and mood. A sensitive and caring multidisciplinary approach to rehabilitation is needed to help the client resume an active and fulfilling life.

spinal curvature Abnormal curvature of the spine, frequently constitutional in children. It may be angular, lateral (scoliosis), or anteroposterior (kyphosis, lordosis).

spinal curvature, lateral Scoliosis.

spinal fusion Surgical immobilization of adjacent vertebrae. This procedure may

be done for several conditions, including herniated disk.

spinalgia (spī-nāl'jē-ă) [L. *spina*, thorn, + Gr. *algos*, pain] Pain in a vertebra under pressure.

spinalis (spī-nā'lis) [L.] A muscle attached to the spinal process of a vertebra.

spinate (spī'nāt) Having spines or shaped like a thorn.

spindle (spīn'dl) [AS. *spinel*] **1.** A fusiform-shaped body. **2.** The mitotic spindle, a series of microtubules formed by the centrosomes during cell division; the spindle fibers pull the new sets of chromosomes toward opposite poles of the cell.

enamel s. A tubular hypomineralized structure extending a short distance from the dentinoenamel junction into enamel, seen in ground sections of teeth.

muscle s. A specialized sensory fiber within a muscle that is sensitive to tension and changes in length of the muscle. The central region consists of a nuclear bag with primary or annulospiral receptor endings and several nuclear chains with primary endings and sec-

ondary, or flower spray, endings. Each end consists of intrafusal muscle fibers innervated by gamma motor nerves. When these fibers contract, tension on the central bag and chains results in feedback to the muscle fibers outside the muscle spindle, causing them to contract.

neuromuscular s. A complex sensory nerve ending consisting of muscle fibers enclosed within a capsule and supplied by an afferent nerve fiber. It mediates proprioceptive sensations and reflexes.

neurotendinous s. A proprioceptive nerve ending found in a tendon, in muscle septa or sheaths, in muscle tissue, or at the junction of a muscle and tendon. SYN: *Golgi tendon organ*.

sleep s. Electroencephalographic waves with a frequency of 12 or 14 cycles per second that appear during sleep and may participate in sleep maintenance. They become less frequent with aging.

spine (spīn) 1. A sharp process of bone.

2. The spinal column, consisting of 33 vertebrae: seven cervical, 12 thoracic, five lumbar, five sacral, and four coccygeal. The bones of the sacrum and coccyx are ankylosed in adult life and counted as one each. SYN: *backbone*.

alar s. The spinous process of the sphenoid bone.

anterior nasal s. The projection formed by the anterior prolongation of the inferior border of the nasal notch of the maxilla.

bamboo s. In ankylosing spondylitis, a spinal column that on a radiograph resembles a bamboo stalk.

bifid s. SEE: *spina bifida cystica*; *spina bifida occulta*.

fracture of the s. Fracture of a vertebral body or its bony prominences. SEE: *hangman's fracture*; *Jefferson fracture*.

TREATMENT: The patient is carefully assessed for evidence of neuromuscular compromise and other internal injuries. To prevent complications and promote healing, vests, casts, or halo devices may be used, depending on the location of the fracture. A program of supervised physical therapy may be needed during recovery.

PROGNOSIS: Prognosis depends on the type of spinal fracture and associated spinal cord involvement.

iliac s. One of four spines of the ilium, namely, the anterior and posterior inferior spines and the anterior and posterior superior spines.

ischial s. The spine of the ischium, a pointed eminence on its posterior border.

mandibular s. The small, tongue-shaped protuberance on the medial aspect of the mandibular ramus near the mandibular foramen, to which the

sphenomandibular ligament is attached.

pharyngeal s. The point of attachment of the superior pharyngeal constrictor and its fibrous raphe on the inferior surface of the basilar part of the occipital bone.

posterior nasal s. The spine formed by medial ends of the horizontal processes of the palatine bones at the very back of the hard palate.

s. of pubis A prominent tubercle on the upper border of the pubis.

s. of scapula An osseous plate projecting from the posterior surface of the scapula.

spear tackler's s. SEE: *spear tackler's spine*.

s. of sphenoid The spinous process of the greater sphenoid wing.

typhoid s. An acute arthritis due to infection causing spinal ankylosis during or following typhoid fever.

spine board, spineboard Back board.

spinnbarkeit (spīn' bār-kīt) [Ger.] ABBR: SBK. Evaluation of the elasticity of cervical mucus used to determine time of ovulation. The cervical secretion is aspirated and placed on a slide. SBK is measured by pulling upward on the secretion with a forceps. Before ovulation, there is no elasticity. On the day of ovulation, elasticity is good, measuring 12 to 24 cm or more. The day after ovulation, elasticity diminishes. Not all women have clear-cut SBK changes. Therefore, this test is used in conjunction with other signs of ovulation. SEE: *chart, basal temperature; ferning; mittelschmerz; mucorrhea*.

spinobulbar (spī'nō-būl'bār) [ʹ + Gr. *bulbos*, a bulb] Concerning the spinal cord and medulla oblongata.

spinocerebellar (spī'nō-sēr-ē-bēl'ār) [ʹ + *cerebellum*, little brain] Concerning the spinal cord and cerebellum.

spinocortical (spī'nō-kor'tī-kāl) [ʹ + *cortex*, rind] Pert. to the spinal cord and cerebral cortex.

spinofugal (spī-nīf'ū-gāl) [L. *spina*, thorn, + *fugare*, to flee] Conducting nerve impulses away from the spinal cord.

spinoglenoid (spī'nō-glēn'oyd) [ʹ + Gr. *glene*, socket, + *eidōs*, form, shape] Rel. to the spine of the scapula and the glenoid cavity.

spinopetal (spī-nīp'ē-tāl) [ʹ + *petere*, to seek] Conducting nerve impulses toward the spinal cord.

spinose (spī'nōs) [L. *spina*, thorn] Spinous.

spinotectal (spī'nō-tēk'tāl) [ʹ + *tectum*, roof] Pert. to the spinal cord and the tectum, the dorsal portion (corpora quadrigemina) of the midbrain.

spinous (spī'nūs) [L. *spina*, thorn] Pert. to or resembling a spine.

spinous point A spot over a spinous process very sensitive to pressure.

spinous process The prominence at the posterior part of each vertebra.

spiradenoma (spī'rad-ĕn-ō'mă) [" + " + *oma*, tumor] A benign tumor of the sweat glands. SEE: *spiroma*.

spiral (spī'rāl) [L. *spiralis*] Coiling around a center like the thread of a screw.

Curschmann's s. SEE: *Curschmann's spirals*.

spirillicidal (spī-rīl'ī-sīd'āl) [L. *spirillum*, coil, + *cidus*, kill] Destructive to spirochetes or spirilla.

spirillicide (spī-rīl'ī-sīd) An agent that is destructive to spirilla.

spirillolysis (spī'rī-lōl'ī-sīs) [" + Gr. *lysis*, dissolution] The destruction of spirilla.

spirillosis (spī-rīl-ō'sīs) [" + Gr. *osis*, condition] A disease caused by the presence of spirilla in the blood.

spirillotropic (spī'rī-lō-trōp'īk) [" + Gr. *trope*, a turning] Having an attraction to spirilla.

spirillotropism (spī'rī-lōt'rō-pīzm) [" + " + *-ismos*, condition] The ability to attract spirilla.

Spirillum (spī-rīl'ūm) [L., coil] A genus of spiral, motile bacteria of the family Pseudomonadaceae, tribe Spirillaeae. They are found in fresh water and salt water.

S. minus A species that infects rats and mice. It causes one form of rat-bite fever. It was formerly known as *S. minor*.

spirillum (spī-rīl'ūm) *pl.* **spirilla** A flagellated aerobic bacterium with an elongated spiral shape, of the genus *Spirillum*. SEE: *bacteria* for *illus*.

spirit (spīr'it) [L. *spiritus*, breath] **1.** A solution of essential or volatile liquid. **2.** Any distilled or volatile liquid. **3.** An alcoholic beverage. **4.** Mood; courage. **5.** Soul.

spiritual distress Disruption in the life principle that pervades a person's entire being and that integrates and transcends one's biological and psychosocial nature.

risk for s.d. At risk for an altered sense of integration with life and the universe in which dimensions that transcend and empower the self may be disrupted. SEE: *Nursing Diagnoses Appendix*.

spirituality (spīr'ī-choo-āl'ī-tē) [ME.] An awareness of the metaphysical, the religious, or the sublime. In practice, spirituality includes participation in organized religion, contemplation, meditation, prayer, reflection, and activities fostering self-growth and connections with others and with nature.

spiritual therapy The use of beliefs, religious practices, and prayer to treat disease.

spiritual well-being, readiness for enhanced Ability to experience and integrate meaning and purpose in life through connectedness with self, others, art, music, literature, nature, or a power greater than oneself. SEE: *Nursing Diagnoses Appendix*.

Spirochaeta (spī'rō-kē'tā) [Gr. *speira*, coil, + *chaite*, hair] A genus of slender, spiral, motile bacteria of the family Spirochaetaceae. The species are saprophytes in water and soil.

spirochete (spī'rō-kēt) Any member of the order Spirochaetales. **spirochetal**, *adj.*

spirochetemia (spī'rō-kē-tē'mē-ā) [" + *chaite*, hair, + *haima*, blood] Spirochetes in the blood.

spirocheticide (spī'rō-kē'tī-sīd') Anything that destroys spirochetes. **spirocheticidal** (-sī'dāl), *adj.*

spirochetolysis (spī'rō-kē-tōl'ī-sīs) [" + *chaite*, hair, + *lysis*, dissolution] The destruction of spirochetes by specific antibodies, chemotherapy, or lysins.

spirocheturia (spī'rō-kē-tū'rē-ā) [Gr. *speira*, coil, + *chaite*, hair, + *ouron*, urine] Spirochetes in the urine.

spiogram (spī'rō-grām) [L. *spirare*, to breathe, + Gr. *gramma*, something written] A record made by a spiograph or a spirometer, demonstrating lung volumes and air flow.

spiograph (spī'rō-grāf) [" + Gr. *graphein*, to write] A graphical record of respiratory movements.

spiroid (spī'royd) [Gr. *speira*, coil, + *eidos*, form, shape] Resembling a spiral.

spiroma (spī-rō'mă) [" + *oma*, tumor] Multiple, benign, cystic epithelioma of the sweat glands. SEE: *spiradenoma*.

spirometer (spī-rōm'ēt-ēr) [L. *spirare*, to breathe, + Gr. *metron*, measure] An apparatus used to measure lung volumes and air flow. The following are typical measurements made on adult patients by using the spirometer: inspiratory reserve volume: the amount that a subject can still inhale by special effort after a normal inspiration; expiratory reserve volume: the volume of air that can still be exhaled after a normal exhalation; tidal volume: the volume of air exhaled or inhaled during normal breathing; vital capacity: the maximum volume of air that can be exhaled after a maximal inhalation; forced vital capacity or forced expiratory volume: the air that can be exhaled during a maximal exhalation.

spirometry the plerocercoid larva of tapeworms, esp. those of the genera *Diphyllobothrium* and *Spirometra*.

spirometry (spī-rōm'ēt-ēr) [L. *spirare*, to breathe, + Gr. *metron*, measure] Measurement of air flow and lung volumes. SEE: *pulmonary function test*.

incentive s. Spirometry in which visual and vocal stimuli are given to the

patient to produce maximum effort during deep breathing. Incentive spirometry is used most often in postoperative patients to prevent atelectasis. **SEE: il-lus.**



INCENTIVE SPIROMETER

spit (spīt) [AS. *spittan*] 1. Saliva. 2. To expectorate spittle.

spittle (spīt'tl) [AS. *spatl*] Saliva.

spit tobacco **SEE:** under *tobacco*.

splanchn-, splanchno- Prefixes meaning *viscera* or *splanchnic nerve*.

splanchna (splāngk'nā) [Gr.] The viscera.

splanchnectopia (splāngk'nēk-tō'pē-ā) [" + *ektopos*, out of place] Dislocation of a viscus or of the viscera.

splanchnesthesia (splāngk'nēs-thē'zē-ā) [" + *aisthesis*, sensation] Visceral sensation.

splanchnic (splāngk'nīk) [Gr. *splanchnikos*] Pert. to the viscera.

splanchnicectomy (splāngk'nē-sēk'tō-mē) [Gr. *splanchnos*, viscus, + *ektome*, excision] Resection of the splanchnic nerves.

splanchnicotomy (splāngk'nī-kōt'ō-mē) [" + *tome*, incision] Section of a splanchnic nerve.

splanchnocranium (splāngk'nō-kra'nē-ūm) [" + *kranion*, skull] Viscerocranium.

splanchnography (splāngk-nōg'rā-fē) [" + *graphein*, to write] Examination of the viscera using fluoroscopy or transillumination.

splanchnology (splāngk-nōl'ō-jē) [" + *logos*, word, reason] The study of the viscera.

splanchnomegaly (splāngk'nō-mēg'ā-lē) [" + *megas*, large] Visceromegaly.

splanchnomicria (splāngk'nō-mīk'rē-ā) [" + *mikros*, small] The condition of having small splanchnic organs.

splanchnoptosis, splanchnoptosis (splāngk'nō-tō'sē-ā,-sīs) [" + *ptosis*, a dropping] Prolapse of the viscera. **SYN:** *enteroptosis; visceroptosis*.

splanchnosclerosis (splāngk'nō-sklēr-ō'sīs) [" + *sklerosis*, to harden] A

hardening of any of the viscera through overgrowth or infiltration of connective tissue.

splanchnotribe (splāngk'nō-trīb) [" + *tribein*, to rub] A crushing instrument formerly used to close the lumen of the intestine before surgically removing the organ.

splatter, spatter The airborne distribution of particles, e.g., during dental or surgical procedures.



To avoid exposure to potentially infectious agents or other hazardous particles during procedures in which splatter is anticipated, exposed personnel should wear protective equipment such as goggles, respirators, gowns, and gloves.

splayfoot (splā'foot) [ME. *splayen*, to spread out, + AS. *fof*, foot] Flatfoot.

spleen (splēn) [Gr. *splen*] A dark red, oval lymphoid organ in the upper left abdominal quadrant posterior and slightly inferior to the stomach; on the inferior side is the hilum, an indentation at which the splenic vessels and nerves enter or exit. The spleen is surrounded by an outer capsule of connective tissue from which strands of connective tissue (trabeculae) extend into the soft pulp (functional tissue), dividing the spleen into compartments.

The white pulp, composed of lymphocytes and follicles, forms sheaths around arterial vessels and collects in larger nodules containing germinal centers. The red pulp contains vascular sinuses and sinusoids with highly permeable walls, and spongelike splenic cords filled with macrophages and dendritic cells. The spleen is part of the mononuclear phagocytic system and its removal (splenectomy), though compensated for by the lymph nodes and liver, decreases immune function and may place the patient at increased risk for infection, esp. from *Streptococcus pneumoniae* and *Haemophilus influenzae*.

FUNCTION: In the embryo, the spleen forms both red and white blood cells; after birth, only lymphocytes are created except in severe anemia, when production of red blood cells may be reactivated. Blood enters via the splenic artery and passes through progressively smaller arterial vessels; foreign antigens are trapped in the white pulp, initiating proliferation of antigen-specific lymphocytes and antibodies. The arterioles terminate in the red pulp, where macrophages remove cell debris, microorganisms, and cells that are old, damaged, abnormal, or coated with antibody.

The vascular capacity of the spleen, 100 ml to 300 ml, is an average of 4% of the total blood, and the spleen may con-

tain 30% of the total platelets. In stressful situations, sympathetic impulses stimulate constriction of the venous sinuses, forcing most of the splenic blood into circulation. If the spleen is enlarged (splenomegaly), its vascular capacity increases dramatically, and increased contact with macrophages may cause anemia, leukopenia, and thrombocytopenia. Removal of the spleen may be necessary in patients with thrombocytopenia. Many disorders cause splenomegaly, including portal hypertension (e.g., in cirrhosis), heart failure, and certain infections. Primary disorders of the spleen, however, are rare. SEE: *lymphatic system for illus; asplenia syndrome; germinal center.*

accessory s. Splenic tissue found outside the main bulk of the organ, usually but not always within the peritoneal cavity. If the patient is asymptomatic, the accessory spleen may be found only as an incidental mass on an abdominal scan; alternatively, the condition may exacerbate certain illnesses (e.g., immune thrombocytopenic purpura).

floating s. An enlarged movable spleen that is not protected by the ribs. SYN: *splenectopia*.

sago s. A spleen having the appearance of grains of sago.

wandering s. A dislocated floating spleen.

splenadenoma (splĕn'ād-ĕ-nō'mă) [Gr. *splen*, spleen, + *aden*, gland, + *oma*, tumor] An enlarged spleen caused by hyperplasia of its pulp.

splinalgia (splĕ-nāl'jĕ-ă) [" + *algos*, pain] Neurological pain in the spleen. SYN: *splendynia*.

splenectasia, splenectasis (splĕ'nĕk-tă-zĕ-ă, splĕ'nĕk'tă-sĭs) [" + *ektasis*, dilatation] Enlargement of the spleen.

splenectomy (splĕ'nĕk'tō-mĕ) [" + *ektome*, excision] 1. Surgical removal of the spleen. 2. Obliteration of the spleen by trauma or illness (e.g., by infarction resulting from sickle cell anemia).



Because the spleen removes encapsulated bacteria from the bloodstream, its absence or removal increases the risk of many serious infections. To prevent life-threatening infections, all patients scheduled for splenectomy should be vaccinated against *Haemophilus influenzae*, *Neisseria meningococcus*, and *Streptococcus pneumoniae* about 10 days before surgery.

deficient blood elements. Symptoms and complications of underlying disorders are also treated.

After splenectomy, the patient should have an intravenous line and receive fluids, medications (including pain relievers), and blood products as prescribed. The patient should be helped to a comfortable position in bed by correctly aligning his body alignment. The abdominal assessment should include looking for abrasions or contusions, periumbilical ecchymosis, and abdominal distention, incisional bleeding, or infection or excessive drainage. Increases in the patient's abdominal girth may indicate postoperative blood loss into the abdominal cavity, bowel obstruction, or paralytic ileus. The abdomen should be auscultated for return or bowel sounds, palpated for areas of tenderness, pain, guarding, or rigidity, and percussed for hollow or dull sounds (hollowness indicates gaseous distention; dull sounds suggest intra-abdominal fluid, blood, or solid tissue). Repeat examinations of the patient should occur on a scheduled basis until postoperative stability is ensured. Fevers may suggest peritonitis; decreased urinary output, tachycardia, and hypotension may indicate third-spacing or bleeding. The patient should be assessed for restlessness, agitation, and disorientation and watched for subtle changes that indicate hypoxemia or inadequate organ perfusion. Nasogastric drainage via low or intermittent suction is administered as prescribed. Sequential laboratory studies include white blood cell counts, hemoglobin levels, serum chemistries, coagulation factors, and platelets. Significant changes from prior levels should be noted. Sudden or progressive decompensation of the patient's hemodynamic status may well necessitate reoperation. If a splenectomy patient becomes unstable, breathing should be supported with high-flow oxygen with a non-rebreather mask; and vascular access established and reinforced using a 16- or 18-gauge intravenous catheter; fluids should be administered by bolus to increase blood pressure, decrease heart rate, and increase urine output to 50 to 100 ml/hr. Blood products should be typed and cross-matched. Throughout his the hospitalization, the patient and family will require physical, emotional, informational, and in some cases, spiritual support and care. Discharge instructions should be reviewed with the patient, and a printed copy provided for reinforcement. Restrictions may be placed on heavy lifting, stretching, and sports activities for a period of 6 weeks to 6 months. Follow-up appointments should be arranged with the attending physician, surgeon, or primary health

PATIENT CARE: Preoperatively, the patient is prepared for open abdominal or laparoscopic surgery by agency/surgeon protocol, and postoperative care and concerns are explained. Blood or blood products are transfused to replace

care provider as required. Postsplenectomy patients should wear a MedicAlert device bracelet to alert future caregivers of their status.

splenectopia, splenectomy (splē'nēk-tō'pē-ā, -nēk'tō-pē) [" + *ektos*, out of place] Floating spleen.

splenelcosis (splē'nēl-kō'sīs) [" + *helkosis*, ulceration] Ulceration or abscess of the spleen.

splenemia (splē-nē'mē-ā) [Gr. *splen*, spleen, + *haima*, blood] **1.** Splenic congestion with blood. **2.** Leukemia with splenic hypertrophy.

spleneolus (splē-nē'ō-lūs) Accessory spleen.

splenic (splēn'ik) [Gr. *splenikos*] **1.** Pert. to the spleen. **2.** Suffering with chronic disease of the spleen. **3.** Surly, fretful, impatient. SYN: *splenetic*.

splenic cord A spongelike cord in the red pulp of the spleen composed of macrophages and dendritic cells. The macrophages phagocytize pathogens, cell debris, and cells that are old, abnormal, or damaged, esp. red blood cells. Phagocytosis may be increased when the spleen is enlarged (splenomegaly).

splenic nodule A concentrated mass of white pulp in the spleen. SYN: *malpighian body* (2).

splenic sinus Any of the vascular collecting channels that lead into the internal veins of the spleen. The microcirculation in the spleen is quite leaky. Some capillaries empty directly into the splenic sinuses, but others allow blood to percolate through the extracellular red pulp before it drains into the splenic sinuses and thence into the veins.

splenic vein The vein carrying blood from the spleen to the portal vein.

spleniform (splēn'ī-form) [" + L. *forma*, form] Resembling the spleen.

splenitis (splē-nī'tīs) [" + *itis*, inflammation] Inflammation of the spleen, usually as a result of infection.

ETIOLOGY: Typical causes may include viral (e.g., mononucleosis), bacterial (e.g., bartonellosis, Lyme disease), or fungal (e.g., actinomycoses) infections.

splenium (splē'nē-ūm) [Gr. *splenion*, bandage] **1.** A compress or bandage. **2.** A structure resembling a bandaged part.

s. corporis callosi The thickened posterior end of the corpus callosum.

splenius (splē'nē-ūs) A flat muscle on either side of the back of the neck and upper thoracic area. SEE: *muscle* for illus.

spleno- Combining form meaning *spleen*.
splenocele (splē'nō-sēl) [Gr. *splen*, spleen, + *kele*, tumor, swelling] **1.** A hernia of the spleen. **2.** Splenoma.

splenoceleisis (splē'nō-klī'sīs) [" + *kleisis*, closure] Friction on the surface of the spleen or application of gauze in

order to induce the formation of fibrous tissue.

splenocolic (splē'nō-kōl'ik) [" + *kolon*, colon] Pert. to the spleen and colon or reference to a fold of peritoneum between the two viscera.

splenocyte (splē'nō-sīt') [" + "'] A monocyte found in the spleen or in splenic tissue.

splenodynia (splē'nō-dīn'ē-ā) [" + *odyne*, pain] Pain in the spleen. SYN: *splenalgia*.

splenogenic, splenogenous (splē'nō-jēn'ik, splē-nōj'ēn-ūs) [" + *gennan*, to produce] Originating in the spleen.

splenography (splē-nōg'rā-fē) [" + *graphein*, to write] **1.** A radiographical image of the spleen. **2.** A treatise on or a description of the spleen.

splenoid (splē'noyd) [" + *eidos*, form, shape] Resembling the spleen.

splenolaparotomy (splē'nō-lāp'ā-rōt'ō-mē) [" + *lapara*, flank, + *tome*, incision] Incision through the abdominal wall to access the spleen.

splenology (splē-nōl'ō-jē) [" + *logos*, word, reason] The study of functions and diseases of the spleen.

splenolymphatic (splē'nō-līm-fāt'ik) [" + L. *lymphā*, lymph] Concerning the spleen and lymph nodes.

splenolysin (splē-nōl'ī-sīn) [" + *lysis*, dissolution] An antibody that destroys splenic tissue.

splenolysis (splē-nōl'ī-sīs) Destruction of splenic tissue.

splenoma (splē-nō'mā) *pl.* **splenomasmata** [" + *oma*, tumor] A splenic hamartoma. SYN: *splenocele* (2).

splenomalacia (splē'nō-mā-lā'shē-ā) [" + *malakia*, softening] Softening of the spleen.

splenomedullary (splē'nō-méd'ū-lēr'ē) [" + L. *medulla*, marrow] Concerning the spleen and bone marrow, or originating in the spleen and bone marrow. SYN: *spleno-myelogenous*.

splenomegaly (splē'nō-mē-gā'lē, -mēg'ā-lē) [" + *megas*, large] Enlargement of the spleen. Causes for splenomegaly include portal hypertension, infections (such as leishmaniasis), autoimmune diseases, and blood disorders (such as some lymphomas, leukemias, and myeloproliferative disorders). It is frequently associated with anemia, leukopenia, and/or thrombocytopenia. Splenomegaly may cause a sense of discomfort in the left upper quadrant of the abdomen, particularly after eating. SEE: *spleen*.

congestive s. Enlargement of the spleen caused by various types of venous congestion: splenic vein obstruction, systemic venous congestion (e.g., due to heart failure), or portal vein hypertension caused by cirrhosis of the liver. Blood flow through the spleen is slowed, increasing red blood cell de-

struction by macrophages (hypersplenism) and resulting in focal hemorrhages. SEE: *Banti's syndrome*.

hemolytic s. Enlarged spleen associated with hemolytic anemia. The increased rigidity of red blood cell membranes results in their increased destruction as they attempt to move from splenic cords into the vascular sinuses. SEE: *spleen*.

splenomyelogenous (splē-nō-mī'ē-lōj'ē-nūs) [*"* + *myelos*, marrow, + *genan*, to produce] Splenomedullary.

splenomyelomalacia (splē-nō-mī'ēl-ō-mā-lā'shē-ā) [*"* + *malakia*, softening] Abnormal softening of the spleen and bone marrow.

splenephric (splē'nō-nēf'rik) [*"* + *nephros*, kidney] Rel. to the spleen and kidney. SYN: *lienorenal*.

splenopancreatic (splē'nō-pān'krē-āt'ik) [*"* + *pankreas*, pancreas] Rel. to the spleen and pancreas.

splenopathy (splē-nōp'ā-thē) [*"* + *pathos*, disease, suffering] Any disorder of the spleen.

splenopexy (splē'nō-pēk'sē) [*"* + *pexis*, fixation] Artificial fixation of a movable spleen.

splenephrenic (splēn-ō-frēn'ik) [*"* + *phren*, diaphragm] Concerning the spleen and diaphragm.

splenoportography (splē'nō-por-tōg'rā-fē) [*"* + *L. porta*, gate, + *Gr. graphēin*, to write] Radiography of the spleen and portal vein after injection of a radiopaque contrast medium into the spleen.

splenoptosis (splē'nōp-tō'sis) [*"* + *ptosis*, a dropping] Downward displacement of the spleen.

splene renal (splē'nō-rē'nāl) Pert. to the spleen and kidney.

splene renal shunt Anastomosis of the splenic vein to the renal vein to enable blood from the portal system to enter the general venous circulation; performed in cases of portal hypertension.

spleno rragia (splē'nō-rā'jē-ā) [*"* + *rhegnynai*, to burst forth] Hemorrhage from a ruptured spleen.

spleno rraphy (splē-nor'ā-fē) [*"* + *rhaphe*, seam, ridge] Suture of a wound of the spleen.

spleno tomy (splē-nōt'ō-mē) [*"* + *tome*, incision] Incision of the spleen.

spleno toxin (splē'nō-tōks'in) [*"* + *toxikon*, poison] Cytotoxin having specific action on splenic cells.

splenu lus, splenu culus (splēn'ū-lūs) [*L.*, a little spleen] A rudimentary or accessory spleen.

splice (splis) To take two cut pieces and fasten them together; to link two cut segments of DNA.

spliceosome (spli'sē-ō-sōm) A multipart ribonucleoprotein complex within the nucleus of cells that splices exons and

introns from pre-messenger RNA during the regulation of protein synthesis.

splint (splint) [*MD. splinte*, a wedge] An appliance made of bone, wood, metal, plastics, composites, or plaster of Paris used for the fixation, union, or protection of an injured part of the body. It may be movable or immovable.

Agnew's s. A splint used in fractures of the patella and metacarpus.

air s. A lightweight splint used for immobilizing fractured or injured extremities. It is usually an inflatable cylinder, open at both ends, that becomes rigid when inflated, thus preventing the part confined in the cylinder from moving. SYN: *blow-up splint*; *inflatable splint*.



Because of the tendency for the air cast to straighten out the limb as it is inflated, this device should not be used to immobilize joint dislocations or fractures with gross displacement.

airplane s. An appliance usually used on ambulatory patients in the treatment of fractures of the humerus. It takes its name from the elevated (abducted) position in which it holds the arm suspended away from the body.

anchor s. A splint for fracture of the jaw, with metal loops fitting over the teeth and held together by a rod.

Balkan s. A splint used for continuous extension in fracture of the femur.

banjo traction s. A splint made out of a steel rod bent to resemble the shape of a banjo. It provides anchor points for attachments to the fingers in the treatment of contractures and fractures of the fingers.

Bavarian s. An immovable dressing in which the plaster is applied between two layers of flannel.

Bennett double-ring s. SEE: *Bennett double-ring splint*.

blow-up s. Air s.

Bond's s. A splint used for fracture of the lower end of the radius.

Bowly's s. A splint used for fracture of the shaft of the humerus.

box s. A splint used for fracture below the knee.

Cabot's s. A splint composed of a metal structure placed posterior to the thigh and leg.

Carter's intranasal s. A steel bridge with wings connected by a hinge; used for operation of a depressed nasal bridge.

coaptation s. A small splint adjusted about a fractured part to prevent over-riding of the fragments of bones; usually covered by a longer splint for fixation of entire section.

cock-up s. A static splint designed to maintain the wrist in either extension or flexion.

cylinder s. A splint constructed around an injured bone to reduce the potential for flexion contractures.

Denis Browne s. A splint used to treat talipes equinovarus (clubfoot), consisting of a curved bar attached to the soles of a pair of high-topped shoes. It is often used in late infancy and applied at bedtime. Its use generally follows casting and manipulation to reduce the deformity.

dorsal blocking s. A splint constructed on the back of the hand to inhibit full extension of one or more of the finger joints and/or the wrist.

Dupuytren's s. A splint used to prevent eversion in Pott's fracture.

dynamic s. A splint that assists in movements initiated by the patient. SYN: *functional splint*.

finger s. A padded strip of malleable metal used to immobilize a fractured finger. As an alternative, the injured finger is often "buddy taped" to an adjoining finger for support.

flail arm s. ABBR: FAS. An upper-extremity orthotic device used to provide support and limited function, consisting of a shoulder-operated harness, a volar supporting structure made of low-temperature thermoplastic material, and a terminal device that allows the arm to grasp or stabilize objects.

Fox's s. A splint used for a fractured clavicle.

functional s. Dynamic s.

Gibson walking s. A splint that is a modification of a Thomas splint.

Gordon's s. A side splint used for the arm and hand in Colles' fracture.

inflatable s. Air s.

interdental s. A rigid or flexible device or compound used to support, protect, or immobilize teeth that have been loosened, replanted, fractured, or subjected to surgical procedures.

Jones' nasal s. A splint used for the fracture of nasal bones.

Levis' s. A splint of perforated metal extending from below the elbow to the end of the palm; shaped to fit the arm and hand.

McIntire's s. A splint shaped like a double inclined plane, used as a posterior splint for the leg and thigh.

occlusal s. A device fashioned to cover the incisal and occlusal surfaces of a dental arch to stabilize the teeth, treat bruxism, or facilitate proper occlusal positioning.

opponens s. A splint designed to maintain the thumb in a position to oppose the other fingers.

padded board s. A slat of wood, typically padded on one side and covered with plastic or cloth, to which an injured extremity can be fastened to immobilize it.

permanent fixed s. A nonremovable

prosthesis firmly attached to an abutment used to stabilize or immobilize teeth. A fixed bridge may serve as a permanent fixed splint for such support.

resting pan s. Splint designed to position the fingers and stabilize the hand in a functional position with the fingers held in opposition. Also called *resting hand splint*.

static s. Any orthosis that lacks movable parts and is used for positioning, stability, protection, or support.

sugar tong s. A splint commonly used instead of a cast to immobilize a Colles' fracture after it has been reduced. The splint permits the affected arm to swell without being compressed within the confines of the cast, yet maintain its alignment. Follow up x-rays of the fracture are typically obtained 5 to 7 days after placement of the splint to make certain that adequate reduction of the fracture is maintained.

temporary removable s. One of a variety of splints used for temporary or intermittent support and stabilization of the teeth.

tenodesis s. Orthosis fabricated to allow pinch and grasp movements through use of wrist extensors. Also called *wrist-driven flexor hinge hand splint*.

Thomas s. SEE: *Thomas splint*.

traction s. A splint that provides continual traction to a midshaft lower extremity fracture.

vacuum s. A negative-pressure device used to immobilize the extremities or torso after an injury. It may be used to safely transport the injured person. The splint consists of a nylon appliance filled with Styrofoam-like beads. The appliance is fitted around the injured body part and air is removed using a negative-pressure (vacuum) pump. As air is removed, the appliance conforms to the body part without straightening the limb. SEE: *illus.*



VACUUM SPLINT



Distal neurovascular function must be monitored after splint application. If decreased circulation or neurolog-

ical involvement is noted, the splint must be loosened immediately.

Volkman's s. A splint used for fracture of the lower extremity, consisting of a footpiece and two lateral supports.

splinter (splin'tēr) [MD. *splinte*, a wedge] **1.** A fragment from a fractured bone. **2.** A slender, sharp piece of material piercing or embedded in the skin or subcutaneous tissue.

splinter hemorrhage A small linear hemorrhage under the fingernails or toenails. It may be due to subacute bacterial endocarditis.

splinting (splint'ing) **1.** Fixation of a dislocation or fracture with a splint. Splints are also used to help support weak joints, to assist actively with functional movement, to immobilize to promote healing, and to protect from injury and deformity. **2.** Involuntary tensing of muscles to limit the pain that results from moving them or rubbing them over inflamed, internal body parts.

split (splīt) [D. *splitten*, to divide] **1.** A longitudinal fissure. **2.** Characterized by a deep fissure.

split foot Cleft foot.

split hand Cleft hand.

splitting (splīt'ing) [D. *splitten*, to divide] **1.** In chemistry, the breaking up of complex molecules into two or more simpler compounds. **2.** A defense mechanism found in some children and some patients with personality disorders, in which things are represented as being either very good (because they support one's desires or behaviors) or very bad (because they are obstructive to those desires or behaviors).

split tongue A cleft or bifid tongue resulting from developmental arrest.

SpO₂ The saturation of arterial blood with oxygen as measured by pulse oximetry, expressed as a percentage. SEE: *oximetry*.

spodogenous (spō-dōj'ēn-ūs) [Gr. *spodos*, ashes, + *gennan*, to produce] Caused by waste material.

spoligotyping (spōl'i-gō-tīp'ing) [Fm. *sp(acer) oligotyping*] The use of the polymerase chain reaction to identify pathogens, such as *Mycobacterium tuberculosis*, in laboratory specimens. It relies on the detection of unique spans of repeated DNA sequences found between the active genes of the pathogen. Culture-based methods of identifying mycobacteria are slow, often taking as long as 4 to 6 weeks to identify microorganisms in sputum or blood. DNA fingerprinting requires considerable technical expertise. Spoligotyping is simpler, more economical, and a more efficient means of identifying slowly growing microorganisms. SYN: *spacer oligotyping*.

sponde (spōn-dē) Two-syllable words

that receive equal stress on each syllable.

sponde threshold [Fr., a two-syllable word with equal stress on each syllable] In audiometry, the intensity at which speech is recognized as a meaningful symbol. This is tested by presenting, through an audiometer, two-syllable words in which each symbol is accented equally. SEE: *audiometry*.

spondyl- (spōn'dīl) SEE: *spondylo-*.

spondylalgia (spōn'dil-äl'jē-ä) [Gr. *spondylos*, vertebra, + *algos*, pain] Painful condition of a vertebra.

spondylarthritis (spōn'dil-är-thrī'tis) [+ *arthron*, joint, + *itis*, inflammation] Inflammation of the joints of the vertebrae; arthritis of the spine. SEE: *spondylitis*.

spondylitic (spōn'dī-lit'ik) [+ *itis*, inflammation] **1.** A person with spondylitis. **2.** Concerning spondylitis.

spondylitis (spōn-dil-i'tis) [+ *itis*, inflammation] Inflammation of one or more vertebrae.

ankylosing s. ABBR: AS. A chronic progressive inflammatory disorder that, unlike other rheumatological diseases, affects men more often than women. It involves primarily the joints between articular processes, costovertebral joints, and sacroiliac joints, and occasionally the iris or the heart valves. Bilateral sclerosis of sacroiliac joints is a diagnostic sign. Affected persons have a high incidence of a specific human leukocyte antigen (HLA-B27), which may predispose them to the disease. Changes occurring in joints are similar to those seen in rheumatoid arthritis. Ankylosis may occur, giving rise to a stiff back (poker spine). Nonsteroidal anti-inflammatory drugs and physical therapy are the primary forms of treatment. SYN: *Marie-Strümpell spondylitis*; *rheumatoid spondylitis*.

s. deformans Inflammation of the vertebral joints resulting in the outgrowth of bone-like deposits on the vertebrae, which may fuse and cause rigid and distorted spine.

hypertrophic s. A condition in which bodies of vertebrae hypertrophy; it occurs in most people over 50. Bony changes such as facet degeneration and the formation of bone spurs commonly occur.

Kümmell's s. A traumatic spondylitis in which symptoms do not appear until some time after the injury.

Marie-Strümpell s. Ankylosing s.

rheumatoid s. Ankylosing s.

tuberculous s. Pott's disease. SEE: under *Pott, John Percivall*.

spondylizema (spōn'dil-i-zē'mä) [Gr. *spondylos*, vertebra, + *izema*, depression] Downward displacement of a vertebra caused by the disintegration of the one below it.

spondylo-, spondyl- Combining form meaning *vertebra*.

spondylodymus (spŏn'dī-lŏd'ī-mūs) [" + *didymos*, twin] Twin fetuses joined at the vertebrae.

spondylodynia (spŏn'dī-lŏ-dīn'ē-ă) [" + *odyne*, pain] Pain in a vertebra.

spondylolisthesis (spŏn'dī-lŏ-līs'thē'sīs) [" + *obliethesis*, a slipping] Any forward slipping of one vertebra on the one below it. Predisposing factors include spondylolysis, degeneration, elongated pars, elongated pedicles, and birth defects in the spine such as spina bifida. SYN: *spondyloptosis*. SEE: *retrospondylolisthesis*.

spondylolisthetic (spŏn'dī-lŏ-līs-thēt'ik) Concerning spondylolisthesis.

spondylolysis (spŏn'dī-lŏl'ī-sīs) [" + *lysis*, dissolution] The breaking down of a vertebral structure.

spondylomalacia (spŏn'dī-lŏ-mă-lă'shē-ă) [" + *malakia*, softening] Softening of the vertebrae.

spondylopathy (spŏn'dīl-ŏp'ă-thē) [" + *pathos*, disease, suffering] Any disorder of the vertebrae.

spondyloptosis (spŏn'dī-lŏ-tŏ'sīs) [" + *ptosis*, a dropping] Spondylolisthesis.

spondylopyosis (spŏn'dī-lŏ-pī-ŏ'sīs) [" + *pyosis*, suppuration] Suppuration with inflammation of a vertebra.

spondyloschisis (spŏn'dī-lŏs'ki-sīs) [" + *schisis*, a splitting] A congenital fissure of one or more of the vertebral arches. SYN: *rhachischisis*.

spondylolysis (spŏn'dī-lŏ'sīs) [Gr. *spondylos*, vertebra, + *osis*, condition] Vertebral ankylosis.

cervical s. Degenerative arthritis, osteoarthritis, of the cervical or lumbar vertebrae and related tissues. It may cause pressure on nerve roots with subsequent pain or paresthesia in the extremities. SYN: *lumbar spondylolysis*.

lumbar s. Cervical spondylolysis.

rhizomelic s. Ankylosis interfering with movements of the hips and shoulders.

spondylosyndesis (spŏn'dī-lŏ-sīn'dē-sīs) [" + *syndesis*, a binding together] Surgical formation of an ankylosis between vertebrae.

spondylotomy (spŏn'dīl-ŏt'ŏ-mē) [" + *tome*, incision] Removal of part of the vertebral column to correct a deformity. SYN: *rachitomy*.

spondylous (spŏn'dī-lūs) [Gr. *spondylos*, vertebra] Concerning a vertebra.

sponge (spŏnj) [Gr. *sphongos*, sponge]



1. Elastic, porous mass forming the internal skeleton of certain marine animals; or rubber or synthetic substance that resembles a sponge in properties and appearance. SYN: *spongia*. 2. An absorbent pad made of gauze and cotton used to absorb fluids and blood in surgery or to dress wounds. 3. Short term

for sponge bath. 4. To moisten, clean, cool, or wipe with a sponge.

abdominal s. A flat sponge from .5 to 1 in. (1.27 to 2.54 cm) thick, 3 to 6 in. (7.62 to 15.24 cm) in diameter, used as packing, to prevent closing or obstruction by intrusion of viscera, as covering to prevent tissue injury, and as absorbents.

contraceptive s. A sponge impregnated with a spermicide. It is used intravaginally during sexual intercourse as a method of contraception. SEE: *illus*. SYN: *spermicidal sponge*. SEE: *contraceptive*.

gauze s. A sterile pad made of absorbent material. It is used during surgery and in wound dressing materials.

gelatin s. A spongy substance prepared from gelatin. This nonantigenic, readily absorbable material is used esp. to stop internal bleeding (e.g., during surgery or during procedures in which blood vessels are occluded by embolization).

spermicidal s. Contraceptive s.

spongia (spŏn'jē-ă) [Gr. *sphongos*, sponge] Sponge.

spongiform (spŏn'jī-form) [Gr. *sphongos*, sponge, + *L. forma*, shape] Having the appearance or quality of a sponge. SYN: *spongioid*.

spongio- Combining form meaning *sponge*.

spongioblast (spŏn'jē-ŏ-blăst) [" + *blastos*, germ] A cell that develops with the embryonic neural tube. It is a precursor of ependymal cells and astrocytes.

spongioblastoma (spŏn'jē-ŏ-blăst-ŏ-mă) [" + " + *oma*, tumor] A glioma of the brain derived from spongioblasts.

spongiocyte (spŏn'jē-ŏ-sīt) [" + *kytos*, cell] A neuroglial cell.

spongioid (spŏn'jē-ŏyd) [" + *eidōs*, form, shape] Spongiform.

spongiolysis (spŏn'jē-ŏ-sī'tis) [" + *itis*, inflammation] Inflammation of the corpus spongiosum of the urethra.

spongy (spŏn'jē) Resembling a sponge in texture.

sponsor A mentor or supporter.

spontaneous (spŏn-tă'nē-ūs) [L.] Occurring unaided or without apparent cause; voluntary.

spontaneous breathing trial A method of assessing a patient's readiness for weaning from mechanical ventilation in which the patient is allowed to breathe on his or her own through a t-piece or while on the ventilator but with only minimal pressure support. A patient who breathes comfortably for a half an hour without support while maintaining stable oxygenation and hemodynamics can be safely disconnected from mechanical ventilation.

spontaneous intracranial hypotension A chronically recurring headache caused



CONTRACEPTIVE SPONGE

by leakage of cerebrospinal fluid (CSF) into the epidural space; it worsens when a person stands and improves on lying down. It is typically found in those with connective tissue disorders. The leakage of CSF limits the quantity of fluid in which the brain floats, drawing the brain toward the foramen magnum and base of the skull. Applying a blood patch to alleviate the leakage resolves the symptoms in most patients.

spoon [AS. *span*, a chip] Instrument consisting of a small bowl on a handle used in scooping out tissues or tumors or in measuring quantities.

sporadic (spō-rād'ik) [Gr. *sporadikos*] Occurring irregularly, alone, or without linkage to other events. SEE: *endemic; epidemic; pandemic*.

sporangiophore (spō-rān'jē-ō-for) [Gr. *sporos*, seed, + *angeion*, vessel, + *phoros*, a bearer] In microbiology, the supporting stalk for a spore sac of certain fungi.

sporangium (spō-rān'jē-ūm) A sac enclosing spores, seen in certain fungi.

spore (spor) [Gr. *sporos*, seed] **1.** A cell produced by fungi for reproduction. Spores may remain dormant yet viable for months. Cooking destroys spores, but pathogenic spores are usually inhaled rather than ingested. **2.** A resistant cell produced by bacteria to withstand extreme heat or cold or dehydration; such spores may remain viable for decades. Important spore-forming bac-

teria include the causative agents of tetanus, botulism, and gas gangrene. The spores are heat-resistant and can survive an hour of boiling, but they can be destroyed by steam under pressure (i.e., autoclave). **3.** An airborne particle (fungal, bacterial, or derived from mosses or ferns) that may trigger an allergic response when inhaled. **4.** A stage in the life cycle of some parasitic protozoa that contains infective sporozoites.

sporicide (spor'ī-sid) An agent that destroys bacterial and mold spores. Because spores are more difficult to kill than vegetative cells, a sporicide also acts as a sterilizing agent. **sporicidal** (-āl), *adj.*

sporiferous (spor-īf'ēr-ūs) [ʹ + *L. ferre*, to bear] Producing spores.

spork (spork) An adapted utensil for persons with limited upper extremity function. The distal end may swivel to allow food to remain level as a result of gravitational force. The bowl end is shaped like a spoon but has modified tines, like a fork.

sporoblast (spor'ō-blāst) [ʹ + *blastos*, germ] The structure within the oocyst of certain parasitic protozoa (*Eimeria* and *Isospora*) that gives rise to a sporocyst and eventually a spore.

sporocyst (spor'ō-sīst) [ʹ + *kystis*, sac] **1.** Any sac containing spores or reproductive cells. **2.** A sac secreted around a sporoblast by certain protozoa before spore production. **3.** A stage in the life cycle of a trematode worm usually found

in the tissues of the first intermediate host, a mollusk. It develops from a miracidium and is essentially a germinal sac containing germ cells. It gives rise to daughter sporocysts or rediae.

sporogenesis (spor'ō-jěn'ĕ-sīs) [Gr. *sporos*, seed, + *genesis*, generation, birth] The production or formation of spores. SYN: *sporogeny*; *sporogony*.

sporogenic (spor'ō-jěn'ĭk) [+ *gennan*, to produce] Having the ability of developing into spores.

sporogenous (spor'ōj'ĕ-nūs) [+ *gennan*, to produce] Concerning sporogenesis.

sporogeny (spor'ōj'ĕ-nē) Sporogenesis.

sporogony (spor'ōg'ō-nē) [+ *goneia*, generation] Sporogenesis.

sporophore (spor'ō-for) [+ *phoros*, bearing] The spore-bearing portion of an organism.

sporophyte (spor'ō-fit) [+ *phyton*, plant] The spore-bearing stage of a plant exhibiting alternation of generations.

sporoplasm (spor'ō-plāzm) [+ LL. *plasma*, form, mold] The cytoplasm of spores.

Sporothrix (spor'ō-thrĭks) A genus of fungi of the family Moniliaceae.

S. schenckii The causative agent of sporotrichosis.

sporotrichin (spor'ō'trĭ-kĭn) An antigenic substance derived from *Sporothrix* organisms and used for diagnostic purposes.

sporotrichosis (spor'ō-trĭ-kō'sĭs) [+ *thrix*, hair, + *osis*, condition] A chronic granulomatous infection usually of the skin and superficial lymph node, marked by the formation of abscesses, nodules, and ulcers and caused by the fungus *Sporothrix schenckii*. SYN: *rose-handler's disease*.

Sporozoa (spor'ō-zō'ă) [+ *zoon*, animal] A class of parasitic protozoa of the phylum Apicomplexa (apical microlobule complex), kingdom Protista. The mature forms lack a means of self-locomotion. Important genera are *Plasmodium*, *Toxoplasma*, *Cryptosporidium*, *Microsporidia*, and *Isoospora*.

sporozoan (spor'ō-zō'ăn) A protozoan belonging to the group formerly called Sporozoa.

sporozoite (spor'ō-zō'ĭt) [+ *zoon*, animal] An elongated sickle-shaped cell that develops from a sporoblast within the oocyst in the life cycle of malaria. Upon bursting of the oocyst within a mosquito, sporozoites are released into the body cavity and make their way to the salivary gland. They are introduced into human blood by a mosquito and almost immediately enter liver cells, where they go through two schizogonic divisions and then reenter the bloodstream and infect erythrocytes.

sport [ME. *sperten*, to divert] Mutation.

sports medicine SEE: *medicine, sports*.

sports vision The use of eye safety procedures, ophthalmology, optometry, and visual training to protect or enhance athletic performance.

sporular (spor'ū-lār) [L. *sporula*, little spore] Concerning a spore.

sporulation (spor'ū-lā'shūn) [L. *sporula*, little spore] 1. The production of spores, a method of reproduction in fungi, mosses, and ferns. 2. Bacterial production of spores, resistant forms that can withstand extremes of heat and cold, and dehydration.

spot (spôt) [MD. *spotte*] 1. A small surface area differing in appearance from its surroundings. SYN: *macula*. 2. Randomly collected, as in the phrase "spot" urine specimen.

ash-leaf s. White macules found on the trunk and extremities of persons with tuberous sclerosis.

Bitot's s. SEE: *Bitot's spots*.

blind s. 1. Physiological scotoma situated 15° to the outside of the visual fixation point; the point where the optic nerve enters the eye (optic disk), a region devoid of rods and cones. SEE: *scotoma*. 2. In psychiatry, the inability of an individual to have insight into his or her own personality.

blue s. Mongolian s.

Brushfield s. SEE: *Brushfield spots*.

cherry-red s. A red spot occurring on the retina in children with Tay-Sachs disease.

cold s. An area on a nuclear medicine scan in which no radioactive tracer is taken up, indicative of nonfunctioning tissue in a gland or other structure.

corneal s. Leukoma.

Fordyce's s. SEE: *Fordyce's disease*.

genital s. The area on the nasal mucosa that tends to bleed during menstruation. SEE: *menstruation, vicarious*.

hot s. 1. An area on the surface of the skin that, when stimulated, causes a sensation of warmth. 2. In a nuclear medicine scan, a region of the image that shows an abnormally high concentration of injected isotope. 3. Any location that has been radioactively contaminated.

hypnogenic s. Hypnogenic zone.

liver s. SEE: *liver spots*.

milk s. A dense area of macrophages in the omentum.

mongolian s. One of the blue or mulberry-colored spots usually located in the sacral region. It may be present at birth in Asian, American Indian, black, and Southern European infants, and usually disappears during childhood. SYN: *blue spot*. SEE: *illius*.

rose s. Rose-colored maculae occurring on the abdomen or loins in typhoid fever.

ruby s. Cherry angioma.



MONGOLIAN SPOTS

white s. Light-colored, elevated areas of various sizes occurring on the ventricular surface of the anterior leaflet of the mitral valve in endocarditis.

yellow s. Macula (3).

spot compression The application of local pressure to a region of the breast in which an anomaly was found during routine mammography. The locally imaged portion of breast tissue is magnified by compression and easier to view than the surrounding breast tissue because the volume of tissue in the image is minimized.

spotted fever A general, imprecise name for a variety of infectious diseases (including typhus and rickettsial illnesses) characterized by fever and rash. SEE: *Rocky Mountain spotted fever*.

spotting The appearance of blood-tinged discharge from the vagina, usually between menstrual periods or at the onset of labor.

spouse 1. A partner in marriage. 2. A life partner. **spousal**, *adj.*

spp *species* (plural).

sprain (sprān) [O.Fr. *espraindre*, to wring] Trauma to ligaments that causes pain and disability, depending on the degree of injury to the ligaments. In the most severe sprain, ligaments are completely torn. The ankle joint is the most often sprained. SEE: *fracture*; *strain*.



SYMPTOMS: Pain may be accompanied by heat, discoloration, and localized swelling in the affected area. Moderate to severe sprains are marked by joint laxity, reduced range of motion, and limitation of function. When the sprained ligament is contiguous with the joint capsule (e.g., anterior talofibular ligament, medial collateral ligament), swelling occurs in the acute stage. When the sprain involves other intracapsular or extracapsular ligaments (e.g., calcaneofibular ligament, anterior cruciate ligament), swelling is slight or absent in the acute stage and progressively increases.

DIAGNOSIS: X-ray examination is often indicated, to rule out an avulsion fracture of the ligament's attachment.

TREATMENT: The affected part should be treated initially with ice or other cooling agents to limit inflammation and hypoxic injury. Circumferential compression, in the form of an elastic wrap, should be applied to the joint and the limb elevated to reduce swelling. Joint range of motion should be restricted to patient tolerance through the use of immobilization devices, crutches, or both. Analgesics and nonsteroidal anti-inflammatory medications may be administered for pain and swelling. In the chronic stage of the injury, massage, intermittent compression, and muscle contractions can be used to reduce swelling.

s. of ankle Trauma to the ligaments of the ankle and foot, possibly involving tendon injury, but without an avulsion. Sprains of the lateral ligaments (most commonly the anterior talofibular ligament) account for approx. 90% of all ankle sprains. SEE: *Nursing Diagnoses Appendix*.

TREATMENT: SEE: *sprain* for treatment.



Ice should not be applied directly to the foot and ankle in patients who are elderly or who have cold allergy or circulatory insufficiency.

s. of back Overstretching of the spinal ligaments, often involving the surrounding muscles and spinal structures. Small fractures of the vertebrae are often associated.

TREATMENT: Treatment includes superficial moist heat and rest. If muscle spasm is present, muscle relaxants, nonsteroidal anti-inflammatory drugs, or both, may be prescribed. After the acute symptoms have subsided, strengthening and flexibility programs are prescribed.



If back pain develops after acute trauma, or if the patient has a known history of cancer, the patient should not be moved until the possibility of a fracture has been ruled out. Persons with a history of back pain and fever or back pain and injection drug use should be evaluated for spinal epidural abscess.

s. of foot Trauma to the ligaments of the foot not involving the ankle.

high ankle s. Syndesmotic ankle sprain.

syndesmotic ankle s. Damage to the ligamentous structures of the distal tibiofibular syndesmotic joint, resulting from dorsiflexion or external rotation of the talus within the ankle mortise, or both, which in turn causes spreading of the joint. The distal tibiofibular syndes-

mosis is formed by the anterior tibiofibular ligament, the interosseous membrane, and the posterior tibiofibular ligament. SYN: *high ankle sprain*.

ETIOLOGY: The rate of syndesmoic ankle sprains may be increased when athletes are participating on artificial surfaces, because of the increased friction between the shoe and playing surface.

SYMPTOMS: Patients may describe pain along the fibula, just superior to the lateral malleolus, that worsens during dorsiflexion or external rotation of the talus, or both.

spray (sprā) [MD. *spraeyen*, to sprinkle]

1. A jet of fine medicated vapor applied to a diseased part or discharged into the air. **2.** A pressurized container. SYN: *atomizer*. **3.** To discharge fluid in a fine stream.

pepper s. A chemical derived from chili peppers (capsaicin) that irritates the eyes, mucous membranes, and bronchi. It is commonly used by law enforcement personnel against individuals to help subdue and apprehend them.

spreader (sprēd'ēr) **1.** An instrument for distributing something evenly over a tissue or culture plate. **2.** A bacterial culture that, as it grows, spreads over the surface of the culture medium. **3.** A surgical instrument that divides and holds apart tissues or bones.

bladder-neck s. An instrument used to expose the bladder neck and prostatic cavity while doing a retropubic prostatectomy.

root canal s. In dentistry, an instrument that is pointed and of variable diameter and taper. It is used to apply force to the material used in filling a root canal.

spreading (sprēd'ing) [AS. *spraedan*, to strew] The extension of a bacterial culture on a growth medium.

spring [AS. *springan*, to jump] **1.** The season of the year that comes after winter and before summer. SYN: *vernal*. **2.** The quick movement of a body to its original position through its elasticity.

spring fever A feeling of lassitude, rejuvenation, or increased sex drive that affects some people in the spring.

spring finger Arrested movement of a finger in flexion or extension followed by a jerk. SYN: *trigger finger*.

sprout [ME. *spruten*] The new, germinated growth from a root, seed, or tuber.

alfalfa s. The initial growth from the germinated seeds of the legume alfalfa, eaten as a source of vegetable protein.

spruce (sproos) Any of the evergreen coniferous trees and shrubs of the genus *Picea* (family Piceaceae), widely found in the Northern Hemisphere. Known side effects of exposure to spruce dusts (e.g., in sawmill workers) include an increased incidence of reactive airways

diseases such as asthma. The gum of the spruce is used occasionally in complementary and alternative medicine as an expectorant.

sprue (sproo) [D. *spruwe*] **1.** In dentistry, the wax, metal, or plastic used to form the aperture(s) through which molten gold or resin will pass to make a casting; also, the part of the casting that later fills the sprue hole. **2.** A disease of the intestinal tract characterized by malabsorption, weight loss, abdominal distention, bloating, diarrhea, and steatorrhea.

celiac s. A synonym for celiac disease.

collagenous s. Infiltration of the small intestine by collagen fibers. Clinically, the disease is similar to severe celiac sprue. It is resistant to treatment with a gluten-free diet and immunosuppressive drugs.

nontropical s. Celiac s.

tropical s. A disease endemic in Southeast Asia and the Caribbean, marked by diarrhea, nutrient malabsorption, anemia, fatigue, malnutrition, and edema. It is similar pathologically to celiac sprue although the involvement of the small intestine is often more extensive. Folate, iron, and vitamin B₁₂ deficiencies are common findings. The administration of folic acid and tetracyclines for 6 to 12 months provides effective treatment. SYN: *Hill diarrhea*.

spud (spüd) [ME. *spudde*, short knife] Short, flattened, spadelike blade to dislodge a foreign substance.

Spumavirus (spū'mā-vī'rūs) A genus of retroviruses occasionally transmitted to humans after exposure to the blood or body fluids of infected animals (e.g., apes, cats, or cattle). SYN: *foamy virus*.

spun glass hair syndrome Uncombable hair syndrome.

spur [AS. *spura*, a pointed instrument] **1.** A sharp or pointed projection. **2.** A sharp horny outgrowth of the skin.

bone s. The common term for an exostosis.

calcaneal s. An exostosis of the heel, often painful and resulting in disability. SYN: *heel spur*.

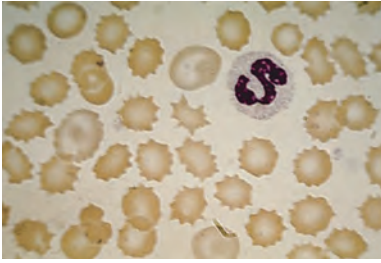
s. cell An erythrocyte with spikes caused by a membrane deformity. Spur cells are often seen in persons with alcoholic cirrhosis and congenital abetalipoproteinemia. SEE: *illus*.

femoral s. A spur sometimes present on the medial and underside of the neck of the femur.

heel s. Calcaneal s.

scleral s. Scleral fibers bordered anteriorly by the canal of Schlemm and the trabecular meshwork and posteriorly by the ciliary muscle fibers.

spurious (spū'rē-ūs) [L. *spurius*] Not true or genuine; adulterated; false.



SPUR CELLS

In severe liver disease ($\times 640$)

Spurling's maneuver, Spurling's test (spŭr'ling) Extending the patient's neck, moving the head to the affected side, and applying an axial load to the cervical spine to determine if symptoms of paresthesia or pain intensify. The maneuver is used in the physical assessment of patients with possible cervical nerve root compression. This test is not performed until the possibility of a cervical spine fracture or dislocation has been ruled out.

sputum (spŭ'tŭm) *pl. sputa* [L.] Mucus expelled from the lung by coughing. It may contain a variety of materials from the respiratory tract, including in some instances cellular debris, mucus, blood, pus, caseous material, and/or microorganisms.

CONDITIONS: A wide variety of illnesses, including typical and atypical pneumonias, tuberculosis, cancers of the lungs or bronchi, reactive airway disease, and occupational diseases of the lungs can be diagnosed with gram staining or culturing of sputum, cytological examination of sputum, or the use of special stains and microscopic techniques.



Sputum color or thickness cannot be relied on to diagnose any particular illness.

bloody s. Hemoptysis.

currant jelly s. Thick sputum mixed with clotted blood, typically seen in patients with pneumonia caused by *Klebsiella pneumoniae*.

nummular s. Sputum laden with round, coin-shaped solids.

prune juice s. Thin, reddish, bloody sputum.

rusty s. Blood-tinged purulent sputum sometimes seen in patients with pneumococcal pneumonia.

sputum cytology The examination of cells obtained from mucus in the upper or lower respiratory tract to see if cancer cells are present. SEE: *sputum specimen*.

sputum specimen A specimen of mucus

from the lungs expectorated through the mouth or obtained via tracheal suctioning with an in-line trap or bronchoscope. Sputum specimens are used to 1. identify the microorganism responsible for lung infections; 2. identify cancer cells shed by lung tumors; 3. aid in the diagnosis and management of occupational lung diseases. SEE: *postural drainage*.

PATIENT CARE: The procedure for coughing up a sputum sample is explained to the patient. The patient should increase fluid intake the evening prior to collection (unless otherwise restricted), brush his or her teeth, remove dentures, and gargle and rinse the mouth with to remove food particles. These directions may decrease the contamination of the specimen by bacteria in the mouth or the throat. Using the sterile collection container provided, the patient is instructed to take three deep breaths, then force a deep cough and expectorate into a sterile screw-top container. The specimen should be collected in the early morning before ingesting food or drink if possible. The nurse or respiratory therapist examines the specimen to differentiate between sputum and saliva, documents its characteristics (color, viscosity, odor) and volume, and records the date and time the specimen went to the laboratory and the reason the specimen was taken. Five to 10 ml of sputum is typically needed for laboratory analysis. A specimen will be rejected by the laboratory if it contains excessive numbers of epithelial cells from the mouth or throat or if it fails to show adequate numbers of neutrophils on gram staining. If the patient cannot cough up a specimen, the respiratory therapist can use sputum induction techniques such as heated aerosol (nebulization), followed in some instances by postural drainage and percussion. More invasive means of obtaining a sputum specimen are with suction or bronchoscopy. These techniques are used in intubated patients, and in those from whom an uncontaminated specimen is required.

The following procedures should be followed to obtain a specimen by suctioning: the operator should put on sterile gloves, and a face shield, mask, and gown to avoid exposure to airborne pathogens during the procedure; suction equipment, specimen containers and oxygenating devices should assembled at the bedside; the patient should be hyperoxygenated to an oxygen saturation of 99% to 100% before suctioning; suction is applied for about 10 to 15 sec, and the patient's respiratory and cardiac status are closely monitored for evidence of poor tolerance for the procedure. Sputum may also be collected

bronchoscopically, through the inner channel of the bronchoscope. Normal saline is used as an irrigating solution if needed, a technique known as bronchoalveolar lavage (BAL). BAL increases the likelihood of obtaining a diagnostic specimen, although on occasion the fluid used to irrigate the airways may contain local anesthetics, which, because they are bacteriostatic, may prevent bacteria from growing in culture. After bronchoscopy, the patient is observed closely for hypoxia and other possible complications, and oral liquids are withheld until the gag reflex has returned and the patient can swallow saliva without difficulty. All sputum specimens should be sent to the laboratory immediately and refrigerated. They should be treated as infective until proven otherwise. Appropriate isolation procedures are used for handling specimens. Common isolates from sputum specimens include *Staphylococcus aureus*, *Haemophilus influenzae*, *Streptococcus pneumoniae*, and *Moraxella catarrhalis*.

SQ *subcutaneous*.

squalamine (skwā'li-mēn") [L. *squalus*, dogfish + "] An antiangiogenic protein, originally isolated from dog sharks. It has been used to treat the neovascularization of age-related macular degeneration and to limit blood vessel proliferation needed by a cancer for it to spread and survive.

squalene (skwāl'ēn) An unsaturated carbohydrate present in shark-liver oil and some vegetable oils. It is an intermediate in the biosynthesis of cholesterol.

squam-, squamo- Combining forms meaning *scale*.

squama (skwā'mā) *pl. squamae* [L.]
1. A thin plate of bone. 2. A scale from the epidermis. SYN: *squame*.

squamate (skwā'māt) [L. *squama*, scale] Scaly.

squamization (skwā'mā-ti-zā'shūn) [L. *squama*, scale] The changing of cells into squamous cells.

squame (skwām) [L. *squama*, scale] Squama (2).

squamocellular (skwā'mō-sēl'ū-lār) [L. *squama*, scale, + *cellula*, little cell] Rel. to or having squamous cells.

squamocolumnar (skwā'mō-kō-lūm'nār) [" + "] Pertaining to any tissue in which squamous epithelium abuts columnar epithelium.

squamosa (skwā'mō'sā) *pl. squamosae* [L. scaly] 1. The squamous part of the temporal bone. 2. Scaly or platelike.

squamosal (skwā-mō'sāl) [L. *squama*, scale] Squamous.

squamous (skwā'mūs) [L. *squamosus*] Scalelike.

square knot SEE: under *knot*.

squatting position A position in which

the person crouches with legs drawn up closely in front of, or beneath, the body; sitting on one's haunches and heels.

squeeze-bottle A bottle made of a flexible, semirigid material that can be deformed by applying hand pressure to it. It is used to contain irrigating solutions, esp. those required in ophthalmology.

squill (skwīl) [Gr. *skilla*, a sea onion] An ancient remedy now rarely employed in medical practice, with therapeutic and toxic effects that mimic those of digoxin. It is derived from plants of the lily family.

squint (skwīnt) [ME. *asquint*, sidelong glance] 1. Abnormality in which the right and left visual axes do not bear toward an objective point simultaneously. SEE: *strabismus*. 2. To close the eyes partly, either to block out excess environmental light or to try to improve a refractive error of vision. 3. To be unable to direct both eyes simultaneously toward a point.

convergent s. Esotropia.

divergent s. Exotropia.

external s. Exotropia.

internal s. Esotropia.

Sr Symbol for the element strontium.

src Family of oncogenes involved in transforming normal cells to cancer cells. Src was the first transforming oncogene discovered. Proteins produced by these genes have tyrosine kinase activity. SEE: *oncogene*; *transformation*.

SRF *somatotropin releasing factor*.

sRNA *soluble ribonucleic acid*.

SRS, SRS-A *slow-reacting substance; slow-reacting substance of anaphylaxis*. SEE: *leukotriene*.

Sézary syndrome (sā'zā-rē) An advanced stage of cutaneous T-cell lymphoma in which there is widespread involvement of the skin and systemic circulation of malignant cells. SEE: *cutaneous T cell lymphoma*.

SS *saliva sample; soapsuds; sterile solution*.

ss [L. *semis*, half] 1. One half; *subjects*, as in ss of an experiment or clinical study. 2. Single strength.

SSD *source-skin distance*.

SSE *soapsuds enema*.

SSRI *selective serotonin reuptake inhibitor*

SSS *sterile saline soak*.

ST *sedimentation time*.

stab (stāb) [ME. *stob*, stick] 1. To pierce with a knife. 2. A wound produced by piercing with a knife or pointed instrument. 3. A stab culture.

stabile (stā'bīl) [L. *stabilis*, stable] Not moving; fixed.

stability 1. The condition of remaining unchanged, even in the presence of forces that would normally change the state or condition (e.g., a chemical com-

found that remains unchanged, or a mature mental state that resists change). **2.** A measure of the ability of an aerosol to remain in suspension. This is determined by the size, type, and concentration of particles, the humidity, and the mobility of the gas in which the particles are transported.

limits of s. ABBR: LOS. The largest angle from vertical that can be reached and maintained before balance is lost. In normal adults, the sagittal plane limit is 12 degrees and the coronal plane limit is 16 degrees.

PATIENT CARE: The patient with decreased limits of stability has an increased likelihood of falling when he shifts his body from side to side and therefore an increased risk of injuring himself. Physical therapy, occupational therapy, personal assistance, or assistive devices may reduce this risk.

stability testing of pharmaceuticals The monitoring of a drug's quality and effectiveness throughout its shelf life.

stabilization (stā'bīl-ī-zā'shūn) [L. *stabilis*, stable] **1.** The act of making something, such as a body structure, chemical reaction, mood state, or disease process less variable, mobile, or volatile or more rigid. **2.** The fixation of a dental restoration, the mandible, or a tooth so that it will not move, especially under such conditions as chewing, speaking, or swallowing.

dynamic s. An integrated function of neuromuscular systems requiring muscles to contract and fixate the body against fluctuating outside forces, providing postural support with fine adjustments in muscle tension. The term usually pertains to a function of the trunk, shoulder, and hip muscles and includes the lower extremity muscles when they are functioning in a closed chain.

stable (stā'bl) **1.** Firm; steady. **2.** Of an atom or a chemical compound, not subject to spontaneous radioactivity; not readily decomposing. **3.** In psychology, not subject to emotional insecurity or illness.

stable condition A term used in describing a patient's status. It indicates that the patient's disease process has not changed precipitously or significantly.

Stachybotrys atra (ā'trā) *Stachybotrys chartarum*.

Stachybotrys chartarum (stāk'ē-bō'trīs kahr-tār'ūm) [NL] A mold that grows well on wood, plaster, insulation, tobacco products, and sheetrock. Inhalation of spores has been implicated in cases of fatigue, chronic headaches, and respiratory difficulties. SYN: *Stachybotrys atra*.

stachyose (stāk'ē-ōs") A nonabsorbable carbohydrate present in beans. Because

the substance is not absorbed or metabolized in the small intestine, it passes into the colon where it is acted on by bacteria to form gas. This may be related to the flatus produced by eating beans.

stack (stāk) [ME. *stak*] **1.** To place objects directly on top of others. **2.** To perform a procedure immediately after a preceding one, without interruption or pause.

stacked shock (stākt) In emergency cardiac care, defibrillation repeated immediately without resuming basic life support or cardiopulmonary resuscitation between the electrical discharges.

stadiometer (stā'dē-ōm'ā-tēr) [Gr. *stadium* + ""] A device used to measure body height, esp. of children.

stadium (stā'dē-ūm) [Gr. *stadion*, alteration] A stage or period in the progress of a disease. SEE: *fastigium*.

staff (stāf) [AS. *staef*, a stick] **1.** An instrument to be introduced into the urethra and bladder as a guide to a surgical knife. **2.** The medical, nursing, and other personnel attached to a hospital.

attending s. The group of physicians and surgeons who have privileges to practice at a hospital.

consulting s. The physicians and surgeons attached to a hospital who may be consulted by members of the attending staff.

house s. A nonspecific term for physicians, esp. interns and residents and other allied health professionals employed as part of the medical care team for a hospital. They are supervised by the permanent hospital staff and receive training to meet the requirements for licensure or certification in their specialty. SEE: *teaching hospital*.

retention of s. Keeping employees on a stable roster without losses due to attrition, firing, or layoffs.

stage (stāj) [O.Fr. *estage*] **1.** Period in the course of a disease or in the life history of an organism. **2.** The platform of a microscope on which the slide is placed.

algid s. Cold and cyanotic skin that occurs in cholera and some other diseases.

anal s. In Freudian psychology, the second phase of sexual development, from infancy to childhood, in which the libido is concentrated in the anal region. In order of appearance, the phases of sexual development are oral, anal, phallic, and genital.

asphyxial s. The preliminary stage of Asiatic cholera.

cold s. The chill or rigor of a malarial paroxysm.

eruptive s. **1.** The period in which an exanthem appears. **2.** The middle stage in the pre-eruptive, eruptive, or post-eruptive categorization of tooth erup-

tion. It is characterized by root elongation and movement of the tooth mesially and toward the occlusal plane.

hot s. Febrile stage in a malarial paroxysm.

s. of invasion The period in which the causative agent is present in the body before the onset of a disease.

s. of latency The incubation period of an infectious disorder.

pre-eruptive s. The stage following an infection (e.g., with measles or chickenpox) before the characteristic rash appears.

resting s. Term sometimes used for a cell that is between mitotic divisions. It is not accurate because the cell is metabolically active and is producing a new set of chromosomes for the next division. SEE: *interphase*.

sweating s. The third or terminal stage of malaria during which sweating occurs.

stage 0 In situ, or noninvasive. Said of cancers.

staggers (stäg'ērzh) Vertigo and confusion that occur in decompression illness.

staging The process of classifying tumors, esp. malignant tumors, with respect to their degree of differentiation, to their potential for responding to therapy, and to the patient's prognosis.

stagnation (stäg-nā'shūn) [L. *stagnans*, stagnant] 1. Cessation of motion. 2. Stasis.

stain (stān) [O.Fr. *desteindre*, deprive of color] 1. Any discoloration. 2. A pigment or dye used in coloring microscopic objects and tissues. 3. To apply pigment to a tissue or microscopic object.

acid s. A chemical used to stain the cytoplasmic or basic components of cells.

acid-fast s. A stain used in bacteriology, esp. for staining *Mycobacterium tuberculosis*, *Nocardia*, and other species. A special solution of carbolfuchsin is used, which the organism retains in spite of washing with the decolorizing agent acid alcohol. SEE: *Ziehl-Neelsen method*.

basic s. A chemical used to add pigment to the nuclear or acidic components of cells.

Commission Certified s. A stain that has been certified by the Biological Stain Commission.

contrast s. A stain used to color one part of a tissue or cell, unaffected when another part is stained by another color.

counter s. Counterstain.

dental s. A discoloration accumulating on the surface of teeth, dentures, or denture base material, most often attributed to the use of tea, coffee, or tobacco. Many stains contain calcium, carbon, copper, iron, nitrogen, oxygen, and sulfur. Stains may be intrinsic or extrinsic. Extrinsic stains of teeth can be re-

moved, e.g. by brushing, rinsing, or sonication. Intrinsic stains cannot be removed by these methods.

differential s. In bacteriology, a stain such as Gram's stain that enables one to distinguish different types of bacteria.

double s. A mixture of two contrasting dyes, usually an acid and a basic stain.

Giemsa s. A stain that contains azure II-eosin and azure II. It is used to stain blood cells, Negri bodies, and chromosomes.

hematoxylin-eosin s. A widely used method of staining tissues for microscopic examination. It stains nuclei blue-black and cytoplasm pink.

intravital s. A nontoxic dye that, when introduced into an organism, selectively stains certain cells or tissues. SYN: *vital stain*.

inversion s. A basic stain that, when under the influence of a mordant, acts as an acid stain.

metachromatic s. A stain which causes cells or tissues to take on a color different from the stain itself.

neutral s. A combination of an acid and a basic stain.

nonspecific s. A dye added to a tissue specimen that binds to tissue indiscriminately, making it more difficult to distinguish one part from the next.

nuclear s. A basic stain that colors cell nuclei, but does not stain structures in the cytoplasm.

Perl's s. SEE: *Perl's stain*.

port-wine s. Nevus flammeus.

substantive s. A stain that is directly absorbed by the tissues when they are immersed in the staining solution.

supravital s. Stain that will color living cells or tissues that have been removed from the body.

tumor s. In arteriography, an abnormally dense area in a radiographical image caused by the collection of contrast medium in the vessels. This may be a sign of neoplastic growth.

vital s. Intravital s.

Wright's s. SEE: *Wright's stain*.

stained teeth Deep or superficial discoloration of teeth. A number of conditions cause this (e.g., exposure of the fetus to tetracycline the mother took during pregnancy or mottling caused by exposure to high levels of fluoride in drinking water). The stains may be covered by applying a resin or porcelain laminate veneer over the stain (bonding). The same technique may be used to rebuild or repair chipped or cracked teeth.

staining (stān'ing) [O.Fr. *desteindre*] The process of impregnating a substance, esp. a tissue, with pigments so that its components may be visible under a microscope.

staircase phenomenon The effect exhib-

ited by skeletal and heart muscle when subjected to rapidly repeated maximal stimuli following a period of rest. In the resulting series of contractions, each is greater than the preceding one until a state of maximum contraction is reached. SYN: *trappe*.

stair chair A device used to transport patients capable of being moved in a sitting position up or down a staircase or through narrow and confined spaces.

stalagmometer (stäl-äg-möm'è-tër) [Gr. *stalagmos*, dropping, + *metron*, a measure] An instrument for measuring the number of drops in a given amount of fluid.

stalk (stawk) [ME.] An elongated structure usually serving to attach or support an organ or structure.

body s. A bridge of mesoderm that connects the caudal end of the embryo with the chorion. It later forms the structural tissue of the umbilical cord.

optic s. The structure that connects the optic vesicle or cup to the forebrain.

pineal s. Pineal peduncle.

stalking A form of harassment in which one person repeatedly calls, follows, or writes to another even though these attempts at contact are disruptive, unwanted, or felt to be menacing by the person who is the object of attention.

stamina (stäm'î-nă) [L., thread of the warp, thread of human life] Inherent force, constitutional energy; strength; endurance.

stammering (stäm'er-îng) [AS. *stamerian*] Stuttering.

stanch (stönch) [O.Fr. *estanche*, firm] To stop the flow of blood from a wound.

standard [O.Fr. *estandard*, marking rallying place] That which is established by custom or authority as a model, criterion, or rule.

biological s. The standardization of drugs or biological products (vitamins, hormones, antibiotics) by testing their effects on animals. It is used when chemical analysis is impossible or impracticable.

reasonable patient s. In the giving of informed consent, the amount of information that a rational patient would want before making a choice to pursue or reject a treatment or procedure.

reasonable physician s. In the giving of informed consent, the amount of information that a typical physician would provide to patients before asking that they decide to pursue or reject a treatment.

standard of care 1. A statement of actions consistent with minimum safe professional conduct under specific conditions, as determined by professional peer organizations. 2. In forensic medicine, a measure with which the defendant's conduct is compared to determine negligence or malpractice. In negligence

law, the degree of care which a reasonable, prudent person should exercise under the same or similar circumstances.

standard deviation ABBR: S.D. SYMB: σ . In statistics, the commonly used measure of dispersion or variability in a distribution; the square root of the variance.

standard drink In alcohol-related research either one 12 oz serving of beer, 5 oz of wine, or 1.5 oz of distilled spirits.

standard error ABBR: S.E. A measure of variability that could be expected of a statistical constant following the taking of random samples of a given size in a particular set of observations. An important standard error is that of the difference between the means of two samples.

standardized assessment of concussion instrument, standardized assessment of concussion tool ABBR: SAC. A common battery of neurological, neuropsychological, and physical tests used to index the relative severity of sports-related traumatic brain injury (colloquially known as "concussion"). These results are also an indicator of an athlete's physical readiness to return to competition. The assessment includes tests of orientation, memory, concentration, cognition, and physical exertion.

standardized test A test that has been developed empirically, has adequate norms, definite instructions for administration, and evidence of reliability and validity.

standardized uptake value ABBR: SUV. The amount of radioactive tracer detected by a positron-emission tomographic scan during imaging of a body part. The SUV is equal to the tissue tracer taken up by the tissue of interest, divided by the injected dose of tracer, divided by the body weight of the patient. The SUV is used radiologically to distinguish benign masses from those that are cancerous; to monitor the response of cancerous masses to treatment with chemotherapy and/or radiation; and to assess the likelihood that a particular cancer will respond to treatment.

standard patient, standardized patient An actor who is trained to represent a patient during a clinical encounter with a health care provider. His or her performance is used in health-care education to help trainees recognize the signs and symptoms of diseases and how to gather and relay information during a patient interview.

standard precautions SEE: *precautions, standard*.

standard survey (of nursing home care) A regularly scheduled, on-site federal investigation of the quality of care provided in a nursing home. The survey assesses compliance with rules promulgated by Medicaid and Medicare.

standard temperature and pressure, dry ABBR: STPD. Gas volume at 0°C 760 mm Hg total pressure and partial pressure of water of zero (i.e., dry).

stand-by assistance Help provided to a person who cannot complete an activity of daily living on his own, e.g., the prevention of falls and injuries.

standing orders Orders, rules, regulations, protocols, or procedures prepared by the professional staff of a hospital or clinic and used as guidelines in the preparation and carrying out of medical and surgical procedures.

standstill A cessation of activity.

atrial s. Cessation of atrial contractions.

cardiac s. Cessation of contractions of the heart.

inspiratory s. The temporary cessation of inspiration normally following each inspiration, resulting from stimulation of proprioceptors in the alveoli of the lungs. SEE: *Hering-Breuer reflex*.

respiratory s. Cessation of respiratory movements.

ventricular s. Cessation of ventricular contractions.

Stanford-Binet IQ test (stän'fürd-bī-nā') [A. Binet, Fr. psychologist, 1857-1911; Stanford University, where the original test was revised by Louis Terman in 1916] A commonly used test of cognitive abilities. It assesses verbal and nonverbal reasoning by subtests that assess a person's language fluency, three-dimensional thought processes, and pattern recognition skills. The test was first used in the late 1800s as an approximate means of classifying and comparing intellectual function in broad groups of people. It has been revised many times since then and is used for a variety of purposes, including the classification of military recruits and the assessment of individuals thought to have subnormal intelligence.

stannic (stän'ik) [L. *stannum*, tin] 1. Resembling or containing tin. 2. In chemistry, containing tetravalent tin.

stannosis (stā-nō'sis) The deposition of tin oxide dust in the upper or lower respiratory tract. Patients may complain of irritation of the eyes, nasal passages, and other mucous membranes. Chest x-ray examination often reveals dust deposits in the lungs, but this form of pneumoconiosis does not cause lung injury or disease.

stannous (stän'ūs) [L. *stannum*, tin] 1. Resembling or containing tin. 2. In chemistry, containing divalent tin.

stannum (stän'üm) [L.] Tin.

stanazolol (stän'ō-zō-lōl") An anabolic steroid.

stapedectomy (stā'pē-dēk'tō-mē) [L. *stapes*, stirrup, + Gr. *ektome*, excision] Excision of the stapes to improve hearing, esp. in cases of otosclerosis. In pa-

tients with severely impaired hearing, the stapes is replaced by a prosthesis which is placed in the ear.

PATIENT CARE: After surgery the patient is instructed to keep head movements to a minimum and to refrain from blowing the nose or sneezing) for at least a week, and preferably two. Subsequently all nose blowing should be done with the mouth open. Dizziness or lightheadedness, bloody drainage from the ear, reduced hearing, and nose bleeding are common initial adverse effects of the surgery. To prevent falls caused by dizziness, the patient is kept at bedrest for the first day after surgery, and then gradually permitted freer ambulation, initially with someone to assist him or her. Bending, suddenly moving the head, lifting heavy weights, and straining during bowel movements should be initially avoided. The patient should not get the operated ear wet for at least 10 days postoperatively. For 30 days after surgery the patient should not fly; climb to high altitudes; dive, scuba, or snorkel (to avoid sudden pressure changes); or be exposed to loud sounds such as those produced by a jet aircraft. Sudden movements of the head should be avoided. Prior to discharge from the hospital, patient and family are taught about caring for the incision and changing the external ear dressing. The patient is warned to avoid contact with anyone with an upper respiratory infection. An appointment is scheduled for follow-up care. SEE: *Nursing Diagnoses Appendix*.

stapediotomy (stā-pē'dē-ō-tēn-ōt'ō-mē) [ʹ + Gr. *tenon*, tendon, + *tome*, incision] Division of the tendon of the stapedius muscle.

stapediovestibular (stā-pē'dē-ō-vēs-tīb'ū-lar) [ʹ + *vestibulum*, an antechamber] Rel. to the stapes and vestibule of the ear.

stapedius (stā-pē'dē-ūs) [L. *stapes*, stirrup] A small muscle of the middle ear inserted in the stapes.

stapes (stā'pez) [L., stirrup] The ossicle in the middle ear that articulates with the incus; commonly called the *stirrup*. The footplate of the stapes fits into the oval window. SEE: *ear*.

staphyledema (stāf'īl-ē-dē'mā) [ʹ + *oidema*, swelling] Swelling of the uvula.

staphylene (stāf'ī-līn) [Gr. *staphyle*, a bunch of grapes] 1. Resembling a bunch of grapes. SYN: *botryoid*. 2. Rel. to the uvula. SYN: *uvular*.

staphylo- [Gr. *staphyle*, a bunch of grapes] Combining form indicating the uvula, pert. to or resembling a bunch of grapes, or pert. to *Staphylococcus*.

staphylococcal food poisoning SEE: *under poisoning*.

staphylococcal scalded skin syndrome Infection and inflammation of the outer

layers of skin, predominantly but not exclusively found in children, elderly persons, and immunosuppressed patients. It is caused by exotoxins produced by *Staphylococcus aureus*. Initially, the skin in the affected areas is rough, with a bright red, flat rash; it then becomes wrinkled, and blisters form. The syndrome is treated with antistaphylococcal antibiotics (e.g., nafcillin), and supportive care is provided to minimize the risk of cellulitis or pneumonia. About 2% to 3% of affected patients die of the disease. In survivors, the blisters heal without scarring.

TREATMENT: Beta-lactamase-resistant synthetic penicillin is given. The bullae and denuded skin should be treated symptomatically. Uncomplicated lesions heal without scarring. **SYN:** *Ritter's disease*.

staphylococemia (stáf'íl-ō-kōk-sē'mē-ā) [" + " + *haima*, blood] The presence of staphylococci in the blood.

Staphylococcus (stáf'íl-ō-kōk'ūs) [Gr. *staphyle*, a bunch of grapes, + *kokkos*, berry] A genus of micrococci belonging to the family Micrococcaceae, order Eubacteriales. They are gram-positive and when cultured on agar produce white, yellow, or orange colonies. Some species are pathogenic, causing suppurative conditions and elaborating exotoxins destructive to tissues. Some produce enterotoxins and are the cause of a common type of food poisoning. **staphylococcal**, *adj.*

S. aureus A species that is coagulase positive, often part of resident flora of the skin and the nasal and oral cavities. These bacteria may cause suppurative conditions such as boils, carbuncles, and abscesses, as well as hospital-acquired infections, foreign body (prosthetic) infections, and life-threatening pneumonia or sepsis. Various strains of this species produce toxins, including those that cause food poisoning, staphylococcal scalded skin syndrome, and toxic shock syndrome. Some strains also produce hemolysins and staphylokinase.

S. aureus, methicillin-resistant **ABBR:** MRSA. A strain of *S. aureus* resistant to methicillin. MRSA is resistant to all penicillins and cephalosporins. Patients with MRSA infections should be isolated; appropriate mask-gown-glove precautions must be used, depending on the site of the infection. MRSA is an important cause of health care associated infections. Handwashing is essential in caring for patients who harbor this organism. **SEE:** *isolation; resistance, antibiotic*.

MRSA is resistant to most antibiotics and is usually acquired in hospitals or nursing homes, spread from patient to patient by contaminated hands, clothing, and equipment. Infection with

MRSA can range from pneumonia to flesh-eating diseases. About 0.5% of people in the U.S. have MRSA bacteria on their skin or in their noses and, although not infected, can still spread the bacteria to those at risk. The CDC estimates that 90,000 people die annually in the U.S. from hospital-acquired infections; about 17,000 of these deaths are due to MRSA. Agencies can now reduce and perhaps stop the spread of MRSA infection by following the guidelines of a pilot program of the Pittsburgh, PA, Veterans Affairs Healthcare System.

PATIENT CARE: The Pittsburgh guidelines require that all patients have their noses swabbed for MRSA on admission and discharge. Those with MRSA are isolated from other patients and are cared for in protective isolation. Noninvasive equipment is disinfected after each use with these patients, and strict hand hygiene policies are applied. As a result, there was a drop of more than 70% of MRSA cases in surgical care units. The VA, because of the Pittsburgh results, plans to expand the program to more than 150+ VA hospitals nationwide. The CDC suggests screening high-risk patients (those with weak immune systems, intensive care patients, and patients in nursing homes), rather than recommending universal screening. However, Denmark, Finland, and the Netherlands have essentially eradicated MRSA by using universal screening methods. In addition to screening everyone, agencies may provide MRSA carriers with special soap and antibiotic nasal creams. Additionally, a gene-based MRSA test provides results in hours as opposed to days.

S. aureus, vancomycin-resistant **ABBR:** VRSA. A strain of *S. aureus* resistant to vancomycin that may become a serious nosocomial pathogen. Strains with intermediate resistance to vancomycin have caused life-threatening infections. **SEE:** *Standard Precautions Appendix*.

S. capitis A coagulase-negative *Staphylococcus* species that has been isolated from infections in premature neonates and patients with endocarditis.

S. caprae A coagulase-negative, DNase-positive *Staphylococcus* species first identified in goats. It can infect humans, e.g., in prosthetic joints and injured bones.

S. epidermidis A coagulase-negative species that is part of the normal flora of the skin. It may colonize, form biofilms on, and infect prosthetic devices and indwelling catheters.

S. haemolyticus A coagulase-negative *Staphylococcus* species that primarily infects premature neonates and

patients being treated for cancer or other critical conditions. It is frequently resistant to multiple common antibiotics.

S. hominis A coagulase-negative species frequently recovered from skin. It is not consistently pathogenic for humans.

S. lugdunensis An aggressive coagulase-negative *Staphylococcus* species.

S. saprophyticus A species that is the second most common cause of urinary tract infection in young, sexually active females. It is a rare cause of pneumonia.

staphylococcus (stăf'īl-ō-kōk'ūs) *pl.* **staphylococci** Any bacterium of the genus *Staphylococcus*. SEE: *bacteria* for illus.; *Staphylococcus*.

staphyloiderma (stăf'ī-lō-dēr'mă) [*"* + *derma*, skin] Cutaneous infection with staphylococci.

staphyloidermatitis (stăf'īl-ō-derm"ă-tī'tis) [*"* + *"* + *itis*, inflammation] A dermatitis caused by staphylococci.

staphylokinase (stăf'ī-lō-kī'nās) An exotoxin produced by some strains of *Staphylococcus aureus* that may be used clinically as a thrombolytic drug.

staphylolysin (stăf'ī-lōl'ī-sīn) [*"* + *lysis*, dissolution] A hemolysin produced by staphylococci.

staphyloma, staphyloma corneae (stăf'īl-ō'mă) [Gr.] Bulging of part of the uvea (choroid, iris, or ciliary body) into a thin, stretched area of sclera. **staphylo-matous, adj.**

anterior s. Globular enlargement of the anterior part of the eye. SYN: *keratoglobus*.

ciliary s. Staphyloma in the region of the ciliary body.

equatorial s. Staphyloma in the equatorial region of the eye.

intercalary s. Staphyloma in the region of the union of the sclera with the periphery of the iris.

partial s. Staphyloma that extends in one direction, displacing the pupil. The remainder of the cornea is clear.

posterior s. A bulging of the sclera backward.

total s. An opaque, protuberant scar found in place of the cornea. It is caused by a perforation of the cornea resulting in poor vision, increased tension, and rupture of thin scar. Treatment involves incision, excision, and ablation.

uveal s. The protrusion of any portion of the uvea through the sclera.

staphylopharyngorrhaphy (stăf'ī-lō-făr'in-gor'ă-fē) [*"* + *"* + *rhaphe*, seam, ridge] Any of several different operations on the soft palate and uvula.

staphyloplasty (stăf'ī-lō-plăs'tē) [*"* + *plassein*, to form] Plastic surgery of the uvula or soft palate.

staphylorrhaphy (stăf'īl-or'ă-fē) [*"* +

rhaphe, seam, ridge] Suture of a cleft palate.

staphylootomy (stăf'ī-lōt'ă-mē) [Gr. *staphylo-*, excision of the uvula]

1. Amputation or incision of the uvula.
2. Excision of a staphyloma.

staphylotoxin (stăf'ī-lō-tōk'sin) [Gr. *staphyle*, a bunch of grapes, + *toxikon*, poison] A toxin elaborated by one of the staphylococci, esp. *S. aureus*. Among some of the toxins produced are an enterotoxin, a cause of food poisoning, and exotoxins, including a hemotoxin that lyses red blood cells, a dermonecrotic toxin, toxic shock syndrome toxin-1, and leukocidins.

staple food, staple Any food that supplies a substantial part, at least 25% to 35%, of the caloric requirement and is regularly consumed by a certain population.

stapling (stăp'ling) In surgery, a means of fastening tissues to one another with C-shaped clips. Staples are made of either titanium or an absorbable polymeric material. Stapling can usually be performed more rapidly than suturing. SEE: *illu.*



STAPLED INCISION

gastric s. The surgical restriction of the outlet of the stomach (gastric cardia); used as a treatment for obesity in morbidly overweight patients. The procedure has many potential side effects, including esophagitis, vitamin deficiencies, and stenosis of the operative site.

star [AS. *steorra*] Aster.

lens s. A starlike structure developing in the lens of the eye as a result of unequal growth of lens fibers.

starburst (stăr'būrst) A visual disturbance in which brilliant flashes are seen around light sources. It is an occasional complication of refractive keratoplasty on the eye.

starch [AS. *stercan*] Plant polysaccharides composed of glucose that are digestible by humans. Staple grains often comprise 50% to 58% of caloric intake. Salivary and pancreatic amylases hydrolyze starches to dextrin and maltose. These in turn are hydrolyzed to glucose, which is absorbed in the bloodstream.

Glucose not immediately needed for energy is converted into glycogen and stored in the liver and muscle.

animal s. Glycogen.

corn s. Starch obtained from ordinary corn or maize (*Zea mays*). It is used as a dusting powder and an absorbent and is a constituent in many pastes and ointments. It is widely used in industry and as a food.

starch-iodine test A test for the presence of starch. When an iodine solution is applied to a substance or material that contains starch, a dark blue color appears.

stare (stār) [AS. *starian*] To gaze fixedly at anyone or anything.

star excursion balance test A test of dynamic stability used to assess function of the lower extremity. The patient stands on the test leg and reaches as far as possible in eight directions 45° apart (anterior, anteromedial, medial, posteromedial, posterior, posterolateral, lateral, and anterolateral) without using the reaching leg as a source of support. Scores are determined based on the distance reached in each direction.

Stargardt disease (stār'gärt) [Karl Bruno Stargardt, Ger. ophthalmologist, 1875–1927] An autosomal-recessive form of macular degeneration, marked by progressive central visual loss beginning in childhood or adolescence and worsening in middle age. SYN: *fundus flavimaculatus*.

Star of Life symbol The symbol designated by the Department of Transportation (DOT) to represent providers of emergency medical services (EMS). It is displayed on EMS vehicles and outside the emergency departments of hospitals. SEE: *illus.*



STAR OF LIFE

EMERGENCY MEDICAL CARE SYMBOL

Starling's law [Ernest Henry Starling, Brit. physiologist, 1866–1927] A law that states that the force of blood ejected by the heart is determined primarily by

the length of the fibers of its muscular wall (i.e., an increase in diastolic filling lengthens the fibers and increases the force of muscular contraction).

starter A pure culture of bacteria or other microorganism used to initiate a particular fermentation, as in the making of cheese.

star test pattern In radiography, a test to evaluate the condition of the focal spot of the x-ray tube.

startle (stār'tēl) [ME. *sterten*, stand up stiffly; move quickly] A response to a sudden stimulus marked by jerking body movements and some or all of the following: defensive posture, tremors, sweating, widened pupils, and a temporary increase in pulse and respiratory rates.

startle syndrome A rare, autosomal dominant neurological disorder in which affected persons have either brisk reflexes or sudden loss of consciousness with muscular rigidity when suddenly stimulated (e.g., by a loud noise or bright light). Treatment with benzodiazepines, such as clonazepam, is often beneficial.

starvation (stār-vā'shūn) [AS. *steorfan*, to die] **1.** The condition of being without food for a long period of time. When everything but air and water is withheld, the sequence of events is as follows: (1) hunger, beginning about 4 hr after the last meal, accompanied by gastric contraction and general restlessness, becoming more acute periodically, esp. at times when meals were customarily taken; (2) utilization of glycogen stored in the liver and muscles; (3) utilization of stored fat; (4) loss of weight; (5) spells of nausea and diminishing acuteness of the sensation of hunger; (6) destruction of body protein. The greatest loss of weight is in the fatty tissues, spleen, and liver. **2.** The condition in which the supply of a specific food is below minimum bodily requirements, such as protein starvation. SEE: *kwashiorkor*. **3.** The condition resulting from failure of the body to digest and absorb essential foodstuffs. SEE: *deficiency disease*; *diet*; *dietetics*.

stasimorphia, stasimorphy (stā'si-mor'fē-ā, -fē) [ʹ + *morphe*, form] A deformity caused by the failure to develop and grow.

stasis (stā'sis) [Gr. *stasis*, a standing] Stoppage of the normal flow of fluids, as of the blood or urine, or feces. SYN: *stagnation* (2).

diffusion s. Stasis with diffusion of lymph or serum.

intestinal s. Ileus.

venous s. Stasis of blood caused by venous congestion.

stat (stāt) [L., *statim*] Immediately.

-stat (stāt) A suffix used in pharmacology to designate an enzyme inhibitor.

state [L. *status*, condition] **1.** A condi-

tion. **2.** A mode or condition of being. **3.** Status. Particular states are listed under the first word. SEE: e.g., *dream state*; *locked-in state*; *persistent vegetative state*.

State Children's Health Insurance Program ABBR: SCHIP. A state-based program providing health insurance for children whose parents have no private insurance and have incomes that exceed eligibility limits for Medicaid.

state of matter The condition in which matter exists under specified kinetic conditions (e.g. the pressure and temperature). All matter is in one or more states at any time: solid, liquid, gas, or plasma.

statement, consensus A comprehensive summary of the opinions of a panel of experts about a particular scientific, medical, nursing, or administrative issue. Its purpose is to provide guidance to health care professionals, esp. on controversial or poorly understood aspects of care.

statement, position The official attitude assumed by a professional organization regarding an important health care topic. Position statements reflect care standards proposed by the organization and are typically updated regularly.

static (stăt'ĭk) [Gr. *statikos*, causing to stand] At rest; in equilibrium; not in motion.

static acoustic impedance ABBR: Z_a . The opposition to the passage of sound through the external auditory canal.

static balance Static equilibrium.

static equilibrium The ability to maintain a steady position of the head and body in relation to gravity; it is integrated with the equilibrium of movement, or dynamic equilibrium. SYN: *static balance*.

static reaction One of the postural reflex responses important to standing and walking. Included are local static reactions acting on individual limbs, segmental static reactions linking the extremities together, and general static reactions to the position of the head in space.

statics (stăt'ĭks) The study of matter at rest and of the forces bringing about equilibrium. SEE: *dynamics*.

statim (stăt'ĭm) [L.] ABBR: stat. Immediately; at once.

statins (stă'tĭnz) Any of the drugs from the class known as 3-hydroxy-3-methylglutaryl coenzyme A (HMG CoA) reductase inhibitors. These drugs have powerful lipid-lowering properties. The names of drugs in this class all end in "-statin" (e.g., atorvastatin, pravastatin, lovastatin, and simvastatin). Drugs from this class reduce the risk of myocardial infarction and stroke.

station (stă'shŭn) [L. *statio*, standing] **1.** The manner of standing. **2.** A stop-

ping place. **3.** In obstetrics, the relationship in centimeters between the presenting part and the level of the ischial spines. SEE: *forceps*.

aid s. A site in the army for collecting the wounded in battle.

dressng s. A temporary station for soldiers wounded during combat.

rest s. A temporary relief station for the sick on a military road or railway.

stationary (stă'shŭn-ēr-ē) [L. *stationarius*, belonging to a station] Remaining in a fixed condition.

statistical (stă-tĭs'tĭ-kāl) Pert. to statistics.

statistical reasoning Reasoning from combinations of data to arrive at conclusions about what is true, false, likely, or improbable.

statistical significance Numerical meaningfulness; the likelihood that the results of a study are accurate, true, and valid.

statistics (stă-tĭs'tĭks) [LL. *statisticus*] The systematic collection, organization, analysis, and interpretation of numerical data pert. to any subject. SEE: *Bayes' theorem*; *statistical significance*.

medical s. Statistics pert. to medical sciences, esp. data pert. to human disease.

morbidity s. Statistics pert. to sickness.

population s. Vital statistics

statoacoustic (stăt''ō-ă-koo'stĭk) [Gr. *statos*, placed, + *akoustikos*, acoustic] Concerning balance and hearing.

statoconia (stăt''ō-kō'nē-ă) ['' + *konos*, dust] Otolith.

statokinetic (stăt''ō-kĭn-ēt'ĭk) ['' + *kinetikos*, moving] Pert. to reactions of the body produced by movement.

statolith (stăt''ō-lĭth) ['' + *lithos*, stone] Otolith.

statometer (stă-tŏm'ēt-ēr) ['' + *metron*, a measure] An instrument for measuring the amount of abnormal protrusion of the eye.

stature (stăt'ūr) [L. *statura*] The height of the body in a standing position.

short s. Body height at a specified age below the level obtained at that age by 70% of the population. A number of diseases, including hormonal, nutritional, and intrauterine growth retardation, may cause this condition. It is important to determine the cause and initiate appropriate therapy as soon as possible.

tall s. Unusually great height, typically considered to be greater than 200 cm in men and 180 cm in women. This condition is usually familial and may be prevented with estrogens or testosterone, depending on gender of patient.

status (stă'tŭs) *pl.* **statuses** [L.] A state or condition.

s. asthmaticus Persistent and intractable asthma.

s. dysraphicus A condition resulting from imperfect closure of the neural tube of the embryo.

s. epilepticus Continuous seizure activity without a pause, i.e., without an intervening period of normal brain function. Status can include two back-to-back seizures without a lucid interval or any seizure lasting more than 5 to 10 min.

estrogen receptor s. The presence or absence of a receptor to the hormone estrogen on breast cancer cells. Tumors that possess receptors either to estrogen alone or to both estrogen and progesterone are more responsive to estrogen-blocking agents such as tamoxifen than are tumors that lack these receptors.

mental s. The functional state of the mind as judged by the individual's behavior, appearance, responsiveness to stimuli of all kinds, speech, memory, and judgment.

s. migrainosus Continuous or daily unilateral, throbbing, and disabling headaches that do not improve with standard therapies for migraine.

s. panicus A panic attack that does not subside, but persists for many hours, days, or weeks without remission.

performance s. A measure of the overall health and functional capability of a patient.

progesterone receptor s. The presence or absence of receptors to the steroid hormone progesterone on breast cancer cells. Tumors that possess receptors to estrogen, to progesterone, or to both are more responsive to hormone-blocking agents, such as tamoxifen, than are tumors that lack these receptors.

s. verrucosus The defective development of the cerebral gyri with many small gyri. This gives a warty appearance to the surface of the brain.

status syndrome The name for the observation that the health of individuals and communities improves with increased socioeconomic status. Health and life expectancy improve gradually and consistently with increases in social position. The poorest, least educated people in Western societies have the worst health (in aggregate). Consistently better health is found with graded increases in social class.

statute Any law enacted by a state legislature.

statute of repose Legal protection from prosecution or damages that result from the failure of a project completed in the distant past. A statute of repose protects participants in the project (for example, a heart valve manufacturer for its old, currently obsolete heart valves) for a specified number of years after the

valve is no longer made, sold, or used in patient care.

Repose statutes differ from statutes of limitation. A statute of limitations provides protection to the valve manufacturer if an injured patient fails to file a claim of damages some number of months after being injured by the operation to implant it. The statute of repose provides the valve maker with an independent protection that states, in essence, that once a sufficient time has passed, the manufacturer has no ongoing relationship with its old products.

statutes of limitations Federal and state laws that set maximum time limits in which lawsuits can be brought and actions, claims, or rights can be enforced. No legal action can be brought outside the time allowed by law even if the person or entity has a claim or cause of action. In medical negligence claims, the statute usually is in effect from the time the wrong occurred or from the time it was or should have been discovered. Time limitations vary from state to state.

stauroplegia (staw'rō-plē'jē-ā) [*"* + *plege*, stroke] Alternate hemiplegia.

stay (stā) [ME.] A postponement of an administrative or a judicial ruling.

stay-time restriction The maximum amount of time that a person should spend in the presence of a radioactive object or radioactive patient.

S.T.D. 1. *sexually transmitted disease.*
2. *skin test dose.*

steady state A dynamic equilibrium in which construction and destruction are balanced. In physiology, the condition in which energy inputs equal expended energy (e.g., in which nutrition equals metabolism).

steal (stēl) The deviation of blood flow from its normal course or rate of flow.

hand ischemic s. Deprivation of blood flow to the radial artery, after an arteriovenous access (i.e., for hemodialysis) has been surgically placed in a patient's arm. If blood flow to the hand is not restored, the limb may become cold, painful, pale, or gangrenous.

intracerebral s. The shunting of blood from ischemic to well-supplied regions of the brain, producing overperfusion of the unaffected tissue and underperfusion of the ischemic tissue.

subclavian s. SEE: *subclavian steal syndrome.*

steam (stēm) [AS. *steam*, vapor] 1. The invisible vapor into which water is converted at the boiling point. 2. The mist formed by condensation of water vapor. 3. Any vaporous exhalation.

steam tent An obsolete device formerly used to encourage the inhalation of vapors (e.g., in respiratory diseases such as croup or cystic fibrosis).

steapsin (stē-āp'sin) [Gr. *stear*, fat, + *pepsis*, digestion] Pancreatic lipase.

stearate (stē'ā-rāt) An ester or salt of stearic acid.

stearic acid (stē-ār'ik) [Gr. *stear*, fat] A monobasic fatty acid, $C_{18}H_{36}O_2$, occurring naturally in plants and animals. It is used in the manufacture of soap and pharmaceutical products such as glycerin suppositories.

steariform (stē-ār'i-form) [" + *forma*, shape] Resembling fat.

stearin (stē'ā-rin) [Gr. *stear*, fat] A white crystalline solid in animal and vegetable fats; $C_3H_5(CH_2)_6COOH$; any of the esters of glycerol and stearic acid, specifically glyceryl tristearate. One of the commonest fats in the body, esp. the solid ones. It breaks down into stearic acid and glycerol.

stearopten(e) (stē'ā-rōp'tēn) [" + *ptenos*, volatile] The more solid portion of a volatile oil as distinguished from the more fluid portion or oleoptene. Menthol and thymol are examples.

steatitis (stē'ā-tī'tis) [" + *itis*, inflammation] Inflammation of adipose tissue.

steato- [Gr. *steatos*, fat] Combining form meaning fat. SEE: *adipo-*; *lipo-*.

steatocystoma multiplex (stē'ā-tō-sīs-tō'mā) A skin disorder marked by the development of many sebaceous cysts.

steatogenous (stē'ā-tōj'ēn-ūs) [Gr. *steatos*, fat, + *gennan*, to produce] 1. Causing fatty degeneration. 2. Producing any sebaceous gland disease.

steatolysis (stē'ā-tōl'ī-sis) [" + *lysis*, dissolution] 1. The process by which fats are first emulsified and then hydrolyzed to fatty acids and glycerin preparatory to absorption. 2. The decomposition of fat. SYN: *lipolysis*.

steatolytic (stē'ā-tō-lit'ik) Concerning steatolysis.

steatoma (stē'ā-tō'mā) [" + *oma*, tumor] A fatty tumor. SEE: *epidermoid cyst*; *lipoma*.

steatomatous (stē'ā-tō'mā-tūs) The presence of multiple sebaceous cysts.

steatonecrosis (stē'ā-tō-nē-kro'sis) [" + *nekros*, corpse, + *osis*, condition] Necrosis of fatty tissue.

steatopathy (stē-ā-tōp'ā-thē) [" + *pathos*, disease, suffering] Disease of the sebaceous glands of the skin.

steatopygia (stē'ā-tō-pij'ē-ā) [" + *pyge*, buttock] Abnormal accumulation of fat on the buttocks, occurring more frequently in women than in men.

steatorrhea (stē'ā-tō-rē'ā) [Gr. *steatos*, fat, + *rhoia*, flow] 1. Increased secretion of fat from the sebaceous glands of the skin. SYN: *seborrhea*. 2. Fatty stools, as seen in some malabsorption syndromes. Stains, such as Sudan stain, can be used to demonstrate fat in stool. Precise measurements of the quantity of fat in stools can be made with a 72-hr

stool collection. During the collection the patient must eat at least 100 g of dietary fat each day. The excretion of more than 7 g/day of fat is abnormal, that is, diagnostic of fat malabsorption. SYN: *fatty stool*.

s. simplex Excessive secretion of the sebaceous glands of the face.

steatosis (stē'ā-tō'sis) [" + *osis*, condition] 1. Fatty degeneration. 2. Disease of the sebaceous glands.

steerable Capable of being maneuvered, driven, or positioned into a specific anatomical location. Said of medical devices such as those advanced into the body by catheters.

stegnosis (stēg-nō'sis) [Gr. *stegenosis*, obstruction] 1. Checking of a secretion or discharge. 2. Stenosis. 3. Constipation. **stegnotic**, *adj.*

stegnotic (stēg-nōt'ik) Bringing about stegnosis. SYN: *astringent*.

Stegomyia (stēg'ō-mī'ē-ā) A subgenus of mosquito of the genus *Aedes*, family Culicidae, capable of transmitting many diseases to humans, including dengue, yellow fever, filariasis, and others.

Steinert's disease (stīn'ērts) [Hans Steinert, Ger. physician, b. 1875] A dominantly inherited disease marked by muscular wasting, decreased muscular tone, and cataracts, among other findings. SYN: *myotonia dystrophica*.

Stein-Leventhal syndrome (stīn-lēv'ēnthāl) [Irving F. Stein, Sr., U.S. gynecologist, b. 1887; Michael L. Leventhal, U.S. obstetrician and gynecologist, 1901–1971] Chronic anovulation in the setting of obesity, hyperinsulinemia, type 2 diabetes mellitus, lipid abnormalities, hirsutism, infertility, and ovarian cysts. SYN: *polycystic ovary syndrome*.

Steinmann's extension (stīn'mānz) [Fritz Steinmann, Swiss surgeon, 1872–1932] Traction applied to a limb by applying weight to a pin placed through the bone at right angles to the direction of pull of the traction force.

Steinmann pin A metal rod used for internal fixation of the adjacent sections of a fractured bone.

steinstrasse Tiny fragments of stone that remain in the ureters after lithotripsy, causing obstruction to the flow of urine, persistent pain, or bleeding.

stella (stēl'ā) [L.] Star.

s. lentis hyaloidea Posterior pole of the crystalline lens of the eye.

s. lentis iridica Anterior pole of the crystalline lens of the eye.

stellate (stēl'āt) [L. *stellatus*] Star-shaped; arranged with parts radiating from a center.

stellectomy (stēl-lēk'tō-mē) [" + *ektome*, excision] The surgical removal of the stellate ganglion.

Stellwag's sign (stēl'vāgs) [Carl Stellwag von Carion, Austrian oculist, 1823–

1904] Widening of the palpebral aperture with absence or lessened frequency of winking, seen in Graves' disease.

stem [AS. *stemn*, tree trunk] **1.** Any stalklike structure. **2.** To derive from or originate in.

stem cell factor ABBR: SCF. A cytokine that influences the development of sperm and egg cells, the production of melanin, and mast cell development. It is a glycoprotein.

steno- [Gr. *stenos*, narrow] Combining form meaning *narrow* or *short*.

stenobregmatic (stĕn"ō-brĕg-măt'ĭk) [" + *bregma*, front of head] A term applied to a skull with narrowing of the upper and frontal portions.

stenocephaly (stĕn"ō-sĕf'ă-lĕ) [" + *kephale*, head] Narrowness of the cranium in one or more diameters.

steno-compressor (stĕn"ō-kōm-prĕs'or) [" + L. *compressor*, that which presses together] An instrument for compressing Stensen's ducts to stop the flow of saliva.

steno-pa-ic, steno-pe-ic (stĕn-ŏ-pă'ĭk, -pĕ'ĭk) [Gr. *stenos*, narrow, + *ope*, opening] Provided with a narrow opening or slit, esp. denoting optical devices to protect against snow blindness.

stenosal (stĕ-nŏ'săl) [Gr. *stenos*, narrow] Stenotic.

stenosis (stĕ-nŏ'sĭs) [Gr., act of narrowing] The constriction or narrowing of a passage or orifice. **stenosed, stenotic, adj.**

ETIOLOGY: This may result from embryonic maldevelopment, hypertrophy and thickening of a sphincter muscle, inflammatory disorders, or excessive development of fibrous tissue. It may involve almost any tube or duct.

aortic s. An impairment of blood flow from the left ventricle to the aorta due to aortic valve disease or obstructions just above or below the valve. Stenosis may be congenital or secondary to diseases of adolescence or adulthood (e.g., rheumatic fever or fibrocalcific degeneration of the valve). It is the most common cardiac valve dysfunction in the U.S. SYN: *aortostenosis*. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: Many patients with mild or moderate aortic stenosis (e.g., with a valve area that is more than 1 cm² or a valve gradient that is less than 50 mm Hg) have no symptoms and are unaware of their condition. A heart murmur is usually heard on physical examination of the patient. This murmur is best heard at the right second intercostal space during systole. Palpation of the arteries in severe aortic stenosis may reveal a delayed and weakened pulse (e.g., at the carotids). The heart's apical impulse may be laterally and inferiorly displaced as a result of left ventricular hypertrophy. Alarming symp-

toms include anginal chest pain, syncope, and dyspnea on exertion. When these occur, surgery to repair or replace the diseased valve are necessary.

PHYSICAL FINDINGS: Transthoracic echocardiography (TTE) diagnoses aortic stenosis and helps to evaluate its severity, determine left ventricular size and function, and detect other valvular disease.

TREATMENT: If the aortic valve area is significantly narrowed (i.e., < 0.8 cm²) or the patient has experienced symptoms of heart failure or syncope, percutaneous balloon aortic valvuloplasty or aortic valve replacement may be necessary.

PATIENT CARE: A history of related cardiac disorders is obtained. Cardiopulmonary function is assessed regularly by monitoring vital signs and weight, intake, and output for signs of fluid overload. The patient is monitored for chest pain, which may indicate cardiac ischemia, and the electrocardiogram is evaluated for ischemic changes. Activity tolerance and fatigue are assessed.

After cardiac catheterization, the insertion site is checked according to protocol (often every 15 min for 6 hr) for signs of bleeding; the patient is assessed for chest pain, and vital signs, heart rhythm, and peripheral pulses distal to the insertion site are monitored. Problems are reported to the cardiologist.

Desired outcomes for all aortic valve surgeries include adequate cardiopulmonary tissue perfusion and cardiac output, reduced fatigue with exertion, absence of fluid volume excess, and ability to manage the treatment regimen. Patients with aortic stenosis (with or without surgical repair) require prophylactic antibiotics before invasive procedures (including dental extractions, cleanings) because of the risk they pose for bacteremia and infective endocarditis.

catrictorial s. Stenosis resulting from any contracted scar.

coronary artery s. A physical obstruction to the flow of blood through the epicardial arteries, usually due to atherosclerotic plaque.

infantile hypertrophic pyloric s. Pyloric stenosis.

lumbar spinal s. A narrowing of the spinal canal caused by degenerative or traumatic changes at the level of the lumbar vertebrae. This condition causes back pain, often associated with pain that radiates into the legs, esp. when the patient is standing. Sitting often relieves the pain. The diagnosis is performed by spinal imaging (e.g., computed tomography or magnetic resonance imaging scanning). Treat-

ments include physical therapy, braces, analgesic agents, and spinal surgery.

mitral s. SEE: *mitral stenosis*; *Nursing Diagnoses Appendix*.

pulmonary s. Narrowing of the opening into the pulmonary artery from the right cardiac ventricle.

renal artery s. An obstruction in one or both arteries that supply the kidneys; a relatively uncommon cause of hypertension. In young women the cause is usually fibromuscular dysplasia of one or both arteries. In older people the cause is usually atherosclerosis.

TREATMENT: Patients may be treated medically with standard anti-hypertensive drugs, or, in some cases, with renal artery angioplasty or bypass surgery. SEE: *illius*.

subaortic s. A congenital constriction of the aortic tract below the aortic valves. SEE: *hypertrophic cardiomyopathy*.

tricuspid s. Narrowing of the opening to the tricuspid valve.

stenostomia (stĕn'ō-stō'mĕ-ā) [Gr. *stenos*, narrow, + *stoma*, mouth] Narrowing of the mouth.

steno thorax (stĕn'ō-thō'rāks) [" + *thorax*, chest] An unusually narrow thorax.

Stenotrophomonas maltophilia (stĕn'ō-trō-fō-mōn'as) A gram-negative, motile, strictly anaerobic bacillus of the family Pseudomonadaceae. It may cause pneumonia, meningitis, endocarditis, conjunctivitis, wound infections, and infections related to the use of central venous catheters. Trimethoprim-sulfamethoxazole is used to treat infections with this organism. This species was formerly called *Pseudomonas maltophilia* and *Xanthomonas maltophilia*.

Stensen's duct (stĕn'sĕns) [Niels Stensen, Danish anatomist, 1638–1686] The duct leading from the parotid gland to the oral cavity. SYN: *parotid duct*.

stent (stĕnt) [Charles R. Stent, Brit. dentist, 1845–1901] 1. Originally a compound used in making dental molds. 2. Any material or device used to hold tissue in place, to maintain open blood vessels, or to provide a support for a graft or anastomosis while healing is taking place.

airway s. A tube or catheter used as a scaffold to keep an airway open. It is used, e.g., to maintain the patency of a trachea or bronchus that has collapsed as a result of compression by neighboring tissues.



intraluminal coronary artery s. A stent made of an inert material, usually metallic, with a self-expanding mesh introduced into the coronary artery. It is used to prevent lumen closure (restenosis) following bypass surgery and to treat acute vessel closure after angioplasty. SEE: *illius*.

urologic s. A biologically compatible tube inserted into the ureter or urethra to relieve or prevent urinary tract obstruction. Stents are commonly placed in the urinary tract after endoureterotomy and endopyelotomy.

step 1. To move one foot in relation to the other, as in walking. **2.** A series of rests for the foot, used for ascending or descending. **3.** A single movement or act within a sequence of behaviors necessary for completing a task.

rate-determining s. The chemical reaction in a series of sequential reactions that takes the longest to occur.

Rönne's s. A steplike defect in the visual field.

step-down unit A unit to which stable patients are sent either after being cared for in intensive care units (ICUs) or instead of receiving care in ICUs.

Stephan's curve A mathematical model used to determine the impact of ingested foods on the pH of dental plaque and subsequent caries formation. Decalcification of teeth occurs when the pH in the oral cavity is less than 5.5.

DENTAL IMPLICATIONS: To reduce decalcification of tooth surfaces, patients should be encouraged to consume foods that do not result in a drop in plaque pH.

steradian (stĕ-rā'dĕ-ān) The unit of measurement of solid angles. It encloses an area on the surface of a sphere equal to the square of the radius of the sphere.

sterc- [L. *stercus*, dung] Combining form meaning *feces*. SEE: *scato-*.

stercobilin (stĕr'kō-bī'lĭn) [" + *bilis*, bile] A brown pigment derived from the bile, giving the characteristic color to feces. SEE: *urobilin*.

stercobilinogen (stĕr'kō-bī-lĭn'ō-jĕn) A colorless substance derived from urobilinogen. It is present in the feces and turns brown on oxidation.

stercolith, stercorolith (stĕr'kō-lĭth) [" + Gr. *lithos*, stone] A fecal stone.

stercoraceous (stĕr'kō-rā'shūs) [L. *stercoraceus*] Having the nature of, pert. to, or containing feces.

stereo-, stere- Combining form meaning *solid*, *having three dimensions*, or *firmly established*.

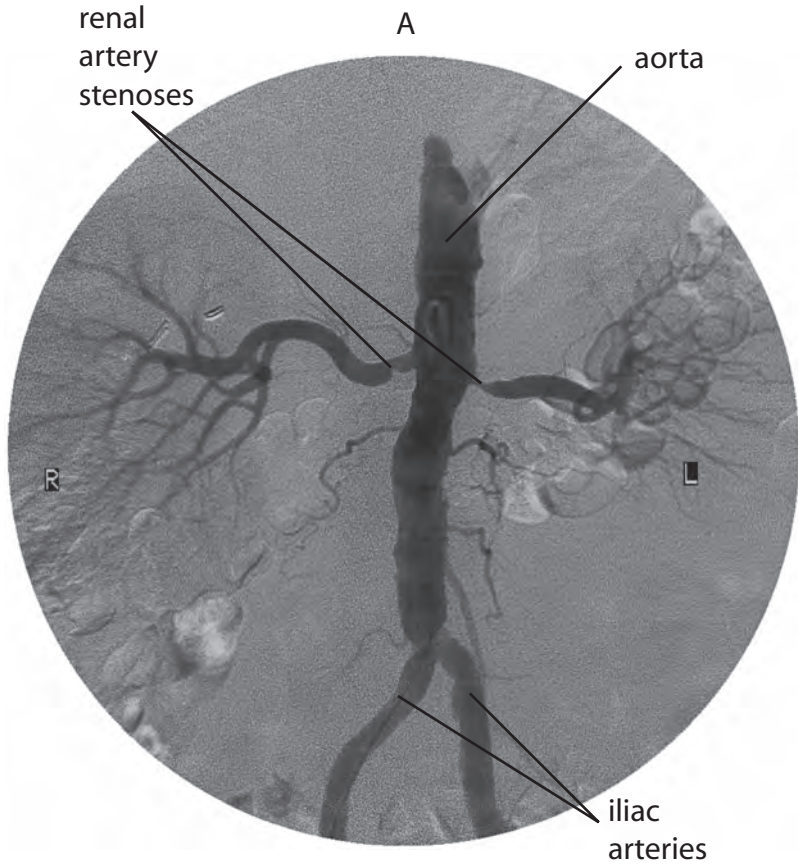
stereoacuity (stĕr'ĕ-ō-ā-kew'it-ĕ) The accuracy and sharpness of images acquired with binocular depth perception.

stereoagnosis (stĕr'ĕ-ō-āg-nō'sis) [Gr. *stereos*, solid, + *a-*, not, + *gnosis*, knowledge] Agnosia, tactile.

stereoanesthesia (stĕr'ĕ-ō-ān'ĕs-thĕ'zĕ-ā) [" + *an-*, not, + *aisthesis*, sensation] The inability to recognize objects by feeling their form.

stereoarthrolysis (stĕr'ĕ-ō-ār-thrōl'ĭ-sis) [" + *arthron*, joint, + *lysis*, dissolution] The surgical formation of a movable new joint in bony ankylosis.

stereoauscultation (stĕr'ĕ-ō-aws'kūl-tā'



RENAL ARTERY STENOSIS

(A) Renal artery stenosis (before angioplasty); (B) Renal artery stenosis (after angioplasty)
(Courtesy of Arnold Klein, M.D., Northwest Permanente, P.C.)

shŭn) [ʹ + L. *auscultare*, listen to] Auscultation by use of a two-headed stethoscope. One tube of each instrument is inserted into an ear while the other is squeezed shut by the fingers.

stereocampimeter (stĕr'ĕ-ō-kām-pīm'ĕ-tĕr) [ʹ + L. *campus*, field, + Gr. *metron*, measure] A device for measuring the visual field of both eyes simultaneously.

stereochemistry (stĕr'ĕ-ō-kĕm'is-trĕ) That branch of chemistry dealing with atoms in their space relationship and the effect of such a relationship on the action and effects of the molecule. **stereochemical**, *adj.*

stereocilia (stĕr'ĕ-ō-sīl'ĕ-ă) *sing.*, **stereocilium** Microvilli on the free surfaces of cells lining the ductus epididymis and ductus deferens, and of the hair cells of the receptors of the inner ear.

stereoenkephalotomy (stĕr'ĕ-ō-ĕn-sĕf'ă-

lōt'ō-mĕ) [ʹ + *enkephalos*, brain, + *tome*, incision] Surgical incision by use of stereotaxis during brain surgery.

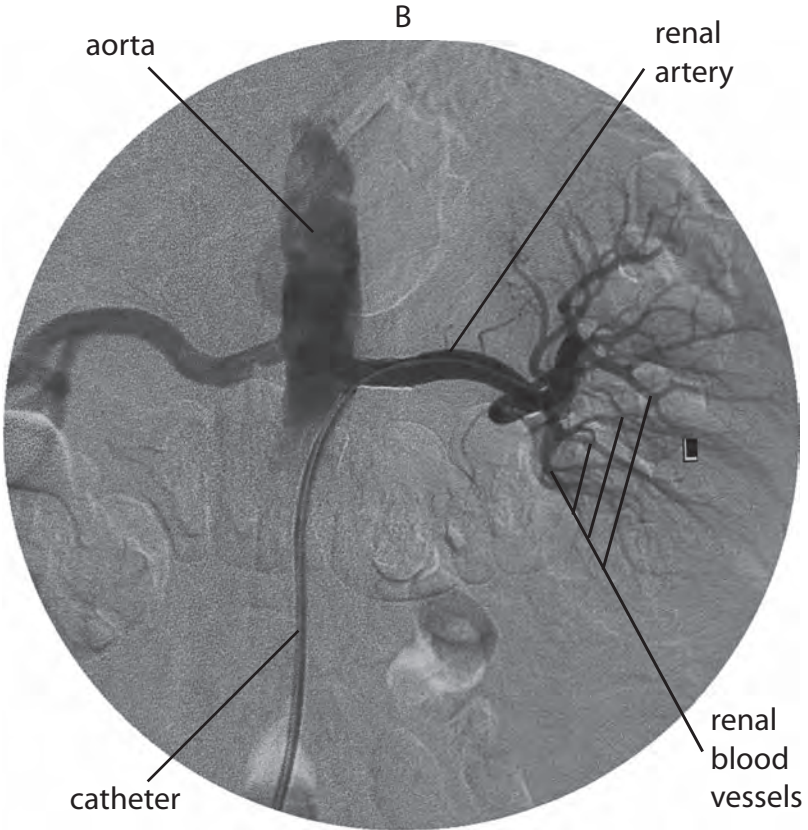
stereognosis (stĕr'ĕ-ōg-nō'sis) [ʹ + *gnosis*, knowledge] The ability to recognize the form of solid objects by touch.

stereogram (stĕr'ĕ-ō-grām) [ʹ + *gramma*, something written] Stereoscopic radiographs.

stereoisomerism (stĕr'ĕ-ō-ī-sō'mĕr-izm) A condition in which two or more substances may have the same empirical formula but mirror-image structural formulas.

stereology (stĕr'ĕ-ōl'ō-jĕ) [Gr. *stereos*, solid, + *logos*, word, reason] The study of three-dimensional aspects of objects.

stereometry (stĕr'ĕ-ōm'ĕ-trĕ) [ʹ + *metron*, a measure] The measurement of a solid body or the cubic contents of a hollow body.



stereo-ophthalmoscope (stēr'ē-ō-ōf-thāl'mō-skōp) [" + *ophthalmos*, eye, + *skopein*, to examine] An ophthalmoscope that is designed to permit the fundus to be seen simultaneously by both eyes of the examiner.

stereo-orthopter (stēr'ē-ō-or-thōp'tēr) [" + *orthos*, straight, + *opsis*, vision] A mirror-reflecting device for the treatment of strabismus.

stereophorometer (stēr'ē-ō-for-ōm'ē-tēr) [" + *phoros*, a bearer, + *metron*, measure] A prism-refracting device for use in correcting extraocular eye muscle imbalance.

stereophotography (stēr'ē-ō-fō-tōg'rā-fē) [" + *phos*, light, + *graphein*, to write] Photography that produces the effect of solidity or depth in the pictures.

stereophotomicrograph (stēr'ē-ō-fō'tō-mī'krō-grāf) [" + " + *mikros*, tiny, + *graphein*, to write] A photograph showing the solidity or depth of a microscopic subject.

stereopsis (stēr'ē-ōp'sis) [" + *opsis*, vision] Binocular depth perception.

stereoradiography (stēr'ē-ō-rā'dē-ōg'rā-fē) [" + *L. radius*, ray, + *Gr. graph-*

ein, to write] Radiography from two slightly different angles to simulate the distance between the viewer's eyes (usually 4 in.) so that a stereoscopic effect is produced when the radiographs are viewed through a stereoscope.

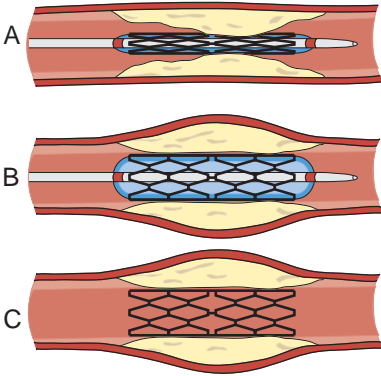
stereoscope (stēr'ē-ō-skōp) [" + *skopein*, to examine] An instrument that creates an impression of solidity or depth of objects seen by combining images of two pictures.

stereoscopic, stereoscopical (stēr'ē-ō-skōp'ik, stēr'ē-ō-skōp'ik-āl) Pert. to the stereoscope or its use.

stereospecific (stēr'ē-ō-spē-sif'ik) Specific for only one of the possible receptors on a cell.

stereotactic (stēr'ē-ō-tāk'tik) Having precise spatial coordinates; located precisely in three-dimensional space. Stereotactic techniques are used in brain surgery, breast biopsies, and other procedures in which precision is needed in identifying, cutting, or removing tissues.

stereotropism (stēr'ē-ōt'rō-pīzm) [" + *tropos*, a turning, + *-ismos*, condition] A response toward (positive stereotro-



INSERTION OF A CORONARY ARTERY STENT

(A) A balloon catheter with a collapsed stent is advanced to the location of a coronary artery lesion. (B) The balloon is inflated, which expands the stent and compresses the lesion to increase the artery opening. (C) The balloon is then deflated and removed, leaving the expanded stent in place to prevent the artery from closing.

pism) or away from (negative stereotropism) a solid object. SYN: *thigmotropism*.

stereotype 1. A simplified idea of a person or a concept, often one that is prejudicial to others or lacking in finesse. 2. A simple movement performed unconsciously.

stereotypic movement disorder Motor behavior, persisting for at least 4 weeks, that is repetitive, often seemingly driven and nonfunctional to the extent that it interferes with normal activities or results in self-inflicted bodily injury sufficient to require medical treatment. The disorder cannot be accounted for by a compulsion, a tic, or hair pulling and is not due to the effects of a substance or a general medical condition.

stereotypy (stĕr-ĕ-ō-tī'pē) [*n* + *typos*, type] The persistent repetition of words, posture, or movement without meaning.

steric (stĕ'rĭk) Concerning the spatial arrangement of atoms in a chemical compound.

sterilant (stĕr'ĭ-lānt) [L. *sterilis*, barren] Any agent used to render objects free of living or potentially infectious organisms.

sterile (stĕr'ĭl) [L. *sterilis*, barren] 1. Free from living microorganisms, i.e., of bacteria, fungi, protozoa, spores, viruses, and other living organisms. No agent, device, drug, or fluid should be placed inside the body in clinical medicine if it is not sterile. 2. Not fertile; un-

able to reproduce young. SYN: *barren*. SEE: *sterility*.

sterility (stĕr-ĭl'ĭ-tē) [L. *sterilitas*, barrenness] 1. Freedom from contamination or colonization by living microorganisms. 2. The inability of the female to become pregnant or for the male to impregnate a female.

When investigating sterility, both partners should be examined. A routine examination for the female includes a study of the vaginal secretions, a bimanual pelvic examination, visualization of the cervix, in some cases a test for patency of the fallopian tubes, and a record of basal body temperature. A history of pelvic disease in the female is of great importance. The male should have the seminal fluid examined for the number, motility, viability, and normality of the spermatozoa, and occasionally other tests (e.g., of testosterone levels).

TREATMENT: Treatment of sterility depends on the finding and correction of any or all causes of the condition. A high percentage of couples who have an infertility problem during the first year in which they are trying to have a child will, without treatment, produce offspring within 2 to 3 years. SEE: *embryo transfer*; *gamete intrafallopian transfer*; *fertilization, in vitro*.

absolute s. The inability to produce offspring as a result of anatomical or physiological factors that prevent production of functional germ cells, conception, or the normal development of a zygote.

female s. The inability of a female to conceive. This may result from a failure to produce or transport viable ova or to sustain a pregnancy due to a congenital absence or maldevelopment of the reproductive organs. Sterility also may be secondary to endocrine disorders, infections, trauma, neoplasms, inactivation of the ovaries by irradiation, or surgical excision of the ovaries, tubes, or uterus. SEE: *infertility*; *gonadal dysgenesis*.

male s. The inability of a male either to produce sperm or to produce viable sperm, thereby prohibiting fertilization of the ovum. This may result from congenital factors, such as cryptorchidism or maldevelopment of the testicular ducts or testis, or acquired factors, such as radiation to, or surgical removal of, the testes.

primary s. Sterility resulting from failure of the testis or ovary to produce functional germ cells.

relative s. Sterility due to causes other than a defect of the sex organs.

sterilization (stĕr'ĭl-ĭ-zā'shŭn) [L. *sterilis*, barren] 1. The process of completely removing or destroying all microorganisms from an object. 2. The process of rendering barren. This can be accomplished by the surgical removal of the testes or ovaries (castration) or inactivation by irradiation, or by tying off

or removing a portion of the reproductive ducts (ductus deferens or uterine tubes). SEE: *salpingectomy*; *vasectomy*.

cold s. Immersing heat-sensitive instruments into microbicidal fluids, such as glutaraldehyde, orthophthalaldehyde, or concentrated hydrogen peroxide to rid them of bacteria, fungi, mycobacteria, or viruses.

dry heat s. The sterilization of instruments in an oven in order to raise their surface temperature for a long enough time to kill any microorganisms.

flash s. Steam-thermal sterilization in which instruments which are difficult to obtain or replace are placed in superheated (270°F) steam for 3 to 10 min.



The Association of Operating Room Nurses cautions that this procedure should only be used when there is an urgent need for a particular operating instrument that otherwise cannot be met.

fractional s. Sterilization in which heating is done at intervals so that spores can develop into vegetative bacteria and be destroyed.

gas s. Exposure to gases such as formaldehyde or ethylene oxide that destroy microorganisms.



Because ethylene oxide is toxic if it is inhaled, tools sterilized in ETO must be aerated according to OSHA standards.

intermittent s. Fractional s.

involuntary s. Any procedure that renders a legally incompetent person permanently infertile. It is performed only under court order, and only when other less drastic means of preventing unwanted procreation have failed.

laparoscopic s. Sterilization by use of a laparoscope to gain access to the fallopian tubes so they can be banded, clipped, or electrocoagulated.

steam-thermal s. Sterilization by exposure of microorganisms at to flowing steam or pressurized steam. There are three types of steam-thermal sterilization: gravity methods, in which ambient air in the sterilization chamber is gradually displaced by steam; prevacuum, in which air in the chamber is mechanically removed; and flash sterilization (see above).

sterilize (stēr'ī-līz) [L. *sterilis*, barren] 1. To free from microorganisms. 2. To make incapable of reproduction.

sterilizer (stēr'ī-lī'zēr) An oven or appliance for sterilizing.

bead s. A device devised to remove bacteria from dental instruments, but found to be ineffective by the U.S. Food and Drug Administration (F.D.A.). It

consists of a container filled with millimeter-sized glass spheres heated to temperatures exceeding 217°C into which the instrument is placed, usually for 15 to 45 seconds.



The FDA recommends the use of other devices to sterilize dental and surgical equipment.

steam s. An autoclave that sterilizes by steam under pressure at temperatures above 100°C.

sternad (stēr'nād) [Gr. *sternon*, chest] Toward the sternum.

sternalgia (stēr-nāl'jē-ä) [Gr. *sternon*, chest, + *algos*, pain] Pain in the sternum. SYN: *sternodynia*.

Sternberg-Reed cell Reed-Sternberg cell.

sternebra (stēr'nē-brä) [" + L. *vertebra*, vertebra] Parts of the sternum during development of the fetus.

sternon (stēr'nēn) [Gr. *sternon*, chest] Pert. solely to the sternum and no other structures.

sterno- [Gr. *sternon*, chest] Combining form meaning *sternum*.

sternoclavicular (stēr'nō-klāv'īk'ū-lār) [" + L. *clavicula*, little key] Concerning the sternum and clavicle. SYN: *sternocleidal*.

sternocleidal (stēr'nō-klī'dāl) [" + *clavis*, key] Sternoclavicular.

sternocleidomastoid (stēr'nō-klī'dō-mās'toyd) [" + *clavis*, key, + *mastos*, breast, + *eidosis*, form, shape] One of two muscles arising from the sternum and inner part of the clavicle.

sternocostal (stēr'nō-kōs'tāl) [" + L. *costa*, rib] Rel. to sternum and ribs.

sternodynia (stēr'nō-dīn'ē-ä) [" + *odyne*, pain] Pain in the sternum. SYN: *sternalgia*.

sternohyoid (stēr'nō-hī'oyd) [" + *hyooides*, U-shaped] The muscle from the medial end of the clavicle and sternum to the hyoid bone.

sternoid (stēr'noyd) [" + *eidosis*, form, shape] Resembling the breastbone.

sternomastoid (stēr'nō-mās'toyd) [" + *mastos*, breast, + *eidosis*, form, shape] Pert. to the sternum and mastoid process of the temporal bone.

sternomastoid region The wide area on the lateral region of the neck covered by sternocleidomastoid muscle.

sternopericardial (stēr'nō-pēr'ī-kār'dē-äl) [" + *peri*, around, + *kardia*, heart] Concerning the sternum and pericardium.

sternoschisis (stēr-nōs'kī-sīs) [" + *schisis*, a splitting] A cleft or fissured sternum.

sternothyroid (stēr'nō-thī'royd) [" + *thyreos*, shield, + *eidosis*, form, shape] The muscle extending beneath the sternohyoid that depresses the thyroid cartilage.

sternotomy (stĕr-nŏt'ō-mē) [ʼ + *tome*, incision] The operation of cutting through the sternum. **SEE: illus.**

sternotracheal (stĕr'nō-trā'kē-äl) [ʼ + *tracheia*, trachea] Concerning the sternum and trachea.

sternotrypsis (stĕr'nō-trī-pēs'is) [ʼ + *trypsis*, a boring] Surgical perforation of the sternum.

sternovertebral (stĕr'nō-vĕr'tĕ-bräl) [ʼ + *L. vertebra*, vertebra] Concerning the sternum and vertebrae.

sternum (stĕr'nūm) [*L.*] The narrow, flat bone in the median line of the thorax in front. It consists of three portions: the manubrium, the body or gladiolus, and the ensiform or xiphoid process. **SEE: illus.**

cleft s. A congenital fissure of the sternum.

sternutation (stĕr-nū-tā'shŭn) The act of sneezing.

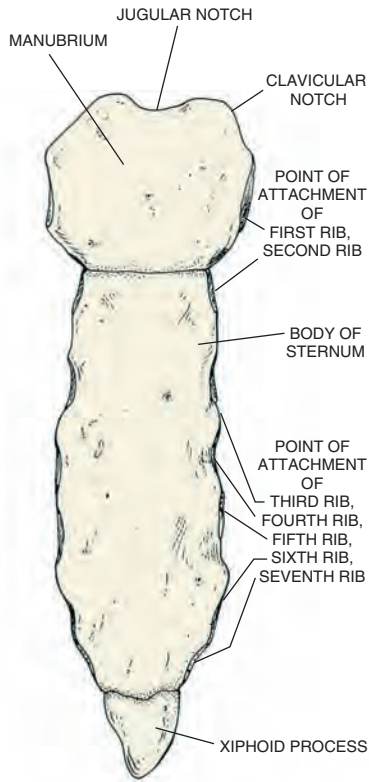
sternutator (stĕr'nū-tā'tor) [*L. sternutatorius*, causing sneezing] An agent, such as a war gas, that induces sneezing. **sternutatory, adj.**

steroid (stĕr'oyd) **1.** An organic compound containing in its chemical nucleus the perhydrocyclopentanophenanthrene ring. **SEE: steroid hormone for illus.;** *perhydrocyclopentanophenanthrene*. **2.** A term applied to any one of a large group of substances chemically related to sterols, including cholesterol, D vitamins, bile acids, certain hormones, saponins, glucosides of digitalis, and certain carcinogenic substances.

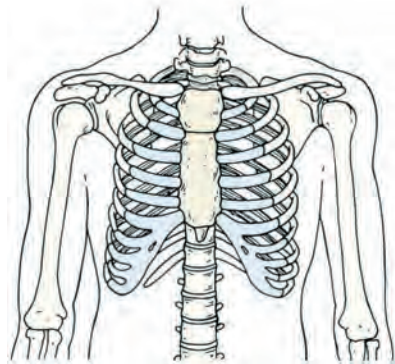
steroid diabetes Hyperglycemia that results from the use of exogenously administered corticosteroids, such as prednisone, methylprednisolone, dexamethasone, or other therapeutic agents.

steroid hormone One of the sex hormones and hormones of the adrenal cortex. **SEE: illus.**

steroid hormone therapy Treatment



ANTERIOR VIEW



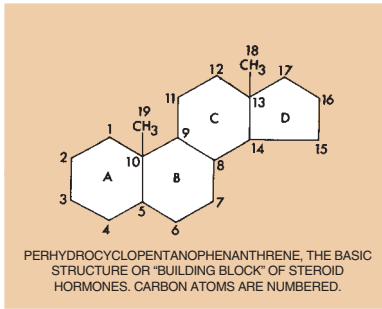
STERNUM



STERNOTOMY

Sternotomy scar that is nearly healed

with intravenous, oral, inhaled, or topical adrenal hormones (or their synthetic derivatives), usually to relieve inflammatory diseases (such as asthma or chronic obstructive lung disease; arthritis or colitis; or dermatitis or eczema) or as part of a combined modality treat-



STEROID HORMONE NUCLEUS

ment for some malignancies. Common side effects of prolonged, high-dose steroid hormone therapy include alterations in the sleep-wake cycle, fluid and sodium retention, muscle weakness, thinning of the skin, cataract formation, diabetes mellitus, osteoporosis, or immune suppression. Few if any of these effects are likely to occur when steroids are given for 1- or 2-week courses of therapy.

steroidogenesis (stē-roy"ō-dō-jěn'ē-sīs) Production of steroids.

steroid withdrawal syndrome The appearance of symptoms of adrenal insufficiency in persons who discontinue the use of corticosteroids after having been treated with them for a prolonged period. In those patients, adrenal function has been suppressed by exogenous hormone and the patient's adrenal glands do not provide an appropriate response when the patient has a serious infection, surgery, or an accident. This failure to respond to stress may be present for as long as a year after discontinuation of corticosteroid therapy. The syndrome may be prevented by gradual rather than abrupt withdrawal of corticosteroid therapy.

sterol (stēr'ōl, stēr'ōl) [Gr. *stereos*, solid, + *L. oleum*, oil] One of a group of substances (such as cholesterol) with a cyclic nucleus and alcohol moiety. They are found free or esterified with fatty acids (cholesterides). They are found in animals (zoosterols) or in plants (phytosterols). They are generally colorless, crystalline compounds, nonsaponifiable and soluble in certain organic solvents.

stertor (stēr'tor) [NL. *stertor*, to snore] Snoring or laborious breathing owing to obstruction of air passages in the head, seen in certain diseases such as apoplexy.

stertorous (stēr'tō-rūs) Pert. to laborious breathing provoking a snoring sound.

stetho- [Gr. *stethos*, chest] Combining form meaning *chest*.

stethogram (stēth'ō-grām) [' +

gramma, something written] A record of heart sounds. The record may be stored for later comparison with subsequent heart sounds. SYN: *phonocardiogram*.

stethomyitis, stethomyositis (stēth"ō-mī-t'īs, -mī"ō-sī'tīs) [' + *mys*, muscle, + *itis*, inflammation] Inflammation of the muscles of the chest.

stethoparalysis (stēth'ō-pā-rāl'ī-sīs) [' + *paralyein*, to disable] Paralysis of the muscles of the chest.

stethoscope (stēth'ō-skōp) [' + *sko-pein*, to examine] An instrument used to transmit to the examiner's ears sounds produced in the body. It ordinarily consists of rubber tubing in a Y shape and a bell or diaphragm.

binaural s. A stethoscope designed for use with both ears.

compound s. A stethoscope in which more than one set is attached to the same fork and chest piece.

double s. A stethoscope with two earpieces and tubes.

electronic s. A stethoscope equipped to amplify electronically sounds from the body.

single s. A rigid or flexible stethoscope designed for one ear only.

stethospasm (stēth'ō-spāzm) [' + *spasmos*, convulsion] A spasm of the pectoral or chest muscles.

Stevens-Johnson syndrome (stē'vēnz-jōn'sōn) [Albert M. Stevens, 1884–1945, Frank C. Johnson, 1894–1934, U.S. pediatricians] A systemic skin disease, probably identical to toxic epidermal necrolysis, that produces fevers and lesions of the oral, conjunctival, and vaginal mucous membranes. It is marked by a cutaneous rash that is often widespread and severe. Skin loss may lead to dehydration, infection, or death. SEE: *illus.*; *erythema multiforme*.

Stevia (stē'vē-ā) [NL] A genus of shrubs native to South America. A noncaloric sugar substitute is made from plants of this genus.

STH *somatotropic hormone*. SEE: under *hormone*.

sthenia (sthē'nē-ā) [Gr. *sthenos*, strength] Normal or unusual strength. Opposite of *asthenia*. **sthenic, adj.**

stibialism (stīb'ē-āl-izm) [L. *stibium*, antimony, + Gr. *-ismos*, condition] Antimony poisoning.

stibiated (stīb'ē-āt'ēd) [L. *stibium*, antimony] Containing antimony.

stibium (stīb'ē-ūm) [L.] Antimony.

stibophen (stīb'ō-fēn) A trivalent tin compound, used in treating schistosomiasis, leishmaniasis, and granuloma inguinale.

stiff [AS. *stif*] Rigid, firm, inflexible.

stiff baby syndrome An inherited disorder marked by muscular rigidity that appears in the first days of life. It may



STEVENS-JOHNSON SYNDROME

be associated with an excessive startle response, apnea, gait disturbance, or reurgitation of foods.

stiff man syndrome, stiff person syndrome A rare central nervous system disease characterized by progressive muscular rigidity and spasms. The diagnosis is strongly supported by continuous motor unit activity during electromyography and by the presence of autoantibodies (antiglutamic acid antibody, for example). Treatments include benzodiazepines, for comfort, and immunological therapies such as high-dose corticosteroids, intravenous immunoglobulins, or plasma exchange.

stiff neck Rigidity of neck resulting from spasm of neck muscles. It is a symptom of many disorders. SYN: *torticollis*; *wry-neck*.

stigma (stĭg'mă) *pl.* **stigmata, stigmata** [Gr., mark] **1.** A mark or spot on the skin; lesions or sores of the hands and feet that resemble crucifixion wounds. **2.** The spot on the ovarian surface where rupture of a graafian follicle occurs. **3.** A social condition marked by attitudinal devaluing or demeaning of persons who, because of disfigurement or disability, are not viewed as being capable of fulfilling valued social roles.

stigmata (stĭg'mă-tă) Cutaneous evidence of systemic illness.

stigmatic (stĭg-măt'ĭk) [Gr. *stigma*, mark] Pert. to or marked with a stigma.

stigmatism (stĭg'mă-tĭsm) **1.** A condition marked by possession of stigmata. **2.** A condition in which light rays are accurately focused on the retina. SEE: *astigmatism*.

stilbestrol (stĭl-bēs'trōl) Diethylstilbestrol.

stillbirth (stĭl'bĭrth) [AS. *stille*, quiet, + Old Norse *burdhr*, birth] The birth of a dead fetus. **stillborn**, *adj.*

Still's disease (stĭlz) [Sir George F. Still, Brit. physician, 1868–1941] Juvenile rheumatoid arthritis.

Still's murmur A benign, functional mid-systolic murmur heard in children. The maximum sound is heard over the left lower sternal border.

-stim (stĭm) A suffix used in pharmacology to designate a hematopoietic colony-stimulating factor.

stimulant (stĭm'ū-lănt) [L. *stimulans*, goading] Any agent temporarily increasing functional activity. Stimulants may be classified according to the organ upon which they act, as follows: cardiac, bronchial, gastric, cerebral, intestinal, nervous, motor, vasomotor, respiratory, and secretory. Commonly used stimulants include caffeine, low doses of ethanol, methamphetamines, and cocaine.

stimulate (stĭm'ū-lăt) [L. *stimulare*, to goad on] **1.** To increase activity of an organ or structure. **2.** To apply a stimulus.

stimulation (stĭm'ū-lă'shŭn) **1.** Irritating or invigorating action of agents on muscles, nerves, or sensory end organs by which excitation or activity in a part is evoked. **2.** A stimulus.

breast s. In pregnancy, nipple rolling or the application of heat to the breasts to elicit release of endogenous oxytocin and to generate uterine contractions. The procedure also has been used to evaluate placental sufficiency in the third trimester and to increase contractions in patients with ruptured membranes and when contractions are absent, rare, irregular, or of poor quality. SEE: *oxytocin challenge test*.

deep brain s. The application of pulsed electrical energy via electrodes to the pars interna of the globus pallidus or the subthalamic nucleus. It is used to treat movement disorders, such as Parkinson's disease.

double simultaneous s. In the neurological examination, a test of unilateral neglect. A light touch, audible signal, or visual cue is provided to both sides of the patient at the same time (e.g., both arms, both ears, both the left and right visual fields). Failure to detect one of the stimuli suggests a lesion in the opposite side of the cerebral cortex. Double simultaneous stimulation can also be performed on one side of the body, for instance, by tapping the left arm and left side of the face at the same time. If the distal stimulus is undetected even after several trials, the patient may have an organic brain syndrome.

fetal scalp s. An assessment of fetal well-being in which the examiner reaches into the vagina and rubs the scalp of the fetus. The fetal heart rate is

monitored for accelerations. If the fetal heart rate does not accelerate appropriately, further testing, such as scalp blood sampling, may be needed.

fetal (vibratory) acoustic s. ABBR: FAST. A noninvasive means of assessing fetal reactivity during labor. It typically is used as an adjunct to nonstress testing. The examiner applies an electronic source of low-frequency sound (such as an electrolarynx) firmly to the mother's abdomen over the fetal head. A reactive test is characterized by fetal heart rate accelerations or other measurable forms of increased fetal activity.

neural s. The activation or energizing of a nerve, through an external source.

transcranial magnetic s. ABBR: TMS. The application of pulses from a magnetic coil to induce electrical currents in specific parts of the brain. This treatment has been used in experimental neuroscience to study the activity of different areas of the brain, and in psychiatry as a noninvasive alternative to electroconvulsive therapy.

stimulator (stīm'ū-lā'tor) Something that stimulates.

long-acting thyroid s. SEE: *long-acting thyroid stimulator*.

stimulus (stīm'ū-lūs) *pl.* **stimuli** [L., a goad] **1.** A change of environment of sufficient intensity to evoke a response in an organism. **2.** An excitant or irritant.

adequate s. **1.** Any stimulus capable of evoking a response, i.e., an environmental change possessing a certain intensity, acting for a certain length of time, and occurring at a certain rate. **2.** A stimulus capable of initiating a nerve impulse in a specific type of receptor.

chemical s. A chemical (liquid, gaseous, or solid) that is capable of evoking a response.

conditioned s. A stimulus that gives rise to a conditioned response. SEE: *reflex, conditioned*.

electric s. A stimulus resulting from initiation of or cessation of a flow of electrons as from a battery, induction coil, or generator.

homologous s. A stimulus that acts only on specific sensory end organs.

iatrotropic s. Any stimulus or event that makes a person seek or receive medical attention, such as a symptom, a physical finding, or the need for a routine or required health screening examination.

liminal s. Threshold s.

mechanical s. A stimulus produced by a physical change such as contact with objects or changes in pressure.

minimal s. Threshold s.

nociceptive s. A painful and usually injurious stimulus.

subliminal s. A stimulus that is weaker than a threshold stimulus.

thermal s. A stimulus produced by a change in skin temperature, a rise giving sensations of warmth, a fall giving sensations of coldness.

threshold s. The least or weakest stimulus that is capable of initiating a response or giving rise to a sensation. SYN: *liminal stimulus; minimal stimulus*.

unconditioned s. Any stimulus that elicits an unconditioned response (i.e., a response that occurs by reflex rather than by learning).

sting [AS *stinge*] **1.** A sharp, smarting sensation, as of a wound or astringent. **2.** A puncture wound made by a venomous barb or spine (e.g., of a marine animal or an insect). SEE: *bite*.

SYMPTOMS: Pain at the puncture site is almost universally reported. The patient may also develop local swelling, which at times is massive, and localized itch. Generalized hives, dizziness, a tight feeling in the chest, difficulty breathing, swelling of the lips and tongue, stridor, respiratory failure, hypotension, syncope, or cardiac arrest may also occur. Anaphylactic reactions such as these require prompt effective treatment.

TREATMENT: If the stinger is still present in the skin, it should be carefully removed. Ice should be applied locally to limit inflammation at the site of the sting and systemic distribution of venom. Diphenhydramine (or other antihistamine) should be given by mouth or parenterally; moreover, if signs and symptoms of anaphylaxis exist, epinephrine should be administered. Corticosteroids are given to reduce the risk of delayed allergic responses. Patients who have had large local reactions or systemic reactions to stings should be referred for desensitization (immunotherapy). In this treatment, gradually increasing dilutions of venom are injected subcutaneously over weeks or months until immunological tolerance develops.

PREVENTION: Those with a history of anaphylactic reactions to venom should avoid exposure to the vectors (e.g., ants, bees, snakes, wasps) as much as possible. Protective clothing (e.g., specialized gloves or shoes) may prevent some stings. Cosmetics, perfumes, hair sprays, and bright or white clothing should be avoided to prevent attracting insects. Because foods and odors attract insects, care should be taken when cooking and eating outdoors.

bee s. SEE: *hymenoptera s.*

caterpillar s. Irritating contact with the hairs of a butterfly or moth larva. More than 50 species of larvae possess urticating hairs that contain a toxin.

Contact can cause numbness and swelling of the infected area, severe radiating pain, localized swelling, enlarged regional lymph nodes, nausea, and vomiting. Although shock and convulsions may occur, no deaths have been reported. The disease is self-limiting. The larva of the flannel moth, *Megalopyge opercularis*, known as the puss caterpillar or woolly worm, is frequently the cause of this sting, particularly in the southern U.S. The fuzz from these larvae can be transported by wind. Treatment involves local application of moist soaks and administration of antihistamines.

catfish s. A toxic, allergic reaction caused by exposure to the venom contained in venomous glands at the base of catfish fins. The stung part should be immediately immersed in water as hot as the patient can stand for 1 hr or until the pain is controlled. Tetanus prophylaxis should be administered if needed.

hornet s. A sting from a wasp of the family Vespidae. SEE: *hymenoptera s.*

hymenoptera s. Envenomation by a fire ant, bee, hornet, or wasp. The sting from any of these insects may cause localized or, in some sensitized patients, systemic allergic reactions. Stings by venomous insects are one of the most common causes of anaphylaxis found in hospital emergency departments.

scorpion s. Injury resulting from scorpion venom. The stings of most species in the U.S. seldom produce severe toxic reactions, but because of the difficulty of distinguishing one species of scorpion from another, each scorpion sting should be treated as if it had been inflicted by a species capable of delivering a very toxic dose of venom. The stings vary in severity from local tissue reactions consisting of swelling and pain at the puncture site, to systemic reactions that compromise breathing and neuromuscular function. Death may rarely occur (e.g., in very young children).

TREATMENT: For mild local reactions, cold compresses and antihistamines are sufficient. Severe reactions may need to be treated with airway management, antivenins, and intensive observation in the hospital. For the source of local antivenins, the use of which is controversial, contact the nearest poison control center.

sea anemone s. Contact with the nematocysts or stinging cells of certain species of the flower-like marine coelenterates causing severe dermatitis with chronic ulceration. In some cases, signs and symptoms of a systemic reaction develop, including headache, nausea, vomiting, sneezing, chills, fever, paralysis, delirium, seizures, anaphylaxis, cardiac arrhythmias, heart failure, pul-

monary edema, and collapse. In rare cases, it is fatal.

TREATMENT: When systemic changes are present, vigorous therapy is indicated for hypotension. Diazepam is administered for convulsions. An electrocardiogram should be monitored for arrhythmias. Treatment for mild stings is symptomatic; application of vinegar to the sting area may inactivate the irritating secretion. All victims should be observed for 6 to 8 hr after initial therapy for rebound phenomenon.

stingray s. Penetration of the skin by the spine of a stingray and injection of venom.

TREATMENT: The injury should be treated by washing the wound with copious amounts of water; seawater should be used if sterile water is unavailable. The wound, which is very painful, should be cleansed thoroughly, and all foreign material should be removed. The wound site should be soaked in hot water (113°F or 45°C) for 30 to 60 min to inactivate the venom. Surgical débridement may be necessary, and narcotics may be needed for pain. Tetanus prophylaxis may be required, depending on the patient's immunization status. The wound is either packed open or loosely sutured to provide adequate drainage. Failure to treat this sting may result in gas gangrene or tetanus.

wasp s. SEE: *hymenoptera s.*

stinger Burner.

stingray (sting'rá) Any of the rays of the family Dasyatidae with wide pectoral fins that resemble wings. Venom glands are located in the spine running along the top of its whiplike tail; severe injuries can be inflicted if this spine penetrates the skin.

S-T interval The interval in an electrocardiogram that represents ventricular repolarization. An elevation of the S-T segment may be seen in myocardial infarction, Prinzmetal's angina, and ventricular aneurysms; depression of the S-T segment is seen in conditions such as coronary ischemia, left ventricular hypertrophy, and digitalis use. SEE: *electrocardiogram* for illus.; *QRST complex*.

stippling (stip'ling) [Dutch *stippelen*, to spot] A spotted condition (e.g., in the retina in some diseases of the eye, or in basophilic red blood cells).

gingival s. An orange-peel appearance of healthy gingiva, believed to be due to the enlargement of the underlying connective tissue papillae in response to massage and toothbrushing; the indent lies between the bulging papillae where the epithelia grow downward as rete ridges.

stirrup, stirrup bone (stir'úp) [AS. *stirrap*, a stirrup] A common name for the

stapes, the third of the three bones in the middle ear. SEE: *ear*.

stitch (stīch) [AS. *stice*, a pricking] **1.** A local, sharp, or spasmodic pain that often occurs in the side or flank of athletes. The following maneuvers may offer relief: bending forward while tightening the abdomen; breathing deeply and exhaling slowly through pursed lips; tightening the belt or pushing one's fingers into the painful area. It is advisable not to eat for 30 to 90 min before exercising, to warm up before exercising, and to work out at a lower intensity for longer periods. **2.** A single loop of suture material passed through skin or flesh by a needle, to facilitate healing of a wound.

stochastic effect A phenomenon that occurs purely by chance.

stochastic model (stō-kās'tik) [Gr. *stokastikos*, skillful in guessing] A statistical model that attempts to reproduce the sequence of events likely to occur in a real-life situation.

stock (stōk) [AS. *stocc*, tree trunk] **1.** The original individual, race, or tribe from which others have descended. **2.** A supply or inventory of a drug or medical device.

Stocker line A pigmented line composed of deposits of iron on the cornea at the advancing edge of the pterygium.

Stockholm syndrome (stōk'hōlm) The emotional involvement between a hostage and the person holding him or her captive. The hostage's action may be due to sympathy for the terrorist's cause, to stress, or to the need to cooperate in order to survive. This syndrome is named after the romantic involvement of a terrorist and a bank employee held hostage during a 1973 bank robbery in Stockholm.

stockinet (stōk'ī-nēt') A tubular woven material of uniform size that is open at both ends. It is used to hold bandages in place or to place uniform protection on a leg, finger, arm, or other part of an extremity, or to line a cast. A variant is termed "bias" stockinet and comes in a roll of different widths.

stocking A snug covering for the foot and leg. A stocking made of elastic material that places firm, even pressure on an extremity, useful in managing edema, preventing deep vein thrombosis (DVT) of the leg, and in treating varicose veins. Pneumatic compression devices, which sequentially inflate and deflate, are more effective than simple elasticized stockings. A graduated compression stocking exerts more pressure at the ankle than on the rest of the limb. Its pressure decreases proximally to permit venous return of blood. External compression reduces the cross-sectional area of the limb and increases the velocity of blood flow in both superficial

and deep veins. It also improves venous valve function, reduces vein distention, and may have favorable effects on coagulants. In hospitalized patients at low risk for DVT, compression stockings may be used alone to prevent the formation of blood clots; for those at higher risk, compression stockings usually are used in combination with anticoagulant therapy, such as heparin, low molecular weight heparin, or warfarin. Low-risk patients are those who have had minor surgery (less than 30 minutes), minor trauma, or minor medical illnesses.

PATIENT CARE: Health care professionals should consider the following as guiding principles for clinical practice in the use of graduated compression stockings in the management of patients.

1. Apply compression stockings before surgery (when possible).

2. Follow manufacturer's recommendations to ensure correct stocking fit.

3. Document measurements and stocking size at initial use to serve as baseline measures for the patient.

4. Review leg measurements regularly to avoid potential complications related to leg swelling.

5. Be sure the patient's legs and feet are dry before putting on stockings.

6. Remove stockings at least once each shift for skin assessment, hygiene, and care.

7. Provide more than one pair of correct size hose to allow for laundering if long-term use is planned.

8. Check stocking periodically during wear to ensure correct placement and to be certain there is no bunching or other restriction that would impede perfusion.

9. Assess neurovascular status regularly during skin care and at other times using the inspection hole in the foot of the compression stocking.

10. Check patient sitting in a chair to be sure stockings are not compromising perfusion by acting as a tourniquet at the knee.

11. Teach patient and family the reason for using compression stockings, concerns for application and correct fit, care of the skin, and the importance of assessing for leg swelling. If the patient has difficulty putting on compression hose, suggest wearing rubber gloves to help grip the stockings. Warn the patient not to pull too hard, because this could rip the hose. Applying a lubricating silicone lotion to the leg before donning the stockings may help to reduce friction. Assistive devices are available to help with donning compression stockings. If stockings roll or slip down at the top, a roll-on adhesive designed for compression stockings can be applied to the leg to help resolve this problem. Advise the patient to replace stockings every 6

months. The patient should avoid standing or sitting for long periods, wearing constricting clothing (girdles, etc.), and crossing the legs. Legs and feet should be protected from injury and inspected daily.

antiembolism s. An elastic stocking applied to the lower extremity to reduce the likelihood of developing a deep venous thrombosis (e.g., during prolonged periods of bedrest or inactivity).

TED s. Elastic hose worn on the lower extremities to prevent thrombophlebitis, while at prolonged bedrest or during periods of prolonged immobility.

stocking aid A device for assisting persons with limited function to put on socks or stockings.

stockpile (stŏk'pīl") To withhold from immediate use; to maintain in storage for future needs. In many countries stockpiles of food rations, medications, or vaccines are maintained by governmental agencies in anticipation of future public health needs.

stoichiometry (stoy'kē-ŏm'ē-trē) [Gr. *stoicheion*, element, + *metron*, measure] The study of the mathematics of chemistry and chemical reactions; chemical calculations.

stoke (stŏk) [Sir George Stokes, Brit. physicist, 1819–1903] A unit of viscosity equal to 10^{-4} m²/sec.

Stokes-Adams syndrome (stŏks-ăd' äms) [William Stokes, Irish physician, 1804–1878; Robert Adams, Irish physician, 1791–1875] Loss of consciousness caused by a decreased flow of blood to the brain. It may be caused by any transient interference with cardiac output such as incomplete or complete heart block. The patient may be light-headed or become completely unconscious and have brief convulsive body movements. Treatment includes basic and advanced cardiac life support measures (e.g., rescue breathing, chest compressions, administration of epinephrine, or cardiac pacing, as indicated by the patient's responses). SYN: *Adams-Stokes syndrome*.

PATIENT CARE: The patient's airway, breathing, apical and radial pulses, blood pressure, and cardiac rhythm are monitored and supported. Emergency treatment (atropine sulfate, external pacing) is provided as necessary according to prescribed protocols. The patient is prepared for cardiac pacemaker implantation; reassurance and support are provided to the patient and family, pacemaker maintenance is taught, and the patient is assisted to return to usual activities.

Stokes' lens [George Stokes] Device used to diagnose astigmatism.

stoma (stŏ'mă) *pl.* **stomatapl. -mas** [Gr., mouth] **1.** A mouth, small opening, or pore. **2.** An artificially created opening between two passages or body

cavities or between a cavity or passage and the body's surface. **3.** A minute opening between cells of certain epithelial membranes, esp. peritoneum and pleura.

stomach (stŏm'ăk) [Gr. *stomachos*, mouth] A muscular, distensible saclike portion of the alimentary tube between the esophagus and duodenum. SEE: *illus.*

ANATOMY: It is below the diaphragm to the right of the spleen, partly under the liver. It is composed of an upper fundus, a central body, and a distal pylorus. It has two openings: the upper cardiac orifice opens from the esophagus and is surrounded by the lower esophageal (cardiac) sphincter. The lower pyloric orifice opens into the duodenum and is surrounded by the pyloric sphincter. The wall of the stomach has four layers. The outer serous layer (visceral peritoneum) covers almost all of the organ. The muscular layer just beneath it has three layers of smooth muscle: an outer longitudinal layer, a medial circular layer, and an inner oblique layer. The submucosa is made of connective tissue that contains blood vessels. The mucosa is the lining that contains the gastric glands, simple tubular glands of columnar epithelium that secrete gastric juice. Chief cells secrete pepsinogen; parietal cells secrete hydrochloric acid and the intrinsic factor; mucous cells secrete mucus; G cells secrete gastrin.

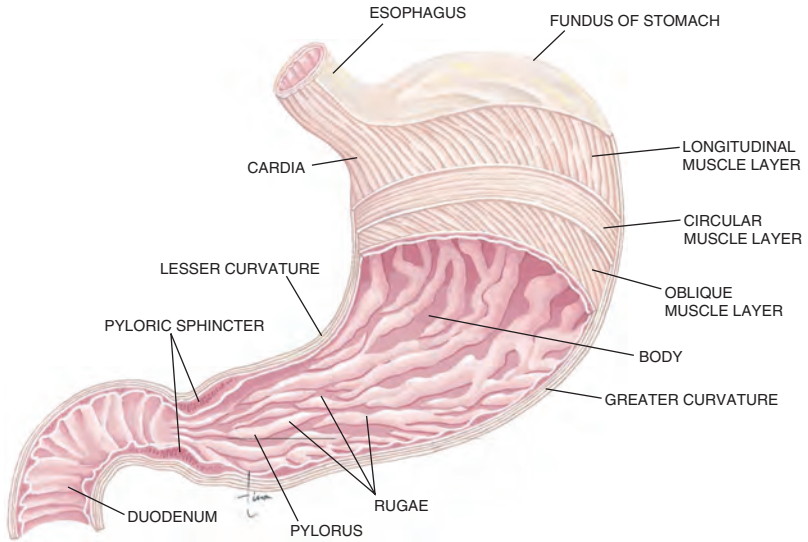
FUNCTION: The stomach is a reservoir that permits digestion to take place gradually; emptying of the stomach is under both hormonal and nervous control. Secretions and motility are increased by parasympathetic impulses (vagus nerves) and decreased by sympathetic impulses. The presence of food stimulates the production of the hormone gastrin, which increases the secretion of gastric juice. Protein digestion begins in the stomach; pepsin digests proteins to peptones. Hydrochloric acid converts pepsinogen to active pepsin and has little effect on unemulsified fats except those of cream. The intrinsic factor in gastric juice combines with vitamin B₁₂ (extrinsic factor) to prevent its digestion and promote its absorption in the small intestine. Little absorption takes place in the stomach because digestion has hardly begun, but water and alcohol are absorbed.

bilocular s. Hourglass s.

cascade s. A form of hourglass stomach in which there is a constriction between the cardiac and pyloric portions. The cardiac portion fills first, and then the contents cascade into the pyloric portion.

cow horn s. A high, transversely placed stomach.

foreign bodies in the s. Accidental or



STOMACH

Anterior view, sectioned

intentional ingestion of materials such as coins, nails, bottle tops, marbles, and buttons. In some instances, these should be removed endoscopically (e.g., copper coins).

hourglass s. The division of the stomach (in the form of an hourglass) by a muscular constriction; often associated with gastric ulcer. **SYN:** *bilocular stomach*.

leather-bottle s. A condition of the stomach caused by hypertrophy of the stomach walls or their infiltration with malignant cells. **SEE:** *linitis plastica*.

thoracic s. A variant of hiatal hernia in which the stomach lies above the diaphragm. This may result from an embryonic anomaly in which the stomach fails to descend, or from a hernia of the diaphragm.

water-trap s. A stomach with the pylorus situated unusually high, causing slow emptying.

stomachal (stŭm'ă-kāl) [Gr. *stomachos*, mouth] Rel. to the stomach.

stomachic (stŏ-măk'ik) **1.** Concerning the stomach. **2.** A medicine that stimulates the action of the stomach.

stomach intubation Passage of a tube into the stomach to obtain gastric contents for examination, for prophylaxis and treatment of ileus, to remove ingested poisons, or for feeding.

stoma covers and filters Cloth or foam overlays used to limit the inhalation of dust, fumes, or vapors by laryngectomees and to warm inhaled air.

stomal (stŏ'māl) [Gr. *stoma*, mouth] Concerning a stoma.

stomata Pl. of stoma.

stomatal (stŏ'mă-tāl) [Gr. *stoma*, mouth] Concerning stomata.

stomatic (stŏ-măt'ik) Pert. to or rel. to the mouth.

stomatitis (stŏ-mă-tī'tis) [" + *itis*, inflammation] Inflammation of the mouth (including the lips, tongue, and mucous membranes). **SEE:** *illus*; *noma*; *thrush*.



STOMATITIS

As caused by herpes simplex virus

ETIOLOGY: Stomatitis may be associated with a variety of conditions including viral infections, chemical irritation, radiation therapy, mouth breathing, paralysis of nerves supplying the oral area, chemotherapy that damages or destroys the mucous membranes, adverse reactions to other medicines, or acute sun damage to the lips. The nasal and oral mucosa are esp. vulnerable to being traumatized by the use

of nasal catheters to administer oxygen or nutrients and by dental appliances. Also, these areas may be damaged during surgery when an endotracheal tube is in place.

SYMPTOMS: Symptoms include oral pain, esp. when eating or drinking, bad breath, or difficulty swallowing. Findings include oral ulcers, friability of the mucous membranes, swollen cervical lymph nodes, and sometimes fever.

TREATMENT: Treatment depends on the underlying cause but is often symptomatic. The mucous membranes should be kept moist and clear of tenacious secretions. Care of the teeth and gingival tissues should be comprehensive and include flossing. The pain of stomatitis may be alleviated by systemic analgesics or application of anesthetic preparations to painful lesions. It is important for patients with dentures to clean the dentures thoroughly. Dentures should be removed from patients who are unconscious or stuporous. SEE: *toothbrushing*.

aphthous s. Aphthous ulcer.

corrosive s. Stomatitis resulting from intentional or accidental exposure to corrosive substances.

diphtheritic s. Inflammation of the oral mucosa caused by infection with *Corynebacterium diphtheriae*. SEE: *diphtheria*.

herpetic s. Stomatitis seen with primary infection with herpes simplex virus.

major aphthous s. A disease in which large recurring or migrating painful ulcers appear within the oral cavity (on the gingiva and soft palate) and sometimes on the lips.

membranous s. Stomatitis accompanied by the formation of a false or adventitious membrane.

mercurial s. A form of stomatitis seen in those exposed to elemental mercury or mercury vapors.

mycotic s. Thrush.

simple s. Erythematous inflammation of the mouth occurring in patches on the mucous membranes.

traumatic s. Stomatitis resulting from mechanical injury as from ill-fitting dentures, sharp jagged teeth, or biting the cheek.

ulcerative s. Necrotizing ulcerative gingivitis.

vesicular s. Aphthous ulcer.

Vincent's s. Necrotizing ulcerative gingivitis.

stomato- Combining form meaning *mouth*.

stomatocyte (stō'mă-tō-sīt") A swollen erythrocyte with a slit-like area of central pallor that is found in hereditary stomatocytosis.

stomatocytosis, hereditary (stō'mă-tō-sī-tō'sīs) A disorder of erythrocytes

usually inherited as an autosomal dominant. A membrane defect in the red blood cells permits the entry of excess sodium ions and water, causing the cells to swell. Hemolysis and anemia range from mild to severe.

stomatodynia (stō'mă-tō-dīn'ē-ă) [Gr. *stoma*, mouth, + *odyne*, pain] Pain in the mouth.

stomatogastric (stō'mă-tō-gās'trik) [" + *gaster*, belly] Concerning the stomach and mouth.

stomatognathic (stō'mă-tō-g-nāth'ik) [" + *gnathos*, jaw] Indicating the mouth and jaws together.

stomatologist (stō'mă-tōl'ō-jist) [" + *logos*, word, reason] A specialist in the treatment of diseases of the mouth.

stomatology (stō'mă-tōl'ō-jē) The science of the mouth and teeth and their diseases.

stomatomalacia (stō'mă-tō-mă-lă'shē-ă) [" + *malakia*, softening] Pathological softening of any structures of the mouth.

stomatomenia (stō'mă-tō-mē'nē-ă) [" + *meniaia*, menses] Bleeding from the mouth at the time of menstruation.

stomatomycosis (stō'mă-tō-mī-kō'sis) [" + *mykes*, fungus, + *osis*, condition] Any disease of the mouth caused by fungi.

stomatopathy (stō'mă-tōp'ă-thē) [" + *pathos*, disease, suffering] Any mouth disease.

stomatoplasty (stō'mă-tō-plās'tē) [" + *plassein*, to form] Plastic surgery or repair of the mouth.

stomatorrhagia (stō'mă-tō-ră'jē-ă) [" + *rhegnynai*, to burst forth] Hemorrhage from the mouth or gums.

stomatosis (stō'mă-tō'sis) [" + *osis*, condition] Any disease of the mouth.

stomoccephalus (stō'mō-sēf'ă-lūs) [Gr. *stoma*, mouth, + *kephale*, head] A deformed fetus with a very small head and neck.

stomodeum (stō'mō-dē'ūm) [" + *hodaio*s, a way] An external depression lined with ectoderm and bounded by frontonasal, mandibular, and maxillary processes of the embryo. It forms the anterior portion of the oral cavity. Its floor, the pharyngeal membrane, separates the stomodeum from the foregut. The buccopharyngeal membrane, which forms the floor of the stomodeum, ruptures during the 4th week of gestation, and the gut tube then comes in communication with the amniotic fluid of the amniotic cavity.

stone [AS. *stan*] **1.** Calculus. **2.** In Britain, a unit of weight, 14 lb avoirdupois.

dental s. A hemihydrate of gypsum divided into four classes according to the qualities resulting from differing methods of preparation. It is used in dentistry in the preparation of models and study casts.

gray s. A synthetic stone composed of carborundum and rubber used to polish dental restorations.

pulp s. A calcified structure present in the pulp chamber of a tooth. SYN: *denticle* (2).

red s. An abrasive stone with garnet as its main component, for polishing dental restorations.

salivary s. A calcified stone present in the ducts of salivary glands; also called *stalolith*.

stonefish A poisonous member of the Synbranchidae family that carries a deadly tissue-destructive enzyme in its spines. Divers exposed to the toxin may die within days of exposure, often after a painful and mutilating illness.

stonustoxin (stŏn'us-tŏk-sĭn) A purified protein isolated from the venom of the stonefish, one of the most lethal members of the animal kingdom. The protein dissolves cells and tissues, and produces hypotension and death after it contacts animal tissues.

stool (stool) [AS. *stol*, a seat] 1. Evacuation of the bowels. 2. Feces.

bilious s. Yellow or yellow-brown discharges in diarrhea.

fatty s. Steatorrhea (2).

pea soup s. Liquid stools characteristic of typhoid.

rice water s. Watery serum stools with detached epithelium, as in cholera.

stool softener A substance that acts as a wetting agent and thus promotes soft, malleable bowel movements. A stool softener is not a laxative.

stopcock (stŏp'kŏk) A valve that regulates the flow of fluid from a container.

stoppage (stŏp'aj) [AS. *stoppian*] Obstruction of an organ. SEE: *cholestasia*.

storage disease A disorder involving abnormal deposition of a substance in body tissues. SEE: *glycogen storage disease*; *Wilson's disease*.

storax (stŏ'raks) A balsam obtained from the scarred trunk of *Liquidambar orientalis*. It is a component of tincture of benzoin and has been used as an expectorant.

storm [AS.] A sudden outburst or exacerbation of the symptoms of a disease.

electrical s. Recurring episodes of unstable ventricular tachycardia or ventricular fibrillation within 24 hr of a first life-threatening arrhythmia.

thyroid s. SEE: *thyroid storm*.

stout (stowt) [O.Fr. *estout*, bold] Having a bulky body.

STP *standard temperature and pressure*.

STPD *standard temperature and pressure, dry*.

Str *Streptococcus*.

strabismic (strā-biz'mĭk) [Gr. *strabismos*, a squinting] Pert. to or afflicted with strabismus. SYN: *strabismic*.

strabismometer (strā-biz-mŏm'ēt-ēr) [" + *metron*, a measure] An instrument

for determining the amount of strabismus.

strabismus (strā-biz'mŭs) [Gr. *strabismos*, a squinting] A disorder of the eye in which optic axes cannot be directed to the same object. This disorder is present in about 4% of children. The squinting eye always deviates to the same extent when the eyes are carried in different directions: *unilateral* when the same eye always deviates; *alternating* when either deviates, the other being fixed; *constant* when the squint remains permanent; *periodic* when the eyes are occasionally free from it. Strabismus can result from reduced visual acuity, unequal ocular muscle tone, or an oculomotor nerve lesion. SYN: *heterotropia*. SEE: *microstrabismus*; *squint*.

accommodative s. Strabismus due to disorder of ocular accommodation. SYN: *bilateral strabismus*.

alternating s. Strabismus affecting either eye alternately.

bilateral s. Accommodative s.

concomitant s. Strabismus in which both eyes move freely but retain an unnatural relationship to each other.

convergent s. Strabismus in which the deviating eye turns inward.

divergent s. Strabismus in which the deviating eye turns outward.

horizontal s. Strabismus in which the deviation of the visual axis is in the horizontal plane.

intermittent s. Strabismus recurring at intervals.

monocular s. Strabismus in which the same eye habitually deviates.

monolateral s. Strabismus with the squinting eye always the same.

nonconcomitant s. Strabismus of an eye that varies in degree with the change in direction in which the eye moves.

paralytic s. Strabismus due to paralysis of one of the extraocular muscles.

spastic s. Strabismus due to contraction of an ocular muscle.

vertical s. Strabismus in which the eye turns upward.

Strachan syndrome (strā'chăn) [William H. W. Strachan, Brit. physician, 1857-1921] The neurological syndrome of amblyopia, painful neuropathy, and orogenital dermatitis that occurs in undernourished persons in many tropical countries. In the U.S., the syndrome occasionally is seen in alcoholic patients. Treatment is symptomatic and includes adequate nutrition. Formerly called Jamaican neuritis.

straight back syndrome An abnormally erect position of the spine, associated with pectus excavatum and functional cardiac murmurs.

strain (strān) [AS. *streon*, offspring]

1. A stock, said of bacteria or protozoa from a specific source and maintained in

successive cultures or animal inoculation. **2.** A hereditary streak or tendency. **strain** (strān) [O.Fr. *estreindre*, to draw tight] **1.** To pass through, as a filter. **2.** To injure by making too strong an effort or by excessive use. **3.** Excessive use of a part of the body so that it is injured. **4.** Trauma to the muscle or the musculotendinous unit from violent contraction or excessive forcible stretch. It may be associated with failure of the synergistic action of muscles. SEE: *sprain*. **5.** To make a great effort, as in straining to have a bowel movement. This is done by means of the Valsalva maneuver, which increases intra-abdominal pressure and helps to expel feces. **6.** Force applied per unit area. Tension, compression, or shear stress placed on a tissue leads to distortion of the structure and the release of energy. **7.** Psychological trauma.

riders' s. Strain of the adductor longus muscles of the thigh, resulting from strain in riding horseback.

strainer (strān'ēr) **1.** Device used for retaining solid pieces while liquid passes through. SYN: *filter*. **2.** In river rescue, a term used to describe locations where water is moving through grating, wire mesh, or downed trees. A strainer is dangerous because victims can get caught in it or pinned up against it by the force of the moving current.

strain radiography A radiographical image taken with the involved region, usually a bone or joint, under static force or tension; used to determine if a partial tear or rupture of the ligaments has occurred. Greater than normal gaping of the joint surfaces indicates a tear. Strain radiography reveals pathological changes that might be inapparent without use of this technique. SYN: *stress radiography*.

strait (strāt) [O.Fr. *estreit*, narrow] A constricted or narrow passage.

s. of pelvis The inferior and superior openings of the true pelvis.

straitjacket A shirt with long sleeves laced on a patient and fastened to restrain the arms.



Because patients placed in physical restraints may suffer injury from their use, they should be applied to patients only under legally accepted guidelines and protocols.

stramonium (strā-mō'nē-ūm) [L.] The dried leaves of the toxic anticholinergic plant *Datura stramonium*. SYN: *jimson weed*.

stramonium poisoning SEE: under *poisoning*.

strand A single thread or fiber.

strangalesthesia (sträng'gäl-ēs-thē'zē-ä) [L. *strangulare*, halter, + *aisthesis*,

sensation] A girdle-like sensation of constriction. SYN: *zonesthesia*.

strangle (sträng'gl) [L. *strangulare*, halter] **1.** To choke or suffocate. **2.** To be choked from compression of the trachea.

strangulation (sträng'gū-lā'shūn) [L. *strangulare*, halter] The compression or constriction of a part, as the bowel or throat, causing suspension of breathing or of the passage of contents. Congestion accompanies this condition. **strangulated**, *adj.*

internal s. The entrapment of a segment of the intestine in an internal hernia or by adhesion, or through a rent or hiatus in the diaphragm, which leads to vascular compromise with ensuing gangrene.

strangury (sträng'gū-rē) [Gr. *stranx*, drop, squeezed out, + *ouron*, urine] Painful and interrupted urination in drops produced by spasmodic muscular contraction of the urethra and bladder.

strap, strapping (strāp) [Gr. *strophos*, a cord] **1.** A band, as one of adhesive tape, used to hold dressings in place or to approximate surfaces of a wound. **2.** To bind with strips of adhesive tape.

stratification (strāt'ī-fi-kā'shūn) [L. *stratificare*, to arrange in layers] The classification of objects into a hierarchy; the making of an ordered series of categories.

risk s. A formal estimate of the probability of a person's succumbing to a disease or benefiting from a treatment for that disease.

stratified (strāt'ī-fid) [L. *stratificare*, to arrange in layers] Arranged in the form of layers.

stratified epithelium SEE: under *epithelium*.

stratiform (strāt'ī-form) [L. *stratum*, layer, + *forma*, shape] Arranged in layers.

stratify (strā'tī-fi) [NL. *stratificare*] **1.** To arrange in layers. **2.** To classify into categories, e.g., of risk for a particular illness.

stratum (strā'tūm, strāt'ūm) *pl.* **strata** [L.] A layer.

s. basale **1.** The innermost or deepest layer of the endometrium. **2.** Stratum germinativum.

s. compactum The superficial or outermost layer of the endometrium.

s. corneum The outermost horny layer of the epidermis.

s. disjunction The outermost layer of the stratum corneum, which is being shed constantly.

s. functionalis Functional layer of the endometrium.

s. germinativum The innermost layer of the epidermis; a row of cuboidal cells that divide to replace the rest of the epidermis as it wears away. It is part of the stratum malpighii. SYN: *stratum basale* (2). SEE: *s. malpighii*.

s. granulosum A layer of cells containing deeply staining granules of keratohyalin found in the epidermis of the skin between the stratum spinosum and the stratum corneum. SEE: *s. malpighii*.

s. lucidum The translucent layer of the epidermis between the stratum corneum and the stratum granulosum in the palms and soles.

s. malpighii The inner layer of the epidermis. It was first seen with low magnification and described in the 1600s by Marcello Malpighi. It includes both the stratum germinativum and stratum spinosum of today's nomenclature.

s. papillare Papillary layer.

s. reticulare The recticular layer of the corium just beneath the papillary layer.

s. spinosum The prickle cell layer, so called because of its prominent intercellular attachments. It is part of the stratum malpighii. SEE: *s. malpighii*.

s. spongiosum The middle layer of decidua of the endometrium.

s. submucosum The layer of smooth muscle fibers of the myometrium lying contiguous with the endometrium.

s. subserosum The layer of smooth muscle fibers of myometrium that lies immediately under the serous coat.

s. supravasculare The layer of circular and longitudinal muscle fibers of the myometrium lying between the stratum subserosum and the stratum vasculare.

s. vasculare The layer of smooth muscle fibers in myometrium lying between the stratum submucosum and the stratum supravasculare.

strawberry mark A soft, modular, vascular nevus usually present on the face or neck, occurring at birth or shortly afterward. SEE: *nevus flammeus*.

straw itch A self-limiting skin condition accompanied by itching owing to working in straw or sleeping on a straw mattress. The straw contains a mite that causes the pruritic eruption.

streak (strĕk) [AS. *strica*] A line or stripe. SEE: *stria*.

angioid s. A dark streak seen in the retina that represents a defect in Bruch's membrane. It is often an age-related phenomenon but sometimes is seen in connective tissue diseases, like pseudoxanthoma elasticum, or hemoglobinopathies, such as sickle cell anemia.

gonadal s. Ovarian atrophy or aplasia; a finding in persons with Turner's syndrome.

Moore's lightning s. The subjective visual sensation of lightning-like flashes at the time of eye movements, esp. noticeable in dim or absent light. They are usually vertical and on the lateral part of the visual field. The flashes are accompanied by or followed by dark

spots before the eyes. This condition is not related to significant eye disease.

primitive s. SEE: *primitive streak*.

stream (strĕm) A steady flow of a liquid.

cathode s. Negatively charged electrons emitted from a cathode and accelerated in a straight line to interact with an anode. X-ray photons are then produced. SEE: *Bremsstrahlung radiation*; *ray, cathode*.

strength 1. The maximum force that can be generated by a muscle or muscle group. **2.** The concentration of a solution or substance. **3.** The intensity of light, color, or sound. **4.** The ability to resist deformation, fracture, or abrasion.

breaking s. The point at which an amount of applied force breaks a material. Also called *tensile strength*.

compression s. The point at which a material loses its shape when force is applied. Also called *crushing strength*.

ego s. In classical psychoanalytical theory, the ability of the ego to maintain its various functions, the prime one of which is to perceive reality and adapt to it.

impact s. The force required to fracture a material.

shear s. The resistance of a material to force applied perpendicular to the plane of the material.

strephosymbolia (strĕf'ō-sīm-bō'lĕ-ă) [Gr. *strephēin*, to twist, + *symbolon*, symbol] **1.** Difficulty in distinguishing between letters that are similar but face in opposite directions (e.g., p-q, b-d). **2.** The perception of objects as reversed, as in a mirror.

Strep throat Streptococcal pharyngitis.

strepto- [Gr. *streptos*, twisted] Combining form meaning *twisted*.

Streptobacillus moniliformis (strĕp'tō-bă-sil'ūs mō-nil'ĭ-fōr'mĭs) [NL] A gram-negative bacillus present in the mouths of rats, mice, and cats. It is transmitted to humans through bites or by ingestion of milk contaminated by rats. It causes one form of rat-bite fever, marked by prolonged fever, skin rash, and generalized arthritis. The infection may be treated with amoxicillin-clavulanate or doxycycline. SYN: *Haverhill fever*. SEE: *Spirillum minus*.

streptococcal (strĕp'tō-kōk'ăl) [ʹ + *kokkos*, berry] Caused by or pert. to streptococci.

streptococcal pyrogenic exotoxins The preferred name for those toxic chemicals released by Group A streptococci that were formerly known as erythrotoxic toxins. They are responsible for the rash children experience with scarlet fever and for many of the septic manifestations of toxic shock syndrome.

streptococemia (strĕp'tō-kōk-sĕ mĕ-ă) [ʹ + *haima*, blood] Presence of streptococci in the blood.

streptococcosis (strĕp'tō-kōk'sĭ-kō'sĭs)

[" + " + *osis*, condition] Any streptococcal infection.

Streptococcus (strĕp"tō-kōk'ūs) [" + *hōkōs*, berry] ABBR: Str. A genus of gram-positive, facultatively anaerobic cocci of the family Streptococcaceae, in which the cells tend to form chains or pairs. Many species are saprophytes, but others are virulent pathogens. They may be classified as alpha (α), beta (β), and gamma (γ) on the basis of their growth on blood agar plates and the hemolysis produced. Alpha-hemolytic streptococci produce partial hemolysis and create a greenish coloration around the colonies. Beta-hemolytic types completely hemolyze blood and form clear zones round colonies; those of the gamma type are nonhemolytic and do not change the color of the medium. Streptococci are also classified into several immunological groups (Lancefield groups) designated by the letters A through H, and K through O. Most human infections are caused by groups A, B, D, F, G, H, K, and O. Approximately 100 types of group A beta-hemolytic streptococci have been identified. SEE: *rheumatic fever*; *scarlet fever*.

S. agalactiae A group B β -hemolytic species found in raw milk that is the leading cause of bacterial sepsis and meningitis in newborns and a major cause of endometritis and fever in postpartum women.

Infected infants develop early-onset symptoms in the first 5 days of life, including lethargy, jaundice, respiratory distress, shock, pneumonia, and anorexia. The fatality rate is 50% for very low birth weight neonates and 2% to 8% in term infants.

Infected postpartum women develop late-onset symptoms 7 days to several months after giving birth. Symptoms include sepsis, meningitis, seizures, and psychomotor retardation. Neonatal infection may be prevented by detecting colonization by these bacteria in pregnant women and by administering antibiotics prior to birth.

S. bovis A species found in the alimentary tract of cattle. It may cause endocarditis in humans.

S. equisimilis A species that has been isolated from the upper respiratory tract. It may be associated with erysipelas, puerperal sepsis, pneumonia, osteomyelitis, bacteremia, and endocarditis.

S. faecalis The former name of *Enterococcus faecalis*.

S. iniae A species pathogenic to fish that may cause cellulitis in persons who handle affected fish and have skin abrasions.

S. mutans A species that has been implicated in dental caries initiation and bacterial endocarditis.

S. pneumoniae A species that occurs in pairs with capsules, is also called the pneumococcus, and may be part of the transient flora of the upper respiratory tract. Based on capsular chemistry, more than 80 serological types have been identified. It is the causative agent of certain types of pneumonia, esp. lobar pneumonia, and is associated with other infectious diseases such as meningitis, conjunctivitis, endocarditis, periodontitis, septic arthritis, osteomyelitis, otitis media, septicemia, spontaneous bacterial peritonitis, and, rarely, urinary tract infections. About 40,000 people die of pneumococcal disease each year in the U.S., more than from any other vaccine-preventable illness. SYN: *pneumococcus*.

S. pyogenes Any of the group A β -hemolytic streptococci causing suppurative infections. These streptococci are the causative agents of scarlet fever, erysipelas, bacterial pharyngitis, puerperal sepsis, and necrotizing fasciitis.

streptococcus (strĕp"tō-kōk'ūs)*pl.* **streptococci** An organism of the genus *Streptococcus*. SEE: *bacteria* for illus. **streptococci**, *adj.*

α -hemolytic s. Streptococci that, when grown on blood-agar, produce a zone of partial hemolysis around each colony and often impart a greenish appearance to the agar. Included are *S. pneumoniae* and viridans group streptococci.

β -hemolytic s. Streptococci that, when grown on blood-agar, produce complete hemolysis around each colony, indicated by a yellowish zone. Included are *S. pyogenes* and *S. agalactiae*.

group A s. Beta-hemolytic streptococci (esp. *Streptococcus pyogenes*) that produce human diseases, including pharyngitis, cellulitis, erysipelas, impetigo, otitis media, pneumonia, scarlet fever, necrotizing fasciitis, sepsis, sinusitis, and tonsillitis. In addition, group A streptococcus infection may have immunologic sequelae such as rheumatic fever and acute glomerulonephritis.

group B s. Beta-hemolytic streptococci that are a leading cause of early-onset neonatal infections and late-onset postpartal infections. In women, this is marked by urinary tract infection, chorioamnionitis, postpartum endometritis, bacteremia, and wound infections complicating cesarean section. Eradication of this organism during labor decreases the chances for neonatal sepsis. Performance of cervical-rectal screening cultures at 35 to 37 weeks' gestation (and intrapartum treatment with penicillin if cultures are positive) prevents the development of neonatal sepsis.

group D s. Any *Streptococcus* species, including *S. bovis* and *S. equinus*, that is not destroyed by bile or exposure

to heat. These strains can be destroyed in a laboratory by a 6.5% concentration of sodium chloride.

nutritionally variant s. ABBR: NVS.

The obsolete name for bacteria of the genera *Abiotrophia* or *Granulicatella*.

streptodornase (strĕp'tō-dor'nās) One of the enzymes produced by certain strains of hemolytic streptococci. It is capable of liquefying fibrinous and purulent exudates.

streptogramin (strĕp'tō-grām'in) Any of a class of antibiotics effective against gram-positive bacteria that bind to the bacterial ribosome and inhibit protein synthesis. An example is the combination antibiotic quinupristin-dalfopristin.

streptolysin (strĕp'tōl'ī-sin) An enzyme produced by streptococci that destroys blood cells.

s. O Streptolysin that is inactivated by oxygen.

s. S Streptolysin that is inactivated by heat or acid, but not by oxygen.

Streptomyces (strĕp'tō-mī'sēz) [*l'* + Gr. *mykes*, mushroom, fungus] A genus of branching, filamentous bacteria of the family Streptomycetaceae. Most species live in the soil, and few are pathogenic. Many produce antibiotics, and some produce immune-suppressing and anticancer drugs. Important species within the genus are *S. coelicolor* and *S. lividans*.

streptomycosis (strĕp'tō-mī-kō'sis) [*l'* + *mykes*, fungus, + *osis*, condition] An infection caused by microorganisms of the genus *Streptomyces*.

stress (strĕs) [O.Fr. *estresse*, narrowness] **1.** Any physical, physiological, or psychological force that disturbs equilibrium **2.** The consequences of forces that disturb equilibrium. **3.** Force applied per unit area. In the physical sciences, stresses include forces that deform or damage materials, such as impact, shear, torsion, compression, and tension. These physical stresses are particularly important in certain branches of health care (e.g., dentistry or orthopedic surgery) and in biotechnology industries (e.g., in the design and use of prostheses, grafts, and perfusion pumps).

Physiological stresses include agents that upset homeostasis, such as infection, injury, disease, internal organ pressures, or psychic strain.

In psychology, stresses include perceptions, emotions, anxieties, and interpersonal, social, or economic events that are considered threatening to one's physical health, personal safety, or well-being. Marital discord; conflicts with others; battle, torture, or abuse; bankruptcy; incarceration; health care crises; and self-doubt are all examples of conditions that increase psychic stresses. The response of an organism or

material to stress is known as adaptation. SEE: *adaptation; anxiety; fracture; homeostasis; Laplace, law of; relaxation response.*

critical incident s. One's emotional reaction to a catastrophic event such as a mass casualty incident or the death of a patient or coworker. Often such events negatively affect the well-being of health care providers.

oxidative s. The cellular damage caused by oxygen-derived free radical formation. The three most important are superoxide (O₂⁻), hydrogen peroxide (H₂O₂), and hydroxyl ions; these are produced during normal metabolic processes as well as in reaction to cell injury. The extent of their damaging potential can be decreased by antioxidants. SEE: *antioxidant; free radical; superoxide; superoxide dismutase.*

shear s. Shear.

stress-breaker A device incorporated into a removable denture. It is designed to relieve abutting teeth from excessive stress during chewing.

stress incontinence SEE: *incontinence, stress urinary.*

stress management (strĕs măn'tj-mĭnt) Any intervention that may help control the physiological changes or psychological discomfort caused by the body's response to stress. There are many methods of stress management, including relaxation techniques (e.g., yoga, meditation, deep breathing, and progressive muscle relaxation), choosing a lifestyle with meaning and purpose, physical activity, maintenance of a positive attitude and outlook, and prayer.

stressor An agent or condition capable of producing stress.

systemic s. A stressor that produces generalized systemic responses.

topical s. Stress that causes mild inflammation or local damage.

stress overload Excessive amounts and types of demands that require action. SEE: *Nursing Diagnoses Appendix.*

stress radiography Strain radiography.

stress response protein SEE: under *protein.*

stress test Exercise tolerance test.

abduction s.t. A maneuver to assess whether a patient has suffered a ligamentous injury to the knee. With the patient's hip extended over the edge of the examining table, the examiner externally rotates the patient's lower extremity at the ankle, while providing internal rotation from the lateral border of the thigh. SEE: *valgus s.t.*

adenosine s.t. A test for coronary artery disease that uses the drug adenosine as a vasodilator, usually along with radionuclide imaging of the heart or echocardiography. The drug is used in place of physical exercise to demonstrate obstructions in the coronary ar-

teries (e.g., in patients who cannot perform physical exercise or whose exercise testing results have been uninterpretable).

valgus s.t. A test of ligament laxity, where a passive force is exerted on a joint that, in the presence of ligamentous insufficiency, would cause the medial joint space to open (e.g., medial collateral ligament of the knee and ulnar collateral ligament of the elbow).

varus s.t. A test of ligament laxity, where a passive force is exerted on a joint that, in the presence of ligamentous insufficiency, would cause the lateral joint space to open (e.g., lateral collateral ligament of the knee and radial collateral ligament of the elbow).

stretch (strĕch) [AS. *streccan*, extend] To draw out or extend to full length.

static s. A sustained, low-intensity lengthening of soft tissue (e.g., muscle, tendon, or joint capsule), performed to increase range of motion. The stretch force may be applied continuously for as short as 15 to 30 sec or as long as several hours.

stretcher (strĕch'er) Litter, equipped with wheels, used for transporting patients. SYN: *gurney*.

basket s. A stretcher made of metal or strong synthetic material in which a patient is placed for removal from an accident site. The stretcher may also be lifted by ropes. Also called *Stokes stretcher*.

orthopedic s. A metal stretcher that is hinged along its long axis and designed to be split so that it can be placed on both sides of the patient and then reassembled to lift the patient. SYN: *scoop stretcher*.

pole s. A type of stretcher, also known as the Army type, composed of folding cloth or canvas supported by poles.

scoop s. Orthopedic s.

spineboard s. A type of stretcher made from a wooden board or strong synthetic material used to secure patients with spinal trauma to prevent movement and possible paralysis; also called a long backboard.

split-frame (scoop) s. A metal stretcher that can be split down the middle, slid under a patient, and reconnected.

stretching of contractures Techniques performed to increase the length of tissues that have been abnormally shortened (e.g., ligaments, muscles, or joint capsules). A slow, steady, and gradually increasing force should be used.

stretch mark Stria atrophica.

stria (strī'ā) *pl.* **striae** [L., a channel] A line or band elevated above or depressed below surrounding tissue, or differing in color and texture. SEE: *streak*.

s. atrophica A fine pinkish-white or

gray line, usually 14 cm long, seen in parts of the body where skin has been stretched; commonly seen on thighs, abdomen, and breasts of women who are or have been pregnant; in persons whose skin has been stretched by obesity, tumor, or edema; or in persons who have taken adrenocortical hormones for a prolonged period. SYN: *stretch mark*. SYN: *stria gravidarum*.

striae gravidarum Striae atrophica.

s. medullaris In the brain, a thin axon tract of the limbic system. SEE: *limbic system* for illus.

olfactory striae Three bands of fibers (lateral, intermediate, and medial) that form the roots of the olfactory tract.

striae of Retzius The benign incremental lines seen periodically in the calcified enamel of teeth.

striae terminalis A band of fibers in the roof of the inferior horn running to the floor of the body of the lateral ventricle.

striatal (strī-ā'tāl) [L. *striatus*, striped] Concerning the corpus striatum.

striae, striated (strī'āt, strī'ā-tĕd) [L. *striatus*] Striped; marked by streaks or striae.

striate body The corpus striatum, composed of the cordate and lenticular nuclei of the brain.

striation (strī-ā'shŭn) [L. *striatus*, striped] 1. State of being striped or streaked. 2. Stria.

striatum (strī-ā'tŭm) [L., grooved] Corpus striatum.

stricture (strĭk'chŭr) [LL. *strictura*, contraction] A narrowing or constriction of the lumen of a tube, duct, or hollow organ such as the esophagus, ureter, or urethra. Strictures may be congenital or acquired. Acquired strictures may result from infection, trauma, fibrosis due to mechanical or chemical irritation, muscular spasm, or pressure from adjacent structures or tumors. They may be temporary or permanent, depending on the cause.

annular s. Ringlike obstruction of an organ involving the entire circumference of a structure.

anorectal s. A fibrotic narrowing of the anorectal canal.

bride s. A stricture caused by a band of membrane stretched across a tube, partially occluding it.

cicatrical s. A stricture resulting from a scar or wound.

functional s. A stricture caused by muscular spasm.

impermeable s. A stricture closing the lumen of a tube or canal so that an instrument cannot pass through it.

irritable s. A stricture causing pain when an instrument is passed.

s. of the urethra Partial or complete narrowing of the urethra, occurring most commonly in men. The condition is

marked by straining to pass urine, esp. at the commencement of urination. It is caused by spasm of the urethral muscle, congestion of the urethra, and fibrous formation.

strictureplasty (strīk'chīr-plā'stē) [" + "] A surgical technique for treating or opening a bowel blockage used to spare the intestines from surgical removal (e.g., in managing Crohn's disease).

strictureotomy (strīk'chūr-ōt'ō-mē) The operation of cutting strictures of the urethra.

stride length The length of the step taken during ambulation; useful in the assessment of a neuromuscular disease that affects only one leg.

strident (strī'dēnt) Stridulous.

stridor (strī'dor) [L., a harsh sound] A high-pitched, harsh sound occurring during inspiration, often heard without the use of a stethoscope. It is a sign of upper airway obstruction, which may indicate the presence of a life-threatening condition (e.g., epiglottitis). The lack of stridor should never be interpreted as a sign that the upper airway is patent in the patient with signs of having difficulty breathing.

congenital laryngeal s. Stridor present at birth or occurring during the first weeks or months of life.

s. dentium The noise from grinding of the teeth. SEE: *bruxism*.

s. serraticus A sound of respiration similar to that of sawing, produced by the patient's tracheostomy tube.

stridulous (strīd'ū-lūs) [L. *stridulus*] Making a shrill, grating sound. SYN: *strident*.

string-of-pearls deformity Fusiform enlargement of the proximal and middle phalanges, seen in rickets.

string sign In gastrointestinal radiology, extreme narrowing of a segment of the terminal ileum (in Crohn's disease) or of the pylorus (in congenital pyloric stenosis).

string test A test formerly used to diagnose intestinal infection with *Giardia lamblia*, in which a string is swallowed, then removed, and examined for parasites.

strip (strīp) [AS. *stripan*, to plunder] **1.** To remove all contents from a hollow organ or tube, esp. by gentle pressure, as to strip the seminal vesicles. **2.** A long slender band of tissue, e.g., one removed surgically for transplantation elsewhere in the body.

stripper A surgical instrument used to remove veins, tendons, or periosteum.

strobila (strō-bī'lā) [Gr. *strobilos*, anything twisted up] The series of proglottids of the adult form of a tapeworm.

strobiloid (strō'bī-loyd) [" + *eidos*, form] Resembling a chain of tapeworm segments.

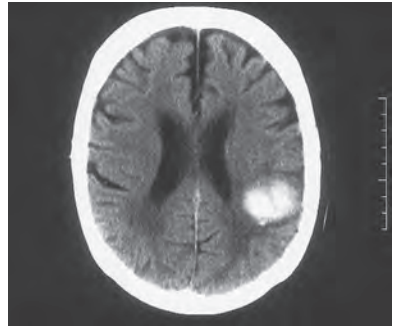
stroboscope (strō'bō-skōp) [Gr. *strobos*,

whirl, + *skopein*, to examine] A device that produces light intermittently. When the light is shown on moving or vibrating objects, the object appears to be stationary. A photograph taken at the precise time the light is flashed on the object will not be blurred.

stroboscopy The analysis of movements with a periodically flickering light source.

strobvideolaryngoscopy (strō'bō-vid-ē-ō-lār'inj-ōs-kō-pē) The use of a stroboscope in video recordings of diseases of the larynx and vocal cords.

stroke (strōk) [ME.] **1.** A sudden loss of neurological function, caused by vascular injury (loss of blood flow) to an area of the brain. Stroke is both common and deadly: about 700,000 strokes occur in the U.S. each year. Stroke is the third leading cause of death in the U.S. Because of the long-term disability it often produces, stroke is the disease most feared by older Americans. In the U.S., 80% of strokes are caused by cerebral infarction (i.e., blockage of the carotid or intracerebral arteries by clot or atherosclerosis); intracranial hemorrhage and cerebral emboli are responsible for most other strokes. Innovations in the management of stroke (e.g., in prevention, the early use of thrombolytic drugs, vascular ultrasonography, and endarterectomy) have revolutionized the acute and follow-up care of the stroke patient. SYN: *apoplexy*; *attack*, *brain*; *cerebrovascular accident*. SEE: *carotid endarterectomy*; *intracranial hemorrhage*; *transient ischemic attack*; *illius*.



HEMORRHAGIC STROKE

Bleeding into the brain, seen on noncontrast head CT (Courtesy of Harvey Hatch, MD, Curry General Hospital)

ETIOLOGY: Risk factors for stroke include advanced age (esp. older than 65 years), atherosclerosis of the aortic arch, atrial fibrillation, carotid artery disease, cigarette use, excessive alcohol use (more than 5 drinks daily), heart failure, hyperlipidemia, hypertension, a history of myocardial infarction, diabe-

tes mellitus, male gender, close relation of someone who has had a stroke, non-white race, peripheral vascular disease, physical inactivity, obesity, using combination hormonal contraception (the pill, ring, patch), being pregnant or immediately postpartum, or a recent transient ischemic attack.

SYMPTOMS: The National Institute of Neurological Disorders and Stroke lists the following symptoms as warning signs of stroke: sudden weakness or numbness of the face, arm, or leg; sudden loss of vision, double vision, dimming of vision in one or both eyes; sudden difficulty speaking or understanding speech; sudden severe headache; and sudden falling, gait disturbance, or dizziness. The patient who experiences these problems should call 911 immediately. If symptoms disappear in a few minutes, the individual may have experienced a transient ischemic attack (TIA [informally known as a "ministroke" or a "warning stroke"]) and should notify his/her primary care provider immediately for preventive care. In clinical practice, stroke patients often present with more than one stroke symptom (e.g., limb paralysis and aphasia; severe headache and hemibody deficits). It is also important to note that these symptoms are not specific for stroke: sudden dizziness or gait disturbance can occur as a result of intoxication with drugs or alcohol, for example, and sudden severe head pain can result from cluster headache, migraine, and many other disorders.

TREATMENT: Acute ischemic stroke can be treated with recombinant tissue plasminogen activator (rt-PA) if the disease is recognized in the first 90 to 180 min and intracerebral hemorrhage has been excluded with urgent computed tomography (CT) or magnetic resonance imaging (MRI) scanning of the brain. This form of therapy is not without risk; thrombolytic drugs can reduce the potential for long-term disability and death by 20%, but increase the risk of hemorrhage. Hemorrhagic strokes, which have about a 50% mortality, can sometimes be treated by evacuating blood clots from the brain or by repairing intracerebral aneurysms.



Patients with hemorrhagic stroke should never receive fibrinolytic drugs. Other contraindications to fibrinolysis in stroke include recent or active bleeding or a known propensity for abnormal bleeding; recent lumbar puncture; recent arterial puncture; recent myocardial infarction; recent surgery or major trauma; seizure at the onset of the stroke; or blood pressure over 185/110 that does not improve with simple therapies.

PATIENT CARE: *Acute phase:* The health care team performs a history and physical assessment, including a careful examination of airway, breathing, circulation, and neurological functions. The Glasgow Coma Scale should be used to assess level of consciousness. The severity of a stroke should be assessed with a valid scale, such as the National Institute's of Health Stroke Scale (NIHSS) or other well-publicized assessment tools. Staff provides oxygen by nasal cannula, establishes venous access via two large-bore catheters, and infuses saline intravenously; obtains blood samples for complete blood count, blood glucose, electrolytes, and coagulation studies; and obtains a 12-lead ECG and initiates cardiac monitoring. The stroke team, neurologist, radiologist, and MRI and/or CT technician are alerted. Fever and hyperglycemia are treated aggressively because elevated body temperatures and elevated blood glucose levels have been linked to poorer outcomes. Blood pressure is gently controlled to a level less than 180/110: more aggressive pressure control may be hazardous. The patient is positioned in the lateral or semiprone position with the head elevated 15 to 30 degrees to decrease cerebral venous pressure. Neurological status is monitored for signs of deterioration or improvement, and findings are documented on a flow sheet. The National Institute of Neurological Disorders and Stroke (NINDS) suggests the following order of assessment in patients with suspected stroke: level of consciousness, eye movements, visual fields, facial movements, motor function of arms and legs, limb coordination, sensory responses, and language use including clarity of speech. A history of the incident is obtained, including how and when symptoms started. Past medical history should be reviewed (hypertension, use of anticoagulant drugs, cardiac dysrhythmias). The patient is prepared for prescribed diagnostic studies, including MRI and/or CT, and possibly arteriography.

The patient is oriented frequently and reassured with verbal and tactile contacts. Attention is focused on determining the patient's candidacy for emergent use of thrombolytic therapy. If potential benefits are established, recombinant tissue plasminogen activator (rt-PA) is administered intravenously over 60 min, with 10% of the determined dosage as a bolus in the first 60 sec. Blood pressure is monitored closely once the infusion is started, and any elevation treated aggressively. The patient also is monitored for indications of systemic bleeding (tachycardia, tachypnea, hypotension or acute hypertension, rapid

mental status deterioration, severe headache, and nausea and vomiting). When rt-PA administration is complete, the patient is transferred to the neurologic ICU or neurology unit. If clot-busting drugs cannot or should not be administered, monitoring and supportive care is provided. The ability to speak is assessed, and if aphasia is present, a consultation by a speech therapist is obtained. Bladder function is assessed; noninvasive measures are used to encourage voiding in the presence of urinary retention, voiding pattern is determined, and the incontinent patient is kept clean and dry. Use of indwelling catheters is limited because these promote urinary tract infection. Bowel function is assessed, and dietary intervention and stool softeners or laxatives as necessary are used to prevent constipation. Straining at stool or use of enemas is avoided. Fluid and electrolyte balance (intake, output, daily weight, laboratory values) is monitored and maintained. Adequate enteral or parenteral nutrition is provided as appropriate. Nursing measures are instituted to prevent complications of immobility. In consultation with occupational therapists and physical therapists, a program of positioning and mobility is initiated, as appropriate. Examples of activities include repositioning at least every 2 hr, maintaining correct body alignment, supporting joints to prevent flexion and rotation contractures, and providing range-of-motion exercises (passive to involved joints, active-assisted or active to uninvolved joints). Irrigation and lubrication prevent oral mucous membranes and eyes (cornea) from drying. Prescribed medical therapy is administered to decrease cerebral edema, and antihypertensives or anticoagulants are given as appropriate for etiology. The patient is observed for seizure activity, and drug therapy and safety precautions are initiated. Most stroke patients are hospitalized for a few days. Patient education about risk modification begins prior to discharge.

Rehabilitative phase: After the acute phase of stroke, rehabilitation goals depend on the severity of the patient's deficit, the age of the patient, the presence of comorbidities and prior functional status, his or her ability to perform activities of daily living independently, and the family and social support systems available. The rehabilitation program will consist of various types of exercises, including neuromuscular retraining, motor learning and motor control, and functional activities that emphasize relearning or retraining in basic skills required for self-care. This may include instruction in the use of adaptive and supportive devices to fa-

cilitate independence in daily tasks. The goal of rehabilitation is to achieve an optimal functional outcome that will allow the patient to be discharged to the least restrictive environment. Ideally, the patient will achieve sufficient independence to return to community living, either independently or with family and community support.

All patient efforts should receive positive reinforcement. Patient communication is a priority. Exercises, proper positioning, and supportive devices help to prevent deformities. Quiet rest periods are provided based on the patient's response to activity. The patient should either assist with or perform own personal hygiene and establish independence in other activities of daily living. The rehabilitation team evaluates the patient's ability to feed self and continues to provide enteral feeding as necessary. A bowel and bladder retraining program is initiated, and both patient and family receive instruction in its management. Both patient and family are taught about the therapeutic regimen (activity and rest, diet, and medications), including desired effects and adverse reactions to report. Emotional lability, a consequence of some strokes, is recognized and explained, and assistance is provided to help the patient deal with changes in affect.

NOTE: The best results are achieved by patients treated in specialized treatment centers with demonstrably low complication rates. All stroke patients are advised to reduce their risk for future stroke by taking prescribed antihypertensive drugs as directed; losing excess weight; exercising regularly; eating a well-balanced diet low in fat, cholesterol, sugar, and salt; stopping smoking; limiting alcohol intake; and maintaining glycemic control. Patient and family are referred to the American Stroke Association or local stroke groups for information and support (<http://www.strokeassociation.org>).

2. To rub gently in one direction, as in massage. **3.** A gentle movement of the hand across a surface. **4.** In dentistry, a complete simple movement that is often repeated with modifications of position, strength, or speed, perhaps as a part of a continuing activity; e.g., the closing stroke in mastication when the jaw closes and the teeth come together. In scaling or planing the roots of teeth, the scaling instrument is introduced carefully into the subgingival area in what is called an exploratory stroke, perhaps followed by a power stroke designed to break or dislodge encrusted calculus. This is followed by a shaving stroke, intended to smooth or plane the root surface. **5.** A sharp blow.

ischemic s. A stroke caused by di-

minished blood flow to a particular artery in the brain, e.g., as a result of a clot in the artery or an embolus lodging in the artery. Ischemic stroke is much more common than hemorrhagic stroke.

lacunar s. A pathological change in the brain caused by diminished or no blood flow through one of the brain's small penetrating arteries. When this occurs, there may be no clinically detectable changes in the patient or signs and symptoms of stroke. A group of little strokes may cause progressive dementia.

mini-s. A colloquial and imprecise term for a transient ischemic attack.

paralytic s. A stroke that produces loss of muscular functions.

Stroke Impact Scale An instrument used to measure the effect of a stroke on a person's mobility, speech, social activities, manual dexterity, strength, emotions, memory, and daily activities.

stroke volume variability ABBR: SVV. Changes in the amount of blood ejected from the left ventricle into the aorta with each heartbeat. Stroke volume variability measurements may be used to assess the autonomic responsiveness or preload of critically ill patients during a ventilator breath.

stroking **1.** A massage technique of moving the hand over the body surface, used to facilitate relaxation and improve flow of tissue fluids. **2.** A technique of slow tactile stimulation over the posterior primary rami, used to inhibit muscle responses and promote relaxation during neuromotor rehabilitation.

stroma (strō'mā) *pl.* **stromata** [Gr., bed covering] **1.** Foundation-supporting tissues of an organ. The opposite of parenchyma. **2.** The membranous lipid-protein framework within a red blood cell to which hemoglobin molecules are attached. **stromal, stromatic, adj.**

stromatolysis (strō'mā-tōl'ī-sīs) [*l* + *lysis*, dissolution] Destruction of the stroma of a cell.

stromatosis (strō'mā-tō'sīs) [*l* + *osis*, condition] The presence of mesenchymal (structural) tissue infiltrating the uterine endometrium. Contrast with the term adenomyosis.

stromelysin (strō'mā-līs-īn) ABBR: MMP-3. Member of the matrix metalloproteinase family of enzymes that plays a major role in the degradation of proteoglycans, gelatin, and other constituents of the extracellular matrix. Two forms of stromelysin have been described, stromelysin-1 and -2. Stromelysin-1 degrades proteoglycans, gelatin, fibronectin, laminin, collagen types III, IV, IX, and X. Stromelysin-2 degrades proteoglycans, fibronectin, laminin, and collagen type IV.

strong (strawng) **1.** Potent. **2.** Concentrated. **3.** Biologically or chemically ac-

tive; said, e.g., of acids, bases, electrolytes, and muscle tissue.

strong dominance In health care management any strategy that provides a more effective and less costly solution to a problem.

Strong Interest Inventory ABBR: SII. A psychological test that traditionally measures vocational interests but also identifies personality traits. Previous versions (the original was developed in 1927) were known as the Strong Vocational Interest Bank.

Strongyloides (strōn'jī-loi'dēz) A genus of roundworms that infect humans.

S. stercoralis A roundworm that causes gastrointestinal infections (primarily in persons from developing nations) and opportunistic infections (in immunosuppressed patients). It may occasionally be life-threatening. In the U.S., *S. stercoralis* is found mainly in the rural South. The ova hatch in the intestines of the host, and rod-shaped larvae are passed in the stool. In the soil, these may develop into adults and continue their life cycle or may metamorphose into filariform larvae that can infect humans. The filariform larvae enter the skin, pass through the venous system to the lungs, where they migrate upward and are swallowed. A rash or pneumonia may accompany their migration. The larvae mature in the intestine, and ova of the next generation hatch. The rod-shaped larvae may metamorphose into the filariform larvae in the intestine. These may enter the circulation, migrate to the lungs, and begin the cycle again.

Such auto-infection may be sufficient to cause overwhelming systemic infection with fever, severe abdominal pain, shock, and possibly death. Severe reactions are more likely to occur in immunosuppressed patients. The diagnosis is made by finding larvae in the patient's feces. Thiabendazole and mebendazole are the drugs of choice. Repeated courses of treatment may be required.

strongyloidosis (strōn'jī-loi-dō'sīs) [Gr. *strongylos*, compact, + *osis*, condition] Infestation with organisms of the genus *Strongyloides*.

strongylosis (strōn'jī-lō'sīs) Infestation with organisms of the genus *Strongylus*.

Strongylus (strōn'jī-lūs) A genus of nematodes; the several species usually parasitize horses.

strontium (strōn'shē-ūm) [Strontian, mining village in Scotland] SYMB: Sr. A dark yellow metal; atomic weight, 87.62; atomic number, 38; specific gravity, 2.6. Medically it is of interest because its radioactive isotope ⁹⁰Sr constitutes a radioactive hazard in fallout from atom bombs. The isotope has a half-life of 28 years and is stored in bone when ingested.

Strophanthus (strō-fān'thūs) [Gr. *strophos*, twisted cord, + *anthos*, flower] A genus of plants yielding a poisonous, white, crystalline glucoside, previously used as a heart stimulant.

strophocephaly (strōf'ō-sēf'ā-lē) [" + *kephale*, head] Distortion of the head and face resulting from a developmental anomaly.

structural integration Rolfing.

structure (strūk'shūr) The composition and arrangement of the component parts of an organism or a device.

struma (stroo'mā) [L. *struma*, a mass] Goiter.

cast iron s. Riedel's s.

s. lymphomatosa A rare condition involving a diffuse and extensive infiltration of the entire thyroid gland.

s. maligna Carcinoma of the thyroid gland.

s. ovarii A form of ovarian teratoma in which the mass is composed of typical thyroid follicles filled with colloid.

Riedel's s. A form of chronic thyroiditis in which the gland becomes enlarged, hard, and adherent to adjacent tissues. The follicles become atrophic and fibrosis occurs. SYN: *cast iron struma*.

strumectomy (stroo-mēk'tō-mē) [" + *ektome*, excision] The removal of a goiter.

strumitis (stroo-mī'tis) [" + Gr. *itis*, inflammation] Thyroiditis.

Strümpell's disease (strīm'pēlz, stroom', shtrüm') Ankylosing spondylitis.

Strümpell-Marie disease (strüm'pīl-mār'ē, shtrüm', -mā-rē') [Adolf G. G. von Strümpell, Ger. physician, 1853–1925; Pierre Marie, Fr. neurologist, 1853–1940] Ankylosing spondylitis.

Strümpell's sign (strīm'pēls) Dorsiflexion of the foot when the thigh is flexed on the abdomen. This sign may be associated with spastic paralysis of the leg.

strut (strüt) [probably fm. AS. *strutian*, to struggle] A support that stabilizes a structure.

struvite (strū'vīt) Magnesium ammonium phosphate crystals, important in health care because they cause about 15% of all kidney stones. They are formed in the urinary tract in conjunction with some bacterial infections, such as infection with *Proteus mirabilis*, and in some patients with hypercalciuria.

strychnine (strīk'nīn, -nēn, -nīn) [Gr. *strychnos*, nightshade] A poisonous alkaloid, used to kill rodents, that may produce nausea and vomiting, symmetrical muscle spasms, fever, muscle breakdown (rhabdomyolysis), and renal failure. It has no therapeutic usefulness but has been used as an experimental tool in neuropharmacology.

s. poisoning SEE: under *poisoning*.

strychninism (strīk'nīn-izm) [" + *-is-*

mos, condition] Chronic strychnine poisoning.

Stryker frame (strī'kēr) A device that supports two rectangular pieces of lightweight but strong material so that one side is on the anterior surface of the patient and the other is on the posterior surface. The patient is sandwiched firmly between the pieces of material. The device may be rotated around the patient's long axis. This permits turning the patient without his or her assistance. After a turn is completed, the uppermost portion of the frame can be moved away from the patient. SEE: *illus.*

Stryker's saw An electric-powered oscillating saw that cuts through bone or dense tissue with minimal damage to the underlying soft tissues.

STS *serological test for syphilis*.

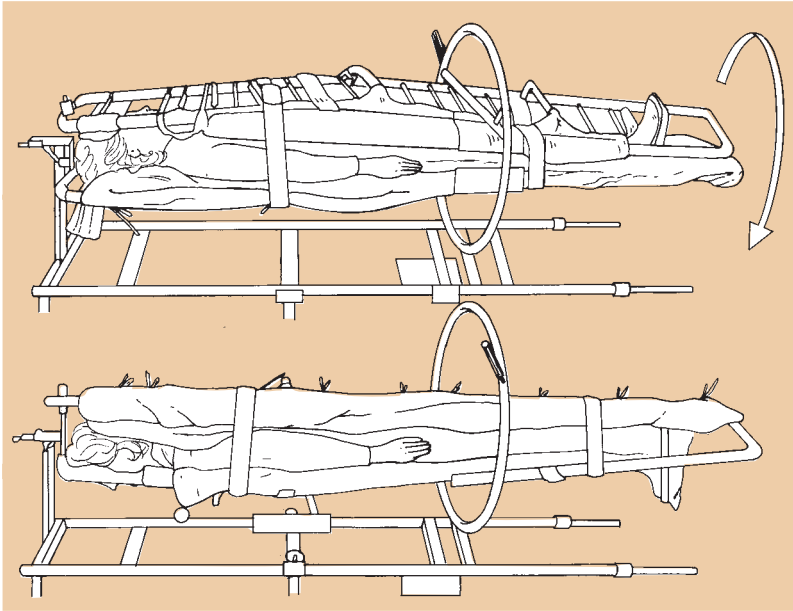
STU *skin test unit*.

stucco keratosis Benign papules, typically found on the lower extremities, histologically related to seborrheic keratoses (which are also benign lesions).

study, case-control In epidemiology and medical research, an investigative technique in which cases are selected for study on the basis of the dependent variable, i.e., the presence (study group) or absence (control group) of the condition or disease being investigated. Differences in the rates of the factor, trait, exposure, characteristic, or possible cause (independent variables) are then compared between the two groups. For example, a study might involve two groups of patients from the same population—one that has cancer (study group) and one that does not have cancer (control group). The smoking rates in these otherwise similar groups could then be compared to see if exposure to cigarettes differed between them. It is important to remember that case-control studies cannot prove causation but can only suggest associations between the variables. Because this type of study is retrospective, there is no way to control for bias in the study from differential reporting between the groups, nor to match the two groups as closely as would be necessary to exclude possible confounding factors.

study, nerve conduction ABBR: NCS.

An electrodiagnostic test used to determine whether the conduction of impulses along specific nerves is normal or pathologically slowed. In the test an electrical shock is given to a nerve that controls a particular muscle. The time required for the muscle to contract and the distance the electrical stimulus has to travel along the nerve are recorded. In patients with neuropathies, the expected velocity of impulse conduction will not be met; slowing will be evident. Patients with cut or injured nerves will



STRYKER FRAME

show maximal slowing of impulse conduction.

study, prospective A scientific investigation that collects data as they accumulate and analyzes the results after they have accrued. Prospective studies in which both the investigators and the research subjects are unaware of treatment assignments are considered among the most meaningful in health care.

study, retrospective A research project that collects data and draws conclusions from events that have already occurred.

study, role delineation ABBR: RD study. A document that describes those tasks that are critical for competent job performance, by identifying the minimum amount of knowledge and skills required to perform job-related functions. RD study results are often used to develop certification and licensing examinations in the health professions.

stump The distal portion of an amputated extremity.

stun (stün) [O.Fr. *estoner*, a blow] To render unconscious or stupefied by a blow.

stupe (stüp) [L. *stupa*, tow] A counter-irritant for topical use, prepared by adding a small amount of an irritant such as turpentine to a hot liquid.

stupor (stū'por) [L., numbness] A state of altered mental status (decreased responsiveness to one's environment) in

which a person is arousable only with vigorous or unpleasant stimulation.

stuporous, adj.

epileptic s. Postictal confusion or drowsiness that sometimes follows a seizure.

Sturge-Weber syndrome (stürj'wéb'ēr) [William Sturge, Brit. physician, 1850–1919; Frederick Parkes Weber, Brit. physician, 1863–1962] A congenital neurocutaneous syndrome (technically a “phocomatosis”) marked by port-wine nevi along the distribution of the trigeminal nerve, angiomas of leptomeninges and choroid, intracranial calcifications, mental retardation, seizures, and glaucoma. SYN: *nevroid amentia*.

stuttering (stüt'ēr-ing) [ME. *stutten*, to stutter] A disruption in the fluency of speech in which affected persons repeat letters or syllables, pause or hesitate abnormally, or fragment words when attempting to speak. The symptoms are exaggerated during times of stress, and may also be worsened by some medications, some strokes, or other diseases and conditions. Stuttering often occurs in more than one family member. SYN: *stammering*.

This condition occurs in approx. 1% to 2% of the school population. Boys are affected three or four times as often as girls. The onset is in two periods: between the ages of 2 and 4 years when speech begins and between 6 and 8 years of age when the need for language

increases. It usually resolves spontaneously by adulthood.

Therapies, including relaxation techniques, hypnosis, delayed auditory feedback, and medications such as haloperidol can provide some help.

Educational materials are available from the Stuttering Foundation of America (800-992-9392) and from the American Speech-Language-Hearing Association (800-638-8255).

acquired s. The sudden appearance of stuttering in a person over age 10 with no previous history of an articulation disorder. It may occur after a stroke, after the administration of certain drugs (e.g., theophylline), as an affection, or as a reaction to unusually stressful circumstances.

sty, styte (stī) *pl. sties pl. styes* [AS. *stigan*, to rise] A localized inflammatory swelling of one or more of the glands of the eyelid. They are mildly tender, and may discharge some purulent fluid. SEE: *chalazion*.

SYMPTOMS: General edema of the lid, pain, and localized conjunctivitis mark the condition. As the internal sty progresses, an abscess will form that can be seen through the conjunctiva.

TREATMENT: Applying warm, moist compresses to the eyelid several times a day for 4 or 5 days usually helps the sty drain. If the sty does not resolve, it can be incised and drained surgically. SYN: *hordeolum*.

meibomian s. An inflammation of a meibomian gland.

zeisian s. An inflammation of one of the Zeis's glands.

stylet, stylette (stī-lēt') [Fr. *stilette*] **1.** A small, sharp-pointed instrument for probing. **2.** A wire used to pass through, stiffen or clear a cannula or catheter.

styliiform (stī'li-form) [" + L. *forma*, form] Long and pointed.

styloglossus (stī-lō-glōs'ūs) [Gr. *stylos*, pillar, + *glossa*, tongue] A muscle connecting the tongue and styloid process that raises and retracts the tongue.

stylohyal (stī'lō-hī'äl) [" + *hyooides*, hyoid] Stylohyoid.

stylohyoid (stī-lō-hī'oyd) [" + *hyooides*, hyoid] Pert. to the styloid process of the temporal and hyoid bones. SYN: *stylohyal*.

stylohyoideus (stī'lō-hī-oyd'ē-ūs) A muscle having its origin on the styloid process and its insertion on the hyoid bone. It draws the hyoid bone upward and backward.

styloid (stī'loyd) [" + *eidōs*, form, shape] Resembling a stylus or pointed instrument.

styloiditis (stī'loyd-ī'tīs) [" + " + *itis*, inflammation] Inflammation of a styloid process.

stylomandibular (stī'lō-män-dīb'ū-lar) [" + L. *mandibula*, lower jawbone]

Concerning the styloid process of the temporal bone and mandible.

stylo mastoid (stī'lō-mäs'toyd) [" + *mastos*, breast, + *eidōs*, form, shape] Concerning the styloid and mastoid processes of the temporal bone.

stylopharyngeus (stī'lō-fär-in'jē-ūs) [" + *pharynx*, throat] The muscle connecting the styloid process and the pharynx that elevates and dilates the pharynx.

stylosteophyte (stī-lōs'tē-ō-fit) A peg-shaped outgrowth from bone.

stylus (stī'lūs) [Gr. *stylos*, a pillar] **1.** A probe or slender wire for stiffening or clearing a canal or catheter. **2.** A pointed medicinal preparation in stick form for external application (e.g., silver nitrate). **3.** A pointed writing instrument.

stypsis (stīp'sīs) [Gr. *styphein*, to contract] Astringency or the use of an astringent.

styptic (stīp'tik) [Gr. *styptikos*, contracting] **1.** Contracting a blood vessel; stopping a hemorrhage by astringent action. **2.** Anything that stops a hemorrhage such as alum, ferrous sulfate, or tannic acid. SYN: *astringent*; *hemostat*.

sub- [L. *sub*, under, below] Prefix meaning *under, beneath, in small quantity, less than normal*. SEE: *hypo-*.

subacetate (süb-äs'ë-tät) [" + *acetum*, vinegar] A basic acetate.

subacid (süb-äs'id) [" + *acidus*, sour] Moderately acid.

subacute (süb'ä-küt') [" + *acutus*, sharp] Between acute and chronic, said of the course of a disease or of the healing process that develops at a moderate, rather than a slow or fast pace.

subarachnoid (süb'ä-räk'noyd) [" + Gr. *arachne*, spider, + *eidōs*, form, shape] Below or under the arachnoid membrane and above the pia mater of the covering of the brain and spinal cord.

subareolar (süb'ä-rē'ō-lär) [" + *areola*, a small space] Below the areola.

subastringent (süb'äs-trin'jënt) [" + *astringere*, to bind fast] Mildly astringent.

subatomic (süb'ä-töm'ik) [" + Gr. *atomos*, indivisible] Less than the size of an atom.

subaxillary (süb-äk'sī-lēr'ē) [" + *axilla*, armpit] Below the axilla, or armpit.

subcalcarine (süb-käl'kär-in) [" + *calcar*, spur] Below the calcarine sulcus of the brain.

subcapsular (süb-käp'sü-lär) [" + *capsula*, little box] Beneath, below, or within a capsule.

subcarbonate (süb-kär'bō-nät) [" + *carbo*, carbon] A basic carbonate; one having a proportion of carbonic acid radical less than the normal carbonate.

subchondral (süb'kōn'dräl) [" + Gr.

chondros, cartilage] Below or under a cartilage.

subchoroidal (süb'kō-roj'däl) [" + Gr. *chorioeides*, skinlike] Below the choroid.

subchronic An imprecise term meaning "of intermediate duration."

subclass (süb'kläs) In taxonomy, a category between a class and an order.

subclavian (süb-klä'vê-än) [" + *clavis*, key] **1.** Under the clavicle or collarbone. **2.** Pert. to the artery or vein that run beneath the collarbone (the subclavian artery or vein).

subclavian steal syndrome The clinical consequences of shunting blood from the vertebrobasilar artery, usually on the left side, around an occluded subclavian artery on that side, and into the left arm.

SYMPTOMS: The affected person often experiences numbness or weakness of the arm when he or she tries to use it. In some people, the diversion of blood from the brain into the arm results in signs and symptoms of brainstem ischemia or stroke, such as loss of consciousness. On physical examination, a bruit may be heard over the obstructed subclavian artery, and the blood pressure in the arm on the affected side will be lower than in the unaffected arm.

TREATMENT: The subclavian artery may be surgically bypassed or opened with angioplasty.

subclavian vein A large vein draining the arm. It unites with the internal jugular vein to form the brachiocephalic (innominate) vein.

subclavicular (süb'klä-vik'ü-lär) [L. *sub*, under, below, + *clavicula*, little key] Subclavian.

subclavius (süb-klä'vê-üs) [" + *clavis*, key] A tiny muscle from the first rib to the undersurface of the clavicle.

subclinical (süb-klín'í-käl) [" + Gr. *klinikos*, pert. to a bed] Pert. to a period before the appearance of typical symptoms of a disease or to a disease or condition that does not present clinical symptoms. Mildly increased or decreased levels of thyroid hormone in the body often present subclinically.

subconjunctival (süb'kōn-jünk-tí'väl) [" + *conjungere*, to join together] Beneath the conjunctiva.

subconsciousness (süb-kōn'shüs-nēs) [" + *consciūs*, aware] The condition in which mental processes take place without the individual's being aware of their occurrence. SEE: *subliminal*.

subcontinuous (süb'kōn-tín'ü-üs) [" + *continere*, to hold together] Almost continuous; with periods of abatement.

subcortical (süb-kor'tí-käl) Pert. to the region beneath the cerebral cortex.

subcranial (süb-krä'nê-äl) [" + Gr. *kranion*, skull] Beneath or below the cranium.

subcrepitant (süb-krêp'í-tánt) [" + *cre-*

pitare, to rattle] Partially crepitant or crackling in character; noting a rale.

subculture (süb-kül'chür) [" + *cultura*, tillage] **1.** To make a culture of bacteria with material derived from another culture. **2.** A relatively cohesive group of individuals living within a society, who, because of shared traditions, customs, socioeconomic status, or genetic heritage, may be predisposed to particular states of health or illness.

subculturing (süb-kül'chür-ìng) [" + "] The growing and replacing of cells in tissue culture for many months.

subcutaneous (süb'kü-tä'nê-tis) [" + *cutis*, skin] Beneath the skin. SYN: *hypodermic*.

subcutaneous surgery An operation performed through a small opening in the skin.

subcuticular (süb'kü-tík'ü-lär) [L. *sub*, under, below, + *cuticula*, little skin] Subepidermal.

subcutis (süb-kü'tis) The layer of connective tissue beneath the skin.

subdeltoid (süb-dêl'toïd) [" + Gr. *delta*, letter d, + *eidos*, form, shape] Beneath the deltoid muscle.

subdental (süb-dên'täl) [" + *dens*, tooth] Beneath the teeth or a tooth.

subdermal (süb-dêr'mäl) [" + Gr. *derma*, skin] Below the skin.

subdiaphragmatic (süb'di-ä-fräg-mät'ík) [" + Gr. *diaphragma*, a partition] Beneath the diaphragm.

subduct (süb-dükt') [" + *ducere*, to lead] To draw down.

subdural (süb-dū'räl) [" + *durus*, hard] Beneath the dura mater.

subendothelial, **subendothelium** (süb'ên-dō-thê'lê-äl, süb'ên-dō-thê'lê-üm) [" + Gr. *endon*, within, + *thele*, nipple] Beneath the endothelium.

subepidermal (süb'êp-i-dêr'mäl) [" + Gr. *epi*, upon, + *derma*, skin] Beneath the epidermis. SYN: *subcuticular*.

subepithelial (süb'êp-i-thê'lê-äl) [" + " + *thele*, nipple] Beneath the epithelium.

suberosis (sü'bêr-ô'sis) [L. *suber*, cork, + Gr. *osis*, condition] Pulmonary hypersensitivity reaction in workers exposed to cork. The antigen is present in a mold in the cork.

subfamily (süb-fäm'í-lê) In taxonomy, the category between a family and a genus.

subfebrile (süb-fê'bril) [" + *febris*, fever] Having a mildly increased body temperature, usually considered to be less than 101°F (38.3°C).

subfertility (süb'fêr-tíl'í-tê) [" + *fertilis*, fertile] Fertility considered to be less than normal.

subfoveal (süb-fô've-äl) [" + "] Beneath the fovea of the eye, that is, beneath the central portion of the macula.

subgenus (süb-jê'nüs) In taxonomy, the category between a genus and a species.

subgingival (süb-jìn'jí-väl) [" + *gin-*

- giva, gum*] Beneath the gingiva; rel. to a point or area apical to the margin of the free gingiva, usually within the confines of the gingival sulcus (e.g., subgingival calculus, or the subgingival margin of a restoration).
- subgenoid** (süb-glé'noyd) [ʹ + Gr. *glene*, socket, + *eidos*, form, shape] Below the genoid fossa or genoid cavity.
- subglossal** (süb-glös'äl) [ʹ + Gr. *glossa*, tongue] Sublingual.
- subglossitis** (süb-glös-si'tis) [ʹ + " + *itis*, inflammation] An inflammation of the undersurface or tissues of the tongue.
- subglottic** (süb-glöt'ik) [ʹ + Gr. *glottis*, back of tongue] Beneath the glottis.
- subgranular** (süb-grän'ü-lär) [ʹ + *granulum*, little grain] Not completely granular.
- subgrondation, subgrundation** (süb-grön-dä'shün, -grün-dä'shün) [Fr.] The depression of one fragment of a broken bone beneath the other, as of the cranium.
- subgroup** (süb'groop") In a research study a selected population of patients who share one or more common traits and thus can be distinguished from the rest of the individuals investigated.
- subicular** (sü-bik'ü-lär) Concerning the uncinate gyrus.
- subincision** (süb'in-sizh'ün) The production of a fistula of the penile urethra, which may interfere with conception. It is used for contraception by some primitive groups, esp. Australian aborigines.
- subintimal** (süb-in'ti-mäl) [ʹ + *intima*, innermost] Beneath the intima.
- subinvolution** (süb'in-vö-lü'shün) [L. *sub*, under, below, + *involutio*, a turning into] Imperfect involution; incomplete return of a part to normal dimensions after physiological hypertrophy, as when the uterus fails to reduce to normal size following childbirth. SEE: *uterus*.
- subjacent** (süb-jä'sënt) [ʹ + *jacere*, to lie] Lying underneath.
- subject** (süb'jekt) [L. *subjectus*, brought under] **1.** A patient undergoing treatment, observation, or investigation; this includes a well person participating in a medical or scientific study. **2.** A body used for dissection. **3.** To have a liability to develop attacks of a particular disease. **4.** To submit to a procedure or to the action of another.
- subjective** (süb-jék'tiv) [L. *subjectivus*] Arising from or concerned with the individual; not perceptible to an observer; the opposite of objective.
- subjective well-being** ABBR: SWB. Wellness.
- subjugal** (süb-jü'gäl) [L. *sub*, under, below, + *jugum*, yoke] Below the malar bone or os zygomaticum.
- sublatio** (süb-lä'shē-ō) [L.] Sublation.
- s. retinae** Detachment of the retina.
- sublation** (süb-lä'shün) [L. *sublatio*, elevation] The displacement, elevation, or removal of a part. SYN: *sublatio*.
- sublesional** (süb-lē'shün-äl) [L. *sub*, under, below, + *laesio*, wound] Beneath a lesion.
- sublethal** (süb-lē'thäl) [ʹ + Gr. *lethe*, oblivion] Less than lethal; almost fatal.
- sublimate** (süb'li-mät) [L. *sublimare*, to elevate] **1.** A substance obtained or prepared by sublimation. **2.** To cause a solid or gas to change state without becoming a liquid during transition. For example, ice may evaporate without first becoming a liquid. **3.** An ego defense mechanism by which one converts unwanted aggressive or sexual drives into socially acceptable activities.
- sublimation** (süb'li-mä'shün) [L. *sublimatio*] **1.** The altering of the state of a gas or solid without first changing it into a liquid. **2.** A Freudian term pert. to the unconscious mental processes of ego defense whereby unwanted aggressive or sexual drives find an outlet through creative mental work.
- sublime** (süb-lim') [L. *sublimis*, to the limit] To evaporate a substance directly from the solid into the vapor state and condense it again. For example, metallic iodine on heating does not liquefy but directly forms a violet gas.
- subliminal** (süb-lim'in-äl) [L. *sub*, under, below, + *limen*, threshold] **1.** Below the threshold of sensation; too weak to arouse sensation or muscular contraction. **2.** Beneath consciousness.
- subliminal self** In psychoanalytical theory, part of the normal individual's personality in which mental processes function without consciousness, under normal waking conditions.
- sublimis** (süb-li'mis) [L.] Near the surface.
- sublingual** (süb-ling'gwäl) [L. *sub*, under, below, + *lingua*, tongue] Beneath or concerning the area beneath the tongue. SYN: *subglossal*.
- sublinguitis** (süb'ling-gwä'tis) [ʹ + " + Gr. *itis*, inflammation] An inflammation of the sublingual gland.
- subluxation** (süb'lüks-ä'shün) [ʹ + *luxatio*, dislocation] **1.** A partial or incomplete dislocation. **2.** In dentistry, injury to supporting tissues that results in abnormal loosening of teeth without displacement or rotation. When loosely applied to the temporomandibular joint, subluxation refers to the relaxation or stretching of the capsule and ligaments that results in popping noises during movement or partial dislocation of the mandible forward.
- submacular surgery** A treatment for wet macular degeneration consisting of surgical removal of subfoveal choroidal neovascularization and the bleeding that accompanies it.
- submammary** (süb-mäm'ä-rē) [ʹ +

mamma, breast] Below the mammary gland.

submandibular (süb"män-dib"ü-lär) [" + *mandibula*, lower jawbone] Beneath the mandible or lower jaw.

submandibularitis (süb"män-dib"ü-lär-ī'tis) An inflammation of, or mumps affecting, the submandibular gland.

submarginal (süb-mär'jin-äl) [" + *marginalis*, border] Close to or next to a margin or border of a part. In dentistry, pert. to a deficiency in material or contour at the margin of a restoration in a tooth.

submaxillary (süb-mäk'si-lēr"ē) Below the maxilla or upper jaw.

submembranous (süb-mēm'brä-nūs) [" + *membrana*, membrane] Containing partly membranous material.

submental (süb-mēn'täl) [" + *mentum*, chin] Under the chin.

submerge (süb-mēr'j) [" + *mergere*, to immerse] To place under water.

submerged tooth A tooth that is below the plane of occlusion; usually a deciduous tooth retained as a result of ankylosis.

submetacentric (süb"mēt-ä-sēn'trīk) [" + Gr. *meta*, beyond, + *kentron*, center] Concerning a chromosome in which the centromere is within the two central quarters but not precisely centrally located.

submicron (süb-mī'krŏn) [" + Gr. *mikros*, tiny] A particle smaller than 10⁻⁵ cm in diameter, visible only with an ultramicroscope. SEE: *micron*.

submicroscopic (süb"mī-krŏ-skŏp'ik) [" + " + *skopein*, to examine] Too minute to be seen through a microscope.

submucosa (süb'mü-kŏ'sä) [L. *sub*, under, below, + *mucosus*, mucus] The layer of connective tissue below the mucosa. It may vary from areolar to quite dense irregular connective tissue and, in addition to the distributing vessels and nerves, may contain fat, mucous glands, or muscle.

submucous resection Removal of tissue below the mucosa, esp. excision of cartilaginous tissue beneath the mucosal tissue of the nose.

subneural (süb-nū'räl) [" + Gr. *neuron*, nerve] Beneath the neural axis or the central nervous system.

subnormal (süb-nor'mäl) [" + *normalis*, accord. to pattern] Less than normal or average.

suboptimal (süb-ŏp'ti-mäl) [" + *optimus*, best] Less than optimum.

suborbital (süb-or'bi-täl) [" + *orbita*, track] Beneath the orbit.

suborder (süb-or'dēr) In taxonomy, a category between an order and a family.

suboxide (süb-ŏk'sidz) In a series of oxides, one that contains the smallest amount of oxygen.

subpapular (süb-päp'ü-lär) [" + *papula*, pimple] Very slightly papular,

such as papules elevated scarcely more than macules.

subpar (süb"pä'r) [" + L. *par*, equal] Below accepted standards, said, e.g., of poor performance by an employee or institution.

subpatellar (süb"pä-tēl'är) [" + *patella*, a small pan] Beneath the patella.

subperiosteal (süb"pēr-ē-ös'tē-äl) [" + " + *osteon*, bone] Beneath the periosteum.

subphrenic (süb-frēn'ik) [" + Gr. *phren*, diaphragm] Subdiaphragmatic.

subphylum (süb-ft'lüm) In taxonomy, the category between a phylum and a class.

subpial (süb-pi'äl) [" + *pia*, soft] Beneath the pia mater.

subplacenta (süb"plä-sēn'tä) [" + *placenta*, a flat cake] During pregnancy, the endometrium that lines the entire uterine cavity except at the site of the implanted blastocyst. SYN: *decidua parietalis*.

subpleural (süb-plū'räl) [" + Gr. *pleura*, side] Beneath the pleura.

subpoena (sü-pē'nä) A court order that requires a person to come to court or appear at a specific time and place to give testimony. Failure to appear can result in punishment by the court.

subpoena duces tecum (sü-pē'nä doo'sēz tē'küm, soob poy'nä dook'ās tā'koom) A process used in litigation that compels the party having control of documents, items, and materials relevant to issues in a lawsuit to produce them at a designated time and place.

subpubic (süb-pū'bik) [" + *pubes*, pubic region] Beneath the pubic arch, as a ligament, or performed beneath the pubic arch.

subretinal (süb-rēt'ī-näl) [" + *rete*, a net] Beneath the retina.

subscapular (süb-skäp'ü-lär) [" + *scapula*, shoulder blade] Below the scapula.

subscleral (süb-sklē'räl) [" + Gr. *sclerosis*, hard] Beneath the sclera of the eye. SYN: *subsclerotic* (1).

subsclerotic (süb-sklē'rŏt-ik) [" + Gr. *skleros*, hard] 1. Subscleral. 2. Not completely sclerosed.

subscription (süb-skrīp'shŭn) [L. *subscriptas*, written under] The part of a prescription that contains directions for compounding ingredients.

subsibilant (süb-sīb'ī-länt) [" + *sibilans*, hissing] Having the sound of a muffled whistle.

subsidence (süb-sid'ēns) [L. *subsidere*, to sink down] The gradual disappearance of symptoms or manifestations of a disease.

subsistence 1. The minimum amount of something essential for life (e.g., a subsistence diet). 2. Any means of barely supporting life.

subspecies (süb'spē-sēz) [L. *sub*, under,

below, + *species*, a kind] In taxonomy, subordinate to a species.

substage (süb'stāj) [*'* + O.Fr. *estage*, position] The part of the microscope below the stage by which attachments are held in place.

substance (süb'stāns) [L. *substantia*]

1. Material of which any organ or tissue is composed; matter. SYN: *substantia*.

2. A chemical or drug. **3.** When used in a medicolegal context, a chemical with potential for abuse. A great variety of entities are included: alcohol, nicotine, caffeine, sedatives, hypnotics, anxiolytics, and illicit drugs such as cannabis, heroin, or methamphetamines. Almost any substance may be abused even though its clinical use is approved when used as prescribed.

anterior perforated s. The portion of the rhinencephalon lying immediately anterior to the optic chiasm. It is perforated by numerous small arteries.

chromophilic s. A substance found in the cytoplasm of certain cells that stains similar to chromatin with basic dyes. It includes Nissl bodies of neurons and granules in serozymogenic cells.

colloid s. Jelly-like substance in colloid degeneration.

ground s. The matrix or intercellular substance in which the cells of an organ or tissue are embedded.

high threshold s. A substance such as glucose or sodium chloride present in the blood and excreted by the kidney only when its concentration exceeds a certain level.

ketogenic s. A substance that, in its metabolism, gives rise to ketone bodies.

low threshold s. A substance such as urea or uric acid that is excreted by the kidney from the blood almost in its entirety. It occurs in the urine in high concentrations.

Nissl s. Nissl body.

posterior perforated s. A triangular area forming the floor of the interpeduncular fossa. It lies immediately behind the corpora mammillaria and contains numerous openings for blood vessels.

pressor s. A substance that elevates arterial blood pressure.

reticular s. The skein of threads present in some red blood cells. These are visible only when the cells are appropriately stained.

substance dependence disorder An addictive disorder of compulsive drug use. It is marked by a cluster of behavioral and physiological symptoms that indicate continual use of the substance despite significant related problems. Patients develop a tolerance for the substance and require progressively greater amounts to elicit the effects desired. In addition, patients experience physical and psychological signs and symptoms of withdrawal if the agent is not used. SEE: *abuse, substance; sub-*

stance-induced disorder; substance-related disorder.

substance-induced disorder A disorder related to drug use but excluding drug dependency. Substance-induced disorders include intoxication, withdrawal, and other substance-induced mental disorders such as delirium and psychosis. SEE: *abuse, substance; substance dependence disorder.*

substance P An 11-amino acid peptide that has important functions in the body's response to pain, noxious stimuli, depression, and anxiety. This substance may also be important in eliciting local tissue reactions resembling inflammation. SEE: *neurotransmitter; pain.*

standardard Unable to meet a generally accepted benchmark for quality.

substantia (süb-stān'shē-ä) [L.] The material of which any organ or tissue is composed; matter. SYN: *substance*.

s. nigra Nuclei of the midbrain that help regulate unconscious muscle activity. SYN: *locus niger*.

s. propria membranae tympani The fibrous middle layer of the drum membrane.

substantivity (süb'stān-tiv'ī-tē) The ability of tissue to absorb an active ingredient and release it slowly over a period of time.

substernal (süb-stēr'nāl) [L. *sub*, under, below, + Gr. *sternon*, chest] Situated beneath the sternum.

substituent (süb'stī'chū-ēnt) One part of a molecule substituted with another atom or group.

substitute (süb'stī-tūt) Something that may be used in place of another.

blood s. An oxygen-carrying fluid that can be used in place of human blood products for transfusion therapy. Candidate substances that have been investigated for this purpose include polymerized hemoglobin and fluorinated hydrocarbons. SYN: *red blood cell substitute*.

red blood cell s. Blood substitute.

substitution (süb'stī-tū'shūn) [L. *substitutio*, replacing]

1. Displacing an atom (or more than one) of an element in a compound by atoms of another element of equal valence. **2.** In psychiatry, the ego defense mechanism of turning from an obstructed desire to one whose gratification is socially acceptable. **3.** The turning from an obstructed form of behavior to a more primitive one, as a substitution neurosis. **4.** The replacement of one substance by another. **5.** Drug substitution.

substitution product A compound formed by an element or a radical replacing another element or radical in a compound.

substitution therapy Replacement therapy.

substitutive (süb'stī-tū'tiv) [L. *substitutivus*] Causing a change or substitution of characteristics.

substrate, substratum (süb'strät, süsträ'tüm) [L. *substratum*, to lie under]

1. An underlying layer or foundation.
2. A base, as of a pigment.
3. The substance acted upon, as by an enzyme. SEE: *enzyme*.

substructure (süb'strük-chür) The underlying structure of supporting material.

subsultus (süb-sül'tüs) [L., to leap up] Any tremor, twitching, or spasmodic movement.

subsyndromal (sub'sin-drö'mäl) **1.** Subthreshold. **2.** Having a cluster of symptoms suggesting a particular disease or condition but that do not meet the defined criteria used to make a diagnosis of that disease or condition.

subtarsal (süb-tär'säl) [L. *sub*, under, below, + Gr. *tarsos*, a broad, flat surface] Below the tarsus.

subtentorial (süb'tên-tör'ë-äl) Located beneath the tentorium.

subterminal (süb-tër'mi-näl) [+ *terminus*, a boundary] Close to the end of an extremity.

subtetanic (süb'të-tän'ik) [+ Gr. *tetanikos*, suffering from tetanus] Moderately tetanic.

subthalamal (süb'thä-läm'ik) [+ Gr. *thalamos*, inner chamber] Below the thalamus.

subthalamus (süb-thäl'ä-müs) The portion of the diencephalon lying below the thalamus and above the hypothalamus. SEE: *thalamus*.

subtherapeutic (süb'thër-ü-püt'ik) [+ "] **1.** Less than adequately treated. **2.** Taking a drug with a blood level below a desired treatment range. Patients using warfarin for atrial fibrillation, for example, have subtherapeutic anticoagulation when their international normalized ratio (INR) is below 2.0.

subtle, subtle (süb'til, sü'tl) [L. *subtilis*, fine] **1.** Very fine or delicate. **2.** Very acute. **3.** Mentally acute or crafty. **4.** Causing injury without attracting attention, as subtle poisons or early symptoms of a disease.

subtotal (söb'töt'il, söb-töt'l) [+ L. *totalis*, entire] Pert. to surgical procedures in which a portion of an organ, rather than the complete organ, is removed; partial, limited.

subtraction The process by which undesired, overlying structures can be removed from a radiographical image.

subtribe (süb'trib) In taxonomy, the category between a tribe and a genus.

subtrochlear (süb-trök'lë-är) [+ Gr. *trochileia*, system of pulleys] Beneath the trochlea.

subtympanic (süb-tim-pän'ik) [+ Gr. *tympanon*, drum] Below the tympanum.

subtype **1.** A gene that has a small mutation in its nucleotide sequence. **2.** An organism that carries or expresses an

allele with a minor variation that distinguishes it from other members of the species.

subtyping (süb'tip-ing) The precise identification of the genetic identity of a microorganism, often using DNA fingerprinting techniques.

subungual, subunguial (süb-üng'gwäl, -gwë-äl) [+ *unguis*, nail] Situated beneath the nail of a finger or toe.

subungual hematoma A collection of blood under the nail as a result of trauma. This condition may be treated by heating the end of a paper clip and then placing its point against the nail, which permits a small hole to be melted painlessly in the nail and allows the trapped blood to escape.

subunit (süb'ü'nit) In chemistry, a portion of a compound that represents a smaller part of the molecule than the remainder of the substance. SEE: *beta subunit*.

subvertebral (süb-vër'të-bräl) [+ *vertebra*, vertebra] Beneath, or on the ventral side of, the vertebral column or a vertebra.

subvitreal (süb-vit'rin-äl) [+ *vitrina*, vitreous body] Located beneath the vitreous body.

subvolutio (süb'vö-lü'shün) [+ *volutus*, turning] A method of turning over a flap surgically to prevent adhesions, particularly involving a pterygium of the eye.

succedaneous (sük'së-dä'në-üs) [L. *succedaneus*, substituting] **1.** Acting as a substitute or relating to one. **2.** In dentistry, referring to the secondary or permanent set of teeth, which follows an earlier deciduous set.

succedaneum (sük'së-dä'në-üm) [L. *succedaneus*, substituting] Something that may be used as a substitute.

succimer (sük'si-mër) An oral drug (2,3-dimercaptosuccinic acid) used to remove lead from the body by chelation. It is used primarily to treat children with acute lead intoxication. Its side effects include gastrointestinal upset, skin rashes, and elevated liver function test results. SEE: *acute lead encephalopathy*; *lead poisoning, acute*.



Use of this drug should always be accompanied by identification and removal of the source of the lead exposure.

succinate (sük'si-nät) Any salt of succinic acid.

succinylacetone (sük-sin'il-äs'ï-tön) A potentially toxic by-product of tyrosine metabolism. It accumulates in excessive concentrations in the blood of patients with type 1 tyrosinemia and is responsible for some of the symptoms of the disease.

succorhea (sük-kö-rë-ä) [L. *succus*,

juice, + Gr. *rhoia*, flow] An unnatural increase in the secretion of any juice, esp. of a digestive fluid.

succus (sük'kü's) *pl. succi* [L. *succus*, juice] A juice or fluid secretion.

s. entericus Intestinal juice.

s. gastricus Gastric juice.

suction (sü-küsh'ün) [L. *succussio*, a shaking] The shaking of a person to detect the presence of fluid in the body cavity by listening for a splashing sound, esp. in the thorax.

suck [AS. *sucan*, to suck] **1.** To draw fluid into the mouth, as from the breast. **2.** To exhaust air from a tube and thus draw fluid from a container. **3.** That which is drawn into the mouth by sucking.

suckle (sük'él) To nurse at the breast.

sucralose (soo'krí-lös") [Fm. *sucr(ose)* + (*ga*)/(*act*)/*ose*] A sugar substitute manufactured by replacing hydroxyl groups on a sucrose molecule with chloride. It adds a sweet taste to foods without adding calories.

sucre (sü'kräs) [Fr. *sucre*, sugar] A digestive enzyme that splits cane sugar into glucose and fructose, the two being absorbed into the portal circulation. SYN: *invertase*.

sucrose (sü'krös) [Fr. *sucre*, sugar] A disaccharide, C₁₂H₂₂O₁₁, obtained from sugarcane, sugar beet, and other sources. In the intestine, it is hydrolyzed to glucose and fructose by sucrase present in the intestinal juice. The monosaccharides resulting from the digestion of sucrose are absorbed by the small intestine and carried to the liver, where they may be converted to glycogen and stored if they are not needed immediately for energy.

sucrosuria (sü'krō-sü-rē-ä) [r' + Gr. *ouron*, urine] Sucrose in the urine.

suction [LL. *suctio*, sucking] The drawing of fluids or solids from a surface, using negative pressures. SEE: *aspiration*.

closed s., closed suctioning The incorporation of a suction system into a mechanical ventilator that permits airway suctioning without disconnecting patients from the ventilator. Closed suctioning prevents loss of PEEP and loss of alveolar volume, and decreases contamination of the airway or the ventilator circuit by gases, germs, liquids, or fomites in the intensive care unit.

endotracheal s. Tracheobronchial suction.

nasogastric s. The suction of gas, fluid, and solid material from the gastrointestinal tract by use of a tube extending from the suction device to the stomach or intestines via the nasal passage.

open s. Clearing the airways of a mechanically ventilated patient with a suction catheter inserted into the endotracheal tube after the patient has been

disconnected from the ventilator circuit. SEE: *closed s.*

posttussive s. The suction sound over a lung cavity heard on auscultation after a cough.

tracheobronchial s. Clearing the airways of mucus, pus, or aspirated materials to improve oxygenation and ventilation. SYN: *endotracheal suction*.

PATIENT CARE: To avoid hypoxia to the lower airways, the patient must be aggressively ventilated before suctioning. During insertion of the suction tube no negative pressure is used to avoid damaging the fragile lining of the bronchi. Suction is then applied during tubal withdrawal for 15 sec or less. The patient should be in supine position, with head elevated 30 degrees or higher, unless otherwise contradicted. Baseline vital signs and oxygen saturation are assessed, and the patient informed the procedure may initiate coughing. The health care professional performs hand hygiene and puts on clean gloves. The patient is hyperoxygenated for 1 min prior to and after suctioning by increasing the ventilator's fraction of inspired oxygen setting (FIO₂) to 1. The vacuum regulator is adjusted to the desired suction pressure. The catheter is advanced to the carina of the trachea without suctioning to avoid airway injury. The patient with an intact cough reflex will begin to cough. Suctioning begins as the catheter is pulled out of the airway. The patient is checked for desired and adverse effects (such as hypoxia or arrhythmias), and needs are met. Suctioning is repeated as needed to clear secretions (usually no more than two to three passes). When suctioning is complete, the FIO₂ level is returned to the proper setting. Since ventilated patients require frequent oral hygiene, this may be a good time for that to be provided. Gloves are removed, and hand hygiene repeated, and the procedure is documented.

suction channel A passage within an endoscope through which fluids may be injected or removed. During endoscopy it is used to draw blood, feces, mucus, or secretions away from the lens of the scope, so that clinical observations can be made with clarity and tissues can be selected for specimen collection.

suctioning The use of suction to remove debris or body fluids from an airway, body cavity, orifice, or surgical site. SEE: *suction*.

suctorial (sük-tō'rē-äl) [LL. *suctio*, sucking] **1.** Concerning sucking. **2.** Equipped for sucking.

sudamen (sü-dä'měn) *pl. sudamina* [L., sweat] A noninflammatory eruption from sweat glands marked by whitish vesicles caused by the retention of sweat in the cornified layer of the skin, ap-

pearing after profuse sweating or in certain febrile diseases.

Sudan (sū-dān') One of a number of related biological stains for which fats have a special affinity, including Sudan II, Sudan III (G), Sudan IV, and Sudan R.

sudanophil (sū-dān'ō-fil) [*sudan* + Gr. *philein*, to love] A leukocyte that stains readily with Sudan III, indicative of fatty degeneration. **sudanophilic**, *adj.*

sudanophilia (sū-dān'ō-fil'ē-ā) An affinity for Sudan stains.

sudden infant death syndrome ABBR: SIDS. The sudden death of an infant younger than 1 year of age that remains unexplained after a thorough investigation, including a complete autopsy, examination of the death scene, and review of the clinical history. More than 90% of all SIDS deaths occur before the age of 6 months. SIDS is a major contributor to infant mortality in the U.S. and other industrialized nations. (About 2500 infants die of SIDS annually in the U.S.) SYN: *crib death*.

ETIOLOGY: The causes of SIDS are still not clearly understood. Some evidence has linked SIDS to unrecognized congenital abnormalities of either the central nervous system or the electrical conduction system of the heart; to elevated levels of alpha fetoprotein; to rare metabolic diseases, occult infections, or unintentional injuries; or, in some cases, child abuse.

RISK FACTORS: Although the cause of SIDS is unknown, some of the identified factors that increase the risk of SIDS include sleeping on the stomach; sharing a bed with an adult; maternal age less than 20 years; tobacco use in the home; living in overcrowded or unsanitary conditions; and lack of prenatal care. Very low birthweight babies, non-white babies, and male infants have higher rates of SIDS than other babies. More SIDS occurs during the winter months than at other times of year.

PREVENTION: Parents should attempt to remedy those risk factors listed that can be altered or prevented. The prone position for sleep should be avoided. The slogan "Back to Sleep" was devised to remind parents that infants should be positioned on their backs when put to bed. Since the introduction of the "Back to Sleep" campaign, SIDS deaths have declined by about 40%. A firm sleeping surface is recommended. Soft, plush, or bulky items, such as pillows, rolls of bedding, or cushions should not be placed in the infant's sleeping environment. These items could come into close contact with the infant's face, thereby interfering with ventilation or entrapping the infant's head and causing suffocation. Breast-feeding mothers should be advised to avoid alcohol, drugs, and OTC and

herbal remedies that could contain substances that would depress the infant's central nervous system. Guidelines from the American Academy of Pediatrics recommend use of a pacifier from age 1 month to help reduce the risk of SIDS by preventing the infant from sleeping too soundly. If rejected, the pacifier should not be forced, and pacifier use should end by 12 months because continued use increases the risk of ear infections and teeth malalignment. Home monitoring of the infant with apnea monitors or baby listening devices provide parents with reassurance about the status of their infants, but have not been clearly proven to prevent SIDS. During prenatal checkups, parents should be educated about SIDS risk factors. Parental smoking should be discouraged, as should smoking by anyone else entering the home. Baby-sitters, daycare providers, and others who may be involved in care of the infant should be made aware of the parents' concerns for their infant. Placing an infant who is used to sleeping on his/her back in prone position increases the risk for SIDS. SEE: *apnea; apnea alarm mattress*.

PATIENT CARE: Parents can make sure that the crib and bedding they plan to use are safe by accessing the U.S. Consumer Product Safety Commission's guidelines at <http://www.cpsc.gov>. Loss of an infant because of SIDS usually produces a severe grief and guilt reaction. Thus, the family needs expert counseling in the several months after the death. Valuable sources of support and information about SIDS are First Candle/SIDS Alliance (Phone 1-800-221-7437; www.sidsalliance.org) and SIDS Families (www.sidsfamilies.com).

sudden infant death syndrome, risk for Presence of risk factors for sudden death of an infant under 1 year of age. SEE: *Nursing Diagnoses Appendix*.

Sudeck's disease, Sudeck's atrophy (soo'déks) Reflex sympathetic dystrophy.

sudor (sū'dōr) [L.] Sweat. **sudoral** (sū'dōr-āl), *adj.*

sudoresis (sū'dō-rē'sis) [L.] Diaphoresis.

sudorific (sū'dōr-īf'ik) [L. *sudorificus*] 1. Secreting or promoting the secretion of sweat. 2. An agent that produces sweating. SYN: *diaphoretic*.

sue 1. To initiate legal action. 2. To make a petition or pleading to the court.

suet (sū'ēt) [Fr. *sewet*, suet] A hard fat from cattle or sheep kidneys and loins, used as the base of certain ointments and as an emollient.

suffer 1. To experience pain or distress. 2. To be subjected to injury, loss, or damages.

suffocate (sūf'ō-kāt) [L. *suffocare*] To

impair respiration; to smother, asphyxiate.

suffocation (sūf'ō-kā'shūn) Deprivation of air exchange (e.g., by drowning, smothering, or other forms of airway obstruction) that produces an intense sensation of air hunger. SYN: *asphyxiation*. SEE: *asphyxia*; *resuscitation*; *unconsciousness*.

s., **risk for** Accentuated risk of accidental suffocation (inadequate air available for inhalation). SEE: *Nursing Diagnoses Appendix*.

suffusion (sū-fū'zhūn) [L. *suffusio*, a pouring over] 1. Extravasation. 2. Pouring of a fluid over the body as treatment.

sugar [O.Fr. *zuchre*] A sweet-tasting, low-molecular-weight carbohydrate of the monosaccharide or disaccharide groups. Common sugars include fructose, glucose, lactose, maltose, sucrose, and xylose. Oral or parenteral administration of sugars can prevent hypoglycemia caused by insulin or oral hypoglycemic agents.

CLASSIFICATION: Sugars are classified in two ways: the number of atoms of simple sugars yielded on hydrolysis by a molecule of the given sugar and the number of carbon atoms in the molecules of the simple sugars so obtained. Therefore, glucose is a monosaccharide because it cannot be hydrolyzed to a simpler sugar; it is a hexose because it contains six carbon atoms per molecule. Sucrose is a disaccharide because on hydrolysis it yields two molecules, one of glucose and one of fructose. SEE: *carbohydrate*.

blood s. Glucose in the blood, normally 60 to 100 mg/100 ml of blood. It rises after consumption of a meal to variable levels, depending on the content of the meal, the activity level of and medications used by the consumer, and other variables. In diabetes mellitus, fasting blood sugar levels exceed 126 mg/dl. SEE: *glucose*.

cane s. Sucrose obtained from sugar cane.

fruit s. Fructose.

invert s. Mixture consisting of one molecule of glucose and one of fructose resulting from the hydrolysis of sucrose.

malt s. Maltose.

milk s. Lactose.

muscle s. Inositol; not a true sugar.

simple s. A sugar molecule made of few components (e.g., a monosaccharide or disaccharide).

wood s. Xylose.

suggestible (sūg-jēs'ti-bl) Very susceptible to the opinions of others.

suggestion (sūg-jēs'chūn) [L. *suggestio*] 1. The imparting of an idea indirectly; the act of implying. 2. The idea so conveyed. 3. The psychological process of having an individual adopt or accept an idea without argument or persuasion.

posthypnotic s. A suggestion given during hypnosis that influences the behavior of an individual when awake and alert.

suggestive (sūg-jēs'tiv) Stimulating or pert. to suggestion.

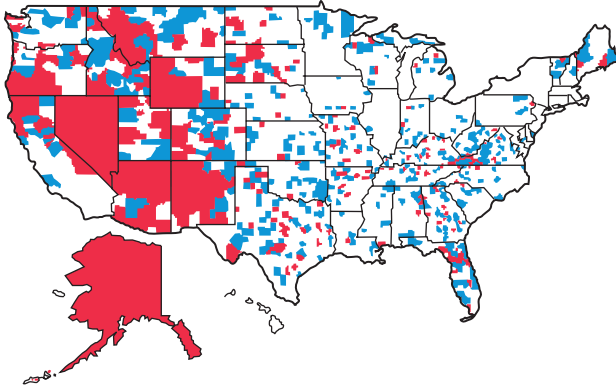
suggestive therapeutics The practice of treating disease by hypnotic suggestions.

suicide (sū'ī-sīd) [L. *sui*, of oneself, + *caedere*, to kill] Intentionally causing one's own death. In the U.S., about 30,000 people commit suicide each year. Currently, suicide is the ninth most common cause of death in the U.S.

RISK FACTORS: Although suicide attempts are more frequently made by young women than any other group, successful suicide is most likely to occur when attempted by older men who live alone or young veterans returning from war. These men are most likely to use truly violent means in their suicide attempts (e.g., shooting themselves, jumping from heights, or hanging). Other risk factors for suicide include having a first-degree relative with a mood disorder; recurrent thoughts or discussion of suicide, esp. if a concrete plan for suicide has been contemplated; the means to commit suicide, esp. a weapon in one's possession; alcoholism; a new diagnosis of a mortal illness; living alone; a recent divorce or job loss; or uncontrolled pain caused by physical illness. Many people who kill themselves have consulted a health care provider in the months or weeks immediately before their death, a fact that suggests that opportunities to intervene in the at-risk population are often missed.

PREVENTION: Health care professionals should be alert to the warning signs of suicide (e.g., statements indicating a desire to die or a prediction that suicide will occur). People contemplating suicide may be depressed, act to get their lives in order, give away possessions, have failing grades or poor work performance, adopt risk-taking behavior, or have a history of alcoholism or drug abuse.

Management of those who are contemplating or have attempted suicide includes removal of lethal means from them and the provision of professional, social, and family support. If the patient is being treated as an outpatient, then he or she should be scheduled for specific future appointments and informed of a telephone number where help or assistance will be immediately available on a 24-hr basis. During a crisis, the patient should not be left alone even for a few minutes. For medicolegal reasons, careful and complete medical records should be kept concerning the plans and actions for management of the patient. SEE: *illness*.



SUICIDE

Suicide rates in the U.S. 1989–1998. Number of counties, with respect to national percentiles: [red] 308 at or above the 90th percentile; [blue] 460 at or above the 75th but less than the 90th percentile; [white] 2304 less than the 75th percentile.

assisted s. ABBR: AS. Providing a patient with the means for ending his life (usually a prescription for a lethal dose of barbiturates), knowing that the patient intends to use it to commit suicide. Although someone other than the patient supplies the means, the patient is the person who takes action to end his life. For AS to occur, the patient must be physically and mentally capable of committing suicide. AS is sometimes called “physician-assisted suicide” because the lethal prescription is typically provided by a physician. Whether professionals should involve themselves in assisted suicide is a topic of active debate. In the U.S. an assisted suicide ballot initiative was approved by voters in Oregon in 1993 and reaffirmed in 1997. Its legality has been affirmed by the U.S. Supreme Court. Assisted suicide is also legal in Belgium, the Netherlands, and Switzerland. SEE: *death, assisted; euthanasia.*

physician-assisted s. The prescription by a physician of a lethal dose of a medication to a patient. Physician-assisted suicide is illegal in most nations, but was legalized in the U.S. in the state of Oregon in 1997.

suicide cluster An epidemic of suicides, within either a defined location or a brief period of time.

suicide gene A gene that codes for a protein, usually an enzyme, that makes cells vulnerable to otherwise nontoxic substances or nutrients. Suicide genes can be introduced into cells during gene therapy. The technique is used in cancer therapy to make tumor cells susceptible to treatment with prodrugs, which only become active chemotherapeutic agents when they are metabolized within cells harboring the gene. Suicide gene ther-

apy is also used in graft-versus-host disease to kill the activated donor T cells responsible for the immunological attack on the host.

suicide prevention center A health care facility dedicated to preventing suicide by counseling and crisis intervention.

suicidology (soo’ī-sīd-ōl’ō-jē) [” + ” + Gr. *logos*, word, reason] The science of suicide, including its cause, prediction of those susceptible, and prevention.

suit 1. A lawsuit, legal action, or court proceeding by one party against another for damages or other legal remedies. 2. An outer garment.

anti-G s. A garment designed to produce uniform pressure on the lower extremities and abdomen. Normally the suit is used by aviators to help prevent pooling of blood in the lower half of the body during certain flight maneuvers. The garment has also been used in treating severe forms of postural hypotension. The suit’s usefulness in treating shock is questionable.



This garment is contraindicated in congestive heart failure, cardiogenic shock, and penetrating chest trauma.

sulcate, sulcated (sūl’kāt, -əd) [L. *sulcatus*] Furrowed or grooved.

sulciform (sūl’sī-form) [L. *sulcus*, groove, + *forma*, form] Resembling a sulcus.

sulcus (sūl’kūs) *pl.* **sulci** [L., groove] A furrow, groove, depression, or fissure, esp. of the brain.

alveololingual s. The space in the floor of the mouth between the base of the tongue and the alveolar ridge, on each side extending from the frenum of the tongue back to the retromolar wall.

calcarine s. A deep horizontal fissure on the medial surface of the occipital lobe of the brain.

s. centralis SYN: *Rolando's fissure*.

cingulate sulcus A long groove on the medial (inner) face of the cerebral hemisphere that outlines the upper margin of the cingulate gyrus.

s. cutis The ridges on the skin of the palmar surface of the fingers and toes, which form the fingerprints.

gingival s. The space or crevice between the free gingiva and the tooth surface. The healthy sulcus produces gingival sulcular fluid (GSF), which helps remove bacteria from the sulcus. Normal sulcus depth is 0.5 to 1.5 mm. Inflammation in the sulcus is the first sign of gingivitis. When enlarged by disease, the gingival sulcus deepens and becomes a periodontal pocket.

intraparietal s. The groove that separates the superior and inferior parietal convolutions.

lateral s. Fissure of Sylvius.

malleolar s. Malleolar groove.

median s. of the tongue The midline groove that separates the surface of the tongue into right and left halves.

Monro's s. Groove on the lateral wall of the third ventricle from the opening to the lateral ventricle to the opening of the cerebral aqueduct of the brain.

olfactory nasal s. An anterior-posterior groove in the wall of the nasal cavity. It passes from the anterior area to the lamina cribrosa. SYN: *nasal carina*.

sulfatase (sül'fä-täs) An enzyme that hydrolyzes sulfuric acid esters.

sulfate (sül'fat) [L. *sulphas*] A salt or ester of sulfuric acid.

atropine s. Salt of an alkaloid obtained from belladonna. A parasympatholytic agent, it counteracts the effects of parasympathetic stimulation. It is used primarily to treat potentially life-threatening bradycardias and heart blocks. SEE: *poisoning, atropine sulfate*.

chondroitin s. A glycosaminoglycan present in connective tissue, including the cornea and cartilage. It is used as a dietary supplement to treat joint pain, esp. in people and animals with degenerative joint disease, usually combined with the dietary supplement glucosamine.

dermatan s. A macromolecule found throughout the body that may have an important function in the formation of connective tissue by promoting cell growth. Dermatan sulfate helps fibroblasts to develop into cells, including cartilage and synovial tissue. It also promotes blood coagulation. SEE: *proteoglycans*.

ferrous s. An iron compound used to treat iron-deficiency anemia.

heparan s. ABBR: HS. A macromolecule of the proteoglycan family found on cell walls and in basement mem-

branes. It is instrumental in embryonic organ development, blood vessel development, and cell adhesion. It also regulates blood coagulation and growth factor-cytokine action.

iron s. Ferrous sulfate. SEE: *copperas; copper salts in Poisons and Poisoning Appendix*.

magnesium s. SEE: *magnesium sulfate*.

sulfatide (sül'fä-tīd) Any cerebroside with a sulfate radical esterified to the galactose.

sulfhemoglobin (sül'f'hēm-ō-glō'bīn) Sulfmethemoglobin.

sulfhemoglobinemia (sül'f'hēm-ō-glō'bīn-ē'mē-ā) A persistent cyanotic condition caused by sulfhemoglobin in the blood.

sulfhydryl (sül'hī'drīl) The univalent radical, SH, of sulfur and hydrogen.

sulfide (sül'fid) Any compound of sulfur with an element or base.

sulfmethemoglobin (sül'f'mēt-hē'mō-glō'bīn) The greenish hemoglobin compound formed when hemoglobin and hydrogen sulfide are combined. SYN: *sulfhemoglobin*.

sulfonamide (sül-fōn'ä-mīd") Any a group of compounds consisting of amides of sulfanilic acid derived from their parent compound sulfanilamide. They are characterized by the presence of a $-SO_2NH_2$ moiety in their chemical structure.



Sulfa drugs may cause allergic reactions, such as rashes, and other adverse reactions, such as nausea and vomiting.

sulfone (sül'fōn) An oxidation product of sulfur compound in which the $=SO_2$ is united to two hydrocarbon radicals.

sulfonylurea (sül'fū-nīl'ūr-ē-ū) One of a class of oral drugs used to control hyperglycemia in type 2 diabetes mellitus. Members of this group include tolazamide, glyburide, and glipizide.



Hypoglycemia may occur as a side effect of these medications if they are taken when dietary intake is limited or restricted voluntarily or during illness.

sulforaphane, sulphoraphane (sül-fōr'ä-fän") [" + Gr. *phainein*, to show] ABBR: SF. A sulfur-containing compound found in vegetables of the mustard family (Cruciferae). Like other isothiocyanates, it has been shown to prevent cancer in animals.

sulfosalicylic acid test (sül'fō-säl'tī-sil'ik) A test for protein in the urine.

sulfourea (sül'fō-ūr-ē'ä) Thiourea.

sulfoxide (sül-fök'sīd) The divalent radical $=SO$.

sulfur (sül'fūr) [L.] SYMB: S. A pale yellow, crystalline element; atomic weight, 32.06; atomic number, 16; specific gravity, 2.07. It burns with a blue flame, producing sulfur dioxide.

Sulfur is part of some amino acids (cystine, cysteine) and is necessary for the synthesis of proteins such as insulin and keratin. The amount of sulfur (as sulfate) excreted in urine varies with the amount of protein in the diet but more or less parallels the amount of nitrogen excreted, as both are derived from protein catabolism. The S:N ratio is approx. 1:14 (i.e., for each gram of sulfur excreted, 14 g of nitrogen are excreted). The amount of sulfur excreted daily is about 1 g.

DEFICIENCY SYMPTOMS: Sulfur deficiency produces dermatitis and imperfect development of hair and nails. A deficiency of cystine or cysteine proteins in the diet inhibits growth and may be fatal. Tissue oxidation of cystine forms inorganic sulfate if the protein intake is sufficient.

s. dioxide An irritating gas used in industry to manufacture acids and as a bactericide and disinfectant. It is a major component of air pollution.

precipitated s. A form of sulfur used in various skin diseases, including scabies. Its keratolytic effect helps to make it effective in those disorders.

sulfurated, sulfureted (sül'fū-rā'tēd, -rēt'ēd) Combined or impregnated with sulfur.

sulfurated hydrogen Hydrogen sulfide.

sulfuric acid poisoning SEE: under *poisoning*.

sumac (soo'māk) The common name for several species of shrub of the Toxicodendron family.

poison s. A shrublike plant, *Toxicodendron vernix*, widely distributed in the U.S. Because it contains the same active substances as poison ivy, the symptoms and treatment of poison sumac dermatitis are the same as for poison ivy dermatitis. SEE: *poison ivy* for illus.

sumatriptan (soo-mā-trīp'tān) A drug from the class of 5-hydroxytryptamine antagonists that can be given, either orally or by injection, to treat migraine headaches. Adverse effects include return of the headache and precipitation of angina pectoris in patients with coronary artery disease, among others.

summation (süm-ā'shūn) [L. *summatio*, adding] A cumulative action or effect, as of stimuli; thus, an organ reacts to two or more weak stimuli as if they were a single strong one.

SUNA headache An abbreviation for *short-lasting unilateral neuralgiform headache with cranial autonomic features*, a form of intense headache affecting one side of the face and often asso-

ciated with tearing, reddening of the conjunctiva, and swelling of the eyelid on the affected side. A SUNA headache is similar to a SUNCT headache; some headache specialists consider SUNCT headache to be a subtype of SUNA and both to be related to disturbances of the trigeminal nerve.

sunburn [AS. *sunne*, sun, + *bernan*, to burn] Dermatitis due to excessive exposure to the actinic rays of the sun. The rays that produce the characteristic changes in the skin are ultraviolet, between 290 and 320 nm (sunburn rays). Some people are more resistant to these rays than others, but the skin will be damaged in anyone who has sufficient exposure.

PREVENTION: Direct exposure of the skin to sunlight between 10 A.M. and 3 P.M., when ultraviolet rays are strongest, should be avoided to minimize the risk of sunburn and skin cancer. Clothing should be worn to cover the skin or a sun-blocking agent with a sun protective factor (SPF) of 15 or more should be used (to be reapplied each hour if the person is sweating heavily).



Sunbathing and sunburn are risk factors for skin cancers, including basal cell carcinoma, squamous cell carcinoma, and melanoma.

TREATMENT: Cool, wet dressings may be applied to the burned area if the reaction is moderate. For severe sunburn, lukewarm baths with oatmeal or cornstarch and baking soda should be given. Aspirin or other nonsteroidal anti-inflammatory agents may reduce inflammation and pain.

SUNCT headache An abbreviation for *short-lasting unilateral neuralgiform headaches occurring with conjunctival injection and tearing*, consisting of brief but repetitive intense attacks affecting one side of the face and the eye on the same side. Transient nasal congestion often accompanies the headache. The syndrome is most often reported in men over 50, although it has been documented in other groups of patients.

Sunday morning paralysis Radial nerve palsy, sometimes the indirect result of acute alcoholism resulting from the stuporous patient lying immobile with his or her arm pressed over a hard surface. SYN: *musculospiral paralysis*; *Saturday night paralysis*.

sundowning (sun'dow-nīng) Confusion or disorientation that increases in the afternoon or evening. It is a common finding in patients with cognitive disorders (e.g., elderly persons with dementia) and tends to improve when the patient is reassured and reoriented.

sunflower eyes Slang term for the ap-

pearance of the eyes of patients with Wilson's disease. Deposits of copper around the edge of the cornea (Kayser-Fleischer rings) cause this condition.

sunglasses Eyeglasses that protect the eyes from exposure to visible as well as ultraviolet rays. For optimal eye protection outdoors, wraparound sunglasses or solar shields that block both ultraviolet A and ultraviolet B rays should be worn.

sunna circumcision Female genital cutting (e.g., removal of the clitoris, among other procedures).

sunrise view An x-ray of the knee in flexion, taken to highlight the patella and its relation to the femoral condyles, e.g., in evaluations of osteoarthritis. SYN: *skyline view*.

sunscreens A substance used as a second line of defense against damage to the skin by ultraviolet rays. It is usually applied as an ointment or cream. SEE: *photosensitivity; ultraviolet radiation*.



Sunscreens are much less effective in protecting against the damaging effects of the sun than avoiding midday sunlight and wearing protective clothing and headgear—these are the primary defenses against solar injury. Sunscreens should be reapplied after vigorous exercise and swimming. Some sunscreens may cause allergic or contact dermatitis.

sunscreens protective factor index In preparations (sunscreens) for protecting the skin from the sun, the ratio of the amount of exposure needed to produce a minimal erythema response with the sunscreen in place divided by the amount of exposure required to produce the same reaction without the sunscreen. This index assesses the ability of sunscreens to block (short-wavelength) ultraviolet B rays but does not measure the protective effect of sunscreens against (long-wavelength) ultraviolet A radiation. SEE: *erythema dose*.

Sun's soup (sūnz, soonz) A dietary supplement consisting of a mixture of herbs and vegetables and promoted as a treatment for a variety of cancers. Also known as Selected Vegetables.

sunstroke (sūn'strōk) [AS. *sunne*, sun, + *strake*, a blow] Heatstroke.

suntan Darkening of the skin caused by exposure to the sun. SEE: *tanning salon; sunburn; sunscreen*.



A suntan predisposes exposed skin to basal cell carcinoma, squamous cell carcinoma, melanoma, and premature aging.

super- [L., over, above] Combining form meaning *above, beyond, superior*.

superantigen (soo'pēr-ān'ti-jěn) An antigen that binds with class I major histocompatibility antigens and T-cell receptors and causes the simultaneous activation of large numbers of T cells and massive release of cytokines. Such antigens do not have to be processed by macrophages to be recognized by T cells. Exotoxins from bacteria such as staphylococci and group A streptococci act as superantigens. A superantigen known as toxic shock syndrome toxin-1 causes toxic shock syndrome.

superciliary (soo'pēr-sil'ē-ā-rē) [L. *supercilium*, eyebrow] Pert. to or in the region of an eyebrow. SYN: *supraciliary*.

supercilium (soo'pēr-sil'ē-ūm) *pl. supercilia* [L.] 1. Eyebrow. 2. A hair of the eyebrow.

superclass (soo'pēr-klās) In taxonomy, a category between a phylum and a class.

superego (soo'pēr-ē-gō) [ʹ + *ego*, I; later translators of Freud's writings feel the word *uber-ich* should have been translated to over-I or upper-I and not to superego] In Freudian psychoanalytical theory, the portion of the personality associated with ethics, self-criticism, and the moral standard of the community. It is formed in infancy by the individual's adopting as his or her personal standards the values of the significant persons with whom he or she identifies. This helps to form the conscience. The superego functions to protect and to reward when the ego-ideal of behavior or thought is satisfied and to criticize, punish, and evoke a sense of guilt when the reverse is true. In neuroses, symptoms develop when instinctual drives conflict with those dictated by the superego. SEE: *ego*.

supereruption Overeruption.

superexcitation (soo'pēr-ēk'sī-tā'shūn) [ʹ + *excitatio*, excitation] Excess excitement.

superfamily (soo'pēr-fām'ī-lē) In taxonomy, a category between an order and a family.

superfecundation (soo'pēr-fē'kūn-dā'shūn) [ʹ + *fecundare*, to fertilize] Successive fertilization by two or more separate instances of sexual intercourse of two or more ova formed during the same menstrual cycle. Fertilization may be by the same male or by two different males.

superfemale (soo'pēr-fē'māl) A female having three X chromosomes.

superfetation (soo'pēr-fē-tā'shūn) [ʹ + *fetus*, fetus] The fertilization of two ova in the same uterus at different menstrual periods within a short interval.

superficial (soo'pēr-fish'āl) [L. *superficialis*] 1. Pert. to or situated near the surface (e.g., of the ribs in relation to the lungs). 2. Not thorough; cursory.

superficialis (soo'pēr-fish-ē-ā'lis) [L.]

Noting a structure such as an artery, vein, or nerve that is nearer to the surface.

superglue (soo'pěr-gloo") An extremely strong adhesive made of cyanoacrylate. It can be used to reapproximate the edges of a wound, without sutures.



This glue is quite effective in gluing skin to skin. It should not be used near the eyes, mouth, nose, labia, or other sensitive body parts.

superinduce (soo'pěr-in-dūs') [*"* + *in*, into, + *ducere*, to lead] To bring on, over, or above an already existing condition or situation.

superinfection (soo'pěr-in-fěk'shün) [*"* + *infectio*, a putting into] A new infection caused by an organism different from that which caused the initial infection. The microbe responsible is usually resistant to the treatment given for the initial infection.

superinvolution (soo'pěr-in-vō-lū'shün) [*"* + *involutus*, a turning] Hyperinvolution.

superior (soo-pě'rē-or) [*L. superus*, upper] **1.** Higher than; situated above something else. **2.** Better than. **3.** One in charge of others.

superior vena cava syndrome A partial occlusion of the superior vena cava with resulting interference of venous blood flow from the head and neck to the heart. This emergency condition is typically caused by obstruction of the great vessels, usually by a cancer located in the mediastinum. It is marked by venous engorgement and edema of the head and neck.

supermotility (soo'pěr-mō-tīl'ī-tē) [*"* + *motilis*, moving] Excessive motility in any part. SYN: *hyperkinesia*.

supernatant (soo'pěr-nā'tānt) [*"* + *natare*, to float] **1.** Floating on a surface, as oil on water. **2.** The clear liquid remaining at the top after a precipitate settles. **3.** The cell-derived fluids containing chemical mediators that develop in a laboratory culture of leukocytes mixed with an antigen or mitogen stimulus. Supernatants can be assessed for the presence of monokines or lymphokines by adding them to other white blood cell cultures and measuring cell proliferation and activity.

supernate (soo'pěr-nāt) A supernatant fluid.

supernumerary (soo'pěr-nū'měr-ār'ē) [*L. supernumerarius*] Exceeding the regular number.

supernumerary teeth More than the usual number of teeth. Extra teeth develop in approx. 2% of the population, with almost all of them being maxillary incisors or mesiodens. A cleft palate or other developmental disturbances dis-

rupt the dental lamina and often result in palatal supernumerary teeth.

superolateral (soo'pěr-ō-lăt'ēr-āl) [*"* + *latus*, side] Above and to the side.

superovulation (soo'pěr-ōv'ū-lā'shün) [*"* + *ovulum*, little egg] An increased frequency of ovulation or production of a greater number of ova at one time. This is usually caused by the administration of gonadotropins.

superoxide (soo'pěr-ōk'sid) A highly reactive form of oxygen. Superoxide is produced during the normal catalytic function of certain enzymes, by the oxidation of hemoglobin to methemoglobin, and when ionizing radiation passes through water. It is also produced when granulocytes phagocytize bacteria. Superoxide is destroyed by the enzyme superoxide dismutase, which catalyzes the conversion of two molecules of superoxide anion to one molecule of oxygen and one of hydrogen peroxide. Superoxides play a part in many diseases and conditions, including central nervous system damage in amyotrophic lateral sclerosis and endothelial damage in hypertension and diabetes mellitus.

superoxide dismutase An enzyme that destroys superoxide. One form of the enzyme contains manganese, and another contains copper and zinc.

superparasite (soo'pěr-pār'ā-sīt) [*"* + *Gr. para*, beside, + *sitos*, food] **1.** A parasite that lives upon another parasite. **2.** A parasite involved in superparasitism.

superparasitism (soo'pěr-pār'ā-sīt'izm) [*"* + *"* + *-ismos*, condition] A condition in which the host is infested or infected with a greater number of parasites than can be supported.

superphosphate (soo'pěr-fōs'fāt) Acid phosphate.

supersaturate (soo'pěr-säch'ū-răt") To add more of a substance to a solution than can be dissolved permanently.

superscription (soo'pěr-skrīp'shün) [*L. super*, over, above, + *scriptio*, a writing] The beginning of a prescription noted by the sign R, signifying (*L.*) *recipe*, take.

supersensitive (soo'pěr-sěn'sī-tīv) [*"* + *sensitivus*, feeling] Hypersensitive.

supersoft (soo'pěr-sōft') [*"* + *AS. softē*, soft] Exceptionally soft; noting roentgen rays of extremely long wavelength and low penetrating power.

supersonic (soo'pěr-sōn'ik) [*"* + *sonus*, sound] **1.** Ultrasonic. **2.** Used to describe speeds greater than that of sound. At sea level, in air at 0°C, the speed of sound is about 331 m, or 1087 ft per second (741 mph). **3.** A sound frequency that is greater than 20,000 cycles per second.

superstructure (soo'pěr-strūk'chūr) The visible portion of a structure, esp. those parts external to the main structure.

supervenosity (soo'pĕr-vĕ-nōs'ĭ-tē) Abnormally decreased oxygen in the venous blood.

supervention (soo'pĕr-vĕn'shŭn) [L. *superventio*, a coming over] The development of an additional condition as a complication to an existing disease.

supervirulent (soo'pĕr-vĭr'ŭ-lĕnt) [L. *super*, over, above, + *virulentus*, full of poison] More virulent than usual.

supervisor (soo'pĕr-vĭz'ĕr) [L. *supervisus*, having looked over] One who directs and evaluates the performance of others. In a health care setting, the supervisor usually has the knowledge and skills to provide the same service as those being directed (e.g., the supervisor of the pharmacy, physical therapy, or maternity nursing).

supervitaminosis (soo'pĕr-vĭ'tā-mĭ-nō'sis) Hypervitaminosis.

supervoltage (soo'pĕr-vōl'tĭj) A term applied to x-rays produced by very high voltage, usually in the megavolt range.

supinate (sŭ'pĭ-nāt) [L. *supinatus*, bent backward] **1.** To turn the forearm or hand so that the palm faces upward. **2.** To rotate the foot and leg outward.

supination (sŭ'pĭn-ā'shŭn) [L. *supinatio*] **1.** The turning of the palm or the hand anteriorly or the foot inward and upward. **2.** The act of lying flat upon the back. **3.** The condition of being on the back or having the palm of the hand facing upward or the foot turned inward and upward.

supinator (sŭ'pĭn-ā'tor) [L.] A muscle producing the motion of supination of the forearm.

supine (sŭ-pĭn') [L. *supinus*, lying on the back] **1.** Lying on the back with the face upward. **2.** A position of the hand or foot with the palm or foot facing upward; the opposite of prone.

supine hypotensive syndrome Sudden fall in blood pressure due to diminished venous return caused by compression of the vena cava by the gravid uterus when the pregnant woman rests flat on her back. The low venous return also results in decreased placental perfusion and potentially in fetal hypoxia. SYN: *vena caval syndrome*.

supplement (sŭp'lĕ-mĕnt) [L. *supplementum*, an addition] **1.** An additive (e.g., something added to a food to increase its nutritive value). **2.** To add. **supplemental, adj.**

supplementation (sŭp'lĕ-mĕn-tā'shĭn) **1.** The addition of a vitamin, mineral, or other nutrient to a food. **2.** The enhancement of the diet with special nutrients.

support (sŭ-port') **1.** That which assists in maintaining something in place. **2.** In dentistry, the abutting teeth, alveolar ridge, and mucosal tissues upon which the denture rests.

s. group SEE: under *group*.

s. hose Elastic stockings that may

extend from the toes to the knee or above. These are worn by patients to provide sufficient pressure on the tissues to facilitate venous return and to help to prevent the formation of thrombi in the veins of the legs.

social s. Help given by others to provide feedback, satisfy needs, and validate one's experience. A large body of research suggests that the loss of social support is a causal factor of both physical and psychological disease. Nursing practice uses social supports such as tangible materials, teaching, and intimate interactions to restore, promote, and care for patients.

supportive treatment Special measures employed to supplement specific therapy.

suppository (sŭ-pōz'ĭ-tō-rĕ) *pl.* **suppositories** [L. *suppositorium*, something placed underneath] A semisolid substance for introduction into the rectum, vagina, or urethra, where it dissolves. It may be used to stimulate a bowel movement, but often serves as a vehicle for medicines to be absorbed. It is commonly shaped like a cylinder or cone and may be made of soap, glycerinated gelatin, or cocoa butter (oil of theobroma).

PATIENT CARE: Privacy is provided. The nurse instructs the patient to retain the suppository for about 20 min for effectiveness as a laxative, and for as long as possible (until it dissolves and medication is absorbed) when it is a vehicle, and positions the patient appropriately. The suppository is lubricated and inserted into the appropriate orifice. For neurological rehabilitation, a rectal suppository may be used by the patient after instruction in bowel management. The nurse checks with the patient about effectiveness and notes that in the chart.

suppression (sŭ-prĕsh'ŭn) [L. *suppressio*, a pressing under] **1.** The control, but not complete eradication, of a disease, esp. an infection. In the management of HIV/AIDS, e.g., drug therapies are designed to suppress viral loads to very low levels. **2.** The complete failure of the natural production of a secretion or excretion, as distinguished from retention, in which normal secretion occurs but the discharge is retained within the organ or body. **3.** In Freudian psychoanalysis, the ego defense mechanism of conscious inhibition of an idea or desire, as distinguished from repression, which Freud considered an unconscious process.

active immune s. The use of agents to block an antigen-specific immune response. An example is the administration of anti-Rh antibodies (Rh₀ immune globulin) to Rh-negative mothers during the 28th week of pregnancy to prevent

the formation of maternal antibodies that cause erythroblastosis fetalis in the Rh-positive newborn.

androgen s. Androgen deprivation.

appetite s. The use of drugs, biofeedback, hypnosis, cognitive therapies, or other means to regulate the desire for food and its consumption.

suppression of menses 1. Amenorrhea in which menstruation ceases after once being established and from some cause other than hysterectomy, pregnancy, or menopause. SEE: *hypothalamic amenorrhea*; *pathological amenorrhea*. 2. Any suppression of the menses.

suppressor T cells A subpopulation of T lymphocytes that slows and stops a specific immune response. SYN: *regulatory T cell*.

suppurant (sŭp'ū-rānt) [L. *suppurans*] 1. Producing, tending to produce, or marked by pus formation. 2. An agent causing pus formation.

suppurate (sŭp'ū-rāt) [L. *suppurare*] To form or generate pus.

suppuration (sŭp-ū-rā'shŭn) [L. *suppuratio*] 1. The formation of pus. SEE: *pus*. 2. Pus.

suppurative (sŭp'ū-rā'tiv, -rā'tiv) [L. *suppuratus*] 1. Producing or associated with generation of pus. SEE: *pus*; *pyogenic*. 2. An agent producing pus formation.

supra- [L.] Combining form meaning *above, beyond, or on the top side*.

suprabulge (soo'prā-bŭlj) The part of the crown of a tooth that curves toward the occlusal surface.

suprachoidea (soo'prā-kō-roy'dē-ā) Suprachoroid lamina.

supraciliary (soo'prā-sil'ē-ēr'ē) [L. *supra*, above, on top, beyond, + *cilia*, eyelid] Superciliary.

supraclavicular point A stimulation point over the clavicle at which contraction of the arm muscles may be produced.

supracostal (soo'prā-kōs'tāl) [L. + *costa*, rib] Above the ribs.

supradiaphragmatic (soo'prā-dī'rā-frāgmāt'ik) [L. + Gr. *diā*, across, + *phragma*, wall] Above the diaphragm.

supraduction (soo'prā-dŭk'shŭn) [L. + *ducere*, to lead] Turning upward of the eye.

supragingival (soo'prā-jīn'jī-vāl) Above the gingiva; used in reference to the location of dental restorations, bacterial plaque, or calculus on the tooth. It is often contrasted with subgingival, the gingival margin being the reference point.

supraglenoid (soo'prā-glē'noyd) [L. + Gr. *glene*, socket, + *eidōs*, form, shape] Above the glenoid cavity or fossa.

supraglenoid tuberosity A rough surface of the scapula above the glenoid cavity to which is attached the long head of the biceps muscle.

suprahepatic (soo'prā-hē-pāt'ik) [L. + Gr. *hepar*, liver] Located above the liver.

suprahyoid muscles The digastric, geniohyoid, mylohyoid, and stylohyoid muscles.

supraliminal (soo'prā-līm'ī-nāl) [L. *supra*, above, on top, beyond, + *limen*, threshold] 1. Above the threshold of consciousness; conscious. 2. Exceeding the stimulus threshold. SEE: *subliminal*.

supramammary (soo'prā-mām'ā-rē) [L. + *mamma*, breast] Located above the breast.

supramarginal (soo'prā-mār'jīn-āl) [L. + *marginalis*, border] Located above any border.

supramastoid crest A ridge on the superior edge of the posterior root of the zygomatic bone.

supramaxillary (soo'prā-māk'sī-lēr-ē) 1. Rel. to the upper jaw. 2. Located above the upper jaw.

suprameatal (soo'prā-mē-ā'tāl) [L. + *meatus*, passage] Above a meatus, esp. the suprameatal spine.

supramental (soo'prā-mēn'tāl) [L. *supra*, above, on top, beyond, + *mentum*, chin] Located above the chin.

supranuclear (soo'prā-nū'klē-lār) [L. + *nucleus*, little kernel] Concerning nerve fibers located above a nucleus in the brain.

supraocclusion (soo'prā-ō-kloo'zhŭn) [L. + *occlusio*, occlusion] Overeruption.

supraorbital neuralgia Neuralgia of the supraorbital nerve. SYN: *hemicrania* (1).

supraorbital notch A notch in the superior margin of the orbital arch for transmitting supraorbital vessels and nerve.

suprapatellar (soo'prā-pā-tēl'ār) [L. + *patella*, a small pan] Located above the patella.

suprapubic (soo'prā-pū'bik) [L. + NL. (*os*) *pubis*, bone of the groin] Located above the pubic arch.

suprapubic aspiration of urine A procedure for draining the bladder when it is not possible to use a urethral catheter. The skin over the lower abdominal area is cleansed. An incision in the abdominal wall is made with a needle or trocar to gain access to the bladder. To prevent complications during the procedure, it is important to observe the following guidelines: The patient should be positioned in the marked Trendelenburg position. The bladder should be distended with 400 ml of fluid. Any previous abdominal wall incisions that may have left the bladder or bowel adherent to the scar tissue should be noted. The incision should be no more than 3 cm above the pubic symphysis. The trocar should be inserted 30 degrees toward the bladder, i.e., away from the pubic symphysis (if in doubt, a small-gauge needle should

be inserted for orientation); the trocar should not be placed in a vertical direction. The depth of trocar insertion should be monitored, using gentle pressure on the trocar to prevent damage to the bladder base.



The needle may pierce a loop of bowel that is lying over the anterior surface of the bladder.

suprarenal (soo'pră-rē'năl) [L. *supra*, above, on top, beyond, + *ren*, kidney]

1. Located above the kidney. **2.** Pert. to the gland above each kidney that secretes glucocorticoids and mineralocorticoids. SEE: *adrenal gland*.

suprascapular (soo'pră-skăp'û-lăr) [" + *scapula*, shoulder blade] Located above the scapula.

suprascleral (soo'pră-sklē'răl) [" + Gr. *skleros*, hard] Located on the surface of the sclera.

suprasellar (soo'pră-sē'l'ăr) [" + *sella*, saddle] Located above or over the sella turcica.

supraspinous fossa SEE: under *fossa*.

suprasternal (soo'pră-stēr'năl) [L. *supra*, above, on top, beyond, + Gr. *sternon*, chest] Located above the sternum.

supratentorial (soo'pră-tên-tō'rē-ăl) Located above the tentorium.

supratip (soo'pră-tip') The nasal region where the inferior region of the nasal dorsum meets the tip of the nose. Deformities sometimes occur in this area during botched rhinoplasties.

supravaginal (soo'pră-văj'i-năl) [" + *vagina*, sheath] Located above the vagina or any sheathing membrane.

supraventricular (soo'pră-vên-trik'û-lăr) [" + *ventriculus*, a little belly] Located above the ventricle, esp. the heart ventricles.

supravergence (soo'pră-vēr'jěns) [" + *vergere*, to be inclined] A condition in which one eye moves upward in the vertical plane while the other does not.

supraversion (soo'pră-vēr'zhŭn) [" + *versio*, a turning] **1.** A turning upward. **2.** In dentistry, a tooth out of occlusal line.

sura (sū'ră) [L.] The calf of the leg; the muscular posterior portion of the lower leg.

sural (sū'răl) Rel. to the calf of the leg.

surefooted (shŭr'foot'ēd) Being able to walk or run without stumbling or falling.

surface (sŭr'fēs) [Fr. *sur*, above, + L. *facies*, face] **1.** The exterior boundary of an object. **2.** The external or internal exposed portions of a hollow structure, as the outer or inner surfaces of the cranium or stomach. **3.** The face or faces of a structure such as a bone. **4.** The side of a tooth or the dental arch; usually named for the adjacent tissue or space.

The outer or facial surface is called the labial surface of the incisors or canines, and the buccal surface of the premolars and molars. The facial surface may also be called the vestibular surface. The inner surface of each tooth is called the lingual or oral surface. Within the arch, each tooth is said to have a mesial surface, the side toward the midpoint in the front of the dental arch, and a distal surface, the side of the tooth farthest from the midpoint in the front of the dental arch. SEE: *illus*.

body s. **1.** The exterior of the human body, or one of its parts. **2.** The epidermis. SEE: *body surface area*.

occlusal s. The masticating surface of the premolar and molar teeth.

support s. A brace, pillow, or mattress on which part or all of the body rests. Static support surfaces are made or filled with materials such as air, fabric, foam, or gels. Dynamic support surfaces, which are used for patients with skin breakdown, are filled with moving air, beads, or fluid that circulates by electromechanical energy.

surfactant (sŭr-făk'tânt) A surface-active agent that lowers surface tension (e.g., oils and various forms of detergents). Artificial surfactants may be given endotracheally to relieve respiratory distress.

modified natural s. A replacement phospholipid from a natural source with some components removed.

pulmonary s. A lipoprotein secreted by type II alveolar cells that decreases the surface tension of the fluid lining the alveoli, permitting expansion. Synthetic lung surfactant is available for treating patients with respiratory distress syndrome. In obstetrics, fetal production of surfactant can be stimulated by administration of a glucocorticoid 24 to 48 hr before an inevitable preterm birth. SYN: *lung surfactant*. SEE: *betamethasone*; *lecithin-sphingomyelin ratio*.

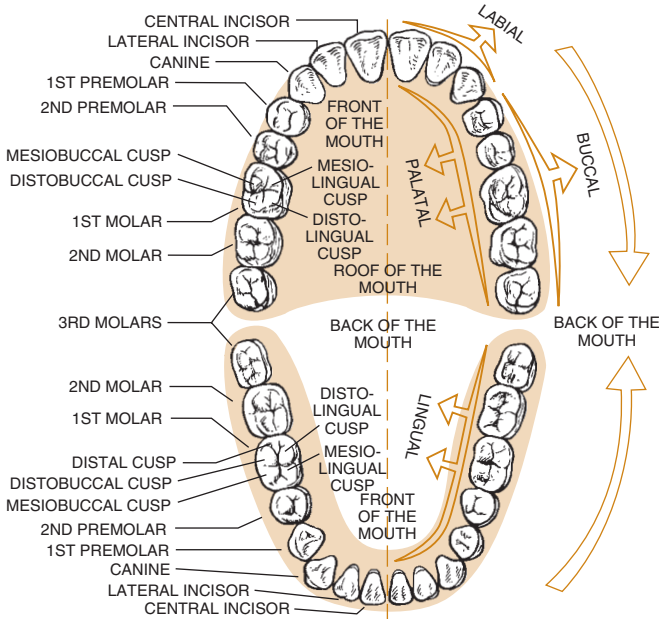
surfer's ear The formation of abnormal bone (an exostosis) in the external auditory canal of surfers, especially those who habitually surf in colder waters.

surfer's knots Nodules that form on the foot, leg, or chest as a result of trauma from repetitive contact with surfboards.

surge capacity The ability of a community or health care system to respond to sudden increases in demand for services or emergency help, e.g., after a multiple casualty incident.

surgeon (sŭr'jŭn) [L. *chirurgia*] A medical practitioner who specializes in surgery.

civil s. A physician certified by the U.S. Bureau of Citizenship and Immigration Services to perform medical examinations on immigrants seeking immigration visas to, or permanent resident status in, the U.S. The exami-



RELATIONSHIP OF DENTAL SURFACES

nation performed by civil surgeons includes a physical and mental status examination; tests for tuberculosis, syphilis, and human immunodeficiency virus; and vaccinations for measles, mumps, rubella; polio; tetanus and diphtheria; pertussis; influenza B; and hepatitis B.

ghost s. Any person, esp. one not designated by the patient or not licensed to practice surgery, who replaces the patient's chosen surgeon in performing an operation, without the patient's consent. Ghosts may include surgical residents or representatives of pharmaceutical or biomedical engineering firms. The use of ghost surgeons is a violation of professional standards and ethics.

surgeon general The chief medical officer in each branch of the armed forces of the U.S. or of the U.S. Public Health Service.

surgery (sūr'jĕr-ē) [L. *chirurgia*, hand-work, surgery] **1.** The branch of medicine dealing with manual and operative procedures for correction of deformities and defects, repair of injuries, and diagnosis and cure of certain diseases. **2.** A surgeon's operating room. **3.** Treatment or work performed by a surgeon. SYN: *operation*. SEE: *Nursing Diagnoses Appendix*.

ablative s. Operation in which a part is removed or destroyed.

aesthetic s. Cosmetic surgery.

ambulatory s. Surgery performed between the time the patient is admitted in the morning and the time the patient is discharged the same day. Also called *day surgery*.

antenatal s. Surgical procedure performed on the fetus before delivery. This type of surgery is done only at certain medical centers. SEE: *amniocentesis*; *embryoscopy*.

aseptic s. An operative procedure performed under sterile conditions.

aural s. Surgery of the ear.

bariatric s. Surgical management of morbid obesity. Commonly employed operative procedures are classified either as "restrictive" (because they decrease the size of the stomach) or "mal-absorptive" (because they limit absorption of nutrients from the gastrointestinal tract), or both restrictive and malabsorptive. They include

1. gastric banding,
2. vertical banded gastroplasty,
3. Roux-en-Y gastric bypass,
4. biliopancreatic diversion or duodenal switch, and
5. long-limb Roux-en-Y gastric bypass.

PATIENT CARE: This surgery is typically used only for those with a body mass index greater than 40 kg/m² or 35 kg/m² in the presence of other weight-related health problems, such as hypertension or diabetes mellitus. Complications may include puncture of blood

vessels or internal organs, infection, incisional hernia, wound dehiscence, or leakage from surgical sites into the peritoneum. In preparation for surgery the patient should be assessed for other major surgical risks, including the risk of heart attack, heart failure, deep vein thrombosis, atelectasis/pneumonia, or respiratory failure after the proposed operation. The patient should be made aware that an intravenous catheter, urinary catheter, and sequential compression stockings will be used to help manage complications postoperatively. Incentive spirometry is employed to prevent postoperative atelectasis.

Pain and nausea are managed with patient-controlled epidural or intravenous analgesia, and antiemetic drugs. Equipment required for obese patients undergoing bariatric surgeries includes specially sized litters, operating tables, beds, wheelchairs, blood-pressure cuffs, and gowns. The patient should begin ambulation soon after surgery to help prevent complications of immobility. Adequate staff should be available to assist with transfers and mobilization in order to prevent patient or staff injuries. Depending on the type of surgery employed, the patient may require vitamin and mineral supplementation postoperatively (e.g., with B vitamins, calcium, iron, and fat-soluble vitamins). Psychological, nutritional, and physical therapeutic support is critical to optimal outcomes. Discharge teaching emphasizes diet, hydration, wound care, medications, and prescribed or prohibited activities. The majority of treated patients have significant, sustainable postoperative weight loss, with improvement in comorbid conditions such as diabetes mellitus, hypertension, and hyperlipidemia. Following massive weight loss, some patients may require reconstructive surgery to remove excess abdominal wall fat (panniculectomy).

breast conservation s. Removal of a malignant growth from the breast and dissection of axillary lymph nodes without mastectomy. Breast conservation surgery ("lumpectomy") is an alternative to mastectomy for patients with early stage breast cancer. Its outcomes are equivalent to those of mastectomy when used as part of a treatment plan that includes postoperative radiation therapy to the affected breast.

cardiac s. Any operation on the heart and/or the proximal great vessels. SEE: *Nursing Diagnoses Appendix*.

colorectal s. Operative procedures on the anus, rectum, or large intestine.

conservative s. Surgery in which as much as possible of a part or structure is retained. It is often an equally effective alternative to radical surgery.

cosmetic s. Surgery performed to re-

verse or change the texture, configuration, or relationship of contiguous structures of a feature of the body. SYN: *aesthetic surgery*. SEE: *plastic s.*

exploratory s. An operation performed for diagnostic purposes (e.g. an exploratory laparotomy). Exploratory surgeries may become surgeries in which definitive treatment is rendered when a previously undiagnosed lesion is identified and rectified.

flap s. A surgical procedure in which a flap of tissue or periosteum is raised. An amputation flap is a tissue flap produced to cover the amputation stump.

image-guided s. The use of real-time computed tomography, magnetic resonance imagery, or ultrasound to place surgical instruments in precise anatomical locations (e.g., during biopsies or tissue resections). Images taken before the operation are compared with those obtained during surgery to improve the localization of tumors or vascular structures, the placement of prosthetic parts, or the identification of moving structures.

intestinal bypass s. The production of controlled intestinal malabsorption by surgically short-circuiting the small intestine. This procedure is used to treat massive obesity. It is done by anastomosing the proximal jejunum to the distal ileum by bypassing the small intestine between the anastomotic sites. The lengths of jejunum and ileum involved vary by surgeon. Because of long-term metabolic complications (including hepatic injury), this procedure has largely been abandoned in favor of gastric bypass procedures.

laparoscopic s. A form of endoscopic surgery in which a fiberoptic laparoscope is inserted into the body to inspect, resect, or otherwise surgically treat a wide and expanding variety of conditions. Small incisions (ports) are created to insert required instrumentation. In "assisted" laparoscopic procedures, a smaller than standard ancillary incision may be necessary for removal of large specimens or to perform various surgical maneuvers. A laparoscopic surgery may also be used to complement other procedures (e.g., vaginal hysterectomy). Under certain circumstances (e.g., hemorrhage or dense adhesions) the laparoscopic procedure cannot be completed. Operating time is longer and equipment is more expensive in laparoscopic surgery than in laparotomy, but the convalescence of patients who have undergone laparoscopic procedures is shorter, and pain, nausea, vomiting, and obstipation are diminished. Common operations performed with a laparoscope include cholecystectomy, appendectomy, colonic surgery, hernia repairs (including hiatal hernias),

and many gynecological surgeries. SEE: *laparoscopic laser cholecystectomy*.

laryngeal framework s. Thyroplasty.

lung volume reduction s. The removal of emphysematous lung tissue (esp. inelastic air spaces in the upper lobes of the lungs) to enhance the ability of the rest of the lung to expand and contract. This procedure improves respiratory function for many patients with advanced chronic obstructive lung disease although the long-term benefits of its use are uncertain.

major s. An operation risking a potential hazard and disruption of physiological function (e.g., entering a body cavity, excision of large tumors, amputation of a large body part, insertion of a prosthesis, open heart procedures). All surgeries are potentially dangerous and may involve a risk to life.

manipulative s. Use of manipulation in surgery or bone-setting.

maxillofacial s. The branch of dental practice and/or plastic surgery that deals with the diagnosis and the surgical and adjunctive treatment of diseases, injuries, and defects of the mouth and dental structures. This was formerly called oral or dental surgery. SYN: *oral surgery*.

minor s. A simple operation not involving a major body cavity or structure and usually causing little disruption of the patient's physiological status. As with all surgery, there is some risk of injury or death.

muco gingival s. A plastic surgical method for correcting diseases of the gingiva and adjacent oral mucosa.

open heart s. Surgery involving direct visualization and surgical procedure of the exposed heart.

oral s. Maxillofacial s.

orthopedic s. Surgical prevention and correction of musculoskeletal deformities and/or injuries.

palliative s. Surgery for the relief of symptoms or improvement in quality of life, usually in patients with incurable illness.

plastic s. Surgery for the repair or restoration of defective or missing structures, frequently involving the transfer of tissue from one part to another and sometimes including the use of prosthetic materials. SEE: *cosmetic s.*; *tissue expansion, soft*.

radical s. An operation to remove a large amount of damaged or neoplastic tissue and/or adjoining areas of lymphatic drainage so as to obtain a complete cure. This is in contrast to conservative surgery.

reconstructive s. An operation to repair a loss or defect or to restore function.

second-look s. Surgery some months after the original operation for cancer to

detect possible recurrences. Second-look procedures are also performed on a more immediate basis (e.g., within hours of the initial surgery) when vascular injuries created by the initial operation or condition are suspected. Occasionally, an endoscopic second look may be performed instead of an open surgical procedure.

subtotal s. An operation in which only a portion of the organ is removed (e.g., subtotal removal of the thyroid gland).

transsphenoidal s. Surgery on the pituitary gland, performed with an incision made through the base of the sphenoid sinus. It is typically performed through the nasal passages or the oral cavity for removal of a macroadenoma of the pituitary gland in patients with acromegaly, prolactinomas, or other pituitary tumors.

surgery, antimicrobial prophylaxis in

The use of antibiotics before, and sometimes during, procedures that are prolonged or involve potential risk of infection. This practice has been shown to prevent infectious complications in colorectal surgery, gynecological and obstetric surgeries, and some cardiac, cancer, and orthopedic procedures. The type of antibiotic administered depends on the surgical procedure. This practice is best suited to procedures involving contaminated areas or implantation of prosthetic material. SEE: *antibiotic resistance*.

surgical (sŭr'jĭ-kăł) Of the nature of or pert. to surgery.

surgical dressing A sterile protective covering of gauze or other substance applied to an operative wound.

surgical field The visible, palpable area in which an operation takes place. This field is prepared and covered to maintain sterility during operations.

surgical neck of humerus The constricted part of the shaft of the humerus below the tuberosities; commonly the site of fracture. Surgery is often indicated because of potential compromise of the density of neurovascular structures in this region.

surgical recovery, delayed Extension of the number of postoperative days required to initiate and perform activities that maintain life, health, and well-being. SEE: *Nursing Diagnoses Appendix*.

surgical resident A physician who is enrolled in a hospital-based training program to complete the requirements for board certification in a surgical specialty.

surgical technologist A technologist who assists in many operating room functions, including preparing the patient for surgery, ensuring the sterility of the operating room, operating equipment

during surgery, and, in some instances, working as a surgical first assistant.

surname (sūr'nām) The family name, as distinguished from the individual's given or Christian name. In some societies, the surname is written first.

surprise test A test designed to identify anterior shoulder instability. The relocation test for anterior glenohumeral instability is performed. SEE: *relocation test*. While the patient's glenohumeral joint is externally rotated, the examiner suddenly removes the posteriorly directed stabilizing force. A positive test is marked by the patient expressing pain and/or apprehension.

surrender (sūr-ēn'dēr) [O.Fr. *surrendre*] Giving up a health care professional license, e.g., at retirement or as a means of resolving a disciplinary action brought forward by a health care supervisory board.

surrogate (sūr'ō-gāt) [L. *surrogatus*, substituted] 1. Something or someone replacing another; a substitute, esp. an emotional substitute for another. 2. In psychoanalysis, the representation of one whose identity is concealed from conscious recognition as in a dream; a figure of importance may represent one's loved one.

sex s. A professional sex partner employed to assist persons with sexual dysfunction.

surrogate father A man who serves as a substitute father for a child's biological father. SEE: *parenting, surrogate*.

surrogate mother SEE: *under mother*.

sursumduction (sūr'sūm-dūk'shūn) [L. *sursum*, upward, + *ducere*, to lead] Elevation, as the power or act of turning an eye upward independently of the other one.

sursumvergence (sūr'sūm-vēr'jēns) [+ *vergere*, to turn] An upward turning of the eyes to maintain single binocular vision.

sursumversion (sūr'sūm-vēr'zhūn) [+ *versio*, turning] The process of turning upward; simultaneous movement of both eyes upward.

surveillance (sūr-vāl'āns) In health care, the monitoring of a disease, condition, epidemic, risk factor, or physiological function.

disease s. In epidemiology and public health, the identification of index patients and their contacts; the detection of outbreaks and epidemics; the determination of the incidence and demographics of an illness; and the policy making that may prevent further spreading of a disease.

immunological s. The theory that the immune system destroys some malignant cells as they grow in the body. Support for this theory is found in research data that show tumor cells killed by cytotoxic T lymphocytes, natural

killer cells, and perhaps, activated macrophages. SEE: *natural killer cell*.

postmarketing s. The review of adverse reactions to drugs and medical technologies that occurs after these agents are released for sale and use. Nurses, pharmacists, physicians, and other practitioners participate in this process by recording their observations on the adverse effects of drugs to the Food and Drug Administration, which accumulates this survey data and issues warnings to practitioners when needed.

survey 1. The study of a particular disease or condition, esp. its epidemiological aspects. **2.** In emergency care, the rapid and careful assessment of a patient's respiratory, circulatory, and neurological status. The *primary* survey focuses on the patency of a patient's airway, respiratory effort, circulation and cardiac rhythm, and neurological disability. The patient is then undressed or exposed, with environmental protection given to prevent hypothermia. In a *secondary* survey the stabilized patient is examined thoroughly for other conditions that may need prompt care.

survival Continuing to live, esp. under conditions in which death would be the expected outcome.

PATIENT CARE: Health care professionals are sometimes asked by patients or their families how long a patient may be expected to live, because he or she has a serious illness or has already reached an advanced age. Even in intensive care units, predicting how long some one may live is difficult. Some illnesses (e.g., widely metastatic breast or lung cancers) leave a patient with weeks or months of life. Some traumas (e.g., gunshot wounds to the brain, heart, or great vessels) confer a survival of hours or less. A patient who is not responding to resuscitative efforts can be expected to live for minutes. For patients who are not at the extremes of illness or injury, several predictive tools can be used to provide crude estimates of survival. The Karnofsky Performance Scale, the Palliative Prognostic Indicator, and the Palliative Performance Scale, for example, can be used to gauge survival in grave illnesses. For average members of the population, the Center for Disease Control and Prevention (National Center for Health Statistics) publishes tables that estimate the life expectancy of Americans based on their current age.

graft s. Persistent functioning of a transplanted organ or tissue in a recipient of that organ. Survival rates of transplanted organs are influenced by many factors, including the age and health status of both the donor and the recipient of the graft, the immunological match between the donor and the recip-

ient, the preparation of the organ before transplantation, and the use of immunosuppressive drugs. For some organ transplantation, graft survival approximates 90%.

Surviving Sepsis Campaign An international effort to reduce mortality from sepsis. It is a joint undertaking of the European Society of Intensive Care Medicine, the International Sepsis Forum, and the Society of Critical Care Medicine.

survivor (sür-viv'ër) An individual who has experienced a serious illness or injury and lived through it (and/or its treatment). In the U.S., for example, in 2005 there were more than 10 million people living after the diagnosis and treatment of cancer.

survivor guilt A grief reaction marked by feelings of depression, loss, or responsibility experienced by persons who have survived an event in which others have lost their lives (e.g., a war, holocaust, or epidemic illness).

survivorship care (sür-viv'ër-shíp") A plan for patient follow-up that links the treatments a patient has received from an oncologist and the needs of the patient after intensive cancer treatments have been completed. With about 10 million cancer survivors in the U.S., and that number constantly on the rise, survivors are living longer and receiving more fragmented care. A follow-up care plan helps communicate to the patient and his or her future health care providers details of cancer staging, treatment, and disease surveillance that may otherwise be misunderstood or neglected. According to the Institute of Medicine, such a plan should include the following elements: 1. A clear, concisely written statement of the patient's diagnosis, the methods used in treatment (what specific chemotherapeutic drugs, e.g., and what doses of radiation), and the expected or potential effects of that treatment; 2. Detailed information about the need for specific follow-up services and a timetable specifying when such services should be delivered; 3. Information about secondary disease prevention (including the detection of cancer recurrence and the need for monitoring for secondary cancers); 4. Information about the availability of support services and agencies in the patient's community; 5. Information for the patient about legal protections after diagnosis, including employment and insurance.

Survivor care plans are often drawn up and given to patients by medical oncologists or advanced practice nurses. They should address nutritional concerns; activity, exercise and mobility concerns; elimination; cognition and perception; pain and discomfort; sleep and rest; self-perception; relationships

with spouse, parents, children, other family, and friends; coping; and sexuality and reproductive issues.

susceptibility (süs-sép'ti-bil'ÿ-tē) The degree to which a person is prone to disease or persuasion.

susceptible (sü-sép'ti-bl) [L. *susceptibilis*, capable of receiving] 1. Having little resistance to a disease or foreign protein. 2. Easily impressed or influenced.

sushi (soo'shē) A traditional Japanese food made of raw fish, usually wrapped in a soft rice shell. Some raw fish contain adults or larvae of the nematodes of the family Anisakidae. In order to prevent these organisms from infecting persons who eat raw fish, the U.S. Food and Drug Administration has directed that prior to serving, the fish must be suddenly frozen to -31°F (-34.4°C) or below for 15 hr, or held in a commercial freezer at -4°F (-20°C) for 24 hr. After that period, the fish may be thawed and served. SEE: *anisakiasis*.

sushi domain An amino acid sequence that creates a specific protein conformation in a polypeptide.

suspended (süs-pënd'éd) [L. *suspendere*, to hang up] 1. Hanging. 2. Temporarily inactive.

suspension (süs-pën'shün) [L. *suspensio*, a hanging] 1. A condition of temporary cessation, as of any vital process. 2. Treatment using a hanging support to immobilize a body part in a desired position. 3. The state of a solid when its particles are mixed with, but not dissolved in, a fluid or another solid; also a substance in this state.

cephalic s. The supported suspension of a patient by the head to extend the vertebral column.

colloid s. A colloidal solution in which particles of the dispersed phase are relatively large. SYN: *suspensoid*.

tendon s. Fixation of a tendon. SYN: *tenodesis*.

suspensoid (süs-pën'soyd) [" + Gr. *eidos*, form, shape] Colloid suspension.

suspensory (süs-pën'sö-rē) [L. *suspensorius*, hanging] 1. Supporting a part, as a muscle, ligament, or bone. 2. A structure that supports a part. 3. A bandage or sac for supporting or compressing a part, esp. the scrotum.

suspiration (süs'pür-ä'shün) [L. *suspiratio*] A sigh or the act of sighing.

suspirious (süs-pür-rē-üs) [L. *suspirare*, to sigh] Breathing with apparent effort; sighing.

sustentacular (süs'tën-täk'ü-lär) [L. *sustentaculum*, support] Supporting; upholding.

sustentacular cell A supporting cell such as those found in the acoustic macula, organ of Corti, olfactory epithelium, taste buds, or testes. Those in the testes secrete the hormone inhibin and are

also called *Sertoli cells*. SEE: *Sertoli cell*.

sustentacular fibers of Müller [Friedrich von Müller, Ger. physician, 1858–1941] Fibers forming the supporting framework of the retina.

sustentaculum (sūs'tĕn-tāk'ū-lŭm) *pl.* **sustentacula** [L.] A supporting structure.

s. hepatis A fold of peritoneum upon which rests the right margin of the liver.

s. tali A process of the calcaneum that supports part of the talus.

sutalains (soo'tī-lāns) Proteolytic enzymes derived from the bacterium *Bacillus subtilis*. Calculated on the dry basis, they contain not less than 2,500,000 USP casein units. They are used in ointment form to débride necrotic lesions, such as burns.



This product should be kept away from the eyes.

Sutton's disease (süt'ŏnz) [Richard L. Sutton, Sr., U.S. dermatologist, 1878–1952] Halo nevus.

Sutton's disease (süt'ŏnz) [Richard L. Sutton, Jr., U.S. dermatologist, b. 1908] Granuloma fissuratum.

Sutton's law A method of diagnostic reasoning that states one should look for diseases where they are most likely to be (e.g., malaria in tropical areas that harbor *Anopheles* mosquitoes; atherosclerosis in patients who are smokers, hypertensives, or diabetics). The law is attributed to Willie Sutton, a U.S. bank robber, who, when asked why he robbed banks, said, "Because that's where the money is."

sutura (sū-tū'rā) *pl.* **suturæ** [L., a seam] 1. Suture (1). 2. Any kind of suture. SEE: *synarthrosis*.

sutural (sū-tū-rāl) [L. *sutura*, a seam] Rel. to a suture.

suturation (sū'tū-rā'shŭn) The application of sutures; stitching.

suture (sū'chŭr) [L. *sutura*, a seam]

1. The line of union in an immovable articulation, as those between the skull bones; also such an articulation itself. SYN: *sutura*. SEE: *raphe*; *synarthrosis*.

2. An operation in which soft tissues of the body are united by stitching them together. 3. The thread, wire, or other material used to stitch parts of the body together. 4. The seam or line of union formed by surgical stitches. 5. To unite by stitching.

absorbable surgical s. A sterile strand prepared from collagen derived from healthy mammals or from a synthetic polymer. This type of suture is absorbed and thus does not need to be removed.

aposition s. The suture in the su-

perficial layers of the skin in order to produce precise apposition of the edges.

approximation s. A deep suture for joining the deep tissues of a wound.

basilar s. The suture between the occipital bone and sphenoid bone that persists until the 16th to 18th year as the anteroposterior growth center of the base of the skull; also called *spheno-occipital synchondrosis*.

bifrontal s. The suture between the frontal and parietal bones.

biparietal s. The suture between the two parietal bones.

buried s. A suture placed so that it is completely covered by skin or other surrounding tissue.

button s. A suture in which the threads are passed through buttons or other prosthetic material on the surface and tied to prevent the suture material from cutting into the skin. SEE: *quilled s.*

catgut s. A suture material made from the sterilized submucosa of the small intestine of sheep. Eventually it is absorbed by body fluids. Treatment with chromium trioxide (chromic catgut) or other chemicals delays the absorption time.

coaptation s. A preliminarily placed suture to approximate wound edges before definitive closure.

cobbler's s. A suture in which the thread has a needle at each end. Also known as double-armed suture.

continuous s. The closure of a wound by means of one continuous thread, usually by transfixing one edge of the wound and then the other alternately from within outward in a variety of techniques. SYN: *uninterrupted suture*.

coronal s. A suture between the frontal and parietal bones.

cranial s. One of the sutures between the bones of the skull.

dentate s. An osseous suture consisting of long and toothlike processes.

ethmoidofrontal s. A suture between the ethmoid and frontal bones.

ethmoidolacrimal s. A suture between the ethmoid and lacrimal bones.

false s. A junction of opposing bones in which fibrous union has not occurred.

figure-of-eight s. A suture shaped like the figure eight.

frontal s. An occasional suture in the frontal bone from the sagittal suture to the root of the nose. SYN: *mediofrontal suture*; *metopic suture*.

frontomalar s. A suture between the frontal and malar bones.

frontomaxillary s. A suture between the frontal bone and superior maxilla.

frontonasal s. A suture between the frontal bones and the nasal bones.

frontotemporal s. A suture between the frontal and temporal bones.

glover's s. Locking suture.

Halsted's s. SEE: *Halsted's suture*.

harmonic s. A suture in which there is simple apposition of bone.

intermaxillary s. A suture between the superior maxillae.

internasal s. A suture between the nasal bones.

interparietal s. Sagittal s.

interrupted s. A suture formed by single stitches inserted separately, the needle usually being passed through one lip of the wound from without inward and through the other from within outward.

lambdoid s. A suture between the parietal bones and the two superior borders of the occipital bone. SYN: *occipital suture*; *occipitoparietal suture*.

locking s. A continuous suture in which the needle is passed through the loop of the preceding stitch; more commonly referred to as a locking suture. SYN: *glover's suture*.

longitudinal s. Sagittal s.

mediofrontal s. Frontal s.

metopic s. Frontal s.

nasomaxillary s. A suture between the nasal bone and superior maxilla.

nonabsorbable s. A suture made from a material that is not absorbed by the body, such as silk, polymers, cotton, or wire. These sutures ultimately are removed or are placed in tissue deep to the skin where their presence will have minimal long-term consequences.

occipital s. Lambdoid s.

occipitomastoid s. A suture between the occipital bone and the mastoid portion of the temporal bone. The occipitomastoid and lambdoid sutures meet at the asterion. SYN: *temporo-occipital suture*.

occipitoparietal s. Lambdoid s.

palatine s. A suture between the palatine bones.

palatine transverse s. A suture between the palatine processes and superior maxilla.

parietal s. Sagittal s.

parietomastoid s. A suture between the parietal bone and the mastoid portion of the temporal bone.

petro-occipital s. A suture between the petrous portion of the temporal bone and the occipital bone.

petrosphenoidal s. A suture between the petrous portion of the temporal bone and the ala magna of the sphenoid bone.

purse-string s. A suture entering and exiting around the periphery of a circular opening. Drawing the suture taut closes the opening.

quilled s. An interrupted suture in which a double thread is passed deep into the tissues below the bottom of the wound, the needle being withdrawn so as to leave a loop hanging from one lip of the wound and the two free ends of

the thread from the other. A quill, or more commonly a piece of bougie, is passed through the loops, which are tightened upon it, and the free ends of each separate thread are tied together over a second quill. The purpose of a quilled suture is prevention of tearing when tension becomes greater. Polymeric wound bridges have supplanted the use of quills and catheter segments. SEE: *relief s.*; *button s.*

relaxation s. A suture that may be loosened to relieve excessive tension.

relief s. A suture used primarily in abdominal wound closures to bring large margins of the wound close together to relieve tension and to provide protection to the primary wound closure; more commonly called a retention suture. These sutures are made of heavy-grade material and are tied over wound bridges or tubes of latex to avoid injury to the wound.

right-angled s. A suture used in sewing intestine. The needle is passed in the same direction as the long axis of the incision, and the process is repeated on the opposite side of the incision, the suture being continuous.

sagittal s. A suture between the two parietal bones. SYN: *interparietal suture*; *longitudinal suture*; *parietal suture*.

serrated s. An articulation by suture in which there is an interlocking of bones by small projections and indentations resembling sawlike teeth.

shotted s. A suture in which both ends of a wire or silkworm gut are passed through a perforated shot that is then compressed tightly over them in lieu of tying a knot.

silk s. A suture made of silk. It may be twisted, braided, or floss.

sphenofrontal s. The articulation between the greater wing of the sphenoid bone and the frontal bone.

sphenoparietal s. The articulation between the greater wing of the sphenoid bone and the parietal bone. The pterion of the skull is a region at the posterior end of this suture.

sphenosquamous s. An articulation of the great wing of the sphenoid with the squamous portion of the temporal bone.

sphenotemporal s. A suture between the sphenoid and temporal bones.

squamoparietal s. A suture between the parietal bone and squamous portions of the temporal bone.

squamosphenoidal s. A suture between the squamous portion of the temporal bone and great wing of the sphenoid bone.

squamous s. The junction of the temporal and parietal bones.

subcuticular s. A buried (usually) continuous suture in which the needle

is passed horizontally under the epidermis into the cutis vera, emerging at the edge of the wound but beneath the skin, then in a similar manner passed through the cutis vera of the opposite side of the wound, and so on until the other angle of the wound is reached.

temporo-occipital s. Occipitomas-toid s.

temporoparietal s. The suture between the temporal and parietal bones.

tension s. A suture used to reduce the pull on the edges of a wound.

twisted s. A suture in which pins are passed through the opposite lips of a wound and material is wound about the pins, crossing them first at one end and then at the other in a figure-of-eight fashion, thus holding the lips of the wound firmly together.

uninterrupted s. Continuous s.

vertical mattress s. An interrupted suture in which a deep stitch is taken and the needle inserted upon the same side as that from which it emerged, and passed back through both immediate margins of the wound. The suture is then tied to the free end on the side the needle originally entered. This suture is primarily used in closing the skin.

wire s. A suture of varying gauges of metal (usually stainless steel) that may be used in a wide variety of applications, including wound closure, intestinal repair, and the repair of sternotomies.

Sv *sievert*.

Svedberg (svēd'bürg, bër-ē) [Theodor Svedberg, Swedish chemist, 1884–1971] ABBR: S. The sedimentation rate of a centrifuged particle. One Svedberg equals 10^{-13} s.

Svo₂ *mixed venous oxygen saturation*.

SVV *Stroke volume variability*.

swab (swāb) [Dutch *suabbe*, mop]

1. Cotton or gauze on the end of a slender stick, used for cleansing cavities, applying remedies, or obtaining a piece of tissue or secretion for bacteriological examination. **2.** To wipe with a swab.

urethral s. A slender rod for holding cotton used in examinations with the speculum, in treating ulcers, or removing secretions. The male urethral swab is a rod about 7 in. (17.8 cm) long.

uterine s. A slender flattened wire, a plain rod, or one with coarse thread on the distal end for absorbing or wiping away discharges.

swage (swāj) **1.** To shape metal, esp. around something in order to make a close fit. **2.** Fusing a suture to a needle.

swager (swāj'ēr) A dental tool or device used to shape silver amalgam or gold by applying pressure from different directions simultaneously.

Swain, Mary Ann Price (swān) A U.S. nursing theorist who, along with Helen Erickson and Evelyn Tomlin, developed and published the grand nursing theory

of Modeling and Role Modeling. SEE: *Theory of Modeling and Role Modeling*.

swallow (swāl'ō) [AS. *swelgan*] To cause or enable the passage of something from the mouth through the throat and esophagus into the stomach by muscular action. SYN: *deglutition*.

swallowed blood syndrome A condition in which blood in an infant's stool reflects ingestion of maternal blood, either during delivery or during breastfeeding (from a bleeding nipple fissure). SEE: *APT test*.

swallowing (swāl'ō-ing) A complicated act, usually initiated voluntarily but always completed reflexively, whereby food is moved from the mouth through the pharynx and esophagus to the stomach. It occurs in the following three stages. SYN: *deglutition*.

In the *first stage*, food is placed on the surface of the tongue. The tip of the tongue is placed against the hard palate; then elevation of the larynx and backward movement of the tongue forces food through the isthmus of the fauces in the pharynx.

In the *second stage*, the food passes through the pharynx. This involves constriction of the walls of the pharynx, backward bending of the epiglottis, and an upward and forward movement of the larynx and trachea. This may be observed externally with the bobbing of the Adam's apple. Food is kept from entering the nasal cavity by elevation of the soft palate and from entering the larynx by closure of the glottis and backward inclination of the epiglottis. During this stage, respiratory movements are inhibited by reflex.

In the *third stage*, food moves down the esophagus and into the stomach. This movement is accomplished by momentum from the second stage, peristaltic contractions, and gravity. With the body in an upright position, liquids pass rapidly and do not require assistance from the esophagus. However, second-stage momentum and peristaltic contractions are sufficient to allow liquids to be drunk even when the head is lower than the stomach.

Difficulty in swallowing is called dysphagia. SEE: *dysphagia*.

air s. Voluntary or involuntary swallowing of air. It occurs involuntarily in infants as a result of improper feeding. Adults may swallow air during eating or drinking.

impaired s. Abnormal functioning of the swallowing mechanism associated with deficits in oral, pharyngeal, or esophageal structure or function. SEE: *Nursing Diagnoses Appendix*.

tongue s. SEE: under *tongue-swallowing*.

Swan-Ganz catheter (swān'gānz) [Harold James Swan, U.S. physician, b.

1922; William Ganz, U.S. physician, b. 1919] A soft, flexible catheter that is inserted into the pulmonary artery of patients in shock or acute pulmonary edema to determine intracardiac pressures, oxygen saturation, and other hemodynamic parameters.



Its use may produce bleeding, vessel rupture, dysrhythmias, and other life-threatening complications.

swan-neck deformity A finger deformity marked by flexion of the distal interphalangeal joints and hyperextension of the proximal interphalangeal joints, often seen in rheumatoid arthritis.

swarming (sworm'ing) The spread of bacteria over a culture medium.

sway, postural Forward and backward movement of the body with motion occurring around the ankle joints when the feet are fixed on the floor. Backward sway is controlled by the anterior tibialis, quadriceps, and abdominal muscles; forward sway is controlled by the gastrocnemius, hamstring, and paraspinal muscles. Patients with lesions of the dorsal and lateral columns of the central nervous system exhibit increased postural sway when they close their eyes and may fall down if they are not supported.

sway-back (swā'bāk) A slouched posture in which the pelvis is shifted forward and the thorax posteriorly. Lordosis occurs in the lower lumbar spinal region; a compensating reversal to kyphosis occurs in the upper lumbar and thoracic regions. **SEE: illus.**

sweat (swēt) [AS. *sweatan*] **1.** Perspiration. **2.** The condition of perspiring or of being made to perspire freely, as to order a sweat for a patient. **3.** To emit moisture through the skin's pores. **SYN:** *perspire*.

It is a colorless, slightly turbid, salty, aqueous fluid, although that from the sweat glands in the axillae, around the anus, and of the ceruminous glands has an oily consistency. It contains urea, fatty substances, and sodium chloride. This salty, watery fluid is difficult to collect without contamination with sebum. Perspiration is controlled by the sympathetic nervous system through true secretory fibers supplying sweat glands.

FUNCTION: Sweat cools the body by evaporation and rids it of what waste may be expressed through the pores of the skin. The daily amount is about a liter; this figure is subject to extreme variation according to physical activity and atmospheric conditions, and in hot conditions may be as much as 10 to 15 L in 24 hr.

bloody s. Hemathidrosis.

colliquative s. Profuse, clammy sweat.



SWAY-BACK

colored s. Chromidrosis.

fetid s. Bromidrosis.

night s. **SEE:** *night sweat*.

profuse s. Hyperhidrosis.

scanty s. Anhidrosis.

sweating (swēt'ing) [AS. *swat*, sweat]

1. The act of exuding sweat. **2.** Emitting sweat. **3.** Causing profuse sweat.

deficiency of s. Anhidrosis.

excessive s. Hyperhidrosis.

gustatory s. Sweating and flushing over the distribution of the auriculotemporal nerve in response to chewing.

insensible s. Insensible perspiration.

sensible s. The production of moisture on the skin by means of the secretions of the sweat glands.

urinous s. Uridrosis.

sweat test Pilocarpine iontophoresis.

Swedish gymnastics **SEE:** under *gymnastics*.

sweep (swēp) To clear debris away, e.g., from the mouth during resuscitation. **SEE:** *finger sweep*.

sweet [AS. *swete*, sweet] **1.** Pleasing to the taste or smell. **SEE:** *taste*. **2.** Containing or derived from sugar. **3.** Free from excess of acid, sulfur, or corrosive salts.

sweetener, artificial A chemical compound (e.g., saccharin or aspartame) that tastes sweet but has no available calories. Artificial sweeteners are used in foods and candies as sugar substitutes (e.g., for the overweight or diabetic).

Sweet's syndrome (swēts) [R. D. Sweet, contemporary Brit. physician] A febrile illness with raised painful plaques on the limbs, face, and neck; neutrophilic leukocytosis; and dense neutrophilic infiltrates in the skin lesions. It responds promptly to treatment with glucocorticoids. Although the cause is unknown, the condition is often associated with the administration of drugs (such as hydralazine or sulfa drugs) and occasionally is found in persons with connective tissue diseases, hematological malignancies, or inflammatory bowel disease.

swelling (swēl'ing) [AS. *swellan*, swollen] An abnormal transient enlargement, esp. one appearing on the surface of the body. Ice applied to the area helps to limit swelling. SEE: *edema*.

albuminous s. Cloudy s.

brain s. Brain edema.

Calabar s. A swelling occurring in infestations by the nematode *Loa loa*. Temporary and painless, the swelling is thought to be the result of temporary sensitization. SYN: *fugitive swelling*.

cloudy s. A degeneration of tissues marked by a cloudy appearance, swelling, and the appearance of tiny albuminoid granules in the cells as observed with a microscope. SYN: *albuminous swelling*.

fugitive s. Calabar s.

glassy s. A swelling occurring in amyloid degeneration of tissues. SEE: *amyloid degeneration*.

white s. A swelling seen in tuberculous arthritis, esp. of the knee.

Swift's disease (swifts) Acrodermia.

swimmer's ear SEE: *under ear*.

swing bed A hospital bed that can be used either for acute care needs or for skilled nursing as conditions dictate.

swinging flashlight test A test used to detect a relative afferent pupillary defect or Marcus Gunn pupil. Direct light is shone into the normal eye; both pupils constrict equally due to the consensual response. Light is quickly swung over to the contralateral pupil, which appears to dilate as a result of a relative decrease in the optic nerve fiber function in the affected eye. This response is seen in asymmetrical optic nerve diseases such as glaucoma, optic neuropathy, and optic neuritis.

Swiss ball An inflatable vinyl or rubber ball, used in exercise training, rehabilitation, and sports, e.g., to treat low back pain or to strengthen the muscles of the abdomen and chest. They are also

known as *balance*, *fitness*, or *stability balls*.

swiss cheese cartilage syndrome Kniest's dysplasia.

switch (swich) [MD. *swijch*, bough] 1. A device used to break or open an electrical circuit or to divert a current from one conductor to another. 2. An assistive technology device used as an input device for a microcomputer. Types of adaptive switches include those activated by the tongue, eyelids, voice, movements of the head and trunk, and gross hand movements.

foot s. A foot-activated electrical switch that enables the operator to use both hands in the application of an electrical device (e.g., light source, electro-surgical unit, drill).

pole-changing s. A switch by which the polarity of a circuit may be reversed.

swoon [AS. *swogan*, to suffocate] To faint.

sycosiform (sī-kō'sī-form) [Gr. *sykosis*, figlike disease, + L. *forma*, shape] Resembling sycosis.

sycosis (sī-kō'sīs) [Gr. *sykosos*, figlike disease] A chronic inflammation of the hair follicles.

SYMPTOMS: The patient has inflammation of hairy areas of the body marked by an aggregation of papules and pustules, each of which is pierced by a hair. The pustules show no disposition to rupture but dry to form yellow-brown crusts. There is itching and burning. If the disease persists, it may lead to extreme destruction of hair follicles and permanent alopecia. The disease is curable with prolonged treatment, and relapses do occur. *Staphylococcus aureus* and *S. epidermidis* entering through hair follicles cause the disease. Trauma and disability are predisposing factors.

s. barbae Sycosis of the beard marked by papules and pustules perforated by hairs and surrounded by infiltrated skin.

lupoid s. A pustular lesion of the hair follicles of the beard.

Sydenham's chorea (sīd'ēn-hāmz)

[Thomas Sydenham, Brit. physician, 1624–1689] A rare neurological syndrome that is associated with acute rheumatic fever, marked by dancing movements of the muscles of the trunk and extremities, anxiety and other psychological symptoms, and, occasionally, cognitive disorders. It is seen infrequently in Western societies because of the prompt and effective treatment of most cases of strep throat.

TREATMENT: Benzodiazepines, such as diazepam or lorazepam, are given to limit the choreiform movements. Penicillin or another appropriate antibiotic is given to eradicate the streptococcal infection causing the rheumatic fever.

PROGNOSIS: Recovery usually occurs

within 2 to 3 months. Relapses, esp. in young women, may occur when oral contraceptives are used or during pregnancy. Other complications, such as congestive heart failure or death, may result from the carditis that accompanies rheumatic fever. SYN: *chorea minor*.

syllabic utterance (sī-lāb'ik) [Gr. *syllabikos*] A staccato accentuation of syllables, slowly but separately, observed in patients with multiple sclerosis. SEE: *scanning speech*.

syllable stumbling (sīl'ā-bl) [Gr. *syllabe*, syllable] Hesitating utterance (dysphasia) with difficulty in pronouncing certain syllables.

syllabus (sīl'ā-būs) [Gr. *syllabos*, table of contents] An abstract of a lecture or outline of a course of study or of a book.

sylvian aqueduct (sīl'vē-ān) [François (Franciscus del la Boë) Sylvius, Dutch anatomist, 1614–1672] A narrow canal from the third to the fourth ventricle.

sylvian fissure [François Sylvius] SEE: *fissure of Sylvius*.

sym- [Gr. *syn*, together] Combining form meaning *with, along, together with, beside*.

sympallophone (sīm-bāl'ō-fōn) [+ *ballein*, to throw, + *phone*, sound] A special stethoscope with two chest pieces. Its use assists in locating a lesion in the chest by comparing the different sounds detected by the two chest pieces.

symbiont, symbiont (sīm'bē-ōn, -bē-ōnt) [Gr. *syn*, together, + *bios*, life] An organism that lives with another in a state of symbiosis.

symbiosis (sīm'bē-ō'sīs) [Gr.] **1.** The living together in close association of two organisms of different species. If neither organism is harmed, this is called *commensalism*; if the association is beneficial to both, *mutualism*; if one is harmed and the other benefits, *parasitism*. **2.** In psychiatry, a dependent, mutually reinforcing relationship between two persons. In a healthy context, it is characteristic of the infant-mother relationship. In an unhealthy context, it may accentuate shared depression or paranoia.

symbiote (sīm'bi-ōt) [Gr. *syn*, together, + *bios*, life] An organism symbiotic with another.

symbiotic (sīm'bi-ōt'ik) Concerning symbiosis.

symbplepharon (sīm-blēf'ā-rōn) [+ *blepharon*, eyelid] An adhesion between the conjunctivae of the lid and the eyeball, typically caused by burns with acids or bases, surgical trauma, or inadequately treated infections; also caused by Stevens-Johnson syndrome, pemphigoid, and trachoma. The adhesions are surgically lysed to permit free movement and use of the affected eye.

symbplepharopterygium (sīm-blēf'ā-rō-

tēr-ij'ē-ūm) [+ + *pterygion*, wing] The abnormal joining of the eyelid to the eyeball.

symbol (sīm'bōl) [Gr. *symbolon*, a sign]

1. An object or sign that represents an idea or quality by association, resemblance, or convention. **2.** In psychoanalytical theory, an object used as an unconscious substitute that is not connected consciously with the libido, but into which the libido is concentrated. **3.** A mark or letter representing an atom or an element in chemistry.

phallic s. An object that bears some resemblance to the penis.

symbolia (sīm-bō'lē-ā) The ability to identify or recognize an object by the sense of touch.

symbolism (sīm'bōl'izm) [+ -*ismos*, condition] **1.** The unconscious substitutive expression of subconscious thoughts of sexual significance in terms recognized by the objective consciousness. **2.** An abnormal condition in which everything that occurs is interpreted as a symbol of the patient's own thoughts.

symbolization (sīm'bōl-i-zā'shūn) An unconscious process by which an object or idea comes to represent another object or idea on the basis of similarity or association.

sympbrachydactyly (sīm-brāk'ē-dāk'ti-lē) [+ *brachys*, short, + *daktylos*, finger] The webbing of abnormally short fingers.

Syme's operation (sīmz) [James Syme, Scottish surgeon, 1799–1870] **1.** Amputation of the foot at the ankle joint with removal of the malleoli. **2.** Excision of the tongue. **3.** External urethrotomy.

symmetry (sīm'ēt-rē) Correspondence in shape, size, and relative position of parts on opposite sides of a body.

bilateral s. Symmetry of an organism or body whose right and left halves are mirror images of each other or in which a median longitudinal section divides the organism or body into equivalent right and left halves. SYN: *bilateralism*.

radial s. Symmetry of an organism whose parts radiate from a central axis.

sympathectomize (sīm'pā-thēk'tō-miz) To perform a sympathectomy.

sympathectomy (sīm'pā-thēk'tō-mē) [Gr. *sympathetikos*, sympathy, + *ektome*, excision] Excision of a portion of the sympathetic division of the autonomic nervous system, used, e.g., to treat refractory sweating of the palms or feet, or Raynaud's phenomenon. It may include a nerve, plexus, ganglion, or a series of ganglia of the sympathetic trunk. SYN: *sympathicectomy*.

chemical s. The use of drugs to destroy or temporarily inactivate part of the sympathetic nervous system.

periarterial s. Removal of the sheath of an artery in which sympathetic nerve

fibers are located; used in trophic disturbances.

sympatheoneuritis (sīm-pāth"ē-ō-nū-rī'tis) [" + *neuron*, nerve, + *itis*, inflammation] An inflammation of the sympathetic nerve.

sympathetic (sīm-pā-thēt'ik) **1.** Pert. to the sympathetic nervous system. **2.** Caused by or pert. to sympathy.

sympatheticalgia (sīm-pā-thēt"i-kāl'jē-ā) [" + *algos*, pain] Pain in the cervical sympathetic ganglion.

sympathetic nervous system The thoracolumbar division of the autonomic nervous system. Preganglionic fibers originate in the thoracic and lumbar segments of the spinal cord and synapse with postganglionic neurons in the sympathetic ganglia. Most of these ganglia are in two chains lateral to the backbone, and others are within the trunk; postganglionic fibers extend to the organs innervated. Some effects of sympathetic stimulation are increased heart rate, dilation of the bronchioles, dilation of the pupils, vasoconstriction in the skin and viscera, vasodilation in the skeletal muscles, slowing of peristalsis, conversion of glycogen to glucose by the liver, and secretion of epinephrine and norepinephrine by the adrenal medulla. Sympathetic effects are general rather than specific and prepare the body to cope with stressful situations. SEE: *autonomic nervous system* for ill. and table; *parasympathetic nervous system*.

sympatheticoparalytic (sīm-pā-thēt"i-kō-pār'ā-lit'ik) [" + *paralysis*, a loosening at the sides] Resulting from paralysis of the sympathetic nervous system.

sympatheticopathy (sīm-pā-thēt"i-kōp'ā-thē) [" + *pathos*, disease, suffering] Any condition resulting from a disorder of the sympathetic nervous system.

sympathetic ophthalmia Granulomatous inflammation of the uvea (choroid, ciliary body, and iris) as a complication of penetrating injury. Similar inflammation can occur in the unaffected eye (sympathizing eye).

sympatheticotonia (sīm-pā-thēt"i-kō-tō'nē-ā) [" + *tonos*, act of stretching, tension] A condition marked by excessive tone of the sympathetic nervous system with unusually high blood pressure, fine tremor of the hands, and insomnia; the opposite of vagotonia. It may be present in thyrotoxic patients.

sympathetic plexus One of the plexuses formed at intervals by the sympathetic nerves and ganglia.

sympathicectomy (sīm-pāth"i-sēk'tō-mē) [" + *ektome*, excision] Sympathicectomy.

sympathicolytic Sympatholytic.

sympathiconneuritis (sīm-pāth"i-kō-nū-rī'tis) [" + *neuron*, nerve, + *itis*, in-

flammation] An inflammation of the sympathetic nerves.

sympathicopathy (sīm-pāth"i-kōp'ā-thē) [" + *pathos*, disease, suffering] A disease or disordered function caused by a malfunction of the autonomic nervous system.

sympathicotripsy (sīm-pāth"i-kō-trīp'sē) [" + *tripsis*, a crushing] The crushing of a sympathetic ganglion.

sympathicotropic (sīm-pāth"i-kō-trōp'ik) [" + *tropos*, a turning] Having a special affinity for the sympathetic nerve.

sympathoadrenal (sīm-pāth-ō-ā-drē'nāl) [" + *L. ad*, to, + *ren*, kidney] Concerning the sympathetic part of the autonomic nervous system and the adrenal medulla.

sympathoblastoma (sīm-pāth-ō-blās-tō'mā) [" + " + *oma*, tumor] A malignant tumor made up of sympathetic nerve cells.

sympathogonia (sīm-pā-thō-gō'nē-ā) [" + *gone*, seed] The embryonic cells from which sympathetic nervous system cells are derived.

sympatholytic (sīm-pāth-ō-līt'ik) Interfering with, opposing, inhibiting, or destroying impulses from the sympathetic nervous system. SYN: *adrenolytic*; *sympathicolytic*.

sympathomimetic (sīm-pā-thō-mīm-ēt'ik) [" + *mimetikos*, imitating] Adrenergic; producing effects resembling those resulting from stimulation of the sympathetic nervous system, such as effects following the injection of epinephrine.

sympathy (sīm-pā-thē) [Gr. *sympatheia*] **1.** An association or feeling of closeness between individuals such that something that affects one affects the other. SEE: *empathy*. **2.** In biology, something that affects one of a paired organ influencing the other. The mechanism of this interaction is not always clearly understood.

sympexion (sīm-pēks'ē-ōn) [Gr. *sympexis*, concretion] A calcified mass in certain sites such as the prostate or seminal vesicles.

symphalangism (sīm-fāl'ān-jizm) [Gr. *syn*, together, + *phalanx*, closely knit row] **1.** An ankylosis of the joints of the fingers or toes. **2.** A web-fingered or web-toed condition.

sympyogenetic (sīm"fē-ō-jē-nēt'ik) [Gr. *syn*, together, + *phyein*, to grow, + *gennan*, to produce] Concerning the combined effect of heredity and environment upon the development and function of an organism.

sympyiseal (sīm-fīz'ē-āl) [Gr. *sympyisis*, growing together] Pert. to symphy-sis.

sympyiseotomy, symphysiectomy, symphysiotomy (sīm-fīz'ē-ōt'ō-mē) [" + *tome*, incision] A section of the symphysis pubis to enlarge the pelvic di-

ameters during delivery. SYN: *pubiotomy*.

symplysion (sīm-fiz'ē-ōn) [Gr. *symplysis*, growing together] The most anterior point of the alveolar process of the lower jaw.

symplysiorrhaphy (sīm-fiz'ē-or'ā-fē) [" + *rhaphe*, seam, ridge] The surgical repair of a divided symphyis.

symplysiotome (sīm-fiz'ē-ō-tōm) [" + *tome*, incision] An instrument for dividing a symphyis.

symplysis (sīm'fi-sīs) *pl.* **symplyses** [Gr., growing together] **1.** A line of fusion between two bones that are separate in early development, as symphyis of the mandible. **2.** A joint in which two bones are connected only by a fibrocartilaginous pad, as the pubic symphyis and the intervertebral disks. SEE: *cartilaginous joint*.

s. of jaw An anterior, median, vertical ridge on the outer surface of the lower jaw representing a line of union of its halves.

s. pubis The junction of the pubic bones on the midline in front; the bony eminence under the pubic hair.

sympodia (sīm-pō'dē-ā) [" + *pous*, foot] A fusion of the lower extremities.

sympporter (sīm-por'tēr) A membrane protein that carries two different ions or molecules in the same direction through the membrane, as in the absorption of glucose linked with that of sodium ions in the small intestine.

symptom (sīm'tūm, sīmp-) [Gr. *symp-toma*, occurrence] Any change in the body or its functions as perceived by the patient. A symptom represents the subjective experience of disease. Symptoms are described by patients in their complaint or history of the present illness. By contrast, signs are the objective findings observed by health care providers during the examination of patients.

Aspects of general symptom analysis include the following: *onset*: date, manner (gradual or sudden), and precipitating factors; *characteristics*: character, location, radiation, severity, timing, aggravating or relieving factors, and associated symptoms; *course since onset*: incidence, progress, and effects of therapy.

accessory s. A minor symptom, or a nonpathognomonic one.

accidental s. A symptom occurring incidentally during the course of a disease but having no relationship to the disease.

alarm s. A symptom that raises the concern that a patient may have a severe illness and requires careful evaluation. For example, in patients with digestive illnesses, findings such as anemia, anorexia, bleeding, dehydration, fever, weight loss, or a family history of cancer or inflammatory bowel

disease are considered alarm symptoms.

cardinal s. A fundamental symptom of a disease.

constitutional s. A symptom (e.g., fever, malaise, loss of appetite) caused by or indicating systemic disease.

dissociation s. Anesthesia to heat, cold, and pain without loss of tactile sensibility; seen in syringomyelia.

focal s. A symptom caused by a lesion to a specific body part or a particular location in the central or peripheral nervous system. SYN: *local symptom*.

general s. Constitutional s.

indirect s. A symptom occurring secondarily as a result of a disease in another organ system or body part.

labyrinthine s. A group of symptoms (e.g., tinnitus, vertigo, or nausea) indicating a disease or lesion of the inner ear.

local s. Focal s.

s. management An approach to palliative care that treats the symptoms rather than the cause of a condition. Its focus includes confusion, dizziness, fatigue, incontinence, nausea, shortness of breath, vomiting, and weakness.

negative pathognomonic s. A symptom that never occurs in a certain disease or condition; hence, a symptom whose presence rules out the existence of that disease.

objective s. A symptom apparent to the observer. SEE: *sign* (2).

passive s. Static s.

pathognomonic s. A symptom that is unmistakably associated with a particular disease.

presenting s. The symptom that led the patient to seek medical care.

prodromal s. Prodrome.

rational s. Subjective s.

signal s. A symptom that is premonitory of an impending condition such as the aura that precedes an attack of epilepsy or migraine.

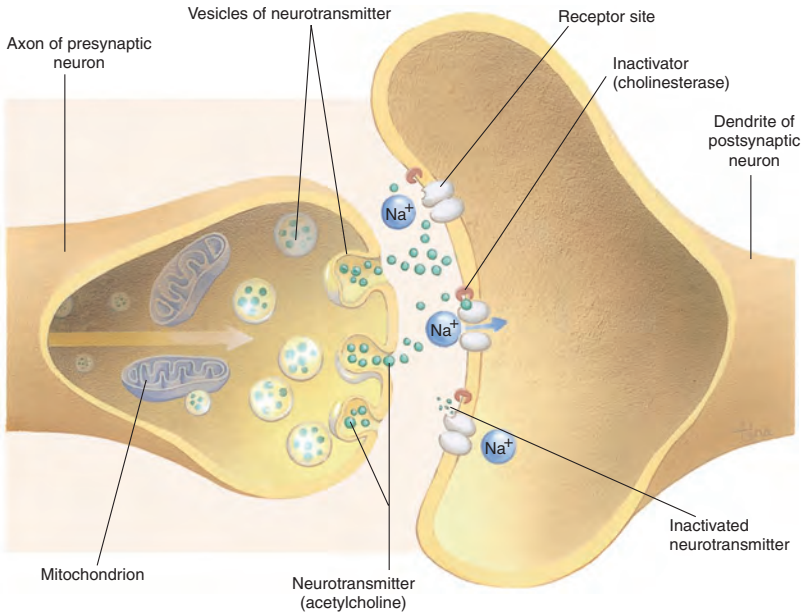
static s. A symptom pert. to the condition of a single organ or structure without reference to the remainder of the body. SYN: *passive symptom*.

subjective s. A symptom apparent only to the patient. SYN: *rational symptom*.

supratentorial s. A symptom due to psychological rather than organic causes. The term is slang and refers to symptoms with causes originating "above the tentorium cerebelli" (i.e., in the brain rather than in the body).

sympathetic s. A symptom for which there is no specific inciting cause and usually occurring at a point more or less remote from the point of disturbance. SEE: *sympathy* (1).

withdrawal s. Any of the symptoms that follow the sudden discontinuation of the use of a substance to which a per-



SYNAPSE

Transmission at an excitatory synapse (arrow indicates direction of impulse)

son has become addicted. SEE: *withdrawal syndrome*.

symptomatic (sĭmp"tō-măt'ĭk) [Gr. *sympmatikos*] Of the nature of or concerning a symptom.

symptomatic treatment Treatment directed toward constitutional symptoms, such as fever, shock, and pain.

symptomatology (sĭmp"tō-măt'ō-jē) [Gr. *sympnoma*, symptom, + *logos*, word, reason] **1.** The science of symptoms and indications. **2.** All of the symptoms of a given disease as a whole.

symptom complex Syndrome.

symptom inventory A list of findings or patterns common to particular illnesses or diseases, e.g., psychological illnesses, traumatic injuries, or neoplastic diseases. Symptom inventories are used to assess or screen patients, to assign them to treatment groups, and to randomize groups of individuals by their similarities or differences so that they may be compared in research.

syn- [Gr., together] Prefix meaning *joined, together*. SEE: *con-*.

synalgitic (sĭn-ăl'ĭk) Pert. to or marked by referred pain.

Synanciidae (sĭ-năn'sĭ-dē, sĭ'ī-) [NL] The family of bottom-dwelling, spiny fish that includes the stonefish, a toxic marine animal.

synanthropic (sĭn-ăn-thröp'ĭk) [" + "] Living in a close association with humans.

synapse (sĭn'ăps) [Gr. *synapsis*, point of contact] The space between the junction of two neurons in a neural pathway, where the termination of the axon of one neuron comes into close proximity with the cell body or dendrites of another. The electrical impulse traveling along a presynaptic neuron to the end of its axon releases a chemical neurotransmitter that stimulates or inhibits an electrical impulse in the postsynaptic neuron; synaptic transmission is in one direction only. Synapses are susceptible to fatigue, offer a resistance to the passage of impulses, and are markedly susceptible to the effects of oxygen deficiency, anesthetics, and other agents, including therapeutic drugs and toxic chemicals. SYN: *synapsis* (1). SEE: *illius*.

axodendritic s. The synapse between an axon of one neuron and the dendrites of another.

axosomatic s. The synapse between the axon of one neuron and the cell body of another.

synapsis (sĭn-ăp'sĭs) [Gr., point of contact] The process of first maturation division in gametogenesis, in which there is conjugation of pairs of homologous chromosomes forming double or bivalent chromosomes. In the resulting meiotic division, the chromosome number is reduced from the diploid to the haploid number. It is at this stage that crossing over occurs.

synaptic (sī-năp'tík) Pert. to a synapse or synopsis.

synaptology (sīn'ăp-tōl'ō-jē) [" + *logos*, word, reason] The study of synapses.

synarthrodial (sīn'ăr-thrō'dē-ăl) Pert. to a synarthrosis.

synarthrophysis (sīn'ăr-thrō-fī'sīs) [" + *arthron*, joint, + *physis*, growth] A progressive ankylosis of joints.

synarthrosis (sīn'ăr-thrō'sīs) [" + *arthron*, joint, + *osis*, condition] A type of immovable joint with fibrous connective tissue or cartilage between the bone surfaces. Movement is absent or limited, and a joint cavity is lacking. It includes the synchondrosis, suture, and syndesmosis types of joints.

syncanthus (sīn-kăn'thūs) [" + *kanthos*, angle] An adhesion of the eyeball to the structures of the orbit.

synchiria (sīn-kī'rē-ă) [" + *cheir*, hand] A rare disorder in which a stimulus applied to one side of the body is felt on both sides. SEE: *achiria*; *allochiria*; *dyschiria*.

synchondroseotomy (sīn'kōn-drō'sē-ōt'ō-mē) [" + *chondros*, cartilage, + *tome*, incision] An operation of cutting through the sacroiliac ligaments and closing the arch of the pubes in the congenital absence of the anterior wall of the bladder (exstrophy).

synchondrosis (sīn'kōn-drō'sīs) [" + " + *osis*, condition] An immovable joint having surfaces between the bones connected by cartilages. This may be temporary, in which case the cartilage eventually becomes ossified, or permanent. SYN: *symphysis cartilaginosa*.

synchondrotomy (sīn-kōn-drōt'ō-mē) [" + " + *tome*, incision] **1.** The division of articulating cartilage of a synchondrosis. **2.** A section of the symphysis pubis to facilitate childbirth. SYN: *symphyseotomy*.

synchorial (sīn-kō'rē-ăl) [" + *chorion*, chorion] Pert. to multiple fetuses that share a single placenta.

synchronism Synchrony.

synchronous communication A mode of communication between parties in which messages and responses are exchanged immediately. An example of synchronous communication is talking by telephone.

synchrony (sīng'krō-nē) The simultaneous occurrence of separate events. SYN: synchronism. **synchronous**, *adj.*

synchrotron (sīng'kră-trōn") A particle accelerator used in medical imaging that accelerates positively or negatively charged particles.

synchysis (sīn'kīs-īs) [Gr., confound] The fluid state of the vitreous of the eye.

syncinesis (sīn'sīn-ē'sīs) [" + *kinesis*, movement] An involuntary movement produced in association with a voluntary one.

imitative s. An involuntary movement occurring on the sound side when a movement is attempted on the paralyzed side.

spasmodic s. Syncinesis occurring on the paralyzed side when muscles of the opposite side are voluntarily moved.

synclinal (sīn-klī'năl) [Gr. *synklinein*, to lean together] Inclined in the same direction toward a point.

synclitism (sīn'klīt-izm) [Gr. *synklinein*, to lean together, + *-ismos*, condition] Parallelism between the planes of the fetal head and those of the maternal pelvis.

synclonus (sīn'klō-nūs) [" + *klonos*, turmoil] **1.** The simultaneous clonic contraction of several muscles. **2.** A disease marked by muscular spasms.

syncope (sīn'kō-pē) [Gr. *synkope*, fainting] Transient (and usually sudden) loss of consciousness, accompanied by an inability to maintain an upright posture. Syncope occurs commonly; it results in about 1% to 6% of all hospital admissions in the U.S. **syncopeal**, *adj.*

ETIOLOGY: The most frequent causes of syncope are vasovagal (the common fainting spell), cardiogenic (esp. arrhythmogenic, valvular, or ischemic), orthostatic (e.g., due to dehydration or hemorrhage), and neurogenic (e.g., due to seizures). Many medications (e.g., sedatives, tranquilizers, excessive doses of insulin, and others), hypoglycemia, hyperventilation, massive pulmonary embolism, aortic dissection, atrial myxoma, carotid sinus hypersensitivity, coughing, urination, and psychiatric disease can also result in loss of consciousness.

SYMPTOMS: The patient typically complains of having suffered a sudden and unexpected fall to the ground, with loss of awareness, and then rapid recovery of orientation. Lacerations, abrasions, or other injuries occasionally result from the fall.

DIAGNOSIS: The history may contain useful clues. For example, if the patient stood up just before losing consciousness, an orthostatic cause is likely; if a patient is confused or disoriented for a long time after losing consciousness, seizures are probable; if a young patient passes out while at a wedding or other stressful event, vasovagal syncope is likely. The diabetic patient who becomes agitated and sweaty before passing out should be rapidly assessed and treated for low blood sugar.

The examination of the patient may reveal the cause; e.g., a loud aortic murmur may point to valvular heart disease, and a pale patient with orthostatic vital signs may be dehydrated or bleeding. Electrocardiographic monitoring may reveal arrhythmias or evidence of ischemia. Depending on clinical circum-

stances, further evaluation may include carotid sinus massage, tilt-table testing, echocardiography, or psychiatric evaluation. In most cases, despite thorough evaluation, a precise diagnosis is not determined.

PATIENT CARE: Any person with sudden loss of consciousness should be placed in a supine position, preferably with the head low to facilitate blood flow to the brain. At the same time, a clear airway should be ensured. Clothing must be loosened, esp. if collar is tight.

Fainting (one form of syncope) usually is of short duration and is counteracted by placing the person supine. If recovery from fainting is not prompt and complete, a prompt assessment of airway, breathing, circulation, and cardiac rhythm is needed; assistance should be obtained and the person transported to a hospital. A person who refuses hospital evaluation after recovering from a fainting episode should be encouraged to be examined by a physician as soon as possible.

cardiac s. Syncope of cardiac origin as in Stokes-Adams syndrome, aortic stenosis, tachycardia, bradycardia, or myocardial infarction.

carotid sinus s. Syncope resulting from pressure on, or hypersensitivity of, the carotid sinus. It may result from turning the head to one side or from wearing too tight a collar.

convulsive s. Loss of consciousness followed by a seizure. It may be caused by any condition (e.g., cardiac arrhythmia) that results in inadequate blood flow to the brain.

defecation s. Loss of consciousness during or immediately after a bowel movement.

deglutition s. Fainting triggered by swallowing, an abnormal reflex in which stimulation of the esophagus elicits vagal motor impulses that cause bradycardia, peripheral vasodilation, and hypotension.

hysterical s. Syncope resulting from a conversion reaction.

laryngeal s. Brief unconsciousness following coughing and tickling in the throat.

local s. Numbness of a part with sudden blanching, as of the fingers; a symptom of Raynaud's disease or of local asphyxia.

micturition s. The abrupt loss of consciousness during urination. It usually occurs in men who get up at night to urinate and is mediated by an increase in vagal tone.

neurocardiogenic s. Vasodepressor syncope.

shallow water s. Loss of consciousness during diving that occurs when a diver hyperventilates and then holds his breath while swimming underwater

for an extended period before resurfacing. The loss of consciousness may result in drowning or near-drowning.

situational s. Loss of consciousness that occurs only in certain distinct clinical circumstances (e.g., after urinating, coughing, or having a bowel movement). It is sometimes associated with inadequate return of blood to the right side of the heart, Valsalva maneuver, or increased parasympathetic tone.

tussive s. Fainting following a paroxysm of coughing. SYN: *laryngeal vertigo*.

vasodepressor s. The common fainting spell.

SYMPTOMS: The patient, who may have just experienced a stressful or emotionally upsetting event, reports a feeling of wooziness, nausea, and weakness, followed often by a feeling that darkness is closing in on him. A ringing in the ears may follow, along with inability to maintain an erect posture. Witnesses may report profuse sweating or a loss of color in the face. During the event, an unusually slow pulse may be present. Several convulsive movements of the body may be noted if blood flow to the brain is inadequate but the loss of consciousness is not accompanied by other signs of seizures (e.g., tongue biting, incontinence, or a prolonged postictal period of confusion).

PATIENT CARE: Placing the patient in a sitting position with the head lowered between the legs or in a horizontal or Trendelenburg position restores blood flow to the brain and promptly aborts the attack. A brief examination should be performed to make sure the affected person can move all extremities and facial muscles and can speak clearly and understand speech. The carotid arteries should be checked for bruits, and the heart for evidence of arrhythmia or heart murmurs. Blood pressure, pulse, and oxygenation, as well as cardiac rhythm, should be monitored. Fluids should be administered by mouth if nausea has resolved, or by vein if the patient cannot take liquids orally and has an intravenous access in place. An electrocardiogram should be obtained or cardiac monitoring ordered if the patient has a history of cardiac disease, is elderly, or has multiple risk factors for cardiac disease or dysrhythmias. A complete blood count, serum electrolytes, BUN, creatinine, and glucose should be checked. Before the patient is allowed to get up again, vital signs should be checked; if they are normal, the patient should be assisted first to a sitting position and then to a standing position before he walks independently. Patients who faint may need specialized follow-up examination, e.g., with a cardiologist, internist, or neurologist. SYN: *va-*

sovagal syncope; neurocardiogenic syncope.

vasovagal s. Vasodepressor s.

syncretio (sîn-krê'shê-ô) [L.] The development of adhesions between opposing inflamed surfaces.

syncytial (sîn-sî'shâl) Of the nature of a syncytium.

syncytioma (sîn'sît'ê-ô'mă) [" + " + *oma*, tumor] A tumor of the chorion. SYN: *deciduoma*.

s. benignum A mole.

syncytiotrophoblast (sîn-sît'ê-ô-trô'fô-blăst) [" + " + *trophe*, nourishment, + *blastos*, germ] The outer layer of cells covering the chorionic villi of the placenta. These cells are in contact with the maternal blood or decidua.

syncytium (sîn-sît'ê-üm) [" + *kytos*, cell] **1.** A multinucleated mass of protoplasm such as a striated muscle fiber. **2.** A group of cells in which the protoplasm of one cell is continuous with that of adjoining cells such as the mesenchyme cells of the embryo. SYN: *coenocyte*.

syndactylism Syndactyly.

syndactyly (sîn-dăk'tî-lê) The fusion, usually congenital, of one or more fingers or toes SYN: syndactylism. **syndactylous** (-lūs), *adj.*

syndectomy (sîn-dêk'tô-mê) [" + *dein*, to bind, + *ektome*, excision] The excision of a circular strip of the conjunctiva around the cornea to relieve panus. SYN: *peritomy* (1).

syndemic (sîn-dêm'îk) [" + analogy with *endemic*, *epidemic*] A network of health problems, esp. ones that share common social underpinnings and cause an increased public health burden on a community. An example of a syndemic is the linkage between the ready availability of snack foods, low socioeconomic status, sedentariness, overeating, obesity, and an increased risk of diabetes mellitus and coronary artery disease.

syndesis (sîn-dê'sis) [" + *desis*, binding] **1.** The condition of being bound together. **2.** Surgical fixation or ankylosis of a joint.

syndesmectomy (sîn'dês-mêk'tô-mê) [Gr. *syndesmos*, ligament, + *ektome*, excision] The excision of a section of a ligament.

syndesmectopia (sîn'dês-mêk-tô'pê-ă) [" + *ektos*, out of place] An abnormal position of a ligament.

syndesmitis (sîn'dês-mî'tîs) [" + *itis*, inflammation] **1.** An inflammation of a ligament or ligaments. **2.** An inflammation of the conjunctiva.

syndesmochorial (sîn'dês'mô-kor'ê-ăl) Pert. to a type of placenta found in ungulates (e.g., sheep and goats) in which there is destruction of the surface layer of the uterine mucosa, thus allowing

chorionic villi to come into direct contact with maternal blood vessels.

syndesmography (sîn-dês-môg'ră-fê) [Gr. *syndesmos*, ligament, + *graphein*, to write] A treatise on the ligaments.

syndesmology (sîn'dês-môl'ô-jê) [" + *logos*, word, reason] The study of the ligaments, joints, their movements, and their disorders.

syndesmoma (sîn'dês-mô'mă) [" + *oma*, tumor] A connective tissue tumor.

syndesmopexy (sîn-dês'mô-pêk'sê) [" + *pexis*, fixation] Joining of two ligaments or fixation of a ligament in a new place, used in correction of a dislocation.

syndesmophyte (sîn-dês'mô-fit) [" + *phyton*, plant] **1.** A bony bridge formed between adjacent vertebrae. **2.** A bony outgrowth from a ligament.

syndesmoplasty (sîn-dês'mô-plăs'tê) [" + *plassein*, to form] Plastic surgery on a ligament.

syndesmorrhaphy (sîn'dês-mor'ă-fê) [" + *rhaphe*, seam, ridge] The repair or suture of a ligament.

syndesmosis (sîn'dês-mô'sis) *pl. syndesmoses* [Gr. *syndesmos*, ligament, + *osis*, condition] An articulation in which the bones are united by ligaments.

syndesmotomy (sîn'dês-môt'ô-mê) [" + *tome*, incision] The surgical section of ligaments.

syndrome (sîn'drôm) [Gr., a running together] A group of symptoms, signs, laboratory findings, and physiological disturbances that are linked by a common anatomical, biochemical, or pathological history. Particular syndromes are listed under the first word. SEE: e.g., *carpal tunnel syndrome; irritable bowel syndrome; toxic shock syndrome*. SYN: *symptom complex*. SEE: *disease; disorder*. **syndromic** (sîn-drôm'îk), *adj.*

syndrome of inappropriate antidiuretic hormone ABBR: SIADH. A syndrome of increased ADH activity in spite of reduced plasma osmolarity. Often first suggested by a relative hyponatremia, it is most commonly associated with disorders of the central nervous system, various tumors, anxiety, pain, pneumonia, and drugs.

syndrome X The presence of four interrelated atherosclerotic risk factors: insulin resistance, hypertension, hyperlipidemia, and obesity. SYN: *dysmetabolic syndrome; metabolic syndrome*.

synechia (sîn-êk'ê-ă) *pl. synechia* [Gr. *synecheia*, continuity] An adhesion of parts, esp. adhesion of the iris to the lens and cornea.

annular s. An adhesion of the iris to the lens throughout its entire pupillary margin.

anterior s. An adhesion of the iris to the cornea.

peripheral anterior s. Adhesion between the iris and periphery of the cor-

nea (PAS); usually near the anterior chamber angle. Can cause glaucoma by blocking the outflow of aqueous. Caused by inflammation

posterior s. An adhesion of the iris to the capsule of the lens.

total s. An adhesion of the entire surface of the iris to the lens.

s. vulvae Fusion of the vulvae, usually congenital.

synchotomy (sīn'ēk-ōt'ō-mē) [*"* + *tome*, incision] The division of a synchchia or adhesion.

synchtenterotomy (sīn'ēk-tēn'tēr-ōt'ō-mē) [*"* + *enteron*, intestine, + *tome*, incision] The division of an intestinal adhesion.

synecology (sīn'ē-kōl'ō-jē) [Gr. *syn*, together, + *oikos*, house, + *logos*, word, reason] The study of organisms in relationship to their environment in group form.

synencephalocele (sīn'ēn-sēf'ā-lō-sēl') [*"* + *enkephalos*, brain, + *kele*, tumor, swelling] An encephalocele with adhesions to adjacent structures.

syneresis (sīn-ēr'ē-sīs) [Gr. *synairesis*, drawing together] The contraction of a gel resulting in its separation from the liquid, as a shrinkage of fibrin when blood clots.

synergetic (sīn'ēr-jēt'ik) [Gr. *syn*, together, + *ergon*, work] Exhibiting cooperative action, said of certain muscles; working together. SYN: *synergic*.

synergia (sīn-ēr'jē-ā) The association and correlation of the activity of synergetic muscle groups.

synergic (sīn-ēr'jik) [*"* + *ergon*, work] Rel. to or exhibiting cooperation, as certain muscles. SYN: *synergetic*.

synergist (sīn'ēr-jīst) **1.** A remedy that acts to enhance the action of another. SYN: *adjuvant*. **2.** A muscle or organ functioning in cooperation with another, as the flexor muscles; the opposite of antagonist.

synergistic (sīn'ēr-jīs'tik) **1.** Concerning synergy. **2.** Acting together.

synergy, synergism (sīn'ēr-jē) [Gr. *synergia*] An action of two or more agents, muscles, or organs working with each other, cooperatively.

synergy patterns Primitive movements that dominate reflex and voluntary effort when spasticity is present following a cerebrovascular accident. They interfere with coordinated voluntary movements such as eating, dressing, and walking. *Flexion synergy patterns* include scapular retraction, shoulder abduction and external rotation, elbow flexion, forearm supination, and wrist and finger flexion in the upper extremity; and hip flexion, abduction and external rotation, knee flexion, and ankle dorsiflexion in the lower extremity. *Extension synergy patterns* include scapular protraction, shoulder adduction and

internal rotation, elbow extension, forearm pronation, and wrist and finger flexion in the upper extremity; and hip extension, adduction and internal rotation, knee extension, ankle plantar flexion and inversion, and toe flexion in the lower extremity.

synesthesia (sīn'ēs-thē'zē-ā) [Gr. *syn*, together, + *aisthesis*, sensation] **1.** A sensation in one area from a stimulus applied to another part. **2.** A subjective sensation of a sense other than the one being stimulated. Hearing a sound may also produce the sensation of smell. SEE: *phonism*.

s. algica Painful synesthesia.

synesthesialgia (sīn'ēs-thē-zē-āl'jē-ā) [*"* + *"* + *algos*, pain] A painful sensation giving rise to one of different character. SEE: *synesthesia*.

Syngamus (sīn'gā-mūs) A genus of nematodes parasitic in the respiratory tract of birds and mammals. The preferred name for the mammalian parasite is *Mammomonogamus*. Bird parasites have retained the name *Syngamus*.

S. laryngeus The former name for *Mammomonogamus laryngeus*.

syngamy (sīn'gā-mē) [Gr. *syn*, together, + *gamos*, marriage] **1.** Sexual reproduction. **2.** The final stage of fertilization in which the haploid chromosome sets from the male and female gametes come together following breakdown of the pronuclear membranes to form the zygote. SYN: *sexual reproduction*.

syngeneic (sīn-jē-nē'ik) Descriptive of individuals or cells without detectable tissue incompatibility. Strains of mice that are inbred for a great number of generations become syngeneic. Identical twins may be syngeneic.

syngensis (sīn-jēn'ē-sīs) [*"* + *genesis*, generation, birth] Arising from the germ cells derived from both parents, rather than from a single cell from one parent.

syngnathia (sīn-nā'thē-ā) [*"* + *gnathos*, jaw] Congenital adhesions between the jaws.

synizesis (sīn'ī-zē'sīs) [Gr. *synizesis*] **1.** An occlusion or shutting. **2.** A clumping of nuclear chromatin during the prophase of mitosis.

synkaryon (sīn-kār'ē-ōn) [Gr. *syn*, together, + *karyon*, kernel] A nucleus resulting from fusion of two pronuclei.

synkinesis (sīn'ki-nē'sīs) [*"* + *kinesis*, movement] An involuntary movement of one part occurring simultaneously with reflex or voluntary movement of another part.

imitative s. An involuntary movement in a healthy or normal muscle accompanying an attempted movement of a paralyzed muscle on the opposite side.

synnecrosis (sīn'nē-krō'sīs) [*"* + *nekrosis*, state of death] The condition of association between groups or individ-

uals that causes mutual inhibition or death.

synonym (sīn'ō-nīm) [Gr. *synonymon*] ABBR: syn. One of two words that have the same or very similar meaning; an additional or substitute name for the same disease, sign, symptom, or anatomical structure.

synophrys (sīn-ōf'rīs) [Gr. *syn*, together, + *ophrys*, eyebrow] Fusion of the eyebrows above the bridge of the nose.

synophthalmia A congenital anomaly in which the eyes are incompletely separated (i.e., in which there is extreme hypotelorism). SEE: *cyclopia*.

synopsis (sīn-ōp'sis) [Gr.] A summary; a general review of the whole.

synoptophore (sīn-ōp'tō-for) [" + *ops*, sight, + *phoros*, bearing] An apparatus for diagnosis and treatment of strabismus. SYN: *synoptoscope*.

synoptoscope (sīn-ōp'tō-skōp) [" + " + *skopein*, to examine] Synoptophore.

synorchidism, synorchism (sīn-or'kīd-izm, -kīzm) [" + *orchis*, testicle, + *-ismos*, condition] The union or partial fusion of the testicles.

synoscheos (sīn-ōs'kē-ōs) [" + *oscheon*, scrotum] An adhesion between the penis and scrotum.

synosteology (sīn'ōs-tē-ōl'ō-jē) [" + " + *logos*, word, reason] The branch of medical science concerned with joints and articulations.

synosteosis (sīn'ōs-tē-ō'sis) Synostosis.

synosteotomy (sīn'ōs-tē-ōt'ō-mē) [" + *osteon*, bone, + *tome*, incision] Dissection of joints.

synostosis (sīn'ōs-tō'sis) *pl. synostoses* [" + " + *osis*, condition] 1. Articulation by osseous tissue of adjacent bones. 2. Union of separate bones by osseous tissue. SYN: *synosteosis*.

synostotic (sīn'ōs-tōt'ik) [" + " + *osis*, condition] Concerning synostosis.

synotia (sīn-ō'shē-ā) [" + *ous*, ear] The union of, or approximation of, the ears occurring in embryonic development, usually associated with absence or incomplete development of the lower jaw.

synotus (sī-nō'tūs) [" + *ous*, ear] A fetus with synotia.

synovectomy (sīn'ō-vēk'tō-mē) [L. *synovia*, joint fluid, + Gr. *ektome*, excision] Excision of the synovial membrane.

synovia (sīn-ō'vē-ā) [L.] Synovial fluid.

synovial (sīn-ō'vē-āl) Pert. to synovia, the lubricating fluid of the joints.

synovial bursa Bursa.

synovial crypt Diverticulum of a synovial membrane of a joint.

synovial fluid Clear viscid lubricating fluid of the joint, bursae, and tendon sheaths, secreted by the synovial membrane of a joint. It contains mucin, albumin, fat, and electrolytes. SYN: *synovia*. SEE: *joint, synovial*.

synovial fold One of the smooth folds of

synovial membrane on the inner surface of the joint capsule. SYN: *plica, synovial*.

synovial villi Slender avascular processes on the free surface of a synovial membrane projecting into the joint cavity.

synovioma (sīn'ō-vē-ō'mā) [L. *synovia*, joint fluid, + Gr. *oma*, tumor] A tumor arising from a synovial membrane.

synoviosarcoma [+ Gr. *sarx*, flesh + *oma*, tumor] A rare malignant tumor that arises from synovial cells, i.e., the cells of the membranes that enclose joints.

synovitis (sīn'ō-vī'tis) [" + Gr. *itis*, inflammation] Inflammation of a synovial membrane. Inflammation may be the result of an aseptic wound, rheumatologic diseases, infections, a subcutaneous injury (contusion or sprain), irritation produced by damaged cartilage, overuse, or trauma. SYN: *osteosynovitis*. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: The joint is painful, much more so on motion, esp. at night. It is swollen and tense. The condition may fluctuate. In synovitis of the knee, the patella is floated up from the condyles, and it can be readily depressed, to rise again when pressure is taken off. The part is never in full extension, as this increases the pain. Skin, which is very sensitive to pressure only at certain points, is neither thickened nor reddened. After a few days, when pain lessens and swelling diminishes as the effusion and extravasated blood are absorbed, the limb returns to its natural position, and recovery follows.

TREATMENT: The condition is managed symptomatically, restricting or avoiding range of motion that produces pain. Therapeutic treatments include cold, heat, ultrasound, and medications to reduce inflammation. Rehabilitation includes strengthening, flexibility, and neuromuscular regimens.

chronic s. Synovitis in which an undue amount of fluid remains in the cavity and the membrane itself is edematous. Prolonged inflammation causes thickening of the membrane and articular structures by plastic exudation and the formation of fibrous tissue, which increases joint dysfunction and exacerbates symptoms. The joint is weak but not esp. painful, except on pressure and sometimes not even then. Movements, esp. in extension, are restricted and generally attended by crepitus or creaking. Symptoms are well marked when the patient has an excess accumulation of synovial fluid (the amount of fluid depends on the joint involved and also on the patient's body build). Fluid can be removed with a needle and syringe and sent to the laboratory for analysis.

dendritic s. Synovitis with villous growths developing in the sac.

detritic s. Inflammation and proliferation of the synovial tissues, esp. when occurring around foreign bodies (such as silicone joint prostheses) or loose bodies (such as fragments of cartilage or subchondral bone).

dry s. Synovitis with little or no effusion. SYN: *synovitis sicca*.

purulent s. Synovitis with purulent effusion within the sac.

serous s. Synovitis with nonpurulent, copious effusion.

s. sicca Dry s.

simple s. Synovitis with only slightly turbid, if not clear, effusion.

tendinous s. Inflammation of a tendon sheath. SYN: *vaginal synovitis*.

vaginal s. Tendinous s.

vibration s. Synovitis resulting from a vibration wound near a joint.

synovitis acne pustulosis hyperostosis and osteomyelitis syndrome ABBR: SAPHO. Acne-associated arthritis.

synovium (sīn-ō'vē-ŭm) [L. *synovia*, joint fluid] A synovial membrane.

syntactic (sīn-tāk'tik) Concerning or affecting syntax.

synaxis (sīn-tāk'sīs) [" + *taxis*, arrangement] A junction between two bones. SYN: *articulation*.

synthase (sīn'thās) An enzyme that acts as a catalyst for joining two molecules. SYN: *synthetase*.

ATP s. An enzyme that catalyzes the addition of a phosphate group to adenosine diphosphate to produce adenosine triphosphate.

nitric oxide s. ABBR: NOS. An enzyme that synthesizes nitric oxide from arginine; present in the central nervous system, the lining of blood vessels, the heart, joints, some autonomic neurons, and other organs.

synthermal (sīn-thēr'mäl) [" + *therme*, heat] Having the same temperature.

synthesis (sīn'thēs-īs) [Gr.] In chemistry, the union of elements to produce compounds; the process of building up. In general, the process or processes involved in the formation of a complex substance from simpler molecules or compounds, as the synthesis of proteins from amino acids. Synthesis is the opposite of decomposition.

synthesize (sīn'thē-sīz') To produce by synthesis.

synthetase (sīn'thē-tās) Synthase.

synthetic (sīn-thēt'ik) [Gr. *synthetikos*] Rel. to or made by synthesis; artificially prepared.

synthorax (sīn-thō'rāks) [Gr. *syn*, together, + *thorax*, chest] Thoracopagus.

Synthroid (sīn'throid") SEE: *levothyroxine sodium*.

syntone (sīn'tōn) [" + *tonos*, act of stretching, tension] An individual whose personality indicates a stable re-

sponsiveness to the environment and its social demands. SEE: *syntonic*.

syntonic (sīn-tōn'ik) Pert. to a personality characterized by an even temperament, a normal emotional responsiveness to life situations; the opposite of schizoid. SEE: *syntone*.

syntonin (sīn'tō-nīn) An acid albumin formed by the action of dilute hydrochloric acid on muscle during gastric digestion.

syntrophism (sīn'trōf-izm) [" + *trophe*, nourishment, + *-ismos*, condition] Stimulation of an organism to grow by mixing with or through the closeness of another strain.

syntrophoblast (sīn-trōf'ō-blāst) [" + " + *blastos*, germ] The outer syncytial layer of the trophoblast. SEE: *trophoblast*.

syntropy (sīn'trō-pē) [" + *trope*, a turn] Turning or pointing in the same direction. **syntropic, adj.**

synulosis (sīn"ū-lō'sīs) [Gr. *synoulosis*] The formulation of scar tissue. **synulotic, adj.**

syphilid(e) (sif'īl-īd) *pl.* **syphilides** [Fr.] A skin eruption caused by secondary syphilis.

syphilis (sif'ī-lis) [*Syphilis*, shepherd having the disease in a Latin poem] A multistage infection caused by the spirochete *Treponema pallidum*. The disease is typically transmitted sexually, although a small number of congenital infections occur during pregnancy. In the U.S. the incidence of syphilis fluctuates from year to year and decade to decade. In 2005, 33,278 cases were reported in the U.S., a rate of 11.3 per 100,000. SYN: *lues*. SEE: *illus.*; *Standard and Universal Precautions Appendix*. **syphilitic** (sif'ī-līt'ik), *adj.*

Syphilis is typically passed from person to person by direct contact with skin or mucous membranes. Spirochetes readily penetrate skin and disseminate from the initial site of inoculation to regional lymph nodes, the bloodstream, and multiple other sites including the central nervous system. After an incubation period of 10 days to 2 months, a papule appears on the skin that develops into a painless ulcer ("chancre") that is characteristic of the *primary stage* of infection. The chancre and other skin lesions caused by syphilis are highly infectious. The genitals are the most common site of primary infection and chancre formation in syphilis, although chancres may appear on other points of contact, such as the lips, mouth, anus, or rectum.

Chancres usually disappear within 3 to 6 weeks, even without treatment. Within a few days to several months, the *secondary stage* appears: a widespread body rash, often with systemic symptoms such as fever, headache, generalized lymph node swelling, nausea, vomiting,



SYPHILIS

Secondary syphilitic rash on chest and palm

weight loss, and malaise. Highly infectious, moist, broad, pink or grayish-white papules may appear in the perineum (“condyloma lata”), along with shallow ulcers in the mouth (“mucous patches”). Hair loss, which usually is temporary, also may occur, and the nails may become brittle and pitted. If the disease is not eradicated with antibiotics, it establishes latent infection that may cause multiple destructive changes in many organ systems years later.

In the latent (formerly called *tertiary stage*), tissue destruction occurs in the aorta, the central nervous system, bone, and skin. The consequences may include aortic aneurysm, meningitis, sensory and gait disturbances, dementia, optic atrophy, and many other illnesses.

SEROLOGICAL TESTS FOR SYPHILIS: Commonly used laboratory tests for syphilis do not have optimal sensitivity or specificity. Screening is usually performed with the nontreponemal rapid plasma reagin test (RPR) or the Venereal Disease Research Laboratory test (VDRL); either of these may yield inaccurate results. Both tests become reactive about 1 to 2 weeks after initial infection. If either test result is positive, a confirmatory test is done: (1) by identifying the responsible bacterium, *T. pallidum* on dark-field examination of material from a genital lesion; (2) with the microhemagglutination assay for antibody to *T. pallidum* (MHA-TP); or (3) with the fluorescent treponemal antibody absorption test (FHA-ABS). Two-stage testing increases the likelihood of obtaining an accurate diagnosis.



Individuals diagnosed with syphilis may have other sexually transmitted illnesses, esp. HIV infection. Public health experts recommend testing all individuals with either disease for the other, as well as for other sexually transmitted diseases (gonorrhea, chlamydia, or trichomoniasis).

acting intramuscular preparations of penicillin are typically given to patients with syphilis. The duration of treatment varies, depending on the stage of the disease and on whether there are comorbid illnesses, such as HIV infection, or complications, such as evidence of neurosyphilis. Doxycycline or tetracycline may be substituted in nonpregnant patients who are allergic to penicillin, although, because of potential bacterial resistance, patients with penicillin allergy should be considered candidates for desensitization. Pregnant patients are not given tetracycline or doxycycline because they discolor primary teeth in the infant.

PATIENT CARE: The patient is taught about the illness and the importance of locating all sexual contacts, the nature of the disease, treatment, and the need for follow-up care. The patient should avoid sexual contact with anyone until the full course of therapy has been completed, including previous partners who have not received adequate evaluation and treatment, if indicated, for syphilis. Contact precautions are instituted from the time the disease is suspected until 24 hr after initiation of proper antibiotic therapy and whenever draining lesions are present. Standard precautions apply. The patient is informed about safe sex practices and consistent condom use to prevent infection with syphilis, as well as other sexually transmitted diseases. Pregnant patients are screened for syphilis to prevent prenatal transmission. Rape victims are tested at the time of the attack and again 1 to 2 weeks later. All cases of syphilis must be reported to local public health authorities by both health care providers and laboratories. SEE: *Standard Precautions Appendix*.

cardiovascular s. Tertiary syphilis involving the heart and great blood vessels, esp. the aorta. Sacular aneurysms of the aorta and aortic insufficiency frequently result.

congenital s. Syphilis transmitted from the mother to the fetus in utero.

TREATMENT: Intravenous or long-

Transplacental fetal infection may occur if a pregnant woman is not treated by the 18th week of gestation or contracts the disease later in pregnancy. In the U.S. in 2000, 529 cases of congenital syphilis were reported. SYN: *prenatal syphilis*. SEE: *Nursing Diagnoses Appendix*.

endemic s. Chronic, nonvenereal syphilis infection of childhood. It is characterized in its early stages by mucocutaneous or membrane lesions. Later, gummas of bone and skin occur. The causative organism is *T. pallidum*. Penicillin is the treatment of choice.

extragenital s. Syphilis in which the primary chancre is located elsewhere than on genital organs.

latent s. The phase of syphilis during which symptoms are absent and the disease can be diagnosed only by serological tests.

meningovascular s. A form of neurosyphilis in which the meninges and vascular structures of the brain and spinal cord are involved. It may be localized or general. SYN: *meningovascular neurosyphilis*.

prenatal s. Congenital s.

serological tests for s. ABBR: STS. Nonspecific blood tests for syphilis. Two general types are available: (1) Procedures that identify the presence of a nontreponemal antibody against a lipoidal agent that is generated in response to infection with *Treponema pallidum* (i.e., a reagin). These tests include the Wassermann, the Venereal Disease Research Laboratory, and the rapid plasma reagin tests. (2) An antibody-specific test, the fluorescent treponemal antibody absorption (FTA-ABS) procedure. Because of a high rate of false-positive findings by the nonspecific antibody tests, diagnosis of syphilitic infection is established by the more accurate FTA test.

syphilitic macule (sif'ī-lit'ik māk'ūl') A small red eruption manifested in secondary syphilis. These eruptions often cover the entire body and are associated with chancre or scar, alopecia, pain in bones, swollen glands, and sore throat.

syphiloderm, syphiloderma (sif'īl-ō-dēr'mā) [sif'īl-ō-dēr'mā, sif'īl-ō-dēr'mā] [sif'īl-ō-dēr'mā] [sif'īl-ō-dēr'mā] + Gr. *derma*, skin] A syphilitic cutaneous disorder.

syphiloid (sif'ī-loyd) [sif'īl-ō-loyd] [sif'īl-ō-loyd] [sif'īl-ō-loyd] [sif'īl-ō-loyd] + Gr. *eidōs*, form, shape] Resembling syphilis.

syphilology (sif'īl-ōl'ō-jē) The study of syphilis and its treatment.

syphiloma (sif'īl-ō'mā) [sif'īl-ō-mā] [sif'īl-ō-mā] [sif'īl-ō-mā] [sif'īl-ō-mā] + Gr. *oma*, tumor] A syphilitic tumor; a gumma.

syphilomania (sif'īl-ō-mā'nē-ā) [sif'īl-ō-mā'nē-ā] [sif'īl-ō-mā'nē-ā] [sif'īl-ō-mā'nē-ā] [sif'īl-ō-mā'nē-ā] + Gr. *mania*, madness] Syphilophobia (1).

syphilophobia (sif'īl-ō-fō'bē-ā) [sif'īl-ō-fō'bē-ā] [sif'īl-ō-fō'bē-ā] [sif'īl-ō-fō'bē-ā] [sif'īl-ō-fō'bē-ā] + Gr. *phobos*, fear] 1. A morbid fear of syphilis. SYN: *syphilomania*. 2. A delusion of

having syphilis. **syphilophobic** (-fō'bīk), *adj.*

syr (sēr, sīr) [L., *syropus*] Syrup.

Syrian rue (sēr'e-ān roo) The common name for the plant, *Peganum harmala*, whose seeds are brewed in some cultures to make a tea with hallucinogenic properties. Its seeds contain harmaline alkaloids (harmine, harmaline and tetrahydroharmine) which are members of the class of chemicals known as beta-carboline alkaloids. They increase levels of serotonin in the central and peripheral nervous systems.

syrigmus (sīr-ig'mūs) [Gr. *syrgmos*, a whistle] An infrequently used synonym for tinnitus.

syringadenoma (sīr-īng'ā-dē-nō'mā) [Gr. *syrix*, pipe, + *aden*, gland, + *oma*, tumor] Tumor of a sweat gland.

syringe (sīr-īnj', sīr'īng) [Gr. *syrix*, pipe] 1. An instrument for injecting fluids into cavities, tissues, or vessels. SEE: *illus. 2*. 2. To wash out or introduce fluid with a syringe.

air s. A syringe on a dental unit that delivers compressed air, water, or both through a fine nozzle to clear or dry an area or to evacuate debris from an operative field.

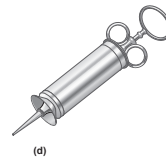
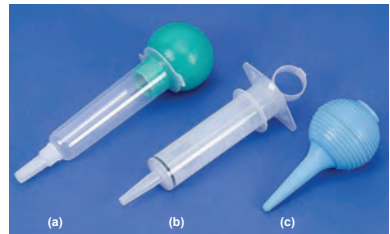


Use of high pressure may injure the tissues.

hand s. A hollow rubber bulb that is fitted to a nozzle and delivers air or fluid when squeezed; commonly called a bulb syringe.

hypodermic s. A syringe, fitted with a needle, used to administer drugs subdermally.

oral s. A syringe made of plastic or



SYRINGES

A. plastic; B. piston; C. rubber bulb; D. metallic.

glass. It is not fitted with a needle but is graduated and is used to dispense liquid medication to children. The tip is constructed to prevent its breaking in the child's mouth. An oral syringe may also be used to deliver fluids to impaired patients with an intact swallowing mechanism.

syringectomy (sir'in-jĕk'tō-mĕ) [" + *ektome*, excision] Removal of the walls of a fistula.

syringocarcinoma (sir-rĭng'gō-kār'sĭ-nō'mā) [" + *karkinos*, crab, + *oma*, tumor] Carcinoma of a sweat gland.

syringocoele (sir'in'gō-sĕl) [" + *koilia*, cavity] **1.** The central canal of the myelion or spinal cord. **2.** A form of meningocele that contains a cavity in the ectopic spinal cord.

syringocystadenoma (sir'in'gō-sĭs'tā-dĕ-nō'mā) [" + *kystis*, bladder, sac, + *aden*, gland, + *oma*, tumor] Adenoma of the sweat glands, characterized by tiny, hard, papular formations.

syringocystoma (sir'in'gō-sĭs-tō'mā) [" + " + *oma*, tumor] A cystic tumor having its origin in ducts of the sweat gland.

syringoencephalomyelia (sir-rĭng'gō-ĕn-sĕf'ā-lō-mĭ-ĕ'lĕ-ā) [" + *encephalos*, brain, + *myelos*, marrow] A condition of cavities in the brain and spinal cord.

syringoid (sir'in'goid) [Gr. *syrinx*, pipe, + *eidos*, form, shape] Resembling a tube; fistulous.

syringoma (sir'in'gō'mā) [" + *oma*, tumor] A tumor of the sweat glands.

syringomeningocele (sir'in'gō-mĕn-in'gō-sĕl) [" + *meninx*, membrane, + *kele*, tumor, swelling] A meningocele that is similar to a syringomyelocele.

syringomyelia (sir'in'gō-mĭ-ĕ'lĕ-ā) [" + *myelos*, marrow] A disease of the spinal cord characterized by the development of a cyst or cavities with the cord. It usually begins at the site of a congenital malformation of the cerebellum, but sometimes results from spinal cord trauma, tumors, or after spinal cord infection. SYN: *syringomyelus*. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: Depending on the location of the syrinx, there may be pain, sensory losses, paralysis, or autonomic dysfunction.

TREATMENT: Some patients are managed conservatively. Sudden enlargement of a cavity may warrant surgical intervention with decompression of the cavity. Persistent pain may necessitate chordotomy or medullary tractotomy for relief.

syringomyelitis (sir'in'gō-mĭ-ĕ-lĭ'tis) [" + *myelos*, marrow, + *itis*, inflammation] Inflammation coincident with abnormal dilation of the central canal of the spinal cord.

syringomyelocele (sir'in'gō-mĭ-ĕl-ō-sĕl) [" + " + *kele*, tumor, swelling] A

form of spina bifida in which the cavity of the projecting portion communicates with the central canal of the spinal cord.

syringomyelus (sir'in'gō-mĭ-ĕl-ūs) Syringomyelia.

syringopontia (sir'in'gō-pōn'shĕ-ā) [" + L. *pons*, bridge] Cavity formation in the pons varolii similar to syringomyelia.

syringotomy (sir'in'gōt'ō-mĕ) An operation for incision of a fistula.

syrinx (sir'inks) [Gr., pipe] **1.** A tube or pipe. **2.** A pathological cavity (cyst) in the spinal cord or brain. **3.** A fistula.

syrup (sir'üp) [L. *syrupus*] ABBR: syr. A concentrated solution of sugar in water to which specific medicinal substances are usually added. Syrups usually do not represent a very high percentage of the active drug. Some syrups are used principally to give a pleasant odor and taste to solutions.

system (sĭs'tĕm) [Gr. *systema*, a composite whole] An organized grouping of structures, such as a group of cells that perform a particular function (e.g., the mononuclear phagocyte system). Particular systems are listed under the first word. SEE: e.g., *circulatory system*; *International System of Units*; *metric system*.

systematic (sĭs'tĕ-măt'ĭk) Concerning a system or organized according to a system.

systematization (sĭs-tĕm'ā-tĭ-zā'shŭn) The process of organizing something according to a plan.

Systematized Nomenclature of Medicine ABBR: SNOMED. A systematized collection of medically useful terms published by the American College of Pathologists. The words in the collection are arranged in various fields to permit coding, computerization, sorting, and retrieval of large amounts of information from medical records.

systematized nomenclature of medicine-clinical terms ABBR: SNOMED-CT. A reference terminology optimized for clinical data retrieval and analysis. Concept definition and manipulation are supported through a set of tools with functionality such as

1. acronym resolution, word completion, term completion, spelling correction, display of the authoritative form of the term entered by the user, and decomposition of unrecognized input;
2. automated classification; and
3. conflict management, detection, and resolution.

systemic (sĭs-tĕm'ĭk) **1.** Rel. or pert. to a system. **2.** Pert. to the blood flow that leaves the left ventricle to deliver oxygen to the body as distinct from the blood flow that leaves the right ventricle to become oxygenated in the lungs.

systemic capillary leak syndrome A rare disease whose hallmarks are episodes of hypotension associated with extravasa-

tion of plasma from the systemic circulation.

systemic inflammatory response syndrome ABBR: SIRS. A progressive state of systemic inflammation characterized by a white blood cell count greater than 12,000/mm³ or less than 4000/mm³, temperature greater than 38°C or less than 36°C, tachycardia, tachypnea, and decreased blood carbon dioxide levels. SIRS can begin with any serious illness or injury involving inflammation but is most often associated with systemic infection (sepsis) caused by gram-negative bacteria. SEE: *sepsis*; *septic shock*.

ETIOLOGY: Lipopolysaccharide endotoxins released by gram-negative and gram-positive bacteria bind with lymphocytes and endothelial cells, stimulating a cascade of cytokine release, which produces systemic inflammation of blood vessels, tissues, and organs. Shock develops when cytokines cause vasodilation and increased vascular permeability; SIRS is one of the main causes of multiple organ dysfunction syndrome.

TREATMENT: Treatment for SIRS is focused on treating the primary cause. Multiple antibiotic therapy is required in sepsis. Supportive measures include the use of intravenous fluids and pressors, to support blood pressure, and intensive monitoring and optimization of oxygenation, ventilation, blood pressure, cardiac rhythms, serum electrolytes, and renal function.

systemoid (sĭs'tē-moyd) [ʹ + *eidos*, form, shape] 1. Resembling a system. 2. Pert. to tumors made up of several types of tissues.

Systems Model Neuman's systems model.

system testing The evaluation of the function, performance, and suitability of a computing system. Elements of system testing include assessments of usability, final requirements, volume and stress, security and controls, recovery, documentation procedures, and communications ability among separate locations.

system theory, general A theory developed by Ludwig von Bertalanffy, which asserts that all living systems are open systems constantly exchanging information, matter, and energy with the environment. There are three levels of reference for systems: the system level on which one is focusing, such as a person; the suprasystems level above the focal

system, such as the person's family, community, and culture; and the subsystem, that below the focal system, such as the bodily systems and the cell. The theory suggests that the treatment of people is more important than the treatment of illnesses. SEE: *holistic medicine*.

systole (sĭs'tō-lē) [Gr., contraction] Contraction of the chambers of the heart. The myocardial fibers shorten, making the chamber smaller and forcing blood out. In the cardiac cycle, atrial systole precedes ventricular systole, which pumps blood into the aorta and pulmonary artery. **systolic**, *adj.* SEE: *diastole*; *murmur*; *presystole*.

aborted s. A premature cardiac systole in which arterial pressure is increased little if at all because of inadequate filling of ventricles resulting from shortening of the preceding diastole.

anticipated s. A systole that is aborted because it occurs before the ventricle is filled.

arterial s. The rebound or recoil of the stretched elastic walls of the arteries following ventricular systole.

atrial s. The contraction of the atria; it occurs before the contraction of the ventricles. About a fourth of the blood that fills the ventricles is squeezed into them during atrial systole. In atrial fibrillation, the atria beat erratically without a defined contraction, and ventricular filling is impaired. Colloquially, atrial systole is called the "atrial kick."

electrical s. The total duration of the QRST complex in an electrocardiogram; it occurs just before the mechanical systole.

premature s. Extrasystole.

ventricular s. Ventricular contraction.

systolic pressure Systolic blood pressure. SEE: *blood pressure*, *diastolic*; *pulse*; *pulse pressure*.

systemma (sĭs-trēm'ă) [Gr. *systemma*, anything twisted together] A cramp in the calf of the leg, the muscles forming a hard knot.

syzygiology (sĭ-zĭj'ē-ōl'ō-jē) [ʹ + *logos*, word, reason] The study of interdependence or interrelationship of the whole as opposed to that of isolated functions or separate parts. SEE: *holism*.

syzygium (sĭ-zĭj'ē-ŭm) [Gr. *syzygia*, conjunction] Fusion of two parts or structures without loss of identity of the parts. **syzygial**, *adj.*

syzygy (sĭz'ĭ-jē) Fusion of organs, each remaining distinct.



T *temperature; time; intraocular tension.*

t *temporal; L. ter, three times.*

t- *therapy related; resulting from treatment. It is used in hematology to designate a cancer or leukemia that arises after treatment with cytotoxic drugs or radiation therapy, as in "t-AML" (therapy-related acute myeloid leukemia) or "t-MDS" (therapy-related myelodysplastic syndrome).*

T1, T2, etc. *first thoracic nerve, second thoracic nerve, and so forth.*

T_{1/2}, t_{1/2} In nuclear medicine, the symbol of half-life of a radioactive substance.

T₃ *triiodothyronine.*

T₄ *thyroxine.*

T-1824 Evans blue.

TA *Terminologia Anatomica.*

Ta Symbol for the element tantalum.

tabanid (tăb'ă-nid) [L. *tabanus*, horsefly] A member of the dipterous family Tabanidae.

Tabanidae (tă-băn'î-dē) [L. *tabanus*, horsefly] A family of insects belonging to the order Diptera. It includes horseflies, gadflies, deer flies, and mango flies, all bloodsucking insects that attack humans and other warm-blooded animals. These flies are of medical importance because they are vectors of the filarial worm *Loa loa*, tularemia, and other diseases.

tabanka (tă-băng'kă) [Fm. Trinidadian English] A family-bound illness specific to the West Indies in which men who are abandoned by their wives become severely depressed and may commit suicide.

Tabanus (tă-bă'nūs) [L., horsefly] A genus of flies of the family Tabanidae.

tabardillo (tăb'ăr-dē'lyō) [Sp.] An epidemic louse-borne typhus fever occurring in parts of Mexico. SEE: *typhus*.

tabella (tă-bēl'ă) *pl. tabellae* [L., tablet] A medicated mass of material formed into a small disk. SEE: *lozenge; tablet; troche*.

tabes (tă'bēz) [L., wasting disease] A gradual, progressive wasting in any chronic disease.

diabetic t. Peripheral neuritis affecting diabetics; may affect the spinal cord and simulate tabes caused by syphilis.

t. dorsalis A form of neurosyphilis, in which the dorsal roots of sensory nerves are damaged by inflammation. It causes problems in coordinating muscles for voluntary movement and ambulation (locomotor ataxia), which produce a staggering gait, absence of deep tendon reflexes (e.g., at the ankles), and loss of pain in the lower extremities, inter-

rupted occasionally by flashes of sharp pain (lightning pains). Tabes is frequently seen in combination with the other forms of neurosyphilis, meningitis, and dementia. Physical therapy and teaching are needed to reduce the risk of falls. Penicillin G is the treatment of choice; for penicillin-allergic persons, tetracyclines are used. SYN: *locomotor ataxia*. SEE: *syphilis*.

t. ergotica Tabes resulting from the use of ergot.

t. mesenterica Emaciation and malnutrition caused by engorgement and tubercular degeneration of the mesenteric glands.

tabetic (tă-bēt'ik) [L. *tabes*, wasting disease] Pert. to or afflicted with tabes.

tabetiform (tă-bēt'î-form) [" + *forma*, shape] Resembling or characteristic of tabes.

tablature (tăb'lă-chūr) The structure of a cranial bone consisting of outer and inner layers of compact bone separated by spongy bone, the diploe.

table (tă'bl) [L. *tabula*, board] **1.** A flat-topped structure, as an operating table. **2.** A thin, flat plate, as of bone.

t. of the skull The inner and outer layers of a cranial bone, made of compact bone. These are separated by diploe, spongy bone that contains red bone marrow.

tilt t. A table that can be inclined or tipped over while a person is strapped to it. It is used to study patients with loss of consciousness of unknown cause.

water t. The level at which rock or any underground stratum is saturated with water. This overlies an impervious stratum.

tablespoon (tă'bl-spoon) ABBR: Tbs. A rough measure, equal approx. to 15 ml of fluid. To administer a tablespoon of medicine, 15 ml of the substance should be given.

tablet (tăb'lēt) [O.Fr. *tablete*, a small table] A small, disklike mass of medicinal powder.

buccal t. A tablet designed to be placed in the mouth and held between the cheek and gum until dissolved and absorbed through the buccal mucosa.

coated t. A type of tablet usually made by enclosing a drug in a protective shell.

compressed t. A tablet made by forcibly compressing powdered medications into the desired shape to decrease their solubility. These tablets may be very hard and not readily soluble.

dispensing t. A tablet that contains

a clinically effective large amount of an active drug.

enteric-coated t. A tablet that resists digestion in gastric acid.

fluoride t. A tablet of sodium fluoride for prevention of dental caries and osteoporosis.

hypodermic t. A tablet used to form injectable solutions.

sublingual t. A small, flat, oval tablet placed beneath the tongue to permit direct absorption of the active substance.

t. triturate A tablet made by moistening the medication mixed with a powdered lactose or sucrose and then molding it into shape and allowing the liquid to evaporate. It usually disintegrates readily.

taboo [Polynesian *tabu, tapu*, inviolable] An act, object, or social custom separated or set aside as being sacred or profane, thus forbidden for general use.

tabular (täb'ü-lär) [L. *tabula*, board]
1. Resembling a table. **2.** Set up in columns, as a tabulation.

tabun (tä'bün) Ethyl N-dimethylphosphoramidocyanidate; an organophosphate chemical used primarily as a pesticide. It has been used in chemical warfare as a toxic nerve gas.

tache (tösh) [Fr., spot] A colored spot or macule on the skin, as a freckle.

tachetic (täk-ët'ik) [Fr. *tache*, spot] Marked by purple or reddish-blue patches (taches).

tachistoscope (tä-kis'tö-sköp) [Gr. *tachistos*, swiftest, + *skopein*, to view] A device used to determine the speed of visual perception. The time of exposure can be adjusted so that the length of time needed for detection of the viewed object can be measured.

tachy- Combining form meaning *swift, rapid*.

tachyarrhythmia (täk"ë-ä-rith'më-ä) [Gr. *tachys*, swift, + *a*, not, + *rhythmos*, rhythm] Any cardiac rhythm disturbance in which the heart rate exceeds 100 beats per minute (bpm).

tachybrady syndrome Sick sinus syndrome.

tachycardia (täk"ë-kär'dë-ä) [" + *kardia*, heart] An abnormally rapid heart rate, greater than 100 beats per minute (bpm) in adults. SYN: *tachyrrhythmia* (1); *accelerated pulse*.

atrial t. A rapid regular heart rate arising from an irritable focus in the atria, with a rate of more than 100 beats per minute but less than 220 bpm.

atrioventricular nodal reentrant t. ABBR: AVNRT. The most common supraventricular tachycardia, resulting from abnormal conduction of electrical impulses through a self-sustaining circuit in the atrioventricular node. It occurs more often in women than in men, often in their twenties. The heart rate

is usually between 150 and 250 bpm. SEE: *re-entry*.

ectopic t. A rapid heartbeat caused by stimuli arising from outside the sinoatrial node.

fetal t. A fetal heart rate faster than 160 bpm that persists throughout one 10-min period.

multifocal atrial t. ABBR: MAT. A cardiac arrhythmia that sometimes is confused with atrial fibrillation, because the heart rate is greater than 100 bpm and the ventricular response is irregular. However, in MAT P waves are clearly visible on the electrocardiogram, and they have at least three distinct shapes. MAT is seen most often in patients with poorly compensated chronic obstructive lung disease. It may resolve with management of the underlying respiratory problem.

narrow complex t. Tachycardia in which the duration of the QRS complex is less than 0.12 seconds. Most narrow complex tachycardias originate from a pacemaker above the ventricles and are therefore supraventricular tachycardias.

nodal t. Tachycardia resulting from a focus in the atrioventricular node. It may be the result of digitalis therapy.

pacemaker-mediated t. A problem of dual-chamber cardiac pacemakers in which tachycardia develops due to improper functioning of the pacemaker. This can be treated by reprogramming the electronic signals to the atrium.

paroxysmal atrial t. A term formerly used for paroxysmal supraventricular tachycardia ("paroxysmal" implies that the arrhythmia begins and ends suddenly).

paroxysmal junctional t. Tachycardia due to increased activity of the AV junction. The rate is usually from 120 to 180 bpm.

paroxysmal supraventricular t. ABBR: PSVT. A sporadically occurring arrhythmia with an atrial rate that is usually 160 to 200 beats per minute. It originates above the bundle of His, and typically appears on the surface electrocardiogram as a rapid, narrow-complex tachycardia. This relatively common arrhythmia may revert to sinus rhythm with rest, sedation, vagal maneuvers, or drug therapy.

paroxysmal ventricular t. Ventricular tachycardia beginning and ending suddenly.

polymorphic ventricular t. Torsade de pointes.

reflex t. Tachycardia resulting from stimuli outside the heart, reflexly accelerating the heart rate or depressing vagal tone.

sinus t. A rapid heart rate (over 100 bpm) originating in the sinoatrial node. It may be caused by fevers, exercise, de-



hydration, bleeding, stimulant drugs (e.g., epinephrine, aminophylline), thyrotoxicosis, or many other diseases or conditions.

TREATMENT: The underlying cause is addressed.

supraventricular t. ABBR: SVT. A rapid, regular tachycardia in which the pacemaker is found in the sinus node, the atria, or the atrioventricular junction, i.e., above the ventricles. SEE: *paroxysmal supraventricular t.*

ventricular t. ABBR: VT. Three or more consecutive ventricular ectopic complexes (duration greater than 120 msec) occurring at a rate of 100 to 250 bpm. Although nonsustained VT may occasionally be well-tolerated, it often arises in hearts that have suffered ischemic damage or cardiomyopathic degeneration and may be a cause of sudden death. Nonsustained VT lasts less than 30 sec. Sustained VT lasts more than 30 sec and is much more likely to produce loss of consciousness or other life-threatening symptoms. SEE: *illus.*

TREATMENT: The acute treatment of sustained VT is outlined in advanced life support protocols but may include the administration of lidocaine or other antiarrhythmic drugs, cardioversion, or defibrillation. Chronic, recurring VT may be treated with sotalol, amiodarone, or implantable cardioverter-defibrillators.

wide complex t. ABBR: WCT. An arrhythmia with a sustained rate of more than 100 bpm in which the surface electrocardiogram reveals QRS complexes lasting at least 120 msec. WCT is usually caused by ventricular tachycardia, although it may occasionally result from a supraventricular tachycardia whose conduction through the ventricles produces an abnormally wide QRS complex.

tachycardia-bradycardia syndrome Sick sinus syndrome.

tachycardic (tăk'ē-kăr'dĭk) [Gr. *tachys*, swift, + *kardia*, heart] Pert. to or afflicted with tachycardia.

tachygastric (tăk'ē-găs'trē-ă) Increased rate of contractions of the stomach.

tachykinin (tăk'kĭ'nĭn) [' + ''] ABBR: TK. Any of a large family of peptides that function as neurotransmitters in the central and peripheral nervous sys-

tems. They have extraneuronal activity in other body tissues. Their diverse biological actions are mediated through cellular G proteins.

tachylalia (tăk'ē-lă'lē-ă) [' + *lalein*, to speak] Rapid speech.

tachyphasia (tăk'ē-fă'zē-ă) [' + *phasis*, speech] Tachyphrasia.

tachyphrasia (tăk'ē-fră'zē-ă) [' + *phrasia*, speech] Excessive volubility or rapidity of speech, as seen in mania and some other psychotic illnesses. SYN: *tachyphasia*.

tachyphrenia (tăk'ē-frē'nē-ă) [' + *phren*, mind] Abnormally rapid mental activity.

tachyphylaxis (tăk'ē-fĭ-lăk'sĭs) [' + *phylaxis*, protection] **1.** Rapid immunization to a toxic dose of a substance by previously injecting tiny doses of the same substance. **2.** Diminishing responsiveness to a drug after routine usage.

tachyrythmia (tăk'ē-rĭth'mē-ă) [' + *rhythmos*, rhythm] **1.** Tachycardia. **2.** Increase in the frequency of brain waves in electroencephalography up to 12 to 50 per second.

tachysterol (tă-kĭs'tě-rōl) One of the isomers of ergosterol. It is a compound related to vitamin D.

tactical emergency medical support ABBR: TEMS. Specially trained emergency medical staff who support law enforcement officials during out-of-hospital operations.

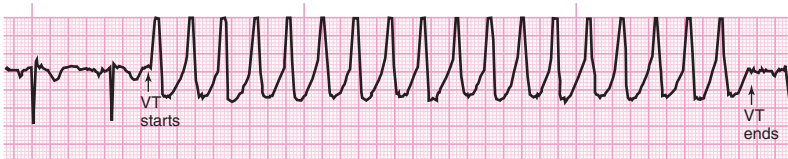
tactile (tăk'tĭl) [L. *tactilis*] Perceptible to the touch. SYN: *tactual*.

t. defensiveness Behaviors such as avoidance or withdrawal in response to being touched by another person. These defensive reactions are seen most often in children with autism or related disorders.

t. discrimination The ability to localize two points of pressure on the surface of the skin and to identify them as discrete sensations.

t. localization An individual's ability to accurately identify the site of tactile stimulation (touch, pressure, or pain). Tactile localization is often tested in sensory evaluations following disease or trauma of the nervous system.

t. system That portion of the nervous system concerned with the sensation of touch. It includes sensory nerve endings (Meissner's corpuscles, Merkel's tactile disks, hair-root endings), afferent nerve



VENTRICULAR TACHYCARDIA

fibers, conducting pathways in the cord and brain, and the sensory area of the parietal lobe of the cerebral cortex.

taction (tāk'shūn) [L. *tactio*] **1.** The sense of touch. **2.** Touching.

tactometer (tāk-tōm'ēt-ēr) [L. *tactus*, touch, + Gr. *metron*, measure] An instrument for determining the acuity of tactile sensitiveness.

tactical (tāk'tū-āl) [L. *tactus*, touch] Tactile.

tactus (tāk'tūs) [L.] Touch (1).

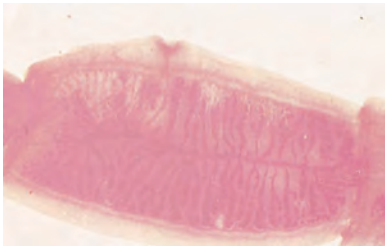
taen-, taeni- Combining forms meaning *tapeworm*. SEE: *ten-*.

Taenia (tē'nē-ā) [L., *tape*] A genus of tapeworms, parasitic flatworms belonging to the class Cestoda, phylum Platyhelminthes. They are elongated ribbon-like worms consisting of a scolex, usually with suckers and perhaps hooks, and a chain of segments (proglottids). Adults live as intestinal parasites of vertebrates; larvae parasitize both vertebrates and invertebrates, which are intermediate hosts. SEE: *taeniasis*; *tapeworm*.

T. echinococcus *Echinococcus granulosus*.

T. lata *Diphyllobothrium latum*.

T. saginata A tapeworm whose larvae live in cattle. The adult worm lives in the small intestine of humans, who acquire it by eating insufficiently cooked beef infested with the encysted larval form (cysticercus or bladderworm). Adult worms may reach a length of 15 to 20 ft (4.6 to 6.1 m) or longer. SYN: *beef tapeworm*. SEE: *illus.*

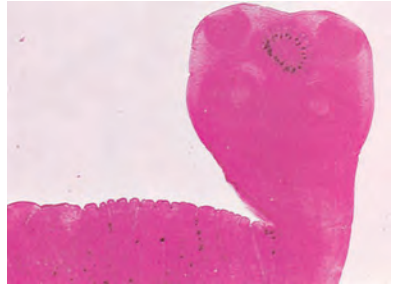


TAENIA SAGINATA

Gravid proglottid (orig. mag. ×5)

T. solium A tapeworm whose larvae live in hogs; its scolex possesses a row of hooks about the rostellum. The adult worm lives in the small intestine of humans, who acquire it by eating insufficiently cooked pork. Adult worms may take up residence in the intestine, depriving the host of food. Larval forms of *T. solium* may encyst in the brain, resulting in seizures. In some underdeveloped nations the onset of seizures in adulthood is presumed to be the result of neurocysticercosis until proved otherwise. The infection is treated with niclo-

samide or praziquantel. SYN: *armed tapeworm*; *pork tapeworm*. SEE: *illus.*



TAENIA SOLIUM

(Orig. mag. ×100)

taenia (tē'nē-ā) [L., *tape*] **1.** A flat band or strip of soft tissue. **2.** A tapeworm of the genus *Taenia*. SYN: *tenia*.

t. coli The three bands of smooth muscle into which the longitudinal muscle layer of the colon is gathered. They are taenia mesocolica (mesenteric insertion), taenia libera (opposite mesocolic band), and taenia omentalis (at place of attachment of omentum to transverse colon).

taeniicide (tē'nē-ā-sīd) [L. *taenia*, tapeworm, + *cidus*, kill] An agent that kills tapeworms.

taeniafuge (tē'nē-ā-fūj) [" + *fugere*, to put to flight] Tenifuge.

taeniasis (tē-nī-ā-sīs) [" + Gr. *-iasis*, condition] The condition of being infested with tapeworms of the genus *Taenia*. SEE: *tapeworm*.

taeniform (tē'nī-form) [" + *forma*, shape] Having the structure of, or resembling, a tapeworm.

taenifuge (tē'nī-fūj) [" + *fuga*, flight] Tenifuge.

tag **1.** A small polyp or growth. **2.** A label or tracer; or the application of a label or tracer.

hemorrhoidal t. Remaining anal skin tag related to uneven postsurgical healing, spontaneous resolution of a previously enlarged external hemorrhoid, secondary to anal skin irritation, or external to an anal fissure. SEE: *sentinel pile*.

radioactive t. A radioactive isotope that is incorporated into a chemical or organic material to allow its detection in metabolic or chemical processes. SYN: *radiolabel*.

skin t. A small outgrowth of skin, usually occurring on the neck, axilla, and groin. SEE: *illus.*; *acrochordon*.

tagging Introduction of a radioactive isotope into a molecule in order to distinguish the molecule from others without that "tag." SYN: *labeling*.

Tahyna virus (tā-hīn'ā) ABBR: TAH. A European arbovirus of the Bunyaviri-



SKIN TAGS

dae family. It is transmitted to humans by mosquito bite and causes fevers, respiratory illnesses, encephalitis, and meningitis.

tai chi (tī-chē) A traditional Chinese martial art in which a series of slow, controlled movements are made through various postures designed to develop flexibility, balance, strength, relaxation, and mental concentration. Tai chi has been used as a therapeutic exercise by the young and the old, hemophiliacs, and people recovering from brain injuries.

taijin kyofusho (tī-jēn-kyō-foo-shō) [Jap., literally, “fear of interpersonal relationships disorder”] ABBR: TKS. A culture-bound syndrome in Japan in which a person becomes fearful that he or she is offensive to others. In the West it is considered a form of social anxiety disorder.

tail (tāl) [AS. *taegel*] **1.** The long end of a structure, such as the extremity of the spinal column or the final segments of a polypeptide or nucleic acid. SEE: *cauda*. **2.** An uninterrupted extension of the insurance policy period; also called the *extended reporting endorsement*. SEE: *professional liability insurance*.

taint (tānt) [O.Fr. *teint*, color, tint] To spoil or cause putrefaction, as in tainted meat.

taipan snake venom time (tī'pān) [Aboriginal Australian name] A test used to determine the presence of lupus anticoagulant in a blood specimen. The test relies on the mixing of venom from snakes of the genus *Oxyuranus* with dilute phospholipid and can be used even in patients receiving warfarin anticoagulation.

Takayasu's arteritis (tāk'kă-yă'sooz) [Michishige Takayasu, Japanese physician, 1872–1938] A rare vasculitis of the aorta and its branches, marked by inflammatory changes in the large arteries. Blood flow through those arteries is limited, esp. to the arms or head of affected persons. The disease, which is found most often in young women of Japanese descent, produces symptoms such as dizziness or arm claudication.

Affected individuals usually have markedly reduced blood pressures or pulses in one or both arms. SYN: *pulseless disease*.

take To be effective, as in administering a vaccine; or to be successful in grafting skin or transplanting an organ.

talalgia (tāl-ăl'jē-ă) [L. *talus*, heel, + Gr. *algos*, pain] Pain in the heel or ankle.

talar (tāl'läär) [L. *talaris*, of the ankle] Pert. to the talus, the ankle.

talar tilt test An orthopedic test used to determine the collateral stability of the ankle joint. The amount of laxity in the affected ankle is determined relative to the laxity in the uninvolved limb.

Eversion talar tilt test. The foot and ankle are maintained in the neutral position. The examiner stabilizes the distal lower leg while cupping the calcaneus with the opposite hand. The talus is then rolled outward to eversion.

This test checks the integrity of the deltoid ligament group of the medial ankle, esp. the tibiocalcaneal and tibionavicular ligaments. The mechanical block formed by the lateral malleolus limits the amount of eversion.

Inversion talar tilt test. The foot and ankle are maintained in the neutral position. The examiner stabilizes the distal lower leg while cupping the calcaneus with the opposite hand. The talus is then rolled inward to inversion.

This test checks the integrity of the lateral ligaments, specifically the calcaneofibular, anterior talofibular, and posterior talofibular ligaments (in order of involvement). The anterior talofibular ligament can be isolated through the use of the anterior drawer test.

talc (tälk) [Persian *talk*] Powdered soapstone; a soft, soapy powder; native hydrous magnesium silicate, $Mg_3Si_4O_{10}(OH)_2$, used, for example, in pleurodesis. SYN: *talcum*.



Exposure to talc in the workplace can result in interstitial lung disease. Persons who work with talc or other particulates should wear masks that limit respiratory exposure to fine dust particles.

talcosis (täl-kō'sīs) [Persian *talk*, talc, + Gr. *osis*, condition] Any disease caused by the inhalation or injection of talc. The lungs are often affected.

talcum (tälk'üm) [L.] Talc.

talipes (täl'ī-pēz) [L. *talus*, ankle, + *pes*, foot] Any of several deformities of the foot, esp. those occurring congenitally; a nontraumatic deviation of the foot in the direction of one or two of the four lines of movement.

t. arcuatus Talipes in which there is an exaggerated medial arch of the foot. SYN: *pes cavus*; *talipes cavus*.

t. calcaneus Talipes in which the foot is dorsiflexed and the heel alone touches the ground, causing the patient to walk on the inner side of the heel. It often follows infantile paralysis of the calf muscles.

t. cavus Talipes arcuatus.

t. equinovarus A combination of talipes equinus and talipes valgus. SYN: *clubfoot*.

t. equinus Talipes in which the foot is plantar flexed and the person walks on the toes.

t. percavus Talipes in which there is excessive plantar curvature.

t. valgus Talipes in which the heel and foot are turned outward.

t. varus Talipes in which the heel is turned inward from the midline of the leg.

talipomanus (täl'p-ôm'ân-üs) [L. *talus*, ankle, + *pes*, foot, + *manus*, hand] A deformity of the hand in which it is twisted out of position. SYN: *clubhand*.

tallow (täl'ō) Fat obtained from suet, the solid fat of certain ruminants.

talocalcaneal (täl'lō-käl-kä'nē-äl) [ʹ + *calcaneus*, heel bone] Pert. to the talus and calcaneus, bones of the tarsus.

talocrural (täl'lō-kroo'räl) [ʹ + *crus*, leg] Pert. to the talus and leg bones.

talocrural articulation The ankle joint; a ginglymoid or hinge joint.

talofibular (täl'lō-fib'ü-lär) [ʹ + *fibula*, pin] Concerning the talus and fibula.

talon (täl'ōn) [L.] The claw of a bird of prey.

t. noir Minute black areas on the heels (or less often the toes or hands) caused by repetitive injuries that produce hemorrhage into the skin.

talonic (täl'ō-nīd) [ME. *talon*, heel] The crushing region, the posterior or heel part, of a lower molar tooth.

talus (täl'lūs) *pl.* **tali** [L., ankle] The ankle bone. It is an irregular, stubby cylinder and articulates with the tibia, fibula, calcaneus, and navicular bone. In front its head has a broad, rounded articular surface that meets the navicular bone. The body of the talus has a saddle-shaped articular surface on the top that meets the distal articular end of the tibia to form the main ankle joint; the outer side of the talus has a broad, convex articular surface that meets the lateral malleolus of the distal end of the fibula. On the bottom of the head and the body of the talus, there are two separate convex articular surfaces that meet the calcaneus (heel) bone. It was formerly called astragalus



tambour (täm-boor') [Fr., drum] A shallow, drum-shaped appliance used in registering information such as changes in rate or intensity of pulse, respiration, or arterial blood pressure.

Tamm-Horsfall mucoprotein (täm'hors'fäl) [Igor Tamm, Russian-born U.S. virologist,

1922–1971; Frank L. Horsfall, Jr., U.S. physician, 1906–1971] A normal mucoprotein in the urine, produced by the ascending limb of the loop of Henle. When this protein is concentrated at low pH, it forms gel, which may protect the kidney from infection by bacteria.

tamoxifen citrate (tä-möks'ÿ-fën) An antiestrogenic drug used in treating and preventing breast cancer.

tampon (täm'pön) [Fr., plug] A roll or pack made of absorbent materials used to stop bleeding, absorb secretions, or obtain specimens from a wound or body cavity.

menstrual t. An absorbent material suitably shaped and prepared to provide a hygienic means of absorbing menstrual fluid in the vagina. A cord is attached and remains outside the vagina to facilitate removal. These tampons are made for self-insertion. Washing hands before insertion and after removal as well as changing tampons often guards against toxic shock syndrome. SEE: *menstruation*; *sanitary napkin*.

Mikulicz's t. Mikulicz's drain.

nasal t. A tampon used to compress bleeding blood vessels in the nose.

tamponade (täm'pön-äd') [Fr., plug] **1.** The act of using a tampon. SYN: *tamponing*; *tamponment*. **2.** The pathological or intentional compression of a part.

balloon t. The application of pressure against a part of the body with an inflatable balloon, typically to stop blood loss. Balloon tamponade has been used to stop bleeding from esophageal varices, ectopic pregnancies, the postpartum uterus, the liver (e.g., after gunshot wounds), damaged blood vessels.

cardiac t. A life-threatening condition in which elevated pressures within the pericardium impair the filling of the heart during diastole.

Cardiac tamponade may result from injuries to the heart or great vessels, from cardiac rupture, or from other conditions that produce large pericardial effusions. If fluid accumulates rapidly, as little as 150 ml can impair the filling of the heart. Slow accumulation, as in pericardial effusion associated with cancer, may not produce immediate signs and symptoms because the fibrous wall of the pericardial sac can gradually stretch to accommodate as much as 1 to 2 L of fluid.

ETIOLOGY: Cardiac tamponade may be idiopathic (Dressler's syndrome) or may result from any of the following causes: effusion (in cancer, bacterial infections, tuberculosis, and, rarely, acute rheumatic fever); hemorrhage from trauma (e.g., gunshot or stab wounds of the chest, perforation by catheter during cardiac or central venous catheteri-

zation, or after cardiac surgery); hemorrhage from nontraumatic causes (e.g., rupture of the heart or great vessels, or anticoagulant therapy in a patient with pericarditis); viral, postirradiation, or idiopathic pericarditis; acute myocardial infarction; chronic renal failure; drug reaction (e.g., from procainamide, hydralazine, minoxidil, isoniazid, penicillin, methysergide, or daunorubicin); or connective tissue disorders (e.g., rheumatoid arthritis, systemic lupus erythematosus, rheumatic fever, vasculitis, and scleroderma). Classic signs of tamponade include persistent hypotension despite fluid bolusing, muffled heart sounds, distended jugular veins, and pulsus paradoxus (a drop in systolic blood pressure of more than 10 mm Hg on inspiration).

DIAGNOSIS: Cardiac tamponade is suggested by chest radiograph (slightly widened mediastinum and enlargement of the cardiac silhouette), ECG (reduced QRS amplitude, electrical alternans of the P wave, QRS complex, and T wave and generalized ST-segment elevation), and pulmonary artery pressure monitoring (increased right atrial pressure, right ventricular diastolic pressure, and central venous pressure). It is definitively diagnosed with echocardiography, or MRI or CT of the chest.

TREATMENT: Pericardiocentesis (needle aspiration of the pericardial cavity) or surgical creation of a pericardial opening (a "window") dramatically improves systemic arterial pressure and cardiac output. In patients with malignant tamponade, a balloon-aided opening in the pericardium may be made (a "balloon pericardiomy").

PATIENT CARE: The patient is assessed for a history of disorders that can cause tamponade and for symptoms such as chest pain and dyspnea. Oxygen is administered via nonrebreather mask, and intravenous access established via one or two large-bore catheters for fluid resuscitation. Airway, breathing, circulation, and level of consciousness are closely monitored.

If the patient is unstable, he or she requires arterial blood gas analysis and hemodynamic monitoring and support. Prescribed inotropic drugs and intravenous solutions maintain the patient's blood pressure, and oxygen and ventilatory support are administered as necessary and prescribed.

Pain is assessed, and appropriate analgesia provided. The patient is prepared for central line insertion, pericardiocentesis, thoracotomy, or other therapeutic measures as indicated; brief explanations of procedures and expected sensations are provided; and the patient is reassured to decrease anxiety. The patient is observed for a decrease in

central venous pressure and a concomitant rise in blood pressure after treatment, which indicate relief of cardiac compression. If the patient is not acutely ill, the patient is educated about the condition, including its cause and its planned treatment (e.g., by surgery to place a pericardial window). The importance of immediately reporting worsening symptoms is stressed. The patient is followed with repeat echocardiography and chest X-rays as deemed necessary. **SYN:** *pericardial tamponade*.

nasal t. Compression of nasal blood vessels to stop bleeding. **SEE:** *epistaxis; nosebleed* for illus.

pericardial t. Cardiac tamponade. **SEE:** *illus*.

tamponing, tamponment (tăm'pön-íng, tăm-pön'měnt) Tamponade.

Tanacetum parthenium (tăn"ă-sě'tüm păr-thén'ě-üm) [NL] The scientific name for feverfew.

tandem 1. A curved stainless steel tube inserted into the uterine canal during brachytherapy to hold radioactive sources. **2.** Any two objects arranged consecutively or working in series with one another.

tandem mass assay Tandem mass spectrometry.

tandem repeat A short segment of DNA that includes duplicated genetic material.

tang (tăng) **1.** A strong taste or flavor. **2.** A long, slender projection or prong forming a part of a chisel, file, or knife.

3. In dentistry, an apparatus for joining the rests and retainers to palatal or lingual bars of a denture.

Tannerella (tăn"ěr-ě'l'ü) A genus of gram-negative, anaerobic, non-spore-forming bacilli (formerly classified as *Bacteroides*). One species, *T. forsythensis* (less commonly known as *T. forsythia*), is an important cause of periodontal infection.

tannin (tăn'in) [Fr. *tanin*] **1.** An acid found in the bark of certain plants and trees or their products, usually from nutgall. It is found in coffee and to a greater extent in tea. **2.** Any of several substances containing tannin.

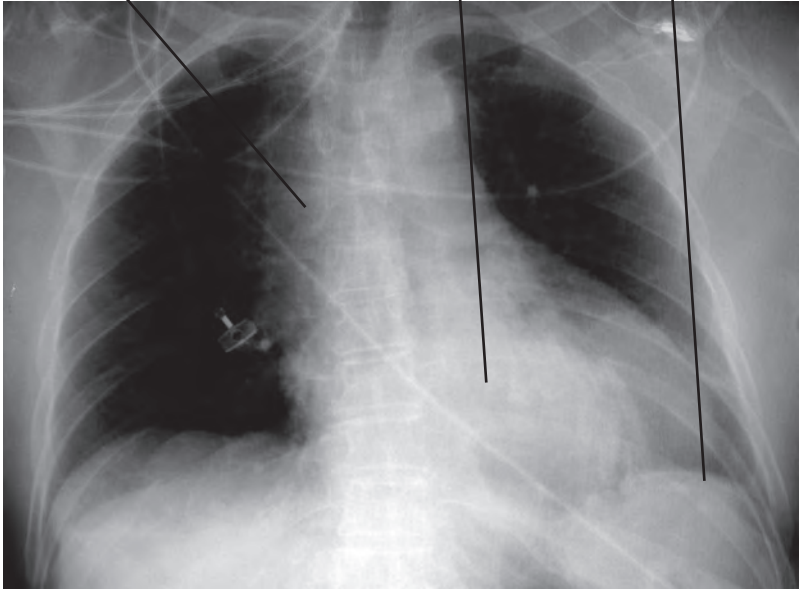
ACTION/USES: Tannin was once used as an astringent, an antidote for various poisons, and a topical hemostatic.

tanning salon A commercial establishment where patrons can expose themselves to ultraviolet light to darken their skin. Because ultraviolet light ages the skin and increases the likelihood of skin cancers, tanning salons are frowned on by dermatologists, cancer specialists, and other health care professionals. **SEE:** *actinic keratosis; basal cell carcinoma; melanoma; photosensitivity; squamous cell carcinoma*.

widening of
the mediastinum

cardiac
silhouette

fluid
surrounding
the heart



PERICARDIAL TAMPONADE

tantalum (tän'tă-lŭm) SYMB: Ta. A rare metallic element derived from tantalite; atomic weight, 180.947; atomic number, 73. Because it is noncorrosive and malleable, it has been used to repair cranial defects, as a wire suture, and in prostheses.

tantrum, temper An explosive outburst, usually by a child, often as a result of frustration or developmental disabilities. It may resolve with a variety of parental interventions, such as behavioral modification techniques (e.g., positive reinforcement of more acceptable behaviors by the child).

tap (täp) [AS. *taeppa*] To puncture or to empty a cavity of fluid. SEE: *lumbar puncture*; *paracentesis*; *thoracentesis*.

spinal t. Lumbar puncture.

tap (täp) [O.Fr. *taper*] **1.** A light blow. **2.** An instrument used for performing a tap. **3.** An instrument used to create an internal thread.

tape (täp) [AS. *taeppe*] **1.** A flexible, narrow strip of linen, cotton, paper, or plastic such as adhesive tape. **2.** To wrap a part with a long bandage made of adhesive or other type of material.

adhesive t. A fabric, film, or paper, one side of which is coated with an adhesive so that it remains in place when

applied to the skin. In general, there are two types of backings for the adhesive material: occlusive and nonocclusive. The former prevents air from going through the backing and the latter does not. The occlusive type increases the possibility of skin irritation, so it is rarely used. SYN: *adhesive plaster*.

PATIENT CARE: To prevent skin damage, adhesive tape should be removed by carefully peeling back the tape, following the direction of hair growth while the skin is held taut behind the tape removal edge or alternatively compressing the skin from the tape as it is held on gentle tension. The skin should be checked for irritation. If the adhesive material has irritated the skin, solvents may be used judiciously to assist in removal. Because some patients are allergic to certain adhesive agents, information about this type of allergy should be gathered as part of the history; other varieties of tape may be nonreactive. If the patient is intolerant of all adhesives, alternative bandage applications are used.

tapeinocephalic (täp'ī-nō-sē-fäl'ik) [Gr. *tapeinos*, low-lying, + *kephale*, head] Pert. to tapeinocephaly.

tapeinocephaly (täp'ī-nō-sēf'äl-lē) A flat-

tened head in which the vertical index of the skull is less than 72.

tapetum (tă-pĕ'tŭm) [NL, a carpet] A layer of fibers from the corpus callosum forming the roof and lateral walls of the inferior and posterior horns of the lateral ventricles of the brain. This layer separates the optic radiation from the ventricle and passes to the temporal and occipital lobes.

tapeworm (tăp'wŏrm) [AS. *taeppe*, a narrow band, + *uyrm*, worm] Any of the species of worms of the class Cestoda, phylum Platyhelminthes; all are intestinal parasites of humans and other animals. A typical tapeworm consists of a scolex, with hooks and suckers for attachment, and a series of a few to several thousand segments, or proglottids. New proglottids develop at the scolex, so that a worm is actually a linear colony of immature, mature, and gravid proglottids; adult worms range from less than an inch to 50 ft or more, depending on the species. The terminal proglottids, which contain fertilized eggs, break off and pass from the host in the feces. The eggs develop into small, hooked embryos, which, when ingested by the proper intermediate host (usually another vertebrate such as a pig), develop into encysted larvae (cysticerci) in the muscle tissue. Humans acquire tapeworm infestation by eating undercooked meat that contains the cysticerci. SEE: *Taenia*.

Species of medical importance are *Diphyllobothrium latum*, *Echinococcus granulosus*, *Hymenolepis nana*, *H. diminuta*, *Taenia saginata*, and *T. solium*. SEE: *cysticercosis*; *cysticercus*; *hydatid*; *taeniasis*.

SYMPTOMS: Often symptoms are absent, although abdominal discomfort, bloating, or changes in bowel habits may be present. If tapeworms are very numerous, they may cause intestinal obstruction (but this is rare). Some species of tapeworms may cause severe disease: *Echinococcus* can cause life-threatening cysts in the liver or pericardium; *Taenia solium* can encyst in the brain and cause seizures or strokelike symptoms.

armed t. *Taenia solium*.

beef t. *Taenia saginata*.

broad t. *Diphyllobothrium latum*.

dog t. *Dipylidium caninum*.

dwarf t. *Hymenolepis nana*.

fish t. *Diphyllobothrium latum*.

hydatid t. *Echinococcus granulosus*.

mouse t. *Hymenolepis nana*.

pork t. *Taenia solium*.

rat t. *Hymenolepis nana*.

unarmed t. *Taenia saginata*.

taphophilia (tăf'ŏ-fil'ĕ-ă) [ɸ + *philos*, love] An abnormal attraction for graves.

Tapia syndrome (tă'pĕ-ă) [Antonio

García Tapia, Sp. physician, 1875–1950] Paralysis of the pharynx and larynx on one side and atrophy of the tongue on the opposite side, caused by a lesion affecting the vagus (10th) and hypoglossal (12th) cranial nerves on the side in which the pharynx is affected.

tapinocephalic (tăp'in-ŏ-sĕf-ăl'ik) [Gr. *tapeinos*, lying low, + *kephale*, head] Pert. to flatness of the top of the cranium.

tapinocephaly (tăp'in-ŏ-sĕf'ă-lĕ) Flatness of the top of the cranium.

tapotement (tă-pŏt-mŏn') [Fr.] Percussion in massage. Techniques include beating with the clinched hand, clapping performed with the palm of the hand, hacking with the ulnar border of the hand, and punctuation with the tips of the fingers. The strength of the manipulations is an essential factor in the massage treatment, and care must be taken not to bruise the patient. As a rule, one should begin with moderate pressure, and then ascertain from the patient the appropriate level of stimulation. A lubricating lotion or cream should be used to avoid abrading the skin. SEE: *massage*.

tapping (tăp'ing) [O.Fr. *taper*, of imitative origin] Tapotement.

muscle t. Tapping the skin over a muscle belly to recruit more motor units and facilitate contraction.

tapping (tăp'ing) [AS. *taeppa*, tap] The withdrawal of fluid from a body cavity. Examples include paracentesis and thoracentesis.

tar A dark, viscid mass of complex chemicals obtained by destructive distillation of tobacco, coal, shale, and organic matter, esp. wood from pine and juniper trees.

coal t. A tar produced in the destructive distillation of bituminous coal. It is used as an ingredient in ointments for treating eczema, psoriasis, and other skin diseases.

tarantism (tăr'ăn-tizm) [*Taranto*, seaport in southern Italy, + Gr. *-ismos*, condition] A disorder that is culturally specific to regions of Italy and Northern Africa, marked by stupor, melancholy, and uncontrollable, manic dancing. It is popularly attributed to the bite of the tarantula, although some experts believe it to be an example of a mass psychogenic illness. SYN: *tarantism*.

tarantula (tă-răn'tŭ-lă) A large venomous spider feared by many people; however, its bite is comparable in severity to a bee sting. SEE: *spider bite*.

Tardieu's spot (tăr-dyüz') [Auguste A. Tardieu, Fr. physician, 1818–1879] One of the subpleural spots of echymosis following death by strangulation.

tardive (tăr'div) [Fr., tardy] Characterized by lateness, esp. pert. to a disease in which the characteristic sign or

- symptom appears late in the course of the disease. SEE: *dyskinesia*, *tardive*.
- tare** (tār) The weight of an empty container. That weight is subtracted from the total weight of the vessel and substance added to it in order to determine the precise weight of the material added to the container.
- tared** (tārd) A container of known and predetermined tare.
- tarentism** (tār'ēn-tīzm) Tarantism.
- target** (tār'gēt) [O.Fr. *targette*, light shield] **1.** A structure or organ to which something is directed. **2.** The portion of the anode of an x-ray or therapeutic tube in which electrons from the filament or electron gun are focused and x-ray photons are produced; usually made of a heavy metal such as tungsten or molybdenum.
- tarnish** Surface discoloration or reduced luster of metals owing to the effect of corrosive substances or galvanic action. In dental restorations, such action may be enhanced by accumulation of bacterial plaque.
- tarsadenitis** (tār'sād-ēn-ī'tis) [Gr. *tarsos*, a broad, flat surface, + *aden*, gland, + *itis*, inflammation] An inflammation of the tarsal or meibomian glands of the eyelid.
- tarsal** (tār'sāl) [Gr. *tarsalis*] **1.** Pert. to the tarsus or supporting plate of the eyelid. **2.** Pert. to the ankle or tarsus.
- tarsalgia** (tār-sāl'jē-ā) [Gr. *tarsos*, a broad, flat surface, + *algos*, pain] Pain in the tarsus or ankle; it may be due to flatfoot, shortening of the Achilles tendon, or other causes.
- tarsal tunnel syndrome** Neuropathy of the distal portion of the posterior tibial nerve at the ankle caused by chronic pressure on the nerve at the point it passes through the tarsal tunnel. It causes pain in and numbness of the sole of the foot and weakness of the plantar flexion of the toes.
- tarsectomy** (tar-sēk'tō-mē) [" + *ektome*, excision] **1.** An excision of the tarsus or a tarsal bone. **2.** The removal of the tarsal plate of an eyelid.
- tarspectopia** (tār'sēk-tō'pē-ā) A dislocation of the tarsus.
- tarsitis** (tār-sī'tis) [" + *itis*, inflammation] **1.** An inflammation of the tarsus of the foot. **2.** Blepharitis.
- tarso-** [Gr. *tarsos*, a broad, flat surface] Combining form indicating *the flat of the foot or the edge of the eyelid*.
- tarsoclasia, tarsoclasia** (tār'sō-klā'sē-ā, tār-sōk'lās-īs) [" + *klasis*, a breaking] A surgical fracture of the tarsus for the correction of clubfoot.
- tarsomalacia** (tār'sō-mā-lā'sē-ā) [" + *malakia*, a softening] The softening of the tarsal plate of the eyes.
- tarsomegaly** (tār'sō-mēg'ā-lē) [" + *megas*, large] An enlargement of the heel bone, the calcaneus.
- tarsometatarsal** (tār'sō-mēt'ā-tār'sāl) [" + *meta*, between, + *tarsos*, a broad, flat surface] Pert. to the tarsus and the metatarsus.
- tarso-orbital** (tār'sō-or'bi-tāl) [" + L. *orbita*, track] Concerning the tarsus of the eyelid and the orbit.
- tarsoptosis** (tār'sōp-tō'sis) [" + *ptosis*, falling] Flatfoot; fallen arch of the foot.
- tarsorrhaphy** (tār-sor'ā-fē) [" + *rhaphe*, seam, ridge] Blepharorrhaphy.
- tarsotomy** (tār-sōt'ō-mē) [" + *tome*, incision] **1.** An incision of the tarsal plate of an eyelid. **2.** Any surgical incision of the tarsus of the foot.
- tarsus** (tār'sūs) *pl.* **tarsi** [Gr. *tarsos*, a broad, flat surface] **1.** The ankle with its seven bones located between the bones of the lower leg and the metatarsus and forming the proximal portion of the foot. It consists of the calcaneus (os calcis), talus (astragalus), cuboid (os cuboideum), navicular (scaphoid), and first, second, and third cuneiform bones. The talus articulates with the tibia and fibula, the cuboid and cuneiform bones with the metatarsals. SEE: *foot*; *skeleton*; names of individual bones. **2.** A curved plate of dense white fibrous tissue forming the supporting structure of the eyelid; also called the *tarsal plate*.
- tartrate** (tār'trāt) A salt of tartaric acid.
- tartrazine** (tār'trā-zēn") A pyrazole aniline dye widely used to color foods, cosmetics, drugs, and textiles. Its use has been linked to hives and other allergic-type reactions in some individuals.
- Taru disease** SEE: *glycogen storage disease type VII*.
- task, cancellation** A type of cognitive test that measures attention by determining an individual's ability to select and mark a line through selected target letters or symbols within a larger field of many letters or symbols.
- task analysis** The process of dividing up an activity into components for the purposes of delineating the specific abilities needed to perform that activity. Purposeful activities require various levels of cognitive, perceptual (e.g., vision, proprioception), musculoskeletal, and neuromuscular abilities. Through understanding the abilities necessary for a specific task, practitioners are better able to develop a rehabilitation program for patients who cannot do it for themselves.
- taste** (tāst) [O.Fr. *taster*, to feel, to taste] **1.** To attempt to determine the flavor of a substance by touching it with the tongue. **2.** A chemical sense dependent on the sensory buds concentrated on the surface of the tongue, and scattered over the palate, pharynx, larynx, epiglottis, and superior esophagus; the nerves that innervate them; and the smell center (rhinencephalon) in the sylvian fissure of the brain's parietal cortex. The taste

buds, when appropriately stimulated, produce one or a combination of the five fundamental taste sensations: sweet, bitter, sour, savory, and salty. The sensation is influenced by the sense of smell. Information from the taste buds is carried to the brainstem by the lingual part of the trigeminal nerve, the chorda tympani and the facial nerve (from the anterior two thirds of the surface of the tongue), the glossopharyngeal nerve (from the posterior third), and the vagus nerve (from the tongue's base and pharyngeal areas). Loss of taste may be caused by any neurologic condition that interrupts the transmission pathway. Taste abnormalities also occur in normal aging, some infections, trauma, smoking, vitamin or mineral deficiencies, oral disorders, illicit drug use, lack of saliva, or the therapeutic use of cytotoxic drugs. SYN: *gustatory perception*.

The cells of the taste buds undergo continual degeneration and replacement. None survives for more than a few days.

PATIENT CARE: Taste alterations include ageusia (complete loss of tastes); hypogeusia (partial loss of taste); dysgeusia (distorted sense of taste); and cacogeusia (unpleasant or revolting food taste). When designing a nutritional program for people with altered taste, it is important to consider both their personal taste preferences and the availability of foods with enhanced flavors, both of which may optimize nutritional intake. For individuals with dry mouth from salivary gland disruption or other causes, artificial saliva not only assists in mastication and swallowing, but also enhances taste. Young children have difficulty differentiating between an abnormal taste sensation and simple taste dislike, and thus often refuse new foods, especially those with strong odors, as "disliked." Trying the same food at a later time or in a different preparation may elicit a more favorable response.

t. blindness An inability to taste certain substances such as phenylthiocarbamide (PTC). This inability is due to a hereditary factor that is transmitted as an autosomal recessive trait.

taste area An area in the cerebral cortex at the lower end of the somesthetic area in the parietal lobe.

taster (tās'tēr) A person capable of detecting a particular substance by using the taste sense.

TAT *thematic apperception test*.

tattooing (tā-too'ing) [Tahitian *tatau*]



1. Indelible marking of the skin produced by introducing minute amounts of pigments into the skin. Tattooing is usually done to produce a certain design, picture, or name. When it is done commercially, sterile procedures may

not be used and hepatitis B or C or HIV may be transmitted to the customer. The technique may also be used to conceal a corneal leukoma, to mask pigmented areas of skin, or to color skin to look like the areola in mammoplasty. 2. In radiation therapy, the induction of a small amount of indelible pigment under the skin used to designate an area to be treated with radiation.

removal of t. Use of a ruby laser to "erase" the pigment in an unwanted tattoo. This usually causes no permanent skin changes.

traumatic t. Following abrasion of the skin, embedding of fine dirt particles under the superficial layers of the skin; or as a result of forceful deposit of gunpowder granules. This can be prevented by immediate removal of the particles.

tau A protein associated with microtubules that is found in glial cells of the brains of people affected by neurodegenerative diseases, including Alzheimer's disease, Creutzfeldt-Jakob disease, frontotemporal dementia, and some forms of Parkinson's disease. In these and related illnesses, high levels of tau can be found in the cerebrospinal fluid.

tauopathy (tow-ōp'ū-thē) [" + "'] Any neurodegenerative disorder in which abnormal levels of tau protein are found in the brain.

taurine (taw'rīn) $\text{NH}_2\text{CH}_2\text{CH}_2\text{SO}_3\text{H}$, a derivative of cysteine. It is present in bile, as taurocholic acid, in combination with bile acid.

taurocholate (taw'rō-kō'lāt) A salt of taurocholic acid.

taurocholemia (taw'rō-kō-lē'mē-ā) [Gr. *tauros*, a bull, + *chole*, bile, + *haima*, blood] Taurocholic acid in the blood.

taurodontism (taw'rō-dōn'tizm) [" + *odous*, tooth, + *-ismos*, condition] A condition in which the teeth have greatly enlarged and deepened pulp chambers that encroach on the roots of the teeth.

Taussig-Bing syndrome (tau'sig-bing) [Helen B. Taussig, U.S. pediatrician, 1898–1986; Richard J. Bing, U.S. surgeon, 1909–1986] A congenital deformity of the heart in which the aorta arises from the right ventricle and the pulmonary artery arises from both ventricles. An intraventricular septal defect is present.

tauto- Prefix meaning *identical*.

tautomer (taw'tō-mēr) [" + *meros*, a part] A chemical that is capable of tautomerism.

tautomerase (taw-tōm'ēr-ās) [" + " + *-ase*, enzyme] An enzyme that catalyzes tautomeric reactions.

tautomerism (taw-tōm'ēr-izm) [" + " + *-ismos*, condition] A phenomenon in which a chemical may be present in two forms, existing in dynamic equilibrium

so that as the amount of one substance is altered, the second is changed into the other form in order to maintain the equilibrium. SEE: *isomerism*.

taxane (tāk'sān") Any of a class of drugs derived from the bark of the yew tree, *Taxus breviflora*. Examples include paclitaxel and docetaxel. Taxanes are used to treat breast, ovarian, and other types of cancer. Side effects include bone marrow suppression, neuropathy, mucositis, and hypersensitivity reactions.

taxis (tāk'sis) [Gr., arrangement]

1. The manual replacement or reduction of a hernia or dislocation. **2.** The response of an organism to its environment; a turning toward (positive taxis) or away from (negative taxis) a particular stimulus. SEE: *chemotaxis*.

Taxol (tāk'söl") A chemotherapeutic drug obtained from the bark of the yew tree, *Taxus brevifolia*. It is used to treat cancers of the breast, ovary, and other organs. Side effects include bone marrow suppression, neuropathy, mucositis, and hypersensitivity reactions.

taxon (tāk'són) [Gr. *taxis*, arrangement] A taxonomic group.

taxonomy (tāks-ōn'ō-mē) [" + *nomos*, law] **1.** The laws and principles of classification of living organisms **2.** Classification of learning objectives.

Taylor, Euphemia Jane [U.S. nurse, 1878–1957] A pioneer of psychiatric nursing. She graduated from the Johns Hopkins Hospital School of Nursing in 1907 and became Director of Nursing Services at the Henry Phipps Clinic at Johns Hopkins from 1913 to 1919. Due to her efforts, Johns Hopkins was the first general hospital school of nursing to offer a course in psychiatric nursing. She became the Dean of the Yale School of Nursing in 1934 and served in this position until 1944. She was also a leader in the International Council of Nurses until her death.

Taylor brace (tā'lēr) [Charles Fayette Taylor, U.S. surgeon, 1827–1899] A brace with two rigid posterior oblique portions and soft straps crossed anteriorly over the chest.

Tay-Sachs disease (tā'sāks) [Warren Tay, Brit. physician, 1843–1927; Bernard Sachs, U.S. neurologist, 1858–1944] The most severe (and most common) of the lipid storage diseases. Tay-Sachs disease is characterized by neurological deterioration in the first year of life. It is caused by a genetic abnormality on chromosome 15, which results in the deficient manufacture of lysosomal beta-hexosaminidase A. As a result of this metabolic error, sphingolipids accumulate in the neural tissues of affected offspring. The illness is especially prominent in families of Eastern European (Ashkenazi) Jews. In this ethnic group it is carried by approximately 1 in

25 individuals. Carriers of the trait can be accurately detected by assay of hexosaminidase A. SEE: *Nursing Diagnoses Appendix*; *sphingolipidosis*.

SYMPTOMS: The disease is characterized by normal development until the third to sixth month of life, after which profound regression occurs. Physical findings may include cherry-red spots on the macula and enlargement of the head in the absence of hydrocephalus. Alterations in muscle tone, an abnormal startle response (hyperacusis), blindness, social withdrawal, and mental retardation are common early signs. A vegetative state is nearly universal by the second year of life. Death may occur before age 4.

TB *tuberculosis*.

Tb Symbol for the element terbium.

tb *tubercle bacillus*; *tuberculosis*.

T-bar T-shaped tubing connected to an endotracheal tube; used to deliver oxygen therapy to an intubated patient who does not require mechanical ventilation.

TBI *total body irradiation*; *traumatic brain injury*.

TBP *thyroxine-binding protein*.

Tbs *tablespoon*.

TBSA *total body surface area*.

Tbsp *tablespoon*.

TBW *total body water*. The sum of the mass of water within cells, interstitial tissues, and plasma.

Tc Symbol for the element technetium.

T-cell growth factor Interleukin-2.

T-cell-mediated immunity Cell-mediated immunity.

T-cell receptor ABBR: TCR. One of two polypeptide chains (α or β) on the surface of T lymphocytes that recognize and bind foreign antigens. TCRs are antigen specific; their activity depends on antigen processing by macrophages or other antigen-presenting cells and the presence of major histocompatibility complex proteins to which peptides from the antigen are bound. SEE: *autoimmunity*; *immune response*; *cell, T*.

TCID₅₀ *tissue culture infective dose*.

TCR *T-cell receptor*.

tds L. *ter die sumendum*, to be taken three times a day.

Te Symbol for the element tellurium.

tea (tē) **1.** An infusion of a medicinal plant. **2.** The leaves of the plant *Thea chinensis* or *Camellia sinensis*, from which a beverage is made by steeping the leaves in boiling hot water.

COMPOSITION: A number of pharmacologically active ingredients including caffeine, theophylline, various antioxidants including polyphenolic compounds, and sufficient fluoride to help prevent tooth decay are present in tea. The caloric content is negligible unless sugar, honey, and/or milk is added prior to consumption. SEE: *caffeine*; *withdrawal, caffeine*.



Tea intake should be limited in those patients with a history of oxalate-containing kidney stones.

black t. Tea made from leaves that have been fermented before they are dried.

green t. Tea made from the leaves of *Camellia sinensis* that have been steamed to prevent fermentation and then rolled and dried. The ingredients of green tea said to influence health are antioxidants called catechins. Green tea is often promoted for the putative prevention of certain types of cancer. Although studies have demonstrated antitumor effects of tea in laboratory animals, studies of the impact of green tea consumption on breast and prostate cancer in humans failed to show any impact.

herb t., herbal tea Tea made of a variety of plants, including leaves of certain flowers, herbs, barks, and grasses. Some herbs used in these teas have been demonstrated to have pharmacological properties.

t. kombucha SEE: *kombucha tea*.

Paraguay copper t. Tea, also known as yerba maté, made from the leaves and stems of *Ilex paraguayensis*. It is a stimulating drink and contains volatile oil, tannin, and caffeine.

team A group of individuals working together to perform a common task.

tear (tār) [AS. *taer*] To separate or pull apart by force.

bucket handle t. A longitudinal tear, usually beginning in the middle of a meniscus (cartilage) of the knee.

tear break-up test ABBR: TBUT. A test for dry eyes in which fluorescein sodium is applied to the cornea. The amount of time it takes for the first dry spots to appear on the cornea is determined. A TBUT time of less than 10 seconds suggests poor tear film stability.

tear film A liquid consisting of lipids, water, and mucin that coats the outer surface of the eye, lubricating it.

PATIENT CARE: A reduction in the tear film causes a sensation of a dry or gritty eye, such as is seen in Sjögren's syndrome, keratoconjunctivitis, sicca, disorders of the lacrimal gland, and other conditions. Keeping eyelids clean, using artificial tears, and withholding medications that may reduce the tear film can prove helpful for some patients. Other treatments may include the wearing of moisture chambers around the eye, and eye lid surgery. Topical lubricants can be used for symptomatic relief.

tears (tērs) [AS. *tear*] The watery saline solution secreted continuously by the lacrimal glands. They lubricate the surfaces between the eyeball and eyelids

(i.e., the conjunctiva). These are called continuous tears. Irritant tears are produced when a foreign object or substance is in the eye. SEE: *Schirmer's test*.

artificial t. A solution used to lubricate the conjunctivae.

crocodile t. Tears and excessive saliva produced during eating. This condition is present when nerve fibers of the salivary glands grow abnormally into the lacrimal glands following Bell's (seventh nerve) palsy.

tease (tēz) [AS. *taesan*, to pluck] To separate a tissue into minute parts with a needle to prepare it for microscopy.

teaspoon (tē'spoon) ABBR: tsp. A household measure equal to approx. 5 ml. Teaspoons used in the home vary from 3 to 6 ml. Because household measures are not accurate, when a teaspoon dose is prescribed or ordered, 5 ml of the substance should be given.

teat (tēt) [ME. *tete*, from AS. *tīt*, teat]

1. The nipple of the mammary gland. SYN: *papilla mammae*. SEE: *breast*.
2. Any protuberance resembling a nipple.

teatulation (tēt'ū-lā'shūn) [AS. *tīt*, teat] The development of a nipple-like elevation.

technetium (tēk-nē'shē-ūm) SYMB: Tc. A synthetic metallic chemical element having a number of radioactive isotopes; average atomic weight, 98.9062; atomic number, 43. Radioisotopes of technetium are used in imaging studies in nuclear medicine (e.g., myocardial perfusion scans, bone scans, and V/Q scans).

technetium-99m SYMB: ^{99m}Tc. A silvery gray, radioactive, crystalline transition metal. It has a half-life of 6 hr. Its short-lived isotope ^{99m}Tc is used in nuclear medicine for a wide variety of diagnostic tests. The "m" refers to the fact that it is a metastable isotope.

technetium Tc 99m albumin aggregated injection An injection of technetium-99m that has been aggregated with albumin. It is used intravenously to scan the lungs.

technetium Tc 99m hexamethylpropyleneamine oxime ABBR: HMPAO. A radioactive tracer consisting of technetium-99m linked to hexamethylpropyleneamine oxime. It is used to make nuclear imaging scans of the brain, e.g., in the determination of brain death. Absence of uptake of the molecule by the brain is diagnostic of brain death.

technetium 99m (methoxyisotrile) MIBI A radioactive tracer consisting of technetium-99m linked to MIBI. It is used in nuclear medical imaging (e.g., in scintimammography) to identify cancerous breast masses. Other uses of technetium 99m MIBI include cardiac, parathyroid, and thyroid imaging.

technetium Tc 99m methylene di-

phosphonate A radioactive tracer consisting of technetium-99m linked to methylene diphosphonate. It is used in nuclear medicine to obtain images of bone and bone diseases, e.g., fractures not seen on plain x-rays, malignancies, and osteomyelitis.

technetium Tc 99m RBC A radioactive tracer consisting of technetium-99m linked to red blood cells. It is used in clinical medicine to evaluate occult bleeding, e.g., from the gastrointestinal tract, or the motion of the heart in gated blood pool imaging.

technetium Tc 99m sestamibi A radioactive tracer consisting of technetium-99m linked to sestamibi. It is used to image blood flow to the heart muscle, esp. when combined with exercise or pharmacological "stress" tests. In a heart with normal blood flow, the isotope should be taken up uniformly throughout the heart muscle. Decreased uptake by regions of the heart occurs when coronary artery blood flow to those regions is blocked, e.g., by atherosclerotic plaque. SYN: *sestamibi*.

technetium Tc 99m sulfur colloid A radioactive tracer consisting of technetium-99m linked to sulfur colloid. It is used in nuclear medicine scans to make images of gastric emptying or of the lymph nodes, liver, and spleen.

technical (tèk'ni-kāl) [Gr. *tekhnikos*, skilled] Requiring technique or special skill.

technical efficiency The extent to which the most appropriate technologies, e.g., MRI studies, are devoted to the solution of problems, such as the diagnosis of diseases of the spinal cord, regardless of their economic costs or sociopolitical impact.

technician (tèk-nish'ân) An individual who has the knowledge and skill required to carry out specific technical procedures. This individual usually has a diploma from a specialized school or an associate degree from college or has received training through preceptorship. Particular technicians are listed under the first word. SEE: e.g., *dental technician*; *emergency medical technician*; *respiratory therapy technician*.

technique (tèk-nèk') [Fr., Gr. *tekhnikos*]

1. A systematic procedure or method by which an involved or scientific task is completed. 2. The skill in performing details of a procedure or operation. 3. In radiology, the various technical factors that must be determined to produce a diagnostic radiograph (e.g., kilovoltage, milliamperage, time of exposure, and source-image receptor distance).

aseptic t. A method used in surgery to prevent contamination of the wound and operative site. All instruments used are sterilized, and physicians and nurses wear caps, masks, shoe cover-

ings, sterile gowns, and gloves. The technique is adapted at the bedside (e.g., during procedures) and in emergency and treatment rooms. SEE: *Standard and Universal Precautions Appendix*.

bisecting angle t. A dental radiographic technique that requires (1) placement of the film as close as possible to the teeth, causing the film to rest against the crown; (2) visualization of a bisector, which bisects the angle formed by the long axis of the teeth and the film; and (3) positioning of the central ray perpendicular to the bisector. The image produced is distorted in a buccolingual direction. Also called *short-cone technique*. SEE: *Cieszynski's rule*.

compensatory t. The use of modified procedures or assistive devices to enable the successful performance of tasks by persons with a disability.

enzyme-multiplied immunoassay t. ABBR: EMIT. An enzyme immunoassay based on a mixture of analyte and enzyme substrate such that no immobile phase is necessary. SEE: *enzyme immunoassay*; *cloned enzyme donor immunoassay*.

forced expiration t. A type of cough that facilitates clearance of bronchial secretions while reducing the risk of bronchiolar collapse. One or two expirations are forced from average to low lung volume with an open glottis. A period of diaphragmatic breathing and relaxation follows.

minimal leak t. ABBR: MLT. A method of determining the appropriate cuff inflation volume on endotracheal tubes. Excessive cuff inflation volume may lead to necrosis of the trachea, and excessive leaking may render oxygenation and ventilation ineffective or allow aspiration of large particles from the oral cavity.

paralleling t. A dental radiographic technique that requires placement of the film parallel to the teeth and positioning of the central ray perpendicular to the teeth. The orientation of the film, teeth, and central ray produces a radiograph with minimal geometric distortion. Also called *right-angle* or *long-cone technique*.

techno- Combining form meaning *art, skill*.

technologist (tèk'nól'ô-jîst) [Gr. *techne*, art, + *logos*, word, reason] An individual specializing in the application of scientific knowledge in solving practical or theoretical problems. The knowledge and skills required for performing these functions are achieved through formal education and a period of supervised clinical practice.

Particular technologists are listed under the first word. SEE: e.g., *cardiovas-*

cular technologist; medical technologist; radiation therapy technologist.

technology (tĕk-nŏl'ō-jē) [^l + *logos*, word, reason] **1.** The application of scientific knowledge. **2.** The scientific knowledge used in solving or approaching practical problems and situations.

adaptive t. Assistive t.

assistive t. ABBR: AT. A device or adaptation that enables or assists persons with disabilities to perform everyday tasks of living. Assistive technologies are categorized by rehabilitation personnel as high technology or low technology, with the former including devices that use microprocessors. An example of a high-technology device is an environmental control unit or robotic aid. An example of a low-technology device is a reacher or a tool with a built-up handle. SYN: *adaptive technology; assistive technology device; adaptive device.*

The Technology Related Assistance for Individuals with Disabilities Act Amendments of 1994 provide for programs that support the development, acquisition, or application of assistive technology devices or equipment to assist persons with activity limitations resulting from functional impairments.

wavefront t. A three-dimensional mapping system that measures the irregularities of an optical system (e.g., the human eye or a telescope lens); used in ophthalmology to detect refractive aberrations. Parallel light rays are directed toward the eye. If there are no aberrations, the returning light rays remain parallel. Any deviation indicates a defect that can alter the clarity of a visual image. Visual deficits caused by refractive aberration can be corrected by reshaping of the cornea.

technology-enabled active learning ABBR: TEAL. A means of enhancing the educational experience of students by including computer-assisted interactive media with more traditional lectures, group assignments, problem-solving sessions, and readings. SYN: *technology-enabled problem-based learning.*

technology-enabled problem-based learning Technology-enabled active learning.

tectocephaly (tĕk-tō-sĕf'āl-ē) Scaphocephalism. **tectocephalic, adj.**

tectorium (tĕk-tō'rĕ-ŭm) *pl.* **tectoria** [L. *tectorium*, a covering] **1.** Any rooftop structure. SEE: *tectum; tegmentum; tegument.* **tectorial, adj.** **2.** The membrane that overhangs the receptors for hearing (hair cells) in the organ of Corti.

tectospinal (tĕk'tō-spi'nāl) [L. *tectum*, roof, + *spina*, thorn] From the tectum mesencephali to the spinal cord.

tectospinal tract A nerve tract that passes from the tectum of the midbrain

through the medulla to the spinal cord; most of the fibers cross to the other side of the body.

tectum (tĕk'tŭm) [L., roof] **1.** Any structure serving as, or resembling, a roof. SYN: *tectorium; tegmentum; tegument.* **2.** The dorsal portion of the midbrain consisting of the superior and inferior colliculi (corpora quadrigemina). SYN: *tegmentum.*

t. mesencephali The roof of the midbrain, including the corpora quadrigemina.

T.E.D. *threshold erythema dose.*

TEE (tĕ'ĕ'ĕ') *Transesophageal echocardiography.*

teenage Adolescent.

teeth (tĕth) Plural of tooth.

teething (tĕth'ing) [AS. *toth*, tooth] Eruption of the teeth. SEE: *dentition.*

tegmen (tĕg'mĕn) *pl.* **tegmina** [L. *tegmen*, covering] A structure that covers a part. **tegmental, adj.**

tegmental nucleus One of several masses of gray matter lying in the tegmentum of the midbrain and upper portion of the pons; it includes the dorsal, pedunculopontile, reticular, and ventral nuclei.

tegmentum (tĕg-mĕn'tŭm) [L. *tegmentum*, covering] **1.** A roof or covering. SYN: *tectorium; tegument.* **2.** The dorsal portion of the cruri cerebri of the midbrain. It contains the red nucleus and nuclei and roots of the oculomotor nerve. SYN: *tectum.*

tegment (tĕg'ŭ-mĕnt) **1.** Integument. **2.** A covering structure.

tegmental, tegumentary (tĕg'ŭ-mĕn'tāl, -tā-rĕ) Concerning the skin or tegment; covering.

teichoic acid (tī-kō'ik) A polymer found in the cell walls of some gram-positive bacteria, such as the staphylococci.

teichopsia (tī-kōp'sĕ-ā) [Gr. *teichos*, wall, + *opsis*, vision] Zigzag lines bounding a luminous area appearing in the visual field. It causes temporary blindness in that portion of the field of vision. This condition is sometimes associated with migraine headaches or mental or physical strain. SYN: *scintillating scotoma.*

tel-, tele- **1.** Combining form meaning *end*. **2.** Combining form meaning *distant*.

tela (tĕ'lā) *pl.* **telae** [L. *tela*, web] Any weblike structure.

telalgia (tĕl-āl'jĕ-ā) [Gr. *tele*, distant, + *algos*, pain] Pain felt at a distance from its stimulus. SYN: *pain, referred.*

telangiectasia, telangiectasis (tĕl-ān'jĕ-ĕk-tā-zĕ-ā, -ĕk'tā-sis) [Gr. *telos*, end, + *angeion*, vessel, + *ektasis*, dilatation] A vascular lesion formed by dilatation of a group of small blood vessels. It may appear as a birthmark or become apparent in young children. It may also be caused by long-term sun exposure. Al-

though the lesion may occur anywhere on the skin, it is seen most frequently on the face and thighs. **SEE: illus. telangiectatic, adj.**



TELANGIECTASIA

hereditary hemorrhagic t. A disease transmitted by autosomal dominant inheritance marked by thinness of the walls of the blood vessels of the nose, skin, and digestive tract, as well as a tendency to hemorrhage. **SYN: Rendu-Osler-Weber syndrome.**

spider t. Stellate angioma.

telangiectodes (těl-ăn"jē-ék-tō'dēz) Tumors that have telangiectasia.

telangiitis (těl-ăn"jē-ī'tīs) [" + " + *itis*, inflammation] An inflammation of the capillaries.

telangioma (těl-ăn"jē-ō'mă) [Gr. *telos*, end, + *angeion*, vessel, + *oma*, tumor] A tumor made up of dilated capillaries or arterioles.

telangiosis (těl-ăn-jē-ō'sīs) [" + " + *osis*, condition] A disease of capillary vessels.

telecanthus (těl'ē-kăn'thūs) [Gr. *tele*, distant, + *kanthos*, corner of the eye] Increased distance between the inner canthi of the eyelids.

telecardiography (těl'ē-kăr'dē-ōg'ră-fē) [" + " + *graphein*, to write] The process of taking telecardiograms.

telecardiophone (těl'ē-kăr'dē-ō-fōn) [" + " + *phone*, voice] A stethoscope that will magnify heart sounds so they may be heard at a distance from the patient.

teleceptive (těl-ē-sēp'tiv) [" + L. *cepius*, take] Relating to a teleceptor.

teleceptor (těl'ē-sēp'tor) [" + L. *ceptor*, a receiver] A distance receptor; a sense organ that responds to stimuli arising some distance from the body, such as the eye, ear, and nose. **SYN: teleceptor.**

teleconferencing Holding a meeting with people at different geographic locations by means of telecommunication devices. Teleconferencing is accomplished with high-speed telephone connections, satellite links, or desktop computer video-conference software.

teledendrite, teledendron (těl-ē-dēn'drit, -dēn'drōn) [Gr. *telos*, end, + *dendron*, a tree] One of the terminal processes of an axon. **SYN: telodendron.**

telediagnosis (těl'ē-dī'ăg-nō'sīs) [Gr. *tele*, distant, + *diagnosiskein*, to discern] Diagnosis made on the basis of data transmitted electronically to the physician's location.

telediastolic (těl'ē-dī-ă-stōl'ik) [Gr. *telos*, end, + *diastole*, a dilatation] Concerning the last phase of the diastole.

telefluoroscopy (těl'ē-floo'or-ōs'kō-pē) The transmission of fluoroscopic images by electronic means.

telehealth The use of telecommunication equipment and/or networks to transfer health care information among participants at different locations. Aspects of telehealth include teleradiology (the transmission of radiological images from one site to another), telemedicine (consultation by physicians at a distance), telenursing, and teledermatology.

telekinesis (těl'ē-kī-nē'sīs) [" + "] The ability to move objects by pure mental concentration. Claims of telekinetic powers are typical of patients with psychotic illnesses.

telemedicine (těl'ē-mēd'ī-sin) The use of telecommunication equipment to transmit video images, x-rays and other images, electronic medical records, and laboratory results about patients from distant sites. This improves health care access and delivery to remote rural, military, or international health care facilities.

telemeter (těl'ē-mē'tēr) [" + *metron*, measure] An electronic device used to transmit information to a distant point.

telemetry (těl-ēm'ē-trē) The transmission of data electronically to a distant location.

telencephalic (těl'ēn-sēf'ă-ik) [Gr. *telos*, end, + *enkephalos*, brain] Pert. to the endbrain (telencephalon).

telencephalization (těl'ēn-sēf'ă-lī-ză'shūn) The evolution of the cerebrum as a control center for functions previously regulated by lower nerve centers.

telencephalon (těl-ēn-sēf'ă-lōn) [" + *enkephalos*, brain] The embryonic endbrain or posterior division of the prosencephalon from which the cerebral hemispheres, corpora striata, and rhinencephalon develop.

teleneurite (těl'ē-nū'rīt) [" + *neuron*, nerve] The branching end of an axon.

teleneuron (těl'ē-nū'rōn) [" + *neuron*, nerve] A nerve ending.

teleo- Combining form meaning *perfect, complete*.

teleological (tē'lē-ō-lōj'ī-kăl) Concerning teleology.

teleology (těl-ē-ōl'ō-jē) [Gr. *teleos*, complete, + *logos*, word, reason] **1.** The belief that everything is directed toward some final purpose. **2.** The doctrine of final causes.

teleomitosi (těl'ē-ō-mī-tō'sīs) [" + *mi-*

tos, thread, + *osis*, condition] Completed mitosis.

teleomorph (tél'ē-ō-mawrf', tēl') [" + G. *morphe*, form] The sexual state of a fungus (the state in which two fungal nuclei unite and undergo meiosis, forming offspring with new genetic information). Fungi that have teleomorphic states are said to be "perfect" fungi. Fungi that reproduce asexually are said to be "imperfect." **teleomorphic** (tél'ē-ō-mawrf'ik, tēl'), *adj.* SEE: *anamorph*.

teleonomy (tél'ē-ōn'ō-mē) [" + *nomos*, law] The concept that, in an organism or animal, the existence of a structure, capability, or function indicates that it had survival value. **teleonomic** (tél'ē-ō-nōm'ik), *adj.*

teleoperator (tél'ē-ōp'ēr-āt'or) A machine or device operated by a person at a distance. Such a machine allows tasks to be done deep in the ocean or on orbiting satellites, and allows radioactive materials to be manipulated without danger of exposure to the radioactivity.

teleopsis (tél'ē-ōp'sē-ā) [Gr. *tele*, distant, + *ops*, eye] A visual disorder in which objects perceived in space have excessive depth or in which close objects appear far away.

teletherapeutics (tél'ē-ō-thēr-ā-pū'tiks) [Gr. *tele*, distant, + *therapeutikos*, treating] The use of hypnotic suggestion in the treatment of disease. SYN: *suggestive therapeutics*.

telepathy (tē-lēp'ā-thē) The ability to communicate with others wordlessly, that is, by broadcasting one's thoughts or by receiving the transmitted thoughts of others. Claims of telepathic powers are typical of patients with psychoses and of some shamans. SYN: *teleesthesia* (1).

telephony (tē-lēf'ō-nē) Telephone technology, i.e., the electronic transmission of voice, fax, or other information between distant parties using a handheld device containing both a speaker or transmitter and a receiver.

telepresence (tél'ē-prē-zīns) Virtual attendance rather than physical attendance (i.e., the presence of a person or thing that is brought about by technological means such as telephone, video, or other electronic devices).

telerradiogram (tél'ē-rā'dē-ō-grām) [Gr. *tele*, distant, + L. *radius*, ray, + Gr. *gramma*, something written] An x-ray image obtained by telerradiography.

telerradiography (tél'ē-rā-dē-ōg'rā-fē) Radiography with the radiation source about 2 m (6½ ft) from the body. Because the rays are virtually parallel at that distance, distortion is minimized. SYN: *teleroentgenography*.

telerradiology (tél'ē-rā-dē-ōl'ō-jē) The transmission of an x-ray image to a distant center where it may be interpreted by a radiologist.

telerradium (tél'ē-rā'dē-ūm) A radium source distant from the area being treated.

teleroentgenogram (tél'ē-rēnt-gēn'ō-grām) [" + *roentgen* + Gr. *gramma*, something written] Teleradiogram.

teleroentgenography (tél'ē-rēnt'gēn-ōg'rā-fē) [" + " + Gr. *graphein*, to write] Teleradiography.

telesthesia (tél'ēs-thē'zē-ā) [" + *aisthesis*, sensation] 1. Telepathy. 2. Distance perception. SEE: *paranormal*.

telesurgery (tél'ēs-sūr'jēr-ē) [" + "'] Surgery performed from a remote location, using robotically controlled instruments. Visual, auditory, tactile, and other feedback is provided electronically to the surgeon.

telesystolic (tél'ēs-sīs-tōl'ik) [Gr. *telos*, end, + *systole*, contraction] Pert. to the termination of cardiac systole.

teletherapy (tél'ē-thēr'ā-pē) [Gr. *tele*, distant, + *therapeia*, treatment] Cancer treatment in which the radiation source is placed outside the body.

telethonin (tél'ē-thōn'in) [Fm *telethon*, after the televised fund-raisers urging donations for muscular dystrophy] A 19kD protein found in the Z disk of striated and cardiac muscle. Mutations in the gene for telethonin result in altered sarcomeres and some forms of muscular dystrophy.

telluric (tē-lūr'ik) [L. *tellus*, earth] Of or rel. to the earth.

tellurism (tél'ū-rīzm) [" + Gr. *-ismos*, condition] The unproven and vague concept that emanations from the earth cause disease.

tellurium (tél-ū'rē-ūm) [L. *tellus*, earth] SYMB; Te. A brittle, silvery-white element used primarily in alloys and as a semiconductor; atomic weight, 127.60; atomic number, 52; specific gravity, 6.24.

telocentric (tél'ō-sēn'trīk) [Gr. *telos*, end, + *kentron*, center] Location of the centromere in the extreme end of the replicating chromosome so that there is only one arm on the chromosome.

teleceptor (tél'ō-sēp'tor) Teleceptor.

telodendron (tél-ō-dēn'drōn) [Gr. *telos*, end, + *dendron*, tree] Teledendrite.

telogen (tél'ō-jēn) [" + *genesis*, generation, birth] The resting stage of the hair growth cycle. SEE: *anagen*; *catagen*.

teloglia (tél-ōg'lē-ā) The Schwann cells at the end of a motor nerve fiber near the neuromuscular junction.

telolecithal (tél'ō-lēs'ī-thāl) Concerning an egg in which the large yolk mass is concentrated at one pole.

telolemma (tél'ō-lēm'mā) [" + *lemma*, rind] The membrane of the axon terminal at a neuromuscular junction.

telomerase (tél'ō-mēr'ās) An enzyme that helps cells repair the damage that

occurs to the end of the DNA molecule during each cycle of cell division. Without such repair, cells eventually age and die. Cancer cells have telomerases that allow infinite repair to the DNA strands, a factor that contributes to their "immortality." SEE: *telomere*.

Telomere (tĕl'ō-mĕr) [*l'* + *meros*, part] A repetitive segment of DNA found on the ends of chromosomes. With each mitotic division, parts of the telomeres of a chromosome are lost. A theory of cellular aging proposes that the telomeres act as a biological clock and that when they are depleted, the cell dies or becomes much less active. **telomeric** (tĕl'ō-mĕr'ĭk), *adj.*

telomeric repeat amplification protocol assay (tĕl'ō-mĕr'ĭk) ABBR: TRAP. A means of detecting telomerase activity in laboratory specimens. Telomerase can be used as a biomarker for the presence of malignant cells. TRAP has been used to detect abnormal telomerase activity in urine (a marker of bladder cancer) and in tissue and cell extracts, e.g., in lymphomas or renal tumors.

telomeric theory of aging (tĕl'ō-mĕr'ĭk thĕ'ā-rĕ ūv ā'jĭng, -mĕr', thĕr'ĕ) The progressive shortening of the end regions of chromosomes that occurs with each cell replication cycle; this loss of genetic material may serve as the clock that defines aging at the cellular level.

telophase (tĕl'ō-fāz) [*l'* + *phasis*, an appearance] The final phase or stage of mitosis (karyokinesis) during which reconstruction of the daughter nuclei takes place and the cytoplasm of the cell divides, giving rise to two daughter cells.

temoradiation (tĕm'ō-rā'dĕ-ā'shŭn) A colloquial term for the combination of radiation therapy with the chemotherapeutic drug temozolomide, a treatment for patients with glioblastoma multiforme.

tempeh (tĕm'pā) A wheat-soybean-mold modified and fermented food used traditionally in Asia. The quality of protein in tempeh is close to that of casein.

temper [AS. *temprian*, to mingle] The state of an individual's mood, disposition, or mind (e.g., even-tempered or foul-tempered).

temperament (tĕm'pĕr-ā-mĕnt) [L. *temperamentum*, mixture] The combination of intellectual, emotional, ethical, and physical characteristics of a specific individual.

temperance (tĕm'pĕr-āns) Moderation in one's thoughts and actions, esp. with respect to use of alcoholic beverages.

temperate (tĕm'pĕr-ĭt) Moderate; not excessive.

temperature (tĕm'pĕr-ā-tŭr) [L. *temperatura*, proportion] The degree of hot-

ness or coldness of a substance. SEE: *illus.*

absolute t. The temperature measured from absolute zero, which is -273.15°C .

ambient t. The surrounding temperature or that present in the place, site, or location indicated.

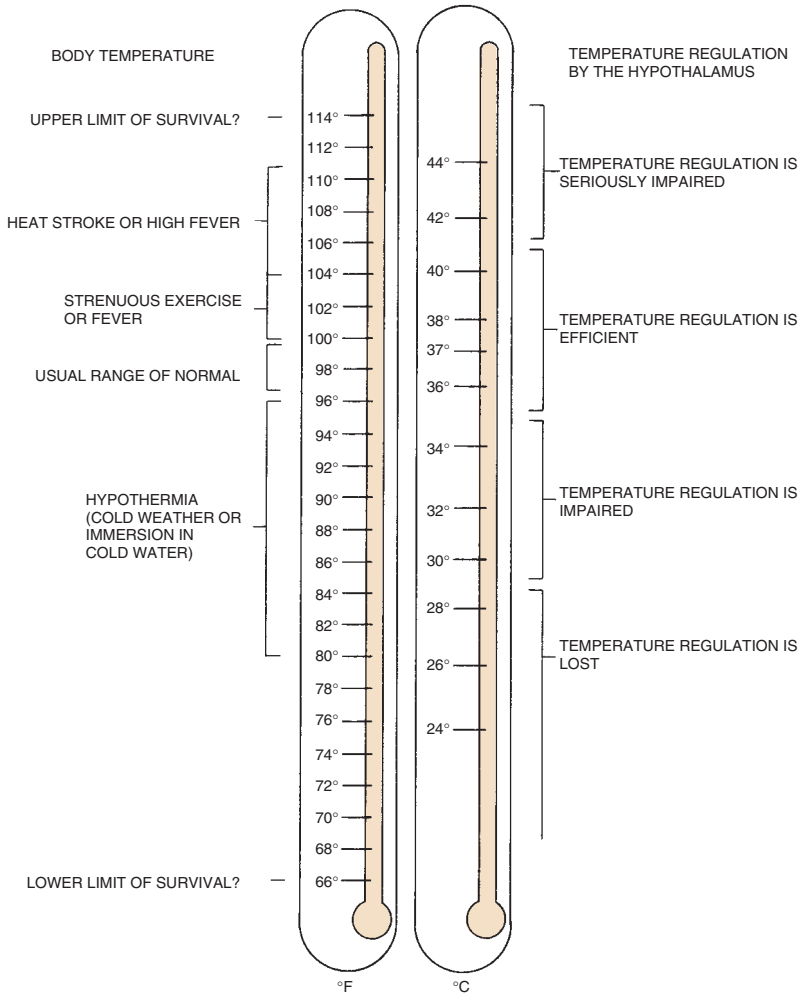
axillary t. The temperature obtained by placing a thermometer in the apex of the axilla with the arm pressed closely to the side of the body for 5 min. The temperature obtained by this method is usually 0.5° to 1.0°F (0.28° to 0.56°C) lower than oral.

body t. The temperature of the body, an indicator of health and disease and one of the vital signs. Body temperature varies with the time of day and the site of measurement. Oral temperature is usually 97.5° to 99.5°F (36° to 38°C). Daily fluctuations in an individual may be 1° or 2°F . Body temperature may be measured by a placing a thermometer in the mouth, the rectum, under the arm, in the bladder, within the chambers of the heart, or in the external auditory canal of the ear. Rectal temperature is usually from 0.5° to 1.0°F (0.28° to 0.56°C) higher than by mouth; axillary temperature is about 0.5°F (0.28°C) lower than by mouth. Oral temperature measurement may be inaccurate if performed just after the patient has ingested cold substances or has been breathing with the mouth open.

Body temperature is regulated by thermoregulatory centers in the hypothalamus that balance heat production and heat loss. Eighty-five percent of body heat is lost through the skin (radiation, conduction, sweating) and the remainder through the lungs and fecal and urinary excretions. Muscular work (including shivering) is a mechanism for raising body temperature. Elevation of temperature above normal is called fever (pyrexia), and subnormal temperature is hypothermia. Other factors that can influence body temperature are age (infants and children have a wider range of body temperature than adults, and elderly have lower body temperatures than others); menstruation cycle in women (the temperature rises in the ovulatory midcycle and remains high until menses); and exercise (temperature rises with moderate to vigorous muscular activity).

core t. The body's temperature in deep internal structures, such as the heart or bladder, as opposed to peripheral parts such as the mouth or axilla. In critical care it is often measured with a thermometer linked to a central venous catheter or pulmonary artery catheter.

critical t. The temperature above



TEMPERATURE REGULATION

Effects of changes in body temperature

which distinct liquid and gas phases do not exist.

inverse t. A condition in which the body temperature is higher in the morning than in the evening.

maximum t. The temperature above which bacterial growth will not take place.

mean t. The average temperature for a stated period in a given locality.

minimum t. In bacteriology, the temperature below which bacterial growth will not take place.

normal t. The temperature of the body, taken orally, in a healthy individual: normally 97.5° to 99.5°F (36° to 38°C).

optimum t. The temperature at which a procedure is best carried out, such as the culture of a given organism or the action of an enzyme.

oral t. The temperature obtained by placing a thermometer under the patient's tongue with lips closed for 3 min. It should not be taken for at least 10 min after ingestion of hot or cold liquids. It is not advisable for infants, individuals who breathe through the mouth, comatose or obtunded patients, or the critically ill.

rectal t. The temperature obtained by inserting a thermometer into the anal canal to a depth of at least 1½ in (3.8 cm) and holding it in place for 3 to

5 min. This method should not be used following a rectal operation or if the rectum is diseased. A rectal temperature is more accurate than either oral or axillary temperatures. It averages about 1°F (0.56°C) higher than the oral temperature and approx. 1.5°F (0.84°C) higher than the axillary temperature.

room t. The temperature between 65° and 80°F (18.3° and 26.7°C).

subnormal t. A body temperature below the normal range of 97.5° to 99.5°F (36° to 38°C).

tympenic t. The temperature obtained by placing an electronic probe in the ear canal. SEE: *ear thermometry; thermometer, tympanic.*

temperature sense The sensations of warmth or cold that are projected to the skin as its temperature changes. The receptors for heat and cold are free nerve endings in the dermis; sensory impulses may be perceived by the thalamus as a poorly localized temperature sensation. The sensory area of the parietal lobe can localize the sensation much more precisely. Adaptation is fairly rapid unless the temperature is extreme.

template (tēm'plāt) A pattern, mold, or form used as a guide in duplicating a molecule, shape, structure, or device.

occlusal t. Bite plate.

wax t. SEE: *waxing-up.*

temple (tēm'pl) [O.Fr. from *L. tempora*, pl. of *tempus*, temple] The region of the head in front of the ear and over the zygomatic arch.

tempolabile (tēm'pō-lā'bl) [*L. tempus*, period of time, + *labi*, to slip] Becoming altered spontaneously within a definite time.

tempora (tēm'pō-rā) [*L.* pl. of *tempus*, period of time] The temples.

temporal (tēm'por-āl) [*L. temporalis*, period of time] **1.** Pert. to or limited in time. **2.** Rel. to the temples.

temporalis (tēm'pō-rā'lis) [*L.*] The muscle in the temporal fossa that elevates the mandible.

temporal lobe SEE: *under lobe.*

temporal-sequential organization The ability of a child to develop concepts of time and sequence. This function is localized in the left hemisphere of the brain. This ability is essential to the function of a child in daily activities concerned with routines such as telling time or following multistep directions. Skill in this function increases with age. SEE: *digit span test.*

temporo- [*L.*] Combining form meaning *temple* of the head.

temporomalar (tēm'pō-rō-mā'lār) [" + *mala*, cheek] Temporozygomatic.

temporomandibular (tēm'pō-rō-mān-dīb'ū-lār) [" + *mandibula*, lower jawbone] Pert. to the temporal and mandible bones; esp. important in dentistry

because of the articulation of the bones of the temporomandibular joint.

temporomandibular joints The encapsulated, bicondylar, synovial joints between the condyles of the mandible and the temporal bones of the skull.

temporomandibular joint syndrome ABBR: TMJ syndrome. Severe pain in and about the temporomandibular joint, made worse by chewing. The syndrome is marked by limited movement of the joint and clicking sounds during chewing. Tinnitus, pain, and rarely, deafness may be present. Causes include lesions of the temporomandibular joint tissues, malocclusion, overbite, poorly fitting dentures, and tissue changes resulting in pressure on nerves. Treatments may include bite blocks worn at night, nonsteroidal anti-inflammatory drugs, local massage, or joint surgeries. SYN: *Costen's syndrome.*

temporo-occipital (tēm'pō-rō-ōk-sīp'ī-tāl) [" + *occipitalis*, pert. to the occiput] Pert. to the temporal and occipital bones of the skull or to the temporal and occipital lobes of the brain.

temporoparietal (tēm'pō-rō-pā-rī'ē-tāl) [" + *paries*, wall] Concerning the temporal and parietal bones.

temporozygomatic (tēm'pō-rō-zī'gō-māt'ik) [" + *Gr. zygoma*, cheekbone] Concerning the temporal and zygomatic bones. SYN: *temporomalar.*

tempostabile (tēm'pō-stā'bīl) [*L. tempus*, time, + *stabilis*, stable] Descriptive of something, esp. a chemical compound, that remains stable with the passage of time.

TEMS *Tactical emergency medical services.*

ten- SEE: *taen-*.

tenacious (tē-nā'shūs) [*L. tenax*] Adhering to; adhesive; retentive.

tenacity (tē-nās'ī-tē) Toughness, stubbornness, obstinacy, durability.

tenaculum (tēn-āk'ū-lūm) [*L.*, a holder] Sharp, hooklike, pointed instrument with a slender shank for grasping and holding an anatomical part.

tenalgia (tēn-āl'jē-ā) [*Gr. tenon*, tendon, + *algos*, pain] Tenodynia.

tenascin (tēn'ū-sin) A large glycoprotein expressed by normal embryonic cells during organogenesis, and by adult cells in inflammation, wound healing, and cancer.

tenascin-C (tēn-ā'sin) A glycoprotein found in the extracellular matrix that influences embryological development, tissue remodeling, and angiogenesis in infectious, inflammatory, and malignant diseases.

Tenckhoff peritoneal dialysis catheter (tēng'kof) [Henry Tenckhoff, Am. nephrologist] A large-bore, indwelling catheter used for continuous ambulatory peritoneal dialysis or peritoneal irrigation; it is inserted into the perito-

neum through the abdominal wall. SEE: *dialysis, continuous ambulatory peritoneal*.

tender loving care ABBR: TLC. The concept of administering medical and nursing care and attention to a patient in a kindly, compassionate, and humane manner.

tenderness (tĕn'dĕr-nĕs) Sensitivity to pain upon pressure.

rebound t. The production or intensification of pain when pressure that has been applied during palpation (esp. of the abdomen) is suddenly released. SYN: *Blumberg's sign*.

tendinoplasty (tĕn'dī-nō-plās'tĕ) [" + Gr. *plassein*, to form] Plastic surgery of tendons. SEE: *tendoplasty; tenontoplasty; tenoplasty*.

tendinosis (tĕn'dī-nō'sis) 1. Degeneration of a tendon from repetitive microtrauma. 2. Collagen degeneration.

tendinosuture (tĕn'dīn-ō-sū'tūr) [" + *sutura*, a seam] The suturing of a divided tendon. SEE: *tenorrhaphy*.

tendinous (tĕn'dī-nūs) [L. *tendinosus*] Pert. to, composed of, or resembling tendons.

tendo [L.] Tendon.

tendo- SEE: *teno-*.

tendolysis (tĕn-dōl'ī-sis) [" + Gr. *lysis*, dissolution] The process of freeing a tendon from adhesions. SYN: *tenolysis*.

tendon (tĕn'dŭn) [L. *tendo*, tendon] Fibrous connective tissue serving for the attachment of muscles to bones and other parts. SYN: *sineu; tendo*.

Achilles t. SEE: *Achilles tendon*.

calcaneal t. Achilles t.

central t. The central portion of the diaphragm, consisting of a flat aponeurosis into which the muscle fibers of the diaphragm are inserted.

t. of Zinn The portion of the fibrous ring (annulus tendineus communis) from which the inferior rectus muscle of the eye originates.

tendon cell One of the fibroblasts of white fibrous connective tissue of tendons that are arranged in parallel rows.

tendonitis, tendinitis (tĕn'dīn-ī'tis) [L. *tendo*, tendon, + Gr. *itis*, inflammation] Inflammation of a tendon.

rotator cuff t. A common cause of shoulder pain, thought to be due to inflammation of the intrinsic tendons of the shoulder, esp. that of the supraspinatus. The onset usually follows injury or overuse during activities involving repeated overhead arm motions, as occurs in certain occupations (e.g., construction workers, painters) and sports (e.g., baseball, tennis, swimming).

ETIOLOGY: Individuals over age 40 are particularly susceptible because of decreased vascular supply to the rotator cuff tendons. Those who perform repeated overhead motions are also at risk.

SYMPTOMS: The patient will describe pain with overhead arm motion; on examination, the extremity may be postured for comfort; muscle strength and tone of the scapular muscles may be decreased.

TREATMENT: Conservative treatment consists of the use of moist heat and strengthening and range-of-motion exercises; if the patient does not respond to these treatment methods and loss of function is present, corticosteroid injections may be helpful. Surgery to resect the coracoacromial ligament may be indicated in persons who fail other therapies.

tendon spindle A fusiform nerve ending in a tendon.

tendoplasty (tĕn'dō-plās'tĕ) [" + Gr. *plassein*, to mold] Reparative surgery of an injured tendon. SYN: *tendinoplasty; tenontoplasty; tenoplasty*.

tendosynovitis (tĕn'dō-sīn'ō-vī'tis) [" + *synovia*, joint fluid, + Gr. *itis*, inflammation] Tenosynovitis.

tendotomy (tĕn-dōt'ō-mĕ) Tenotomy.

tendovaginal (tĕn'dō-vāj'ī-nāl) [L. *tendo*, tendon, + *vagina*, sheath] Rel. to a tendon and its sheath.

tendovaginitis (tĕn'dō-vāj'īn-ī'tis) [" + " + Gr. *itis*, inflammation] Tenosynovitis.

Tenebrio (tĕ-nĕb'rĕ-ō) A genus of beetles including the species of *T. molitor*, which is an intermediate host of helminth parasites of vertebrates.

tenectomy (tĕ-nĕk'tō-mĕ) [" + *ektome*, excision] Excision of a lesion of a tendon or tendon sheath.

graduated t. Partial division of a tendon.

tenesmus (tĕ-nĕz'mŭs) [Gr. *teinesmos*, a stretching] Spasmodic contraction of anal or bladder sphincter with pain and persistent desire to empty the bowel or bladder, with involuntary ineffectual straining efforts. **tenesmic** (tĕn-ĕz'mĭk), *adj.*

teni- SEE: *taen-*.

tenia (tĕ'nĕ-ă) [L. *taenia*, tape] Taenia.

teniasis (tĕ-nī'ă-sis) [L. *taenia*, tapeworm, + Gr. *-iasis*, a condition] Presence of tapeworms in the body.

tenicide (tĕn'ī-sīd) [" + *cidus*, killing] Taeniocide.

tenifuge (tĕn'ī-fŭj) [" + *fuga*, flight] Causing or that which causes expulsion of tapeworms. SYN: *taenifuge*.

tennis elbow A condition marked by pain over the lateral epicondyle of the humerus or the head of the radius. The pain radiates to the outer side of the arm and forearm due to injury or overuse of the extensor carpi radialis brevis or longus muscle, as may occur in playing tennis. The condition is aggravated by resisted wrist extension or forearm supination, or by a stretch force with the wrist flexed, forearm pronated, and el-

bow extended. Present are weakness of the wrist and difficulty in grasping objects. A reliable diagnostic sign is increased pain when the middle finger or wrist is extended against resistance. SYN: *epicondylitis, lateral humeral*.

TREATMENT: When elbow soreness is mild, treatment includes resting the arm, using nonsteroidal anti-inflammatory drugs, or applying a wide strap around the forearm, just below the elbow. Injections of a long-acting steroid into the tendon are helpful in about two thirds of patients with slowly resolving symptoms. Physical therapy with an elastic band helps many patients. Patients who do not improve require surgery, e.g., with resection of the extensor carpi radialis brevis or decompression of the posterior interosseous nerve.

teno-, tendo- Combining form meaning *tendon*.

tenodesis (tĕn-ŏd'ĕ-sĭs) [Gr. *tenon*, tendon, + *desis*, a binding] **1.** Surgical fixation of a tendon. Usually a tendon is transferred from its initial point of origin to a new origin in order to restore muscle balance to a joint, to restore lost function, or to increase active power of joint motion. **2.** Closing of the fingers through tendon action of the extrinsic finger flexor muscles when they are stretched across the wrist joint during wrist extension. This mechanism is used for functional grip in the quadriplegic individual when paralysis is due to loss below the sixth cervical vertebra.

tenodynia (tĕn'ŏ-dĭn'ĕ-ă) [" + *odyne*, pain] Pain in a tendon. SYN: *tenalgia*.

tenofibril (tĕn'ŏ-fi'brĭl) [" + *fibrilla*, little fiber] A filament in the cytoplasm of epithelial cells; part of the cytoskeleton tonofibril. SYN: *tonofibril*.

tenolysis (tĕn-ŏl'ĭ-sĭs) [" + *lysis*, dissolution] Tendolysis.

tenomyoplasty (tĕn'ŏ-mĭ'ŏ-plă's'tĕ) [" + *mys*, muscle, + *plassein*, to form] Reparative operation upon a tendon and muscle.

tenomyotomy (tĕn'ŏ-mĭ-ŏt'ŏ-mĕ) [" + " + *tome*, incision] Excision of lateral portion of a tendon or muscle.

Tenon, Jacques R. (tĕ'nŏn) French surgeon, 1724–1816.

T. capsule A thin connective tissue envelope of the posterior eyeball behind the conjunctiva.

T. space Tissue fluid space between the sclera and Tenon's capsule. SYN: *interfacial space*.

tenonectomy (tĕn'ŏ-nĕk'tŏ-mĕ) [" + *ektome*, excision] Excision of a portion of a tendon.

tenonitis (tĕn'ŏ-nĭ'tĭs) [" + *itis*, inflammation] **1.** Inflammation of a tendon. SEE: *tendonitis*. **2.** Inflammation of Tenon's capsule.

tenonometer (tĕn'ŏ-nŏm'ĕ-tĕr) [Gr. *teinein*, to stretch, + *metron*, measure]

A device for measuring degree of intraocular tension.

tenontography (tĕn'ŏn-tŏg'ră-fĕ) [" + *graphein*, to write] A treatise on tendons.

tenontology (tĕn'ŏn-tŏl'ŏ-jĕ) [" + *logos*, word, reason] The study of tendons.

tenontomyotomy (tĕn-ŏn'tŏ-mĭ-ŏt'ŏ-mĕ) [" + " + *tome*, incision] Cutting of the principal tendon of a muscle with excision of the muscle in part or in whole. SYN: *myototomy*.

tenontoplasty (tĕn-ŏn'tŏ-plă's'tĕ) [" + *plassein*, to form] Plastic surgery of defective or injured tendons. SEE: *tenoplasty*.

tenophyte (tĕn'ŏ-fit) [" + *phyton*, a growth] A cartilaginous or osseous growth on a tendon.

tenoplasty (tĕn'ŏ-plă's'tĕ) [" + *plassein*, to form] Reparative surgery of tendons. SYN: *tendinoplasty*; *tenontoplasty*.

tenoreceptor (tĕn'ŏ-rĕ-sĕp'tor) [" + *L. receptor*, receiver] Proprioceptive nerve ending in a tendon.

Tenormin (tĕn'ĕr-mĭn") SEE: *atenolol*.

tenorrhaphy (tĕn-or'ă-fĕ) [" + *rhaphe*, seam, ridge] Suturing of a tendon.

tenostosis (tĕn'ŏs-tŏ'sis) [Gr. *tenon*, tendon, + *osteon*, bone, + *osis*, condition] Calcification of a tendon.

tenosuspension (tĕn'ŏ-sŭs-pĕn'shŭn) [" + *L. suspensio*, a hanging under] In surgery, use of a tendon to support a structure.

tenosuture (tĕn'ŏ-sŭ'chŭr) [" + *L. sutura*, a seam] Suture of a partially or completely divided tendon.

tenosynovectomy (tĕn'ŏ-sĭn'ŏ-vĕk'tŏ-mĕ) [" + *synovia*, joint fluid, + *Gr. ektome*, excision] Excision of a tendon sheath.

tenosynovitis (tĕn'ŏ-sĭn'ŏ-vĭ'tĭs) [" + " + *Gr. itis*, inflammation] An inflammation of a tendon sheath. SYN: *tendosynovitis*; *tendovaginitis*. SEE: *de Quervain's disease*.

de Quervain's t. SEE: *de Quervain's disease*.

t. hyperplastica Painless swelling of extensor tendons over the wrist joint.

tenotomy (tĕ-nŏt'ŏ-mĕ) Surgical section of a tendon. SYN: *tendotomy*.

tenovaginitis (tĕn'ŏ-văj'in-ĭ'tĭs) [" + *L. vagina*, sheath, + *Gr. itis*, inflammation] Inflammation of a tendon sheath. SYN: *tendosynovitis*.

TENS *transcutaneous electrical nerve stimulation*.

tense (tĕns) **1.** Tight, rigid. **2.** Anxious, under mental stress.

Tensilon test (tĕn'sĭ-lŏn") A test used in the diagnosis of myasthenia gravis (MG). A short-acting anticholinesterase drug, such as edrophonium chloride or neostigmine, is injected, and the patient is observed for improved muscular

strength. The patient is also observed after an injection of a placebo (e.g., saline). Improvement with the active drug, but not the placebo, is a strong indication of MG.

tensiometer (tĕn'sē-ŏm'ĕ-tĕr) [L. *tensio*, a stretching, + Gr. *metron*, measure] **1.** A device for determining the surface tension of liquids. **2.** A device used to measure the amount of force a muscle can produce. Also called *cable tensiometer*.

tension (tĕn'shŭn) [L. *tensio*, a stretching] **1.** Process or act of stretching; state of being strained or stretched. **2.** Pressure, force. **3.** Expansive force of a gas or vapor. **4.** Mental, emotional, or nervous strain.

arterial t. Tension resulting from the force exerted by the blood pressure on the walls of arteries.

arterial oxygen t. ABBR: PaO₂. The partial pressure of oxygen in the plasma of the arterial blood.

intraocular t. The pressure of the fluid within the eyeball. SEE: *tonometry*; *intraocular pressure*.

intravenous t. Force exerted by the blood pressure on the walls of a vein.

muscular t. Condition of a muscle in which fibers tend to shorten and thus perform work or liberate heat.

premenstrual t. Premenstrual dysphoric disorder.

surface t. Molecular property of film on surface of a liquid to resist rupture. The molecules are mutually attracted, and their cohesive state presents the smallest surface area to the surrounding medium. This accounts for the spherical shape assumed by fluids, such as drops of oil or water.

tissue t. The theoretical state of equilibrium between the cells of a tissue.

tension of gases The partial pressure of gas in a mixture. In clinical applications this is usually measured in millimeters of mercury (mm Hg) or kilopascals (kPa).

tensometer (tĕn-sŏm'ĕ-tĕr) [L. *tensio*, a stretching, + Gr. *metron*, measure] A device for testing the tensile strength of materials.

tensor (tĕn'sŏr) [L., a stretcher] Any muscle that makes a part tense.

tent (tĕnt) [O.Fr. *tente*, from L. *tenta*, stretched out] **1.** A plug of soft material used to maintain or dilate the opening to a sinus, canal, or body cavity. A variety of cylindrically shaped materials may be used. **2.** A portable covering or shelter composed of fabric.

cool mist t. An enclosure into which nebulized medications and mist are sprayed; it is used to treat croup, asthma, and other respiratory illnesses in children.

laminaria t. A plug made of *Lami-*

naria digitata that is placed in the cervical canal of the uterus to dilate it.

medical t. A portable clinic erected to provide supportive care in outdoor settings, such as war zones, outdoor concerts, or marathon races.



oxygen t. A tent that can be placed over a bed for the continuous administration of oxygen and mist.

pleural t. In thoracoscopy or thoracic surgery, a mediastinal or subpleural blanket used to reinforce the suture line.

sponge t. A plug made of compressed sponge that is placed in the cervical canal to dilate it.

tentacle (tĕn'tă-k'l) A slender projection of invertebrates. It is used for prehension, tactile purposes, or feeding.

tentative (tĕn'tă-tiv) [L. *tentativus*, feel, try] **1.** Rel. to a diagnosis subject to change because of insufficient data. **2.** Indecisive.

tentorial (tĕn-tŏ'rĕ-ăl) Pert. to a tentorium.

tentorial pressure cone Projection of a portion of the temporal lobe of the cerebrum through the incisure of the tentorium due to increased intracranial pressure.

tentorium (tĕn-tŏ'rĕ-ŭm) *pl.* **tentoria** [L., tent] A tentlike structure or part.

t. cerebelli The process of the dura mater between the cerebrum and cerebellum supporting the occipital lobes.

tenure (tĕn'yĕr) [L. *tenĕre*, to hold]

1. The holding of a property, place, or occupational assignment. **2.** The specification that an employee (typically someone in an academic setting) may hold a position permanently unless he or she behaves with gross negligence.

tepid (tĕp'id) [L. *tepidus*, lukewarm] Slightly warm; lukewarm.

ter- [L., thrice] Combining form meaning *three times*.

tera- A prefix used in the International System of Units (SI units) to indicate 10¹².

teras (tĕr'ăs) *pl.* **terata** [Gr.] A severely deformed fetus.

teratic (tĕr-ăt'ik) [Gr. *teratikos*, monstrous] Pert. to a severely malformed fetus.

teratism (tĕr'ă-tĭzm) [Gr. *teratisma*] An anomaly or structural abnormality either inherited or acquired.

acquired t. Abnormality resulting from a prenatal environmental influence.

atresic t. Teratism in which natural openings such as the mouth or anus fail to form.

caesmic t. Teratism in which a normal union of parts fails to occur (e.g., as in spina bifida or cleft palate).

ectogenic t. Condition in which parts are absent or defective.

ectopic t. Abnormality in which a part becomes displaced.
hypergenic t. Teratism in which a part is duplicated (e.g., polydactylism).
symphysic t. Teratism in which parts that are normally separate are fused.
terato- Combining form meaning *monster*.
teratoblastoma (tēr'ā-tō-blās-tō'mā) [Gr. *teratos*, monster, + *blastos*, germ, + *oma*, tumor] A tumor that contains embryonic material but that is not representative of all three germinal layers. SEE: *teratoma*.
teratocarcinoma (tēr'ā-tō-kār'si-nō'mā) [+ *karkinos*, cancer, + *oma*, tumor] A carcinoma that has developed from the epithelial cells of a teratoma.
teratogen (tēr-āt'ō-jěn) [+ *gennan*, to produce] Anything that adversely affects normal cellular development in the embryo or fetus. Certain chemicals, some therapeutic and illicit drugs, radiation, and intrauterine viral infections are known to adversely alter cellular development in the embryo or fetus. SEE: *table*; *mutagen*.
teratogenesis (tēr'ā-tō-gěn'ēs-sīs) [+ *genesis*, generation, birth] The development of abnormal structures in an embryo.
teratoid (tēr'ā-toyd) [Gr. *teratos*, monster, + *eidōs*, form, shape] Resembling a severely malformed fetus.
teratology (tēr-ā-tōl'ō-jē) [+ *logos*, word, reason] Branch of science dealing

with the study of congenital deformities and abnormal development. **teratologic**, *adj.*
teratoma (tēr-ā-tō'mā) [+ *oma*, tumor] A congenital tumor containing one or more of the three primary embryonic germ layers. Hair and teeth as well as endodermal elements may be present. SYN: *dermoid cyst*. SEE: *fetus in fetu*.
teratospermia (tēr'ā-tō-spēr'mē-ā) [+ *sperma*, seed] Malformed sperm in semen.
terbium (tēr'bē-üm) SYMB; Tb. A metal of the rare earths; atomic weight, 158.9254; atomic number, 65; specific gravity, 8.272.
terebrant (tēr'ē-brānt) Piercingly painful.
terebration (tēr'ē-brā'shūn) [L. *terebratio*] 1. Boring; trephination. 2. A boring pain.
teres (tēr'rēz) [L., round] Round and smooth; cylindrical; used to describe certain muscles and ligaments.
tergal (tēr'gāl) [L. *tergum*, back] Concerning the back or dorsal surface.
ter in die (tēr in dē'ā) [L.] ABBR: t.i.d. Three times a day.
term [L. *terminus*, a boundary] 1. A limit or boundary. 2. A definite or limited period of duration such as the normal period of pregnancy, approx. nine calendar months or 38 to 42 weeks' gestation.
TERMA An abbreviation for the "total energy released to media," e.g., the amount of radiation to which a cancer is exposed during radiation therapy.

U.S. FDA Categories for Drugs by Teratogenic or Fetotoxic Potential*

Pregnancy Category	Description	Examples
A	Medications for which no harm has been demonstrated in well-designed studies of pregnant and lactating women.	Folic acid supplementation
B	Medications without known risk when used in human pregnancy or breastfeeding. Studies in laboratory animals have been performed with positive or negative results, but no demonstrable risk in pregnancy is yet known. Individual considerations of risk and benefit guide usage in patients.	Acyclovir, amoxicillin/clavulanate, fluoxetine, glyburide, ranitidine
C	Medications whose use in human pregnancy or breastfeeding has not been adequately studied; risk of usage cannot be excluded but has not been proven. Individual considerations of risk and benefit guide drug usage in patients.	Albuterol, hydrocodone, omeprazole, verapamil
D	Medications known to cause fetal harm when administered during pregnancy or harm to children during breastfeeding. In some specific settings the potential benefits of use may outweigh the risk.	Tetracycline antibiotics
X	Medications judged to be unsafe (contraindicated) in pregnancy. Evidence of risk has accrued from clinical trials or postmarketing surveillance.	Isotretinoin, thalidomide, warfarin

*All medication use during pregnancy should be carefully reviewed with health professionals experienced in reproductive pharmacology and patient care.

terminal (těr'mī-nāl) [L. *terminalis*]

1. Pert. to or placed at the end. 2. Final, last, ultimate. 3. Fatal.

terminal bars Minute bars of dense intercellular cement that occupy and close spaces between epithelial cells and bind them together.

terminal cancer Widespread or advanced cancer, from which recovery is not expected.

terminal duct lobular unit ABBR: TDLU. The blind ending of the lactiferous duct that contains the lobule and its duct. Most benign and malignant breast lesions arise here.

terminal extubation The sudden withdrawal of mechanical ventilation from critically ill patients who are not expected to survive without respiratory support. Although the physical process of switching a ventilator off and removing the tracheal tube are simple, there are serious ethical, familial, psychological, and religious considerations of terminal extubation.

In most jurisdictions terminal extubation is not allowed unless patients or surrogate decision makers with power of attorney have explicitly specified that, if care is futile and death imminent, they would want life-support measures withdrawn. If these conditions are met, the patient's family and the health care team may meet to discuss withdrawal of support. Negotiations are made for the timing of extubation, and the use of medications or other means to alleviate breathlessness, pain, suffering, and other conditions for withdrawal. Arrangements are made for the funeral and the advisability of or need for autopsy or organ donation. Time is set aside for the family and staff to prepare for the death and grieving process. Terminal extubation differs from terminal weaning in that the withdrawal of support is sudden. The patient may survive either method of withdrawal for minutes, hours, or occasionally, days.

terminal ganglia Ganglia of the parasympathetic division of the autonomic nervous system that are located in or close to their visceral effectors such as the heart or intestines.

terminal illness A final, fatal illness.

PATIENT CARE: The health care professional supports the patient and family by anticipating their loss and grief and helps the patient to deal with major concerns: pain and suffering, fear, hopelessness, dependency, disability, loss of self-esteem, and loss of pleasure. Hospice care is provided if desired and available. The patient receives caring comfort and help in adjusting to decreased quality of life to ensure that death occurs with dignity.

terminal infection Infection appearing in

the late stage of another disease; often fatal.

terminal weaning The gradual withdrawal of mechanical ventilation from a patient who is not expected to survive without respiratory support. It is similar to terminal extubation except that the withdrawal of support occurs incrementally, often over a span of several hours or days. At predetermined intervals the ventilatory rate is decreased and/or the fraction of inspired oxygen is decreased. The process continues until the patient is no longer receiving ventilatory support or death has occurred.

The ethical considerations that guide terminal extubation apply equally to terminal weaning. Terminal weaning takes longer than extubation: this gives the patient, his family, and professional staff more time to reflect on his life and adjust to his or her death.

termination [L. *terminatio*, limiting]

1. The distal end of a part. 2. The cessation of anything.

Terminologia Anatomica (těr'mī-nā-lō'jē-ā ān-ā-tōm'ī-kā) [NL] ABBR: TA. The current official nomenclature for human anatomy. It was developed by the Federative Committee on Anatomical Terminology (FCAT) and the 56 Member Associations of the International Federation of Associations of Anatomists (IFAA) and was released in 1998, replacing the *Nomina Anatomica*, the earlier standard. SEE: *Basle Nomina Anatomica*; *Nomina Anatomica*.

terminology (těr-mī-nōl'ō-jē) [L. *terminus*, a boundary, + Gr. *logos*, word] The vocabulary used in specific arts, sciences, technical endeavors, trades, or professions. SEE: *nomenclature*.

terminus (těr'mī-nūs) [L.] An ending; a boundary.

Ternidens deminutus (těr'nī-dēns dā-mī-nōo'tūs, -dēnz, dē-) [NL "lessened three-toothed"] A nematode that is an intestinal parasite in primates.

terpene (těr'pēn) Any member of the family of hydrocarbons of the formula $C_{10}H_{16}$.

terra (těr'ā) [L.] Earth; soil.

terror [L. *terrere*, to frighten] Great fear.

Terry's nails An abnormal finding in the fingernails of patient with cirrhosis, right-side heart failure, or type 2 diabetes mellitus, in which the proximal nail bed turns white.

Terson's syndrome Subarachnoid hemorrhage combined with subhyaloid hemorrhage.

tertian (těr'shūn) [L. *tertianus*, the third] Occurring every third day; usually pert. to a form of malarial fever.

tertiary (těr'shē-ār-ē) [L. *tertiarius*] Third in order or stage.

tertiary alcohol Alcohol containing the trivalent group $\equiv\text{COH}$.

tertiary care A level of medical care avail-

able only in large medical care institutions. It includes techniques and methods of therapy and diagnosis involving equipment and personnel not economically feasible in a smaller institution because of underutilization. SEE: *primary care; care, secondary medical.*

tertiary gain The prolongation of an illness or the feigning of disability in order to benefit someone or some agency other than oneself.

tertiary syphilis The third and most advanced stage of syphilis. SEE: under *syphilis.*

tertigravida (têr'shê-grāv'y-dā) [*t* + *gravida*, pregnant] A woman pregnant for the third time.

tertipara (têr-shîp'ā-rā) [L. *tertius*, third, + *parere*, to bring forth] A woman who has had three pregnancies terminating after the 20th week of gestation or has produced three infants weighing at least 500 g, regardless of their viability.

tesla (tês'lā) [Nikola Tesla, U.S. physicist, 1856–1943] ABBR: T. In the SI system, a measure of magnetic strength; 1 tesla equals 1 weber per square meter.

tessellated (tês'ê-lā'têd) [L. *tessella*, a square] Composed of little squares.

test [L. *testum*, earthen vessel] **1.** An examination. **2.** A method to determine the presence or nature of a substance or the presence of a disease. **3.** A chemical reaction. **4.** A reagent or substance used in making a test. Particular tests are listed under the first word. SEE: e.g., *creatinine clearance test; oral glucose tolerance test; tuberculin skin test.*

testa (tês'tā) [L.] A shell.

testalgia (tês-tāl'jê-ā) [L. *testis*, testicle, + Gr. *algos*, pain] Orchialgia.

testectomy (tês-têk'tō-mê) [*t* + Gr. *ektome*, excision] **1.** Removal of a testicle. SYN: *castration.* **2.** Removal of a corpus quadrigeminum.

testes (tês'tês) [L.] Pl. of testis.

testicle (tês'tî-kl) [L. *testiculus*, a little testis] Testis.

self-examination of t. A technique that enables a man to detect changes in the size and shape of his testicles and evaluate any tenderness. Each testicle is examined separately and in comparison with the other. The best time to perform the test is just after a warm bath or shower, when the scrotal tissue is relaxed. The man places his thumbs on the anterior surface of the testicle, supporting it with the index and middle fingers of both hands. Each testicle is gently rolled between the fingers and thumbs and carefully felt for lumps, hardness, or thickening, esp. as compared with the other testicle. The epididymis is a soft, slightly tender, tube-like body behind the testicle. Abnormal

findings should be reported immediately to a health care professional.

testicular (tês-tîk'ū-lār) Rel. to a testicle.

testicular cancer, germ-cell A group of malignant diseases of the testicles that include choriocarcinomas, embryonal carcinomas, seminomas, spermatocytic seminomas, sex cord tumors, teratomas, and tumors with mixtures of several different malignant cell types.

testis (tês'tis) *pl.* **testes** [L.] The male gonad; testicle. It is one of two reproductive glands located in the scrotum that produce the male reproductive cells (spermatozoa) and the male hormones testosterone and inhibin. SEE: *il-lus.*

ANATOMY: Each is an ovoid body about 4 cm long and 2 to 2.5 cm in width and thickness, enclosed within a dense inelastic fibrous tunica albuginea. The testis is divided into numerous lobules separated by septa, each lobule containing one to three seminiferous tubules within which the spermatozoa are produced by meiosis. The lobules lead to straight ducts that join a plexus, the rete testis, from which 15 to 20 efferent ducts lead to the epididymis. The epididymis leads to the ductus deferens, through which sperm are conveyed to the urethra. Between the seminiferous tubules are the interstitial cells (cells of Leydig), which secrete testosterone. Within the tubules are sustentacular cells, which secrete inhibin. The testes are suspended from the body by the spermatic cord, a structure that extends from the inguinal ring to the testis and contains the ductus deferens, testicular vessels (spermatic artery, vein, lymph vessels), and nerves.

DISORDERS: Hyperfunction (hypergonadism) may cause early maturity such as large sexual organs with early functional activity and increased growth of hair. Hypofunction (hypogonadism) is indicated by undeveloped testes, absence of body hair, high-pitched voice, sterility, smooth skin, loss of sexual desire, low metabolism, and eunuchoid or eunuch body type.

descent of t. The migration of the testis from the abdominal cavity to the scrotum during fetal development.

displaced t. A testis located abnormally within the inguinal canal or pelvis.

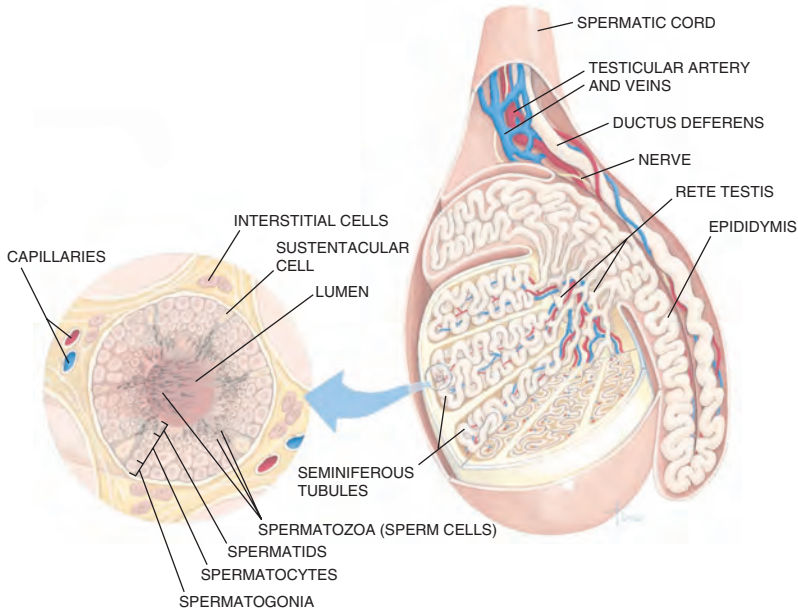
femoral t. An inguinal testis near or superior to the femoral ring.

inverted t. A testis reversed in the scrotum so that the epididymis attaches to the anterior instead of the posterior part of the gland.

perineal t. A testis located in the perineal region outside the scrotum.

undescended t. Cryptorchidism.

testis compression reflex Contraction of



TESTIS

Midsagittal section of testis and epididymis (right), cross-section through seminiferous tubule (left)

abdominal muscles following moderate compression of a testis.

testitis (tēs-tī'tīs) [L. *testis*, testicle, + Gr. *itis*, inflammation] Orchitis.

test meal A meal usually small and of definite quality and composition, given to aid in chemical analysis of the stomach contents or radiographical examination of the stomach.

testopathy (tēs-tōp'ă-thē) [ʹ + Gr. *pathos*, disease, suffering] Any disease of the testes.

testosterone (tēs-tōs'tēr-ōn) [L. *testis*, testicle] A steroid sex hormone that is responsible for the growth and development of masculine characteristics. It directly influences the maturation of male sexual organs, development of sperm within the testes, sexual drive, erectile function of the penis, and male secondary sexual characteristics (facial hair, thickened vocal cords, and pronounced musculature). In addition, it is linked to aggressive and predatory behaviors.

Testosterone is produced in the Leydig cells of the testes. It has also been synthesized for replacement therapy in men with sex hormone deficiencies (e.g., men with hypogonadal conditions such as Klinefelter's syndrome).

Testosterone adversely affects diseases of the prostate gland by sponsoring the growth of both benign hyperplasia of the gland and carcinomas of the

prostate. Both of these conditions may be treated with antiandrogenic therapies. Predatory sexual behaviors also depend on testosterone and can be treated with interventions that block the effects of the hormone.

testotoxicosis (tēs'tō-tōk'sī-kō'sīs) [ʹ + ʹ] Precocious puberty occurring in boys due to increased secretion of the male hormone, testosterone. Affected boys prematurely develop adult secondary sexual characteristics, increased height and muscle mass, and, in some instances, aggressive behavior.

test-retest reliability The degree to which a research tool or laboratory assay obtains similar results when it is used repetitively to analyze a single sample or subject cohort.

test tube A glass tube closed at one end. It is used in laboratory sciences to hold chemicals and other material.

test tube baby A baby born to a mother whose ovum was removed, fertilized outside her body, and then implanted in her uterus. The term in colloquial. SEE: *gamete intrafallopian transfer; in vitro fertilization*.

test type Letters or figures of various sizes printed on paper. These are used in testing visual acuity.

tetanic (tē-tān'ik) [Gr. *tetanikos*] **1.** Pert. to or producing tetanus. **2.** Any agent producing tetanic spasms.

tetanic convulsion A tonic convulsion with constant muscular contraction.

tetaniform (tē-tān'ī-form) [Gr. *tetanos*, stretched, + L. *forma*, shape] Resembling tetanus.

tetanism (tēt'ā-nīzm) [ʹ + *-ismos*, condition] Persistent muscular hypertonicity resembling tetanus, esp. in infants.

tetanization (tēt'ā-nī-zā'shūn) [Gr. *tetanos*, stretched] 1. Production of tetanus or tetanic spasms by induction of the disease. 2. Induction of tetanic contractions in a muscle by electrical stimuli.

tetanize (tēt'ā-nīz) To induce tonic muscular spasms.

tetanode (tēt'ā-nōd) [ʹ + *eidōs*, form, shape] In tetany, the quiet period between spasms.

tetanolysin (tēt'ā-nōl'ī-sīn) A hemolytic component of the toxin produced by *Clostridium tetani*, causative organism of tetanus. It does not cause the clinical signs and symptoms of this disease.

tetanomotor (tēt'ān-ō-mō'tor) [ʹ + L. *motor*, a mover] Appliance for the production of tetanic motor spasms mechanically by electrical stimulation of a nerve.

tetanolphil, tetanophilic (tēt'ān-ō-fīl, tēt'ān-ō-fīl'īk) [ʹ + *philein*, to love] Possessing an affinity for tetanus toxin.

tetanospasmin (tēt'ā-nō-spās'mīn) [ʹ + *spasmos*, a convulsion] A component of the toxin produced by *Clostridium tetani* that causes tetanus.

tetanus (tēt'ā-nūs) [Gr. *tetanos*, stretched] An acute, life-threatening illness caused by a toxin (tetanospasmin) produced in infected wounds by the bacillus *Clostridium tetani*. The disease is marked by extreme muscular rigidity, violent muscle spasms, and often, respiratory and autonomic failure. Because of proactive immunization programs in the U.S., the disease affects only 50 patients annually. In nations without effective immunization programs, the disease is exceptionally common and usually deadly. SEE: *Clostridium tetani*; *lockjaw*; *tetanolysin*; *tetanospasmin*; *trismus*.

ETIOLOGY: The responsible bacteria is most likely to proliferate in "tetanus-prone" wounds (e.g., those contaminated by soil, animal excret or debris); puncture, avulsion, or bite wounds; burns; frostbite; necrotic tissues; gangrene; injection site infections; umbilical stump infections; or uterine infections. It is less likely to infect shallow wounds with cleanly cut edges. The spores of *C. tetani* germinate in the anaerobic depths of tetanus-prone injuries, producing bacteria that release tetanospasmin. This neurotoxin is carried to the central nervous system, where it blocks impulses that modulate muscle contraction. The incubation period varies from 1 or 2 days to a few months. The

shorter the incubation, the more deadly the illness is likely to be.

SYMPTOMS: Unopposed muscular contraction leads to rigidity and spasticity, esp. of the muscles of the jaw, neck, back, abdomen, and esophagus. Lockjaw (also called trismus) is a hallmark of the disease, as are violent arching of the back muscles (opisthotonus), and a rigid, fixed smile (risus sardonius). Intense painful muscle spasms may be triggered by noises, bright lights, attempts to swallow or eat, or other stimuli. In addition, the patient may suffer profuse sweating, low-grade fever, and wild fluctuations in pulse, blood pressure, and respirations. Diagnosis usually is based on a history of trauma with no previous tetanus immunization and on the clinical picture presented.

TREATMENT: Early débridement may lessen the burden of toxin-producing bacteria in the wound. Muscle-relaxing drugs, like baclofen and diazepam, and neuromuscular blocking agents, such as vecuronium, reduce muscle spasm. Beta blockers like propranolol decrease the incidence of tachycardias and hypertension. Advanced airway and ventilatory support are best provided in an intensive care unit. Tetanus immune globulin (TIG) is given to provide passive immunity against circulating tetanus toxin. High doses of penicillin G (or alternatives for the patient with penicillin allergy) are administered intravenously to kill clostridia. Wound debridement and/or surgical exploration may be required to remove the source of the toxin.

PATIENT CARE: The patient is kept in a quiet, dimly lit room, where stimulation is minimized. A patent airway is maintained, oxygen administered to maintain oxygen saturation, and suctioning carried out gently with prehyperventilation and posthyperventilation. Oral feedings are withheld to limit esophageal spasms and the aspiration of nutrients. Intravenous access is established for administration of emergency medications, and hydration is provided. Enteral or parenteral nutrition may be needed to meet the patient's increased metabolic needs. A Foley catheter is placed to prevent urinary retention. Cardiac rhythm and vital signs are monitored, and fluid and electrolyte balance managed.



Recovery from tetanus does not guarantee natural immunity. Therefore, the patient should begin an immunization series before leaving the hospital.

PREVENTION: Initial immunization should begin in infancy. The toxoid

should be given in three doses at 4- to 8-week intervals beginning when the infant is 6 to 8 weeks old, and a fourth dose 6 to 12 months thereafter. A fifth dose is usually administered at 4 to 6 years of age before school entry. Tetanus toxoid is commonly given in combination with diphtheria toxoid and acellular pertussis vaccine. Active immunization with adsorbed tetanus toxoid provides protection for at least 10 years. Although it has been the practice to give a tetanus booster every 10 years, current advice is to give a single booster dose at age 50 if the individual received all 5 doses as a child. Tetanus booster vaccination should be given to patients with tetanus-prone wounds who have not received the toxoid in the past 3 years.

artificial t. Tetanus produced by a drug such as strychnine.

ascending t. Tetanus in which muscle spasms occur first in the lower part of the body and then spread upward, finally involving muscles of the head and neck.

cephalic t. A form of tetanus due to a wound of the head, esp. one near the eyebrow. It is marked by trismus, facial paralysis on one side, and pronounced dysphagia. It resembles rabies and is often fatal. SYN: *hydrophobic tetanus*.

chronic t. 1. A latent infection in a healed wound, reactivated on opening the wound. 2. A form of tetanus in which the onset and progress of the disease are slower and more prolonged and the symptoms are less severe.

cryptogenic t. Tetanus in which the site of entry of the organism is not known.

descending t. Tetanus in which muscle spasms occur first in the head and neck and later are manifested in other muscles of the body.

t. dorsalis Tetanus in which the body is bent backward.

extensor t. Tetanus that affects the extensor muscles.

idiopathic t. Tetanus that occurs without any visible lesion.

imitative t. A conversion disorder that simulates tetanus.

t. infantum Tetanus neonatorum.

t. lateralis A form of tetanus in which the body is bent sideways.

local t. Tetanus marked by spasticity of a group of muscles near the wound. Trismus, tonic contraction of jaw muscles, is usually absent.

t. neonatorum Tetanus of very young infants, usually due to infection of the navel caused by using nonsterile technique in ligating the umbilical cord.

t. paradoxus Cephalic tetanus combined with paralysis of the facial or other cranial nerve.

postoperative t. Tetanus that fol-

lows an operation as a result of contamination of the surgical incision.

puerperal t. Tetanus that occurs following childbirth.

toxic t. Tetanus produced by overdose of strychnine.

tetanus antitoxin Protective antibody against *Clostridium tetani*, the bacterium that causes tetanus. The antibody develops after inoculation with tetanus toxin or toxoid or after infection with *C. tetani*.

tetanus immune globulin A solution containing antibodies to *Clostridium tetani*. It is obtained from human blood and used to provide passive immunity to prevent and treat tetanus infection. The average prophylactic dose for children and adults is 250 to 500 units injected intramuscularly.

tetanus toxoid Tetanus toxin modified so that its toxicity is greatly reduced, while retaining its capacity to promote active immunity.

tetany (tēt'ă-nē) [Gr. *tetanos*, stretched] Intermittent tonic muscular spasms that typically involve the arms or legs.

SYMPTOMS: Spasms may be accompanied by numbness, tingling, loss of function, and pain in affected muscle groups.

SIGNS: Characteristic diagnostic signs are Trousseau's sign, Chvostek's sign, and the peroneal sign. Prolongation of the isoelectric phase of the S-T segment of the electrocardiogram may be present with tetany that is caused by a low serum calcium level. SEE: *Chvostek's sign*; *hyperventilation*; *Trousseau's sign*.

ETIOLOGY: It may occur in infants, esp. newborns in intensive care and those who have had perinatal asphyxia. Other causative factors include hypocalcemia (e.g., in hypoparathyroidism or after parathyroid surgery), hypomagnesemia, hypokalemia, alkalosis (e.g., in hyperventilation), infection with *Clostridium tetani*, and vitamin D deficiency.

alkalotic t. Tetany resulting from respiratory alkalosis, as in hyperventilation, or from metabolic alkalosis induced by excessive intake of sodium bicarbonate or excessive loss of chlorides by vomiting, gastric lavage, or suction.

duration t. Continuous contraction, esp. in degenerated muscles, in response to a continuous electric current.

hyperventilation t. Tetany caused by continued hyperventilation.

hypocalcemic t. Tetany due to low serum calcium and high serum phosphate levels. This may be due to lack of vitamin D, factors that interfere with calcium absorption such as steatorrhea or infantile diarrhea, or defective renal excretion of phosphorus.

latent t. Tetany that requires me-

chemical or electrical stimulation of nerves to show characteristic signs of excitability; the opposition of manifest tetany.

manifest t. Tetany in which the characteristic symptoms such as carpopedal spasm, laryngospasm, and convulsions are present; the opposite of latent tetany.

parathyroid t. Tetany resulting from excision of the parathyroid glands or from hyposecretion of the parathyroid glands as a result of disease or disorders of the glands. SEE: *hypoparathyroidism*.

rachitic t. Tetany due to hypocalcemia accompanying vitamin D deficiency.

thyreoprival t. Tetany resulting from removal of the thyroid gland, accompanied by inadvertent removal of the parathyroid glands.

tetartanopia, tetartanopsia (tēt'ār-tān-ō'pē-ā, -ōp'sē-ā) [" + *opsis*, vision] Symmetrical blindness in the same quadrant of each visual field. SYN: *quadrantanopsia*.

tethering Binding or attachment, e.g., of white blood cells as they migrate through tissues.

tetra-, tetr- Combining forms meaning *four*.

tetrabasic (tēt'rā-bā'sīk) [Gr. *tetras*, four, + *basis*, base] Having four replaceable hydrogen atoms, said of an acid or acid salt.

tetrabromofluorescein (tēt'rā-brōm'ō-flū-or-ēs'in, -ē-in) A dye, $C_{20}H_8Br_4O_6$, obtained from the action of bromine on fluorescein, used as a stain in microscopy. SYN: *eosin*.

tetrachlorethylene (tēt'rā-klor-ēth'ī-lēn) A clear, colorless liquid with a characteristic odor, used as a solvent.

tetrachloride (tēt'rā-klō'rīd) A radical with four atoms of chlorine.

tetracid (tē-trās'id) [" + L. *acidus*, sour] 1. Able to react with four molecules of a monoacid or two of a diacid to form a salt or ester, said of a base or alcohol. This term is disapproved by some authorities. 2. Having four hydrogen atoms replaceable by basic atoms or radicals, said of acids.

tetracrotic (tēt'rā-krōt'īk) [" + *krotos*, beat] Noting a pulse or pulse tracing with four upward strokes in the descending limb of the wave.

tetracycline (tēt'rā-sī'klēn) A bacteriostatic antibiotic used, for example, to treat acne, chlamydia, and atypical pneumonia.

tetrad (tēt'rād) [Gr. *tetras*, four] 1. A group of four things with something in common. 2. An element having a valence or combining power of four. 3. A group of four parts, said of cells produced by division in two planes. 4. The group of four chromosomes in prophase I of mitosis; the pairs of homologous chromosomes, each having two chromatids, that line up together on the spindle fibers. SEE: *meiosis* for illud.

tetradactyly (tēt'rā-dāk'tī-lē) [" + *daktylos*, finger] Having four digits on a hand or foot.

tetraethylphosphosphate (tēt-rā-ēth'īl-pī-rō-fōs'fat) ABBR: TEPP. A powerful cholinesterase inhibitor used as an insecticide. It is poisonous to humans; the antidote is atropine.

tetrahydrocannabinol (tēt'rā-hī'drō-kā-nāb'ī-nōl) ABBR: THC. A chemical, $C_{21}H_{30}O_2$, that is the principal active component in cannabis, or marijuana.

tetraiodothyronine (tēt'rā-ī'ō-dō-thī'rō-nēn) Thyroxine.

tetralogy (tē-trāl'ō-jē) The combination of four symptoms or elements.

tetralogy of Fallot (tē-trāl'ā-jē, fāl-ō') [Etienne L. A. Fallot, Fr. physician, 1850–1911] A congenital malformation of the heart and great vessels marked by a defect in the interventricular septum, pulmonary artery stenosis, dextroposition of the aorta, and right ventricular hypertrophy. The defect can be repaired surgically.

tetramastia, tetramazia (tēt'rā-mās'tē-ā, tēt'rā-mā-zē-ā) [" + *mastos*, *mazos*, breast] A condition characterized by the presence of four breasts.

tetramastigote (tēt'rā-mās'tī-gōt) [" + *mastix*, lash] Having four flagella.

tetrameric, tetramerous (tēt'rā-mēr'īk, tēt-rām'ēr-ūs) [" + *meros*, a part] Having four parts.

tetranopsia (tēt'rā-nōp'sē-ā) [" + *an-*, not, + *opsis*, vision] Quadrantanopia.

tetraparesis (tēt'rā-pār'ēs-īs) [" + *parienai*, to let fall] Muscular weakness of all four extremities.

tetrapeptide (tēt'rā-pēp'tīd) A peptide that yields four amino acids when it is hydrolyzed.

tetraplegia (tēt'rā-plē'jē-ā) [" + *plege*, a stroke] Quadriplegia.

tetraploid (tēt'rā-ploid) [" + *ploos*, a fold, + *eidos*, form, shape] 1. Concerning tetraploidy, the state of having twice the diploid number of chromosomes. 2. Having four sets of chromosomes.

tetrasomic (tēt-rā-sō'mīk) [" + *soma*, body] Possessing four instead of the usual pair of chromosomes in an otherwise diploid cell; that is, having a chromosome number of $2n + 2$.

tetraster (tēt-rās'tēr) [" + *aster*, star] A mitotic figure in which there are four



Tetracyclines should not be given to pregnant women or young children, because they damage developing teeth and bones.

asters instead of the usual two; occurring abnormally in mitosis.

tetravalent (tět'rá-vā'lěnt) Having a valence or combining power of four. SYN: *quadrivalent*.

tetrodotoxin (tět'rō-dō-tōks'ín) A powerful neurotoxin that blocks the movement of sodium ions through voltage-gated sodium channels in neuronal cell membranes. It prevents depolarization of nerves and the propagation of electrical impulses from one nerve to another. Most cases of human intoxication result from consumption of the fugu, a puffer fish prepared as a delicacy.

tetroxide (tē-trōk'síd) A chemical compound containing four oxygen atoms.

textarin (těks'tār-in) [Fm. (*Pseudonaja*) *textilis*, a species name] A serine proteinase that activates thrombin and causes bleeding. It is present in the venom of the Australian eastern brown snake. Purified textarin is used in laboratory assays to determine the presence of lupus anticoagulants.

textiform (těks'ti-form) [L. *textum*, something woven, + *forma*, shape] Resembling a network, web, or mesh.

textoblastic (těks'tō-blās'tík) [L. *textus*, tissue, + Gr. *blastos*, germ] Forming adult tissue; regenerative.

textural (těks'tū-rāl) [L. *textura*, weaving] Concerning the texture or constitution of a tissue.

texture (těks'tūr) [L. *textura*] The organization of a tissue or structure.

textus (těks'tūs) [L.] Tissue.

Th Symbol for the element thorium.

thalamic (thāl-ām'ík) [Gr. *thalamos*, inner chamber] Pert. to the thalamus.

thalamic pain syndrome Pain affecting one half of the body (alternately, anesthesia affecting half the body) that results from a stroke or other injury to the thalamus.

thalamo- Combining form meaning *thalamus*.

thalamocortical (thāl'ām-ō-kor'ti-kāl) [" + L. *cortex*, rind] Pert. to the thalamus and the cerebral cortex.

thalamotomy (thāl-ā-mōt'ō-mē) [" + *to*me, incision] Destruction of a portion of the thalamus—used to treat intractable pain or movement disorders such as Parkinson's disease.

thalamus (thāl'ā-mūs) *pl.* **thalami** [L.] The largest subdivision of the diencephalon on either side, consisting chiefly of an ovoid gray nuclear mass in the lateral wall of the third ventricle. Each consists of a number of nuclei (anterior, medial, lateral, and ventral), the medial and lateral geniculate bodies, and the pulvinar.

FUNCTION: All sensory stimuli, with the exception of olfactory, are received by the thalamus. These are associated, integrated, and then relayed through thalamocortical radiations to specific

cortical areas. Impulses are also received from the cortex, hypothalamus, and corpus striatum and relayed to visceral and somatic effectors. The thalamus is also the center for appreciation of primitive uncritical sensations of pain, crude touch, and temperature.

thalassemia (thāl-ā-sē'mē-ā) [Gr. *thalassa*, sea, + *haima*, blood] A group of hereditary anemias occurring in populations bordering the Mediterranean and in Southeast Asia. Anemia is produced by either a defective production rate of the alpha or beta hemoglobin polypeptide chain or a decreased synthesis of the beta chain. Heterozygotes are usually asymptomatic. The severity in homozygotes varies according to the complexity of the inheritance pattern, but thalassemia may be fatal. SEE: *anemia*, *sickle cell*.

t. intermedia A chronic hemolytic anemia caused by deficient alpha chain synthesis. It is also called *hemoglobin H disease*.

t. major The homozygous form of deficient beta chain synthesis, which presents during childhood. This inherited blood disorder most commonly affects people of Mediterranean, Middle Eastern, Indian, Asian, and Southeast Asian descent. Malaria is endemic in these areas, and the thalassemia trait (carrier status that is generally asymptomatic) may provide protection against malaria. When both parents have the trait and pass it on to a child (25% chance in each pregnancy), the child develops the disorder. The different forms of thalassemia vary in severity, but each affects the body's ability to produce a specific type of hemoglobin. The most severe form is B thalassemia major (Cooley's anemia), which prevents or greatly reduces the body's ability to produce "adult" hemoglobin (HbA). Clinically thalassemia is characterized by fatigue, splenomegaly, severe anemia, enlargement of the heart, mild jaundice, leg ulcers, and cholelithiasis. When untreated, bone marrow expands as the body attempts to increase blood cell formation, causes thickening of the cranial bones, and increases cheekbone eminences.

PATIENT CARE: The only cure for B thalassemia major is a bone marrow transplant from a matched sibling. The parents and siblings of a child with thalassemia may undergo human leukocyte antigen testing to identify a potential bone marrow donor. Generally patients under age 15 who have no liver disease and are well chelated have the highest success rates from bone marrow transplant. Without a match, treatment involves transfusions to restore hemoglobin levels and chelation therapy to remove excess transfused iron from the

body. Parents are taught to prepare chelation at home for their affected children, select and rotate subcutaneous administration sites, and recognize adverse drug reactions and signs of infection. Complications of chelation therapy include swelling and itching at the site of administration, blurred vision, and high-frequency hearing loss, sometimes accompanied by tinnitus. Young children may develop knock knees (genu valgus) as other metals are removed by the therapy. The child thus requires annual hearing and vision examinations and long-bone x-rays to screen for these problems. When a problem is identified, the drug is discontinued until the adverse reaction resolves and is later restarted at a lower dose. Motivation for this arduous therapy is difficult, and an associated psychosocial problem may be the need for a "holiday" from treatment, esp. among adolescents and young adults. The primary health care provider monitors blood ferritin levels to assess compliance with therapy. Patients and their families require ongoing support and education. SYN: *Coolley's anemia*.

t. minor A mild disease produced by heterozygosity for either beta or alpha chain. It may be completely asymptomatic. It is usually revealed by chance or as a result of study of the family of an individual having thalassemia major. The prognosis is excellent.

thalassophobia (thäl-äs"ō-fō'bē-ä) [Gr. *thalassa*, sea, + *phobos*, fear] An abnormal fear of the sea.

thalassotherapy (thäl-äs"sō-thēr'ä-pē) [" + *therapeia*, treatment] Treatment of disease by living at the seaside, bathing in the sea, taking sea voyages, or consuming or being wrapped in seaweed.

thalidomide (thä-lid'ō-mid) A sedative/hypnotic drug that was removed from the market when it was discovered to be the cause of severe birth defects (malformations of the limbs of exposed fetuses). It has been found to be useful in treating erythema nodosum leprosum, multiple myeloma, Kaposi's sarcoma, and several other cancers, and skin and immunological diseases. SEE: *phocomelia*.



This drug should not be administered to women of childbearing age.

thallium (thäl'ē-üm) [Gr. *thallos*, a young shoot] SYMB: Tl. A metallic element. Atomic weight, 204.37; atomic number, 81; specific gravity, 11.85. Its salts may be poisonous in overdose; its radioisotope is used to assess myocardial perfusion and viability.

t. 201 A radionuclide used to diagnose ischemic heart disease. When in-

jected at the peak of exercise during a graded exercise tolerance test, it circulates to the myocardium. Images of the heart can then be obtained to aid in the diagnosis of impaired coronary blood flow or prior myocardial infarction. SEE: *exercise tolerance test; redistribution*.

t. sulfate A chemical used as a rodenticide. It is also toxic to humans.

thanato- Combining form meaning *death*.

thanatognomonic (thän"ät-ög-nō-mōn'ik) [" + *gnomonikos*, knowing] Indicative of the approach of death.

thanatology (thän"ä-töl'ō-jē) [Gr. *thanatos*, death, + *logos*, word, reason] The study of death.

thanomania (thän"ä-tō-mā-nē-ä) [" + *mania*, madness] Homicidal or suicidal mania.

thanatophoric dysplasia ABBR: TD. A frequently lethal form of osteochondrodysplasia in which abnormalities of bone and cartilage development are accompanied by underdevelopment of the lungs. It is detectable in utero with prenatal ultrasound.

Thayer-Martin medium (thä'ēr-mär'tin) A special medium used for growing the causative organism of gonorrhea, *Neisseria gonorrhoeae*.

theater sign Pain in the anterior knee that is felt after prolonged sitting, a symptom sometimes reported by patients with patellofemoral pain syndrome.

thebaine (thē-bā'in) An alkaloid present in opiates and poppy seeds.

theca (thē'kā) *pl. thecae* [Gr. *theke*, sheath] A sheath or investing membrane.

thecal (thē'käl) [Gr. *theke*, sheath] Pert. to a sheath.

thecitis (thē-sī'tis) [" + *itis*, inflammation] Inflammation of the sheath of a tendon.

theco- Combining form meaning *sheath, case, receptacle*.

thecodont (thē'kō-dōnt) [Gr. *theke*, sheath, + *odous*, tooth] Having teeth that are inserted in sockets.

thecoma (thē-kō'mä) [" + *oma*, tumor] A spindle-cell tumor of the ovary often occurring during or after menopause. It is usually benign but may present with elevated serum tumor markers, adhesions to neighboring structures, or ascites, all of which may initially suggest prior to its removal that the tumor is malignant.

thecomatosis (thē'kō-mä-tō'sis) [" + " + *osis*, condition] Increased connective tissue in the ovary.

thel-, thelo- Combining forms meaning *nipple*.

thelalgia (thē-läl'jē-ä) [Gr. *thele*, nipple, + *algos*, pain] Pain in the nipples.

thelarche (thē-lär'kē) [" + *arche*, be-

ginning] The beginning of breast development, a milestone that typically occurs by about age 13 in the U.S. SEE: *pubarche*; *semenarche*.

Thelazia (thē-lā-zē-ā) [Gr. *thelazo*, to suck] A genus of nematodes that inhabit the conjunctival sac and lacrimal ducts of various species of vertebrates. Occasionally species of *Thelazia* are found in humans.

thelaziasis (thē-lā-zī-ā-sīs) [ʹ + *-iasis*, condition] Infestation by worms of the genus *Thelazia*.

theloplasty (thē-lē-plās-tē) [Gr. *thele*, nipple, + *plassein*, to form] Plastic surgery of the nipple. SYN: *mammilloplasty*.

thelitis (thē-lī-tīs) [ʹ + *itis*, inflammation] Inflammation of the nipples. SYN: *acromastitis*.

thelium (thē-lē-ūm) *pl.* **thelia** [L.] **1.** A papilla. **2.** A nipple. **3.** A cellular layer.

thelorrhagia (thē-lō-rā-jē-ā) [ʹ + *rhegynnai*, to burst forth] Bleeding from a nipple. This finding is sometimes caused by an underlying breast cancer.

thematic apperception test A projective test in which the subject is shown life situations in pictures that could be interpreted in several ways. The subject is asked to provide a story of what the picture represents. The results may provide insights into the subject's personality.

thenad (thē-nād) [Gr. *thenar*, palm, + L. *ad*, toward] Toward the palm or the thenar eminence.

thenal (thē-nāl) [Gr. *thenar*, palm] Pert. to the palm or thenar eminence.

thenar (thē-nār) [Gr. *thenar*, palm] **1.** The palm of the hand or sole of the foot. **2.** A fleshy eminence at the base of the thumb. **3.** Concerning the palm.

thenar cleft A fascial cleft of the palm overlying the volar surface of the adductor pollicis muscle.

thenar fascia A thin membrane covering the short muscles of the thumb.

theobromine (thē-ō-brō-mēn) [Gr. *theos*, god, + *broma*, food] A white powder obtained from *Theobroma cacao*, the plant from which chocolate is obtained. It dilates blood vessels in the heart and peripherally. It is used as a mild stimulant and as a diuretic.

theomania (thē-ō-mā-nē-ā) [Gr. *theos*, god, + *mania*, madness] Religious insanity; esp. that in which the patient thinks he or she is a deity or has divine inspiration.

theophylline (thē-ō-fī-lēn, -īn) [L. *thea*, tea, + Gr. *phyllon*, plant] A white crystalline powder used as an oral agent for reactive airway diseases such as asthma. The drug has a narrow therapeutic index, and toxicity to this agent, marked by gastrointestinal upset, tremor, cardiac arrhythmias, and other complications, is common in clinical

practice. Other drugs for reactive airway diseases, such as inhaled beta-agonists and inhaled steroids, are often prescribed instead of theophylline to avoid its toxicities. SEE: *aminophylline*. **theophylline poisoning** SEE: under *poisoning*.

theorem (thē-ō-rēm) [Gr. *theoremata*, principle arrived at by speculation] A proposition that can be proved by use of logic, or by argument, from information previously accepted as being valid.

Bayes' t. SEE: *Bayes' theorem*.

theory (thē-ō-rē) [Gr. *theoria*, speculation as opposed to practice] A statement that best explains all the available evidence on a given topic. If evidence that contradicts the theory becomes available, the theory must be abandoned, modified, or changed to incorporate it. When a theory becomes generally accepted and firmly established, it may be called a doctrine or principle.

activity t. A social theory of aging that asserts that the more active older persons are, the higher their life satisfaction and morale. According to this theory, individuals who are aging successfully cultivate substitutes for former societal roles that they may have had to relinquish.

t. of aging Any coherent set of concepts that explains the aging process at the cellular, biological, psychological, and sociological levels.

atomic t. **1.** The theory that all matter is composed of atoms. **2.** Theories pert. to the structure, properties, and behavior of the atom.

clonal selection t. of immunity The theory that precursor cell lines for lymphocytes are made up of innumerable clones with identical antigen receptors. The clones capable of reacting with "self" components (i.e., the individual's own cells) are eliminated or suppressed in the prenatal period. Those clones not eliminated or suppressed react only with specific foreign antigens that fit their receptors, leading to the proliferation of that lymphocyte cell line. Within the body, there are many different lymphocyte clones, each of which only reacts to one antigen (clonal restriction).

five elements t. A fundamental premise in traditional Chinese medicine and some branches of alternative medicine that holds that illness results from imbalances in these elements: wood, fire, earth, metal, and water. A similar concept in ancient Western and medieval medicine held that diseases resulted from imbalances in four elements: earth, air, fire, and water. SEE: *feng shui*.

germ t. The proposition that infectious diseases are caused by microorganisms.

grand t. A set of abstract ideas that together make a broad statement about human beings, the environment, health, or nursing. A grand theory is less abstract than a conceptual model and less concrete than a middle-range theory. Its intent is to enhance understanding of key concepts and principles within nursing, not to highlight specific concepts or variables. Grand theories cannot be tested directly. Examples include Newman's "Health as Expanding Consciousness," Parse's "Theory of Human Becoming," and Leininger's "Theory of Culture Care Diversity and Universality." SEE: *Nursing Theory Appendix*.

health belief t. A theory of how and why people choose to make healthy choices in their lives. The theory suggests that people make such decisions intentionally, evaluating their risks for diseases, the likely severity of illnesses, and the potential benefits from taking action, and that they act when they perceive a clear benefit. Other theories about healthy behavior stress physiological or psychological reasons for health-related decisions.

learning t. An approach to understanding how learning comes about by applying certain laws of learning; learning represents a change in behavior that has come about as a result of practice, education, and experience.

middle-range t. A theory comprising limited numbers of variables, each of limited scope. Middle-range theories may be descriptive, explanatory (specifying relationships between two or more concepts), or predictive (envisioning relationships between concepts or effects of certain concepts on others). Examples include the Health Belief Model, the Theory of Maternal Attachment, Erikson's Theory of Psychosocial Development, Watson's Theory of Human Caring, and Maslow's Hierarchy of Needs Theory.

nursing t. SEE: *nursing theory*.

quantum t. The proposition that energy can be emitted in discrete quantities (quanta) and that atomic particles can exist only in certain energy states. Quanta are measured by multiplying the frequency of the radiation, ν , by Planck's constant, h .

recapitulation t. The theory that during development an individual organism goes through the same progressive stages as did the species in developing from the lower to the higher forms of life; the theory that ontogeny recapitulates phylogeny.

social learning t. The theory that learning social standards and behavior occurs by observing and imitating others (e.g., family members, peers, or role models). Social learning also includes conforming, learning in context, and

modeling. Theories of social learning were developed by the American psychologist, Albert Bandura, who used them, e.g., to explain the impact of media violence on the behavior of children and adolescents.

summation t. The concept that excessive or intense stimulation of nerves will eventually produce a disagreeable sensation—the sensation of pain.

target t. A model used in radiobiology to describe cellular and chromosomal injury caused by radiation. The disruption of some intracellular targets by radiation can produce mutations; the disruption of critical targets is lethal to the cell.

Theory of Clinical Nursing A nursing theory developed by Reva Rubin that focuses on patients' experiences of tension or stress during illness. The goal of nursing is to help patients adjust to, endure through, and usefully integrate health problem situations. SEE: *Nursing Theory Appendix*.

Theory of Culture Care Diversity and Universality A nursing theory developed by Madeleine Leininger that focuses on diversities and universalities in human care. The goal of nursing is to provide culturally congruent care to people. SEE: *Nursing Theory Appendix*.

Theory of Goal Attainment A middle-range nursing theory developed by Imogene King that helps to identify the nature of nurse-client interactions leading to goal attainment. This theory concentrates on working with clients to attain, maintain, and restore health through communication, goal setting, and goal achievement. SEE: *general systems framework; Nursing Theory Appendix*.

Theory of Health as Expanding Consciousness A nursing theory developed by Margaret Newman that proposes that all people in every situation, no matter how disordered and hopeless the situation may seem, are part of a universal process of expanding consciousness. The goal of nursing is the authentic involvement of nurse and patient in a mutual relationship of pattern recognition and augmentation. SEE: *Nursing Theory Appendix*.

Theory of Human Becoming A nursing theory developed by Rosemarie Parse that focuses on the individual's experiences of health. The goal of nursing is to respect and facilitate the quality of life as perceived by the individual and the family. Also known as the Human becoming School of Thought. SEE: *Nursing Theory Appendix*.

Theory of Human Caring A nursing theory developed by Jean Watson that focuses on the transpersonal caring relationship between nurse and patient and the caring actions or interventions used by nurses. The goal of nursing is to help

individuals to gain a higher degree of harmony within the mind, body, and soul through the use of 10 curative factors or nursing interventions. SEE: *Nursing Theory Appendix*.

theory of infinitesimals One of the three "natural laws" of Samuel Hahnemann, the founder of homeopathy. He proposed that properly diluted substances become more and more powerful as remedies the more dilute they become.

Theory of Interpersonal Relations A nursing theory developed by Hildegard Peplau that identifies the three phases of the interpersonal process between the nurse and the patient: orientation, working, and termination. In this theory, the goal of nursing is to resolve the patient's perceived health difficulties. SEE: *Nursing Theory Appendix*.

Theory of Modeling and Role Modeling ABBR: MRM. A nursing theory in which the nurse uses the client's assumptions and beliefs on health and disease to plan and implement sound, holistic, and healing interventions. MRM was developed by Helen Cook Erickson, Evelyn Malcolm Tomlin, and Mary Ann Price Swain. SEE: *Nursing Theory Appendix*.

theory of planned behavior/reasoned action ABBR: TpB. A model used to explain health-seeking behavior that suggests that such behavior depends on personal intention. In this theory an intention to promote health develops from the specific attitudes one holds about the proposed choice, the social pressure one faces—e.g., from peers—if one were to make that choice, and one's sense of empowerment (i.e., the confidence one holds that one's choice will be faithfully translated into fruitful action).

theory of Psora (sō'rá) One of the three "natural laws" of Samuel Hahnemann, the founder of homeopathy; this one specifies that most chronic diseases result from suppressed itching.

Theory of the Deliberative Nursing Process A nursing theory developed by Ida Jean Orlando that focuses on how the nurse identifies patients' immediate needs for help. The goal of nursing is to identify and meet patients' immediate needs for help through use of the deliberative nursing process. SEE: *Nursing Theory Appendix*.

theotherapy (thē'ō-thēr'ă-pē) [Gr. *theos*, god, + *therapeia*, treatment] The treatment of disease by spiritual and religious methods.

thèque (tĕk) [Fr., a box] A nest of nevus cells or other cells close to the basal layer of the epidermis.

theranostics The use of diagnostic tests for specific biomarkers to stratify patients into those most likely to respond to particular treatment regimens

and to monitor the response of patients to the treatments administered.

therapeutic (thēr-ă-pū'tik) [Gr. *therapeutikos*, treating] 1. Pert. to results obtained from treatment. 2. Having medicinal or healing properties. 3. A healing agent.

therapeutic cloning The use of human embryos as a source of stem cells for the treatment of diseases and medical conditions, e.g., leukemias, Parkinson's disease, and spinal cord injury. Therapeutic cloning is banned in the U.S. and is a topic of ethical and religious debate in those countries in which it has been legalized.

therapeutic equivalents Drugs that have the same pharmacological effects and actions in the treatment of illnesses, even though the drugs may not be chemically equivalent.

therapeutic humor Humor therapy.

therapeutic misconception The mistaken impression held by patients enrolled in medical research trials that the research in which they are participating will be beneficial to them personally, e.g., that the investigation gives them their last best hope of a cure.

therapeutic radiology Radiation therapy.

therapeutic ratio The ratio obtained by dividing the effective therapeutic dose by the minimum lethal dose. SYN: *curative ratio*.

therapeutic recreation A specialized field within recreation whose specialists plan and direct recreational activities for patients recovering from physical or mental illness or who are attempting to cope with a permanent or temporary disability.

therapeutic regimen management, readiness for enhanced A pattern of regulating and integrating into daily living programs for treatment of illness and its sequelae that are sufficient for meeting health-related goals and can be strengthened. SEE: *Nursing Diagnoses Appendix*.

therapeutic regimen management: effective A pattern of regulating and integrating into daily living a program for treatment of illness and its sequelae that is satisfactory for meeting specific health goals. SEE: *Nursing Diagnoses Appendix*.

therapeutic regimen management: ineffective A pattern of regulating and integrating into daily living a program for treatment of illness and the sequelae of illness that is unsatisfactory for meeting specific health goals. SEE: *Nursing Diagnoses Appendix*.

therapeutic regimen management: ineffective community A pattern of regulating and integrating into community processes programs for treatment of illness and the sequelae of illness that is

unsatisfactory for meeting health-related goals. SEE: *Nursing Diagnoses Appendix*.

therapeutic regimen management: ineffective family A pattern of regulating and integrating into family processes a program for treatment of illness and the sequelae of illness that is unsatisfactory for meeting specific health needs. SEE: *Nursing Diagnoses Appendix*.

therapeutics (thĕr"ă-pū'tiks) [Gr. *therapeutike*, treatment] That branch of medicine concerned with the application of remedies and the treatment of disease.

Theraphosidae (thĕr"ă-fōs'ī-dē) [NL] The scientific name for the family of mildly venomous, hairy spiders known popularly as tarantulas.

therapist (thĕr'ă-pĭst) [Gr. *therapeia*, treatment] A person skilled in giving therapy, usually in a specific field of health care.

Particular therapists are listed under the first word. SEE: e.g., *occupational therapist*; *physical therapist*; *respiratory therapist*.

therapy (thĕr'ă-pē) [Gr. *therapeia*, treatment] Treatment. Particular therapies are listed under the first word. SEE: e.g., *hormone replacement therapy*; *occupational therapy*; *physical therapy*.

therapy putty The generic name for a malleable plastic material to provide resistance in various hand exercises.

therm (thĕrm) [Gr. *therme*, heat] Term used to indicate a variety of quantities of heat. SEE: *MET*.

thermocogenesis (thĕr"mă-kō-jĕn'ĕs-ĭs) [Gr. *therme*, heat, + *genesis*, generation, birth] An increase of body temperature by drug therapy or biological methods (e.g., in the past, injection of malarial parasites).

thermal (thĕr'mäl) [Gr. *therme*, heat] Pert. to heat.

thermal death point In bacteriology, the degree of heat that will kill organisms in a fluid culture in 10 min.

thermalgia (thĕr"mäl-jĕ'zē-ă) [" + *algosis*, sense of pain] Pain caused by heat. SYN: *thermoalgia*.

thermalgia (thĕr-mäl'jĕ-ă) [" + *algos*, pain] Neuralgia accompanied by an intense burning sensation, pain, redness, and sweating of the area involved. SYN: *causalgia*.

thermal sense Thermesthesia.

thermatology (thĕr-mă-tōl'ō-jĕ) [Gr. *therme*, heat, + *logos*, word, reason] The study of heat in the treatment of disease.

thermelometer (thĕr"mĕl-ōm'ĕ-tĕr) [" + *elektron*, amber, + Gr. *metron*, a measure] An electric thermometer used to indicate temperature changes too slight to be measured on an ordinary thermometer.

thermesthesia (thĕr"mĕs-thĕ'zē-ă) [" +

aisthesis, sensation] The capability of perceiving heat and cold; temperature sense. SYN: *thermal sense*; *thermoesthesia*.

thermesthiometer (thĕrm"ĕs-thĕ-zē-ōm'ĕt-ĕr) [" + *aisthesis*, sensation, + *metron*, a measure] A device for determining sensibility to heat.

thermic (thĕr'mik) [Gr. *therme*, heat] Pert. to heat.

thermic effect of food ABBR: TEF. The increase in the body's metabolic rate that is produced by the consumption, digestion, metabolism, and storage of food. Foods with relatively low thermic effects include most carbohydrates, since carbohydrates, esp. sugars, cost the body relatively little energy to digest and metabolize. Protein-rich meals have a higher TEF, which is the rationale for low-carbohydrate diets, such as the Atkins and South Beach diets. SYN: *specific dynamic action of food*.

thermic sense The temperature sense; ability to react to heat stimuli.

thermistor (thĕr-mĭs'tor) An apparatus for quickly determining very small changes in temperature. Materials that alter their resistance to the flow of electricity as the temperature changes are used in these devices.

thermo- Combining form indicating *hot*, *heat*.

thermoalgia (thĕr"mō-ăl-jĕ'zē-ă) [Gr. *therme*, heat, + *algosis*, sense of pain] Thermalgia.

thermoanesthesia (thĕr"mō-ăn"ĕs-thĕ'zē-ă) [" + " + *aisthesis*, sensation] 1. Inability to distinguish between heat and cold. 2. Insensibility to heat or temperature changes.

thermobiosis (thĕr"mō-bĭ-ō'sĭs) [" + *biosis*, way of life] The ability to withstand high temperature. **thermobiotic**, *adj.*

thermocautery (thĕr"mō-kaw'tĕr-ĕ) 1. Cautery by application of heat. 2. Cauterizing iron.

thermochemistry (thĕr"mō-kĕm'ĭs-trĕ) The branch of science concerned with the interrelationship of heat and chemical reactions.

thermochroism (thĕr-mōk'rō-ĭzm) [" + *chroa*, color] Property of a substance reflecting or transmitting portions of thermal radiation and absorbing or altering others. **thermochoic**, *adj.*

thermocoagulation (thĕr"mō-kō-ăg-ū-lă'shŭn) [" + L. *coagulatio*, clotting] The use of high-frequency currents to produce coagulation to destroy tissue. SYN: *endocoagulation*.

thermocouple (thĕr"mō-kŭ'pl) [" + L. *copula*, a bond] Thermopile.


thermocurrent (thĕr"mō-kŭr'ĕnt) An electric current produced by thermo-electric means.

thermocycler (thĕr"mō-sĭk'lĕr) A device used to heat and cool clinical and labo-

ratory specimens rapidly. It is used in polymerase chain reaction (PCR) assays.

thermode (thēr'mōd) A device for heating or cooling a part of the body.

thermodiffusion (thēr'mō-dī-fū'zhūn) Increased diffusion of a substance as a result of increased heat.

thermodilution (thēr'mō-dī-lū'shūn)  The use of an injected cold liquid such as sterile saline into the bloodstream and measurement of the temperature change downstream. This technique has been used to determine cardiac output.

thermoduric (thēr'mō-dūr'ik) Pert. to bacteria that thrive best at high temperatures between 40° and 70°C (104° and 158°F).

thermodynamics (thēr'mō-dī-nām'iks) [*'* + *dynamis*, power] The branch of physics concerned with laws that govern the production of heat and its conversion into other forms of energy.

thermoelasticity (thēr'mō-ī-lās-tīs'-ī-tē) The ability of a material (e.g., a component of a prosthesis) to stretch in response to changes in temperature.

thermoelectric (thēr'mō-ē-lēk'trik) Concerning thermoelectricity.

thermoelectricity (thēr'mō-ē-lēk-trīs'ī-tē) Electricity generated by heat.

thermoesthesia (thēr'mō-ēs-thē'zē-ā) [Gr. *therme*, heat, + *aisthesis*, sensation] Thermesthesia.

thermoexcitatory (thēr'mō-ēk-sī'tā-tor-ē) [*'* + L. *excitare*, to irritate] Stimulating the production of heat in the body.

thermogenesis (thēr'mō-jēn'ē-sīs) [*'* + *genesis*, generation, birth] The production of heat, esp. in the body.

dietary t. The heat-producing response to ingesting food. For several hours after eating, the metabolic rate increases. Heat is a by-product of the digestion, absorption, and breakdown of consumed foods, and the synthesis and storage of proteins and fats. Because the calories used in the thermic response are expended, they are not stored as fat.

nonshivering t. A limited physiological response of the newborn infant to chilling. Hypothermia stimulates sympathetic catabolism of brown fat, which is not coupled with ATP formation, and therefore releases most energy in the form of heat. Brown fat is located mainly in the neck and chest of the infant. SEE: *hypothermia*.

thermograph (thēr'mō-grāf) [*'* + *graphein*, to write] A device for registering variations of heat.

thermography (thēr'mōg'rā-fē) The detection of the heat present in body parts, such as blood vessels, muscles and tendons, or skin. Thermography has a wide range of uses. It has been employed in the study of arterial blood flow, the

cause of lameness in animals, and breast cancer.

thermohyperalgesia (thēr'mō-hī'pēr-āl-jē'zē-ā) [*'* + *hyper*, excessive, + *algesis*, sense of pain] Unbearable pain on the application of heat.

thermohyperesthesia (thēr'mō-hī'pēr-ēs-thē'zē-ā) [*'* + *hyper*, excessive, + *aisthesis*, sensation] Exceptional sensitivity to heat.

thermohypesthesia (thēr'mō-hī'pēs-thē'zē-ā) [*'* + *hypo*, below, + *aisthesis*, sensation] Diminished perception of heat.

thermoinhibitory (thēr'mō-īn-hīb'ī-tor'ē) [*'* + L. *inhibere*, to restrain] Arresting or impeding the generation of body heat.

thermolamp (thēr'mō-lāmp) [*'* + *lampe*, torch] A lamp used for providing heat.

thermology (thēr-mōl'ō-jē) [*'* + *logos*, word, reason] The science of heat.

thermoluminescent dosimeter (thēr'mō-loo-mī-nēs'ēt) A monitoring device consisting of a small crystal in a container that can be attached to a patient or to a health care worker. It stores energy when struck by ionizing radiation. When heated, it will emit light proportional to the amount of radiation to which it has been exposed.

thermolysis (thēr-mōl'ī-sis) [*'* + *lysis*, dissolution] 1. Loss of body heat, as by evaporation. 2. Chemical decomposition by heat.

thermolytic (thēr'mō-lit'ik) [*'* + *lytikos*, dissolving] Promoting thermolysis.

thermomassage (thēr'mō-mā-sāzh') Massage by use of heat.

thermometer (thēr-mōm'ē-tēr) [*'* + *metron*, measure] An instrument for indicating the degree of heat or cold.

thermometric (thēr'mō-mēt'rik), *adj.*
alcohol t. A thermometer containing alcohol.

Celsius t. A thermometric scale generally used in scientific notation. Temperature of boiling water at sea level is 100°C and the freezing point is 0°C. SYN: *centigrade thermometer*. SEE: tables.

centigrade t. Celsius t.

clinical t. A thermometer for measuring the body temperature. SEE: *clinical thermometry*.

differential t. A thermometer recording slight variations of temperature.

Fahrenheit t. A thermometric scale used in English-speaking countries, in which the boiling point is 212°F and the freezing point is 32°F. SEE: tables at *Celsius t.*

gas t. A thermometer filled with gas, such as air, helium, or oxygen.

Kelvin t. A thermometric scale in which absolute zero is 0°K; the freezing point of water is 273.15°K; and the boiling point of water is 373.15°K. Thus 1°K

Comparative Thermometric Scale

	Celsius*	Fahrenheit
Boiling point of water	100°	212°
	90	194
	80	176
	70	158
	60	140
	50	122
	40	104
Body temperature	37°	98.6°
	30	86
	20	68
	10	50
Freezing point of water	0°	32°
	-10	14
	-20	-4

*Also called *Centigrade*.

on the Kelvin scale is exactly equivalent to 1°C.

mercury t. A thermometer containing mercury for measurement of temperature. Mercury thermometers are seldom employed because they are an important source of heavy metal pollution of rivers, streams, and aquatic life.

recording t. A device with a suitable

sensor that continuously monitors and records temperature.

rectal t. A thermometer with a round bulb that is inserted into the rectum for determining body temperature.

self-registering t. A thermometer recording variations of temperature.

surface t. A thermometer for indicating the temperature of the body's surface. Used, for example, in infant warmers.

tympanic t. A thermometer that determines the temperature electronically by measuring it from the tympanic membrane of the ear. SEE: *ear thermometry; temperature, tympanic.*

wet-and-dry-bulb t. Psychrometer.

thermometer, disinfection of Disinfection of a thermometer with a substance that is able to kill ordinary bacteria and *Mycobacterium tuberculosis* as well as viruses. A variety of chemical solutions are used, but the effectiveness of these agents can be greatly diminished if the thermometer is not washed thoroughly before being disinfected.

thermometry (thér-môm'è-trè) Measurement of temperature.

clinical t. Measurement of the temperature of warm-blooded organisms, esp. humans. The oral temperature of the healthy human body ranges between 96.6° and 100°F (35.9° and 37.8°C). During a 24-hr period, a per-

Thermometric Equivalents (Celsius and Fahrenheit)

C°	F°	C°	F°	C°	F°	C°	F°
0	32	27	80.6	54	129.2	81	177.8
1	33.8	28	82.4	55	131	82	179.6
2	35.6	29	84.2	56	132.8	83	181.4
3	37.4	30	86.0	57	134.6	84	183.2
4	39.2	31	87.8	58	136.4	85	185
5	41	32	89.6	59	138.2	86	186.8
6	42.8	33	91.4	60	140	87	188.6
7	44.6	34	93.2	61	141.8	88	190.4
8	46.4	35	95	62	143.6	89	192.2
9	48.2	36	96.8	63	145.4	90	194
10	50	37	98.6	64	147.2	91	195.8
11	51.8	38	100.4	65	149	92	197.6
12	53.6	39	102.2	66	150.8	93	199.4
13	55.4	40	104	67	152.6	94	201.2
14	57.2	41	105.8	68	154.4	95	203
15	59	42	107.6	69	156.2	96	204.8
16	60.8	43	109.4	70	158	97	206.6
17	62.6	44	111.2	71	159.8	98	208.4
18	64.4	45	113	72	161.6	99	210.2
19	66.2	46	114.8	73	163.4	100	212
20	68	47	116.6	74	165.2		
21	69.8	48	118.4	75	167		
22	71.6	49	120.2	76	168.8		
23	73.4	50	122	77	170.6		
24	75.2	51	123.8	78	172.4		
25	77	52	125.6	79	174.2		
26	78.8	53	127.4	80	176		

CONVERSION: *Fahrenheit to Celsius*: Subtract 32 and multiply by 5/9. *Celsius to Fahrenheit*: Multiply by 9/5 and add 32.

son's body temperature may vary from 0.5° to 2.0°F (0.28° to 1.1°C). It is highest in late afternoon and lowest during sleep in the early hours of the morning. It is slightly increased by eating, exercising, and external heat, and is reduced about 1.5°F (0.8°C) during sleep. In disease, the temperature of the body deviates several degrees above or below that considered the average in healthy persons.

In acute infections such as meningitis or pneumonia, body temperature sometimes rises as high as 106° to 107°F (41.1° to 41.7°C).

Subnormal temperatures are sometimes seen in exposure, sepsis, or myxedema coma. In general, for every degree of fever, the pulse rises 10 beats per minute.

thermonuclear (thēr'mō-nū'klār) Pertaining to atomic reactions that result in the fission or fusion of nuclei and the release of large quantities of energy.

thermopenetration (thēr'mō-pēn-ē-trā'shūn) [*"* + *L. penetrare*, to go within] Application of heat to the deeper tissues of the body by diathermy. SEE: *thermoradiotherapy*.

thermophile (thēr'mō-fīl) *pl.* **thermophils** Organism that grows best at elevated temperatures (i.e., 40° to 70°C).

thermopile (thēr'mō-pīl) [*"* + *L. pila*, pile] A thermoelectric battery used in measuring small variations in the degree of heat. It consists of a number of connected dissimilar metallic plates. Under the influence of heat, these plates produce an electric current. SYN: *thermocouple*.

thermoplastic (thēr'mō-plās'tik) Concerning or being softened or made malleable by heat.

thermoradiotherapy (thēr'mō-rā'dē-ō-thēr'ā-pē) [*"* + *L. radius*, ray, + *Gr. therapeia*, treatment] Application of heat to the deep tissues by diathermy. SYN: *thermopenetration*.

thermoreception The ability to detect or sense heat.

thermoreceptor (thēr'mō-rē-sēp'tor) [*"* + *L. receptor*, a receiver] A sensory receptor that is stimulated by a rise of body temperature.

thermoregulation (thēr'mō-rēg'ū-lā'shūn) Heat regulation.

ineffective t. The state in which the individual's temperature fluctuates between hypothermia and hyperthermia. SEE: *Nursing Diagnoses Appendix*.

thermoregulatory (thēr'mō-rēg'ū-lā-tor'ē) Pert. to the regulation of temperature, esp. body temperature.

thermoreistant (thēr'mō-rē-zis'tánt) [*"* + *L. resistentia*, resistance] An ability to survive in relatively high temperature; characteristic of some types of bacteria.

thermostabile (thēr'mō-stā'bīl) [*"* + *L.*

stabilis, stable] Not changed or destroyed by heat.

thermostat (thēr'mō-stāt) [*"* + *statio*, standing] An automatic device for regulating the temperature.

thermotaxis (thēr'mō-tāks'is) [*"* + *taxis*, arrangement] **1.** Regulation of bodily temperature. **2.** The movement of certain organisms or cells toward (positive thermotaxis) or away from (negative thermotaxis) heat.

thermotherapy (thēr'mō-thēr'ā-pē) [*"* + *therapeia*, treatment] The therapeutic application of heat to the body, or to specific diseased tissues. Heat may be applied with many modalities ranging from hot water bottles to lasers or ultrasound.

thermotolerant (thēr'mō-tōl'ēr-ánt) [*"* + *L. tolerare*, to tolerate] Able to live normally in high temperature.

thermotonometer (thēr'mō-tō-nōm'ē-tēr) [*"* + *tonos*, tension, + *metron*, measure] A device for measuring muscle contraction caused by heat stimuli.

theroid (thé'royd) [*Gr. theriodes*, beast-like] Having animal instincts and characteristics.

thiaminase (thī-ām'ī-nās) An enzyme that hydrolyzes thiamine.

thiamine hydrochloride (thī'ā-mīn, -mēn') [*"* + *"*] C₁₂H₁₇ClN₄OS·HCl; a water-soluble, white crystalline compound that occurs naturally or can be synthesized. It is found in a wide variety of foods including sunflower seeds, pork, whole and enriched grains, legumes, brewers yeast, and fortified baked goods. The daily requirement for adults is 1.2 mg/day for men and 1.1 mg/day for women. SYN: *vitamin B₁*.

FUNCTION: It acts as a coenzyme of carboxylases in the decarboxylation of pyruvic acid and is therefore essential for the liberation of energy and the transfer of pyruvic acid into the Krebs cycle.

DEFICIENCY SYMPTOMS: Symptoms may include fatigue, muscle tenderness and increased irritability, disturbances of extraocular movement, loss of appetite, or cardiovascular disturbances. Alcoholics are especially prone to develop thiamine deficiency. Prolonged severe deficiency (e.g., during starvation) results in beriberi.

thiamine pyrophosphate (thī'ā-mīn, -mēn' pī'rō-fōs'fāt') An enzyme important in carbohydrate metabolism. It is the active form of thiamine. In people suspected of malnutrition, administering thiamine before the infusion of glucose-containing solutions prevents brain damage (Wernicke-Korsakoff's encephalopathy). SYN: *cocarboxylase*.

thiazolidinedione (thī'ā-zō'li-dēn-dī-ōn) A class of oral hypoglycemic agents that lowers blood sugars by reducing insulin resistance (improving tissue sensitivity

to the effects of insulin) in fat and muscle, as well as the liver. A commonly used agent in this class is pioglitazone.



Side effects of medications in this class include increased fluid retention, fractures, heart failure, liver injury, and weight gain.

thickened liquids A diet designed to prevent aspiration in patients with dysphagia. Solid particles that make liquids more viscous are added to liquid nutrients to achieve dense but pourable liquids, or liquids that have the consistency of honey or pudding, depending on the patient's needs.

thienopyridines (thī-ē-nō-pīr'ā-dēnz) Any of a group of drugs that block the aggregation of platelets. Drugs in this class are used to prevent arterial clotting and are effective in the prevention of strokes, heart attacks, stent thromboses, and peripheral arterial disease. Examples include ticlopidine and clopidogrel. Their most common side effect is bleeding.

thigh (thī) [AS. *theoh*] The proximal portion of the lower extremity; the portion lying between the hip joint and the knee. SEE: *femur*; *hip*; *pectineus*; *sartorius*.

thigmesthesia (thīg'mēs-thē'zē-ā) [Gr. *thigma*, touch, + *aisthesis*, sensation] Sensitivity to touch.

thigmotaxis (thīg'mō-tāks'is) ["/ + *taxis*, arrangement] The negative or positive response of certain motile cells to touch.

thigmotropism (thīg-mōt'rō-pīzm) ["/ + *tropos*, a turning, + *-ismos*, condition] The response of certain motile cells to move toward something that touches them.

thimerosal (thī-mēr'ō-sāl) An organic mercurial antiseptic used topically and as a preservative in pharmaceutical preparations.



Children and pregnant women should not be given immune globulin or vaccinations that use thimerosal as a preservative.

thin basement membrane disease Benign familial hematuria.

thinking Intellectual activity. Thinking includes the interpretation and ordering of symbols, learning, planning, forming ideas and opinions, organizing information, and problem solving.

abstract t. The ability to calculate, sort, categorize, conceptualize, draw conclusions, or interpret and condense complex ideas. In clinical medicine, abstract thinking is assessed by asking patients to interpret proverbs. Patients

with dementia or other cognitive deficits may fail to do so, as they fail to see the relationships between similar objects and ideas.

concrete t. Thinking in simple, tangible, real, or nonidealized terms, without drawing relations between objects or concepts.

critical t. A purposeful approach to problem solving that relies on flexibility, creativity, perspective, and communication to achieve desired outcomes. Critical thinking focuses on goals rather than processes or tasks.

thiocyanate (thī'ō-sī'ā-nāt) Any compound containing the radical —SCN.

thiogenic (thī'ō-jēn'ik) [Gr. *theon*, sulfur, + *gennan*, to produce] Able to convert hydrogen sulfide into more complex sulfur compounds, said of bacteria in the water of some mineral springs.

thioglycosidase (thī'ō-glū-kō'si-dās) An enzyme that catalyzes the hydrolysis of thioglycoside to a thiol and a sugar.

thiopeptic, thiopexic (thī-ō-pēk'tik, -pēks'ik) ["/ + *pexis*, fixation] Pert. to the fixation of sulfur.

thiophil, thiophilic (thī'ō-fil, thī'ō-fil'ik) [Gr. *theon*, sulfur, + *philein*, to love] Thriving in the presence of sulfur or its compounds, which is true of some bacteria.

thiosulfate (thī'ō-sūl'fāt) Any salt of thiosulfuric acid.

thiourea (thī'ō-ūr-ē'ā) [Gr. *theon*, sulfur, + *ouron*, urine] H_2NCSNH_2 ; A colorless crystalline compound of urea in which sulfur replaces the oxygen. SYN: *sulfourea*.

third-party payer An entity (other than the patient or the health care provider) that reimburses and manages health care expenses. Third-party payers include insurance companies, governmental agencies, and employers.

thirst [AS. *thurst*] The sensation resulting from the lack of adequate body water or desire for liquids. Excessive thirst may be an early symptom of diabetes as the kidneys excrete extra water in an effort to decrease circulating glucose levels. Thirst is common following fever, vomiting, diarrhea, bleeding, vigorous exercise, or other causes of hypovolemia or hyperosmolality. In addition, thirst may be associated with the use of diuretics, tricyclic antidepressants, and some antihistamines, among other drugs.

thirteenth step A colloquial term for sexual intercourse between two members of a 12-step recovery program to treat addiction.

thixolabile (thīk'sō-lā'bīl) Esp. susceptible to being changed by shaking.

thixotropy (thīks-ōt'rō-pē) [Gr. *thixis*, a touching, + *trope*, turning] The property of certain gels in which they liquefy

when agitated and revert to a gel on standing.

Thomas splint (tōm'ūs) [Hugh Owen Thomas, Brit. orthopedic surgeon, 1834–1891] A splint originally developed to treat hip-joint disease. It is now used mainly to place traction on the leg in its long axis, in treating fractures of the upper leg. It consists of a proximal ring that fits around the upper leg and to which two long rigid slender steel rods are attached. These extend down to another smaller ring distal to the foot.

Thomas test A test used to identify hip flexor contractures. Lying supine with the legs off the end of the table, the patient flexes the knee and tries to pull the thigh to the chest. Inability to perform this maneuver or extension of the opposite knee indicates tightness of the iliopsoas or rectus femoris muscle.

Thompson test (tōmp'sōn) A test to evaluate the integrity of the Achilles tendon. The patient kneels on the examination table with the feet hanging off; the examiner squeezes the calf while observing for plantar flexion. The result is positive if there is no movement of the foot; this indicates an Achilles tendon rupture.

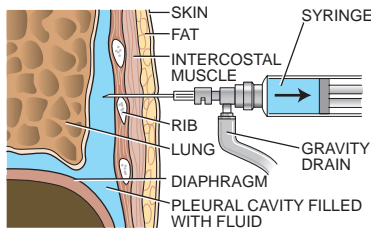
Thomsen's disease (tōm'sēnz) [Asmus Julius Thomsen, Danish physician, 1815–1896] Myotonia congenita.

thorac- SEE: *thoraco-*.

thoracalgia (thō'rāk-āl'jē-ă) [Gr. *thorax*, chest, + *algos*, pain] Thoracic pain.

thoracotomy (thō'ră-sĕk'tō-mē) [" + *ektome*, excision] Incision of the chest wall with resection of a portion of rib.

thoracentesis (thō'ră-sĕn-tē'sis) [" + *kentesis*, a puncture] Inserting a needle through the chest wall and into the pleural space, usually to remove fluid for diagnostic or therapeutic purposes. SYN: *pleurocentesis*; *thoracocentesis*. SEE: *illus.*



THORACENTESIS

The needle is inserted just above the rib to avoid the neurovascular bundle beneath each rib

PATIENT CARE: Before the procedure, the patient is carefully examined, a history is taken, and radiological studies, such as chest x-rays or ultrasonograms, are reviewed. The procedure

should be explained to the patient and sensation information provided (stinging with anesthesia instillation). The risks (e.g., bleeding, puncture of the lung with subsequent lung collapse, or introduction of infection), as well as the benefits and alternatives to the procedure, should be carefully reviewed. If the patient wishes to proceed, a consent form with the patient's signature must be completed. Allergies to local anesthetics are noted. Baseline vital signs will be obtained and supplemental oxygen administered. Cardiac monitoring is usually performed. A nurse or respiratory therapist may assist the physician and support the patient throughout the procedure. Equipment is assembled for the procedure, and in most instances, the fluid is identified with ultrasound to avoid injury to the liver, lung, or other tissues. The patient is positioned to make pleural fluid accessible to the examiner.

The patient's skin is prepared per protocol, the area is draped, and local anesthesia is injected subcutaneously. After allowing a short time for this to become effective, the thoracentesis needle is inserted above the rib to avoid damaging intercostal vessels, which run in a neurovascular bundle beneath each rib. The patient is advised not to move, cough, or take a deep breath during the procedure to reduce the risk of injury. When the needle contacts the fluid pocket, fluid can be withdrawn by gravity drainage or with suction.

During thoracentesis, health care professionals should assess the patient for difficulty breathing, dizziness, faintness, chest pain, nausea, pallor or cyanosis, weakness, sweating, cough, alterations in vital signs, oxygen saturation levels, or cardiac rhythm. An occlusive dressing should be applied to the puncture site as the needle or cannula is removed, preventing air entry. The fluid obtained is labeled and sent for diagnostic tests as ordered (typically Gram stain, cultures, cell count, measurements of fluid chemistries, pH, and, when appropriate, cytology). The amount, color, and character of the fluid is documented, along with the time of the procedure, the exact location of the puncture, and the patient's reaction. After the procedure, a chest x-ray is often obtained to assess results or determine if any injury has occurred (e.g., pneumothorax). The patient should be positioned comfortably. Vital signs are monitored until stable, then as needed. The patient is advised to call for assistance immediately, if difficulty in breathing or pleuritic pain is experienced.

thoraci- SEE: *thoraco-*.

thoracic (thō-rās'ik) [Gr. *thorax*, chest] Pert. to the chest or thorax.

thoracic cage The bony structure surrounding the thorax, consisting of the 12 paired ribs, the thoracic vertebrae, and the sternum.

thoracic duct The main lymphatic duct, originating at the cisterna chyli in the abdomen. It passes upward through the diaphragm into the thorax, continuing upward alongside the aorta and esophagus to the neck, where it turns to the left and enters the left subclavian vein near its junction with the left internal jugular vein. It receives lymph from all parts of the body except the right side of the head, neck, thorax, and upper extremity. SEE: *lymphatic system* for illus.

thoracic gas volume ABBR: VTG. The volume of gas contained within the chest during body plethysmography when the mouth shutter is closed. This measurement is a rough estimate of the functional residual capacity of the lung.

thoracic limb SEE: under *limb*.

thoracic outlet compression syndrome, thoracic outlet syndrome ABBR: TOS. A symptom complex caused by the compression of nerves and/or vessels in the neck, such as by the first rib pressing against the clavicle or entrapment of brachial nerves and vessels between the pectoralis minor muscle and the ribs. It is marked by brachial neuritis with or without vascular or vasomotor disturbance in the upper extremities. The practitioner must differentiate TOS from cervical disk lesions, osteoarthritis affecting cervical vertebrae, bursitis, brachial plexus injury, angina, lung cancer, and carpal tunnel syndrome.

thoracic squeeze Compression of the lungs and rupture of alveolar capillaries as a result of breath holding during deep underwater diving.

thoracic surgery Surgery involving the rib cage and structures contained within the chest. It is used to biopsy or remove masses in the hilum, lung, or mediastinum, to drain abscesses or treat empyema, to repair cardiac valves or vessels, or to implant devices, such as cardioverter/defibrillators in the chest.

PATIENT CARE: *Preoperative:* Preparation involves the usual preoperative teaching, with special emphasis on breathing and coughing, incentive spirometry, incisional splinting, pain evaluation, invasive and noninvasive relief measures that will be available, and basic information about the chest drainage tube and system that will be required in most such surgeries. The health care professional should encourage the patient to voice fears and concerns, allay misapprehensions, and correct misconceptions. *Postoperative care:* All general patient care concerns apply. Vital signs and breath sounds should be monitored. Water-seal chest drainage

should be maintained as prescribed, and the volume and characteristics of drainage should be monitored. The health care professional should maintain sterile impervious wound dressings; provide analgesia and comfort measures to ensure patient cooperation with respiratory toilet, exercises, and rest and activity; provide emotional support and encouragement; and provide instructions to be followed by the patient and family after discharge and follow-up care. As necessary, the respiratory therapist provides mechanical ventilation in the immediate postoperative period and evaluates the patient for weaning from the ventilator.

thoraco-, thorac-, thoraci- Combining forms meaning *chest, chest wall*.

thoracoacromial (thō'rá-kō-á-krō'mē-ál) Concerning the thorax and acromion.

thoracoceloschisis (thō'rāk-ō-sē-lōs'kī-sīs) [Gr. *thorakos*, chest, + *koiilia*, belly, + *schisis*, a splitting] A congenital fissure of the thoracic and abdominal cavities.

thoracodelphus (thō'rāk-ō-dēl'fūs) [" + *adelphos*, brother] A deformed fetus with a single head and thorax, but four legs.

thoracodynia (thō'rāk-ō-dīn'ē-ā) [" + *odyne*, pain] Thoracic pain.

thoracograph (thō'rāk-ō-gräf) [" + *graphein*, to write] A device for plotting and recording the contour of the thorax and its change during inspiration and expiration.

thoracolumbar (thō'rāk-ō-lūm'bar) [" + *L. lumbus*, loin] Pert. to the thoracic and lumbar parts of the spinal cord; denoting their ganglia and the fibers of the sympathetic nervous system.

thoracolysis (thō'rāk-ōl'i-sīs) [" + *lysis*, dissolution] Pneumolysis.

thoracometer (thō'rāk-ōm'ē-tēr) [Gr. *thorakos*, chest, + *metron*, measure] A device for measuring the expansion of the chest.

thoracometry (thō'rāk-ōm'ēt-rē) [" + *metron*, measure] The measurement of the thorax.

thoracomylodynia (thō'rāk-ō-mī'ō-dīn'ē-ā) [" + *mys*, muscle, + *odyne*, pain] Pain in the chest muscles.

thoracopathy (thō'rāk-ōp'ā-thē) [" + *pathos*, disease, suffering] Any disease of the thorax, thoracic organs, or tissues.

thoracoplasty (thō'rāk-ō-plās'tē, thō'rāk-ō-plās'tē) [" + *plassein*, to form] A plastic operation on the thorax; removal of portions of the ribs in stages to collapse diseased areas of the lung. It has been used on occasion to manage empyema or pulmonary tuberculosis, among other illnesses. SEE: *empyema*.

thoracopneumoplasty (thō'rāk-ō-nū'mō-plās-tē) [" + *pneumon*, lung, + *plas-*

sein, to form] Plastic surgery involving the chest and lung.

thoracoschisis (thō'ra-kōs'kī-sīs) [" + *schisis*, a splitting] A congenital fissure of the chest wall.

thoracoscope (thō-rā'kō-skōp, -rāk'ō-skōp) [" + *skopein*, to examine] An endoscope used to inspect the lungs, pleura, and other chest structures. It is inserted into the pleural space via an incision made through the chest wall.

thoracoscopy (thō'ra-kōs'kō-pē) A diagnostic examination and/or therapeutic procedure within the pleural cavity with an endoscope.

thoracostenosis (thō'ra-kō-stēn-ō'sīs) [" + *stenosis*, act of narrowing] Narrowness of the thorax due to atrophy of trunk muscles.

thoracostomy (thō'rāk-ōs'tō-mē) [" + *stoma*, mouth] Incision into the chest wall, usually followed by insertion of a tube between the pleurae and a system for draining fluid from that space.

thoracostomy tube A tube inserted into the pleural space via the chest wall to remove air or fluid present in the space.

thoracotomy (thō'rāk-ōt'ō-mē) [" + *tome*, incision] Surgical incision of the chest wall. **SEE:** *illus.*



THORACOTOMY SCAR

thorax (thō'rāks) *pl.* **thoraces, thoraxes** [Gr., chest] That part of the body between the base of the neck superiorly and the diaphragm inferiorly. **SYN:** *chest*. **SEE:** *rib*.

The surface of the thorax is divided into regions as follows: *Anterior surface:* supraclavicular, above the clavicles; suprasternal, above the sternum; clavicular, over the clavicles; sternal, over the sternum; mammary, the space between the third and sixth ribs on either side; inframammary, below the mammae and above the lower border of the 12th rib on either side. *Posterior surface:* scapular, over the scapulae; interscapular, between the scapulae; infrascapular, below the scapulae. *On sides:* axillary, above the sixth rib.

barrel-shaped t. A malformed chest rounded like a barrel, seen in advanced pulmonary emphysema.

bony t. The part of the skeleton that is made up of the thoracic vertebrae, 12 pairs of ribs, and the sternum.

Peyrot's t. A chest that has an obliquely oval deformed shape, seen with large pleural effusions.

thorium (thō'rē-ūm) **SYMB:** Th. A radioactive metallic element. Atomic weight, 232.038; atomic number, 90. At one time, it was used to outline blood vessels in radiography.

thoron (thō'rōn) **SYMB:** Tn. A radioactive isotope of radon having a half-life of 51.5 sec; atomic weight, 220; atomic number, 86.

thought processes, disturbed A state in which an individual experiences a disruption in cognitive operations and activities. **SEE:** *Nursing Diagnoses Appendix*.

thr threonine.

thread (thrēd) **1.** Any thin filamentous structure (e.g., a stringy substance present in the urine in some infectious diseases of the urinary tract). **2.** Suture material.

threadworm (thrēd'wūrm") Any long, slender nematode worm. **SEE:** *Enterobius*.

three-day fever Sandfly fever.

three-day measles A colloquial term for rubella.

three-glass test A test to identify the site of a urinary tract infection. On awakening, the patient empties the bladder by passing urine sequentially into three test tubes (glasses). The amount of cellular debris visible to the naked eye in the glasses helps to determine whether the infection is located in the anterior urethra, posterior urethra, or prostate. If the first glass is turbid and the other two are clear, the anterior urethra is inflamed but the rest of the urinary tract is clear. If the initial specimen is clear and the second and third ones are turbid, the posterior urethra or prostate is inflamed. If only the third specimen is turbid, then only the prostate is inflamed.

threonine (thrē'ō-nīn) **ABBR:** thr. C₄H₉NO₃ Alpha-amino-beta-hydroxybutyric acid, an essential amino acid.

threshold (thrēsh'ōld) [AS. *therscold*] **1.** Point at which a psychological or physiological effect begins to be produced. **2.** A measure of the sensitivity of an organ or function that is obtained by finding the lowest value of the appropriate stimulus that will give the response.

absolute t. The lowest amount or intensity of a stimulus that will give rise to a sensation or a response.

acoustic reflex t. The decibel level that provokes reflex contraction of the stapedius muscle. Tests that measure the triggering of the acoustic stapedius

reflex are used to determine the presence of sensorineural hearing loss.

anaerobic t. The point at which increased carbon dioxide production and minute ventilation result from increased levels of lactic acid during exercise.

auditory t. Minimum audible sound perceived.

t. of consciousness SEE: under *consciousness*.

differential t. The lowest limit at which two stimuli can be differentiated from each other.

erythema t. The stage of ultraviolet skin injury in which erythema of the skin due to radiation begins.

ketosis t. The lower limit at which ketone bodies (acetoacetic acid, hydroxybutyric acid, and acetone), on their accumulation in the blood, are excreted by the kidney. At that point, ketone bodies are being produced faster by the liver than the body can oxidize them.

pain t. Pain threshold.

renal t. The concentration at which a substance in the blood normally not excreted by the kidney begins to appear in the urine. The renal threshold for glucose is 160 to 180 mg/dl.

sensory t. The minimal stimulus for any sensory receptor that will give rise to a sensation.

viability t. The body weight or gestational age of an infant below which the ability to survive is doubtful.

threshold dose Minimal erythema dose.

threshold substance A substance present in the blood that, on being filtered through glomeruli of the kidney, is reabsorbed by the tubules up to a certain limit, that being the upper limit of the concentration of the substance in normal plasma. High-threshold substances (e.g., chlorides or glucose) are entirely or almost entirely reabsorbed. Low-threshold substances (e.g., phosphates or urea) are reabsorbed in limited quantities. No-threshold substances (e.g., creatinine sulfate) are excreted entirely.

thrifty Thriving, growing vigorously, and being healthy, esp. when assessing the health status of animals or plants.

thrill (thrĭl) [ME. *thrillen*, to pierce]

1. An abnormal tremor accompanying a vascular or cardiac murmur felt on palpation. SYN: *fremitus*. **2.** A tingling or shivering sensation of tremulous excitement as from pain, pleasure, or horror.

aneurysmal t. A thrill felt on palpation of an aneurysm.

aortic t. A thrill perceived over the aorta or aortic valve.

arterial t. A thrill perceived over an artery.

diastolic t. A thrill perceived over the heart during ventricular diastole.

hydatid t. A peculiar tremor felt on palpation of a hydatid cyst.

presystolic t. A thrill sometimes felt over the apex of the heart preceding ventricular contraction.

systolic t. A thrill felt during systole over the precordium. It may be associated with aortic or pulmonary stenosis or an interventricular septal defect.

thrix (thriks) Hair.

t. annulata Hair with light and dark segments alternating along the shaft.

-thrix [Gr. *thrix*, hair] A word ending indicating hair.

throat (thröt) [AS. *throte*] **1.** The pharynx and fauces. **2.** The cavity from the arch of the palate to the glottis and superior opening of the esophagus. **3.** The anterior portion of the neck. **4.** Any narrow orifice.

throat, foreign bodies in The presence of foreign objects in the pharynx or throat. Symptoms depend somewhat on the location and size of the foreign body, and vary from simple discomfort to severe coughing and difficulty in breathing. If the airway is obstructed, suffocation occurs, resulting in unconsciousness and death.

FIRST AID: If complete airway obstruction is present, as evidenced by an inability to speak, breathe, or cough, the Heimlich maneuver should be performed. This consists of wrapping one's arms around the victim's waist from behind; making a fist with one hand and placing it against the victim's abdomen between the navel and rib cage; and clapping the fist with the free hand and pressing in with a quick, forceful upward thrust. This may be repeated several times if necessary. If the airway remains obstructed, tracheostomy will be required to save the patient's life. SEE: *Heimlich maneuver* for illus.



The Heimlich maneuver should not be performed unless complete airway obstruction is present. If the patient can cough, this maneuver should not be performed. In infants, extremely obese patients, and obviously pregnant patients, chest thrusts are used instead of abdominal thrusts to facilitate removal of the obstruction.

throb (thröb) [ME. *throbben*, of imitative origin] **1.** A beat or pulsation, as of the heart. **2.** To pulsate.

throbbing (thröb'ing) Pulsation.

Throckmorton's reflex (throk'mor'tünz) [Thomas Bentley Throckmorton, U.S. neurologist, 1885–1961] The extension of the great toe and flexion of the other toes when the dorsum of the foot is percussed in the metatarsophalangeal region.

thrombase (throm'bäs) Thrombin.

thrombasthenia (thrŏm"bās-thē'nē-ā) [Gr. *thrombos*, clot, + *asthēnia*, weakness] A bleeding disorder caused by abnormal platelet function characterized by abnormal clot retraction, prolonged bleeding time, and lack of aggregation of the platelets.

thrombectomy (thrŏm-bĕk'tō-mē) [" + *ektome*, excision] Surgical removal of a thrombus.

thrombi (thrŏm'bī) Pl. of thrombus.

thrombin (thrŏm'bīn) [Gr. *thrombos*, clot] **1.** An enzyme formed in coagulating blood from prothrombin, which reacts with soluble fibrinogen converting it to fibrin, which forms the basis of a blood clot. SEE: *coagulation, blood*. **2.** A sterile protein prepared from prothrombin of bovine origin. It is used topically to control capillary oozing during surgical procedures. When used alone, it is not capable of controlling arterial bleeding.

topical t. A type of fibrin glue that may be applied locally (not injected) to a bleeding wound to stop blood loss.

thrombo- Combining form meaning *clot*.
thromboangiitis (thrŏm"bō-ān"jē-ī'tīs) [Gr. *thrombos*, clot, + *angeion*, vessel, + *itis*, inflammation] Inflammation of the intimal layer of a blood vessel, with clot formation. SEE: *thrombosis*.

t. obliterans Buerger's disease. SEE: under *Buerger, Leo*.

thromboarteritis (thrŏm"bō-ār-tĕ-rī'tīs) [" + *arteria*, artery, + *itis*, inflammation] Inflammation of an artery in connection with thrombosis. SYN: *thromboendarteritis*.

thromboclasia (thrŏm-bŏk'lā-sīs) [" + *klasis*, a breaking] Thrombolysis.

thromboclastic (thrŏm"bō-klās'tik) Thrombolytic.

thrombocyst (thrŏm"bō-sīst) [Gr. *thrombos*, clot, + *kystis*, a sac] A membranous sac enveloping a thrombus. SYN: *thrombocystis*.

thrombocystis (thrŏm"bō-sī'tīs) Thrombocyst.

thrombocyte (thrŏm"bō-sīt) [" + *kytos*, cell] Platelet.

thrombocythemia (thrŏm"bō-sī-thē'mē-ā) [" + " + *haima*, blood] An absolute increase in the number of platelets in the blood.

thrombocytolysis (thrŏm"bō-sī-tŏl'ī-sīs) [" + " + *lysis*, dissolution] Dissolution of thrombocytes.

thrombocytopathy (thrŏm"bō-sī-tŏp'ā-thē) [" + " + *pathos*, disease, suffering] Deficient function of platelets.

thrombocytopenia (thrŏm"bō-sī'tŏ-pĕ-nē-ā) [" + " + *penia*, lack] An abnormal decrease in the number of platelets. SYN: *thrombopenia*.

ETIOLOGY: Acute infections (e.g., sepsis), chronic infections (e.g., HIV), drugs (e.g., alcohol, heparin, or chemotherapy agents), immune disorders

(e.g., idiopathic thrombocytopenic purpura), leukemia and aplastic anemia, and portal hypertension (e.g., in cirrhosis) can all cause low platelet counts. Because platelets play a vital role in blood clotting, low levels may increase the risk of bleeding. Platelet counts below 50,000/mm³ increase the risk of hemorrhage with minor trauma; spontaneous bleeding can occur when less than 20,000 are present in a milliliter of blood. Treatment is directed at removing offending drugs or managing the underlying condition.

PATIENT CARE: The patient is watched for evidence of internal hemorrhage, esp. intracranial bleeding, as well as hematuria, hematemesis, bleeding gums, abdominal distention, melena, prolonged menstruation, epistaxis, ecchymosis, petechiae, or purpura, and is handled carefully (e.g., during blood drawing) to prevent trauma and hemorrhage. Bleeding is controlled by applying pressure to bleeding sites for at least 20 min. If arterial blood collection is necessary (i.e., for blood gases), a patient care plan should be developed with the physician and the laboratory/blood collection staff to ensure that occult bleeding does not occur. The patient's head should be elevated when lying down. Use of a soft toothbrush or sponge stick helps to prevent injury to oral tissues. Dental flossing is avoided. Normal saline (0.9%) nasal spray or use of a humidifier moistens nasal passages and helps to prevent nosebleeds. An electric razor should be used for shaving. Stools are tested for occult bleeding. Straining at stool and coughing are discouraged; stool softeners are provided as necessary. The patient is advised never to go barefoot and to wear properly fitting shoes and socks.

During periods of active bleeding, bedrest is maintained. Platelet transfusions are administered as prescribed, and the patient is observed for chills, rigors, fever, or allergic reactions. Acetaminophen and diphenhydramine may prevent or relieve minor transfusion reactions. The platelet growth factor oprelvekin (Neumega) may be prescribed to reduce the need for platelet transfusions after chemotherapy. Aspirin and other nonsteroidal anti-inflammatory agents should be avoided, as well as herbs such as feverfew, ginkgo, ginseng, and kava because these substances may inhibit platelet function. Drugs like corticosteroids, immunoglobulin, or gamma globulin may be prescribed to decrease platelet destruction in immune-mediated thrombocytopenia. Folate stimulates bone marrow production of platelets in patients with folate deficiency. When splenectomy is performed to decrease platelet destruc-

tion, preoperative and postoperative nursing care is provided as required.

gestational t. An abnormally low platelet count occurring during pregnancy (usually less than 70,000 platelets/mm³). Serious illnesses that cause low platelet counts (e.g., disseminated intravascular coagulation, HELLP syndrome, idiopathic thrombocytopenic purpura, pre-eclampsia, systemic lupus erythematosus, or leukemia) should be ruled out. If no illness is present, the condition is usually benign.

heparin-induced t. A decrease in the platelet count caused by an immune reaction to heparin. It may lead to widespread or potentially life-threatening blood clotting rather than bleeding. SEE: *white-clot syndrome*.



Patients whose platelet counts drop significantly during exposure to heparin should discontinue the drug immediately.

thrombocytopoiesis (thrŏm'bŏ-sī'tŏ-pŏy-ē'sīs) [" + " + *poiesis*, production] The formation of platelets.

thrombocytosis (thrŏm'bŏ-sī'tŏ'sīs) [" + *kytos*, cell] An increase in the number of platelets.

thromboelastogram (thrŏm'bŏ-ē-lās'tŏ-grām) ABBR: TEG. A device used to determine the presence of intravascular fibrinolysis and to monitor the effect of antifibrinolytic therapy on the formation and dissolution of clots.

thromboembolism (thrŏm'bŏ-ēm'bŏ-lizm) [" + *embolos*, thrown in, + *-ismos*, condition] The blocking of a blood vessel by a clot (or part of a clot) that has broken off from the place where it formed and traveled to another organ. SYN: *embolic thrombosis*.

thromboendarterectomy (thrŏm'bŏ-ēnd'ār-tēr-ēk'tŏ-mē) [" + *endon*, within, + *arteria*, artery, + *ektome*, excision] Surgical removal of a thrombus from an artery, and removal of the diseased intima of the artery.

thromboendarteritis (thrŏm'bŏ-ēnd-ār'tēr-ī'tīs) [" + " + " + *itis*, inflammation] Thromboarteritis.

thromboendocarditis (thrŏm'bŏ-ēn'dŏ-kār-dī'tīs) [" + *endon*, within, + *kardia*, heart, + *itis*, inflammation] Formation of a clot on an inflamed surface of a heart valve.

thromboerythrocyte (thrŏm'bŏ-ēr-īth'rŏ-sīt) [" + "] A synthetic blood product consisting of red blood cells to whose surface a peptide with the following amino acid sequence (arginine-glycine-aspartic acid) has been covalently bonded. Such cells aggregate with activated platelets and may be used as platelet substitutes in patients with severe platelet deficiencies.

thrombogenesis (thrŏm'bŏ-jĕn'ĕ-sīs) [" + *genesis*, generation, birth] The formation of a blood clot.

thrombogenic (thrŏm'bŏ-jĕn'ĭk) [" + "]
1. Capable of producing a blood clot.
2. Likely to produce a blood clot.

thromboid (thrŏm'boyd) [" + *eidōs*, form, shape] Resembling a thrombus or clot.

thrombokinase (thrŏm'bŏ-kīn'ās) [" + *kinesis*, movement] Obsolete term for the 10th blood coagulation factor (factor X) or Stuart factor.

thrombokinesis (thrŏm'bŏ-kī-nē'sīs) [" + *kinesis*, movement] The coagulation of the blood.

thromboectomy (thrŏm'bŏ-lĕk'tŏ-mē) Surgical removal of a blood clot.

thrombolympangitis (thrŏm'bŏ-līm'fān-jī'tīs) [" + L. *lymphā*, lymph, + Gr. *angeion*, vessel, + *itis*, inflammation] Inflammation of a lymphatic vessel due to obstruction by thrombus formation.

thrombolysis (thrŏm-bŏl'ī-sīs) [" + *lysis*, dissolution] The breaking up of a thrombus. Thrombolytic enzyme therapy is used for lysis of thrombi obstructing coronary arteries in acute MI, management of acute massive pulmonary embolism, acute ischemic stroke within 3 hr of symptom onset, after intracranial bleeding has been ruled out, and to lyse deep vein thrombosis via catheter-directed delivery. SYN: *thrombolysis*.

PATIENT CARE: The health care provider should obtain a complete history of previous illnesses before administering thrombolytic drugs. Recent surgeries, traumatic events, and invasive procedures are all contraindications to their use, as are uncontrolled hypertension, the presence of brain tumors, a history of abnormal bleeding, pregnancy, and other conditions. In ischemic stroke, the strict time limit for use of thrombolysis is within 3 hr of initial symptoms. Usage later in the course leads to increased risk of intracranial bleeding and death. The use and administration of the drug should be explained to the patient and family. Each thrombolytic enzyme has specific instructions for reconstitution and dosing, and all are administered intravenously. The drugs should be given through a dedicated IV catheter and line, and administered via an infusion controller. Health care professionals should be prepared to initiate anticoagulant and antiplatelet therapy as prescribed during or immediately after thrombolytic treatment to decrease the risk of rethrombosis. The patient's vital signs, heart rhythm, and neurologic status require intensive monitoring throughout and following therapy. Strict bedrest is required. In patients treated for acute myocardial infarction, reperfusion-in-

duced arrhythmias are treated as prescribed or according to Advanced Cardiac Life Support protocols. Spontaneous bleeding (cerebral, retroperitoneal, GI, and GU) may occur with thrombolysis; the patient should be assessed every 15 min initially, then every 30 min, then hourly, then every 4 hr (time span for each varies with the particular drug used). Invasive procedures should be avoided; all puncture sites assessed and reassessed. Patient movement should be restricted, but when necessary, it should be performed gently. Antihistamines or corticosteroids may be used to treat mild allergic responses, but infusion should be stopped if a severe allergic response occurs. Bleeding is the most common adverse effect, occurring internally and at external puncture sites. If uncontrollable bleeding occurs, the infusion should be stopped immediately and the prescriber notified.

thrombolytic (thrŏm-bŏ-līt'ik) Pert. to or causing the breaking up of a blood clot. SYN: *thromboclastic*.

thrombolytic therapy The use of drugs that degrade blood clots to treat acute myocardial infarction, pulmonary embolism, or stroke.

thrombomodulin (thrŏm'bŏ-mŏ'dū-līn) A protein released by the vascular endothelium. Acting in concert with other factors, it helps to prevent formation of intravascular thrombi.

thrombon (thrŏm'bŏn) [Gr. *thrombos*, clot] The portion of the hematopoietic system concerned with platelet formation.

thrombopathy (thrŏm-bŏp'ă-thē) [ʹ + *pathos*, disease, suffering] A defect in coagulation.

thrombopenia (thrŏm-bŏ-pē'nē-ă) [ʹ + *penia*, lack] Thrombocytopenia.

thrombophilia (thrŏm-bŏ-fil'ē-ă) [ʹ + *philein*, to love] A tendency to form blood clots; esp., any disease such as that caused by the factor V Leiden mutation.

thrombophlebitis (thrŏm'bŏ-flē-bī'tīs) [ʹ + *phleps*, vein, + *itis*, inflammation] Inflammation of a vein in conjunction with the formation of a thrombus. It usually occurs in an extremity, most frequently a leg. SEE: *deep venous thrombosis*; *phlebitis*; *Nursing Diagnoses Appendix*.

TREATMENT: Drug therapies include heparins or warfarin.

PATIENT CARE: Prevention includes identifying patients at risk and encouraging leg exercises, use of antiembolic stockings, intermittent pneumatic compression devices, and early ambulation to prevent venous stasis. The at-risk patient (see below) should be assessed at regular intervals for signs of inflammation, tenderness, aching, and

differences in calf circumference measurements. Noninvasive venous ultrasonography provides definitive diagnosis of thrombophlebitis (DVT). It is performed in patients with risk factors for DVT who have a swollen limb and an elevated level of D-dimer in the blood. Anticoagulants are administered as prescribed, the patient is evaluated for signs of bleeding, and coagulation results are monitored to maintain an international normalized ratio (INR) of 2–3. The patient is assessed for signs of pulmonary emboli, dyspnea, tachypnea, hypotension, chest pain, changes of level of consciousness, arterial blood gas abnormalities, and electrocardiogram changes. The patient is prepared for the diagnostic procedures and medical or surgical interventions prescribed.

Patients at greatest risk for thrombophlebitis are those on prolonged bedrest; those with major trauma, congestive heart failure or respiratory failure, obesity, nephrotic syndrome, inflammatory bowel disorders, myeloproliferative disorders, cancer and cancer therapies; pregnancy, recent childbirth, and use of combination hormonal contraceptives or postmenopausal hormone therapy; smoking; varicose veins or previous DVT; central venous catheterization; and people older than 65 years. At highest risk are those individuals with multiple risk factors. Patients who are at risk should be taught preventive measures. Long-distance travelers (flying, train, or automobile) should keep well-hydrated (avoiding alcoholic beverages), avoid constrictive clothing, not cross their legs, walk about frequently, and stretch calf muscles while sitting. Properly fitted below-the-knee graduated compression stockings that provide 15 to 30 mm Hg pressure at the ankle can be worn.

t. migrans Recurring attacks of thrombophlebitis in various sites.

postpartum iliofemoral t. Thrombophlebitis of the iliofemoral artery that occurs after childbirth.

thromboplastic (thrŏm'bŏ-plās'tik) [ʹ + *plassein*, to form] Pert. to or causing blood clot formation.

thromboplastid (thrŏm'bŏ-plās'tid) A platelet.

thromboplastin (thrŏm'bŏ-plās'tin) [ʹ + *plassein*, to form] Blood coagulation factor (III), a substance found in both blood and tissues. It accelerates the clotting of blood.

thromboplastinogen (thrŏm'bŏ-plās'tin'ŏ-jĕn) Blood clotting factor VIII. SEE: *coagulation factor*.

thrombopoiesis (thrŏm'bŏ-pŏy-ē'sis) [ʹ + ʹ] The formation of platelets.

thrombopoietin (thrŏm'bŏ-pŏy-ē'tin) ABBR: TPO. A growth factor that acts on the bone marrow to stimulate plate-

let production as well as the proliferation of other cell lines.

thrombosed (thrŏm'bōzd) [Gr. *thrombos*, a clot] 1. Coagulated; clotted. 2. Denoting a vessel containing a thrombus.

thrombosis (thrŏm-bŏ'sis) [ʹ + *osis*, condition] The formation or presence of a blood clot within the vascular system. This is a life-saving process when it occurs during hemorrhage. It is a life-threatening event when it occurs at any other time because the clot can occlude a vessel and stop the blood supply to an organ or a part. The thrombus, if detached, can travel through the bloodstream and occlude a vessel at a distance from the original site; for example, a clot in the leg may break off and cause a pulmonary embolus.

ETIOLOGY: Trauma (esp. following an operation and parturition), cardiac and vascular disorders, obesity, hereditary coagulation disorders, age over 65, an excess of erythrocytes and of platelets, an overproduction of fibrinogen, and sepsis are predisposing causes.

SYMPTOMS: *Lungs:* Obstruction of the smaller vessels in the lungs causes an infarct that may be accompanied by sudden pain in the side of the chest, similar to pleurisy; also present are the spitting of blood, a pleural friction rub, and signs of consolidation. *Kidneys:* Blood appears in the urine. *Skin:* Small hemorrhagic spots may appear in the skin. *Spleen:* Pain is felt in the left upper abdomen. *Extremities:* If a large artery in one of the extremities, such as the arm, is suddenly obstructed, the part becomes cold, pale, bluish, and the pulse disappears below the obstructed site. Gangrene of the digits or of the whole limb may ensue. The same symptoms may be present with an embolism.

If the limb is swollen, one should watch for pressure sores. Burning with a hot water bottle or electric pad should be guarded against. Prolonged bedrest may be necessary, depending on the patient's condition.

TREATMENT: Pathological clots are treated with thrombolytic agents (e.g., streptokinase), antiplatelet drugs (e.g., heparins or aspirin), anticoagulants (e.g., warfarin), or platelet glycoprotein receptor antagonists (e.g., abciximab). When a thrombus or embolus is large and life threatening, surgical removal may be attempted.

cardiac t. Coronary t.

cerebral sinovenous t. A blood clot in one of the main veins that carry blood from the brain, such as the superior sagittal sinus, the lateral sinus, or the straight sinus.

coagulation t. Thrombosis due to coagulation of fibrin in a blood vessel.

coronary t. A blood clot in a coronary

artery, the most common cause of an acute coronary syndrome or a myocardial infarction (heart attack). **SYN:** *cardiac thrombosis*.

deep venous t. **ABBR:** DVT. A blood clot in one or more of the deep veins of the legs (the most common site) or the veins of arms, pelvis, neck, axilla, or chest. The clot may damage the vein or may embolize to other organs (e.g., the heart or lungs). Such emboli are occasionally fatal. **SEE:** *embolism, pulmonary*.

ETIOLOGY: DVT results from one or more of the following conditions: blood stasis (e.g., bedrest); endothelial injury (e.g., after surgery or trauma); hypercoagulability (e.g., factor V Leiden or deficiencies of antithrombin III, protein C, or protein S); congestive heart failure; estrogen use; malignancy; nephrotic syndrome; obesity; pregnancy; thrombocytosis; or many other conditions. DVT is a common occurrence among hospitalized patients, many of whom cannot walk or have one or more of the other risk factors just mentioned.

SYMPTOMS: The patient may report a dull ache or heaviness in the limb, and swelling or redness may be present, but just as often patients have vague symptoms, making clinical diagnosis unreliable.

DIAGNOSIS: Compression ultrasonography is commonly used to diagnose DVT (failure of a vein to compress is evidence of a clot within its walls). Other diagnostic techniques include impedance plethysmography and venography.

TREATMENT: Unfractionated heparin or low molecular weight heparin (LMWH) is given initially, followed by several months of therapy with an oral anticoagulant such as warfarin. The duration of therapy depends on whether the patient has had previous thrombosis and whether, at the end of a specified period of treatment, the patient has an elevated D-dimer level: patients with increased D-dimers after several months of treatment with anticoagulants are more likely than other patients to have recurrent clots if their anticoagulant regimen is discontinued.

COMPLICATIONS: Pulmonary emboli are common and may compromise oxygenation or result in frank cardiac arrest. Postphlebotic syndrome, a chronic swelling and aching of the affected limb, also occurs often.

PREVENTION: In hospitalized patients and other immobilized persons, early ambulation, pneumatic compression stockings, or low doses of unfractionated heparin, LMWH, or warfarin may be given to reduce the risk of DVT.

effort t. Paget-Schreutler syndrome

embolic t. Thromboembolism.

hepatic vein t. An often fatal throm-

botic occlusion of the hepatic veins, marked clinically by hepatomegaly, weight gain, ascites, and abdominal pain. SYN: *Budd-Chiari syndrome*.

infective t. Thrombosis in which there is bacterial infection.

marasmic t. Thrombosis due to wasting diseases.

mural t. Mural thrombus.

placental t. Thrombi in the placenta and veins of the uterus.

plate t. Thrombus formed from an accumulation of platelets.

puerperal t. Coagulation in veins following labor.

septic t. An infected blood clot usually found in the heart or the venous sinuses of the brain.

sinus t. Formation of a blood clot in a venous sinus.

traumatic t. Thrombosis due to a wound or injury of a part.

venous t. Thrombosis of a vein. SEE:

Nursing Diagnoses Appendix.

thrombosphere (thrōm'bō-sfēr) [" + "]

An albumin molecule bonded with fibrinogen. It may serve as a platelet substitute in patients with severe thrombocytopenia and impaired hemostasis.

thrombospondin (thrōm'bō-spōn'dīn)

ABBR: TSP. A glycoprotein secreted by cells whose functions include the ability to prevent both cell-to-cell adhesion and angiogenesis. Thrombospondin is secreted by some parasites and may enhance their ability to cause disease. It is also found in malignant tumors, where it may block tumor growth and metastasis.

thrombostasis (thrōm-bōs'tā-sīs) [" +

stasis, standing still] Stasis of blood in a part, causing or caused by formation of a thrombus.

thrombostenin (thrōm'bō-sthē'nīn) ["

+ *sthenos*, strength] A contractile protein present in platelets. This protein is active in clot retraction.

thrombotic (thrōm-bōt'ik) [Gr. *throm-*

bos, clot] Related to, caused by, or of the nature of a thrombus.

thromboxane A₂ (thrōm-bōk'sān) ABBR:

TXA₂. An unstable compound synthesized in platelets and other cells from a prostaglandin, PGH₂. It acts to aggregate platelets, is a potent vasoconstrictor, and mediates inflammation. SEE: *eicosanoid*; *prostaglandin*; *prostanoids*.

thrombus (thrōm'būs) [Gr. *thrombos*] A

blood clot that adheres to the wall of a blood vessel or organ. In many cases it may obstruct the vessel or organ in which it resides, preventing the flow of blood. Anticoagulants are used to prevent and treat this condition.

agonal t. A blood clot formed in the heart just at the time of death.

annular t. A thrombus whose circumference is attached to the walls of a ves-

sel, while an opening still remains in the center.

antemortem t. A clot formed in the heart or large vessels before death.

ball t. A round clot in the heart, esp. in the atria.

hyaline t. A thrombus having a glassy appearance, usually occurring in smaller blood vessels.

lateral t. Mural t.

milk t. A curdled milk tumor in the female breast caused by obstruction in a lactiferous duct.

mural t. A blood clot that forms on the wall of the heart, esp. along an immobile section of the heart damaged by myocardial infarction or cardiomyopathy. Such clots may occasionally embolize, causing stroke or organ damage. SYN: *lateral thrombus*; *mural thrombosis*; *parietal thrombus*.

obstructing t. A thrombus completely occluding the lumen of a vessel.

occluding t. A thrombus that completely closes the vessel.

parietal t. Mural t.

postmortem t. Blood clot formed in the heart or a large blood vessel after death.

progressive t. Propagated t.

propagated t. A thrombus that increases in size. SYN: *progressive thrombus*.

stratified t. A thrombus composed of layers.

white t. A pale thrombus in any site; made up principally of platelets.

throughput (throo'pūt') **1.** In hospital

management, the sum of the services provided by a health care institution per unit of time. It includes the number of patients treated, admitted, and discharged; the total number of procedures performed; and the quantity of laboratory or radiological services rendered. It is a measure of institutional volume or capacity and a determinant of productivity. **2.** In the laboratory, the analysis, processing, or testing of multiple samples. Techniques that foster the rapid or simultaneous processing of multiple samples are called *high-throughput*.

throwback (thrō'bāk) **1.** To reflect. SEE: *atavism*. **2.** To impair progress.

thrush (thrūsh) [D. *troshe*, rotten wood]

Infection of the mucosa of the mouth caused by *Candida albicans*. In patients with healthy immune systems, it occurs when the balance of normal flora is destroyed during antibiotic therapy or after the use of corticosteroid-based inhalers, which suppress normal white blood cell function in the mouth. It is also common in patients receiving immunosuppressive therapy for organ transplants, in cancer patients, and in those with acquired immunodeficiency syndrome, in whom oral candida infection may be chronic. Occasionally,

healthy neonates and persons who wear dentures develop thrush.

On physical examination, white, raised, creamy, easily removable patches are present on the tongue and other oral mucosal surfaces. The organism is identified by a microscopic examination of scrapings. The infection is treated with a single dose of fluconazole, with clotrimazole lozenges, or with a nystatin oral solution (which must be held in the mouth for 3 min before swallowing) for 14 days; long-term suppressive therapy may be needed for patients with impaired immunity. Dentures should be soaked in an antifungal solution of nystatin. Careful handwashing is essential before doing oral care. SEE: *aphtha*; *candidiasis*; *stomatitis*.

thrust 1. To move forward suddenly and forcibly, as in tongue thrust when the tongue is pushed against the teeth or alveolar ridge at the beginning of deglutition. This may cause open bite or malformed jaws. 2. In physical medicine, a manipulative technique in which the therapist applies a rapid movement to tear adhesions and increase flexibility of restricted joint capsules.

abdominal t. Treatment of airway obstruction that consists of inward and upward thrusts of the thumb side of a closed fist in the area between the umbilicus and the xiphoid process. If the patient is conscious, the procedure is performed from behind the person standing; if the patient is unconscious, it can be performed while kneeling beside or straddling the patient and using the heel of the hand rather than a closed fist. SEE: *Heimlich maneuver*.



This technique is no longer taught for the unconscious patient as the American Heart Association Guidelines replaced it with chest thrusts or CPR compression.

subdiaphragmatic abdominal t. Treatment for patients suspected of having a complete airway obstruction. For conscious, standing adults, it consists of upward and inward thrusts of the thumb side of the rescuer's closed fist, coming from behind the victim, in the area between the umbilicus and the xiphoid process. SEE: *Heimlich maneuver*.

substernal t. A palpable heaving of the chest in the substernal area. This is a physical finding detectable in some persons with right ventricular hypertrophy. SEE: *apical heave*.

thrypsis (thrip'sis) [Gr., breaking in pieces] A fracture in which the bone is splintered or crushed.

thulium (thū'lē-ūm) SYMB: Tm. A lanthanide element; atomic weight, 168.934; atomic number, 69.

thumb (thūm) [AS. *thuma*, thumb] The short, thick first finger on the radial side of the hand, having two phalanges and being opposable to the other four digits. SYN: *pollex*. SEE: *hand* for illlus.

gamekeeper's t. Skier's t.

skier's t. An injury to the ulnar collateral ligament of the metacarpophalangeal joint of the thumb. SYN: *gamekeeper's thumb*.

tennis t. Calcification and inflammation of the tendon of the flexor pollicis longus muscle owing to repeated irritation and stress while playing tennis.

thumb sign Protrusion of the thumb across the palm and beyond the clenched fist; seen in Marfan's syndrome.

thumb sucking The habit of sucking one's thumb. Intermittent thumb sucking is not abnormal, but prolonged and intensive thumb sucking past the time the first permanent teeth erupt at 5 or 6 years of age can lead to a misshapen mouth and displaced teeth. If the habit persists, combined dental and psychological therapy should be instituted.

thump (thūmp) To punch or strike with a fist or a mechanical device.

precordial t. A forceful punch delivered to a patient's sternum in an attempt to terminate a lethal cardiac rhythm, such as ventricular fibrillation or ventricular tachycardia.



This procedure is not routinely used. The critical time it consumes during resuscitation may be better used by starting chest compressions and assigning a second rescuer to obtain an automated external defibrillator.

Thunder God vine A toxic plant, *Tripterygium wilfordii*, from which extracts have been obtained that can be used to treat rheumatoid arthritis.

Thygeson's disease [Phillips Thygeson, U.S. physician, 1903–2003] Bilateral corneal inflammation of unknown cause; it often creates a sensation of dry eyes or of a foreign body in the eye, tearing, and photophobia. The cornea is dotted, pitted, or grooved by inflamed channels. Corticosteroids applied topically are effective treatments.

thymectomy (thī-mēk'tō-mē) [Gr. *thymos*, mind, + *ektome*, excision] Surgical removal of the thymus gland.

thymelcosis (thī'mēl-kō'sis) [" + *helcosis*, ulceration] Ulceration of the thymus gland.

-thymia [Gr. *thymos*, mind] A word ending indicating a state of the mind.

thymic (thī'mik) [L. *thymicus*] Rel. to the thymus gland.

t. hormone Any of the hormones produced by the thymus that may help attract lymphoid stem cells to the thymus and stimulate their development into

mature T lymphocytes. These hormones include thymulin, thymopoietin, and thymosin.

thymicolymphatic (thī'mī-kō-līm-fāt'ik) Rel. to the thymus and lymph glands.

thymidine (thī'mī-dēn) A nucleoside present in deoxyribonucleotide. It is formed from the condensation product of thymine and deoxyribose.

thymine (thī'mīn) $C_5N_2H_6O_2$; a pyrimidine base present in DNA (not RNA) where it is paired with adenine.

thymitis (thī-mī'tis) [l' + "] Inflammation of the thymus.

thymo- 1. Combining form meaning *thymus*. 2. Combining form meaning *mind*.

thymocyte (thī'mō-sīt) [Gr. *thymos*, mind, + *kytos*, cell] Immature T lymphocytes that reside in the thymus. Fewer than 1% of the lymphoid stem cells that migrate to the thymus reproduce and develop into T lymphocytes capable of binding with specific antigens.

thymokinetic (thī'mō-kī-nēt'ik) [l' + *kinesis*, movement] Stimulating the thymus gland.

thymoma (thī-mō'mā) [l' + "] A rare neoplasm, usually found in the anterior mediastinum and originating in the epithelial cells of the thymus. It is often associated with myasthenia gravis and autoimmune diseases. Treatments may include surgical removal, radiation therapy, or chemotherapy.

thymopathy (thī-mōp'ā-thē) A disease of the thymus.

thymopoietin (thī'mō-poy'ē-tīn) A peptide hormone secreted by the thymus that helps thymocytes to mature and respond to specific antigenic stimuli.

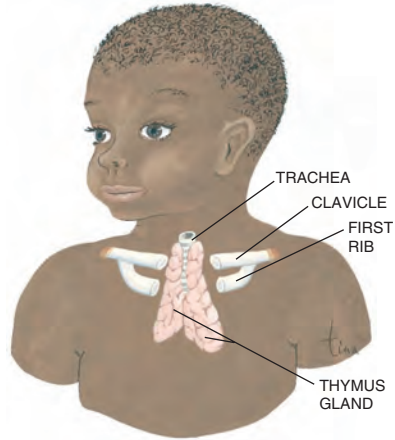
thymoprivic (thī'mō-prīv'ik) [l' + L. *privus*, deprived of] Concerning or caused by removal of the thymus.

thymosin (thī'mō-sin) A peptide hormone, produced in cells of the thymus and believed to play a part in T lymphocyte development.

thymulin (thī'mū-līn) A peptide hormone, released by the thymus, with immune modulating and analgesic actions.

thymus (thī'mūs) [Gr. *thymos*] A lymphoid organ located in the mediastinal cavity anterior to and above the heart, composed of two fused lobes each containing multiple lobules roughly divided into an outer cortex and inner medulla. Immature T cells (thymocytes) make up most of the cortex and some of the medulla. The remaining cells are epithelial cells, with some macrophages. Epithelial cells in some areas of the medulla develop hard cores and are known as Hassall's corpuscles; their purpose is unknown. **SEE: illus.**

The thymus is the primary site for T lymphocyte differentiation. During the prenatal period, lymphoid stem cells migrate from the bone marrow to the thy-



THYMUS IN A YOUNG CHILD

mus. They fill and expand the interstitial spaces between epithelial cells and proliferate rapidly. Almost all of these immature thymocytes are destroyed to eliminate those that would attack self-antigens. Approximately 1% of the thymocytes mature into T cells, with either a CD4 or a CD8 protein marker and receptors capable of binding with specific antigens. The mature T lymphocytes leave the thymus and migrate to the spleen, lymph nodes, and other lymphoid tissue, where they control cell-mediated immune responses.

The thymus weighs from 15 g to 35 g at birth and continues to grow until puberty, when it begins to shrink and the lymphoid tissue is replaced by fibrotic tissue; only about 5 g of thymic tissue remains in adulthood. The reason for involution may be that the organ has produced enough T lymphocytes to seed the tissues of the immune system and is no longer necessary. Removal of the thymus in an adult does not cause the decrease in immune function seen when the gland is removed from children.

PATHOLOGY: Lack of a thymus or thymus hypoplasia is one component of DiGeorge syndrome, which is marked by severe lack of cell-mediated immunity. Thymic hyperplasia results from the growth of lymph follicles containing both B lymphocytes and dendritic cells. It is found in myasthenia gravis and, occasionally, in other autoimmune diseases (e.g., Graves' disease, rheumatoid arthritis, and systemic lupus erythematosus). Thymomas involve only the thymic epithelial cells. Other tumors, including those associated with Hodgkin's disease and lymphomas, involve thymocytes.

accessory t. A lobule isolated from the mass of the thymus gland. It is also

called a supernumerary thymus. SYN: *supernumerary thymus*.

persistent hyperplastic t. Thymus persisting into adulthood, sometimes hypertrophying.

supernumerary t. Accessory t.

thyr- SEE: *thyroido-*.

thyreo- [Gr. *thyreos*, shield] Combining form indicating *thyroid*.

thyro- SEE: *thyroido-*.

thyroadenitis (thī'rō-ād-ē-nī'tis) [" + *aden*, gland, + *itis*, inflammation] Inflammation of the thyroid gland.

thyroaplasia (thī'rō-ā-plā'zē-ā) [" + *a-*, not, + *plasis*, a molding] Imperfect development of the thyroid gland.

thyroarytenoid (thī'rō-ā-rīt'ēn-oyd) [" + *arytaina*, ladle, + *eidosis*, form, shape] Rel. to the thyroid and arytenoid cartilages.

thyrocalcitonin (thī'rō-kāl'sī-tō'nīn) Calcitonin.

thyrocardiac (thī'rō-kār'dē-āk) [" + *kardia*, heart] **1.** Pert. to the heart and thyroid gland. **2.** A person suffering from thyroid disease complicated by a heart disorder.

thyrocele (thī'rō-sēl) [" + *kele*, tumor, swelling] Goiter.

thyrocolloid (thī'rō-kōl'oyd) Colloid contained in the thyroid gland.

thyrocricotomy (thī'rō-krī-kōt'ō-mē) [" + *krikos*, ring, + *tome*, incision] A division of the cricothyroid membrane.

thyroepiglottic (thī'rō-ēp'ī-glōt'īk) [" + *epi*, upon, + *glottis*, back of tongue] Rel. to the thyroid and epiglottis.

thyrofissure (thī'rō-fīsh'ūr) Surgical creation of an opening through the thyroid cartilage to expose the inside of the larynx.

thyrogenic, thyrogenous (thī-rō-jēn'īk, thī-rōj'ē-nūs) [" + *gennan*, to produce] Having its origin in the thyroid.

thyroglobulin (thī'rō-glōb'ū-līn) [" + *L. globulus*, globule] **1.** An iodine-containing glycoprotein secreted by the thyroid gland and stored within its colloid, from which thyroxine and triiodothyronine are derived. **2.** A substance obtained by the fractionation of thyroid glands from the hog, *Sus scrofa*.

thyroglossal (thī'rō-glōs'sāl) [" + *glossa*, tongue] Pert. to the thyroid gland and the tongue.

thyrohyal (thī'rō-hī'āl) Concerning the thyroid cartilage and the hyoid bone.

thyrohyoid (thī'rō-hī'oyd) [" + *hyooides*, U-shaped] Rel. to thyroid cartilage and hyoid bone.

thyroid (thī'royd) [" + *eidosis*, form, shape] **1.** Thyroid gland **2.** The cleaned, dried, and powdered thyroid gland of animals (also known as thyroid extract). Thyroid extract is used infrequently to treat hypothyroidism and goiter because of its unpredictable potency.

thyroid- SEE: *thyroido-*.

thyroid cachexia Exophthalmic goiter. SEE: *hyperthyroidism*.

thyroid cartilage SEE: under *cartilage*.

thyroidea accessoria, thyroidea ima (thī-roy'dē-ā) Accessory thyroid.

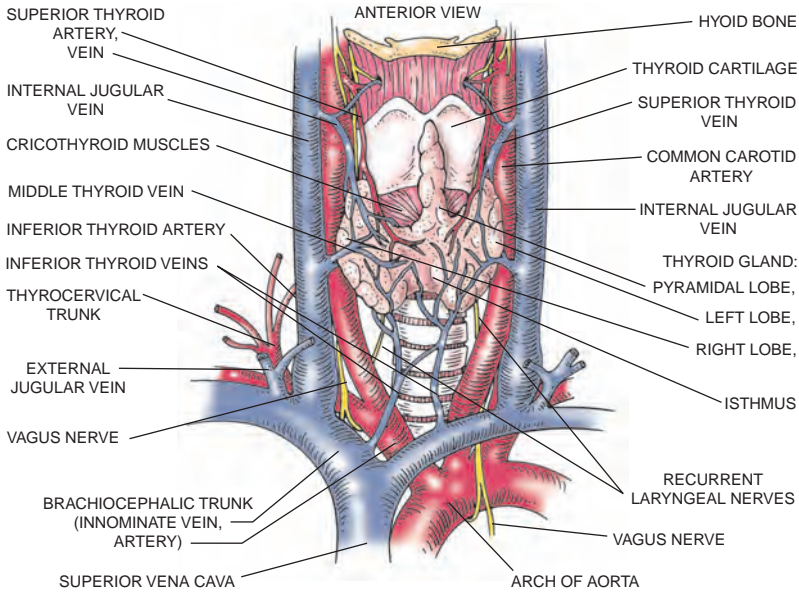
thyroidectomy (thī'royd-ēk'tō-mē) Excision of the thyroid gland, used typically to treat thyroid cancers, goiters, or Grave's disease. SEE: *Nursing Diagnosis Appendix*.

PATIENT CARE: Preoperative: The patient is taught about postoperative care measures and pain management.

Postoperative: All general patient care concerns apply. Attention to airway compromise due to either hemorrhage or recurrent laryngeal nerve injury is emphasized. The patient is maintained in a semi-Fowler's position, with head and neck well supported to ease incisional tension. A Hemovac, or similar low-suction drain, may be in place for the first 24 to 48 hr. The patient is checked for dysphagia and hoarseness, signs of laryngeal nerve injury, and for bleeding or infection. Evidence of hypocalcemia resulting from unrecognized removal of the parathyroid glands must also be assessed both with postoperative parathyroid hormone levels and with physical assessments for tetany. The patient is watched closely for signs of respiratory distress, and in both the recovery room and the patient care setting, there should be equipment for immediate resuscitation: airway reintubation, tracheostomy tray, or both, as well as various pharmacological agents (e.g., calcium chloride, antithyroid agents, and antihypertensives). Immediate notification of the surgeon for suspected problems is mandatory. Discharge teaching focuses on incisional care and signs of infection to be reported immediately. Regular follow-up care is required to manage hypothyroidism, which develops 2 to 4 weeks after total thyroidectomy, and to assess thyroid size and status following subtotal resection.

subtotal t. Surgical excision of part of the thyroid gland, as is performed for benign conditions, equivocal or limited forms of low-grade malignancy, and other conditions. The risk of accidental removal of the parathyroid glands is lessened by this procedure.

thyroid function test A test for evidence of increased or decreased thyroid function, including a clinical physical examination, which is usually reliable, and a variety of reliable laboratory tests. The most commonly used test to assess thyroid function is the measurement of thyroid-stimulating hormone (TSH) with supersensitive assays. Usually, TSH levels are high in hypothyroidism and suppressed in hyperthyroidism, although in patients with



THYROID GLAND AND RELATED STRUCTURES

pituitary masses this pattern may be reversed. Other thyroid function tests include measurements of free and total thyroxine (T_4) and triiodothyronine (T_3), tests of thyroid-binding globulin levels, antithyroid antibody tests, and thyroid gland radioactive iodine uptake (RAIU) measurement. Many of these test results are more difficult to interpret than are TSH results because their normal ranges may vary with pregnancy, liver disease, nutritional status, and other medical conditions. SEE: *hyperthyroidism*; *hypothyroidism*.

thyroid gland A large endocrine gland located in the center of the base of the neck. The gland is composed of two lobes, one on each side of the trachea, and an isthmus of tissue connecting the lower two thirds of each lobe. The isthmus is usually located at the level of the second to third tracheal rings. The whole gland is surrounded by a thin fibrous capsule attached in back to the cricoid cartilage and the first few tracheal rings. The lobes of the thyroid lie under the sternothyroid and sternohyoid muscles. The thyroid is filled with capillary networks (supplied by the superior and inferior thyroid arteries) that surround the many spherical units (follicles) packed inside the gland. Thyroid follicles consist of a ring of follicular cells surrounding a space filled with a clear colloid (a mixture of thyroglobulin proteins and iodine), from which the thyroid hormones (thyroxine and related molecules) are synthesized. These

hormones regulate the rate of cellular metabolism throughout the body. All the steps in synthesizing and releasing thyroid hormones are stimulated by thyroid-stimulating hormone (TSH) secreted by the pituitary gland. Another class of thyroid cells, the parafollicular or C cells, is found outside the follicles; C cells secrete calcitonin, a calcium-lowering hormone. SEE: *illus.*

thyroiditis (thī'royd-ī'tis) [*th* + *eidōs*, form, shape, + *itis*, inflammation] Inflammation of the thyroid gland. SEE: *struma*, *Riedel's*.

giant cell t. Thyroiditis characterized by the presence of giant cells, round-cell infiltration, fibrosis, and destruction of follicles.

Hashimoto's t. SEE: *Hashimoto's thyroiditis*.

Reidel's t. A rare form of thyroiditis characterized by fibrotic destruction of the thyroid gland. The fibrotic tissue extends beyond the capsule of the gland into the surrounding structures of the neck and may develop sufficiently to compress the trachea. The etiology is unknown.

thyroido-, thyroid-, thyro-, thyr- [Gr. *thyrooedēs*, fr. *thyroos*, shield + *eidōs*, form] Combining forms meaning *thyroid gland*.

thyroidotomy (thī'royd-ōt'ō-mē) [*th* + *tōmē*, incision] Incision of the thyroid gland.

thyroid stimulating hormone-releasing factor ABBR: TSH-RF. An obsolete term for thyrotropin releasing hormone.

thyroid storm A rare but often life-threatening medical emergency resulting from untreated hyperthyroidism. It is marked by fevers, sweating, restlessness, irritability, tachycardia, hypertension, heart failure, shock, and cardiac arrhythmias, delirium, and coma, among other findings. It may begin when a patient with hyperthyroidism suffers a second illness (e.g., an infection), after thyroid gland surgery, or after withdrawal from antithyroid drug treatment. SYN: *thyroid crisis*; *thyrotoxic crisis*.

TREATMENT: Antithyroid medications (e.g., propylthiouracil) to block sympathetic effects, beta blockers (e.g., propranolol) to manage tachycardia, high-dose steroids (corticosteroid) to inhibit conversion of T_4 to T_3 and to replace depleted cortisol, and an iodide to block release of thyroid hormone, as well as volume infusions, are needed. Any secondary illness should be aggressively treated as well.

PATIENT CARE: Supplemental oxygen is administered, along with nutrients and vitamins to manage the hypermetabolic state, and sedatives. A calm cool, darkened, and quiet reassuring atmosphere helps to reduce restlessness. Underlying infections are treated with antibiotics. Acetaminophen is given to reduce fevers; anxiolytic drugs are used to reduce psychological distress. Cardiac status, level of consciousness, fluid and electrolyte balance, and blood glucose are monitored closely. After the crisis resolves, adherence to prescribed medications and the close outpatient follow-up may be needed with health care providers. Medical management of hyperthyroidism on an outpatient basis involves adjustment of drug doses, regular follow-up of thyroid function tests, complete blood counts, and prompt evaluation of fevers, sore throat, tachycardias, or other complications. Surgical referral may be needed for the patient requiring thyroidectomy.

thyromegaly (thī'rō-mēg'ă-lē) [" + *me-gas*, large] Enlargement of the thyroid gland.

thyroparathyroidectomy (thī'rō-pār'ă-thī'royd-ĕk'tō-mē) [" + *para*, beside, + *thyreos*, shield, + *eidōs*, form, shape, + *ektōmē*, excision] Surgical removal of the thyroid and parathyroid glands.

thyropathy (thī-rōp'ă-thē) [" + *pathos*, disease, suffering] Any disease of the thyroid.

thyroplasty (thī'rō-plās'tē) A surgical procedure for altering the configuration of the thyroid cartilage adjacent to the vocal cords. This is done to treat certain types of dysphonia. SYN: *laryngeal framework surgery*.

thyroprivia (thī'rō-priv'ē-ă) [" + L. *priv-*

us, single, set apart] Hypothyroidism due to deficient action of or removal of the thyroid. **thyroprival**, *adj.*

thyroptosis (thī'rōp-tō'sis) [" + *ptōsis*, a dropping] Downward displacement of the thyroid into the thorax.

thyrotome (thī'rō-tōm) [" + *tōmē*, incision] A knife for cutting the thyroid cartilage.

thyrotomy (thī-rōt'ō-mē) **1.** The splitting of the thyroid cartilage anteriorly in midline to expose laryngeal structures. **2.** Surgery on the thyroid gland.

thyrotoxic (thī'rō-tōks'ik) [" + *toxikon*, poison] Pertaining to, affected by, or marked by toxic activity of the thyroid gland.

thyrotoxic heart disease A disease due to increased activity of the thyroid gland, marked by cardiac enlargement, atrial fibrillation, and high-output heart failure. SEE: *thyrotoxicosis*.

thyrotoxicosis (thī'rō-tōks'ī-kō'sis) [" + " + *ōsis*, condition] Hyperthyroidism.

thyrotroph (thī'rā-trōf') Thyroid hormone producing. The term is usually used to denote cells or adenomas in the pituitary gland that secrete thyroid-stimulating hormone.

thyrotropic (thī'rō-trōp'ik) [" + *trōpē*, a turning] That which has an affinity for or stimulates the thyroid gland.

thyrotropin (thī-rōt'rō-pīn) A hormone secreted by the anterior lobe of the pituitary that stimulates the thyroid gland. SYN: *thyroid-stimulating hormone*; *thyrotropic hormone*.

thyrotropism (thī-rōt'rō-pīzm) Affinity for the thyroid.

thyroxine (thī-rōks'īn) [Gr. *thyreos*, shield] ABBR: T_4 . One of the principal hormones secreted by the thyroid gland that increases the use of all food types for energy production and increases the rate of protein synthesis in most tissues. It is used to treat hypothyroidism. Chemically, it is 3,5,3',5'-tetraiodothyronine. SYN: *tetraiodothyronine*. SEE: *thyroid*; *thyroid function test*; *triiodothyronine*.

Ti **1.** Symbol for the element titanium. **2.** Inspiratory time; the time it takes to inhale.

TIA *transient ischemic attack*.

tibia (tib'ē-ă) [L., *tibia*, shinbone] The inner and larger bone of the leg between the knee and the ankle; it articulates with the femur above and with the talus below.

saber-shaped t. A deformity caused by gummatous periostitis (syphilitic) in which the tibia curves outward.

t. valga A bulging of the lower legs in which the convexity is inward. SYN: *genu valgum*.

t. vara Blount's disease.

tibial (tib'ē-ăl) [L. *tibialis*] Concerning the tibia.

tibialgia (tib"ē-āl'jē-ā) [t" + Gr. *algos*, pain] Pain in the tibia.

tibialis (tib"ē-ā'lis) [L.] Pert. to the tibia.

tibioadductor reflex (tib"ē-ō-ād-dūk'tor) [*L. tibia*, shinbone, + *adducere*, to lead to] Adduction of either the stimulated leg or the opposite one when the tibia is percussed on the inner side.

tibioalcanean (tib"ē-ō-kāl-kā'nē-ān) Concerning the tibia and calcaneus.

tibiofemoral (tib"ē-ō-fēm'or-āl) [t" + L. *femur*, thigh] Rel. to the tibia and femur.

tibiofibular (tib"ē-ō-fīb'ū-lār) [t" + L. *fibula*, pin] Pert. to the tibia and fibula.

tibionavicular (tib"ē-ō-nā-vīk'ū-lār) Pert. to the tibia and navicular bones.

tibiotalar (tib"ē-ō-tār'sāl) [t" + Gr. *tarsos*, broad, flat surface] Rel. to the tibia and tarsus.

tic (tik) [Fr.] A spasmodic muscular contraction, most commonly involving the face, mouth, eyes, head, neck, or shoulder muscles. The spasms may be tonic or clonic. The movement appears purposeful, is often repeated, is involuntary, and can be inhibited for a short time only to burst forth with increased severity.

Children between the ages of 5 and 10 years are esp. likely to develop tics. SEE: *Tourette's syndrome*.

ETIOLOGY: In most cases, the cause is unknown. In some people, the tic is worsened by anxiety and nervous tension.

convulsive t. Spasm of the facial muscles supplied by the seventh cranial nerve.

t. douloureux Trigeminal neuralgia. SEE: *Nursing Diagnoses Appendix*.

facial t. Tic of the facial muscles.

habit t. Habitual repetition of a grimace or muscular action.

t. rotatoire Spasmodic torticollis in which the head and neck are forcibly rotated or turned from one side to the other.

vocal t. Grunts and barking sounds that may be made by persons with Tourette's syndrome.

tick (tik) [ME, *tyke*] Any of the numerous bloodsucking arthropods of the order Acarida. Ixodidae is the hard tick family and Argasidae the soft. Ticks transmit many diseases to humans and animals. SEE: *illus.*

t. bite SEE: *under bite*.

wood t. *Dermacentor andersoni*, an important North American species of tick, which causes tick paralysis and transmits causative organisms of Rocky Mountain spotted fever and tularemia. SEE: *tick for illus.*

tick-borne rickettsiosis The spotted-fever group (SFG) of tick-borne rickettsioses. Included are infections caused by the pathogenic organism *Rickettsia rickettsii*, which causes Rocky Mountain



WOOD TICK

Dermacentor (×4)

spotted fever. There are six other pathogenic SFG rickettsial species, five of which (*R. conorii*, *R. sibirica*, *R. japonica*, *R. australis*, and *R. africae*) are most likely to be transmitted by a tick bite. *R. akari*, which causes rickettsialpox, is transmitted to humans by mouse mites.

tickle (tik'l) [ME. *tikelen*] 1. Peculiar sensation caused by titillation or touching, esp. in certain areas of the body, resulting in reflex muscular movements, laughter, or other forms of emotional expression. 2. To arouse such a sensation by touching a surface lightly.

tickling (tik'ling) Gentle stimulation of a sensitive surface and its reflex effect, such as involuntary laughter. SYN: *titillation*.

t.i.d. *L. ter in die*, three times a day.

tidal (tī'dāl) Periodically rising and falling, increasing and decreasing.

tide [AS. *tid*, time] Alternate rise and fall; a space of time.

acid t. Temporary increase in acidity of urine caused by increased secretion of alkaline substances into the duodenum or by fasting.

alkaline t. Temporary decrease in acidity of urine following awakening and after meals. The former results from an increased rate of breathing, in which excess carbon dioxide is eliminated; the latter results from an increase of base in the blood following the secretion of HCl into gastric juice.

fat t. Increased fat in the lymph and blood after a fatty meal.

-tidine (tī-dēn") A suffix used in pharmacology to designate an H₂receptor antagonist.

Tietze's syndrome (tēt'sēz) [Alexander Tietze, Ger. surgeon, 1864–1927] Inflammation of the costochondral cartilages. This self-limiting disease is of unknown etiology. The pain may be confused with that of myocardial infarction. There is no specific therapy, but

some relief is provided by injecting the area with local anesthetics or corticosteroids. SYN: *costochondritis*.

tigretier (tĕ-grĕt'ĕ-ă) [Fr.] A dancing mania or form of tarantism caused by the bite of a poisonous spider, occurring in Tigre, Ethiopia.

tigroid (tĭ'grōyd) [Gr. *tigroïdes*, tiger-spotted] Striped, spotted, or marked like a tiger.

tigroid bodies Masses of chromophil substance present in the cell bodies of neurons. SEE: *Nissl body*.

tigrolysis (tĭg'rōl'ĭ-sĭs) Chromatolysis.

tilmus (tĭl'mūs) [Gr. *tilmos*, a plucking] Carphology.

tiltometer (tĭl-tŏm'ĕ-tĕr) A device for measuring the degree of tilt of a bed or operating table; used to determine which end of the spinal canal is lower when spinal anesthesia has been given.

timbre (tĭm'bĕr, tām'br) [Fr., a bell to be struck with a hammer] The resonance quality of a sound by which it is distinguished, other than pitch or intensity, depending on the number and character of the vibrating body's overtones.

time (tĭm) [AS. *tīma*, time] The interval between beginning and ending; measured duration.

association t. SEE: *association test*.

backup t. In radiography, the time setting selected before an automated exposure, usually 150% of the anticipated total exposure time for projection.

bleeding t. The time required for blood to stop flowing from a small wound or pinprick. It is assessed using one of several techniques. Depending on the method used, the time may vary from 1 to 3 min (Duke method) or from 1 to 9 min (Ivy method). The Duke method consists of timing the cessation of bleeding after the ear lobe has received a standardized puncture. The Ivy method is done in a similar manner following puncture of the skin of the forearm. The validity of this test to predict clinically significant bleeding has been questioned.

clot retraction t. The time required following withdrawal of blood for a clot to completely contract and express the serum entrapped within the fibrin net. The normal time is about 1 hr. Clot retraction depends on the number of platelets in the specimen.

coagulation t. The time required for a small amount of blood to clot. This can be determined by collecting blood in a small test tube and noting elapsed time from the moment blood is shed to the time it coagulates.

cycle t. The period between regular events, e.g., inflations of an automated blood pressure monitor.

doubling t. The length of time needed for a malignant tumor cell population to double in size.

dwell t. The length of time a therapeutic substance will be retained in the body.

intestinal transit t. The speed with which consumed food passes through the gut. It is slowed by anticholinergic agents (e.g., tricyclic antidepressants) and by neuropathic diseases of the stomach or intestines (e.g., diabetes mellitus). Many agents increase intestinal transit, including erythromycin and nonabsorbable laxatives.

median lethal t. The time required for half of a population to die after exposure to ionizing radiation.

partial thromboplastin t. The time needed for plasma to clot after the addition of partial thromboplastin; used to test for defects of the clotting system.

prothrombin t. SEE: *prothrombin time*.

reaction t. The period between application of a stimulus and the response.

recovery t. 1. The time between the end of an anesthetic infusion and the opening of a patient's eyes. 2. The time between the end of an anesthetic infusion and the patient's ability to oxygenate and ventilate without mechanical assistance.

response t. 1. The delay between the first administration of a medication and the onset of or recovery from its effects. 2. Duration of reaction.

setting t. The time required for a material to polymerize or harden, as in dental amalgam, cement, plaster, resin, or stone.

thermal death t. The time required to kill a bacterium at a certain temperature.

turn-around-time ABBR: TAT. The time it takes to process an order and carry it out (e.g., the time it takes to order and receive laboratory test results).

time diary Time inventory.

timed up-and-go test ABBR: TUGT. A test that measures mobility by assessing the time it takes for a person to rise from a chair, walk a measured distance, and turn around. The test is used to assess balance and gait, esp. in the elderly.

time inventory A personal record of how time is used or managed by a patient or client. It provides a detailed outline of daily activities, including the subject's primary and secondary activities, social interaction, and places where daily activities occur. SYN: *time diary*.

time-out A method of discipline that involves removing a child from social interaction and placing him or her in a nonstimulating location (i.e., in a quiet room) for a few minutes because of unacceptable behavior.

time pressure The psychological stress that results from having to get things

done in less time than is needed or desired.

timer (tīm'ēr) A device for measuring, signaling, recording, or otherwise indicating elapsed time. Various forms of timers are used in radiographic, surgical, and laboratory work.

time use survey An inventory of the activities of a population of interest, used, e.g., to measure economic productivity, health risks, leisure pursuits, and traffic flow.

time zone change syndrome Desynchronization.

timothy grass (tīm'ō-thē grās) [Timothy Hanson, 18th century American farmer who cultivated the grass] *Phleum pratense*.

tin (tīn) [AS.] SYMB; Sn. A metallic element used in various industries and in making certain tissue stains; atomic weight, 118.69; atomic number, 50. SEE: *tin poisoning*.

tinct (tīnkt) *tincture*.

tinctable (tīnk'tā-bl) Stainable.

tincture (tīnk'shūn) [L. *tingere*, to dye]

1. The process of staining. 2. A stain.

tinctorial (tīnk-tō'rē-āl) [L. *tinctorius*, dyeing] Rel. to staining or color.

tincturation (tīnk'tū-rā'shūn) Making a tincture from an appropriate drug.

tincture (tīnk'chūr) [L. *tincture*, a dyeing] An alcoholic extract of vegetable or animal substances. SYN: *tinctura*.

tincture of iodine Obsolete term for a simple alcoholic solution of iodine.

tine (tīn) A sharp, pointed prong.

tinea (tīn'ē-ā) [L., worm] Any fungal skin disease occurring on various parts of the body. SEE: *dermatomycosis*.

FINDINGS: There are two types of findings. Superficial findings are marked by scaling, slight itching, reddish or grayish patches, and dry, brittle hair that is easily extracted with the hair shaft. The deep type is characterized by flat, reddish, kerion-like tumors, the surface studded with dead or broken hairs or by gaping follicular orifices. Nodules may be broken down in the center, discharging pus through dilated follicular openings.

TREATMENT: Griseofulvin, terbinafine, or ketoconazole is given orally for all types of true trichophyton infections. Local treatment alone is of little benefit in ringworm of the scalp, nails, and in most cases the feet. Topical preparations containing fungicidal agents are useful in the treatment of tinea cruris and tinea pedis.

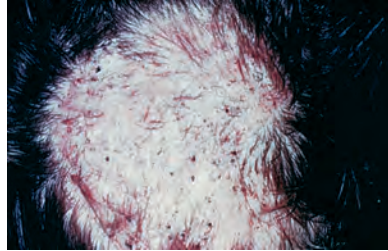
Personal hygiene is important in controlling these two common diseases. The use of antiseptic foot baths to control tinea pedis does not prevent spread of the infection from one person to another. Persons affected should not let others use their personal items such as clothes, towels, and sports equipment.

Tinea of the scalp, tinea capitis, is particularly resistant if due to *Microsporum audouinii*. It should not be treated topically. Systemic griseofulvin is quite effective.

t. amiantacea Sticky scaling of the scalp following infection or trauma.

t. barbae Barber's itch.

t. capitis A fungal infection of the scalp. It may be due to one of several types of *Microsporum* or to *Trichophyton tonsurans*. SEE: *illus.*; *kerion*.



TINEA CAPITIS

t. corporis Tinea of the body. It begins with red, slightly elevated scaly patches that on examination reveal minute vesicles or papules. New patches spring from the periphery while the central portion clears. There is often considerable itching. SEE: *illus.*



TINEA CORPORIS

t. cruris A fungus skin disease of surfaces of contact in the scrotal, crural, anal, and genital areas. Also called "jock itch." SYN: *dhobie itch*. SEE: *illus.*

t. imbricata Chronic tinea caused by *Trichophyton concentricum*. It is present in tropical regions. The annular lesions have scales at their periphery.

t. incognita Tinea corporis that grows rapidly and in unusual patterns after the use of topical steroids.

t. kerion Kerion.

t. nigra An asymptomatic superficial fungal infection that affects the skin of the palms. Caused by *Cladosporium werneckii* or *C. mansonii*, it is characterized by deeply pigmented, macular, nonscaly patches. SYN: *pityriasis nigra*.

t. nodosa Sheathlike nodular



TINEA CRURIS (inner thigh)

masses in the hair of the beard and mustache from growth of either *Piedraia hortae*, which causes black piedra, or *Trichosporon beigeli*, which causes white piedra. The masses surround the hairs, which become brittle; hairs may be penetrated by fungus and thus split. SYN: *piedra*.

t. pedis Athlete's foot.

t. profunda Majocchi's disease.

t. sycosis Barber's itch (2).

t. tonsurans Tinea capitis.

t. unguium Onychomycosis.

t. versicolor A fungus infection of the skin producing yellow or fawn-colored branny patches. A topically applied azole antifungal cream or 2% selenium sulfide lotion is effective in treating the causative agent, the fungus *Malassezia furfur*. SYN: *pityriasis versicolor*. **SEE:** *illius*.



TINEA VERSICOLOR (on back)

Tinel's sign (tĭn-ĕlz') [Jules Tinel, Fr. neurologist, 1879–1952] A cutaneous tingling sensation produced by pressing on or tapping the nerve trunk that has been damaged or is regenerating following trauma.

tine test Tuberculin tine test.

Tinetti test (tĭ-nĕt'tĕ) A measurement of

functional ability that incorporates observation of performance of 13 activities. The activities include sitting, rising from a chair, standing, turning, reaching up, and bending down. The rating scale is normal, adaptive, or abnormal.

tingibility (tĭn'jĭ-bĭl'ĭ-tĕ) The property of being stainable.

tingible (tĭn'jĭ-bl) [L. *tingere*, to stain] Capable of being stained by a dye.

tingle (tĭng'gl) A prickling or stinging sensation that may be caused by cold or nerve injury.

tinnitus (tĭn-ĭ'tŭs) [L., a jingling] A subjective ringing, buzzing, tinkling, or hissing sound in the ear. For some patients, this causes only minor irritation; for others, it is disabling.

ETIOLOGY: It may be caused by impacted cerumen, myringitis, otitis media, Ménière's disease, otosclerosis, or drug toxicities (esp. salicylates and quinine).

tip (tip) [ME.] A point, end, or apex of a part.

tipped uterus Malposition of the uterus. In the past, this has been invoked as the cause of numerous conditions, including pelvic pain, back pain, abnormal uterine bleeding, infertility, and emotional difficulties. Simple malposition of the uterus without evidence of a specific disease condition that accounts for the malposition is felt to be harmless and virtually symptomless. It is essential, therefore, that individuals who have been told that a tipped uterus is the cause of their symptoms be carefully examined to attempt to find a specific organic cause for the symptoms. If in the absence of other findings a vaginal pessary relieves symptoms associated with a retrodisplaced uterus and these symptoms return when the pessary is removed, then surgical suspension of the uterus is indicated. If surgery is not acceptable to the patient, the pessary may be worn intermittently. Evidence is lacking that a tipped uterus is an important cause of pelvic pain and discomfort.

tipping (tĭp'ĭng) Angulation of a structure, such as a tooth about its long axis, the patella when it moves away from the frontal plane of the femur, or the scapula when the inferior angle moves away from the rib cage.

TIPS (tips) *transjugular intrahepatic portosystemic shunt*.

tiqueur (tĭ-kĕr') [Fr.] One afflicted with a tic.

tire (tĭr) [AS. *teorian*, to tire] **1.** To become fatigued. **2.** To exhaust or fatigue.

tires (tĭrz) Trembles.

tiring (tĭr'ĭng) Fastening wire around the fragments of a bone.

tissue (tĭsh'ŭ) [O.Fr. *tissu*, from L. *texere*, to weave] A group or collection of similar cells and their intercellular sub-

stance that perform a particular function. The four major groups are epithelial, connective, muscular, and nervous tissues.

adipose t. Fat.

areolar t. A form of loose connective tissue consisting of fibroblasts in a matrix of tissue fluid and collagen and elastin fibers. Many white blood cells are present. It is found subcutaneously and beneath the epithelium of all mucous membranes. SEE: *connective t.* for illus.

bone t. Osseous t.

bronchus-associated lymphoid t. ABBR: BALT. Lymph nodules that contain clusters of T and B lymphocytes and macrophages within the mucosa of the bronchial wall; a component of the mucosal immune system that defends all mucosal surfaces against pathogens. SEE: *immune system, mucosal.*

brown adipose t. ABBR: BAT. Brown fat.

cancellous t. Spongy bone with many marrow cavities. It is present at the ends of long bones and in the interior of most flat bones.

chondroid t. Embryonic cartilage.

chordal t. Tissue of the notochord or derived from it. The nucleus pulposus is derived from the notochord.

chromaffin t. Chromaffin system.

connective t. Tissue that supports and connects other tissues and parts of the body. Connective tissue has comparatively few cells. Its bulk consists of intercellular substance or matrix, whose nature gives each type of connective tissue its particular properties. The vascular supply varies: cartilage, none; fibrous, poor; adipose, good; and bone, abundant. Connective tissue includes the following types: areolar, adipose, fibrous, elastic, reticular, cartilage, and bone. Blood may also be considered a connective tissue. SEE: *illus.*

elastic t. A form of connective tissue in which yellow elastic fibers predominate. It is found in certain ligaments, the walls of blood vessels, esp. the larger arteries, and around the alveoli of the lungs.

embryonic t. Any tissue as yet undifferentiated or fully specialized.

endothelial t. Endothelium.

epithelial t. Epithelium.

erectile t. Spongy tissue, the spaces of which fill with blood, causing it to harden and expand. It is found in the penis, clitoris, and nipples.

fatty t. Fat.

fibrous t. Connective tissue consisting principally of collagen fibers. Also called white fibrous or dense connective tissue; may be regular (parallel fibers) or irregular.

gelatinous t. Tissue from which gelatin may be obtained by treating it with hot water.

glandular t. A group of epithelial cells capable of producing secretions.

granulation t. The newly formed vascular and connective tissue produced in the early stages of wound healing.

hard t. In dentistry, the term used to denote any of the three calcified tissue components of the tooth: enamel, dentin, and cementum.

homologous t. Tissues that are identical in structure.

indifferent t. Tissue composed of undifferentiated cells as in embryonic tissue.

interstitial t. Connective tissue that forms a network with the cellular portions of an organ.

lymphadenoid t. Aggregates of lymphatic tissue found in the spleen and lymph nodes.

lymphoid t. Collections of lymphocytes in all stages of development found in the spleen, thymus, lymph nodes, lymph nodules of the digestive tract (tonsils, Peyer's patches), and the respiratory, urinary, and reproductive tracts.

mesenchymal t. The embryonic mesenchyme.

mucosa-associated lymphoid t. ABBR: MALT. Aggregates of T and B lymphocytes found in all mucous membranes, a line of defense against infection. Examples include Peyer's patches in the small intestine and lymph nodules in the colon, trachea, and bronchi. MALT contains CD4+ and CD8+ T cells and activated B cells and may occasionally undergo malignant transformation into lymphomas. SEE: *mucosal immune system.*

mucous t. The jellylike connective tissue of the umbilical cord.

muscular t. Muscle.

myeloid t. The bone marrow in which most blood cells are formed.

nerve t. The neurons and neuroglia of the nervous system. SEE: *neuron.*

osseous t. Bone, a connective tissue with a matrix of calcium phosphate and calcium carbonate surrounding osteocytes SYN: *bone tissue.* SEE: *bone.*

reticular t. A type of connective tissue consisting of delicate fibers forming interlacing networks. Fibers stain selectively with silver stains and are called argyrophil fibers. Reticular tissue supports blood cells in lymph nodes, bone marrow, and the spleen.

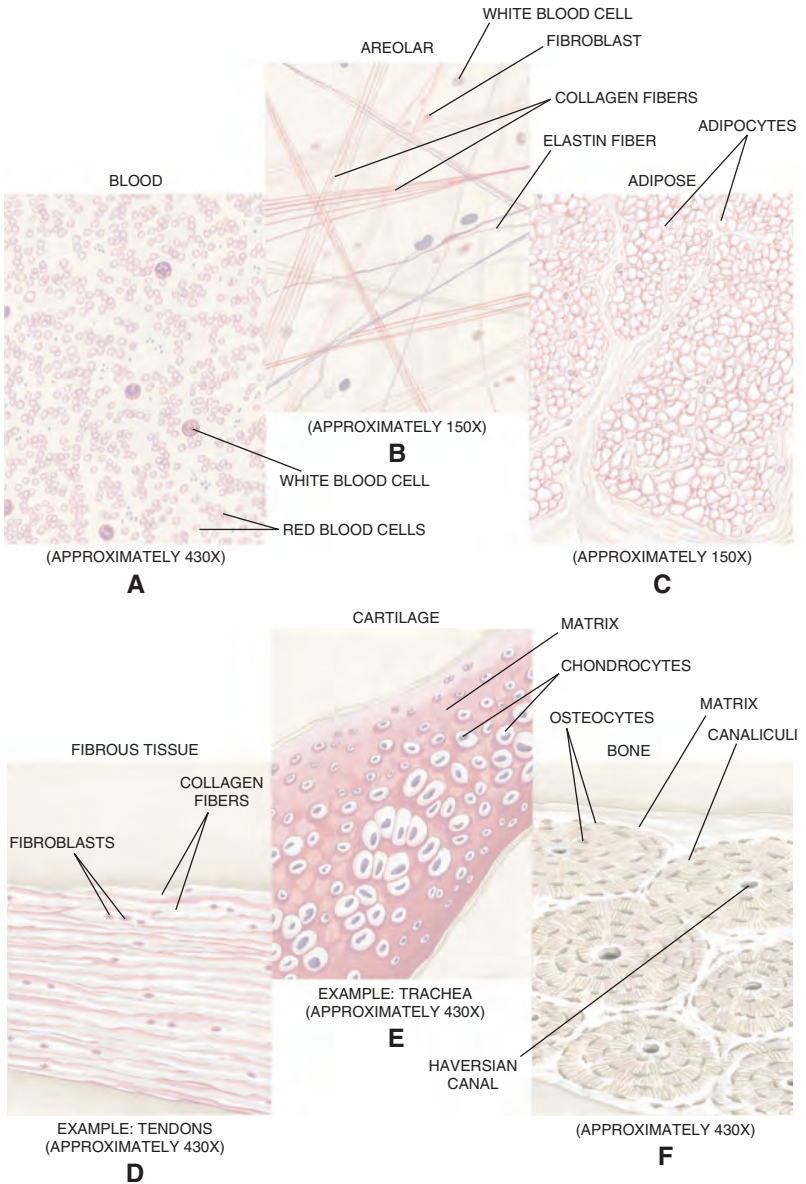
sclerous t. Firm connective tissue such as bone and cartilage.

skeletal t. Bone.

splenic t. The highly vascular splenic pulp.

subcutaneous t. Superficial fascia.

tissue ablation The coagulation, cooking, drying, or destruction of tissues, e.g., with cautery, chemicals, or thermotherapy.



CONNECTIVE TISSUES

(A) blood, (B) areolar, (C) adipose, (D) fibrous, (E) cartilage, (F) bone

tissue air ratio In radiation therapy, the ratio of the absorbed dose at a given depth to the absorbed dose at the same point in free space.

tissue bank A facility for collecting, processing, and storing tissue for later transplantation. Tissue stored includes bone, skin, nerve, fascia, tendon, heart

valve, dura mater, cornea, and bone marrow. These are tested for microbial pathogens and stored either in a freeze-dried or frozen state.

tissue expansion, soft A technique used in plastic surgery to expand skin prior to excising an area to achieve a more cosmetic wound closure. One or more

expander balloons are inserted under the skin. The balloons are then expanded by progressively increasing the amount of saline solution in them. This is done on a weekly basis for whatever time is required to sufficiently stretch the overlying skin. After the expansion is completed, the plastic surgical procedure is performed. This permits removal of skin without having to cover the area by a skin graft. SEE: *surgery, plastic; W-plasty; Z-plasty.*

tissue factor ABBR: TF. Coagulation factor III.

tissue filler Any substance used to smooth body contours, eliminate defects in body structure, or improve cosmesis.

tissue integrity, impaired A state in which an individual experiences damage to mucous membrane or corneal, integumentary, or subcutaneous tissue. SEE: *Nursing Diagnoses Appendix.*

tissue perfusion, ineffective (specific type): renal, cerebral, cardiopulmonary, gastrointestinal, peripheral The state in which an individual experiences a decrease in nutrition and oxygenation at the cellular level due to a deficit in capillary blood supply. SEE: *Nursing Diagnoses Appendix.*

tissue plasminogen activator ABBR: TPA. **1.** A natural enzyme that helps degrade blood clots by freeing plasmin from plasminogen. Plasmin in turn breaks down fibrin, the substance that forms the structural meshwork of clots. **2.** A recombinant enzyme, produced in the laboratory by *Escherichia coli*, for use in the treatment of thrombosis, esp. in myocardial infarction and ischemic stroke. Recombinant TPA is one of several thrombolytic drugs that can be given to patients during myocardial infarction (MI) to restore the flow of blood through occluded coronary arteries. Restoring perfusion keeps heart muscle from dying, reduces the damage caused by the infarction, and reduces the subsequent risk of congestive heart failure and death. SYN: *recombinant TPA.* SEE: *thrombolysis.*

tissue processor **1.** A device that prepares tissue samples for sectioning and microscopic examination in the clinical laboratory. **2.** A device that disinfects tissues to use in transplantation or allograft surgery.

tissue reaction The response of living tissues to altered conditions or types of restorative materials, metals or cements.

tissular (tish'ū-lār) Concerning living tissues.

titanium (tī-tā'nē-ūm) [L. *titan*, the sun] SYMB: Ti. A metallic element found in combination with minerals; atomic weight, 47.90; atomic number, 22; specific gravity, 4.54. In dentistry, it is used as an alloy chiefly for appliances and

implants because of its biological acceptance and resistance to corrosion.

t. dioxide A chemical used to protect the skin from the sun. It is also used in industrial applications to produce white in paints and plastics.

Türk's irritation cell A cell resembling a plasma cell, found in cases of severe anemia or chronic infection.

titer (tī'tēr) [F. *titre*, standard] Standard of strength per volume of a volumetric test solution.

agglutination t. The highest dilution of a serum that will cause clumping (agglutination) of the antigen being tested.

antibody t. The concentration of a specific antibody in plasma. Antibody titers are used to establish the diagnosis of some infectious diseases: a rising titer indicates a recent exposure to a specific infectious antigen.

titillation (tīt'īl-ā'shūn) [L. *titillatio*, a tickling] **1.** The act of tickling. **2.** The state of being tickled. **3.** The sensation produced by tickling.

titin (tī'tin) An elastic protein in sarcomeres that anchors myosin filaments to the Z disks.

titrate (tī'trāt) To determine or estimate by titration.

titration (tī-trā'shūn) [Fr. *titre*, a standard] **1.** Estimation of the concentration of a chemical solution by adding known amounts of standard reagents until alteration in color or electrical state occurs. **2.** Determination of the quantity of antibody in an antiserum.

titre (tīt'ēr) Titer.

titrimetric (tī'trī-mēt'rīk) [" + Gr. *metron*, measure] Employing the process of titration.

titrimetry (tī-trīm'ē-trē) [*titration* + Gr. *metron*, measure] Analysis by titration.

titubation (tīt'ū-bā'shūn) [L. *titubatio*, a staggering] A coarse and backward tremor of the trunk. In patients with cerebellar disease, standing sometimes provokes this tremor.

lingual t. Stuttering.

Tl Symbol for the element thallium.

TLC **1.** *tender loving care*. **2.** *total lung capacity*. **3.** *thin-layer chromatography*.

TLD *thermoluminescent dosimeter*.

T.L.R. *tonic labyrinthine reflex*.

Tm **1.** Symbol for the element thulium.

2. Symbol for maximal tubular excretory capacity of the kidneys.

TMJ *temporomandibular joint*.

TMP *trimethoprim*.

Tn Symbol for normal intraocular tension.

TNF *tumor necrosis factor*.

TNM classification Method of classifying malignant tumors with respect to primary tumor, involvement of regional lymph nodes, and presence or absence of metastases. SEE: *cancer*.

TNT *trinitrotoluene*.

toadskin (tōd'skīn) A condition characterized by excessive dryness, wrinkling, and scaling of skin sometimes seen in vitamin deficiencies.

toadstool (tōd'stool) Any of various fungi with an umbrella-shaped cap, esp. a poisonous mushroom.

tobacco (tō-bāk'ō) [Sp. *tabaco*] A plant (scientific name *Nicotiana tabacum*) whose leaves are cultivated, dried, and adulterated for use in smoking, chewing, and snuffing. The use of tobacco creates more preventable disability and death than the use of any other commercially available product. The tobacco leaf contains nicotine, a highly addictive alkaloid, and numerous other chemicals. During its combustion, it releases thousands of hydrocarbons into the oral, digestive, and respiratory tract of the smoker. These substances have been linked to coronary and peripheral arterial disease, emphysema, chronic bronchitis, peptic ulcer disease, and cancers of the lungs, oral cavity, and gastrointestinal tract. SEE: *risk factor*; *passive smoking*; *smokeless tobacco*.

smokeless t. Tobacco used in the form of snuff, tobacco powder, or chewing tobacco. These products irritate the oral mucosa and gingiva, and their continued use results in an increased risk of cancer of the mouth, larynx, throat, and esophagus. Smokeless tobacco contains nicotine and is addictive. Its use is greatest among adolescents, esp. males. An estimated 1.4% to 8.8% of adults in the U.S. use smokeless tobacco products. SEE: *snuff* (2).

spit t. SEE: *smokeless t.*

TOBEC *total body electrical conductivity.* One of several means of estimating or measuring body composition.

Tobias syndrome Apical lung cancer.

toco- Combining form indicating relationship to *labor* or *childbirth*.

tocodynamograph (tō'kō-dī'nā-grāf) [Gr. *tokos*, birth, + *dynamis*, power, + *graphein*, to write] A record obtained by using a tocodynamometer.

tocodynamometer (tō'kō-dī'nām-ōm'ē-tēr) [+ *dynamis*, power, + *metron*, a measure] A device for estimating the force of uterine contractions in labor.

tocograph (tōk'ō-grāf) [+ *graphein*, to write] A device for estimating and recording the force of uterine contractions.

tocography (tō'kōg'rā-fē) Recording the intensity of uterine contractions.

tocology (tō-kōl'ō-jē) [+ *logos*, word, reason] Science of parturition and obstetrics.

tocolysis (tō'kō-lī'sīs) [+ *lysis*, dissolution] Inhibition of uterine contractions. Drugs used for this include adrenergic agonists, magnesium sulfate, and ethanol.

tocolytic (tō-kō-lī'tīk) [Gr. *tokos*, child-

birth, labor, + *lysis*, reduction, relief] **1.** Capable of relieving uterine contraction by reducing the excitability of myometrial muscle. **2.** Any agent that diminishes uterine contractions by reducing myometrial excitability.

tocopherol (tō-kōf'ēr-ōl) [+ *pherein*, to carry, + L. *oleum*, oil] Generic term for vitamin E (alpha-tocopherol) and a number of chemically related compounds, most of which have the biological activity of vitamin E.

tocophobia (tō'kō-fō'bē-ā) [+ *phobos*, fear] An abnormal fear of childbirth.

toddler (tōd'lēr) **1.** A colloquial term for a child who has begun to walk but whose gait remains clumsy or unsteady. **2.** A child between the ages of 2 and 4 years.

Todd's paralysis (tōdz) Transient, focal neurological deficits, occurring after a seizure, that resemble a stroke but resolve spontaneously.

Todd unit (tōd) In a test of inhibition hemolysis by enzymes such as antistreptolysin O, the reciprocal of the highest dilution that inhibits hemolysis.

toe (tō) [AS. *ta*] A digit of the foot. SYN: *digit*. SEE: *foot* for illus.

claw t. Hammertoe.

dislocation of the t. Traumatic displacement of bones of a toe. This condition is treated essentially the same as dislocation of the finger. SEE: *finger*, *dislocation of*.

fanning of t. Spreading of toes, esp. when the sole is stroked.

Morton's t. SEE: *Morton's toe*.

pigeon t. Walking with the toes turned inward.

turf t. A hyperextension injury of the first metatarsophalangeal (MTP) joint. Severe hyperextension also injures the plantar sesamoids and flexor tendons. The injury commonly occurs on artificial surfaces such as Astro Turf®, where the competitors wear light, flexible-soled shoes that allow MTP hyperextension on the firm surface.

webbed t. Toes joined by webs of skin.

toe clonus Contraction of the big toe caused by sudden extension of the first phalanx.

toe drop Inability to lift the toes.

toenail (tō'nāl) Unguis. SEE: *nail*.

toe reflex A reflex in which strong flexion of the great toe flexes all the muscles below the knee.

tofu (tō-foo') Soybean curd. It is a dietary source of proteins, isoflavones, and phytoestrogens.

Togaviridae (tō'gā-vīr'ī-dē) [L. *toga*, coat, + *virus*, poison] A family of RNA viruses that include the genus *Alphavirus*. They cause Western and Eastern equine encephalitis. Other *Togaviridae* include the rubiviruses (e.g., rubella virus).

toilet (toy'lēt) [Fr. *toilette*, a little cloth]

1. Cleansing of a wound after operation or of an obstetrical patient. 2. An apparatus for use during defecation and urination to collect and dispose of these waste products.

toilet training Teaching a child to control urination and defecation until placed on a toilet. The bowel movements of an infant may habitually occur at the same time each day very early in life, but because the child does not have adequate neuromuscular control of bowel and bladder function until the end of the second year, it is not advisable to begin this training until then. Close to that time, placing the child on a small potty chair for a short period several times a day may allow him or her to stay dry. First the diapers are removed while the child is awake, later removed during naps and the child told he or she should be able to stay dry. This schedule may need to be interrupted for several days to a week if the child does not remain dry.

To protect the bed, a rubber sheet should be used during the training period. Training pants or "pull-ups" may help in the transition from passive to active control of toilet habits. There is no difference in ease of training between boys and girls, each taking about 3 to 6 months.

Children who are unsuccessful in remaining dry or controlling their bowels should not be punished. To do so may promote the later development of enuresis or constipation. In any event, it is neither abnormal nor harmful for training to be delayed until well into the third year of life. If not achieved by then, professional evaluation should be undertaken to detect the rare case of genitourinary or gastrointestinal abnormalities contributing to such a delay.

-toin (tō-īn") [Fm. (*hydantoin*)] A suffix used in pharmacology to designate an anticonvulsant medication derived from hydantoin.

token economy system Any program using positive reinforcement (operant conditioning) to teach or train desired skills or behaviors.

toko- SEE: *toco-*.

tolerable daily intake (tōl'ēr-ū-bīl) [L. *tolerabilis*] ABBR: TDI. That quantity of a chemical contaminant that accidentally enters the food supply and may be consumed on a daily basis without known adverse effects on health. SEE: *acceptable daily intake*.

tolerable upper limit ABBR: TUL. The maximum amount of a mineral or vitamin supplement that a person may consume in a day without incurring health risk.

tolerance (tōl'ēr-āns) [L. *tolerantia*, tolerance] Capacity for enduring a large amount of a substance (e.g., food, drug, or poison) without an adverse effect and

showing a decreased sensitivity to subsequent doses of the same substance.

drug t. The progressive decrease in the effectiveness of a drug.

exercise t. The amount of physical activity that can be done under supervision before exhaustion.

glucose t. The ability of the body to absorb and use glucose. SEE: *oral glucose tolerance test*.

immunological t. The state in which the immune system does not react to the body's own antigens. It is caused by the destruction of lymphocytes that express receptors to self-antigens as they develop. Failure of these mechanisms may result in autoimmune disease.

impaired glucose t. ABBR: IGT. Altered glucose metabolism in which fasting blood sugars are less than 126 mg/dl, and blood sugar levels are over 140 mg/dl but less than 200 mg/dl 2 hr after drinking 75 g of glucose.



Having either impaired glucose tolerance or impaired fasting glucose predisposes patients to diabetes mellitus, heart attack, stroke, and early death. Patients with abnormal glucose metabolism ought to receive professional dietary counseling. They should also begin a program of regular physical exercise.

oral t. The suppression of autoimmune or allergic responses as a result of eating antigenic material.

pain t. The degree of pain an individual can withstand.

radiation t. The level below which tissue radiation exposure will be least harmful. Some organs are less tolerant to radiation than others.

tissue t. The ability of specific tissues to withstand the effects of ionizing radiation.

tolerance test A test of the ability of the patient or subject to endure the medicine given or exercise taken.

tolerant Capable of enduring or withstanding drugs without experiencing ill effects.

tolerogen (tōl'ēr-ā-jěn) Any substance that causes immunological tolerance; any substance that blocks or prevents an immune response to an antigen. **tolerogenic** (tōl'ēr-ā-jěn'īk), *adj.*

tolerogenic (tōl'ēr-ō-jěn'īk) Producing immunological tolerance.

toluene (tōl'yā-wēn") A toxic hydrocarbon derived from coal tar.

toluidine (tōl-ū'y-dīn) C₇H₉N; aminotoluene, a derivative of toluene.

tomatine (tō'mā-tēn) A substance derived from tomato plants affected by wilt. It has antifungal action.

-tome Combining form meaning *cutting, cutting instrument*.

Tomlin, Evelyn Malcolm (tōm'līn) A

U.S. nursing theorist who, with Helen Erickson and Mary Ann Swain, developed and published the grand nursing theory of Modeling and Role Modeling. SEE: *Nursing Theory Appendix*.

tomo- Combining form indicating *section, layer*.

tomodensitometry (tō'mō-dēn-sī-tōm'ī-trē) A rarely used synonym for CT scanning.

tomogram (tō'mō-grām) [Gr. *tome*, incision, + *gramma*, something written] The radiograph obtained during tomography.

tomograph (tō'mō-grāf) [+ *graphein*, to write] An x-ray tube attached to a Bucky diaphragm by a rigid rod allowing rotation around a fixed point (fulcrum) during the radiographical exposure for tomography.

tomography (tō-mōg'rā-fē) A radiographic technique that selects a level in the body and blurs out structures above and below that plane, leaving a clear image of the selected anatomy. This is accomplished by moving the x-ray tube in the opposite direction from the imaging device around a stationary fulcrum defining the plane of interest. Tube movements can be linear, curvilinear, circular, elliptical, figure eight, hypocycloidal, or trispiral. SYN: *radiography, body section*.

computed axial t. ABBR: CAT. SEE: *computed t.*

computed t. A computerized x-ray scanning system that produces a sectional anatomic image. It is achieved by digital processing of x-ray attenuation coefficients from a 360° wedge scan of ionizing radiation. There is considerable use of data from the attenuation coefficients in diagnosis.

electrical impedance t. Cross-sectional body imaging that reconstructs pictures of internal organs based on measurements of their electrical activity as detected by electrodes placed on the surface of the body.

electron-beam t. Ultrafast computed t.

helical computed t. Computed tomographic (CT) images that are obtained as the CT table moves continuously during a single, held breath. Detailed evaluation of dynamic internal features is feasible with this technique. SYN: *spiral computed tomography*.

optical coherence t. ABBR: OCT. A radiographical method used to obtain high-resolution cross-sectional images of tissues and their defects, e.g., of the structures of the eye.

panoramic t. Zonography.

positron emission t. ABBR: PET. Reconstruction of brain sections by using positron-emitting radionuclides. By using several different radionuclides, researchers can measure regional cere-

bral blood flow, blood volume, oxygen uptake, and glucose transport and metabolism, and can locate neurotransmitter receptors. PET has been used with fludeoxyglucose F 18 to identify and localize regional lymph node metastases and to help assess response to therapy.

The images produced by PET are in colors that indicate the degree of metabolism or blood flow. The highest rates appear red, those lower appear yellow, then green, and the lowest rates appear blue. The images in various disease states may then be compared to those of normal subjects. SEE: *illus.*

quantitative computed t. ABBR: QCT. A method for determining the bone mineral density of a three-dimensional bony specimen, e.g., in the vertebral bodies or the forearms. It is used in the diagnosis of osteopenia and osteoporosis.

single photon emission computed t. ABBR: SPET, SPECT. A medical imaging method for reconstructing sectional images of radiotracer distributions. SEE: *nuclear medicine scanning test; positron emission t.*

spiral computed t. Helical computed tomography.

ultrafast computed t. Computed tomographic (CT) scanning that produces images by rotating the x-ray (electron) beam at targets placed around a patient, instead of moving a patient on a gantry through the scanner. The technique minimizes patient movement artifacts and decreases scanning times to about 50 to 100 msec. It is capable of providing good resolution of vascular structures, such as the aorta and the coronary arteries. SYN: *electron-beam tomography*.

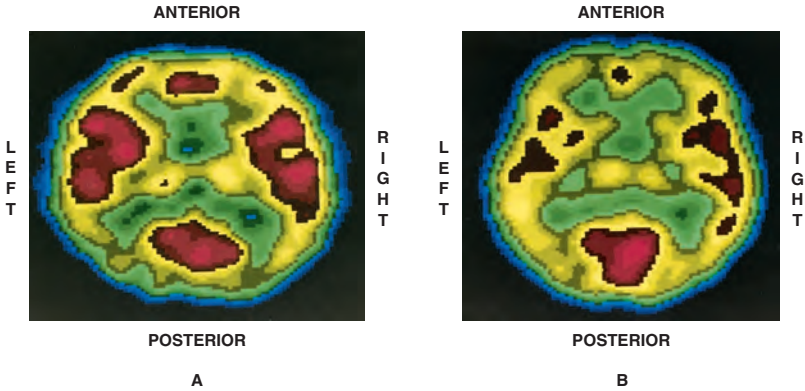
xenon-enhanced computed t. Computed tomographic (CT) scanning that uses the inert gas xenon to improve the visual distinction between healthy and abnormal tissues, esp. to visualize blood flow to different regions of the brain in stroke.

-tomy Combining form meaning *cutting, incision*.

tonaphasia (tō'nā-fā'sē-ā) [L. *tonus*, a stretching, + *a-*, not, + *phasia*, speech] Inability to remember a tune owing to cerebral lesion.

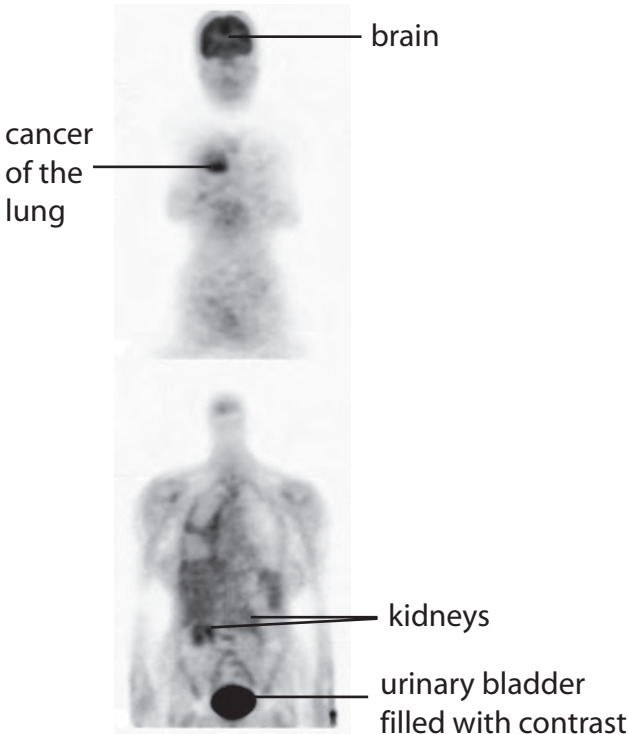
tone (tōn) [L. *tonus*, a stretching]
1. That state of a body or any of its organs or parts in which the functions are healthy and normal. In a more restricted sense, the resistance of muscles to passive elongation or stretch. **2.** Normal tension or responsiveness to stimuli, as of arteries or muscles, seen particularly in involuntary muscle (such as the sphincter of the urinary bladder). SYN: *tonicity*. (2). A musical or vocal sound.

muscular t. The state of slight con-



PET SCAN OF BRAIN

Transverse section in (A) normal young patient, (B) normal aging patient



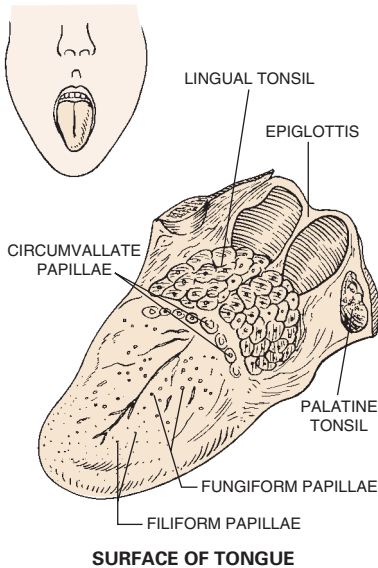
POSITRON EMISSION TOMOGRAPHY

PET SCAN revealing lung cancer

traction usually present in muscles that contributes to posture and coordination; the ability of a muscle to resist a force for a considerable period without change in length.

tone deafness SEE: under *deafness*.

tongue (tŭng) [AS. *tunge*] A freely movable muscular organ that lies partly in the floor of the mouth and partly in the pharynx. It is the organ of taste and contributes also to chewing, swallowing, and speech. SYN: *lingua*. SEE: *illus.*



ANATOMY: The tongue consists of a body and root and is attached by muscles to the hyoid bone below, the mandible in front, the styloid process behind, and the palate above, and by mucous membrane to the floor of the mouth, the lateral walls of the pharynx, and the epiglottis. A median fold (frenulum linguae) connects the tongue to the floor of the mouth. The surface of the tongue bears numerous papillae of three types: filiform, fungiform, and circumvallate (or vallate). Taste buds are present on the surfaces of many of the papillae, esp. the vallate papillae. Mucous and serous glands (lingual glands) are present; their ducts open on the surface. The lingual tonsils are lymphatic tissue on the base of the tongue. A median fibrous septum extends the entire length of the tongue.

Arteries: The lingual, exterior maxillary, and ascending pharyngeal arteries supply blood to the tongue. **Muscles:** Extrinsic muscles include genioglossus, hypoglossus, and styloglossus; intrinsic muscles consist of four groups: superior, inferior, transverse, and vertical lingualis muscles. The hypoglossal nerves are motor to the tongue; the facial and glossopharyngeal nerves are sensory for taste. **Nerves:** Lingual nerve (containing fibers from trigeminal and facial nerves), glossopharyngeal, vagus, and hypoglossal.

bifid t. A tongue with a cleft at its anterior end. SYN: *cleft tongue*; *forked tongue*.

burning t. Burning mouth syndrome.

cleft t. Bifid t.

coated t. A tongue covered with a layer of whitish or yellowish material

consisting of desquamated epithelium, bacteria, or food debris. The significance of this is difficult to interpret. It may mean only that the patient slept with the mouth open or has not eaten because of loss of appetite. If darkly coated, it may indicate a fungus infection.

deviation of t. Marked turning of the tongue from the midline when protruded, indicative of lesions of the hypoglossal nerve.

t. diagnosis In traditional Chinese medicine, the methodical evaluation of the appearance of the patient's tongue to determine the cause of a complaint or syndrome.

dry t. A tongue that is dry and shriveled, usually indicative of dehydration. It may also be the result of mouth breathing.

fern-leaf t. A tongue possessing a prominent central furrow and lateral branches.

filmy t. A tongue possessing symmetrical whitish patches.

fissured t. Scrotal tongue.

forked t. Bifid t.

furred t. A coated tongue on which the surface epithelium appears as a coat of white fur. It is seen in nearly all fevers. Unilateral furring may result from disturbed innervation, as in conditions affecting the second and third branches of the fifth nerve. It has been noted in neuralgia of those branches and in fractures of the skull involving the foramen rotundum. Yellow fur indicates jaundice.

geographic t. A tongue with white raised areas, normal epithelium, and atrophic regions. This condition is also known as benign migratory glossitis. SEE: *illus.*



GEOGRAPHIC TONGUE

hairy t. A tongue covered with hair-like papillae entangled with threads produced by the fungi *Aspergillus niger* or *Candida albicans*. This condition is usually seen as the result of antibiotic therapy that inhibits growth of bacteria normally present in the mouth, permitting overgrowth of fungi. SYN: *glossotrichia*; *lingua nigra*.

magenta t. A magenta-colored

tongue seen in cases of riboflavin deficiency.

parrot t. A dry shriveled tongue seen in typhus.

raspberry t. Strawberry t.

scrotal t. A furrowed and rugated tongue, resembling the skin of the scrotum. SYN: *fissured tongue*.

smoker's t. Leukoplakia.

smooth t. A tongue with atrophic papillae. It is characteristic of many conditions, such as anemia and malnutrition.

strawberry t. A tongue that first has a white coat except at the tip and along the edges, with enlarged papillae standing out distinctly against the white surface. Later the white coat disappears, leaving a bright red surface. This is characteristic of scarlet fever. SYN: *raspberry tongue*.

trifid t. A tongue in which the anterior end is divided into three parts.

trombone t. The rapid involuntary movement of the tongue in and out.

tongue-swallowing A condition in which the tongue tends to fall backward and obstruct the openings to the larynx and esophagus. The tongue is not swallowed and the term is inaccurate; nevertheless, it is occasionally used. The condition is due to excessive flaccidity of the tongue during unconsciousness. Airway control is achieved through one of the following maneuvers: forceful elevation of the chin and extension of the head during artificial respiration, in order to open the airway; or insertion of a mechanical airway device, such as an oropharyngeal airway, to push the tongue out of the airway.



The rescuer should never place his or her hand inside the victim's mouth to move the tongue.

tongue thrust The infantile habit of pushing the tongue between the alveolar ridges or incisor teeth during the initial stages of suckling and swallowing. If this habit persists beyond infancy, it may cause anterior open occlusion, jaw deformation, or abnormal tongue function.

tongue-tie Lay term for ankyloglossia, congenital shortness of the frenulum of the tongue. The condition has been shown to have no functional significance, even for speech.

tonic (tôn'ik) [Gr. *tonikos*, from *tonos*, tone] 1. Pert. to or characterized by tension or contraction, esp. muscular tension. 2. Restoring tone. 3. A medicine that increases strength and tone. Tonics are subdivided according to action, such as cardiac or general.

tonic immobility response Muscular paralysis that occurs during significant

stress or injury (e.g., as an animal is fleeing or trying to fight off a predator). It is a common reaction experienced by animals and humans faced with overwhelming force (e.g., in battle or during sexual assault).

tonicity (tō-nis'î-tē) [Gr. *tonos*, act of stretching] 1. Property of possessing tone, esp. muscular tone. 2. Tone (2).

tonic labyrinthine reflex Labyrinthine righting reflex.

tonofibril (tôn'ô-fî'brîl) Tenofibril.

tonogram (tô'nô-grām) [n + *gramma*, something written] The record produced by a tonograph.

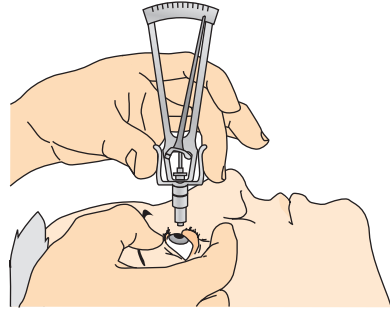
tonograph (tô'nô-gráf) [n + *graphein*, to write] A recording tonometer.

tonography (tô-nôg'rā-fē) The recording of changes in intraocular pressure.

tonometer (tôn-ôm'ê-tēr) [n + *metron*, measure] An instrument for measuring tension or pressure, esp. intraocular pressure.

Schiötz t. SEE: *Schiötz tonometer*.

tonometry (tôn-ôm'ê-trē) The measurement of tension of a part, as intraocular tension, used to detect glaucoma. SEE: *illus.*



TONOMETRY

Measuring intraocular eye pressure

analytical t. A technique formerly used in blood gas analysis in which the liquid blood sample and its gas are held at equilibrium and the partial pressures of oxygen and carbon dioxide are measured.

digital t. Determining intraocular pressure by use of the fingers.

gastric t. Measurement of the partial pressure of carbon dioxide (PCO₂) in the stomach of critically ill patients to determine how well the stomach and other internal organs are perfused with blood and oxygen. Poor gastric perfusion is found in more severe conditions, i.e., those that carry an increased risk of death.

noncontact t. Determining intraocular pressure by measuring the degree of indentation of the cornea produced by a puff of air.

tonoplast (tôn'ô-plást) [n + *plassein*, to

form] The membrane surrounding an intracellular vacuole.

tonsil (tŏn'sil) [L. *tonsilla*, almond] **1.** A mass of lymphoid tissue in the mucous membranes of the pharynx and base of the tongue. The free surface of each tonsil is covered with stratified squamous epithelium that forms deep indentations, or crypts, extending into the substance of the tonsil. The palatine tonsils, pharyngeal tonsils (adenoids), and lingual tonsils form a ring of immunologically active tissue. **2.** A rounded mass on the inferior surface of the cerebellum lying lateral to the uvula.

INFECTION OF THE TONSILS: Tonsils detect and respond to pathogens entering the body through the mouth and nose. Inflammation of the tonsils (tonsillitis) occurs during upper respiratory infections caused by common viruses. Beta-hemolytic streptococci or, occasionally, *Staphylococcus aureus* infections may occur as primary infections or follow viral infections, most commonly in children and immunocompromised adults. Clinically, the patient will have enlarged, reddened, tender glands, often coated with inflammatory exudate, which may form a pseudomembrane. The tonsils may stay enlarged after multiple infections and are sometimes surgically removed (tonsillectomy). **SEE: illus.**



INFLAMED TONSILS

Rheumatic fever, an autoimmune inflammatory disease, develops 2 to 3 weeks after streptococcal infections in about 3% of patients; it is believed that antibodies against streptococcal pharyngitis cross-react with antigens in the heart and joints.

cerebellar t. One of a pair of cerebellar lobules on either side of the uvula, projecting from the inferior surface of the cerebellum.

faucial t. Palatine t.

lingual t. A mass of lymphoid tissue located in the root of the tongue.

nasal t. Lymphoid tissue on the nasal septum.

palatine t. Two oval masses of lym-

phoid tissue that lie in the tonsillar fossa on each side of the oral pharynx between the glossopalatine and pharyngopalatine arches. They are commonly known as the tonsils. **SYN:** *faucial tonsil*.

pharyngeal t. Lymphoid tissue on the roof of the posterior superior wall of the nasopharynx. It is commonly called adenoids. **SEE:** *adenoid*.

tonsillar (tŏn'sī-lār) Pert. to a tonsil, esp. the faucial or palatine tonsil.

tonsillar area An area composed of the palatine arch, tonsillar fossa, glossopalatine sulcus, and posterior faucial pillar.

tonsillar crypt A deep indentation, lined with stratified squamous epithelium, into the lymphatic tissue of a lingual or palatine tonsil.

tonsillar fossa **SEE:** under *fossa*.

tonsillar ring The almost complete ring of tonsillar tissue encircling the pharynx. It includes the palatine, lingual, and pharyngeal tonsils. **SEE:** *tonsillar ring of the pharynx*.

tonsillectomy (tŏn-sil'ĕk'tō-mĕ) [L. *tonsilla*, almond + Gr. *ektome*, excision] Surgical removal of the tonsils. This procedure is typically performed for children with recurrent infections of the throat, or peritonsillar abscess, although it may also be used when enlarged tonsils cause obstructive sleep apnea. Whether the procedure is advisable in children with recurrent pharyngeal infections is a matter of debate. Complications of the procedure may include local bleeding, throat pain, injury to the upper airway, and aspiration pneumonia, among others. **SEE:** *Nursing Diagnoses Appendix*.

PATIENT CARE: *Preoperative:* The anesthetic methods (usually locally injected anesthesia) and expected sensations are explained to the adult patient. For children, the anesthetic methods and hospital routines are explained in simple, nonthreatening language; the child is allowed to try on hospital garb; and the child is shown the operating and recovery rooms, as appropriate to age. Parents are encouraged to remain with the child.

Postoperative: A patent airway is maintained, and the patient is placed in a semiprone or sidelying position until he or she has fully recovered from anesthesia. Vital signs are monitored, and the patient is assessed for bleeding (excessive swallowing in a semiconscious child), restlessness, tachycardia, and pallor. After the patient's gag reflex has returned, water and nonirritating fluids are permitted by mouth. Deep breathing and turning help to prevent pulmonary complications. Ice packs are applied and analgesics administered as prescribed. Vocal rest is encouraged and

the patient is instructed not to clear the throat or cough, because this may precipitate bleeding. Written discharge instructions covering use of fluids and soft diet and avoidance of overactivity are provided to the patient and family. Within 5 to 10 days postoperatively, a white scab will form in the patient's throat. The patient or family should report any bleeding, ear discomfort, or persistent fever.

tonsillitis (tôn-sil-ī'tis) [ʹ + Gr. *itis*, inflammation] Inflammation of a tonsil, esp. the faucial tonsil. SEE: *Nursing Diagnoses Appendix*.

acute parenchymatous t. Tonsillitis in which the entire tonsil is affected.

acute t. Inflammation of the lymphatic tissue of the pharynx, esp. the palatine or faucial tonsils. It may occur sporadically or in epidemic form, and usually is self-limiting.

SYMPTOMS: Throat pain, esp. while swallowing, is the cardinal symptom of tonsillitis; fever and malaise are common. Abrupt-onset headache, nausea and vomiting, and cervical lymphadenopathy are more commonly seen with streptococcal infections. Rhinorrhea, cough, and diarrhea are usually associated with viral infection. The tonsils are usually enlarged and red, but the degree of erythema does not reflect the severity of the pain. An exudate is often, but not always, present on the tonsils. Adolescents should be assessed for infectious mononucleosis, as it is quite common among teenagers and young adults.

ETIOLOGY: Viruses are the most common cause of tonsillitis. Beta-hemolytic streptococci infections may follow viral infections or occur as primary infections, esp. in school-aged children and immunocompromised adults (5% to 20% of cases).

TREATMENT: Viral tonsillitis is treated symptomatically. If group A beta-hemolytic streptococci infection is suspected, a throat culture is taken. Streptococcal tonsillitis must be treated with a 10-day course of oral penicillin or one intramuscular dose of long-acting benzathine penicillin to decrease the risk of rheumatic fever or glomerulonephritis. Rheumatic fever develops 2 to 3 weeks after streptococcal infections in about 3% of patients. If chronic tonsillitis occurs, the tonsils may be removed, but this operation is not as common as it was years ago. SEE: *rheumatic fever*.

follicular t. Inflammation of the follicles on the surface of the tonsil, which become filled with pus.

ulceromembranous t. Tonsillitis that ulcerates and develops a membranous film.

tonsilloolith (tôn'sil-ō-lith) [ʹ + Gr.

lithos, stone] A stone within a tonsil. SYN: *amygdalolith*.

tonsillopathy (tôn'si-lōp'ā-thē) Any disease of the tonsil.

tonsilloscopy (tôn'sil-lōs'kō-pē) [ʹ + Gr. *skopein*, to examine] Inspection of the tonsils.

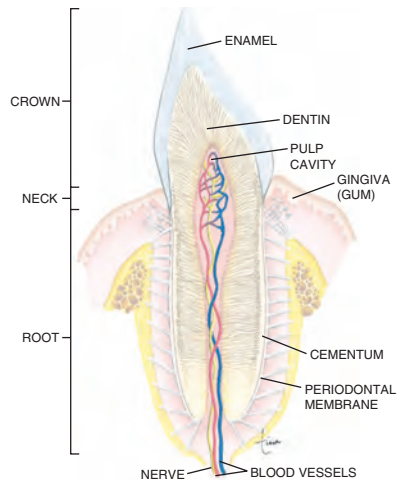
tonsillotomy (tôn-sil'ō-tōm) A surgical instrument used in tonsillectomy.

tonsillotomy (tôn'sil-ōt'ō-mē) [ʹ + Gr. *tome*, incision] Incision of the tonsils.

tonus (tō'nūs) [L., tension] The partial steady contraction of muscle that determines tonicity or firmness; the opposite of clonus. SYN: *tone*; *tonicity*.

tooth (tooth) *pl.* **teeth** [AS. *toth*] One of the hard, bony conical structures of the upper and lower jaws used for chewing. A tooth consists of a crown portion above the gum, a root portion embedded in a socket (alveolus) of the jaw bone, and a neck or cervical constricted region between the crown and root. The soft-tissue gingiva covers the neck and root to a variable extent, depending on age and oral hygiene. The major portion of a tooth consists of dentin, which is harder than bone; enamel; and cementum, which is similar to bone. The pulp cavity contains the dental pulp. Each tooth has five surfaces: occlusal, mesial, distal, lingual, and facial or buccal. SEE: *illus.*; *dentition*.

Everyone has two complete sets of teeth during his life. The 20 primary teeth are the first set of teeth a person develops. They exfoliate by age 14 and are replaced by the 32 permanent teeth. The permanent teeth include the following: incisors, canines (cuspids), premolars (bicuspid), and molars. On average, a child should have 6 teeth at 1



TOOTH STRUCTURE

(longitudinal section)

year, 12 teeth at 18 months, 16 teeth at 2 years, and 20 teeth at 12 years. Some children are born with a few erupted teeth; in other children the teeth may not appear until 16 months.

PATIENT CARE: Health care professionals should assess patients' teeth and gums during physical examinations, educate patients about routine dental hygiene (brushing, flossing, gum stimulation, use of oral rinses), and refer them to a dental professional for dental caries, eruption anomalies, or periodontal problems. SEE: *dental plaque; periodontal disease.*

accessional t. A permanent molar tooth that arises without deciduous predecessors in the dental arch.

anterior t. Any of teeth located close to the midline of the dental arch on either side of the jaw, including the incisors and canines.

baby t. Deciduous t.

deciduous t. Any of the 20 teeth that make up the first dentition, which are shed and replaced by the permanent teeth. SYN: *baby tooth; milk tooth.* SEE: *illus.*

hypersensitive t. A tooth sensitive to temperature changes, sweets, or percussion. It may exhibit gingival recession, exposed root dentin, caries, or periodontal disease.

TREATMENT: Popular treatments for hypersensitivity include topical varnishes, sealants, and topical fluoride applications. Other treatments include application of silver nitrate, formalin, glycerin, strontium chloride, potassium

nitrate, calcium compounds, sodium citrate, and potassium oxalate.

PATIENT CARE: The patient can reduce sensitivity by a regimen of plaque control, dentifrice with fluoride, self-applied fluoride, and control of diet.

impacted t. A tooth unable to erupt due to crowding by adjacent teeth, malposition of the tooth, or developmental disturbances.

malacotic t. A tooth soft in structure, white in color, and esp. prone to decay.

milk t. Deciduous tooth.

permanent t. Any of the 32 teeth that develop as the second dentition and replace the deciduous teeth. SYN: *secondary tooth.* SEE: *deciduous teeth* for illus.

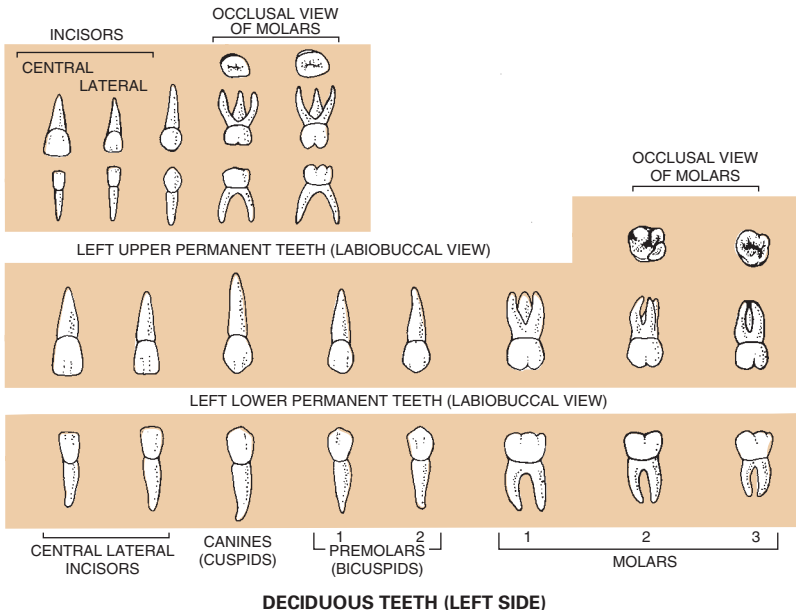
sclerotic t. A yellowish tooth that is naturally hard and highly resistant to caries.

secondary t. Permanent t.

wisdom t. The third most distal molar on each side of both jaws. These four molars may appear as late as the 25th year or may never erupt.

toothache Pain in a tooth or the region about a tooth. The origin of pain in a tooth is physical, chemical, thermal, and bacteriological trauma. Treatment may include restorations, extractions, or topical application of medications, among others. SYN: *dentalgia; odontalgia; odontodynia.*

tooth and nail syndrome A rare autosomal dominantly inherited syndrome characterized by malformed or absent teeth and defects in nail plate development. This syndrome is one of the ecto-



dermal dysplasias. SYN: *Witkop syndrome*.

tooth bleaching Use of an oxidizing chemical to remove stain or discoloration from a tooth. Bleaching techniques vary according to the vitality of the pulp.

at-home t.b. The lightening or whitening of discolored teeth, using a bleaching gel. Carbamide peroxide and hydrogen peroxide are common bleaching agents used for this purpose in concentrations ranging from 3% to 25%. Treatment must be carefully monitored to avoid overbleaching and damage to surrounding soft tissue.



Bleaching agents must not be placed on exposed root surfaces or soft tissue.

toothbrushing The act of cleaning the teeth and gums by using a soft brush specifically designed for this purpose. The toothbrush consists of tufts of soft, synthetic fibers or natural bristles mounted in a handle that may be straight or angled for better access or brushing action. It is usually used with fluoride toothpaste (a mildly abrasive, flavored dentifrice) in a manner suggested by dentists and dental hygienists as being a suitable method for cleaning. The proper use of a toothbrush stimulates periodontal tissue. SEE: *hygiene, oral; periodontal disease; plaque, dental*.

Good oral hygiene, consisting of proper brushing of the teeth with a soft-bristle brush, use of a fluoride-containing toothpaste, and daily use of dental floss, will help to prevent dental plaque. If brushing or flossing causes bleeding, pain, or irritation, a dentist should be seen without delay.

Some people with conditions that limit motion of their hands may have difficulty holding and using a toothbrush. This may be overcome by attaching the brush handle to the hand with a wide elastic band, or the handle may be enlarged by attaching a rubber or foam ball to it. Those with limited shoulder or elbow movement may find that lengthening the handle by attaching it to a long piece of wood or plastic is beneficial. In addition, an electric toothbrush may be of benefit.



If the toothbrush used has hard bristles or if any toothbrush is used too forcibly, gingival tissue may be eroded and damaged.

tooth migration, pathological Drifting or movement of teeth due to the pathological changes in areas adjacent to the

moving teeth. SEE: *drift, mesial; tooth movement*.

tooth migration, physiological The natural and expected movement of teeth as growth and development occur; normal tooth mobility. SEE: *drift, mesial; tooth migration, pathological; tooth movement*.

tooth numbering system A system used to identify teeth. The American Dental Association recognizes two systems: one used in the U.S. (the "universal/national system"), and another used in other countries (the "international standards organization system").

t. n. s. international standards organization An internationally recognized system of tooth numbering in which teeth in each quadrant are identified by numbers 1 through 8. A second number indicates the quadrant. Quadrant 1 is the maxillary right quadrant, quadrant 2 is the maxillary left quadrant, quadrant 3 is the mandibular left quadrant, and quadrant 4 is the mandibular right quadrant. Tooth number 13, e.g., indicates the maxillary right quadrant and the canine tooth.

t. n. s. universal/national A system of tooth numbering that uses numbers 1 through 32 to identify the permanent teeth. Tooth number 1 is the maxillary right third molar. Tooth number 17 is the mandibular left third molar. Primary teeth are identified in a similar manner, using the letters A through T.

toothpaste A dentifrice used with a toothbrush to clean the exposed surfaces of teeth. It may contain mild abrasives, whiteners, deodorants, sodium bicarbonates, peroxide, or caries-preventing agents. SEE: *toothbrushing*.

tartar control t. Toothpaste containing pyrophosphates that act as abrasives to remove plaque from teeth. Some evidence links these toothpastes to irritation of oral tissues.

toothpick Any small tapering sliver of wood or other material used to remove food debris from between the teeth. Early examples were made of gold, carved bone, or ivory.

top-, topo- Combining forms meaning *place, locale*.

topagnosis (tōp'äg-nō'sis) [Gr. *topos*, place, + *a*, not, + *gnosis*, knowledge] Loss of the ability to localize the site of tactile sensations.

topalgia (tō-pāl'jē-ä) ["/ + *algos*, pain] Pain in a localized site.

topectomy (tō-pēk'tō-mē) ["/ + *ektome*, excision] A form of neurosurgery in which small incisions are made through the thalamofrontal tracts.

topesthesia (tōp'ēs-thē'zē-ä) ["/ + *ais-thesis*, sensation] The ability through tactile sense to determine that skin is touched. SYN: *topognosia*.

tophaceous (tō-fä'shūs) [L. *tophaceus*,

sandy] **1.** Relating to a tophus.
2. Sandy or gritty.

tophus (tō'fūs) *pl.* **tophi** [L., porous stone] A deposit of sodium biurate in tissues near a joint, in the ear, or elsewhere in individuals with gout. SYN: *gouty pearl*. SEE: *illius*.



TOPHI

Left and right hands of a patient with multiple deforming gouty tophi

topical (tōp'ī-kāl) [Gr. " + "] Pert. to a definite surface area; local.

topalgia (tō'pō-āl'jē-ā) [" + *algos*, pain] Localized pain, common in neuroasthenia following emotional upsets.

topoanesthesia (tō'pō-ān'ēs-thē'zē-ā) [" + *an-*, not, + *aisthesis*, sensation] Loss of the ability to recognize the location of a tactile sensation.

topognosia, topognosis (tō'pōg-nō'sē-ā, -sīs) [" + *gnosis*, knowledge] Recognition of the location of a tactile sensation. SYN: *topesthesia*.

topographical (tōp'ō-grāf'ī-kāl) [" + "] Pert. to description of special regions.

topographical anatomy A study of all the

structures and their relationships in a given region (e.g., the axilla).

topographical disorientation (tōp'ō-grāf'ī-kil dis-ōr'ē-ēn-tā'shūn) ABBR: TD. Difficulty finding one's way from one location to another or navigating from a starting point to a destination. This disorder of visuospatial skills is sometimes present in patients who have had a stroke affecting the posterior portions of the brain; it is also common in some dementias (e.g., Alzheimer's disease).

topographic memory The ability to recall the contours, design, shape, or structure of a previously experienced environment. The ability to hold in the mind a map of a person, place, or thing.

topography (tō-pōg'rā-fē) The physical features of a surface, e.g., of the contours or slope of a body structure.

topoisomerase (tōp'ō-ī-sōm'er-ās") [" + "] One of several enzymes that cleave and rejoin the coiled sugar-phosphate backbone of DNA or RNA.

topology (tō-pōl'ō-jē) **1.** In obstetrics, the relationship of the presenting fetal part to the pelvic outlet. **2.** In mathematics, the study of the relationships between objects that share a surface or a common border.

toponarcosis (tō'pō-nār-kō'sīs) [" + *narkosis*, a numbing] Local anesthesia.

toponym (tōp'ō-nīm) The name of a region.

toponymy (tō-pōn'ī-mē) [" + *onoma*, name] Nomenclature of the regions of the body.

topothermesthiometer (tōp'ō-thēr'mēs-thē-zē-ōm'ē-ter) [" + *therme*, heat, + *aisthesis*, sensation, + *metron*, measure] A device for measuring local temperature sense.

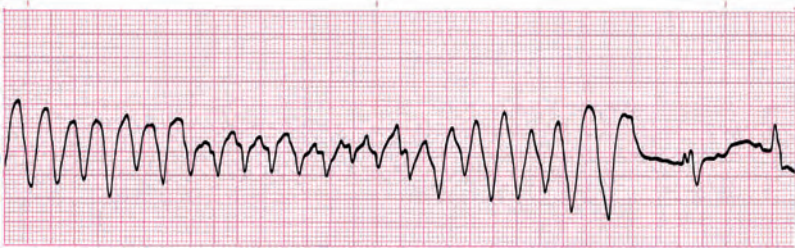
Toprol-XL SEE: *metoprolol tartrate*.

TOPV *trivalent oral polio vaccine*. SEE: *poliovirus vaccine, live oral*.

TORCH (tōrch) An acronym originally coined from the first letters of *Toxoplasmosis, Rubella, Cytomegalovirus, and Herpes simplex*. Contemporary revisions describe the O as standing for *Other transplacental infections* (by human immunodeficiency virus, hepatitis B, human parvovirus, and syphilis). TORCH infections can attack a growing embryo or fetus and cause abortion, abnormal fetal development, severe congenital anomalies, mental retardation, and fetal or neonatal death.

torcular herophili (tor'kū-lār) The confluence of cranial venous sinuses at the internal occipital protuberance of the skull.

Torg ratio (tawrg) [Joseph S. Torg, U.S. orthopedist, b. 1934] The relationship between the diameter of the spinal canal and the corresponding vertebral body. The Torg ratio is calculated



TORSADE DE POINTES

Ventricular tachycardia converting spontaneously to sinus rhythm

through radiographical or MRI measurement by dividing the sagittal diameter of the canal by the diameter of the vertebral body. Studies have indicated that lower ratios correspond to higher risk of spinal cord injury in American football.

toric (tō'rik) Concerning a torus.

toric contact lens (tōr'ik) A contact lens with two separate curvatures. It can be used, for example, to correct astigmatism and distance vision simultaneously.

torose, torous (tō'rōs, -rūs) [L. *torosus*, full of muscle] Knobby or bulging; tubercular.

torpent (tor'pēnt) [L. *torpens*, numbing]
1. Medicine that modifies irritation.
2. Not capable of functioning; dormant, apathetic, torpid.

torpid (tor'pid) [L. *torpidus*, numb] Not acting vigorously; sluggish.

torpidity (tor-pid'i-tē) Sluggishness; inactivity.

torpor (tor'por) [L. *torpor*, numbness] Abnormal inactivity; dormancy; numbness; apathy.

t. retinae Reduced sensitivity of retina to light stimuli.

torque (tork) [L. *torquere*, to twist] **1.** A force producing rotary motion. **2.** In dentistry, the rotating movement of a handpiece, or the application of force to rotate a tooth around its long axis.

torr (tor) A pressure quantity equivalent to 1/760 of standard atmospheric pressure; for most practical purposes, this equals 1 mm Hg.

torrefaction (tor'ē-fāk'shūn) [L. *torrefactio*] Roasting or parching something, esp. a drug, to dry it.

Torre-Muir syndrome Muir-Torre syndrome.

torsade de pointes (tor-sād'dē pwōnt') A rapid, unstable form of ventricular tachycardia in which the QRS complexes appear to twist, or shift, electrical orientation around the isoelectric line of the electrocardiogram. It often occurs as a life-threatening effect of a medication (e.g., quinidine, amiodarone, or a tricyclic antidepressant) that

prolongs the Q-T interval but may also complicate congenital long Q-T syndromes. Intravenous magnesium sulfate may be used to treat this arrhythmia. SYN: *polymorphic ventricular tachycardia*. SEE: *illus.*

torsiometer (tor'sē-ōm'ē-tēr) A device for measuring the rotation of the eyeball around the visual axis (i.e., its anterior-posterior axis).

torsion (tor'shūn) [L. *torsio*, a twisting]
1. The act of twisting or the condition of being twisted. **2.** In dentistry, the state of a tooth when rotated around its long axis. **3.** Rotation of the vertical meridians of the eye.

lung t. A rare injury in which the lung rotates around its pedicle, typically after violent trauma to the chest. The injured lung can usually only be repaired with immediate surgery.

torsionometer (tor'shūn-ōm'ē-tēr) [T + Gr. *metron*, measure] **1.** A device for measuring the rotation of the vertebral column around the long axis using radiographs of the spine. **2.** A subjective test used in ophthalmology for measuring the rotation of vertical meridians of the eyes.

torsive (tor'siv) Twisted, as in a spiral.
torsiversion (tor'si-vēr'zhūn) Rotation of a tooth around its long axis.

torso (tor'sō) [It.] The trunk of the body.

torsocclusion (tor'sō-kloo'zhūn) [T + L. *occlusio*, to occlude] Malocclusion characterized by rotation of a tooth on its long axis.

tort A wrongful act or injury, committed by an entity or person against another person or another person's property, that may be pursued in civil court by the injured party. The purpose of tort law is to make amends to the injured party, primarily through monetary compensation or damages.

intentional t. An intentional wrongful act by a person or entity who means to cause harm, or who knows or is reasonably certain that harm will result from the act.

quasi-intentional t. A wrongful act

based on speech committed by a person or entity against another person or entity that causes economic harm or damage to reputation, e.g., a defamation of character or an invasion of privacy.

torticollar (tor"tī-kōl'ār) Concerning torticollis.

torticollis (tor"tī-kōl'īs) [L. *tortus*, twisted, + *collum*, neck] Stiff neck associated with muscle spasm, classically causing lateral flexion contracture of the cervical spine musculature. It may be congenital or acquired. The muscles affected are principally those supplied by the spinal accessory nerve. SYN: *wryneck*.

ETIOLOGY: The condition may be caused by scars, disease of cervical vertebrae, adenitis, tonsillitis, rheumatism, enlarged cervical glands, retropharyngeal abscess, or cerebellar tumors. It may be spasmodic (clonic) or permanent (tonic). The latter type may be due to Pott's disease (tuberculosis of the spine).

congenital muscular t. Congenital fibrosis of the sternocleidomastoid muscle in the newborn, causing rotation of the infant's head to the opposite side. The condition usually becomes evident in the first 2 weeks of life. Treatments include physical therapy or, in refractory cases, surgical division of the muscle. SYN: *fibromatosis colli*.

fixed t. An abnormal position of the head owing to organic shortening of the muscles.

intermittent t. Spasmodic t.

ocular t. Torticollis from inequality in sight of the two eyes.

spasmodic t. Torticollis with recurrent but transient contractions of the muscles of the neck and esp. of the sternocleidomastoid. SYN: *intermittent torticollis*. SYN: *cervical dystonia*.

TREATMENT: Botulinus toxin has been used to inhibit the spastic contractions of the affected muscles. SEE: *toxin, botulinus*.

tortipelvis (tor"tī-pēl'vīs) [" + *pelvis*, basin] Muscular spasms that distort the spine and hip. SYN: *dystonia musculorum deformans*.

tortuous (tor'choo-ūs) [L. *tortuosus*, fr. *torqueo*, to twist] Having many twists or turns.

torture (tor'chūr) [LL. *tortura*, a twisting] Infliction of severe mental or physical pain by various methods, usually for the purpose of coercion.

Torula (tor'ū-lā) Former name of a genus of yeastlike organisms, now called *Cryptococcus*.

toruloid (tor'ū-loyd) [L. *torulus*, a little bulge, + Gr. *eidos*, form, shape] Beaded; noting an aggregate of colonies like those seen in the budding of yeast.

toruloma (tor-ū-lō'mā) [*Torula*, old name for *Cryptococcus*, + *oma*, tumor]

The nodular lesion of cryptococcosis (torulosis).

Torulopsis glabrata (tor"ū-lōp'sis glā-brāt'ā) The former name for the fungus now known as *Candida glabrata*.

torulosis (tor-ū-lō'sīs) Cryptococcosis.

torulus (tor'ū-lūs) [L. *torulus*, a little elevation] Papilla.

t. tactiles A tactile cutaneous elevation on the palms and soles.

torus (tō'rūs) pl. **tori** [L., swelling] A rounded elevation or swelling.

t. mandibularis An exostosis that develops on the lingual aspect of the body of the mandible.

t. palatinus A benign exostosis located in the midline of the hard palate. Also called *palatine protuberance*.

total body potassium The sum of all the potassium in the human body, used as one indicator of muscle mass. More than half of the potassium in the human body is within skeletal muscle.

total joint replacement Surgical removal of a diseased or injured joint and its replacement with an orthosis. SEE: *knee, replacement of; hip replacement, total; Nursing Diagnoses Appendix*.

total nutrient admixture A comprehensive combination of nutrients given parenterally, including amino acids, carbohydrates, fats, fluids, electrolytes, vitamins, and minerals.

totipotent (tō-tīp'ō-tēnt) [L. *totus*, all, + *potentia*, power] In embryology, the ability of a cell or group of cells to produce all of the tissues required for development (i.e., the embryonic membranes, the embryo, and finally the fetus).

touch (tūch) [O.Fr. *tochier*] **1.** To perceive by the tactile sense; to feel with the hands, to palpate. **2.** The sense by which pressure on the skin or mucosa is perceived; the tactile sense. SYN: *tactile perception*. **3.** Examination with the hand. SYN: *palpation*.

Various disorders may disturb or impair the tactile sense or the ability to feel normally. There are a number of words and suffixes pert. to sensation and its modifications. A few of the more important ones are as follows: algesia, -algia, anesthesia, dysesthesia, -dynia, esthesia, esthesioneurosis, hyperesthesia, paresthesia, and synesthesia.

after-t. Persistence of the sensation of touch after contact with the stimulus has ceased.

healing t. A form of biofield medicine, often compared to therapeutic touch, in which hands-on contact with the patient is combined with other spiritual links made between patient and practitioner. SEE: *therapeutic t.*

therapeutic t. The practice of running the hands on or above a patient's body to restore health. It is based on the premise that the human body is a com-

plex system of energy fields, which must be channeled and balanced for optimum health.

vaginal t. Digital examination of the vagina.

vesical t. Digital examination of the bladder.

touch preparation, touch prep 1. The dabbing of a clinical specimen, e.g., the cut surface of an organ or tissue, onto a microscope slide to distribute a thin layer of cells for microscopic examination. **2.** Any slide so obtained and prepared for pathological analysis.


Toupet's procedure A surgical treatment for gastroesophageal reflux in which the stomach is partially wrapped around the lower esophagus. The surgery may be performed with a traditional incision or laparoscopically.

Tourette's syndrome, Tourette's disorder (tūr-êts') [Georges Gilles de la Tourette, Fr. neurologist, 1857–1904] A neurological disorder marked by repetitive motor and verbal tics. Affected persons may blink, jerk, grunt, clear their throats, swing their arms, grasp or clasp others, have obsessive-compulsive behaviors, or use verbal expletives uncontrollably. In some instances, people with this condition can control the urge to use these mannerisms while in public, but they may express them vigorously when alone. The condition often appears in multiple family members. It may be caused by a disorder of dopamine uptake in the basal ganglia. Dopamine-blocking drugs such as haloperidol can be used to treat this disorder. SYN: *Gilles de la Tourette's syndrome*. SEE: *tic*.

Tournay's sign (tūr-nāz') [Auguste Tournay, Fr. ophthalmologist, 1878–1969] Dilatation of the pupil of the eye on unusually strong lateral fixation.

tourniquet (toor-ni-kět) [Fr., a turning instrument] Any constrictor used on an extremity to apply pressure over an artery and thereby control bleeding; also used to distend veins to facilitate venipuncture or intravenous injections.

Arterial hemorrhage: In emergent circumstances, the tourniquet is applied between the wound and the heart, close to the wound, placing a hard pad over the point of pressure. This should be discontinued as soon as possible and a tight bandage substituted under the loosened tourniquet. SEE: *bleeding, arterial* for table.

 A tourniquet should never be left in place too long. Ordinarily, it should be released from 12 to 18 min after application to determine whether bleeding has ceased. If it has, the tourniquet is left loosely in place so that it may be retightened if necessary. If bleeding has not ceased, it should be retightened at once.

In general, a tourniquet should not be used if steady firm pressure over the bleeding site will stop the flow. As an adjunct to surgery on extremities, a pneumatic tourniquet is applied after exsanguinating the limb with an Esmarch or similar bandage. The tourniquet is released at appropriate intervals to prevent tissue damage due to ischemia. An additional application utilizes two tourniquets or a double cuff tourniquet for retrograde intravenous nerve block (e.g., Bier block).

rotating t. The application of blood pressure cuffs to three extremities; used in certain types of medical emergencies, such as acute pulmonary edema, to reduce the return of blood to the heart. The patient is placed in a head-high position (Fowler's). The pressure is kept midway between systolic and diastolic. Every 10 min, the cuffs are deflated and when inflated, the previously free extremity is now used. This allows each extremity to be free of a tourniquet for 10 min out of each 40-min cycle.

NOTE: A cuff would not be applied to an extremity into which an intravenous infusion is running.

tourniquet test A test used to determine pain thresholds or, alternately, capillary fragility. A blood pressure cuff is inflated sufficiently to occlude venous return. It is kept in place for a set time. The anesthetic effect, or the impact on skin integrity, is subsequently assessed. SEE: *illus*.



TOURNIQUET TEST

Positive test for idiopathic thrombocytopenic purpura

Touton cell (toot'ön) [Karl Touton, Ger. dermatologist, 1858–1934] A giant multinucleated cell found in lesions of xanthomatosis.

towelette (tow'el-ët') [ME. *towelle*, towel] A small towel.

tox- SEE: *toxi-*.

toxemia (tök-sé'mē-ä) [L + Gr. *haima*, blood] Distribution throughout the body of poisonous products of bacteria growing in a focal or local site, thus producing generalized symptoms.

SYMPTOMS: The condition is marked by fever, diarrhea, vomiting, and symp-

toms of shock. In tetanus, the nervous system is esp. affected; in diphtheria, nerves and muscles are affected.

t. of pregnancy Previously used term for pregnancy-induced hypertension. SEE: *eclampsia*; *pre-eclampsia*; *Nursing Diagnoses Appendix*. **toxemic** (-mĭk), *adj.*

toxi-, tox-, toxo- Combining forms meaning *poison*.

toxic (tŏks'ĭk) [Gr. *toxikon*, poison] Pert. to, resembling, or caused by poison. SYN: *poisonous*.

toxic- SEE: *toxico-*.

toxicant (tŏks'ĭ-kānt) [L. *toxicans*, poisoning] **1.** Poisonous; toxic. **2.** Any poison.

toxemic (tŏks'ĭ-sĕ'mĭk) Toxemic.

toxicity (tŏks'ĭs'ĭ-tĕ) The extent, quality, or degree of being poisonous.

neurobehavioral t. Alterations in attention, concentration, coordination, mood, muscle activity, neurological development, or sensation resulting from exposure to a poisonous chemical, drug, or physical agent.

toxico-, toxic- [Gr. *toxikon*, poison] Combining form meaning *poisonous*.

Toxicodendron (tŏk'sĭ-kŏ-dĕn'drŏn") [" + "] A genus of trees and shrubs, formerly called *Rhus*, some species of which, such as poison ivy and poison oak, contain oily resins that produce an allergic contact dermatitis in susceptible people. SEE: *poison ivy*, *poison sumac*.

toxicoderma (tŏks'ĭ-kŏ-dĕr'mă) [" + *derma*, skin] Any skin disease resulting from a poison. SYN: *toxicodermatitis*.

toxicogenic (tŏks'ĭ-kŏ-jĕn'ĭk) [" + *genan*, to produce] Caused by, or producing, a poison.

toxicoid (tŏks'ĭ-koyd) [" + *eidōs*, form, shape] Of the nature of a poison.

toxicologist (tŏks'ĭ-kŏl'ŏ-jĭst) [" + *logos*, word, reason] A specialist in the field of poisons or toxins.

toxicology (tŏks'ĭ-kŏl'ŏ-jĕ) Division of medical and biological science concerned with toxic substances, their detection, their avoidance, their chemistry and pharmacological actions, and their antidotes and treatment.

toxicopathy (tŏks'ĭ-kŏp'ă-thĕ) [" + *pathos*, disease, suffering] Toxicosis.

toxicosis (tŏks'ĭ-kŏ'sĭs) [" + *osis*, condition] A disease resulting from poisoning. SYN: *toxicopathy*; *toxinosis*; *toxipathy*; *toxonosis*.

endogenous t. A disease due to poisons generated within the body. SYN: *auto-intoxication*; *autotoxemia*.

exogenous t. Any toxic condition resulting from a poison not generated in the body.

retention t. Toxicosis from retained products that normally are excreted shortly after formation.

toxic shock-like syndrome ABBR: TSLS.

An infection in which the initial site is skin or soft tissue. This may occur in adults or children and it is readily transmitted from person to person. Typically there is a history of a minor, usually nonpenetrating, local trauma that within the next 1 to 3 days develops into the usual toxic shock syndrome (TSS) caused by a toxin elaborated by certain strains of *Staphylococcus aureus*. SEE: *toxic shock syndrome*.

toxic shock syndrome ABBR: TSS. A rare disorder similar to septic shock caused by an exotoxin produced by certain strains of *Staphylococcus aureus* and group A streptococci. It was originally described in young women using vaginal tampons but has also been reported in users of contraceptive sponges and diaphragms and after surgical wound packing. A similar syndrome is caused by streptococcal infections. SEE: *Staphylococcus*; *Nursing Diagnoses Appendix*.

SYMPTOMS: The diagnosis is made when the following criteria are met: fever of 102°F (38.9°C) or greater; diffuse, macular (flat), erythematous rash, followed in 1 or 2 weeks by peeling of the skin, particularly of the palms and soles; hypotension or orthostatic syncope; and involvement of three or more of the following organ systems: gastrointestinal (vomiting or diarrhea at the onset of illness), muscular (severe myalgia), mucous membrane (vaginal, oropharyngeal, or conjunctival) hyperemia, renal, hepatic, hematological (platelets less than 100,000/mm³), and central nervous system (disorientation or alteration in consciousness without focal neurological signs when fever and hypotension are absent). Results of blood, throat, and cerebrospinal fluid cultures are usually negative. The possibility of Rocky Mountain spotted fever, leptospirosis, or rubeola should be eliminated by blood tests. The disease is fatal in approx. 5% to 15% of cases.



Anyone who develops these symptoms and signs should seek medical attention immediately. If a tampon is being used, it should be removed at once.

TREATMENT: Penicillinase-resistant antibiotics such as nafcillin or oxacillin do not affect the initial syndrome but may prevent its recurrence. Supportive care (intravenous fluids, pressor drugs, intensive care) is provided.

toxicodermatitis (tŏks'ĭ-dĕr-mĭ'tĭs) [" + *derma*, skin, + *itis*, inflammation] Toxicoderma.

toxidrome (tŏk'sĭ-drŏm) A specific cluster of symptoms that occurs after patients are exposed to a poisonous agent; a toxic syndrome.

toxigenic (tòks'î-jèn'ik) [*l'* + *gennan*, to produce] Producing toxins or poisons.

toxigenicity (tòks'î-jèn-îs'î-tè) The virulence of a toxin-producing pathogenic organism.

toxin (tòks'în) [Gr. *toxikon*, poison] A poisonous substance. SEE: *antitoxin*; *hazardous material*; *health hazard*; *permissible exposure limits*; *phytotoxin*; *right-to-know law*; *toxoid*.

anthrax t. The three proteins made by the infectious bacterium *Bacillus anthracis* responsible for the deadly effects of anthrax. Anthrax toxin includes protective antigen, which helps the bacterium enter cells, and lethal and edema factors, which kill cells by disrupting the cell membrane's normal biochemical functions.

bacterial t. Poisons produced by bacteria that cause cell damage. They include exotoxins (e.g. those secreted by *Staphylococcus aureus* and *Corynebacterium diphtheriae*), and endotoxins. Endotoxins continue to cause damage even after the bacteria are killed. SEE: *bacteria*.

botulinum t. type A A neuromuscular blocking drug used to paralyze muscles, esp. muscles in spasm. It is also used for cosmetic purposes (e.g., by those desirous of maintaining a fixed facial appearance).

botulinus t. A neurotoxin that blocks acetylcholine release, produced by *Clostridium botulinum*, the causative organism for botulism. Seven types of the toxin have been identified.

dermonecrotic t. Any one of a group of different toxins that can cause necrosis of the skin. Coagulase-positive *Staphylococcus aureus* produces several such toxins. SYN: *exfoliative toxin*. SEE: *Kawasaki disease*; *staphylococcal scaled skin syndrome*; *toxic shock syndrome*.

diphtheria t. The specific toxin produced by *Corynebacterium diphtheriae*.

dysentery t. The exotoxin of various species of *Shigella*.

erythrogenic t. The former name for Streptococcal pyrogenic exotoxins.

exfoliative t. Dermonecrotic toxin.

plant t. Any toxin produced by a plant; a phytotoxin.

Shiga t. SEE: *Shiga toxin*.

toxin-antitoxin (tòk'sîn ân'tè-tòk'sîn) ABBR: T.A.T. An infrequently used mixture of a toxin and an antibody that blocks its effects. It was formerly used in some vaccine formulations.

toxicicide (tòks-în'îs-îd) [*l'* + *cidus*, kill] That which is destructive to toxins.

toxinosis (tòk'sî-nò'sîs) [*l'* + Gr. *osis*, condition] Toxicosis.

toxipathy (tòks-îp'â-thè) [*l'* + Gr. *pathos*, disease, suffering] Toxicosis.

tox- SEE: *toxi-*.

toxocariasis (tòks'ò-kâr-î'â-sîs) [*l'* +

kara, head, + *-iasis*, condition] Infestation with the nematode worms *Toxocara canis* or *T. cati*, which migrate but cannot complete their life cycle in a human host and die after causing tissue damage that ranges from mild to severe. Larvae may be carried to any part of the body where the blood vessel is large enough to accommodate them. They may end up in the brain, retinal vessels, liver, lung, or heart and produce myocarditis, endophthalmitis, epilepsy, or encephalitis. Diagnosis is made by immunological tests and by the presence of larvae in tissue obtained by liver biopsy. It is important that toxocariasis be considered in cases diagnosed as retinoblastoma. SYN: *visceral larva migrans*.

toxoid (tòks'oyd') [*l'* + *o*] A toxin that has been chemically modified to retain its antigenicity but is no longer poisonous.

alum-precipitated t. Toxoid of diphtheria or tetanus precipitated with alum.

diphtheria t. Diphtheria toxin that has been altered so that it cannot cause disease but is still able to stimulate the production of antibodies for active immunization; it is used in diphtheria-pertussis-tetanus vaccine (DTaP). SYN: *anatoxin*. SEE: *toxin*.

toxolecithin (tòks'ò-lès'î-thîn) [*l'* + *lethos*, egg yolk] A compound of lecithin with a toxin such as certain snake venoms.

toxopeptone (tòks'ò-pèp'tòn) [*l'* + *pepton*, digesting] A protein derivative produced by action of a toxin on peptones.

Toxoplasma (tòks'ò-plàs'mă) Genus of protozoa in the sporozoa group.

T. gondii The causative agent of toxoplasmosis.

toxoplasmin (tòk'sò-plàs'mîn) An antigen obtained from mouse peritoneal fluid infected with *Toxoplasma gondii*.

toxoplasmosis (tòks-ò-plàs-mò'sîs) Infection with the protozoan *Toxoplasma gondii*. It usually is a recurrence of a mild subclinical infection in people with normal immune systems; approx. 30% of the U.S. population have antibodies indicating they have been infected. In those with acquired immunodeficiency syndrome (AIDS) or receiving immunosuppressive therapy after an organ transplant, reactivation of dormant organisms may be fatal. Approx. 25% of women infected for the first time during pregnancy pass the infection on to the developing fetus.

ETIOLOGY/TRANSMISSION: *T. gondii* is carried by many mammals and birds and is commonly transmitted to humans by inadequate handwashing after handling cat feces or by eating incompletely cooked pork or lamb. Once inside the intestines, the organism may

spread via the blood to other organs. It is destroyed by T lymphocytes; people with immune-suppressing illnesses (e.g., AIDS) or patients receiving immunosuppressive therapy are especially susceptible, as is the developing fetus.

In 25% of fetuses, toxoplasmosis damages the heart, brain, and lungs. It also causes eye infection (chorioretinitis), which may produce blindness. In AIDS patients, toxoplasmosis is the most common cause of encephalitis; systemic disease also may occur. In immunosuppressed patients, the infection causes reactivation of latent infection in the transplanted organ. Toxoplasmosis is diagnosed by clinical presentation, brain biopsy, brain scans, and response to treatment.

SYMPTOMS: In healthy people, primary infection may be indicated only by mild lymphadenopathy. AIDS patients with neurological involvement usually show confusion, weakness, focal neurological deficits, seizures, and decreased levels of consciousness; fever may be present.

TREATMENT: A combination of pyrimethamine, sulfadiazine, and leucovorin (folinic acid) is administered until 2 weeks after symptoms disappear; the latter helps prevent bone marrow depression. Prednisone is added to the regimen for patients with toxoplasma meningitis or chorioretinitis. In AIDS patients, trimethoprim/sulfamethoxazole is used for prophylaxis and sulfadiazine for suppressive therapy after acute infection. Infected pregnant women are treated with spiramycin to prevent placental infections.

TPA *total parenteral alimentation; tissue plasminogen activator.*

T.P.I. test *Treponema pallidum immobilizing test* (for syphilis).

TPN *triphosphopyridine nucleotide; total parenteral nutrition.*

TPR *temperature, pulse, respiration.*

tr *L. tinctura, tincture.*

trabecula (tră-běk'ū-lă, -lê) *pl. trabeculae* [L., a little beam] **1.** A cord of tissue that serves as a supporting structure by forming a septum that extends into an organ from its wall or capsule. **2.** The network of osseous tissue that makes up the cancellous structure of a bone.

t. carnea Any of the thick muscular tissue bands attached to the inner walls of the ventricles of the heart.

trabecular (tră-běk'ū-lăr) The network of osseous tissue that makes up spongy (cancellous) bone.

trabecular meshwork A woven structure at the junction between the iris and the sclera of the eye that filters aqueous fluid before it enters the canal of Schlemm.

trabeculate (tră-běk'ū-lăt) Having trabeculae.

trabeculectomy A surgical treatment for glaucoma in which part of the trabecular meshwork is removed to relieve pressure in the anterior chamber of the eye. The opening is made in the sclera (the "white of the eye") under the eyelid. Fluid from the anterior chamber drains in front of the eye instead of being drained through the canal of Schlemm and is absorbed by the conjunctiva.

trabeculectomy (tră-běk'ū-lō-plăs'tê) Surgical laser procedure done on the trabecular meshwork of the eye to increase the outflow of aqueous in the treatment of glaucoma. SEE: *glaucoma.*

trace (trăs) [O.Fr. *tracer*] **1.** A very small quantity. **2.** A visible mark or sign.

trace amine Any of several chemicals synthesized in the body and similar in structure and function to the biogenic amines. Examples include phenylethylamine and tryptamine. Trace amines alter impulse propagation in the brain and influence mood and behavior.

traceback Identification of the source of an outbreak of disease or of a public health emergency.

trace element An element needed by the body in very small amounts; many are essential for enzyme functioning. Trace elements include chromium, copper, fluoride, iodine, iron, manganese, molybdenum, selenium, and zinc.

traceforward The anticipation, identification, and planning for the likely effects of a local outbreak of disease or public health emergency.

tracer (tră'sêr) A radioactive isotope, capable of being incorporated into compounds, that when introduced into the body "tags" a specific portion of the molecule so that its course may be traced. This is used in absorption and excretion studies, in identification of intermediary products of metabolism, and in determination of distribution of various substances in the body. Radioactive carbon (¹⁴C), calcium (⁴²Ca), and iodine (¹³¹I) are examples of tracers commonly used. SEE: *label.*

trachea (tră'ke-ă) *pl. tracheae* [Gr. *tracheia*, rough] The portion of the respiratory tract that carries air through the neck and upper chest. The trachea runs in the midline of the neck along the front of the esophagus. It is a fibrocartilaginous tube, 9 to 15 cm long, extending from the larynx (at the level of vertebra C6) into the thorax, where, at the level of the sternal angle, it divides into the right and left main (primary) bronchi. The 15 to 20 stacked rings of cartilage composing the skeleton of the trachea are incomplete circles: they are C-shaped with the opening along the back wall of the trachea. The mem-

branes that connect the tracheal rings are elastic, and the whole trachea can bend and stretch. The trachea is lined with a mucosa made of ciliated epithelium that sweeps mucus, trapped dust, and pathogens upward. SYN: *windpipe*. SEE: *bronchi*.

tracheal (trā'kē-äl) Pert. to the trachea.

tracheal gas insufflation A ventilatory technique to reduce accumulated carbon dioxide in the central airways and improve alveolar ventilation while decreasing ventilatory pressures and tidal volumes. Gas may be injected either continuously or through a catheter into the airways during a specific phase of the respiratory cycle.

trachealgia (trā'kē-äl'jē-ä) [" + *algos*, pain] Pain in the trachea.

trachealis (trā'kē-ä'lis) [L.] A muscle composed of smooth muscle fibers that extends between the ends of the tracheal rings. Its contraction reduces the size of the lumen.

tracheal tickle A maneuver designed to elicit a reflex cough.

tracheal tube Endotracheal tube.

tracheal tugging A slight downward movement of the trachea with each inspiratory effort, resulting from descent of the diaphragm in a person with a low, flat diaphragm. This sign may also be present as a result of the proximity of an aortic aneurysm to the trachea. It should not be confused with the pulsations from a normal vessel beneath the trachea.

tracheitis (trā'kē-ī'tis) [Gr. *tracheia*, rough, + *itis*, inflammation] Inflammation of the trachea most often caused by infection. It may be acute or chronic and may be associated with bronchitis and laryngitis. SYN: *trachitis*.

TREATMENT: Patients must be monitored for signs of airway obstruction. Antibiotics are given when bacterial infection is the cause. In children the most common bacterial cause of infection is *Staphylococcus aureus*.

PATIENT CARE: Vital signs are monitored, and the patient is assessed for fever and acute airway obstruction (croupy cough, stridor) due to the presence of inflammation and thick secretions. Humidified oxygen is administered as prescribed, and suctioning is performed as necessary to remove secretions. If airway obstruction results in respiratory failure, emergency endotracheal intubation or tracheostomy is performed. The patient is comforted to reduce anxiety.

trachelectomy (trā'kēl-ēk'tō-mē) [" + *ektome*, excision] Amputation of the cervix uteri.

trachelematoma (trā'kēl-ēm'ä-tō'mä) [" + *haima*, blood, + *oma*, tumor] A hematoma situated on the neck.

trachelism, trachelismus (trā'kē-lizm,

trā-kē-liz'müs) [" + *-ismos*, condition] Backward spasm of the neck, sometimes preceding an epileptic attack.

trachelitis (trā-kē-lī'tis) [" + *itis*, inflammation] Inflammation of the mucous membrane of the cervix uteri. SYN: *cervicitis*.

trachelo- Combining form meaning *neck*.
trachelocele (trāk'ē-lō-sēl) [" + *kele*, tumor, swelling] Tracheocele.

trachelocystosis (trā'kē-lō-sīr-tō'sis) [" + *kyrtos*, curved, + *osis*, condition] Trachelokyphosis.

trachelodynia (trā'kē-lō-dīn'ē-ä) [" + *odyne*, pain] Pain in the neck.

trachelokyphosis (trā'kēl-ō-kī-fō'sis) [" + *kyphosis*, humpback] Excessive anterior curvature of the cervical portion of the spine. SYN: *trachelocystosis*.

trachelology (trā'kē-lōl'ō-jē) [" + *logos*, word, reason] Scientific study of the neck, its diseases, and its injuries.

trachelopexy (trā'kēl-ō-pēks'ē) [" + *pexis*, fixation] Surgical fixation of the cervix uteri to an adjacent part.

trachelorrhaphy (trā'kēl-or'ä-fē) [" + *rhaphe*, seam, ridge] Suturing of a torn cervix uteri.

tracheloschisis (trā'kē-lōs'kī-sis) [" + *schisis*, a splitting] Congenital opening or fissure in the neck.

trachelotomy (trā'kēl-ōt'ō-mē) [" + *tome*, incision] Incision of the cervix of the uterus.

tracheo- Combining form meaning *trachea, windpipe*.

tracheoaocele (trā'kē-ō-ēr'ō-sēl) [Gr. *tracheia*, rough, + *aer*, air, + *kele*, tumor, swelling] Hernia or cyst of the trachea containing air.

tracheobronchial (trā'kē-ō-brōng'kē-äl) Concerning the trachea and bronchus.

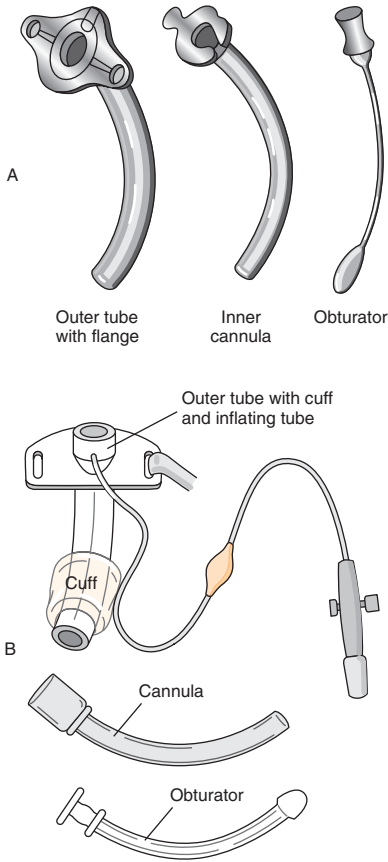
tracheobronchomegaly (trā'kē-ō-brōng'kō-mēg'ä-lē) Congenitally enlarged size of the trachea and bronchi.

tracheobronchoscopy (trā'kē-ō-brōng-kōs'kō-pē) [" + *bronchos*, windpipe, + *skopein*, to examine] Inspection of the trachea and bronchi through a bronchoscope.

tracheocele (trā'kē-ō-sēl) [" + *kele*, hernia] Protrusion of mucous membrane through the wall of the trachea. SYN: *trachelocele*.

tracheoesophageal (trā'kē-ō-ēs'ōf'ä-jē-äl) [" + *oisophagos*, esophagus] Pert. to the trachea and esophagus.

tracheoesophageal puncture ABBR: TEP. A surgically created connection between the trachea and the esophagus made for a patient who has had his voicebox (larynx) removed; it permits the patient to force air from the lungs through the windpipe into the esophagus, and from there out of the mouth in order to speak. A one-way valve, or "shunt," is placed into the tracheoesophageal opening. The patient learns to



TRACHEOSTOMY TUBE

(A) Metal tube, (B) Cuffed plastic tube

speaking using the TEP with the help of a speech therapist.

tracheolaryngotomy (trā'kē-ō-lār'in-gōt'ō-mē) [n + larynx, larynx, + tome, incision] Incision into the larynx and trachea.

tracheomalacia (trā'kē-ō-mā-lā'shē-ä) Softening of the tracheal cartilage. It may be caused by pressure of the left pulmonary artery on the trachea or by long-term tracheal intubation.

tracheopathia, tracheopathy (trā'kē-ō-pāth'ē-ä, -ōp'ä-thē) [n + pathos, disease, suffering] A disease of the trachea.

tracheophony (trā'kē-ōf'ō-nē) [n + phone, a sound] The sound heard over the trachea in auscultation.

tracheoplasty (trā'kē-ō-plās'tē) [n + plassein, to form] Plastic operation on the trachea.

tracheorrhagia (trā'kē-ō-rā'jē-ä) [Gr. tracheia, rough, + rhexnynai, to burst forth] Tracheal hemorrhage.

tracheoschisis (trā'kē-ōs'kīs-is) [n + schisis, a splitting] A fissure of the trachea.

tracheoscopy (trā'kē-ōs'kō-pē) [n + skopein, to examine] Inspection of the interior of the trachea by means of reflected light.

tracheostenosis (trā'kē-ō-stēn-ō'sīs) [n + stenosis, act of narrowing] Contraction or narrowing of the lumen of the trachea.

tracheostoma (trā'kē-ōs'tō-mā) Opening into the trachea, via the neck.

tracheostomy (trā'kē-ōs'tō-mē) [n + stoma, mouth] The surgical opening of the trachea to provide and secure an open airway. This procedure may be performed in emergency situations (e.g., when there is an acute upper airway obstruction) or electively to replace a temporary airway provided by an endotracheal tube that has been in place or is anticipated to remain in place for more than 10 to 12 days. SEE: *illus.; endotracheal tube.*



To avoid injury to the structures of the neck, tracheostomy should be performed only by skilled or well-trained health care professionals.

PATIENT CARE: Vital signs are monitored frequently after surgery. Warm, humidified oxygen is administered. The patient is placed in the semi-Fowler position to promote ease of breathing. A restful environment is provided. Communication is established by questions with simple yes and no answers, hand signals, and simple sign language and



PATIENT WITH TRACHEOSTOMY

with use of a slate or an alphabet board for writing. (Written communication requires vision, hand strength, and dexterity and is often difficult or impossible for acutely ill patients.) Later, the patient is taught how to cover the tracheostomy with the cuff deflated to facilitate speech, or is provided with a speaking valve and taught how to use it. Before the patient is able to speak, the nurse should be alert to the patient's unmet needs and assist to prevent increased anxiety. Chest physiotherapy promotes aeration of the lung. Suctioning of secretions with prehyperoxygenation and posthyperoxygenation and tracheostomy care are provided as necessary, using aseptic technique throughout. Dressing is changed frequently during the first 24 hr postoperatively, and the surgical site is observed for excessive bleeding. Coughing and deep breathing are encouraged at regular intervals. A teaching plan should cover stoma care, which includes cleansing, removing crusts, and filtering air with a suitable filter. The patient and his or her health care team should watch for signs of infection, such as reddening of the skin or drainage of pus from the surgical site. Aspiration is a risk for all tracheostomized patients, but may be reduced when a speaking valve is used. The patient is assessed for signs and symptoms of aspiration, including changes in secretion production, fever, and mental status changes. The patient should not smoke and should avoid secondhand smoke. Activities may be gradually increased to include noncontact sports but should not include swimming. Showering may be permitted if the patient wears a protective plastic bib or uses a hand to cover the stoma. The patient should be reassured that secretions will decrease and that taste and smell will gradually return. If a speaking valve is used, the patient is taught to clean it daily with water and mild, fragrance-free soap, to rinse it thoroughly and allow it to air dry, and to place it in its storage container when not in use. The importance of follow-up care with an ear, nose, and throat specialist is stressed.

mini-t. Placement of a 4 mm (about 1/6th of an inch) cannula through an incision made through the cricothyroid membrane into the trachea. This is done using local anesthesia. This type of tracheostomy is esp. useful in removing sputum retained in the tracheobronchial tree.

tracheostomy button A short tube or cannula placed inside a tracheostomy stoma to keep the tissue open.

tracheostomy care Management of the tracheostomy wound and the airway device. The patient should be suctioned as often as necessary to remove secretions.

Sterile technique is maintained throughout the procedure. Before suctioning, the patient should be aerated well, which can be accomplished by using an Ambu bag attached to a source of oxygen. The patency of the suction catheter is tested by aspirating sterile normal saline through it. The catheter is inserted without applying suction, until the patient coughs. Suction is then applied intermittently and the catheter withdrawn in a rotating motion. The lungs are auscultated by assessing the airway, and the suctioning procedure is repeated until the airway is clear. Each suctioning episode should take no longer than 15 sec, and the patient should be allowed to rest and breathe between suctioning episodes. The suction catheter is cleansed with sterile normal saline solution, as is the oral cavity if necessary. The inner cannula should be cleaned or replaced after each aspiration. Metal cannulas should be cleansed with sterile water.

An emergency tracheotomy kit is kept at the bedside at all times. A Kelly clamp is also kept at the bedside to hold open the tracheostomy site in an emergency. Unless ordered otherwise, cuffed tracheostomy tubes must be inflated if the patient is receiving positive-pressure ventilation. In other cases, the cuff is kept deflated if the patient has problems with aspiration. The dressing and tape are changed every 8 hr, using aseptic technique. Skin breakdown is prevented by covering tracheostomies with an oval dressing between the airway device and the skin. To apply neck tapes, two lengths of twill tape approx. 10 in (25 cm) long are obtained; the end of each is folded and a slit is made 0.5 in (1.3 cm) long about 1 in (2.5 cm) from the fold. The slit end is slipped under the neck plate and the other end of the tape pulled through the slit. This is repeated for the other side. The tape is wrapped around the neck and secured with a square knot on the side. Neck tapes should be left in place until new tapes are attached. Tracheal secretions are cultured as ordered; their color, viscosity, amount, and abnormal odor, if any, are observed. The site is inspected daily for bleeding, hematoma formation, subcutaneous emphysema, and signs of infection. Appropriate skin care is provided. The medical care team should help alleviate the patient's anxiety and apprehension and communicate openly with the patient. The patient's response is documented.

tracheostomy tube Tracheotomy tube.

tracheotome (trā'kē-ō-tōm) [*t* + *tome*, incision] An instrument used to open the trachea.

tracheotomy (trā'kē-ōt'ō-mē) Incision into the trachea through the skin and

soft tissues of the neck. SEE: *tracheostomy*.

tracheotomy tube Any tube inserted into the trachea to gain control of the airway. SYN: *tracheostomy tube*.

trachitis (trā-kī'tis) [" + *itis*, inflammation] Tracheitis.

trachoma (trā-kō'mā) [Gr., roughness] A chronic, contagious form of conjunctivitis that is the leading cause of blindness in the world. It is caused by *Chlamydia trachomatis*, which is endemic in Africa, India, and the Middle East and is seen also in the southwestern U.S. The disease is transmitted by flies, clothing, bedding, and hands contaminated by exudate. Over time, the inflammation is followed by scarring, which causes the cornea to become opaque. SYN: *Egyptian ophthalmia*; *granular conjunctivitis*. SEE: *Standard Precautions Appendix*.

Azithromycin is the drug of choice for treating trachoma, but its expense limits its use in some impoverished nations. Tetracyclines are an alternative.

brawny t. Trachoma with general lymphoid infiltration without granulation of the conjunctiva.

t. deformans Trachoma with scarring.

diffuse t. Trachoma with large granulations.

trachoma body A mass of cells present as an inclusion body in the conjunctival epithelial cells of individuals with trachoma.

trachomatous (trā-kō'mā-tūs) Concerning trachoma.

trachychromatic (trā'kī-krō-māt'ik) [Gr. *trachys*, rough, + *chroma*, color] Pert. to a nucleus with very deeply staining chromatin.

trachyphonia (trā'kī-fō'nē-ā) [" + *phone*, voice] Roughness or hoarseness of the voice.

tracing (trā'sing) **1.** A graphic record of some event that changes with time such as respiratory movements or electrical activity of the heart or brain. **2.** In dentistry, a graphic display of movements of the mandible.

contact t. An attempt to find the source of an infectious or toxic outbreak, typically through patient interviews and laboratory specimens.

tract (trākt) [L. *tractus*, extent] **1.** A course or pathway. **2.** A group or bundle of nerve fibers within the spinal cord or brain that constitutes an anatomical and functional unit. SEE: *fasciculus*. **3.** A group of organs or parts forming a continuous pathway.

afferent t. A primary or secondary sensory tract of axons inside the central nervous system.

alimentary t. The canal or passage

from the mouth to the anus. SYN: *digestive tract*.

ascending t. 1. Axons that carry impulses up the spinal cord or from the spinal cord to the brain. **2.** Axons that carry impulses to the cerebral cortex.

biliary t. The organs and ducts that participate in the secretion, storage, and delivery of bile into the duodenum. SEE: *illus*; *bile ducts*; *gallbladder*; *liver*.

corticospinal t. Pyramidal t.

descending t. White fibers in the spinal cord that carry nerve impulses from the brain.

digestive t. Alimentary t.

dorsolateral t. A spinal cord tract superficial to the tip of the dorsal horn. It is made up of short pain and temperature fibers that are processes of neurons having their cell bodies in the dorsal root ganglion.

extrapyramidal t. SEE: *extrapyramidal motor system*.

gastrointestinal t. The stomach and intestines.

genitourinary t. The genital and urinary pathways. SYN: *urogenital tract*.

iliotibial t. A thickened area of fascia lata extending from the lateral condyle of the tibia to the iliac crest.

intestinal t. The small and large intestines.

motor t. A descending pathway of axons that conveys motor impulses from the brain to the lower portions of the spinal cord.

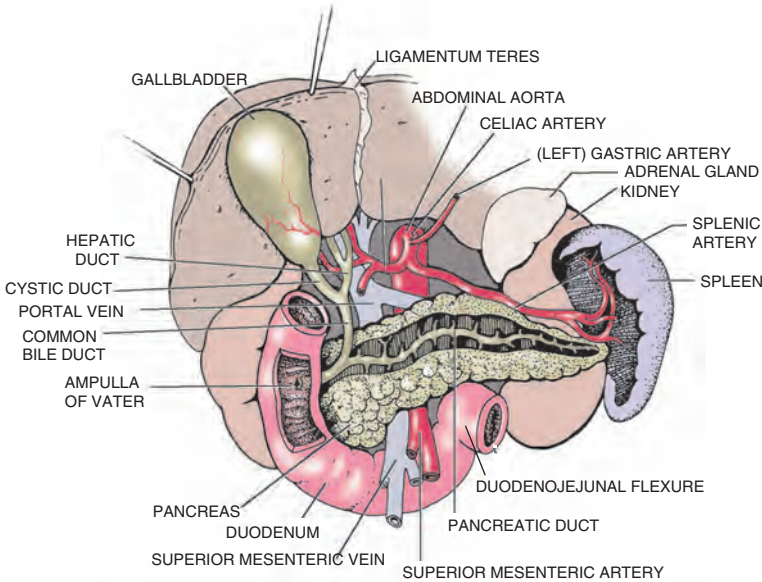
olfactory t. A narrow white band that extends from the olfactory bulb to the anterior perforated substance of the brain.

optic t. Fibers of the optic nerve that continue beyond the optic chiasma, most of which terminate in the lateral geniculate body of the thalamus. Some continue to the superior colliculus of the midbrain; others enter the hypothalamus and terminate in the supraoptic and medial nuclei.

pyramidal t. One of three descending tracts (lateral, ventral, ventrolateral) of the spinal cord. The tract consists of fibers arising from the giant pyramidal cells of Betz present in the motor area of the cerebral cortex. SYN: *corticospinal tract*.

respiratory t. The respiratory organs in continuity.

rubrospinal t. A descending tract of fibers arising from cell bodies located in the red nucleus of the midbrain. After leaving the red nucleus, axons cross to the contralateral side and descend into the spinal cord, where they terminate in the ventral horns but not directly on the motor neurons. The red nucleus is innervated from the motor cortices and the cerebellum; the rubrospinal pathway is a nonpyramidal route for cortical motor information to be sent to the spi-



BILIARY TRACT (IN RELATION TO LIVER, PANCREAS, AND DUODENUM)

nal cord. A major function of the rubrospinal axons is to set and adjust the muscle tone in the flexor muscles. SEE: *red nucleus*.

spinothalamic t. The main sensory axon tract carrying pain and temperature information in the spinal cord.

supraopticohypophyseal t. A tract consisting of fibers arising from cell bodies located in supraoptic and paraventricular nuclei of the hypothalamus and terminating in the posterior lobe of the hypophysis.

urinary t. The urinary passageway from the kidney to the outside of the body, including the pelvis of the kidney, ureter, bladder, and urethra.

urogenital t. Genitourinary t.

uveal t. The vascular and pigmented tissues that constitute the middle coat of the eye, including the iris, ciliary body, and choroid.

tractellum (trāk-tĕl'ūm) [L.] An anterior flagellum of a protozoan. It propels the cell by traction.

traction (trāk'shŭn) [L. *tractio*] The process of drawing or pulling. SEE: *Nursing Diagnoses Appendix*.

axis t. Traction in line with the long axis of a course through which a body is to be drawn.

Bryant's t. SEE: *Bryant's traction*.

Buck's t. Buck's extension.

cervical t. Traction applied to the cervical spine by applying a force to lift the head or a mobilization technique to distract individual joints of the vertebrae. SEE: *Crutchfield tongs*.

dynamic t. Use of both tension across an injury and movement to maintain proper alignment and function of an injured body part.

elastic t. Traction exerted by elastic devices such as rubber bands.

external t. Traction applied to any fracture (e.g., compression fractures of the face using metal or plaster headgear for anchorage).

head t. Traction applied to the head as in the treatment of injuries to cervical vertebrae.

intermittent t. The force of traction alternately applied and released at specified intervals.

lumbar t. Traction applied to the lumbar spine usually by applying a force to pull on the pelvis or by using a mobilization technique to distract individual joints of the lumbar vertebrae.

manual t. The application of traction to the joints of the spine or extremities by a therapist trained to know appropriate positions and intensities for the force.

maxillomandibular t. Traction applied to the maxilla and mandible by means of elastic or wire ligatures and interdental wiring or splints.

mechanical t. The use of a device or mechanical linkage (i.e., pulleys and weights) to apply a traction force.

skeletal t. A pulling force applied directly to the bone through surgically applied pins and tongs.

PATIENT CARE: The patient in traction is placed on a firm mattress in the

prescribed position. Ropes, weights, and pulleys are assessed daily for wear, chafe, and improper position. Care must be taken to keep the skin insertion points of pins and tongs clean and free of infection. Infection at insertion sites can lead to osteomyelitis. Assessing the area for odor and other signs of infection and cleansing the area and then applying prescribed medication and sterile dressing can help to prevent osteomyelitis; aseptic technique is used to perform these procedures. Daily skin inspection for signs of pressure or friction is performed, and appropriate nursing measures are instituted to alleviate any pressure or friction. Proper traction and postural alignment should be maintained at all times and adjusted as necessary. An exercise regimen is established for the unaffected extremities. Patient complaints should be responded to without delay. Respiratory toilet with incentive spirometry is provided to prevent pulmonary complications. Pain and discomfort are assessed, and analgesics are administered as prescribed. Adequate nutrition and fluid intake promote tissue healing and repair. Dietary and medical management helps to prevent constipation and fecal impaction. The affected extremity is assessed daily or more frequently if necessary for complications such as phlebitis and nerve or circulatory impairment, and the lower extremity, for footdrop. Social and diversional activities are promoted. The patient is instructed about the use of a trapeze, exercises, and activity limitations, and discharge plans and follow-up care are provided.

sustained t. The application of a constant traction force up to ½ hr.

weight t. Traction exerted by means of weights.

tractor (trāk'tor) [L., drawer] Any device or instrument for applying traction.

tractotomy (trāk-tōt'ō-mē) Surgical section of a tract of the central nervous system. It is sometimes used to relieve intractable pain.

tractus (trāk'tūs) *pl.* **tractus** [L.] A tract or path.

tradename The name used to market a formally licensed drug or treatment.

traditional birth attendant A person, especially one in a developing country, who assists a woman during labor and delivery with skills learned by apprenticeship or personal experience rather than by formal training.

tragacanth (träg'ä-känth) [Gr. *tragacantha*, a goat thorn] The dried gummy exudation from the plant *Astragalus gummifer* and related species, grown in Asia. It is used in the form of mucilage, as a greaseless lubricant, and as an application for chapped skin.

tragal (trä'gäl) [Gr. *tragos*, goat] Relating to the tragus.

Trager work (trä-gër) [Milton Trager, American physician] A form of massage therapy that involves rhythmic manipulations of the body, combined with mental gymnastics.

tragi (trä'jī) *Pl.* of tragus.

tragicus (träj'ik-üs) [L.] The muscle on the outer surface of the tragus.

triglion (träj'ē-ön) An anthropometric point at the upper margin of the tragus of the ear.

tragomaschalia (träg'o-mäs-käl'ē-ä) [Gr. *tragos*, goat, + *maschale*, the armpit] Odorous perspiration (bromidrosis) of the axilla.

tragoponia, tragophony (träg'o-fō'nē-ä, -ōf'ō-nē) [' + *phone*, voice] A bleating sound heard in auscultation at the level of fluid in hydrothorax. SYN: *egophony*.

tragus (trä'gūs) *pl.* **tragi** [Gr. *tragos*, goat] A cartilaginous projection in front of the exterior meatus of the ear.

trailing zero (träl'ing) A zero that follows a decimal point, e.g., "lisinopril 5.0 grams orally twice a day." Trailing zeros appear on the Joint Commission on the Accreditation of Hospitals (JCAHO) "Do not use" list.



The use of a zero after a decimal point may result in the administration of a drug at ten times its prescribed dose if the decimal point is illegible or not seen.

train (trān) To participate in a special program of instruction to attain competence in a certain occupation.

trainable (trān'ä-bl) Having the ability to be instructed and to learn from being taught. In classifying severity of mental retardation or brain damage, it is important to know to what extent individuals may be trainable in various areas such as safety, personal care, or self-feeding.

training An organized system of instruction.

aerobic t. Exercise training for the purpose of attaining aerobic conditioning. Although no formula should be slavishly applied, a general guideline is that aerobic conditioning will be obtained by normal, healthy persons who exercise three to five times a week for 35 min or more and at an intensity that produces a heart rate of 220 minus the age of the individual.

autogenic t. A form of self-regulation developed by Johannes Schulz (early 20th century German physician) that is used to promote relaxation, aid stress management, and/or foster well-being using the autonomic nervous system. The practitioner utters or concentrates on a simple phrase (e.g., my arms feel

heavy and warm) and tries to induce physiological changes, such as increases in blood flow, to the body part on which he or she is concentrating.

aversive t. Aversion therapy.

bowel t., bowel retraining A program for assisting adult patients to re-establish regular bowel habits. Patients with chronic constipation, colostomies, fecal incontinence, or spinal cord injuries affecting the muscles involved in defecation may benefit from bowel training. Assessments include determining the etiology and duration of the bowel problem, the normal pattern, the use of enemas, suppositories, or laxatives to promote bowel evacuation, and the patient's mental status and ability to cooperate with the planned program. Interventions include dietary changes (esp. increased intake of dietary fiber), supervised training to elicit evacuation at convenient times (esp. after meals), biofeedback, kegel exercises (to strengthen anorectal and pelvic muscles), and psychotherapy.

PATIENT CARE: The patient is encouraged to increase the dietary intake of fresh fruits and vegetables and whole grains, and to drink 3000 ml of fluid each day. The need to heed normal evacuatory urges is emphasized. Use of laxatives is discouraged, and the actions of stool softeners are explained. The advantages of generating evacuation 30 min after meals to enlist normal peristaltic action are communicated to the patient. Digital anal stimulation or insertion of suppository, if indicated, is demonstrated.

t. effect The physiological response of the body to regular repetitive exercise. Beneficial effects include a slower heart rate, lower blood pressure, decreased blood cholesterol levels, increased muscle strength, better oxygen and glucose extraction from the blood, and improvement in mood.

habit t. 1. The development in young children of specific behavior patterns for performing basic activities such as eating, dressing, using the toilet, and sleeping. **2.** An educational tool in which learning of specific tasks is assigned to a structured time of the day, so that the task and the time are associated in the mind of the student. **3.** The treatment is designed to encourage behavioral routines and productive time management.

in-service t. Clinical education designed to inform and update staff about important ongoing projects, technologies, and therapeutic agents.

inspiratory muscle t. Any technique used to enhance ventilation by increasing respiratory coordination, endurance, and strength. Examples include breath-holding exercises, breathing

against resistance, and incentive spirometry.

interval t. A form of physical conditioning in which periods of high-intensity exercise alternate with periods of lesser exertion or rest and recovery.

social skills t. The components of rehabilitation programs that focus on the skills necessary for effective interaction with other people.

train-of-four ABBR: TOF. A monitoring protocol for counting the number of contractions produced by peripheral nerve stimulators in patients who have received neuromuscular blocking agents (NMBAs) such as Pavulon and vecuronium. When NMBAs are used, staff may be unable to use normal assessment techniques of neurological function.

PATIENT CARE: In TOF, electrodes are placed on the patient's wrist, and the number of thumb twitches is counted. After the NMBA infusion is begun, thumb twitches are measured every 30 min for 2 hr to ensure the appropriate level of paralysis has been reached. The absence of contractions indicates that too much NMBA is being given; 1 to 2 twitches indicate the appropriate level of drug is being administered, and 3 to 4 twitches indicate the need to increase the infusion rate. Once the desired level is reached, response to peripheral nerve stimulation is measured every 4 hr.

Patients retain sensory nerve function and awareness of their surroundings, so analgesics and sedatives are usually administered concurrently. Whether TOF augments clinical assessment of neuromuscular blockade is controversial; it may be more useful with some neuromuscular blocking agents (e.g., vecuronium) than others.

trait (trāt) A distinguishing feature; a characteristic or property of an individual.

acquired t. A trait that is not inherited; one resulting from the effects of the environment.

inherited t. A trait due to genes transmitted through germ cells.

personality t. An enduring pattern of perceiving, communicating, and thinking about oneself, others, and the environment that is exhibited in multiple contexts. SEE: *personality disorder*.

sickle cell t. The condition of being heterozygous with respect to hemoglobin S, the gene responsible for sickle cell anemia. In people with sickle cell trait each red blood cell has one copy each of hemoglobin A and hemoglobin S. These cells will not become sickled until extremely low concentrations of oxygen occur. SEE: *hemoglobin S disease*.

trajector (trā-jĕk'tor) [L. *trajectus*, thrown across] A device for determin-

ing the approximate location of a bullet in a wound.

TRAM (trām) *transverse rectus abdominis musculocutaneous reconstruction.*

tramadol (trā'mă-dōl) A cyclohexanol and centrally acting analgesic, administered orally to treat moderate or moderately severe pain.

trance (trāns) [L. *transitus*, a passing over] A sleeplike state, as in deep hypnosis, in which a person has limited awareness of his surroundings.

death t. A trance simulating death.

induced t. A trance caused by some external event such as hypnosis.

tranquilizer (trān'kwī-līz'ēr) [L. *tranquillus*, calm] A drug that reduces tension, agitation, hyperactivity, and anxiety. The minor tranquilizers include antihistamines (e.g., hydroxyzine), buspirone, and benzodiazepines (e.g., diazepam or alprazolam). The benzodiazepines decrease anxiety, provide sedation, and may cause dependence, tolerance, or addiction. The major tranquilizers include neuroleptic drugs such as haloperidol, fluphenazine, or risperidone. They are used to treat psychotic symptoms, such as delusions, hallucinations, and catatonia, and to manage psychotic disorders, such as schizophrenia. A prominent delayed side effect of many neuroleptic agents is the movement disorder known as tardive dyskinesia.



Some tranquilizers may injure the developing embryo. Therefore, before prescribing one, one should know whether it is approved for use during pregnancy, esp. early pregnancy.

trans- [L.] Prefix meaning *across, over, beyond, through.*

transabdominal (trāns'āb-dōm'ī-nāl) Through, into, or across the abdomen or abdominal wall.

transacetylation (trāns-ās'ē-tīl-ā'shūn) Transfer of an acetyl group (CH₃CO—) in a chemical reaction.

transaction The interaction of a person with others, esp. one in which items on an agenda, finances, or ideas are discussed.

transactional analysis Psychotherapy involving role playing in an attempt to understand the relationship between the patient and the therapist and eventually that between the patient and reality.

transamidination (trāns-ām'ī-dīn-ā'shūn) The transfer of an amidine group from one amino acid to another.

transaminase (trāns-ām'in-ās) The old term for aminotransferase.

glutamic-oxaloacetic t. Aspartate aminotransferase.

glutamic-pyruvic t. Alanine aminotransferase.

transamination (trāns'ām-ī-nā'shūn) The transfer of an amino group from one compound to another or the transposition of an amino group within a single compound.

transaortic (trāns'ā-or'tīk) Done through the aorta (e.g., a surgical procedure).

transatrial (trāns-ā'trē-āl) Done through the atrium (e.g., a surgical procedure).

transaudient (trāns-aw'dē-ēnt) [ʹ + *audire*, to hear] Permeable to sound waves.

transbronchial (trāns-brōng'kē-āl) Across the bronchi or the bronchial wall.

transcalent (trāns-kā'lēnt) [ʹ + *calere*, to be hot] Permeable by heat rays. SYN: *diathermal.*

transcapillary (trāns'kăp'il-lă-rē) [ʹ + *capillaris*, relating to hair] Across the endothelial wall of a capillary.

transcellular (trāns-sēl'ū-lēr) [ʹ + ʹ] Passing through cells.

transcervical (trāns-sēr'vī-kāl) Done through the cervical os of the uterus.

transcortical (trāns-kor'tī-kāl) Joining two parts of the cerebral cortex.

transcortin (trāns-kor'tīn) A corticosteroid-binding globulin.

transcriptase (trāns-krip'tās) A polymerase enzyme that constructs a messenger RNA molecule that is a complementary copy of the base sequence on a DNA gene. SYN: *RNA polymerase.*

reverse t. An enzyme of retroviruses, including HIV, that catalyzes the construction of DNA from the RNA of the virus, the reverse of normal transcription.

transcription (trān-skrīp'shūn) The first step in protein synthesis, the synthesis of a messenger RNA (mRNA) molecule that is a complementary copy of a DNA gene. This takes place in the nucleus of the cell; the mRNA then travels to the ribosomes in the cytoplasm, the site of protein synthesis.

transcriptome (trāns-skrīp'tōm) All the messenger RNA that can be made from a genome.

transcultural (trāns-kūl'tū-răl) Affecting or pertaining to individuals of different ethnic, racial, or socioeconomic backgrounds. SEE: table.

transcutaneous (trāns'kū-tā-nē-ūs) Percutaneous.

transcutaneous electrical nerve stimulation ABBR: TENS. The application of mild electrical stimulation to skin electrodes placed over a painful area. It alleviates pain by interfering with transmission of painful stimuli.

transcutaneous oxygen monitoring Oximetry.

transcytosis (trānz-sī-tō'sīs) The ferrying of a substance across a cell membrane in coated vesicles.

Some Culturally Specific (Folk) Illnesses

Syndrome	Culture	Meaning
Caida de mollera	Latin America	"Sunken fontanel," i.e., dehydration. Thought to be caused by spells or hexes
Latah	S.E. Asia	Obsessive and repetitive use of vulgar language followed by obedient gesturing
Mal de ojo	Latin America	"Evil eye," i.e., a spell put on a child. Causes vomiting, belly pain, dehydration
Piblokto	Eskimo/Inuit	Sudden manic madness, with subsequent amnesia of the event
Root; rootwork Tabanka	S.E. U.S. Trinidad	Hexing or healing through sorcery Depression and/or suicide after abandonment by a wife
Tarantism	Mediterranean	Uncontrollable stupor, melancholy, and manic dancing attributed to the bite of the tarantula
Windigo (witiko)	Native American	Cannibalism as a result of spirit possession
Yonaki	Japanese	A sleep-disorder of childhood, marked by separation anxiety and nocturnal crying
Zar	Northern African/ Middle Eastern	Spirit possession

transdermal infusion system

(tränz"dërm'äl) A method of delivering medicine by placing it in a special gel-like matrix that is applied to the skin. Each application will provide medicine for from one to several days. Nitroglycerin, fentanyl, lidocaine, estradiol, testosterone, and scopolamine may be administered through the skin. A transdermal drug patch has three key elements: a backing, the drug, and a liner that is peeled away before application. The absorption, delivery rate, and bio-distribution of the drug are not affected by the patient's skin texture, thickness, or color. Drugs are equally well absorbed when applied to arms, thighs, back, or abdomen because various body sites have about the same rate of dermal penetration. When placed on intact skin, a transdermal drug patch creates a concentration gradient between the high concentration of drug in the patch and the low concentration in the skin. The drug then diffuses passively across the outermost skin layer (stratum corneum) into epidermal capillaries. Also called *transdermal drug-delivery system*.

PATIENT CARE: The skin acts as a reservoir for the absorbed drug; therefore simple removal of a patch does not stop release of the drug into the bloodstream. Patients may forget to tell health care providers that they are wearing a patch, or the patch may be overlooked because of its transparency or because of skin folds, and as a result the patient could receive an overdose if a similar drug is administered by another route. Thus, health care professionals should ask specifically about patch use when taking a patient's med-

ication history. Most patches are imprinted with the drug name, dose, and release rate, providing needed information to the care provider. The patient should be taught to keep each patch in its protective wrapper until ready for use, to inspect it for leakage, and not to use it if it is damaged. If a patch leaks on the skin, the exposed skin should be thoroughly rinsed with water (soap should not be used because it can irritate the drug-exposed skin). The manufacturer's directions for patch application should be followed. Skin that is very hairy, oily, sunburned, scarred, calloused, or damaged; areas that tend to be sweaty; areas prone to friction (e.g., under a bra strap or at the waist line); and bony areas (e.g., the shoulders and hips) should be avoided. Skin should be clean and dry before the patch is applied, and powder, lotion, or residual oil from bath products or sunscreens should be removed by washing with mild soap and water and rinsing thoroughly. The drug name, dose, and delivery rate should be checked before the patch is applied. The patient should then peel off the protective liner and apply the adhesive side of the patch to the skin at the selected site, pressing the patch on firmly so that it adheres well, esp. around the edges. The hands should be washed immediately after applying a patch. Directions for removing a patch should be followed and the patch disposed of according to the manufacturer's instructions. Application sites should be rotated to avoid skin irritation. Depending on the particular drug and the prescribed regimen, a patch may be worn continually or removed for a portion of each day. Trans-

dermal patches are best stored in their original container at room temperature with nothing stacked on top of them so as to protect them from excessive heat or pressure. If the interval between patch changes is lengthy, the patient must develop a system to assist in correctly scheduling the change. If a patient forgets to change a patch at the prescribed interval, he or she should remove the missed patch and apply a new one as soon as the error is discovered. Drug patches are waterproof, and the patient can bathe, shower, or swim while wearing a patch as long as it is not rubbed. If a patch starts to peel because of sweating, immersion in water, or hot, humid weather, it should be replaced, never taped to the skin, or held in place or covered in any way. Patch adhesive can irritate sensitive skin, but the reaction usually subsides when the patch is removed. Localized skin reactions may require treatment with a topical corticosteroid, but they should be reported to the primary care provider to determine the appropriate action.



1. Patients should remove a patch before having a magnetic resonance imaging (MRI) scan and replace it afterward with a new patch. The foil backing on many patches can cause MRI-related burns.

2. Patches containing estrogen or nicotine should not be applied to the breasts.

transdifferentiation (trănz"dif"ë-rën"shë-ä'shün) The conversion of stem cells derived from one tissue into cells normally found in another tissue.

transducer (trăns-dü'sër) [L. *trans*, across, + *ducere*, to lead] A device that converts one form of energy to another. The telephone is an example. It is used in medical electronics to receive the energy produced by sound or pressure and relay it as an electrical impulse to another transducer, which can either convert the energy back into its original form or produce a record of it on a recording device.

pulse-echo t. An ultrasonic transducer that sends out intermittent (pulsed) signals rather than continuous sound waves and receives the echo signal. Pulsed-wave Doppler ultrasound is used to measure blood flow and the depths from which echoes originate.

continuous wave t. An ultrasonic transducer that sends a constant and continuing signal that is not pulsed.

transrectal t. A cylindrically shaped ultrasonic transducer inserted into the rectum to evaluate the prostate, rectum, and urinary bladder and to guide prostate biopsy.

ultrasonic t. A device used in ultrasound that sends and receives the sound wave signal.

transduction (trăns-dük'shün) A phenomenon causing genetic recombination in bacteria in which DNA is carried from one bacterium to another by a bacteriophage. SEE: *transformation*.

signal t. Biochemical conversion that is part of a process, such as the docking of hormone to receptor, stimulating cellular production of specific enzymes or other proteins.

transection, transection (trăns-sék'shün, trăns-sék'shün) [" + *sectio*, cutting] A cutting made across a long axis; a cross section.

trans fat SEE: *under fat*.

trans-fatty acid The solid fat produced by heating liquid vegetable oils in the presence of hydrogen and certain metal catalysts. This process of partial hydrogenation changes some of the unsaturated bonds to saturated ones. The more trans-fatty acids in the diet, the higher the serum cholesterol and low density lipoprotein cholesterol.

transfection (trăns-fék'shün) The infection of bacteria by purified phage DNA.

transfer, transference (trăns-fër, trăns-fër'ëns) [" + *ferre*, to bear] **1.** The mental process whereby a person transfers patterns of feelings and behavior that had previously been experienced with important figures such as parents or siblings to another person. Quite often these feelings are shifted to the caregiver. **2.** The state in which the symptoms of one area are transmitted to a similar area.

blastocyst t. An assisted reproduction technique in which a zygote created by in vitro fertilization is incubated in the laboratory to the pre-embryonic stage of the blastocyst before being placed in the uterus.

egg t. Transfer of eggs retrieved from ovarian follicles into the fallopian tubes. SEE: *gamete intrafallopian transfer*.

embryo t. SEE: *embryo transfer*.

magnetization t. In magnetic resonance imaging (MRI), a technique that improves imaging of the white matter of the brain.

ooplasmic t. Insertion of a donor egg's cytoplasm, along with donor sperm, into the egg of another woman. Ooplasmic transfer is used to treat infertility and results in the development of embryos with two different sources of maternal mitochondrial DNA.

somatic cell nuclear t. In cloning, the transfer of genetic material from a differentiated, adult cell into an egg.

zygote intrafallopian t. ABBR: ZIFT. An in vitro fertilization technique in which a woman's ova are surgically removed and mixed with her partner's sperm. The resulting zygotes are placed

in her fallopian tube. SEE: *embryo transfer*; *fertilization, in vitro*; *GIFT*.

transferase (trāns'fēr-ās) An enzyme that catalyzes the transfer of atoms or groups of atoms from one chemical compound to another.

gamma glutamyl t. ABBR: GGT. An enzyme present in the liver and biliary tree that is used to diagnose liver, gallbladder, and pancreatic diseases. Elevated levels of GGT are often found in people who use drugs (such as alcohol) that are metabolized by the liver.

transfer board A device used to bridge the space between a wheelchair and a bed, toilet, or car seat; used to facilitate independent or assisted transfer of the patient from one of these sites to another. It is also called a *sliding board*. SEE: *illus.*



TRANSFER BOARD

Use of a transfer board to move from bed to chair.

transfer factor Low-molecular-weight chemicals extracted from immune cells activated to respond to specific antigens. These products can be taken from a sensitized person and given to another. As a result of this transfer, the recipient will react to the same antigen originally used to sensitize the lymphocytes of the donor. In humans, the factor can be transferred by injecting the recipient with either intact lymphocytes or extracts of disrupted cells. It has been studied as adjunctive therapy used to modulate the immune system in several clinical trials.

transferrin (trāns'fēr'in) A globulin that binds and transports iron.

transferring (trāns'fēr-ing") The act of moving a person with limited function from one location to another. This may be accomplished by the patient or with assistance.

transfix (trāns-fiks') [" + *figere*, to fix] To pierce through or impale with a sharp instrument.

transfixion (trāns-fik'shūn) A maneuver in performing an amputation in which a

knife is passed into the soft parts and cutting is from within outward.

transforation (trāns'for-ā'shūn) [" + *forare*, to pierce] The perforation of the fetal skull at the base in craniotomy.

transforator (trāns'for-ā'tor) An instrument for perforating the fetal skull.

transformation (trāns'for-mā'shūn) [" + *formatio*, a forming] **1.** Change of shape or form. **2.** In oncology, the change of one tissue into another. SEE: *metastasis*. **3.** In bacterial genetics, the acquisition of bacterial DNA fragments by other bacterial cells; antibiotic resistance is often acquired this way.

transformation zone Any area of the body where squamous epithelium meets columnar epithelium. SEE: *squamocolumnar junction*.

transformer (trāns-form'er) [" + *formare*, to form] A stationary induction apparatus to change electrical energy at one voltage and current to electrical energy at another voltage and current through the medium of magnetic energy, without mechanical motion.

step-down t. A transformer that changes electricity to a lower voltage.

step-up t. A transformer that changes electricity to a higher voltage.

transfuse (trāns-fūz') To infuse blood or blood products.

transfusion (trāns-fū'zhūn) [" + *fusio*, a pouring] **1.** The collection of blood or a blood component from a donor followed by its infusion into a recipient. In the U.S. more than 12 million blood products are transfused each year. SEE: *blood t.*; *intraosseous infusion*. **2.** The injection of saline or other solutions into a vein for a therapeutic purpose.



Although the risk of contracting infectious diseases from blood in Europe and North America is very small, transfusions are still associated with considerable hazards. These include the risk of allergic reactions, transfusion reactions, fluid overload, iron overload, hemolysis, alloimmunization, lung injury, and the increased likelihood of dying from a critical illness.

autologous blood t. A procedure for collecting and storing a patient's own blood several weeks before its anticipated need by the patient. Alternatively, blood lost during a noncontaminated surgical procedure can be recovered from the operation site and processed for transfusion. This method of providing blood for a patient is used to prevent the possible transmission of disease from the use of donor blood. SEE: *blood doping*; *blood transfusion*.

blood t. The replacement of blood or one of its components. Effective and safe transfusion therapy requires a thorough

understanding of the clinical condition being treated. Most patients require blood components rather than whole blood. SEE: *blood component therapy* for table; *autologous blood transfusion*; *exchange transfusion*; *transfusion reaction*; *Standard Precautions Appendix*.

The following measures should be taken during transfusion therapy:

1. Screen donors for transmissible diseases;
2. Test blood for pathogens;
3. Ensure that cross-matched blood products are given to correctly identified patients;
4. Intervene promptly in transfusion reactions;
5. Avoid unnecessary transfusions;
6. Avoid volume overload during transfusions;
7. Avoid hypothermia, electrolyte, and clotting disorders.

Administration of a single unit may be indicated in young or old surgical patients, in those with coronary disease, and in patients who have an acute blood loss of several units but whose blood pressure, pulse, and oxygen are stabilized by use of one unit.

The risk of HIV, HBV, or HCV on blood collected and distributed in the U.S. is very low.

PATIENT CARE: The patient is identified from both the hospital identification band and blood bank band. Two health care professionals (one the administering nurse) verify the patient's ABO and Rh blood type and its compatibility with the unit of blood or packed cells to be administered, as well as the unit's expiration date and time. Outdated blood is not used; it is returned to the blood bank for disposal. The blood or blood product is retrieved from the blood bank refrigerator immediately before administration because blood should not be stored in other than approved refrigerators. Blood cannot be returned to blood bank storage if the unit's temperature exceeds 50°F (10°C), a change that will occur within about 30 min of removal from storage.

Before the transfusion is started, the patient's vital signs (including temperature) are checked and documented. The blood is inspected visually for clots or discoloration, and then the transfusion is administered through an approved line containing a blood filter, preferably piggybacked through physiological saline solution on a Y-type blood administration set. No other intravenous (IV) solutions or drugs should be infused with blood (unless specifically prescribed) because of potential incompatibility. In the first 15 min, the blood flow rate is slowed to limit intake to no more than 50 ml. A health care professional remains with the patient during this time and in-

structs the patient to report any adverse reactions (e.g., back or chest pain, hypotension, fever, increase in temperature of more than 1.8°F (1°C), chills, pain at the infusion site, tachycardia, tachypnea, wheezing, cyanosis, urticaria, or rashes). If any of these occurs, the transfusion is stopped immediately; the vein is kept open with physiological saline solution, and the patient's physician and the blood bank are notified. If incompatibility is suspected, the blood and set are returned to the blood bank; samples of the patient's blood and urine are obtained for laboratory analysis of: hemoglobin in the urine; protime/INR; blood culture; complete blood count; chemistries; and identifying data are recorded from the unit. If no symptoms occur in the first 15 min and vital signs remain stable, the transfusion rate is increased to complete the transfusion within the prescribed time, or (if necessary) the transfusion is administered as fast as the patient's overall condition permits. Once the transfusion begins, the blood is administered within a maximum of 4 hr to maintain biological effectiveness and limit the risk of bacterial growth. (If the patient's condition does not permit transfusing the prescribed amount within this time frame, arrangements are made to have the blood bank split the unit and properly store the second portion.) The patient's vital signs and response are monitored every 30 min throughout the transfusion and 30 min afterward; stated precautions are observed, and caregivers monitor for indications of volume overload (distended neck veins, bounding pulse, hypertension, dyspnea). Blood should not be administered through a central line unless an approved in-line warming device is used. A warmer should also be used whenever multiple transfusions place the patient at risk for hypothermia, which can lead to dysrhythmias and cardiac arrest. Patients planning elective surgery (e.g., hip, knee replacement, hysterectomy) may bank one or two units of their own blood in the weeks prior to surgery for use if needed. Blood-saving devices also are used in such surgeries, and this blood is returned to the patient before he or she leaves the operating theater.

cadaveric blood t. A transfusion using blood obtained from a cadaver a short time after death.

direct t. The transfer of blood directly from one person to another.

exchange t. The removal of a patient's entire blood volume (e.g., in sickle cell disease, thrombotic thrombocytopenic purpura, hemolytic disease of the newborn) and its replacement with blood donated by others. SYN: *replacement transfusion*.

feto-fetal t. Twin-twin t.

indirect t. A transfusion of blood from a donor to a suitable storage container and then to the patient.

intrauterine t. The infusion of blood cells into a fetus, to treat prenatal diseases such as erythroblastosis fetalis.

replacement t. Exchange t.

single unit t. The infusion of one unit of packed red blood cells (PRBCs). On average, one unit of PRBCs will increase the hemoglobin level by 1 g/dL.

t. trigger Colloquial term for the point at which the risks associated with low hematocrit or hemoglobin levels outweigh the risk of an adverse reaction associated with a blood transfusion.

PATIENT CARE: The concept of a transfusion trigger is controversial. Some medical authorities recommend transfusions only for patients who are actively compromised by bleeding rather than for specific levels of hemoglobin or hematocrit.

twin-twin t. A complication of monochorionic multiple pregnancies in which one fetus receives more blood flow than the other from the placenta. It is diagnosed by fetal ultrasonography: one twin's amniotic sac has polyhydramnios (excessive amniotic fluid), while the other twin's sac has oligohydramnios (insufficient amniotic fluid). Death of one or both twins will occur without intervention. Treatments include repeated amniocenteses, laser therapy to prevent the exchange of blood between twins, or intrauterine surgery. SYN: *feto-fetal transfusion*.

transfusion reaction An adverse response to a transfusion caused by the presence of foreign antigens, antibodies, or cytokines. There are three basic types of true transfusion reactions and several other complications of transfusion therapy.

Hemolytic reactions (type II hypersensitivity reactions) occur when ABO-incompatible blood is given; antibodies or complement (or both), coat blood cells, stimulating hemolysis by macrophages and neutrophils. These reactions occur in less than 1% of all blood transfusions. In acute hemolytic reactions, patients develop fever, chills, nausea, flank pain, hypotension, flushing, and hematuria within 20 min after the transfusion has begun. Delayed reactions develop 3 to 14 days later; the patient presents with fever, jaundice, and a decreased hemoglobin level. In rare cases, disseminated intravascular coagulopathy, respiratory distress syndrome, acute renal tubular necrosis, and/or death may occur.

Allergic reactions occur when patients have been sensitized to foreign antigens on proteins in the blood or plasma. A history of allergies is usually present, indicating the patient has developed immunoglobulin E antibodies to allergens.

Patients develop itching and hives. Mild allergic reactions can be prevented or treated with antihistamines; the use of washed red blood cells (RBCs), which have fewer antigens, also reduces the risk of allergic reactions. Very rarely, systemic anaphylaxis occurs, as indicated by severe hypotension, and wheezing.

Febrile reactions are the result of cytokine release by leukocytes while the blood was being stored. Antipyretics are used to treat the transient fever that appears; the use of fresh blood and leukocyte-poor RBC transfusion also reduces the risk of a febrile response.

Other problems associated with blood transfusions include circulatory overload (the most common transfusion reaction). Bacterial, viral, and protozoal infections may occasionally be transmitted by transfusions, and some patients may suffer a graft-versus-host reaction after receiving blood products. The ability to screen blood for antibodies to hepatitis and human immunodeficiency virus has decreased the risk of acquiring these diseases through blood transfusion; however, malaria and bacterial infections can still occasionally be transmitted if the donor is asymptomatic. The acute pulmonary edema that develops from circulatory overload can be diagnosed through the presence of crackles, gurgles, and wheezes on auscultation of the chest, severe difficulty in breathing, frothy sputum, decreased oxygen saturation, and abnormal findings on chest x-ray examination. Immunosuppressed patients may receive irradiated blood to prevent activation of donor leukocytes and graft-versus-host disease.

PATIENT CARE: Hemolytic blood transfusion reactions are prevented by meticulous accuracy in labeling the patient's blood sample for typing and cross-matching; double-checking the patient's name and identification number at the time of transfusion is essential. Antihistamines and antipyretics may be given to patients with a history of multiple blood transfusions, allergies, or a previous febrile transfusion reaction. Patients at risk for circulatory overload are placed in an upright position before the transfusion is started, and the blood is administered very slowly; packed RBCs create less risk than whole blood, but also must be transfused over several hours.

All patients receiving blood transfusions should be monitored closely for signs of an adverse response. Transfusions should be initiated by infusing 50 ml during the first 15 min to detect and prevent severe reactions. The patient is advised to report any symptoms experienced during this initial period. Vital

signs including temperature are checked. The flow rate is only increased if the initial infusion is completed without complications. Vital signs and clinical responses continue to be monitored at least every 30 min throughout the transfusion. If a reaction occurs, the infusion is stopped immediately, but an intravenous line is kept patent with saline. A description of the patient's signs or symptoms, and the blood container and tubing, are sent to the blood bank; blood and urine samples are sent to the laboratory for analysis. In many hospitals, a specialty transfusion nurse is assigned to supervise transfusions and educate staff about policies, procedures, and guidelines to optimize transfusion safety.

transfusion syndrome, multiple Bleeding that results from the transfusion of multiple units of blood. SEE: *posttransfusion syndrome*.

transgendered (trāns-jěn'děrd) Having a gender identity or gender perception different from one's phenotypic gender.

transgenerational (trānz'jěn-ě-rā'shūn-īl) [" + "] Having an effect on several generations of a family.

transgenic (trāns-jěn'īk) An organism into which hereditary material from another organism has been introduced.

transient (trān'zē-ěnt) [L. *transi*, to go by] Not lasting; of brief duration.

transient hypoglobulinemia (trān'zē-īnt hī'pō-glōb'ū-līn-ēm'ē-ā) Low levels of the immunoglobulin G (IgG) class antibody that occur when an infant is between 5 and 6 months of age. The maternal IgG that has crossed the placenta begins to drop after birth and reaches its lowest level (about 350 mg/dl) at this point. If IgG production is decreased, transient hypogammaglobulinemia develops. Normal blood levels of B cells, IgA, and IgM usually are present, which differentiates this transient disorder from hereditary, X-linked hypogammaglobulinemia. Some infants develop recurrent infections and must be treated with intravenous gamma globulin (IVIG) until IgG production increases.

transient ischemic attack ABBR: TIA. A neurologic deficit, having a reversible vascular cause, that produces stroke symptoms that resolve within 24 hr. (In practice, most TIAs resolve within an hour of onset). Patients who have suffered a TIA have an increased risk of peripheral and coronary artery atherosclerosis, and an increased risk of subsequent heart attack and stroke. SEE: *stroke*.

SYMPTOMS: TIAs and strokes have similar symptoms. These vary depending on the blood vessel affected, but may include weakness of one half of the face or half of the body, confusion, dizziness, aphasia (difficulty speaking or under-

standing), monocular visual loss, hemibody sensory loss, sudden trouble walking, loss of balance, or severe headache with no known cause. A person who develops any of these symptoms should seek emergency medical assistance immediately. He or she should not attempt to drive or be driven to the emergency center, but should call or have a family member call 911 for help.

ETIOLOGY: TIAs usually occur in patients with underlying atherosclerosis, esp. of the carotid arteries, intracranial arteries, or the aorta. Emboli to the brain caused by atrial fibrillation, cerebrovascular vasospasm, transient episodes of hypotension, cerebral vasculitis, polycythemia vera, and other illnesses may occasionally produce TIAs.

TREATMENT: Studies involving large numbers of patients have shown that the risk of subsequent stroke in those who have suffered TIAs can be substantially reduced with antiplatelet or anticoagulant drugs (e.g., aspirin, clopidogrel, or warfarin) and with drugs that control blood pressure and lipids. Carotid endarterectomy or balloon angioplasty and stenting are better options than medical therapy for stroke prevention in TIA patients with extensive carotid artery blockages, provided their surgeons have an operative mortality rate of less than 5%.

PATIENT CARE: Because symptoms of TIA may resolve by the time the patient reaches the emergency care center, an accurate history of the event should be obtained, questioning not only the patient but also family, first-responders, and any other witnesses. Carotid arteries are assessed for bruits, the heart for evidence of atrial fibrillation, and the cranial nerves, speech and motor strength for signs of functional loss. The patient may have brain imaging studies (e.g., CT or MRI) to exclude other intracerebral disorders. Baseline laboratory studies including serum chemistries, glucose level and coagulation factors are obtained. The health care professional supports the patient and family during diagnostic procedures by explaining the procedures and expected sensations and by encouraging verbalization of feelings and concerns. Therapeutic interventions are provided, and the patient is instructed about desired effects and adverse reactions of prescribed drugs.

The patient also is encouraged to follow preventive measures: stopping smoking and avoiding second-hand smoke, exercising regularly (walking at a moderate pace for 30 min daily), losing weight if obesity is a concern, eating a heart-healthy diet, drinking no more than one (women) or two (men) alcoholic

drinks daily, seeking medical management for elevated cholesterol or blood pressure, and more tightly controlling glucose levels if diabetes mellitus is present.

transilic (trāns-īl'ē-āk) [L. *trans*, across, + *iliacus*, pert. to ilium] Extending between the two ilia.

transilient (trāns-sīl'ē-ēnt) Jumping across or passing over as occurs when nerve fibers in the brain link nonadjacent convolutions.

transillumination (trāns'īl-lū'mī-nā'shūn) [" + *illuminare*, to light up] Inspection of a cavity or organ by passing a light through its walls. When pus or a lesion is present, the transmission of light is diminished or absent. SYN: *diaphanography*.

transischic (trāns-īs'kē-āk) Across or between the ischia of the pelvis.

transition (trān-zī'shūn) [L. *transitio*, a going across] **1.** Passage from one state or position to another, or from one part to another part; a change in health status, roles, family, abilities, and other important areas. Transitions often require adaptations within the person, the group, or the environment and define the need for and context of nursing care. **2.** In obstetrics, the final phase of the first stage of labor. Cervical dilation is 8 to 10 cm and strong uterine contractions occur every 1.5 to 2 min and persist for 60 to 90 sec. Accompanying behavioral changes include increasing irritability and anxiety, declining coping abilities, and expressions of a strong desire for the labor to be ended immediately.

transitional (trān-zīsh'ūn-āl) Marked by or relating to change.

transition zone of the prostate The central area of the prostate gland. Glandular overgrowth here is responsible for symptoms of bladder obstruction, urinary frequency, and nighttime urination—symptoms of benign prostatic hypertrophy. Relatively fewer cancers start here than at the outer borders of the gland.

transitive movement Any movement in which physical objects, such as tools or utensils, are employed. Using a bottle-opener, carving a turkey, brushing the teeth, and drinking from a glass are all examples of transitive movement.

transjugular (trānz-jūg'ū-lēr) Through the jugular vein.

transkaryotic (trānz'kār-ē-ōt'īk) Binding or attachment (e.g., of white blood cells as they migrate through tissues).

translabial (trānz'lā'bē-īl) Through or across the labia majora; a term used for radiological examinations that penetrate the labial and vaginal tissues to examine the uterus, fallopian tubes, and ovaries.

translation (trāns-lā'shūn) [L. *trans*,

across, + *latus*, borne] **1.** The synthesis of proteins under the direction of ribonucleic acid. **2.** To change to another place or to convert into another form.

translocation (trāns'lō-kā'shūn) [" + *locus*, place] **1.** The alteration of a chromosome by transfer of a portion of it either to another chromosome or to another portion of the same chromosome. The latter is called shift or intrachange. When two chromosomes interchange material, it is called reciprocal translocation. **2.** Movement of bacteria across the intestinal wall to invade the body. **3.** The linear motion of one structure across the parallel surface of another.

translucent (trāns-lū'sēnt) [" + *lucens*, shining] Not transparent but permitting passage of light.

transluminal (trānz-lū'mī-nāl) Within or through the internal bore or cylindrical channel within a blood vessel.

transmethylase (trāns-mēth'ī-lās) Methyltransferase.

transmethylation (trāns'mēth-ī-lā'shūn) The process in the metabolism of amino acids in which a methyl group is transferred from one compound to another; for example, the conversion in the body of homocysteine to methionine. In this case, the methyl group is furnished by choline or betaine.

transmigration (trānz'mī-grā'shūn) [" + *migrare*, to move from place to place] Wandering across or through, esp. the passage of white blood cells through capillary membranes into the tissues.

external t. Transfer of an ovum from an ovary to an opposite tube through the pelvic cavity.

internal t. Transfer of an ovum through the uterus to the opposite oviduct.

transmissible (trāns-mīs'ā-bl) [L. *transmissio*, a sending across] Capable of being carried from a source, such as an individual, or an animal to a person, for example, an infectious disease.

transmission (trāns-mīsh'ūn) Transfer of anything, as a disease or hereditary characteristics.

airborne t. The spread of infectious organisms by aerosol or dust particles. Diseases spread by airborne transmission include varicella-zoster virus and tuberculosis.

biological t. A condition in which the organism that transmits the causative agent of a disease plays an essential role in the life history of a parasite or germ.

common vehicle t. The transfer of infectious germs on contaminated objects, substances, or surfaces touched by two or more people.

droplet t. The spread of infectious germs in airborne fluids, e.g., the liquid particles released during coughing or sneezing.

duplex t. The passage of impulses through a nerve trunk in both directions by sensory and motor neurons.

horizontal t. 1. The transfer of a disease between sexual partners. **2.** The acquisition of an infection by individuals of the same generation. SEE: *vertical t.*

mechanical t. The passive transfer of causative agents of disease, esp. by arthropods. This may be indirect, as when flies pick up organisms from excreta of humans or animals and deposit them on food, or direct, as when they pick up organisms from the body of a diseased individual and directly inoculate them into the body of another individual by bites or through open sores. SEE: *vector.*

perinatal t. The transmission of an infectious illness from mother to infant during childbirth.

placental t. The transmission of substances in the mother's blood to the blood of the fetus by way of the placenta.

synaptic t. The release of a neurotransmitter by a neuron that initiates or inhibits an electrical impulse in the next neuron in the pathway.

transovarial t. The transmission of causative agents of disease to offspring following invasion of the ovary and infection of eggs; occurs in ticks and mites.

vertical t. 1. In certain insects, transovarial passage of infection from one generation to the next. **2.** In mammals, passage of infection from the mother's body fluids to the infant either in utero, during delivery, or during the neonatal period (via breast milk).

transmission-based precautions Measures suggested by the Centers for Disease Control and Prevention to reduce the risk of airborne, droplet, and direct-contact transmission of infection in hospitals. SEE: *Standard Precautions Appendix.*

transmission control protocol/internet protocol ABBR: TCP/IP. The standard communication algorithm that governs and facilitates data transmission on the Internet and on many private computing networks.

transmural (trāns-mū'rāl) [L. *trans*, across, + *murus*, a wall] Across the wall of an organ or structure, as in transmural myocardial infarction, in which the tissue in the entire thickness of a portion of the cardiac wall dies.

transmutation (trāns'mū-tā'shūn) [L. *transmutatio*, a changing across] **1.** A mutation. **2.** In physics, the alteration of an element's nucleus, usually by bombarding it with subatomic particles.

transnasal tube (trānz'nā'zīl) A tube passed through the nose into the gastrointestinal tract for feeding.

transocular (trāns-ōk'ū-lār) [' + *oculus*, eye] Across the eye.

transonance (trāns'ō-nāns) [L. *trans*,

across + *sonans*, sounding] The transmission of sounds through an organ, as heart sounds through the lungs and chest wall.

transorbital (trāns-or'bī-tāl) [' + *orbita*, track] Passing through the orbit of the eye.

transovarial passage (trāns-ō-vā'rē-āl) The passage of infectious or toxic agents into the ovary, a process that might invade and infect the oocytes.

transparent (trāns-pār'ēnt) [' + *parere*, to appear] **1.** Transmitting light rays so that objects are visible through the substance. **2.** Pervious to radiant energy. **3.** In medical ethics, openly and publicly discussed. Available for review by disinterested parties.

transpeptidase (trāns-pēp'tī-dās) An enzyme that catalyzes the transfer of a peptide from one compound to another.

transperitoneal (trāns'pēr-ī-tō-nē-āl) Across or through the peritoneum.

transphosphorylase (trāns-fōs-for'ī-lās) An enzyme that catalyzes the transfer of a phosphate group from one compound to another.

transphosphorylation (trāns-fōs'for-ī-lā'shūn) The exchange of phosphate groups from one compound to another.

transpiration (trāns'pī-rā'shūn) [' + *spirare*, to breathe] The passage of water or a vapor through a membrane. SEE: *perspiration.*

cutaneous t. The insensible evaporation of water vapor through the skin.

pulmonary t. The evaporation of water from the alveolar cells into the air in the lungs.

transpire (trān-spīr') To emit vapor through the skin or other tissues. SEE: *perspire.*

transplacental (trāns'plā-sēn'tāl) Through the placenta, esp. penetration of the placenta by a toxin, chemical, or organism that would affect the fetus.

transplant [' + *plantare*, to plant] To transfer tissue or an organ from one part to another (or one body to another) as in grafting or plastic surgery.

transplant (trāns'plānt) [' + *plantare*, to plant] A piece of tissue or organ used in transplantation.

transplantar (trāns-plān'tār) [' + *planta*, sole] Across the sole of the foot.

transplantation (trāns'plān-tā'shūn)

1. The grafting of living tissue from its normal position to another site or the transplantation of an organ or tissue from one person to another. Organs and tissues that have been successfully transplanted include the heart, lung, kidney, liver, pancreas, cornea, large blood vessels, tendon, cartilage, skin, bone, and bone marrow. Brain tissue has been implanted experimentally to treat patients with Parkinson's disease. The matching of histocompatibility antigens that differentiate one person's

cells from another's helps prevent rejection of donated tissues. Cyclosporine, tacrolimus, corticosteroids, monoclonal antibodies, and other immunosuppressive agents have been approx. 80% effective in preventing rejection of transplanted organs for 2 or more years. SEE: *autotransplantation*; *graft*; *heart t.*; *organ donation*; *renal t.*; *replantation*.



Patients who have received organ transplants and who are maintained on immunosuppressant drugs should generally avoid vaccination with live, attenuated organisms unless these vaccinations are specifically approved by their health care providers. Inactive vaccines are usually preferable for these patients.

2. In dentistry, the transfer of a tooth from one alveolus to another.

allogeneic t. Transplantation of material from a donor to another person.

autologous t. Transplantation of material from one location in the body to another site.

autologous bone marrow t. ABBR: ABMT. The harvesting and preservation of a patient's own blood-forming cells, followed by their eventual reintroduction into a patient. The procedure may be used to treat a variety of cancers and blood disorders. Contemporary practice is to mobilize stem cells into the blood stream with growth factors, and then to collect and filter the blood by a process called leukapheresis. In leukapheresis stem cells are identified by a cell surface antigen called CD34. After desirable blood-forming cells with this antigen are removed from the patient's blood, high-dose chemotherapy, monoclonal antibody therapy, or radiation may be used to purge the marrow of diseased cells. Healthy CD34+ cells capable of rebuilding the bone marrow are then returned to the patient and stimulated to reproduce.

autoplastic t. Transplantation of tissue from one part to another part of the same body. SYN: *homoplastic transplantation*.

bone marrow t. ABBR: BMT. Transplantation of bone marrow from one individual to another. It is used in treating aplastic anemia, thalassemia and sickle cell anemia, immunodeficiency disorders, acute leukemia, chronic myelogenous leukemia, non-Hodgkin's lymphoma, Hodgkin's disease, and testicular cancer, among others.

double t. Tandem transplantation.

fat t. In cosmetic surgery, the movement of adipose tissue from one body site to another to augment structure,

change body contours, or reduce skin wrinkling.

hair t. A surgical procedure for placing plugs of skin containing hair follicles from one body site to another. This time-consuming technique is used to treat baldness.

heart t. Surgical transplantation of the heart from a patient who died of trauma or a disease that left the heart intact and capable of functioning in the recipient. The only absolute contraindications are uncontrollable cancer or infection, irreversible pulmonary vascular disease, or a separate life-threatening disease; in general, however, patients over 65 years, those with severe renal or liver disease, and those with a history of noncompliance with medical regimens do not receive heart transplants. The major barrier to heart transplantation is the lack of donors; the number of potential recipients is approx. 10 times the number of donors each year.

After receiving a heart transplant, continuous immunosuppression with cyclosporine, corticosteroids, or related drugs is required to prevent rejection of the donated organ. Acute episodes of rejection are treated with monoclonal antibodies (OKT3) or antilymphocyte immune globulin. Clinical signs of rejection—fatigue, dyspnea, hypotension, and extra heart sounds—are non-specific, so biopsies are performed frequently during the first 2 years after surgery. Average patient survival is greater than 75% 1 year after the surgery, and greater than 50% after 10 years. SEE: *rejection* (2).

heteroplastic t. Transplantation of a part from one individual to another individual of the same or a closely related species.

heterotopic t. Transplantation in which the transplant is placed in a different location in the host than it had in the donor.

homoplastic t. Autoplastic t.

homotopic t. Transplantation in which the transplant occupies the same location in the host as it had in the donor.

kidney t. Renal transplantation.

renal t. The grafting of a kidney from a living donor or from a cadaver to an individual with renal failure. It is used as the definitive form of renal replacement for patients with kidney failure. Tissue typing for HLA antigens as well as ABO blood groups is used to decrease the likelihood of acute or chronic rejection. Family members are often the best-matched donors. In patients with diabetes mellitus, combined renal and pancreatic transplants are sometimes performed, with a very high likelihood of success. The high success rate of kid-

ney transplants (85% to 95% at 2 years) is primarily due to immunosuppressive drugs such as corticosteroids, cyclosporine, mycophenolate, and tacrolimus. Because cyclosporine is nephrotoxic, careful monitoring of serum drug levels after transplantation is required. SYN: *kidney transplantation*. SEE: *major histocompatibility complex*; *suppressive immunotherapy*; *Nursing Diagnoses Appendix*.

small intestine t. A semi-experimental procedure in which the small intestine is replaced with a donor organ.

syngeneic t. A specific type of allogeneic transplantation of material between identical twins.

tandem t. The use of sequential bone marrow transplants to treat cancer. An initial autologous transplant is followed by a second, e.g., if remission is not achieved after the first transplant. SYN: *double transplantation*.

transpleural (trāns-plōor'ral) Through the pleura.

transport Movement or transfer of substances. Transport may occur actively, passively, or with the assistance of a carrier.

active t. The process by which a cell membrane moves molecules against a concentration or electrochemical gradient. This requires metabolic work. Potassium, for example, is maintained at high concentrations within cells and low concentrations in extracellular fluid by active transport. Other ions actively transported are sodium, calcium, hydrogen, iron, chloride, iodide, and urate. Several sugars and the amino acids are also actively transported in the small intestine.

axonal t. The active movement of intracellular molecules and structures within the axon. Anterograde axonal transport supplies the axon and its terminal with proteins and membranous elements fabricated in the cell body. Retrograde axonal transport moves molecules (including some picked up from outside the terminal) from the end of the axon back to the cell body.

transportation of the injured The process of moving an injured person to a hospital or other treatment center. In serious injuries such as cranial and spinal trauma, airway compromise, and hemorrhage, the patient should be moved by properly trained support personnel with equipment to stabilize vital structures and prevent further injury. In particular, the airway should be secured, ventilation provided, circulation supported, and the spine protected from injury with specially designed appliances. It is crucial that critically injured persons receive definitive care within the first hour of their injury to optimize their chances of survival. Patients with lesser

injuries whose vital signs are relatively stable may be transported by ambulance litter, private vehicle, or wheelchair, or by means listed here.

Carrying in arms: The patient is picked up in both arms, as the carrying of a child.

One-arm assist: The patient's arm is placed about the neck of the bearer, and the bearer's arm is placed about the patient's waist, thus assisting the patient to walk.

Chair carry, chair stretcher: Any ordinary firm chair may be used. The patient is seated on the tilted-back chair. One bearer grasps the back of the chair and the other the legs of the chair (either the front or rear, depending on the construction of the chair). Both bearers face in the same direction.

Fireman's drag: The patient's wrists are crossed and tied with a belt or rope. The bearer kneels alongside the patient, with his or her head under the patient's wrists, and walks on all fours, dragging the patient underneath.

Fireman's lift: The bearer grasps the patient's left wrist with the right hand. The bearer's head is placed under the patient's left armpit, drawing the patient's body over the bearer's left shoulder. The bearer's left arm should encircle both thighs, then lift the patient. The patient's wrist is transferred to the bearer's left hand, thus leaving one hand free to remove obstacles or to open doors.

Four-handed basket seat: Each of two bearers grasps own wrist and then grasps the partner's free wrist. The patient sits on this support.

Pack-strap carry: The patient is supported along the bearer's back. The patient's right arm is brought over the bearer's right shoulder and held by the bearer's left hand. The patient's left arm is brought over the left shoulder and held by the bearer's right hand. The patient is thus carried on the back, with the arms resembling pack straps.

Piggyback carry: The patient is supported along the bearer's back with the knees raised to the sides of the bearer's torso. This leaves the patient practically in a sitting position astride the bearer's back, with arms around the bearer's neck or trunk.

Six- or eight-person carry: This is done as the three-person carry, except three or four bearers are on each side of the patient, thus dividing the patient's weight more uniformly.

Three-handed basket seat: The bearer grasps his or her own wrist; the partner grasps the bearer's wrist and leaves one arm free for supporting the patient.

Three- or four-person carry: This is the litter-type carry used by emergency squads. Three persons kneel on one side

of the patient, place their hands under the patient, and lift up. The head bearer supports the patient's head and shoulders, the center bearer lifts the waist and hips, and the third bearer lifts both the lower extremities. A fourth person, if available, should help steady the patient while he or she is being lifted.

Two-handed seat: The bearers kneel on either side of the patient. Each passes one arm around the patient's back (under the armpits) and the other arm under the knees and lifts the patient carefully in a sitting position.

Wheelchair, improvised: To make this, the legs of a chair, preferably one with arms, are fastened to parallel boards and skates or casters are attached to the bottom of the boards. A footrest can be made by attaching a broom handle or stick across the parallel boards in front of the chair.

Vehicles: If an ambulance is not available, stretchers can be improvised with ropes and chairs, ladders, or poles. The patient should always be tied to the stretcher during transportation. Several bearers will be necessary to assist entering and leaving the vehicle.

transporter associated with antigen processing ABBR: TAP. An intracellular protein that carries antigens to the endoplasmic reticulum of cells, where the antigens may be transformed for presentation.

transport protein One of the proteins important in transporting materials such as hormones from their site of origin to the site of cellular action and metabolism.

transpose (trāns-pōz') To change places (e.g., moving the insertion of a muscle or ligament to another site).

transposition (trānz'pō-zī'shūn) [L. *trans*, across, + *positio*, a placing] **1.** A transfer of position from one spot to another. SYN: *metathesis*. **2.** Displacement of an organ, esp. a viscus, to the opposite side. **3.** Transplantation of a flap of tissue without severing it entirely from its original position until it has united in the new position.

transposition of the great vessels A fetal deformity of the heart in which the aorta arises from the right ventricle and the pulmonary artery arises from the left ventricle. SEE: *dextroposition of the great vessels*.

transposon (trānz-pō'zōn) A genetic unit such as a DNA sequence that is transferred from one cell's genetic material to another.

transrectal (trānz-rēk'tīl) Into or through the rectum.

trans-retinal (trāns-rēt'ī-nāl) The form of retinal created when light strikes the retina. It separates from the opsin of the photopigment (rhodopsin in rods), which is then said to be bleached.

The enzyme retinal isomerase converts it back to *cis*-retinal, and the photopigment is again able to respond to light.

transseptal (trāns-sēp'tāl) [ʹ + *saep-tum*, partition] Across a septum.

transsexual (trāns-sēks'ū-āl) [ʹ + *sexus*, sex] **1.** An individual who has an overwhelming desire to be of the opposite sex. **2.** An individual who has had his or her external sex changed by transsexual surgery.

transsexualism (trāns-sēks'ū-ā-līzm) The condition of being of a certain definite sex (i.e., male or female) but feeling and acting as if a member of the opposite sex. In some instances, the desire to alter this situation leads individuals to seek medical and surgical assistance to alter anatomical characteristics so that their anatomy would more nearly match their feelings about their true sexuality.

transsexual surgery Surgical therapy for alteration of the anatomical sex of an individual whose psychological gender is not consistent with the anatomical sexual characteristics.

transsphenoidal (trāns'sfē-noy'dāl) Through or across the sphenoid bone.

transsphenoidal surgery (trāns-sfē-noy'dl) Operations on the pituitary gland performed with an incision made through the base of the sphenoid sinus. These procedures are typically performed through the nasal passages or the oral cavity and are used to remove a macroadenoma of the pituitary, such as may be found in patients with acromegaly, prolactinomas, or other pituitary tumors.

transstadial (trān-stā'dē-āl) Pert. to the passage of an infection from one developmental stage of an organism to another, e.g., from the larval to the nymph stage or from the nymph to the adult. Some important infections transmitted to humans from parasitized arthropods are acquired by the arthropod when it is immature and then are passed transstadially to more mature forms, which subsequently feed on humans.

transthoracic (trāns'thō-rās'īk) [ʹ + Gr. *thorax*, chest] Across the thorax.

transthoracotomy (trāns'thō-rā-kōt'ō-mē) [ʹ + Gr. *thorax*, chest, + *tome*, incision] The operation of incising across the thorax.

tranthyretin (trānz-thī'rēt-īn) ABBR: TTR. A normal serum prealbumin protein that binds and transports thyroxine (T₄). Mutations in TTR can result in the protein's being deposited as amyloid in various organs.

transtracheal (trāns-trā'kē-āl) Across or through the trachea.

transtracheal jet insufflation The life-saving technique of ventilating a patient with a complete airway obstruc-



tion. A small catheter is placed via a cricothyroid puncture and attached to a pressure-controlled oxygen outlet via a one-way valve.

transtympanic neurectomy (trānz-tīm-pān'ik) Surgical interruption of the parasympathetic nerve supply to the parotid and submandibular glands by bilateral sectioning of the tympanic and chorda tympani nerves. The technique was developed in the 1980s to treat excessive drooling, esp. in mentally retarded children.

transubstantiation (trānz'süb-stān'shē-ā'shūn) [" + *substantia*, substance] The process of replacing one tissue for another.

transudate (trānz'ū-dāt) [" + *sudare*, to sweat] The fluid that passes through a membrane, esp. that which passes through capillary walls. Compared with an exudate, a transudate has fewer cellular elements and is of a lower specific gravity.

transudation (trānz-ū-dā'shūn) Oozing of a fluid through pores or interstices, as of a membrane.

transuranic (trānz'ū-rān'ik) [" + *uran(ium)* + "] Having an atomic number that is greater than 92 (i.e., one greater than the atomic number of uranium). Examples of transuranic elements are neptunium and plutonium.

transureteroureterostomy (trānz'ū-rē'tēr-ō-ū-rē'tēr-ōs'tō-mē) Section of one ureter and joining both ends to the opposite ureter.

transurethral (trānz'ū-rē'thrāl) [" + Gr. *ourethra*, urethra] Pert. to an operation performed through the urethra.

transurethral laser incision of the prostate ABBR: TULIP. The treatment of prostatic hyperplasia with a laser used as a cutting instrument. The laser is inserted into the penile urethra and directed at the diseased portion of the gland.

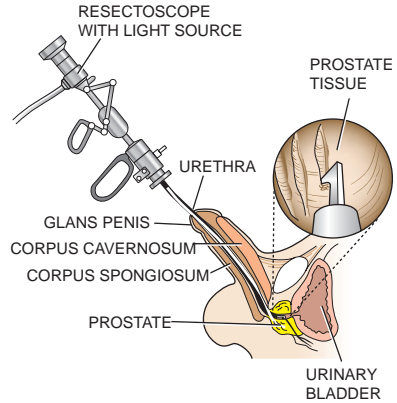
transurethral needle ablation ABBR: TUNA. The treatment of prostatic hyperplasia with a needle inserted into the penile urethra and directed toward the diseased portion of the gland. The needle is used to destroy prostatic tissue with electromagnetic energy.

transurethral resection of the prostate ABBR: TUR, TURP. The removal of prostatic tissue using a device inserted through the urethra. SEE: *prostatectomy*; *illus.*

transurethral vaporization of the prostate ABBR: TUVP. A treatment for prostatic hyperplasia in which a laser is used to vaporize hypertrophic prostatic tissue.

transvaginal (trānz-vāj'in-āl) [" + *vagina*, sheath] Through the vagina. The term is used to describe surgical and ultrasonic imaging procedures.

transvaginal tape sling ABBR: TVT



TRANSURETHRAL RESECTION OF THE PROSTATE

sling. A surgical procedure used to treat urinary stress incontinence in women, in which an adjustable pubourethral mesh is inserted through the vagina to hold the urethra and neck of the bladder. It is used to manage conditions such as excessive mobility of the urethrovaginal junction, intrinsic sphincter deficiency, or pelvic organ prolapse. It is also called "tension-free transvaginal tape sling."

transvector (trānz-vēk'tor) An animal that transmits a toxin that it does not produce and by which it is itself unaffected, as when a bivalve mollusc, such as the oyster, filters viruses out of the water and transmits them to those who ingest the mollusc.

transvenous (trānz-vē'nūs) Through a vein.

transversalis (trānz'ver-sā'lis) [" + *vertere*, to turn] A structure occurring at right angles to the long axis of the body.

transversalis fascia A thin membrane forming the peritoneal surface of the transversus muscle and its aponeurosis.

transverse (trānz-vērs') [L. *transversus*] Lying at right angles to the long axis of the body; crosswise.

transversectomy (trānz'ver-sēk'tō-mē) [" + Gr. *ektome*, excision] Excision of a transverse vertebral process.

transverse foramen SEE: under *foramen*.

transverse rectus abdominis musculocutaneous flap reconstruction ABBR: TRAM. A procedure for reconstructing the contours of the breast after mastectomy, in which tissue from the abdomen is mobilized and grafted to the anterior chest wall. Potential complications include infection and necrosis of the graft.

transversion (trānz'ver'zhūn) The eruption of a tooth at an abnormal site.

transversocostal (trāns-vēr'sō-kōs'tāl)

Costotransverse.

transversospinalis (trāns-vēr'sō-spī-nā'lis) [L. *transversus*, turned across, + *spina*, thorn] Semispinalis capitis, semispinalis cervicis.

transversourethralis (trāns-vēr'sō-ū'rē-thrā'lis) The transverse fibers of the sphincter urethrae muscle.

transversus (trāns-vēr'sūs) [L.] **1.** Any of several small muscles. **2.** Lying across the long axis of a part or organ.

transvestism, transvestitism (trāns-vēst'izm, -ī-tizm) [L. *trans*, across, + *vestitus*, clothed, + Gr. *-ismos*, condition] The desire to dress in the clothes of and be accepted as a member of the opposite sex.

transvestite (trāns-vēs'tīt) An individual who practices transvestism.

Trantas' dots (trān'tās) [Alexios Trantas, Gr. ophthalmologist, 1867–1960] Chalky concretions of the conjunctiva around the limbus. These are associated with vernal conjunctivitis.

trapeze bar Triangular device suspended above a bed to facilitate transferring and positioning the patient; also called a *suivel trapeze bar*.

trapeziform (trā-pē'zī-form) Shaped like a trapezoid.

trapezium (trā-pē'zē-ūm) [Gr. *trapezion*, a little table] **1.** A four-sided, single-plane geometric figure in which none of the sides are parallel. **2.** The os trapezium, the first bone on the radial side of the distal row of the bones of the wrist. It articulates with the base of the metacarpal bone of the thumb.

trapezius (trā-pē'zē-ūs) A flat, triangular muscle covering the posterior surface of the neck and shoulder. It raises, retracts, or lowers the scapula, extends the head, and is controlled by the accessory nerves.

trapezoid (trāp'ē-zoyd) [Gr. *trapezoides*, table-shaped] A four-sided figure having two parallel sides and two divergent sides.

trapezoid body A bundle of transverse fibers in the ventral portion of the tegmentum of pons. SYN: *corpus trapezoidium*.

trapezoid ligament SEE: under *ligament*.

trauma (traw'mă) *pl.* **traumata, traumas** [Gr. *trauma*, wound] **1.** A physical injury or wound caused by external force or violence. It may be self-inflicted. In the U.S., trauma is the principal cause of death between the ages of 1 and 44 years. In addition to each death from trauma, there are at least two cases of permanent disability caused by trauma. The principal types of trauma include motor vehicle accidents, military service, falls, burns, gunshot wounds, and drowning. Most deaths occur in the first several hours after the event. **2.** An

emotional or psychological shock that may produce disordered feelings or behavior.

a severity characterization of t. ABBR: ASCOT. An assessment tool used to predict the likelihood that an injured patient will survive after serious trauma. It includes the patient's age; whether the trauma was blunt or penetrating; the Glasgow Coma Score; and the initial blood pressure and respiratory rate.

acoustic t. Injury to hearing by noise, esp. loud noise.

birth t. **1.** Injury to the fetus during the birthing process. **2.** Otto Rank's term to describe what he considered the basic source of anxiety in human beings, the birth process. The importance of this concept is controversial.

head t. Injury to the head, esp. to the scalp and cranium, that may be limited to soft tissue damage or may include the cranial bones and the brain.

occlusal t. Any injury to part of the masticatory system as a result of malocclusion or occlusal dysfunction. It may be abrupt in its development in response to a restoration or ill-fitting prosthetic device, or result from years of tooth wear, drift, or faulty oral habits. It may produce adverse periodontal changes, tooth mobility or excessive wear, pain in the temporomandibular joints, or spasms and pain in the muscles of mastication.

psychic t. A painful emotional experience that may cause anxiety, depression, insomnia, flashbacks, or other psychological symptoms.

risk for t. Accentuated risk of accidental tissue injury (e.g., wound, burn, fracture). SEE: *Nursing Diagnoses Appendix*.

toothbrush t. Abrasion or grooving of teeth and gingival injury or recession as a result of improper brushing with a stiff-textured brush.

trauma, revised scale ABBR: RTS. An assessment tool used to gauge the severity of patient injuries, e.g., after a fall, gunshot wound, or auto accident. It consists of measurements of blood pressure and respiratory rate and the Glasgow Coma Scale. A lower score indicates more severe injuries and a greater likelihood of death.

trauma center A regional hospital capable of providing care for critically injured patients. Available on a 24-hr basis are a surgical team, operating suite, surgical subspecialties, intensive care unit, and specialized nursing team.

trauma injury severity score ABBR: TRISS. A calculation of the probability that an injured person will survive after serious trauma. It is made on the basis of the patient's age; the type of trauma (blunt versus penetrating); and the in-

jury severity score and revised trauma score.

Trauma Score Numerical grading system that combines the Glasgow Coma Scale and measurements of cardiopulmonary function as a gauge of severity of injury and as a predictor of survival after blunt trauma to the head. Each parameter is given a number (high for normal and low for impaired or absent function). Severity of injury is estimated by summing the numbers. The lowest score is 1, the highest 16. It was developed by Howard Champion, MD. SEE: table.

traumatic (traw-măt'ik) [Gr. *traumatikos*] Caused by or relating to an injury.

traumatism (traw'mă-tizm) [Gr. *traumatismos*] Morbid condition of a system owing to an injury or a wound.

traumato- Combining form meaning *trauma*.

traumatology (traw-mă-tôl'ô-jē) [Gr. *trauma*, wound, + *logos*, word, reason] The branch of surgery dealing with wounds and their care.

traumatopathy (traw'mă-tôp'ă-thē) [" + *pathos*, disease, suffering] Pathological state caused by trauma.

traumatopnea (traw'mă-tôp-nē'ă) [" + *pnoia*, breath] The passage of air in and out of a wound in the chest wall.

travel [ME. *travaillen*, to travail, to journey] **1.** To move from place to place, e.g., from one country to another. **2.** The act of moving among different places or countries. Travel to some locations presents health risks, such as deep venous thrombosis, diarrhea, geographically specific infections (e.g., malaria), injury, insomnia, rashes, colds, and influenza.

tray (trā) A flat surface with raised edges.

impression t. In dentistry, a receptacle with raised edges for carrying impression material and supporting it in contact with the surfaces to be recorded until the impression material sets or hardens.

trazodone (trăz'ô-dôn) An triazolopyridine and antidepressant. It is administered orally to treat major depression and may be used as an adjunct to psychotherapy. SYN: *Desyrel*.

Treacher Collins syndrome (trē'chēr-

kôl'inz) [Edward Treacher Collins, Brit. ophthalmologist, 1862–1919] Mandibulofacial dysostosis.

treadmill (trēd'mil) A conveyor belt for walking or running in place; the speed of movement and angle of inclination can be varied during tests of cardiopulmonary health and conditioning. SEE: *exercise tolerance test*.

treatment (trēt'mënt) [ME. *treten*, to handle] **1.** Medical, surgical, dental, or psychiatric management of a patient. **2.** Any specific procedure used for the cure or the amelioration of a disease or pathological condition. SEE: *therapy*. Particular treatments are listed under the first word. SEE: e.g., *conservative treatment*; *legally mandated treatment*; *radiation treatment*.

treatment card In dentistry a specially formatted card or file summarizing a patient's dental care. SEE: *dental chart*.

treatment plan A therapeutic strategy that may incorporate patient education, dietary adjustment, an exercise program, drug therapy, and the participation of nursing and allied health professionals. Treatment plans are esp. important in the optimal management of complex or chronic illnesses.

tree A structure that resembles a tree.

bronchial t. The right or left primary bronchus with its branches and their terminal arborizations.

tracheobronchial t. The trachea, bronchi, and their branches.

tree nut Any of several nuts, e.g., almonds, cashews, pecans, or walnuts, or the peanut (a legume). They are among the most common sources of food allergy.

Treg (trêg) A commonly used abbreviation for a regulatory T cell (i.e., a T lymphocyte that alters or controls the activity of other T cells).

trehalase (trē-hā'lās) The enzyme that cleaves the bond between glucose molecules in the disaccharide, trehalose.

trehalose (trē-hā'lōs) A disaccharide containing two linked glucose molecules. It is less sweet than sucrose, but can be used as a source of glucose. SYN: *mycose*.

Trematoda (trēm'ă-tō'dă) [Gr. *trematodes*, pierced] A class of flatworms

Revised Trauma Score (RTS)

Glasgow Coma Scale (GCS)	Systolic Blood Pressure (SBP)	Respiratory Rate (RR)	Coded Value
13–15	>89	10–29	4
9–12	76–89	>29	3
6–8	50–75	6–9	2
4–5	1–49	1–5	1
3	0	0	0

RTS = 0.9368 GCS_c + 0.7326 SBP_c + 0.2908 RR_c coded values × revised score coefficient

commonly called flukes belonging to the phylum Platyhelminthes. It includes two orders: Monogenea, which are external or semiexternal parasites having direct development with no asexual multiplication, and Digenea, internal parasites with asexual generation in their life cycle. The Digenea usually require two or more hosts, the hosts alternating. SEE: *fluke*.

trematode (trém'ă-tōd) A parasitic flatworm belonging to the class Trematoda. SEE: *cercaria*; *fluke*.

trematodiasis (trém'ă-tō-dī'ă-sīs) Infestation with a trematode.

tremble (trém'bl) [O.Fr. *trembler*] **1.** An involuntary quivering or shaking. **2.** To shiver, quiver, or shake.

trembles (trém'blz) A condition resulting from ingestion of plants such as snakeroot (*Eupatorium urticaefolium*) or jimmyweed (*Haplopappus heterophyllus*). The condition is common in domestic animals and may occur in humans as a result of ingesting the plants or more commonly from drinking milk or eating the meat of poisoned animals. Symptoms are weakness, anorexia, nausea and vomiting, and prostration, possibly resulting in death. In humans, the illness is called milk sickness. SYN: *tires*.

tremelloid, tremellose (trém'ě-loyd, -lōs) Jelly-like.

tremolabile (trém'mō-lā'bl) [*l'* + *labi*, to slip] Easily destroyed or inactivated by shaking; said of an enzyme.

tremor (trém'or, trēm'mor) [L. *tremor*, a shaking] **1.** A quivering, esp. a continuous quivering of a convulsive nature. **2.** An involuntary movement of a part or parts of the body resulting from alternate contractions of opposing muscles. SEE: *subsultus*.

Tremors may be classified as involuntary, static, dynamic, kinetic, or hereditary. Pathological tremors are independent of the will. The trembling may be fine or coarse, rapid or slow, and may appear on movement (intention tremor) or improve when the part is voluntarily exercised. It is often caused by organic disease; trembling may also express an emotion (e.g., fear). All abnormal tremors except palatal and ocular myoclonus disappear during sleep.

action t. Intention t.

alcoholic t. The visible tremor exhibited by alcoholics.

cerebellar t. An intention tremor of 3 to 5 Hz frequency, associated with cerebellar disease.

coarse t. A tremor in which oscillations are relatively slow.

continuous t. A tremor that resembles tremors of paralysis agitans.

enhanced physiological t. An action tremor associated with catecholamine excess (e.g., in association with anxiety,

thyrotoxicosis, hypoglycemia, or alcohol withdrawal). It may occur as a side effect of drugs (e.g., epinephrine, caffeine, theophylline, amphetamines, levodopa, tricyclic antidepressants, lithium, and corticosteroids).

essential t. A benign tremor, usually of the head, chin, outstretched hands, and occasionally the voice, that is to be differentiated from the tremor of Parkinson's disease. Unlike Parkinson's disease, essential tremor does not cause or presage other neurological complications. Essential tremor, which is made worse by anxiety or action, is usually 8 to 10 cycles per second and that of parkinsonism 4 to 5. Postural tremors occur when the patient tries to hold his hands in a particular position (e.g., when the hands are outstretched). Kinetic tremors occur during purposeful movement (e.g., during finger-to-nose testing). Essential tremor affects 5 to 10 million adults and some children in the U.S. and is probably the most common movement disorder. Its incidence increases with age. In essential tremor, there is usually a family history. The medicines effective in treating parkinsonism have no effect on essential tremor.

PATIENT CARE: Patients with essential tremor often require no treatment other than reassurance. They should avoid stimulants, like caffeine or pseudoephedrine, which make trembling worse, and they should rest when tremors are especially prominent. Medications commonly used to treat essential tremor include beta blockers, anticonvulsants, benzodiazepines, and botulinum toxin injections. Tremors that are exceptionally troubling to patients can also be suppressed by thalamic stimulation or surgical excision of the thalamus.

familial t. A tremor indistinguishable from essential tremor in its clinical manifestation. Unlike essential tremor, it is inherited as an autosomal dominant trait.

fibrillary t. A tremor caused by consecutive contractions of separate muscular fibrillae rather than of a muscle or muscles.

fine t. A rapid tremor.

flapping t. Asterixis.

forced t. A tremor continuing after voluntary motion has ceased.

Hunt's t. SEE: *Hunt's tremor*.

hysterical t. A fine tremor occurring in hysteria. It may be limited to one extremity or generalized.

intention t. A tremor exhibited or intensified when attempting coordinated movements. SYN: *action tremor*.

intermittent t. A tremor common to paralyzed muscles in hemiplegia when attempting voluntary movement.

muscular t. Slight oscillating muscular contractions in rhythmic order.

parkinsonian t. A resting tremor of the fingers and hands, often called a pill-rolling tremor, that is suppressed briefly during voluntary activity. The tremor disappears during all but the lightest phases of sleep.

physiological t. A tremor occurring in normal individuals. It may be transient and occur in association with excessive physical exertion, excitement, hunger, fatigue, or other causes. SEE: *enhanced physiological t.*

rest t. A tremor present when the involved part is at rest but absent or diminished when active movements are attempted. SYN: *static tremor*.

senile t. A form of benign essential tremor found in individuals older than 60, marked by rapid, alternating movements of the upper extremities that occur at a frequency of about 6 cycles/sec.

static t. Rest t.

volitional t. Trembling of the limbs or of the body when making a voluntary effort. It is seen in many cerebellar diseases.

tremulor (trēm'ū-lor) A device for administering vibratory massage.

tremulous (trēm'ū-lūs) [L. *tremulus*] Trembling or shaking.

trench fever A febrile disease whose characteristics include headache, malaise, pain, tenderness (esp. in the shins), splenomegaly, and often a transient macular rash. The causative agent is *Bartonella quintana*, a rickettsial organism that can reproduce only within cells; it is transmitted to people by body lice. The disease is rarely encountered in industrialized nations, except among the homeless; it is prevalent in many developing nations. The disease is treated with doxycycline 100 mg orally, twice a day.

trend [ME. *trenden*, to revolve] The inclination to proceed in a certain direction or at a certain rate; used to describe the prognosis or course of a symptom or disease.

Trendelenburg gait A side lurching of the trunk over the stance leg due to weakness in the gluteus medius muscle.

Trendelenburg position (trēn-dēl'ēn-bürg) [Friedrich Trendelenburg, Ger. surgeon, 1844–1924] A position in which the patient's head is low and the body and legs are on an elevated and inclined plane. This may be accomplished by having the patient flat on a bed and elevating the foot of the bed. In this position, the abdominal organs are pushed up toward the chest by gravity. The foot of the bed may be elevated by resting it on blocks. This position is used in abdominal surgery. In treating shock, this position is usually used, but if there is an associated head injury, the head

should not be kept lower than the trunk. SEE: *position for illus*.

reverse T. p. A body position in which the trunk and head are elevated above the pelvis and lower extremities.

Trendelenburg sign A pelvic drop on the side of the elevated leg when the patient stands on one leg and lifts the other. It indicates weakness or instability of the gluteus medius muscle on the stance side.

Trendelenburg test A test to evaluate the strength of the gluteus medius muscle. The examiner stands behind the patient and observes the pelvis as the patient stands on one leg and then the other. A positive result determines muscle weakness on the standing leg side when the pelvis tilts down on the opposite side.

trepan (trē-pān') [Gr. *trypanon*, a borer] **1.** To perforate the skull. **2.** An instrument resembling a carpenter's bit for incision of the skull. SYN: *trepine*.

trepanation (trēp'ā-nā'shūn) [L. *trepanatio*] Surgery using a trepan.

corneal t. Keratoplasty.

trepination (trēf'in-ā'shūn) [Fr. *trepine*, a bore] The process of cutting out a piece of bone with the trephine.

trepine (trē-fin') **1.** To perforate with a trephine. **2.** A cylindrical saw for cutting a circular piece of bone out of the skull. SYN: *trepan*.

trepining (trē-fin'ing) The process of cutting bone with a trephine.

trophocyte (trēf'ō-sit) [Gr. *trephein*, to feed, + *kytos*, cell] Trophocyte.

trepidant (trēp'i-dānt) [L. *trepidans*, trembling] Marked by tremor.

trepidation (trēp'i-dā'shūn) [L. *trepidatio*, a trembling] **1.** Fear, anxiety. **2.** Trembling movement, esp. when involuntary.

Treponema (trēp'ō-nē'mā) [Gr. *trepein*, to turn, + *nema*, thread] A genus of spirochetes, parasitic in humans, which belongs to the family Treponemataceae. They move by flexing, snapping, and bending. SEE: *bacteria for illus*.

T. carateum The causative agent of pinta, an infectious disease of the skin.

T. endemicum The causative agent of bejel, a nonvenereal, endemic form of syphilis. It often affects the skin, bones, and oral mucous membranes.

T. pallidum The causative organism of syphilis. SYN: *Spirochaeta pallida*.

T. pertenu The causative organism of yaws (frambesia).

Treponema denticola (dēn-tīk'ā-lā) A species of anaerobic, gram-negative spirochete that causes periodontal disease. Its presence in the oral cavity has been linked to an increased incidence of coronary artery disease.

Treponemataceae (trēp'ō-nē'mā-tā'sē-ē) A family of spiral organisms belonging to the order Spirochaetales; that in-

cludes the genera *Borrelia*, *Leptospira*, and *Treponema*.

treponematosi (trĕp'ō-nĕ-mă-tō'sīs) Infection with *Treponema*.

treponeme (trĕp'ō-nĕm) Any organism of the genus *Treponema*.

treponemiasis (trĕp'ō-nĕ-mī'ă-sīs) [n + *nema*, thread, + *-iasis*, condition] Infestation with *Treponema*.

treponemicidal (trĕp'ō-nĕ'mī-sī'dăl) [n + " + *L. cidus*, to kill] Destructive to *Treponema*.

trepopnea (trĕp-ŏp'nĕ-ă) [n + *pnoia*, breath] The condition of being able to breathe with less difficulty when in a certain position.

treppe (trĕp'ĕ) Staircase phenomenon.

tretinoin (trĕt'ī-noyn) All-*trans*-retinoic acid. It is a keratolytic agent used topically in treating acne.

TRH *thyrotropin-releasing hormone*. SEE: under *hormone*.

tri- [Gr.] Prefix meaning *three*.

triacetate (trī-ăs'ĕ-tăt) Any acetate that contains three acetic acid groups.

triacidic (trī'ă-sīd'ĭk) Containing three acidic hydrogen ions.

triacylglycerol (trī-ăs'ĭl-glīs'ă-rŏl') Tri-glyceride.

triad (trī'ăd) [Gr. *trias*, group of three]

1. Any three things having something in common. 2. A trivalent element. 3. Trivalent.

Beck's t. SEE: *Beck's triad*.

Charcot's t. SEE: *Charcot's triad*.

female athlete t. Abnormal eating habits (eating disorders or disordered eating), amenorrhea, and osteoporosis among young female athletes. It is most common in sports in which low body weight has a beneficial effect on performance or appearance (e.g., gymnastics, running, swimming, and figure skating). Males participating in similar sports, or in wrestling, may also suffer the health-related effects of excessive training or abnormally restrictive eating. Disordered eating is often the first condition in the triad to appear.

SYMPTOMS: Signs of the disorder include excessive training, food restriction, ritualized eating habits, and other obsessive behavior, bingeing and purging, fatigue, anemia, depression, and electrolyte imbalances. Fractures occur because of bone loss, which may not be reversible.

PATIENT CARE: Screening female high school athletes for disordered eating and menstrual irregularities is recommended as a first step in preventing development of the disorder. During physical exams required for participation in sports, athletes should be asked about food intake within the past 24 hr, perceived ideal weight, forbidden foods, and use of diet aids. Some women and coaches believe that amenorrhea is a normal consequence of athletic training

rather than a sign of injury to the hypothalamic-pituitary axis. A dual-energy x-ray absorptiometry (DEXA) scan or similar study should be considered in athletes with amenorrhea lasting at least 6 months. The patient, dietitian, and primary care provider should agree on a goal weight, after considering the weight requirements for the sport.

Hutchinson's t. SEE: under *Hutchinson*, *Sir Jonathan*.

triad syndrome Prune belly defect.

triage (trĕ-ăzh') [Fr., sorting] 1. The screening and classification of casualties to make optimal use of treatment resources and to maximize the survival and welfare of patients. 2. Sorting patients and setting priorities for their treatment in urgent care settings, emergency rooms, clinics, hospitals, health maintenance organizations, or in the field.

PATIENT CARE: To triage a patient the health care professional assesses mental status, airway, breathing, and circulation and makes decisions about treatment priorities. The process is dynamic, e.g., the patient's condition may change and upon reassessment, so may the priority. Common triage categories used in the field during multiple casualty incidents would include: P-1 or red, P-2 or yellow, P-3 or green, and P-0 or deceased.

Most emergency department triage systems rely on patient surveys, with victims assigned to the following categories based on assessment: emergent (requires stabilization or treatment within minutes to prevent death or further injury), urgent (serious but not life-threatening, should be treated within 2 hr), and nonurgent (minor or stable injury or illness, does not require treatment within 2 hr). In the primary survey of the patient, the Airway, Breathing, Circulation, need for Defibrillation (or neurological Disability) are assessed and the patient is undressed or Exposed. The survey order is remembered with the mnemonic ABCDE. Resuscitation of the patient begins immediately, based on the findings. In the secondary survey, the same elements of care are reviewed, but the emphasis is on assessing the effectiveness of interventions to maintain the airway, support ventilation, control hemorrhage and blood pressure, and restore normal physiology. After stabilization the patient may be admitted to a hospital, or transported to a facility better equipped to manage his or her illness or injuries.



Warning measures should be employed to avoid hypothermia caused by "E" (exposure).

telephone t. Use of the telephone or other means of communication to assess a patient's health status and to recommend treatment or provide appropriate referrals. It is used, e.g., in emergency departments and the offices of primary care providers to facilitate the outpatient management of common, simple health-related problems.

trial, phase 1 A clinical trial to determine the toxicity of a new drug.

trial, phase 2 A clinical trial to determine the potential effectiveness of a new drug.

trial, phase 3 A clinical trial to explore the clinical use of a new drug, esp. relative to other known effective agents.

triangle (trī'äng-gl) [L. *triangulum*] A figure or area formed by three angles and three sides.

anal t. The dorsal triangular region of the perineum from the point at the tip of the coccyx to a line between the two ischial tuberosities. The anal triangle contains the anus.

anterior t. of neck The space bounded by the middle line of the neck, the anterior border of the sternocleidomastoid muscle, and a line running along the lower border of the mandible and continued to the mastoid process of the temporal bone.

cephalic t. The triangle on the anteroposterior plane of the skull formed by lines joining the occiput and forehead and chin, and a line uniting the occiput and the chin.

digastric t. The triangular region of the neck. Its borders are the mandible, stylohyoid muscle, and the anterior belly of the digastric muscle.

facial t. The triangle bounded by the lines uniting the basion and the alveolar and nasal points, and one uniting the nasal and basion.

frontal t. The triangle bounded by the maximum frontal diameter and the lines joining its extremities and the glabella.

Hesselbach's t. SEE: *Hesselbach's triangle*.

inferior carotid t. The triangular space bounded by the middle line of the neck, the sternomastoid muscle, and the anterior belly of the omohyoid muscle. SYN: *muscular triangle*.

lumbocostoadominal t. The triangle bounded in front by the obliquus abdominis externus, above by the lower border of the serratus posterior inferior and the point of the 12th rib, behind by the outer edge of the erector spinae, and below by the obliquus abdominis internus.

muscular t. Inferior carotid t.

mylohyoid t. The triangular space formed by the mylohyoid muscle and the two bellies of the digastric muscle.

occipital t. of the neck The triangle

bounded by the sternocleidomastoid, the trapezius, and the omohyoid muscles.

t. of Petit The space above the hip bone between the exterior oblique muscle, the latissimus dorsi, and the interior oblique muscle.

posterior cervical t. The triangular region wrapping around the side of the neck bounded by the upper border of the clavicle, the posterior border of the sternocleidomastoid muscle, and the anterior border of the trapezius muscle.

pubourethral t. A triangular space in the perineum bounded laterally by the ischiocavernosus muscle, medially by the bulbocavernosus muscle, and posteriorly by the superficial transverse perineus muscle.

submandibular t. The triangular region of the neck, bounded by the inferior border of the mandible, the stylohyoid muscle and the posterior belly of the digastric muscle, and the anterior belly of the digastric muscle; it is one of three triangles included in the anterior triangle of the neck. This was formerly called the submaxillary triangle.

submental t. A superficial region under the chin with its base being the hyoid bone and its right and left walls being the right and left anterior bellies of the digastric muscle. The front wall of the triangle is skin; the back wall is the outer surface of the mylohyoid muscle.

suboccipital t. The triangle bounded by the obliquus inferior and superior muscles on two sides and the rectus capitis posterior major muscle on the third side. The floor contains the posterior arch of the atlas bone and the vertebral artery. It is covered by the semispinalis capitis muscle.

superior carotid t. The space bounded by the anterior belly of the omohyoid muscle, the posterior belly of the digastric muscle, and the sternomastoid muscle.

suprameatal t. The triangle slightly above and behind the exterior auditory meatus. It is bounded above by the root of the zygoma and anteriorly by the posterior wall of the exterior auditory meatus.

urogenital t. The triangle with its base formed by a line between the two ischial tuberosities and its apex just below the symphysis pubis.

triangulation (trī-äng'gū-lā'shūn) In qualitative research, a technique for enhancing the validity of the data gained from investigative research by comparing or synthesizing information gathered from more than one study.

Triatoma (trī-ät'ō-mā) A genus of blood-sucking insects belonging to the order Hemiptera, family Reduviidae; commonly called cone-nosed bugs or assassin bugs. It includes the species *T. bra-*

ziliensis, *T. dimidiata*, *T. infestans*, *T. protracta*, *T. recuva*, and *T. rubida*. They are house-infesting pests and some species, esp. *T. infestans*, transmit *Trypanosoma cruzi*, the causative agent of Chagas' disease.

tribade (trīb'ād) A lesbian.

tribasic (trī-bā'sīk) [Gr. *treis*, three, + *L. basis*, base] Capable of neutralizing or accepting three hydrogen ions.

tribasilar (trī-bās'īl-ār) ["] + *L. basilaris*, base] Having three bases.

tribasilar synostosis A condition resulting from the premature fusion of three skull bones—the occipital, sphenoid, and temporal. This results in arrested cerebral development and mental deficiency.

tribe (trīb) [L. *tribus*, division of the Roman people] In taxonomy, an occasional subdivision of a family; often equal to or below subfamily and above genus.

tribology (trī-bōl'ō-jē) The study of the effect of friction on the body, esp. the articulating joints.

triboluminescence (trī'bō-lū'mī-nēs'ēns) [Gr. *tribein*, to rub, + *L. lumen*, light, + *O.Fr. escence*, continuing] Luminescence or sparks produced by friction or mechanical force applied to certain chemical crystals.

tribromide (trī-brō'mīd) [Gr. *treis*, three, + *bromos*, stench] A compound having three atoms of bromine in the molecule.

TRIC Acronym for trachoma and inclusion conjunctivitis. SEE: *Chlamydia trachomatis*.

tricarboxylic acid cycle (trī-kār'bōk-sīl'īk) Krebs cycle.

triceps (trī'sēps) ["] + *L. caput*, head] A muscle arising by three heads with a single insertion.

t. brachii The muscle of the posterior arm with three points of origin (one on the scapula, two on the humerus) and one insertion on the ulna. It extends the forearm and is controlled by the radial nerve. SEE: *arm* for illus.

t. skin fold The thickness of the skin including subcutaneous fat as measured on the skin over the triceps muscle of the arm. Comparison of the value obtained from a patient to standard values helps to provide an estimate of body fat. It is used in assessing and documenting both malnutrition and obesity.

t. sura(e) The muscles of the calf formed by the gastrocnemius, soleus, and plantaris muscles.

trich- SEE: *trichi-*.

trichalgia (trīk-āl'jē-ā) Pain caused by touching or moving the hair.

trichi-, trich-, tricho- Combining forms meaning *hair*.

trichiasis (trīk-ī'ā-sīs) [Gr. *thrix*, hair, + *-iasis*, condition] Inversion of eyelashes so that they rub against the cornea, causing a continual irritation of the

eyeball. Symptoms are photophobia, lacrimation, and feeling of a foreign body in the eye. The condition is treated by cryotherapy, epilation, electrolysis, and operation, such as correcting the underlying entropion with which this condition is usually associated.

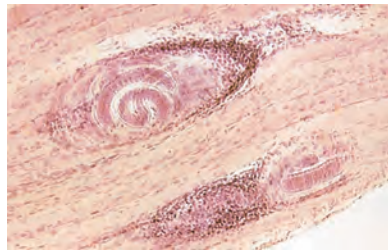
trichilemmoma (trīk'ī-lēm-ō'mā) A benign tumor of the outer root sheath epithelium of a hair follicle.

Trichina (trīk-ī'nā) [Gr. *trichinos*, of hair] Trichinella.

trichina (trī-kī'nā) *pl.* **trichinae** A larval worm of the genus *Trichinella*.

Trichinella (trīk'ī-nēl'lā) A genus of nematode worms belonging to the suborder Trichurata. They are parasitic in humans, hogs, rats, and many other mammals.

T. spiralis The species of *Trichinella* that commonly infests humans, causing trichinosis. Infection occurs when raw or improperly cooked meat, particularly pork and wild game, containing cysts is eaten. Larvae excyst in the duodenum and invade the mucosa of the small intestine, becoming adults in 5 to 7 days. After fertilization, each female deposits 1000 to 2000 larvae, which enter the blood or lymph vessels and circulate to various parts of the body where they encyst, esp. in striated muscle. SEE: *illus.*



TRICHINELLA SPIRALIS

Encysted in muscle tissue (×800)

trichinellosis (trīk'ī-nēl-lō'sīs) [Gr. *trichinos*, of hair, + *osis*, condition] Trichinosis.

trichinosis (trīk'īn-ō'sīs) ["] + *osis*, condition] Infection by the roundworm parasite *Trichinella spiralis*, resulting from consumption of undercooked pork or wild game containing *T. spiralis* cysts. Gastric juices release the worms from their cysts and they quickly reach sexual maturity. The female roundworms then burrow into the intestinal mucosae of organisms and produce larvae in the gastrointestinal tract that move through the bloodstream and lymphatic system and encyst in striated muscle tissue (chest, diaphragm, arms and legs), where they die. In the U.S. fewer than 0.5% of pigs are infected, and fewer than 40 cases of the disease are now reported annually, although it continues

to be common throughout the world. SYN: *trichinellosis*. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: Occasionally, anorexia, nausea, vomiting, abdominal cramping, and diarrhea may be present when the infected meat is eaten (invasion – stage 1). After the larvae penetrate the intestinal mucosa and invade blood and lymph to migrate to the muscles (dissemination – stage 2), patients have fever, muscle pain (most often in the extremities), and periorbital and facial edema. Sometimes patients experience itching and burning of the skin, sweating, and skin lesions. Rarely, signs of encephalitis, myocarditis, and invasion of the diaphragm occur, which can result in death. After encystment (stage 3), the only symptom may be vague muscular pains, which may persist for weeks.

DIAGNOSIS: Diagnosis is based primarily on the patient's history of ingesting raw or under cooked pork, pork products, or game and the clinical findings. During the invasion stage, stools may contain larvae and mature worms. Laboratory testing reveals an extreme increase in eosinophils circulating in the blood (as high as 15,000/mm³).

TREATMENT: Albendazole is effective during the intestinal stage, and is administered for 14 days after diagnosis. Muscle pains should be relieved by analgesics. Corticosteroids are indicated for allergic reaction, severe inflammation, or central nervous system involvement. Once the larvae have encysted in the muscles, no curative therapy exists. Treatment is generally symptomatic and supportive.

PROGNOSIS: The prognosis depends on the number of worms ingested. The majority of patients recover.

PREVENTION: Pork and wild game should always be cooked to an internal temperature of at least 160°F (71°C) to destroy trichinella; smoking and pickling do not destroy the organism. The meat industry advocates irradiation to ensure roundworm destruction, but this process is controversial.

PATIENT CARE: The caregiver provides support and encourages the patient to report adverse symptoms, because treatment is primarily directed at their relief. The patient should also obtain sufficient rest, bedrest in severe cases to prevent a relapse. Health care professionals should educate the public about the importance of properly cooking and storing meats from all carnivorous animals. Travelers to foreign countries should be advised against eating pork or pork products, as the animals may have been fed raw garbage. All cases of trichinosis should be reported to local public health authorities.

trichinous (trik'in-üs) [Gr. *trichinos*, of hair] Infested with trichinae.

tricho- [Gr. *thrix*, *trichos*, hair] SEE: *trichi-*.

trichoaesthesia (trik'ō-än'ēs-thē'zē-ä) Loss of sensibility of the hair.

trichobezoar (trik'ō-bē'zor) [" + Arabic *bazahr*, protecting against poison] Hairball.

trichocyst (trik'ō-sist) [" + *kystis*, bladder] **1.** A cell structure derived from cytoplasm. **2.** In some single-celled organisms, a vesicle equipped with a thread that can be thrust out for the purposes of defense or attack.

Trichodectes (trik'ō-dēk'tēz) [" + *dektes*, biter] A genus of lice that infests dogs and sheep. Some are the intermediate hosts of tapeworms.

trichoeptelioma (trik'ō-ēp'ī-thē-lē-ō'mä) [" + *epi*, upon, + *thele*, nipple, + *oma*, tumor] A benign skin tumor originating in the hair follicles.

trichoesthesia (trik'ō-ēs-thē'zē-ä) [" + *aisthesis*, sensation] **1.** The sensation felt when a hair is touched. **2.** A paresthesia causing a sensation of the presence of a hair on a mucous membrane or on the skin.

trichogen (trik'ō-jēn) [" + *gennan*, to produce] An agent stimulating hair growth.

trichogenous (trik'ōj'en-üs) Promoting hair growth.

trichoglossia (trik'ō-glōs'ē-ä) [" + *glossa*, tongue] Hairy condition of the tongue.

trichohyalin (trik'ō-hī'ä-lin) [" + *hyalos*, glass] The hyaline of the hair.

trichoid (trik'oyd) [" + *eidōs*, form, shape] Hairlike.

tricholith (trik'ō-lith) [" + *lithos*, stone] **1.** A hairy nodule on the hair; seen in piedra. **2.** A calcified intestinal bezoar that contains hair.

trichology (trik'ōl'ō-jē) [" + *logos*, word, reason] The study of the hair and its care and treatment.

trichoma (trik'ō-mä) [Gr., hairiness] **1.** Inversion of one or more eyelashes. SYN: *entropion*. **2.** Matted, verminous, encrusted state of the hair.

trichomatosis (trik'ō-mä-tō'sis) [" + *osis*, condition] Entangled matted hair caused by scalp fungus.

trichomatous (tri-kōm'ä-tūs) Of the nature of or affected with trichoma.

trichome (tri'kōm) [Gr. *trichoma*, a growth of hair] **1.** A hair or other appendage of the skin. **2.** A colony of cyanobacteria in which the cells form chains.

trichomegaly (trik'ō-mēg'ä-lē) [Gr. *trichos*, hair, + *megas*, large] Long, coarse eyebrows.

trichomonacide (trik'ō-mō'nä-sid) Anything that is lethal to trichomonads.

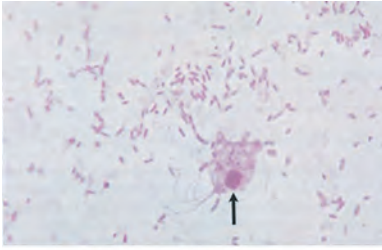
trichomonad (trik'ō-mō'näd) Related to or resembling the genus of flagellate *Trichomonas*.

Trichomonas (trik"ō'mō'nās) [l' + *monas*, unit] Genus of flagellate parasitic protozoa.

T. hominis A benign trichomonad found in the large intestine.

T. tenax A benign trichomonad that may be present in the mouth.

T. vaginalis A species found in the vagina that produces discharge. *T. vaginalis* is fairly common in women, esp. during pregnancy or following vaginal surgery. It is sometimes found in the male urethra and may be transmitted through sexual intercourse. **SEE: illus.; colpitis macularis.**



TRICHOMONAS VAGINALIS (arrow) AND BACTERIA IN VAGINAL SMEAR (×1000)

SYMPTOMS: *T. vaginalis* causes persistent burning, redness, and itching of the vulvar tissue associated with a profuse vaginal discharge that may be frothy or malodorous or both. Occasionally, infection with *T. vaginalis* is asymptomatic.

TREATMENT: Metronidazole (Flagyl) is taken orally by the woman and her sexual partner. The drug is contraindicated during the first trimester of pregnancy because of potential damage to the developing fetus; clotrimazole vaginal suppositories provide symptomatic relief during the first 12 weeks of gestation.



Alcohol should not be consumed during metronidazole therapy.

trichomoniasis (trik"ō-mō-nī'ā-sīs) [l' + " + *-iasis*, infection] Infestation with a parasite of the genus *Trichomonas*.

trichomycosis (trik"ō-mī-kō'sīs) [l' + *mykes*, fungus, + *osis*, condition] Any disease of the hair caused by a fungus.

t. axillaris An infection of the axillary region and sometimes pubic hairs caused by *Nocardia tenuis*.

t. nodosa Piedra.

trichonosis, trichonosis (trik-ō-nō'sīs, -ōn'ō-sūs) [Gr. *trichos*, hair, + *nosos*, disease] Any disease of the hair. **SYN:** *trichopathy*.

trichopathy (trik-ōp'ā-thē) [l' + *pathos*, disease, suffering] Trichonosis.

trichophagia, trichophagy (trik-ō-fā'jē-ā, -ōf'ā-jē) [l' + *phagein*, to eat] The habit of eating hair.

trichophobia (trik"ō-fō'bē-ā) [l' + *phobos*, fear] An abnormal dread of hair or of touching it.

trichophytic (trik"ō-fit'ik) [l' + *phyton*, plant] **1.** Relating to *Trichophyton*. **2.** Promoting hair growth.

trichophytic granulosa (trik"ō-fit'ik) Majocchi's disease.

trichophytid (tri-kōf'i-tīd) A skin disorder considered to be an allergic reaction to fungi of the genus *Trichophyton*.

trichophytin (tri-kōf'i-tīn) An extract prepared from cultures of the fungi of the genus *Trichophyton*; used as an antigen for skin tests and for the treatment of certain trichophytid infections.

trichophytobezoar (trik-ō-fī'tō-bē'zor) [l' + *phyton*, plant, + Arabic *bazahr*, protecting against poison] A hairball found in the stomach or intestine composed of hair, vegetable fibers, and miscellaneous debris.

Trichophyton (tri-kōf'it-ōn) A genus of parasitic fungi that lives in or on the skin or its appendages (hair and nails) and is the cause of various dermatomycoses and ringworm infections. Species that produce spores arranged in rows on the outside of the hair are designated ectothrix; if spores are within the hair, endothrix.



T. mentagrophytes A species, one form of which, called *granulare*, is parasitic on several mammals including horses, dogs, and rodents and can also affect humans. Another variety, called *interdigitale*, is associated with tinea pedis.

T. schoenleinii The causative agent of favus of the scalp. **SEE: favus.**

T. tonsurans The most frequent cause of ringworm of the scalp. **SEE: tinea capitis.**

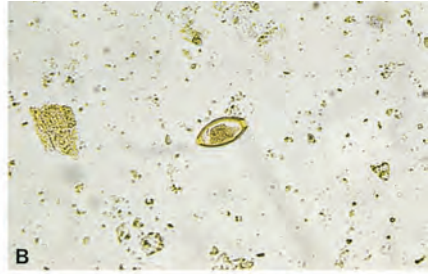
T. violaceum The causative agent of some forms of ringworm of the scalp, beard, or nails.

trichophytosis (trik"ō-fit-tō'sīs) [l' + *phyton*, plant, + *osis*, condition] Infestation with *Trichophyton* fungi.

trichoptilosis (trik"ōp-tīl-ō'sīs) [l' + *ptilon*, feather, + *osis*, condition] **1.** The splitting of hairs at their ends, giving them a feather-like appearance. **2.** A disease of hair marked by development of nodules along the hair shaft, at which point it splits off.

trichosis (tri-kō'sīs) [l' + *osis*, condition] Any disease of the hair or its abnormal growth or development in an abnormal place.

Trichosporon (tri-kōs'pō-rōn) [l' + *sporos*, a seed] A genus of fungi that causes superficial skin infections in immunocompetent hosts and opportunistic infections (e.g., endocarditis, fungemia, and lung, kidney, and splenic infections) in immunocompromised patients.



TRICHURIS TRICHIURA

(A) adult female ($\times 4$), (B) eggs in feces ($\times 100$)

- T. beigelii*** The causative agent of white piedra. SEE: *piedra*.
- trichosporosis** (trik"ō-spō-rō'sīs) [" + " + *osis*, condition] Infestation of the hair with *Trichosporon*.
- trichostrongyliasis** (trik"ō-strōn-jī-lī'ā-sīs) Infestation with the intestinal parasite *Trichostrongylus*; a rare disease in the U.S.
- trichostrongylosis** (trik"ō-strōn"jī-lō'sīs) Infestation with *Trichostrongylus*.
- Trichostrongylus** (trik"ō-strōn"jī-lūs) A genus of nematode worms of the family Trichostrongylidae. These worms are of economic importance because of the damage they cause to domestic animals and birds.
- trichotillomania** (trik"ō-tīl"ō-mā'nē-ā) [" + *tillein*, to pull, + *mania*, madness] The unnatural and irresistible urge to pull out one's own hair. Clomipramine has been effective in treating this condition.
- trichotomous** (trī-kōt'ō-mūs) [Gr. *tricha*, threefold, + *tome*, incision] Divided into three.
- trichotomy** (trī-kōt'ō-mē) Division into three parts.
- trichotoxin** (trik"ō-tōks'in) [Gr. *trichos*, hair, + *toxikon*, poison] An antibody or cytotoxin that destroys ciliated epithelial cells.
- trichotrophy** (trī-kōt'rō-fē) [" + *trophe*, nourishment] Nutrition of the hair.
- trichroic** (trī-krō'ik) [Gr. *treis*, three, + *chroa*, color] Presenting three different colors when viewed along each of three different axes.
- trichroism** (trī'krō-izm) [" + " + *-ismos*, condition] Quality of showing a different color when viewed along each of three axes. SYN: *trichromatism*.
- trichromatic** (trī'krō-māt'ik) [" + *chroma*, color] Rel. to or able to see the three primary colors; denoting normal color vision. SYN: *trichromic*.
- trichromatism** (trī-krō'mā-tizm) Trichroism.
- trichromatopsia** (trī'krō-mā-tōp'sē-ā) Normal color vision.

- trichromic** (trī-krō'mik) Pert. to normal color vision or the ability to see the three primary colors. SYN: *trichromatic*.
- trichuriasis** (trik"ū-rī'ā-sīs) [Gr. *trichos*, hair, + *oura*, tail + *-iasis*, condition] The presence of worms of the genus *Trichuris* in the colon or in the ileum.
- Trichuris** (trī-kū'ris) A genus of parasitic worms of the class Nematoda.
- T. trichiura*** A species that infests humans when the ova that have undergone incubation in the soil are ingested. The larvae develop into adults, which inhabit the large intestine. Symptoms of infestation include diarrhea and abdominal pain. Rectal prolapse may occur if a great number of worms are present. Mebendazole is the drug of choice; albendazole or ivermectin may be of benefit. SYN: *whipworm*. SEE: *illus*.
- tricipital** (trī-sīp'i-tāl) [Gr. *treis*, three, + L. *caput*, head] Three-headed, as the triceps muscle.
- tricrotic** (trī-krōt'ik) [Gr. *trikrotos*, rowed with a triple stroke] A condition in which three accentuated waves or notches occur with each pulse.
- tricrotism** (trī'krōt-izm) [" + *-ismos*, condition] The condition of being tricrotic.
- tricuspid** (trī-kūs'pid) [Gr. *treis*, three, + L. *cuspis*, point] **1.** Pert. to the tricuspid valve. **2.** Having three points or cusps.
- tricuspid area** The lower portion of the body of the sternum where sounds of the right atrioventricular orifice are best heard.
- tricuspid orifice** Right atrioventricular cardiac aperture.
- tricuspid tooth** A tooth with a crown that has three cusps.
- tricuspid valve** SEE: *valve*, *tricuspid*.
- trident, tridentate** (trī'dēnt, trī-dēn'tāt) [L. *tres*, *tria*, three, + *dens*, tooth] Having three prongs.
- tridermoma** (trī'dēr-mō'mā) [" + " + *oma*, tumor] A teratoid growth containing all three germ layers.

trielcon (trī-ĕl'kŏn) [*tr* + *helkein*, to draw] An instrument with three branches for removing bullets or other foreign bodies from wounds.

trifid (trī-fid) [L. *trifidus*, split thrice] Split into three; having three clefts.

trifocal (trī-fŏ'kāl) [L. *tri*-, three, + *focus*, hearth] Having three convergence points, as in a trifocal lens. SEE: *bifocal*; *focus*.

Trifolium pretense (trī-fŏl'ĕ-ŭm prĕ-tĕn'sĕ) [L., lit. "extended trefoil"] The scientific name for red clover, an herbal remedy containing phytoestrogens. Despite its estrogenic chemistry it is not an effective treatment for hot flashes occurring in menopause.

trifurcation (trī'fūr-kā'shŭn) [Gr. *treis*, three, + L. *furca*, fork] **1.** Division into three branches. **2.** In dentistry, the area of root division in a tooth with three roots.

trifurcation involvement The extension of periodontitis or a periodontal pocket into an area where the tooth roots divide.

trigeminal (trī-jĕm'in-āl) [L. *tres*, *tria*, three, + *geminus*, twin] Pert. to the trigeminal or fifth cranial nerve.

trigeminy (trī-jĕm'ĭ-nĕ) Occurring in threes, esp. three pulse beats in rapid succession.

trigenic (trī-jĕn'ĭk) [Gr. *treis*, three, + *gennan*, to produce] In genetics, a condition in which three alleles are present at any particular locus on the chromosome.

trigger (trĭg'ĕr) [D. *trekker*, something pulled] **1.** Stimulus. **2.** To initiate or start with suddenness. **3.** A chemical that initiates a function or action.

trigger finger A state in which flexion or extension of a digit is arrested temporarily but is finally completed with a jerk. Any finger may be involved, but the ring or middle finger is most often affected. SEE: *illus*.

TREATMENT: A finger splint or cortisone injection may be used to treat this condition. Surgery may be required.

triggering The initiation of a mechanically generated breath after the detection of a change in airway pressure, after a change in air flow, or after an alteration in the flow wave form.

trigger point, trigger zone **1.** An area of tissue that is tender when compressed and may give rise to referred pain and tenderness. **2.** An area of the cerebral cortex that, when stimulated, produces abnormal reactions similar to those in acquired epilepsy.

active t.p. A trigger point that is painful when the involved muscle is at rest. Palpation will reproduce the patient's symptoms.

latent t.p. Trigger points that are not symptomatic when the involved muscle is at rest, but produce pain during pal-



TRIGGER FINGER

pation. Range of motion and strength may also be limited.

triglyceride (trī-glĭs'ĕr-ĭd) Any combinations of glycerol with three of five different fatty acids. These substances, triacylglycerols, are also called neutral fats. In the blood, triglycerides are combined with proteins to form lipoproteins. The liver synthesizes lipoproteins to transport fats to other tissues, where they are a source of energy. Fat in adipose tissue is stored energy. SYN: *triacylglycerol*. SEE: *hyperlipoproteinemias*.

medium-chain t. Triglycerides with 8 to 10 carbon atoms. They are absorbed differently from long chain fatty acids (i.e., via the portal vein through the liver rather than as chylomicrons transported via the lymphatics) and therefore, have been used to treat malabsorption.

trigonal (trĭg'ŏ-nāl) [Gr. *trigonon*, a three-cornered figure] Triangular; pert. to a trigone.

trigone (trĭ'gŏn) A triangular space, esp. one at the base of the bladder, between the two openings of the ureters and the urethra. SYN: *t. of bladder*.

t. of bladder Trigone.

carotid t. The triangular area in the neck bounded by the posterior belly of the digastric muscle, the sternocleidomastoid muscle, and the midline of the neck.

olfactory t. A small triangular eminence at the root of the olfactory peduncle and anterior to the anterior perforated space of the base of the brain.

trigonectomy (trĭ'gŏn-ĕk'tŏ-mĕ) [*tr* + *ektome*, excision] Excision of the base of the bladder.

trigonid (trī-gō'nīd) The first three cusps of a lower molar tooth.

trigonitis (trīg'ō-nī'tīs) [" + *itis*, inflammation] Inflammation of the mucous membrane of the trigone of the bladder.

trigonocephalus (trīg'ō-nō-sēf'ā-lūs) A fetus exhibiting trigonocephaly.

trigonocephaly (trī-gō'nō-sēf'ā-lē) The condition of the head of the fetus being shaped like a triangle.

trihybrid (trī-hī'brīd) [Gr. *treis*, three, + L. *hybrida*, mongrel] In genetics, the offspring of a cross between two individuals differing in three unit characters.

triiodothyronine (trī'ī-ō'dō-thī'rō-nēn) ABBR: T₃. One of two forms of the principal hormone secreted by the thyroid gland. Chemically it is 3,5,3'-triiodothyronine (liothyronine). SEE: *tetraiodothyronine*; *thyroid gland*; *thyroid function test*; *thyroxine*.

trilaminar (trī-lām'i-nār) Composed of three layers.

trill (trīl) [It. *trillare*, probably imitative] A tremulous sound, esp. in vocal music.

trilogy (trīl'ō-jē) A series of three events.

trimanual (trī-mān'ū-āl) [" + *manualis*, by hand] Performed with three hands, as an obstetrical maneuver.

trimensual (trī-mēn'shū-āl) [" + *mensualis*, monthly] Occurring every 3 months.

trimester (trī-mēs'tēr) A 3-month period.

first t. The first 3 months of pregnancy.

second t. The middle 3 months of pregnancy.

third t. The third and final 3 months of pregnancy.

trimethylene (trī-mēth'ī-lēn) Cyclopropane.

trimmer (trīm'ēr) A device or instrument used to shape something by cutting off the material along its margin.

gingival margin t. A cutting instrument for shaping gingival contours. It has a curved and angled shaft for use either on the right or left sides and on the mesial or distal surfaces.

model t. A rotary flat grinder used to trim dental plaster or stone casts. Water keeps the cutting surface clean and obviates any dust problem as the casts are squared into proper study models.

trimorphous (trī-mor'fūs) [" + *morphe*, form] 1. Having three different forms as the larva, pupa, and adult of certain insects. 2. Having three different forms of crystals.

Trimox (trī'mōks") SEE: *amoxicillin*.

trinitrophenol (trī'nī-trō-fē'nōl) A yellow crystalline powder that precipitates proteins. It is used as a dye and as a reagent. SYN: *picric acid*.

trinitrotoluene (trī'nī-trō-tōl'ū-ēn) ABBR: TNT. C₇H₅N₃O₆; an explosive compound.

triolein (trī-ō'lē-ēn) Olein.

triorchid, triorchis (trī-or'kīd, -kīs) [" + *orchis*, testicle] A person who has three testicles.

triorchidism (trī-or'kīd-īzm) [" + " + *-ismos*, condition] The condition of having three testicles.

triose (trī'ōs) A monosaccharide having three carbon atoms in its molecule.

trioxalen (trī-ōk'sā-lēn) An agent used to promote repigmentation in vitiligo. Trade name is Trisoralen. SEE: *psoralen*; *vitiligo*.

trip (trīp) A slang term used to refer to hallucinations produced by various drugs, including LSD, mescaline, and some narcotics.

tripara (trīp'ā-rā) [L. *tres, tria*, three, + *parere*, to bear] A woman who has had three pregnancies that have lasted beyond 20 weeks or that have produced an infant of at least 500 g; also designated Para III.

Tripedia (trī-pēd'ē-ā) Diphtheria and tetanus toxoids and acellular pertussis vaccine adsorbed. Dtap vaccine.

tripeptide (trī-pēp'tīd) [Gr. *treis*, three, + *pepton*, digested] The product of a combination of three amino acids formed during proteolytic digestion.

triphalangia (trī'fā-lān'jē-ā) [" + *phalanx*, closely knit row] A deformity marked by the presence of three phalanges in a thumb or great toe.

triphasic (trī-fā'sīk) [" + *phasis*, phase] Consisting of three phases or stages, said of electric currents.

triphenylmethane (trī-fēn'īl-mēth'ān) A coal tar-derived chemical that is the basis of some dyes and stains.

Tripier's amputation (trīp-ē-āz') [Léon Tripier, Fr. surgeon, 1842–1891] Amputation of a foot with part of the calcaneus removed.

triple (trīp'l) [L. *tripplus*, threefold] Consisting of three; threefold; treble.

triplegia (trī-plē'jē-ā) [" + *plege*, stroke] Hemiplegia with paralysis of one limb on the other side of the body.

triple-marker test Testing for Down syndrome by assessing maternal serum levels of alpha-fetoprotein, human chorionic gonadotropin, and unconjugated estriol. The test is sometimes used as an alternative to amniocentesis.

triplet (trīp'lēt) [L. *tripplus*, threefold] 1. One of three children born of a single gestation. SEE: *Hellin's law*. 2. A combination of three of a kind.

triplex (trī'plēks, trīp'lēks) [Gr. *triploos*, triple] Triple; threefold.

triploid (trīp'loīd) Concerning triploidy.

triploidy (trīp'loī-dē) In the human, having three sets of chromosomes.

triplopia (trīp-lō'pē-ā) [" + *ope*, vision] A condition in which three images of the same object are seen.

tripod (trī'pōd) [Gr. *treis*, three, +

pous, foot] A stand having three supports, usually legs.

tripodia (trī-pō'dē-ă) Having three feet.

tripoding (trī'pōd-ing) The use of three bases for support (e.g., two legs and a cane, or one leg and two crutches).

-tripsy (trīp'sē) [Gr. *tripsis*, friction] A suffix indicating *intentional crushing of something*.

triptan A class of medications used to treat cluster and migraine headaches. Members of this class act as agonists at 5-hydroxytryptamine (5-HT) receptors in the brain. Each of them has a generic name that ends in "-triptan," including frovatriptan, naratriptan, rizatriptan, and sumatriptan.

-triptyline (trīp'til-ēn") A suffix used in pharmacology to designate a cyclic antidepressant.

triquetral (trī-kwē'trāl) [L. *triquetrus*] Triangular.

triquetrum (trī-kwē'trūm, -tră) *pl. triquetra* [L. *triquetrus*, triangular] Triquetral bone. **triquetral** (-trēl), *adj.*

triradius (trī-ră'dē-ūs) In classifying fingerprints, the point of convergence of dermal ridges coming from three directions.

trisaccharide (trī-săk'ă-rīd) A carbohydrate that on hydrolysis yields three molecules of simple sugars (monosaccharides).

trismic (trīz'mīk) Concerning trismus.

trismoid (trīz'moyd) [Gr. *trismos*, grating, + *eidōs*, form, shape] **1.** Of the nature of trismus. **2.** A form of trismus nascentium; once thought to be due to pressure on the occiput during delivery.

trismus (trīz'mūs) [Gr. *trismos*, grating] Tonic contraction of the muscles of mastication; may occur in mouth infections, encephalitis, inflammation of salivary glands, and tetanus. SYN: *lockjaw*.

trisomic (trī-sōm'īk) In genetics, an individual possessing 2n+1 chromosomes, that is, one set of chromosomes contains an extra (third) chromosome. SEE: *chromosome*; *karyotype*.

trisomy (trī-sō-mē) In genetics, having three homologous chromosomes per cell instead of two.

t. 13 A severe developmental disorder in which a third copy of chromosome 13 is present in the cell nucleus. It is often lethal in utero. Children who survive fetal development may have severe facial, scalp, and cranial deformities, and a predisposition to leukemia. SYN: *Patau syndrome*.

t. 18 A severe, usually lethal developmental disorder in which a third copy of chromosome 18 is present in the cell nucleus. Children with trisomy 18 usually do not survive beyond the first year of life. The condition is characterized by cranial, neurological, facial, cardiac, and gastrointestinal malformations. The disease can be sometimes detected

during pregnancy with ultrasound or specialized blood tests. SYN: *Edward's syndrome*.

t. 21 Down syndrome.

TRISS (trīs) *trauma injury severity score*.

tristichia (trī-stīk'ē-ă) [" + *stichos*, row] The presence of three rows of eyelashes.

trisulfate (trī-sūl'fāt) A chemical compound containing three sulfate, SO₄, groups.

trisulfide (trī-sūl'fīd) A chemical compound containing three sulfur atoms.

tritanomalopia (trī'tă-nōm'ă-lō-pē-ă) [Gr. *tritos*, third, + *anomalos*, irregular, + *ope*, sight] A color vision defect similar to tritanopia but less pronounced. SYN: *tritanomaly*.

tritanomaly (trī'tă-nōm'ă-lē) Tritanom-
alopia.

tritanopia (trī'tă-nō'pē-ă) [Gr. *tritos*, third, + *an-*, not, + *ope*, vision] Blue blindness; color blindness in which there is a defect in the perception of blue. SEE: *color blindness*.

tritiate (trīt'ē-ăt) To treat with tritium.

tritiated thymidine (trīt'ē-ăt'id thīmī-dēn", trīsh') ³H-Tdr; a radioactively labeled nucleoside used to measure T lymphocyte proliferation in vitro. Thymidine is essential for DNA synthesis; thus the amount of ³H-Tdr taken up is a general measure of the number of new lymphocytes produced.

tritium (trīt'ē-ūm, trīsh'ē-ūm) [Gr. *tritos*, third] SYMB: H³. The mass three isotope of hydrogen; triple-weight hydrogen.

triturable (trīt'ū-ră-bl) [L. *triturare*, to pulverize] Capable of being powdered.

triturate (trīt'ū-răt) **1.** To reduce to a fine powder by rubbing. **2.** A finely divided substance made by rubbing.

trituration (trīt'ū-ră-shūn) [LL. *triturare*, to pulverize] **1.** The act of reducing to a powder. **2.** A finely ground and easily mixed powder. **3.** The mixing of dental alloy particles with mercury. Trituration may be done either manually in a mortar with a pestle or with a mechanical device. The goal of trituration is to abrade the alloy particles to facilitate the uptake of mercury.



Mercury compounds are toxic; care should be taken to avoid touching mercury during trituration. Inhaling mercury vapor and mercury particles produced when removing amalgam restorations also should be avoided.

trivalence (trīv'ă-lēns) Condition of being trivalent.

trivalent (trī-vă'lēnt, trīv'ăl-ēnt) [Gr. *treis*, three, + L. *valens*, powerful] **1.** Combining with or replacing three

hydrogen atoms. **2.** Having three components (e.g., a trivalent vaccine).

trivalve (trī'vālv) Having three valves.

trivial name A nonsystematic or semisystematic name and qualifying term used to name drugs. These names do not provide assistance in determining biological action or function of the drug. Examples are aspirin, caffeine, and belladonna.

tRNA *transfer RNA*.

trocar (trō'kār) [Fr. *trois quarts*, three quarters] A sharply pointed surgical instrument contained in a cannula; used for aspiration or removal of fluids from cavities.

trochanter (trō-kān'tēr) [Gr. *trokhanter*, to run] Either of the two bony processes below the neck of the femur.

greater t. A thick process at the lateral upper end of the femur projecting upward to the union of the neck and shaft.

lesser t. A conical tuberosity on the medial and posterior surface of the upper end of the femur, at the junction of the shaft and neck.

t. roll A cushion or pillow used to hold the hip of a postoperative patient in neutral position.

third t. The gluteal tubercle of the femur when it is unusually prominent.

trochanteroplasty (trō-kān'tēr-plās'tē) Plastic surgery of the neck of the femur.

troche, troch (trō'kē, trōk') [Gr. *trokhiskos*, a small wheel] A solid, discoid, or cylindrical mass consisting chiefly of medicinal powder, sugar, and mucilage. Troches are used by placing them in the mouth and allowing them to remain until, through slow solution or disintegration, their mild medication is released. SYN: *lozenge*.

trochiscus (trō-kis'kūs) [L., Gr. *trochiskos*, a small disk] A medicated tablet or troche.

trochlea (trōk'lē-ā) *pl.* **trochleae** [Gr. *trokhileia*, system of pulleys] **1.** A structure having the function of a pulley; a ring or hook through which a tendon or muscle projects. **2.** The articular smooth surface of a bone on which glides another bone.

trochlear (trōk'lē-ār) **1.** Of the nature of a pulley. **2.** Pert. to a trochlea.

trochlearis (trōk'lē-ā'ris) [L.] The superior oblique muscle of the eye.

trochlear nerve The fourth cranial nerve, a small mixed nerve arising from the midbrain. It is both sensory and motor to the superior oblique muscle of the eye. SYN: *fourth cranial nerve*.

trochlea of the elbow A surface on the distal humerus that articulates with the ulna.

trochocardia (trō'kō-kār'dē-ā) [Gr. *trokchos*, a wheel, + *kardia*, heart] Rotary displacement of the heart on its axis.

trochocephalia, trochocephaly (trō'kō-

sē-fā'lē-ā, -sēf'ā-lē) [r + *kephale*, head] Roundheadedness, a deformity due to premature union of the frontal and parietal bones.

trochoid (trō'koyd) [Gr. *trokchos*, a wheel, + *eidōs*, form, shape] Rotating or revolving, noting an articulation resembling a pivot or pulley. SEE: *joint, pivot*.

Troglotrematidae (trōg'lō-trē-māt'ī-dē) A family of flukes that includes *Paragonimus* (human lung fluke).

trohoc (trō'hök) [*cohort* spelled backwards] A colloquial term for a case control study, that is, a study in which an effect is identified, and epidemiologists look retrospectively to find the cause.

Troisier's node (trwā-zē-āz') [Charles E. Troisier, Fr. physician, 1844–1919] Signal node.

troland (trō'länd) A unit of visual stimulation to the retina of the eye. It is equal to the illumination received per square millimeter of the pupil from a source of 1 lux brightness.

Trombicula (trōm-bīk'ū-lā) A genus of mites belonging to the Trombiculidae. The larvae, called redbugs or chiggers, cause an irritating dermatitis and rash. Some are vectors of disease.

T. akamushi A species that transmits the causative agent of scrub typhus.

trombiculiasis (trōm-bīk'ū-lī-ā-sīs) Infestation with Trombiculidae.

Trombiculidae (trōm-bīk'ū-lī'dē) A family of mites; only the genus *Trombicula* is of medical significance.

troph- SEE: *tropho-*.

trophedema (trōf'ē-dē'mā) [Gr. *trophe*, nourishment, + *oidema*, a swelling] Permanent, localized edema of a limb or limbs. Repeated low-grade infection may also obstruct the flow of lymph.

Tropheryma whipplei (trō-fēr'ī-mā (h)wīp-ēl-ī [NL.]) A gram-positive, aerobic bacillus that grows in branching filaments. It is the cause of Whipple's disease. SEE: *Whipple's disease*.

trophic (trōf'ik) [Gr. *trophikos*] Concerned with nourishment; applied particularly to a type of efferent nerves believed to control the growth and nourishment of the parts they innervate. SEE: *autotrophic*.

trophism (trōf'izm) Nutrition.

tropho-, troph- Combining forms meaning *nourishment*.

trophoblast (trōf'é-ū-blāst'") The outermost layer of the developing blastocyst (blastodermic vesicle) of a mammal. It differentiates into two layers, the cytotrophoblast and syntrophoblast, the latter coming into intimate relationship with the uterine endometrium, with which it establishes nutrient relationships. SEE: *fertilization* for ill. **trophoblastic** (trōf'ō-blāst'ik), *adj.*

trophoblastic disease (trōf'ō-blāst'ik)

ABBR: TD. Any neoplasm of trophoblastic origin. SEE: *chorioadenoma destruens*; *choriocarcinoma*; *hydatid mole*.

trophoblastoma (trōf'ō-blās-tō'mă) [" + " + *oma*, tumor] A neoplasm due to excessive proliferation of chorionic epithelium. SYN: *chorioepithelioma*.

trophocyte (trōf'ō-sīt) A cell that nourishes (e.g., Sertoli cells of the testicle, which support developing spermatozoa). SYN: *trephocyte*.

trophoneurosis (trōf'ō-nū-rō'sīs) [" + *neuron*, nerve, + *osis*, condition] Any trophic disorder caused by defective function of the nerves concerned with nutrition of the part.

disseminated t. Thickening and hardening of the skin. SYN: *sclerema*; *scleroderma*.

facial t. Progressive facial atrophy.

muscular t. Muscular changes in connection with nervous disorders.

trophonucleus (trōf'ō-nū'klē-ūs) [" + *nucleus*, kernel] Protozoan nucleus concerned with vegetative functions in metabolism and not reproduction.

trophopathia (trōf'ō-pāth'ē-ā) [" + *pathos*, disease, suffering] 1. Any disorder of nutrition. 2. A trophic disease.

trophozoite (trōf'ō-zō'īt) [" + *zoon*, animal] A sporozoan nourished by its hosts during its growth stage.

-trophy Combining form meaning *nourishment*.

tropia (trō'pē-ā) [Gr. *trope*, turn] Deviation of the eye or eyes away from the visual axis; observed with the eyes open and uncovered. Esotropia indicates inward or nasal deviation; exotropia, outward; hypertropia, upward; hypotropia, downward. SYN: *manifest squint*; *strabismus*. SEE: *-phoria*.

-tropia Suffix meaning *turning*.

tropical (trōp'ī-kal) [Gr. *tropikos*, turning] Pert. to the tropics.

tropical immersion foot Immersion foot.

tropical lichen Acute inflammation of the sweat glands. SYN: *Miliaria*.

-tropin [Gr. *tropos*, a turn] Combining form, used as a suffix, indicating the stimulating effect of a substance, esp. a hormone, on its target organ.

tropine (trō'pīn) An alkaloid, C₈H₁₅NO, that smells like tobacco. It is present in certain plants.

tropism (trō'pīzm) [Gr. *trope*, turn, + *ismos*, condition] The involuntary response of an organism as a bending, turning, or movement toward (positive tropism) or away from (negative tropism) an external stimulus such as light, heat, gravity, or various chemical changes. SEE: *chemotropism*; *phototropism*.

tropocollagen (trō'pō-kōl'ā-jēn) [" + *collagen*] The basic molecular unit of collagen fibrils, composed of three polypeptide chains.

tropometer (trōp-ōm'ē-ter) [" + *met-*

ron, measure] 1. A device for measuring the rotation of the eyeballs. 2. An instrument for measuring torsion in long bones.

tropomyosin (trō'pō-mī'ō-sīn) An inhibitory protein in muscle fibers; it blocks myosin from forming cross-bridges with actin until shifted by troponin-calcium ion interaction.

troponin (trō'pō-nīn) An inhibitory protein in muscle fibers. The action potential at the sarcolemma causes the sarcoplasmic reticulum to release calcium ions, which bond to troponin and shift tropomyosin away from the myosin-binding sites of actin, permitting contraction. SEE: *muscle for illus*.

t. I A protein that is released into the blood by damaged heart muscle (but not skeletal muscle), and therefore is a highly sensitive and specific indicator of recent myocardial infarction.

t. T A protein, found in both skeletal and cardiac muscle, that can be detected in the blood following injury to heart muscle. Assays for it can be used as rapid tests for myocardial infarction (MI). Troponin I (which is released only by heart and not by skeletal muscles) is a more specific marker for MI than troponin T.

Trotter's syndrome (trōt'érz) A unilateral neuralgia in the mandible, tongue, and ear. The causes are mandibular nerve lesions, deafness on the same side due to eustachian tube lesions, and damage to the levator palatini muscle resulting in kinesthesia of the soft palate.

trough (trōf) A groove or channel.

arm t. A concave positioning device attached to a wheelchair armrest that positions the arm and prevents lateral leaning, thus encouraging postural alignment.

focal t. A three-dimensional area within which structures are accurately reproduced on a panoramic radiograph. Positioning the patient within the focal trough is critical to producing a panoramic radiograph that clearly reproduces oral structures.

gingival t. Gingival sulcus.

synaptic t. The depression in a muscle fiber adjacent to the axon terminal of a motor neuron in a myoneural junction.

Trousseau's sign (trōo-sōz') [Armand Trousseau, Fr. physician, 1801–1867] A muscular spasm of the hand and wrist resulting from pressure applied to nerves and vessels of the upper arm. It is indicative of latent tetany, usually as a result of hypocalcemia.

Trousseau's spots Streaking of the skin with the fingernail, seen in meningitis and other cerebral diseases.

trov weight A system of weighing gold, silver, precious metals, and jewels in

which 5760 gr equal 1 lb; 1 gr equals 0.0648 g. SEE: *Weights and Measures Appendix*.

trp tryptophan.

true (troo) [AS. *treowe*, faithful] **1.** Real, genuine, or actual. Opposite of false. **2.** Straight.

true rib Any of the seven upper ribs on each side with cartilages articulating directly with the sternum. SEE: *rib*.

truncal (trüŋg'käl) [L. *truncus*, trunk] Rel. to the trunk.

truncate (trüŋg'kät) [L. *truncare*, to cut off] **1.** Having a square end as if it were cut off; lacking an apex. **2.** To shorten by amputation of a part of the entity.

trunk (trüŋk) [L. *truncus*, trunk] **1.** The body exclusive of the head and limbs. SYN: *torso*. **2.** The main stem of a lymphatic vessel, nerve, or blood vessel.

celiac t. The trunk arising from the abdominal aorta. Most of the blood supply for the liver, stomach, spleen, gallbladder, pancreas, and duodenum comes from this trunk.

lumbosacral t. Part of the fourth and all of the fifth lumbar spinal nerves. These nerves accompany part of the first, second, and third sacral nerves to form the sciatic nerve.

pulmonary t. The great vessel that arises from the right ventricle of the heart and gives rise to the right and left pulmonary arteries to the lungs.

sympathetic t. Either of two long chains of paravertebral sympathetic ganglia, connected by sympathetic nerve fibers, and extending along the vertebral column from the skull to the coccyx.

trusion (troo'zhün) [L. *trudere*, to show] Malposition of a tooth or teeth.

truss (trüs) [ME. *trusse*, a bundle] **1.** A restraining device for pushing a hernia, esp. an inguinal or abdominal wall hernia, back in place. A truss is almost always a poor substitute for surgical therapy. **2.** To tie or bind as with a cord or string.

trust In the relations between health care providers and patients, reliance by both parties on the integrity and sincerity of each other, and the patient's confidence in the ability and good will of the care provider. Trust is essential in the relationship between patients and those who provide medical care for them.

truth serum One of several hypnotic drugs supposedly having the effect of causing a person on questioning to talk freely and without inhibition. In actual practice, serum is not given, but a short-acting barbiturate or benzodiazepine is given intravenously. The reliability of the information obtained is questionable.

trybutyrase (trī-bū'tē-rās) An enzyme present in the stomach that digests the

short-chain diglycerides of butter. SEE: *digestion*.

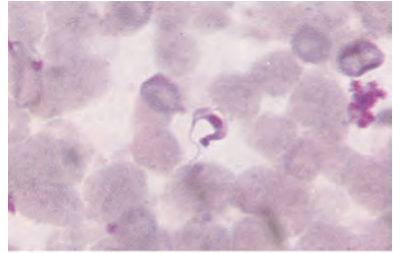
try-in (trī'in) The temporary placement of a dental restoration or device to determine its fit and comfortableness.

trypanocide (trī-pän'ü-sīd") [Gr. *trypanon*, a borer, + L. *occidere*, to kill] **1.** Destructive to trypanosomes. **2.** An agent that kills trypanosomes. SYN: *trypanosomicide*. **trypanocidal** (trīp"än-ō-sī'däl), *adj.*

trypanolysis (trīp-än-öl'ī-sīs) [" + *lysis*, dissolution] The dissolution of trypanosomes.

Trypanoplasma (trī"pän-ō-pläz'mä) [" + LL. *plasma*, form, mold] A genus of protozoan parasites resembling trypanosomes.

Trypanosoma (trī"pän-ō-sō'mä) [" + *soma*, a body] A genus of parasitic, flagellate protozoa found in the blood of many vertebrates, including humans. The protozoa are transmitted by insect vectors. The only two species relevant for disease in humans are *T. brucei* and *T. cruzi*. SEE: *illus*.



TRYPANOSOMA (center) IN BLOOD

(Orig. mag. ×1000)

T. brucei A species with three subspecies: *T. brucei brucei*, *T. brucei gambiense*, and *T. brucei rhodesiense*. The subspecies *T. brucei brucei* causes a wasting disease in cattle called nagana but does not produce disease in humans. The subspecies *T. brucei gambiense* causes African sleeping sickness in western and central Africa. The subspecies *T. brucei rhodesiense*, transmitted by the tsetse fly, causes African sleeping sickness in eastern and southern Africa.

T. cruzi The causative agent of American trypanosomiasis (Chagas' disease). It is transmitted by blood-sucking insects (triatomids) of the family Reduviidae.

trypanosome (trī'pän-ō-sōm) Any protozoan belonging to the genus *Trypanosoma*. **trypanosomal**, **trypanosomic**, *adj.*

trypanosomiasis (trī-pän"ō-sō-mī'ä-sīs) [" + *soma*, body, + *-iasis*, infection] Any of the several diseases occurring in

humans and domestic animals caused by a species of *Trypanosoma*. SEE: *sleeping sickness*.

African t. African sleeping sickness, caused by *Trypanosoma gambiense*.

American t. A disease caused by *Trypanosoma cruzi* and transmitted by the biting reduviid bug. It is characterized by fever, lymphadenopathy, hepatosplenomegaly, and facial edema. Chronic cases may be mild or asymptomatic, or may be accompanied by myocarditis, cardiomyopathy, megaesophagus, megacolon, or death. SYN: *Chagas' disease*.

ETIOLOGY: A bloodborne infection, American trypanosomiasis may be transmitted from person-to-person by needlestick injury, transfusion, organ donation, or during childbirth.

trypanosomid (trī-pān'ō-sō-mīd) A skin eruption in any disease caused by a trypanosome.

trypsin (trīp'sīn) [Gr. *tripsis*, friction] 1. A proteolytic enzyme formed in the intestine from trypsinogen. It catalyzes the hydrolysis of peptide bonds in partly digested proteins and some native proteins, the final products being amino acids and various polypeptides. SEE: *chymotrypsin*; *digestion*; *enzyme*; *pancreas*.

trypsinogen (trīp-sīn'ō-jěn) [ʹ + *gennan*, to produce] The proenzyme or inactive form of trypsin that is released by the pancreas and converted to trypsin in the intestine.

tryptamine (trīp'tā-mēn") [*trypt(ophan)* + ""] A metabolite of tryptophan that acts as an enhancer of impulse propagation in the brain.

tryptase (trīp'tās) An enzyme (specifically a neutral proteinase) produced by mast cells that mediates many allergic phenomena, including anaphylaxis, asthma, conjunctivitis, and rhinitis.

tryptic (trīp'tik) Rel. to trypsin.

tryptolysis (trīp-tōl'ī-sīs) [ʹ + *lysis*, dissolution] The hydrolysis of proteins or their derivatives by trypsin.

tryptone (trīp'tōn) A peptide produced by the action of trypsin on a protein.

tryptophan (trīp'tō-fān) ABBR: trp. $C_{11}H_{12}N_2O_2$; An essential amino acid present in high concentrations in animal and fish protein. It is necessary for normal growth and development. Tryptophan is a precursor of serotonin and niacin. In high doses, it may cause nausea, vomiting, and sedation.

tryptophanase (trīp'tō-fān-ās) An enzyme that catalyzes the splitting of tryptophan into indole, pyruvic acid, and ammonia.

tryptophanuria (trīp'tō-fā-nū'rē-ā) [*tryptophan* + Gr. *ouron*, urine] The presence of excessive levels of tryptophan in the urine.

T/S *thyroid:serum* (thyroid to serum iodine ratio).

TS *test solution*; *triple strength*.

T score A measure of bone density in which the mass of a patient's bones are compared with the bone mass of premenopausal women. A T score that is more than 1 standard deviation (SD) from the norm identifies bone that is osteopenic. A T score that is more than 2.5 SDs identifies osteoporosis.

TSD *target skin distance*.

tsetse fly (tsēt'sē) [S. African] One of several species of blood-sucking flies belonging to the genus *Glossina*, order Diptera, confined to Africa south of the Sahara Desert. It is an important transmitter of trypanosomes, the causative agents of African sleeping sicknesses in humans, and nagana and other diseases of cattle and game animals. SEE: *Trypanosoma*; *trypanosomiasis*.

TSH *thyroid-stimulating hormone*. SEE: *under hormone*.

TSH-RF *thyroid-stimulating hormone releasing factor*.

tsp *teaspoon*.

TSTA *tumor-specific transplantation antigen*.

tsutsugamushi disease (soot'soo-gā-moo'shī) [Japanese, dangerous bug] Scrub typhus.

TT *transit time* of blood through heart and lungs.

TTE (tē'tē'é') *transthoracic echocardiography*.

T-tube A device inserted into the common bile duct, most often following cholecystectomy and bile duct exploration. It has two main purposes: to allow drainage of bile, and to introduce media, when needed for postoperative biliary imaging (T-tube cholangiogram). On occasion (e.g., in distal duct obstruction due to cancer or when cholangioenterostomy is performed), the tube may be left in for a sustained period.

T.U. *toxic unit*; *toxin unit*.

tub (tüb) [ME. *tubbe*] 1. A receptacle for bathing. 2. The use of a cold bath. 3. To treat by using a cold bath.

tuba (too'bā) [L. *tubus*, tube] Tube.

tubal (tū'bāl) [L. *tubus*, tube] Pert. to a tube, esp. the fallopian tube.

tubal factor Any abnormality of the fallopian tubes that produces infertility.

tubal reflux The movement of endometrial, tubal, or uterine tissue into the peritoneal cavity.

tubatorision (tū'bā-tor'shūn) [ʹ + *torsio*, a twisting] The twisting of an oviduct.

tubba, tubboe (tüb'ā, -ō) Yaws that attacks the palms and soles.

tube (tüb) [L. *tubus*, a tube] A long, hollow, cylindrical structure. Particular tubes are listed under the first word. SEE: e.g., *endotracheal tube*; *fallopian tube*; *test tube*.

tubectomy (too-bĕk'tō-mē) Surgical removal of all or part of a tube, esp. the fallopian tube.

tube feeding Enteral tube feeding.

tubeless For a test, accomplished without an endoscope.

tubeless test (tūb'lĕs) A colloquial term for a test of gastrointestinal (GI) function that does not rely on the use of an endoscope. Thus there is no direct entrance into or visualization of the GI tract.

tuber (tū'bĕr) *pl.* **tubera** [L., a swelling] A swelling or enlargement.

t. cinereum A part of the base of the hypothalamus bordered by the mammillary bodies, the optic chiasma, and on either side by the optic tract. It is connected by the infundibulum with the posterior lobe of the pituitary.

tubercle (tū'bĕr-kl) [L. *tuberculum*, a little swelling] **1.** A small rounded elevation or eminence on a bone. **2.** A small nodule, esp. a circumscribed solid elevation of the skin or mucous membrane. **3.** The characteristic lesion resulting from infection by tubercle bacilli. It consists typically of three parts: a central giant cell, a midzone of epithelioid cells, and a peripheral zone of nonspecific structure. SEE: *tuberculosis*.

adductor t. The tubercle of the femur to which is attached the tendon of the adductor magnus.

articular t. The tubercle at the base of the zygomatic arch to which is attached the temporomandibular ligament; it is lateral to the articular eminence of the glenoid fossa, with which it is often confused.

deltoid t. A tubercle on the anterior border of the acromion to which the deltoid muscle attaches.

dental t. A small elevation of variable size on the crown of a tooth representing a thickened area of enamel or an accessory cusp.

fibrous t. A fibrous tissue that has replaced a previously inflamed area.

genital t. The embryonic structure that becomes the clitoris or the penis.

Gerdy's t. SEE: *Gerdy's tubercle*.

lacrima t. A small tubercle between the lacrimal crest and the frontal process of the maxilla.

mental t. A small tubercle on either side of the midline of the chin.

miliary t. A small tubercle resembling a millet seed, caused by tuberculosis. SEE: *tuberculosis, miliary*.

pubic t. A small projection at the lateral end of the crest of the pubic bone. The inguinal ligament attaches to it.

supraglenoid t. A rough, elevated area just above the glenoid cavity of the scapula. The long head of the biceps muscle of the arm attaches to this tubercle.

t. of the upper lip The prominence of the upper part of the vermilion border that represents the distal termination of the philtrum of the upper lip.

tuberculation (tū-bĕr'kū-lā'shŭn) The formation of tubercles.

tuberculid, tuberculide (tū-bĕr'kū-līd, -līd) [L. *tuberculum*, a little swelling] A tuberculous cutaneous eruption caused by toxins of tuberculosis. SYN: *tuberculoderma*.

follicular t. A cutaneous eruption characterized by the presence of groups of follicular lesions, esp. on the trunk.

papulonecrotic t. A form of tuberculid characterized by symmetrically distributed bluish papules, esp. on the extremities. These undergo central necrosis and, on healing, leave deep scars.

tuberculin (tū-bĕr'kū-līn) [L. *tuberculum*, a little swelling] A solution of purified protein derivative of *Mycobacterium tuberculosis*. It is injected intradermally to determine whether a person has been infected with tuberculosis. SYN: *purified protein derivative; tuberculoprotein*. SEE: *tuberculin skin test*.

tuberculin skin test A test to determine the presence of infection with tuberculosis (TB). A solution containing purified protein derivative of TB is injected intradermally into the arm, and the response is read 48 to 72 hr later. A 5-mm induration is considered a positive reaction if the patient has been in close contact with persons infected with TB, is infected with human immunodeficiency virus (HIV), has risk factors for HIV, or has a chest x-ray examination that suggests a history of pulmonary TB. A 10-mm induration is considered positive in people born in nations where TB is endemic, in nursing home patients, in patients with other serious illnesses, and in people of low socioeconomic status. In all other people, a 15-mm induration is considered a positive result. A positive response indicates infection but does not distinguish between active infection and that which has been controlled by the immune system or drugs.

tuberculin tine test A tuberculin test performed with a special disposable instrument that contains multiple sharp points or prongs for piercing the skin. The tines penetrate the skin and introduce the tuberculin applied to them. The test is read in 48 to 72 hr. The tine test has largely been replaced by testing with an intradermal injection of purified protein derivative. SYN: *tine test*.

tuberculitis (tū'bĕr-kū-lī'tīs) Inflammation of a tubercle.

tuberculocele (tū-bĕr'kū-lō-sĕl') [t + *cele*, tumor] Tuberculosis of the testis.

tuberculoceal (tū-bĕr'kū-lō-sī'dāl) Any-

thing that destroys *Mycobacterium tuberculosis*.

tuberculoderma (tū-bēr'kū-lō-dēr'mă) [" + Gr. *derma*, skin] Tuberculid.

tuberculo-fibrosis (tū-bēr'kū-lō-fi-brō'sis) [" + " + Gr. *osis*, condition]

1. Chronic pulmonary inflammation with formation of fibrous tissue. 2. Interstitial pneumonia.

tuberculoid (tū-bēr'kū-loyd) [L. *tuberculum*, a little swelling, + Gr. *eidōs*, form, shape] Resembling tuberculosis or a tubercle.

tuberculoma (tū-bēr'kū-lō'mă) [" + Gr. *oma*, tumor] 1. A tuberculous abscess. 2. Any tuberculous neoplasm.

tuberculosis (tū-bēr'kū-lō'sis) [" + Gr. *osis*, condition] ABBR: TB. An infectious disease caused by the tubercle bacillus, *Mycobacterium tuberculosis*, and characterized pathologically by inflammatory infiltration, formation of tubercles, caseation, necrosis, abscesses, fibrosis, and calcification. It most commonly affects the respiratory system, but other parts of the body such as the gastrointestinal and genitourinary tracts, bones, joints, nervous system, lymph nodes, and skin may also become infected. Fish, amphibians, birds, and mammals (esp. cattle) are subject to the disease. Three types of the tubercle bacillus exist: human, bovine, and avian. Humans may become infected by any of the three types, but in the U.S. the human type predominates. Infection usually is acquired from contact with an infected person or an infected cow or through drinking contaminated milk. In the U.S., about 10 to 15 million persons have been infected with tuberculosis. In 2005 about 14,000 active cases were reported. Worldwide, about 2 billion people harbor the infection; about 9 million have active disease, and an estimated 1.7 million die from TB each year. The percentage of drug-resistant TB cases varies internationally.

Tuberculosis usually affects the lungs, but the disease may spread to other organs, including the gastrointestinal and genitourinary tracts, bones, joints, nervous system, lymph nodes, and skin. Macrophages surround the bacilli in an attempt to engulf them but cannot, producing granulomas with a soft, cheesy (caseous) core. From this state, lesions may heal by fibrosis and calcification and the disease may exist in an arrested or inactive stage. Depending on the person's immune status and other factors, the disease may become reactivated as pulmonary TB or disseminated infection. Reactivation or exacerbation of the disease or reinfection gives rise to the chronic progressive form.

The incidence of TB declined steadily from the 1950s to about 1990, when the

acquired immunodeficiency syndrome (AIDS) epidemic, an increase in the homeless population, an increase in immigrants from endemic areas, and a decrease in public surveillance caused a resurgence of the disease. Populations at greatest risk for TB include patients with human immunodeficiency virus (HIV), Asian and other refugees, the urban homeless, alcoholics and other substance abusers, persons incarcerated in prisons and psychiatric facilities, nursing home residents, patients taking immunosuppressive drugs, and people with chronic respiratory disorders, diabetes mellitus, renal failure, or malnutrition. People from these risk groups should be assessed for TB if they develop pneumonia; all health care workers should be tested annually.

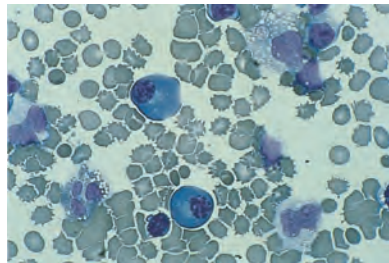
Currently the only vaccine available to prevent tuberculosis is the BCG vaccine. It has somewhat limited effectiveness but is used in regions of the world where TB is endemic. SEE: *illness*; *immunological therapy*; *tuberculin skin test*; *vaccine*, BCG; *Nursing Diagnoses Appendix*.

INCUBATION PERIOD: Approx. 4 to 12 weeks elapse between the time of infection and the time a demonstrable primary lesion or positive tuberculin skin test (TST) occurs.

SYMPTOMS: Pulmonary TB produces chronic cough, sputum, fevers, sweats, and weight loss. TB may also cause neurological disease (meningitis), bone infections, urinary bleeding, and other symptoms if it spreads to other organs.

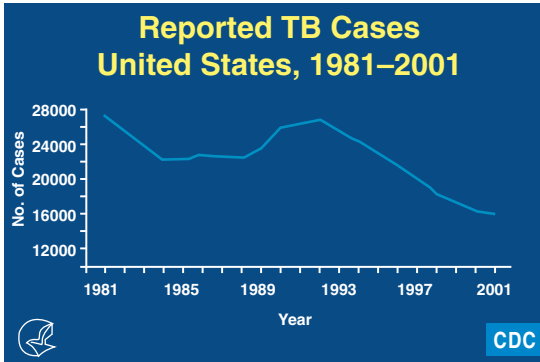
DIAGNOSIS: Tests used to diagnose latent infection with tuberculosis include a positive tuberculin skin test (TST) or a blood assay. A presumptive diagnosis of active disease is made by finding acid-fast bacilli in stained smears from sputum or other body fluids. The diagnosis is confirmed by isolating *M. tuberculosis* in cultures or rapid nucleic acid test probes.

TREATMENT: Regimens for TB have been developed for patients, depending on their HIV status, the prevalence of



TUBERCULOSIS

Pleural fluid with plasma cells (×1000)



TUBERCULOSIS

Reported tuberculosis cases in the United States, 1981-2001

multidrug resistant disease in the community, drug allergies, and drug interactions. Uncomplicated TB in the non-HIV infected patient is typically treated with a four-drug regimen for 6 months. Regimens evolve: prescribers should consult published guidelines for current standards of care. Commonly used drugs include isoniazid (INH), rifampin (RIF), ethambutol (EMB), pyrazinamide, ciprofloxacin, and rifapentin. Medications are typically given in combinations rather than alone. A long course of therapy may be prescribed for patients co-infected with HIV/AIDS or for patients with drug-resistant bacilli. Multiply drug-resistant TB (MDR-TB) is tuberculosis resistant to either INH or RIF. Extensively drug-resistant TB (XDR-TB) is resistant to INH or RIF, any fluoroquinolone (e.g., ciprofloxacin), and at least one parenteral TB drug. Both MDR-TB and XDR-TB have very high mortality rates. SEE: *multidrug resistant t.*



All patients with HIV should be tested for TB, and all patients with TB should be tested for HIV, because about one fourth of all patients with one disease will be infected with the other.

PATIENT CARE: All patients suspected of or confirmed to have TB should be placed in airborne isolation until they are no longer infectious. Health care professionals and visitors should wear particulate respirators when in the patient's room. Patients should be taught to cough and sneeze into tissues, and to dispose of secretions in a lined bag taped to the side of the bed or in a covered disposal. The patient should wear a mask when outside the isolation room for any reason. Patients should be observed for complications

such as hemoptysis, bone or back pain, and bloody urine. The patient and family or other support persons should be taught about the importance of regular follow-up visits, of following and completing the treatment regimen exactly as prescribed, of adverse effects to be reported, and of signs and symptoms of recurring TB. Persons who have been exposed to an infected patient should receive a TB test; chest x-rays and prophylactic INH also may be prescribed.

avian t. Tuberculosis of birds caused by *Mycobacterium avium*.

bovine t. Tuberculosis of cattle caused by *Mycobacterium bovis*.

endogenous t. Tuberculosis that reactivates after a previous infection.

exogenous t. Tuberculosis originating from a source outside the body.

hematogenous t. The spread of tuberculosis from a primary site to another site via the bloodstream.

latent t. Infection with tuberculosis without active lung disease. It is detected by tuberculin skin testing.

miliary t. Tuberculosis that spreads throughout the body via the bloodstream. It may be fatal.

multidrug resistant t. ABBR: MDR-TB. *Mycobacterium tuberculosis* bacilli that are resistant to therapy with at least two standard antitubercular drugs (esp. isoniazid and rifampin, the two drugs that have formed the cornerstone of therapy for tuberculosis). MDR-TB must be treated with at least three antitubercular drugs to which the organism is presumed or proven to be sensitive. About 3% of cases of TB are drug-resistant.

open t. Tuberculosis in which the tubercle bacilli are present in bodily secretions that leave the body.

tuberculostatic (tū-bēr'kū-lō-stāt'ik) Arresting the growth of the tubercle bacillus.

tuberculous (tū-bēr'kū-lōt'ik) Concerning tuberculosis.

tuberculous (tū-bēr'kū-lūs) [*L. tuberculum*, a little swelling] Relating to or affected with tuberculosis, or conditions marked by infiltration of a specific tubercle, as opposed to the term *tubercular*, referring to a nonspecific tubercle.

tuberculum (tū-bēr'kū-lūm) *pl.* **tubercula** [*L. tuberculum*, a little swelling] A small knot or nodule; a tubercle.

tuberosis (tū'bēr-ō'sīs) A condition in which nodules develop; a nonspecific term that indicates no specific disease process.

tuberosity (tū-bēr-ōs'ī-tē) [*L. tuberositas*, tuberosity] **1.** An elevated round process of a bone. **2.** A tubercle or nodule.

ischial t. A palpable prominence on the inferior margin of the ischium that supports a person's weight when sitting.

maxillary t. A rounded eminence on the posteroinferior surface of the maxilla that enlarges with the development and eruption of the third molar. It articulates medially with the palatine bone and laterally with the lateral pterygoid process of the sphenoid. It forms the anterior surface of the pterygopalatine fossa, including a groove for the passage of the maxillary nerve, which is anesthetized in this region for a maxillary or second-division block.

radial t. A bump on the inside (medial) surface of the proximal end of the radius bone onto which the distal tendon of the biceps brachii muscle attaches

tuberos (tū'bēr-ūs) Pert. to tubers.

tubo- Combining form meaning *tube*.

tuboabdominal (tū'bō-ō-dōm'in-āl) [*L. tubus*, tube, + *abdominalis*, pert. to the abdomen] Pert. to the fallopian tubes and the abdomen.

tubo-ovarian (tū'bō-ō-vā-rē-ān) [" + *LL. ovarium*, ovary] Pert. to the fallopian tube and the ovary.

tubo-ovariotomy (tū'bō-ō-vā-rē-ōt'ō-mē) [" + *LL. ovarium*, ovary, + *Gr. tome*, incision] Excision of ovaries and oviducts.

tubo-ovariitis (tū'bō-ō-vā-rī'tīs) [" + " + *Gr. itis*, inflammation] Inflammation of the ovary and fallopian tube.

tuboperitoneal (tū'bō-pēr-ī-tō-nē'āl) [" + *Gr. peritoneion*, peritoneum] Rel. to the fallopian tube and peritoneum.

tuboplasty (tū'bō-plās'tē) **1.** Plastic repair of any tube. **2.** Plastic repair of a fallopian tube or tubes in an attempt to restore patency so that fertilization of the ovum may occur. SYN: *salpingoplasty*.

tuboplasty, transcervical balloon Catheterization and dilation of the fallopian tubes, a method of treating infertility in women whose fallopian tubes are occluded proximally. A balloon catheter is

inserted through the cervical os of the uterus and into the fallopian tube to the point of occlusion in the tube. The balloon is then expanded by filling it with sterile saline. This dilation of the tube may restore tubal patency. SEE: *catheter*, *balloon*; *infertility*.

tuborrhoea (tū-bor-rē'ā) [" + *Gr. rhoia*, flow] Discharge from the eustachian tube.

tubortorsion (tū'bō-tor'shūn) The act of twisting a tube.

tubouterine (tū'bō-ū'tēr-in) [" + *uterinus*, pert. to the uterus] Rel. to the fallopian tube and the uterus.

tubular (tū'bū-lār) [*L. tubularis*, like a tube] Rel. to or having the form of a tube or tubule.

tubule (tū'būl) [*L. tubulus*, a tubule] A small tube or canal.

Bellini's t. SEE: *Bellini's tubule*.

collecting t. One of the small ducts that receive urine from several renal tubules, which join together to provide a passage for the urine to larger straight collecting tubules (papillary ducts of Bellini) that open into the pelvis of the kidney. SEE: *kidney* for illius.

convoluted t. of the kidney The proximal and distal convoluted tubules of the nephron that, with the loop of Henle and collecting tubule, form the renal tubule through which the glomerular filtrate passes before entering the renal pelvis. SEE: *kidney* for illius; *nephron*.

dentinal t. One of the very small canals in the dentin. These extend from the pulp cavity of the tooth to the enamel and are occupied by odontoblastic processes and occasional nerve filaments.

galactophorous t. Lactiferous t.

Henle's t. Henle's loop.

lactiferous t. One of the lactiferous ducts of the breast. It provides a channel for the milk formed in the lobes of the breast to pass to the nipple.

mesonephric t. One of the embryonic tubules that in the female gives rise only to vestigial structures but in the male gives rise to the efferent ducts of the testes.

renal t. The part of a nephron through which renal filtrate from the renal corpuscle flows and is changed to urine by reabsorption and secretion. The parts, in order, are the proximal convoluted tubule, the loop of Henle, the distal convoluted tubule, and collecting tubule. SEE: *kidney* for illius; *nephron*.

seminiferous t. One of the very small channels of the testes in which spermatozoa develop and through which they leave the testes. These tubules may be either straight or convoluted.

transverse t. ABBR: T-tubule. An invagination of the cell membrane of a muscle fiber that carries the action po-

tential to the interior of the cell and the innermost sarcomeres.

tubulin (tū'bü-līn) A protein present in the microtubules of cells.

tubulization (too'bü-lī-zā'shūn) A method of repairing severed nerves in which the nerve ends are placed in a tube of absorbable material.

tubuloalveolar (too'bü-lō-äl-vē'ō-lār) Consisting of tubes and alveoli, as in a tubuloalveolar salivary gland.

tubulocyst (too'bü-lō-sist) The cystic dilatation of a functionless duct or canal.

tubulodermoid (tū'bü-lō-dēr'moyd) [" + Gr. *derma*, skin, + *eidōs*, form, shape] A dermoid tumor caused by the persistent embryonic tubular structure.

tubulorrhesis (too'bü-lō-rēk'sīs) [" + *rhēsis*, a breaking] Focal ruptures of renal tubules.

tubus (too'būs) [L.] Tube.

tuft (tüft) A small clump, cluster, or coiled mass.

enamel t. An abnormal structure formed in the development of enamel, consisting of poorly calcified twisted rods.

tugging A dragging or pulling.

tracheal t. SEE: *tracheal tugging*.

tui na (twā nah, too'ī) [Chinese Mandarin, lit., "poke-pinch"] A traditional method of Chinese massage in which the body is lifted, squeezed, and pushed to improve circulation and enhance disease resistance.

tularemia (tū-lār-ē'mē-ā) [*Tulare*, part of California where disease was first discovered] An acute plague-like infectious disease caused by *Francisella tularensis*. It is transmitted to humans by the bite of an infected tick or other bloodsucking insect, by direct contact with infected animals, by eating inadequately cooked meat, or by drinking water that contains the organism. Streptomycin or gentamicin is effective in treating the disease. SYN: *deer fly fever*; *rabbit fever*.

SYMPTOMS: The incubation period is 2 to 10 days; symptoms include headache, fever, chills, vomiting, and body aches.

tumbu fly (tūm'boo, toom') A species of fly belonging to the genus *Cordylobia* in Africa and the genus *Dermatobia* in tropical America. Their larvae develop in the skin of wild domesticated animals, and humans are frequently attacked.

tumefacient (tū-mē-fā'shēnt) [L. *tumefaciens*, producing swelling] Producing or tending to produce swelling; swollen.

tumefaction (tū'mē-fāk'shūn) [L. *tumefactio*, a swelling] Intumescence.

tumentia (tū-mēn'shē-ā) [L.] Swelling.
vasomotor t. Irregular swellings in the lower extremities associated with vasomotor disturbances.

tumescence (tū-mēs'ēns) 1. A condition of being swollen or tumid. 2. A swelling.

tumor (tū'mor) [L. *tumor*, a swelling] 1. A swelling or enlargement; one of the four classic signs of inflammation. 2. An abnormal mass. Growth or proliferation that is independent of neighboring tissues is a hallmark of all tumors, benign and malignant. SYN: *neoplasm*. SEE: *cancer*.

brain t. An inexact term to describe any intracranial mass—neoplastic, cystic, inflammatory (abscess), or syphilitic. SEE: *illus*; *Nursing Diagnoses Appendix*.



BRAIN TUMOR

Neoplastic brain tumors may be benign or malignant, and malignant brain lesions may be primary or secondary; resulting from metastatic spread of other cancers. Primary malignant brain tumors make up from 10% to 30% of adult cancers, about 20% in children, although any of these tumors may occur at any age. Incidence in children is usually greatest prior to age 12, with astrocytomas, medulloblastomas, ependymomas, and brain stem gliomas the most common types. In adults the most common types of tumors are gliomas and meningiomas, usually occurring supratentorially. Other malignant tumor types are oligodendrogliomas and acoustic neuromas (Schwannomas). Most malignant brain tumors are metastatic, with 20% to 40% of patients with cancer developing brain metastasis. The cause of primary brain cancers is unknown; however, one known environmental risk is exposure to ionizing radiation. Cell phone use has been implicated in acoustic neuromas. Central nervous system changes occur as the lesions invade and destroy tissue, and because they compress the brain, cranial nerves, and cerebral blood vessels, causing cerebral edema and in-

creases in intracranial pressure (ICP). Most clinical signs are due to the increased ICP, but signs and symptoms may vary due to the type of tumor, its location, and the degree and speed of invasion. Usually symptom onset is insidious, with brain tumors frequently misdiagnosed.

DIAGNOSIS: The patient is evaluated for neurological deficits, such as headache, mental activity changes, behavioral changes, weakness, sensory losses, or disturbances of vision, speech, gait, or balance. The patient is monitored for seizure activity and for increased intracranial pressure (ICP). Diagnostic tools include skull x-rays, brain scan, CT scan, MRI, cerebral angiography, and EEG. Lumbar puncture demonstrates increased pressure and protein levels, decreased glucose levels, and (sometimes) tumor cells in the cerebrospinal fluid (CSF). Definitive diagnosis is by tissue biopsy performed by stereotactic surgery.

TREATMENT: Treatment includes excision of the tumor if it is resectable, and size reduction if it is not respectable; relieving cerebral edema, reducing ICP, and managing other symptoms; and preventing further neurologic damage. The treatment modality(ies) is/are determined by the tumor's histology, radiosensitivity, and location. Functional MRI can map the brain function surrounding a tumor to help design a surgical approach that removes the tumor while avoiding damage to areas critical for normal functioning. Surgery, radiation, chemotherapy, and/or decompression for increased ICP with diuretics, corticosteroids, or sometimes ventricular or ventroperitoneal CSF shunting. Focused and computerized robotic radiation methods such as the Gamma Knife and Cyberknife permit delivery of more radiation to the tumor and less to surrounding normal tissue.

PATIENT CARE: Radiation therapy can cause inflammation, so the patient is monitored for increasing ICP. If radiation is to be used following surgery, it will be delayed until the surgical wound has healed. However, even after local healing occurs, radiation can break down the wound, so the incisional area must be assessed for infection and sinus formation. Chemotherapy for malignant brain tumors includes use of nitrosoureas (BCNU, CCNU, procarbazine) to help break down the blood-brain barrier allowing entrance of other chemotherapy agents. Antiemetics are provided prior to and following chemotherapy administration to minimize nausea and prevent vomiting, and the patient is assessed over the following weeks for bone marrow suppression and advised to report any signs of infection or bleeding

and avoid contact with crowds and individuals with respiratory infections. The oral agent temozolomide (Temodar) crosses the blood-brain barrier and is usually well tolerated by the patient. Intrathecal or intra-arterial administration helps to increase drug actions. Convection-enhanced delivery systems infuse the antitumor agent directly into the brain, bypassing the blood-brain barrier to pump drugs slowly through 2 to 4 implanted catheters into the area where a tumor was removed to attach to and kill remaining tumor cells and to shrink a tumor prior to surgery. A disc-shaped drug wafer can be implanted during surgery to deliver chemotherapy directly to the tumor. MRI spectroscopy reveals the physiology of treated tumors to differentiate dead tissue from an actively growing tumor. The patient must be monitored closely for changes in neurologic status and increases in ICP. A patent airway must be maintained and respiratory changes monitored. Patient safety must be ensured. Temperature also is monitored closely. Steroids and osmotic diuretics are administered as prescribed. Fluid intake may be restricted to 1500 ml/24 hr. Fluid and electrolyte balance is monitored to prevent dehydration. Stress ulcers may occur, so the patient is assessed for abdominal distention, pain, vomiting, and tarry stools. Stools also are tested for occult blood. Antacids and anti-histamine-2 agents are administered as prescribed.

Postcraniotomy surgery, all general patient care concerns apply. General neurologic status and ICP remain the assessment priorities. Patient positioning post surgery depends on the procedure: after supratentorial craniotomy, the head of the bed should be elevated 30° and the patient positioned on the side to promote venous drainage, reduce cerebral edema, allow drainage of secretions and prevent aspiration. After infratentorial craniotomy, the patient should be kept flat for 48 hr but log-rolled side to side every 2 hr to minimize immobility complications. Because brain tumors and their treatment frequently result in residual disabling neurologic deficits, a rehabilitation program should be started early. Physical and occupational therapists help the patient to maintain independence and quality of life, providing aids for self-care and mobility as needed. If the patient is aphasic or develops dysphagia, a speech pathologist is consulted. Depression is common, and psychological consultation for behavioral or drug therapies may be helpful.

Emotional support is provided to the patient and family as they struggle to cope with treatments, disabilities, changes in lifestyle, and end-of-life is-

sues. The patient and family are referred to resource and support services (e.g., social service, home health care agencies, the American Cancer Society, and other such voluntary agencies).

Brenner's t. SEE: *Brenner's tumor*.

brown t. A benign fibrotic mass found within the bone of patients with unchecked hyperparathyroidism. The tumor appears brown on gross examination because it contains blood and by-products of the metabolism of hemoglobin, such as hemosiderin.

Buschke-Loewenstein t. A giant condyloma acuminata, typically found on the genitals or anus, caused by infection with papilloma virus. In men, it is almost always found under the foreskin (it is rarely reported in circumcised men). It may transform into a verrucous carcinoma and cause deep local tissue invasion.

calcifying epithelial odontogenic t. Pindborg tumor.

carotid body t. A benign tumor of the carotid body.

collision t. 1. A malignant growth made up of two or more different cell types occurring simultaneously in the same location. 2. A cancerous growth made up of two or more malignancies that have metastasized toward each other.

connective tissue t. Any tumor of connective tissue such as fibroma, lipoma, chondroma, or sarcoma.

desmoid t. A tumor of fibrous connective tissue. SYN: *desmoma*.

erectile t. A tumor composed of erectile tissue.

false t. An enlargement due to hemorrhage into tissue or extravasation of fluid into a space, rather than cancer.

fibroid t. Uterine leiomyoma.

follicular t. A sebaceous cyst.

functioning t. A tumor that is able to synthesize the same product as the normal tissues from which it arises, esp. an endocrine or nonendocrine tumor that produces hormones.

giant cell t. 1. A malignant or benign bone tumor that probably arises from connective tissue of the bone marrow. Histologically, it contains a vascular reticulum of stromal cells and multinucleated giant cells. 2. A yellow giant cell tumor of a tendon sheath. 3. Epulis. 4. Chondroblastoma.

giant cell t. of bone A benign or malignant tumor of bone in which the cells are multinucleated and surrounded by cellular spindle cell stroma.

giant cell t. of tendon sheath A localized nodular tenosynovitis.

granulosa cell t. An estrin-secreting neoplasm of the granulosa cells of the ovary.

granulosa-theca cell t. An estrogen-

secreting tumor of the ovary made up of either granulosa or theca cells.

Gubler's t. SEE: *Gubler's tumor*.

heterologous t. A tumor in which the tissue differs from that in which it is growing.

homologous t. A tumor in which the tissue resembles that in which it is growing.

Hürthle cell t. SEE: *Hürthle cell tumor*.

islet cell t. A tumor of the islets of Langerhans of the pancreas.

Klatskin t. SEE: under *Klatskin*.

Krukenberg's t. SEE: *Krukenberg's tumor*.

lipoid cell t. of the ovary A masculinizing tumor of the ovary. It may be malignant.

mast cell t. A benign nodular accumulation of mast cells.

melanotic neuroectodermal t. A benign tumor of the jaw, occurring mostly during the first year of life.

mesenchymal mixed t. A tumor composed of tissue that resembles mesenchymal cells.

milk t. A colloquial term for a galactocele. SYN: *galactocele* (1). SEE: *aked breast*.

Pancoast's t. SEE: *Pancoast's tumor*.

papillary t. Neoplasm composed of or resembling enlarged papillae. SEE: *papilloma*.

phantom t. 1. An apparent tumor due to muscular contractions or flatus that resolves on re-examination of the patient. 2. A mass that resembles a tumor in only one view of a chest x-ray film. On other views it either disappears or appears to be an encapsulated fluid collection.

primary t. In a patient with metastatic cancer, the lesion assumed to be the source of the metastases.

Recklinghausen t. SEE: under *Recklinghausen, Friedrich D. von*.

sand t. Psammoma.

teratoid t. Tumor of embryonic remains from all germinal layers. SEE: *teratoma*.

turban t. Multiple cutaneous cylindromata that cover the scalp like a turban.

vascular t. Hemangioma.

Warthin's t. SEE: *Warthin's tumor*.

Wilms' t. SEE: *Wilms' tumor*.

tumor ablation Destruction of tumor masses that cannot otherwise be treated by means of the application of chemicals, heat, or other forms of energy.

tumoraffin (tū'mor-āf-in) [L. *tumor*, a swelling, + *affinis*, related] Having an affinity for tumor cells.

tumor angiogenesis factor ABBR: TAF. A protein present in animal and human cancer tissue that in experimental studies appears to be essential to growth of

the cancer. The substance is thought to act by stimulating the growth of new blood capillaries that supply the tumor with nutrients and remove waste products.

tumor burden The sum of cancer cells present in the body.

tumoricidal (too'mor-i-sī'dāl) Lethal to neoplastic cells.

tumorigenesis (too'mor-i-jěn'ě-sīs) The production of tumors.

tumorigenic (tū'mor-i-jěn'ik) [t' + Gr. *genesis*, generation, birth] Forming and developing tumors.

tumorlet A small benign growth (e.g., in the lungs or uterus), usually made of smooth muscle cells.

tumor marker A substance whose presence in blood serves as a biochemical indicator for the possible presence of a malignancy. Examples of markers and the malignancies they may indicate are carcinoembryonic antigen for cancers of the colon, lung, breast, and ovary; beta subunit of chorionic gonadotropin for trophoblastic and testicular tumors; alpha-fetoprotein for testicular teratocarcinoma and primary hepatocellular carcinoma; and prostate-specific antigen for prostate cancer.

tumor necrosis factor ABBR: TNF. A polypeptide protein mediator or cytokine released primarily by macrophages and T lymphocytes; it helps regulate the metabolism of fats, the immune response, and some hematopoietic functions. There are two factors: alpha (TNF α), also called cachectin, produced by macrophages, and beta (TNF β), called lymphotoxin, which is produced by activated CD4+ T cells. The functions of TNF are very similar to those of interleukin-1. A monoclonal antibody against TNF α , infliximab, is used to treat rheumatoid arthritis and other diseases in which TNF α causes inflammatory damage. Antagonists to tumor necrosis factor (such as adalimumab, etanercept, and infliximab) are used to treat diseases impacted by TNF, such as rheumatoid arthritis or Crohn disease. SEE: *cytokine*; *interleukin-1*.

tumor necrosis factor receptor-associated periodic syndrome ABBR: TRAPS. A rare, dominantly inherited autoinflammatory disorder marked by bouts of abdominal pain, fever, myalgia and arthralgia, pleurisy, and conjunctivitis. It is caused by a mutation in a cell receptor for tumor necrosis factor. SEE: *tumor necrosis factor*.

tumorous (too'mor-ūs) Tumor-like.

Tunga (tūng'ā) A genus of fleas of the family Hectopsyllidae.

T. penetrans A small flea common in tropical regions. It infests humans, cats, dogs, rats, pigs, and other animals and produces a severe local inflammation frequently liable to secondary infection.

tungiasis (tūng-gī'ā-sīs) Infestation of the skin with *Tunga penetrans*.

tungsten (tūng'stēn) SYMB: W (for wolfram). A metallic element; atomic weight, 183.85; atomic number, 74.

tungsten carbide A hard alloy composed of tungsten and carbon. It is used as a metallic alternative to diamond in the manufacture of histological knives and surgical instruments.

tunic (tū'nik) [L. *tunica*, a sheath] A layer of tissue.

tunica (tū'nī-kā) *pl.* **tunicae** [L. *tunica*, a sheath] A layer, or coat, of tissue.

t. adventitia The outermost fibroelastic layer of a blood vessel or other tubular structure. SYN: *tunica externa*.

t. albuginea The white fibrous outer layer of the eye, testicle, ovary, or spleen.

t. externa Tunica adventitia.

t. interna SEE: *t. intima*.

t. intima The lining of a blood vessel composed of an epithelial (endothelium) layer and the basement membrane, a subendothelial connective tissue layer, and usually an internal elastic lamina. SYN: *Bichat's tunic*.

t. media The middle layer in the wall of a blood vessel composed of circular or spiraling smooth muscle and some elastic fibers.

t. mucosa The mucous membrane lining of various structures.

t. muscularis The smooth muscle layer in the walls of organs such as the bronchi, intestines, and blood vessels.

t. serosa The membrane lining the walls of the closed body cavities and folded over the organs in those cavities, forming the outermost layer of the wall of these organs. The body cavities are the thoracic, abdominal, and pericardial cavities.

t. vaginalis The serous membrane surrounding the front and sides of the testicle. It is the thin, flattened remnant of a pouch of peritoneum pulled into the scrotum by the testis as it descends during fetal development.

t. vasculosa Any vascular layer.

tuning fork A device that vibrates at a specific frequency when it is struck, e.g., 128, 256, or 512 Hz. It is used in simple tests of hearing and vibration sense.

tunnel (tūn'ēl) A narrow channel or passageway.

carpal t. The canal in the wrist bounded by osteofibrous material through which the flexor tendons and the median nerve pass. SYN: *flexor tunnel*.

flexor t. Carpal t.

tarsal t. The osteofibrous canal in the tarsal area bounded by the flexor retinaculum and tarsal bones. The posterior tibial vessels, tibial nerve, and flexor tendons pass through this tunnel.

Tuohy needle (too'hē ne-dil) A needle

with a curved point that is used in epidural anesthesia. The curve reduces the possibility that the point of the needle and the anesthetic will enter the dura mater.

TUR *tolerable upper limit; transurethral resection* (of the prostate).

turbid (tūr'bid) [L. *turba*, a tumult] Cloudy; not clear. SEE: *turbidity*.

turbidimeter (tūr-bī-dīm'ē-ter) [L. *turbidus*, disturbed, + Gr. *metron*, measure] A device for estimating the degree of turbidity of a fluid.

turbidimetry (tūr-bī-dīm'ē-trē) [+ Gr. *metron*, measure] Estimation of the turbidity of a liquid.

turbidity (tūr-bīd'ī-tē) [L. *turbiditas*, turbidity] Opacity due to the suspension of flaky or granular particles in a normally clear liquid.

turbinal (tūr'bi-nāl) [L. *turbinalis*, fr. *turbo*, a child's top] Shaped like an inverted cone.

turbinate (tūr'bī-n-āt) [L. *turbinalis*, fr. *turbo*, a child's top] **1.** Shaped like an inverted cone. **2.** A concha; a scroll-like bone on the lateral wall of the nasal cavity.

turbinated (tūr'bī-nā'tēd) [L. *turbo*, whirl] Top-shaped or cone-shaped. SEE: *concha*.

turbinectomy (tūr-bin-ēk'tō-mē) [+ Gr. *ektome*, excision] Excision of a turbinated bone.

turbinoplasty (tūr-bin'ō-plās-tē) Reduction of the size of the nasal turbinates. The surgery is used occasionally in the management of snoring and airflow disorders.

turbinotome (tūr-bin'ō-tōm) [+ Gr. *tome*, incision] An instrument for excision of a turbinated bone.

turbinotomy (tūr-bin-ōt'ō-mē) [+ Gr. *tome*, incision] Surgical incision of a turbinated bone.

Turcot syndrome (tēr-kōz') An autosomal recessive syndrome in which multiple colonic polyps are found in conjunction with malignant brain tumors.

turgescence (tūr-jēs'ēns) [L. *turgescens*, swelling] Swelling or enlargement of a part.

turgescient (tūr-jēs'ēnt) [L. *turgescens*, swelling] Swollen; inflated.

turgid (tūr'jīd) [L. *turgidus*, swollen] Swollen; bloated.

turgometer (tūr-gōm'ē-tēr) [L. *turgor*, swelling, + Gr. *metron*, measure] A device for measuring turgescence.

turgor (tūr'gor) [L., a swelling] **1.** Normal tension in a cell. **2.** Distention, swelling.

skin t. The resistance of the skin to deformation, esp. to being grasped between the fingers. In a healthy person, when the skin on the back of the hand is grasped between the fingers and released, it returns to its normal appearance either immediately or relatively

slowly. The state of hydration of the skin can determine which of these reactions occurs, but age is the most important factor. As a person ages, the skin returns much more slowly to its normal position after having been pinched between the fingers. The skin over the forehead or sternum may be used when assessing turgor in elderly persons.

t. vitalis Normal fullness of the capillaries and blood vessels.

turista (tūr-rēs'tā) [Sp.] One of the many colloquial names applied to travelers' diarrhea, esp. that which occurs in tourists in Mexico.

Turner's syndrome (tūr'ēnrz) [Henry Hubert Turner, U.S. physician, 1892–1970] Gonadal dysgenesis.

turning [AS. *turnian*, to turn] **1.** Rotating to change position. **2.** Version (2).

turpentine (tūr'pēn-tīn) [Gr. *terebinthos*, turpentine tree] Oleoresin obtained from various species of pine trees. It is a mixture of terpenes and other hydrocarbons obtained from pine trees. It was once used in liniments and counterirritants.

TURP syndrome (tūrp sīn'drōm") Hypopnatremia that results from bladder irrigation with dilute fluids during and after transurethral resection of the prostate gland.

turunda (tūr-rūn'dā) [L.] **1.** A surgical tent, drain, or tampon. **2.** A suppository.

tussiculation (tū-sīk'ū-lā'shūn) A short, dry cough.

tussis (tūs'is) [L.] Cough.

tussive (tūs'iv) [L. *tussis*, cough] Relating to a cough. SYN: *tussal*.

tutamén (tū-tā'mēn) *pl.* **tutamína** [L.] Any tissue that has a protective action.

twelfth cranial nerve The hypoglossal nerve, motor to muscles of the tongue. SEE: *cranial nerve; hypoglossal nerve*.

Twelve-Item Short-Form Health Survey ABBR: SF-12. An abbreviated version of the Medical Outcomes Study 36-Item Short-Form Health survey. SEE: *Medical Outcomes Study 36-Item Short-Form Health Survey*.

twig The final branch of a structure such as a nerve or vessel.

twilight sleep A state of partial anesthesia and hypococonsciousness in which pain sense has been greatly reduced by the injection of morphine and scopolamine. The patient responds to pain, but afterward the memory of the pain is dulled or effaced. Although once in common use as a method of analgesia for childbirth and minor surgery, twilight sleep has been replaced by more effective contemporary approaches to pain control.

twilight state A state in which consciousness is disordered, and autonomic dysfunction or dissociation may occur. This may occur in epilepsy.

twin (twín) [AS. *twinn*] One of two children developed within the uterus at the same time from the same pregnancy. **SEE:** *illus.*; *fetus papyraceus*; *Hellin's law*.

INCIDENCE: Per 1000 live births, incidence rates for American whites are 1:88; for American blacks, 1:70. Generally, the rates are higher in blacks and East Indians and lower in Northern Europeans.

RESEARCH ON TWINS: Identical and fraternal twins provide a unique resource for investigating the origin and natural history of various diseases and discovering the different rates of environmental and hereditary factors in causing physical and mental disorders. Esp. important are studies that follow the course of identical twins separated shortly after birth and who then grew up in different social, economic, educational, and environmental conditions. In other research, the second-born twin was found to be at increased risk for an unfavorable outcome (e.g., need for intubation and resuscitation, lower 5-min Apgar score), even when delivered by cesarean section.

biovular t. Dizygotic twins.

conjoined t. Twins that are united. **SEE:** *Siamese twins*.

dizygotic t. Twins from two separate, fertilized ova. **SYN:** *biovular twins*; *fraternal twins*.

enzygotic t. Monozygotic twins.

fraternal t. Dizygotic twins.

growth discordant t. The unequal growth of twins while in utero. The

smaller twin is at greater risk of having congenital anomalies than is the normal birth-weight twin. **SYN:** *unequal twins*.

identical t. Monozygotic twins.

impacted t. Twins so entwined in utero as to prevent normal delivery.

interlocked t. Twins in which the neck of one becomes interlocked with the head of the other, making vaginal delivery impossible.

monozygotic t. Twins that develop from a single fertilized ovum. Monozygotic twins have the same genetic makeup and, consequently, are of the same gender and strikingly resemble each other physically, physiologically, and mentally. They develop within a common chorionic sac and have a common placenta. Each usually develops its own amnion and umbilical cord. Such twins may result from development of two inner cell masses within a blastocyst, development of two embryonic axes on a single blastoderm, or the division of a single embryonic axis into two centers. **SYN:** *enzygotic twins*; *identical twins*; *true twins*; *uniiovular twins*.

parasitic t. The smaller of a pair of conjoined twins, when there is a marked disparity in size.

true t. Monozygotic twins.

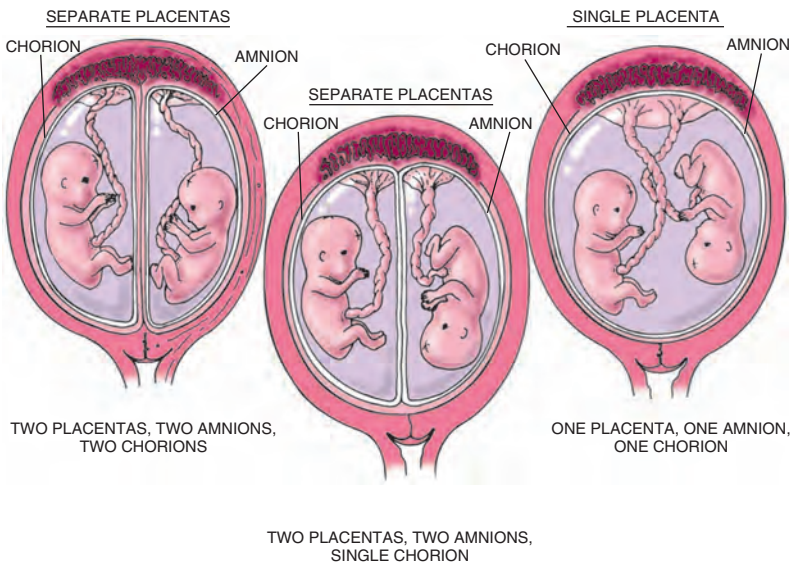
unequal t. Growth discordant twins.

uniiovular t. Monozygotic twins.

vanishing t. Fetal resorption in multiple gestation. **SEE:** *gestation, multiple*.

twinge (twínj) [AS. *twengan*, to pinch] A sudden keen pain.

twinning (twín'ing) Delivery of or producing twins.



POSSIBLE RELATIONS OF FETAL MEMBRANES IN TWIN PREGNANCIES

twinning of teeth A dental anomaly in which two teeth are joined together
SYN: *geminism*.

Twinrix (twin'riks) Hepatitis A inactivated, and hepatitis B (recombinant) vaccine.

twitch (twich) [ME. *twicchen*] **1.** A single contraction of one muscle fiber in response to one nerve impulse. SEE: *myokymia*. **2.** To jerk convulsively.

twitching (twich'ing) Repeated contractions of portions of muscles.

two-point discrimination test A test of cutaneous sensation involving determination of the ability of the patient to detect that the skin is being touched by two pointed objects at once. It is used to determine the degree of sensory loss following disease or trauma affecting the nervous system.

two-way interactive television ABBR: IATV. A means of telecommunication used to link two geographically distant sites via real-time audio and visual media.

TXA₂ *thromboxane A₂*

tylectomy (tī-lēk'tō-mē) [Gr. *tylos*, knot, + *ektome*, excision] Lumpectomy.

tylion (tīl'ē-ōn) [Gr. *tyleion*, knot] The point at the middle of the anterior edge of the optic groove.

tyloma (tī-lō'mā) [Gr. *tylos*, knot, + *oma*, tumor] A callus.

tylosis (tī-lō'sis) [ʹ + *osis*, condition] Formation of a callus.

tymp- SEE: *tympano-*.

tympal (tīm'pān-āl) [Gr. *tympanon*, drum] Tympanic (1).

tympalectomy (tīm'pān-ēk'tō-mē) [ʹ + *ektome*, excision] Excision of the tympanic membrane.

tympanic (tīm'pān'ik) [Gr. *tympanon*, drum] **1.** Pert. to the tympanum. SYN: *tympal*. **2.** Resonant. SYN: *tympanic* (2).

tympanitic (tīm'pān-īt'ik) **1.** Pert. to or characterized by tympanites. **2.** Tympanic (2).

tympanitis (tīm'pān-ī'tis) [Gr. *tympanon*, drum, + *itis*, inflammation] Otitis media.

tympano-, tympan-, myringo-, myring- [Gr. *tympanon*, drum] Combining forms meaning *tympanic membrane* or *eardrum*.

tympanocentesis (tīm'pā-nō-sēn-tē'sis) Drainage of fluid from the middle ear by using a small gauge needle to puncture the tympanic membrane. The fluid is cultured to determine the identity of any microbes that may be present.

tympano-eustachian (tīm'pā-nō-ū-stā'kē-än) Concerning the tympanic cavity and eustachian tube.

tympanography (tīm'pā-nōg'rā-fē) Radiographic examination of the eustachian tubes and middle ear after introduction of a contrast medium.

tympano-hyal (tīm'pā-nō-hī'āl) Concerning the tympanic cavity and hyoid arch.

tympanomalleal (tīm'pā-nō-māl'ē-āl) Concerning the tympanic membrane and malleus.

tympanomandibular (tīm'pā-nō-mān-dīb'ū-lār) Concerning the middle ear and mandible.

tympanomastoiditis (tīm'pān-ō-mās'toy-dī'tis) [ʹ + *mastos*, breast, + *eidōs*, form, shape, + *itis*, inflammation] Inflammation of the tympanum and mastoid cells.

tympanometry (tīm'pā-nōm'ē-trē) A procedure for objective evaluation of the mobility and patency of the eardrum and for detection of middle-ear disorders and patency of the eustachian tubes. SEE: *audiometry*.

tympanoplasty (tīm'pān-ō-plās'tē) [ʹ + *plassein*, to form] Any one of several surgical procedures designed either to cure a chronic inflammatory process in the middle ear or to restore function to the sound-transmitting mechanism of the middle ear. SEE: *Nursing Diagnoses Appendix*.

tympanosclerosis (tīm'pā-nō-sklē-rō'sis) Infiltration by hard fibrous tissue around the ossicles of the middle ear.

tympanosis (tīm'pā-nō'sis) [ʹ + *osis*, condition] Tympanites.

tympanostomy (tīm'pā-nōs'tō-mē) Myringotomy.

tympanostomy tube A tube placed through the tympanic membrane of the ear to allow ventilation of the middle ear as part of the treatment of otitis media with effusion. SYN: *grommet*. SEE: *otitis media with effusion*.

tympanotemporal (tīm'pā-nō-tēm'pō-rāl) Concerning the tympanic cavity and area of the temporal bone.

tympanotomy (tīm'pān-ōt'ō-mē) [ʹ + *tome*, incision] Incision of the tympanic membrane. SYN: *myringotomy*.

tympaneous (tīm'pān-ūs) [Gr. *tympanon*, a drum] Marked by abdominal distention with gas.

tympanium (tīm'pān-ūm) [L.; Gr. *tympanon*] The middle ear or tympanic cavity. SYN: *cautum tympani*; *eardrum*. SEE: *ear*, *middle*.

tympany (tīm'pā-nē) **1.** Abdominal distention with gas. **2.** Tympanic resonance on percussion. It is a clear hollow note like that of a drum. It indicates a pathological condition of the lung or of a cavity.

Tyndall effect [John Tyndall, Irish natural philosopher, 1820–1893] The scattering of light as it passes through a colloid filled with particles. It is seen, for example, in a slit lamp examination of an eye with an inflamed anterior chamber.

type (tīp) [Gr. *typos*, mark] The general character of a person, disease, or substance.

asthenic t. Having a thin, flat, long-chested body build with poor muscular development.

athletic t. Having broad shoulders, a deep chest, flat abdomen, thick neck, and powerful muscular development.

blood t. Blood group.

body t. Classification of the human body according to muscle and fat distribution. SEE: *ectomorph*; *endomorph*; *mesomorph*; *somatotype*.

phage t. Distinguishing subgroups of bacteria by the type of bacteriophage associated with that specific bacterium.

pyknic t. Having a rounded body, large chest, thick shoulders, broad head, thick neck, and usually short stature.

TYPHIM VI (tī'fīm) Typhoid VI polysaccharide vaccine.

typhlectasis (tif'lĕk'tā-sīs) [Gr. *typhlon*, cecum, + *ektasis*, dilatation] Cecal distention.

typhlectomy (tif'lĕk'tō-mē) [" + *ektome*, excision] Excision of the cecum. SYN: *cecectomy*.

typhlenteritis (tif'lĕn-tĕr-ī'tīs) [" + *enteron*, intestine, + *itis*, inflammation] Inflammation of the cecum. SYN: *typhlitis*.

typhlitis (tif-lī'tīs) [" + *itis*, inflammation] Inflammation of the cecum. It is often encountered during profound chemotherapy-induced neutropenia. SYN: *typhlenteritis*.

typhlocicliditis (tif'lō-dīk-lī-dī'tīs) [" + *diklis*, door, + *itis*, inflammation] Inflammation of the ileocecal valve.

typhloenteritis (tif'lō-ĕn-tĕr-ī'tīs) [" + *enteron*, intestine, + *itis*, inflammation] Cecitis.

typhlon (tif'lōn) [Gr.] Cecum.

typho- [Gr. *typhos*, fever] Combining form meaning *fever*, *typhoid*.

typhoid (tī'fōyd) [Gr. *typhos*, fever, + *eidōs*, form, shape] Resembling typhus.

typhoidal (tī-fōy'dāl) Resembling typhoid.

typhoid fever A severe infectious disease marked by fever and septicemia. The Centers for Disease Control and Prevention (CDC) report 400 cases per year in the U.S., mostly among travelers. An estimated 21 million cases of typhoid fever and 200,000 deaths occur worldwide, as it is endemic in areas where sanitation is poor. SYN: *enteric fever*. SEE: *vaccine*, *typhoid*.

SYMPTOMS: Gastrointestinal symptoms may develop within 1 hr of *Salmonella typhi* ingestion, but usually subside prior to the onset of the typhoid fever symptoms. The disease is marked initially by a gradually increasing fever up to 104°F (40°C), anorexia, malaise, myalgia, headache, and slow pulse for about 7 days, followed by remittent fever up to 104°F (40°C) that usually occurs in the evening, a flat, rose-colored, fleeting rash (primarily on the abdo-

men), chills and diaphoresis, increasing abdominal pain and distention, diarrhea or constipation, generalized lymphadenopathy, abdominal pain, anorexia, weakness, and exhaustion, cough and moist crackles, a tender abdomen with enlarged spleen, and delirium as the bacteria spread through the bloodstream. About 14 days after the infection begins, persistent fever and increased weakness and fatigue are present but usually subside by about 21 days into the illness, although relapses may occur. Internal bleeding usually develops as the result of gastrointestinal ulcers, abscesses, and intestinal perforation, and this may lead to hypovolemic shock. Damage to the liver and spleen is commonly seen. In approx. 10% of patients, typhoid fever is complicated by pneumonia, thrombophlebitis, osteomyelitis, septic arthritis, cerebral thrombosis, meningitis, myocarditis, or acute circulatory failure, which account for the majority of deaths.

ETIOLOGY: Typhoid fever is caused by *S. typhi*, gram-negative bacteria that enter the gastrointestinal (GI) tract, infect the biliary tract, invade the lymphoid tissues and walls of the ileum and colon seeding the intestinal tract with millions of bacilli, and then gain access to the bloodstream. The disease is most commonly transmitted via the fecal-oral route through water or food contaminated by human feces, but it can be spread also by vomitus and oral secretions during the acute stage. Unlike *S. enteritidis*, it lives only in humans. A small percentage of persons become carriers after recovering from infection.

DIFFERENTIAL DIAGNOSIS: Paratyphoid, pneumonia, dysentery, meningitis, smallpox, and appendicitis are among the differential diagnoses. Diagnostic points of value are the presence of rose spots, splenomegaly, leukopenia, the Widal serological test result, blood culture, and examination of feces for the presence of the causative organism. The best means of providing bacterial confirmation is through bone marrow culture. This method is successful even after patients have received antibiotics. SEE: *paratyphoid fever*.

TREATMENT: The disease is treated with ciprofloxacin or other antimicrobials based on organism sensitivity testing for 10 days. Dexamethasone is administered a few minutes before antibiotics are given in patients with shock or decreased levels of consciousness. Travelers should be aware that the most important safeguards are good food handling and water sanitation. The CDC recommends vaccination with typhoid vaccine, which is available in a live attenuated oral and parenteral form and intramuscular form for people

traveling to developing countries in Africa, Asia, the Indian subcontinent, Central and South America, and the Caribbean. The oral vaccine is taken in multiple doses, with adults and children over age 6 prescribed one capsule every other day for a total of four doses. Each dose should be taken 1 hr prior to a meal with cool water, and the capsules kept in the refrigerator. The one-dose parenteral vaccine may be used as an option for children aged 2 to 6 years, immunocompromised individuals, and people who might not adhere to the oral regimen. Vaccination protects only 50% to 80% of those vaccinated, so all travelers should protect themselves from enteric illness by following the adage, "boil it, cook it, peel it, or forget it." The vaccinations should be completed at least 1 week before the trip; boosters are required every 2 to 5 yrs, depending on the type of vaccine. The vaccinations should not be given to patients who are taking mefloquine for malaria prophylaxis. SEE: *Standard Precautions Appendix*.

PATIENT CARE: Contact precautions (handwashing, patient handwashing, glove and gown for disposal of feces or fecally contaminated objects) are followed until three consecutive stool cultures at 24-hr intervals are negative. Drugs are administered as prescribed, and the patient is observed for signs and symptoms of complications, such as bacteremia, intestinal bleeding, and bowel perforation. During the acute phase, the temperature is monitored, but antipyretics usually are not administered as these mask the fever and can result in hypothermia; tepid sponge baths are also provided to promote vasodilation without shivering. The incontinent patient is cleansed, and high fluid intake by mouth or IV is encouraged to maintain adequate hydration. Fluid and electrolyte balance is monitored. Adequate nutrition is maintained. Rest is encouraged and oral hygiene and skin care provided. Abscesses may need to be drained surgically. The caregiver explains the importance of follow-up care and examination to ensure that the patient is not a carrier.

If the patient's stool cultures are still positive at the time of discharge, he or she should be careful to use good hand hygiene, especially after defecating, and should avoid preparation of uncooked foods (e.g., salads) for family members. Individuals who retain positive cultures (asymptomatic carrier state) should not be employed as food handlers. All cases of typhoid fever should be reported to the state health department. While traveling in endemic areas, people should be careful to buy bottled water, or boil tap water for 5 min prior to

drinking, cooking, or brushing teeth with it; avoid ice in beverages and desserts, and treats containing ice; eat well-cooked foods that are still steaming hot; avoid raw food, including garden or fruit salads; peel all fresh fruits prior to eating them by first vigorously washing the hands, then washing the outside of the fruit, then peeling it; and avoid food sold by street vendors.

typholysin (tī-fōl'ī-sīn) [" + *lysis*, dissolution] A lysin destructive to typhoid bacilli.

typhomalarial (tī'fō-mā-lā'rē-āl) [" + *It. malaria*, bad air] Having symptoms of both typhoid and malarial fevers.

typhous (tī'fūs) [Gr. *typhos*, fever] Pert. to typhus fever.

typhus (tī'fūs) [Gr. *typhos*, fever] Any of several rickettsial infections transmitted to people by lice, fleas, or mites. The causative microbe invades the lining of blood vessels and smooth muscle cells, causing widespread vasculitis. The most common causes of typhus are *Rickettsia prowazekii*, *R. typhi*, and *Orientia tsutsugamushi*. *R. prowazekii* causes the epidemic typhus found in crowded conditions with poor sanitation, such as refugee camps. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: The disease may be mild, marked only by a flat rash that spreads out from the trunk and petechiae or by flulike symptoms. In more severe cases, patients have fever, skin necrosis, and gangrene on the tips of the fingers, toes, earlobes, and penis as a result of thrombus formation in blood vessels; focal inflammation and thrombosis in organs throughout the body, including the brain, produce organ-specific signs. Rickettsial infections are diagnosed by identifying the organism through immunofluorescent staining.

TREATMENT: Typhus is treated with doxycycline for 7 days. SEE: *Standard and Universal Precautions Appendix*.

COMPLICATIONS: Bronchopneumonia occurs more frequently than lobar pneumonia. Hypostatic congestion of the lungs, nephritis, and parotid abscess also may occur.

PROGNOSIS: The prognosis is variable. Mortality may be quite high in epidemic typhus and almost nonexistent in murine typhus. Broad-spectrum antibiotics are life-saving if given early enough.

endemic t. Murine t.

epidemic t. An infectious disease caused by *Rickettsia prowazekii* and transmitted by the human body louse (*Pediculus humanus corporis*).

flea-borne t. Murine t.

louse-borne t. *Rickettsia prowazekii*.

Mexican t. A louse-borne epidemic

typhus present in certain portions of Mexico.

mite-borne t. Scrub typhus.

murine t. A disease caused by *Rickettsia typhi* and occurring in nature as a mild infection of rats and transmitted from rat to rat by the rat-louse or flea. Humans may acquire it by being bitten by infected rat fleas or ingesting food contaminated by rat urine or flea feces. SYN: *endemic typhus*; *flea-borne typhus*.

recrudescence t. The recurrence of epidemic typhus after the initial attack.

typical (tīp'ī-kāl) [Gr. *typikos*, pert. to type] Having the characteristics of, pert. to, or conforming to a type, condition, or group.

typing (tīp'ing) Identification of type (e.g., of a specimen of genetic material through the detection of its specific nucleic acid sequences).

bacteriophage t. Determination of the subdivision of a bacterial species by a type-specific bacteriophage.

blood t. The method used to determine the antigens present on a person's blood cells.

tissue t. The determination of the human leukocyte antigens present on a cell or organ. Tissue typing is an essential element in matching proposed donors and recipients for organ transplantation. SEE: *transplantation*.

typo- Combining form meaning *type*.

typodont (tī'pō-dōnt) A replica of the natural dentition and alveolar mucosa used in training dental professionals.

typoscope (tī'pō-skōp) [Gr. *typos*, type, + *skopein*, to examine] A reading aid device for patients with amblyopia or cataract.

typus (tī'pūs) [L.] Type.

tyr tyrosine.

tyramine (tī'rā-mēn) An intermediate product in the conversion of tyrosine to epinephrine. Tyramine is found in most cheeses and in beer, broad bean pods, yeast, wine, and chicken liver.



When persons taking certain monoamine oxidase inhibitors eat these foods, they may experience severe hypertension, headache, palpitation, neck pain, and perhaps intracranial hemorrhage.

tyrannism (tīr'ān-izm) [Gr. *tyrannos*, tyrant, + *-ismos*, condition] Sadism.

tyrogenous (tī-rōj'ēn-ūs) [Gr. *tyros*, cheese, + *gennan*, to produce] Having origin in or produced by cheese.

Tyroglyphus (tī-rōg'li-fūs) [Gr. *tyros*, cheese, + *glyphein*, to carve] A genus

of sarcoptoid mites commonly known as cheese mites. They infest cheese and dried vegetable food products and occasionally infest humans, causing pruritus. This genus includes species that cause grocer's itch, vanillism, and copra itch.

tyroid (tī'royd) [ʹ + *eidōs*, form, shape] Caseous; cheesy.

tyromatosis (tī'rō-mā-tō'sīs) [ʹ + *oma*, tumor, + *osis*, condition] Caseation (1).

tyrosinase (tī-rō-sīn-ās) [Gr. *tyros*, cheese] An enzyme that acts on tyrosine to produce melanin. It is used as a tumor marker for malignant melanoma, since almost all melanomas express the enzyme.

tyrosine (tī'rō-sīn) ABBR: tyr. C₉H₁₁NO₃; an amino acid present in many proteins, esp. casein. It serves as a precursor of epinephrine, thyroxine, and melanin. Two vitamins (ascorbic acid and folic acid) are essential for its metabolism.

tyrosinemia (tī'rō-sī-nē'mē-ā) A disease of tyrosine metabolism caused by a deficiency of the enzyme tyrosine aminotransferase. In addition to an accumulation of tyrosine in the blood, mental retardation, keratitis, and dermatitis are present. Treatment consists of controlling phenylalanine and tyrosine intake.

tyrosinosis (tī'rō-sīn-ō'sīs) [ʹ + *osis*, condition] A condition resulting from faulty metabolism of tyrosine, whereby its oxidation products appear in the urine.

tyrosinuria (tī'rō-sīn-ū'rē-ā) [ʹ + *ouron*, urine] Tyrosine in the urine.

tyrosis (tī-rō'sīs) [ʹ + *osis*, condition] **1.** Curdling of milk. **2.** Vomiting of cheesy substance by infants. **3.** Caseation (1).

tyrosyluria (tī'rō-sīl-ū'rē-ā) Increased tyrosine-derived products in the urine.

tyvelose (tī'vél-ōs) A carbohydrate, 3-6-dideoxy-D-mannose, derived from certain strains of *Salmonella* and *Trichinella*.

Tzanck cell A degenerated cell from the keratin layer of the skin, disconnected from adjacent cells. It is seen in pemphigus.

Tzanck test (tsānk) [Arnault Tzanck, Russ. dermatologist in Paris, 1886–1954] The examination of cells scraped from the lower surface of a vesicle to determine the underlying disease (e.g., infection with a herpesvirus).

tzetze (sēt'sē) Tsetse fly.



U 1. *unit*. 2. Symbol for the element uranium.

²³⁵U Isotope of uranium with atomic weight 235.

U-100 *one hundred units of insulin per ml of solution*. A common concentration of commercially available insulins.

UAO *upper airway obstruction*.

ubiquinol (ū-bīk'wī-nōl) Coenzyme QH₂, the reduced form of ubiquinone.

ubiquinone (ū-bīk'wī-nōn) [*ubiquitous* + coenzyme *quinone*] Coenzyme Q, a lipid-soluble quinone present in virtually all cells. It collects reducing equivalents during intracellular respiration and is converted to its reduced form, ubiquinol, while involved in this process. This substance is widely used in Europe and Asia as a health food supplement for congestive heart failure and other disorders, although confirmation of its effectiveness is uncertain.

ubiquitin (ū-bīk'wī-tin) An intracellular protein that helps to destroy misfolded proteins. It is also important in promoting the functions of proteins that make up ribosomes.

UBT *urea breath test*.

UDP *uridine diphosphate*.

Uhthoff's sign (oot'hōfs) [Wilhelm Uhthoff, Ger. ophthalmologist, 1853–1927] The transient decrease in vision, double vision, or nystagmus when body temperature rises; seen in patients with multiple sclerosis.

ulcer (ūl'sēr) [L. *ulcus*, ulcer] A lesion of the skin or mucous membranes marked by inflammation, necrosis, and sloughing of damaged tissues. A wide variety of insults may produce ulcers, including trauma, caustic chemicals, intense heat or cold, arterial or venous stasis, cancers, drugs (e.g., nonsteroidal anti-inflammatory drugs), and infectious agents such as *Herpes simplex* or *Helicobacter pylori*.

amputating u. An ulcer that destroys tissue to the bone by encircling the part.

aphthous u. A lesion of the skin or mucous membranes (e.g., of the oral mucosa, conjunctiva, or genitalia). It is usually less than 0.5 cm in diameter. If it persists for longer than 2 weeks, it should be biopsied to rule out cancer. SYN: *aphthous stomatitis*; *canker sore*.

ETIOLOGY: Aphthous ulcers are found in stomatitis, Behçet's syndrome, Crohn's disease, acquired immunodeficiency syndrome (AIDS), and some cancers.

TREATMENT: For patients with oral ulcers, application of a topical anes-

thetic or a protective paste provides symptomatic relief and makes it possible to eat without pain.

chronic leg u. Any longstanding, slowly healing ulcer of a lower extremity, esp. one caused by occlusive disease of the arteries or veins or by varicose veins.

Curling's u. SEE: *Curling's ulcer*.

Cushing's u. SEE: under *Cushing, Harvey*.

denture u. An ulcer of the oral mucosa caused by irritation from wearing dentures.

PATIENT CARE: To prevent irritation and ulceration of the mucus membranes of the mouth, denture wearers should clean dentures daily and remove them while sleeping. Poorly fitting dentures should be reconstructed or padded by a dentist.

duodenal u. An open sore on the mucosa of the first portion of the duodenum, most often the result of infection with *Helicobacter pylori*. It is the most common form of peptic ulcer. SEE: *peptic ulcer*.

follicular u. A tiny ulcer originating in a lymph follicle and affecting a mucous membrane.

fungus u. 1. An ulcer in which the granulations protrude above the edges of the wound and bleed easily. 2. An ulcer caused by a fungus.

gastric u. An ulcer of the gastric mucosa.

ETIOLOGY: Common causes are nonsteroidal anti-inflammatory drugs, use of alcohol or tobacco, and infection with *Helicobacter pylori*. SEE: *peptic ulcer*.

Hunner's u. Interstitial cystitis.

indolent u. A nearly painless ulcer usually found on the leg, characterized by an indurated, elevated edge and a nongranulating base.

Meleney's u. SEE: under *Meleney*.

peptic u. SEE: *peptic ulcer*.

perforating u. An ulcer that erodes through an organ (e.g., the stomach or duodenum).

phagedenic u. Tropical ulcer.

pressure u. Pressure sore.

rodent u. A basal cell carcinoma that has caused extensive local invasion and tissue destruction, esp. on the face. The usual sites are the outer angle of the eye, near the side and on the tip of the nose, and at the hairline. SYN: *Jacob's ulcer*.

serpiginous u. A creeping ulcer that heals in one part and extends to another.

shield u. A corneal ulcer found in

some patients with vernal conjunctivitis. The ulcer is sometimes associated with corneal plaques that may permanently impair vision.

stercoral u. A rarely occurring ulcer of the colon caused by pressure from impacted feces. Perforation through the walls of the colon may cause peritonitis, sepsis, and, sometimes, death.

stress u. Multiple small, shallow ulcers that form in the mucosa of the stomach or, occasionally, in the duodenum, in response to extreme physiological stressors. Stress ulcers seen in patients with shock, extensive burns, or sepsis are called Curling's ulcers and may be caused by mucosal ischemia secondary to systemic vasoconstriction. Stress ulcers that occur in patients with increased intracranial pressure (Cushing's ulcers) may be caused by increased secretion of gastric acid due to vagus nerve stimulation. SEE: *peptic u.*

traumatic u. An ulcer due to injury of the oral mucosa. Its causes include biting, denture irritation, toothbrush injury, and sharp edges of teeth or restorations.

trophic u. An ulcer caused by the failure to supply nutrients to a part.

tropical u. 1. An indolent ulcer, usually of a lower extremity, that occurs in persons living in hot, humid areas. The cause may or may not be known; it may be caused by a combination of bacterial, environmental, and nutritional factors. SYN: *phagedenic ulcer.* 2. The tropical sore caused by leishmaniasis.

varicose u. An ulcer, esp. of the lower extremity, associated with varicose veins.

venereal u. An ulcer caused by a sexually transmitted disease (i.e., chancere or chancroid).

venous stasis u. A poorly, slowly healing ulcer, usually located on the lower extremity above the medial malleolus. Typically it is edematous, pigmented, and scarred. The skin is extremely fragile and easily injured. In the U.S. about 3.5% of people over 65 have venous stasis ulcers, women are three times more likely than men to be affected. SEE: *illus.*

PATIENT CARE: Assessment should include a detailed medical and surgical history and physical examination. When the lower extremities are examined, characteristic markers of venous ulceration include ankle flare (distension of small veins on the medial aspect of the foot due to chronic venous hypertension); dermatitis (chronic skin dryness with epithelial scaling); pigmentation changes on the skin surface, usually appearing as brown discolorations affecting the medial part of the leg, woody induration of the leg, and varicosities (dilated veins). The health care



VENOUS STASIS ULCER

On lateral malleolus

professional should examine the leg for lesions superior to the medial malleolus and should carefully measure wound size, shape and margins; drainage or exudates; surrounding skin; and pain or tenderness. The patient should be advised to elevate the legs 7 inches (18 cm) above the heart for 2 to 4 hours during the day and at night. Compression devices (e.g., graduated pressure stockings, Unna's boot) are used to help reduce edema, improve venous blood flow, and aid healing. Before applying any compression device or wrap, the health care professional should measure the patient's leg circumference at the wound and the wound size of the ulcer. The wound should be cleansed regularly, and aggressive debridement employed as needed. Wounds with light to moderate drainage benefit from a moisture-retentive dressing (e.g., hydrocolloid, transparent film, some foams), while wounds with moderate to heavy drainage do better with an absorbent dressing (e.g., foams, alginates, special absorptive dressings). Underlying problems (e.g., obesity, deep venous thrombosis, diabetes, cardiovascular disease) must be assessed and managed as part of the wound care protocol.

ulcera (ŭl'sēr-ă) Pl. of *ulcus*.

ulcerate (ŭl'sēr-ăt) [L. *ulcerare*, to form ulcers] To produce or become affected with an ulcer.

ulcerated (ŭl'sēr-ăt'ĕd) Of the nature of an ulcer or affected with one.

ulceration (ŭl'sēr-ăt'shŭn) A suppurative or non-healing lesion on a surface such as skin, cornea, or mucous membrane.

ulcerative (ŭl'sēr-ăt'ĭv) [L. *ulcerare*, to form ulcers] Pert. to or causing ulceration.

ulcerogangrenous (ŭl'sēr-ŏ-găng'grĕ-nŭs) Rel. to an ulcer that contains gangrenous tissue.

ulceromembranous (ŭl'sēr-ŏ-mĕm'brăn-ŭs) [+ *membrana*, membrane] Pert. to ulceration and formation of a fibrous pseudomembrane.

ulcerous (ül'sēr-üs) Pert. to or affected with an ulcer.

ulcus (ül'küš) *pl.* **ulcera** [L.] Ulcer.

ulegryia (ü'lē-jī'rē-ā) [Gr. *oule*, scar, + *gyros*, ring] A condition in which gyri of the cerebral cortex are abnormal due to scar tissue from injuries, usually occurring in early development.

ulerythema (ü-lēr-i-thē'mā) [" + *erythema*, redness] An erythematous disorder with atrophic scar formation.

u. ophryogenes Folliculitis of the eyebrows, characterized by loss of hair and scarring.

ulitis (ü-lī'tis) Gingivitis.

Ulmus fulva (ül'mūs fül'vū) [L., lit. "tawny elm"] The scientific name for slippery elm. Also known as *Ulmus rubra*.

ulna (ül'nā) [L., elbow] The larger bone of the forearm, between the wrist and the elbow, on the side opposite that of the thumb. It articulates with the head of the radius and humerus proximally, and with the radius and carpals distally.

ulnad (ül'nād) [" + *ad*, to] In the direction of the ulna.

ulnar (ül'nār) [L. *ulna*, elbow] Rel. to the ulna, or to the nerve or artery named from it.

ulnar drift A joint abnormality at the metacarpophalangeal joints, frequently seen in rheumatoid arthritis, resulting from chronic synovitis. In this condition, the long axis of the fingers deviates in an ulnar direction with respect to the metacarpals.

ulnaris (ül'nā'ris) **1.** Ulnar. **2.** Concerning the ulna.

ultimate (ül'tim-it) [L. *ultimus*, last] Final or last.

ul timobran chial body (ül'tī-mō-brāng'kē-äl) One of two embryonic pharyngeal pouches usually considered as rudimentary fifth pouches. They become separated from the pharynx and incorporated into the thyroid gland, where they give rise to parafollicular cells that secrete calcitonin, a hormone that lowers the blood calcium level.

ultra- [L.] Prefix meaning *beyond*, *excess*.
ultrabrachycephalic (ül'trā-brāk'ī-sē-fäl'ik) [L. *ultra*, beyond, + Gr. *brachys*, short, + *kephale*, head] Having a cephalic index of 90 or more.

ultracentrifugation (ül'trā-sēn-trif'ū-gā'shūn) Treatment or preparation of substances by use of the ultracentrifuge. *Analytical* ultracentrifugation is a means of determining molecular mass, structure, and size. *Preparative* ultracentrifugation is a means of purifying mixed solutions of proteins. It separates them based on their densities or their sedimentation coefficients.

ultracentrifuge (ül'trā-sēn'trī-fūj) [" + *centrum*, center, + *fugere*, to flee] A high-speed centrifuge capable of producing centrifugal forces more than

100,000 times gravity; it is used in the study of proteins, viruses, and other substances present in body fluids.

ultradian (ül'trā'dē-än) [" + *dies*, day] Concerning biological rhythms that occur less frequently than every 24 hr.

ultrafilter (ül'trā-fil'tēr) A filter by which colloidal particles may be separated from their dispersion medium or from crystalloids.

ultrafiltration (ül'trā-fil'trā'shūn) [" + *filtrum*, a filter] Filtration of a colloidal substance in which the dispersed particles, but not the liquid, are held back.

Ultram Tramadol.

ultramicroscopy (ül'trā-mī-krōš'kō-pē) The use of the ultramicroscope.

ultramicrotome (ül'trā-mī'krō-tōm) A microtome that makes extremely thin slices of tissue.

ultrarapid (ül'trā-rā'pid) [L. *ultra*-, beyond, + *rapidus*, seizing, rapid] Exceptionally fast; said of, e.g., centrifuges, some chemical reactions, and some forms of tissue fixation or freezing.

ultrasonic (ül'trā-sōn'ik) [" + *sonus*, sound] Pert. to sounds of frequencies above approx. 20,000 cycles/sec, which are inaudible to the human ear. SEE: *supersonic*; *ultrasonography*; *ultrasound*.

ultrasonic cleaning The use of ultrasonic energy to sterilize objects, including medical and surgical instruments.

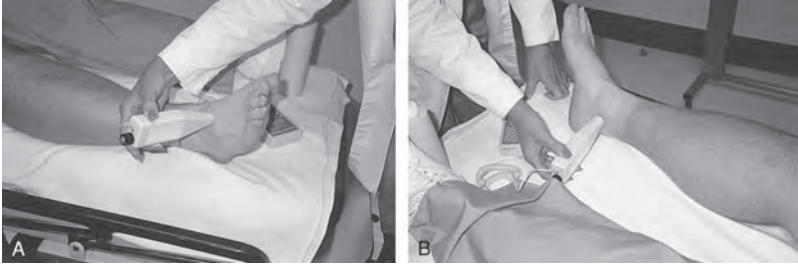
ultrasonic dissector (ül'trā-sōn'ik dis-ēk'tēr) Harmonic scalpel.

ultrasonics (ül'trā-sōn'iks) The division of acoustics that studies inaudible sounds, i.e., those with frequencies greater than 20,000 cycles/sec (20,000 Hz or 20 kHz). Biological effects may result, depending on the intensity of the beams. Heating effects are produced by beams of low intensity, paralytic effects by those of moderate intensity, and lethal effects by those of high intensity. The lethal action of ultrasonics is primarily the result, either directly or indirectly, of cavitation of tissues. Ultrasonics is used clinically for therapeutic and diagnostic purposes; diagnostic ultrasound uses transducers that emit in the range from 2-15 MHz. In dentistry, instruments producing 29 kHz are used in periodontal surgery, curettage, and root planing. SEE: *ultrasound*.

ultrasonogram (ül'trā-sōn'ō-grām) The image produced by use of ultrasonography.

ultrasonography (ül'trā-sōn'ōg'rā-fē) The use of ultrasound to produce an image or photograph of an organ or tissue. Ultrasonic echoes are recorded as they return from reflecting or refracting tissues of different densities.

arterial duplex u. A diagnostic procedure that helps to identify areas within arteries where blood flow is blocked or reduced. SEE: *LEAS*.



DOPPLER ULTRASONOGRAPHY

Doppler probe used on (A) dorsal pedis and (B) posterior tibial arteries

Doppler u. The shift in frequency produced when an ultrasound wave is echoed from something in motion. The use of the Doppler effect permits measuring the velocity of that which is being studied (e.g., blood flow in a vessel). **SEE: illus.**

gray-scale u. Use of a television scan technique to process the strength of ultrasound echoes with the strongest being registered as white and the weakest as different shades of gray.

pelvic u. Transvaginal ultrasonography.

transvaginal u. Ultrasonographic visualization of the uterus, fallopian tubes, endometrium, and, in pregnant patients, the fetus. The test may be used to diagnose ectopic pregnancy, determine multiple pregnancies, identify ovarian cysts and pelvic cancers, and visualize tubo-ovarian abscesses. To obtain the needed images, the transducer (ultrasound probe) can be placed either on the abdominal wall or within the vagina. **SYN: pelvic ultrasonography.**

ultrasound (ŭl'tră-sound") Inaudible sound in the frequency range of approx. 20,000 to 10 billion (10^9) cycles/sec. Ultrasound has different velocities that differ in density and elasticity from one kind of tissue to the next. This property permits the use of ultrasound in outlining the shape of various tissues and organs in the body. In obstetrics, for example, identifying the size and position of the fetus, placenta, and umbilical cord enables estimation of gestational age, detects some fetal anomalies and fetal death, and facilitates other diagnostic procedures, such as amniocentesis. In physical therapy, the thermal effects of ultrasound are used to treat musculoskeletal injuries by warming tissue, increasing tissue extensibility, and improving local blood flow. Ultrasound is used to facilitate movement of certain medications (e.g., pain relievers) into tissue (phonophoresis). Ultrasound is also used with electric current for muscular stimulation. The diagnostic and therapeutic uses of ultrasound re-

quire special equipment. **SEE: illus phonophoresis; sonographer; ultrasonography.**

A-mode u. A form of diagnostic ultrasonography in which imaging data are represented as echo amplitudes (on the y-axis) and time (on the x-axis), similar to the way electromagnetic waves are represented on an oscilloscope. **SYN: A-mode.**

B-mode u. Brightness mode display: in ultrasonography, the use of dots of differing intensities to represent echoes received from tissues that more strongly or weakly reflect sound waves. **SYN: B-mode (brightness mode) display.**

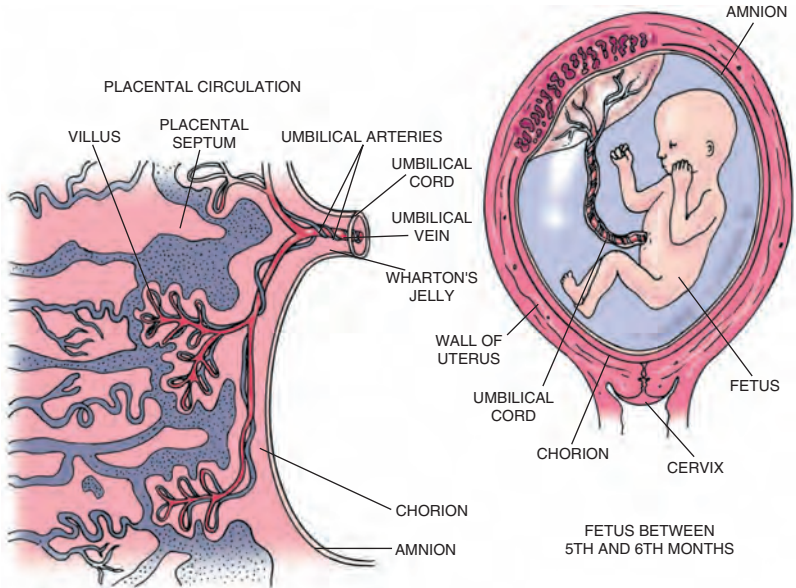
continuous wave Doppler u. Doppler ultrasonography that uses spectral Doppler in a constant series of echoes both originating and being received by the same transducer. It is used to study obstruction to blood flow through vessels.

duplex Doppler u. Doppler ultrasonography that uses a transducer with two functions: pulsed-wave Doppler and B-mode imaging.

endobronchial u. ABBR: EBUS. The use of ultrasonic transducers carried within a bronchoscope to evaluate tissues in or adjacent to the trachea and bronchi. EBUS can be used to identify solid masses to be biopsied. It helps distinguish solid masses, which may be malignant, from blood vessels such as



FETAL ULTRASOUND IMAGE



UMBILICAL CORD

the aorta or pulmonary arteries, which should not be penetrated with a biopsy needle.

endovaginal u. Pelvic ultrasound.

intravascular u. In ultrasonography, a technique for imaging intimal tissue proliferation and blood vessel blockages.

keepsake fetal u. SEE: *keepsake fetal ultrasound*.

M-mode u. Motion mode display: an ultrasonic display mode in which the motion of structures is seen on the vertical axis of the display, used, e.g., to show the movement of the heart's valves and walls during diastole and systole. SYN: *time-motion mode ultrasound*.

pelvic u. Examination of the pelvis with an ultrasonic transducer placed inside the vagina. It is used in assessment of diseases or conditions affecting the cervix, uterus, fallopian tubes, or ovaries. SYN: *endovaginal ultrasound*.

pulsed-wave Doppler u. SEE: *transducer, pulse-echo*.

quantitative u. ABBR: QUS. Measurement of the density of a body tissue (e.g., bone) by determining how rapidly sound travels through the tissue and how different sonic wavelengths are absorbed. QUS is used to diagnose osteopenia and osteoporosis.

real-time u. A sonographic procedure that provides rapid, multiple images of an anatomical structure in the form of motion.

time-motion mode u. M-mode ultrasound.

ultrastructure (ül'trä-strük'chür) The

fine structure of tissues. It is visible only by use of electron microscopy.

ultra-trace elements Any of those elements for which laboratory animals seem to have tiny dietary requirements, typically less than 1 µg/g. Elements in this category include arsenic, boron, bromine, cadmium, chromium, fluorine, lead, lithium, molybdenum, nickel, selenium, silicon, tin, and vanadium.

ultraviolet (ül'trä-ví'ō-lét) [u + *viola*, violet] Beyond the visible spectrum at its violet end, said of rays between the violet rays and x-rays. SEE: *infrared ray*.

ultraviolet therapy Treatment with ultraviolet radiation. SEE: *heliotherapy*; *phototherapy*.

ululation (ül'ü-lä'shün) [L. *ululare*, to howl] Howling; wailing.

umani (oo-män'ē) The sense of taste triggered by glutamates, such as monosodium glutamate (MSG). It has been proposed as a fifth taste sensation, in addition to the traditionally recognized tastes (bitter, salty, sour, sweet).

umbilical (üm-bil'ī-käl) [L. *umbilicus*, navel] Pert. to the umbilicus.

umbilical cord The attachment connecting the fetus with the placenta. It contains two arteries and one vein surrounded by a gelatinous substance, Wharton's jelly. The umbilical arteries carry blood from the fetus to the placenta, where nutrients are obtained and carbon dioxide and oxygen are exchanged; this oxygenated blood returns to the fetus through the umbilical vein. SEE: *illus*.

The umbilical cord is surgically severed after the birth of the child. To give the infant a better blood supply, the cord should not be cut or tied until the umbilical vessels have ceased pulsating. However, in preterm infants, the cord should be clamped and cut before pulsation ceases to avoid maternal-newborn transfusion and reduce the risk of hypovolemia, polycythemia, and hyperbilirubinemia.

The stump of the severed cord atrophies and leaves a depression on the abdomen of the child, called a navel or umbilicus.

umbilical cord blood SEE: under *cord blood*.

umbilical cord matrix Wharton's jelly.

umbilical souffle A hissing sound said to arise from the umbilical cord.

umbilical vesicle SEE: under *vesicle*.

umbilicate (üm-bil'î-kât) [L. *umbilicatus*, dimpled] Dimpled, pitted, or shaped like a navel. Said of the appearance of certain rashes, such as molluscum contagiosum. **umbilicated**, *adj.*

umbilication (üm-bil'î-kâ'shün) [L. *umbilicatus*, dimpled] **1.** A depression resembling a navel. **2.** Formation at the apex of a pustule or vesicle of a pit or depression.

umbilicus (üm-bil'î-kūs, -bil'î-kūs) *pl. umbilici* [L., a pit] A depressed point in the middle of the abdomen; the scar that marks the former attachment of the umbilical cord to the fetus.

umbo (üm'bō) [L., boss of a shield] The projecting center of a round surface.

u. of tympanic membrane The central depressed portion of the concavity on the lateral surface of the tympanic membrane. It marks the point where the malleus is attached to the inner surface.

umbra (üm'brä) [L., shade, shadow] The edge of the radiographic image proper.

umbrella filter SEE: under *filter*.

UMP *uridine monophosphate*.

un- [AS.] Prefix meaning *back, reversal, annulment, not*.

unbiased (ün-bi'ist) **1.** Neutral; impartial; uninfluenced. **2.** Scientifically randomized.

unbundling Separately billing for laboratory tests or procedures that are normally linked in order to extract more money from a payer (such as Medicare). This practice is illegal in the U.S.

uncal (üng'käl) Concerning the uncus of the brain.

uncal herniation Transtentorial herniation.

Uncaria tomentosa (ün-kä'rë-ä tō-mën-tō'sä) A medicinal plant, known popularly as cat's claw or *uña de gato*. Its extracts include alkaloids that are used as an anti-inflammatory for arthritis and also have effects on thinking, concentra-

tion, and sedation. It has also been promoted as a treatment for AIDS, without scientific validation.

unciform, unciforme (ün'si-shə) [L. *uncus*, hook, + *forma*, shape] Uncinate.

uncinariasis (ün'sin-ä-rî'ä-sis) The condition of being infested with hookworms (i.e., worms of the genus *Uncinaria*).

uncinate (ün'sin-ät) [L. *uncinatus*, hooked] Hook-shaped; hooked. SYN: *unciform*.

uncinate bundle of Russell [James S. Risien Russell, Brit. physician, 1863–1939] Fibers that arise in the fastigial superior cerebellar peduncle and pass inferiorly to the vestibular nuclei and reticular formation by which impulses are carried to muscles, esp. those of the neck and body.

uncinate seizure A seizure marked by olfactory and gustatory hallucinations, usually disagreeable; a sense of unreality; and sometimes convulsions and temporary loss of senses of taste and smell. This is associated with lesions of the uncinate gyrus of the temporal lobe of the brain.

uncipressure (ün'si-prësh'ür) [L. *uncus*, hook, + *pressura*, pressure] Pressure applied with the use of a blunt hook to arrest bleeding.

uncoating (ün-köt'ing) The release of viral nucleic acids from the capsid that covers them. Uncoating of viruses can be complete or incomplete and can occur before a virus enters the cell or after it penetrates a cell membrane.

uncombable hair syndrome A rare disorder, typically identified in childhood, in which hair grows in unruly bundles, sometimes called a "spun glass arrangement." The hair is dry, shiny, or blond, and easily broken. Cross-sectioning often reveals a triangular or grooved shaft. The condition is often associated with other birth defects. SYN: *spun glass hair syndrome*. SEE: *pili trianguli et canaliculi*.

uncomplemented (ün-köm'plë-mënt'éd) Not joined or associated with complement and thus inactive.

unconcern Profound uninterest or nonchalance out of proportion to societal norms. It is a characteristic of some brain diseases, including certain forms of brain injury, dementias, intoxications, and strokes.

unconscious (ün-kön'shüs) [AS. *un*, not, + L. *conscius*, aware] **1.** Lacking in awareness of the environment; insensible. SEE: *unconsciousness*. **2.** In Freudian psychiatry, that part of the mind that consists of unrecognized feelings and drives.

unconsciousness (ün-kön'shüs-nës) [AS. *un*, not, + L. *conscius*, aware] The state of being partly or completely unaware of external stimuli. Unconsciousness occurs normally in sleep, and

pathologically, in such conditions as syncope (fainting), shock, unperfused cardiac dysrhythmias, and intoxications. SEE: *coma*; *Glasgow Coma Scale*; *Nursing Diagnoses Appendix*.

uncontrolled area For radiation protection purposes, an area occupied by the general public.

unco-ossified (ün'kō-ōs'ī-fid) Not ossified into one bone.

unction (ünk'shūn) [L. *unctio*, ointment]
1. The application of an ointment.
2. Ointment.

uncus (ün'küś) [L. *uncus*, hook] Any structure that is hook-shaped.

undecylenic acid (ün'dē'si-lēn'ik) An antifungal drug used topically to treat tinea pedis.

underachiever A person whose achievements are less than what is predicted to be possible, based on his or her aptitudes, intelligence, and socioeconomic status.

underactive Functioning at less than full efficiency or productivity; said, for example, of glands such as the thyroid or the adrenals.

underage drinking The consumption of alcohol under a legally specified age, usually before one's 21st birthday.

underbite (ün'dēr-bit') A condition in which the lower incisors pass in front of the upper incisors when the mouth is closed.

undercorrection (ün'dēr-kō-rēk'shūn) In refractive eye surgeries such as LASIK, too small a change in shape of the cornea that results in inadequate focusing of light rays (failure of light to fall onto the retina).

undercut (ün'dēr-küt) A condition of having overhanging tissue as could be the case in preparing a dental cavity for restoration. Undercutting helps to keep the filling material in place.

undernutrition (ün'dēr-nū-trīsh'ün) [AS. *under*, beneath, + LL. *nutritio*, nourish] Inadequate nutrition from any cause.

SYMPTOMS: This condition is marked by loss of body weight that begins with loss of glycogen, loss of body fat, and then proceeds to loss of protein. Vitamin, mineral, and micronutrient deficiencies are also usually present. SEE: *malnutrition*.

The term *undernutrition* is also used to indicate reduced caloric consumption while maintaining adequate intake of all micronutrients.

undertoe (ün'dēr-tō) [ʹ + *ta*, toe] The displacement of the great toe underneath the others.

underweight (ün'dēr-wāt') Body weight for height that is 15% to 20% below healthy weight; a body mass index below 19. By this standard, which is the one promoted both by the World Health Organization and the National Heart,

Lung, and Blood Institute, a person who stands 5'7" tall is underweight if he or she weighs less than 120 lb.

In children, underweight can be defined as having a weight-for-height that is less than the 5th percentile for one's age.

undifferentiated connective tissue disease ABBR: UCTD. A connective tissue disease that does not fully meet the criteria for any of the well-defined rheumatological conditions such as rheumatoid arthritis, Sjögren's syndrome, or systemic lupus erythematosus. Signs and symptoms of connective tissue disease must be present for several years. These may include polyarticular arthritis, Raynaud's phenomenon, pleuritis, or pericarditis, among others. The patient with UCTD will also have a positive antinuclear antibody test as well as other autoantibodies. Diagnostic difficulties in UCTD may be found in people who have evidence of mixed connective tissue disease or overlap syndrome.

undifferentiation (ün-dif'er-ēn-shē-ā'shūn) [AS. *un*, not, + L. *differens*, bearing apart] An alteration in cell character to a more embryonic type or toward a malignant state. SYN: *anaplasia*.

undulant (ün'dū-lānt) [L. *undulatio*, wavy] Rising and falling like waves, or moving like them.

undulant fever (ün'dū-lānt) Brucellosis.

undulate (ün'dū-lāt) [L. *undulatio*, wavy] Wavy; having a wavy border with shallow sinuses, said of bacterial colonies.

undulation (ün-dū-lā'shūn) A continuous wavelike motion or pulsation.

ung [L.] *unguentum*, ointment.

ungu-, unguo- Combining forms meaning *nail*.

ungual (üng'gwāl) [L. *unguis*, nail] Pert. to or resembling the nails.

ungual tuberosity The spatula-shaped extremity of the terminal phalanx that supports the nails of fingers and toes.

unguent, unguentum (üng'gwēnt) [L. *unguentum*, ointment] Ointment.

unguis (üng'gwīs) *pl. unguis* [L., nail]

1. A fingernail or toenail. SYN: *onyx*.

2. The lacrimal bone. 3. A white prominence on the floor of the posterior horn of the lateral ventricle. SYN: *hippocampus minor*.

u. incarnatus An ingrowing nail, esp. a toenail.

uni- Combining form meaning *one*. SEE: *mono-*.

uniarticular (ū'nē-ār-tīk'ū-lār) [L. *unus*, one, + *artculus*, joint] Pert. to a single joint.

uniaxial (ū'nē-āk'sē-āl) [ʹ + *axis*, axis] Having a single axis.

unicameral (ū'nī-kām'er-āl) [ʹ + *camera*, vault] Having a single cavity.

unicellular (ū'nī-sĕl'ū-lār) [l' + *cellula*, a little box] Having only one cell.

unicorn, unicornous (ū'nī-korn, ū-nī-kor'nūs) [l' + *cornu*, horn] Having a single cornu or horn. Women with a unicornous uterus are at higher risk for repeated pregnancy loss.

unicuspid (ū'nī-kūs'pīd) Having a single cusp.

uniform Having the identical shape or form of other objects of the same class.

unigerminal (ū'nī-jĕr'mī-nāl) Concerning a single ovum or germ.

uniglandular (ū'nī-glān'dū-lār) Concerning or having one gland.

unigravida (ū'nī-grāv'ī-dā) [l' + *gravida*, pregnant] A woman who is pregnant for the first time. SEE: *primigravida*.

unilaminar (ū'nī-lām'ī-nār) Having a single layer.

unilateral (ū'nī-lāt'ĕr-āl) [l' + *latus*, side] Affecting or occurring on only one side. SEE: *contralateral*; *homolateral*; *ipsilateral*.

unilateral neglect Impairment in sensory and motor response, mental representation, and spatial attention of the body and the corresponding environment characterized by inattention to one side and overattention to the opposite side. Left side neglect is more severe and persistent than right side neglect. SEE: *Nursing Diagnoses Appendix*.

unilobar (ū'nī-lō'bār) Having a single lobe.

unilocular (ū'nī-lōk'ū-lār) [l' + *loculus*, a small space] Having only one cavity.

uninuclear (ū'nī-nū'klĕ-ār) [l' + *nucleus*, a kernel] Having only one nucleus.

uninucleated (ū'nī-nū'klĕ-āt'ĕd) Having a single nucleus.

unioocular (ū'nĕ-ōk'ū-lār) [l' + *oculus*, eye] Pert. to or having only one eye.

union (ūn'yūn) [L. *unio*] **1.** The act of joining two or more things into one part, or the state of being so united. **2.** Growing together of severed or broken parts, as of bones or the edges of a wound. SEE: *healing*.

secondary u. **1.** A healing by second intention with adhesion of granulating surfaces. SEE: *healing*. **2.** Operative correction of nonunion of a fracture.

vicious u. The union of the ends of a broken bone formed in such a way as to cause deformity.

unioval (ū'nĕ-ō'vāl) [L. *unus*, one, + *ovum*, egg] Developed from one ovum, as identical twins.

uniovular (ū'nĕ-ōv'ū-lār) [l' + *ovum*, egg] Monozygotic, as in the case of twins that develop from a single ovum.

unipara (ū-nīp'ā-rā) [l' + *parere*, to bring forth, to bear] A woman who has had one pregnancy of more than 20 weeks' duration or has produced a fetus

weighing at least 500 g, regardless of the fetus's viability. SEE: *primipara*.

uniparous (ū-nīp'ā-rūs) [l' + *parere*, to bring forth, to bear] **1.** Giving birth to one offspring at a time. **2.** Having produced one child weighing at least 500 g or having a pregnancy lasting 20 weeks, regardless of the fetus's viability.

unipolar (ū'nī-pō'lār) [l' + *polus*, pole] **1.** Having or pert. to one pole. **2.** Having a single process, as a unipolar neuron.

unipotent, unipotential (ū-nīp'ō-tĕnt, ū'nī-pō-tĕn'shāl) In cell biology, committed to a single, differentiated structure and a single mode of functioning.

Unique Physician Identification Number ABBR: UPIN. A six-digit code, consisting of numbers and letters, assigned in the U.S. to all health care providers who take care of Medicare patients. It allows the Centers for Medicare and Medicaid Services to collect information about a provider's billing practices and to assess his or her utilization of medical services.

uniseptate (ū'nĕ-sĕp'tāt) Having only one septum.

unisex (ū'nī-sĕks") **1.** Lack of gender distinction by external appearance, esp. with respect to hairstyle or clothing. **2.** Suitable for use by either sex.

unit (ū'nīt) [L. *unus*, one] ABBR: u; U. **1.** One of anything. **2.** A determined amount adopted as a standard of measurement. Particular units are listed under the first word. SEE: e.g., *British thermal unit*; *dental unit*; *SI units*.

unitary (ū'nī-tĕr-ĕ) Rel. to a single unit.

unit of capacity The capacity of a condenser that gives a difference of potential of 1 volt when charged with 1 coulomb. SYN: *curie*; *farad*.

United Network for Organ Sharing ABBR: UNOS. An organization established in 1984 to facilitate donation of organs for possible transplantation. Website: www.unos.org. SEE: *organ donation*.

United States Adopted Names ABBR: USAN. Dictionary of nonproprietary names, brand names, code designations, and Chemical Abstracts Service registry numbers for drugs published by the U.S. Pharmacopeial Convention, Inc. The purpose is to have nonproprietary names assigned to new drugs in accordance with established principles. SEE: *USAN and the USP Dictionary of Drug Names*.

United States Pharmacopeia A pharmacopeia issued every 5 years, but with periodic supplements, prepared under the supervision of a national committee of pharmacists, pharmacologists, physicians, chemists, biologists, and other scientific and allied personnel. The U.S. Pharmacopeia was adopted as standard in 1906. Beginning with the U.S. Pharmacopeia XIX, 1975, the National For-

mulary has been included in that publication.

United States Public Health Service
 ABBR: USPHS. An agency of the U.S. Department of Health and Human Services (HHS). Its function is to assess health care needs and promote national and international health. Included in the organization are the Centers for Disease Control and Prevention (CDC); Food and Drug Administration (FDA); Alcohol, Drug Abuse and Mental Health Administration; Agency for Toxic Substances and Disease Registry; and various USPHS regional offices.

univalence (ū'nī-vā'lēns) The condition of having only one valence.

univalent (ū'nī-vā'lēnt, ū-nīv'ā-lēnt) [*un-* + *valens*, to be powerful] Possessing the power of combining or replacing one atom of hydrogen. SYN: *monovalent*.

universal (ū'nī-vēr'sāl) [L. *universalis*, combined into one whole] General or applicable or common to all situations or conditions.

universal cuff A device fitted around the palm of the hand to permit attachment of self-care tools when normal grasp is absent. SYN: *palmar cuff*.

universal design The design of places and objects to enable access and use by all persons, to the greatest extent possible, without adaptation or modification.

Universal Nonverbal Intelligence Test
 ABBR: UNIT. A psychometric test designed to assess IQ without testing a subject's understanding of language.

universal precautions Guidelines designed to protect workers with occupational exposure to bloodborne pathogens (such as HIV and hepatitis B virus). These "universal blood and body fluid precautions" (e.g., gloves, masks, and gowns), originally recommended by the Centers for Disease Control and Prevention in 1985, were mandated by the OSHA Bloodborne Pathogens Standard in 1991 for workers in all U.S. health care settings. SEE: *Standard and Universal Precautions Appendix*.

universal recipient A person belonging to blood type AB, Rh positive, whose serum will not agglutinate the cells of the other ABO blood types. The recipient's blood must be tested by cross-matching before transfusion to exclude minor antigenic mismatches.

unknowns (ū'nōnz') In hypnotherapy those feelings, ideas, or images that are unfamiliar to a person and therefore potentially frightening, hazardous, or uncomfortable.

unlicensed assistive personnel (pēr-sŏn-nēl') ABBR: UAP. Unlicensed health care personnel who work under the direction of a registered nurse. In addition to delivering direct patient care, they

may take blood samples, provide respiratory treatments, or keep track of medical records. Some UAPs are multiskilled. Each state regulates UAP practice independently.

unlocking Mobilizing or freeing, e.g., a joint and its associated muscles.

Unna's paste (oo'nāz) [Paul G. Unna, Ger. dermatologist, 1850–1929] A mixture of 15% zinc oxide in a glycoelatin base.

Unna's (paste) boot A bootlike dressing of the lower extremity made of layers of gauze and Unna's paste. It is used in treating chronic ulcers of the leg. SEE: *illus.*



UNNA'S BOOT

Boot uncovered on right leg; covered with cohesive bandage on left leg

unorthodox 1. Unconventional. Not in conformity with generally accepted standards of care. 2. Bizarre. Unscientific. Irrational.

UNOS *United Network for Organ Sharing*.

unsaturated (ūn-săt'ū-rāt'ēd) [AS. *un-*, not, + L. *saturare*, to fill] 1. Capable of dissolving or absorbing to a greater degree. 2. Not combined to the greatest possible extent.

unsaturated compound An organic compound having double or triple bonds between the carbon atoms.

unsealed source radiation Radioactive nuclides that are given to patients orally, or by intravenous injection, e.g., iodine-131, given as a treatment for thyroid gland ablation.

unsex (ūn-sĕks') [*un-* + L. *sexus*, sex] 1. To castrate; to spay or excise the ovaries or testes. 2. To deprive of sexual character.

unstriated (ūn-strī'āt-ēd) [*un-* + *striatus*, striped] Unstriped, as smooth muscle fibers.

up and go test A timed test of lower-extremity mobility. It measures the time required to rise from a chair, walk 10 ft, turn, and return to the sitting position. Performance on this test is affected by

abnormal gaits that increase the risk of falling.

upcode (ŭp'kōd") To assign a higher billing code to a patient visit than is justified by common practice or law.

upjo (ŭp'jō") A commonly used acronym for *ureteropelvic junction obstruction*. The ureteropelvic junction is the last segment of the ureter, through which urine normally passes into the bladder. It is a common location for kidney stones to lodge and obstruct the flow of urine when they pass from the renal pelvis down the ureter.

upper airway obstruction ABBR: UAO. Any potentially life-threatening abnormality in which the flow of air into and out of the lungs is partially or completely blocked by such conditions as laryngeal swelling, foreign bodies, or angioedema. SEE: *cardiopulmonary resuscitation; tracheostomy*.

upper airway resistance syndrome ABBR: UARS. A type of sleep-disordered breathing, caused by increased airflow obstruction, in which a person awakens multiple times and then suffers daytime drowsiness or fatigue.

upper GI *upper gastrointestinal*.

upper motor neuron lesion Neurological damage to the corticospinal or pyramidal tract in the brain or spinal cord. This lesion results in hemiplegia, paraplegia, or quadriplegia, depending on its location and extent. Clinical signs include loss of voluntary movement, spasticity, sensory loss, and pathological reflexes.

upper respiratory infection ABBR: URI. An imprecise term for any infection involving the nasal passages, pharynx, and bronchi. The cause is usually bacterial or viral, and, occasionally, fungal.

upregulate (ŭp-rĕg'yū-lăt) **1.** To increase the responsiveness of a cell or organ to a stimulus. **2.** To increase the number of receptors on a cell membrane.

upsiloid (ŭp'sī-loyd) [Gr. *upsilon*, letter U, + *eidos*, form, shape] Shaped like the letter U or V.

upstream (ŭp'strĕm") In descriptions of genetic material, codons or base pairs that are on the 5' side of a specific gene.

uptake (ŭp'tāk) The absorption of nutrients, chemicals (including radioactive materials), and medicines by tissues or by an entire organism.

urachal (ŭ'ră-kăl) [Gr. *ourachos*, fetal urinary canal] Rel. to the urachus.

uracil (ŭ'ră-sil) C₄H₄N₂O₂; a pyrimidine base found in RNA (not DNA) which, if paired, pairs with adenine.

uranium (ŭ-ră'nĕ-ŭm) [LL., planet Uranus] SYMB: U. A radioactive element, the parent of radium and other radioelements; atomic weight, 238.029; atomic number, 92. Uranium ore contains the isotopes ²³⁸U, ²³⁵U, and ²³⁴U.

depleted u. The metal remaining af-

ter the most active radioisotope (²³⁵U) has been extracted from uranium. A heavy metal, depleted uranium is used in munitions, e.g., in armor-piercing weapons. Its radioactivity is about 40% that of natural uranium.

It is estimated that, worldwide, more than 1 million tons of depleted uranium are stored. About 95% of the depleted uranium produced until now is stored as uranium hexafluoride, (D)UF₆. The long-term storage of (D)UF₆ presents environmental, health, and safety risks because of its chemical instability. When UF₆ is exposed to moist air, it reacts with the water in the air to produce UO₂F₂ (uranyl fluoride) and HF (hydrogen fluoride), which are both highly soluble and toxic. SEE: *enriched u.*

enriched u. Uranium with a higher concentration of the radioisotope ²³⁵U than is found in natural uranium ore. The isotope ²³⁵U is used to manufacture nuclear fuel rods (for electrical power generation) and nuclear weapons. SEE: *depleted u.*

uranoplegia (ŭ'ră-nō-plĕ'jĕ-ă) [r + *plege*, stroke] Paralysis of muscles of the soft palate.

uranous A common oxidation state of uranium (U⁺⁴ or U (IV)) with a quadruple positive charge.

uranyl (ŭ'ră-nil) The bivalent uranium radical UO²⁺. It forms salts with many acids. An example is uranyl nitrate, UO₂(NO₃)₂.

urase (ŭ'rās) Urease.

urate (ŭ'răt) [Gr. *ouron*, urine] The combination of uric acid with a base; a salt of uric acid.

urban legend (ŭr'bĭn) [L. *urbanus*] Myth (2). Urban legends about health care are widely disseminated by patients and practitioners. One favorite is the internet prank that states that dihydrogen monoxide is a deadly toxin widely consumed by human beings. Its chemical formula is H₂O.

Most urban legends are not humorous or malicious pranks but are based on misunderstandings or unrecognized errors in reasoning, e.g., the common but false belief that emergency rooms are busiest during certain phases of the moon.

urceiform (ŭr-sĕ'ī-form) [L. *urceus*, pitcher, + *forma*, shape] Pitcher-shaped.

urea (ŭ-rĕ'ă) [Gr. *ouron*, urine] The diamide of carbonic acid, a crystalline solid having the formula CH₄N₂O; found in blood, lymph, and urine.

It is formed in the liver from ammonia derived from the deamination of amino acids.

Urea is the chief nitrogenous constituent of urine and, along with carbon dioxide, the final product of protein metabolism in the body. In normal

conditions, urea represents 80% to 90% of the total urinary nitrogen. It is odorless and colorless, appears as white prismatic crystals, and forms salts with acids. The amount of urea excreted varies directly with the amount of protein in the diet. Its excretion is increased in fever, diabetes, or increased activity of the adrenal gland, and decreased in kidney failure.

urea balance test A test of kidney function performed by measuring intake and output of urea.

urea cycle The complex cyclic chemical reactions in some (ureotelic) animals, including humans, that produce urea from the metabolism of nitrogen-containing foods. This cycle provides a method of excreting the nitrogen produced by the metabolism of amino acids as urea. The cycle was first described by Sir Hans Krebs [1900–1981].

u.c. disorder ABBR: UCD. One of six inherited disorders in which an enzyme in the urea cycle is missing or non-functional, resulting in the accumulation of excess ammonia in the bloodstream. Lethargy, failure to thrive, nausea and vomiting, encephalopathy, and coma are common symptoms, esp. in the newborn period.

urea frost White flaky deposits of urea seen on the skin in patients with advanced uremia.

ureagenetic (ū-rē"ā-jēn-ēt'ik) [" + *genesis*, generation, birth] Pert. to or producing urea.

ureametry (ū-rē-ām'ēt-rē) Determination of the amount of urea in urine.

urea nitrogen The nitrogen of urea (as distinguished from nitrogen in blood proteins).

Ureaplasma urealyticum (ū-rē"ā-plās'mā) A mycoplasma that is usually sexually transmitted. It may cause inflammation of the reproductive or urinary tracts in males and females. It has been implicated in a wide variety of infections in babies with low birth weight.

urea-reduction ratio The relative decrease (or clearance) of blood urea nitrogen during hemodialysis. The ratio is a measure of the adequacy of renal replacement. The failure to achieve an adequate ratio leads to increased morbidity and mortality among renal failure patients.

urease (ū-rē-ās) [Gr. *ouron*, urine] 1. An enzyme that accelerates the hydrolysis of urea into carbon dioxide and ammonia. It is used in determining the amount of urea in blood or in urine. 2. An enzyme used by certain microorganisms to facilitate their existence in otherwise inhospitable body locations.

urelcosis (ū-rēl-kō'sis) [" + *helkosis*, ulceration] Ulceration of the urinary tract.

uremigenic (ū-rē'mī-jēn'ik) [Gr. *ouron*,

urine, + *haima*, blood, + *gennan*, to produce] Caused by or producing uremia.

ureogenesis (ūr"ē-ō-jēn'ē-sis) [" + *genesis*, generation, birth] Formation of urea.

ureotelic (ū"rē-ō-tēl'ik) [*urea* + Gr. *telikos*, belonging to the completion] Concerning animals that excrete amino nitrogen in the form of urea. Included in this group are mammals. SEE: *urea cycle*; *uricotelic*.

uresis (ū-rē'sis) [Gr. *ouresis*] Urination.

ureter (ū-rē-ter, ū-rē'tēr) [Gr. *oureter*] The tube that carries urine from the kidney to the bladder. It originates in the pelvis of the kidney and terminates in the posterior base of the bladder. Each kidney has one ureter measuring from 28 to 34 cm long, the right being slightly shorter than the left. The diameter varies from 1 mm to 1 cm. The wall consists of three layers: the mucosal, muscular, and fibrous layers. SEE: *kidney*; *urethra*.

ureteralgia (ū-rē-tēr-āl'jē-ā) [" + *algos*, pain] Pain in the ureter.

ureterectasis (ū-rē"tēr-ēk'tā-sis) [" + *ektasis*, dilatation] Dilatation of the ureter.

ureterectomy (ū-rē"tēr-ēk'tō-mē) [" + *ektome*, excision] Excision of a ureter.

ureteritis (ū-rē"tēr-ī'tis) [" + *itis*, inflammation] Inflammation of the ureters.

uretero- Combining form indicating *ureter*.

ureterocele (ū-rē"tēr-ō-sēl) [" + *kele*, tumor, swelling] Cystlike dilatation of the ureter near its opening into the bladder; usually a result of congenital stenosis of the ureteral orifice.

ureteroclectomy (ū-rē"tēr-ō-sē-lēk'tō-mē) [" + " + *ektome*, excision] Surgical removal of a ureterocele.

ureterocolostomy (ū-rē"tēr-ō-kō-lōs'tō-mē) [" + *kolon*, colon, + *stoma*, mouth] The implantation of the ureter into the colon.

ureterocystoscope (ū-rē"tēr-ō-sis'tō-skōp) [" + *kystis*, bladder, + *skopein*, to examine] A cystoscope combined with a ureteral catheter. SYN: *cystourethroscopy*.

ureteroenterostomy (ū-rē"tēr-ō-ēn-tēr-ōs'tō-mē) [" + *enteron*, intestine, + *stoma*, mouth] Formation of a passage between a ureter and the intestine.

ureterography (ū-rē"tēr-ōg'rā-fē) [" + *graphein*, to write] Radiography of the ureter after injection of a radiopaque substance into it.

ureteroheminephrectomy (ū-rē"tēr-ō-hēm"ī-nē-frēk'tō-mē) [" + *hemi*-, half, + *nephros*, kidney, + *ektome*, excision] In cases of reduplication of the upper urinary tract on one side, surgical removal of the reduplicated portion.

ureterohydronephrosis (ū-rē"tēr-ō-

hī'drō-nē-frō'sis) [" + *hydor*, water, + *nephros*, kidney, + *osis*, condition] Dilatation of the ureter and the pelvis of the kidney resulting from a mechanical or inflammatory obstruction in the urinary tract.

ureteroileostomy (ū-rē'tēr-ō-īl'ē-ōs'tō-mē) [" + *ileum*, ileum, + *stoma*, mouth] Surgical anastomosis of a ureter to an isolated segment of the ileum. The ileum is connected to an abdominal stoma so that urine leaves the body via that opening.

ureterolith (ū-rē'tēr-ō-līth) [" + *lithos*, stone] A stone or calculus in the ureter.

ureterolithiasis (ū-rē'tēr-ō-līth-ī'ās-īs) [" + " + *iasis*, condition] Development of a stone in the ureter.

ureterolithotomy (ū-rē'tēr-ō-līth-ōt'ō-mē) [" + " + *tome*, incision] Surgical incision for removal of a stone from the ureter.

ureterolysis (ū-rē'tēr-ōl'ī-sīs) [" + *lysis*, dissolution] **1.** Rupture of a ureter. **2.** Paralysis of the ureter. **3.** The process of loosening adhesions around the ureter.

ureteroneocystostomy (ū-rē'tēr-ō-nē'ō-sīs-tōs'tō-mē) [" + *neos*, new, + *kystis*, bladder, + *stoma*, mouth] Surgical formation of a new passage between a ureter and the bladder.

ureteroneopyelostomy (ū-rē'tēr-ō-nē'ō-pī-ē-lōs'tō-mē) [" + " + *pyelos*, pelvis, + *stoma*, mouth] Excision of a portion of the ureter with attachment of the severed end of the lower portion to a new opening in the renal pelvis. SYN: *ureteropyelostomy*.

ureteronephrectomy (ū-rē'tēr-ō-nēf-rēk'tō-mē) [" + *nephros*, kidney, + *ektome*, excision] Removal of a kidney and its ureter.

ureteropelvioplasty (ū-rē'tēr-ō-pēl'vē-ō-plās'tē) [Gr. *oureter*, ureter, + L. *pelvis*, basin, + Gr. *plassein*, to mold] Plastic surgery of the junction of the ureter and the pelvis of the kidney.

ureteroplasty (ū-rē'tēr-ō-plās'tē) [" + *plassein*, to form] Plastic surgery of the ureter.

ureteroproctostomy (ū-rē'tēr-ō-prōk-tōs'tō-mē) [" + *proktos*, anus, + *stoma*, mouth] The formation of a passage from the ureter to the lower rectum.

ureteropyelitis (ū-rē'tēr-ō-pī-ēl'ītīs) [" + *pyelos*, pelvis, + *itis*, inflammation] Inflammation of the pelvis of the kidney and a ureter.

ureteropyelonephritis (ū-rē'tēr-ō-pī'ēl-ō-nēf-rī'tīs) [" + " + *nephros*, kidney, + *itis*, inflammation] Inflammation of the renal pelvis and the ureter.

ureteropyeloplasty (ū-rē'tēr-ō-pī-ēl-ō-plās'tē) [" + " + *plassein*, to mold] Plastic surgery of the ureter and renal pelvis.

ureteropyelostomy (ū-rē'tēr-ō-pī'ē-lōs'tō-mē) [" + " + *stoma*, mouth] Ureteroneopyelostomy.

ureteropyosis (ū-rē'tēr-ō-pī-ō'sīs) [" + *pyon*, pus, + *osis*, condition] Suppurative inflammation within a ureter.

ureterorrhagia (ū-rē'tēr-ō-rā'jē-ā) [" + *rhegnynai*, to burst forth] Hemorrhage from the ureter.

ureterorrhaphy (ū-rē'tēr-ō-rā'fē) [" + *rhaphe*, seam, ridge] Suture of the ureter (e.g., when repairing a fistula).

ureteroscope (ū-rē'tēr-ō-skōp') A rigid or flexible endoscope used to examine and treat diseases of the urinary bladder or ureters. Ureteroscopes are inserted into the urethra and advanced upward toward the kidneys. They can be used to biopsy suspicious lesions or remove urinary stones lodged in the ureters.

ureter sigmoidostomy (ū-rē'tēr-ō-sīg-moyd-ōs'tō-mē) [" + *sigma*, letter S, + *eidos*, shape, + *stoma*, mouth] Surgical implantation of the ureter into the sigmoid colon.

ureterostoma (ū-rē'tēr-ōs'tō-mā) [Gr. *oureter*, ureter, + *stoma*, mouth] The orifice through which the ureter enters the urinary bladder.

ureterostomy (ū-rē'tēr-ōs'tō-mē) [" + *stoma*, mouth] The formation of a permanent fistula for drainage of a ureter.

cutaneous u. Surgical implantation of the ureter into the skin. This allows urine to drain via the ureter to the outside of the body by going through the stoma.

ureterotomy (ū-rē'tēr-ōt'ō-mē) [" + *tome*, incision] Incision or surgery of the ureter.

ureterotrigonenterostomy (ū-rē'tēr-ō-trī-gō'nō-ēn'tēr-ōs'tō-mē) [" + *trigolon*, three-sided figure, + *enteron*, intestine, + *stoma*, mouth] Surgical removal of the trigone of the bladder with one or both of the ureteral openings and implantation of it into the intestine.

ureteroureterostomy (ū-rē'tēr-ō-ū-rē'tēr-ōs'tō-mē) [" + " + *stoma*, mouth] **1.** The formation of a connection from one ureter to the other. **2.** The re-establishment of a passage between the ends of a divided ureter.

ureterouterine (ū-rē'tēr-ō-ū'tēr-īn) [" + L. *uterus*, womb] Concerning the ureter and uterus or a fistula between them.

ureterovaginal (ū-rē'tēr-ō-vāj'ī-nāl) [" + L. *vagina*, sheath] Relating to a ureter and the vagina, denoting a fistula connecting them.

ureterovesical (ū-rē'tēr-ō-vēs'ī-kl) Relating to the entry point of the ureter into the urinary bladder. Kidney stones frequently lodge at this location.

ureterovesicostomy (ū-rē'tēr-ō-vēs'ī-kōs'tō-mē) [" + " + Gr. *stoma*,

mouth] Reimplantation of a ureter into the bladder.

urethra (ū-rē'thrā) [Gr. *ourethra*] The tube for the discharge of urine extending from the bladder to the outside. In females, its orifice lies in the vestibule between the vagina and clitoris; in males, the urethra passes through the prostate gland and the penis, opening at the tip of the glans penis. In males, it serves as the passage for semen as well as urine. Its lining, the mucosa, is thrown into folds and contains the openings of the urethral glands. Surrounding the mucosa is a lamina propria containing many elastic fibers and blood vessels, outside of which is an indefinite muscular layer. SEE: *penis*.

urethral (ū-rē'thrāl) [Gr. *ourethra*, *urethra*] Relating to the urethra.

urethralgia (ū-rē'thrāl'jē-ā) [" + *algos*, pain] Pain in the urethra.

urethratresia (ū-rē'thrā-trē'zē-ā) [" + *a-*, not, + *tresis*, a perforation] Occlusion or imperforation of the urethra.

urethrectomy (ū-rē'thrēk'tō-mē) [" + *ektome*, excision] Surgical excision of the urethra or part of it.

urethrisms, urethrisms (ū-rē'thrīzm, ū'rē'thrīz'mūs) [" + *-ismos*, condition] Irritability or spasm of the urethra.

urethritis (ū'rē'thrītīs) [" + *itis*, inflammation] Inflammation of the urethra.

anterior u. Inflammation of that portion of the urethra anterior to the anterior layer of the triangular ligament.

gonococcal u. Urethritis caused by *Neisseria gonorrhoeae*.

nongonococcal u. ABBR: NGU. Urethral inflammation caused by organisms other than *Neisseria gonorrhoeae*. NGU is the most common sexually transmitted disease in men. It accounts for 4 to 6 million physician visits annually. The symptoms usually include painful urination and a urethral discharge. The two organisms most frequently associated with NGU are *Chlamydia trachomatis* and *Ureaplasma urealyticum*. Other causes include herpes simplex virus, *Trichomonas vaginalis*, *Haemophilus influenzae*, *Gardnerella vaginalis*, and *Clostridium difficile*.

TREATMENT: NGU due to *C. trachomatis* or *U. urealyticum* is treated with doxycycline or azithromycin. Appropriate antibiotics are used for other causative organisms.

nonspecific u. ABBR: NSU. Nongonococcal u.

posterior u. Inflammation of membranous and prostatic portions of the urethra.

specific u. Urethritis due to a specific organism, usually gonococcus.

urethro- [Gr. *ourethra*] Combining form meaning *urethra*.

urethrolubular (ū-rē'thrō-būl'bār) Concerning the urethra and the bulbar penis.

urethrocele (ū-rē'thrō-sēl) [" + *kele*, tumor, swelling] 1. Pouchlike protrusion of the urethral wall in the female. 2. Thickening of connective tissue around the urethra in the female.

urethrocystitis (ū-rē'thrō-sīs-tītīs) [" + *kystis*, bladder, + *itis*, inflammation] Inflammation of the urethra and bladder.

urethrocystopexy (ū-rē'thrō-sīs'tō-pēk'sē) [" + *kystis*, bladder, + *pexis*, fixation] Plastic surgery of the urethral-bladder junction to relieve urinary stress incontinence.

urethrograph (ū-rē'thrō-grāf) A device for recording the caliber of the urethra.

urethrography (ū-rē'thrōg'rā-fē) [" + *graphein*, to write] Radiography of the urethra after it has been filled with contrast medium.

voiding u. Radiographic examination of the urethra during urination after the introduction of a contrast medium.

urethrometer (ū-rē'thrōm'ēt-ēr) [Gr. *ourethra*, *urethra*, + *metron*, measure] An instrument for measuring the diameter of the urethra or the lumen of a stricture.

urethropehile (ū-rē'thrō-pē'nīl) [" + L. *penis*, penis] Relating to the urethra and penis.

urethroperineal (ū-rē'thrō-pēr-ī-nē'āl) [" + *perinaion*, perineum] Rel. to the urethra and perineum.

urethroperineoscrotal (ū-rē'thrō-pēr-ī-nē'ō-skrō'tāl) [" + " + L. *scrotum*, a bag] Relating to the urethra, perineum, and scrotum.

urethropexy (ū-rē'thrō-pēks-ē) [" + Gr. *pexis*, fixation] Surgical fixation of the urethra.

urethropraxis (ū-rē'thrō-frāks'īs) [" + *phrassein*, to obstruct] Urethral obstruction.

urethroplasty (ū-rē'thrō-plās'tē) [" + *plassein*, to mold] Reparative surgery of the urethra.

urethroprostatic (ū-rē'thrō-prōs-tāt'īk) Concerning the urethra and prostate.

urethrorectal (ū-rē'thrō-rēk'tāl) [Gr. *ourethra*, *urethra*, + L. *rectus*, straight] Rel. to the urethra and rectum.

urethrorrhagia (ū-rē'thror-ā'jē-ā) [" + *rhegnynai*, to burst forth] Hemorrhage from the urethra.

urethrorrhaphy (ū-rē'thror-āf-ē) [" + *rhaphe*, seam, ridge] Suture of the urethra or of a urethral fistula.

urethrorrhea (ū-rē'thror-ē'ā) [" + *rhoia*, flow] An abnormal discharge from the urethra.

urethroscopy (ū-rē'thrōs'kō-pē) An ex-

amination of the mucous membrane of the urethra with a urethroscope.

urethrospasm (ū-rē'thrō-spāzm) [" + *spasmos*, a convulsion] Spasmodic stricture of the urethra.

urethrostenosis (ū-rē'thrō-stēn-ō'sīs) [" + *stenosis*, act of narrowing] Stricture of the urethra.

urethrostomy (ū-rē-thrōs'tō-mē) [" + *stoma*, mouth] The formation of a permanent fistula opening into the urethra by perineal section and fixation of the membranous urethra in the perineum.

urethrotome (ū-rē'thrō-tōm) [" + *tome*, incision] An instrument for incision of a urethral stricture.

urethrotomy (ū-rē-thrōt'ō-mē) Incision of a urethral stricture.

urethrotigonitis (ū-rē'thrō-trī'gō-nī'tīs) [" + *trigonon*, three-sided figure, + *itis*, inflammation] Inflammation of the urethra and the trigone of the bladder.

urge **1.** A strong desire; a force or a motive that impels action. **2.** The need to urinate or defecate.

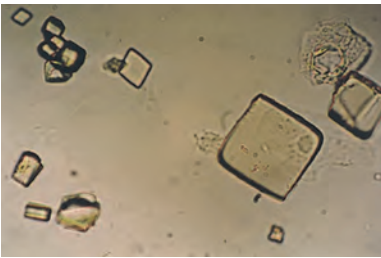
urgency A sudden, almost uncontrollable need to urinate.

Urginea (ūr-jīn'ē-ŭ) [NL] Squill.

URI *upper respiratory infection*.

uric (ū'rīk) [Gr. *ourikos*, urine] Of or pert. to urine.

uric acid A crystalline acid, $C_5H_4N_4O_3$, occurring as an end product of purine metabolism. It is formed from purine bases derived from nucleic acids (DNA and RNA). It is a common constituent of urinary stones and gouty tophi. **SEE: illus.**



URIC ACID CRYSTALS (×400)

OUTPUT: The uric acid output should be between 0.8 and 1 g/day if the patient is on an ordinary diet. Uric acid must be excreted because it cannot be metabolized.

Increased elimination is observed after ingestion of proteins and nitrogenous foods, after exercise, after administration of cytotoxic agents, and in gout and leukemia. Decreased elimination is observed in kidney failure, lead poisoning, and in people who eat a protein-free diet.

endogenous u.a. Uric acid derived from purines undergoing metabolism from the nucleic acid of body tissues.

exogenous u.a. Uric acid derived

from purines from food made up of free purines and nucleic acids. **SEE: urate; uraturia.**

uricacidemia (ū'rīk-ās-īd-ē'mē-ā) [Gr. *ourikos*, urine, + *L. acidus*, sour, + Gr. *haima*, blood] Hyperuricemia.

uricaciduria (ū'rīk-ās-īd-ū'rē-ā) [" + " + Gr. *ouron*, urine] Excessive uric acid in the urine.

uricase (ū'rī-kāz) [" + *-ase*, enzyme] An enzyme present in the liver and kidneys of most mammals, but not humans. This enzyme is capable of oxidizing uric acid into allantoin and carbon dioxide.

uricosuria (ū'rī-kō-sū'rē-ā) [" + *ouron*, urine] The excessive excretion of uric acid in the urine.

uricosuric (ū'rī-kō-sū'rīk) Potentiating the excretion of uric acid in the urine.

uricosuric agent A drug (such as probenecid or sulfipyrazone) that increases the urinary excretion of uric acid by blocking renal tubular absorption, thereby reducing the concentration of uric acid in the blood. It is used to treat gout.

PATIENT CARE: Probenecid and sulfipyrazones are used to treat gout. Side effects of both include headache, gastrointestinal upset, epigastric pain, kidney stone formation, and peptic ulceration. These drugs should be avoided by patients with diminished renal function. Any uricosuric agent should be taken with milk, food, or antacids to reduce gastric distress. Patients should drink large volumes of water. Sodium bicarbonate (or potassium citrate) is prescribed simultaneously with these agents to alkalinize urine and keep uric acid crystals in solution.

uricotelic (ū'rī-kō-tēl'īk) [" + *telikos*, belonging to the completion] Concerning animals that excrete amino nitrogen in the form of uric acid. Included in this group are birds and reptiles. **SEE: urea cycle; ureotelic.**

uridine (ūr'ī-dīn) A nucleoside that is one of the four main riboside components of ribonucleic acid. It consists of uracil and D-ribose.

u. diphosphate A uridine-containing nucleotide important in certain metabolic reactions, in which it transports sugars such as glucose and galactose.

uridrosis (ū-rī-drō'sīs) [" + *hidrosis*, a sweating] The presence of urea in the sweat. Evaporation may show white scales, the crystals of urea.

urin- **SEE: urino-**

urinal (ū'rīn-āl) [*L. urina*, urine] **1.** A container into which one urinates. **2.** A toilet or bathroom fixture for receiving urine and flushing it away.

condom u. Condom catheter.

urinalysis (ū'rī-nāl'ī-sīs) [" + Gr. *ana*, apart, + *lysis*, a loosening] Analysis of the urine. **SEE: urine.**

COLLECTION OF URINE: For a routine urinalysis, a voided specimen of urine in a clean container is usually sufficient. For culture, either a clean-catch or a catheterized specimen is required. For a clean-catch specimen, the individual cleanses the perineum or glans penis with soap and water or an antiseptic solution such as benzalkonium chloride before voiding. A midstream specimen of urine is then collected in a sterilized container. A catheterized specimen is obtained by passing a catheter into the bladder, using sterile technique. SEE: *suprapubic catheter*.

NOTE: A urine specimen may be obtained to test for excretion of drugs of abuse. In such cases, care must be taken to ensure that appropriate consent is obtained, that the specimen was produced by the individual, and that there was no opportunity for the specimen to be diluted.

urinary (ū'ri-nār'ē) [L. *urina*, urine] Pert. to, secreting, or containing urine.

urinary bladder SEE: under *bladder*.

urinary calculus A stone formed in the urinary tract, but usually found in the renal pelvis and/or kidney calyces. These vary in composition but may contain urates, calcium, oxalate, calcium carbonate, phosphates, and cystine. SEE: *calculus, renal; lithotripter*.

SYMPTOMS: Predisposing factors include dehydration, infection, obstruction, and metabolic factors. In the U.S., urinary stones develop in 2% to 10% of people, more often in southeastern states than in other parts of the country. Males have a 3 times higher rate than females, especially between ages 30 and 40. Struvite calculi, which account for about 15% of all stones, are found primarily in females, usually related to urinary tract infections. Pain related to obstruction is the primary symptom. Classic renal colic travels from the costovertebral angle to the suprapubic region and external genitalia. Its intensity fluctuates, but is excruciating at its peak. Nausea and vomiting usually accompany the most severe pain. Diagnosis is based on the clinical picture plus CT scan or MRI, excretory urography, KUB X-rays, and stone analysis.

PATIENT CARE: The patient is encouraged to verbalize anxieties and concerns regarding severe pain. Pain relief measures are instituted as prescribed; they include analgesics, antispasmodics, and warm, moist heat. All urine is strained for stones, and any calculus is sent for laboratory analysis. Vigorous hydration with oral or intravenous fluids assist in passage of small stones (90% are smaller than 5 mm in diameter). If a lithotripter is to be used to shatter the calculus for removal by suction or natural passage, the duration of the procedure and follow-up care are ex-

plained. Procedures for surgical removal depend on the location of the calculus, and include cystoscopy with ureteral manipulation, or a flank or lower abdominal laparoscopic or open approach. All diagnostic studies are explained and the patient is encouraged to verbalize fears and concerns. Urine is observed for hematuria, and specimens are tested for specific gravity and pH. Vital signs are monitored; if temperature is elevated, antipyretic measures are instituted as ordered, and antibiotics specific to cultured organisms are prescribed. Fluids are forced (PO/IV) to enhance dilution of urine, and intake and output are monitored. Fruit juices, specifically cranberry juice or cranberry tablets, help to acidify urine. The health care professional stays alert for complications such as infection, stasis, and retention. A catheter is inserted as ordered. Dietary management is based on the composition of the stone. If phosphate stones are present, patients should increase their intake of acid-ash foods such as cereals, eggs, meat, and cranberry and grape juices. Persons prone to uric acid stones should consume an alkaline-ash diet of green vegetables and fruits and avoid foods high in purine. To minimize urinary tract infections, esp. for female patients, the patient is taught proper perineal hygiene, and the need for increased fluid intake is emphasized.

Postsurgery, the patient usually has an indwelling catheter or a nephrostomy tube in place. Bloody drainage is expected, and this tube should never be irrigated without a specific physician order. If the kidney was removed, the patient should be reassured that the body can adapt well to one kidney. Pulmonary hygiene using an spirometer is stressed in the presence of flank or abdominal incisions. Dressings are assessed for drainage, and changed per protocol, and signs of hemorrhage or infection reported promptly.

urinary director appliance A hand-held, hollow, plastic device that fits over the vulva, enabling a woman to urinate while standing. The device collects urine and allows it to be directed away from the user through an outlet spout. Intended use is for women who are active outdoors and need to urinate without partially disrobing. Medically, the appliance has been found to be useful in patients who have had a radical vulvectomy.

Other devices for use by women in collecting urine are available. Some of these have the capacity to contain the specimen for disposal rather than merely redirecting the flow.

urinary diversion The surgical redirection of urine flow. SEE: *Nursing Diagnoses Appendix*.

urinary elimination, impaired Dysfunction in urine elimination. SEE: *Nursing Diagnoses Appendix*.

urinary elimination, readiness for enhanced A pattern of urinary functions that is sufficient for meeting eliminatory needs and can be strengthened. SEE: *Nursing Diagnoses Appendix*.

urinary incontinence Loss of control over urination. SEE: *incontinence; incontinence, stress urinary*.

u.i., functional Inability of usually continent person to reach toilet in time to avoid unintentional loss of urine. SEE: *Nursing Diagnoses Appendix*. SEE: *under incontinence*.

u.i., overflow Involuntary loss of urine associated with overdistention of the bladder. SEE: *Nursing Diagnoses Appendix*. SEE: *incontinence, overflow*.

u.i., reflex Involuntary loss of urine at somewhat predictable intervals when a specific bladder volume is reached. SEE: *Nursing Diagnoses Appendix*.

u.i., risk for urge At risk for an involuntary loss of urine associated with a sudden, strong sensation or urinary urgency. SEE: *Nursing Diagnoses Appendix*.

u.i., stress Sudden leakage of urine with activities that increase intra-abdominal pressure. SEE: *Nursing Diagnoses Appendix*.

u.i., total Continuous and unpredictable loss of urine. SEE: *Nursing Diagnoses Appendix*.

u.i., urge Involuntary passage of urine occurring soon after a strong sense of urgency to void. SEE: *Nursing Diagnoses Appendix*.

urinary retention The state in which the individual experiences incomplete emptying of the bladder. High urethral pressure inhibits voiding until increased abdominal pressure causes urine to be involuntarily lost, or high urethral pressure inhibits complete emptying of the bladder.

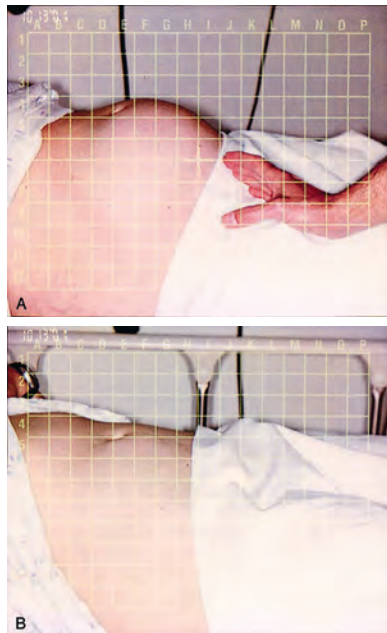
PATIENT CARE: Ultrasound can be used to measure residual urine after voiding (i.e., to determine postvoid residual urinary retention). Other uses of bladder ultrasound include: identifying an obstruction in an indwelling catheter (indicated by a significant urine volume when the bladder should be almost empty), or the presence of bladder distension and the need for urinary catheterization.

Health care professionals should use standard precautions when a bladder scanner is employed. The procedure, which is painless, should be explained to the patient and appropriate privacy (screening and draping) provided. The probe (also known as the “transducer”) should then be cleansed with a disinfectant. The health care provider then gently palpates the patient’s pubic symphy-

sis and places ultrasound gel or a bladder scan gel pad midline on the patient’s abdomen about 1 to 1½ in (2.5 to 4 cm) above it. The probe is then placed on the gel with its directional icon toward the patient’s head and aimed toward the bladder. Pointing the probe slightly downward toward the coccyx provides an accurate view of the bladder for most patients. The scan button should then be pressed and released. The orientation of the probe is readjusted until the bladder image is centered. The volume of urine in the bladder is calculated by software, and the measurement is displayed. A volume greater than 200 ml is abnormal. The gel should be wiped from the patient’s skin or the gel pad discarded, and the patient made comfortable.

The health care provider should document any patient concerns that led to the scanning, the urine volume indicated, the patient’s response to the scan, any follow-up treatment, and whether the patient’s primary health care provider was contacted. SEE: *illus., Nursing Diagnoses Appendix*.

urinary system The organ system that includes the kidneys, ureters, bladder, and urethra. The kidneys form urine from blood plasma by filtration, reab-



URINARY RETENTION

(A) Massive distention of the bladder by two liters of urine. (B) After catheterization of the bladder.

sorption, and secretion. The formation of urine includes the excretion of waste products, but the kidneys also regulate the water and mineral content and the acid-base balance of the blood and all other body fluids. The other organs of the system are concerned with the elimination of urine after it has been formed.

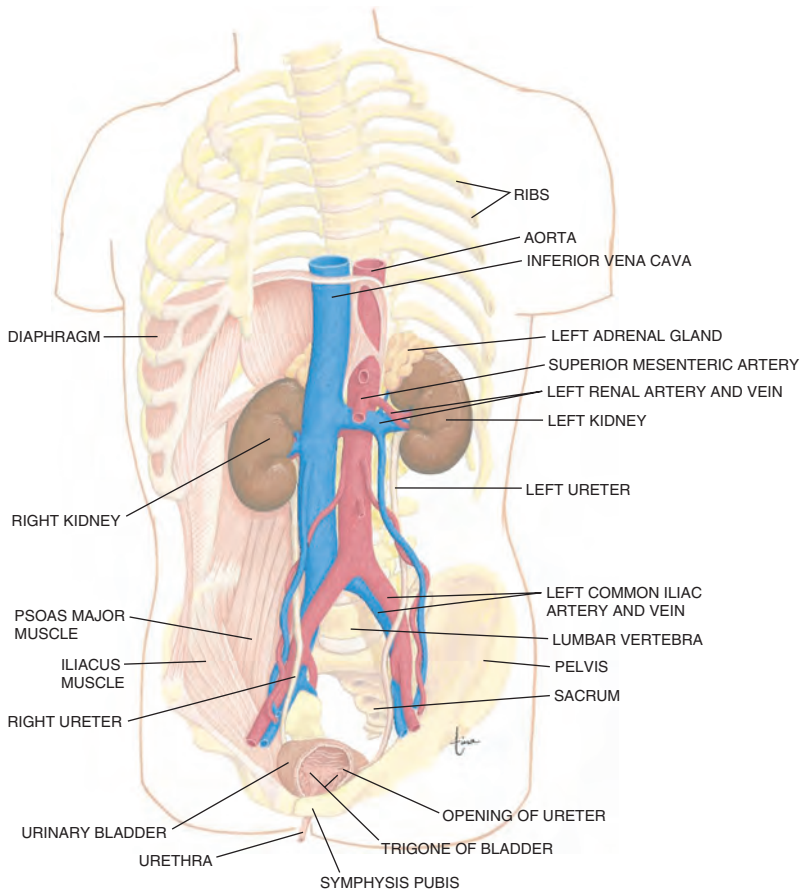
SEE: *illus.*

urinary tract infection ABBR: UTI. Infection of the kidneys, ureters, or bladder by microorganisms that either ascend from the urethra (95% of cases) or that spread to the kidney from the bloodstream (5%). About 7 million American patients visit health care providers each year because of UTIs. These infections commonly occur in otherwise healthy women, men with prostatic hypertrophy or bladder outlet obstruction, children with congenital anatomical abnormalities of the urinary tract, and patients with urinary stasis related to incomplete bladder emptying, neurogenic

bladder or indwelling bladder catheters. SEE: *clean-catch method; cystitis; pyelonephritis; urethritis.*

ETIOLOGY: *Escherichia coli* causes about 80% of all UTIs. In young women, *Staphylococcus saprophyticus* is also common. In men with prostate disease, enterococci are often responsible. The small remaining percentage of infections may be caused by *Klebsiella* species, *Proteus mirabilis*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, or other virulent organisms.

SYMPTOMS: The presenting symptoms of UTI vary enormously. Young patients with bladder infections may have pain with urination; urinary frequency or urgency, or both; pelvic or suprapubic discomfort; low-grade fevers; or a change in the appearance or odor of their urine (cloudy, malodorous, or rarely bloody). Older patients may present with fever, lethargy, confusion, delirium, or coma caused by urosepsis.



URINARY SYSTEM

Patients with pyelonephritis (an infection of the kidneys themselves) often complain of flank pain, prostration, nausea, vomiting, diarrhea, and high fevers with shaking chills. UTI may also be asymptomatic, esp. during pregnancy. Asymptomatic UTI during pregnancy is a contributing factor to maternal pyelonephritis, or fetal prematurity and stillbirth.

DIAGNOSIS: Urinalysis (obtained either as a clean catch or catheterized specimen) and subsequent urinary culture are used to determine the presence of UTI, the culprit microorganism, and the optimal antibiotic therapy. A dipstick test may identify leukocyte esterase and nitrite in a urinary specimen, strongly suggesting a UTI. The presence of more than 8 to 10 white blood cells per high-power field of spun urine also strongly suggests UTI, as does the presence of bacteria in an uncentrifuged urinary specimen.

TREATMENT: Sulfa drugs, nitrofurantoin, cephalosporins, or quinolones may be used for the outpatient treatment of UTIs while the results of cultures are pending. Patients sick enough to be hospitalized may also be treated with intravenous aminoglycosides, medicine to treat nausea and vomiting, and hydration. The duration of therapy and the precise antibiotics used depend on the responsible organism and the underlying condition of the patient. Patients with anatomical abnormalities of the urinary tract (e.g., children with ureteropelvic obstruction, or older men with bladder outlet obstruction) may sometimes require urological surgery.

RISK FACTORS: The following conditions predispose sexually active women to development of UTI: the use of a contraceptive diaphragm, the method of sexual intercourse (i.e., greatly prolonged or cunnilingus), and failure to void immediately following intercourse.

PREVENTION OF UTI IN YOUNG WOMEN: Fluid intake should be increased to and maintained at six to eight glasses daily. Although cranberry and other fruit juices are often recommended for patients with UTI, there is little objective evidence to show they have an impact. The urinary tract anesthetic phenazopyridine and sitz baths may provide relief from perineal discomfort. The anal area should be wiped from front to back or wipe the front first to prevent carrying bacteria to the urethral area; the bladder should be emptied shortly before and after intercourse; the genital area should be washed before intercourse; if vaginal dryness is a problem, water-soluble vaginal lubricants should be used before intercourse; a contraceptive diaphragm, cap, shield, or sponge should not remain

in the vagina longer than necessary. An alternative method of contraception should be considered.

PATIENT CARE: Patient teaching should emphasize self-care procedures and prevention of recurrent episodes. The antibiotic regimen should be explained, and the patient should be aware of signs and symptoms and, when they occur, should report them promptly to the primary caregiver.

urinate (ū'ri-nāt) [L. *urinare*, to discharge urine] To pass urine from the bladder. SYN: *micturate*.

urination (ū'ri-nā'shūn) [L. *urinatio*, a discharging of urine] The release of urine from the body. SYN: *micturition*; *uresis*.

DIFFERENTIAL DIAGNOSIS: Increased frequency is seen in polydipsia; polyuria; diabetes mellitus and diabetes insipidus; irritation of the bladder, urethra, or urinary meatus; diseases of the spinal cord; enlarged prostate in males; pregnancy in females; beer drinking; interstitial nephritis; use of medications (e.g., diuretics); and phimosis. Decreased frequency occurs after dehydration, sweating, diarrhea, or bleeding; and in anuria, oliguria, uremia, and anticholinergic drug use. SEE: *urine*.

urine (ū'rīn) [L. *urina*; Gr. *ouron*, urine] The fluid and dissolved solutes (including salts and nitrogen-containing waste products) that are eliminated from the body by the kidneys. SEE: *tables*.

COMPOSITION: Urine consists of approx. 95% water and 5% solids. Solids amount to 30 to 70 g/L and include the following (values are in grams per 24 hr unless otherwise noted): *Organic substances:* urea (10 to 30), uric acid (0.8 to 1.0), creatine (10 to 40 mg/24 hr in men and 10 to 270 mg/24 hr in women), creatinine (15 to 25 mg/kg of body weight per day), ammonia (0.5 to 1.3). *Inorganic substances:* chlorides (110 to 250 nmol/L depending on chloride intake), calcium (0.1 to 0.2), magnesium (3 to 5 nmol/24 hr), phosphorus (0.4 to 1.3). *Osmolarity:* 0.1 to 2.5 mOsm/L.

In addition to the foregoing, many other substances may be present depending on the diet and state of health of the individual. Among component substances indicating pathological states are abnormal amounts of albumin, glucose, ketone bodies, blood, pus, casts, and bacteria. SEE: *illus*.

double-voided u. A urine sample voided within 30 min after the patient has emptied the bladder.

midstream specimen of u. A urine specimen collected after the first few milliliters of urine are voided and discarded. SEE: *clean-catch method*.

residual u. Urine left in the bladder after urination, an abnormal occurrence

Significance of Changes in Urine

QUANTITY		
Normal	Abnormal	Significance
1000–3000 ml/day		Varies with fluid intake, food consumed, exercise, temperature, kidney function
	High (polyuria >3000 ml/day)	Diabetes insipidus, diabetes mellitus, water intoxication, chronic nephritis, diuretic use
	Low (oliguria)	Dehydration, hemorrhage, diarrhea, vomiting, urinary obstruction, or many intrinsic kidney diseases
	None (anuria)	Same as oliguria
COLOR		
Normal	Abnormal	Significance
Yellow to amber		Depends on concentration of urochrome pigment
	Pale	Dilute urine, diuretic effect
	Milky	Fat globules, pus, crystals
	Red	Drugs, blood or muscle pigments
	Green	Bile pigment (jaundiced patient)
	Brown-black	Toxins, hemorrhage, drugs, metabolites
HEMATURIA (blood in urine)		
Normal	Abnormal	Significance
0–2 RBC/high-powered field (hpf)		Normal (physiological) filtration
	3 or more RBCs/hpf	Extrarenal: urinary tract infections, cancers, or stones. Renal: infections, trauma, malignancies, glomerulopathies, polycystic kidneys
PYURIA (leukocytes in urine)		
Normal	Abnormal	Significance
0–9 leukocytes per hpf		
	10 or more leukocytes/hpf	Urinary tract infection, urethritis, vaginitis, urethral syndrome, pyelonephritis, and others
PROTEINURIA		
Normal	Abnormal	Significance
10–150 mg/day		
	30–300 mg/day of albumin	Indicative of initial glomerular leakage in diabetes mellitus or hypertension (microalbuminuria)
	>300 mg/day	Macroalbuminuria. Indicative of progressive kidney failure. Injury to glomeruli or tubulointerstitium of kidney.
	>3500 mg/day	Nephrotic range proteinuria. Evaluation may include kidney biopsy.

Table continued on following page

Significance of Changes in Urine (Continued)

SPECIFIC GRAVITY		
Normal	Abnormal	Significance
1.010–1.025		Varies with hydration
	1.010 (Low)	Excessive fluid intake, impaired kidney concentrating ability
	>1.025 (High)	Dehydration, hemorrhage, salt-wasting, diabetes mellitus, and others
ACIDITY		
Normal	Abnormal	Significance
Acid (slight)		Diet of acid-forming foods (meats, eggs, prunes, wheat) overbalances the base-forming foods (vegetables and fruits)
	High acidity	Acidosis, diabetes mellitus, many pathological disorders (fevers, starvation)
	Alkaline	Vegetarian diet changes urea into ammonium carbonate; infection or ingestion of alkaline compounds

that may accompany enlargement of the prostate. SYN: *postvoid residual*.

urino-, urin- Combining forms meaning *urine*. SEE: *uro-*.

urinoma (ū'rī-nō'mă) [ʹ + Gr. *oma*, mass] A cyst containing urine.

urinometer (ū'rī-nōm'ĕ-tĕr) [ʹ + Gr. *metron*, measure] A device, a form of hydrometer, for determining the specific gravity of urine. SEE: *hydrometer*.

urinophil (ū'rī-nō-fīl) [ʹ + Gr. *philein*, to love] Capable of existing in the urine, such as bacteria that grow well in the urinary bladder or in urine.

urinous, urinous (ū'rī-nōs, ū'rī-nūs) [L. *urina*, urine] Having the characteristics of or containing urine.

uriposia (ū'rī-pō'zē-ă) [ʹ + *posis*, drinking] Drinking of urine.

uro- [Gr. *ouron*, urine] Combining form meaning *urine*. SEE: *urino-*.

uroammoniac (ū'rō-ă-mō'nĕ-ăk) Containing urine and ammonia.

urobilin (ū'rō-bī'līn) [ʹ + L. *bilis*, bile] A brown pigment formed by the oxidation of urobilinogen, a decomposition product of bilirubin. Urobilin may be formed from the urobilinogen in stools or in urine after exposure to air.

urobilinemia (ū'rō-bī'līn-ĕ'mĕ-ă) [ʹ + " + Gr. *haima*, blood] Urobilin in the blood.

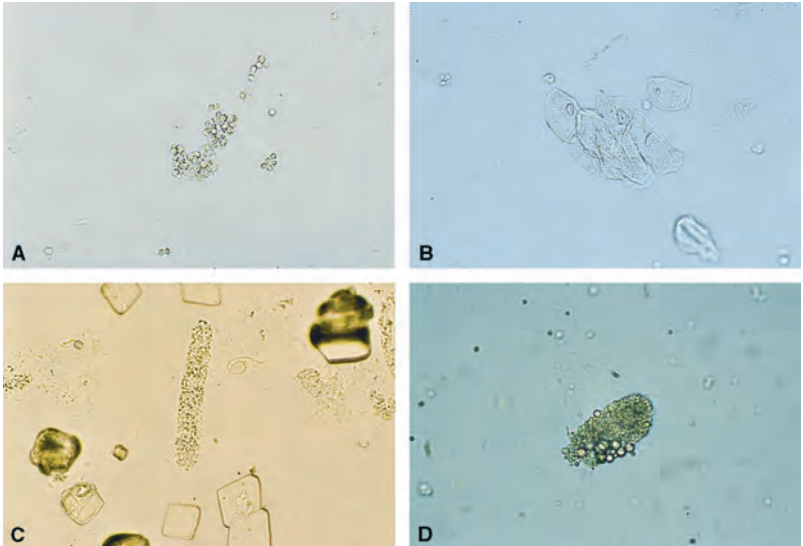
urobilinicterus (ū'rō-bī'līn-ĭk'tĕr-ŭs) [ʹ + L. *bilis*, bile, + Gr. *ikteros*, jaundice] Jaundice resulting from urobilinemia.

urobilinogen (ū'rō-bī'līn-ō-jĕn) [ʹ + " + Gr. *gennan*, to produce] A colorless derivative of bilirubin, from which it is formed by the action of intestinal bacteria.

urobilinogenemia (ū'rō-bī'līn-ō-jĕn-ĕ'mĕ-ă)

Common Disorders of Urination

Anuria	Complete (or nearly complete) absence of urination
Diversion	Drainage of urine through a surgically constructed passage (e.g., a ureterostomy or ileal conduit)
Dysuria	Painful or difficult urination (e.g., in urethritis, urethral stricture, urinary tract infection, prostatic hyperplasia, or bladder atony)
Enuresis	Involuntary discharge of urine, esp. by children at night (bedwetting)
Incontinence	Loss of control over urination from any cause (e.g., from involuntary relaxation of urinary sphincter muscles or overflow from a full or paralyzed bladder)
Nocturia	Excessive urination at night
Oliguria	Decreased urinary output (usually less than 500 ml/day), often associated with dehydration, shock, hemorrhage, acute renal failure, or other conditions in which renal perfusion or renal output are impaired
Polyuria	Increased urinary output (usually more than 3000 ml/day), such as occurs in diabetes mellitus, diabetes insipidus, and diuresis



URINE

(A) white blood cells, (B) squamous epithelial cells, (C) granular cast and uric crystals, (D) fat body ($\times 400$)

[" + " + " + *haima*, blood] Urobilinogen in the blood.

urobilinuria (ū'rō-bī'līn-ū'rē-ā) [" + " + Gr. *ouron*, urine] Excess of urobilin in the urine.

urocele (ū'rō-sēl) [" + *kele*, tumor, swelling] Escape of urine into the scrotum. SYN: *uroscheocele*.

urochesia (ū-rō-kē'zē-ā) [" + *chezein*, to defecate] A discharge of urine in the feces.

urochrome (ū'rō-krōm) [" + *chroma*, color] The pigment that gives urine its characteristic color. It is derived from urobilin.

urocortin (ūr'ō-kōr'tīn) Any of a family of neuropeptides functionally related to corticotropin-releasing hormone that decreases appetite, delays gastric emptying, and decreases distal colonic motility

urocyanin (ū-rō-sī-ā-nīn) [" + *kyanos*, blue] A blue pigment present in the urine in certain diseases.

urocyanogen (ū'rō-sī-ān'ō-jēn) [" + " + *gennan*, to produce] A blue pigment in urine, esp. in cholera patients.

urocyanosis (ū'rō-sī-ān'ō'sīs) [" + " + *osis*, condition] Blue discoloration of the urine; possibly due to the presence of indigo blue from oxidation of indican or to ingestion of drugs such as methylene blue. SEE: *indicanuria*.

urodynamics (ū'rō-dī-nām'iks) The study of the holding or storage of urine in the bladder, the facility with which it empties,

and the rate of movement of urine out of the bladder during micturition.

urodynia (ū'rō-dīn'ē-ā) [" + *odyne*, pain] Pain associated with urination.

uroerythrin (ū'rō-ēr'īth-rīn) [" + *erythros*, red] A reddish pigment sometimes present in urine.

uroflavin (ū'rō-flā'vīn) A fluorescent compound present in the urine of persons taking riboflavin.

uroflow (ūr'ū-flō) [G. *ourikos*, urine, AS. *flowan*, to flow] The volume of urine voided in a specified period. Low flow rates associated with high bladder pressures occur in bladder outlet obstruction.

uroflowmeter (ūr'ō-flō'mē'tēr) A device for recording urine flow; used to quantify obstruction to urine flowing from the bladder.

uroflowmetry (ū'rō-flō'mē-trē) Timed measurement of the rate of urination. Uroflowmetry is used to diagnose conditions that result in slow urinary output, e.g., bladder outlet obstruction resulting from enlargement of the prostate gland. The maximal volume of urinary flow over time is called the Q_{max} . A Q_{max} of less than 10 ml of urine/second is an indication of significantly reduced urinary output.

urofusin (ū'rō-fūs'īn) [" + L. *fuscus*, dark brown] A red-brown pigment sometimes found in samples of urine, esp. in cases of porphyria.

urofuscohematin (ū'rō-fūs'kō-hēm'āt-īn) [" + " + Gr. *haima*, blood] A red-

dish-brown pigment in urine in some diseases.

urogastrone (ū'rō-gās'trōn) [*u* + *gaster*, belly] A polypeptide present in urine that has an inhibitory effect on gastric secretion.

urogenital (ū'rō-jěn'ī-tāl) [*u* + *L. genitalia*, genitals] Pert. to the urinary and reproductive organs.

urogenital system Genitourinary system.

urogenous (ū-rōj'ēn-ūs) [*u* + *gennan*, to produce] **1.** Producing urine. **2.** Originating in urine.

urogram (ū'rō-grām) [*u* + *gramma*, something written] A radiograph of the urinary tract.

urography (ū'rōg'rā-fē) [Gr. *ouron*, urine, + *graphein*, to write] Radiography of the urinary tract after the introduction of a contrast medium.

ascending u. Urography in which the radiopaque contrast agent is injected into the bladder during cystoscopy. SYN: *cystoscopic urography*; *retrograde urography*.

cystoscopic u. Ascending u.

descending u. Urography in which an injected contrast agent is excreted by the kidney and studied by x-ray examination during excretion. SYN: *excretory urography*; *intravenous urography*.

excretory u. Descending u.

intravenous u. Descending u.

retrograde u. Ascending u.

urohematin (ū'rō-hēm'āt-īn) [*u* + *haima*, blood] Pigment in urine, considered as identical with hematin, that alters the color of urine in proportion to the degree of oxidation.

urohematonephrosis (ū'rō-hēm'ā-tō-nē-frō'sīs) [*u* + " + *nephros*, kidney] A pathological condition of the kidney in which the pelvis is distended with blood and urine.

urohematoporphyrin (ū'rō-hēm'ā-tō-por'fir-īn) [*u* + " + *porphyra*, purple] Iron-free hematin in urine when intravascular hemolysis occurs.

urokinetic (ū'rō-kī-nēt'īk) [*u* + *kinesis*, movement] Resulting reflexly from stimulation of the urinary organs.

urolognia (ū-rō-lāg'nē-ā) [*u* + *lagneia*, lust] Sexual excitation associated with urine or urination (e.g., watching another person urinate or having another person urinate on one's own body).

urolith (ū'rō-līth) [*u* + *lithos*, stone] A concretion in the urine.

urolithiasis (ū'rō-lī-thī'ās-īs) [*u* + " + *-iasis*, condition] The formation of kidney stones. SEE: *Nursing Diagnoses Appendix*.

urolithic (ū'rō-līth'īk) Concerning kidney stones.

urological (ū-rō-lōj'īk-āl) [*u* + *logos*, word, reason] Pert. to urology.

urologist (ū-rōl'ō-jīst) A physician who specializes in the practice of urology.

urology (ū-rōl'ō-jē) [*u* + *logos*, word, reason] The branch of medicine concerned with the urinary tract in both sexes and the male genital tract.

urolutein (ū-rō-lū'tē-īn) [*u* + *L. luteus*, yellow] A yellow pigment seen in the urine.

uromedulin, human (ū'rō-mēd'ū-līn) The most abundant protein of renal origin in normal urine. This glycoprotein is the same protein termed Tamm-Horsfall mucoprotein. SEE: *mucoprotein*, *Tamm-Horsfall*.

uromelanin (ū-rō-mēl'ān-īn) [*u* + *melas*, black] A black pigment occurring in urine resulting from the decomposition of urochrome.

uronephrosis (ū'rō-nēf-rō'sīs) [*u* + *nephros*, kidney, + *osis*, condition] Dilatation of the renal structures from obstruction of the urinary flow; distention of the renal pelvis and tubules with urine. SYN: *hydronephrosis*.

uropathogen (ū'rō-pāth'ō-jēn) [*u* + *pathos*, disease, suffering, + *gennan*, to produce] A microorganism capable of causing disease of the urinary tract.

uropathy (ū-rōp'ā-thē) Any disease affecting the urinary tract.

obstructive u. Any disease that blocks the flow of urine (e.g., prostatic hyperplasia).

uropepsin (ū'rō-pēp'sīn) The end product of pepsin metabolism. It is excreted in the urine.

urophein, uropheain (ū'rō-fē'īn) [*u* + *phaios*, gray] Gray pigment sometimes found in urine.

urophosphometer (ū'rō-fōs-fōm'ē-tēr) [*u* + *L. phosphas*, phosphorus] A device for estimating the amount of phosphorus in the urine.

uroporphyrin (ū'rō-por'fir'ē-ā) Porphyrin in which an excess amount of uroporphyrin is excreted in the urine.

uroporphyrin (ū'rō-por'fir-īn) A red pigment present in the urine and feces in cases of porphyria; may also be present in the urine of persons taking certain drugs.

uroporphyrinogen (ū'rō-por'fir-īn'ō-jēn) Any one of several porphyrins that are the precursors of uroporphyrins.

u. An abnormal isomer of a precursor of protoporphyrin, which accumulates in one form of porphyria. It causes the urine to be red, the teeth to fluoresce brightly in ultraviolet light, and the skin to be abnormally sensitive to sunlight. This is observed in congenital erythropoietic porphyria.

uropsammus (ū'rō-sām'ūs) [*u* + *psamos*, sand] Gravel or calcified sediment in the urine.

uropyoureter (ū'rō-pī'ō-ū-rē'tēr) [*u* + " + *oureter*, ureter] Accumulation of urine and pus in the ureter.

uroscheocele (ū-rōs'kē-ō-sēl) [*u* + *os-*

cheon, scrotum, + *kele*, tumor, swelling] Urocele.

uroschesis (ū-rōs'kēs-ĭs) [ʹ + *schesis*, a holding] **1.** Suppression of urine. **2.** Retention of urine.

uroscopy (ū-rōs'kō-pē) [ʹ + *skopein*, to examine] **1.** Examination of the urine. **2.** Diagnosis by examination of the urine.

urothelium (ū'rō-thēl'ē-ūm) The endothelium that lines the urinary tract, extending from the renal calyces, through the ureters, to the urinary bladder. **urothelial** (ū'rō-thē'lē-āl), *adj.*

uroreter (ū'rō-ū-rē-tēr, ū'rō-ū-rē'tēr) [ʹ + *oureter*, ureter] Distention of the ureter with urine caused by stricture or obstruction.

uroxanthin (ū'rō-zān'thĭn) [ʹ + *xanthos*, yellow] Yellow pigment of the urine; an indigo-forming substance.

uroxin (ū-rōk'sĭn) [ʹ + *oxys*, sharp] Alloxantin, a derivative of alloxan.

urtica (ūr-tī'kā) *pl. urticae* [L., nettle] *Wheat.*

Urtica dioica (dī-ō'ī-kā, dē-) The scientific name for the stinging nettle, an herb used to treat allergic conditions such as allergic rhinitis. Exposure to the herb can cause a rash. Extracts made from it are promoted for their diuretic effects.

urticant (ūr'tī-kānt) That which causes hives.

urticaria (ūr-tī-kā-rē-ā) [L. *urtica*, nettle] An allergic reaction marked by multiple discrete swellings on the skin (wheals) that are intensely itchy and last up to 24 hr. The wheals appear primarily on the chest, back, extremities, face, or scalp. SYN: *hives*. SEE: *illus.; allergy; angioedema*.



URTICARIA

ETIOLOGY: Urticaria is caused by vasodilation and increased permeability of capillaries of the skin due to the release by mast cells of vasoactive mediators. The mast cell degranulation is due to an

immunoglobulin E-mediated reaction to allergens (e.g., foods, drugs, or drug additives), heat, cold, and, rarely, infections or emotions. Urticaria is a primary sign of local and systemic anaphylactic reactions. It affects people of all ages but is most common between the ages 20 and 40. Angioedema is frequently associated with urticaria.

TREATMENT: Drugs that block histamine-1 (H_1) receptors (antihistamines) are the primary treatment for urticaria. The use of both H_1 and H_2 receptor blockers has been recommended but has not been proven more effective. Patients should avoid identified allergens. Corticosteroids are not usually used.

aquagenic u. Urticaria caused by exposure of the skin to water.

u. bullosa Eruption of temporary vesicles with infusion of fluid under the epidermis.

cholinergic u. Urticaria that develops after exposure to high ambient temperatures (e.g., after exercise, a warm shower or bath, or during a fever). The hives that develop are typically small (1 to 3 mm) and are often surrounded by erythema. SYN: *generalized heat urticaria*.

chronic u. Urticaria that occurs frequently for 2 weeks or more. It is often associated with autoimmune disease.

cold u. Cold-induced urticaria that may progress to angioedema.

u. factitia Urticaria following slight irritation of the skin.

generalized heat u. Cholinergic urticaria.

giant u. Angioedema.

u. medicamentosa Urticaria caused by an allergic reaction to a drug (e.g., a sulfa drug).

papular u. Urticaria in which the wheal is followed by a lingering papule and considerable itching. It is most commonly observed in debilitated children. SYN: *prurigo simplex*.

physical u. Urticaria due to the direct effects of physical forces on the skin. Cold temperature (cold urticaria), pressure (pressure urticaria), ultraviolet radiation (solar urticaria), and scratching (dermographism) are some causes of physical urticaria.

u. pigmentosa Urticaria characterized by persistent, pigmented maculopapular lesions that urticate when stroked (Darier's sign). It typically occurs in childhood. Biopsy reveals infiltration by mast cells.

pressure u. Urticaria produced by pressure perpendicular to the surface of the skin. The persistent red swelling appears after a delay of 1 to 4 hr.

solar u. Urticaria occurring in certain people after exposure to sunlight.

urticate (ūr'tī-kāt) **1.** To produce urti-

caria. 2. Marked by the appearance of wheals.

urushiol (ū-roo' shē-ōl') [Japanese *urushi*, lac, + *L. oleum*, oil] The principal toxic irritant substance of plants such as poison ivy, which produces characteristic severe dermatitis on contact.

USAEC *United States Atomic Energy Commission*.

USAN *United States Adopted Names* (for drugs).

USAN and the USP Dictionary of Drug Names A dictionary of nonproprietary names, brand names, code designations, and Chemical Abstracts Service registry numbers for drugs.

USDA *United States Department of Agriculture*.

USDA organic A USDA designation for food that specifies that 95% of its components are organic.

usenet A world-wide collection of user-submitted notes or messages on various subjects that are posted to servers on the Internet.

Usher's syndrome (ūsh' ērz) [Charles Howard Usher, Brit. ophthalmologist, 1865–1942] An autosomal recessive disorder marked by a combination of congenital sensorineural deafness and retinitis pigmentosa that results in a gradual loss of vision. One variant of the syndrome also interferes with normal balance. SEE: *retinitis pigmentosa*.

USP, US Phar *United States Pharmacopeia*.

USPHS *United States Public Health Service*.

USP-PRN *United States Pharmacopeia-Practitioners' Reporting Network*.

USP unit Any unit specified in the U.S. Pharmacopeia.

Ustilago (ūs-tīl-ā' gō) A mold parasite of plants, commonly called smut, which renders grains unfit to eat.

uta (ū'tā) American leishmaniasis.

Utah Elbow (ū'tah) A myoelectric prosthesis that uses an electrode and microprocessors to control both the elbow and the terminal device. The system is also designed to permit a natural elbow swing during walking.

uter- SEE: *utero-*.

uteralgia (ū'tēr-āl' jē-ā) [L. *uterus*, womb, + Gr. *algos*, pain] Uterine pain.

uterectomy (ū'tēr-ēk'tō-mē) [+ Gr. *ektome*, excision] Hysterectomy.

uterine (ū'tēr-īn, -īn) [L. *uterinus*] Pert. to the uterus.

uterine artery Doppler velocimetry SEE: *Doppler echocardiography*.

uterine factor (ūt' ā-rīn', -rīn) Any abnormality of the uterus that produces infertility.

uterine tube Fallopian tube.

utero-, uter- Combining forms meaning *uterus*. SEE: *hystero-*; *metro-*.

uteroabdominal (ū'tēr-ō-āb-dōm' ī-nāl)

[L. *uterus*, womb, + *abdomen*, belly] Pert. to both the uterus and abdomen.

uterocele (ū-tēr'ō-sēl) [+ Gr. *kele*, tumor, swelling] Hernia containing the uterus.

utero cervical (ū'tēr-ō-sēr' vī-kāl) [+ *cervix*, neck] Rel. to the uterus and cervix.

uterozystostomy (ū'tēr-ō-sīs-tōs'tō-mē) [+ Gr. *kystis*, bladder, + *stoma*, mouth] The formation of a passage between the uterine cervix and the bladder.

uterofixation (ū'tēr-ō-fīks-ā' shūn) [+ *fixatio*, a fixing] Fixation of a displaced uterus.

uterography (ū'tēr-ōg' rā-fē) [+ Gr. *graphein*, to write] Hysteroogram.

uterolith (ū'tēr-ō-līth) [+ Gr. *lithos*, stone] A uterine stone.

uterometer (ū'tēr-ōm' ēt-er) [+ Gr. *metron*, measure] Hysterometer.

uteroovarian (ū'tēr-ō-ō-vā' rē-ān) [+ L. *ovarium*, ovary] Rel. to the uterus and ovary.

uteropexia, uteropexy (ū'tēr-ō-pēks' ē-ā, ū'tēr-ō-pēks' ē) [+ Gr. *pexis*, fixation] Fixation of the uterus to the abdominal wall.

uteroplacental (ū'tēr-ō-plā-sēn' tāl) [+ *placenta*, a flat cake] Rel. to the placenta and uterus.

uteroplasty (ū'tēr-ō-plās'tē) [+ Gr. *plassein*, to form] Plastic surgery of the uterus. SYN: *metroplasty*.

uterorectal (ū'tēr-ō-rēk' tāl) Concerning the uterus and rectum.

uterosacral (ū'tēr-ō-sā' krāl) [+ *sacralis*, pert. to the sacrum] Rel. to the uterus and sacrum.

uterosalpingography (ū'tēr-ō-sāl-pīng-ōg' rā-fē) [+ Gr. *salpinx*, tube, + *graphein*, to write] Radiography of the uterus and fallopian tubes after the introduction of a contrast medium. SYN: *hysterosalpingography*.

uterotomy (ū-tēr-ōt'ō-mē) Incision of the uterus.

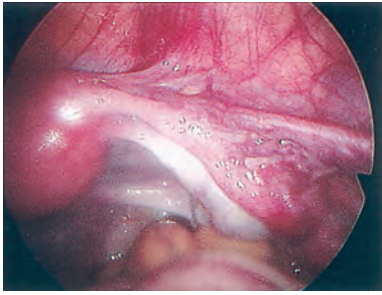
uterotractor (ū'tēr-ō-trāk'tor) [+ *tractor*, drawer] An instrument for applying traction to the cervix uteri.

uterotubal (ū'tēr-ō-tū' bāl) [+ *tuba*, tube] Relating to the uterus and oviducts.

utero vaginal (ū'tēr-ō-vāj' ī-nāl) [+ *vagina*, sheath] Rel. to the uterus and vagina.

uterus (ū'tēr-ūs) [L.] A reproductive organ for containing and nourishing the embryo and fetus from the time the fertilized egg is implanted to the time the fetus is born. SYN: *womb*. SEE: *illus.*; *genitalia*, *female* for *illus.*

ANATOMY: The uterus is a muscular, hollow, pear-shaped organ situated in the midpelvis between the sacrum and the pubic symphysis. Before child-bearing, it is about 3 in. (7.5 cm) long, 2 in. (5 cm) wide, and 1 in. (2.5 cm) thick. Its



UTERUS

Uterus and its ligaments seen laparoscopically ($\times 1/3$)

upper surface is covered by peritoneum called the perimetrium, and it is supported by the pelvic diaphragm supplemented by the two broad ligaments, two round ligaments, and two uterosacral ligaments. It is usually anteflexed, or tilted forward, over the top of the urinary bladder. The upper portion of the uterus, between the openings of the fallopian tubes, is the fundus; the large central portion is the body; and the narrow lower end is the cervix, which projects into the vagina. The cavity of the uterus is widest in the fundus. The canal of the cervix is narrow, opens into the uterine cavity at the internal os, and into the vagina at the external os.

The wall of the uterus consists of the outer perimetrium, middle myometrium, and inner endometrium. The perimetrium is the visceral peritoneum that covers the uterus, except for the portion that rests on the bladder and the vaginal part of the cervix. The thick myometrium is smooth muscle that contracts for labor and delivery. The endometrium is the vascular lining that can become the placenta for nourishment of the embryo-fetus; it is thin before puberty; grows and is shed cyclically during childbearing years, and degenerates after menopause. The uterine and ovarian arteries supply blood to the uterus.

POSITIONS: *Anteflexion:* The uterus bends forward. *Anteversio:* The fundus is displaced forward toward the pubis, while the cervix is tilted up toward the sacrum. *Retroflexion:* The uterus bends backward at the junction of the body and the cervix. *Retroversion:* The uterus inclines backward with retention of the normal curve; this position is the opposite of anteversion. SEE: *hysterectomy; pregnancy.*

u. acollis A uterus without a cervix.

u. arcuatus A uterus with a depressed arched fundus.

u. bicornis A uterus in which the fundus is divided into two parts.

u. biforis A uterus in which the ex-

ternal os is divided into two parts by a septum.

u. bilocularis A uterus in which the cavity is divided into two parts by a partition.

bipartite u. A uterus in which the body is partially divided by a median septum.

cancer of u. A malignant neoplasm of the uterus, suggested by size, intermittent bleeding, purulent discharge, and detected by vaginal or Papanicolaou smear, or cervical or endometrial biopsy. Cancer may produce sterility, abortion, hemorrhage, or sepsis. SEE: *the Bethesda System; cancer cervical intraepithelial neoplasia.*

u. cordiformis A heart-shaped uterus.

u. didelphys Double uterus.

u. duplex A double uterus resulting from failure of union of müllerian ducts.

fetal u. A uterus that is retarded in development and possesses an extremely long cervical canal.

fibroids of u. Uterine leiomyoma.

gravid u. A pregnant uterus.

u. parvicollis A normal uterus with a disproportionately small vaginal portion.

prolapse of u. A condition in which a defective pelvic floor allows the uterus or part of it to protrude out of the vagina. In first-degree uterine prolapse, the cervix uteri reaches down to the vaginal introitus. In second-degree uterine prolapse, it protrudes out from the vagina. In third-degree uterine prolapse, the entire uterus lies outside of the vagina. SYN: *descensus uteri.* SEE: *prolidentia.*

ETIOLOGY: This condition may be congenital or acquired; most often, however, it is acquired. The etiological factors are congenital weakness of the uterine supports and injury to the pelvic floor or uterine supports during childbirth.

SYMPTOMS: The condition is most often seen following instrumental deliveries or when the patient has been allowed to bear down during labor before the cervix is fully dilated. Frequently associated with this is a prolapse of the anterior and posterior vaginal walls, as seen in cystocele and rectocele. In the early stages, there are dragging sensations in the lower abdomen, back pain while standing and on exertion, a sensation of weight and bearing down in the perineum, and frequency of urination and incontinence of urine in cases associated with cystocele. In the later stages, a protrusion or swelling at the vulva is noticed on standing or straining, and leukorrhea is present. In prolidentia, there is frequently pain on walking, an inability to urinate unless the mass is reduced, and cystitis.

TREATMENT: The treatment depends on the age of the patient, the degree of prolapse, and the associated pathology. Abdominal surgery with fixation of the uterus is required if the prolapse is complete.

pubescent u. An adult uterus that resembles that of a prepubertal female.

rupture of u. in pregnancy SEE: under *rupture*; *Nursing Diagnoses Appendix*.

subinvolution of u. The lack of involution of the uterus following childbirth, manifested by a large uterus (greater than 100 g) and a continuation of lochia rubra beyond the usual time. It is caused usually by puerperal infection, overdistention of the uterus by multiple pregnancy or polyhydramnios, lack of lactation, malposition of the uterus, and retained secundines. Involution is aided by the certainty that the placenta is intact at the time of delivery and the use of ecbolics to cause uterine contraction.

tumors of u. Uterine neoplasia, which may cause sterility or abortion or obstruct labor; they may become infected or twisted on their attachments. SEE: *cancer of uterus*; *endometrioma*; *uterine fibroma*.

u. unicornis A uterus possessing only one lateral half and usually having only one uterine tube. About 20% to 30% of women who have this structural abnormality also experience repeated spontaneous abortion during early pregnancy.

utilization behavior The compulsive or thoughtless use of any found object even though its use is not appropriate for the context in which it was found. Finding a toothbrush in a grocery store and automatically using it to brush one's teeth in public is an example.

utilization review Evaluation of the necessity, quality, effectiveness, or efficiency of medical services, procedures, and facilities. In regard to a hospital, the review includes appropriateness of admission, services ordered and provided, length of stay, and discharge practices.

utricle (ū'trīk'l) [L. *utriculus*, a little bag] **1.** A small sac. **2.** The larger of two sacs of the vestibular labyrinth in the vestibule of the inner ear. It communicates with the semicircular ducts, the sacculle, and the endolymphatic duct, all of which are filled with endolymph. In its wall is the macula utriculi, a sensory area with hair cells that respond to movement of otoliths as the position of the head changes.

prostatic u. A small blind pouch of the urethra extending into the substance of the prostate gland. It is a remnant of the embryonic müllerian duct. The ejaculatory duct opens into or at the opening of the prostatic utricle.

utricular (ū-trīk'ū-lār) [L. *utriculus*, a little bag] **1.** Pert. to the utricle. **2.** Like a bladder.

utriculitis (ū-trīk'ū-lī'tīs) [l' + Gr. *itis*, inflammation] Inflammation of the utricle, that of either the vestibule or the prostate.

utriculoplasty (ū-trīk'ū-lō-plās'tē) [l' + Gr. *plassein*, to form] Surgical reduction of the size of the uterus by excision of a longitudinal wedge-shaped section.

uva-ursi (ū'vā-ūr'sē) An evergreen perennial shrub, *Arctostaphylos uva-ursi* (family Ericaceae)—commonly known as bearberry—whose dried leaves are used as a urinary antiseptic and diuretic. There have been few clinical trials on its effectiveness.

uvea (ū'vĕ-ă) [L. *uva*, grape] The highly vascular middle layer of the eyeball, immediately beneath the sclera. It consists of the iris, ciliary body, and choroid, and forms the pigmented layer.

uveal (ū'vĕ-āl) Pert. to the middle layer of the eye, or uvea.

uveitic (ū-vĕ-ī'tīk) [l' + Gr. *itis*, inflammation] Marked by or pert. to uveitis.

uveitis (ū-vĕ-ī'tīs) A nonspecific term for any intraocular inflammatory disorder. The uveal tract structures—iris, ciliary body, and choroid—are usually involved, but other nonuveal parts of the eye, including the retina and cornea, may be involved.

Uveitis that is not associated with known infections or that is associated with diseases of unknown cause is termed endogenous uveitis. This is thought to be due to an autoimmune phenomenon.

TREATMENT: Corticosteroids and other immunosuppressive agents, including cyclosporine, are used in treating some causes of uveitis, but their use may make some types of uveitis worse.

Short-acting cycloplegic agents such as hematomine, scopolamine, or cyclopentolate are used during therapy to prevent inflammatory adhesions (posterior synechiae) between the iris and lens.

diffuse u. Panuveitis.

intermediate u. Pars planitis.

sympathetic u. Severe, bilateral uveitis that starts as inflammation of the uveal tract of one eye resulting from a puncture wound. The injured eye is termed the "exciting eye." SEE: *sympathetic ophthalmia*.

TREATMENT: High-dose corticosteroids are often effective.

uveitis-glaucoma-hypHEMA syndrome ABBR: UGH. A rare complication of cataract surgery with intraocular lens implantation in which patients experience brief episodes of visual loss affecting a single eye, typically months or years after cataract surgery.

uveoparotitis (ū'vĕ-ō-pār-ō-tī'tīs) [l' +

- Gr. *para*, beside, + *ous*, ear, + *itis*, inflammation] Inflammation of the parotid gland and uveitis.
- uveoplasty** (ū'vē-ō-plās'tē) ["] + Gr. *plassein*, to form] Reparative operation of the uvea.
- uveoscleritis** (ū'vē-ō-skler-ī'tis) Inflammation of the sclera in which the infection has spread from the uvea.
- uviform** (ū'vī-form) ["] + *forma*, form] Shaped like a grape.
- uviofast** (ū'vē-ō-fāst) Uvioreistant.
- uviofast** (ū'vē-ōl) Glass that is unusually transparent to ultraviolet rays.
- uvioresistant** (ū'vē-ō-rē-zis'tānt) Resistant to the effects of ultraviolet radiation. SYN: *uviofast*.
- uviosensitive** (ū'vē-ō-sēn'sī-tīv) Sensitive to the effects of ultraviolet radiation.
- uvula** (ū'vū-lā) [L. *uvula*, a little grape]
1. The free edge of the soft palate that hangs at the back of the throat above the root of the tongue; it is made of muscle, connective tissue, and mucous membrane. 2. Any small projection.
 - u. fissa* A cleft uvula.
 - u. vermis* A small, triangular elevation on the vermis of the cerebellum of the brain.
 - u. vesicae* A median projection of mucous membrane of the urinary bladder located immediately anterior to the orifice of the urethra.
- uvular** (ū'vū-lār) [L. *uvula*, little grape] Pert. to the uvula.
- uvularis** (ū'vū-lā'rīs) [L.] The azygos uvulae muscle.
- uvulectomy** (ū'vū-lēk'tō-mē) ["] + Gr. *ektome*, excision] Surgical removal of the uvula.
- uvulitis** (ū'vū-lī'tis) ["] + Gr. *itis*, inflammation] Inflammation of the uvula.
- uvulopalatopharyngoplasty** (ū'vū-lō-pāl'ā-tō-fā-rīn'gō-plās'tē) ABBR: UPPP. Plastic surgery of the oropharynx in which redundant soft palate, uvula, pillars, fauces, and sometimes posterior pharyngeal wall mucosa are removed. The procedure may be done by using laser therapy. It is usually done to correct intractable snoring or sleep apnea. SEE: *sleep disorder*; *snore*.
- uvuloptosis** (ū'vū-lōp-tō'sīs) ["] + Gr. *ptosis*, a dropping] A relaxed and pendulous condition of the palate. SYN: *uvulaptosis*.
- U wave** In the electrocardiogram, a low-amplitude deflection that follows the T wave. It is exaggerated in hypokalemia and with digitalis use, and negative in ventricular hypertrophy. SEE: *QRST complex*; *electrocardiogram*.



V 1. *Vibrio*; *vision*; *visual acuity*. 2. Symbol for the element vanadium.

V 1. Symbol for gas flow. 2. Symbol for ventilation.

v *L. vena*, vein; *volt*.

vacate (vā'kāt) [*L. vacare*, to be empty] In law, to overturn a ruling or judgment.

vaccina (vāk-sī'nā) Vaccinia.

vaccinal (vāk'sin-āl) Rel. to vaccine or to vaccination.

vaccinate (vāk'sin-āt) [*L. vaccinus*, pert. to cows] To inoculate with vaccine to produce immunity against disease.

vaccination (vāk'sī-nā'shūn) [*L. vaccinus*, pert. to cows] 1. Inoculation with any vaccine or toxoid to establish resistance to a specific infectious disease. SEE: *immunization*. 2. A scar left on the skin by inoculation of a vaccine.

antitumor v. The injection of tumor-associated antigens (e.g., from melanomas or other solid tumors) into cancer patients in an attempt to raise a long-lasting and effective immune response against the tumor. The tumor antigen is often presented to the vaccinee in the presence of dendritic cells, in order to improve the presentation of the antigen and heighten the immune response. SYN: *antitumor vaccine*; *tumor vaccine*.

catch-up v. The immunization of unvaccinated children at the most convenient times (e.g., on the first day of school) rather than at the optimal time for antibody production. Because many children miss vaccines at regularly scheduled times, catch-up immunization offers unvaccinated children, their families, and the communities in which they live a second opportunity for disease prevention and control.

mass v. The use of vaccines during an outbreak of a communicable disease in an attempt to prevent an epidemic. In the U.S. mass vaccinations are sometimes carried out in schools and hospitals during meningitis or hepatitis epidemics.

vaccine (vāk'sēn, vāk-sēn') [*L. vaccinus*, pert. to cows] 1. An infectious liquid that Edward Jenner (Brit. physician, 1749–1823) derived from cowpox lesions, and used to prevent and attenuate smallpox in humans. 2. Any suspension containing antigenic molecules derived from a microorganism, given to stimulate an immune response to an infectious disease. Vaccines may be made from weakened or killed microorganisms; inactivated toxins; toxoids derived from microorganisms; or immunologically active surface markers

extracted or copied from microorganisms. They can be given intramuscularly, subcutaneously, intradermally, orally, or intranasally; as single agents; or in combinations. SEE: *Recommended Immunization Schedules Appendix*.

The ideal vaccine should be effective, well-tolerated, easy and inexpensive to manufacture, easy to administer, and easy to store. In practice, vaccine side effects such as fevers, muscle aches, and injection site pain are common but generally mild. Adverse reactions to vaccines that should be reported include anaphylaxis, shock, seizures, active infection, and death. SEE: *immunization*.



Because vaccines may cause side effects, all persons who receive them should carefully review federally mandated Vaccine Information Sheets before they are immunized.

adsorbed anthrax v. A cell-free, aluminum-hydroxide-adsorbed vaccine, administered to raise protective antibodies against *Bacillus anthracis*. *Bacillus anthracis* causes anthrax and has been used in biological warfare.

antitumor v. Antitumor vaccination.

autogenous v. Bacterial vaccine prepared from lesions of the individual to be inoculated. SYN: *homologous vaccine*.

bacterial v. A suspension of killed or attenuated bacteria; used for injection into the body to produce active immunity to the same organism.

BCG v. Bacille Calmette-Guérin vaccine, a preparation of a dried, living but attenuated culture of *Mycobacterium bovis*. In areas with a high incidence of tuberculosis (TB), it is used to provide passive immunity to infants against disseminated TB or TB meningitis, and it affords some protection against leprosy; it is not effective prevention, however, against pulmonary infection with tuberculosis. Among its other shortcomings, the vaccine cannot be used in pregnant women or in immunosuppressed individuals. It also produces hypersensitivity to TB skin tests, making them unreliable for several years. The vaccine can be used in cancer chemotherapy, e.g., to treat multiple myeloma and cancer of the colon, or as a bladder wash in patients with carcinoma of the bladder. SEE: *bacille Calmette-Guérin*.

cholera v. A vaccine prepared from killed or inactivated *Vibrio cholerae*.

diphtheria v. A vaccination against *Corynebacterium diphtheriae*. SEE: *DTaP v.*

DNA v. A vaccine made by genetic engineering in which the gene that codes for an antigen is inserted into a bacterial plasmid and then injected into the host. Once inside the host, it uses the nuclear machinery of the host cell to manufacture and express the antigen. Unlike other vaccines, DNA vaccines may have the potential to induce cellular as well as humoral immune responses.

DPT v. An obsolete combination of diphtheria and tetanus toxoids and killed pertussis bacilli that is no longer given in pediatric immunizations because of the superiority of *DTaP*, a vaccine that contains only acellular pertussis.

DTaP v. A preparation of diphtheria and tetanus toxoids and acellular pertussis proteins. It is used to immunize children against all three infections or adults at high risk of complications of infection with pertussis.

edible v. A genetically manipulated food containing organisms or related antigens that may provide active immunity against infection. Edible vaccines against many microorganisms are being developed, with the goal of using them to vaccinate children in nonindustrialized countries where there are obstacles to the use of traditional injectable vaccines.

v. extraimmunization The giving of excessive or repetitive doses of vaccines to children or adults, usually because of incomplete or inaccurate recordkeeping.

Haemophilus influenzae type b v. ABBR: *HIB*. A vaccine created by combining purified polysaccharide antigen from the *H. influenzae* bacteria and a carrier protein. It reduces the risks of childhood epiglottitis, meningitis, and other diseases caused by *H. influenzae*.

hepatitis B v. A vaccine prepared from hepatitis B protein antigen produced by genetically engineered yeast. The vaccine prevents acute infection with hepatitis B, the chronic carrier state of hepatitis B infection. In developing nations where hepatitis B infection is endemic, it has been shown to decrease the incidence of hepatocellular carcinoma resulting from hepatitis B infection. The World Health Organization has recommended that the vaccine be given to all infants and adolescents, as well as all health care workers and all patients receiving hemodialysis; all incarcerated prisoners; men who have sex with men; and people who inject drugs.

heterogeneous v. A vaccine made from some source other than the patient's own tissues or cells; the opposite of autogenous vaccine.

heterologous v. A vaccine derived from an organism different from the organism against which the vaccine is used.

homologous v. Autogenous v.

HPV v. A vaccine that protects against several types of human papillomavirus infection, specifically those that have been associated with genital warts and cervical cancer.

human diploid cell rabies v. ABBR: *HDCV*. An inactivated virus vaccine prepared from fixed rabies virus grown in human diploid cell tissue culture.

inactivated poliovirus v. An injectable vaccine made from three types of inactivated polioviruses. SYN: *Salk vaccine*.

influenza virus v. A polyvalent vaccine containing either inactivated or live attenuated antigenic variants of the influenza virus (types A and B either individually or combined) for annual usage. It prevents epidemic disease and the morbidity and mortality caused by influenza virus, esp. in the aged and persons with chronic illnesses. The vaccine is reformulated each year to match the strains of influenza present in the population.

killed v. A vaccine prepared from dead microorganisms. This type of vaccine is used to prevent disease caused by highly virulent microbes.

live attenuated influenza v. ABBR: *LAIV*. A live virus vaccine made with influenza viruses adapted to replicate in the nose, sinuses, and pharynx but not in the lower respiratory tract. *LAIV* is typically administered by nasal inhalation rather than by intramuscular injection.

live attenuated measles (rubeola) virus v. A vaccine prepared from live strains of the measles virus. It is the preferred form except in patients who have one of the following: lymphoma, leukemia, or other generalized malignancy; radiation therapy; pregnancy; active tuberculosis; egg sensitivity; prolonged treatment with drugs that suppress the immune response (i.e., corticosteroids or antimetabolites); or administration of gamma globulin, blood, or plasma. Those persons should be given immune globulin immediately following exposure.

live measles and mumps virus v. A standardized vaccine containing attenuated measles and mumps viruses.

live measles and rubella virus v. A standardized vaccine containing attenuated measles and rubella viruses.

live measles, mumps, and rubella virus v. ABBR: *MMR vaccine*. A standardized vaccine containing attenuated measles, mumps, and rubella viruses.

live measles virus v. A standardized

attenuated virus vaccine for use in immunizing against measles.

live oral poliovirus v. A vaccine prepared from three types of live attenuated polioviruses. In 1999, an advisory panel to the Centers for Disease Control and Prevention recommended that its routine use be discontinued. Because it contains a live, although weakened virus, it has caused 8 to 10 cases of polio each year. This risk is no longer acceptable now that the polio epidemic has been eliminated in the U.S. SYN: *Sabin vaccine*.

live rubella virus v. An attenuated virus vaccine used to prevent rubella (German measles). All nonpregnant susceptible women of childbearing age should be provided with this vaccine to prevent fetal infection and the congenital rubella syndrome (i.e., possible fetal death, prematurity, impaired hearing, cataract, mental retardation, and other serious conditions). SEE: *rubella*.



Women of child-bearing age who receive vaccination are advised to use effective birth control measures for at least 3 months following the immunization. Before administering the RA27/3 rubella vaccine, a history of allergies (especially to neomycin) and of reactions to previous vaccinations should be obtained, and the primary care provider made aware of any problems. Individuals who are immunocompromised for any reason should not receive this vaccine, which is more immunogenic than previous preparations.

Lyme disease v. A vaccine that uses as an antigen either the outer surface protein (OspA) of *Borrelia burgdorferi* (the spirochete that causes Lyme disease) or the decorin protein of the same microbe. Lyme vaccine is available in the U.S. for veterinary use only.

meningococcal v. A vaccine prepared from bacterial polysaccharides from certain types of meningococci. Meningococcal polysaccharide vaccines A, C, Y, and W135 are available for preventing diseases caused by those serogroups. A vaccine for meningococcal serogroup B is not available. SEE: *meningitis, acute meningococcal*.

mumps v. A live attenuated vaccine used to prevent mumps. Its use should be governed by the same restrictions listed for live attenuated measles virus vaccine.

peptide v. A vaccine that stimulates antibody production against specific amino acid sequences, e.g., those expressed on the surface of pathogens or cancer cells.

pertussis v. A vaccine against *Bordetella pertussis*. SEE: *DTaP v.*

plague v. A vaccine made either from a crude fraction of killed plague bacilli, *Yersinia pestis*, or synthetically from recombinant proteins. It is rarely used, except in a laboratory or for field workers in areas where plague is endemic.

polyvalent v. A vaccine produced from cultures of a number of strains of the same species.

polyvalent pneumococcal v. A vaccine that contains 23 of the known 83 pneumococcal capsular polysaccharides, and induces immunity against *Streptococcus pneumoniae*, a gram-positive bacterium that causes ear, sinus, lung, blood, and meningeal infections. This vaccine is used to prevent pneumococcal disease in persons with sickle cell diseases; alcoholism; asplenia; chronic heart, lung, liver, or kidney disease; diabetes mellitus; and immunological illnesses; and in people over the age of 65.

PATIENT CARE: The value of vaccination is continually rising, as *Streptococcus pneumoniae* becomes more and more resistant to antibiotics. The vaccine should not be coadministered in the same syringe as other vaccines. Common adverse reactions include pain at the site of injection and sometimes a low-grade fever.

pneumococcal 7-valent conjugate v. A pneumococcal vaccine used for active immunization of infants and toddlers. The vaccine contains antigens from 7 capsular serotypes of *Streptococcus pneumoniae*.

rabies v. A vaccine prepared from killed rabies virus used for pre-exposure immunization for persons at high occupational risk. Following a bite by a rabid animal, both the vaccine and rabies immune globulin, containing preformed antibodies, are given. SEE: *human diploid cell rabies v.; rabies*.

reassortant v. A vaccine made by combining antigens from several viruses or from several strains of the same virus.

Sabin v. Live oral poliovirus v. SEE: *poliomyelitis*.

Salk v. SEE: *Salk vaccine*.

sensitized v. A vaccine prepared from bacteria treated with their specific immune serum.

smallpox v. A vaccine used to provide immunity against smallpox, one of the deadliest infections in the history of humanity. The vaccine is made from live vaccinia virus (not from the smallpox virus). Similarities between the two viruses make the vaccine about 95% effective in preventing smallpox in those people exposed to the virus. Smallpox vaccine was not used for many years because smallpox had been eradicated worldwide. However, concerns over the

use of smallpox as a biological weapon have resulted in vaccination of persons at high risk (e.g., public health workers, health care response teams, members of the armed services). The general public is not being vaccinated. The CDC recommends that persons who could be exposed to the monkeypox virus should also be vaccinated against smallpox. **SEE: illus.**

tetanus v. A vaccine against *Clostridium tetani*. **SEE: DTaP v.**

tumor v. Antitumor vaccination.

typhoid v. One of two forms of vaccine against typhoid fever. Attenuated (weakened) live virus is used for an oral vaccine taken in four doses by adults and children over age 6; it provides protection for 5 years. This vaccine should not be given to persons taking antimicrobial drugs or to those with AIDS. A parenteral type of the vaccine, made from the capsular polysaccharide of *Salmonella typhi*, given to children at least 6 months old, requires two doses 4 weeks apart, is effective 55% to 75% of the time, and lasts 3 years.

typhus v. A sterile suspension of the killed rickettsial organism of a strain or strains of epidemic typhus rickettsiae.

varicella (chickenpox) v. A chickenpox vaccine prepared from attenuated virus. **SEE: chickenpox; herpes zoster.**

yellow fever v. A vaccine made from a live attenuated strain of yellow fever that protects against this tropical, mosquito-borne, viral hemorrhagic fever.

vaccine adverse event reporting system **ABBR: VAERS.** A national surveillance system for monitoring undesirable reactions to administered vaccines.

vaccine safety datalink project **ABBR: VSD.** A collaboration between the Centers for Disease Control and Prevention and several major managed care organizations and health insurers to assess the effects of vaccinations on public health. The VSD has studied the effects of vaccination on autism, hair loss, thrombocytopenia, and neurological development in children. **Website: www.cdc.gov/od/science/iso/**

vaccine therapy Injection of infectious organisms, particles, or antigens to produce active immunization against a disease. **SYN: opsonic therapy.**

vaccinia (vāk-sin'ē-ă) [L. *vaccinus*, pert. to cows] A contagious disease of cattle, produced in humans by inoculation with cowpox virus to confer immunity against smallpox. Papules form about the third day after vaccination, changing to umbilicated vesicles about the fifth day, and at the end of the first week becoming umbilicated pustules surrounded by red areolae. They dry and form scabs, which fall off about the second week, leaving a white pitted depression. **SYN: coupox; vaccina.** **SEE: vaccination; varicella; variola.**

v. necrosum Spreading necrosis at the site of a smallpox vaccination; may be accompanied by similar necrotic areas elsewhere on the body. **SYN: progressive vaccinia.**

progressive v. v. necrosum.

vaccinia immune globulin An immune globulin containing vaccinia-specific antibodies. It is used for dermal complications of vaccination for smallpox (i.e., severe eczema vaccinatum and progressive vaccinia). An intravenous formulation (IV-VIG) is now being produced and tested.

vacciniform (vāk-sin'ī-form) [L. *vaccinus*, pert. to cows, + *forma*, shape] Of the nature of vaccinia or cowpox.

Vaccinium macrocarpon (vāk-sin'ē-ūm māk'rō-kār'pūn) [L. blueberry + Gr. *makros*, long + *karpos*, fruit] The scientific name for cranberry.

vaccinogenous (vāk'sin-ōj'ēn-ūs) [L. *vaccinus*, pert. to cows, + Gr. *gennan*, to produce] Producing vaccine or pert. to its production.

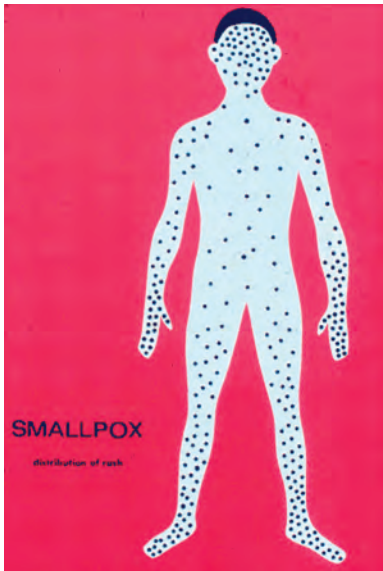
vaccinosis (vāk-sin-ō'sīs) Chronic illness, discomfort, or malaise that results from immunization.

vaccinostyle (vāk-sin'ō-stīl) A pointed stylus used in vaccination.

vacuolar (vāk'ū-ō-lār) [L. *vacuum*, empty] Pert. to or possessing vacuoles.

vacuolated (vāk'ū-ō-lāt'ēd) Possessing or containing vacuoles.

vacuolation (vāk'ū-ō-lā'shūn) Formation of vacuoles. **SYN: vacuolization.**



SMALLPOX

Centripetal distribution.

vacuole (vāk'ū-ōl) [L. *vacuum*, empty] A membrane-bound cell organelle, which may contain water, secretions, enzymes, or the remains of ingested material.

autophagic v. A vacuole that contains recognizable fragments of the ribosomes or mitochondria.

contractile v. A cavity filled with fluid in the cytoplasm of a protozoan. The cavity is emptied by sudden contraction of its walls.

heterophagous v. A vacuole that contains substances that come from outside the cell.

plasmocrine v. A vacuole present in the cytoplasm of a secretory cell that is filled with crystalloid material.

rhagiocrine v. A vacuole present in the cytoplasm of a secretory cell that is filled with colloid material.

vacuolization (vāk'ū-ō-li-zā'shūn) [L. *vacuum*, empty] Vacuolation.

vacuum (vāk'ū-ūm) [L., empty] A space exhausted of its air content.

vacuum aspiration Evacuation of the uterine contents by means of a curet or catheter attached to a suction apparatus. The procedure is performed before the 12th week of gestation.

vacuum extractor A device for applying traction to the fetus during delivery by using a suction cup attached to the fetal head. Its use may be hazardous except in the hands of experts.

vacuum tube A vessel of insulating material (usually glass) that is sealed and has a vacuum sufficiently high to permit the free flow of electrons between the electrodes that extend into the tube from the outside. In England, it is called a vacuum valve.

vagabond's disease Discoloration of the skin caused by exposure and scratching owing to the presence of lice. SEE: *pediculosis corporis*.

vagal (vā'gāl) [L. *vagus*, wandering] Pert. to the vagus nerve.

vagal attack Vasodepressor syncope.

vagal maneuver Any physical action that increases parasympathetic tone and decreases the conduction of the electrical impulses of the heart. Vagal maneuvers may be used as first-line interventions in the evaluation or management of supraventricular tachycardias. Examples include bearing down or straining; massaging the carotid sinus; coughing; gagging; or immersing the face or neck in ice water. SEE: *Valsalva's maneuver*.

vagi (vā'gī) Pl. of vagus.

vagin- SEE: *vagino-*.

vagina (vā-jī'nā) *pl. vaginae, vaginas* [L., sheath] A musculomembranous tube that forms the passageway between the cervix uteri and the vulva.

SEE: *illus.*

ANATOMY: In the uppermost part,

the cervix divides the vagina into four small vaulted cavities, called fornices: two lateral, the anterior, and the posterior. The bladder and urethra are adjacent to the anterior wall of the vagina, and the rectum is behind the posterior wall. The cavity of the vagina is a potential space; the walls are usually in contact with each other. Close to the cervix uteri the walls form a horizontal crescent shape, at the midpoint an H shape, and close to the vulva the shape of a vertical slit. The vaginal mucosa is stratified squamous epithelium that is very resistant to bacterial colonization. This lining is in folds called rugae, and the connective tissue external to it also permits stretching. The blood supply of the vagina is furnished from the inferior vesical, inferior hemorrhoidal, and uterine arteries. Except for the area close to the entrance, the vaginal tissue and mucosa contain few, if any, sensory nerve endings. The vagina is a passage for the insertion of the penis, for the reception of semen, and for the discharge of the menstrual flow. It also serves as the birth canal.

artificial v. A vagina constructed by plastic surgery for a patient whose vagina was removed for treatment of carcinoma or one who has congenital absence of the vagina.

bulb of v. The small erectile body on each side of the vestibule of the vagina. SEE: *vestibule of vagina*.

foreign bodies in v. Objects that enter the vagina accidentally or are inserted deliberately. A great variety of foreign bodies may be present in the vagina, esp. in children. Some foreign bodies in adults include vaginal tampons, pessaries, and contraceptive diaphragms. The treatment is to remove the foreign body. Antibiotic therapy is not usually necessary.

septate v. A congenital condition in which the vagina is divided longitudinally into two parts. This division may be partial or complete.

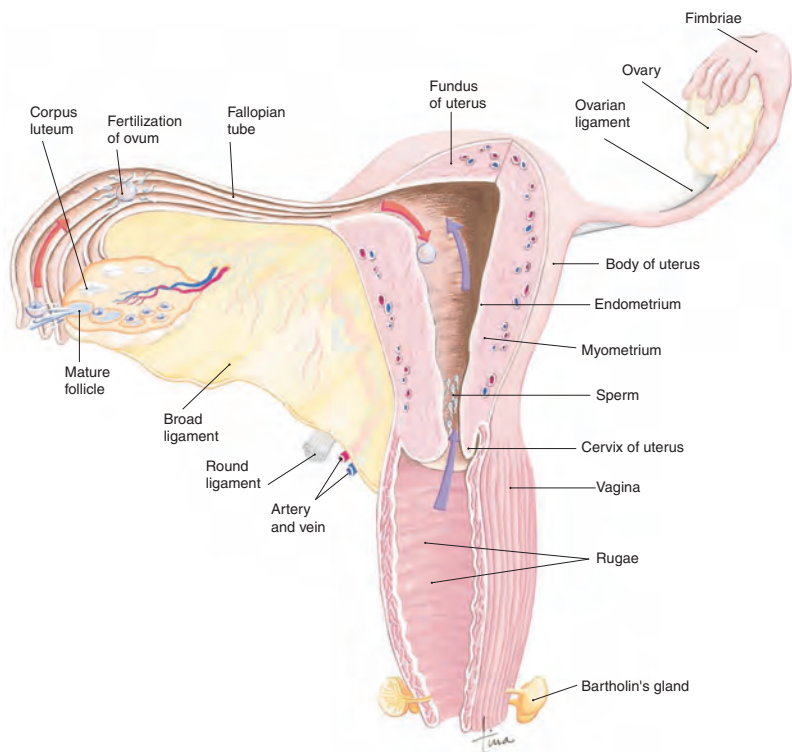
vaginal (vāj'in-āl) [L. *vagina*, sheath] Pert. to the vagina or to any enveloping sheath.

vaginal birth after previous cesarean ABBR: VBAC. Vaginal childbirth subsequent to cesarean delivery of a previous pregnancy. The risk of uterine rupture is 1% to 2%.

vaginal intraepithelial neoplasia ABBR: VAIN. Vulvar intraepithelial neoplasia.

vaginalitis (vāj-in-āl-ī'tīs) [v + Gr. *itis*, inflammation] Inflammation of the tunica vaginalis testis.

vaginal lubricant A fluid, usually a water-soluble ointment or cream, used to reduce vaginal dryness or sexual friction. As a lubricant, petroleum jelly is of little or no value. Estrogen-containing



VAGINA AND OTHER FEMALE ORGANS

vaginal creams reduce friction-associated discomfort related to postmenopausal atrophy. A natural and effective lubricant is human saliva.

vaginal vibrator A device used for erotic stimulation. It is usually applied to the clitoris or intravaginally.

vaginapexy (vāj'īn-ă-pĕk'sĕ) [v + Gr. *pexis*, fixation] Repair of a relaxed and prolapsed vagina. SYN: *colpopexy*.

vaginate (vāj'īn-āt) [L. *vaginatus*] Forming or enclosed in a sheath.

vaginectomy (vāj-īn-ĕk'tō-mĕ) [L. *vagina*, sheath, + Gr. *ektome*, excision]

1. Vaginalectomy. 2. Excision of the vagina or a part of it.

vaginismus (vāj'īn-īz'mūs) [L.] Painful spasm of the vagina from contraction of the outer third of the muscles surrounding it, a condition that may interfere with coitus. SEE: *Nursing Diagnoses Appendix*.

Severe vaginismus may prevent intercourse. Its origin may be physical or psychological. Diagnosis is based on pelvic examination (to rule out vaginal infections or structural anomalies) and sexual history, including childhood experiences and familial attitudes and current sexual practices and responses.

PATIENT CARE: Patients with vaginismus need factual information and emotional support. Information about sexual concerns, practices, and responses should be geared specifically to the problem or question posed by the patient. Correcting myths and misinformation and teaching the woman about the range of normal sexual responses can be helpful. Treatments include pelvic relaxation exercises, sex therapy, counseling and cognitive behavioral therapy, and instrumental dilator therapy, among others. Addressing the patient's emotional concerns provides psychological support. The woman should be helped to attain security and comfort in her own sensate sexual responses. Additional suggestions for patients may include advice about extending foreplay to increase vaginal relaxation and lubrication.

vaginitis (vāj-īn-ī'tīs) [L. *vagina*, sheath, + Gr. *itis*, inflammation] 1. Inflammation of a sheath. 2. Inflammation of the vagina. SYN: *colpitis*. SEE: *sexually transmitted disease; Nursing Diagnoses Appendix; vulvovaginitis*.

ETIOLOGY: This condition may be caused by overgrowth or invasion of mi-

croorganisms such as gonococci, Chlamydiae, *Gardnerella vaginalis*, staphylococci, streptococci, spirochetes; viruses such as herpes; irritation from chemicals in douching, hygiene sprays, detergents, menstrual products, or toilet tissue; fungal infection (candidiasis) caused by overgrowth of *Candida albicans*; or less commonly other candidal species, protozoal infection (*Trichomonas vaginalis*); neoplasms of the cervix or vagina; poor hygiene, irritation from foreign bodies (e.g., a pessary or a retained tampon), or vulvar atrophy. Other rare causes are parasitic illnesses, or, in malnourished women, pellagra.

SYMPTOMS: The patient experiences vaginal discharge, sometimes malodorous and occasionally stained with blood; irritation, burning, or itching; increased urinary frequency; and pain during urination or examination. On examination, the vaginal mucous membrane is reddened and there may be superficial maceration or ulceration.

TREATMENT: Specific therapy is given as indicated for the underlying cause. Improved perineal hygiene is emphasized by instructing in the proper method of cleaning the anus after a bowel movement, the proper use of menstrual protection materials, and the necessity of drying the vulva following urination.

PREVENTION: Perineal hygiene is emphasized by instructing patients in the proper method of cleaning the anus after a bowel movement, the proper use of menstrual protection materials, and the necessity of drying the vulva following urination. Patients should be encouraged to wear all cotton underpants, or panties with a cotton crotch area, no underwear to bed, and advised to avoid tight-fitting pants and panty-hose that promote moisture and organism growth.

PATIENT CARE: During examination of the patient, aseptic technique is used to collect specimens. The health care provider supports the patient throughout the procedures, explaining each procedure and forewarning the patient of possible discomfort. The patient should be advised that persistent or recurrent candidiasis indicate a need to be assessed for pregnancy or diabetes mellitus. If vaginitis is due to a sexually transmitted disease, the sexual partner should receive treatment together with the patient to prevent reinfection. Certain sexually transmitted vaginal infections are reported to local or state public health officials along with the patient's known sexual contacts.

v. adhaesiva Inflammation of the vagina causing adhesions between its walls.

atrophic v. Postmenopausal thinning and dryness of the vaginal epithelium related to decreased estrogen levels. SYN: *postmenopausal vaginitis*; *senile vaginitis*.

Symptoms include burning and pain during intercourse. Estrogen replacement therapy, hormone replacement therapy, or application of topical estrogen restores the integrity of the vaginal epithelium and supporting tissues and relieves symptoms.

candidal v. A yeast infection caused by *Candida albicans*.

Symptoms include a thick, curdlike adherent discharge; itching; dysuria; and dyspareunia. The vulva and vagina are bright red. History usually reveals one or more risk factors: use of oral contraceptives or broad-spectrum antibiotics; immune defects; diabetes mellitus; pregnancy; or frequent douching. Diagnosis is established by the presence of hyphae and buds on a wet smear treated with 10% potassium solution, a pH of 4.5 or less, and/or of growth of culture on Nickerson's or Sabouraud's media. Treatment may include the use of topical or antifungal agents, or both. Oral fluconazole, given once, or topical applications of miconazole, clotrimazole, butoconazole, or terconazole, given 3 to 7 days, promptly relieve symptoms. Recurrence of symptoms after treatment is often due to presence of candida species other than *C. albicans*, presence of a mixed infection, or reinfection. Either use of a different agent or a longer course of treatment (14 to 21 days) is indicated, as well as testing for hyperglycemia. SYN: *moniliasis*.

chlamydial v. The most common sexually transmitted vaginal infection in the U.S., caused by an obligate intracellular parasite, *Chlamydia trachomatis*. Chlamydial infection is also a major cause of pelvic inflammatory disease, tubal occlusion, infertility, ectopic pregnancy, nongonococcal urethritis, and ophthalmia neonatorum. Asymptomatic chlamydial infection has been implicated in the development of preterm labor and birth in high-risk women. Symptoms include a thin or purulent vaginal discharge, dysuria, and lower abdominal pain. Diagnosis is established by testing for specific monoclonal antibodies. Doxycycline is the drug of choice, except during pregnancy (it damages fetal bone and tooth formation). During pregnancy the infection is treated with erythromycin or azithromycin. SEE: *Chlamydia*.

diphtheritic v. Vaginitis with membranous exudate caused by infection with *Corynebacterium diphtheriae*.

emphysematous v. A rare, benign vaginitis with gas-bubble formation in the vaginal wall.

granular v. Vaginitis with cellular infiltration and enlargement of papillae.

nonspecific v. A rare condition in which no particular factor or etiological agent is identifiable; a contact-related allergic response may be involved. The inflammation usually resolves spontaneously. Treatments include topical creams and ointments. SEE: *bacterial vaginosis*.

DIAGNOSIS: The diagnosis is established when clinical symptoms of vaginitis are present, but no organisms are found in laboratory specimens.

postmenopausal v. Atrophic v.

senile v. Atrophic v.

v. testis Inflammation of the tunica vaginalis of the testis.

Trichomonas vaginalis v. An inflammation of the vagina caused by flagellate protozoa that infect the vagina, urethra, and Skene's ducts. Although the individual inflammatory response can include severe vulvar irritation and burning, dysuria, dyspareunia, and profuse, thin, "frothy," yellow-green to gray discharge, nearly 50% of infected women are asymptomatic. Sixty percent of the sexual partners of infected women share the infection. On inspection, the vulva may appear reddened and edematous. About 10% of infected women exhibit characteristic "strawberry patches" in the upper vagina and upper cervix. Diagnosis is based on seeing the highly motile organism with three to five flagella in a saline wet smear. Oral metronidazole is the organism-specific treatment. SEE: *Trichomonas*.

vagino-, vagin- [L. *vagina*, sheath] Combining forms meaning *vagina*.

vaginoabdominal (vāj'īn-ō-āb-dōm'īn-āl) [L. *vagina*, sheath, + *abdominalis*, abdominal] Rel. to the vagina and abdomen.

vaginocele (vāj'īn-ō-sēl) [" + Gr. *kele*, tumor, swelling] Vaginal hernia. SYN: *colpocele*.

vaginodynia (vāj'īn-ō-dīn'ē-ā) [" + Gr. *odyne*, pain] Pain in the vagina.

vaginogenic (vāj'īn-ō-jēn'īk) [" + Gr. *gennan*, to produce] Developed from or originating in the vagina.

vaginogram (vāj'īn-ō-grām) [" + *gramma*, something written] A radiograph of the vagina.

vaginography (vāj'īn-ōg'rā-fē) [" + Gr. *graphein*, to write] Radiography of the vagina. This technique is useful in diagnosing ureterovaginal fistula.

vaginolabial (vāj'īn-ō-lā'bē-āl) [" + *labium*, lip] Rel. to the vagina and labia.

vaginometer (vāj'īn-ōm'ētēr) [" + Gr. *metron*, measure] A device for measuring the length and expansion of the vagina.

vaginomycosis (vāj'īn-ō-mī-kō'sīs) [" + Gr. *mykes*, fungus, + *osis*, condition]

A fungus infection (mycosis) of the vagina.

vaginopathy (vāj'ī-nōp'ā-thē) [" + Gr. *pathos*, disease, suffering] Any disease of the vagina.

vaginoperineal (vāj'īn-ō-pēr'ī-nē'āl) [" + Gr. *perinaion*, perineum] Rel. to the vagina and perineum.

vaginoperineoplasty (vāj'īn-ō-pēr'ī-nē'ō-plās'tē) Plastic surgery involving the vagina and perineum.

vaginoperineorrhaphy (vāj'īn-ō-pēr'ī-nē-or'āf-ē) [" + " + *rhaphe*, seam, ridge] Repair of a laceration involving both the perineum and vagina. SYN: *colpoperineorrhaphy*.

vaginoperineotomy (vāj'īn-ō-pēr'īn-ē-ōt'ō-mē) [" + " + *tome*, incision] Surgical incision of the vagina and perineum; usually done to facilitate childbirth. SEE: *episiotomy*.

vaginoperitoneal (vāj'īn-ō-pēr'ī-tō-nē'āl) Rel. to the vagina and peritoneum.

vaginoplasty (vā-jī'nō-plās'tē) [" + Gr. *plassein*, to form] Plastic surgery on the vagina.

vaginoscope (vāj'īn-ō-skōp) [" + Gr. *skopein*, to examine] An instrument for inspection of the vagina. This may be a speculum or an optical instrument.

vaginoscopy (vāj'īn-ōs'kō-pē) Visual examination of the vagina.

vaginosis, bacterial (vāj'ī-nō'sīs) SEE: *bacterial vaginosis*.

vaginotomy (vāj'ī-nōt'ō-mē) [" + Gr. *tome*, incision] Incision of the vagina.

vagino-vesical (vāj'ī-nō-vēs'ī-kāl) [" + *vesica*, bladder] Pert. to the vagina and bladder.

vaginovulvar (vāj'īn-ō-vūl'vār) [" + *vulva*, covering] Vulvovaginal.

vagitis (vā-jī'tīs) [L. *vagus*, wandering, + Gr. *itis*, inflammation] Inflammation of the vagal nerve.

vagitus (vā-jī'tūs) [L. *vagire*, to squall] The first cry of a newborn.

v. uterinus The crying of a fetus while still in the uterus.

v. vaginalis The cry of an infant with its head still in the vagina.

vagolysis (vā-gōl'ī-sīs) [L. *vagus*, wandering, + Gr. *lysis*, dissolution] Surgical destruction of the vagus nerve.

vagolytic (vā'gō-lit'īk) **1.** Concerning vagolysis. **2.** An agent, surgical or chemical, that prevents function of the vagus nerve.

vagomimetic (vā'gō-mī-mēt'īk) [" + Gr. *mimetikos*, imitating] Resembling action caused by stimulation of the vagus nerve.

vagotomy (vā-gōt'ō-mē) [" + Gr. *tome*, incision] Section of the vagus nerve.

medical v. Administration of drugs to prevent function of the vagus nerve.

vagotonia (vā'gō-tō'nē-ā) [" + Gr. *tonos*, tension] Hyperirritability of the parasympathetic nervous system. SEE: *sympatheticotonia*. **vagotonic, adj.**

vagotropic (vā'gō-trōp'ik) [v + Gr. *tropos*, a turning] Acting on the vagus nerve.

vagotropism (vā-gōt'rō-pizm) [v + -ismos, condition] Affinity for the vagus nerve, as a drug.

vagovagal (vā'gō-vā'gāl) Concerning reflex activity mediated entirely through the vagus nerve (i.e., via efferent and afferent impulses transmitted through the vagus nerve).

vagrant (vā'grānt) [L. *vagrans*] **1.** Wandering from place to place without a fixed home. **2.** A homeless person who wanders from place to place.

vagus nerve stimulation A treatment for seizures and treatment-resistant depression in which a generator sends electrical impulses along the left vagus nerve. The impulse generator is typically inserted under the clavicle on the left side of the chest during a brief surgical procedure. The device is set to generate electrical impulses of appropriate amplitude, frequency, and pulse width to control a patient's symptoms.

VAIN *vaginal intraepithelial neoplasia*.
val valine.

valence, valency (vā'lēns, -lēn-sē) [L. *valens*, powerful] **1.** The property of an atom or group of atoms causing them to combine in definite proportion with other atoms or groups of atoms. Valency may be as high as 8 and is determined by the number of electrons in the outer orbit of the atom. **2.** The degree of the combining power or replacing power of an atom or group of atoms, the hydrogen atom being the unit of comparison. The number indicates how many atoms of hydrogen can unite with one atom of another element.

valerian (vā-lēhr'ē-an) A perennial herb, *Valeriana officinalis*, used as a sedative and sleep aid. The drug acts by inhibiting the breakdown of gamma-aminobutyric acid in the brain. It may interact with other sedatives and hypnotics such as alcohol and barbituates.

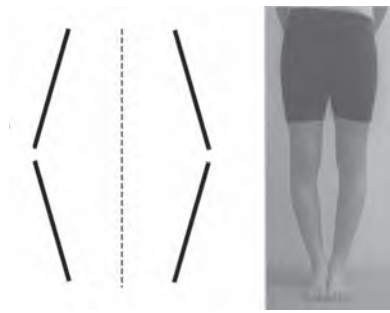
valgus (vāl'gūs) [L., bowlegged] Bent or turned outward, used esp. of deformities in which the most distal anatomical part is angled outward and away from the midline of the body, as talipes valgus or hallux valgus. **SEE:** *illus.*; *knock-knee*; *varus*.

valid (vāl'id) [L. *validus*, strong] Producing the desired effect; correct.

validate (vāl'ī-dāt) To ensure that the item in question is valid and correct.

validation, consensual The process of testing thoughts, emotions, and behaviors with other human beings. The desired outcome is acknowledgment of similar viewpoints and feelings.

validation group In research, a group of subjects who are enrolled to determine whether the findings obtained from a



VALGUS

previous cohort apply to a different cohort and are generally applicable.

validation therapy A communication technique used for patients with moderate to late dementia in which the caregiver makes statements to the patient that demonstrate respect for the patient's feelings and beliefs. This method helps prevent argumentative and agitated behavior. In some cases, the caregiver may need to agree with the patient's statements, even though they are not true or real. It is used when reality orientation is not successful.

validity (vā-līd'ī-tē) **1.** The degree to which data or results of a study are correct or true. **2.** The extent to which a situation as observed reflects the true situation.

concurrent v The degree to which two measuring devices or methods agree with each other; the degree to which an unproven measurement instrument matches the results obtained by an instrument known to provide accurate results.

construct v. The degree to which a measurement accurately counts the objects it is intended to evaluate; the fitness of a test to its target or to the theory that it is intended to illuminate. Imagine that a researcher wants to determine how important spirituality is to survival in patients with cancer. She may design a test to measure spirituality. As a first approximation she decides to measure the number of times per month that her subjects attend religious services and to correlate that number with months of survival after the diagnosis of cancer. Now, suppose she finds that people who report themselves as attending church frequently do not survive cancer more than individuals who rarely attend church. There are at least two possible explanations for her findings: 1. spirituality is unrelated to cancer survival; or, 2. her test of spirituality did not have construct validity, i.e., the number of times a month that a person attends church may prove to be an inaccurate measure of religious faith.

face v. Plausibility, that is, logically reasonable or acceptable and therefore, assumed to be true.

predictive v. The degree to which a test's measurement of current variables accurately forecast future results or outcomes.

valine (vāl'ēn, vā'lēn) ABBR: val. A branched-chain amino acid, $C_5H_{11}NO_2$, derived from digestion of proteins. It is essential in the diet, esp. for normal growth in infants.

valinemia (vāl'ī-nē'mē-ā) An increased concentration of valine in the blood, usually caused by a deficiency of the enzyme valine transaminase.

vallate (vāl'āt) [L. *vallatus*, walled] Having a rim around a depression.

vallecula (vāl-lēk'ū-lā) [L., a depression] A depression or crevice.

v. cerebelli A deep fissure on the inferior surface of the cerebellum.

v. epiglottica A depression lying lateral to the median epiglottic fold and separating it from the pharyngoepiglottic fold.

v. ovata A depression in the liver in which rests the gallbladder.

valley fever Coccidioidomycosis.

vallum unguis (vāl'ūm ūng'gwīs) The fold of skin overlapping the nail.

Valsalva's maneuver (vāl-sāl'vāz) [Antonio Maria Valsalva, It. anatomist, 1666–1723] An attempt to forcibly exhale with the glottis, nose, and mouth closed. This maneuver causes increased intrathoracic pressure, slowing of the pulse, decreased return of blood to the heart, and increased venous pressure. If the eustachian tubes are not obstructed, the pressure on the tympanic membranes also will be increased. When this maneuver is done with just the glottis closed, only intrathoracic pressure will increase. This maneuver may be helpful in converting supraventricular tachycardias to normal sinus rhythm or in clearing ears that have become blocked during a descent from a high altitude. SEE: *Müller's maneuver*; *Toynbee maneuver*.

valsartan (vāl-sār'tān) An angiotensin II receptor antagonist and hypertensive, administered orally to manage hypertension. SYN: *Diovan*.

value (vāl'ū) [ME. from L. *valere*, to be of value] 1. The amount of a specific substance or the magnitude of an entity. 2. Something that is cherished or held dear.

valve (vālv) [L. *valva*, leaf of a folding door] Any of various membranous structures in a hollow organ or passage that temporarily close to permit the flow of fluid in one direction only.

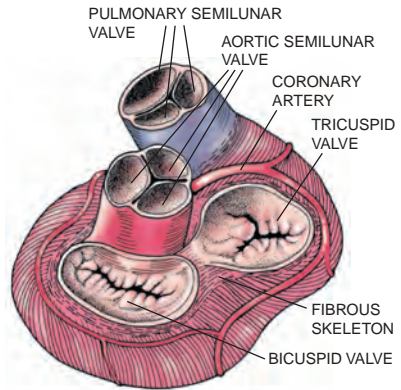
aortic v. The valve at the junction of the left ventricle and the ascending aorta. It is composed of three segments

(semilunar cusps) and prevents regurgitation. SEE: *cardiac v.* for illus.

bicuspid v. Mitral valve.

Bjork-Shiley heart v. A synthetic artificial heart valve that is no longer commercially available but remains implanted in thousands of patients. The valve has been known to fracture at its struts during use, which results in death in the majority of cases.

cardiac v. Any of the four valves that prevent the backflow of blood as it passes into, through, and out of the heart. In order of the entry of the venous blood into the right atrium, they are the tricuspid, pulmonary, mitral, and aortic. SEE: *illus.*



CARDIAC VALVES

Superior view with atria removed

external nasal v. The outermost opening of the nose (i.e., the alar rim).

Houston's v. SEE: *Houston's valve*.

ileocecal v. A projection of two membranous folds of the ileum of the small intestine into the cecum of the colon. It prevents backup of fecal material into the small intestine. SYN: *valvula coli*.

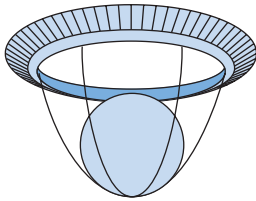
left atrioventricular v. Mitral valve.

mitral v. SEE: *mitral valve*.

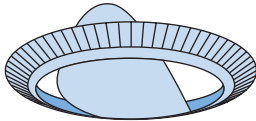
nasal v. The site of greatest obstruction to airflow through the nasal passages. It extends from the bony cage near the piriform aperture into part of the cartilaginous vestibule of the nose. It is also known as the "internal nasal valve."

prosthetic heart v. A substitute valve used to replace a diseased valve. There are two main types of prostheses: those made from biological tissues (e.g., the heart valves of animals, esp. pigs) and those made from biocompatible materials (e.g., metals or polymers). Biocompatible mechanical valves may be constructed in a variety of ways, e.g., from a ball that moves up and down in a cage; with bileaflet valves that close in the midline; or with a single leaflet

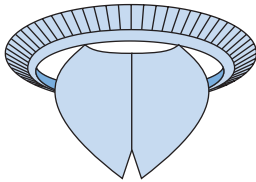
(which tilts to open and close). SEE: *illus.*



Caged ball valve



Monoleaflet



Bileaflet

TYPES OF MECHANICAL HEART VALVES

A. caged ball valve; B. monoleaflet. C. bileaflet

pulmonary v. The valve at the junction of the right ventricle and pulmonary artery. It is composed of three semilunar cusps and prevents regurgitation of blood from the pulmonary artery back into the right ventricle. SEE: *cardiac v.* for *illus.*

pyloric v. The prominent circular membranous fold at the pyloric orifice of the stomach. SYN: *valvula pylori*.

reducing v. A device to reduce the pressure of gas that has been compressed in a cylinder.

right atrioventricular v. Tricuspid v.

semilunar v. The type of valve separating the heart and aorta and the heart and pulmonary artery. SEE: *cardiac v.* for *illus.*

tricuspid v. The valve that closes the orifice between the right cardiac atrium and right ventricle during ventricular systole. SYN: *right atrioventricular valve*; *valvula tricuspidalis*. SEE: *cardiac v.* for *illus.*

valvectomy (vāl-vĕk'tō-mĕ) Surgical excision of a valve, esp. a heart valve. SEE: *valvuloplasty*.

valvotomy (vāl-vōt'ō-mĕ) [*v* + Gr. *tome*, incision] Valvulotomy.

mitral balloon v. Expansion of a balloon in the orifice of a mitral valve as a means of treating mitral stenosis, instead of mitral valve replacement or commissurotomy. SYN: *valvuloplasty*.

valvula (vāl'vū-lā) *pl. valvulae* [L., a small fold] A valve, specifically a small valve.

v. coli Ileocecal valve.

valvulae (vāl'vū-lĕ) Pl. of valvula.

valvular (vāl'vū-lār) [L. *valvula*, a small fold] Rel. to or having one or more valves.

valvulitis (vāl'vū-lī'tis) [*v* + Gr. *itis*, inflammation] Inflammation of a valve, esp. a cardiac valve.

valvuloplasty (vāl'vū-lō-plās'tē) Plastic or restorative surgery on a valve, esp. a cardiac valve.

percutaneous balloon v. The percutaneous insertion of one or more balloons across a stenotic heart valve. Inflating the balloons decreases the constriction. This technique has been used to treat mitral and/or pulmonic stenosis.

valvulotome (vāl'vū-lō-tōm) [*v* + Gr. *tome*, incision] An instrument for incising a valve.

valvulotomy (vāl'vū-lōt'ō-mĕ) The process of cutting through a valve. SYN: *valvotomy*.

vanadium (vā-nā'dē-ŭm) [*Vanadis*, a Scandinavian goddess] SYMB: V. A light gray metallic element; atomic weight, 50.941; atomic number, 23.

van Buren's disease (vān bū'rĕnz) [William Holme van Buren, U.S. surgeon, 1819–1883] Induration of the corpora cavernosa of the penis. SYN: *Peyronie's disease*.

Vandellia cirrhosa (vān-dĕl'ĕ-ā sī-rō'sā) [NL] A slender parasitic catfish indigenously to the Amazon. It attaches itself to the gills of other spiny fishes and extracts blood for food. It occasionally swims into and inserts itself in the urethra or rectum of human bathers, from whom it must be surgically removed. This nearly transparent vertebrate is also known as the "toothpick fish," "vampire fish," "carnero," or "candiru urethra."

van der Hoeve's syndrome (vān'dĕr hōvz") [Jan van der Hoeve, Dutch ophthalmologist, 1878–1952] Conductive deafness caused by otosclerosis-like changes in the temporal bone. Blue sclerae and osteogenesis imperfecta are also present.

van der Waals forces (vān'dĕr-wōlz) [Johannes D. van der Waals, Dutch physicist, 1837–1923] The definite but weak forces of attraction between the nuclei of atoms of compounds. These forces do not result from ionic attraction, hydrogen bonding, or sharing of electrons, but rather from the motion of electrons in atoms and molecules.

vanilla (vā-nīl'ä) [Sp. *vainilla*, little sheath] Any one of a group of tropical orchids. The cured seed pods of *Vanilla planifolia* contain an aromatic substance, also called vanilla, that is used for flavoring.

vanillin (vā-nīl'in) A crystalline compound found in vanilla pods or produced synthetically; used for flavoring foods and in pharmaceuticals.

vanillism (vā-nīl'izm) Irritation of the skin, mucous membranes, and conjunctiva sometimes experienced by workers handling raw vanilla. It is caused by a mite.

vanillylmandelic acid ABBR: VMA. 3-methoxy-4-hydroxymandelic acid. Metabolic product of catecholamines representing approx. 90% of the metabolites of catecholamines epinephrine and norepinephrine. VMA's are secreted in the urine. Persons with pheochromocytoma produce excess amounts of catecholamines; thus, increased amounts of VMA are present in their urine.

van't Hoff's rule (vānt'hōfz') [Jacobus Henricus van't Hoff, Dutch chemist, 1852–1911] **1.** The rule that the speed of chemical reactions is doubled, at least, for each 10°C rise in temperature. The rule is an approximation that works best when temperatures approximate those under which the reaction normally occurs. **2.** Any substance in a dilute solution exerts an osmotic pressure that is equivalent the pressure of an equal volume of gas in solution. **3.** A technique used to predict the greatest number of mirror-image versions of a molecule that can rotate plane polarized light.

vapocoolant (vā'pō-kool'ānt) [v + *coolant*] A volatile liquid that evaporates on contact with the skin, causing a local refrigerant effect and providing local anesthesia for injections, intravenous insertions, and other procedures.

vapor (vā'por) [L., steam] **1.** The gaseous state of any substance. **2.** A medicinal substance for administration by inhalation.

vaporization (vā'por-ī-zā'shūn) [L. *vapor*, steam] **1.** The conversion of a liquid or solid into vapor. **2.** Therapeutic use of a vapor.

laser v. The resection of tissue by converting it to gas with laser energy.

vaporize (vā'por-īz) To change a material to a vapor form.

vaporizer (vā'por-ī'zer) A device for converting liquids into a vapor spray.

vaporous (vā'por-ūs) [L. *vapor*, steam] Consisting of, pert. to, or producing vapors.

vapor-treated Exposed to steam in order to clean, decontaminate, or sterilize. Clotting factors are steam-treated to re-

move potentially infectious agents such as pathogenic viruses.

VAQTA (vāk'tā) Hepatitis A vaccine, inactivated.

Vaquez's disease (vā-kāz') [Louis Henri Vaquez, Fr. physician, 1860–1936] Polycythemia vera.

variability (vār'ē-ā-bīl'ī-tē) The ability and tendency to change.

baseline v. Fluctuations in the fetal heart rate, recorded by the electronic monitor, that reflect the status of the fetal autonomic nervous system. Absence of short-term variability (beat-to-beat changes) is a sign of fetal compromise. Long-term variability (wavelike undulations) occurs normally three to five times per minute. Increased long-term variability is common during fetal sleep but may reflect prematurity, congenital abnormalities such as anencephaly, or fetal response to drugs.

genetic v. 1. The range of minor alterations present in a genome, such as the number of diverse alleles of a specific gene that are found as a result of small mutations in the DNA of a species. **2.** The expression of those diverse genes in living organisms and their impact on health or disease.

heart rate v. ABBR: HRV. Spontaneous fluctuations above and below the mean heart rate. A reduced HRV is associated with an increased incidence of total mortality and cardiac events in post-myocardial infarction patients, as well as in apparently healthy individuals, esp. older persons.

variable (vā'rē-ā-b'l) [L. *variare*, to vary] **1.** Any changing, measurable thing. In statistics, it is often possible to measure and graph the relationship of one variable to another (e.g., height and weight in the growing child). **2.** Changing in form, structure, behavior, or physiology.

dependent v. In epidemiology and research design, the condition or disease under study or the response part of a dose-response curve. In a study measuring smoking and heart disease, for example, heart disease would be the dependent variable.

independent v. In epidemiology and research, the agent that incites a response; the stimulus (e.g., the dose part of a dose-response curve). In the smoking and heart disease study cited in the entry called *dependent variable*, smoking would be the independent variable.

variance (vār'ē-āns) [L. *variare*, to vary] A statistical index of the degree to which measurements in a data set are different from each other or deviate from the mean; the square of the standard deviation.

variant (vār'ē-ānt) That which is different from the characteristics of the other organisms or entities in a particular

classification, esp. a disease, species, or physical appearance.

variate (vā'rē-āt) Variable (2).

variation (vā'rē-ā'shūn) Differences between individuals of a certain species or class.

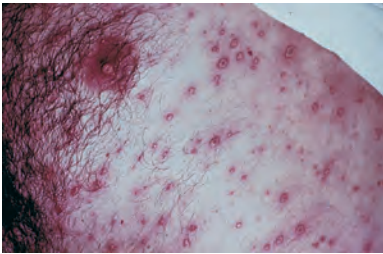
continuous v. Variation in which the difference between successive groups or individuals is quite small.

meristic v. Variation in number as opposed to kind.

varication (vār'i-kā'shūn) 1. Formation of a varix. 2. The condition of a varicosity.

variced (vār'i-sēd) Concerning a varix.

varicella (vār'i-sēl'ā) [L., a tiny spot] An acute infectious disease, usually seen in children under age 15, caused by varicella-zoster virus. Its hallmark is a rash, described clinically as having a "dewdrop on a rose petal" pattern, scattered in clusters ("crops") over the trunk, face, scalp, upper extremities, and sometimes the thighs. It is transmitted mainly by respiratory droplets that contain infectious particles; direct contact with a lesion and contaminated equipment also can spread the virus. Reactivation of the virus in adults causes shingles. SYN: *chickenpox*. **SEE: illus; herpes zoster; varicella-zoster immune globulin.**



VARICELLA (CHICKENPOX)

SYMPTOMS: After an incubation period of 2 to 3 weeks (usually 13 to 17 days), patients develop fever, malaise, anorexia, and lymphadenopathy, followed by the appearance of an extremely pruritic (itchy) rash that starts flat and, over time, becomes a small blister on a red base, and then eventually forms crusted scabs. All three stages of the rash may be present on the body at one time. Varicella may be transmitted to others until all lesions are crusted over.

Occasionally, for example, when it occurs in adults or immunosuppressed children, chickenpox is complicated by superimposed bacterial pneumonia, encephalitis, or thrombocytopenia. Immunization with varicella vaccine provided during infancy is designed to prevent these complications.

ETIOLOGY: Chickenpox may strike

individuals of any age who have not been previously been exposed to the virus. Epidemics are most frequent in winter and spring in temperate climates.

DIFFERENTIAL DIAGNOSIS: Impetigo, dermatitis herpetiformis, herpes zoster, and furunculosis may occasionally need to be distinguished from varicella, although usually the difference is obvious.

COMPLICATIONS: Secondary infections may occur, caused by scratching, which may result in abscess formation; at times, development of erysipelas or even septicemia may result. Occasionally, lesions in the vicinity of the larynx may cause edema of the glottis and threaten the life of the patient. Encephalitis is a rare complication. Varicella may be fatal in children with leukemia or children who are taking adrenocorticosteroids.

PREVENTION: Administration of varicella-zoster immune globulin (VZIG) within 72 hr of exposure will prevent clinical varicella in susceptible, healthy children. The following conditions should alert one to the possible need for use of VZIG: immunocompromised children; newborns of mothers who develop varicella in the period 5 days before to 48 hr after delivery; postnatal exposure of newborns (esp. those who are premature) to varicella; healthy adults who are susceptible to varicella and who have been exposed; pregnant women who have no history of having had varicella and who have had significant exposure. The use of VZIG in pregnant women will not prevent fetal infection or congenital varicella syndrome. Live attenuated vaccine is now available for general use.



Because severe illness and death have resulted from varicella in children being treated with corticosteroids, these children should avoid exposure to varicella.

TREATMENT: Otherwise healthy affected children are treated with diphenhydramine or hydroxyzine to reduce itch and acetaminophen to reduce fever. Children at increased risk for complications and immunosuppressed adults are given varicella-zoster immune globulin as prophylaxis after exposure. If varicella infection develops in immunosuppressed persons or pregnant women in the third trimester, intravenous acyclovir is administered. Immunization with varicella vaccination is recommended for those children who have not had chickenpox and have not previously received the immunization. **SEE: Standard Precautions Appendix.**

v. gangrenosa Varicella in which necrosis occurs around the vesicles, resulting in gangrenous ulceration.

varicella-zoster immune globulin ABBR: VZIg. An immune globulin obtained from the blood of healthy persons found to have high antibody titers to varicella-zoster. SEE: *varicella*.

varicelliform (văr'î-sël'î-form) Resembling varicella. SYN: *varicelloid*.

varicelloid (văr'î-sël'oyd) [" + Gr. *eidōs*, form, shape] Varicelliform.

varices (văr'î-séz) [L.] Pl. of varix.

variciform (văr'îs'î-form) [L. *varix*, twisted vein, + *forma*, shape] Varicose.

varicoblepharon (văr'î-kō-blēf'ă-rōn) [" + Gr. *blepharon*, eyelid] Varicose tumor of the eyelid.

varicocele (văr'î-kō-sēl) [" + Gr. *kele*, tumor, swelling] Enlargement of the veins of the spermatic cord, commonly occurring above the left testicle. Varicoceles, present in more than 10% of males, are usually identified during adolescence. Male infertility has been linked to varicoceles, but a definitive causal relation has not been established. SYN: *varicole*.

SYMPTOMS: There is a dull ache along the cord and a slight dragging sensation in the groin. On examination, the vessels on the affected side of the scrotum are full, feel like a bundle of worms, and are sometimes purplish.

TREATMENT: Most varicoceles are asymptomatic and are followed conservatively. When they cause intolerable symptoms, or when they are found during the evaluation of men with infertility, they may be surgically repaired. However, there is no firm evidence that varicocele repair improves male fertility.

ovarian v. Varicosity of the veins of the ovarian or pampiniform plexus of the broad ligament.

utero-ovarian v. Varicosity of the veins of the ovarian (pampiniform) plexus and the uterine plexus of the broad ligament.

varicocelectomy (văr'î-kō-sē-lēk'tō-mē) [L. *varix*, twisted vein, + Gr. *kele*, tumor, swelling, + *ektomē*, excision] Excision of a portion of the scrotal sac with ligation of the dilated veins to relieve varicocele.

varicography (văr'î-kōg'ră-fē) [" + Gr. *graphein*, to write] Radiography of varicose veins after the injection of a contrast medium.

varicoid (văr'î-koyd) [" + Gr. *eidōs*, form, shape] Resembling a varix.

varicole (văr'î-kōl) Varicocele.

varicomphalos (văr'î-kōm'fă-lūs) [" + Gr. *omphalos*, navel] Varicose tumor of the navel.

varicophlebitis (văr'î-kō-flē-bī'tis) [" +

Gr. *phleps*, vein, + *itis*, inflammation] Phlebitis combined with varicose veins.

varicose (văr'î-kōs) [L. *varicosus*, full of dilated veins] Pert. to varices; distended, swollen, knotted veins. SYN: *variciform*.

varicose vein An enlarged, dilated superficial vein. This condition may occur in almost any part of the body but is most common in the lower extremities and in the esophagus. SEE: *Nursing Diagnoses Appendix*.

ETIOLOGY: The development of varicose veins of the legs is promoted and aggravated by pregnancy, obesity, genetics, chronic constipation or straining during defecation, and occupations that require prolonged standing. Esophageal varices are caused by portal hypertension that accompanies cirrhosis of the liver or mechanical obstruction and occlusion of hepatic veins.

SYMPTOMS: Most varicose veins of the legs are asymptomatic, although they may be cosmetically undesirable. Esophageal varices and hemorrhoidal varices may bleed profusely. SEE: *illus*.



VARICOSE VEINS IN LEG

TREATMENT: In hemorrhage, elevation of the extremity and gentle but firm pressure over the wound will stop the bleeding. The patient should not be permitted to walk until the acute condition is controlled. Sclerotherapy, rubber band ligation, or octreotide may be used to control bleeding caused by hemorrhage from esophageal varices.

PATIENT CARE: The patient with lower extremity varicosities is taught to avoid anything that impedes venous return, such as wearing garters and tight girdles, crossing the legs at the knees, and prolonged sitting. After the legs have been elevated for 10 to 15 min, support hose are applied. The patient should not sit in a chair for longer than 1 hr at a time. Ambulation is encouraged for at least 5 min every hour. The

patient should elevate the legs whenever possible, but no less than twice a day for 30 min each time, and should avoid prolonged standing. Exercise, especially walking, is encouraged to promote the muscular contraction that moves blood through the veins, minimizing venous stasis. Signs of thrombophlebitis, a complication of varicose veins, include heat and local pain. If surgery is performed, elastic stockings or antithrombus devices are applied postoperatively and the foot of the bed is elevated above the level of the heart. Analgesics are prescribed and administered as needed. Circulatory assessment (color and temperature of toes, pedal pulses) is carried out according to protocol or the surgeon's orders. The patient is watched for complications such as bleeding, infection, and neurosensory problems. Overweight patients need to lose weight.

varicosis (văr'î-kō'sîs) [L.] Varicose condition of veins.

varicosity (văr'î-kōs'î-tē) [L. *varix*, twisted vein] **1.** Condition of being varicose. **2.** Varix (1).

varicotomy (văr'î-kōt'ō-mē) [v + Gr. *tomē*, incision] Excision of a varicose vein.

varicula (văr-îk'ū-lā) [L., a tiny dilated vein] A small varix, esp. of the conjunctiva.

variety (vā-rî'ē-tē) [L., *varietas*, variety] A term used in classifying individuals in a subpopulation of a species.

variola (vā-rî'ō-lā) [L., pustule] Smallpox. **variolar** (-lār), *adj.*

v. major Smallpox with its full-blown, classic symptoms. SYN: *variola vera*.

v. minor A mild form of smallpox with sparse rash and low-grade fever. SYN: *alastrim*; *amaas*.

v. vera Variola major.

VARIVAX (văr'î-vāks) Varicella virus vaccine live.

varix (vā'rîks) *pl.* **varices** [L., twisted vein] **1.** A tortuous dilatation of a vein. SEE: *varicose vein*. **2.** Less commonly, dilatation of an artery or lymph vessel.

aneurysmal v. A direct communication between an artery and a varicose vein without an intervening sac.

arterial v. A varicosity or dilation of an artery.

chyle v. A varix of a lymphatic vessel that conveys chyle.

esophageal v. A tortuous dilatation of an esophageal vein, esp. in the distal portion. It results from any condition that causes portal hypertension, typically cirrhosis of the liver. SEE: *Müller's maneuver*; *Nursing Diagnoses Appendix*.

SYMPTOMS: If an esophageal varix bursts, massive hemorrhage occurs, and the patient may die within minutes.

TREATMENT: Medical treatment includes administration of a beta blocker, such as nadolol, with a nitrate, such as isosorbide, to lower portal pressures and decrease the likelihood of variceal bleeding. Invasive therapies include the injection of sclerosing agents or rubber banding of the dilated vein.

PATIENT CARE: Bleeding esophageal varices constitute a medical emergency, requiring immediate treatment to control hemorrhage and prevent hypovolemic shock. The patient's vital signs, SaO₂, ABGs, electrolyte and fluid volume balance, and level of consciousness are closely monitored. Intravenous access must be established promptly and fluid resuscitation, followed by transfusion and the administration of plasma are critical to early stabilization of the patient. Medical therapies also include the use of vasoconstricting drugs, such as vasopressin. Endoscopy is used to identify the site of the ruptured vessels which may then be treated with sclerotherapy, ligation, or banding.

Surgical procedures to prevent rebleeding include portocaval or mesocaval shunts, portosystemic anastomosis, splenorenal shunting or liver transplantation. All procedures are explained, sensation messages provided, and reassurance and emotional support offered.

lymphaticus v. Dilatation of a lymphatic vessel.

turbinal v. Permanent dilatation of veins of turbinated bodies.

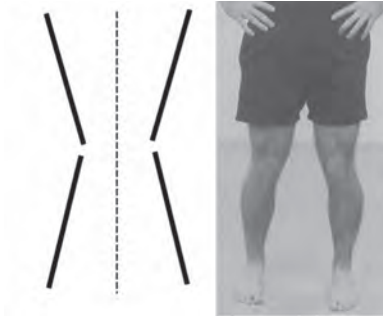
varnish (văr'nîsh) A solution of gums and resins in a solvent. When these are applied to a surface, the solvent evaporates and leaves a hard, more or less flexible film. In dentistry, varnishes are used to protect sensitive tooth areas such as the pulp. SYN: *cavity v.*

cavity v. Varnish.

varus (vā'rûs) [L, knock-kneed.] Angled or turned inward, used esp. of deformities in which the most distal part of the anatomy is turned toward the body's midline. There are many varus conditions. In *coxa vara*, the shaft of the femur turns inward with respect to the neck of the femur. In *genu varum*, either the femur or tibia turns inward at the knee, causing a knock-kneed deformity. *Talipes varus* is a clubfooted condition in which the heel turns inward and the person walks on the outer border of the foot. SEE: *illus.*; *valgus*.

vas (vās) *pl.* **vasa** [L., vessel] A vessel or duct.

v. aberrans 1. A narrow tube varying in length from 1½ to 14 in (3.8 to 35.6 cm), occasionally found connected with the lower part of the canal of the epididymis or with the commencement of the vas deferens. **2.** A vestige of the biliary ducts sometimes found in the liver.



VARUS

v. afferens An afferent vessel of a lymph node.

v. deferens The secretory duct of the testis, a continuation of the epididymis. This slim, muscular tube, approx. 18 in (45.7 cm) long, transports the sperm from each testis to the ejaculatory duct, which empties into the prostatic urethra. SYN: *ductus deferens*. SEE: *illus.; genitalia* for *illus.*

v. prominens Blood vessel on the cochlea's accessory spiral ligament.

v. spirale A large blood vessel beneath the tunnel of Corti in the basilar membrane.

vasa (vā'sā) [L. *vas*, vessel] Pl. of *vas*.

v. afferentia The lymphatic vessels entering a lymph node.

v. efferentia 1. Lymphatics that

leave a lymph node. 2. The secretory ducts of the testis to the head of the epididymis.

v. praevia The blood vessels of the umbilical cord presenting before the fetus.

v. recta 1. Tubules that become straight before entering the mediastinum testis. 2. Capillary branches of the renal efferent arterioles, parallel to the loops of Henle.

v. vasorum Minute blood vessels that are distributed to the walls of the larger veins and arteries.

v. vorticosa Stellate veins of the choroid, carrying blood to the superior ophthalmic vein.

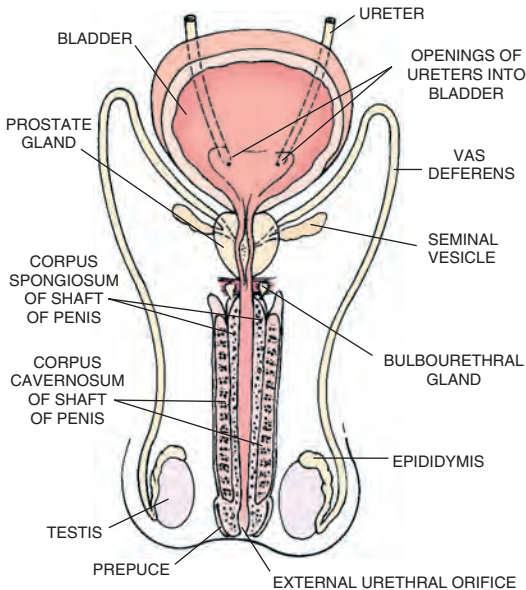
vasal (vā'sāl) [L. *vas*, vessel] Rel. to a vas or vessel.

vasalgia (vā-sāl'jē-ă) Pain in a vessel of any kind.

vascular (vās'kū-lār) [L. *vasculum*, a small vessel] Pert. to or composed of blood vessels.

vascular brachytherapy The temporary implantation of radioactive material within the lumen of a blood vessel. It is used to prevent blood vessels opened by stents or other invasive cardiovascular procedures from closing again after invasive cardiovascular procedures, e.g., stent placements.

vascular endothelium The simple squamous epithelial tissue lining the blood vessels. It is a semipermeable barrier between the blood and the vascular smooth muscle, produces vasodilator chemicals, and may inhibit vasocon-



VAS DEFERENS AND OTHER MALE ORGANS

strictor substances. Damage to the endothelium leads to increased production of prostaglandins and stimulates blood clotting.

vascularity (vās'kū-lār'ī-tē) The state of being vascular.

vascularization (vās'kū-lār-ī-zā'shūn) [*L. vasculum*, a small vessel] The development of new blood vessels in a structure.

vascularize (vās'kū-lār'īz) [*L. vasculum*, a small vessel] To become vascular by development of new blood vessels.

vascular parkinsonism Parkinson's disease is produced by small strokes that affect the basal ganglia, not by neuronal loss in these regions of the brain. Compared with patients who have classical Parkinson's disease, people with vascular parkinsonism tend to be older and are more likely to have lower body rigidity, difficulty walking, and disturbances of balance. Upper body tremor is relatively infrequent. A history of atherosclerotic vascular disease, diabetes mellitus, high blood pressure, or hyperlipidemia is common in vascular parkinsonism. Efforts to prevent vascular parkinsonism focus on the treatment of these predispositions.

vascular stiffening The loss of arterial elasticity that occurs in patients with diabetes mellitus, hypertension, and aging.

vascular system The blood vessels: the arteries, capillaries, and veins. The vessels carry blood to and from the heart and contribute to the regulation of blood pressure. Exchange of materials between the blood and tissues takes place in capillary networks. Pulmonary and systemic circulation are included. Moreover, the lymphatic system, which returns a significant amount of tissue fluid to the venous circulation, is usually considered a part of the vascular system.

vascular technologist A person skilled in obtaining and/or interpreting ultrasonic or radiographic images of blood vessels.

vasculature (vās'kū-lā-tūr") The arrangement of blood vessels in the body or any part of it, including their relationship and functions.

vasculitis (vās'kū-lī'tis) *pl. vasculitides* [" + *itis*, inflammation] Inflammation of blood vessels. SYN: *angiitis*.

It is usually caused by deposition of antigen-antibody immune complexes or other immune-mediated events. Vasculitis due to immune complexes is seen in patients with systemic lupus erythematosus, rheumatoid arthritis, hepatitis B and C, serum sickness, and drug reactions. Vasculitis found in patients with inflammatory bowel disease, Wegener's granulomatosis, graft rejection, polyarteritis nodosa, and temporal arteritis involves other immune-mediated

processes. Vasculitis often affects the renal glomeruli, joints, cerebral vessels, testes, or respiratory system.

Vasculitis can affect large, medium-sized, and small blood vessels. When it is found in small blood vessels in the skin, characteristic rashes may be seen. Vasculitis is loosely classified by the size of the vessel involved. Takayasu's and giant cell arteritis involve large arteries, including the aorta and carotids. Polyarteritis nodosa and Kawasaki disease involve medium-sized vessels, and Wegener's granulomatosis, Henoch-Schönlein purpura, and microscopic polyangiitis involve small vessels, particularly in the kidney and respiratory tract. **SEE: illus; autoimmune disease; immune complex.**

SYMPTOMS: Although fever, pain, and malaise are common, the inflammatory changes of the blood vessels are seen primarily through the signs and symptoms associated with the organ or tissues involved. Vasculitis in superficial vessels may present as painful nodules. Inflammation of the glomerular capillaries of the kidney in small vessel vasculitis may produce glomerulonephritis and decreased renal function. When blood vessels of the respiratory tract are involved, pneumonitis, sinusitis, and ulceration of the nasopharynx may result. Involvement of vessels in the heart leads to coronary artery disease and aneurysms.



VASCULITIS

TREATMENT: Immunosuppressive therapy is used to treat most forms of autoimmune-mediated vasculitis.

livedoid v. A vasculitis with blood-clotting that affects small blood vessels in the skin, esp. near the feet and ankles. The cause in most cases is unknown, but it may be associated with diseases such as antiphospholipid antibody syndrome, systemic lupus erythematosus or scleroderma.

rejection v. The inflammation that occurs when antigen-antibody complexes are deposited on the walls of small blood vessels in transplanted organs. Although the transplant rejection process is dominated by T-cell-mediated activities, antibodies also may form

against the histocompatibility antigens on the transplanted organ and compromise its viability. SEE: *major histocompatibility complex*.

vasculogenesis (vās'kū-lō-jěn'ĕ-sīs) [v + Gr. *genesis*, generation, birth] Development of the vascular system.

vasculomotor (vās'kū-lō-mō'tor) Vasomotor.

vasculopathy (vās-kū-lōp'ă-thē) Any disease affecting blood vessels.

vasectomy (vās-ĕk'tō-mē) [L. *vas*, vessel, + Gr. *ektome*, excision] Removal of all or a segment of the vas deferens. Bilateral vasectomy is the most successful method of male contraception. The procedure prevents sperm (which is manufactured in the testicles) from being expelled in the male ejaculate. It is usually carried out as an outpatient or same day procedure under local or light intravenous anesthesia. SEE: *illus.*

NOTE: Persons who have had this surgical procedure ejaculate in a normal manner but the ejaculate contains semen, produced independently in the seminal vesicles, without sperm.

PATIENT CARE: Postoperatively, the patient applies cold packs to the surgical site, to limit swelling, pain, and inflammation. Activities are limited, and sexual interest is avoided for the first week, approximately. An athletic supporter or tightly fitting underwear are worn to support the scrotum and limit pain. The procedure is considered successful when two consecutive sperm samples are shown to be free of sperm,

typically 8 to 12 weeks postoperatively. Men choose vasectomy only when they want to become permanently sterile. Nonetheless, the procedure can be reversed, although vasectomy reversal is a more complicated operation than the initial severing of the tubes.



Patients should be advised that vasectomy does not prevent sexually transmitted diseases.

vasectomy reversal Surgical procedure for the rejoining of the previously severed vas deferens. Although this procedure may be successful, the chance of success varies in published reports.

vasiform (vās'ī-form) [v + *forma*, shape] Resembling a tubular structure or vas.

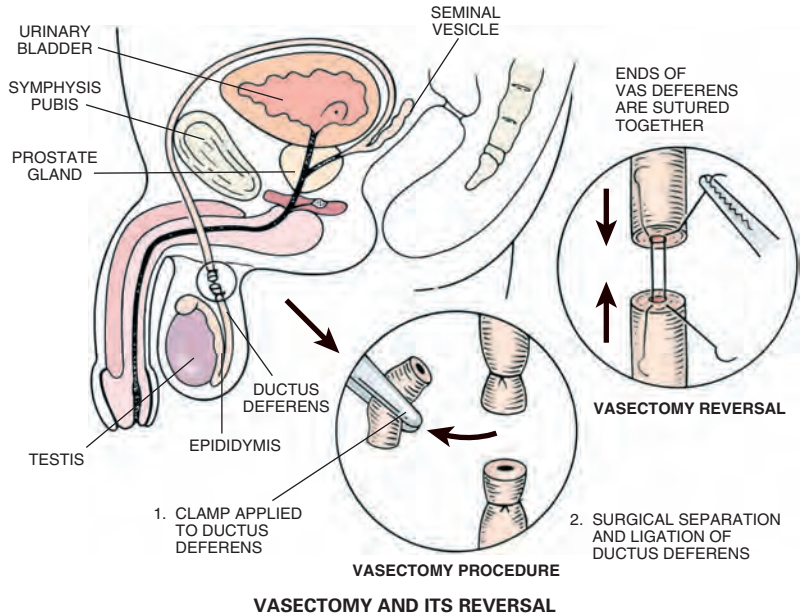
vasitis (vā-sī'tis) Inflammation of the ductus deferens of the testicle.

vaso- [L. *vas*, vessel] Combining form meaning *vessel*, as a blood vessel.

vasoactive (vās'ō-ăk'tiv) Affecting blood vessels.

vasoactive intestinal polypeptide ABBR: VIP. A peptide present in the mucosa of the gastrointestinal tract. One of its principal actions is to inhibit gastric acid secretion. Vasoactive intestinal polypeptide is also present in nerve fibers of the female genital tract.

vasoconstriction (vās'ō-kōn-strīk'shūn) A decrease in the diameter of blood vessels, which decreases blood flow and raises blood pressure.



hypoxic pulmonary v. Narrowing of the small arterioles in the alveoli in response to hypoxia.

vasoconstrictive (väs"ō-kōn-strīk'tiv) [" + *constrictus*, bound] Causing constriction of the blood vessels.

vasoconstrictor (väs"ō-kōn-strīk'tor) [" + *constrictor*, a binder] 1. Causing constriction of the blood vessels. 2. That which constricts or narrows the caliber of blood vessels, as a drug or a nerve.

vasodepression (väs"ō-dē-prēsh'ūn) [" + *depressio*, a pressing down] Vasomotor depression or collapse.

vasodepressor (väs"ō-dē-prēs'or) [" + *depressor*, that which presses down] 1. Having a depressing influence on the circulation, lowering blood pressure by dilatation of blood vessels. 2. An agent that decreases circulation.

vasodilatation (väs"ō-dī-lā-tā'shūn) [" + *dilatate*, to enlarge] Dilatation of blood vessels, esp. small arteries and arterioles.

antidromic v. Vasodilatation resulting from stimulation of the dorsal root of a spinal nerve.

reflex v. Blood vessel dilation caused by stimulation of its dilator nerves or inhibition of its constrictor substance or nerves. This can be done by stimulating the sensory reflex arc.

vasodilation (väs"ō-dī-lā'shūn) An increase in the diameter of blood vessels, which increases blood flow and lowers blood pressure.

vasodilative (väs"ō-dī-lā-tiv) Causing dilation of blood vessels.

vasodilator (väs"ō-dī-lā'tor) [" + *dilatate*, to enlarge] 1. Causing relaxation of blood vessels. 2. A nerve or drug that dilates blood vessels.

vasoepididymostomy (väs"ō-ēp'i-dīd-ī-mōs'tō-mē) [" + Gr. *epi*, upon, + *didymos*, testicle, + *stoma*, mouth] The formation of a passage between the vas deferens and the epididymis.

vasography (väs-ōg'rā-fē) [" + Gr. *graphein*, to write] Radiography of the blood vessels, usually after the injection of a contrast medium.

vasohypertonic (väs"ō-hī'pēr-tōn'ik) [" + Gr. *hyper*, over, above, excessive, + *tonikos*, pert. to tension] Vasoconstrictor.

vasohypotonic (väs"ō-hī'pō-tōn'ik) [" + Gr. *hypo*, under, beneath, below, + *tonikos*, pert. to tension] Vasodilator.

vasoinhibitor (väs"ō-īn-hīb'i-tor) [" + *inhibere*, to restrain] An agent that decreases the action of vasomotor nerves.

vasoinhibitory (väs"ō-īn-hīb'i-tor-ē) Restricting vasomotor activity.

vasoligation (väs"ō-lī-gā'shūn) [" + *ligare*, to bind] Ligation of a vessel, specifically the vas deferens.

vasomotio (väs"ō-mō'shūn) [" + *motio*, movement] Change in caliber of a blood vessel.

vasomotor (väs"ō-mō'tor) [" + *motor*, a mover] Pert. to the nerves that innervate the smooth muscle in the walls of arteries and veins, and thereby alter or preserve vascular tone. Sympathetic impulses to all arteries and veins maintain normal constriction. More impulses per second cause vasoconstriction; fewer impulses per second, vasodilation. For example, if a stressful stimulus, such as hemorrhage, causes increased vasomotor nerve activity, vasoconstriction results, which limits blood loss and maintains blood pressure. SEE: *vasoconstrictor*; *vasodilator*.

vasomotor epilepsy Epilepsy with vasomotor changes in the skin.

vasomotor spasm Spasm of smaller arteries.

vasomotor system The part of the nervous system that controls the size of the blood vessels.

vasoneuropathy (väs"ō-nū-rōp'ā-thē) Disease due to the combined effect of the vascular and nervous systems.

vaso-orchidostomy (väs"ō-or'kīd-ōs'tō-mē) [" + Gr. *orchis*, testicle, + *stoma*, mouth] Surgical connection of the epididymis to the severed end of the vas deferens.

vasopeptidase inhibitor (väs"ō-pēp'tī-dās, vā'zō-) Any member of a class of medications that blocks the actions of both angiotensin converting enzymes (ACE) and neural endopeptidase. Drugs from this class may be used to treat heart failure.

vasopressor (väs"ō-prēs'or) 1. Causing contraction of the smooth muscle of arteries and arterioles. This increases resistance to the flow of blood and thus elevates blood pressure. 2. An agent that stimulates contraction of smooth muscle of arteries and arterioles.

vasopuncture (väs"ō-pūnk'chūr) [" + *punctura*, prick] Puncture of the vas deferens.

vasoreflex (väs"ō-rē'flēx) A reflex that alters the caliber of blood vessels.

vasorrhaphy (väs-or'ā-fē) [" + Gr. *rhaphe*, seam, ridge] Surgical suture of the vas deferens.

vasosection (väs"ō-sēk'shūn) [" + *sectio*, a cutting] Surgical division of the vasa deferentia.

vasosensory (väs"ō-sēn'sō-rē) [" + *sensorius*, pert. to sensation] Rel. to sensation in the blood vessels.

vasospasm (väs'ō-spāzm) [" + Gr. *spasmos*, a convulsion] Spasm of a blood vessel. SYN: *angiohypotonia*; *angiospasm*; *vasoconstriction*. **vasospastic, adj.**

vasostimulant (väs"ō-stīm'ū-lānt) [L. *vas*, vessel, + *stimulans*, goading] Exciting vasomotor action.

vasostomy (vā-sōs'tō-mē) [" + Gr. *stoma*, mouth] Surgical procedure of

making an opening into the vas deferens.

Vasotec (vā'zō-tĕk') SEE: *enalapril*.

vasotomy (vās-ōt'ō-mē) [v + Gr. *tome*, incision] Incision of the vas deferens.

vasotonia (vās'ō-tō-nē-ā) [v + Gr. *tonos*, act of stretching, tension] The tone of blood vessels.

vasotrophic (vās'ō-trōf'īk) [v + Gr. *trophe*, nourishment] Concerned with the nutrition of blood vessels.

vasotropic (vās'ō-trōp'īk) Affecting blood vessels.

vasovasostomy (vās'ō-vē-sōs'tō-mē) [v + *vas*, vessel, + *stoma*, mouth] The rejoining of the previously severed ductus deferens of the testicle; the revision of a vasectomy.

vasovesiculectomy (vās'o-vē-sīk'ū-lĕk'tō-mē) [v + *vesicula*, tiny sac, + Gr. *ektome*, excision] Excision of the vas deferens and seminal vesicles.

vasovesiculitis (vās'ō-vē-sīk'ū-lī'tīs) [v + *vesicula*, a tiny bladder, + Gr. *itis*, inflammation] Inflammation of the vas deferens and seminal vesicles.

vastus (vās'tūs) [L., vast] **1.** Great, large, extensive. **2.** One of three muscles of the anterior thigh.

Vater's corpuscles Pacinian corpuscles.

Vater's papilla The duodenal end of the drainage systems of the pancreatic and common bile ducts. It was formerly called Vater's ampulla.

VATS *Video-assisted thoracic surgery*.

vault (vawlt) A part or structure resembling a dome or arched roof.

VBAC *vaginal birth after previous cesarean*.

VC *vital capacity*.

VD *venereal disease*.

VDH *valvular disease of the heart*.

VDRL *Venereal Disease Research Laboratories*.

vection (vĕk'shūn) [L. *vectio*, a carrying]

1. Transfer of disease agents by a vector from the sick to the well. **2.** Illusion of self-motion. This may be produced experimentally by having the subject seated within a drum that rotates while the subject remains stationary.

vectis (vĕk'tīs) [L., pole] A curved lever for making traction on the presenting part of the fetus.

vector (vĕk'tor) [L., a carrier] **1.** A quantity that is completely specified by magnitude, direction, and sense, which can be represented by a straight line of appropriate length and direction. **2.** A carrier, usually an insect or other arthropod, that transmits the causative organisms of disease from infected to noninfected individuals, esp. one in which the organism goes through one or more stages in its life cycle. **3.** An agent such as a retrovirus that is used to introduce genetic material into the nucleus of a diseased cell in an at-

tempt to cure a genetic illness or a malignancy.

biological v. An animal vector in which the disease-causing organism multiplies or develops prior to becoming infective for a susceptible person.

mechanical v. A vector in or upon which growth and development of the infective agent do not occur.

vectorcardiogram (vĕk'tor-kār'dē-ō-grām) [v + Gr. *kardia*, heart, + *gramma*, something written] A graphic record of the direction and magnitude of the electrical forces of the heart's action by means of a continuous series of vector loops. Analysis of the configuration of these loops permits certain statements to be made about the state of health or diseased condition of the heart. At any moment the electrical activity of the heart can be represented as an electrical vector with a specific direction and magnitude. This is called the instantaneous cardiac vector. A series of these vectors may be established for the entire cardiac cycle. By joining the tips of these vectors with a continuous line, the vectorcardiogram loop is formed. The configuration so obtained may be projected on the frontal plane or viewed as a three-dimensional loop. Three vectorcardiogram loops are formed during each cardiac cycle—one for the electrical activity of the atrium; one for ventricular depolarization; one for ventricular repolarization.

spatial v. Depiction of the vectorcardiogram in three planes—frontal, sagittal, and horizontal.

vectorcardiography (vĕk'tor-kār'dē-ō-grā-fĕ) Analysis of the direction and magnitude of the electrical forces of the heart's action by a continuous series of loops (vectors) that represent the cardiac cycle.

vectorial (vĕk-tō'rĕ-āl) [L. *vector*, a carrier] Rel. to a vector.

vedic medicine Ayurvedic medicine.

VEE *Venezuelan equine encephalitis*.

vegan (vēj'ān) A vegetarian who omits all animal protein from the diet.

veganism (vēj'ā-nīz-m) A form of vegetarianism in which no forms of animal protein are consumed. The diet is devoid of meat, fish, poultry, eggs and dairy products.

vegetable (vēj'ĕ-tā-bl) **1.** Pert. to, of the nature of, or derived from plants. **2.** A herbaceous plant, esp. one cultivated for food. **3.** The edible part or parts of plants that are used as food, including the leaves, stems, seeds and seed pods, flowers, roots, tubers, and fruits.

Vegetables are important sources of minerals and vitamins; provide bulk, which stimulates intestinal motility; and are sources of energy. Caloric value is indirectly proportional to water content. Copper is estimated at 1.2 mg/kg

for leafy vegetables, and 0.7 mg/kg for nonleafy ones.

Plant and vegetable proteins individually do not contain the complete complement of essential amino acids. By combining vegetables, it is possible to obtain an adequate and balanced mixture of essential amino acids. For example, corn is low in lysine but has an adequate amount of tryptophan; beans are adequate in lysine but low in tryptophan. Although neither is a sufficient source of protein alone, in combination, they are an adequate protein source. Similarly rice and beans serve to complement the deficiencies in the other and together are a complete source of protein.

All starches in vegetables must be changed to sugars before they can be absorbed. Dry heat changes starch to dextrin; heat and acid or an enzyme change dextrin to dextrose. In germinating grain, starch is changed to dextrin and dextrose. Fermented dextrose produces alcohol and carbon dioxide.

cruciferous v. A family of vegetables (including broccoli, brussels sprouts, cabbage, and cauliflower) named for their cross-shaped flowers. People who eat a diet rich in these vegetables are found to have a decreased incidence of cardiovascular diseases, strokes, and cancer, among other illnesses.

vegetal (vēj'ě-tāl) **1.** Pert. to plants. **2.** Tropic or nutritional, esp. with reference to that part of an ovum which contains the yolk. SEE: *pole, vegetal*.

vegetarian (vēj'ě-tā'rē-ān) [from *vegetable*, coined 1847 by the Vegetarian Society] A person who does not eat animal flesh or, in some instances, any animal by-products. Different approaches result in individual variation in whether fish, eggs, and/or dairy foods are accepted dietary components. Vegetarians must carefully plan their meals to ensure that they consume an adequately nutritive diet.

vegetarianism (vēj'ě-tā'rē-ān-izm) [ʹ + Gr. *-ismos*, condition] The practice and philosophy of eating grains, nuts, vegetables and fruits, but not meats or animal flesh. Approaches to vegetarianism differ—some vegetarians eat fish, eggs, and/or dairy products, while others do not.

vegetate (vēj'ě-tāt) [LL. *vegetare*, to grow] **1.** To grow luxuriantly with the production of fleshy or warty outgrowths such as a polyp. **2.** To lead a passive existence mentally or physically, or both; to do little more than eat and maintain autonomic body functions.

vegetation (vēj'ě-tā'shūn) A morbid luxuriant outgrowth on any part, esp. wart-like projections made up of collections of fibrin in which are enmeshed white and red blood cells; sometimes seen on denuded areas of the endocardium covering the valves of the heart.

adenoid v. Fungus-like masses of lymphoid tissue in the nasopharynx.

vegetative (vēj'ě-tā'tiv) **1.** Having the power to grow, as plants. **2.** Functioning involuntarily. **3.** Quiescent, passive, denoting a stage of development.

vegetative function Any of the nonconscious body processes needed to keep the body alive.

vegetative state Persistent vegetative state.

vegetoanimal (vēj'ě-tō-ān'ī-māl) Characteristic of both plants and animals, such as the process of cell respiration in mitochondria.

VEGF *vascular endothelial growth factor*.

vehicle (vē'ī-kl) [L. *vehiculum*, that which carries] **1.** An inert agent that carries the active ingredient in a medicine (e.g., a syrup in liquid preparations). **2.** Any object that carries another (e.g., a work surface may be a vehicle that transmits germs from one person to another; a patch applied to the skin may be a vehicle that permits drug delivery to the body).

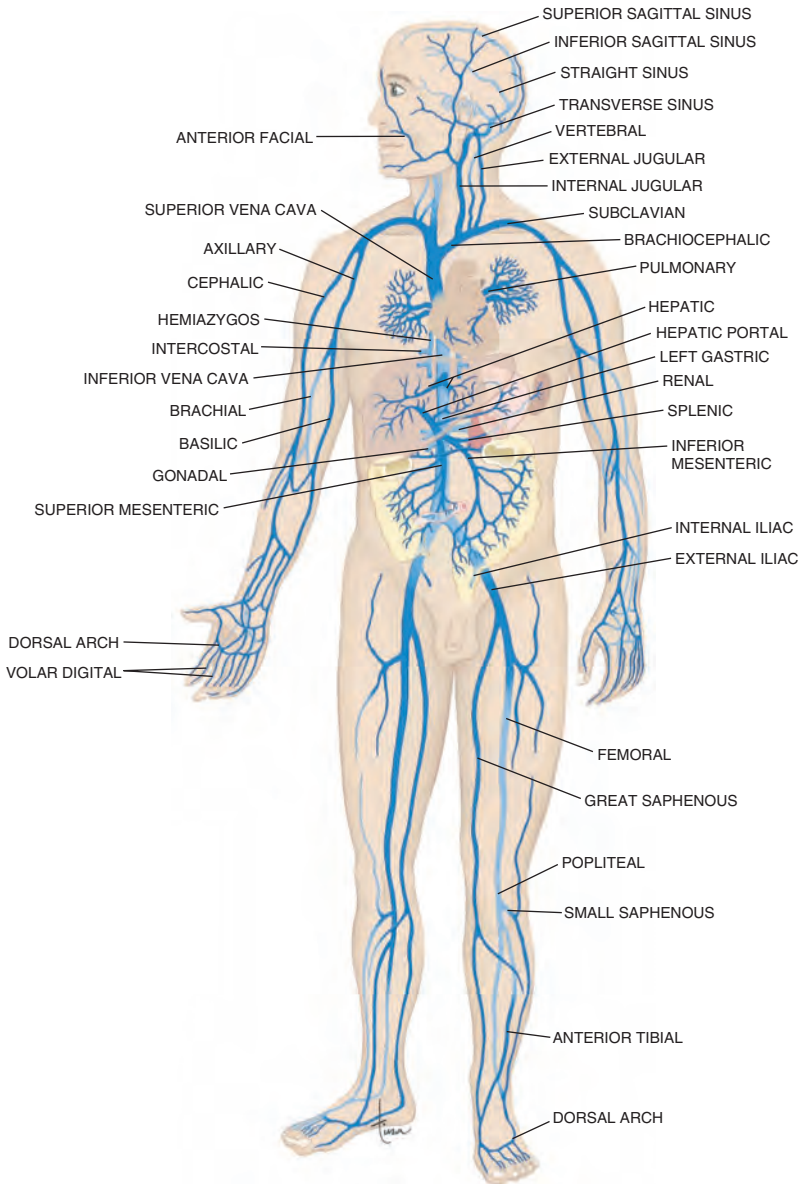
veil (vāl) [L. *velum*, a covering] **1.** Any veil-like structure. **2.** A piece of the amniotic sac occasionally covering the face of a newborn infant. SYN: *caul*. **3.** Slight alteration in the voice in order to disguise it.

Veillonella (vā'lō-něl'ā) A genus of gram-negative, anaerobic diplococci that inhabit the oral cavity and gastrointestinal tract. Although *Veillonella* species rarely cause human disease, occasional episodes of bone or blood-borne infection have been reported.

vein (vān) [L. *vena*, vein] A vessel carrying deoxygenated (dark red) blood to the heart, except for the pulmonary veins, which carry oxygenated blood. The vein wall has three layers: an endothelial lining folded into valves, a thin smooth muscle middle layer, and a thin fibrous connective tissue outer layer. Veins differ from arteries in their larger capacity and greater number; also in their thinner walls, larger and more frequent anastomoses, and presence of valves that prevent backward circulation. The systemic veins consist of two sets, superficial or subcutaneous, and the deep veins, with frequent anastomoses between the two. The former do not usually accompany an artery, as do the latter. The systemic veins may also be considered in three groups—those entering the right atrium through the superior vena cava, those through the inferior vena cava, and those through the coronary sinus. SEE: *illus.; circulation; vena*.

anterior tibial v. A vein that drains blood from the lower leg and foot and joins the popliteal vein.

axillary v. A vein that is formed by the merger of the basilic and brachial

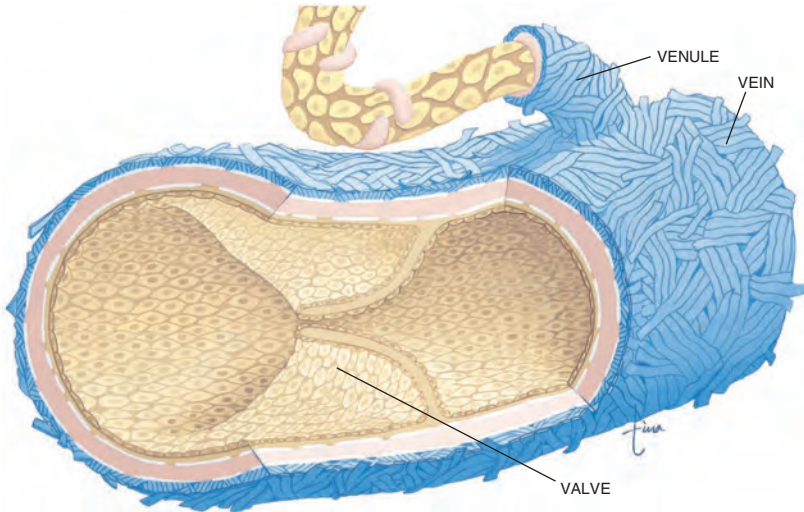


SYSTEMIC VEINS

veins, drains blood from the upper extremity, and becomes the subclavian vein at the lateral border of the first rib.

azygos v. A single vein arising in the abdomen as a branch of the ascending lumbar vein. It passes upward through the aortic hiatus of the diaphragm into the thorax, then along the right side of the vertebral column to the level of the

fourth thoracic vertebra, where it turns and enters the superior vena cava. In the thorax, it receives the hemiazygos, accessory azygos, and bronchial veins, as well as the right intercostal and subcostal veins. If the inferior vena cava is obstructed, the azygos vein is the principal vein by which blood can return to the heart.



STRUCTURE OF A VEIN AND VENULE

brachial v. Either of a pair of veins that accompany each brachial artery and join each axillary vein.

brachiocephalic v. The right and left veins, each formed by the union of the internal jugular with the subclavian vein.

cardiac v. Any of the veins that run along the surface of the heart parallel to the coronary arteries and drain the heart muscle. They converge into the coronary sinus, which runs in the coronary groove between the left atrium and left ventricle on the back side of the heart and drains into the right atrium. SEE: *coronary artery for illus.*

cardinal v. In an embryo of up to 6 weeks' gestation, any of the veins (the bilateral anterior and posterior) that are the original venous drainage system leading to the heart. Over the next few weeks, the right anterior cardinal vein gives rise to the major upper body veins (jugulars, brachiocephalics, subclavians, and superior vena cava); the far ends of the posterior cardinal veins give rise to the iliac systems; and the rest of the cardinal venous system is then replaced by the subcardinal and supracardinal veins.

cephalic v. A vein that drains blood from the superficial arm and forearm and merges with the brachial vein in the upper arm to form the axillary vein.

cerebral v. Any of the veins draining the brain. Cerebral veins differ from other veins in three respects: (1) cerebral veins do not run with cerebral arteries; (2) cerebral veins do not have valves; (3) the major cerebral veins are dural venous sinuses, not true veins.

In general, the venous circulation of the brain follows the following pattern:

venules run from inside the brain to the surface where they turn and run inside the pia. The pial plexuses of veins merge into the cerebral veins, which eventually cross the subarachnoid space and empty into the large dural venous sinuses. The dural venous sinuses then connect and drain into the internal jugular veins. SEE: *dural venous sinus.*

common iliac v. Either of two veins that drain blood from the lower limb and lower abdomen. The two common iliac veins unite to form the inferior vena cava. Each iliac vein is formed in the pelvis by the union of an external iliac vein and an internal iliac vein.

cranial venous sinus v. Any of a group of veins between the two layers of the dura mater that drain blood and reabsorbed cerebrospinal fluid from the brain and join the internal jugular vein.

external iliac v. A vein that drains blood from the lower limb and abdominal wall and joins the common iliac vein.

external jugular v. A vein that drains blood from the deep and superficial veins of the head and crosses the sternocleidomastoid muscle before entering the subclavian vein.

great cardiac v. A large vein on the anterior surface of the heart running in the coronary groove. It drains the same area supplied by the left coronary artery and empties into the coronary sinus on the back surface of the heart.

great saphenous v. A vein that drains blood from the superficial foot, leg, and thigh and joins the femoral vein.

innominate v. Brachiocephalic veins.

internal iliac v. A vein that drains blood from the pelvis and buttocks and joins the common iliac vein.

internal jugular v. ABBR: IJ. A vein that drains blood from the face, neck, and the cranial venous sinuses and unites with the subclavian vein to form the brachiocephalic vein. It is a vein commonly used to gain access to the central circulation or the right side of the heart.

ovarian v. Either of two veins (left and right) that drain blood from the ovaries. The left ovarian vein joins the left renal vein; the right ovarian vein joins the inferior vena cava.

popliteal v. A vein that drains blood from the knee and joins the femoral vein.

pulmonary v. One of the four veins that takes blood from the lungs to the left atrium.

radial v. A vein that drains blood from the forearm and the hand and joins the brachial vein.

renal v. A vein that drains blood from the kidney and joins the inferior vena cava. Blood clots may form in the renal veins in the nephrotic syndrome.

small saphenous v. A vein that drains blood from the lateral border of the superficial leg and foot and joins the popliteal vein.

splenic v. The vein carrying blood from the spleen to the portal vein.

stellate v.s Starlike venous plexuses on the surface of the kidney below its capsule.

subclavian v. A large vein draining the arm. It unites with the internal jugular vein to form the brachiocephalic (innominate) vein.

testicular v. Either of two veins (left and right) that drain blood from the testes. The left testicular vein joins the left renal vein; the right testicular vein joins the inferior vena cava.

ulnar v. A vein that drains blood from the forearm and the hand and joins the brachial vein.

umbilical v. In the embryo, a pair of veins bringing oxygenated blood to the developing heart from the placenta. During development, the right umbilical vein disappears. The left umbilical vein then carries all the oxygenated blood from the placenta via the umbilical cord to the fetus. As the embryonic liver develops, the umbilical vein persists alongside it as a bypass (the ductus venosus) for blood going directly into the inferior vena cava. After birth, the umbilical vein closes and becomes a fibrotic cord, the ligamentum teres, running in the falciform ligament along the ventral wall of the abdomen from the umbilicus to the liver. The ductus venosus also closes and remains as the ligamentum venosum of the liver. SEE: *fetal circulation*.

varicose v. SEE: *varicose vein*.

vitelline v. In the embryo, either of a pair of veins that return blood to the developing heart from the yolk sac. These veins run inside the yolk stalk, alongside the foregut, through the septum transversum, and into the sinus venosus of the heart. The liver eventually forms around the vitelline veins, coopting them into the portal vein, the hepatic sinusoids, and the hepatic veins.

velamentous (vēl'ă-mĕn'tūs) Expanding like a veil, or sheet.

velar (vē'lār) [L. *velum*, a veil] Pert. to a velum or veil-like structure.

vellus (vē'lūs) [L., fleece] The fine hair present on the body after the lanugo hair of the newborn is gone.

velopharyngeal (vēl'ō-fā-rĭn'jĕ-ăl) [L. *velum*, veil, + Gr. *pharynx*, throat] Concerning the soft palate and the pharynx.

Velpeau's bandage (vēl-pōz') [Alfred Velpeau, Fr. surgeon, 1795–1867] A special immobilizing roller bandage that incorporates the shoulder, forearm, and arm. SEE: *bandage for illius*.

Velpeau's deformity Deformity seen in Colles' fracture, in which the lower fragment is displaced backward.

velum (vē'lūm) [L., veil] Any veil-like structure.

vena (vē'nā) *pl. venae* [L.] A vein.

vena cava The principal venous return trunks to the heart.

v. cava inferior The principal vein draining blood from the lower portion of the body. It is formed by junction of the two common iliac veins and terminates in the right atrium of the heart. SEE: *heart*.

v. cava superior The principal vein draining blood from the upper portion of the body. It is formed by the junction of the right and left brachiocephalic veins and empties into the right atrium of the heart. SEE: *heart*.

vena caval syndrome Supine hypotensive syndrome.

venacavography (vē'nā-kā-vōg'rā-fĕ) Radiography of the vena cava during the injection of a contrast medium.

venae comitantes (vē'nĕ kō'mĭ-tān'tĕz) [L.] Two or more veins accompanying an artery. They are usually present with the deep arteries of the extremities.

venation (vē-nā'shŭn) The distribution of veins to an organ or structure.

vendor (vēn'dĕr) [L. *vendor*, seller] Any person or company that designs, develops, sells, and/or supports goods or services to or for another party.

venectasia (vē'nĕk-tā-zĕ-ā) [L. *vena*, a vein, + Gr. *ektasis*, dilation] Dilation of a vein. SYN: *phlebectasia*.

venectomy (vē-nĕk'tō-mĕ) [v + Gr. *ektome*, excision] Phlebectomy.

vener (vē-nĕr') In dentistry, a man-

made material, such as porcelain, that can be bonded to the surface of a tooth. It is used for cosmetic reasons.

venenosalivary (vēn'ē-nō-sāl'ī-vēr'ē) Venomosalivary.

venepuncture (vēn'ē-pūnk'chūr) [L. *vena*, vein, + *punctura*, a point] Venipuncture.

venereal (vē-nēr'ē-rē-āl) [L. *venereus*] Pert. to or resulting from sexual intercourse.

venereal collar SEE: *leukoderma*, *syphilitic*.

venereal disease A term formerly used to describe any illness transmitted by intimate sexual contact. SEE: *Nursing Diagnoses Appendix*.

venereologist (vē-nēr'ē-ōl'ō-jīst) [" + Gr. *logos*, word, reason] A doctor who specializes in the treatment of sexually transmitted diseases.

venereology (vē-nēr'ē-ōl'ō-jē) The scientific study and treatment of sexually transmitted diseases.

venesection (vēn'ē-sēk'shūn) [L. *vena*, vein, + *sectio*, a cutting] Surgical opening of a vein for withdrawal of blood. SYN: *phlebotomy*.

venin(e) (vēn'in) [L. *venenum*, poison] Toxic substance in snake venom. SYN: *venene*.

venipuncture (vēn'ī-pūnk'chūr) [L. *vena*, vein, + *punctura*, a point] Puncture of a vein, typically to obtain a specimen of blood. The pain of venipuncture may be diminished by several methods, including application of cold to the area just prior to the puncture; injection of sterile, normal saline intracutaneously to produce blanching of the site; and use of a local anesthetic to produce a wheal at the site. SEE: *intravenous infusion* for illlus.

venisuture (vēn'ī-sū'chūr) [" + *sutura*, a seam] Suture of a vein. SYN: *phleborrhaphy*.

venlafaxine (vēn-lā-fāk'sēn") An antidepressant that works by inhibiting serotonin and norepinephrine reuptake, thereby improving mood.

veno- Combining form meaning *vein*.

venoclysis (vē-nōk'lī-sīs) [" + Gr. *klysis*, a washing] The continuous injection of medicinal or nutrient fluid intravenously.

venofibrosis (vē'nō-fi-brō'sīs) Phlebosclerosis.

venogram (vē'nō-grām) [" + Gr. *gramma*, something written] 1. A radiograph of the veins. SYN: *phlebogram*. 2. A tracing of the venous pulse.

venography (vē-nōg'rā-fē) [" + Gr. *graphein*, to write] 1. A radiographic procedure to visualize veins filled with a contrast medium; most commonly used to detect thrombophlebitis. 2. The making of a tracing of the venous pulse.

venom (vēn'ōm) [L. *venenum*, poison] A poison secreted by some animals, such

as insects, spiders, or snakes, and transmitted by bites or stings.

snake v. The poisonous secretion of the labial glands of certain snakes. Venoms contain proteins, chiefly toxins and enzymes, which are responsible for their toxicity. They are classified as neurocytolysins, hemolysins, hemocoagulins, proteolysins, and cytolysins on the basis of the effects produced.

venomosalivary (vēn'ō-mō-sāl'ī-vēr'ē) Secreting saliva with venom in it.

venomotor (vē'nō-mō'tor) [L. *vena*, vein, + *motus*, moving] Pert. to constriction or dilatation of veins.

venomous (vēn'ō-mūs) 1. Poisonous. 2. Pert. to animals or insects that have venom-secreting glands.

venomous snake In the U.S., any of the pit vipers such as the copperhead, water moccasin, and rattlesnake of the family Crotalidae, and, in the southern U.S., the coral snakes (genus *Micrurus*), esp. *M. fulvius* and *M. euryxanthus*. Venomous snakes have a worldwide distribution. Specific names of snakes in the general vocabulary are listed under the first word. SEE: e.g., *cobra*; *copperhead*; *daboia*.

veno-occlusive (vē'nō-ō-kloo'siv) Concerning obstruction of veins.

venoperitoneostomy (vē'nō-pēr'ī-tō'nē-ōs'tō-mē) [L. *vena*, vein, + Gr. *peritonaion*, peritoneum, + *stoma*, mouth] A one-way valve shunt that connects the peritoneum with the internal jugular or subclavian vein, permitting the escape of ascitic fluid into the venous circulation. SEE: *LeVein shunt*.

venosclerosis (vē'nō-sklē-rō'sīs) [" + Gr. *sklerosis*, to harden] Sclerosis of veins. SYN: *phlebosclerosis*.

venosity (vē-nōs'ī-tē) [L. *vena*, vein] 1. A condition in which there is an excess of venous blood in a part, causing venous congestion. 2. Deficient aeration of venous blood.

venospasm (vē'nō-spāzm) [" + Gr. *spasmos*, a convulsion] Contraction of a vein, which may follow infusion of a cold or irritating substance into the vein.

venostasis (vē'nō-stā'sīs) [" + Gr. *stasis*, standing still] The trapping of blood in an extremity by compression of veins, a method sometimes employed for reducing the amount of blood being returned to the heart.

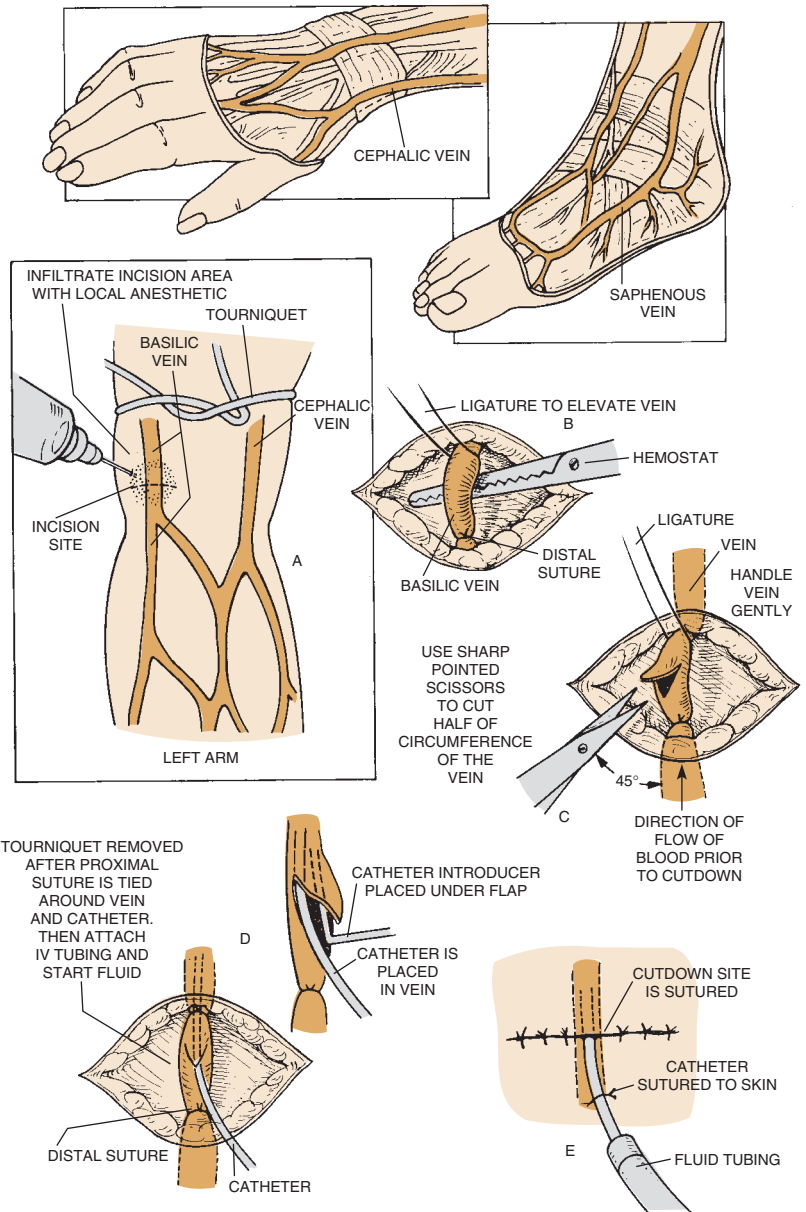
venostat (vē'nō-stāt) [" + Gr. *statikos*, standing] An appliance for performing venous compression.

venotomy (vē-nōt'ō-mē) [" + Gr. *tome*, incision] Incision of a vein.

venous (vē'nūs) [L. *vena*, vein] Pert. to the veins or blood passing through them.

venous admixture A mixture of venous and arterial blood.

venous blood Blood circulating in veins.



VENOUS CUTDOWN

In systemic veins it is dark and poorly oxygenated; in the pulmonary veins it is fully oxygenated.

venous cutdown Surgical incision in a vein to place a catheter to permit intravenous administration of fluids or drugs. It is used in patients with vascular collapse when gaining percutaneous

access to the circulation is difficult; however, this procedure is usually tried only when subclavian, jugular, or femoral access cannot be established. **SEE: illus.**

venous hum A murmur heard on auscultation over the larger veins of the neck.
venous hyperemia Passive hyperemia.

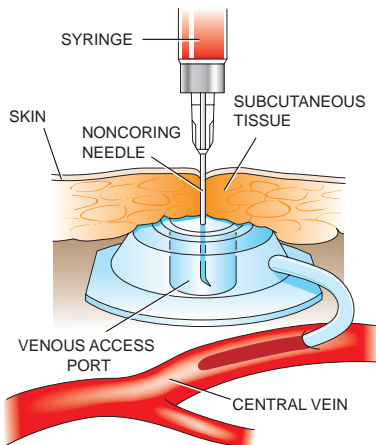
venous port, venous access port Part of a venous access device consisting of a subcutaneously implanted port through which medications are injected. Leading from the port is a catheter that is inserted in the cephalic, jugular, or subclavian vein. The catheter extends into the superior vena cava. The port has a self-sealing septum through which a needle is inserted to have access for administering medications, such as cancer chemotherapy agents, and for drawing blood samples. The septum of the port is made to withstand from 1000 to 2000 punctures depending on the size needle used. Sterile technique is used each time a needle enters the port. The port permits unrestricted patient activity. Each time it is used care must be taken to be certain the line is open and that the catheter in the vein has remained in the proper position. **SEE: illus.**

PATIENT CARE: Venous access ports are useful for patients requiring intermittent intravenous (IV) therapy such as chemotherapy or antibiotics, parenteral nutrition, blood products, or IV fluids, and/or intermittent blood sampling. The port may be implanted for 3 months to several years. It consists of a self-sealing silicone rubber septum (resembling the head of a stethoscope and measuring 7 to 10 mm in diameter) covering a metal or plastic reservoir and a silicone catheter connecting the reservoir to a central vein. Ports may have one or two lumens. The dual-lumen port has two noncommunicating reservoirs with their own catheters in a single port body. The most common site for port implantation is in the anterior chest below the clavicle, although other sites such as the upper arm are options. Once the site heals (5 to 7 days), the skin covering the device protects the patient from infec-

tion. Ports also may be open-ended (requiring flushing with a heparinized saline solution to prevent clotting, or valved (with no flushing needed between uses). The patient should be aware of which type device has been implanted, or should carry a wallet card identifying the device. When a port is not in active use the patient can participate in normal activities.

Sterile technique should be used when accessing a port. A topical anesthetic spray or cream should be applied, if the port has been recently implanted, or if the patient requests analgesia to prevent or reduce discomfort. The patient is positioned, so the site is easily viewed. The septum is palpated (unless newly implanted), and assessed for signs and symptoms of infection, such as redness, swelling, pain, and local warmth. Any infection should be documented, the patient's primary health care provider notified, and the site not accessed. For access, the port septum should be localized and stabilized using the nondominant hand, stretching the skin taut with the thumb and first two fingers. Patient anxiety about the procedure can be eased by speaking reassuringly to the patient throughout, explaining what is being done and the rationale for each action. The site is then prepared following agency procedure. The primed, noncoring needle (20 gauge is appropriate for most injections and infusions) is then held perpendicular to the septum with the dominant hand and inserted at a point between the thumb and fingers. Minimal resistance should be noted as the skin and port septum are punctured. The needle (which should be just long enough to reach the back of the port) is then advanced until the needle stop hits the back of the septum and the bottom of the reservoir is encountered, and blood is aspirated to verify correct needle placement. If resistance is encountered when inserting the needle, it may not be in the middle of the septum. If this occurs, the needle is carefully withdrawn and discarded, and a new, primed needle used. When accessing the port for an infusion, the wings of the noncoring needle are then secured with sterile wound closure strips or sterile tape. A skin protectant solution may be applied if this is part of local institutional protocol.

During continuous use, a needle can remain in place up to 7 days, although most agencies recommend change every 3 to 5 days. The venous access port is flushed per the institution's protocol, prior to being deaccessed. Following administration of prescribed therapy, the port is deaccessed. Hands are washed and nonsterile gloves are



IMPLANTABLE VENOUS ACCESS PORT

donned. Any dressing and tape are removed, and the skin held taut over the port using thumb and first two fingers. Maintaining light pressure on the port body, the needle is pulled straight out in a smooth movement, avoiding side-to-side movements that could damage the septum. A small amount of capillary bleeding may occur at the needle site, which is then covered with an adhesive bandage as desired. Documentation should include needle size, prescribed infusions or bolus dosings, needle and dressing changes and dates, patient tolerance of therapy(ies), complications, blood draws, and any changes in the patient's physical assessment.

venous return The amount of blood returning to the atria of the heart.

venous sinus A large-capacity vessel that carries venous blood. Important venous sinuses are those of the dura mater draining the brain and those of the spleen.

venous sinus of sclera Schlemm's canal.

venovenostomy (vē'nō-vē-nōs'tō-mē) [" + " + Gr. *stoma*, mouth] The formation of an anastomosis of a vein joined to a vein.

vent (vēnt) [O.Fr. *fente*, slit] An opening in any cavity, esp. one for excretion.

venter (vēn'tēr) [L., belly] **1.** A belly-shaped part. **2.** The cavity of the abdomen. **3.** The wide swelling part or belly of a muscle.

ventilation (vēn'tī-lā'shūn) [L. *ventilare*, to air] **1.** The movement of air into and out of the lungs. **2.** Circulation of fresh air in a room and withdrawal of foul air. **3.** In physiology, the amount of air inhaled per day. This can be estimated by spirometry, multiplying the tidal air by the number of respirations per day. An average figure is 10,000 L. This must not be confused with the total amount of oxygen consumed, which is on the average only 360 L/day. These volumes are more than doubled during hard physical labor.

adaptive support v. ABBR: ASV. A mode of mechanical ventilation in which the minute ventilation is not allowed to fall below a set threshold (e.g., in adults, below 100 ml/kg/min), but the inspiratory pressure, inspiratory rate, and tidal volume are all adjusted by the ventilator to the patient's needs.

abdominal displacement v. A non-invasive type of artificial ventilation that relies on displacement of the abdominal contents to move the patient's diaphragm.

airway pressure release v. A type of mechanical ventilation in which patients breathe spontaneously at any phase of the ventilator's duty cycle at high continuous positive airway pressures (CPAP). Periodically, the level of CPAP is lowered to eliminate waste gases from the circuit. This technique of

ventilation generally requires the patient's sedation.

alveolar v. The movement of air into and out of the alveoli. It is a function of the size of the tidal volume, the rate of ventilation, and the amount of dead space present in the respiratory system. It is determined by subtracting the dead space volume from the tidal volume and multiplying the result by the respiratory rate.

asynchronous v. In emergency cardiac or critical care, the administration of artificial breaths to a patient that are timed independently of chest compressions.

continuous positive-pressure v. A method of mechanically assisted pulmonary ventilation. A device administers air or oxygen to the lungs under a continuous pressure that never returns to zero.

dual control v. Mechanical ventilation initiated by either a change in airway pressures or by a change in gas flowing through the ventilator circuit. Dual control is asserted when pressure limited breaths are delivered and the pressure changes from breath to breath to meet a desired delivered tidal volume. It improves the coordination between the patient's respiratory efforts and machine-generated breaths.

high-frequency jet v. A type of ventilation that continuously ventilates at 100 to 150 cycles/min. It is used in respiratory failure to provide continuous ventilation without the side effects of positive-pressure ventilation.

high-frequency oscillatory v. ABBR: HFOV. Pulmonary ventilation with multiple rapid breaths given at small tidal volumes. It limits the stretching and collapse of the alveoli that occur in conventional mechanical ventilation.

high-frequency percussive v. Mechanical ventilation that decreases peak and end-expiratory pressure by delivering hundreds of shallow (low tidal volume) breaths per minute. It is a time-cycled, pressure-limited mode of ventilation.

intermittent mandatory v. ABBR: IMV. Machine ventilation that delivers pressurized breaths at intervals while allowing for spontaneous breathing.

intermittent positive-pressure v. A mechanical method of assisting pulmonary ventilation, using a device that inflates the lungs under positive pressure. Exhalation is usually passive. SYN: *breathing, intermittent positive-pressure.*

liquid v. An experimental technique used in treating premature infants with surfactant-deficient lungs. It is rarely used.

mandatory minute v. Ventilatory support that provides mechanical

breaths when the patient's spontaneous breathing does not occur frequently enough.

maximum sustainable v. The normal maximum breathing pattern that can be maintained for 15 min (usually approx. 60% of maximum voluntary ventilation).

maximum voluntary v. The maximum amount of gas that can be ventilated into and out of the lungs in a voluntary effort in a given time, measured in liters per minute.

mechanical v. Any form of artificially supplied ventilation.

minute v. ABBR: MV. The volume of air inhaled and exhaled in 60 sec. SEE: *minute volume*.

noninvasive v. The use of airway support administered through a face (nasal) mask instead of an endotracheal tube. Inhaled gases are given with positive end-expiratory pressure often with pressure support or with assist control ventilation at a set tidal volume and rate. Numerous studies have shown this technique to be as effective as, and better tolerated than, intubation and mechanical ventilation in patients with exacerbations of COPD. SEE: *illus.*



NONINVASIVE POSITIVE PRESSURE VENTILATION

positive-pressure mechanical v. Mechanical ventilatory support that applies positive pressure to the airway. The objectives include improving pulmonary gas exchange, relieving acute respiratory acidosis, relieving respiratory distress, preventing and reversing atelectasis, improving pulmonary compliance, preventing further lung injury, and avoiding complications. Positive-pressure ventilation can be life saving, but complications such as toxic effects of oxygen, laryngeal injury, tracheal stenosis, alveolar injury, barotrauma, pneumonia, and psychological problems may occur. SEE: *pressure, positive end-expiratory*.

pressure support v. A type of assisted ventilation that supplements a spontaneous breath. The patient controls the frequency and the duration and flow of inspiration from the ventilator.

protective v. A type of mechanical ventilation in which tidal volumes are set to avoid overstretching the alveoli, and pressures at the end of an inhaled breath are set to avoid alveolar collapse.

pulmonary v. The inspiration and expiration of air from the lungs.

synchronized intermittent mandatory v. ABBR: SIMV. Periodic assisted ventilation with positive pressure initiated by the patient and coordinated with spontaneous patient breaths. SEE: *intermittent mandatory v.*

transtracheal catheter v. An emergency procedure in which a catheter is placed percutaneously through the cricothyroid membrane and attached to a high-pressure, high-flow jet ventilator. This form of ventilation is used for patients with an upper airway obstruction who cannot be intubated.

ventilation coefficient The amount of air that must be respired for each liter of oxygen to be absorbed.

ventilation index ABBR: VI. A calculation used to determine the severity of respiratory illness (acute lung injury and/or respiratory distress syndrome) in critically ill patients. The VI is the partial pressure of arterial CO₂ multiplied by the peak airway pressure multiplied by the rate of ventilation, all divided by 1000.

Symbolically, the ventilation index is calculated as follows: $VI = [RR \times (PIP - PEEP) \times PaCO_2] / 1000$.

ventilation tube SEE: *grommet*.

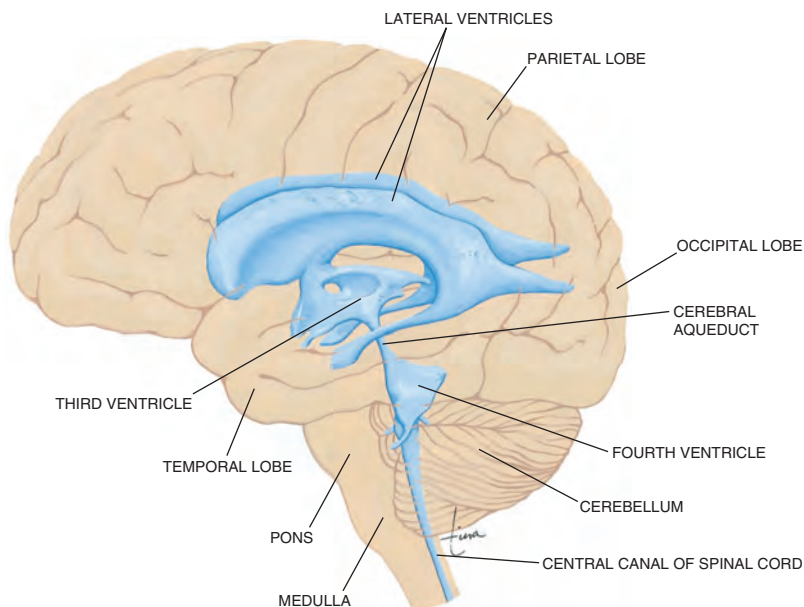
ventilator (vēnt'ī-lāt'or) A mechanical device for artificial ventilation of the lungs. The mechanism may be hand operated (although this is unusual) or machine driven and automated.

automatic transport v. ABBR: ATV. A portable battery- or gas-powered ventilator that can be used while transporting patients between locations. The ATV is designed for short-term use and often has separate volume and rate controls.

ventilator bundle A cluster of four evidenced-based safety measures that decrease the risk to patients of mechanical ventilation while in the intensive care unit. The elements of the bundle include elevating the head of the patient's bed; administering medications to prevent deep venous thrombosis; administering medications to reduce the incidence of peptic ulceration; and giving the ventilated patient periodic intermissions from sedation.

ventilator graphics Visual representations of airway pressures or airway flows as they vary over time.

ventilator support, weaning from The act of gradually removing persons with reversible forms of respiratory failure who are receiving mechanical ventilation from that support. This may be



VENTRICLES OF THE BRAIN

Left lateral view

done by alternating full ventilatory support with increasingly long periods of unassisted breathing. The timing and frequency of the weaning periods should be individualized to each patient. Usually by the time the patient can tolerate 2 hr of spontaneous breathing, ventilatory support may be discontinued.

PATIENT CARE: Weaning from mechanical ventilation is done only in the stable patient in whom the acute precipitating event has been corrected. The respiratory therapist should review current arterial blood gas reports, breathing pattern, vital signs, and vital capacity before each attempt at weaning. The procedure should be described to the patient and he or she should be told what to expect and what his or her role in weaning will be. The nurse, physician, and respiratory therapist should reassure the patient that he or she will not be endangered by weaning trials or left alone during these periods. The nurse and respiratory therapist should also provide positive reinforcement regarding the patient's progress and the anticipated successful termination of support. Patient status and response to the procedure should be continuously evaluated.

ventilatory weaning response, dysfunctional ABBR: DVWR. A state in which a patient cannot adjust to lowered levels of mechanical ventilator support, which interrupts and prolongs the weaning

process. SEE: *Nursing Diagnoses Appendix*.

Ventolin (vēn'tī-līn) SEE: *albuterol*.

ventouse (vēn-toos') [Fr.] A glass or glass-shaped vessel used in cupping.

ventrad (vēn'trād) [L. *venter*, belly, + *ad*, to] Toward the ventral aspect; the opposite of dorsad.

ventral (vēn'trāl) [L. *ventralis*, pert. to the belly] Pert. to the belly; the opposite of dorsal. Hence, in quadrupeds, pert. to the lower or underneath side of the body; in humans, pert. to the anterior portion or the front side of the body.

ventralis (vēn-trā'lis) [L.] Anterior, or closer to the front.

ventricle (vēn'trik-1) [L. *ventriculus*, a little belly] **1.** A small cavity. **2.** Either of two lower chambers of the heart that, when filled with blood, contract to propel it into the arteries. The right ventricle forces blood into the pulmonary artery and thence into the lungs; the left pumps blood into the aorta and then to the rest of the body. **3.** Any of the cavities of the brain filled with cerebrospinal fluid. SEE: *illus.*

fifth v. The cavity of the septum lucidum of the brain. It is between the two laminae of the septum lucidum.

fourth v. The cavity posterior to the pons and medulla and anterior to the cerebellum of the brain. It extends from the central canal of the upper end of the spinal cord to the aqueduct of the mid-brain. Its roof is the cerebellum and the

superior and inferior medullary vela. Its floor is the rhomboid fossa.

v. of larynx Morgagni's ventricle.

lateral v. The cavity in each cerebral hemisphere that communicates with the third ventricle through the inter-ventricular foramen. It consists of a triangular central body and four horns, two inferior and two posterior.

left v. The cavity of the heart that receives blood from the left atrium and pumps it into the systemic circulation via the aorta.

Morgagni's v. SEE: under *Morgagni, Giovanni B.*

right v. The cavity of the heart that receives blood from the right atrium and pumps it into the lungs via the pulmonary artery.

ventricular (vĕn-trĭk'ū-lăr) [L. *ventriculus*, a little belly] Pert. to a ventricle.

ventricular assist pumping Use of a device to temporarily replace the pumping action of a diseased or nonfunctioning heart. SEE: *intra-aortic balloon counterpulsation*.

ventricular compliance Distensibility or stiffness of the relaxed ventricle of the heart.

ventricular remodeling Reshaping of heart muscle in response to injuries such as myocardial infarction, overload (hypertension), or valvular heart disease such as aortic stenosis or mitral regurgitation. Cardiac hypertrophy, fibrosis, and myocyte death are all potential consequences.

ventricular septal defect An abnormal opening in the septum between the ventricles of the heart that may produce shunting of blood from left to right, or other diseases.

ventriculitis (vĕn-trĭk'ū-lĭ'tĭs) [ʹ + Gr. *itis*, inflammation] Inflammation of a ventricle.

ventriculoatriostomy (vĕn-trĭk'ū-lō-ă-trĕ-ōs'tō-mĕ) [ʹ + *atrium*, corridor, + Gr. *stoma*, mouth] Plastic surgery for the relief of hydrocephalus. Subcutaneous catheters are placed to connect a cerebral ventricle to the right atrium via the jugular vein. The catheters contain one-way valves so that cerebrospinal fluid can flow into the catheters, but blood may not flow back into the cerebral ventricle.

ventriculocisternostomy (vĕn-trĭk'ū-lō-sĭs'tĕr-nōs'tō-mĕ) [ʹ + *cisterna*, box, chest, + Gr. *stoma*, mouth] Plastic surgery to create an opening between the ventricles of the brain and the cisterna magna.

ventriculocordectomy (vĕn-trĭk'ū-lō-kor-dĕk'tō-mĕ) [ʹ + Gr. *korde*, cord, + *ektome*, excision] Surgery for the relief of laryngeal stenosis. The ventricular floor is removed, but the buccal processes are left in place.

ventriculogram (vĕn-trĭk'ū-lō-grăm) [ʹ

+ Gr. *gramma*, something written] **1.** A radiograph of the cerebral ventricles. **2.** Injection of a contrast medium into the cardiac ventricles during angiocardiology, in order to estimate ejection fraction and wall motion.

ventriculography (vĕn-trĭk'ū-lōg'ră-fĕ) [ʹ + Gr. *graphein*, to write] **1.** An obsolete technique for visualizing the brain radiographically, that relied on the injection of air into the cerebrospinal fluid. It has been replaced by CT and MRI scans of the brain. **2.** Visualization of ventricles of the heart by radiograph after injection of a contrast material.

ventriculometry (vĕn-trĭk'ū-lōm'ĕ-trĕ) [ʹ + Gr. *metron*, measure] The measurement of the intraventricular cerebral pressure.

ventriculoperitoneal Pert. to the peritoneum and the ventricles of the brain.

ventriculoperitoneal shunt ABBR: VPS. A shunt connecting the ventricles of the brain to the peritoneum, used to treat hydrocephalus.

ventriculopuncture (vĕn-trĭk'ū-lō-pŭnk'tūr) [ʹ + *punctura*, a point] The use of a needle to puncture a lateral ventricle of the brain.

ventriculoscopy (vĕn-trĭk'ū-lōs'kō-pĕ) [ʹ + Gr. *skopein*, to examine] Examination of the ventricles of the brain with an endoscope.

ventriculostomy (vĕn-trĭk'ū-lōs'tō-mĕ) [ʹ + Gr. *stoma*, mouth] Plastic surgery to establish communication between the floor of the third ventricle of the brain and the cisterna interpeduncularis. This is done to treat hydrocephalus.

ventriculotomy (vĕn-trĭk'ū-lōt'ō-mĕ) [ʹ + Gr. *tome*, incision] Surgical incision of a ventricle.

ventriculus (vĕn-trĭk'ū-lŭs) [L., a little belly] **1.** Ventricle. **2.** Stomach. **3.** A ventricle of the brain or heart.

ventro- Combining form meaning *abdomen* or *ventral* (anterior).

ventrodorsal (vĕn'trō-dor'săl) [ʹ + *dorsum*, back] In a direction from the front to the back.

ventrofixation (vĕn'trō-fĭks-ă'shŭn) [ʹ + *fixatio*, to fix] The suture of a displaced viscus to the abdominal wall.

ventroinguinal (vĕn'trō-ĭng'gwĭ-năl) [ʹ + *inguen*, groin] Concerning the ventral and inguinal regions.

ventrolateral (vĕn'trō-lăt'ĕr-ăl) [ʹ + *latus*, side] Both ventral and lateral.

ventromedial (vĕn'trō-mĕ-dĕ-ăl) [ʹ + *medianus*, median] Both ventral and medial.

ventroscopy (vĕn'trōs'kō-pĕ) [L. *venter*, belly, + Gr. *skopein*, to examine] Examination of the abdominal cavity by illumination. SYN: *celioscopy*.

ventrose (vĕn'trōs) Having a swelling like a belly.

ventrosity (vĕn-trōs'ī-tē) Having an enlarged belly; obesity.

ventrosuspension (vĕn'trō-sūs-pĕn'shŭn) [*v* + *suspensio*, a hanging] The fixation of a displaced uterus to the abdominal wall.

ventrotomy (vĕn-trōt'ō-mē) [*v* + Gr. *tome*, incision] Incision into the abdominal cavity. SYN: *celiotomy*; *laparotomy*.

Venturi mask (vĕn-toor'ē) [Giovanni Battista Venturi, It. scientist, 1746–1822] A special mask for administering a controlled concentration of oxygen to a patient. These devices are better known as air entrainment masks rather than Venturi masks, because they do not actually work by the principle discovered by G.B. Venturi.

venturimeter (vĕn'tūr-ĭm'ĕ-tĕr) A device for measuring the flow of fluids through vessels.

venula (vĕn'ū-lā) [L., little vein] Venule.

venule (vĕn'ūl) [L., *venula*, little vein] A tiny vein continuous with a capillary. SYN: *venula*. SEE: *vein* for illus.

Venus, crown of (vĕ'nūs) A papular eruption around the hairline on the forehead caused by secondary syphilis.

verapamil (vĕr-āp'ā-mĭl) A calcium channel blocker, administered orally or intravenously to manage hypertension, angina pectoris, Prinzmetal's angina, and supraventricular arrhythmias. It is sometimes given to prevent migraine headaches. Its therapeutic classes are antianginal, antiarrhythmic, antihypertensive, and vascular headache suppressant. SYN: *Covera-HS*; *Verelan*.

verbigeration (vĕr-bĭj'ĕr-ā'shŭn) [L. *verbigere*, to chatter] Repetition of words that are either meaningless or have no significance.

verdigris (vĕr'dĭ-grĭs) [O.Fr. *vert de Grece*, green of Greece] **1.** Mixture of basic copper acetates. **2.** The green-gray deposit of copper carbonate on copper and bronze vessels.

verdohemoglobin (vĕr'dō-hĕm'ō-glōb'ĭn) A greenish pigment occurring as an intermediate product in the formation of bilirubin from hemoglobin.

Verelan Verapamil.

Verga's ventricle (vĕr'gāz) [Andrea Verga, It. neurologist, 1811–1895] A cleftlike space between the corpus callosum and the body of the fornix of the brain.

verge (vĕrj) An edge or margin.

anal v. The transitional area between the smooth perianal area and the hairy skin.

vergence (vĕr'jĕns) [L. *vergere*, to bend] A turning of one eye with reference to the other; may be horizontal (convergence or divergence) or vertical (intra-vergence or supravergence). SEE: *-phoria*.

vermicidal (vĕr'mĭ-sĭ'dāl) [L. *vermis*,

worm, + *cidus*, kill] Destroying parasitic worms in the intestines.

vermicide (vĕr'mĭ-sĭd) **1.** Destroying worms. **2.** An agent that will kill intestinal worms.

vermicular (vĕr-mĭk'ū-lār) [L. *vermicularis*] Resembling a worm.

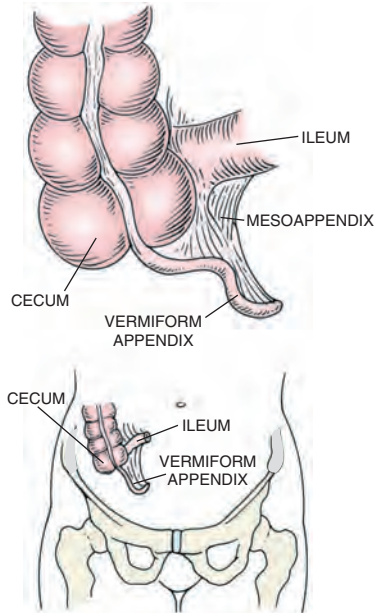
vermiculation (vĕr-mĭk'ū-lā'shŭn) [L. *vermiculare*, to wriggle] A wormlike motion, as in the intestines. SEE: *peristalsis*.

vermicule (vĕr'mĭ-kŭl) [L. *vermiculus*, a small worm] **1.** A small worm. **2.** Having a wormlike shape.

vermiculose, vermiculous (vĕr-mĭk'ū-lōs, vĕr-mĭk'ū-lūs) [L. *vermicularis*, wormlike] **1.** Infested with worms or larvae. **2.** Wormlike.

vermiform (vĕr'mĭ-form) [L. *vermis*, worm, + *forma*, shape] Shaped like a worm.

vermiform appendix A long, narrow, worm-shaped tube connected to the back of the cecum. It varies in length from less than 1 in to more than 8 in (2.5 to 20.3 cm) with an average of about 3 in (7.6 cm). Its distal end is closed. It is lined with mucosa similar to that of the large intestine. The appendix contains many lymph nodules. It is commonly referred to simply as "the appendix." SEE: *illus*.



VERMIFORM APPENDIX

vermifugal (vĕr'mĭf'ū-gāl) [*v* + *fugare*, to put to flight] Expelling worms from the intestines.

vermifuge (vĕr'mĭ-fŭj) Anthelmintic.

vermilionectomy (vĕr-mĭl'yōn-ĕk'tō-mē)

[ʹ + Gr. *ektome*, excision] Surgical removal of the vermilion border of the lip.

vermin (vēr'mīn) [L. *vermis*, worm] Animals such as mice, rats, roaches, lice, and bedbugs that despoil food, infest dwellings, or spread disease.

verminal (vēr'mī-nāl) Concerning or caused by worms.

vermination (vēr'mīn-ā'shūn) Vermin or worm infestation.

verminosis (vēr'mīn-ō'sīs) [ʹ + Gr. *osis*, condition] Infestation with vermin.

vermis (vēr'mīs) [L. worm] **1.** A worm. **2.** Vermis cerebelli.

v. cerebelli Median connecting lobe of the cerebellum.

vernal (vēr'nāl) [L. *vernalis*, pert. to spring] Occurring in or pert. to the spring.

Vernet's syndrome (vēr-nāz') [Maurice Vernet, Fr. physician, b. 1887] Paralysis of the glossopharyngeal, vagus, and spinal accessory nerves on the opposite side of a lesion involving the jugular foramen.

vernish (vēr'nīks) [L.] Varnish.

v. caseosa A protective sebaceous deposit covering the fetus during intrauterine life, consisting of exfoliations of the outer skin layer, lanugo, and secretions of the sebaceous glands. It is most abundant in the creases and flexor surfaces. It is not necessary to remove this after the fetus is delivered. SEE: *sebum*.

verometer (vē-ōm'ī-tēr) [Fm. O. Fr. *veer* + ʹ] A device that measures the ability of a lens to bend light rays into focus.

verotoxin (vē-ō-tōks'in) A heat-labile toxin produced by some types of *Escherichia coli*.

verruca (vēr-roo'kā) *pl.* **verrucae** [L., wart] Wart.

v. acuminata A pointed, reddish, moist wart about the genitals and the anus. It develops near mucocutaneous junctures, forming pointed, tufted, or pedunculated pinkish or purplish projections of varying lengths and consistency. Venereal warts should be treated with topically applied podophyllum resin. SYN: *condyloma*; *genital wart*; *venereal wart*.

v. digitata A form of verruca seen on the face and scalp, possibly serving as a starting point of cutaneous horns. Several filiform projections with horny caps are formed, closely grouped on a comparatively narrow base that in turn may be separated from the skin surface by a slightly contracted neck.

v. filiformis A small threadlike growth on the neck and eyelids covered with smooth and apparently normal epidermis.

v. gyri hippocampi One of the small wartlike protuberances on the convex surface of the gyrus hippocampi.

v. plana A flat or slightly raised wart.

v. plantaris Plantar wart.

v. vulgaris The common wart, usually found on the backs of the hands and fingers; however, it may occur on any area of the skin. SEE: *illus*.



VERRUCA VULGARIS

verruciform (vē-roo'sī-form) [L. *verruca*, wart, + *forma*, shape] Wartlike.

verrucose, verrucous (vēr'roo-kōs, vēr-roo'kūs) [L. *verrucosus*, wartlike] Wartlike, with raised portions.

verrucosis (vēr'oo-kō'sīs) [L. *verruca*, wart, + Gr. *osis*, condition] The condition of having multiple warts.

verruca peruana (vē-roo'gā pēr-wān'ā) [Sp., Peruvian wart] A clinical form of bartonellosis. It is marked by a chronic, benign cutaneous eruption consisting of raised, reddish-purple nodules on the skin and mucous membranes. SEE: *bartonellosis*.

versicolor (vēr'sī-kōl'or) [L., of changing colors] **1.** Having many shades or colors. **2.** Changeable in color. SEE: *tinea versicolor*.

version (vēr'zhūn) [L. *versio*, a turning] **1.** Altering of the position of the fetus in the uterus. It may occur naturally or may be done mechanically by the physician to facilitate delivery. SEE: *conversion*. **2.** Deflection of an organ such as the uterus from its normal position.

bipolar v. Changing of the position of the fetus by combined internal and external manipulation.

cephalic v. Turning of the fetus so that the head presents.

combined v. Mechanical version by combined internal and external manipulation.

external v. Improving the presentation of an unengaged fetus by placing one's hands on the mother's abdomen and pushing, turning, or rotating the fetus.

internal v. Podalic v.

pelvic v. Turning a fetus from a transverse lie to a vertex (head down) presentation.

podalic v. Using two hands (one in-

side the uterus and one on the abdominal wall) to change a twin fetus from a breech to a vertex presentation. SYN: *internal version*.

spontaneous v. Unassisted conversion of fetal presentation by uterine muscular contractions.

vertebra (vēr'tē-brā) *pl. vertebrae* [L.] Any of the 33 bony segments of the spinal column: 7 cervical, 12 thoracic, 5 lumbar, 5 sacral, and 4 coccygeal vertebrae. In adults, the five sacral vertebrae fuse to form a single bone, the sacrum, and the four rudimentary coccygeal vertebrae fuse to form the coccyx.

A typical vertebra consists of a ventral body and a dorsal or neural arch. In the thoracic region, the body bears on each side two costal pits for reception of the head of the rib. The arch that encloses the vertebral foramen is formed of two roots or pedicles and two laminae. The arch bears seven processes: a dorsal spinous process, two lateral transverse processes, and four articular processes (two superior and two inferior). A deep concavity, the inferior vertebral notch, on the inferior border of the arch provides a passageway for a spinal nerve. The successive vertebral foramina form the vertebral, or spinal, canal that encloses the spinal cord.

The bodies of successive vertebrae articulate with one another and are separated by intervertebral disks, disks of fibrous cartilage enclosing a central mass, the nucleus pulposus. The inferior articular processes articulate with the superior articular processes of the next succeeding vertebra in the caudal direction. Several ligaments (supraspinous, interspinous, anterior and posterior longitudinal, and the ligamenta flava) hold the vertebrae in position, yet permit a limited degree of movement. Motions of the vertebral column include forward bending (flexion), backward bending (extension), side bending (lateral flexion), and rotation. Lateral flexion and rotation motions are coupled so that whenever the vertebrae bend to the side, they also rotate and vice versa. SEE: *sacrum* for illus.

basilar v. The lowest of the lumbar vertebrae.

cervical v. One of the seven vertebrae of the neck.

coccygeal v. One of the rudimentary vertebrae of the coccyx.

fixed v. The sacral and coccygeal vertebrae that fuse to form the sacrum and coccyx.

lumbar v. One of the five vertebrae between the thoracic vertebrae and the sacrum.

odontoid v. Axis (2).

v. prominens The seventh cervical vertebra.

sacral v. One of the five fused vertebrae forming the sacrum. SEE: *sacrum* for illus.

thoracic v. One of the 12 vertebrae that connect the ribs and form part of the posterior wall of the thorax. SEE: *spinal column* for illus.

vertebral (vēr'tē-brāl) [L. *vertebra*, *vertebra*] Pert. to a vertebra or the vertebral column.

vertebral body A short column of bone forming the weight-supporting portion of a vertebra. From its dorsolateral surfaces project the roots of the arch of a vertebra.

Vertebrata (vēr'tē-brā'tā) A subphylum of the phylum Chordata characterized by possession of a segmented backbone or spinal column. It includes the following classes: Agnatha (cyclostomes), Chondrichthyes (cartilaginous fishes), Osteichthyes (bony fishes), Amphibia, Reptilia, Aves, and Mammalia. Members of this subphylum possess an axial notochord at some period of their existence.

vertebrate (vēr'tē-brāt) [L. *vertebra*, *vertebra*] Having or resembling a vertebral column.

vertebrated (vēr'tē-brāt'ēd) Composed of jointed segments.

vertebrectomy (vēr'tē-brēk'tō-mē) [" + Gr. *ektome*, excision] Excision of a vertebra or part of one.

vertebro- Combining form indicating *vertebra*.

vertebroarterial (vēr'tē-brō-ār-tē'rē-āl) [" + Gr. *arteria*, artery] Concerning the vertebral artery.

vertebrobasilar (vēr'tē-brō-bās'ī-lār) [" + *basilaris*, basilar] Concerning the vertebral and basilar arteries.

vertebrochondral (vēr'tē-brō-kōn'drāl) [" + Gr. *chondros*, cartilage] Pert. to the vertebrae and the costal cartilages.

vertebrocostal (vēr'tē-brō-kōs'tāl) [" + *costa*, rib] Costovertebral.

vertebroplasty (ver'tē-brō-plās-tē) Plastic surgical repair of a vertebra.

vertebrosternal (vēr'tē-brō-stēr'nāl) [" + Gr. *sternon*, chest] Pert. to a vertebra and the sternum.

vertex (vēr'tēks) [L., summit] The top of the head. SYN: *crown*.

vertical (vēr'tī-kāl) [L. *verticalis*, summit] 1. Pert. to or situated at the vertex. 2. Perpendicular to the plane of the horizon of the earth; upright.

vertical-banded gastroplasty A bariatric surgical procedure that restricts the passage of food into the stomach, increasing the feeling of satiety after a meal.

verticalis (vēr'tī-kāl'īs) [L.] Vertical, indicating any plane that passes through the body parallel to the long axis of the body.

verticality (vēr'tī-kāl'ī-tē) The ability to perceive accurately the vertical position

in the absence of environmental cues. Deficits in vertical perception may result in a tendency for patients to fall.

verticillate (vēr-tis'il-ăt, -tis-il'ăt) [L. *verticillus*, a little whirl] Arranged like the spokes of a wheel or a whorl.

vertiginous (vēr-tij'ĭ-nūs) [L. *vertiginosus*, one suffering from dizziness] Pert. to or afflicted with vertigo.

vertigo (vēr'ti-gō, vēr-ti'gō) [L. *vertigo*, a turning round] The sensation of moving around in space (subjective vertigo) or of having objects move about the person (objective vertigo). Vertigo is sometimes inaccurately used as a synonym for dizziness, lightheadedness, or giddiness. It may be caused by a variety of entities, including middle ear disease; toxic conditions such as those caused by salicylates, alcohol, or streptomycin; sunstroke; postural hypotension; or toxemia due to food poisoning or infectious diseases. SEE: *vection* (2).

PATIENT CARE: Assessment should include whether the patient experiences a sense of turning or whirling and its direction; whether it is intermittent and the time of day it occurs; whether it is associated with drugs, turning over in bed, occupation, or menses; whether it is associated with nausea and vomiting or with nystagmus and migraine. Safety measures, such as the use of siderails in bed, are instituted. The patient should ambulate gradually after a slow, assisted move from a sitting position. The call bell should be available at all times; tissues, water, and other supplies should be within easy reach; and furniture and other obstacles should be removed from the path of ambulation. The patient who has undergone ear surgery and experiences severe vertigo should be confined to bed for several days and then begin to gradually increase activity.

alternobaric v. Vertigo associated with a sudden decrease in the pressure to which the inner ear is exposed. This could occur when a scuba diver ascends quickly or when an aircraft ascends quickly. SEE: *bends*.

auditory v. Vertigo due to disease of the ear.

benign paroxysmal positional v. ABBR: BPPV. A disorder of the inner ear (labyrinth) characterized by intermittent attacks of vertigo triggered by positional changes of the head. Each episode of vertigo may last from less than a minute to a few minutes, with varying degrees of symptom severity. Episodes may recur for weeks intermittently over a period of years.

SYMPTOMS: A sudden change in head position (such as turning over from one side to another in bed) brings on symptoms that may include dizziness or vertigo, lightheadedness, imbalance,

and nausea. Dropping the head back when lying down, rolling over in bed, and getting out of bed are common problematic motions. BPPV may be called "top shelf" vertigo because its sufferers often feel dizzy and unsteady when tipping their heads back to look up. Stationary beauty parlor hairdryers may bring on symptoms. Symptoms of vertigo are often accompanied by nystagmus.

PATIENT CARE: Motion sickness medications (e.g., the antihistamine meclizine) may be prescribed to control associated nausea. Several physical maneuvers (habituation or Brand-Daroff exercises) taught to the patient provide effective relief of symptoms. SYN: *canalithiasis*. SEE: *canalith repositioning maneuver*.

central v. Vertigo caused by disease of the central nervous system.

cerebral v. Vertigo due to brain disease.

epidemic v. Vertigo that may occur in epidemic form. It is believed to be due to vestibular neuronitis.

epileptic v. Vertigo accompanying or following an epileptic attack.

essential v. Vertigo from an unknown cause.

gastric v. Vertigo associated with a gastric disturbance.

horizontal v. Vertigo that occurs while the patient is supine.

hysterical v. Vertigo accompanying hysteria.

labyrinthine v. An out-of-date term for Ménière's disease.

laryngeal v. Vertigo and fainting during a coughing spell in patients with chronic bronchitis. SYN: *laryngeal syncope*.

objective v. Vertigo in which stationary objects appear to be moving.

ocular v. Vertigo caused by disease of the eye.

organic v. Vertigo due to a brain lesion.

peripheral v. Vertigo due to disturbances in the peripheral areas of the central nervous system.

positional v. Vertigo that occurs when the head is tilted toward a specific axis. SYN: *postural vertigo*. SEE: *benign paroxysmal v.*; *Brandt-Daroff maneuvers*; *canalith repositioning maneuver*.

postural v. Positional vertigo.

rotary v. Subjective v.

subjective v. Vertigo in which the patient has the sensation of turning or rotating. SYN: *rotary vertigo*.

toxic v. Vertigo caused by the presence of a toxin in the body.

vertical v. Vertigo produced by standing or by looking up or down.

vestibular v. Vertigo due to disease or malfunction of the vestibular apparatus.

verumontanitis (vēr"ū-mōn"tān-ī'tis) [L. *veru*, spit, dart, + *montanus*, mountainous, + Gr. *itis*, inflammation] Inflammation of the verumontanum. SYN: *colliculitis*.

verumontanum (vēr"ū-mōn-tā'nūm) [L. *veru*, spit, dart, + *montanus*, mountainous] An elevation on the floor of the prostatic portion of the urethra where the seminal ducts enter.

Vesalius, vein of The small emissary vein from the cavernous sinus passing through the foramen of Vesalius and conveying blood to the pterygoid plexus.

vesica (vē-sī'kā) [L.] A bladder.

vesical (vēs'ī-kāl) Pert. to or shaped like a bladder.

vesical reflex An inclination to urinate caused by moderate bladder distention.

vesicant (vēs'ī-kānt) [L. *vesicare*, to blister] 1. Blistering; causing or forming blisters. 2. An agent used to produce blisters. It is much less severe in its effects than are escharotics. 3. A blistering gas used in chemical warfare. SYN: *vesicatory*. SEE: *gas*, *vesicant*.

vesication (vēs'ī-kā'shūn) 1. The process of blistering. 2. A blister.

vesicatory (vēs'ī-kā-tor"ē) Vesicant.

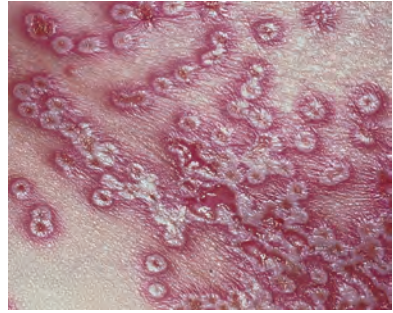
vesicle (vēs'ī-kl) [L. *vesicula*, a little bladder] A small blister-like elevation on the skin containing serous fluid. Vesicles may vary in diameter from a few millimeters to a centimeter. They may be round, transparent, opaque, or dark elevations of the skin, sometimes containing seropurulent or bloody fluid. In sudamina, they result from sweat that cannot escape from the skin; in herpes, they are mounted on an inflammatory base, having no tendency to rupture but associated with burning pain. In herpes zoster, they follow dermatomes. In dermatitis venenata, they result from contact with poison ivy or oak and are accompanied by great itching. They are also seen in dermatitis herpetiformis or multiformis. In impetigo contagiosa, they occur, esp. in children, in discrete form, flat and umbilicated, filled with straw-colored fluid, with no tendency to break. They dry up, forming yellow crusts with little itching. They are also seen in vesicular eczema, molluscum contagiosum, miliaria (prickly heat or heat rash), chickenpox, smallpox, and scabies. SEE: *illius*; *herpes*; *miliaria*.

brain v. One of the five embryonic subdivisions of the brain.

compound v. Multilocular v.

optic v. A hollow outgrowth from the lateral aspects of the embryonic brain. The retinae and optic nerves develop from these paired vesicles.

seminal v. One of two saccular glands below the urinary bladder in males. The duct from each joins the vas deferens on its own side to form the ejaculatory duct. The seminal vesicle pro-



VESICLES

duces an alkaline, fructose-rich secretion that enhances sperm motility and nourishes the sperm.

transfer v. An intracellular vesicle that carries proteins from one organelle to another; e.g., from the endoplasmic reticulum to the Golgi apparatus.

vesico- (vēs'ī-kō) Combining form meaning *bladder*, *vesicle*.

vesicocele (vēs'ī-kō-sē'l) [L. *vesica*, bladder, + Gr. *kele*, tumor, swelling] Hernia of the bladder into the vagina. SYN: *cystocele*.

vesicoclysis (vēs'ī-kōk'li-sīs) [v. + Gr. *klysis*, a washing] Injection of fluid into the bladder.

vesicofixation (vēs'ī-kō-fiks-ā'shūn) [L. *vesica*, bladder, + *fixatio*, a fixing] Attachment of the uterus to the bladder or the bladder to the abdominal wall.

vesicoprostatic (vēs'ī-kō-prōs-tāt'īk) [v. + Gr. *prostatae*, prostate] Rel. to the bladder and prostate.

vesicopubic (vēs'ī-kō-pū'bīk) [v. + NL. (*os*) *pubis*, bone of the groin] Pert. to the bladder and os pubis.

vesicopustule (vēs'ī-kō-pūs'tūl) [v. + *pustula*, blister] A vesicle in which pus has developed.

vesicostomy (vēs'ī-kōs'tō-mē) [v. + Gr. *stoma*, mouth] Surgical production of an opening into the bladder.

vesicotomy (vēs'ī-kōt'ō-mē) [v. + Gr. *tome*, incision] Incision of the bladder.

vesicoureteral (vēs'ī-kō-ū-rē'tēr-āl) [v. + Gr. *oureter*, ureter] Concerning the urinary bladder and a ureter.

vesicouterine (vēs'ī-kō-ū'tēr-īn) [v. + *uterinus*, pert. to the womb] Pert. to the urinary bladder and uterus.

vesicouterine pouch Downward extension of the peritoneal cavity located between the bladder and uterus.

vesicula (vē-sīk'ū-lā) *pl.* **vesiculae** [L.] A small bladder or vesicle.

vesicular (vē-sīk'ū-lār) Pert. to vesicles or small blisters.

vesicular eczema Eczema accompanied by the formation of vesicles.

vesiculated (vē-sīk'ū-lāt'ēd) Having vesicles present.

vesiculation (vē-sīk"ū-lā'shūn) [L. *vesicula*, a tiny bladder] The formation of vesicles or the state of having or forming them.

vesiculectomy (vē-sīk"ū-lēk'tō-mē) [" + Gr. *ektome*, excision] Partial or complete excision of a vesicle, particularly a seminal vesicle.

vesiculiform (vē-sīk"ū-lī-form) [" + *forma*, shape] Having the shape of a vesicle.

vesiculitis (vē-sīk"ū-lī'tīs) [" + Gr. *itis*, inflammation] Inflammation of a vesicle, particularly the seminal vesicle.

vesiculobronchial (vē-sīk"ū-lō-brōng'kē-āl) [" + Gr. *bronchos*, windpipe] Both vesicular and bronchial.

vesiculocavernous (vē-sīk"ū-lō-kāv'ēr-nūs) [" + *caverna*, a hollow] Vesicular and cavernous.

vesiculogram (vē-sīk'ū-lō-grām) [" + Gr. *gramma*, something written] A radiograph of the seminal vesicles.

vesiculography (vē-sīk"ū-lōg'rā-fē) [" + Gr. *graphein*, to write] Radiography of the seminal vesicles after the injection of a contrast medium. This procedure has been replaced by ultrasound imaging.

vesiculopapular (vē-sīk"ū-lō-pāp'ū-lār) [" + *papula*, pimple] Composed of vesicles and papules.

vesiculopustular (vē-sīk"ū-lō-pūs'tū-lār) [" + *pustula*, blister] Having both vesicles and pustules.

vesiculotomy (vē-sīk"ū-lōt'ō-mē) [" + Gr. *tome*, incision] Surgical incision into a vesicle, as a seminal vesicle.

vesiculotubular (vē-sīk"ū-lō-tū'bū-lār) [" + *tubularis*, like a tube] Sounds from auscultation of the chest that have both vesicular and tubular qualities.

vesiculotympanic (vē-sīk"ū-lō-tīm-pān'īk) [" + Gr. *tympanon*, drum] Having both vesicular and tympanic qualities.

Vespidae (vēs'pī-dē) [L. *vespa*, wasp] Family of wasps, including paper wasps, hornets, and yellow jackets.

Vespula vulgaris (vēs'pūl-ā vūl-gār'īs) [NL., common (little) wasp] The scientific name for the yellow jacket. The yellow jacket is a black-and-yellow-striped stinging wasp whose venom, abbreviated *Ves v* by the World Health Organization, may cause anaphylaxis in susceptible individuals.

vessel (vēs'ēl) [O.Fr. from L. *vascellum*, a little vessel] A tube, duct, or canal to convey the fluids of the body. SYN: *vas*.

blood v. Any of the vessels carrying blood (i.e., arteries, veins, and capillaries).

collateral v. A vessel parallel to the vessel from which it arose.

conduit v. One of the large blood vessels that conducts fluid from the heart to the systemic circulation. The elasticity of these vessels is an impor-

tant factor in the development of hypertension.

great v. One of the large blood vessels entering and leaving the heart.

lacteal v. Lacteal (2).

lymphatic v. A thin-walled vessel that conveys lymph from the tissues. These vessels resemble veins in structure, possessing three layers (intima, media, and adventitia) and paired valves.

nutrient v. One of the vessels supplying specific areas such as the interior of bones.

vestibular bulb One of the two sacculated collections of veins, lying on either side of the vagina beneath the bulbocavernosus muscle, connected anteriorly by the pars intermedia, and through this strip of cavernous tissue communicating with the erectile tissue of the clitoris. The vestibular bulbs are the homologues of the male corpus spongiosum. Injury during labor may give rise to troublesome bleeding. SEE: *Bartholin's gland*; *vagina*; *vestibule of vagina*.

vestibular nerve A main division of the acoustic or eighth cranial nerve; arises in the vestibular ganglion and is concerned with equilibrium.

vestibule (vēs'tī-būl) A small space or cavity at the beginning of a canal, such as the aortic vestibule. **vestibular** (vēs'tīb'ū-lār), *adj.*

aortic v. The part of the left ventricle of the heart just below the aortic valve.

buccal v. The part of the oral cavity bounded by the teeth, gingiva, and alveolar processes and laterally by the cheek.

v. of ear The middle part of the inner ear, behind the cochlea; and in front of the semicircular canals; it contains the utricle and saccule.

v. of larynx The portion of the larynx above the vocal cords.

v. of mouth The thin space between the teeth and gums, and the lips and cheeks. SYN: *oral vestibule*.

v. of nose The anterior part of the nostrils, containing the vibrissae.

oral v. Vestibule of mouth.

v. of vagina An almond-shaped space between the lines of attachment of the labia minora. The clitoris is situated at the superior angle; the inferior boundary is the fourchette. The vestibule is approx. 4 to 5 cm long and 2 cm in greatest width when the labia minora are separated. Four major structures open into the vestibule: the urethra anteriorly, the vagina into the midportion, and the two secretory ducts of the glands of Bartholin laterally. The mucous membrane is stratified squamous epithelium. SEE: *Bartholin's gland*; *vagina*; *vestibular bulb*.

vestibuloplasty (vēs'tīb'ū-lō-plās'tē) ["

+ Gr. *plassein*, to mold] Plastic surgery of the vestibule of the mouth.

vestibulotomy (vĕs-tĭb'ū-lōt'ō-mĕ) [+ Gr. *tome*, incision] Surgical incision into the vestibule of the inner ear.

vestibulum (vĕs-tĭb'ū-lŭm) *pl.* **vestibula** [L.] Vestibule.

vestige (vĕs'tĭj) [L. *vestigium*, footprint] A small degenerate or incompletely developed structure that has been more fully developed in the embryo or in a previous stage of the species.

vestigial (vĕs-tĭj'ĕ-ĭl) Of the nature of a vestige. SYN: *rudimentary*.

vestigium (vĕs-tĭj'ĕ-ŭm) *pl.* **vestigia** [L., a footprint] Vestige.

veterinarian (vĕt'ĕr-ĭ-nār'ĕ-ĭn) One who is trained and licensed to practice veterinary medicine and surgery.

veterinary (vĕt'ĕr-ĭ-nār'ĕ) 1. Pert. to animals, their diseases, and their treatment. 2. A veterinarian.

VF *ventricular fibrillation; vocal fremitus*.

V factor Nicotinamide adenine dinucleotide.

V.H. *viral hepatitis*.

via (vĕ'ā, vĭ'ā) *pl.* **viae** [L.] Any passage in the body such as nasal, intestinal, or vaginal.

viability (vĭ'ā-bĭl'ĭ-tĕ) [L. *vita*, life, + *habilis*, fit] The capacity for living, growing, developing, or surviving. It is used, for example, in reference to a premature fetus once it reaches a certain size or gestational age, or in determining the likelihood that an injured limb or transplanted organ will survive or flourish. **viable**, *adj.*

Viagra SEE: *sildenafil*.

vial (vĭ'āl) [Gr. *phiale*, a drinking cup] A small glass bottle for medicines or chemicals.

multiple-dose v. A container that holds more than one dose of a medication.



Contamination of multiple-dose vials may occur when health care providers fail to follow standard precautions or sterile procedures. Multiple-dose vials should be stored at temperatures specified by the manufacturer or pharmacist and be discarded when or if contamination is suspected or after the expiration date on the vial.

single-dose v. A container that holds enough medication for one patient's immediate needs. Single-dose vials should not be reused or refilled.

viator (vĭ'ā-tōr) An individual, usually one with a terminal illness, who sells rights to his or her insurance policy in exchange for an antemortem benefit collection.

vibex (vĭ'bĕks) *pl.* **vibices** [L. *vibix*, mark of a blow] A narrow linear mark of hemorrhage into the skin.

vibration (vĭ-brā'shŭn) 1. A to-and-fro movement. SYN: *oscillation*. 2. Therapeutic shaking of the body, a form of massage. It consists of a quick motion of the fingers or the hand vertical to the body or use of a mechanical vibrator. Chest wall vibration is a component of pulmonary hygiene; it improves respiratory function in patients with chronic obstruction lung disease, and can be used as an adjunctive treatment for pneumonia when it is used with postural drainage.

vibrative (vĭb'rā-tĭv) 1. Vibratory. 2. Indicating sound produced by vibration of parts of the respiratory tract as air passes through.

vibrator (vĭ'brā-tor) [L. *vibrator*, a shaker] A device that produces rapid to-and-fro movements in the body or one of its parts. In health care, vibrators are used in hearing aids and middle ear implants; in pulmonary hygiene to assist in clearing secretions or to stimulate diaphragmatic movement; in patients with sexual dysfunction (e.g., patients with spinal cord injuries affecting orgasm, or other organic difficulties); or in the relief of muscle contraction in some patients with neurological deficits.

whole body v. Exposure of the entire body to vibration as would occur in occupations such as truck and tractor drivers, jackhammer operators, helicopter pilots, and construction workers using various vibration-producing tools. Such exposure may produce diseases of the peripheral nerves, prostatitis, and back disorders.

vibratory (vĭ'brā-tō'rĕ) [L. *vibrator*, a shaker] Having a vibrating or oscillatory movement.

vibratory sense The ability to perceive vibrations transmitted through the skin to deep tissues; usually tested by placing a vibrating tuning fork over bony prominences.

Vibrio (vĭb'rĕ-ō) A genus of curved, motile, gram-negative bacilli, several of which may be pathogenic for humans.

V. cholerae The causative agent of cholera.

V. parahaemolyticus A marine vibrio, a common cause of gastroenteritis involving raw or poorly cooked seafood.

V. vulnificus A marine vibrio that may cause fulminant gangrene if it contaminates wounds or may cause fatal septicemia if ingested by those with impaired gastric, liver, kidney, or immune function. The usual source in such cases is raw shellfish.

vibrio (vĭb'rĕ-ō) *pl.* **vibriones** An organism of the genus *Vibrio*. SEE: *bacteria* for *illus*.

vibriocidal (vĭb'rĕ-ō-sĭ'dāl) Destructive to vibrio organisms.

vibron (vĕ'brĕ-ōn') [Fr.] A vibrio.

vibriosis (vĭb'ĕ-rē-ō'sīs) Infection with bacteria of the genus *Vibrio*.

vibrissae (vĭ-brĭs'ĕ) *sing.*, **vibrissa** [L. *vibrissa*, that which shakes] Stiff hairs within the nostrils at the anterior nares.

vibromassage (vĭ'brō-mā-sāj') A massage in which a mechanical vibrator is used.

vibrometer (vĭ-brōm'ĕt-ĕr) [L. *vibrare*, to shake, + Gr. *metron*, measure] A device used to measure the vibratory sensation threshold. It is particularly useful in judging the progression or remission of peripheral neuropathy.

vibrotactile (vĭ'brō-tāk'tĭl) [ʹ + ʹ] Pertaining to the sense of touch that perceives vibrations.

vibrotactile aid Any instrument that uses vibrations as a sensory substitute for sound. Vibrotactile aids are used by some deaf people to enhance speech recognition, specifically the intensity, pitch, duration, or patterns of spoken words.

vicarious (vĭ-kā'rē-ūs) [L. *vicarius*, change, alternation] Acting as a substitute; pert. to assumption of the function of one organ by another.

vicarious learning Learning through indirect experience.

Vicodin (vĭ'kū-dĭn) SEE: *hydrocodone bitartrate*.

Vicq d'Azyr's tract (vĭk dā-zĕr'z') [Felix Vicq d'Azyr, Fr. anatomist, 1748–1794] A large myelinated bundle arising in mammillary nuclei and terminating in the anterior thalamic nuclei of the brain.

video-assisted Facilitated by live televised images; used for certain surgical techniques.

video clip A brief, recorded, viewable file linked to a website or an electronic message used to educate students or to relay visual information, e.g., from real-time ultrasonography or angiography, from one user to another.

video display terminal ABBR: VDT. A terminal used in information processing (computer terminal) and entertainment (TV picture tube) that produces an image on a screen (target) by bombarding it with electrons. This causes the fluorescent material that coats the screen to emit light. The effects on workers involved with the use of VDTs have been investigated with respect to a variety of factors. There is no evidence that reproductive or visual health is impaired by working with VDTs. Those who work with VDTs may experience musculoskeletal difficulties if the workplaces are poorly designed. This may be due to the screen being positioned in a way that promotes poor posture, or the chair being of improper design. SEE: *ergonomics*.

video electroencephalography ABBR: V-EEG. The simultaneous use of digi-

tal video recording and 16-channel electroencephalography. It is used as a diagnostic aid in refractory epilepsy and may help confirm a diagnosis of psychogenic seizures.

videognosis (vĭd'ĕ-ōg-nō'sīs) [L. *videre*, to see, + Gr. *gnosis*, knowledge] Diagnosis using data and radiographic images transmitted by the use of television.

video-stroboscope A closed-circuit television recording technique used to obtain images while the field is illuminated by use of a stroboscope. Using this provides sequential views of objects in motion.

vidian artery (vĭd'ĕ-ān) [Guido Guidi (L. *Vidius*), It. physician, 1500–1569] The artery passing through the pterygoid canal. SYN: *artery of the pterygoid canal*.

vidian nerve A branch from the sphenopalatine ganglion.

view A body part as seen by an x-ray film or other recording medium.

view box A device made of lights placed behind a translucent screen and used to provide backlighting for a radiographic image. It helps clinicians see the brightness, contrast, and details of an image. Also known as an illuminator.

vigil (vĭj'ĭl) [L., awake] Insomnia, wakefulness.

coma v. A delirious, drowsy state in which the patient is partially conscious and occasionally responsive to stimuli. SEE: *vigilambulism*.

vigilambulism (vĭj'ĭl-ām'bū-lĭzm) [ʹ + *ambulare*, to walk, + Gr. *-ismos*, condition] Automatism that occurs while the person is awake; resembles somnambulism.

vigilance (vĭj'ĭ-lāns) [L. *vigilantia*, wastefulness] The condition of being attentive, alert, and watchful.

vignetting (vin-yĕt'ĭng) In radiology, a loss in brightness and focus toward the periphery of the output phosphor during image intensification.

vigor (vĭg'or) [L.] Active force or strength of body or mind.

Villaret's syndrome (vĕ-lār-āz') [Maurice Villaret, Fr. neurologist, 1877–1946] Ipsilateral paralysis of the 9th, 10th, 11th, 12th, and sometimes the 7th cranial nerves and the cervical sympathetic fibers. It is caused by a lesion in the posterior retroperitoid space. The signs and symptoms include paralysis and anesthesia of the pharyngeal area with difficulty swallowing; loss of taste sensation in the posterior third of the tongue; paralysis of the vocal cords and the sternocleidomastoid and trapezius muscles; and Horner's syndrome.

villi (vĭl'ĭ) [L.] Pl. of villus.

villoma (vĭ-lō'mā) [L. *villus*, tuft of hair, + Gr. *oma*, tumor] A villous tumor.

villose, villous (vĭl'ōs, vĭl'ūs) [L. *villus*,

tuft of hair] Pert. to or furnished with villi or with fine hairlike extensions.

villositis (vil'ōs-ī'tīs) [v + Gr. *itis*, inflammation] Inflammation of the placental villi.

villosity (vil'ōs-ī-tē) The condition of being covered with villi.

villus (vil'ūs) *pl.* **villi** [L., tuft of hair] A small fold or projection of some mucous membranes.

arachnoid v. Arachnoid granulation.

chorionic v. One of the tiny vascular projections of the chorionic surface that become vascular and help to form the placenta. SEE: *embryo* for *illus*; *chorion*.

intestinal v. One of the multiple, minute projections of the intestinal mucosa into the lumen of the small intestine. These projections increase the surface area for absorption of water and nutrients; each contains a capillary network and a lacteal. SEE: *illus*.

villusectomy (vil'ūs-ēk'tō-mē) [v + Gr. *ektome*, excision] Surgical removal of a synovial villus.

VIN *Vulvar intraepithelial neoplasia*.

Vinca (vin'kā) A genus of herbs including periwinkles, from which vincristine and vinblastine are obtained.

Vincent's angina (vin'sēnts) Necrotizing ulcerative gingivitis.

vinclozolin A fungicide used in agriculture, especially for the protection of vegetables and fruits, such as grapevines in vineyards. It is an antiandrogen; i.e., an agent that opposes the action of male hormones.

vinculum (vin'kū-lūm) *pl.* **vincula** [L., to

bind, tie] A uniting band or bundle. SYN: *frenulum*; *frenum*; *ligament*.

v. tendinum 1. Slender tendinous filaments connecting the phalanges with the flexor tendons. 2. The ringlike ligament of the ankle or wrist.

vinegar (vin'ē-gār) [ME. *vinegre*, from Fr. *vin*, wine, + *aigre*, sour] An impure solution containing 4% to 6% acetic acid. It is the product of fermentation of weak alcoholic solutions such as apple cider. SEE: *condiment*.

vinyl (vī'nīl) The univalent ethenyl hydrocarbon molecule, CH₂=CH—.

v. chloride A vinyl radical attached to a chlorine atom, CH₂=CHCl. It is used commercially to make pipes, tubing, and plastic resin. Some individuals exposed to vinyl chloride have developed hepatic angiosarcoma.

v. cyanide A toxic liquid compound, CH₂=CHCN, used in making plastics. SYN: *acrylonitrile*.

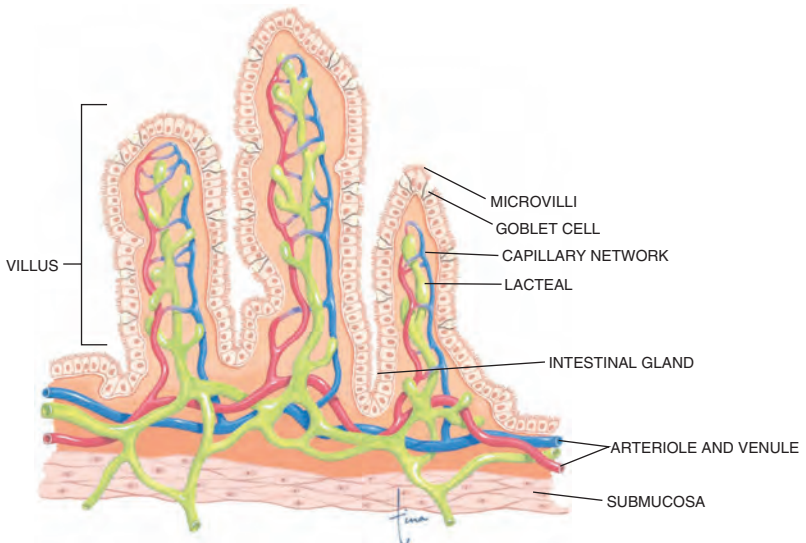
vinyl polysiloxane (pōl'ē-sī-lōk'sān) [v + *sil(icon)* + *ox(ygen)* + "] In dentistry an impression material used to make molded copies of teeth and gums. SYN: *polyvinylsiloxane*.

violaceous (vī'ē-lā'shūs) [L. *violaceus*, violet] Having a purple discoloration, esp. of the skin.

violate (vī'ē-lāt") [L. *violare*, to injure] To harm or injure a person, esp. to rape a female.

violence (vī'ō-lēnts) [L. *violentia*] 1. The use of force or physical compulsion to abuse or damage. 2. An act of violent behavior.

domestic v. Abuse or neglect occur-



VILLI OF SMALL INTESTINE

ring within families. Domestic violence includes child abuse, spouse abuse, elder abuse, sexual abuse, marital rape, and lapses in household firearm safety.

intimate partner v. Physical, sexual, or verbal abuse of a spouse or sexual partner.

perinatal v. Abuse or assault of women just before or after childbirth.

risk for v., directed at others Behavior in which an individual demonstrates that he or she can be physically, emotionally, or sexually harmful to others. SEE: *Nursing Diagnoses Appendix*.

risk for v., directed at self Behavior in which a person demonstrates that he can be physically, emotionally, or sexually harmful to himself. SEE: *Nursing Diagnoses Appendix*.

violet (vī'ō-lēt) [ME. *violet*, from L. *violeta*, violet] One of the colors of the visible spectrum; similar to purple.

gentian v. C₂₂H₂₀ClN₃; a dye derived from coal tar that is widely used as a stain in histology, cytology, and bacteriology. It has also been used therapeutically as a topical anti-infective. Its chemical name is hexamethylpararosaniline chloride.

viosterol (vī-ōs'tēr-ōl) A solution of irradiated ergosterol in vegetable oil. SYN: *calciferol*.

viper (vī'pēr) Any venomous snake of the family Viperidae.

Viperidae (vī-pēr'i-dē) [L. *vipera*, snake or serpent] The scientific name for a family of venomous snakes that includes the European viper, gibbon viper, puff adder, Russel viper, and saw-scaled viper.

VIPoma (vī-pō'mă) [*vasoactive intestinal polypeptide* + *oma*, tumor] A rare form of neuroendocrine tumor that causes watery diarrhea, hypokalemia, and achlorhydria as a result of the release of vasoactive intestinal peptide.

-vir (vīr) [Fm. *vir(us)* or *vir(al)*] A combining form used in pharmacology to designate an antiviral agent.

viral (vī'rāl) Pert. to or caused by a virus.

viral coat Capsid.

viral interference The inhibition of the multiplication of one type of virus by the presence of another virus in the same cell. SEE: *interferon*.

viral load A measure of the total body burden of viral particles present in human blood; the greater the number, usually, the sicker the patient. Testing for viral loads has aided the treatment of several illnesses, including AIDS and hepatitis C. In these illnesses, antiviral therapies are initiated at certain levels of viral load and continued if anticipated reductions in viremic burden are achieved.

viral set point The balance in a viral infection between the number of viruses

in the blood (the "viral load") and the response by the immune system to initial infection. It may be one of the predictors of disease progression in illnesses such as human immunodeficiency virus (HIV) infection.

Virchow's node (fir'kōz) Node, sentinel.

viremia (vī'rēm'ē-ā) The presence of viruses in the blood.

vires (vī'rēs) Pl. of *vir*.

virgin (vēr'jīn) [L. *virgo*, a maiden] 1. A woman or man who has not had sexual intercourse. 2. Uncontaminated; fresh; new.

virginal (vēr'jīn-āl) [L. *virgo*, a maiden] Rel. to a virgin or to virginity.

virginity (vēr'jīn'it-ē) [L. *virginitas*, maidenhood] The state of being a virgin; not having experienced sexual intercourse.

virile (vir'īl) [L. *virilis*, masculine] Masculine.

virile reflex 1. The sudden downward movement of a completely relaxed penis when the prepuce or glans is pulled upward. SYN: *bulbocavernosus reflex*. 2. The contraction of the bulbocavernosus muscle on percussing the dorsum of the penis. 3. The contraction of the bulbocavernosus muscle resulting from compression of the glans penis.

virilescence (vir-il-ēs'ēns) [L. *virilis*, masculine] Virilization.

virilism (vir'īl-izm) [+ Gr. *-ismos*, condition] The presence or development of male secondary characteristics in a woman.

virility (vir-īl'ī-tē) [L. *virilitas*, masculinity] 1. The state of possessing masculine qualities. 2. Sexual potency in the male.

virilization (vir'ī-lī-zā'shūn) The production of masculine secondary sex characteristics in a woman. These include deepening of the voice, development of male-type baldness, clitoral enlargement, and increased growth of facial and body hair. Virilization may be caused by one of several endocrine diseases that lead to excess production of testosterone, or by the woman's taking anabolic steroids, e.g., to attempt to enhance muscular development. SYN: *viriliscence*.

virion (vī'rē-ōn, vī'rē-ōn) A complete virus particle; a unit of genetic material, the genome, surrounded by a protective protein coat, the capsid. Sometimes the capsid is surrounded by a lipid envelope. SYN: *particle(4)*. SEE: *capsid*.

viripotent (vī-rīp'ō-tēt) [L. *viripotens*] Sexually mature, as applied to a man.

viroid (vī'royd) A small, naked, infectious molecule of RNA. Viroids differ from viruses by the absence of a dormant phase and by genomes that are much smaller than those of known viruses.

virology (vī-rōl'ō-jē) [L. *virus*, poison, +

Gr. *logos*, word, reason] The study of viruses and viral diseases.

viropexis (vī'rō-pēk'sīs) [v + Gr. *pexis*, fixation] The fixation of a virus particle to a cell. This leads to the inclusion of the virus inside the cell.

virotherapy (vī'rō-thēr'ā-pē) The use of viruses to infect and kill rapidly replicating cells, esp. cancer cells. Oncolytic viruses used in virotherapy include some adenoviruses, influenza virus, mumps virus, Newcastle virus, and poliovirus.

virotoxin A poisonous substance (usually a protein) released by a virus that destroys or alters the metabolic integrity of cells.

virtual (vēr'tū-āl) [L. *virtus*, capacity] Appearing to exist; made by software to resemble real phenomena.

virtual colonoscopy SEE: under *colonoscopy*.

virucidal (vīr-ū-sī'dāl) [L. *virus*, poison, + *cidus*, to kill] Destructive of a virus.

virucide (vīr'ū-sīd) An agent that destroys or inactivates a virus, esp. a chemical substance used on living tissue.

virulence (vīr'ū-lēns) [LL. *virulentia*, stench] **1.** The relative power and degree of pathogenicity possessed by organisms. Properties that influence the virulence of an organism include **1.** the strength of its adhesion molecules, which link it to the target cell; **2.** its ability to secrete enzymes or exotoxins that damage target cells, or endotoxins that interfere with the body's normal regulatory systems; and **3.** its ability to inhibit or evade the actions of white blood cells and their chemical mediators. SEE: *immunocompetence*; *immunocompromised*. **2.** The property of being virulent; venomousness, as of a disease. SEE: *attenuation*.

virulent (vīr'ū-lēnt) [L. *virulentus*, poison] **1.** Very poisonous. **2.** Infectious; able to overcome the host's defensive mechanism.

viruliferous (vīr-yū-lif'ēr-ūs) [*virul(ence)* + ""] Colonized or infected by a virus and able to transmit that virus to another organism.

viruria (vīr-ūr'ē-ā) [v + Gr. *ouron*, urine] The presence of viruses in the urine.

virus (vī'rūs) [L., poison] A pathogen composed of nucleic acid within a protein shell, which can grow and reproduce only after infecting a host cell. More than 400 types of viruses that cause a great variety of illness are known. All of them can attach to cell membranes, enter the cytoplasm, take over cellular functions, reproduce their parts, and assemble themselves into mature forms capable of infecting other cells.

Some of the most virulent agents

known are viruses (e.g., the hemorrhagic fever caused by Ebola virus). Viruses are also responsible for the common cold, childhood exanthems (e.g., chickenpox, measles, rubella), latent infections (herpes simplex), some cancers or lymphomas (Epstein-Barr virus), and diseases of all organ systems.

Although viral architecture is astonishingly complex, every virus contains at least the following components:

1. A genome, and
2. a capsid.

Most animal viruses are also surrounded by a lipid envelope, a bilayered membrane analogous to a cell membrane. The envelope may be parasitized from host cells. Its chemical components are phospholipids and glycoproteins. The lipid envelope is frequently dotted by spikes.

Viruses with lipid envelopes have a greater ability to adhere to cell membranes and to avoid destruction by the immune system. Both the capsid and envelope are antigenic. Frequent mutations change some viral antigens so that the lymphocytes are unable to create an antibody that can neutralize the original antigen and its replacement. The common influenza viruses have antigens that mutate or combine readily, requiring new vaccines with each mutation. The body's primary immune defenses against viruses are cytotoxic T lymphocytes, interferons, and, to some extent, immunoglobulins; destruction of the virus often requires destruction of the host cell.

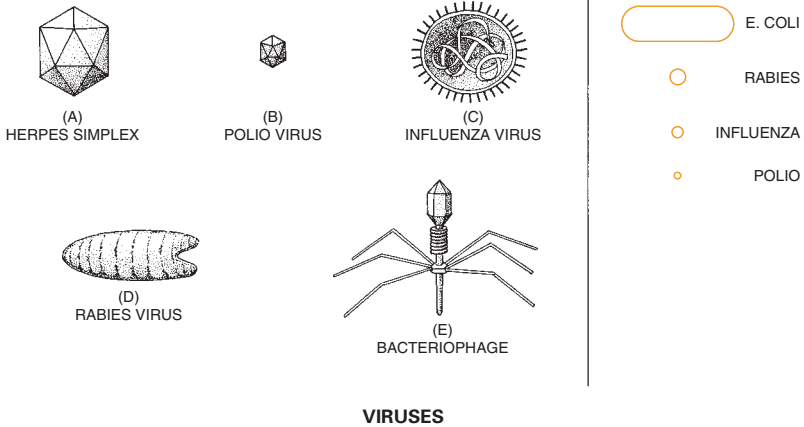
When viruses enter a cell, they may immediately trigger a disease process or remain quiescent for years. They damage the host cell by blocking its normal protein synthesis and using its metabolic machinery for their own reproduction. New viruses are then released either by destroying their host cell or by forming small buds that break off and infect other cells. SEE: *ilus*; *table*.

CLASSIFICATION: The 400 known viruses are classified in several ways: by genome core (RNA or DNA), host (animals, plants, or bacteria), method of reproduction (e.g., retrovirus), mode of transmission (e.g., enterovirus), and disease produced (e.g., hepatitis virus).

TREATMENT: Antiviral drugs include such agents as acyclovir (for herpes simplex); amantadine and rimantadine (for influenza A); interferons (for chronic hepatitis B and C); ribavirin (for respiratory syncytial virus and chronic hepatitis C); and lamivudine (among many others, for human immunodeficiency virus [HIV]).

attenuated v. A virus with reduced pathogenicity due to treatment or repeated passage through hosts.

bacterial v. Bacteriophage.



cercopithecine v. 1, cercopithecine herpesvirus 1 A virus commonly found in macaques but not other primates. Humans who handle macaques may be infected by bites or exposure to animal blood or body fluids. Although in macaques the virus causes a herpetic rash, in humans it often produces deadly infections of the brain and meninges. SYN: *B virus*.

cowpea mosaic v. A plant virus that has been used in vaccine development to deliver antigens from pathogens and tumors. Because the virus does not infect animals, it is considered a safe vehicle

for antigen display in humans and other species.

coxsackie v. SEE: *coxsackievirus*.

cytomegalic v. ABBR: CMV. Cytomegalovirus.

defective v. A virus particle that, because of a lack of certain essential factors, is unable to replicate. Sometimes this can be overcome by the presence of a helper virus that provides the missing factor or factors.

DNA v. A virus such as the papilloma virus and the herpesviruses whose genome is deoxyribonucleic acid (DNA).

enteric v. Enterovirus.

Common Viral Characteristics

Characteristics	Examples
Genetic material	
RNA	HIV, hepatitis A, polio, measles, mumps, rhinovirus, influenza
DNA	Herpesviruses, hepatitis B, adenoviruses, human papilloma viruses, cytomegalovirus
Hosts	
Humans	Measles, mumps, rubella, varicella-zoster, poliovirus
Humans and animals	Rabies, influenza, hantavirus, encephalitis virus
Plants	Tobacco mosaic virus, cowpea mosaic virus
Bacteria	Phages
Envelope	
Present	Herpesviruses, rabies, HIV
Absent	Rotavirus, Norwalk virus, adenovirus
Respiratory	Influenza, parainfluenza, hantavirus
Teratogenic	Herpes varicella, cytomegalovirus, rubella
Neurological and fatal	Rabies
Paralytic encephalitic	Polio, many encephalitis viruses
Fulminant	Yellow fever, hantavirus, Ebola-Marburg
Latent	Herpesviruses
Cancer causing	Human T-cell lymphotropic virus, hepatitis viruses, papillomavirus

enteric cytopathogenic human orphan v. ABBR: echovirus. A virus that was accidentally discovered in human feces and is not known to be associated with a disease; thus the name "orphan." Initially, 33 echovirus serotypes were designated, but numbers 10 and 28 have been reclassified. Various serotypes have been associated with aseptic meningitis, encephalitis, acute upper respiratory infection, enteritis, pleurodynia, and myocarditis.

enteric orphan v. SEE: *enteric cytopathogenic human orphan v.*

fixed v. A rabies virus stabilized and modified but only partially attenuated by serial passage through rabbits.

foamy v. Spumavirus.

GB v. type C Hepatitis G virus.

helper v. A virus that permits a defective virus present in the same cell to replicate. SEE: *defective v.*

herpes v. Herpesviruses.

human immunodeficiency v. ABBR: HIV. SEE: *human immunodeficiency virus.*

human papilloma v. SEE: *under papillomavirus.*

JC v. A DNA papovavirus that causes progressive multifocal leukoencephalopathy in immunosuppressed patients. It is carried asymptotically by a large percentage of the population.

Junin v. An arenavirus that chronically infects rodents. It is the cause of sporadic outbreaks of Argentine hemorrhagic fever, a potentially lethal infection usually found in South America.

latent v. A virus that has the ability to infect the host, initially causing little or no evidence of illness but persisting for the lifetime of the infected individual; later on, a specific triggering mechanism may cause the virus to produce a clinically apparent disease. This occurs with herpes simplex virus that remains latent in sensory ganglia and is reactivated by trauma to the skin supplied by the distal sensory nerves associated with these ganglia. After reactivation, the virus may cause localized or generalized lesions in the affected area and the central nervous system.

lytic v. Any virus that, after infecting a cell, lyses it.

masked v. A virus that ordinarily occurs in the host in a noninfective state but is activated and demonstrated by indirect methods.

neurotropic v. A virus that reproduces in nerve tissue.

Nipah v. ABBR: NiV. A member of the family of paramyxoviruses that can cause outbreaks of encephalitis and respiratory disease in humans. It is transmitted to humans from infected swine (e.g., in slaughterhouses).

Norwalk v. [virus first identified in Norwalk, Ohio, U.S.A.] ABBR: NLV. A

calicivirus that is the causative organism in over half of the reported cases of epidemic viral gastroenteropathy. It commonly causes nausea, vomiting, and diarrhea. The incubation period ranges from 18 to 72 hr. Outbreaks are usually self-limited. Intestinal signs and symptoms last for 24 to 48 hr. Treatment, if required, is supportive and directed at maintaining hydration and electrolyte balance. SYN: *Norwalk agent*. SEE: *Calicivirus*.

Oliveros v. An arenavirus of the T-caribe complex of viruses that normally infects rodents in the pampas of Argentina. It may cause a fatal hemorrhagic fever in humans.

oncogenic v. Tumor virus.

Onyong-nyong v. An alphavirus (family Togaviridae) found in central Africa that causes epidemic fevers, joint pains, and swollen glands. The virus is transmitted to humans by mosquito bite.

orphan v. One of several viruses that initially were not thought to be associated with human illness. This group includes the enteroviruses and rhinoviruses.

parainfluenza v. One of a group of viruses that affect infants and young children. It causes respiratory infections that may be mild or may progress to pneumonia. Most infections are so mild as to be clinically inapparent.

pox v. Poxvirus.

reassortant v. A virus whose genetic material has been recombined or reshuffled so that it contains new nucleic acid sequences, new antigenic structures, and new combinations of protein products.

respiratory syncytial v. ABBR: RSV. A single-stranded RNA virus that is an important cause of upper and lower respiratory tract disease in infants, children, and the elderly. When limited to the upper respiratory tract, RSV causes symptoms of the common cold. In the lower respiratory tract, it causes bronchiolitis, pneumonia, or respiratory distress, and can be life-threatening. Respiratory syncytial virus is the most common cause of lower respiratory infections in infants and children under age 2. It is spread by physical contact, usually with infected nasal or oral secretions. In the U.S. its season begins in the fall and peaks in winter. About 90,000 young children are hospitalized with RSV infections each year in the U.S.

SYMPTOMS: Three to five days following exposure to RSV, the patient typically develops an upper respiratory infection (URI) lasting 1 to 2 weeks with cough, mild to moderate nasal congestion, runny nose, and low-grade fever. If the infection spreads to the lower respi-

ratory tract, symptoms worsen, and may include wheezing and difficulty breathing. Infants and children with RSV pneumonia exhibit retractions; rapid grunting respirations, poor oxygenation, and respiratory distress. Vomiting, dehydration, and acidosis may occur.

DIAGNOSIS: Diagnosis is based on signs and symptoms and confirmed by isolating RSV from respiratory secretions (sputum or throat swabs). Immunofluorescence techniques, enzyme immunoassays, or rapid chromatographic immunoassays provide rapid identification of viral antigens for diagnosis.

PATIENT CARE: Treatment is mainly supportive. Antibiotics are not effective. Acetaminophen or ibuprofen are given for pain or fever. Oxygen is administered if the patient's oxygen saturation SpO_2 falls below 92%. Bronchodilators, such as albuterol and epinephrine, are used to treat wheezing. In patients with severe RSV infections, noninvasive positive-pressure ventilation or intubation and mechanic ventilation are required. Intravenous fluids are administered as prescribed if the patient cannot take enough fluid orally. Nasopharyngeal suction may be needed to clear congestion (by bulb syringe for infants).

Strict adherence to infection control measures is important in preventing an outbreak in any facility. This includes using meticulous hand hygiene (the most important step in preventing RSV spread) before donning gloves for patient care, after removing gloves, and if any potentially contaminated surfaces have been touched. Standard and contact precautions should be observed for all patients with known or suspected RSV (gown, mask and eye protection for direct contact with respiratory secretions or droplets). Protective coverings should be removed in this order: gloves (followed by hand hygiene), goggles or face shield, gown, and finally mask or respirator, discarding them in an infectious waste container in the patient's room. The patient with RSV should be in a private room and dedicated equipment should be used in patient care, with terminal equipment disinfection by the appropriate agency facility. Room assignments should be arranged to avoid cross-contamination whenever possible. Individuals with symptoms of respiratory infection should be prevented from caring for or visiting pediatric, immunocompromised, or cardiac patients.

The administration of high doses of respiratory syncytial virus immune globulin is an effective means of preventing lower respiratory tract infection in infants and young children at high risk for contracting this disease. Paviluzumab, a monoclonal antibody given in-

tramuscularly, can prevent RSV disease in high-risk infants and children.

Rift Valley v. A phlebovirus that causes sporadic epidemics among both humans and animals of hemorrhagic fever, in Africa. It is transmitted by the bite of infected mosquitoes.

RNA v. A virus such as the human immunodeficiency virus, influenza virus, and polio virus whose genome is ribonucleic acid (RNA).

sandfly fever v. Toscana v.

Sindbis v. An alphavirus typically found in South Africa or Oceania that is disseminated to humans by mosquitoes of the genus *Culex*. It can cause a transient febrile illness accompanied by a diffuse maculopapular rash and muscle and joint pains.

slow v. A virus that replicates and causes disease indolently. SEE: *slow v. infection*.

slow v. infection An infection caused by a virus that remains dormant in the body for a prolonged period before causing signs and symptoms of illness. Such viruses may require years to incubate before causing diseases. Examples include progressive multifocal leukoencephalopathy and subacute sclerosing panencephalitis.

street v. A rabies virus obtained from an infected animal rather than from a laboratory strain.

SV 40 v. Simian virus 40, which is a member of the papovavirus family. The virus produces sarcomas after subcutaneous inoculation into newborn hamsters.

Tacaribe complex v. A group of viruses, originally identified in South America, that cause hemorrhagic fever in humans. They are members of the arnavirus family and are typically found in rodents. One member of this group is the Sabia virus.

Toscana v. A Bunyavirus transmitted by insect bite, esp. the bite of the sandfly (*Phlebotomus papatasi*). The virus is endemic in Sicily, Cyprus, and other Mediterranean locations and may cause encephalitis, aseptic meningitis, or septicemia. SYN: *sandfly fever virus*.

transfusion-transmissible v. ABBR: TTV. A single-stranded DNA virus, found in recipients of blood transfusions, that colonizes in the liver. It is not known whether the virus causes liver disease, e.g., chronic hepatitis, or benignly colonizes the liver.

tumor v. A virus that causes malignant neoplasms. Viruses suspected of causing tumors in humans include Epstein-Barr virus (associated with Burkitt's lymphoma), hepatitis B virus (with hepatocellular carcinoma), papilloma virus (with carcinoma of the cervix), and human herpesvirus 8 (with Kaposi's sarcoma). SYN: *oncogenic virus*.

vaccinia v. A double-stranded DNA virus, the causative agent of cowpox and a member of the Orthopoxvirus family. Vaccines against smallpox are derived from live cultures of vaccinia virus. SEE: *Orthopoxvirus*.

West Nile v. An arbovirus that primarily infects birds but can be transmitted by mosquito bite to humans and other animals. Since West Nile virus was identified in the U.S. in 1999, it has produced a nationwide epidemic of encephalitis. Although infection is usually asymptomatic, signs and symptoms that are more likely to be observed in the very young, the very old, or the very sick include fever, headache, stiff neck, fatigue, loss of appetite, nausea or vomiting, muscle pain, aches, and weakness ("neuroinvasive" disease may produce an acute flaccid paralysis). Infection is occasionally fatal. Those over age 50 are at greatest risk for serious complications and death.

In 2005 42 states in the U.S. reported having human cases of West Nile Fever. There were 2949 reported cases of this viral infection in the U.S. in 2005. Infected patients with neuroinvasive disease sometimes suffer long term consequences of infection, including fatigue and malaise, difficulty concentrating or thinking, or movement disorders. The disease is sometimes spread from patient to patient by blood transfusion or organ transplantation.

PATIENT CARE: Disease transmission can be prevented with mosquito control and mosquito avoidance measures. Health care professionals should advise patients and families to limit time out of doors esp. at dusk and dawn, to wear clothing (long sleeves, long pants, and socks), to place mosquito netting over infant carriers or strollers, and to apply an FDA-approved insect repellent (e.g., DEET, picaridin, or oil of lemon eucalyptus). Mosquito breeding grounds should be eliminated: standing water should be removed from flower pots, bird baths, pool covers, rain gutters, and discarded tires. Window and door screens should be installed and kept in good repair to prevent mosquitoes from entering homes. SEE: *illus.*

viremia (vī'rūs-ēm'ē-ā) [" + Gr. *haima*, blood] Viremia.

virus shedding, viral shedding The release of a virus from the host.

virustatic (vīr'ū-stāt'ik) [" + Gr. *statikos*, bringing to a standstill] Stopping the growth of viruses.

vis (vis) *pl.* **vires** [L., strength] Force, strength, energy, power.

VISA, VRSA (vē'sā) *Vancomycin-Intermediate/Resistant Staphylococcus aureus*.

viscera (vis'ēr-ā) *sing.*, **viscus** [L.] In-



WEST NILE VIRUS

The *Culex* mosquito, vector of West Nile Virus

ternal organs enclosed within a cavity, esp. the abdominal organs.

visceral (vis'ēr-āl) [L. *viscera*, body organs] Pert. to viscera.

visceral fat Fat that accumulates around internal organs, especially organs within the peritoneum, pleura, or pericardium. Visceral fat is more commonly found in men than in women. It contributes to insulin resistance and other aspects of the metabolic syndrome.

viscero- (vis'ēr-ō) [L. *viscera*, body organs] Combining form meaning *viscera*.

viscerocranium (vis'ēr-ō-krā'nē-ūm) That portion of the skull derived from the pharyngeal arches.

viscerogenic (vis'ēr-ō-jěn'ik) [" + Gr. *gennan*, to produce] Originating in the viscera.

visceroinhibitory (vis'ēr-ō-īn-hīb'ī-tō-rē) [" + *inhibere*, to restrain] Decreasing the action of the viscera.

visceromegaly (vis'ēr-ō-mēg'ā-lē) [" + Gr. *megalos*, great] Generalized enlargement of the abdominal visceral organs.

visceropleural (vis'ēr-ō-ploo'rāl) [" + Gr. *pleura*, a side] Rel. to the thoracic viscera and pleura.

visceroptosis (vis'ēr-ō-tp-ō'sis) [" + Gr. *ptosis*, a dropping] Downward displacement of a viscus.

visceroreceptors (vis'ēr-ō-rē-sēp'torz) A group of receptors that includes those located in visceral organs. Their stimulation gives rise to poorly localized and ill-defined sensations or to pain. In hollow visceral organs, they are stimulated principally by excessive contraction or by distention.

viscerosensory (vis'ēr-ō-sēn'sō-rē) [" + *sensorius*, sensory] Pert. to sensations aroused by stimulation of visceroreceptors.

viscerosensory reflex SEE: under *reflex*.

viscerotonia (vis'ēr-ō-tōn'ē-ā) [" + Gr. *tonos*, tension] A temperament characterized by predominance of social over intellectual and physical traits. A person with such traits is sociable and con-

vivial, exhibits unusual appreciation of food, and loves company, affection, social support, and approval. **viscerotonic** (-tôn'ík), *adj.*

viscerotrophic (vís'ēr-ō-trōf'ík) [*v* + Gr. *trophē*, nourishment] Pert. to trophic changes rel. to or associated with visceral conditions.

viscerotropic (vís'ēr-ō-trōp'ík) [*v* + Gr. *tropos*, a turn] Primarily affecting the viscera.

viscerovisceral reaction (vís'ēr-ō-vís'ēr-āl) A reaction taking place in the viscera as a result of stimulation of visceral receptors. Such reactions are usually below the level of consciousness.

viscid (vís'íd) [L. *viscum*, mistletoe, birdlime] Adhering, glutinous, sticky. In bacteriology, said of a colony that strings out by clinging to a needle that is touched to the culture and withdrawn. In a liquid culture the sediment rises in a coherent strand when the culture tube is swirled.

viscoelasticity (vís'kō-ē'lās-tis'ī-tē) The property of being viscous and elastic.

viscosimeter (vís'kōs-īm'ē-tēr) [LL. *viscosus*, viscous, + Gr. *metron*, measure] A device for estimating the viscosity of a fluid, esp. of blood.

viscosimetry (vís'kō-sīm'ē-trē) Measurement of the viscosity of a substance.

viscosity (vís'kōs'ī-tē) [LL. *viscosus*, viscous] **1.** The state of being sticky or gummy. **2.** Resistance offered by a fluid to change of form or relative position of its particles due to attraction of molecules to each other.

specific v. The internal friction of a fluid, measured by comparing the rate of flow of the liquid through a tube with that of some standard liquid, or by measuring the resistance to rotating paddles.

viscous (vís'kūs) Sticky, gummy, gelatinous, with high viscosity.

viscus (vís'kūs) *pl.* **viscera** [L., body organ] Any internal organ enclosed within a cavity such as the thorax or abdomen.

visibility (vīz'ī-bīl'ī-tē) [L. *visibilitas*] The quality of being visible.

visible (vīz'ī-bl) [L. *visibilis*] Capable of being seen.

visile (vīz'īl) [L. *visum*, seeing] **1.** Pert. to vision. **2.** Readily recalling what is seen, more than that which is audible or motile.

vision (vīzh'ūn) [L. *visio*, a seeing]

1. Act of viewing external objects. SYN: *sight*. SEE: *reading machine for the blind*. **2.** Sense by which light, color, form, and contrast are apprehended. **3.** An imaginary sight.

achromatic v. Complete color blindness.

artificial v. A technique, still in the experimental stage, designed to make it possible for some persons who are blind

to see as a result of electrical stimulation of the retina or the connection of digital video cameras to the visual cortex of the brain.

binocular v. The visual sensation that is produced when the images perceived by each eye are fused to appear as one.

central v. Vision resulting from light falling on the fovea centralis.

day v. A condition in which one sees better during the day than at night, found in peripheral lesions of the retina such as retinitis pigmentosa. SYN: *photopic vision*.

dichromatic v. A form of defective color vision in which only two of the primary colors are perceived.

double v. Diplopia.

field of v. The space within which an object can be seen while the eye remains fixed on one point. SEE: *perimetry*.

half v. Hemianopia.

indirect v. Peripheral v.

low v. A significant loss of vision that cannot be corrected medically, surgically, or with eyeglasses.

monocular v. Vision using only one eye.

multiple v. Polyopia.

oscillating v. Oscillopsia.

peripheral v. Vision resulting from rays falling on the retina outside of the macular field. SYN: *indirect vision*.

phantom v. An experience of visual sensations following surgical removal of an eye; usually a transient condition.

photopic v. Day v.

scotopic v. Vision at low light levels, primarily as a function of the rods. SEE: *night vision*.

stereoscopic v. Vision in which things have the appearance of solidity and relief, as though seen in three dimensions. Binocular vision produces this effect. SYN: *stereopsis*.

tunnel v. **1.** Visual acuity that is limited to the central visual field, for example, two to three degrees of visual radius. **2.** An inability to appreciate the full scope of an issue.

v. without sight The ability of individuals who are blind and unable to perceive visual stimuli, including bright light, to respond to light.

vision therapy Orthoptics.

visit An encounter between a patient and a health professional that requires either the patient to travel from his or her home to the professional's usual place of practice (office visit) or vice versa (home visit).

visitability (vīz'īt-ā-bīl'ī-tē) Residential home accessibility, i.e., a group of design features that help people with disabilities to enter, maneuver in, and use the toilet in every newly designed home. Some architectural features of homes with visitability include having at least

one entrance without a step, 32-in wide passages from one room to another, and an easily accessible bathroom on the first floor of the home.

Visiting Nurse Association A voluntary health agency that provides nursing services in the home, including health supervision, education and counseling, and maintenance of the medical regimen. Nurses and other personnel such as home health aides who are specifically trained for tasks of personal bedside care provide the services offered by the agency. These agencies originated in the visiting or district nurse service provided to the poor in their homes by voluntary agencies such as the New York City Mission, which existed in the 1870s. The first visiting nurse associations were established in Buffalo, Boston, and Philadelphia between 1886 and 1887.

VistA-Office Electronic Health Record ABBR: VOE. Electronic medical record software developed by the U.S. Veterans Administration and marketed to private medical practices beginning in 2005.

visual (vīzh'ū-āl) [L. *visio*, a seeing]

1. Pert. to vision. 2. One whose learning and memorizing processes are largely of a visual nature.

visual acuity A measure of the resolving power of the eye. It is usually determined by one's ability to read letters of various sizes at a standard distance from the test chart. The result is expressed as a comparison: for example, 20/20 is normal vision, meaning the subject has the ability to see from a distance of 20 ft (6.1 m) what a person with normal vision should see at that distance. Visual acuity of 20/40 means that a person sees at 20 ft (6.1 m) what a person with normal vision sees from a distance of 40 ft (12.2 m).

DIAGNOSIS: The Snellen chart used for most purposes ranges from 20/10 to 20/200. People who can see no better than 20/200 are said to be legally blind. People with worse vision (e.g., 20/400 or worse) are said to have "count fingers" (CF) vision: they may not be able to read any of the letters or figures on an eye chart, but they can often see (and count) how many fingers are held in front of them from a specified distance. Those who cannot identify fingers from any distance may still see "hand motion" (HM), or they may have light perception (LP). People who are completely blind are said to have "no light perception" (NLP).

Young children or people who do not recognize Western alphabets may be able to demonstrate their visual acuity with eye charts on which symbols (e.g., of animals or other commonly recognized shapes) are drawn to similar sizes and specifications.

PATIENT CARE: A health care professional should conduct an initial visual acuity test on all patients who come to the Emergency Department, clinic, or health care provider's office with a visual complaint or disorder. Visual acuity should be tested with an illuminated Snellen eye chart set at eye level 20 ft (~6 m) from the patient. The visual acuity of each eye is checked independently with and without the patient's distance glasses or contact lenses (if worn); then the acuity of both eyes is checked.

visual angle The angle between the line of sight and the extremities of the object seen.

visual cone The cone whose vertex is at the eye and whose generating lines touch the boundary of a visible object.

visual-constructional apraxia The inability to assemble or draw an object after viewing its image or a model of it. This form of apraxia is commonly seen in patients with brain injuries or dementias with parietal lobe lesions.

visual evoked response ABBR: VER. A reaction produced in response to visual stimuli. While the patient is watching a pattern projected on a screen, the electroencephalogram is recorded. The characteristics of the wave form, its latency, and the amplitude of the wave can be compared with the normal, and important information concerning the function of the visual apparatus in transmitting stimuli to the brain can be obtained. SEE: *brainstem auditory evoked potential; evoked response; somatosensory evoked response.*

visual field The area within which objects may be seen when the eye is fixed. SEE: *illus.; perimetry.*

visual function Vision.

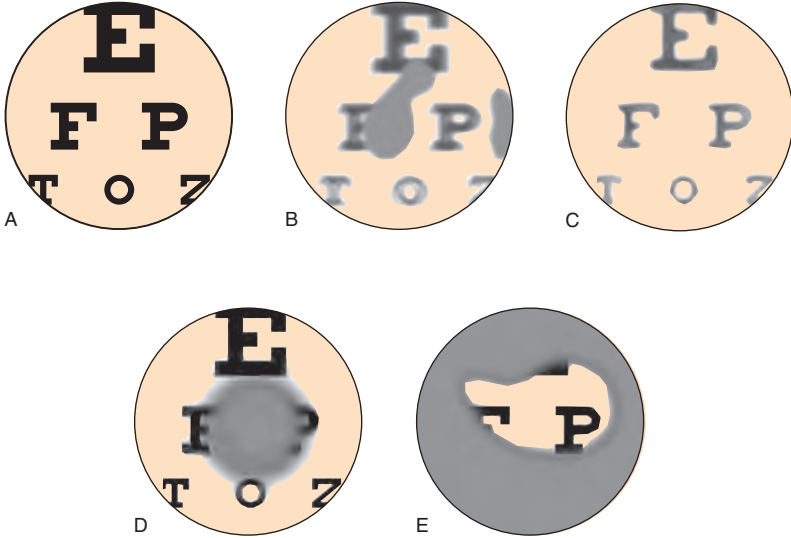
visual inspection with acetic acid ABBR: VIA. Inspection of the surface of the uterine cervix after 5% acetic acid has been applied to it. VIA is a test sometimes used to determine whether the cervix is infected with human papilloma virus or whether irregularities seen on the cervix may be cancerous or precancerous.

visualization (vīzh'ū-āl-ī-zā'shūn) The act of viewing or sensing a picture of an object, esp. the picture of a body structure as obtained by radiographic study.

visualize (vīzh'ū-āl-īz) 1. To make visible. 2. To imagine or picture something in one's mind.

visual loss, functional A reduction in vision with no identifiable lesion of the visual pathways. It may be caused by an occult disease of the eye or of the optical centers in the brain. It may also occur in certain psychiatric disorders.

visual object agnosia Loss of the ability to visually recognize objects presented, even though some degree of ability to see is intact.



VISUAL FIELD ABNORMALITIES

(A) normal vision, (B) diabetic retinopathy, (C) cataracts, (D) macular degeneration, (E) advanced glaucoma

visual point The center of vision.

visuognosis (vīzh"ū-ōg-nō'sīs) [v + Gr. *gnosis*, knowledge] The recognition and appreciation of what is seen.

visuopsychic (vīzh"ū-ō-sī'kik) [v + Gr. *psyche*, soul, mind] Both visual and psychic, applied to the cerebral area involved in perception of visual sensations.

visuosensory (vīzh"ū-ō-sén'sō-rē) [L. *visio*, a seeing, + *sensorius*, sensory] Rel. to the recognition of visual impressions.

visuospatial (vīzh"ū-ō-spā'shāl) Concerning the ability to discern spatial relationships from visual presentations.

vita glass (vī'tā-glās) [L. *vita*, life, + AS. *glæs*, glass] Window glass containing quartz for transmitting the ultraviolet rays of sunlight.

vital (vī'tāl) [L. *vitalis*, pert. to life]

1. Pert. to or characteristic of life.
2. Contributing to or essential for life.

vitality (vī-tāl'ī-tē) 1. Animation, action.
2. The state of being alive.

vitalometer (vī'tā-lōm'ē-tēr) A diagnostic device that measures the response of a nerve in the pulp of a tooth to an electrical stimulus. SYN: *pulp tester*.

vital statistics Statistics relating to births (natality), deaths (mortality), marriages, health, and disease (morbidity). Vital statistics for the U.S. are published annually by the National Center for Health Statistics of the Department of Health and Human Services. SYN: *population statistics*.

vitamer (vī'tā-mēr) Any one of a number

of compounds that have specific vitamin activity.

vitamin (vī'tā-mīn) [L. *vita*, life, + *amine*] An accessory but vital nutrient that serves as a coenzyme or cofactor in an essential metabolic process. Small quantities of the substance assist biological reactions such as oxidation and reduction, or the synthesis of nucleic acids, hemoglobin, clotting factors, or collagen. Vitamin deficiencies produce well-recognized syndromes (e.g., scurvy [vitamin C deficiency], or beriberi [thiamine deficiency]). Unlike proteins, carbohydrates, fats, and organic salts, vitamins are not energy sources or components of body structures. Instead, they are agents that hasten or facilitate biochemical processes involving these other organic molecules. SEE: *dietary reference intakes*; *mineral*.

Only vitamins A, D, and K are made within the body. The rest must be consumed in the diet. Vitamin A is formed from its precursor, carotene; vitamin D is formed by the action of ultraviolet light on the skin; and vitamin K is formed by the symbiotic action of bacteria within the intestines.

A common classification system distinguishes fat-soluble vitamins (A, D, E, and K) from water-soluble vitamins (B and C). Fat-soluble vitamins are poorly assimilated in diseases that interfere with the digestion of fat, such as steatorrhea, but accumulate in organs like the liver when taken in excess. Water-soluble vitamins are readily lost from

the body in urine and sweat and are more likely to be lacking from the body than overabundant. SEE: *Vitamins Appendix*.

One's need for vitamins increases in conditions that deplete their stores from the body, such as pregnancy and lactation, alcoholism, and febrile illnesses. Some drugs block the action of specific vitamins, or create illnesses that can be prevented with vitamin supplementation. In patients taking isoniazid for tuberculosis, for example, vitamin supplementation with pyridoxine is needed to prevent peripheral neuropathy.

SYMPTOMS: Refer to the *Vitamins Appendix* for signs and symptoms of vitamin deficiency.

vitamin A A fat-soluble vitamin formed within the body from alpha, beta, and gamma carotene, the yellow pigments of plants. It is essential for normal growth and development, normal function and integrity of epithelial tissues, formation of visual pigment, and normal tooth and bone development. It is stored in the liver. The recommended daily requirement for adults is 1000 mg. Retinol is the form of vitamin A found in mammals. One retinol equivalent is equal to 6 mg of beta-carotene. Excessive intake of vitamin A may cause acute or chronic effects and may increase risk of developing cancer in smokers. SYN: *retinol*. SEE: *hypervitaminosis*; *Vitamins Appendix*.

SOURCES: Butter, butterfat in milk, egg yolks, and cod liver oil are rich sources. The vitamin is found also in liver, green leafy and yellow vegetables, prunes, pineapples, oranges, limes, and cantaloupes.

STABILITY: This vitamin resists boiling for some time if not exposed to oxidation. It is quite stable with brief exposure to heat but not with continued high temperatures (above 100°C or 212°F).

DEFICIENCY DISORDERS: A deficiency of vitamin A causes interference with growth, reduced resistance to infections, and interference with nutrition of the cornea, conjunctiva, trachea, hair follicles, and renal pelvis. Thus these tissues have an increased susceptibility to infections. Vitamin A deficiency also interferes with the ability of the eyes to adapt to darkness (night blindness) and impairs visual acuity. Children with vitamin A deficiency will experience impaired growth and development. SEE: *Bitot's spots*.

vitamin A₁ A form of vitamin A found in fish liver oils.

vitamin A₂ A compound found in the livers of freshwater fish; similar in properties to vitamin A but with different ultraviolet absorption spectra.

vitamin B₁ Thiamine hydrochloride.

vitamin B₂ Riboflavin. SEE: *Vitamins Appendix*.

Vitamin B₃ Niacin.

vitamin B₄ Adenine.

vitamin B₅ Pantothenic acid.

vitamin B₆ Pyridoxine; found in rice, bran, and yeast. Excess doses (2 to 5 g/day for months) have caused impairment of central nervous system function. SEE: *Vitamins Appendix*.

vitamin B₇ Biotin.

vitamin B₈ Inositol.

Vitamin B₉ Folic acid.

vitamin B₁₀ ABBR: PABA. Para amino-benzoic acid.

vitamin B₁₁ Choline.

vitamin B₁₂ A red crystalline substance, a cobamide, extracted from the liver, that is essential for the formation of red blood cells. Its deficiency results in pernicious anemia. It is used for prophy-laxis and treatment of these and other diseases in which there is defective red cell formation. The recommended adult daily requirement is 2 µg/day. The terms vitamin B₁₂ and cyanocobalamin are used interchangeably as the generic term for all of the cobamides active in humans. SYN: *cyanocobalamin*. SEE: *Vitamins Appendix*.

vitamin B complex A group of water-soluble vitamins isolated from liver, yeast, and other sources. Only grain-made yeast preserves its potency if dried. Among vitamins included are thiamine (B₁), riboflavin (B₂), niacin (nicotinic acid), pyridoxine (B₆), biotin, folic acid, and cyanocobalamin (B₁₂).

SOURCES: *Thiamine:* Whole grains, wheat embryo, brewer's yeast, legumes, nuts, egg yolk, fruits, and vegetables. *Riboflavin:* Brewer's yeast, liver, meat, esp. pork and fish, poultry, eggs, milk, and green vegetables. *Nicotinic acid:* Brewer's yeast, liver, meat, poultry, and green vegetables. *Pyridoxine:* Rice, bran, and yeast. *Folic acid:* Leafy green vegetables, organ meats, lean beef and veal, and wheat cereals. *General:* Fortified cereals, breads and baked goods are good sources of these.

ACTION/USES: The B vitamins affect growth, stimulate appetite, lactation, and the gastrointestinal, neurological, and endocrine systems; aid in prevention of marasmus; stimulate appetite; are important in metabolism of carbohydrates, including sugar; and stimulate biliary action.

Vitamin B₁, thiamine, affects growth and nutrition and carbohydrate metabolism. B₂, riboflavin, affects growth and cellular metabolism. Nicotinic acid prevents pellagra. Pyridoxine is used by patients taking the antitubercular drug, isoniazid, to prevent peripheral neuropathy.

NOTE: Prolonged use of antibiotics may destroy intestinal flora that pro-

duce some of the B vitamins. Vitamin supplementation may be required to prevent deficiencies.

STABILITY: B vitamins are stable during normal cooking, although they may be destroyed by excessive heating for 2 to 4 hr. Baking soda destroys thiamine. Riboflavin and nicotinic acid are more stable than thiamine and are not destroyed by heat or oxidation.

DEFICIENCY DISORDERS: Deficiency causes beriberi, pellagra, digestive disturbances, enlargement of the liver, disturbance of the thyroid, degeneration of sex glands, and disturbance of the nervous system. It also induces edema; affects the heart, liver, spleen, and kidneys; enlarges the adrenals; and causes dysfunction of the pituitary and salivary glands.

vitamin C Ascorbic acid, a factor necessary for formation of collagen in connective tissues and essential in maintenance of integrity of intercellular cement in many tissues, esp. capillary walls. Vitamin C deficiency leads to scurvy. SEE: *Vitamins Appendix*.

NOTE: The recommended adult daily allowance is 60 mg. Large daily doses of vitamin C have been recommended for prevention and treatment of the common cold. Although the effectiveness of vitamin C for this purpose has not been established, it is felt that the vitamin may at least decrease the severity of cold symptoms. Smoking causes an increased need of vitamin C. Excess doses of vitamin C for an extended period can interfere with absorption of vitamin B₁₂, cause uricosuria, and promote formation of oxalate kidney stones.

SOURCES: Vitamin C is found in raw cabbage, young carrots, orange juice, lettuce, celery, onions, tomatoes, radishes, and green peppers. Citrus fruits and rutabagas are esp. rich in this vitamin. Strawberries are about as rich a source as tomatoes. Apples, pears, apricots, plums, peaches, and pineapples also contain vitamin C.

STABILITY: The vitamin is destroyed easily by heat in the presence of oxygen, as in open-kettle boiling. It is less affected by heat in an acid medium; otherwise, it is stable.

DEFICIENCY DISORDERS: Vitamin C deficiency causes scurvy, imperfect prenatal skeletal formation, defective teeth, pyorrhea, anorexia, and anemia. It also leads to undernutrition injury to bone, cells, and blood vessels.

vitamin D One of several vitamins having antirachitic activity. The vitamin D group, which is fat-soluble, includes D₂ (calciferol), D₃ (irradiated 7-dehydrocholesterol), D₄ (irradiated 22-dihydroergosterol), and D₅ (irradiated dehydrositosterol). It is essential in calcium and phosphorus metabolism;

consequently, it is required for normal development of bones and teeth. The recommended daily allowance is 10 µg. The stability of this vitamin is not affected by oxidation; heat, unless over 100°C (212°F); or long-continued cooking. A deficiency of vitamin D causes imperfect skeletal formation, bone diseases, rickets, and caries. SEE: *Vitamins Appendix*.

SOURCES: Milk, cod liver oil, salmon and cod livers, egg yolk, and butter fat contain vitamin D. Ergosterol in the skin activated by sunlight or ultraviolet radiation possesses vitamin D potency.

ACTION/USES: Vitamin D is necessary for the absorption of calcium and phosphorus from food in the small intestine. It is called the antirachitic vitamin because its deficiency interferes with calcium and phosphorus use, which in turn causes rickets. Sun or ultraviolet radiation exposure synthesizes this vitamin in the body. Its presence is necessary for the most efficient absorption of calcium and phosphorus. It is used to treat and prevent infantile rickets, spasmophilia (infantile tetany), and softening of bone. Vitamin D is also important in normal growth and mineralization of skeleton and teeth.

Prolonged excessive doses of vitamin D (100,000 IU daily) cause hypercalcemia with anorexia, nausea, vomiting, polyuria, polydipsia, weakness, anxiety, pruritus, and altered renal function.

vitamin D analogue Any medication that is chemically similar to or derived from vitamin D. Analogues of vitamin D are used to treat skin disorders such as psoriasis.

vitamin E A vitamin that consists of eight components: four tocopherols (of which alpha tocopherol is the most common constituent) and four tocotrienols. Vitamin E is an antioxidant found in many commonly consumed foods. Deficiencies of the vitamin in the general population are rare. SEE: *Vitamins Appendix*.



1. Doses of vitamin E in excess of 100 mg/kg/day in low birth weight neonates have been implicated in the development of necrotizing enterocolitis and sepsis. 2. Vitamin E supplementation in adults that exceeds 400 International Units/day increases mortality.

vitamin H Biotin.

vitamin K An antihemorrhagic factor whose activity is associated with compounds derived from naphthoquinone. Vitamin K, which is fat soluble, is present in broccoli, collards, beet greens, (most green vegetables); vitamin K₂, in fishmeal. Vitamin K₃ is synthesized as menadione sodium bisulfite.

Vitamin K is necessary for synthesis of clotting factors VII, IX, X, and prothrombin by the liver. Its deficiency prolongs blood-clotting time and causes bleeding. Its roles in bone metabolism include its requirement for the conversion of osteocalcin to its active form and its requirement for matrix Gla-protein (MGP) function in bones, teeth, and cartilage. Within the kidney, it acts to inhibit calcium oxalate stone formation. It appears to have a role in normal retinal signaling. In the newborn, the colon is sterile until food is ingested and bacteria colonize the site. Because this bacterial source of vitamin K is not immediately available, an intramuscular injection of 1 mg of water-soluble vitamin K₁ (phytonadione) is recommended for all newborns.

Large doses may cause hemolysis in persons with G6PD deficiency and in some healthy individuals. Large doses in the newborn may lead to anemia and kernicterus. The recommended adult daily allowance is 65 μg for women and 80 μg for men. SEE: *Vitamins Appendix*.

ACTION/USES: Vitamin K helps to eliminate prolonged bleeding in operations and in the biliary tract of jaundiced patients. Bile salts are necessary for its absorption.

vitamin loss Loss of vitamin content in food products as a result of oxidation or heating. Methods of preserving foods such as pickling, salting, curing, or fermenting and canning enhance vitamin loss. Vitamin C is especially labile; up to 85% is lost in commercial canning and pasteurization. Vitamin B₁ in wheat is lost through milling because the vitamin B₁ wheat embryo is removed.

vitamin supplement Any vitamin tablet or capsule containing one or more vitamins. Thus, a tablet or capsule may contain a single vitamin or many, and in some instances, a preparation will contain more than a dozen vitamins and an even greater number of minerals. In general, healthy adult men and healthy nonpregnant, nonlactating women consuming a normal, varied diet do not need vitamin supplements.

The difficulties of individuals choosing to treat themselves with vitamin supplements are: 1. People who take the supplements are usually already consuming an adequate diet. 2. The vitamins chosen are often not the ones inadequate in their diet. 3. The dose may be many times greater than the daily needs. SEE: *Food Guide Pyramid*; *vitamin C*.

vitellary (vīt'ēl-ā-rē) [L. *vitellus*, yolk of an egg] Vitelline.

vitellin (vī-tēl'īn) A protein that can be extracted from egg yolk and contains lecithin. SEE: *nucleoprotein*; *ovovitellin*.

vitelline (vī-tēl'ēn) Pert. to the yolk of an egg or the ovum.

vitelline duct Yolk stalk.

vitellolutein (vī'tēl-ō-lū'tē-īn) [L. *vitellus*, yolk, + *luteus*, yellow] A yellow pigment present in lutein.

vitellorubin (vī'tēl-ō-rū'bin) [v + *ruber*, red] A red pigment present in lutein.

vitellose (vī-tēl'ōse) A proteose present in vitellin.

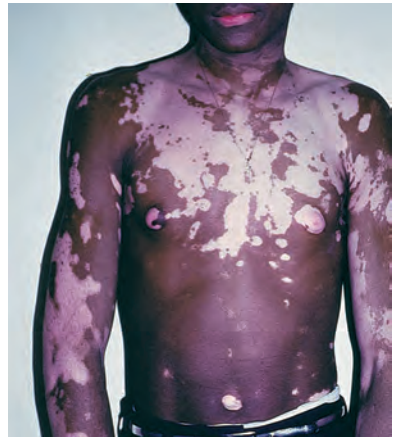
vitellus (vī-tēl'ūs) [L.] The yolk of an ovum, esp. the yolk of a hen's egg.

vitiatio (vīsh'ē-ā'shūn) [L. *vitiare*, to corrupt] Injury, contamination, impairment of use or efficiency.

vitiliginous (vīt'ī-līj'ī-nēz) Depigmented areas of skin. SEE: *vitiligo*.

vitiliginous (vīt'ī-līj'ī-nūs) Concerning vitiligo.

vitiligo (vīt-īl-ī'gō) [L.] A skin disorder characterized by the localized loss of melanocytes, with patchy loss of skin pigment. The depigmented areas, which appear most commonly on the hands, face, and genital region, are flat and pale and surrounded by normal pigmentation. Vitiligo affects all ages and races but is most noticeable in people with dark skin. The cause is unknown, but may be an autoimmune process since autoantibodies to melanocytes have been identified and vitiligo often occurs with autoimmune diseases. SYN: *leukoderma*; *skin, piebald*. SEE: *illius*.



VITILIGO

TREATMENT: Oral and topical synthetic trioxsalen and a natural psoralen, methoxsalen, are used with exposure to long-wave ultraviolet light, but the efficacy is doubtful. The lesions may be masked by use of cosmetic preparations. Vitiliginous areas should be protected from sunburn by applying a 5% aminobenzoic acid solution or gel to the affected areas. The use of 5% fluorouracil cream applied under an occlusive

dressing to the depigmented areas may cause erosion of the dermis and, after re-epithelialization, pigment may reappear.

v. capitis Vitiligo of the scalp with depigmentation of the hairs of the affected area.

perinevic v. Vitiligo surrounding a nevus.

vitium (vish'ē-ūm) *pl.* **vitia** [L., fault] A fault, defect, or vice.

vitrectomy (vi-trēk'tō-mē) [L. *vitreus*, glassy, + Gr. *ektome*, excision] The surgical removal of the vitreous of the eye. The removed vitreous is replaced, usually with gas or liquid. This process is used to treat epiretinal membranes, macular pucker, macular hole, and other disorders of the retina or the vitreous.

enzymatic v. Pharmacological vitrectomy.

pharmacological v. A method of vitrectomy in which enzymes are used to liquefy the vitreous and weaken its attachment to the limiting membrane of the retina. SYN: *enzymatic vitrectomy*.

vitrecapsulitis (vit'rē-ō-kăp'sū-lī'tīs) [L. *vitreus*, glassy, + *capsula*, capsule, + Gr. *itis*, inflammation] Inflammation of the vitreous humor. SYN: *hyalitis*.

vitreodentin (vit'rē-ō-dēn'tīn) A particularly hard and brittle form of dentin.

vitreoretinal (vit'rē-ō-rēt'i-nāl) Concerning the vitreous and the retina.

vitreous (vit'rē-ūs) [L. *vitreus*, glassy] **1.** Glassy. **2.** Transparent, colorless mass composed of collagen fibrils and hyaluronic acid. It fills the posterior segment of the eye between the lens and the retina. **3.** Vitreous body.

vitreous body A jelly-like substance within the eye that fills the space between the lens and the retina. It is colorless and transparent. It may contain minute particles called "floaters."

vitreous face Condensation of the anterior surface of the vitreous behind the lens and the posterior surface of the vitreous attached to the internal limiting membrane of the retina. SEE: *hyaloid membrane*.

vitrescence (vi-trēs'ēns) Becoming hard and transparent like glass.

vitreum (vit'rē-ūm) Vitreous body.

vitrification (vi'trif-i-kā'shūn) The process of converting a silicate material into a smooth, viscous substance by heat. The silicate material hardens on cooling and possesses a smooth, glossy surface. In dentistry, it is related to the extensive use of ceramics, cements, and porcelains. These vary by the additive components that determine their density and refractive qualities.

vitriol (vit'rē-ōl) [L. *vitriolum*] A sulfate of any of various metals.

vitronectin (vi'trō-nēk'tīn) An adhesive

glycoprotein found in the blood and the extracellular matrix. It contributes to blood clotting, cell growth and differentiation, the ability of tumors to metastasize, and normal wound healing. SYN: *complement S protein*.

vitropression (vit'rō-prēsh'ūn) [L. *vitrum*, glass, + *pressio*, a squeezing] A method of temporarily eliminating redness of the skin caused by hyperemia by pressure with a glass slide on the skin for the purpose of studying any lesions or discolorations.

vivi- (viv'ī) [L. *vivus*] Combining form meaning *alive*.

vividiffusion (viv'ī-dif-ū'zhūn) [L. *vivus*, alive, + *dis*, apart, + *fundere*, to pour] The process of removing diffusible substances from the blood of a living animal by allowing it to flow through dialyzing membranes immersed in saline solution.

vivification (viv'ī-ft-kā'shūn) [*v* + *facere*, to make] **1.** Trimming of the surface layer of a wound to aid the union of tissues. **2.** Transformation of protein through assimilation into the living matter of cellular organisms.

viviparity (viv'ī-pār'ī-tē) The ability to produce living young rather than producing young by laying an egg that hatches.

viviparous (viv-īp'ār-ūs) [*v* + *parere*, to bring forth, to bear] Developing young within the body, the young being expelled and born alive; the opposite of oviparous.

vivisect (viv'ī-sēkt) [L. *vivus*, alive, + *sectio*, a cutting] To dissect a living animal for experimental purposes.

vivisection (viv'ī-sēk'shūn) [*v* + *sectio*, a cutting] Cutting of or operation on a living animal for physiological investigation and the study of disease.

vivisectionist (viv'ī-sēk'shūn-īst) One who practices or believes in vivisection. SEE: *antivivisection*.

vivisector (viv-īs-ēk'tor) [*v* + *sector*, a cutting] One who practices vivisection.

Vivotif (viv'ō-tif) Typhoid vaccine, live, oral Ty21a.

VLDL *very low-density lipoprotein*.

VMA *vanillylmandelic acid*.

V_{max} *maximum velocity*.

VNA *Visiting Nurse Association*.

VO₂ Ventilatory oxygen extraction, a measure of the exercise capacity of a patient.

vocal (vō'kāl) [L. *vocalis*, talking] Pert. to the voice.

vocal apparatus The organs, including the pharynx, larynx, teeth, tongue, and lips, that produce sounds and speech.

vocal cord Either of two thin, reedlike folds of tissue within the larynx that vibrate as air passes between them, producing sounds that are the basis of speech. SEE: *illust.*



VOCAL CORDS

Vocal cords (closed, seen endoscopically)



VOCAL CORDS

Vocal cords (open, seen endoscopically)

vocal cords, false The ventricular folds of the larynx.

vocal cords, true Vocal folds.

vocal folds The true vocal cords; the inferior pair of folds within the larynx; each contains a vocal ligament. They form the edges of the rima glottidis and are involved in the production of sound. SYN: *vocal cords, true*.

vocal ligament SEE: under *ligament*.

vocal signs The indication of disease by changes in the voice.

voces (vō'sēz) [L.] Pl. of vox.

voice (voys) [L. *vox*] A sound uttered by human beings produced by vibration of the vocal cords.

amphoric v. Cavernous v.

v. break The sudden interruption of speech, or a sudden decrease in vocal amplitude. It is a sign of laryngeal spasm.

cavernous v. A hollow voice sound

heard during auscultation of the chest, indicating a pulmonary cavity. SEE: *amphoric v.*

eunuchoïd v. The characteristic high-pitched voice of a male in whom the normal sexual development has not occurred or in a male who was castrated before puberty.

voiceprint (voys'prīnt) A graphical representation of the characteristics of an individual's speech pattern. Because voiceprints, like fingerprints, can be used to distinguish one person from another, the technique is useful in forensic medicine and in identifying the voices of criminal suspects.

voices (voys'ēz) In psychiatry, verbal-auditory hallucinations expressed as being heard by the patient.

void (voyd) [O.Fr. *voider*, to empty]
1. To evacuate the bowels or bladder.
2. An empty space, e.g., one seen in radiographical evaluation of arteries or veins.

vol% *volume percent*.

vol *volume*.

vola (vō'lā) [L. *vola*, hollow of the hand, palm (of the hand); sole (of the foot)] The palm of the hand or sole of the foot. The preferred Latin terms for the palm of the hand and the sole of the foot are *palma* and *planta*, respectively. **volar** (vō'lār), *adj.*

volatile (vōl'ā-tīl) [L. *volatilis*, flying] Easily vaporized or evaporated. Examples of volatile liquids are ether (boiling point, 34.5°C) and ethyl chloride (boiling point, 12.2°C).

volatilization (vōl'ā-tīl-i-zā'shūn) Conversion of a solid or liquid into a vapor.

volatilize (vōl'ā-tīl-īz) To vaporize a liquid or solid.

volition (vō-līsh'ūn) [L. *volitio*, will] The act or power of willing or choosing.

volitional (vō-līsh'ūn-āl) Performed by volition.

Volkmann's canals (fōlk'mānz) [Alfred Wilhelm Volkman, Ger. physiologist, 1800–1877] Small canals found in bone through which blood vessels pass from the periosteum. They connect with the blood vessels of haversian canals or the marrow cavity.

Volkmann's contracture (fōlk'mānz) [Richard von Volkman, Ger. surgeon, 1830–1889] Degeneration, contracture, fibrosis, and atrophy of a muscle resulting from injury to its blood supply; usually seen in the hand. SYN: *ischemic paralysis*.

volley (vōl'ē) [L. *volare*, to fly] The simultaneous or nearly simultaneous discharge of a number of nerve impulses from a center within the brain or spinal cord.

volt (vōlt) [Count Alessandro Volta, It. physicist, 1745–1827] ABBR: V. An electrical unit of pressure, the electromotive force required to produce 1 am-

pere of current through a resistance of 1 ohm.

voltage (völ'tij) Electromotive force or difference in potential expressed in volts.

voltaic (völ-tä'ik) Concerning electricity produced by a battery.

voltalism (völ'tä-izm) Galvanism.

voltammeter (völt-äm'më-tër) A device for measuring both volts and amperes.

voltammetry, anodic stripping (völt-äm'í-trë) ABBR: ASV. An analytical technique used to assay blood lead content.

voltampere (völt-äm'për) The value obtained by multiplying volts times amperes.

voltmeter (völt'më'tër) A device for measuring voltage, esp. for determining the voltage between two points of an electrical circuit.

volubility (völ'ü-bíl'í-të) [L. *volubilitas*, flow of discourse] Excessive speech.

volume (völ'üm) The space occupied by a substance, usually a gas or liquid. Liquid volume is expressed in liters or milliliters; gas volume in cubic centimeters.

closing v. The amount of gas remaining in the lung when the small airways close during a maximum expiratory effort. It is increased in patients with small airway disease.

compressed v. The portion of the mechanically delivered tidal volume that is not delivered to the patient owing to expansion of the ventilator circuit with pressure. Tubing with a high compliance increases the compressed volume, esp. when the tidal volume is delivered under high pressure.

expiratory reserve v. The maximal amount of air that can be forced from the lungs after normal expiration.

hospital v. The number of cases of specific conditions (e.g., stroke, acute myocardial infarction, or organ transplantation) treated at an inpatient facility. Morbidity and mortality are typically lowest in treatment centers where professional staff has the greatest clinical experience.

inspiratory reserve v. The maximal amount of air that can be inhaled after a normal inspiration.

mean corpuscular v. ABBR: MCV. The mean volume of an average erythrocyte. Normal values range from 82 to 92 cubic microns.

minute v. The volume of gas expired or inspired per minute in quiet breathing, usually measured as expired ventilation.

packed cell v. Hematocrit.

plasma v. The total quantity of plasma in the body. It decreases with dehydration and increases with greater salt and water intake and during early pregnancy. Plasma volume can be mea-

sured with injected fluorescent-labeled albumin.

residual v. ABBR: RV. The volume of air remaining in the lungs after maximal expiration. This air is essential for continuous gas exchange.

stroke v. The amount of blood ejected by the left ventricle at each heartbeat. The amount varies with age, sex, and exercise but averages 60 to 80 ml.

tidal v. The volume of air inspired and expired in a normal breath.

volume controller Buret (2).

volumenometer (völ'ü-më-nöm'ë-tër) Volumometer.

volume percent ABBR: vol%. The number of cubic centimeters (milliliters) of a substance (usually oxygen or carbon dioxide) contained in 100 ml of another substance (e.g., blood).

volume rendering The imaging of the surface elements, internal geometry, and components of a three-dimensional structure.

volumetric (völ'ü-mët'rik) [L. *volumen*, a volume, + Gr. *metron*, measure] Pert. to measurement of volume.

volumetric analysis Quantitative analysis performed by the measurement of the volume of solutions or liquids.

volumetric brain imaging, volumetric neuroimaging Measurement of the size of specific structures within the brain with magnetic resonance imaging or other devices. It is used to diagnose and identify brain diseases noninvasively. Atrophy of certain anterior brain structures is found in patients with frontotemporal dementia. In schizophrenia, the hippocampus and amygdala are reduced. Other findings have been demonstrated in depression, fragile X syndrome, Rett's disease, Tourette's syndrome, and many other neurological disorders.

volumetric capnography ABBR: VCap. The plot of the expired partial pressure of carbon dioxide versus the expired tidal volume during a breath.

volumometer (völ'ü-möm'ë-tër) A device for measuring volume. SYN: *volumenometer*.

voluntary (völ'ün-tër'ë) [L. *voluntas*, will] Pert. to or under control of the will.

voluntary health agency Any nonprofit, nongovernmental agency, governed by lay or professional individuals and organized on a national, state, or local level, whose primary purpose is health related. This term applies to agencies supported mainly by voluntary public contributions. These agencies are usually engaged in programs of service, education, and research related to a particular disability or group of diseases and disabilities; for example, the American Heart Association, American Cancer Society, National Lung Institute,

Causes of Vomiting

Cause	Example
Gastrointestinal diseases	Esophageal obstruction, gastric distention, peptic ulcer disease, gastroparesis, cholecystitis, cholelithiasis, pancreatitis, intestinal obstruction, ileus
Metabolic illnesses	Hyponatremia, hypokalemia, hypercalcemia, adrenal insufficiency, uremia, ketoacidosis
Intoxications	Acetaminophen, arsenic, mercury, methanol, opiates, mescaline, food poisoning
Drug side effects	Antidepressants, digitalis, erythromycin, theophyllines, many chemotherapeutic drugs for the treatment of cancer (e.g., cisplatin)
Intracranial illnesses	Migraine, meningitis, intracranial hemorrhage
Febrile illnesses	Strep throat (esp. in children), pyelonephritis
Pregnancy	Hyperemesis gravidarum

and their state and local affiliates. The term can also be applied to such agencies as nonprofit hospitals, visiting nurse associations, and other local service organizations that have both lay and professional governing boards and are supported by both voluntary contributions and charges and fees for service provided.

volutuous (vō-lūp'tū-ūs) [L. *volutas*, pleasure] **1.** Pert. to, arising from, or provoking, consciously or otherwise, sensual desire, usually applied to the female sex. **2.** Given to sensualism.

volute (vō-lūt') [L. *volutus*, rolled] Convolute.

volutrauma (vōl'ū-traw'mā) [L. *volumen*, scroll, something rolled, + Gr. *trauma*, wound] A lung injury caused by excessively high tidal volumes during the use of mechanical ventilation.

volvulosis (vōl'vū-lō'sis) Onchocerciasis.

volvulus (vōl'vū-lūs) [L. *volvere*, to roll] A twisting of the bowel on itself, causing obstruction. A prolapsed mesentery is the predisposing cause. This usually occurs at the sigmoid and ileocecal areas of the intestines.

vomer (vō'mēr) [L., plowshare] The plow-shaped bone that forms the lower and posterior portion of the nasal septum, articulating with the ethmoid, the sphenoid, the two palatine bones, and the two maxillae.

vomerine (vō'mēr-īn) Pert. to the vomer.

vomer nasal (vō'mēr-nā'sāl) Pert. to the vomer and nasal bones.

vomer nasal organ Organ of Jacobson.

vomica (vōm'ī-kā) *pl.* **vomicae** [L., ulcer] **1.** A cavity in the lungs, as from suppuration. **2.** Sudden and profuse expectoration of putrid purulent matter.

vomicose (vōm'ī-kōs) Marked by many ulcers; ulcerous; purulent.

vomit (vōm'it) [L. *vomere*, to vomit] **1.** Material that is ejected from the stomach through the mouth. **2.** To eject stomach contents through the mouth. SYN: *vomitus*. SEE: *melena*; *nausea*.

PHYSIOLOGY: The act is usually a reflex involving the coordinated activity of both voluntary and involuntary muscles. A certain position is assumed, the glottis is closed, the diaphragm and abdominal muscles contract, and the cardiac sphincter of the stomach relaxes while antiperistaltic waves course over the duodenum, stomach, and esophagus.

bilious v. Bile forced back into the stomach and ejected with vomited matter.

black v. Vomit containing blood acted on by gastric digestion; seen in digestion conditions where blood collects in the stomach.

coffee-ground v. Vomit having the appearance and consistency of coffee grounds because of blood mixed with gastric contents. It can occur in any condition associated with hemorrhage into the stomach.

vomiting (vōm'it-īng) [L. *vomere*, to vomit] Ejection through the mouth of the contents of the gastrointestinal tract. Vomiting, along with diarrhea and hemorrhage, is an important potential cause of dehydration. It may result from toxins, drugs (such as those given for cancer chemotherapy), uremia, and fevers; cerebral tumors; meningitis; diseases of the stomach such as ulcer, cancer, dysmotility, or dyspepsia; hormonal changes in early pregnancy, reflux from pressure of the gravid uterus in pregnancy, uterine or ovarian disease, irritation of the fauces, intestinal parasites, biliary colic; intestinal obstruction; motion sickness; and neurological disorders such as migraine. Vomiting may also be psychological ("psychogenic") in origin. Esophageal vomiting may result from reflux or obstruction. SYN: *emesis*. SEE: *table*; *bulimia*; *hyperemesis gravidarum*.

TREATMENT: Antinausea ("anti-emetic") medicines may be administered by mouth, rectally, intramuscularly, or intravenously. Fluids may be

given by mouth if the patient will accept them. If vomiting continues, and dehydration or acid-base imbalances occurs, intravenous fluids and electrolytes must be used to replace those lost in the vomit.

PATIENT CARE: Causative factors such as drugs, food, diseases, and psychological factors are assessed and treated if possible. Frequency, amount, time, and characteristics of the vomit are assessed. The patient is positioned to protect the airway and prevent aspiration, and in the hospital, suction equipment is provided for the patient's safety. Food and fluids are withheld for several hours, and oral care is offered. For the pre-operative patient, restriction of foods and fluids for approx. 8 hr before surgery helps to prevent postoperative vomiting. Comfort measures (e.g., a cool cloth applied to the face) are instituted. Vital signs, skin turgor, and urine output are monitored for evidence of dehydration. The health caregiver promotes a calm environment and provides distraction.

cyclic v. Periodic, recurring attacks of vomiting typically occurring in patients with a family history of migraine headaches. Such vomiting causes metabolic alkalosis as a result of chloride loss.

PATIENT CARE: The patient's symptoms are assessed and documented, vital signs monitored, fluid and electrolyte balance maintained, and prescribed medications administered to relieve headache, nausea, and vomiting. A calm, stress-free environment is provided.

dry v. Nausea and retching without vomit.

epidemic v. Sudden unexplained attacks of gastroenteritis characterized by nausea, vomiting, and sometimes diarrhea. Although not proven, the symptoms are believed to be due to a virus. Treatment is symptomatic.

induced v. The production of vomiting by administering certain types of emetics (e.g., syrup of ipecac or amorphine) or by physical stimulation of the posterior pharynx.



Vomiting should never be induced after patients ingest caustic chemicals or in patients who cannot protect their airways.

pernicious v. Hyperemesis gravidarum.

projectile v. Ejection of vomit with great force.

psychogenic v. Occasional or persistent vomiting associated with severe emotional stress or brought on by the anticipation of stress.

stercoraceous v. Vomiting of fecal matter.

vomitus (võm'ĩ-tüs) Vomit.

von Gierke disease (fõn gēr'kěz) [Edgar von Gierke, Ger. pathologist, 1877–1945] Glycogen storage disease type 1a. SYN: *glycogenosis*; *glycogen storage disease*.

von Graefe's sign (fõn grā'fēz) [Albrecht von Graefe, Ger. ophthalmologist, 1828–1870] The failure of the eyelid to move downward promptly with the eyeball; the lid moves tardily and jerkily. This sign is seen in exophthalmic goiter and is a common sign in thyroid eye disease.

von Hippel-Lindau syndrome Hippel's disease.

von Pirquet's test (fõn pēr'kāz) [Clemens Peter Johann von Pirquet, Austrian pediatrician, 1874–1929] A diagnostic test for tuberculosis in which a small amount of tuberculin is applied to a scarified area of the skin of the arm. A positive reaction is seen if a pimply red eruption appears several days later at the site of inoculation. SEE: *tine test*.

von Recklinghausen's disease Type 1 neurofibromatosis.

von Recklinghausen's tumor Recklinghausen's tumor.

von Willebrand's disease (fõn vil'ē-brāntz) [Erik Adolph von Willebrand, Finnish physician, 1870–1949] ABBR: vWD. A congenital bleeding disorder caused by either the mismanufacture of or a deficiency of a protein that helps platelets stick to injured blood vessels during the formation of blood clots. Inadequate amounts of the protein ("von Willebrand's factor") result in easy bruising or bleeding. Common symptoms of the disorder are frequent bleeding from the gums after toothbrushing, frequent or prolonged nosebleeds, heavy menstrual periods, or heavy bleeding after childbirth or surgery.

The disease is the most common inherited bleeding disorder. It is inherited in autosomal fashion – therefore, unlike hemophilia A and B it affects both boys and girls. The most common forms are autosomal dominant, but several recessive types of vWD are also known. Despite its high prevalence in the population (about 3% of Americans are affected), vWD is often undiagnosed because many people affected by vWD have mild episodes of bleeding. vWD can be diagnosed by the demonstration of low levels of von Willebrand factor in the blood; by a prolonged bleeding time, or by factor VIII deficiency (one function of von Willebrand factor is to carry clotting factor VIII in plasma). Treatments for heavy bleeding episodes (or for necessary surgeries) may include the administration of clotting factors contain-

ing von Willebrand factor or Factor VIII, or synthetic vasopressin.

Voorhees' bag (voor'ēz) [James Ditmors Voorhees, U.S. obstetrician, 1869–1929] An inflatable rubber bag formerly used for dilating the cervix uteri to induce and facilitate labor.

voracious (vō-rā'shūs) [L. *vorare*, to devour] Having an insatiable or ravenous appetite.

vortex (vor'tēks) *pl.* **vortices** [L., a whirlpool] A structure having a spiral or whorled appearance.

coccygeal v. The region over the coccyx where lanugo hairs of the embryo come to a point.

v. of heart The region at the apex of the heart where muscle fibers of the ventricles make a tight spiral and turn inward.

v. lentis Spiral patterns on the surface of the lens owing to a concentric pattern of fiber growth.

vortices (vor'tī-sēz) [L.] Pl. of vortex.

v. pilorum Hair whorls as in arrangement of hairs on the scalp.

vorticose (vor'tik-ōs) [L. *vortices*, whirlpools] Whirling or having a whorled arrangement.

vorticose vein One of four veins (two superior and two inferior) that receive blood from all parts of the choroid of the eye. They empty into posterior ciliary and superior ophthalmic veins.

vox (vōks) *pl.* **voices** [L.] Voice.

voxel (vōk'sél) A volume element, i.e., an individually representable volume of tissue detected by a digital radiographical imaging device, represented on the final image by a picture element (a "pixel").

voyeur (vwah-yēr', voy-ēr') [Fr., one who sees] One who derives sexual pleasure from observing nude persons or the sexual activity of others.

voyeurism (voy'yēr-izm) The experiencing of sexual gratification by observing nude persons or the sexual activity of others.

V/Q mismatch In ventilation/perfusion (V/Q) scanning, a region of the lung that ventilates normally but does not receive normal blood flow. SYN: *mismatch*.

VR *right vision; ventilation rate; vocal resonance*. SEE: *ventilation rate* under rate.

VRE *vancomycin-resistant enterococcus*.

VRSA (vē'ār'ēs'ā') *vancomycin-resistant Staphylococcus aureus*.

VS *vesicular sound; vital signs; volumetric solution*.

VSD *ventricular septal defect*.

V_T *tidal volume*.

vulgaris (vül-gā'ris) [L.] Ordinary, common.

vulnerable (vül'nēr-ä-bl) [L. *vulnerare*, to wound] Easily injured or wounded.

vulnerant (vül'nēr-änt) **1.** Something

that wounds or injures. **2.** To inflict injury.

vulnerary (vül'nēr-är'ē) **1.** Pert. to wounds. **2.** An agent, esp. a folk remedy or herb, used to promote wound healing.

vulsella, vulsellum (vül-sél'ä, vül-sél'üm) [L. *vulsella*, tweezers] A forceps with a hook on each blade.

vulva (vül'vä) *pl.* **vulvae** [L., covering] That portion of the female external genitalia lying posterior to the mons veneris, consisting of the labia majora, labia minora, clitoris, vestibule of the vagina, vaginal opening, Bartholin's glands. SEE: *illus. vulval, vulvar* (vül'väl, vül'vär), *adj.*

velamen vulvae An abnormally elongated clitoris.

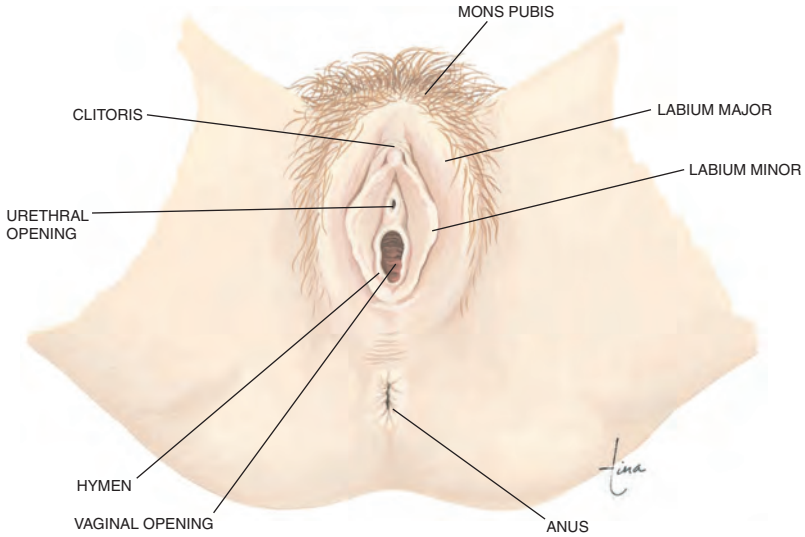
vulvar dystrophy (vül'vēr dīs'trā-fē) Lichen sclerosus et atrophicus.

vulvar leukoplakia Lichen sclerosus et atrophicus.

vulvar vestibulitis syndrome The presence of severe pain on pressing or touching the vestibule of the vagina or on attempted vaginal entry. Physical findings of localized erythema are limited to the mucosa of the vestibule. Although the etiology is unknown, the syndrome often develops in women who have intractable moniliasis or who are receiving long-term antibiotic therapy. No therapy, including vestibulectomy, has been 100% effective. SEE: *vulvodynia*.

vulvectomy (vül'vek'tō-mē) [v + Gr. *ektome*, excision] Excision of the vulva, used to manage cancers of the vulva. Surgical approaches depend on the extent of the disease. They range from simple vulvar excision (for small, confined lesions with no lymph node involvement) to radical vulvectomy with bilateral superficial and deep inguinal node dissection. If metastasis is extensive, resection may include the urethra, vagina, and rectum. Plastic surgery, including pelvic area reconstruction via a mucocutaneous graft may be carried out at a later date. SEE: *vulvar cancer*.

PATIENT CARE: The caregiver provides emotional support, encourages questions, and meets the patient's informational needs. *Preoperative:* Care includes skin preparation, teaching about postoperative care (pain management, pulmonary hygiene, and venous stasis prevention) administration of prophylactic medications to prevent infection, and insertion of an indwelling catheter. The nurse encourages the woman to verbalize her anxieties, fears, and concerns; validates her understanding of the procedure and its implications (change in body image and alterations in sexual function); and witnesses her informed consent. *Postoperative:* Care includes cleansing the wound with diluted hydrogen peroxide, rinsing with



VULVA

Inferior view of the perineum

normal saline, and drying with a heat lamp, a cool-air hair dryer, or exposure to the air three or more times daily as ordered. The wound must be observed closely for evidence of occult bleeding or infection. The caregiver positions, and frequently repositions the woman for comfort using special mattresses, bed cradles, and trapeze to aid self-movement and administers analgesics as needed and prescribed. Patient-controlled analgesia (epidural or intravenous) are appropriate for the early postoperative period. Deep breathing using an inspiriometer and coughing are encouraged. Antiembolic hose or pneumatic pump dressings are applied. Nourishment and hydration is provided by intravenous route until oral fluid and solids are tolerated. Antidiarrheal drugs are administered as needed and meticulous wound cleansing employed to prevent infection. Stool softeners and a low-residue diet may be appropriate as the patient progresses. Depending on the extent of the procedure, home health care is arranged. Discharge teaching emphasizes meticulous wound and catheter care. The patient is advised to report bleeding, purulent discharge, or intolerable pain to the primary caregiver. After a simple vulvectomy, sexual intercourse may resume when the wound has healed (about 6 to 8 wk postsurgery). Adjuvant postoperative treatments may include Chemotherapy with or without radiation therapy. Irradiation may be used for palliative care if advanced age,

poor health, extensive metastasis, or patient preference rules out surgical treatment.

vulvitis (vül-vī'tis) [L. *vulva*, covering, + Gr. *itis*, inflammation] Inflammation of the vulva.

acute nongonorrheal v. Vulvitis resulting from chafing of the opposed lips of the vulva or from accumulated sebaceous material around the clitoris.

desquamative v. Erosion or scarring of the vulva as a result of immunological or blistering conditions, such as contact dermatitis, lichen planus, lupus, or squamous cell carcinoma.

follicular v. Inflammation of the hair follicles of the vulva.

gangrenous v. Necrosis and sloughing of areas of the vulva, often a complication of infectious diseases such as diphtheria, scarlatina, herpes genitalis, or typhoid fever.

leukoplakic v. Lichen sclerosis et atrophicus.

mycotic v. Vulvitis caused by various fungi, most commonly *Candida albicans*.

plasma cellularis v., plasma cell vulvitis Inflammation and edema of the vulva, with infiltration of the upper dermis by plasma cells and other inflammatory cells. This rare condition causes itching, sexual discomfort, and discomfort during urination as well as a macular rash with sharply defined borders. SYN: *Zoon's vulvitis*.

vulvo- Combining form meaning covering, vulva.

vulvocrucial (vül"vō-kroo'räl) [L. *vulva*,

covering, + *cruralis*, pert. to the leg] Rel. to the vulva and thigh.

vulvodynia (vŭl"vō-dīn'ē-ă) [" + *dynia*, pain] Vulvar pain; a nonspecific syndrome of unknown etiology. Common complaints include sporadic pain, dyspareunia, and pruritus. A provisional diagnosis is based on the patient's symptoms, and an absence of any other vulvovaginal or systemic pathology. Palliative treatment is individualized, although some women report relief of symptoms with an oxalate-restricted diet. SEE: *vaginitis*; *candidal vaginitis*; *pruritus*; *vulvar*; *vulvar vestibulitis syndrome*.

The Vulvar Pain Foundation provides information and support for women with vulvodynia. Their address is P.O. Box 4177, Graham, NC 27253. Phone 336-226-0704; www.vulvarpainfoundation.org/. Other support groups may be found on the internet.

PATIENT CARE: The health care professional encourages the woman to verbalize her feelings and concerns. The eliciting and careful review of the woman's history focuses on identifying any coexisting disorders, and noting factors or events that preceded the symptoms and those that increase or decrease symptoms. Patient teaching for palliative self-care emphasizes soothing personal hygiene techniques. Some treatments may be helpful, including physical therapy, trigger point injections, sexual counseling, cognitive behavioral therapy, biofeedback, and some pain-relieving antidepressants or anticonvulsants. However, treatments are often partly, rather than wholly effective. Some women have refractory symptoms.

idiopathic v. Vulvar dysesthesia.

vulvopathy (vŭl-vōp'ă-thē) [" + Gr. *pa-*

thos, disease, suffering] Any disorder of the vulva.

vulvovaginal (vŭl"vō-văj'ī-năl) [" + *vagina*, a sheath] Pert. to the vulva and vagina. SYN: *vaginoulvar*.

vulvovaginal gland One of the small glands on either side of the vaginal orifice. SYN: *Bartholin's gland*.

vulvovaginitis (vŭl"vō-văj'ī-nī'tis) [" + " + Gr. *itis*, inflammation] Simultaneous inflammation of the vulva and vagina, or of the vulvovaginal glands. The condition may be due to chemical irritation produced by materials present in medications, tight-fitting or nonabsorbent underclothes, inadequate perineal hygiene, allergic conditions, or a variety of infectious agents including bacteria, yeasts, viruses, and parasites.

diabetic v. Mycotic vulvar infection commonly occurring in diabetes mellitus.

VURD syndrome A combination of urinary tract abnormalities consisting of posterior urethral valves, unilateral urinary reflux, and dysplasia of the affected kidney. This condition typically occurs in male infants.

vv *veins*.

v/v *volume of dissolved substance per volume of solvent*.

VW *vessel wall*.

v/w *volume of a substance per unit of weight of another component*.

VX A toxic nerve gas, O-ethyl-[S]-[2-diisopropylaminoethyl]-methylphosphonothiolate, that might cause severe damage to public health if it were used in an act of biological terrorism.

V-Y-plasty A technique used in plastic surgery to repair a skin defect or to lengthen a scar as to release tension. A V-shaped incision is made, and the tissue at the apex of the V is placed on tension and advanced to create a straight limb of Y-shaped defect. The edges of the new wound are then sutured so that a Y-shaped scar is now produced.



W Symbol for the element tungsten (wolfram).

w *watt; week; wife; with.*

Waardenburg syndrome (vär'dën-bürg) [Petrus Johannes Waardenburg, Dutch ophthalmologist, 1886–1979] One of several related autosomally transmitted syndromes that may produce skin, neurological, ophthalmic, and auditory deficits.

wafer (wä'fēr) [Ger. *wafel*] A thin envelope or disk used to enclose a medication or to separate two structures from one another.

WAGR syndrome An acronym for a rare cluster of conditions and illnesses in childhood, including Wilms' tumor of the kidney, aniridia, gonadoblastoma, and mental retardation. Children affected by this sporadically occurring disease have mutations of chromosome 11 and at least two of the four listed conditions.

waist (wäst) [ME. *wast*, growth] The small part of the human trunk between the thorax and hips.

waist circumference A gauge of abdominal obesity, obtained by measuring the abdomen at the level of the superior iliac crest with a tape measure. Among non-Asian American males, a waist circumference greater than 40 in (102 cm) increases the risk of diabetes mellitus, hypertension, hyperlipidemia, and heart disease. A circumference greater than 35 in (88 cm) conveys similar risks for non-Asian American women. Americans of Asian ancestry have a lower risk of obesity than African Americans, European Americans, and Hispanics. Among Asians risks rise for men with a waist line that measures 36 in (91 cm) and for women when the waist exceeds 32 in (81 cm). SEE: *waist-to-hip ratio*.

PATIENT CARE: To measure an individual's waist, have the patient face away from the care provider with hands placed on the top of the hipbones or iliac crests. This spot should them be marked on each hip, using a felt-tip pen or skin marker. A measuring tape is then placed around the patient at the level of the iliac crests. It should be parallel to the floor and snug but not tight enough to dent the skin. The patient then exhales normally, and the measurement is taken and recorded. Weight loss should be encouraged when waist circumferences exceed guidelines, or when the body mass index is greater than 25 kg/m², using dietary modification and exercise. Physical activity should consist of more than 35 min of moderate-intensity aerobic ex-

ercise daily (unless contraindicated). Brisk walking is a good choice for most individuals, although any form of exercise that a patient finds enjoyable should be encouraged.

waist-to-hip ratio The measured circumference of the waist divided by the measured circumference of the hip. It has been used as one of several means of estimating abdominal body fat. Other anthropometrics that are similarly used are the "waist circumference," the "waist-to-height ratio," and the "body mass index." Although each of these measurements, if abnormal, has been statistically linked to increased risks for cardiovascular disease, they vary in their specificity and usefulness in people of differing ages and ethnicities.

waiting child A child who is protected by governmental agencies and made ready for adoption after abandonment, abuse, or neglect in his or her home. Also known as a *special needs child*.

waiting list A form of health care rationing that is used esp. in the distribution of scarce resources, such as organs for transplantation.

waived test Any relatively simple laboratory test (such as a fecal occult blood test) that is permitted under the Clinical Laboratory Improvement Amendments (CLIA) of the U.S. Food and Drug Administration to be performed without special laboratory certification, inspection, or proficiency testing.

waiver 1. An exemption from some aspect of a federal health care statute that gives a facility the right to deliver care in a manner that varies from published standards. 2. The voluntary surrender of some legal right or privilege.

wakeful (wāk'fūl) [AS. *wacian*, to be awake, + *full*, complete] 1. Not able to sleep; sleepless. 2. Alert.

Walcher's position (völ'kêrz) [Gustav Adolf Walcher, Ger. gynecologist, 1856–1935] A rarely used position for difficult deliveries in which the patient assumes a dorsal recumbent position with the hips at the edge of the bed and the legs hanging down, but supported.

Wald, Lillian (wäld) U.S. nurse, 1867–1940, who founded the Henry Street Settlement in New York City, one of the world's first visiting nurse associations.

Wald cycle (wäld) [George Wald, U.S. American biochemist (Nobel Laureate), 1906–1997] The transformations involved in the breakdown or resynthesis of rhodopsin.

Waldenström's disease (väl'dën-strēmz)

- [Johann Henning Waldenström, Swedish surgeon, b. 1877] Osteochondritis deformans juvenilis. SEE: *Waldenström's macroglobulinemia*.
- Waldeyer's gland** (völ'dī-ērzh) [Wilhelm von Waldeyer, Ger. anatomist, 1836–1921] A sweat gland of the eyelids; usually found most prominently in the lower lid margin.
- Waldeyer's ring** Lymphoid ring.
- wale** A welt; a raised ridge on the skin or on the epithelial lining of an organ.
- walk** **1.** A method of locomotion of upright bipeds such as humans. **2.** The particular way an individual moves. SEE: *gait*.
- walker** A device used to assist a person in walking, esp. a person prone to falling. It consists of a stable platform made of lightweight tubing that is at a height that permits it to be grasped by the hands and used as support while taking a step. The walker is then moved forward and another step is taken. SEE: *crutch*.
- walking** [AS. *wealcan*, to roll] The act of moving on foot; advancing by steps.
impaired w. Limitation of independent movement within the environment on foot. SEE: *locomotion*; *Nursing Diagnoses Appendix*.
- walking system** A complex device that enables patients with spinal injuries resulting in paralysis of the legs to walk. The device uses computer-controlled electrical stimulation to muscles so that walking may be accomplished. Each of these devices is made esp. for each patient, and their use is experimental.
- walking wounded** In military medicine, an ambulatory case.
- Walk Test** A group of performance-based tests that measure the distance a patient walks in a defined time, e.g., 2 min, 6 min, and 12 min. Walk tests measure the functional level of patients suffering from a wide range of cardiac, respiratory, neurological, and musculoskeletal conditions.
- wall** [AS. *weall*] The limiting or surrounding substance or material of a vessel or cavity such as an artery, vein, chest, or bladder. In dentistry, it may refer to specific boundaries of a cavity preparation or its location within the tooth, for example, cavity walls: buccal, lingual, mesial, distal, pulpal, coronal, axial, cervical, facial, incisal, gingival, or enamel.
cell w. A wall made of cellulose and other materials that encloses a plant cell in a rigid framework. Plant cells have both cell membranes and cell walls. Plant cell walls cannot be digested by humans. SEE: *cellulose*.
- Wallenberg's syndrome** (vahl'ën-bérgzh) [Adolf Wallenberg, Ger. physician, 1862–1949] A complex of symptoms resulting from occlusion of the posterior inferior cerebellar artery or one of its branches supplying the lower portion of the brainstem. Dysphagia, muscular weakness or paralysis, impairment of pain and temperature senses, and cerebellar dysfunction are characteristic.
- wallerian degeneration** (wól-ē-rē-än) [Augustus Volney Waller, Brit. physician, 1816–1870] The dying back of the axons of nerves after an insult to nerve tissue, such as a toxic exposure, a metabolic change, trauma, or deprivation of blood supply. The myelin surrounding the axon deteriorates, and the ability of the axon to transmit signals diminishes.
- walleys** (wāl'ī) [ME. *wawil-eghed*] **1.** An eye in which the iris is light-colored or white. **2.** Leukoma or dense opacity of the cornea. **3.** A squint in which both visual axes diverge. SYN: *strabismus*, *divergent*.
- Walsh, Mary B.** A U.S. nurse-educator and author who, with Helen Yura, published the first comprehensive text on nursing process in 1967. SEE: *nursing process*; *Nursing Theory Appendix*.
- wandering** (wän'dér-ing) [AS. *wandrian*] Moving about; not fixed.
- wandering [specify sporadic or continual]** Locomotion (with dementia or brain injury) characterized by its frequency and persistence: course appears to be meandering, aimless, or repetitive; frequently incongruent with boundaries, limits, or obstacles; impaired navigational ability. SEE: *Nursing Diagnosis Appendix*.
- Wangiella** (wäng'gē-él'ä) [NL.] A genus of fungi that live in soil and rotting vegetation and have brown septate hyphae. The only known species in the genus is *W. dermatiditis*. The fungus primarily produces skin infections, although occasionally it can cause severe pneumonias or infections of the eye or brain, esp. in those with immunosuppressive diseases or conditions.
- warble** (wawr'bīl) A fly larva. Fly larvae from the genus *Cuterebra* can infest the skin of humans and other animals, a condition known as myiasis.
- Warburg apparatus** (wär'bürg) [Otto H. Warburg, Ger. biochemist, 1883–1970] A capillary manometer used for determining oxygen consumption and carbon dioxide production of small bits of cellular tissue. It is widely used in metabolism studies.
- ward** [AS. *weard*, watching over] A large room in a hospital for the care of several patients.
accident w. A ward reserved for the care of traumatic injuries.
psychiatric w. A ward in a general hospital for mentally ill patients.
- warfarin potassium** (wawr'fä-rīn pä-tās'ē-üm) An anticoagulant drug.
- warfarin resistance syndrome** A rare, autosomal dominant condition in which anomalies in the vitamin K receptor site interfere with or neutralize the effects of warfarin. Families with such anom-

alies have great difficulty achieving anticoagulation with warfarin.

warfarin sodium [name derived from initials of Wisconsin Alumni Research Foundation] An anticoagulant drug.

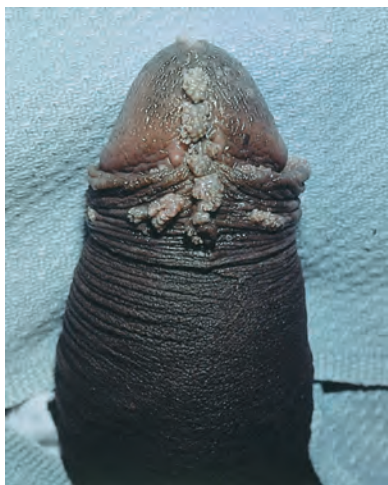
wart (wort) [AS. *wearte*] A circumscribed cutaneous elevation resulting from hypertrophy of the papillae and epidermis. **SEE: illus.**



COMMON WARTS

common w. *Verruca vulgaris*.

genital w. A wart of the genitalia, caused by strains of human papillomavirus (HPV) some of which are transmitted by sexual contact. In women, venereal warts, also known as condyloma acuminata, may be associated with cancer of the cervix and vulva. An estimated 1 million new cases of genital warts occur each year in the U.S., making genital warts the most common sexually transmitted illness. They commonly occur with other genital infections, and grow rapidly in the presence of heavy perspiration, poor hygiene, or the hormonal changes related to pregnancy. **SYN: venereal wart. SEE: illus.**



GENITAL WARTS ON PENIS

TREATMENT: A variety of therapies, including topically applied chemicals

such as podophyllin (10% to 25% in compound tincture of benzoin), trichloroacetic acid, or dichloroacetic acid usually remove small warts; other treatments include CO₂ laser therapy, cryosurgery, electrocautery, 5-fluorouracil, imiquimod, and recombinant interferon alfa-2a. Nevertheless, there is no completely safe and effective therapy available for genital warts.

PATIENT CARE: A history is obtained for unprotected sexual contact with a partner with known infection, a new partner, or multiple partners. Standard precautions are used to examine the patient, to collect a specimen, or to perform associated procedures. The health care professional inspects the genitalia for warts growing on the moist genital surfaces, such as the subpreputial sac, the urethral meatus, and less commonly, the penile shaft or scrotum in male patients and the vulva and vaginal and cervical wall in female patients. In both sexes, the papillomas may spread to the perineum and perianal area. These warts begin as tiny pink or red swellings and may grow as large as 4 in. (10 cm) and become pedunculated. Multiple warts have a cauliflower-like appearance. The patient usually reports no other symptoms, as the warts are generally painless, but a few complain of itching and pain. Infected lesions become malodorous. Diagnosis usually is made by visual inspection, but darkfield examination of wart cell scrapings may be used to differentiate HPV warts from those associated with second-stage syphilis. Biopsy is indicated if cancer is suspected. The patient is monitored for signs of genital cancer and for infection. A nonthreatening, nonjudgmental atmosphere is provided to encourage the patient to verbalize feelings about perceived changes in sexual behavior and body image. Sexual abstinence or condom use during intercourse is recommended until healing is complete. The patient must inform sexual partners about the risk for genital warts and the need for evaluation. The patient should be tested for human immunodeficiency virus and for other sexually transmitted diseases. Genital warts can recur and the virus can mutate, causing warts of a different strain. The patient should report for weekly treatment until all warts are removed and then schedule a checkup for 3 months after all warts have disappeared. If podophyllin is applied, the patient is taught to remove it with soap and water 4 to 6 hrs after the application. Female patients should have a Papanicolaou test on a schedule recommended by their health care providers.

plantar w. A wart on a pressure-bearing area, esp. the sole of the foot. **SYN: verruca plantaris. SEE: illus.**



PLANTAR WART

seborrhic w. Seborrheic keratosis.
venereal w. Genital wart.

Warthin's tumor (wōr'thins) [Aldred Warthin, U.S. pathologist, 1866–1931] A common benign tumor of the parotid gland. SYN: *papillary cystadenoma lymphomatosum*.

wash (wāsh) [AS. *wacsan*] **1.** The act of cleaning, esp. a part or all of the body. **2.** A medicinal preparation used in cleaning or coating.

eye w. A solution used to rinse the eyes. SYN: *collyrium*.

washout (wāsh'owt') The lowering of the concentration of a substance from a solution, or from the human body, by withholding the substance and allowing it to be lost, metabolized, or excreted.

washout, nitrogen The removal of nitrogen from the body by breathing either 100% oxygen or a combination of oxygen and helium. Used to measure total lung capacity.

wasp [AS. *waesp*] Term sometimes applied to all insects belonging to the suborder Apocrita, order Hymenoptera (except the Formicidae and ants), but more generally restricted to the superfamily Scoliodea, Vespoidea, and Specoidea. Members have the base of the abdomen constricted, and females have a piercing ovipositor, which in many species is modified into a sting. Many are social, living in large colonies. Common representatives are yellow jackets and hornets.

waste (wāst) [L. *vastus*, empty] **1.** Cachexia. **2.** Loss by breaking down of bodily tissue. **3.** Excreted material no longer useful to an organism.

hazardous w. In health care, any tissues; bioproducts such as blood, surgical sponges, needles, infectious materials, human remains; toxic substances; cytotoxic drugs; chemicals; or radioactive isotopes. These materials must be clearly labeled and securely stored before disposal, to prevent them from endangering public health.

solid w. Garbage, rubbish, trash, refuse, or sludge, as well as other discarded materials produced by agricultural, community, industrial, home, medical, mining, or municipal processes. Efforts to limit the environmental impact of solid waste, from the point

of production through recovery processes to disposal and recycling, are known as solid waste management.

waste products Metabolic byproducts that would be harmful if allowed to accumulate, which are removed from the body by elimination. Carbon dioxide is exhaled from the lungs; undigested food and bile pigments are eliminated by the colon. The kidneys form urine and excrete nitrogenous wastes (e.g., urea and creatinine) and excess amounts of minerals (e.g., sodium chloride).

wasting (wāst'ing) [L. *vastare*, to devastate] Enfeebling; causing loss of strength or size; emaciating. SEE: *marasmus*.

watchful waiting A strategy that includes frequent observation of a patient's condition rather than immediate intervention with drugs or surgery.

water (wā'tēr) [AS. *waeter*] H₂O, hydrogen combined with oxygen, forming a tasteless, clear, odorless fluid.

Water freezes at 32°F (0°C) and boils at 212°F (100°C). It is the principal chemical constituent of the body, composing approx. 65% of the body weight of an adult male and 55% of the adult female. It is distributed within the intracellular fluid and outside of the cells in the extracellular fluid. Water is indispensable for metabolic activities within cells, as it is the medium in which chemical reactions usually take place. Outside of cells, it is the principal transporting agent of the body. The following properties of water are important to living organisms: it is almost a universal solvent; it is a medium in which acids, bases, and salts ionize, and the concentrations of these substances (electrolytes) must be and are normally regulated quite precisely by the body; it possesses a high specific heat and has a high latent heat of vaporization, important in regulation and maintenance of a constant body temperature; it possesses a high surface tension; and it is an important reacting agent and essential in all hydrolytic reactions.

Water is the principal constituent of all body fluids (blood, lymph, tissue fluid), secretions (saliva, gastric juice, bile, sweat), and excretory fluid (urine). Intake of water is determined principally by the sense of thirst. Excessive intake may lead to water intoxication; excessive loss to dehydration. Humans can survive for only a short time without water intake. The exact length of survival time varies with ambient temperature, moisture in available food, and amount of physical activity.

bound w. Intracellular water attached to organic molecules. It is not available for metabolic processes.

deionized w. Water that has been passed through a substance that re-

moves cations and anions present as contaminants.

w. diffusion The movement of water into and out of cells (e.g., cells of the central nervous system after a stroke). Decreases in water diffusion are found when brain cells have been deprived of blood and oxygen.

distilled w. Water that has been purified by distillation. It is used in preparing pharmaceuticals.

emergency preparation of safe drinking w. The purification of water when only unclean water is available or when the available drinking water is believed to be contaminated. One of the following methods may be used: 1. Water is strained through a filter and boiled vigorously for 30 min. 2. Three drops of alcoholic solution of iodine are added to each quart (approx. 1 L) of water. The water is then mixed well and left to stand for 30 min before using. 3. Ten drops of 1% chlorine bleach, 2 drops of 4% to 6% chlorine bleach, or 1 drop of 7% to 10% chlorine bleach is added to each quart (liter) of water. The water is then mixed well and left to stand for 30 min. If the water is cloudy to begin with, double the amount of chlorine is used.

When the water is contaminated by *Giardia* organisms, heating to 55°C (131°F) kills the protozoa (method 1). Methods 2 and 3 also kill the cysts, but more time is required. Bacteria and viruses are killed by water kept at 60°C (140°F) for 30 min.

hard w. Water that contains dissolved salts of magnesium or calcium.

heavy w. D₂O; an isotopic variety of water, esp. deuterium oxide, in which hydrogen has been displaced by its isotope, deuterium. Its properties differ from ordinary water in that heavy water has a higher freezing and boiling point and is incapable of supporting life.

w. of hydration Water within the crystalline structure of an ionic compound that can be removed by heating or other means, leaving a pure salt.

w. for injection Water for parenteral use that has been distilled and sterilized.

potable w. Water suitable for drinking. Drinking water should be free of disease-causing organisms and should contain only trace amounts of organic and/or inorganic chemicals.

purified w. Water either free of biological or chemical contaminants or obtained by distillation or deionization.

pyrogen-free w. Water that has been rendered free of fever-producing proteins (bacteria and their metabolic products). SEE: *w. for injection*.

soft w. Water that contains very little, if any, dissolved salts of magnesium or calcium.

waterborne (wă'tēr-börn") Carried in water, esp. drinking water, surface wa-

ter, lakes, rivers, or recreational swimming pools.

waterborne disease Any disease transmitted by consuming or bathing in water. Common disease-causing agents that contaminate water include *Cryptosporidium*, *Cyclospora*, some hepatitis viruses, *Escherichia coli* 0157:H7, and metallic toxins.

water of crystallization The water that is chemically bonded to a compound. SYN: *water of hydration*.

water cure Hydrotherapy.

Waterhouse-Friderichsen syndrome (wăt'ēr-hows-frid'ër-rîk-sën) [Rupert Waterhouse, Brit. physician, 1873–1958; Carl Friderichsen, Danish physician, 1886–1979] Acute adrenal failure due to hemorrhage into the adrenal gland caused by meningococcal infection. SEE: *adrenal gland*; *meningitis*, *acute meningococcal*.

water of hydration Water of crystallization.

watermelon stomach (wă'tēr-měl'in) A colloquial term for the pathological changes in the stomach that occur in patients with progressive systemic sclerosis. The disease affects the stomach by causing vascular ectasia in the antrum.

Water's projection (wăt'ërz) Maxillary sinus radiograph.

waters The common term for the amniotic fluid surrounding the fetus.

watershed A tissue that receives minimal blood flow because of its position at the smallest branches of an artery. This tissue may infarct when blood pressures drop, e.g., when patients are in shock and the distant reaches of small blood vessels do not receive an adequate supply of blood.

water syringe In dentistry, a syringe for delivering water spray to a localized area. The flow, pressure, and temperature are controlled.

watery diarrhea, hypokalemia, hypochlorhydria syndrome ABBR: WDHA. A rare syndrome characterized by the passage of loose stools, a low serum potassium level, and an elevated gastric pH. It is caused by excessive pancreatic secretion of vasoactive intestinal peptide (VIP). SYN: *pancreatic cholera*.

Watson, Margaret Jean Harman (wăt'sôn) A nursing educator, born 1940, who developed the Theory of Human Caring. SEE: *Nursing Theory Appendix*.

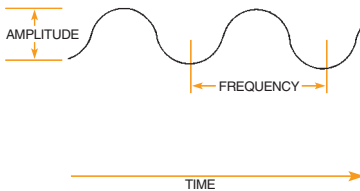
Watson-Schwartz test (wôt'sôn-shwärts) [Cecil J. Watson, U.S. physician, 1901–1983; Samuel Schwartz, U.S. physician, b. 1916] A test used in acute porphyria to differentiate porphobilinogen from urobilinogen.

watt [James Watt, Scottish engineer, 1736–1819] ABBR: w. A unit of electrical power. One watt is the power produced by 1 ampere of current flowing with a force or pressure (i.e., electromotive

force) of 1 volt. In SI units, 1 w equals 1 J/sec. In other units, 1 w equals 1 newton m/sec. This is also equal to 0.7376 ft-lb/sec. SEE: *electromotive force*.

wattage (wõt'ij) The electrical energy produced or consumed by an electrical device, expressed in watts.

wave (wāv) [ME. *wave*] **1.** A disturbance, usually orderly and predictable, observed as a moving ridge with a definable frequency and amplitude. **2.** An undulating or vibrating motion. **3.** An oscillation seen in the recording of an electrocardiogram, electroencephalogram, or other graphic record of physiological activity. SEE: *illus*.



COMPONENTS OF WAVES

a w. **1.** A venous neck wave produced by atrial contraction. **2.** A component of right atrial and pulmonary artery wedge pressure tracings produced by atrial contraction. The a wave just precedes the first heart sound. It is absent in atrial fibrillation and is larger in atrioventricular dissociation and in conditions causing dilation of the right atrium.

afterpotential w. The wave produced after the action potential wave passes along a nerve. On the recording of the electrical activity, it will be either a negative or positive wave smaller than the main spike.

alpha w. An electroencephalographic deflection often generated by cells in the visual cortex of the brain. SEE: *alpha rhythm*.

beta w. An electroencephalographic deflection. Its frequency is between 18 and 30 Hz. SEE: *beta rhythm*.

blast w. A shock wave produced by a blast or explosion. The wave front consists of air under very high pressure that can cause great damage to people, objects, and structures.

brain w. The fluctuation, usually rhythmic, of electrical impulses produced by the brain. SEE: *electroencephalography*.

c w. A component of right atrial and pulmonary capillary wedge pressure waves. It reflects the closing of the tricuspid valve at the beginning of ventricular systole. An abnormal configuration is seen in increased right heart pressure and with abnormalities of the tricuspid valve.

delta w. An abnormal deflection seen on the electrocardiogram in patients

with pre-excitation syndromes, such as Wolff-Parkinson-White syndrome. It occurs at the take-off of the QRS complex.

electromagnetic w. A wave-form produced by simultaneous oscillation of electric and magnetic fields perpendicular to each other. The direction of propagation of the wave is perpendicular to the oscillations. The following waves, in order of increasing frequency and decreasing wavelength, are electromagnetic: radio, television, microwave, infrared, visible light, ultraviolet, x-rays, and gamma rays. SEE: *electromagnetic spectrum* for table.

excitation w. The wave of irritability originating in the sinoatrial node that sweeps over the conducting tissue of the heart and induces contraction of the atria and ventricles.

F w. Flutter waves in atrial fibrillation, detectable on the electrocardiogram at 250 to 350 per minute.

f w. A fibrillatory wave seen as the wavy base line on the electrocardiogram tracing of atrial fibrillation. These waves are caused by multiple ectopic foci in the atria.

J w. An upwardly curving deflection of the J point of the electrocardiogram, found in patients whose body temperature is less than 32°C. This finding is one cardiac effect of hypothermia. The J wave has a particular shape; viewed from above, its surface is convex. SYN: *Osborne wave*.

light w. An electromagnetic wave that stimulates the retina or other optical sensors.

Osborne w. J wave.

P w. SEE: *electrocardiogram*.

pulse w. The pressure wave originated by the systolic discharge of blood into the aorta. It is not due to the passage of the ejected blood but is the result of the impact being transmitted through the arterial walls. The velocity in the aorta may be as high as 500 cm/sec and as low as 0.07 cm/sec in capillaries. The speed of transmission varies with the nature of the arterial wall, increasing with age as the arteries become less resilient. Thus in arteriosclerosis, the velocity is increased over normal.

Q w. A downward or negative wave of an electrocardiogram following the P wave. It is usually not prominent and may be absent without significance. New Q waves are present on the electrocardiogram after patients suffer myocardial infarction. SEE: *electrocardiogram*.

R w. SEE: *electrocardiogram*.

radio w. An electromagnetic wave between the frequencies of 10^{11} and 10^4 Hz.

S w. SEE: *electrocardiogram*.

w. scheduling A method for assigning appointments for patients that brings several patients in to see their health care professionals at the same time (e.g., at the

beginning of each hour instead of every 15 or 20 min during the hour).

shock w. 1. A compression wave produced by a shock such as an earthquake or explosion that is characterized by a sudden change in air pressure, density, and velocity. 2. An electromagnetic or sonic shock wave focused at a specific target (e.g., within the body). 3. A sudden disruption. SEE: *extracorporeal shock wave lithotripsy*; *shock w.*

sound w. A vibration of a vibrating medium that, on stimulating sensory receptors of the cochlea, is capable of giving rise to a sensation of sound. In dry air, the velocity is 1087 ft (331.6 m)/sec at 0°C; in water, it is approx. four times faster than in air.

T w. The portion of the electrical activity of the heart that reflects repolarization of the ventricles. SEE: *electrocardiogram*; *interval, Q-T*.

theta w. A brain wave present in the electroencephalogram. It has a frequency of about 4 to 7 Hz.

ultrashort w. An arbitrary designation of radio waves of a wavelength of less than 1 m.

ultrasonic w. A sound wave of greater frequency than 20 kHz. These waves do not produce sound audible to the human ear.

waveform The shape or the representation of a signal, e.g., in cardiology, the shape of the electrical shock used in cardioversion or defibrillation.

biphasic waveform A waveform used by some defibrillators that discharges energy in two phases (first positive, then negative). The shock applied by a biphasic defibrillator uses 30-40% less peak current at the same applied energy level than a monophasic defibrillator and is both less injurious to the heart and more likely to terminate ventricular fibrillation.

damped sinusoidal waveform A defibrillation waveform that rises sharply to a peak voltage and then returns gradually to zero.

monophasic waveform A waveform used by some defibrillators that delivers a single shock of positive energy to the myocardium.

truncated exponential waveform A defibrillation waveform that rises sharply to a peak voltage and then is abruptly cut off and returns to zero.

wavelength (wāv'length) The distance between the beginning and end of a single wave cycle, usually measured from the top of one wave to the top of the next one.

wax [AS. *weax*] 1. A substance obtained from bees (beeswax), plants, or petroleum (paraffin). It is solid at room temperature. In medicine, a purified form, white wax, is used in making ointments and to stop bleeding from bones during surgery. In dentistry, it is used, e.g., to

create fixed appliances or dentures. 2. Any substance with the consistency of beeswax. 3. Earwax. SYN: *cerumen*.

bone w. A polymer used to fill defects in damaged body parts and to control bleeding from injured bone, e.g., in orthopedic surgery. Its use is occasionally associated with side effects, including the formation of foreign-body reactions or the development of infections.

casting w. A mixture of several waxes that can be carved or formed into shapes to be cast in metal.

waxing-up In dentistry, the shaping of wax around the contours of a trial denture or cast restoration.

wax pattern A molded or carved pattern in wax used extensively in dentistry and jewelry-making whereby casts are made using the lost wax technique.

waxy (wäks'ē) [AS. *weax*, wax] Resembling or pert. to wax.

WBC *white blood cell*; *white blood count*.

weak (wēk) [Old Norse *veikr*, flexible]

1. Lacking physical strength or vigor; infirm, esp. as compared with what would be the normal or usual for that individual. 2. Dilute, as in a weak solution, or weak tea. 3. Biologically or chemically active; said, e.g., of acids, bases, electrolytes, muscles, or toxins.

weak dominance In health care management a strategy that provides a more effective but also a more costly solution to a problem than an alternative.

weakness 1. Fatigue; lack of strength; lack of energy. 2. Any structural or functional deficiency.

positional w. The apparent weakness of a muscle when tested in a shortened range of motion. This is a normal phenomenon of a muscle's length-tension curve. To differentiate positional weakness from general muscle weakness, and assess strength accurately, the muscle must be tested throughout its entire range of motion.

PATIENT CARE: The patient should be positioned carefully when testing for muscle force production.

stretch w. The apparent weakness of a muscle resulting from prolonged positioning in a lengthened position, thus shifting the muscle length-tension curve to the right; a form of positional weakness. This phenomenon is observed when the force production of the lengthened muscle is limited when it is tested in a relatively short position.

PATIENT CARE: Care must be taken in positioning when testing for muscle force production. To assess strength accurately, muscles should be tested in their functional or ideal positions or throughout the entire range of motion.

wean (wēn) [AS. *wenian*] 1. To accustom an infant to discontinuation of breast milk by substitution of other nourishment. 2. The gradual discontin-

uation of any form of therapy. SEE: *ventilator support, weaning from*.

weaning 1. Any gradual tapering of supportive therapy, e.g., of the ventilatory support provided to a patient in respiratory failure by a mechanical ventilator. **2.** The cessation of lactation or of the breastfeeding of an infant.

PATIENT CARE: When infant weaning is abrupt or sudden, some women may feel guilt about the end of a special relationship with their infants and experience remorse or grief. The nurse can assist by suggesting alternative ways the mother can nurture her infant. The nurse can also assist the mother with engorgement by instructing her to wear a supporting bra and to pump the breasts lightly to relieve some of the pressure but not to empty them. Ice packs and mild analgesics may be taken to relieve discomfort.

weaning readiness screen A means of assessing whether a patient receiving mechanical ventilation is capable of spontaneous, unsupported breathing. A variety of criteria are used. The patient must have (1) objective evidence that the disease requiring mechanical ventilation is improving; (2) a body temperature less than 38.5° C; (3) a hemoglobin level > 8; (4) received no sedative or paralytic drugs during the preceding 24 hours; (5) no evidence of left ventricular failure, cardiac rhythm disturbances, or unstable coronary artery disease; (6) oxygen saturation over 92% while receiving less than 50% inspired oxygen; and (7) no evidence of elevated intracranial pressures.

weanling (wēn'ling) A young child or infant recently changed from breast to formula feeding.

weaponize (wē'pōn-iz) To convert a bacterial culture or some other substance into an agent that can be used to injure or kill.

wear pattern The location of tooth erosion as determined by the characteristics of the facets of the teeth.

web A thin tissue or membrane extending across a space.

esophageal w. A group of thin membranous structures that include mucosal and submucosal coats across the esophagus. They may be congenital or may follow trauma, inflammation, or ulceration of the esophagus. SEE: *Plummer-Vinson syndrome*.

terminal w. A microscopic weblike network that is beneath the microvilli of intestinal absorption cells, and beneath the stereocilia of the hair cells of the inner ear.

web-based (wēb'bāst') Founded on, or depending on the Internet. Said, for example, of certain forms of education and knowledge dissemination.

webbed [AS. *webb*, a fabric] Having a membrane or tissue connecting adjacent structures, as the toes of a duck's feet.

Weber-Christian disease (wēb'ēr-

kris'chēn) [Fredrick Parkes Weber, Brit. physician, 1863–1962; Henry A. Christian, U.S. physician, 1876–1951] Relapsing, febrile, nodular, nonsuppurative panniculitis, a generalized disorder of fat metabolism characterized by recurring episodes of fever and the development of crops of subcutaneous fatty nodules.

Weber's gland (vā'bērz) [Moritz I. Weber, Ger. anatomist, 1795–1875] One of the mucous glands of the tongue.

Weber's law (vā'bērz) [Ernst Heinrich Weber, Ger., 1795–1878] The increase in stimulus necessary to produce the smallest perceptible increase in sensation bears a constant ratio to the strength of the stimulus already acting.

Weber's syndrome (wēb'ērz) [Sir Hermann David Weber, Brit. physician, 1823–1918] Paralysis of the oculomotor nerve on one side with contralateral spastic hemiplegia. It is caused by a lesion of the crus cerebri.

Weber test [Friedrich Eugen Weber, Ger. otologist, 1823–1891] A test for unilateral deafness. A vibrating tuning fork held against the midline of the top of the head is perceived as being so located by those with equal hearing ability in the ears; to persons with unilateral conductive-type deafness, the sound will be perceived as being more pronounced on the diseased side; in persons with unilateral nerve-type deafness, the sound will be perceived as being louder in the good ear. SEE: *hearing*.

Wechsler Adult Intelligence Scale (wēks'lēr) [David Wechsler, Romanian-American psychologist, 1896–1981] ABBR: WAIS. A commonly used intelligence test, designed to assess cognitive function in individuals over the age of 16. It consists of seven verbal and seven nonverbal (performance) subsections. Among other cognitive functions, it assesses vocabulary, verbal comprehension, verbal reasoning, short-term memory, arithmetic skills, problem solving, visual perception, logic, and visual-motor coordination.

Wechsler Intelligence Scale for Children (wēks'lēr) [David Wechsler, Romanian-American psychologist, 1896–1981] ABBR: WISC. A widely used intelligence test for children aged 5 to 16. The test is often used by professional testers or licensed psychologists to diagnose learning disabilities. It consists of two scales: one assesses language skills; the other, visual and motor skills.

wedge 1. A solid object with a broad base and two sides arising from the base to intersect each other and to form an acute angle opposite the base. **2.** In radiography, a filter placed in the primary x-ray beam to vary the intensity.

step w. A device consisting of increasing thicknesses of absorber

through which radiographs are taken to determine the amounts of radiation reaching the film.

wedging 1. Suffocation that results from compression of the chest between two firm surfaces. It is an occasional cause of sudden infant death syndrome, e.g., when an infant becomes lodged between a sleeping partner and a wall or mattress. It can also occur in adults, e.g., when they are trapped in collapsing buildings or between massive structures. 2. The squeezing or entrapment of any anatomical structure between two others. 3. The obstruction of blood flow through a vessel by a catheter placed into its lumen.

WEE *western equine encephalomyelitis*.

WeeFIM The Functional Independence Measure adapted for children aged 6 months to 7 years. SEE: *Functional Independence Measure*.

weeping [AS. *wepan*, to lament] 1. Shedding tears. 2. Moist, dripping.

bloody w. Hemorrhage from the conjunctiva.

weeverfish (wē'vēr-fish") [O.Fr. *wivre*, serpent + "] Any of several species of poisonous, bottom-dwelling fish of shallow salt waters, with dorsal and opercular spines that are used to inject a high molecular weight (100 kD) toxin into skin and soft tissue.

Wegener's granulomatosis, Wegener's syndrome (vēg'ē-nērz) [Frederich Wegener, Ger. pathologist, 1843–1917] A systemic necrotizing vasculitis marked by pneumonitis and glomerulonephritis; small and medium-sized blood vessels throughout the body may be affected. The average age of onset is 40, and the disease affects men more often than women.

ETIOLOGY: The precise etiology is unknown. Autoantibodies have been identified in the blood of approx. 90% of patients. Granulomas may be present in the lung, upper respiratory tract, and small arteries and veins. Localized or diffuse inflammatory patches are seen in the glomerular capillaries of the kidney.

SYMPTOMS: Chronic pneumonitis and glomerulonephritis are the most prominent signs; ulcerations of the nasopharyngeal mucosa also are common. Other signs and symptoms include muscle and joint pain, skin rashes, fever, and neuropathy.

TREATMENT: Suppressive immunotherapeutic drugs such as cyclophosphamide and corticosteroids are used to control the disease. Trimethoprim-sulfamethoxazole may prevent relapses. There is a 1-year, 80% mortality rate in untreated patients; when treatment is effective, patients can live normal lifespans. Those with diffuse glomerular damage may develop chronic renal failure. SEE: *granuloma*.

Weigert's law (vī'gërts) [Carl Weigert,

Ger. pathologist, 1845–1904] An observation stating that loss or destruction of tissue results in an excess of new tissue during repair.

weighing, underwater Hydrodensitometry.

weight (wāt) [AS. *gewiht*] The gravitational force exerted on an object, usually by the earth. The unit of weight is the newton; 1 newton equals 0.225 lb. The difference between weight and mass is that the weight of an object varies with the force of gravity, but the mass remains the same. For example, an object weighs less on the moon than on earth because the force of gravity is less on the moon; but the object's mass is the same in both places. SEE: *mass* (3).

Many diseases cause alterations of body weight (BW), for example, BW decreases in Addison's disease, AIDS, cancer, chronic diarrhea, chronic infections, untreated type I diabetes mellitus, anorexia, lactation when prolonged, marasmus, obstruction of the pylorus or thoracic duct, starvation, tuberculosis, and peptic ulcer.

Normal weight depends on the frame of the individual. SEE: *table*.

apothecaries' w. SEE: *apothecaries' weights and measures*.

atomic w. ABBR: at. wt. The weight of an atom of an element compared with that of $\frac{1}{12}$ the weight of carbon-12.

avoirdupois w. SEE: *avoirdupois measure*.

birth w. The weight of the newborn. Normal weight of the newborn is between 5.5 lb (2.5 kg) and 10 lb (4.5 kg) and is directly related to the gestational age at which the infant was born. Birth weight is an important index of maturation and chance for survival. Weight of less than 2.5 kg is associated with an increased chance of death in the perinatal period. Medical advances have increased the chance of survival of newborns of 2.0 kg or more. SEE: *large for gestational age*; *small for gestational age*.

w. cycling Rapid increases and decreases in body weight. SEE: *yo-yo diet*.

equivalent w. An obsolete term for the weight of a chemical element that is equivalent to and will replace a hydrogen atom (1.008 g) in a chemical reaction.

ideal body w. ABBR: IBW. The number of pounds or kilograms a person should weigh, based on height and frame, to achieve and maintain optimal health. Several tables, such as the Metropolitan Life Height and Weight Table, show ideal body weights for men and women of varying heights. These references may be used to help set goals for patients who are underweight or overweight. SEE: *weight* for table.

w. loss A measurable decline in body weight (BW) either intentionally, or as a result of malnutrition or illness. It is

**1983 Metropolitan Height and Weight Tables for Men and Women
According to Frame, Ages 25 to 59**

Men					Women				
Height (in shoes)*		Weight in Pounds (in indoor clothing)†			Height (in shoes)*		Weight in Pounds (in indoor clothing)†		
Ft.	In.	Small Frame	Medium Frame	Large Frame	Ft.	In.	Small Frame	Medium Frame	Large Frame
5	2	128-134	131-141	138-150	4	10	102-111	109-121	118-131
5	3	130-136	133-143	140-153	4	11	103-113	111-123	120-134
5	4	132-138	135-145	142-156	5	0	104-115	113-126	122-137
5	5	134-140	137-148	144-160	5	1	106-118	115-129	125-140
5	6	136-142	139-151	146-164	5	2	108-121	118-132	128-143
5	7	138-145	142-154	149-168	5	3	111-124	121-135	131-147
5	8	140-148	145-157	152-172	5	4	114-127	124-138	134-151
5	9	142-151	148-160	155-176	5	5	117-130	127-141	137-155
5	10	144-154	151-163	158-180	5	6	120-133	130-144	140-159
5	11	146-157	154-166	161-184	5	7	123-136	133-147	143-163
6	0	149-160	157-170	164-188	5	8	126-139	136-150	146-167
6	1	152-164	160-174	168-192	5	9	129-142	139-153	149-170
6	2	155-168	164-178	172-197	5	10	132-145	142-156	152-173
6	3	158-172	167-182	176-202	5	11	135-148	145-159	155-176
6	4	162-176	171-187	181-207	6	0	138-151	148-162	158-179

SOURCE OF BASIC DATA: Build Study, 1979, Society of Actuaries and Association of Life Insurance Medical Directors of America, 1980. Copyright 1983 Metropolitan Life Insurance Company. Reprinted Courtesy of Metropolitan Life Insurance Company, *Statistical Bulletin*. Copyright 1983 Metropolitan Life Insurance Company.

* Shoes with 1-in. heels.

† Indoor clothing weighing 5 lb for men and 3 lb for women.

considered mild when 5% of BW is lost, moderate when 5-10% of BW is lost, and high when more than 10% of BW is lost.

PATIENT CARE: Intentional weight loss achieved through dieting and/or exercise has significant health benefits for the overweight or obese. It reduces the risk of many common illnesses, including coronary artery disease, type 2 diabetes mellitus, hyperlipidemia, and hypertension. Unintentional weight loss, esp. of more than 10% of BW may be a marker of serious disease, such as AIDS, cancer, depression, hyperthyroidism, parasitosis, peptic ulceration, or food insecurity (starvation due to an inadequate food supply).

low birth w. ABBR: LBW. Abnormally low weight of a newborn, usually less than 2500 g. A 280-g infant has survived, but with physical and mental impairment.

Identifying mothers at risk for delivery of LBW infants involves careful assessment. Demographic factors include maternal age (adolescence) and non-white race; the highest risk occurs in primiparas under the age of 15. A review of the mother's history often finds low birth weight or prepregnancy weight, previous preterm delivery or spontaneous abortion, delivery of other LBW newborns, or fetal exposure to diethylstilbestrol. Cigarette smoking or abuse of other substances (i.e., alcohol or narcotics) may be

involved. Other factors include height less than 60 in and weight less than 80% of standard weight for height, diabetes with vascular changes, *Chlamydia trachomatis* genital tract infections, and urinary tract infections.

molecular w. ABBR: mol. wt.; MW. The weight of a molecule attained by totaling the atomic weight of its constituent atoms. SEE: *atomic w.*

set point w. The concept that body weight is controlled by the central nervous system and set at a certain value; the value is more or less stable until something occurs to alter it. An example of resetting of the set point occurs in persons with a disturbance of hypothalamic function that interferes with the satiety and feeding centers.

usual body w. ABBR: UBW. Body weight value used to compare a person's current weight with his or her own baseline weight. The UBW may be a more realistic goal than the ideal body weight for some individuals. SEE: *ideal body w.*

w. in volume ABBR: w/v. The amount by weight of a solid substance dissolved in a measured quantity of liquid. Percent w/v expresses the number of grams of an ingredient in 100 mL of solution.

w. in weight ABBR: w/w. The amount by weight of a solid substance dissolved in a known amount (by weight) of liquid. Percent w/w expresses

the number of grams of one ingredient in 100 g of solution.

weighting (wāt'ing) **1.** In radiation therapy that uses two opposing fields, the use of a higher dose for one of the fields. **2.** In statistical or numerical analysis, the placing of emphasis on a variable or the gauging of the impact of a variable among a group of potential influences on an outcome.

weightlessness The condition of not being acted on by the force of gravity. It is present when astronauts travel in areas so distant from the earth, moon, or planets that the force of gravity is virtually absent.

weights and measures SEE: *Weights and Measures Appendix*.

Weil's disease (vīlz) [Adolf Weil, Ger. physician, 1848–1916] Leptospirosis caused by any one of several serotypes of *Leptospira interrogans* such as *L. icterohemorrhagica* in rats, *L. pomona* in swine, or *L. canicola* in dogs. All of these may be pathogenic for humans.

ETIOLOGY: The infection is caused by contact with infected rat urine or feces.

SYMPTOMS: Symptoms include muscular pains, fever, jaundice, and enlargement of the liver and spleen.

TREATMENT: Penicillins or tetracyclines are curative.

PREVENTION: Doxycycline may be used to prevent infection in those exposed to the spirochetes.

Weil-Felix reaction, Weil-Felix test (vī-fā'liks) [Edmund Weil, Austrian bacteriologist, 1880–1922; Arthur Felix, Ger. bacteriologist, 1887–1956] The agglutination of certain *Proteus* organisms caused by the development of *Proteus* antibodies in certain rickettsial diseases.

Welch's bacillus (wēlsh'ēz) [William Henry Welch, U.S. pathologist, 1850–1934] *Clostridium perfringens*, the causative organism of gas gangrene. SEE: *gangrene, gas*.

weld (wēld) [variant of *well*, to boil] To fuse or join two objects with heat.

well-being committee (wēl'bē'ing) An administrative body convened by a health care facility to review instances of inappropriate behavior by staff. The committee may also assist in the rehabilitation of impaired practitioners.

Wellbutrin SR (wēl'bū-trin") SEE: *bupropion*.

Wellens's syndrome (wēl'ēns) [Hein J.J. Wellens, contemporary cardiologist from the Netherlands] The electrocardiographic (ECG) signs of impending occlusion of the left main or left anterior descending coronary artery. ECG shows an inverted symmetrical T wave with little or no associated change of the ST segment or R wave. Inversion appears principally in the V leads. The finding identifies patients who are at risk for an extensive myocardial infarction.

wellness Good health, as well as its appreciation and enjoyment. Wellness is more than a lack of disease symptoms; it is a state of mental and physical balance and fitness. SYN: *subjective well-being*.

Wells syndrome Eosinophilic cellulitis.

welt [ME. *welte*] An elevation on the skin produced by a lash, blow, or allergic stimulus. The skin is unbroken and the mark is reversible.

wen (wēn) [AS.] A cyst resulting from the retention of secretion in a sebaceous gland. One or more rounded or oval elevations, varying in size from a few millimeters to about 10 cm, appear slowly on the scalp, face, or back. They are painless, rather soft, and contain a yellow-white caseous mass. The sac and contents should be carefully dissected to prevent its recurrence. SYN: *sebaceous cyst; steatoma*. SEE: *Fordyce's disease*.

Wenckebach's period, Wenckebach's phenomenon (wēn'kē-bāks) [Karel F. Wenckebach, Dutch-born Aust. internist, 1864–1940] A form of incomplete heart block in which, as detected by electrocardiography, there is progressive lengthening of the P-R interval until there is no ventricular response; and then the cycle of increasing P-R intervals begins again.

Werdnig-Hoffmann disease (vērd'nīg-hōf'mān) [Guido Werdnig, Austrian neurologist, 1844–1919; Johann Hoffmann, Ger. neurologist, 1857–1919] Spinal muscular atrophy.

Werdnig-Hoffmann paralysis Infantile muscular atrophy, considered by some to be identical with amyotonia congenita.

Werdnig-Hoffmann syndrome Werdnig-Hoffmann paralysis.

Werlhof's disease (vērl'hōfs) [Paul G. Werlhof, Ger. physician, 1699–1767] Idiopathic thrombocytopenic purpura.

Wermer's syndrome (wēr'mērz) [Paul Wermer, U.S. physician, d. 1975] Multiple endocrine neoplasia.

Werner's syndrome (vēr'nērz) [C. W. O. Werner, Ger. physician, 1879–1936] An autosomal recessive disease in which adults age at an accelerated pace. SEE: *progeria*.

Wernicke's aphasia (vēr'nī-kēz) [Karl Wernicke, Ger. neurologist, 1848–1905] An injury to the Wernicke's area in the temporal lobe of the dominant hemisphere of the brain, resulting in an inability to comprehend the spoken or written word. Visual and auditory pathways are unaffected; however, patients are unable to differentiate between words or interpret their meaning. Although patients speak fluently, they are unable to function socially because their ability to communicate effectively is impaired by a disordered speech pattern called paraphasia (i.e., inserting inappropriate syllables into words or substituting one word for another). They also

- may be unable to repeat spoken words. If the condition is due to a stroke, the aphasia may improve with time. The disorder is often caused by impairment of blood flow through the lower division of the left middle cerebral artery. SEE: *speech, paraphasic*.
- Wernicke's center** An area in the dominant hemisphere of the brain that recalls, recognizes, and interprets words and other sounds in the process of using language.
- Wernicke's encephalopathy** Encephalopathy associated with thiamine deficiency; usually associated with chronic alcoholism or other causes of severe malnutrition. SYN: *Wernicke's syndrome*.
- Wernicke's syndrome** Wernicke's encephalopathy.
- Western blot test** A technique for analyzing protein antigens. Initially, the antigens are separated by electrophoresis on a gel and transferred to a solid membrane by blotting. The membrane is incubated with antibodies, and then the bound antibodies are detected by enzymatic or radioactive methods. This method is used to detect small amounts of antibodies.
- Western Ontario McMaster Osteoarthritis Index** ABBR: WOMAC. A self-administered assessment test of hip or knee pain, disability, and joint stiffness in osteoarthritis patients.
- West Nile virus** SEE: *under virus*.
- Westphal-Edinger nucleus** (vēst'fāl-ēd'ing-ēr) [Karl Westphal, Ger. neurologist, 1833–1890; Ludwig Edinger, Ger. neurologist, 1855–1918] A small group of nerve cells in the rostral portion of the nucleus of the oculomotor nerve. Efferent fibers pass to the ciliary ganglion conveying impulses destined for the intrinsic muscles of the eye.
- West's syndrome, West syndrome** (vēsts) [W. J. West, Brit. physician, 1794–1848] A form of epilepsy occurring in the first 12 months of life and characterized by myoclonic jerking, EEG hypersarrhythmia, and abnormal brain and behavioral development. It often results from an underlying lesion in the brain (e.g., as in tuberous sclerosis). Most children who survive to the age of 5 have less than normal intelligence, and many have persisting seizures.
- wet** (wēt) [AS. *waet*] Soaked with moisture, usually water.
- wet brain** An increased amount of cerebrospinal fluid with edema of the meninges; may be associated with alcoholism.
- wet cup** In traditional medicine, a cupping glass that is placed on the skin after the skin injured. It is purported to draw toxins from the body.
- wet dream** Nocturnal emission.
- wet nurse** A woman who breastfeeds another's child.
- wet nurse phenomenon** The production of milk in response to repeated stimulation of the nipples in unpregnant women who have previously been pregnant.
- wet pack** A form of bath given by wrapping a patient in hot or cold wet sheets, covered with a blanket, used in the distant past esp. to reduce fever.
- Wetzel grid** (wēt'sēl) [Norman C. Wetzel, U.S. pediatrician, b. 1897] A graph for use in evaluating growth and development in children aged 5 to 18 years.
- Weyers acrofacial dysostosis** (wī'ērzh) An autosomal dominant syndrome characterized by short stature and dental anomalies, nail dystrophy, and polydactyly. Some geneticists consider it a variant of Ellis-van Creveld syndrome.
- Wharton's jelly** The gelatinous intercellular material of the umbilical cord; it consists of collagen, mucin, and hyaluronic acid. It is rich in hyaluronic acid, and in primitive stem cells. SYN: *umbilical cord matrix*.
- wheel** (hwēl) [AS. *hwele*] A more or less round and temporary elevation of the skin, white in the center with a pale-red periphery, accompanied by itching. It is seen in urticaria, insect bites, anaphylaxis, and angioneurotic edema. SYN: *pomphus*.
- wheel** (hwēl) [ME. *wale*, a stripe] An elongated mark or ridge. Such a ridge is produced by intradermal injection.
- wheel and flare reaction** The response within 10 to 15 min to an antigen injected into the skin. The injected skin elevates and blanches, and becomes surrounded by a red rim of inflamed tissue.
- wheat** (hwēt) [AS. *hwæte*] Any of various cereal grasses, widely cultivated for its edible grain used in making flour. Wheat preparations and pastas include macaroni, vermicelli, and noodles, which are made from flour and water, molded, dried, and slightly baked. They are easy to digest.
- STRUCTURE: Wheat is composed of the husk or outer coat, which is removed before grinding; bran coats, which are removed in making white flour and contain the mineral substances; gluten, which contains the fat and protein; and starch, the center of the kernel. Refined wheat products do not include the bran and germ, which contain B complex vitamins, phosphorus, and iron.
- Individuals who are gluten intolerant (e.g., persons with celiac sprue) cannot digest the protein gluten found in wheat.
- wheat germ** The embryonic portion of of the wheat seed or kernel. It contains vitamin E, thiamine, riboflavin, and other micronutrients.
- wheat grass** A chlorophyll-rich grass whose extracted juice is promoted as a treatment for anemia, ulcerative colitis, and other ailments.
- Wheatstone bridge** (hwēt'stōn") [Sir

Charles Wheatstone, Brit. scientist and inventor, 1802–1875] An electric circuit with two branches, each containing two resistors. These branches are joined to complete the circuit. If the resistance in three resistors is known, the resistance of the fourth, unknown, one can be calculated.

wheel A disk attached through its middle to an axle that rotates. In dentistry, small wheels are attached to a handpiece or lathe, and used for polishing and shaping teeth, restorations, and appliances.

carborundum w. A cutting wheel containing silicon carbide, in variable grit sizes.

diamond w. In dentistry, a wheel that contains diamond powder or chips.

polishing w. In dentistry, a wheel made of soft material suitable for polishing teeth or restorations.

wheelchair A type of mobility device for personal transport. Traditional wheelchairs have a seating area positioned between two large wheels, with two smaller wheels at the front. These can be self-propelled through handrims or pushed by another person. Advances in wheelchair design have provided alternatives that accommodate obstacles and rough terrain. Lightweight, collapsible models exist, as well as models designed for racing and sports. Powered wheelchairs and scooters, driven by electric motors, can be controlled through electronic switches and enable mobility by persons with muscle weakness or even paralysis.

wheeze (hwēz) [ME. *whesen*] A continuous musical sound heard predominantly during expiration that is caused by narrowing of the lumen of a respiratory passageway. Often noted only by the use of a stethoscope, it occurs in asthma, croup, hay fever, mitral stenosis, and bronchitis. It may result from asthma, tumors, foreign body airway obstructions, bronchial spasm, pulmonary infections, emphysema and other chronic obstructive lung diseases, or pulmonary edema.

wheezing The production of whistling sounds during difficult breathing such as occurs in asthma, coryza, croup, and other respiratory disorders. SEE: *wheeze*.

whhey The watery material separated from the curd of milk that has coagulated.

whiff test A colloquial term for a fishy odor that is released when a vaginal swab is mixed with potassium hydroxide (KOH). A positive test is suggestive of bacterial vaginosis.

whiplash injury An imprecise term for injury to the cervical vertebrae and adjacent soft tissues. It is produced by a sudden jerking or relative backward or forward acceleration of the head with respect to the vertebral column. This type of injury may occur in a vehicle that is suddenly and forcibly struck from the rear.

Whipple's disease (hwīp'ēlz) [George Hoyt Whipple, U.S. pathologist, 1878–1976] An infectious disease with gastrointestinal and systemic features caused by the organism *Tropheryma whippeli*. This rare disease resembles idiopathic steatorrhea. SYN: *intestinal lipodystrophy*.

TREATMENT: Intensive antibiotic therapy with procaine penicillin followed by maintenance therapy with tetracycline yields good results.

whipworm (wīp'wūrm) *Trichuris trichiura*.

whisper (hwīs'pēr) [AS. *hwisprian*]

1. Speech with a low, soft voice; a low, sibilant sound. 2. To utter in a low sound.

cavernous w. Direct transmission of a whisper through a cavity in auscultation.

whispered voice test A bedside estimate of hearing impairment in which the examiner stands 2 ft from one of the patient's ears and whispers a number followed by a letter. An approximate 30 dB hearing loss is suggested by inability to hear paired numbers and letters, esp. if the patient fails to detect several pairs of them. A patient who performs poorly on the test should be referred for formal testing by an audiologist.

whistle (hwīs'ēl) 1. A sound produced by pursing one's lips and blowing. 2. A tubular device driven by wind that produces a loud and usually shrill sound.

white (hwīt) [AS. *hwit*] 1. The achromatic color of maximum lightness that reflects all rays of the spectrum. 2. The color of milk or fresh snow; opposite of black.

white cell Leukocyte.

white-clot syndrome Widespread blood clotting, usually in several veins and arteries at once, that is associated with thrombocytopenia. Caused by an adverse immune reaction to heparin, the condition is often life threatening. SEE: *heparin-induced thrombocytopenia*.

white dot syndrome Any of a group of inflammatory diseases of the choroid and retina that manifest with visual loss. On inspection of the ocular fundus, well-demarcated whitish lesions are seen.

white of egg The albumin of an egg.

white of eye The part of the sclera visible around the iris.

white gangrene Gangrene caused by local impairments of blood flow.

whitehead (hwīt'hēd) A closed comedo containing pale, dried sebum. SEE: *blackhead*; *comedo*.

white leg Phlegmasia alba dolens.

whitepox (hwīt'pōks) Variola minor.

whites Slang for leukorrhea.

white softening The stage of softening of any tissue in which the affected area has become white and anemic.

Whitmore-Jewett staging system

(hwit'mawr-joo'it) A method of staging prostate cancer. The cancer either is confined entirely to the prostate gland or has spread to regional lymph nodes or, in the worse case, has spread to distant tissues such as bones.

whitlow (hwit'lō) [ME. *whitflawe*, white flow] Suppurative inflammation at the end of a finger or toe. It may be deep seated, involving the bone and its periosteum, or superficial, affecting parts of the nail. SYN: *felon*; *panaris*; *paronychia*; *runaround*.

herpetic w. Whitlow due to herpes simplex virus. It is painful and accompanied by lymphadenopathy. Herpetic whitlow occurs commonly in health care workers as a result of exposure to viral shedding from patients with herpetic lesions on the skin.

WHO *World Health Organization*.

whole body counter An instrument that detects the radiation present in the entire body.

whole bowel irrigation SEE: under *irrigation*.

whole grain An entire kernel of grain, consisting of the bran, the endosperm, and the germ.

wholism (hōl'izm) Holism.

wholistic health Holistic medicine.

whoop (hoop) [AS. *hwopan*, to threaten] The sonorous and convulsive inspiratory crow following a paroxysm of whooping cough.

whooping cough Pertussis.

WHO QoL-100 An international measure of quality of life developed by the World Health Organization based on assessments of physical and psychological well-being, level of independent living, social relationships, and environmental quality.

whorl (hwŭrl) [ME. *whorle*] 1. A spiral arrangement of cardiac muscle fibers. SYN: *vortex*. 2. A type of fingerprint in which the central papillary ridges turn through at least one complete circle. SEE: *fingerprint* for illus.

WIC *Special Supplementary Food Program for Women, Infants, and Children*.

wick (wĭk) Any material that absorbs liquids. Wicks are used in wounds and cavities to drain accumulated fluids.

Wickham's striae (wĭ'kāmz strē'ā) [L. F. Wickham, Fr. dermatologist, 1861–1913] Lines that are demonstrable on the buccal mucosa in patients with lichen planus.

Widal's reaction, Widal's test (vē-dälz') [Georges Fernand Isidore Widal, Fr. physician, 1862–1929] An agglutination test for typhoid fever.

wig A covering for the head to simulate hair if the individual is bald or partially bald. Wigs may be made of hair or synthetic fibers such as acrylic. Wigs are esp. beneficial for use by patients who

have lost their hair due to exposure to certain types of cytotoxic agents used in cancer chemotherapy.

wild (wild) [ME. *wilde*] Occurring in nature.

wild cherry The dried bark of *Prunus serotina*, used principally in the form of syrup as a flavored vehicle for cough medicine.

will [AS.] 1. The mental faculty used in choosing or deciding on an act or thought. 2. The power of controlling one's actions or emotions.

Williamsia (wĭl-yām'zē-ā) A genus of mycolic acid containing actinomycetes. Most members of the genus are thought to be nonpathogenic bacteria found in a variety of natural environments. They have rarely been identified in culture specimens as a cause of human disease.

Williams syndrome (wĭl'yĭmz) [J.C.P. Williams, New Zealand physician, 20th century] ABBR: WS. A rare congenital disorder caused by a deletion of part of chromosome 7 characterized by impaired growth, heart disease, hypercalcemia, mental retardation, sensitivity to loud sounds, and "elfin" facial features, among other anomalies. Some children with WS are described as excessively sociable, hyperactive, and musically talented, but these behavioral markers are not universally present.

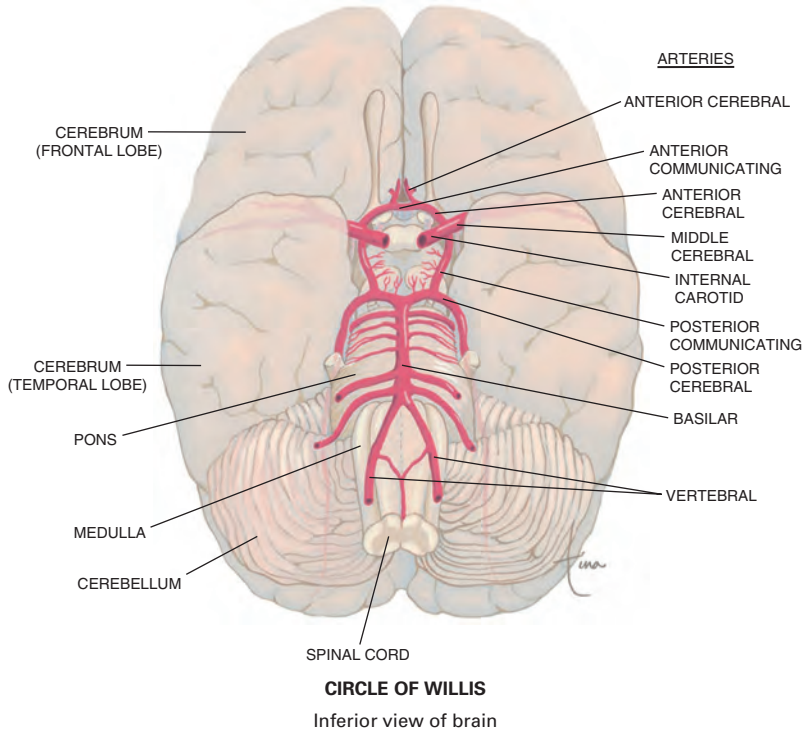
Willis, Thomas (wĭl'is) British anatomist, 1621–1675.

circle of W. An arterial anastomosis that encircles the optic chiasm and hypophysis, from which the principal arteries supplying the brain are derived. It receives blood from the two internal carotid arteries and the basilar artery formed by union of the two vertebral arteries. SEE: *illus*.

Willis' cord One of the cords crossing the superior longitudinal sinus transversely.

Wilms' tumor (wĭlmz) [Max Wilms, Ger. surgeon, 1867–1918] A rapidly developing tumor of the kidney that usually occurs in children. It is the most common renal tumor of childhood. It is associated with chromosomal deletions, esp. from chromosomes 11 and 16. In the past, the mortality from this type of cancer was extremely high; however, newer approaches to therapy have been very effective in controlling the tumor in about 90% of patients. SYN: *embryonal carcinosarcoma*; *nephroblastoma*. SEE: *Nursing Diagnoses Appendix*.

Wilson's disease (wĭl'sūnz) [Samuel Alexander Kinnier Wilson, Brit. internist, 1877–1937] A hereditary syndrome transmitted as an autosomal recessive trait in which a decrease of ceruloplasmin permits accumulation of copper in various organs (brain, liver, kidney, and cornea) associated with increased intestinal absorption of copper. A pigmented



ring (Kayser-Fleischer ring) at the outer margin of the cornea is pathognomonic. This syndrome is characterized by degenerative changes in the brain, cirrhosis of the liver, hemolysis, splenomegaly, tremor, muscular rigidity, involuntary movements, spastic contractures, psychic disturbances, dysphagia, and progressive weakness and emaciation. SYN: *hepatolenticular degeneration*; *Westphal-Strümpell pseudosclerosis*.

TREATMENT: The untreated disease is fatal. The goal is to prevent further copper accumulation in tissues by avoiding foods high in copper such as organ meats, shellfish, nuts, dried legumes, chocolate, and whole cereals. Reduction of the copper in the tissues is achieved by giving the copper binder, D-penicillamine, orally until the serum copper level returns to normal. Carefully controlled doses of this therapy will probably be required for the patient's entire lifetime. Blood cell counts and hemoglobin should be monitored every 2 weeks during the first 6 weeks of treatment. Nonsteroidal anti-inflammatory drugs or systemic corticosteroids may help to relieve symptoms.



The copper binder, D-penicillamine, may cause pyridoxine and iron deficiency.

Wilson-Mikity syndrome (wīl'sīn-mīk'ī-tē) [Miriam G. Wilson, U.S. pediatrician, b. 1922; Victor G. Mikity, U.S. radiologist, b. 1919] A so-called pulmonary dysmaturity syndrome seen in premature infants. The symptoms are insidious onset of dyspnea, tachypnea, and cyanosis in the first month of life. Radiographs of the lungs reveal evidence of emphysema that develops into multicysts. Therapy is directed at the pulmonary insufficiency and cardiac failure. The death rate is about 25%.

windburn Erythema and irritation of the skin caused by exposure to wind. Simultaneous exposure to the sun, moisture, wind, and cold may cause a severe dermatitis.

windchill The cooling effect wind has on exposed human skin. The effect is intensified if the skin is moist or wet.

windchill factor Loss of heat from exposure of skin to wind. Heat loss is proportional to the speed of the wind. Thus, skin exposed to a wind velocity of 20

mph (32 km/hr) when the temperature is 0°F (-17.8°C) is cooled at the same rate as in still air at -46°F (-43.3°C). Similarly, when the temperature is 20°F (-6.7°C) and the wind is 10, 20, or 35 mph (16.1, 32.2, or 56.3 km/hr), the equivalent skin temperature is -4°, -18°, or -28°F (-20°, -27.8°, or -33.3°C), respectively.

The windchill factor is calculated for dry skin; skin that is wet from any cause and exposed to wind loses heat at a much higher rate. Wind blowing over wet skin can cause frostbite, even on a comfortably warm day as judged by the thermometer.

windigo, witigo (wīn'dī-gō', wī'tī-gō') [Ojibwa, Cree] A culture-bound illness, found only in indigenous cultures of Northern Canada, in which people practice cannibalism believing they have been possessed by malevolent spirits. The disease is considered by Western psychiatrists to be a form of depression accompanied by agitation.

window [Old Norse *vindauga*] **1.** An aperture for the admission of light or air or both. **2.** A small aperture into a cavity, esp. that of the inner ear. SYN: *fenestra*.

aortic w. In radiology, in a left anterior oblique or lateral view of the chest, a clear area bounded by the aortic arch, the bifurcation of the trachea, and the pericardial border.

beryllium w. The part of a radiographic tube through which the x-ray photons pass to the outside.

cochlear w. Round w.

w. level ABBR: WL. In digital imaging, including computed tomography, the center of the range of gray scale in the image.

oval w. The opening from the middle ear cavity to the inner ear, over which the plate of the stapes fits; it transmits vibrations for hearing.

pericardial w. A surgically constructed drainage portal through the pericardium into the peritoneum, used for the relief of pericardial effusions or tamponade.

radiation w. A translucent lead glass window in a radiographic control booth.

radiographic w. A thinner area on the glass envelope of an x-ray tube from which x-rays are emitted toward the patient.

round w. A membrane-covered opening below the oval window. Vibrations in the inner ear cause the membrane to bulge outward, decreasing the pressure in the cochlea and preventing damage to the hair cells. SYN: *cochlear window*.

vestibular w. Oval window.

w. width ABBR: WW. In digital imaging, the number of shades of gray in an image.

windowing Cutting a hole in a structure,

such as a plaster cast or the pericardium, to relieve pressure, permit drainage, or allow access to an underlying structure.

windpipe (wīnd'pīp) Trachea.

wine (wīn) [L. *vinum*, wine] **1.** Fermented juice of any fruit, usually made from grapes and containing 10% to 15% alcohol. Taken in moderation (1 or 2 glasses a night) it is part of the Mediterranean diet.

red w. An alcoholic beverage made from pressed grapes, which contains polyphenolic antioxidants. Consumption of red wine, not in excess of 1 to 2 glasses per day, is associated with reduced risk of coronary artery disease.

wine sore Slang term for a superficial infected area of the skin seen in alcoholics with poor personal hygiene; erroneously thought to be due to specific action of the wine.

wing [Old Danish *wingae*] A structure resembling the wing of a bird. SEE: *ala*.

wink [AS. *wincian*] The brief, voluntary closure of one eye. In hemiplegia, the patient may not be able to blink or close the eye on the paralyzed side without simultaneously closing the other eye. This is called *Reviviod sign* or *orbicularis sign*. SEE: *blink*; *Marcus Gunn syndrome*.

winking Wink.

jaw w. SEE: *jaw winking*.

Winslow, foramen of (wīnz'lō) [Jacob Benignus Winslow, Danish-born Fr. anatomist, 1669-1760] Epiploic foramen.

wintergreen oil Methyl salicylate. This colorless, yellowish, or reddish liquid has a characteristic taste and odor. It is used as a flavoring substance and as a counterirritant applied topically in the form of salves, lotions, and ointments.

winter itch A mild form of eczematous dermatitis of the lower legs of elderly persons during dry periods of the year. The skin contains fine cracks and there is no erythema. The skin should be rehydrated with a cream or emulsion of water in oil. SYN: *asteatotic eczema*; *pruritus hiemalis*.

wire (wīr) **1.** Metal drawn out into threads of varying thickness. **2.** To join fracture fragments together by use of wire.

arch w. A cable, usually made of metal, that is used to apply tension to the teeth in orthodontics.

guide w. A wire used to enter tight spaces (e.g., obstructed valves or channels) within the body.

Kirschner w. SEE: *Kirschner wire*.

separating w. A brass wire used in dentistry to separate teeth before banding them.

wired Slang for tense and anxious, esp. when the condition is caused by the effect of a psychoactive drug.

wire localization The insertion of a radiographically guided, thin metal wire into a small suspicious lesion to direct the surgeon to the lesion making it easier to biopsy or remove.

wiring (wīr'ing) Fastening bone fragments together with wire.

circumferential w. A method of treating a fractured mandible by passing wires around the bone and a splint in the oral cavity.

continuous loop w. The forming of wire loops on both mandibular and maxillary teeth to provide attachment sites for rubber bands. These are used in treating fractures of the mandible. SYN: *Stout's wiring*.

craniofacial suspension w. Wiring using bones not contiguous with the oral cavity for attachment of wires that lead from those bones to the fractured jaw segments.

Gilmer w. Wiring of single opposed teeth by use of wire passed circumferentially around the two teeth and the ends twisted together. The twisted ends are placed where they will not irritate adjacent soft tissues. This procedure is used to produce intermaxillary fixation.

Ivy loop w. The placement of wire around adjacent teeth to provide an attachment site for rubber bands.

perialveolar w. The use of wires to fix a splint to the mandible. The wires are passed through the alveolar process from the buccal plate to the palate.

pyriform w. Wiring using the nasal bones to stabilize a fracture of the jaw. The wires are passed through the pyriform aperture of the nasal bone and then to the segment.

silver w. Abnormal reflections of light seen on the ophthalmoscopic examination of the retina of persons with long-standing, uncontrolled hypertension.

Stout's w. Continuous loop w.

Wirsung, duct of (vēr'soong) [Johann Georg Wirsung, Ger. physician, 1600–1643] Pancreatic duct.

Wisconsin Card Sorting Test (wīskōn'sin) ABBR: WCST. A neuropsychiatric test in which subjects are asked to group a series of symbols by their form and color. The test and its adaptations are used to assess disorders that affect the frontal lobes of the brain, e.g., schizophrenia.

Wiskott-Aldrich syndrome (vīs'kōt-äl'drich) [Alfred Wiskott, Ger. pediatrician, 1898–1978; Robert A. Aldrich, U.S. pediatrician, 1917–1998] An X-linked immune deficiency syndrome whose hallmarks are decreased resistance to infection, eczema, and thrombocytopenia. The number of T lymphocytes in the blood and lymph nodes declines, blood levels of immunoglobulin M class antibodies are reduced, and

the response to many antigens is inadequate. If bone marrow transplant is unsuccessful, the patients die at a young age from infection.

withdrawal Cessation of administration of a drug, esp. a narcotic or alcohol to which the individual has become either physiologically or psychologically addicted. Withdrawal symptoms vary with the type of drug used. Neonates may exhibit withdrawal symptoms from drugs or alcohol ingested by the mother during pregnancy. SEE: *drug addiction*.

caffeine w. SEE: *caffeine*; *caffeine withdrawal headache*; *coffee*; *tea*.

withdrawal bleeding Uterine bleeding following discontinuation of treatment with cyclic hormone replacement therapy. It is caused by sloughing of the endometrium but is not technically considered menstruation because it is not associated with an ovulatory cycle.

withdrawal syndrome Irritability, autonomic hyperactivity, hallucinations, or other phenomena resulting from the withdrawal of alcohol, stimulants, or some opiates.

opiate perinatal w.s. Intrauterine hyperactivity and increased oxygen consumption associated with opiate withdrawal in infants of addicted mothers. The syndrome places infants at increased risk for meconium aspiration pneumonia and transient tachypnea.

witkop (wīt'kōp) [Afrikaans, white scalp] Matted crusts in the hair producing a scaplike structure; seen in South African natives.

witness A person having knowledge or information about a particular subject or event.

expert w. A qualified person who assists a judge and jury in understanding technical aspects of a lawsuit, such as breaches of the standard of care and damages or injuries sustained. SEE: *table*.

fact w. A person who has knowledge of circumstances surrounding the events of the alleged incident in a complaint or petition for damages. SYN: *material witness*.

material w. Fact w.

Witzel jejunostomy (vīt'zēl) [Friedrich O. Witzel, Ger. surgeon, 1865–1925] A jejunostomy created by inserting a rubber or silicone catheter into the jejunum and bringing it to the skin surface. Medication and feedings can be administered on a long-term basis. SEE: *jejunostomy*.

witzelsucht (vīt'sēl-zookt) A condition produced by frontal lobe lesions characterized by self-amusement from poor jokes and puns. SEE: *moria*.

primary affective w. A peculiar variety of witzelsucht characterized by teutonization of nomenclature.

Wobe-Mugos E A mixture of enzymes,

Ethical Requirements for Expert Witnesses

Requirement	Rationale
Experts should testify only about those aspects of care for which they have direct knowledge, specific educational background, and clinical experience	Limits the likelihood that generalists will provide testimony outside their areas of specialization or expertise
The testimony should be based on a complete review of all the facts of a case	Decreases the chances that the medical record will be misinterpreted as a result of bias or incomplete study
The testimony must be scientifically up-to-date and its conclusions must be verifiable using evidence-based scholarship	Prevents the witness from relying on subjective impressions, ideas, or personal experiences
The payment that the witness receives must not be contingent on securing a victorious outcome at trial	Limits the motivation to alter testimony purely for financial gain

including chymotrypsin and trypsin (obtained from cow and pig pancreas) and papain (from papaya) used as anti-inflammatory and anticancer treatments, esp. in the treatment of multiple myeloma.

Wohlfahrtia (völ-fär'tē-ä) [Peter Wohlfahrtia, Ger. author, 1675–1726] A genus of flies parasitic in animal tissue, belonging to the family Sarcophagidae, order Diptera.

W. magnifica A species found in southeast Europe. The larvae may occur in human and animal wounds.

W. vigil A species found in Canada and the northern United States.

Wolbachia (wöl-bäk'ē-ä) A genus of bacteria that live only inside the cells of host insects. They have been associated with the blindness caused by *Onchocerca volvulus*.

Wolfe's graft (woolfs) A graft using the whole skin thickness.

wolffian body (wool'fē-än) [Kaspar Friedrich Wolff, Ger. anatomist, 1733–1794] Mesonephros. SEE: *embryo; par-oophoron; parovarium*.

wolffian cyst A cyst lying in one of the broad ligaments of the uterus.

wolffian duct The duct in the embryo leading from the mesonephros to the cloaca. From it develop the ductus epididymis, ductus deferens, seminal vesicle, ejaculatory duct, ureter, and pelvis of the kidney. SYN: *mesonephric duct*.

Wolff's law (völfs) [Julius Wolff, Ger. anatomist and surgeon, 1835–1902] Law that states that bones adapt structurally to resist the specific forces acting on them.

Wolff-Parkinson-White syndrome (wölf pä'r'kīn-sōn-wīt') [Louis Wolff, U.S. cardiologist, 1898–1972; Sir John Parkinson, Brit. physician, 1885–1976; Paul Dudley White, U.S. cardiologist, 1886–1973] ABBR: WPW. A disease manifested by occasional episodes of potentially life-threatening tachycardia, in which there is an abnormal electrical

pathway in the heart connecting the atria to the ventricles.

ETIOLOGY: In some families, the disease is transmitted as an autosomal dominant trait.

DIAGNOSIS: In electrocardiography, the P-R interval is less than 0.12 sec and the QRS complex is widened as a result of an initial electrical deflection, called the delta wave.

TREATMENT: Ablation of the abnormal accessory pathway cures about 92% of patients. SEE: *pre-excitation, ventricular*.

wolfram (wool'frām) Tungsten.

wolfsbane (wölfs'bān) Common name for several species of *Aconitum*, a genus of highly toxic, hardy perennials. Also called *monkshood*. SEE: *aconite*.

Wolhynia fever (völ-hīn'ē-ä) Trench fever.

WOMAC Western Ontario McMaster Osteoarthritis Index.

woman An adult human female.

womb (woom) [AS. *wamb*] Uterus.

Women's Health Initiative ABBR: WHI. A 15-year study of the most common causes of death and disability in postmenopausal women. Website: <http://www.nhlbi.nih.gov/whi/background.htm>.

Wood's rays (wüdz) [Robert Williams Wood, U.S. physicist, 1868–1955] Ultraviolet rays; used to detect fluorescent materials in the skin and hair in certain disease states such as tinea capitis. The terms Wood's light and Wood's lamp have become synonymous with Wood's rays, even though these are misnomers.

woodruff A low-growing, hardy perennial herb (*Galium odoratum* or *Asperula odorata*) used in alternative medicine to treat nervousness, insomnia, and cardiac irregularity. Liver damage has been reported in some patients after long-term use.

wool fat Anhydrous lanolin, a fatty substance obtained from sheep's wool; used as a base for ointments. It can produce

contact dermatitis in susceptible persons.

woolly hair syndrome A rare congenital disorder in which infants are born with wiry or unusually curly hair; sometimes associated with abnormal heart development; sometimes found only on hair that grows on nevi.

woolorter's disease A pulmonary form of anthrax that develops in those who handle wool contaminated with *Bacillus anthracis*. SEE: *anthrax*.

word blindness An inability to understand written or printed words. SYN: *alexia*; *visual aphasia*.

word deafness A form of aphasia in which sounds and words are heard but linguistic comprehension is absent. SYN: *auditory agnosia*; *auditory amnesia*; *auditory aphasia*; *pure word deafness*.

word salad The use of words indiscriminantly and haphazardly, that is, without logical structure or meaning. It is a finding in uncontrolled mania and schizophrenia.

work [Ger. *wirken*] **1.** A force moving a resistance. The amount of work done is the mathematical product of the force in the direction of movement, times the distance the object is moved in that direction. NOTE: If the object is not moved, then no work is done even though energy is expended. The SI unit of work is the joule (J). The dimensionally equivalent newton-meter (N•m) is sometimes used instead to signify work in physics. SEE: *calorie*; *erg*. **2.** The job, occupation, or task one performs as a means of providing a livelihood. **3.** The effort employed to explore interpersonal or psychological issues.

body w. SEE: *body work*.

social w. Provision of social services (in fields such as child welfare, criminal justice, hospital-based medicine, or mental health) and the promotion of social welfare by a professionally trained person. Social work often involves advocacy and aid for individuals who are poor, elderly, homeless, unemployed, or discriminated against in society because of gender, race, or other biases.

workaholic A colloquial term for a person addicted to occupational or productive pursuits who has difficulty relaxing or enjoying familial, social, or leisure activities.

workaround (wŭrk'ä-rownd") A temporary, improvised solution to a problem that may relieve the obstacle but circumvents rather than repairs it.

worker, sex An individual who engages in sexual activities in exchange for payment. SEE: *prostitution*.

workflow The processes involved in completing a job, including such functions as the organization of human or other resources; the design of tasks; the de-

velopment of procedures (and their implementation), followed by feedback, oversight, and quality improvement.

work hardening A series of conditioning exercises that an injured worker performs in a rehabilitation program. These are designed to simulate the functional tasks encountered on the job to which the individual will return.

working memory (wŭrk'ing) The ability to store and use those facts and ideas that are needed to carry out immediate tasks.

working through The combined efforts of a patient and mental health practitioner to understand the basis of behaviors, feelings, symptoms, or thoughts.

work-life balance A harmonious blend of occupational, familial, social, and leisure pursuits.

workout In athletics, a practice or training session.

workup The process of obtaining all of the necessary data for diagnosing and treating a patient. It should be done in an orderly manner so that essential elements will not be overlooked. Included are retrieval of all previous medical and dental records, the patient's family and personal medical history, social and occupational history, physical examination, laboratory studies, x-ray examinations, and indicated diagnostic surgical procedures. The patient's workup is an ongoing process wherein all hospital personnel involved cooperate in attempting to determine the correct diagnosis and effective therapy. SEE: *charting*; *medical record*, *problem-oriented*.

sepsis w. A colloquial term for the evaluation of a patient, esp. a neonate, with a fever, for laboratory evidence of severe infection. Common tests for febrile neonates include a complete blood count; blood cultures, cerebrospinal fluid, urine, and stool samples; and chest x-ray. Most neonates with a fever are given immediate treatment with broad-spectrum antibiotics pending the results of cultures.

World Health Organization ABBR: WHO. The United Nations agency concerned with international health and the eradication of disease.

worm (wŭrm) [AS. *wyrm*] **1.** An elongated invertebrate belonging to one of the following phyla: Platyhelminthes (flatworms); Nematelminthes or Aschelminthes (roundworms or threadworms); Acanthocephala (spinyheaded worms); and Annelida (Annulata) (segmented worms). SYN: *helminth*. **2.** Any small, limbless, creeping animal. **3.** The median portion of the cerebellum. **4.** Any wormlike structure.

bladder w. Cysticercus.

proboscis w. Acanthocephala.

thorny-headed w. Acanthocephala.

wormian bone SEE: *under bone*.

wormwood (wĕrm'wood) A toxic substance, absinthium, obtained from *Artemisia absinthium*. It was used in certain alcoholic beverages (absinthe), but because of its toxicity such use is prohibited in most countries.

worried well Persons who are healthy, but who, because of their anxiety or an imagined illness, frequent medical care facilities seeking reassurance concerning their health.

wound (wound) [AS. *wund*] A break in the continuity of body structures caused by violence, trauma, or surgery to tissues. In treating the nonsurgically created wound, tetanus prophylaxis must be considered. If not previously immunized, the patient should be given tetanus immune globulin.

PATIENT CARE: Successful wound assessment relies on a thorough, organized approach. This assessment includes the wound's location, size, depth, undermining, drainage, wound edges, base, and surrounding tissues. Include an assessment for any redness, swelling, tenderness, and gangrene/necrosis. The assessment includes the patient's vital signs and measures used, which improve the wound healing.

abdominal w. A wound that damages the abdominal wall and intraperitoneal and extraperitoneal organs and tissues. A careful examination (often including peritoneal lavage, ultrasonography, or computed tomographic scanning of the abdomen) is necessary to determine the precise nature of the injury and the proper course of treatment. Superficial injuries may require no more than ordinary local care; immediate laparotomy may be needed, however, when major bleeding or organ damage has occurred. Intravenous fluids, blood components, antibiotics, and tetanus prophylaxis are given when necessary. Major abdominal trauma may be overlooked in comatose or otherwise critically injured patients when there is no obvious abdominal injury. SEE: *abdomen*.

bullet w. A penetrating wound caused by a missile discharged from a firearm. The extent of injury depends on the wound site and the speed and character of the bullet. SEE: *Nursing Diagnostics Appendix; gunshot w.*

TREATMENT: Tetanus booster injection or tetanus immune globulin and antibiotics, if indicated, should be given. An appropriate bandage should be applied. Emergency surgery may be necessary. Complications, including hemorrhage and shock, should be treated.

contused w. A bruise in which the skin is not broken. It may be caused by a blunt instrument. Injury of the tissues under the skin, leaving the skin unbro-

ken, traumatizes the soft tissue. Ruptured blood vessels underneath the skin cause discoloration. If extravasated blood becomes encapsulated, it is termed hematoma; if it is diffuse, ecchymosis. SEE: *ecchymosis; hematoma*.

TREATMENT: Cold compresses, pressure, and rest, along with elevation of the injured area, will help prevent or reduce swelling. When the acute stage is over (within 24 to 48 hr), continued rest, heat, and elevation are prescribed. Aseptic drainage may be indicated.

crushing w. Trauma due to force applied to tissues so they are disrupted or compressed, but with minimal or no frank lacerations. If there is no bleeding, cold should be applied; if the wound is bleeding, application of the dressing should be followed by cold packs until the patient can be given definitive surgical treatment. If the bone is fractured, a splint should be applied.

fishhook w. An injury caused by a fishhook becoming embedded in soft tissue. Deeply embedded fishhooks are difficult to remove. One should push the hook through, then cut off the barb with an instrument, and pull the remainder of the fishhook out by the route of entry. Antitetanus treatment should be given as indicated. Because these injuries often become infected, prophylactic use of a broad-spectrum antibiotic is indicated.

gunshot w. ABBR: GSW. A penetrating injury from a bullet shot from a gun. At very close range, the wound may have gunpowder deposits and the skin burn marks. GSWs can crush, penetrate, stretch, cavitate, or fracture body structures. The severity of the wound may depend on the structures damaged, the velocity and caliber of the bullet, and the underlying health of the victim. SEE: *bullet w.*

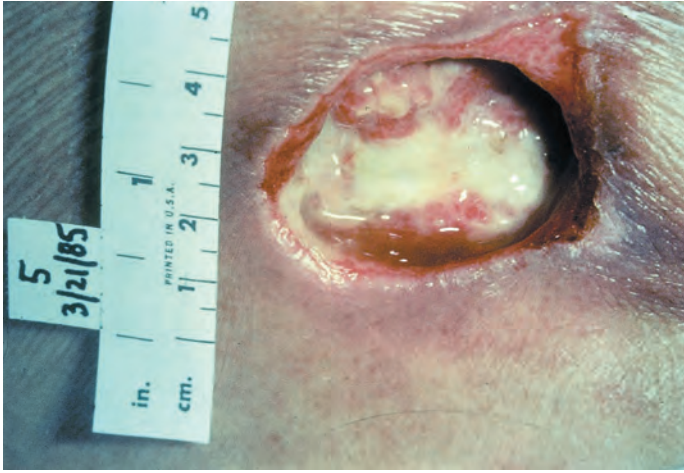
nonpenetrating w. A wound in which the surface of the skin remains intact.

open w. A contusion in which the skin is also broken, such as a gunshot, incised, or lacerated wound. SEE: *illus.*

penetrating w. A wound in which the skin is broken and the agent causing the wound enters subcutaneous tissue or a deeply lying structure or cavity.

perforating w. Any wound that has breached the body wall or internal organs. The perforation may be partial or complete.

puncture w. A wound made by a sharp-pointed instrument such as a dagger, ice pick, or needle. A puncture wound usually is collapsed, which provides ideal conditions for infection. The placement of a drain, antitetanus therapy or prophylaxis, and gas gangrene prophylaxis may be required. This will



OPEN WOUND

An open cavity wound

depend on the nature of the instrument that caused the injury.

subcutaneous w. A wound, such as contusion, that is unaccompanied by a break in the skin.

tunnel w. A wound having a small entrance and exit of uniform diameter.

wound ballistics The study of the effects on the body produced by penetrating projectiles.

wound care Any technique that enhances the healing of skin abrasions, blisters, cracks, craters, infections, lacerations, necrosis, and/or ulcers. Wound care involves

1. local care to the skin, with débridement and dressings;
2. careful positioning of the affected body part to avoid excessive pressure on the wound;
3. application of compression or medicated bandages;
4. treatment of edema or lymphedema;
5. treatment of infection;
6. optimization of nutrition and blood glucose levels;
7. the use of supports and cushions; and
8. maximization of blood flow and oxygen.

Website: Association for the Advancement of Wound Care:

www.aawcone.org/patientresources.shtml.

wound healing SEE: *healing; inflammation*.

W-plasty A technique used in plastic surgery to prevent contractures in straight-line scars. Either side of the wound edge is cut in the form of connected W's, and the edges are sutured together in a zig-

zag fashion. SEE: *tissue expansion, soft; Z-plasty*.

wrap 1. A covering, esp. one that is wound tightly around an object, as an elastic wrap or a compression wrap. 2. To wind a covering around an object.

compression w. An elastic bandage used to prevent or reduce the formation of edema. The wrap is applied starting distally; it uses overlapping spirals to progress proximally. Greater pressure is applied distally than proximally, creating a compression gradient that encourages venous and lymphatic return. SEE: *illus*.



COMPRESSION WRAP

Wright's stain (rītz) [James H. Wright, U.S. pathologist, 1871–1928] A combination of eosin and methylene blue used in staining blood cells to reveal malarial parasites and to differentiate white blood cells.

wrinkle (rīng'kl) [AS. *gewrinclian*, to wind] 1. A crevice, furrow, or ridge in

the skin. **2.** To make creases or furrows, as in the skin by habitual frowning.

wrinkle test A test of sensibility following complete transection of or damage to peripheral nerves based on the characteristic sympathetic response of skin following extended immersion in water. SEE: *nerve*.

Wrisberg's ganglion (rīs'bürgz) [Heinrich August Wrisberg, Ger. anatomist, 1739–1808] A ganglion of the superficial cardiac plexus, between the aortic arch and the pulmonary artery. Also called *Wrisberg's cardiac ganglion*. SYN: *cardiac ganglion*.

wrist (rīst) [AS] The joint or region between the hand and the forearm. SEE: *hand for illus.*; *skeleton*.

wrist-driven hand orthosis ABBR: WDHO. An orthotic that uses the muscles of the wrist, esp. the extensor muscles, to drive the fingers together into a grasping motion. It can be used by people with paralysis of the hand to improve the ability to hold on to and release objects.

wrist-driven wrist-hand orthosis ABBR: WDWHO. Dynamic splint used for functional grasp by individuals with C6 tetraplegia. SEE: *tenodesis (2)*; *universal cuff*.

wrist drop A condition in which the hand is flexed at the wrist and cannot be extended; may be due to injury of the radial nerve or paralysis of the extensor muscles of the wrist and hand.

wrist unit A component of an upper-extremity prosthesis that attaches the terminal device to the forearm section and provides for pronation or supination.

writing The act of placing characters, letters, or words together for the purpose of communicating ideas.

dextrad w. Writing that progresses from left to right.

mirror w. SEE: *mirror writing*.

writing therapy Writing a journal or diary to explore and record one's feelings and thus to make progress toward desired psychological goals.

written action plan ABBR: WAP. A flexible script that patients may use to guide their own outpatient therapy when they experience deterioration in a chronic health care condition.

PATIENT CARE: WAPs were initially introduced into asthma therapy to guide the use of inhaled and oral steroid use but can be used in other conditions as well.

WAPs typically include: 1. How to recognize signs of worsening illness; 2. treatment protocols; 3. the duration of and how to modify or increase the intensity of treatments; 4. When to seek

additional help from health care professionals.

written treatment agreement A formal contract or plan established by a health care provider and a patient, specifying the manner in which certain forms of care will be delivered. Written treatment agreements are used most often in managing prescriptions for narcotic pain relievers. In that setting they are sometimes referred to colloquially as *drug contracts*.

wrongful birth, wrongful life The idea that conception would have been prevented or pregnancy would have been interrupted if the parents had been adequately informed of the possibility that the mother would give birth to a physically or mentally challenged child.

wryneck (rī'nēk) Torticollis.

wt *weight*.

Wuchereria (voo'kēr-ē'rē-ā) [Otto Wucherer, Ger. physician, 1820–1873] A genus of filarial worms of the class Nematoda, commonly found in the tropics.

W. bancrofti A parasitic worm that is the causative agent of elephantiasis. Adults of the species live in human lymph nodes and ducts. Females give birth to sheathed microfilariae, which remain in internal organs during the day but at night are in circulating blood, where they are sucked up by night-biting mosquitoes, in which they continue their development, becoming infective larvae in about 2 weeks. They are then passed on to humans when the mosquito bites. SYN: *Filaria bancrofti*. SEE: *illus.*



50 μm

WUCHERERIA BANCROFTI

Microfilaria (×400)

W. malayi A species occurring in Southeast Asia and largely responsible for lymphangitis and elephantiasis in that region. It closely resembles *W. bancrofti*.

wuchereriosis (voo'kēr-ē-rī'ā-sīs) Elephantiasis.

w/v *weight in volume*.

w/w *weight in weight*.

Wymox (wī'möks") SEE: *amoxicillin*.



X Symbol for Kienböck's unit of x-ray dose; symbol for xanthine.

Xalatan Latanoprost.

Xanax Alprazolam.

xanthelasma (zăn'thêl-ăz'mă) [Gr. *xanthos*, yellow, + *elasma*, plate] A yellow, lipid-rich plaque (a xanthoma) present on the eyelids, esp. near the inner canthus. **SEE:** *illus.*



XANTHELASMA

xanthematin (zăn-thêm'ă-tîn) A yellow substance produced by the action of nitric acid on hematin.

xanthemia (zăn-thê'mê-ă) [ʹ + *haima*, blood] Carotenemia.

xanthene (zăn'thên) A crystalline compound, $O=(C_6H_4)_2=CH_2$, from which various dyes are formed, including rhodamine and fluorescein.

xanthic (zăn'thik) [Gr. *xanthos*, yellow]
1. Yellow. 2. Pert. to xanthine.

xanthine (zăn'thîn, -thên) A nitrogenous compound present in muscle tissue, liver, spleen, pancreas, and other organs, and in the urine. It is formed during the degradation of adenosine monophosphate to uric acid.

dimethyl-x. Theobromine.

xanthine base A group of chemical compounds including xanthine, hypoxanthine, uric acid, and theobromine, which have a purine as their base. **SYN:** *purine base.*

xanthinuria, xanthiuria (zăn'thên'ūr'ê-ă, zăn'thê-ūr'ê-ă) The excretion of large amounts of xanthine in the urine. **SYN:** *xanthuria.*

xanthochromia (zăn'thō-krō'mê-ă) [ʹ + *chroma*, color] Yellow discoloration, as of the skin in patches or of the cerebrospinal fluid, resembling jaundice.

xanthochromic (zăn'thō-krō'mîk) 1. Pert. to anything yellow. 2. Pert. to xanthochromia.

xanthocyanopia, xanthocyanopsia (zăn'thō-sī-ăn-ō'pê-ă, -ōp'sê-ă) [Gr. *xanthos*, yellow, + *kyanos*, blue, + *opsis*, sight] A form of color blindness in which yellow and blue are distinguishable, but not red and green. **SYN:** *xanthokyanopy.*

xanthocyte (zăn'thō-sīt) [ʹ + *kytos*, cell] A cell containing yellow pigment.

xanthoderma (zăn'thō-dêr'mă) [ʹ + *derma*, skin] Yellowness of the skin.

xanthodont (zăn'thō-dōnt) [ʹ + *odous*, tooth] An individual who has yellow teeth.

xanthogranuloma (zăn'thō-grăn'ū-lō'mă) [ʹ + L. *granulum*, grain, + *oma*, tumor] A tumor having characteristics of both an infectious granuloma and a xanthoma.

juvenile x. A skin disease that may be present at birth or develop in the first months of life. Firm dome-shaped yellow, pink, or orange papules, ranging from a few millimeters to 4 cm in diameter, are usually present on the scalp, face, and upper trunk. Biopsy of these lesions reveals lipid-filled histiocytes, inflammatory cells, and Touton giant cells (multinucleated vacuolated cells with a wreath of nuclei and peripheral rim of foamy cytoplasm). The lesions regress spontaneously during the first years of life. Juvenile xanthogranuloma of the iris is one of the most common causes of bleeding into the anterior chamber of the eye in childhood.

xanthokyanopy (zăn'thō-kī-ăn'ō-pê) [ʹ + *kyanos*, blue, + *opsis*, sight] Xanthocyanopia.

xanthoma (zăn'thō'mă) [Gr. *xanthos*, yellow, + *oma*, tumor] Soft, yellow skin plaques or nodules that contain deposits of lipoproteins inside histiocytes; they are esp. likely to be found on the skin of patients with hyperlipidemia.

diabetic x. A yellow fatty skin deposit associated with uncontrolled diabetes mellitus.

x. disseminatum A condition characterized by the presence of xanthomata throughout the body, esp. on the face, in tendon sheaths, and in mucous membranes. **SEE:** *Hand-Schüller-Christian disease.*

x. multiplex Xanthomata all over the body.

x. palpebrarum Xanthoma affecting the eyelids.

x. tuberosum A form of xanthoma that may appear on the neck, shoulders, trunk, or extremities, consisting of small elastic and yellowish nodules.

xanthomatosis (zăn"thō-mă-tō'sis) [" + " + *osis*, condition] A condition in which there is a deposition of lipid in tissues, usually accompanied by hyperlipemia. Cholesterol may accumulate in tumor nodules (xanthoma) or in individual cells, esp. histiocytes and reticulo-endothelial cells.

xanthomatous (zăn-thō'mă-tūs) Concerning xanthoma.

Xanthomonas maltophilia (zăn-thō'mō-nās) SEE: *Stenotrophomonas maltophilia*.

xanthophose (zăn'thō-fōz) [" + *phos*, light] Any yellow phase. SEE: *phase*.

xanthophyll (zăn'thō-fl) [" + *phyllon*, leaf] A yellow pigment derived from carotene. It is present in some plants and egg yolk.

xanthoprotein (zăn'thō-prō'tē-īn) A yellow substance produced by heating proteins with nitric acid.

xanthopsia (zăn-thōp'sē-ā) [" + *opsis*, sight] A condition in which objects appear to be yellow.

xanthopsis (zăn-thōp'sis) A yellow pigmentation seen in certain cancers and degenerating tissue.

xanthosis (zăn'thō'sis) [" + *osis*, condition] A yellowing of the skin seen in carotenemia resulting from ingestion of excessive quantities of carrots, squash, egg yolk, and other foods containing carotenoids. The condition is usually harmless, but it may indicate an increase of lipochromes in the blood caused by other conditions such as hypothyroidism, diabetes, or a malignancy.

xanthous (zăn'thūs) [Gr. *xanthos*, yellow] Yellow.

xanthurenic acid (zăn-thū-rēn'ik) An acid, C₁₀H₇NO₄, excreted in the urine of pyridoxine-deficient animals after they are fed tryptophan. Also called 4,8-dihydroxyquinaldic acid.

xanthuria (zăn-thū-rē-ā) [" + *ouron*, urine] Xanthinuria.

x-disease Aflatoxicosis.

XDR-TB Extremely drug-resistant *Mycobacterium tuberculosis*.

Xe Symbol for the element xenon.

xeno- [Gr. *xenos*, stranger] Combining form indicating *strange*, *foreign*.

xenobiotic (zěn"ō-bi-ōt'ik) An antibiotic not produced by the body, and thus foreign to it.

xenodiagnosis (zěn"ō-dī-āg-nō'sis) [" + "] The diagnosis of parasitic infection in humans or animals using an intermediate host such as an insect as a culture tool. Uninfected insects are allowed to feed on the infected person. The insects are subsequently tested for the presence of infection, e.g., Chagas' disease or leishmaniasis, a few days or weeks later.

xenogeneic (zěn"ō-jēn-ā'ik) [" + *gennan*, to produce] Obtained from a different species. Antigenically foreign.

xenogenous (zěn-ōj'ēn-ūs) [Gr. *xenos*, stranger, + *gennan*, to produce] **1.** Caused by a foreign body. **2.** Originating in the host, as a toxin resulting from stimuli applied to cells of the host.

xenograft (zěn"ō-grāft) [" + L. *graphium*, stylus] A surgical graft of tissue from an individual of one species to an individual of a different species. SYN: *heterograft*.

xenomenia (zěn-ō-mē'nē-ā) [" + *meniaia*, menses] Menstruation from a part of the body other than the uterus. SYN: *stigmata*; *menstruation*, *vicarious*. SEE: *endometriosis*.

xenon (zē'nōn) [Gr. *xenos*, stranger] SYMB: Xe. A gaseous element; atomic weight, 131.29; atomic number, 54. Xenon can be used as an (expensive) anesthetic agent. It is neither explosive nor inflammatory, and it is analgesic and hypnotic. It has no teratogenic effects, does not suppress cardiac function, and has a short recovery time.

PATIENT CARE: Radioactive isotopes of xenon, including Xe¹³³ and Xe¹²⁷, are used in ventilation/perfusion (V/Q) lung scans to diagnose pulmonary embolism. The xenon gas is the ventilation agent in the study, i.e., the agent that highlights how well gases move in and out of lung tissues. An isotope of technetium is used to demonstrate pulmonary blood flow.

xenoparasite (zěn"ō-pār'ă-sīt) An ectoparasite of a weakened animal, one that would not normally serve as a host.

xenophobia (zěn"ō-fō'bē-ā) [" + *phobos*, fear] Abnormal dread of strangers.

xenophonia (zěn"ō-fō'nē-ā) [" + *phone*, voice] Alteration in accent and intonation of a person's voice resulting from a speech defect.

xenophthalmia (zěn"ōf-thāl'mē-ā) [" + *ophthalmia*, eye inflammation] Inflammation of the eye caused by a foreign body.

Xenopsylla (zěn"ōp-sil'ă) [" + *psylla*, flea] A genus of fleas belonging to the family Pulicidae, order Siphonaptera.

X. cheopis The rat flea; other hosts include humans. This species is a vector for a number of pathogens including *Hymenolepis nana*, the dwarf tapeworm; *Salmonella* organisms; the causative organisms of bubonic and sylvatic plague and endemic typhus.

xenotransplantation (zěn"ō-trāns"plānt-ă'shūn) Transplantation of animal tissues or organs into humans.

xenotropic (zěn"ō-trōp'ik) [" + Gr. *tropikos*, turning] Of some viruses, capable of growing in a species that differs from their normal host

xerantic (zē-rān'tik) [Gr. *xeros*, dry] Causing dryness. SYN: *siccant*; *siccative*.

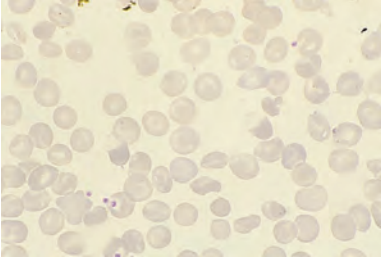
xerasia (zē-rā'sē-ā) [Gr. *xeros*, dry] A disease of the hair in which there is ab-

normal dryness and brittleness, and eventually hair loss.

xero- Combining form meaning *dry*.

xerocheilia (zē'rō-kī'lē-ā) [ʹ + *cheilos*, lip] Dryness of the lips; a type of cheilitis.

xerocyte (zē'rō-sīt) An erythrocyte that is dehydrated and appears to have "puddled" at one end, seeming half dark and half light. This type of cell is found in hereditary xerocytosis. **SEE:** *illus.*; *xerocytosis*, *hereditary*.



XEROCYTES

xerocytosis, hereditary (zē'rō-sī-tō'sīs)

A disorder of erythrocytes usually inherited as an autosomal dominant trait. A membrane defect in the red blood cells permits the loss of excess potassium ions and water, causing dehydration of the cells. Hemolysis and anemia range from mild to severe. **SEE:** *xerocyte* for *illus*.

xeroderma (zē'rō-dēr'mā) [ʹ + *derma*, skin] Roughness and dryness of the skin; mild ichthyosis.

x. pigmentosum A rare, progressive, autosomal recessive, degenerative disease characterized by severe photosensitivity developing in the first years of life. There is rapid onset of erythema, bullae, pigmented macules, hypochromic spots, and telangiectasia. The skin becomes atrophic, dry, and wrinkled. A variety of benign and malignant growths appear early in life. The condition is treated symptomatically and sunlight is avoided. **SYN:** *Kaposi's disease*; *melanosis lenticularis*.

xerography (zē-rōg'rā-fē) Xeroradiography.

xeroma (zē-rō'mā) [ʹ + *oma*, tumor] Xerophthalmia.

xeromycteria (zē'rō-mīk-tē'rē-ā) [ʹ + *mykter*, nose] Dryness of the nasal passages.

xerophthalmia (zē-rōf-thāl'mē-ā) [ʹ + *ophthalmos*, eye] Conjunctival dryness with keratinization of the epithelium following chronic conjunctivitis and in disease caused by vitamin A deficiency. **SYN:** *xeroma*; *xerophthalmus*. **SEE:** *Schirmer's test*.

xerophthalmus (zē'rōf-thāl'mūs) Xerophthalmia.

xeroradiography (zē'rō-rā'dē-ōg'rā-fē)

A method of photoreproduction used in radiography. It is a dry process involving the use of metal plates covered with a powdered substance, such as selenium, electrically and evenly charged. The x-rays alter the charge of the substance to varying degrees, depending on the tissues they have traversed. This produces the image. This procedure has been replaced by film and screen mammography because of its high radiation dose.

xerosis (zē-rō'sīs) [Gr.] Abnormal dryness of the skin, mucous membranes, or conjunctiva. **SEE:** *illus.* **xerotic**, *adj.*



XEROSIS

xerostomia (zē'rō-stō'mē-ā) [ʹ + *stoma*, mouth] Dry mouth.

xerotocia (zē'rō-tō'sē-ā) [ʹ + *tokos*, birth] Dry labor caused by a diminished amount of amniotic fluid.

X factor A growth factor, identified as hemin, that is needed to grow the bacterium, *Haemophilus influenzae* in culture.

-ximab (zī'māb) [from the shape of the Gr. letter chi (X) in "chimera" as if it were a Latin "X" + monoclonal antibody] A combining form for *chimeric monoclonal antibody*. Unlike monoclonal antibodies made from humanized sources (-zumabs), -ximabs usually elicit a neutralizing antibody response in a patient who receives them.

X inactivation The silencing of the genes on one of a woman's paired X chromosomes, allowing the other chromosome's genes to be expressed phenotypically. The process is not universal but affects 75% or more of the genes on the chromosome. Genes that are found near the short end of the chromosome are more likely than the rest to be expressed phenotypically, i.e., to escape inactivation.

xiphi-, xipho-, xiph- Combining forms meaning *sword-shaped*, *xiphoid*.

xiphisternum (zif'ī-stēr'nūm) [Gr. *xiphos*, sword, + *sternon*, chest] Xiphoid process.

xiphocostal (zif'ō-kōs'tāl) [" + L. *costa*, rib] Rel. to the xiphoid process and ribs.

xiphodynia (zif'ō-dīn'ē-ā) [" + *odyne*, pain] Pain in the xiphoid process.

xiphoid (zif'oyd) [Gr. *xiphos*, sword, + *eidōs*, form, shape] Sword-shaped. SYN: *ensiform*.

xiphoiditis (zif'oyd-ī'tīs) [" + " + *itis*, inflammation] Inflammation of the xiphoid process.

xiphopagotomy (zī-fōp'ā-gōt'ō-mē) Surgical separation of twins joined at the xiphoid process.

xiphopagus (zī-fōp'ā-gūs) [" + *pagos*, thing fixed] Symmetrical twins joined at the xiphoid process.

X-linked (x'līnkt) Denoting characteristics that are transmitted by genes on the X chromosome.

X-linked disorder A disease caused by genes located on the X chromosome. SEE: *choroideremia*; *hemophilia*.

X^m The X chromosome that a child gets from his or her mother.

X^p The X chromosome that a daughter gets from her father.

x radiation SEE: under *radiation*.

x-ray **1.** Electromagnetic radiation having a wavelength between 0.1 and 100 angstrom units. **2.** A term commonly but loosely used to signify an image of a part of the body made with electromagnetic radiation. The formal synonym for this colloquial term is *radiograph*.

x-ray photon An uncharged particle of energy, moving in waves produced by the interaction of high-speed electrons with a target (commonly tungsten).

These particles vary from those of lower energy (1 to 0.1 A.U.), used in diagnostic imaging, to those of higher energy (0.1 to 10⁻⁴ A.U.), used in therapy. SYN: *roentgen ray*.

xylylene (zī'lēn, zī-lēn') A mixture of isomeric dimethylbenzenes used in making lacquers and rubber cement. SYN: *xylol*.

xylenol (zī'lē-nōl") General name for a series of dimethylphenols found in the pine-type coal tar disinfectants.

xylitol (zī'lī-tōl) A five-carbon sugar alcohol that has a sweet taste and has chemical properties similar to those of sucrose. It may be used in place of sucrose as a sweetener. The use of xylitol in the diet might reduce tooth decay in children. SEE: *wood sugar*.

xylol (zī'lōl) Xylene.

xylose (zī'lōs) [Gr. *xylon*, wood] Wood sugar (also known as birch sugar). It is a sugar substitute obtained from tree sap, but can also be found in fruits and vegetables (such as berries or corn). SYN: *wood sugar*.

xylulose (zī'lū-lōs) A pentose sugar present in nature as L-xylulose. It appears in the urine in essential pentosuria and in the form of D-xylulose.

xyllyl (zī'līl) A radical, CH₃C₆H₄CH₂—, formed by the removal of a hydrogen atom from xylene.

xyrospasm (zī'rō-spāzm) [Gr. *xyron*, razor, + *spasmos*, a convulsion] An occupational spasm or overuse syndrome involving the fingers and arms; seen in barbers.

xyster (zīs'tēr) [Gr., scraper] Raspatory.



Y Symbol for the element yttrium.

yage [Brazilian, indigenous] **1.** A tropical South American vine, *Banisteriopsis caapi*, whose bark is boiled to make a tea with hallucinogenic properties. **2.** The popular name of the tea made from the vine of the same name.

Yale brace (yāl) A lightweight orthotic used to stabilize the cervical spine (i.e., after vertebral fracture). It consists of a cervical collar with supports that hold the collar firmly on the chest and upper back.

yangona A tropical herb, formally known as *Piper methysticum*, and more commonly called *kava kava*.

Yankauer suction catheter (yäng'kow-ër) A rigid suction tip used to aspirate secretions from the oropharynx.

yard [AS. *gerd*, a rod] A measure of 3 ft or 36 in.; equal to 0.9144 m. SEE: *Weights and Measures Appendix*.

yawn (yawn) [AS. *geonian*] To open the mouth involuntarily and take a deep breath, a movement mediated by neurotransmitters in the hypothalamus and often associated with stretching.

yawning (yawn'ing) Deep inspiration with the mouth wide open. It is associated with drowsiness, boredom, anxiety, or fatigue. SEE: *paniculation*.

yaws (yawz) An infectious nonvenereal disease caused by a spirochete, *Treponema pertenue*, and mainly found in humid, equatorial regions. The disease is marked by fevers, joint pains, and ca-seating eruptions on the hands, feet, face, and external genitals. The infection is rarely, if ever, fatal but can be disfiguring and disabling. It is treated with penicillin. SYN: *bouba*; *frambesia*; *pian*.

mother y. A papilloma that is the initial lesion of yaws, occurring at the site of inoculation 3 to 4 weeks after infection. This lesion persists for several weeks or months and is painless unless there is a secondary infection. SYN: *frambesioma*.

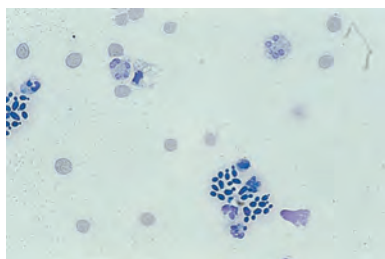
Yb Symbol for the element ytterbium.

Y-connector A glass or plastic connector that divides one incoming line into two outgoing ones.

years of life lost The number of years a person might have lived if the accident or disease that killed him had not occurred.

yeast (yëst) [AS. *gist*] **1.** Any of several unicellular fungi of the genera *Saccharomyces* or *Candida*, which reproduce by budding. They are capable of fermenting carbohydrates. Yeasts, esp. *Can-*

didia albicans, may cause systemic infections as well as vaginitis and oral thrush. Yeast infections are frequently present in patients with malignant lymphomas, poorly controlled diabetes mellitus, AIDS, or other conditions causing immunocompromise. SYN: *Saccharomyces*. SEE: *illus.*; *Candida*; *candidiasis*; *fungi*. **2.** A commercial product composed of meal impregnated with living fungi, used, for example, in fermenting beer and ale and baking bread.



BUDDING YEAST

(In peritoneal fluid ($\times 400$))

brewer's y. Yeast obtained during the brewing of beer. It is a rich source of folic acid and chromium.

dried y. Dried yeast cells from strains of *Saccharomyces cerevisiae*. It is used as a source of proteins and vitamins, esp. B complex.

yellow (yël'ō) [AS. *geolu*] One of the primary colors resembling that of a ripe lemon.

visual y. Macula lutea of the retina

yellow fever One of two forms of an acute, infectious disease caused by a flavivirus and transmitted by the *Aedes* mosquito. It is endemic in Western Africa, Brazil, and the Amazon region of South America but is no longer present in the U.S.

There are two forms of yellow fever: urban, in which the transmission cycle is mosquito to human to mosquito; and sylvan, in which the reservoir is wild primates.

According to the World Health Organization, yellow fever afflicts about 200,000 people a year in Africa and South America, about 30,000 of whom die.

ETIOLOGY: The virus is carried most commonly by the *Aedes aegypti* mosquito, but the *Aedes vittatus* and *Aedes taylori* mosquitoes also are important vectors.

SYMPTOMS: After an incubation period of 3 to 6 days, patients develop high fever, headache, muscle aches, nausea and vomiting, and gastrointestinal disturbances such as diarrhea or constipation. In most patients, the disease resolves in 2 or 3 days, but in about 20% the fever returns after a 1 to 2 day remission period and is accompanied by abdominal pain, severe diarrhea, gastrointestinal bleeding (producing a characteristic "black vomit"), anuria, and jaundice (from which the name "yellow fever" was derived) caused by liver infection. Rarely, there is progressive liver failure, renal failure, and death.

Yellow fever can be distinguished from dengue by the presence of jaundice, and from malaria by the absence of splenomegaly and low serum transaminase levels. Blood tests can identify the virus and its antigens, to which antibodies are formed in 5 to 7 days. A liver biopsy to isolate the virus is contraindicated because of the risk of bleeding.

LABORATORY FINDINGS: As in many viral infections, the white blood cell count and platelet count may be suppressed. The erythrocyte sedimentation rate is rarely elevated. In severely ill patients with jaundice or renal failure, the serum bilirubin and creatinine levels are elevated.

DIAGNOSIS: Diagnosis on clinical grounds alone is almost impossible during the period of infection or in atypical mild forms. Yellow fever viral antigen or antibodies may be detected during the acute phase of the illness.

PROPHYLAXIS: Preventive measures include mosquito control by screening, spraying with nontoxic insecticides, and destruction of breeding areas. Yellow fever vaccine prepared from the 17D strain is available for those who plan to travel or live in areas where the disease is endemic. The vaccine is contraindicated in the first 4 months of life and the first trimester of pregnancy.

TREATMENT: No antiviral agents are effective against the yellow fever virus. Fluids are given to maintain fluid and electrolyte balance, acetaminophen to reduce fever, and histamine blockers (e.g., ranitidine) or gastric acid pump inhibitors (e.g., omeprazole) to decrease the risk of gastrointestinal bleeding. Vitamin K is given if there is decreased production of prothrombin by the liver.

A live virus vaccine, which can be obtained only at designated vaccination centers, may be given to adults and children over age 9 months who are traveling to countries where yellow fever is endemic; the vaccine is effective for 10 years, after which a booster is required. Persons who are immunosuppressed, pregnant, or allergic to eggs should not receive the vaccine. Travelers need to

determine if the country they are visiting has regulations about vaccination.

PROGNOSIS: The prognosis is grave. Mortality is 5% for natives of an area where the disease is endemic.

yellow nail syndrome A condition marked by slowing of nail growth marked by yellowish discoloration, bilateral lymphedema, and recurrent pleural or pericardial effusions. It is typically found in persons with underlying autoimmune, lymphatic, or malignant diseases.

Yergason's test (yě'r'gǎ-sǐnz) A test used to identify subluxation of the long head of the biceps brachii muscle from the bicipital groove caused by disruption of the transverse humeral ligament. The patient is seated, the glenohumeral joint is in the anatomical position, the elbow flexed to 90 degrees, and the forearm supinated to assume the "palm up" position. The evaluator resists the patient as the shoulder is externally rotated and the elbow flexed. A positive test result is marked by a "snapping" sensation as the long head of the biceps brachii subluxates from the bicipital groove, indicating a tear of the transverse humeral ligament.

Yersinia (yě'r-sin'ē-ǎ) [Alexandre Emil Jean Yersin, Swiss bacteriologist who worked in Paris, 1863–1943] A genus of gram-negative coccobacilli of the family Enterobacteriaceae; several are human pathogens.

Y. enterocolitica A species that causes acute mesenteric lymphadenitis and enterocolitis. The disease may progress to a septicemic form in children, and mortality may be as high as 50%. Therapy with trimethoprim-sulfamethoxazole, aminoglycosides, tetracycline, third-generation cephalosporin, or quinolones is effective.

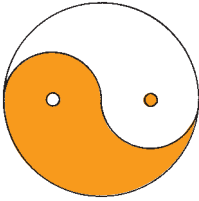
Y. pestis The species that causes bubonic and pneumonic plague. SEE: *plague*.

Y. pseudotuberculosis A species that causes pseudotuberculosis in humans.

yersiniosis (yě'r-sin'ē-ō'sis) Infection with *Yersinia* organisms.

ylilshen (yē-lē-shēn', -shēn') [Chinese Mandarin] A dietary supplement marketed as a treatment for erectile dysfunction. The U.S. Food and Drug Administration has issued a warning to consumers to avoid this product, which has been marketed under the trade name Actra-RX.

yin-yang (yīn-yǎng) The Chinese symbol of presumptively opposing but complementary entities or concepts such as light-dark, male-female, and sun-moon. In traditional Chinese philosophy and medicine, the goal is to have a proper balance of such forces. SEE: *illus*.



YIN-YANG

-yl [Gr. *hyle*, matter, substance] Suffix signifying a radical in chemistry.

-ylene Suffix denoting a bivalent hydrocarbon radical in chemistry.

yocto- [Fm. *octo-*, representing the eighth power of a thousandth] ABBR: y. A prefix used in the International System of Units (SI units) to signify 10^{-24} .

yoga [Sanskrit, union] A system of traditional Hindu beliefs, rituals, and activities that aims to provide spiritual enlightenment and self-knowledge. In the Western world, the term has been associated primarily with physical postures (asanas) and coordinated, diaphragmatic breathing. Many practitioners of complementary medicine use yoga to treat chronic musculoskeletal pain, anxiety, insomnia, and other conditions.

Hatha y. A branch of yoga popular in the West that relies on breathing techniques and the use of body postures to attain fitness, relaxation, and enlightenment.

yogurt, yoghurt (yōg'hūrt) [Turkish] A form of curdled milk created by culturing milk with *Lactobacillus bulgaricus*. Yogurt is a source of calcium and protein that is palatable. It may be better tolerated than milk by persons with lactase deficiency. Yogurt with live bacterial cultures is probiotic – it may be useful for replenishing intestinal flora that have been eradicated by antibiotics. SEE: *milk*.

yoke (yōk) A tissue connecting two structures.

yolk (yōk) [AS. *geolca*] The contents of the ovum; sometimes only the nutritive portion. SYN: *vitellus*. SEE: *zona pellucida*.

y. stalk The duct that connects the embryonic gut to the yolk sac; it disap-

pears during fetal development. SYN: *omphalomesenteric duct*; *vitelline duct*.

yonaki (yō-nā-kē) [Jap., literally, “night-time crying”] A culture-bound syndrome in Japan characterized by sleep-related nocturnal crying by children typically aged from 5 to 11 years.

yotta- [Fm. *octo-*, representing the eighth power of a thousand] A prefix used in the International System of Units (SI units) to signify 10^{24} .

Young-Helmholtz theory (yūng-hēlm'hōlts) [Thomas Young, Brit. physician, 1773–1829; Hermann Ludwig Ferdinand von Helmholtz, Ger. physician, 1821–1894] The theory that color vision depends on three different sets of retinal fibers responsible for perception of red, green, and violet. The loss of red, green, or violet as color perceptive elements in the retina causes an inability to perceive a primary color or any color of which it forms a part.

youth (yooth) [AS. *geoguth*] The period between childhood and maturity. Young adulthood is between 18 and 35 years of age.

youth friendly User friendly (acceptable or appealing) to young people between the ages of 10 and 24. The term is used to describe elements of health care that are accessible to and comfortable for preteens, adolescents, and young adults.

ypsiliform (īp-sīl'ī-form) Y-shaped.

y.s. *yellow spot* of the retina.

ytterbium (ī-tūr'bē-ūm) SYMB: Yb. A rare metallic earth element used in screens in radiography; atomic weight, 173.04; atomic number, 70.

yttrium (īt'rē-ūm) SYMB: Y. A metallic element; atomic weight, 88.905; atomic number, 39.

Yura, Helen (ūr'ă) A U.S. nurse-educator and author who published the first comprehensive text on the nursing process with Mary B. Walsh. SEE: *nursing process*; *Nursing Theory Appendix*.

Yuzpe regimen [Albert Yuzpe, Can. Obstetrician/gynecologist] A type of emergency contraception (colloquially, a “morning after pill”) in which a patient takes estradiol and levonorgestrel after sexual intercourse to prevent pregnancy and implantation.



Z 1. Ger. *Zuckung*, contraction. **2.** Symbol for atomic number.

z zero; zone.

Z-79 Committee of the American National Standards Institute A committee that develops standards for anesthetic and ventilatory equipment. The label "Z-79" signifies that a device meets the established standard.

zafirlukast (zā-fēr-lūk'äst) A leukotriene inhibitor used to treat asthma.

Zagari disease Dry mouth.

Zaglas' ligament (zā'glūs) The part of the posterior sacroiliac ligament from the posterosuperior spinous process of the ilium to the side of the sacrum.

Zahn's line (zōnz) [Frederick W. Zahn, Ger. pathologist, 1845–1904] One of the transverse whitish marks on the free surface of a thrombus made by the edges of layered platelets.

Zahorsky disease Sixth disease.

Zantac Ranitidine.

zar (zahr) A culture-bound illness specific to Northern Africa and the Middle East in which people are possessed by evil spirits. The disease has characteristics reminiscent of the Western illness known as dissociative identity disorder.

Zavanelli maneuver (zā'vā-nēl'ē) In obstetrics, the manual return of the head of a partially born fetus with intractable shoulder dystocia to the vagina. This is followed by cesarean section.

Z disk A thin, dark disk that transversely bisects the I band (isotropic band) of a striated muscle fiber. The thin filaments, made primarily of actin, are attached to the Z disk; the area between the two Z disks is a sarcomere, the unit of contraction. SYN: *Z line*.

ZDV Zidovudine.

zea (zē'ā) Maize or corn.

zeaxanthin (zē'ā-zān'thīn) A pigmented antioxidant (a member of the carotenoid family) that is found in broccoli, corn, leafy green vegetables, and squash. Consumption of zeaxanthin-rich foods has been associated with a decreased risk of age-related macular degeneration, among other illnesses.

zein (zē'in) [Gr. *zeia*, a kind of grain] A protein obtained from maize. It is deficient in tryptophan and lysine.

Zeis' gland (tsis) [Eduard Zeis, Ger. ophthalmologist, 1807–1868] One of the sebaceous glands of the eyelid, close to the free edge of the lid. Each gland is associated with an eyelash. SEE: *Moll's glands*.

zeisian (zī'sē-ān) Pert. to something originally described by Eduard Zeis.

zeitgeber (tsit'gā'bēr) [German *zeitgeber*, timekeeper] Any of the mechanisms in nature that keep internal biological clocks synchronized (entrained) with the environment. Zeitgebers can be physical, involving light or temperature (e.g., sunrise, sunset), or social, involving regular activities (e.g., consistent mealtimes).

zeitgeist (tsit'gīst) [German] The spirit of the people, or trend of thought at a particular time.

zelotypia (zē'lō-tīp'ē-ā) [Gr. *zelos*, zeal, + *typtein*, to strike] **1.** Morbid or monomaniacal zeal in the interest of any project or cause. **2.** Insane jealousy.

Zenker, Friedrich Albert von (zēng'kēr) German pathologist, 1825–1898.

Z.'s degeneration A glassy or waxy hyaline degeneration of skeletal muscles in acute infectious diseases, esp. in typhoid. SYN: *zenkerism*.

Z.'s diverticulum Herniation of the mucous membrane of the esophagus through a defect in the wall of the esophagus. The location is usually in the posterior hypopharyngeal wall. Small diverticuli are asymptomatic. Large ones trap food and may cause esophageal obstruction, dysphagia, or the regurgitation of food. Treatment is surgical or endoscopic.

Zenker's fluid (zēng'kēr, tseng') [Konrad Zenker, 19th-century Ger. histologist] A tissue fixative consisting of mercuric chloride, potassium dichromate, glacial acetic acid, and water. It is used to examine cells, and particularly nuclei, in detail.

zenkerism (zēng'kēr-izm) Zenker's degeneration.

zepto- [Fm L. *septem*, seven, representing the seventh power of a thousandth] A prefix used in the International System of Units (SI Units) to signify 10^{-21} .

zero (zē'rō) [It.] **1.** Corresponding to nothing. SYMB: 0. **2.** The point from which the graduation figures of a scale commence.

On the Celsius scale for example, zero (0°) is the temperature of melting ice. SEE: *thermometer*.

absolute z. The temperature at which all molecular motion (translational, vibrational, rotational) ceases. It is the lowest possible temperature, -273.15°C or -459.6°F ; equal to 0° Kelvin.

limes z. SYMB: L0. The greatest amount of toxin that, when mixed with one unit of antitoxin and injected into a

guinea pig weighing 250 g, will cause no local edema.

zero population growth ABBR: ZPG.

The demographic equilibrium in which in a given period of time the population neither increases nor decreases, that is, the death and birth rates are equal.

zero-sum game A game in which the sum of the wins is equal to the sum of the losses. In such a game, every victory by one party results in equivalent losses by other participants.

Zestril (zēs'trīl) SEE: *lisinopril*.

zetta- [Fm. *L.septem*, seven, representing the seventh power of a thousand] A prefix used in the International System of Units (SI units) to signify 10^{21} .

Ziehl-Neelsen method (zēl-nēl'sēn) [Franz Ziehl, Ger. bacteriologist, 1857–1926; Friedrich Karl Adolf Neelsen, Ger. pathologist, 1854–1894] A method for staining *Mycobacterium tuberculosis*. A solution of carbolfuchsin is applied, which the organism retains after rinsing with acid alcohol.

ZIFT *zygote intrafallopian transfer*.

zinc (zīnk) [L. *zincum*] SYMB: Zn. A bluish-white, crystalline metallic element that boils at 906°C; atomic weight, 65.37; atomic number, 30; specific gravity, 7.13. It is found as a carbonate and silicate, known as calamine, and as a sulfide (blende). Dietary sources are meat, including liver; eggs; seafood; and, to a lesser extent, grain products.

FUNCTION: Zinc is an essential dietary element for animals, including humans. It is involved in most metabolic pathways. The recommended dietary intake is 12 to 15 mg of zinc daily for adults, 19 mg daily during the first 6 months of pregnancy, and 5 mg daily for infants.

DEFICIENCY SYMPTOMS: Loss of appetite, growth retardation, hypogonadism and dwarfism, skin changes, immunological abnormalities, altered rate of wound healing, and impaired taste characterize this condition. Zinc deficiency during pregnancy may lead to developmental disorders in the child.

z. acetate White, pearly crystals; used as an astringent, antiseptic, contraceptive, and copper-binding compound.

z. cadmium sulfide A fluorescent material used in radiographic imaging intensification screens.

z. finger A small protein that can be constructed to bind to specific DNA sequences within genes.

z. oxide and eugenol Two substances that react together to produce a relatively hard mass, used in dentistry for impression material, cavity liners, sealants, temporary restorations, and cementing layers.

z. safts A bluish-white metal used to make various containers and also to gal-

vanize iron to prevent rust. The most commonly used compounds are zinc oxide as a pigment for paints and ointments. The salts also are used as a wood preservative, in soldering, in medicine to neutralize tissue, and in dilute solutions as an astringent and emetic.

z. stearate A very fine smooth powder used as a nonirritating antiseptic and astringent for burns and abrasions.

z. sulfate An astringent agent used as a 0.25% solution for temporary relief of minor eye irritation.

z. undecylenate A topical antifungal.
zinciferous (zīng-kif'ēr-ūs) Containing zinc.

zinc protoporphyrin A biochemical marker of iron deficiency. It is only moderately effective in diagnosing the disease.

Zingiberis rhizoma, Zingiberis officinale (zīng-ī'bēr-īs rī-zō'mā, zīn-jī') [L. fm Gr., root-mass ginger] The scientific name for ginger root.

zipper pull A device allowing persons with limited function to fasten zippers on clothing, esp. those in back.

zirconium (zīr-kō'nē-ūm) SYMB: Zr. A metallic element found only in combination; atomic weight, 91.22; atomic number, 40. It is used in corrosion-resistant alloys and as a white pigment in dental porcelain and other ceramics.

Zithromax (zīth'rō-māks") SEE: *azithromycin*.

Z line Z disk.

Zn Symbol for the element zinc.

zoacanthosis (zō'āk-ān-thō'sīs) Dermatitis due to foreign bodies such as bristles, hairs, or stingers from animals.

zoanthropy (zō-ān'thrō-pē) [Gr. *zoon*, animal, + *anthropos*, man] The delusion that one is an animal.

Zocor Simvastatin.

-zolamide (zōl'ū-mīd") A suffix used in pharmacology to designate an inhibitor.

Zollinger-Ellison syndrome (zōl'īn-jēr-ēl'ī-sōn) [Robert M. Zollinger, 1903–1992; Edwin H. Ellison, 1918–1970, U.S. surgeons] A condition caused by neuroendocrine tumors, usually of the pancreas, which secrete excess amounts of gastrin. This stimulates the stomach to secrete great amounts of hydrochloric acid and pepsin, which in turn leads to peptic ulceration of the stomach and small intestine. About 60% of the tumors are malignant. Hyperacidity produced by the tumor can be treated with proton-pump inhibitors (such as omeprazole). Surgical removal of the tumor (called gastrinoma) may be curative.

Zoloft Sertraline.

zolpidem (zōl'pē-dēm) An imidazopyridine used to treat insomnia. Its therapeutic class is sedatives/hypnotics.

zona (zō'nā) *pl.* **zonae** [L., a girdle] **1.** A band or girdle. **2.** Herpes zoster.

z. fasciculata The middle layer of the adrenal cortex. It secretes glucocorticoids, mainly cortisol.

z. glomerulosa The outer layer of the adrenal cortex. It secretes mineralocorticoids, mainly aldosterone.

z. ophthalmica Old name for herpes zoster of the area supplied by the ophthalmic nerve.

z. pellucida The inner, solid, thick, membranous envelope of the ovum. It is pierced by many radiating canals, giving it a striated appearance. SYN: *zona radiata*; *zona striata*; *membrane, vitelline*.

z. radiata *Zona pellucida*.

z. reticularis The inner layer of the adrenal cortex. It secretes very small amounts of androgens and estrogens.

z. striata *Zona pellucida*.

zona incerta (zō'nā in-sēr'tā, kēr') [L. "uncertain zone"] A nucleus in the brain located between the thalamus and subthalamus. It contains many cholinergic neurons, and it links to numerous other structures of the cortex and subcortex of the brain.

zonal (zō'nāl) [L. *zonalis*] Pert. to a zone.

zonary (zō'nār-ē) [L. *zona*, a girdle] Pert. to or shaped like a zone.

zone (zōn) [L. *zona*, a girdle] An area or belt.

border z. The partially damaged part of an organ that is found between tissue that is severely injured by an infarct and nearby tissue that is still well supplied with blood, oxygen, and nutrients.

cell-free z. In dentistry, an area below the odontoblastic layer of the dental pulp that has relatively few cells; also called the *zone of Weil*.

cell-rich z. The area of increased cell frequency between the cell-free zone and the central pulp of the tooth.

chemoreceptor trigger z. ABBR: CTZ. A zone in the medulla that is sensitive to certain chemical stimuli. Stimulation of this zone may produce nausea.

ciliary z. The peripheral part of the anterior surface of the iris of the eye.

cold z. In a hazardous materials incident, an unexposed area where rescue personnel wait for assignments and the command post is located, which is safe from any potential contamination.

comfort z. The range of temperature, humidity, and, when applicable, solar radiation and wind in which an individual doing work at a specified rate and in a certain specified garment is comfortable.

epileptogenic z. Any area of the brain that after stimulation produces an epileptic seizure.

erogenous z. An area of the body that may produce erotic sensations when stimulated. These areas include,

but are not limited to, the breasts, lips, genital and anal regions, buttocks, and sometimes the special senses that cause sexual excitation, such as the sense of smell or taste.

H z. H band.

hot z. In a hazardous materials incident or biohazardous laboratory, the area where the hazardous materials are located. This area cannot be entered without protective equipment, special permission, and specialized training.

hypnogenic z. Any area of the body that, when pressed on, induces hypnosis. SYN: *hypnogenic spot*.

lung z. A hypothetical region of the lung defined by the relationship between the degree of alveolar ventilation and pulmonary blood flow (perfusion). Three lung zones have been identified: I, ventilation exceeds perfusion; II, ventilation and perfusion are equal; and III, perfusion exceeds ventilation. Zone I is found in the upper lung field, where gravity impedes perfusion, and zone III in the inferior portion of the lung, where gravity assists perfusion.

transition z. Squamocolumnar junction.

transitional z. The area of the lens of the eye where the epithelial capsule cells change into lens fibers.

warm z. In a hazardous materials incident, the area between the hot zone and the cold zone, where decontamination occurs. Only specialized personnel who are appropriately dressed are permitted in this location.

zonesthesia (zōn'ēs-thē'zē-ă) [ʼ + *ais-thesis*, sensation] A sensation, as a cord constricting the body. SYN: *girdle sensation*; *girdle pain*.

zonifugal (zō-nif'ū-gāl) [ʼ + *fugere*, to flee] Passing outward from within any zone or area.

zoning The occurrence of a stronger fixation of complement in a lesser amount of suspected serum; a phenomenon occasionally observed in diagnosing syphilis by the complement-fixation method.

zonipetal (zō-nīp'ēt-āl) [ʼ + *petere*, to seek] Passing from outside into a zone or area of the body.

zonography (zō-nōg'rā-fē) A type of tomography, using a tomographic angle less than 10°, that produces an image of a larger thickness of tissue. This technique is used for kidneys or structures lacking inherent contrast.

zonula (zōn'ū-lā) [L.] A small zone. SYN: *zonule*.

z. adherens The portion of the junctional complex between columnar epithelial cells below the zonula occludens where there is an intercellular space of about 200 A.U. and the cellular membranes are supported by filamentous material.

z. ciliaris The suspensory ligament of

the crystalline lens. SYN: *zonule of Zinn*.

z. occludens The portion of the junctional complex between columnar epithelial cells just below the free surface where the intercellular space is obliterated. Also called *tight junction*.

zonular (zōn'ū-lār) Pert. to a zonula.

zonular space A space between the fibers of the ligaments of the lens.

zonule (zōn'ūl) [L. *zonula*, small zone] A small band or area. SYN: *zonula*.

z. of Zinn *Zonula ciliaris*.

zonulitis (zōn-ū-lī'tīs) [+ Gr. *itis*, inflammation] Inflammation of the zonule of Zinn.

zonulolysis (zōn'ū-lōl'ī-sīs) [+ Gr. *lysis*, dissolution] The use of enzymes to dissolve the zonula ciliaris of the eye. SYN: *zonulolysis*.

zonulotomy (zōn'ū-lōt'ō-mē) [+ Gr. *tome*, incision] Surgical incision of the ciliary zonule.

zonulolysis (zōn'ū-lī'sīs) *Zonulolysis*.

zoo- Combining form meaning *animal, animal life*.

zoobiology (zō'ō-bī-ōl'ō-jē) [Gr. *zoon*, animal, + *bios*, life, + *logos*, word, reason] The biology of animals.

zoochemistry (zō'ō-kēm'īs-trē) Biochemistry of animals.

zoofulvin (zō'ō-fūl'vīn) A yellow pigment derived from certain animal feathers.

zoogenous (zō-ōj'ēn-ūs) [+ *gennan*, to produce] Derived or acquired from animals.

zoogeny (zō'ōj'ē-nē) [+ *gennan*, to produce] The development and evolution of animals.

zoogeography (zō'ō-jē-ōg'rā-fē) The study of the distribution of animals on the earth.

zooglea (zō'ō-glē'ā) [+ *gloios*, sticky] A stage in development of certain organisms in which colonies of microbes are embedded in a gelatinous matrix.

zoograft (zō'ō-grāft) [+ L. *graphium*, stylus] A graft of tissue obtained from an animal.

zoografting (zō'ō-grāft'īng) The use of animal tissue in grafting on a human body.

zooid (zō'ōyd) [+ *eidōs*, form, shape] 1. Resembling an animal. 2. A form resembling an animal; an organism produced by fission. 3. An animal cell that can move or exist independently.

zoolagnia (zō'ō-lāg'nē-ā) [+ *lagneia*, lust] Sexual desire for animals.

zoologist (zō-ōl'ō-jīst) [+ *logos*, word, reason] A biologist who specializes in the study of animal life.

zoology (zō-ōl'ō-jē) The science of animal life.

zoomania (zō'ō-mā-nē-ā) [Gr. *zoon*, animal, + *mania*, madness] A morbid and excessive affection for animals.

Zoomastigophora (zō'ō-mās'tī-gō'fō-rā)

A class of unicellular organisms within the phylum Sarcostomatophora. These organisms usually have one or more flagella, but these may be absent in some species. It includes free-living and parasitic species such as *Giardia lamblia*.

zoonosis (zō-ō-nō'sīs) *pl. zoonoses* [+ *nosos*, disease] An infection common in animal populations that occasionally infects humans. Over 250 organisms are known to cause zoonotic infections, of which 30 to 40 are spread from pets and animals used by the blind and deaf. Immunosuppressed people and those who work with animals are esp. at risk of developing zoonoses. **zoonotic** (-nōt'ik), *adj.*

Zoon's vulvitis *Plasmacellularis vulvitis*.
zooparasite (zō'ō-pār'ā-sīt) [+ *para*, beside, + *sitos*, food] An animal parasite.

zoopathology (zō'ō-pāth-ōl'ō-jē) [+ *pathos*, disease, + *logos*, word, reason] The science of the diseases of animals.

zoophile (zō'ō-fīl) [+ *philein*, to love] 1. One who likes animals. 2. An antivivisectionist.

zoophilia (zō'ō-fīl'ē-ā) The preference for obtaining sexual gratification by having intercourse or other sexual activity with animals.

zoophilism (zō-ōfīl'ī-zm) [+ " + *-ismos*, condition] An abnormal love of animals.

zoophyte (zō'ō-fīt) [+ *phyton*, plant] An animal that appears plantlike; any of numerous invertebrate animals resembling plants in appearance or mode of growth.

zooplankton (zō'ō-plānk'tōn) [+ *planktos*, wandering] A small animal organism present in natural waters. SEE: *phytoplankton*.

zoopsychology (zō'ō-sī-kōl'ō-jē) Animal psychology.

zoosadism (zō'ō-sā'dīzm) Mistreatment of animals.

zooscopy (zō-ōs'kō-pē) [+ *skopein*, to examine] 1. Zoopsia. 2. The scientific observation of animals.

zoosmosis (zō'ōs-mō'sīs) [Gr. *zoe*, life, + *osmos*, impulsion] Osmosis that occurs within cells.

zoospore (zō'ō-spor) [+ *sporos*, seed] A motile asexual spore that moves by means of one or more flagella.

zoosterol (zō'ō-stē'rōl) Any sterol derived from animals.

zootechnics (zō'ō-tēk'nīks) [Gr. *zoon*, animal, + *techne*, art] The complete care, management, and breeding of domestic animals.

zootic (zō-ōt'ik) Concerning animals.

zootoxin (zō'ō-tōks'īn) [+ *toxikon*, poison] Any toxin or poison produced by an animal (e.g., snake venom).

zootrophic (zō'ō-trōf'ik) [+ *trophe*, nutrition] Concerning animal nutrition.

Zostavax (zō'stā-vāks") [From *zo(ster)* + *vacc(ine)*] Varicella-zoster virus vaccine.

zoster (zōs'tēr) [Gr. *zoster*, girdle] Herpes zoster.

z. auricularis Herpes zoster of the ear.

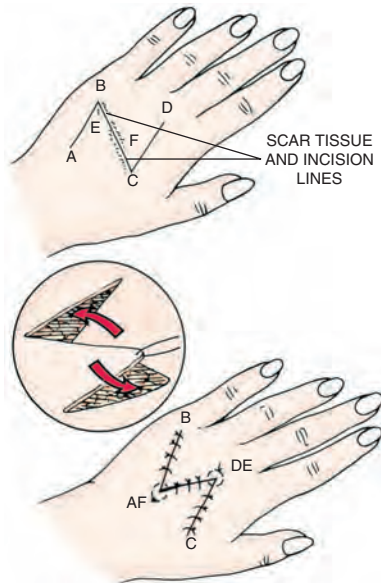
z. ophthalmicus SEE: under *herpes zoster ophthalmicus*.

z. sine herpette Cutaneous pain of dermatomal distribution, suggestive of herpes zoster but without the typical rash of shingles. That the pain is caused by a reactivation of herpes zoster may be confirmed by antibody titer or polymerase chain reaction tests.

zosteroid (zōs'tēr-oyd) [" + *eidōs*, form, shape] Resembling herpes zoster.

ZPG zero population growth.

Z-plasty (z-plās'tē) The use of a Z-shaped incision in plastic surgery to relieve tension in scar tissue. The area under tension is lengthened at the expense of the surrounding elastic tissue. SEE: *illus.*; *tissue expansion*, *soft*; *W-plasty*.



Z-PLASTY METHOD OF CORRECTING A DEFORMING SCAR

Zr Symbol for the element zirconium.

Z-track (z-trāk') An injection technique in which the surface (skin and subcutaneous) tissues are pulled and held to one side before insertion of the needle deep into the muscle in the identified site. The medication is injected slowly, followed by a 10-sec delay; then the needle is removed, and the tissues are quickly permitted to resume their normal position. This provides a Z-shaped track, which makes it difficult for the in-

jected irritating drug to seep back into subcutaneous tissues.

Zuelzer-Ogden syndrome Megaloblastic anemia.

-zumab (zoo'māb) A combining form for *humanized monoclonal antibody*. Compared with monoclonal antibodies made from chimeric sources (-ximabs), -zumabs are less likely to elicit a neutralizing antibody response in the patient who receives them.

zwitterion (tsvīt'ēr-ī'ōn) A dipolar ion that contains positive and negative charges of equal strength. This ion is therefore not attracted to either an anode or cathode. In a neutral solution, amino acids function as zwitterions.

zygal (zī'gāl) [Gr. *zygon*, yoke] Concerning or shaped like a yoke.

zygapophyseal (zī'gā-pō-fiz'ē-āl) Concerning a zygapophysis.

zygapophysis (zī'gā-pōf'ī-sīs) [" + *apo*, from, + *physis*, growth] One of the articular processes of the neural arch of a vertebra.

zygodactyly (zī'gō-dāk'til-ē) [" + *daktylos*, digit] Syndactylism.

zygoma (zī-gō'mā) [Gr., cheekbone]

1. The long arch that joins the zygomatic processes of the temporal and malar bones on the sides of the skull. **2.** The malar bone.

zygomatic (zī'gō-māt'ik) Pert. to the zygomatic bone, also called the cheekbone or malar bone.

zygomatic arch The formation, on each side of the cheeks, of the zygomatic process of each malar bone articulating with the zygomatic process of the temporal bone.

zygomaticofrontal (zī'gō-māt'ī-kō-frōn'tāl) Concerning the zygomatic bone and frontal bone of the face.

zygomaticum (zī'gō-māt'ī-kūm) [L.] Zygomatic bone.

zygomaticus (zī'gō-māt'īk-ūs) [L.] A muscle that draws the upper lip upward and outward.

Zygomycetes (zī'gō-mī-sēt'ēz) In one system of taxonomy, a class of the true fungi that includes those which cause mucormycosis and entomophthoromycosis. This class is equivalent to the phylum Zygomycotina in another system of taxonomy.

zygomycosis (zī'gō-mī-kō'sīs) Fungal infections caused by various species including those involved in mucormycosis and entomophthoromycosis.

Zygomycotina (zī'gō-mī'kō-tēn'ā) [NL.] In one system of taxonomy, a phylum of the true fungi. It is synonymous with the class Zygomycetes in another system of taxonomy.

zygosis (zī-gō'sīs) [Gr. *zygosis*, a balancing] The sexual union of two unicellular animals.

zygosity (zī-gōs'ī-tē) [Gr. *zygon*, yoke]

The composition or characteristics of a zygote.

zygospERM (zī'gō-spĕrm) Zygospore.

zygospore (zī'gō-spor) A spore formed by fusion of morphologically identical structures. SYN: *zygospERM*.

zygote (zī'gōt) [Gr. *zygotos*, yoked] The cell produced by the union of two gametes; the fertilized ovum.

zygote intrafallopian transfer SEE: under *transfer*.

zygotene (zī'gō-tĕn) [Gr. *zygotos*, yoked] The second stage of the prophase of the first meiotic division. During this stage, the homologous chromosomes pair side by side. SEE: *cell division*.

zygotic (zī-gōt'ik) Concerning a zygote.

zygotoblast (zī-gō'tō-blāst) [" + *blastos*, germ] Sporozoite.

zygotomere (zī-gō'tō-mĕr) [" + *meros*, part] Sporoblast.

zym- Combining form meaning *fermentation* or *enzyme*.

zymase (zī'mās) [Gr. *zyme*, leaven, + *-ase*, enzyme] Any of a group of enzymes that, in the presence of oxygen, convert certain carbohydrates into carbon dioxide and water or, in the absence of oxygen, into alcohol and carbon dioxide or lactic acid. It is found in yeast, bacteria, and higher plants and animals. SEE: *enzyme*, *fermenting*.

zymogen (zī'mō-jĕn) [" + *gennan*, to produce] A protein that becomes an enzyme. It exists in an inactive form antecedent to the active enzyme. **zymo-**

genic, *adj.* SYN: *proenzyme*. SEE: *pepsinogen*; *trypsinogen*.

zymogenous (zī-mōj'ĕ-nūs) Zymogenic.

zymogram (zī'mō-grām) An electrophoretic graph of the separation of the enzymes in a solution.

zymohexase (zī'mō-hĕk'sās) The enzyme involved in splitting fructose 1,6-diphosphate into dihydroxyacetone phosphate and phosphoglyceric aldehyde.

zymologist (zī-mōl'ō-jĭst) One who specializes in the study of enzymes.

zymology (zī-mōl'ō-jĕ) The science of fermentation.

zymolysis (zī-mōl'ī-sĭs) [Gr. *zyme*, leaven, + *lysis*, dissolution] The changes produced by an enzyme; the action of enzymes.

zymolyte (zī'mō-lĭt') Substrate.

zymolytic (zī'mō-lĭt'ik) [" + *lytikos*, dissolved] Causing a reaction catalyzed by an enzyme.

zymoprotein (zī'mō-prō'tĕ-ĭn) Any protein that also functions as an enzyme.

zymosan (zī'mō-sān) An anticomplement obtained from the walls of yeast cells.

zymose (zī'mōs) Invertase.

zymosterol (zī-mōs'tĕr-ōl) A sterol obtained from yeast.

zymotic (zī-mōt'ik) Rel. to or produced by fermentation.






Zyprexa (zī-prĕk'sū) SEE: *olanzapine*.



































Zyrtec Cetirizine.

Z.Z.'Z." Symbol for increasing strengths of contraction.

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APPENDIX 1

Nutrition

Appendix 1-1 Explanation of Dietary Reference Values

- AI, Adequate Intake** The amount of a specific nutrient needed to achieve a specific indication (e.g., to maintain bone mass).
- DRI, Dietary Reference Intake** A nutrient recommendation index based on the parameters specified in the Average Intake, Estimated Average Requirement, Recommended Dietary Allowance, and Upper Intake values.
- DRV, Daily Reference Value** Standards for nutrient intake set for both macronutrient and micronutrient dietary components that lack a Recommended Dietary Allowance. The Dietary Reference Value for some nutrients represents their Upper Limit.
- DV, Daily Value** A dietary reference term that encompasses the Dietary Reference Value and Reference Daily Intake. It is used to calculate the labeled percent of each nutrient that a serving of the product provides.
- EAR, Estimated Average Requirement** The estimated intake of a nutrient that meets the nutritional needs of 50% of the individuals within a given age-gender cohort.
- ESADDI, Estimated Safe and Adequate Daily Intake** The amount of a nutrient calculated to meet the needs of half of the individuals in that age group.
- RDA, Recommended Dietary Allowance** The amount of a specific dietary component, as established by the National Academy of Sciences, required to meet the needs of 97% of the individuals in a given age-gender cohort. $RDA = EAR + 2SD_{EAR}$
- RDI, Reference Daily Intake** The nutrient intake standard established by the U.S. Food and Drug Administration as a food label reference for macronutrients and micronutrients.
- RNI, Recommended Nutrient Intake** The Canadian nutrient intake standard.
- US RDA, U.S. Recommended Daily Allowance** A nutritional standard formerly promulgated by the FDA and now replaced by the Recommended Dietary Allowance.
- UL, Tolerable Upper Intake Level** The highest intake per day that is likely to produce no adverse health risks.

Appendix 1-2 Recommended Daily Dietary Allowances^a (Revised 2004)

Category	Age (yr) or Condition		Weight ^b (kg) (lb)		Height (cm) (in.)		Protein (g)				Fat-Soluble Vitamins				Water- Soluble Vitamins				Minerals			
									Vitamin A (µg RE) ^c	Vitamin E (mg α-TE) ^d	Vitamin K (µg)	Vitamin C (mg)	Iron (mg)	Zinc (mg)	Iodine (µg)	Selenium (µg)						
Infants	0.0-0.5	6	13	24	60	24	9.1	400	4	2.0	40	0.27	2	110	15							
	0.5-1.0	9	20	28	71	28	13.5	500	5	2.5	50	11	3	130	20							
Children Male	1-3	13	29	35	90	35	13	300	6	30	15	7	3	90	20							
	4-8	20	44	44	112	44	19	400	7	35	25	10	5	90	30							
	9-13	45	99	62	157	62	34	600	11	60	45	8	8	120	40							
	14-18	66	145	176	176	69	52	900	15	75	75	11	11	150	50							
	19-30	72	160	177	70	70	56	900	15	120	90	8	11	150	55							
	31-50	79	174	176	70	70	56	900	15	120	90	8	11	150	55							
51+	77	170	173	68	56	56	900	15	120	90	8	11	150	55								
Female	9-13	46	101	62	157	62	34	600	11	60	45	8	8	120	40							
	14-18	55	120	64	163	64	46	700	15	75	65	15	9	150	55							
	19-30	58	128	65	164	65	46	700	15	90	75	18	8	150	55							
	31-50	63	138	64	163	64	46	700	15	90	75	18	8	150	55							
	51+	65	143	63	160	63	46	700	15	90	75	18	8	150	55							
Pregnant Lactating			1st 6 months		60		71	770	15	90	85	27	11	220	60							
			2nd 6 months		71		71	1300	19	90	120	9	12	290	70							
				71		71	1200	19	90	90	120	9	12	290	70							

^a The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons living in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined.

^b Weights and heights of reference adults are actual medians for the U.S. population of the designated age, as reported by NHANES II (second National Health and Nutrition Examination Survey). The median weights and heights of those under 19 years of age were taken from Hamill et al. [Physical Growth: National Center for Health Statistics percentiles. Am J Clin Nutr 32:607, 1979]. The use of these figures does not imply that the height-to-weight ratios are ideal.

^c Retinol equivalents. 1 RE = 1 µg retinol or 6 µg beta-carotene.

^d Alpha-tocopherol equivalents. 1 mg d-alpha tocopherol = 1 alpha-TE.

SOURCE: From National Research Council. Dietary Reference Intakes: Applications in Dietary Assessment, Copyright 2000 and Dietary Reference Intakes: Applications in Dietary Planning, Copyright 2003 by the National Academy of Sciences. Revised 2004. Courtesy of the National Academy Press, Washington, DC. www.nap.edu

Appendix 1-3 Dietary Reference Intakes: Recommended Intakes for Individuals

<i>Life Stage Group</i>	<i>Calcium (mg/day)</i>	<i>Phosphorus (mg/day)</i>	<i>Magnesium (mg/day)</i>	<i>Vitamin D_{a,b} (µm/day)</i>	<i>Fluoride (mg/day)</i>	<i>Thiamine (mg/day)</i>	<i>Riboflavin (mg/day)</i>	<i>Niacin (mg/day)^c</i>	<i>Vitamin B₆ (mg/day)</i>	<i>Potassium (µg/day)^d</i>	<i>Vitamin B₁₂ (µg/day)</i>	<i>Pantothenic Acid (mg/day)</i>	<i>Biotin (µg/day)</i>	<i>Choline (mg/day)^e</i>
Infants	0-6 months	210*	100*	30*	5*	0.01*	0.2*	0.3*	2	0.1*	65*	0.4*	1.7	5
	7-12 months	270*	275*	75*	5*	0.5*	0.3*	0.4*	4	0.3*	80*	0.5*	1.8	6
Children	1-3 years	500*	460	80	5*	0.7*	0.5	0.5	6	0.5	150	0.9	2	8
	4-8 years	800*	500	130	5*	1*	0.6	0.6	8	0.6	200	1.2	3	12
Males	9-13 years	1,300*	1,250	240	5*	2*	0.9	0.9	12	1.0	300	1.8	4	20
	14-18 years	1,300*	1,250	410	5*	3*	1.2	1.3	16	1.3	400	2.4	5	25
	19-30 years	1,000*	700	400	5*	4*	1.2	1.3	16	1.3	400	2.4	5	30
	31-50 years	1,000*	700	420	5*	4*	1.2	1.3	16	1.3	400	2.4	5	30
	51-70 years	1,200*	700	420	10*	4*	1.2	1.3	16	1.7	400	2.4 ^f	5	30
	>70 years	1,200*	700	420	15*	4*	1.2	1.3	16	1.7	400	2.4 ^f	5	30
Females	9-13 years	1,300*	1,250	240	5*	2*	0.9	0.9	12	1.0	300	1.8	4	20
	14-18 years	1,300*	1,250	360	5*	3*	1.0	1.0	14	1.2	400 ^g	2.4	5	25
	19-30 years	1,000*	700	310	5*	3*	1.1	1.1	14	1.3	400 ^g	2.4	5	30
	31-50 years	1,000*	700	320	5*	3*	1.1	1.1	14	1.3	400 ^g	2.4	5	30
	51-70 years	1,200*	700	320	10*	3*	1.1	1.1	14	1.5	400	2.4 ^f	5	30
	>70 years	1,200*	700	320	15*	3*	1.1	1.1	14	1.5	400	2.4 ^f	5	30
Pregnancy	≤18 years	1,300*	1,250	400	5*	3*	1.4	1.4	18	1.9	600 ^h	2.6	6	30
	19-30 years	1,000*	700	350	5*	3*	1.4	1.4	18	1.9	600 ^h	2.6	6	30
	31-50 years	1,000*	700	360	5*	3*	1.4	1.4	18	1.9	600 ^h	2.6	6	30

Lactation	≤18 years	19-30 years	31-50 years	1,300*	1,000*	1,000*	700	360	5*	3*	1.4	1.6	17	2.0	500	2.8	7	35	550
							700	310	5*	3*	1.4	1.6	17	2.0	500	2.8	7	35	550
							700	320	5*	3*	1.4	1.6	17	2.0	500	2.8	7	35	550

* As cholecalciferol, 1 μg cholecalciferol = 40 IU vitamin D.

^b In the absence of adequate exposure to sunlight.

^c As niacin equivalents (NE), 1 mg of niacin = 60 mg of tryptophan; 0-6 months = preformed niacin (not NE).

^d As dietary folate equivalents (DFE), 1 DFE = 1 μg food folate = 0.6 μg of folic acid from fortified food or as a supplement consumed with food = 0.5 μg of a supplement taken on an empty stomach.

^e Although AIs have been set for choline, there are few data to assess whether a dietary supply of choline is needed at all stages of the life cycle, and it may be that the choline requirement can be met by endogenous synthesis at some of these stages.

^f Because 10 to 30% of older people may malabsorb food-bound B₁₂, it is advisable for those older than 50 years to meet their RDA mainly by consuming foods fortified with B₁₂ or a supplement containing B₁₂.

^g In view of evidence linking folate intake with neural tube defects in the fetus, it is recommended that all women capable of becoming pregnant consume 400 μg from supplements or fortified foods in addition to intake of food folate from a varied diet.

^h It is assumed that women will continue consuming 400 μg from supplements or fortified food until their pregnancy is confirmed and they enter prenatal care, which ordinarily occurs after the end of the periconceptional period—the critical time for formation of the neural tube.

This table presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). RDAs and AIs may both be used as goals for individual intake. RDAs are set to meet the needs of almost all (97 to 98%) individuals in a group. For healthy breastfed infants, the AI is the mean intake. The AI for other life-stage and gender groups is believed to cover needs of all individuals in the group.

Appendix 1–4 Dietary Reference Intakes: Tolerable Upper Intake Levels (UL^a) for Certain Nutrients and Food Components

Life-Stage Group	Calcium (g/day)	Phosphorus (g/day)	Magnesium (mg/day) ^b	Vitamin D (µg/day)	Fluoride (mg/day)	Niacin (mg/day) ^c	Vitamin B ₆ (mg/day)	Folate (µg/day)	Choline (g/day)
0–6 months	ND ^d	ND	ND	25	0.7	ND	ND	ND	ND
7–12 months	ND	ND	ND	25	0.9	ND	ND	ND	ND
1–3 years	2.5	3	65	50	1.3	10	30	300	1.0
4–8 years	2.5	3	110	50	2.2	15	40	400	1.0
9–13 years	2.5	4	350	50	10	20	60	600	2.0
14–18 years	2.5	4	350	50	10	30	80	800	3.0
19–70 years	2.5	4	350	50	10	35	100	1,000	3.5
> 70 years	2.5	3	350	50	10	35	100	1,000	3.5
<i>Pregnancy</i>									
≤18 years	2.5	3.5	350	50	10	30	80	800	3.0
19–50 years	2.5	3.5	350	50	10	35	100	1,000	3.5
<i>Lactation</i>									
≤18 years	2.5	4	350	50	10	30	80	800	3.0
19–50 years	2.5	4	350	50	10	35	100	1,000	3.5

^aUL = The maximum level of daily nutrient intake that is likely to pose no risk of adverse effects. Unless otherwise specified, the UL represents total intake from food, water, and supplements. Due to lack of suitable data, ULs could not be established for thiamine, riboflavin, vitamin B₁₂, pantothenic acid, and biotin. In the absence of ULs, extra caution may be warranted in consuming levels above recommended intakes.

^bThe UL for magnesium represents intake from a pharmacological agent only and does not include intake from food and water.

^cThe ULs for niacin and folate apply to synthetic forms obtained from supplements, fortified foods, or a combination of the two.



^dND: Not determinable due to lack of data of adverse effects in this age group and concern with regard to lack of ability to handle excess amounts. Source of intake should be from food only to prevent high levels of intake.

Appendix 1–5 Food Guide Pyramids

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STEPS TO A HEALTHIER you
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GRAINS	VEGETABLES	FRUITS	MILK	MEAT & BEANS
<p>Make half your grains whole</p> <p>Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day.</p> <p>1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or ½ cup of cooked rice, cereal, or pasta.</p>	<p>Vary your regions</p> <p>Eat more dark-green veggies like broccoli, spinach, and other dark leafy greens.</p> <p>Eat more orange vegetables like carrots and sweetpotatoes.</p> <p>Eat more dry beans and peas like pinto beans, kidney beans, and lentils.</p>	<p>Focus on fruits</p> <p>Eat a variety of fruit.</p> <p>Choose fresh, frozen, canned, or dried fruit.</p> <p>Go easy on fruit juices.</p>	<p>Get your calcium with fluids</p> <p>Go low-fat or fat free when you choose milk, yogurt, and other milk products.</p> <p>If you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages.</p>	<p>Go lean with protein</p> <p>Choose low-fat or lean meats and poultry.</p> <p>Bake it, broil it, or grill it.</p> <p>Vary your protein routine – choose more fish, beans, peas, nuts, and seeds.</p>
<p>For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.</p>				
Eat 6 oz. every day	Eat 2 ½ cups every day	Eat 2 cups every day	Get 3 cups every day; for both aged 2 to 8, & 9-17	Eat 5 ½ oz. every day
<p>Find your balance between food and physical activity</p> <p>Be sure to stay within your daily calorie needs.</p> <p>Be physically active for at least 30 minutes most days of the week.</p> <p>About 60 minutes a day of physical activity may be needed to prevent weight gain.</p> <p>For sustaining weight loss, at least 60 to 90 minutes a day of physical activity may be required.</p> <p>Children and teenagers should be physically active for 60 minutes every day, or most days.</p>		<p>Know the limits on fats, sugars, and salt (sodium)</p> <p>Make most of your fat sources from fish, nuts, and vegetable oils.</p> <p>Limit solid fats like butter, margarine, shortening, and lard, as well as foods that contain these.</p> <p>Check the Nutrition Facts label to keep saturated fats, trans fats, and sodium low.</p> <p>Choose food and beverages low in added sugars. Added sugars contribute calories with few, if any, nutrients.</p>		

MyPyramid

For Kids

Eat Right. Exercise. Have Fun.

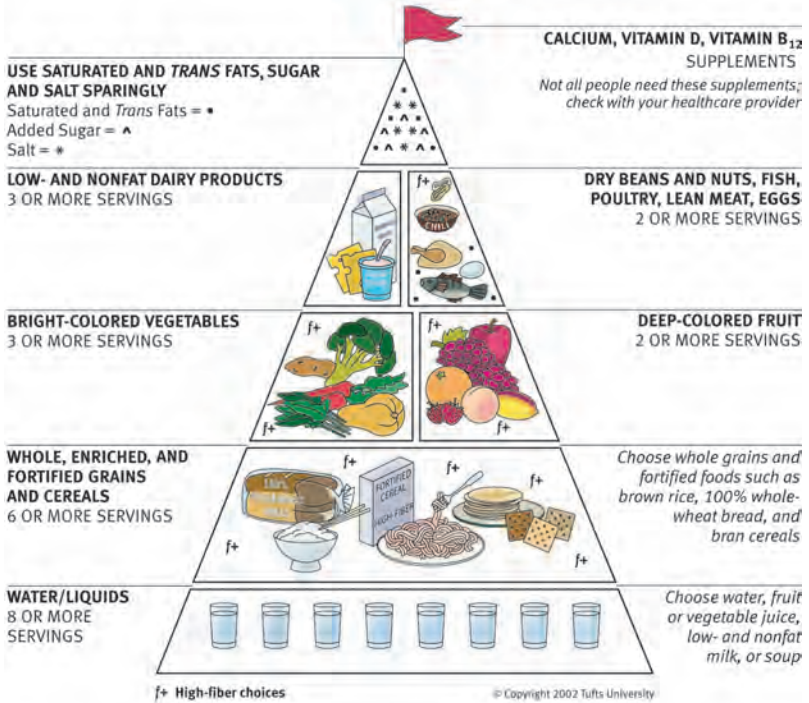
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Grains	Vegetables	Fruits	Milk	Meat & Beans
<p>Make half your grains whole</p> <p>Start smart with breakfast. Look for whole-grain cereals.</p> <p>Just because bread is brown doesn't mean it's whole-grain. Search the ingredients list to make sure the first word is "whole" (like "whole wheat").</p>	<p>Vary your veggies</p> <p>Color your plate with all kinds of great-tasting veggies.</p> <p>What's green and orange and tastes good? Veggies! Go dark green with broccoli and spinach, or try orange ones like carrots and sweet potatoes.</p>	<p>Focus on fruits</p> <p>Fruits are nature's treats – sweet and delicious. Go easy on juice and make sure it's 100%.</p>	<p>Get your calcium-rich foods</p> <p>Move to the milk group to get your calcium. Calcium builds strong bones.</p> <p>Look at the carton or container to make sure your milk, yogurt, or cheese is lowfat or fat-free.</p>	<p>Go lean with protein</p> <p>Eat lean or lowfat meat, chicken, turkey, and fish. Ask for it baked, broiled, or grilled – not fried.</p> <p>It's nutty, but true. Nuts, seeds, peas, and beans are all great sources of protein, too.</p>
<p>For an 1,800-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.</p>				
<p>Eat 6 oz. every day; at least half should be whole</p>	<p>Eat 2 1/2 cups every day</p>	<p>Eat 1 1/2 cups every day</p>	<p>Get 3 cups every day; for kids ages 2 to 6, it's 2 cups</p>	<p>Eat 5 oz. every day</p>
<p>Oils Oils are not a food group, but you need some for good health. Get your oils from fish, nuts, and liquid oils such as corn oil, soybean oil, and canola oil.</p>				
<p>Find your balance between food and fun</p> <ul style="list-style-type: none"> Move more. Aim for at least 60 minutes everyday, or most days. Walk, dance, bike, rollerblade – it all counts. How great is that! 		<p>Fats and sugars – know your limits</p> <ul style="list-style-type: none"> Get your fat facts and sugar smarts from the Nutrition Facts label. Limit solid fats as well as foods that contain them. Choose food and beverages low in added sugars and other caloric sweeteners. 		

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Food Guide Pyramid for Older Adults



For additional copies go to <http://nutrition.tufts.edu>

Modified Food Pyramid for 70+ Adults: Translating Guidelines into Daily Eating

<i>Food Group</i>	<i>What's a Senior to Do Every Day</i>	<i>Best Choices (each equals one serving)</i>
Bread, fortified cereal, rice, and pasta	Strive for 6 servings of high-fiber, unrefined whole grains.	1 slice whole-grain bread; $\frac{1}{2}$ cup cooked brown rice; 1 oz fortified cereal
Vegetables	Munch on 3 servings of bright-colored vegetables each day—look for dark green, red, orange, and yellow (best sources of valuable nutrients).	1 cup raw spinach; $\frac{1}{2}$ cup mashed squash; $\frac{3}{4}$ cup 100% vegetable juice. NOTE: If you boil vegetables, use the cooking water (many vitamins and minerals are in it) in sauces, soups, or stews.
Fruits	Snack on 2 servings of brightly colored fruits	1 med. orange, banana, apple; $\frac{1}{2}$ cup berries; $\frac{1}{4}$ cup raisins or prunes; $\frac{3}{4}$ cup 100% juice—select juice with calcium
Milk, yogurt, and cheese	Eat 2–3 servings of low-fat or non-fat dairy foods. These are great sources of calcium and vitamin D.	1 cup low-fat milk or yogurt; $\frac{1}{2}$ oz low-fat natural cheese. NOTE: If you have trouble digesting milk products, try lactose-free dairy products, or add lactose enzymes to milk.
Meat, poultry, fish, dried beans, (legumes), eggs, and nuts	Eat 2 servings of these high-protein foods. Fish is great—its omega-3 fatty acids have many health benefits. Beans provide fiber and nutrients as well as protein, and are less expensive than meat.	$\frac{1}{2}$ cup cooked lentils or other legumes (dried or canned); 1 egg or 2 egg whites; 2–3 oz fish, lean meat, or skinless poultry
Fats, oils, and sweets	Choose these foods sparingly. Use oils, tub margarine, and butter instead of solids (shortening, stick butter, and margarine).	1 teaspoon oil: olive, canola, peanut, safflower, sunflower, corn, cottonseed, or flaxseed

Pay Special Attention to:

Fluid. Drink 8 eight-ounce glasses per day whether you feel thirsty or not. Don't count alcohol or caffeine-containing fluids in the 8 glasses per day.

Fiber. Dietary fiber may help to relieve constipation.

Supplements. It's tough for people over 70 to get enough calcium, vitamin B₁₂, and vitamin D in their diets. Take supplements of these three nutrients regularly.

SOURCE: Nutrition in Clinical Care, Vol 2, No. 3, 1999, p 186, with permission.

Appendix 1–6 Vitamins *

Vitamin	Chief Functions	Results of Deficiency or Overdose	Characteristics	Good Sources
VITAMIN A Retinol (animal sources) Carotene Beta-carotene (plant sources)	Maintains epithelial membranes; functions in infection resistance; needed to form rhodopsin; prevents night blindness; ensures proper bone growth; facilitates RNA transcription.	<i>Deficiency:</i> Increased susceptibility to infection; abnormal function of gastrointestinal, genitourinary, and respiratory tracts; skin dries, shrivels, thickens; sometimes pustule formation; xerophthalmia, a characteristic eye disease. <i>Overdose:</i> Bleeding disorders; bone decalcification; immune system stimulation; fatigue; nausea; diarrhea; dry skin; brittle nails; jaundice.	Fat soluble; stable during cooking; destroyed by heat and oxygen together; marked capacity for storage in the liver.	Liver; dark green leafy vegetables, esp. escarole, kale, and parsley; yellow-orange fruits, esp. carrots, apricots, and cantaloupe; butter or fortified margarine; milk and dairy products; meats, fish, and poultry.
VITAMIN B ₁ Thiamine	Involved in carbohydrate metabolism; essential for normal nervous tissue function; acts as a coenzyme for cellular energy production.	<i>Deficiency:</i> Weakness; wasting; mental confusion; peripheral paralysis; edema; beriberi.	Water soluble; stable during most cooking; destroyed by alkali or sulfites; not stored in the body. Note: Deficiency often accompanies alcoholism.	Brewer's yeast; pork; soy milk; liver; milk; enriched or whole-grain cereals; beans; nuts.
VITAMIN B ₂ Riboflavin	Acts as a coenzyme in cellular oxidation; essential to normal growth; participates in light adaptation; vital to protein metabolism; associated with functions of niacin and vitamin B ₆ .	<i>Deficiency:</i> Cheilosis; glossitis; dermatitis around mouth and nose; corneal redness; light hypersensitivity.	Water soluble; alcohol soluble; stable during most cooking; destroyed by alkali; unstable in light.	Milk and dairy products; collard greens; broccoli; whole-grain or enriched breads and cereals; liver; meat, fish, and poultry; eggs; legumes.
VITAMIN B ₆ Pyridoxine Pyridoxal Pyridoxamine	Used in hemoglobin synthesis; essential for metabolism of tryptophan to niacin; needed for utilization of other amino acids.	<i>Deficiency:</i> Anemias; depressed immunity; dermatitis around mouth and nose; neuritis; anorexia; nausea; vomiting.	Water soluble; alcohol soluble; inactivated by heat, sunlight, or air.	Meats; liver; cereal grains; bananas; nuts.

*See App. 1-2 for recommended daily allowances.

Vitamins (Continued)

Vitamin	Chief Functions	Result of Deficiency or Overdose	Characteristics	Good Sources
VITAMIN B ₁₂ Cyanocobalamin Hydroxycobalamin	Needed for myelin synthesis; essential for proper red blood cell development; associated with folate metabolism.	<i>Deficiency:</i> Pernicious anemia; neurological disorders.	Water soluble; alcohol soluble; unstable in hot alkaline or acid solutions.	Synthesized by gastrointestinal flora; meat; yeast; milk; eggs.
VITAMIN C Ascorbic acid	Acts as an antioxidant; essential to formation of the protein collagen; facilitates iron absorption; facilitates cholesterol conversion to bile acids; essential to serotonin synthesis.	<i>Deficiency:</i> Joint tenderness; lowered resistance to infections; susceptibility to dental caries, pyorrhea, and bleeding gums; delayed wound healing; bruising; anemia; hemorrhaging; scurvy. <i>Overdose:</i> Nausea; diarrhea; hemolytic anemia; gout; kidney stones.	Water soluble; destroyed by light; heat hastens the process; lost in cooking when water is discarded; cooking loss is increased in iron or copper utensils. Stored in the body to a limited extent.	Citrus fruit; strawberries; green peppers; mustard greens; cauliflower.
VITAMIN D Calciferol Ergocalciferol Cholecalciferol Calcitriol Antirachitic factor	Promotes gastrointestinal absorption of calcium and phosphorus; promotes bone and tooth mineralization; promotes renal calcium absorption; antirachitic.	<i>Deficiency:</i> Interferes with utilization of calcium and phosphorus in bone and tooth formation; irritability; weakness; rickets in young children; osteomalacia in adults. <i>Overdose:</i> Irritability; kidney stone formation; calcification of soft tissues.	Fat soluble; soluble in organic solvents; relatively stable when refrigerated; stored in liver; often associated with vitamin A.	Formed in the skin by sunlight exposure; fortified milk and dairy products; egg yolks; liver; fatty fish, esp. salmon, tuna, herrings, and sardines; oysters.
VITAMIN E Alpha-tocopherol Beta-tocopherol Gamma-tocopherol	Prevents oxidative damage of lipids and cell membranes; promotes red blood cell stability.	<i>Deficiency:</i> Immune system suppression; red blood cell hemolysis.	Fat soluble; destroyed by heat; destroyed by oxidation.	Vegetable oils, esp. soybean and corn; wheat germ.

<p>FOLATE Folacin Folic acid</p>	<p>Needed for normal hematopoiesis; important coenzyme for nucleic acid synthesis; facilitates fetal development for neural tube closure; functions interrelated with those of vitamin B₁₂.</p>	<p><i>Deficiency:</i> Note: Neural tube defects including spina bifida and anencephalus are associated with maternal deficiency; alcohol interferes with absorption; diarrhea; glossitis; macrocytic anemia. <i>Overdose:</i> Masking of vitamin₁₂ deficiency, which may lead to nerve damage.</p>	<p>Slightly water soluble; destroyed by heat at low pH; loss in food stored at room temperature.</p>	<p>Liver; green leafy vegetables; legumes; beets; broccoli; cauliflower; citrus fruits; sweet potatoes.</p>
<p>VITAMIN K Phylloquinone (plant form) Menaquinone (bacterial form)</p>	<p>Regulates blood coagulation; regulates blood Ca⁺⁺ levels.</p>	<p><i>Deficiency:</i> Hemorrhagic disease; fat malabsorption can cause deficiency. <i>Overdose:</i> Kernicterus.</p>	<p>Fat soluble; stable to heat.</p>	<p>Produced by gastrointestinal flora; green leafy vegetables, esp. broccoli; cauliflower; liver.</p>
<p>NIACIN Nicotinic acid Nicotinamide</p>	<p>Facilitates glycolysis, tissue respiration, fat synthesis, and cellular energy production.</p>	<p><i>Deficiency:</i> Dermatitis; edema; diarrhea; irritability; mental confusion. <i>Overdose:</i> Flushed skin; intestinal irritation; liver damage.</p>	<p>Soluble in hot water and alcohol; stable during cooking; not destroyed by light, air, or alkali.</p>	<p>Milk; eggs; meat; legumes; whole-grain or enriched breads and cereals. Note: Also formed in the body from dietary tryptophan (amino acid).</p>

Appendix 1-7 FDA-Approved Dietary Health Claims

Health Claim	Requirements	Sample Claim
<p>Calcium and osteoporosis Low calcium intake is one risk factor for osteoporosis. Lifelong adequate calcium intake helps maintain bone health by increasing, as much as genetically possible, the amount of bone formed in the teens and early adult life and by helping to slow the rate of bone loss that occurs later in life.</p>	<p>Food or supplement must be “high” in calcium and must not contain more phosphorus than calcium. Claims must cite other risk factors; state the need for regular exercise and a healthful diet; explain that adequate calcium early in life helps reduce fracture risk later by increasing, as much as genetically possible, a person’s peak bone mass; and must indicate that those at greatest risk of developing osteoporosis later in life are white and Asian teenage and young adult women who are in their bone-forming years. Claims for products with more than 400 mg of calcium per day must state that a daily intake over 2000 mg offers no added known benefit to bone health.</p>	<p><i>Regular exercise and a healthy diet with enough calcium help teen and young adult white and Asian women maintain good bone health and may reduce their high risk of osteoporosis later in life.</i></p>
<p>Dietary fat and cancer Diets high in fat increase the risk of some types of cancer, such as cancers of the breast, colon, and prostate. Although scientists don’t know how total fat intake affects cancer development, low-fat diets reduce the risk. Experts recommend that Americans consume 30% or less of daily calories as fat. Typical U.S. intakes are 37%.</p>	<p>Foods must meet criteria for “low fat.” Fish and game meats must meet criteria for “extra lean.” Claims may not mention specific types of fats and must use “total fat” or “fat” and “some types of cancer” or “some cancers” in discussing the nutrient-disease link.</p>	<p><i>Development of cancer depends on many factors. A diet low in total fat may reduce the risk of some cancers.</i></p>

Dietary saturated fat and cholesterol and risk of coronary heart disease
Diets high in saturated fat and cholesterol increase total and low-density (bad) blood cholesterol levels and, thus, the risk of coronary heart disease. Diets low in saturated fat and cholesterol decrease the risk. Guidelines recommend that American diets contain less than 10% of calories from saturated fat and less than 300 mg cholesterol daily. The average American adult diet has 13% saturated fat and 300 to 400 mg cholesterol a day.

Dietary soluble fiber, such as that found in whole oats and psyllium seed husk, and coronary heart disease
When included in a diet low in saturated fat and cholesterol, soluble fiber may affect blood lipid levels, such as cholesterol, and thus lower the risk of heart disease. However, because soluble dietary fibers constitute a family of very heterogeneous substances that vary greatly in their effect on the risk of heart disease, FDA has determined that sources of soluble fiber for this health claim need to be considered case-by-case. To date, FDA has reviewed and authorized two sources of soluble fiber eligible for this claim: whole oats and psyllium seed husk.

Foods must meet criteria for “low saturated fat,” “low cholesterol,” and “low fat.” Fish and game meats must meet criteria for “extra lean.” Claims must use “saturated fat and cholesterol” and “coronary heart disease” or “heart disease” in discussing the nutrient-disease link.

Foods must meet criteria for “low saturated fat,” “low cholesterol,” and “low fat.” Foods that contain whole oats must contain at least 0.75 g of soluble fiber per serving. Foods that contain psyllium seed husk must contain at least 1.7 g of soluble fiber per serving. The claim must specify the daily dietary intake of the soluble fiber source necessary to reduce the risk of heart disease and the contribution one serving of the product makes toward that intake level. Soluble fiber content must be stated in the nutrition label. Claims must use “soluble fiber” qualified by the name of the eligible source of soluble fiber and “heart disease” or “coronary heart disease” in discussing the nutrient-disease link. Because of the potential hazard of choking, foods containing dry or incompletely hydrated psyllium seed husk must carry a label statement telling consumers to drink adequate amounts of fluid, unless the manufacturer shows that a viscous adhesive mass is not formed when the food is exposed to fluid.

Although many factors affect heart disease, diets low in saturated fat and cholesterol may reduce the risk of this disease.

Diets low in saturated fat and cholesterol that include 3 g of soluble fiber from whole oats per day may reduce the risk of heart disease. One serving of this whole-oats product provides [number] grams of this soluble fiber.

FDA-Approved Dietary Health Claims (Continued)

<i>Health Claim</i>	<i>Requirements</i>	<i>Sample Claim</i>
<p>Fiber-containing grain products, fruits, and vegetables and cancer Diets low in fat and rich in fiber-containing grain products, fruits, and vegetables may reduce the risk of some types of cancer. The exact role of total dietary fiber, fiber components, and other nutrients and substances in these foods is not fully understood.</p>	<p>Foods must meet criteria for "low fat" and, without fortification, be a "good source" of dietary fiber. Claims must not specify types of fiber and must use "fiber," "dietary fiber," or "total dietary fiber" and "some types of cancer" or "some cancers" in discussing the nutrient-disease link.</p>	<p><i>Low-fat diets rich in fiber-containing grain products, fruits, and vegetables may reduce the risk of some types of cancer, a disease associated with many factors.</i></p>
<p>Fruits, vegetables, and grain products that contain fiber, particularly soluble fiber, and risk of coronary heart disease Diets low in saturated fat and cholesterol and rich in fruits, vegetables, and grain products that contain fiber, particularly soluble fiber, may reduce the risk of coronary heart disease. (It is impossible to adequately distinguish the effects of fiber, including soluble fiber, from those of other food components.)</p>	<p>Foods must meet criteria for "low saturated fat," "low fat," and "low cholesterol." They must contain, without fortification, at least 0.6 g of soluble fiber per reference amount, and the soluble fiber content must be listed. Claims must use "fiber," "dietary fiber," "some types of dietary fiber," "some dietary fibers," or "some fibers" and "coronary heart disease" or "heart disease" in discussing the nutrient-disease link. The term "soluble fiber" may be added.</p>	<p><i>Diets low in saturated fat and cholesterol and rich in fruits, vegetables, and grain products that contain some types of dietary fiber, particularly soluble fiber, may reduce the risk of heart disease, a disease associated with many factors.</i></p>

Folate and neural tube birth defects

Defects of the neural tube occur within the first six weeks after conception, often before the pregnancy is known. The U.S. Public Health Service recommends that all women of childbearing age in the United States consume 0.4 mg (400 µg) of folic acid daily to reduce their risk of having a baby affected with spina bifida or other neural tube defects.

Foods must meet or exceed criteria for “good source” of folate—that is, at least 40 µg of folic acid per serving (at least 10% of the Daily Value). A serving of food cannot contain more than 100% of the Daily Value for vitamin A and vitamin D because of their potential risk to fetuses. Claims must use “folate,” “folic acid,” or “folacin” and “neural tube defects,” “birth defects such as spina bifida or anencephaly,” “birth defects of the brain or spinal cord, anencephaly, or spina bifida,” “spina bifida and anencephaly, birth defects of the brain or spinal cord,” “birth defects of the brain and spinal cord,” or “brain or spinal cord birth defects” in discussing the nutrient-disease link. Folic acid content must be listed on the Nutrition Facts panel.

Healthful diets with adequate folate may reduce a woman's risk of having a child with a brain or spinal cord birth defect.

Fruits and vegetables and cancer Diets low in fat and rich in fruits and vegetables may reduce the risk of some cancers. Fruits and vegetables are low-fat foods and may contain fiber or vitamin A (as beta-carotene) and vitamin C. (The effects of these vitamins cannot be adequately distinguished from those of other fruit or vegetable components.)

Foods must meet criteria for “low fat” and, without fortification, be a “good source” of fiber, vitamin A, or vitamin C. Claims must characterize fruits and vegetables as foods that are low in fat and may contain dietary fiber, vitamin A, or vitamin C; characterize the food itself as a “good source” of one or more of these nutrients, which must be listed; refrain from specifying types of fatty acids; and use “total fat” or “fat,” “some types of cancer” or “some cancers,” and “fiber,” “dietary fiber,” or “total dietary fiber” in discussing the nutrient-disease link.

Low-fat diets rich in fruits and vegetables (foods that are low in fat and may contain dietary fiber, vitamin A, or vitamin C) may reduce the risk of some types of cancer, a disease associated with many factors. Broccoli is high in vitamins A and C, and it is a good source of dietary fiber.

FDA-Approved Dietary Health Claims (Continued)

Health Claim	Requirements	Sample Claim
<p>Sodium and hypertension (high blood pressure) Hypertension is a risk factor for coronary heart disease and stroke deaths. The most common source of sodium is table salt. Diets low in sodium may help lower blood pressure and related risks in many people. Guidelines recommend daily sodium intakes of not more than 2400 mg. Typical U.S. intakes are 3000 to 6000 mg.</p>	<p>Foods must meet criteria for "low sodium." Claims must use "sodium" and "high blood pressure" in discussing the nutrient-disease link.</p>	<p><i>Diets low in sodium may reduce the risk of high blood pressure, a disease associated with many factors.</i></p>
<p>Dietary sugar alcohol and dental caries (cavities) Eating foods high in sugar and starches between meals may promote tooth decay. Sugarless candies made with certain sugar alcohols do not.</p>	<p>Foods must meet the criteria for "sugar free." The sugar alcohol must be xylitol, sorbitol, mannitol, maltitol, isomalt, lactitol, hydrogenated starch hydrolysates, hydrogenated glucose syrups, erythritol, or a combination of these. When the food contains a fermentable carbohydrate, such as sugar or flour, the food must not lower plaque pH in the mouth below 5.7 while it is being eaten or up to 30 minutes afterwards. Claims must use "sugar alcohol," "sugar alcohols," or the name(s) of the sugar alcohol present and "dental caries" or "tooth decay" in discussing the nutrient-disease link. Claims must state that the sugar alcohol present "does not promote," "may reduce the risk of," "is useful in not promoting," or "is expressly for not promoting" dental caries.</p>	<p><i>Full claim: Frequent between-meal consumption of foods high in sugars and starches promotes tooth decay. The sugar alcohols in this food do not promote tooth decay. On small packages only: Does not promote tooth decay.</i></p>

Appendix 1–8 FDA-Approved Terminology for Food Labels

cholesterol-free A food for which a serving meets all of the five following requirements: contains less than 2 mg of cholesterol; contains 5 g or less of total fat; is 20% or less total fat on a dry weight basis; has 2 g or less saturated fatty acids; and is 6% or less saturated fatty acids on a dry weight basis.

extra lean Description of the fat content of meat, poultry, seafood, or game meat that contains less than 5 g fat, less than 2 g saturated fat, and less than 95 mg cholesterol per serving and per 100 g.

free A food or product that contains no amount of or physiologically inconsequential amounts of fat, saturated fat, cholesterol, sodium, sugar, or calories.

good source One serving of a food or product that contains 10% to 19% of the Daily Value for a particular nutrient.

healthy A food low in fat and saturated fat with limited amounts of cholesterol and sodium. Additionally, single-item foods must contain 10% or more of vitamin A, vitamin C, iron, protein, or fiber while not exceeding 360 mg sodium; meal-type products must provide 10% of 2 or 3 of these nutrients as well as not exceeding 480 mg of sodium per serving.

high A product that contains 20% or more of the Daily Value for a particular nutrient.

lean Description of the fat content of meat, poultry, seafood, or game meat that contains less than 10 g fat, less than 4.5 g saturated fat, and less than 95 mg cholesterol per serving and per 100 g.

less A food containing 25% less of a nutrient or of calories than the reference food.

light 1. A nutritionally altered product that contains either $\frac{1}{3}$ fewer calories or half the fat of the reference food. If the caloric content of the reference food is derived 50% or more from fat, then the reduction must reduce the fat by 50%. **2.** A reduction by 50% in the sodium content of a low-calorie, low-fat food.

low A food or product that can be consumed in large amounts without exceeding the Daily Value for the referenced nutrient.

low cholesterol A food for which a serving meets all of the six following requirements: contains 20 mg or less of cholesterol; contains 0.2 mg or less total fat on a dry weight basis; contains 5 g or less of total fat per serving; is 20% or less total fat on a dry weight basis; contains 2 g or less saturated fatty acids per serving; and is 6% or less saturated fatty acids on a dry weight basis.

more One serving of a food that contains at least 10% more of the Daily Value of a nutrient than the reference food. This 10% rule also applies to the claims of fortified, enriched, added, extra, and plus, specifically where the food has been altered to attain the increase in nutrient content.

SOURCE: The Food and Drug Administration's Final Rule on Food Labeling: Definitions of the terms Cholesterol-Free and Low Cholesterol were published in the July 19, 1990 Federal Register.

APPENDIX 2 Complementary and Alternative Medicine

Appendix 2-1 Herbal Medicines and Their Uses

Common Name	Uses	Adverse Reactions and Contraindications	Interactions	Route/Commonly Used Doses
aloe	External: Heals burns/sunburns, wounds, skin irritation; used as anti-infective agent, moisturizer. Internal: Used as laxative and for general healing.	Contact dermatitis, intestinal contractions. Avoid oral use in various GI conditions (i.e., obstruction, inflammation), ulcers, abdominal pain, menstruation, kidney conditions.	May increase risk associated with cardiac glycosides. Use with other K ⁺ -wasting drugs may add to hypokalemic effect of aloe.	PO: <i>Capsules</i> —50–200 mg daily; <i>gel</i> —30 ml t.i.d.; <i>tincture (1:10, 50% alcohol)</i> —15–60 drops. Top: Aloe gel can be applied liberally to affected area 3–5 times daily.
anise	Common cold, cough/bronchitis, fevers, liver and gallbladder complaints, loss of appetite.	Occasional allergic reactions (skin, respiratory, and GI). Avoid if allergy to anise exists.	Excessive doses may interfere with anticoagulants, MAO inhibitors, and hormone therapy.	PO: <i>Dried fruit</i> —0.5–1 g; <i>essential oil</i> —50–200 ml; <i>tea</i> —3 times daily.
arnica	External: Used after injuries (bruises, dislocations, contusions, muscular and joint problems). Inflammation caused by insect bites.	Prolonged use on broken skin may cause edematous dermatitis with pustular formations. Eczema (long-term use). Use of higher concentrations may cause toxic skin reactions with vesicle formation and necrosis. Avoid use on broken skin; avoid if allergy to arnica and plants in Asteraceae family exists.	None known.	Top: Typical strength is 2 g of flower heads in 100 ml of water. For poultice, dilute tincture 3–10 times with water. For mouthwash, dilute tincture 10 times with water.
black cohosh	Premenstrual symptoms, perimenopausal and postmenopausal symptoms such as hot flashes, depression, mood swings, profuse sweating, and sleep disorders.	GI discomfort (occasionally). Avoid during pregnancy and lactation.	None known.	PO: <i>Dried root</i> —0.3–2 g 3 times daily; <i>liquid extract (1:1, 90% alcohol)</i> —0.3–2 ml. Do not use for more than 6 mo.

brewer's yeast	Common cold, cough/bronchitis, dyspepsia, eczema, acne, fevers, inflammation (oral, pharyngeal), loss of appetite, prevention of infections.	Allergic skin reactions may occur. Migraine headaches may be triggered in susceptible patients. GI gas may result from large doses. Avoid during pregnancy and lactation.	Concurrent use with MAO inhibitors can cause an increase in BP.	PO: 6 g of brewer's yeast daily.
camphor	External: Pain relief for warts, cold sores, hemorrhoids, muscular aches. Antipruritic. Inflammatory conditions of the respiratory tract. Internal: Circulatory regulation disorders, catarrhal diseases of the respiratory tract (internal use is unsafe and should be avoided). External: Inflammation of skin and mucous membranes, bacterial skin diseases including oral cavity and gums. Respiratory tract inflammation and irritation. Anogenital inflammation. Internal: GI spasms and inflammatory conditions. External: Bruises and sprains.	Skin irritation (local effect), contact dermatitis may occasionally occur following application of oily salves with camphor. Avoid during pregnancy and lactation. Avoid if GI conditions (infectious, inflammatory) exist.	None known.	Top: 0.1–3% 3–4 times daily for cold sores, antipruritic agent, hemorrhoids. Inhal: 1 tbsp of camphor solution per quart of water in a hot steam vaporizer or bowl up to 3 times daily.
chamomile	External: Inflammation of skin and mucous membranes, bacterial skin diseases including oral cavity and gums. Respiratory tract inflammation and irritation. Anogenital inflammation. Internal: GI spasms and inflammatory conditions. External: Bruises and sprains.	Contact dermatitis, severe hypersensitivity reactions, anaphylaxis, vomiting. Avoid during pregnancy and lactation.	None known.	PO: <i>Dried flower heads</i> — 2–8 g 3 times daily; <i>tea</i> — 1 cup of tea 3–4 times daily. Tea is made by steeping 3 g of flower heads in 150 ml of boiling water for 10 min. <i>Liquid extract</i> — 1–4 ml 3 times daily.
comfrey	External: Bruises and sprains.	No adverse reactions known. Avoid during pregnancy and lactation. Do not use on broken or abraded skin.	None known.	Top: 5–20% comfrey ointment. Use should be limited to 10 days.
dill	Dyspepsia, fever, colds, cough, bronchitis, digestive aid.	Contact dermatitis. No contraindications known.	None known.	PO: <i>Dill seeds</i> — 3 g; <i>dill oil</i> — 100–300 mg/day.

Herbal Medicines and Their Uses (Continued)

Common Name	Uses	Adverse Reactions and Contraindications	Interactions	Route/Commonly Used Doses
echinacea	Cold remedy, cough, and bronchitis, fevers, wounds and burns, inflammation of the mouth and pharynx.	Tingling sensation on tongue, nausea, vomiting, allergic reaction, fever. Avoid if multiple sclerosis, leukoses, collagenoses, AIDS, or tuberculosis is present; avoid if hypersensitivity and cross-sensitivity exist in patients allergic to sunflower seeds and the daisy family, including ragweed; avoid during pregnancy and lactation.	May possibly interfere with immunosuppressant agents because of its immunostimulant activity.	PO: <i>Fluid extract</i> — 1–2 ml t.i.d.; <i>solid form (6.5:1)</i> — 300 mg t.i.d. Should not be used for more than 8 weeks at a time.
eucalyptus	Cough/bronchitis, rheumatism, catarrhs of the respiratory tract.	Nausea, vomiting, and diarrhea may occur after ingestion of eucalyptus (rare). Avoid if severe liver disease, GI tract and bile duct inflammation, hypotension, kidney inflammation are present.	Induction of liver enzymes, which may increase the metabolism of other drugs.	PO: <i>Eucalyptus oil</i> — 300–600 mg/day. Top: <i>Eucalyptus oil (5–20% in vegetable oil or semisolid preparations)</i> , used for local application by diluting 30 ml of oil in 500 ml of lukewarm water.
fennel	Dyspepsias, catarrhs of the respiratory tract.	Allergic reactions (skin and respiratory tract) have been reported. Avoid during pregnancy and lactation.	None known.	PO: <i>Dried fruit/seed</i> — 5–7 g/day; <i>tea</i> — 1 cup daily. Tea is made by steeping 1–2 g of ground seed/fruit in 150 ml boiling water for 10 min and then straining.
feverfew	Prophylaxis of migraine headaches, fever, arthritis.	Dizziness, heartburn, indigestion, inflammation (lips, mouth, tongue), light-headedness, mouth ulceration, and weight gain. Allergic contact dermatitis (reported with many species of feverfew). Avoid during pregnancy and lactation.	May inhibit platelet activity (avoid use with warfarin or other anticoagulants).	PO: 50–125 mg of freeze-dried leaf per day with food.

- garlic
 Reduction of BP and serum cholesterol level.
PO: One clove of fresh garlic 1–2 times daily.
- ginger
 Prevention and treatment of nausea and vomiting associated with motion sickness.
PO: 1000 mg ginger taken 3–60 min before travel for motion sickness or before surgery.
 Prevention of postoperative nausea and vomiting. May be used for dyspepsia, flatulence, and relief of joint pain in rheumatoid arthritis.
Natural Product–Drug: may theoretically increase risk of bleeding when used with anti-coagulants and antiplatelet agents. **Natural Product–Natural Product:** may theoretically increase risk of bleeding when used with other herbs that have anticoagulant or antiplatelet activities.
- ginkgo
 Symptomatic relief of organic brain dysfunction (dementia syndromes, short-term memory deficits, inability to concentrate, depression), intermittent claudication, vertigo and tinnitus of vascular origin.
Natural Product–Drug: theoretically may potentiate effects of antiplatelet agents and MAO inhibitors. **Natural Product–Natural Product:** may increase risk of bleeding when used with other herbs with antiplatelet effects (some include angelica, arnica, chamomile, feverfew, garlic, ginger, and licorice).
 Dizziness, headache, upset stomach, allergic skin reaction, palpitations. Avoid if hypersensitivity exists; avoid during pregnancy and lactation.
PO: *native dry extract*—120–240 mg in 2 or 3 doses for organic brain syndromes; 120–160 mg in 2 or 3 doses for intermittent claudication, vertigo, and tinnitus.

Herbal Medicines and Their Uses (Continued)

Common Name	Uses	Adverse Reactions and Contraindications	Interactions	Route/Commonly Used Doses
ginseng	Improving physical stamina, general tonic to energize during times of fatigue and inability to concentrate, sedative, sleep aid, antidepressant, diabetes.	Depression, dizziness, headaches, insomnia, hypertension, tachycardia, amenorrhea, vaginal bleeding, skin eruptions, estrogen-like effects, mastalgia, Stevens-Johnson syndrome. Avoid during pregnancy and lactation; avoid if manic-depressive disorders or psychosis exists.	Natural Product–Food: may potentiate effects of caffeine in coffee or tea. Natural Product–Drug: may decrease anticoagulant activity of warfarin. Avoid concomitant use with warfarin, heparin, aspirin, and NSAIDs. May interfere with phenelzine treatment and cause headache, tremulousness, and manic episodes. May potentiate the toxic effects of corticosteroids. Natural Product–Natural Product: may increase risk of bleeding when used with herbs that have antiplatelet or anticoagulant activities.	PO: <i>capsule</i> —200–600 mg/day; <i>root powder</i> —0.6–3 g 1–3 times daily.
goldenseal	Infections of the mucous membranes (bacterial and fungal), conjunctivitis, and GI infections associated with diarrhea, cirrhosis, gallbladder inflammation, and cancer. Topically used to treat eczema, acne, itching.	CNS stimulant, hallucinations, occasionally delirium, nausea, vomiting, constipation, ulceration (vaginal use), may affect production of B vitamins in colon. Avoid during pregnancy and lactation; avoid if hypertension exists.	Natural Product–Drug: May theoretically interfere with antacids, sucralate, and H ₂ antagonists. May interfere with antihypertensive agents and anticoagulants. May have additive effects when used concurrently with other drugs with sedative properties. Natural Product–Natural Product: concurrent use with herbs that have sedative properties may potentiate sedative effects.	PO: <i>dried root and rhizome</i> —0.5–1 g t.i.d.; <i>liquid extract</i> —(1:1 in 60% ethanol)—0.3–1 ml t.i.d.; <i>tincture</i> —(1:10 in 60% ethanol)—2–4 ml t.i.d. Top: used as mouthwash 3–4 times daily.

hawthorn	Hypertension, mild to moderate CHF, angina, spasmolytic, sedative.	Agitation, dizziness, headache, sedation (high dose), sleeplessness, hypotension (high dose), palpitations, nausea. Avoid during pregnancy.	Natural Product–Drug: increases vitamin C utilization in body, may inhibit metabolism of ACE inhibitor, potentiates effect of cardiac glycosides, concurrent use with other coronary vasodilators (theophylline, caffeine, epinephrine) may potentiate vasodilatory effects, may have additive CNS depressant effect when used with other CNS depressants. Natural Product–Natural Product: additive effect with other cardiac glycoside-containing herbs (digitalis leaf, black hellebore, oleander leaf).	PO: <i>Hawthorn fluid extract</i> (1:1 in 25% alcohol) — 0.5–1 ml t.i.d.; <i>hawthorn fruit tincture</i> (1:5 in 45% alcohol) — 1–2 ml t.i.d.; <i>dried hawthorn berries</i> — 300–1000 mg t.i.d.
kava-kava	Anxiety, stress, restlessness, insomnia, mild muscle aches and pains.	Dizziness, headache, sedation, sensory disturbances, pupil dilation, visual accommodation disorders, gastrointestinal complaints, allergic skin reactions, yellow discoloration of skin, pellagroid dermatopathy, weight loss, ataxia, muscle weakness. Avoid during pregnancy and lactation; avoid if endogenous depression exists. Do not give to children under 12 yr of age.	Natural Product–Drug: additive effect when used with prazosin. Potentiates effect of CNS depressants (ethanol, barbiturates, benzodiazepines), has decreased the effectiveness of levodopa in a few cases. May have additive effects with antiplatelet agents and MAO inhibitors. Natural Product–Natural Product: May have additive sedative effects when used with other herbs with sedative properties.	PO: <i>dried kava root extract</i> — 100–250 mg for antianxiety; <i>kavalactones</i> — 180–210 mg for insomnia.

Herbal Medicines and Their Uses (Continued)

Common Name	Uses	Adverse Reactions and Contraindications	Interactions	Route/Commonly Used Doses
ma-huang	Asthma, hay fever, colds, weight-loss aid.	Increased BP and heart rate and cardiac arrhythmias, insomnia, motor restlessness, headaches, nausea, vomiting, anxiety. Avoid during pregnancy and lactation. Avoid if heart disease, hypertension, diabetes, hyperthyroidism, or BPH is present.	Potentiates sympathomimetic effects of antihypertensives, antidepressants, MAO inhibitors, and caffeine.	PO: <i>Ephedra</i> — 15–30 mg 2–3 times daily; <i>crude herb</i> — 500–1000 mg 2–3 times daily.
milk thistle	Cirrhosis, chronic hepatitis, gallstones, psoriasis.	Mild laxative, mild allergic reaction. Avoid during pregnancy and lactation.	None known.	PO: <i>Extract (70%)</i> — 200–400; <i>dried fruit (seed)</i> — 12–15 g/day; <i>tea</i> — 3–4 times daily 30 min before meals. Tea is prepared by steeping and 3–5 g of crushed fruit/seed in 150 ml of boiling water for 10 min and then straining. PO: <i>Tincture</i> — 5 ml 30 min before bedtime or 1–4 ml up to 3 times daily.
mugwort	GI ailments (colic, diarrhea, constipation), worm infestations, persistent vomiting, hysteria, epilepsy, menstrual problems and irregular periods; as a sedative.	Allergic reactions. Avoid during pregnancy and lactation.	None known.	
nettle	Urinary tract infections, kidney and bladder stones. Supportive therapy for rheumatic ailments.	Allergic reactions (rare). Avoid during pregnancy and lactation.	None known.	PO: <i>Tea</i> — 1 cup up to 3 times daily with adequate fluid intake. Tea is made by steeping 1.5–5 g of nettle in 150 ml of boiling water for 10 min and then straining. <i>Dried extract (7:1)</i> — 770 mg twice daily; <i>liquid extract (1:1, 25% alcohol)</i> — 3–4 ml 3 times daily. Top: <i>Tincture (1:10)</i> for external use.

oak bark	<p>External: Inflammatory skin disease. Internal: diarrhea (non-specific, acute), mild inflammation of oral and pharyngeal regions and genital and anal areas.</p>	<p>GI disturbances; kidney damage, liver necrosis. Avoid during pregnancy and lactation. Avoid oak bark baths if weeping eczema, large areas of skin damage, febrile or infectious disease, cardiac insufficiency is present.</p>	<p>May reduce or inhibit the absorption of alkaloids and other alkaline drugs.</p>	<p>PO: For diarrhea, 1 cup of tea up to 3 times daily for 3–4 days. Tea is made by steeping 1 g coarsely ground bark in 150 ml of boiling water and then straining. Top: For rinses, compresses, gargles, use 20 g bark in 1 liter of water. For baths, use 5 g bark in 1 liter of water and add to bath water. Topical use should be limited to 2–3 weeks.</p>
pennyroyal	<p>External: Skin diseases. Internal: Digestive disorders, liver and gallbladder disorders, gout, colds, and increased urinary frequency.</p>	<p>Abortifacient in high doses. Hepatotoxicity (use not recommended because of hepatotoxicity). Avoid during pregnancy and lactation.</p>	<p>None known.</p>	<p>Use not recommended because of toxicity.</p>
peppermint	<p>Colds, coughs, inflammation of mouth and pharynx, GI cramps and as an antispasmodic and antipyretic agent. The oil is used topically for myalgias, toothaches, pruritus, urticaria, and as an anti-infective agent.</p>	<p>Heartburn when taken orally. Allergic reactions (headache and flushing). External use may cause skin irritation and contact dermatitis. In small children and babies, the oil may cause bronchial spasms and collapse when applied to their facial, nasal, or chest areas. Avoid during pregnancy and lactation. Avoid use of oil on infants/small children. Avoid if hypersensitivity to peppermint exists. Avoid if bile duct obstruction, severe liver disease, or gallbladder inflammation is present.</p>	<p>Gastric acid–blocking drugs.</p>	<p>PO: <i>Peppermint oil</i>—0.2–0.4 ml 3 times daily in diluted preparation; <i>capsules</i>—1–2 capsules 3 times daily (0.2 ml/capsule). Top: 5–20% peppermint oil in oily preparations, 5–10% in aqueous/ethanol preparations, 1–5% in nasal preparations. To apply, rub small amount on affected skin areas. Inhaln: 3–4 drops of oil placed in hot water and inhaled. Inhalation contraindicated in children.</p>

Herbal Medicines and Their Uses (Continued)

Common Name	Uses	Adverse Reactions and Contraindications	Interactions	Route/Commonly Used Doses
psyllium	Constipation, diarrhea, lowering serum cholesterol	Flatulence, abdominal distention, esophageal/bowel obstruction if not taken with water/fluid. Allergic reactions. Avoid if fecal impaction, GI tract obstruction or narrowing is present.	Interferes with absorption of other drugs taken simultaneously.	PO: 3.5 g 1–3 times daily of the seed husk taken with adequate fluids.
Saint John's wort	Management of mild to moderate depression. Externally used for inflammation of the skin, blunt injuries, wounds, and burns.	Dizziness, restlessness, sleep disturbances, fatigue, hypertension, GI side effects, abdominal pain, bloating, constipation, dry mouth, feeling of fullness, flatulence, nausea, vomiting, allergic skin reactions, phototoxicity, photodermatitis. Avoid during pregnancy and lactation. Do not give to children.	Concurrent use with alcohol or other antidepressants may increase the risk of adverse reactions. Concurrent use with indinavir may significantly reduce blood concentrations of indinavir.	PO: <i>Hypericum extract</i> — 300 mg t.i.d. for depression. Top: <i>Hypericin</i> — 0.2–1 mg daily.
saw palmetto	Urination problems in BPH, irritable bladder.	Headaches, stomach problems (rare). Avoid during pregnancy and lactation; avoid if breast cancer exists.	Oral contraceptives and hormone therapy (possible).	PO: <i>Dried berry</i> — 0.5–1 g of dried berry three times daily; <i>tea</i> — 1 cup of tea 3 times daily. Tea is made by steeping 0.5–1 g of dried berry in 150 ml of boiling water for 10 min and then straining. <i>Saw palmetto extracts with 80–90% fatty acids</i> — 160 mg twice daily.

spruce	Colds, cough, bronchitis, fevers, inflammation of the mouth and pharynx.	None known.	PO: <i>Fresh shoots</i> — 5–6 g/per day. <i>Essential oil</i> — given as 4 drops in water or with sugar 3 times daily. Top: 200–300 g of shoots boiled in 1 liter of water; steep for 5 min, strain, and add to full bath. Inhaln: Inhale 2 g of oil in hot water several times daily.
uva-ursi	Urinary tract infections.	Use with urine-acidifying drugs may reduce the efficacy of uva-ursi.	PO: 1 cup of tea up to 4 times daily. Tea is made by steeping 3 g of dried leaf in 150 ml cold water for 12–24 hr and then straining. This herb should not be used for more than 1 week at a time, no more than 5 times a year.
valerian	Restlessness, sleeping disorders due to nervous conditions.	Use with alcohol and other sedatives may potentiate sedative effects.	PO: <i>Extract (0.8% valeric acid)</i> — 150–300 mg 30 min before bedtime. <i>Tea</i> — 1 cup 1–3 times daily. Tea is made by steeping 2–3 g of root in 150 ml of boiling water for 10 min and then straining.
woodruff	Nervousness, sleeplessness, hysteria, cardiac irregularity.	None known.	PO: 1 cup of tea once a day, shortly before bedtime. Tea is made with 2 teaspoonfuls (1.8 g) in one glass of water.

BPH: benign prostatic hyperplasia; Inhaln: Inhalation; PO: by mouth; PSA: prostate-specific antigen; Top: topical.

* NOTE: Instruct patient to consult health care professional before taking any prescription or OTC medications concurrently with any of these herbal products. The purity, safety, and effectiveness of many herbal remedies remain untested and unproven.

SOURCE: Deglin, JH and Vallerand, AH: *Davis's Drug Guide for Nurses* (11th ed.), F.A. Davis, Philadelphia, 2009.

Appendix 2-2 Forms of Herbal Preparations

bath A form of hydrotherapy. Immerse the full body in a bath with 500 ml or 1 pint of infusion or decoction. The full-strength herbal infusion or decoction is used for foot or hand baths.

capsule or pill Powdered herbs may be enclosed in gelatin capsules or pressed into a hard pill. The powder can also be rolled into a pill with bread or cream cheese. This is one of the most common ways herbs are supplied and used.

compress A clean cloth is soaked in an herbal infusion or decoction and applied over injured or inflamed areas. Also called a fomentation.

crude herb The fresh or dried herb in an unprocessed form. Measurements are expressed by weight.

decoction An aqueous preparation of hard and woody herbs, which are made soluble by simmering in almost boiling water for 30 minutes or more. If the active ingredients are volatile oils, it is important to cover the pan to prevent vaporization. The decoction is then strained while hot and either stored or consumed as needed.

essential oils Volatile oils, usually mixtures of a variety of odoriferous organic compounds of plants.

extract Concentrated form of natural products obtained by treating crude herb with solvent and then discarding the solvent to result in a fluid extract, solid extract, powdered extract, or tincture. Strength is expressed as the ratio of the concentration of the crude herb to the extract (e.g., 5:1 means five parts crude herb is concentrated in 1 part extract, and 1:2 means one part of extract is comparable to 0.5 parts herb).

fluid extract Concentrated tinctures with a strength of one part solvent to one part herb.

fomentation A clean cloth is soaked in an herbal infusion or decoction and applied over injured or inflamed areas.

infusion The preferred method used for soft plant parts such as leaves, flowers, or green stems, an infusion is prepared just like making a tea. In the case of volatile oils or heat-sensitive ingredients, soaking in water or milk for 6 to 12 hours in a

sealed earthenware pot makes a cold infusion.

liniment Usually a mixture of herbs and alcohol or vinegar to be applied topically over muscles and ligaments.

lozenge Dissolvable tablet often used for upper respiratory and throat problems. It is made by combining a powdered herb with sugar and viscous jelly obtained from either an edible gum or mucilaginous plant.

ointment An herb or mixture of herbs in a semi-solid mixture such as petroleum jelly. This is applied externally for injuries or inflammation. If made with volatile oils, it can even be used as a respiratory antitarrhal. Also known as a salve.

poultice A raw or mashed herb applied directly to the body or wrapped in cheesecloth or other clean cloth. It is used either hot or cold for bruises, inflammation, spasm, and pain.

powdered extract A solid extract which has been dried to a powder.

salve An herb or mixture of herbs in a semi-solid mixture such as petroleum jelly. This is applied externally for injuries or inflammation. If made with volatile oils, it can even be used as a respiratory antitarrhal.

tea Made by steeping herbs in hot water (The same as an *infusion*). Place 1 tsp dried herb or 2 to 3 tsp fresh herb into 1 cup (250 ml) hot or boiling water. Steep for 5 to 15 minutes. For larger quantities, use 1 oz (30 g) of herb in 1 pint (500 ml) of hot water. Bruise or powder seeds before making an infusion or tea. The shelf life of these bioactive fluids is short, even in the refrigerator. Discard them after 8 to 12 hours.

tincture An alcohol-based preparation. Alcohol is a better solvent than water for many plant ingredients, so mixing herbs in alcohol such as vodka or wine with a specific water/alcohol ratio is a common method of extraction. The mixture is soaked for about 2 weeks. Then the herbs are strained out and the liquid is saved in a dark, well-stoppered bottle. Tinctures are much stronger volume-for-volume than infusions or decoctions. Strengths are typically 1:5 to 1:10.

SOURCE: Sierpina, VS: Integrative Health Care: Complementary and Alternative Therapies for the Whole Person, F.A. Davis, Philadelphia, 2001.

Appendix 2–3 Premises of Mind-Body Medicine

Mind and body are simply two aspects of a whole individual. The mind is no less medically real and significant than the body.

Every person has self-healing abilities.

Each person is unique, and must be responded to as such. To be most effective, the treatment program must be individualized for each person.

Each person is an integration of physical, psychological, intellectual, and spiritual aspects. All aspects are equally important. All must be addressed in the approach to health.

Patients' healing abilities are strongly affected by their expectations and beliefs. The expectations, attitudes, beliefs, and words of practitioners strongly influence the expectations of their patients.

Mainline medicine does not have a monopoly on the search for health.

Patients need to be actively involved in their own healing and in the decision making concerning their treatments.

SOURCE: Modified from Mind-Body Medicine: A Clinician's Guide to Psychoneuroimmunology, Watkins, A, p. 99, 1997, by permission of the publisher Churchill Livingstone, and Sierpina, VS: Integrative Health Care: Complementary and Alternative Therapies for the Whole Person, F.A. Davis, Philadelphia, 2001.

Appendix 2–4 Websites for Complementary and Alternative Medicine

This list of Websites, though not exhaustive, is intended to provide general sources of useful information on complementary and alternative medical therapies. Many of these Websites provide links to information on specific therapies and medical conditions. Inclusion of a Website on this list does not imply endorsement of the information contained on that site.

Alternative Health News Online

www.altmedicine.com

Alternative Link, LLC (information on billing codes)

www.alternativelink.com/ali/home/

Alternative Medicine Homepage, Falk Library of the Health Sciences, University of Pittsburgh

www.pitt.edu/~cbw/altm.html

American Association of Naturopathic Physicians

www.naturopathic.org

American Chiropractic Association

www.amerchiro.org

American Holistic Medical Association

www.holisticmedicine.org

American Osteopathic Association

www.am-osteo-assn.org

The Ardell Wellness Report

www.yourhealth.com

Ask Dr. Weil

www.drweil.com

Biotecnoquimica (Venezuela—Spanish language)

www.biotecnoquimica.com

Children's Hospital, Boston: Center for Holistic Pediatric Education and Research (CHPER)

www.childrenshospital.org/holistic

Choices for Health

www.choicesforhealth.com/professional.html

Duke's Phytochemical and Ethnobotanical Database

www.ars-grin.gov/duke

Fetzer Institute (a nonprofit organization promoting the study of the spiritual elements of life)

<http://www.fetzer.org>

Healthfinder

www.healthfinder.com

HerbalGram (American Botanical Council)

www.herbalgram.org

HerbMed

www.herbmed.org

Holistic Medicine Interest Group (Oregon Health Sciences University)

www.ohsu.edu/ohmig/index.html

Longwood Herbal Task Force

www.mcp.edu/herbal

McMaster University (Hamilton, Ontario) Alternative Medicine Health Care Information Resources

<http://hsl.mcmaster.ca/tomflem/altmed.html>

**Medical College of Wisconsin:
Alternative Medicine Resources**

[www.intmed.mcw.edu/gimcme/
altmed.html](http://www.intmed.mcw.edu/gimcme/altmed.html)

**MEDLINE (U.S. National Library of
Medicine)**

www.nlm.nih.gov

**National Council for Reliable Health
Information (NCRHI)**

www.ncahf.org

**National Institutes of Health,
National Center for CAM**

nccam.nih.gov

Natural Healthline

www.naturalhealthvillage.com

**Nurse Healers—Professional
Associates International**

www.therapeutic-touch.org

**Office of Dietary Supplements
(National Institutes of Health): The
International Bibliographic
Information on Dietary
Supplements (IBIDS)**

odp.od.nih.gov/ods/databases/ibids.html

Quackwatch

www.quackwatch.com

Tufts University Nutrition Navigator

www.navigator.tufts.edu

**University of Texas Medical Board's
Alternative and Integrative
Healthcare Program**

atc.utmb.edu/altmed

**University of Washington Medicinal
Herb Garden**

www.nnlm.nlm.nih.gov/pnr/uwmhg

WebMD Self-Care Advisor

www.mywebmd.com

WholeHealthMD

www.wholehealthmd.com

APPENDIX 3 Normal Reference Laboratory Values

BLOOD, PLASMA, OR SERUM VALUES

Determination	Reference Range		SI	Minimal ml Required*	Note
	Conventional	SI			
Acetoacetate plus acetone	Negative			1-B	
Aldolase	1.3–8.2 U/L	22–137 nmol · sec ⁻¹ /L		2-S	Use unhemolyzed serum
Ammonia	12–55 μmol/L	12–55 μmol/L		2-B	Collect in heparinized tube; de-liver <i>immediately</i> packed in ice
Amylase	4–25 units/ml	4–25 arb. unit		1-S	
Ascorbic acid	0.4–1.5 mg/100 ml	23–85 μmol/L		7-B	Collect in heparinized tube before any food is given
Bilirubin	Direct: up to 0.4 mg/100 ml Total: up to 1.0 mg/100 ml	Up to 7 μmol/L Up to 17 μmol/L		1-S	
Blood volume	8.5–9.0% of body weight in kg	80–85 ml/kg			
CA-125	<20 U/ml	<20 kU/L		5	Collect in plain red top tube
Calcium	8.5–10.5 mg/100 ml (slightly higher in children)	2.1–2.6 mmol/L		1-S	
Carbamazepine	4.0–12.0 μg/ml	17–51 μmol/L			
Carbon dioxide content	24–30 mEq/L	24–30 mmol/L		1-S	Fill tube to top
Carbon monoxide	<5% of total hemoglobin			3-B	Fill tube to top
Carcinoembryonic antigen	0.0–2.5 ng/ml	0.0–2.5 μg/L		0.5	Collect in plain red top tube
Carotenoids	0.8–4.0 μg/ml	1.5–7.4 μmol/L		3-S	Vitamin A may be done on same specimen
Ceruloplasmin	27–37 mg/100 ml	1.8–2.5 μmol/L		2-S	
Chloramphenicol	10–20 μg/ml	31–62 μmol/L		0.2-S	
Chloride	100–106 mEq/L	100–106 mmol/L		1-S	
CK isoenzymes	5% MB or less			0.2-S	
Copper	Total: 100–200 μg/100 ml	16–31 μmol/L		1-S	Collect in serum separator tube or heparinized plasma
C reactive protein	0–1.0 mg/dl	0–10 mg/L		0.5	

BLOOD, PLASMA, OR SERUM VALUES (Continued)

Determination	Reference Range		SI	Minimal ml Required*	Note
	Conventional	SI			
Creatine kinase (CK)	Female: 10–79 U/L Male: 17–148 U/L	167–1317 nmol · sec ⁻¹ /L		1-S	
Creatinine	0.6–1.5 mg/100 ml	53–133 μmol/L		1-S	
Ethanol	0 mg/100 ml	0 mmol/L		2-B	Collect in oxalate and refrigerate
Glucose	Fasting: 70–110 mg/100 ml	3.9–5.6 mmol/L		1-P	Collect with oxalate-fluoride mixture
Iron	50–150 μg/100 ml (higher in males)	9.0–26.9 μmol/L		1-S	
Iron-binding capacity	250–410 μg/100 ml	44.8–73.4 μmol/L		1-S	
Lactic acid	0.6–1.8 mEq/L	0.6–1.8 mmol/L		2-B	Collect with oxalate-fluoride mixture; deliver immediately packed in ice
Lactic dehydrogenase	45–90 U/L	750–1500 nmol · sec ⁻¹ /L		1-S	Unsuitable if hemolyzed
Lead	50 μg/100 ml or less	Up to 2.4 μmol/L		2-B	Collect with oxalate-fluoride mixture
Lipase	2 units/ml or less	Up to 2 arb. unit		1-S	
Lipids					
Cholesterol	<200 mg/dl	<5.18 mmol/L		1-S	Fasting
Triglycerides	40–150 mg/100 ml	0.4–1.5 g/L		1-S	Fasting
Lipoprotein electrophoresis (LEP)				2-S	Fasting, do not freeze serum
Lithium	0.6–1.2 mEq/L	0.6–1.2 mmol/L		1-S	
Magnesium	1.5–2.0 mEq/L	0.8–1.3 mmol/L		1-S	
5' Nucleotidase	1–11 U/L	17–183 nmol · sec ⁻¹ /L		1-S	
Osmolality	280–296 mOsm/kg water	280–296 mmol/kg		1-S	
Oxygen saturation (arterial)	96–100%	0.96–1.00		3-B	Deliver in sealed heparinized syringe packed in ice
PCO ₂	35–45 mm Hg	4.7–6.0 kPa		2-B	Collect and deliver in sealed heparinized syringe
pH	7.35–7.45	Same		2-B	Collect without stasis in sealed heparinized syringe; deliver packed in ice

P _O ₂	75–100 mm Hg (dependent on age) while breathing room air Above 500 mm Hg while on 100% O ₂	10.0–13.3 kPa	2-B
Phenobarbital	15–50 µg/ml	65–215 µmol/L	1-S
Phenytoin (Dilantin)	10–20 µg/ml	20–80 µmol/L	1-S
Phosphatase (acid)	Male–Total: 0.13–0.63 sigma U/ml Female–Total: 0.01–0.56 sigma U/ml	36–175 nmol · sec ⁻¹ /L 2.8–156 nmol · sec ⁻¹ /L	1-S
Phosphatase (alkaline)	Prostatic: 0–0.05 Fishman-Lerner U/100 ml 13–39 U/L, infants and adolescents up to 104 U/L	217–650 nmol · sec ⁻¹ /L, up to 1.26 µmol/L	1-S
Phosphorus (inorganic)	3.0–4.5 mg/100 ml (infants in first year up to 6.0 mg/100 ml) 3.5–5.0 mEq/L	1.0–1.5 mmol/L	1-S
Potassium	4–12 µg/ml 4–10 µg/ml <4.0 mg/ml 6.0–8.4 g/100 ml 3.5–5.0 g/100 ml 2.3–3.5 g/100 ml	3.5–5.0 mmol/L	1-S
Primidone (Mysoline)	4–12 µg/ml	18–55 µmol/L	1-S
Procainamide	4–10 µg/ml	17–42 µmol/L	1-S
Prostate-specific antigen	<4.0 ng/ml	<4.0 µ/L	2
Protein: Total	6.0–8.4 g/100 ml	60–84 g/L	1-S
Albumin	3.5–5.0 g/100 ml	35–50 g/L	1-S
Globulin	2.3–3.5 g/100 ml	23–35 g/L	1-S
Electrophoresis	(% of total protein)		
Albumin	52–68		1-S
Globulin:			
Alpha ₁	4.2–7.2		
Alpha ₂	6.8–12		
Beta	9.3–15		
Gamma	13–23		
Pyruvic acid	0–0.11 mEq/L	0–0.11 mmol/L	2-B
Quinidine	1.2–4.0 µg/ml	3.7–12.3 µmol/L	1-S
Salicylate: Therapeutic	0 20–25 mg/100 ml;	1.4–1.8 mmol/L	2-P

Must always be drawn just before analysis or stored as frozen serum; avoid hemolysis

Serum must be separated promptly from cells

Serum separator or EDTA plasma

Globulin equals total protein minus albumin

Quantitation by densitometry

Collect with oxalate fluoride. Deliver immediately packed in ice

BLOOD, PLASMA, OR SERUM VALUES (Continued)

<i>Determination</i>	Reference Range		<i>SI</i>	<i>Minimal ml Required*</i>	<i>Note</i>
	<i>Conventional</i>				
Sodium	25–30 mg/100 ml to age 10 yr hr post dose	1.8–2.2 mmol/L		1-S	
Sulfonamide	135–145 mEq/L	135–145 mmol/L		2-P	
Transaminase, aspartate amino- transferase	5–15 mg/100 ml 7–27 U/L	117–450 nmol · sec ⁻¹ /L		1-S	
Transaminase, alanine amino- transferase	1–21 U/L	17–350 nmol · sec ⁻¹ /L		1-S	
Troponin-I	0–0.5 ng/ml	0–0.5 µg/L		0.6	Collect in light green top tube
Troponin-T	0–0.5 ng/ml			0.6	Collect in light green top tube
Urea nitrogen (BUN)	8–25 mg/100 ml	2.9–8.9 mmol/L		1-S	
Uric acid	3.0–7.0 mg/100 ml	0.18–0.42 mmol/L		1-S	
Vitamin A	0.15–0.6 µg/ml	0.5–2.1 µmol/L		3-S	

URINE VALUES

Determination	Reference Range		Minimal ml Required *	Note
	Conventional	SI		
Acetone plus acetoacetate (quantitative)	0	0 mg/L	2 ml	
Amylase	24–76 units/ml	24–76 arb. unit	24-hr specimen	Collect in special bottle with 10 ml of concentrated HCl
Calcium	300 mg/day or less	7.5 mmol/day or less	24-hr specimen	Should be collected with 10 ml of concentrated HCl (pH should be between 2.0 and 3.0)
Catecholamines	Epinephrine: under 20 $\mu\text{g}/\text{day}$ Norepinephrine: under 100 $\mu\text{g}/\text{day}$	<109 nmol/day <590 nmol/day	1st morning void 24-hr specimen	
Chorionic gonadotropin	0	0 arb. unit		
Copper	0–100 $\mu\text{g}/\text{day}$	0–1.6 $\mu\text{mol}/\text{day}$		
Coproporphyrin	50–250 $\mu\text{g}/\text{day}$	80–380 nmol/day	24-hr specimen	Collect with 5 g of sodium carbonate
Creatine	Children under 80 lb (36 kg): 0–75 $\mu\text{g}/\text{day}$ Under 100 mg/day or less than 6% of creatinine. In pregnancy: up to 12%. In children under 1 yr: may equal creatinine. In older children: up to 30% of creatinine.	<0.75 mmol/day	24-hr specimen	Also order creatinine
Creatinine	15–25 mg/kg of body weight/day	0.13–0.22 mmol \cdot kg ⁻¹ /day	24-hr specimen	
Cystine or cysteine	0	0	10 ml	Qualitative
Hemoglobin and myoglobin	0		Freshly voided sample	Chemical examination with benzidine
5-Hydroxyindoleacetic acid	2–9 mg/day (women men)	10–45 $\mu\text{mol}/\text{day}$	24-hr specimen	Collect with 10 ml of concentrated HCl
Lead	0.08 $\mu\text{g}/\text{ml}$ or 120 $\mu\text{g}/\text{day}$ or less	0.39 $\mu\text{mol}/\text{L}$ or less	24-hr specimen	

URINE VALUES (Continued)

Determination	Reference Range		SI	Minimal ml Required*	Note	
	Conventional	SI				
Phosphorus (inorganic)	Varies with intake; average, 1 g/day		32 mmol/day	24-hr specimen	Collect with 10 ml of concentrated HCl	
Porphobilinogen	0			10 ml	Use freshly voided urine	
Protein: Quantitative	<150 mg/24 hr		<0.15 g/day	24-hr specimen		
Steroids:						
17-Ketosteroids (per day)	Age Male 10 1-4 mg 20 6-21 30 8-26 50 5-18 70 2-10	Female 1-4 mg 4-16 4-14 3-9 1-7	3-14 μ mol 21-73 28-90 17-62 7-35	3-14 μ mol 14-56 14-49 10-31 3-24	24-hr specimen	Not valid if patient is receiving meprobamate
17-Hydroxysteroids	3-8 mg/day (women lower than men)		8-22 μ mol/day as tetrahydrocortisol	24-hr specimen	Keep cold; chlorpromazine and related drugs interfere with assay	
Sugar: Quantitative glucose	0		0 mmol/L	24-hr or other timed specimen		
Urobilinogen	Up to 1.0 Ehrlich U		To 1.0 arb. unit	2-hr sample (1-3 P.M.)		
Uroporphyrin	0-30 μ g/day		<36 nmol/day	Coproporphyrin		
Vanillylmandelic acid (VMA)	Up to 9 mg/24 hr		Up to 45 μ mol/day	24-hr specimen	Collect as for catecholamines	

SPECIAL ENDOCRINE TESTS

Steroid Hormones			
Determination	Conventional	Reference Range	SI
		Minimal ml Required *	Note
Aldosterone	Excretion: 5–19 $\mu\text{g}/24$ hr	14–53 nmol/day	5/day Keep specimen cold
	Supine:		3-S, P Fasting, at rest, 210-mEq sodium diet
	48 \pm 29 pg/ml	133 \pm 80 pmol/L	
	Upright (2 hr):		
	65 \pm 23 pg/ml	180 \pm 64 pmol/L	Upright, 2 hr, 210-mEq sodium diet
	Supine:		
	107 \pm 45 pg/ml	279 \pm 125 pmol/L	Fasting, at rest, 110-mEq sodium diet
	Upright (2 hr):		
	239 \pm 123 pg/ml	663 \pm 341 pmol/L	Upright, 2 hr, 110-mEq sodium diet
	Supine:		
175 \pm 75 pg/ml	485 \pm 208 pmol/L	Fasting, at rest, 10-mEq sodium diet	
Cortisol	Upright (2 hr):		
	532 \pm 228 pg/ml	1476 \pm 632 pmol/L	Upright, 2 hr, 10-mEq sodium diet
	8 A.M. :		Fasting
	5–25 $\mu\text{g}/100$ ml	0.14–0.69 $\mu\text{mol}/\text{L}$	1-P
	8 P.M. :		1-P At rest
	Below 10 $\mu\text{g}/100$ ml	0–0.28 $\mu\text{mol}/\text{L}$	1-P 20 U ACTH, IV per 4 hr
	4-hr ACTH test:		
	30–45 $\mu\text{g}/100$ ml	0.83–1.24 $\mu\text{mol}/\text{L}$	1-P 8 A.M. sample after 0.5 mg dexamethasone by mouth at midnight
	Overnight suppression test:		
	Below 5 $\mu\text{g}/100$ ml	0.14 nmol/L	2/day Keep specimen cold
Dehydroepiandrosterone (DHEA)	Excretion:		
	20–70 $\mu\text{g}/24$ hr	55–193 nmol/day	2-S, P
	Male 0.5–5.5 ng/ml	1.7–19 nmol/L	

SPECIAL ENDOCRINE TESTS (Continued)
Steroid Hormones

<i>Determination</i>	<i>Reference Range</i>		<i>Minimal ml Required*</i>	<i>Note</i>
	<i>Conventional</i>	<i>SI</i>		
Dehydroepiandrosterone sulfate (DHEA-S)	Female 1.4–8.0 ng/ml 0.3–4.5 ng/ml	4.9–28 nmol/L 1.0–15.6 nmol/L	2-S, P	Adult Postmenopausal
	Male 151–446 µg/100 ml	3.9–11.4 µmol/L		
	Female 84–433 µg/100 ml 1.7–177 µg/100 ml	2.2–11.1 µmol/L 0.04–4.5 µmol/L		
11-Deoxycortisol	Responsive Over 7.5 µg/100 ml	>0.22 µmol/L <184 pmol/L	1-P 5-S, P	Adult Postmenopausal 8 A.M. sample, preceded by 4.5 g of metyrapone by mouth per 24 hr or by single dose of 2.5 g by mouth at midnight
	Estradiol	Male: <50 pg/ml Female: 23–361 pg/ml <30 pg/ml <20 pg/ml	84–1325 pmol/L <110 pmol/L <73 pmol/L <3.2 nmol/L	5-S, P
Progesterone	Male: <1.0 ng/ml Female 0.2–0.6 ng/ml 0.3–3.5 ng/ml 6.5–32.2 ng/ml	0.6–1.9 nmol/L 0.95–11 nmol/L 21–102 nmol/L	1-P	Follicular phase Midcycle peak Postovulatory A.M. sample
Testosterone	Adult male: 300–1100 ng/100 ml Adolescent male: Over 100 ng/100 ml Female 25–90 ng/100 ml	10.4–38.1 nmol/L >3.5 nmol/L	2-P	A.M. sample
Unbound testosterone	Adult male: 3.06–24.0 ng/100 ml Adult female: 0.09–1.28 ng/100 ml	106–832 pmol/L 3.1–44.4 pmol/L		

Polypeptide Hormones

Determination	Reference Range		SI	Minimal ml Required*	Note
	Conventional	SI			
Adrenocorticotropin (ACTH)	15–70 pg/ml	3.3–15.4 pmol/L		5-P	Place specimen on ice and send promptly to laboratory. Use EDTA tube only.
Alpha subunit	<0.5–2.5 ng/ml <0.5–5.0 ng/ml	<0.4–2.0 nmol/L <0.4–4.0 nmol/L		2-S	Adult male or female
Calcitonin	Male: 0–14 pg/ml Female: 0–28 pg/ml >100 pg/ml in medullary carcinoma	0–4.1 pmol/L 0–8.2 pmol/L >29.3 pmol/L		5-S	Postmenopausal female Test done only on known or suspected cases of medullary carcinoma of the thyroid
Follicle-stimulating hormone (FSH)	Male 3–18 mU/ml Female: 4.6–22.4 mU/ml 13–41 mU/ml 30–170 mU/ml	3–18 arb. unit 4.6–22.4 arb. unit 13–41 arb. unit 30–170 arb. unit <233 pmol/L >465 pmol/L		5-S, P	Same sample may be used for LH Pre- or postovulatory Midcycle peak Postmenopausal Fasting, at rest After exercise
Growth hormone	Below 5 ng/ml Children: Over 10 ng/ml Male: Below 5 ng/ml Female: Up to 30 ng/ml Male: Below 5 ng/ml Female: Below 5 ng/ml 6–26 μ U/ml	<233 pmol/L >465 pmol/L 0–1395 pmol/L <233 pmol/L <233 pmol/L 43–187 pmol/L		1-S	After glucose load
Insulin	Below 20 μ U/ml Up to 150 μ U/ml Male: 3–18 mU/ml	<144 pmol/L 0–1078 pmol/L 3–18 arb. unit		1-S	Fasting During hypoglycemia After glucose load Same sample may be used for FSH
Luteinizing hormone (LH)	Female: 2.4–34.5 mU/ml 43–187 mU/ml 30–150 mU/ml <25 pg/ml	2.4–34.5 arb. unit 43–187 arb. unit 30–150 arb. unit <2.94 pmol/L		5-S, P	Pre- or postovulatory Midcycle peak Postmenopausal Keep blood on ice, or plasma frozen, if it is to be sent any distance, A.M. sample
Prolactin	2–15 ng/ml	0.08–6.0 nmol/L		2-S	

SPECIAL ENDOCRINE TESTS (Continued)
Polypeptide Hormones

<i>Determination</i>	<i>Reference Range</i>		<i>Minimal ml Required*</i>	<i>Note</i>
	<i>Conventional</i>	<i>SI</i>		
Renin activity	Supine : 1.1±0.8 ng/ml/hr Upright: 1.9±1.7 ng/ml/hr Supine: 2.7±1.8 ng/ml/hr Upright: 6.6±2.5 ng/ml/hr Diuretics: 10.0±3.7 ng/ml/hr	0.9±0.6 nmol/L/hr 1.5±1.3 nmol/L/hr 2.1±1.4 nmol/L/hr 5.1±1.9 nmol/L/hr 7.7±2.9 nmol/L/hr	4-P	EDTA tubes, on ice, normal diet Low-sodium diet Low-sodium diet
Somatomedin C (Sm-C, IGF-1)	0.08–2.8 U/ml 0.9–5.9 U/ml 0.34–1.9 U/ml 0.45–2.2 U/ml	0.08–2.8 arb. unit 0.9–5.9 arb. unit 0.34–1.9 arb. unit 0.45–2.2 arb. unit	2-P	EDTA plasma prepubertal During puberty Adult males Adult females

Thyroid Hormones

<i>Determination</i>	<i>Reference Range</i>		<i>Minimal ml Required *</i>	<i>Note</i>
	<i>Conventional</i>	<i>SI</i>		
Thyroid-stimulating hormone (TSH)	0.5–5.0 μ U/ml	0.5–5.0 arb. unit	2-S	
Thyroxine-binding globulin capacity	15–25 μ g T ₄ /100 ml	193–322 nmol/L	2-S	
Total triiodothyronine (T ₃)	75–195 ng/100 ml	1.16–3.00 nmol/L	2-S	
Reverse triiodothyronine (rT ₃)	13–53 ng/ml	0.2–0.8 nmol/L	2-S	
Total thyroxine by RIA (T ₄)	4–12 μ g/100 ml	52–154 nmol/L	1-S	
T ₃ resin uptake	25–35%	0.25–0.35	2-S	
Free thyroxine index (FT ₄ I)	1–4		2-S	

VITAMIN D DERIVATIVES

Determination	Reference Range		Minimal ml Required *	Note
	Conventional	SI		
1,25-Dihydroxy-vitamin D	26-65 ng/ml	62-155 pmol/L	1-S	
25-Hydroxy-vitamin D	8-55 ng/ml	19.4-137 nmol/L	1-S	

HEMATOLOGIC VALUES

Determination	Reference Range		Minimal ml Required *	Note
	Conventional	SI		
Coagulation factors				
Factor I (fibrinogen)	0.15-0.35 g/100 ml	4.0-10.0 μ mol/L	4.5-P	Collect in Vacutainer containing sodium citrate
Factor II (prothrombin)	60-140%	0.60-1.40	4.5-P	Collect in plastic tubes with 3.8% sodium citrate
Factor V (accelerator globulin)	60-140%	0.60-1.40	4.5-P	Collect as in factor II
Factor VII-X (proconvertin-Stuart)	70-130%	0.70-1.30	4.5-P	Collect as in factor II
Factor X (Stuart factor)	70-130%	0.70-1.30	4.5-P	Collect as in factor II
Factor VIII (antihemophilic globulin)	50-200%	0.50-2.0	4.5-P	Collect as in factor II
Factor IX (plasma thromboplastin cofactor)	60-140%	0.60-1.40	4.5-P	Collect as in factor II
Factor XI (plasma thromboplastin antecedent)	60-140%	0.60-1.40	4.5-P	Collect as in factor II
Factor XII (Hageman factor)	60-140%	0.60-1.40	4.5-P	Collect as in factor II
Coagulation screening tests:				
Bleeding time (Simplate)	3-9.5 min	180-570 sec	4.5 ml	Collect in 3.8% sodium citrate
D-dimer	<500 ng/ml	<500 μ g/L	4.5-P	Collect in Vacutainer containing 3.8% sodium citrate
Prothrombin time	Less than 2-sec deviation from control	Less than 2-sec deviation from control		

HEMATOLOGIC VALUES (Continued)

Determination	Reference Range		Minimal ml Required*	Note
	Conventional	SI		
International Normalized Ratio (INR)	1.0	1.0	4.5 ml	Collect in 3.8% sodium citrate
Partial thromboplastin time (activated)	25–38 sec	25–38 sec	4.5-P	Collect in Vacutainer containing 3.8% sodium citrate
Whole-blood clot lysis	No clot lysis in 24 hr	0/day	2.0-whole blood	Collect in sterile tube and incubate at 37°C
Fibrinolytic studies:				
Euglobin lysis	No lysis in 2 hr	0/2 hr	4.5-P	Collect as in factor II
Fibrinogen split products	Negative reaction at >1:4 dilution	0 (at 1:4 dilution)	4.5-S	Collect in special tube containing thrombin and epsilon aminocaproic acid
Thrombin time	Control ± 5 sec	Control ± 5 sec	4.5-P	Collect as in factor II
"Complete" blood count: Hematocrit	Male: 45–52% Female: 37–48%	Male: 0.45–0.52 Female: 0.37–0.48	1-B	Use EDTA as anticoagulant; the seven listed tests are performed automatically on the Ortho ELT 800, which directly determines cell counts, hemoglobin (as the cyanmethemoglobin derivative), and MCV and computes hematocrit, MCH, and MCHC
Hemoglobin	Male: 13–18 g/100 ml Female: 12–16 g/100 ml	Male: 8.1–11.2 mmol/L Female: 7.4–9.9 mmol/L		
Leukocyte count	4,300–10,800/mm ³	4.3–10.8 × 10 ⁹ /L		
Erythrocyte count	4.2–5.9 million/mm ³	4.2–5.9 × 10 ¹² /L		
Mean corpuscular volume (MCV)	86–98 μm ³ /cell	86–98 fl		
Mean corpuscular hemoglobin (MCH)	27–32 pg/RBC	1.7–2.0 pg/cell		
Mean corpuscular hemoglobin concentration (MCHC)	32–36%	0.32–0.36		

Erythrocyte sedimentation rate	Male: 1–13 mm/hr Female: 1–20 mm/hr	5-B	Use EDTA as anticoagulant
Erythrocyte enzymes			
Glucose-6-phosphate dehydrogenase	5–15 U/g	9-B	Use special anticoagulant (ACD solution)
Pyruvate kinase	13–17 U/g Hb	8-B	Use special anticoagulant (ACD solution)
Ferritin (serum)			
Iron deficiency	0–12 ng/ml 13–20 Borderline >400 ng/L		
Iron excess			
Folic acid	>3.3 ng/ml	1-S	
Normal	2.5–3.2 ng/ml	1-S	
Borderline	40–336 mg/100 ml	1-S	
Haptoglobin			
Hemoglobin studies:			
Electrophoresis for abnormal hemoglobin		5-B	Collect with anticoagulant
Electrophoresis for:			
A ₂ hemoglobin	3.0%	5-B	Use oxalate as anticoagulant
Borderline	0.3–3.5%		
Hemoglobin F (fetal hemoglobin)	Less than 2%	5-B	Collect with anticoagulant
Hemoglobin, met- and sulf-Serum hemoglobin	0	5-B	Use heparin as anticoagulant
Thermolabile hemoglobin	2–3 mg/100 ml	2-S	
Lupus anticoagulant	0	1-B	Any anticoagulant
LE (lupus erythematosus) preparation:	0	4.5-P	Collect as in factor II
Method I	0		
Method II	0		
Leukocyte alkaline phosphatase:			
Qualitative method	Males: 33–188 U Females (off contraceptive pill): 30–160 U	5-B 5-B 20-Isolated blood leukocytes Smear-B	Use heparin as anticoagulant Use defibrinated blood Special handling of blood necessary

HEMATOLOGIC VALUES (Continued)

<i>Determination</i>	Reference Range		<i>Minimal ml Required*</i>	<i>Note</i>
	<i>Conventional</i>	<i>SI</i>		
Muramidase	Serum, 3–7 $\mu\text{g/ml}$ Urine, 0–2 $\mu\text{g/ml}$	3–7 mg/L 0–2 $\mu\text{g/L}$	1-S 1-U 5-B	Use heparin as anticoagulant
Osmotic fragility of erythrocytes	Increased if hemolysis occurs in over 0.5% NaCl; decreased if hemolysis is incomplete in 0.3% NaCl			
Peroxide hemolysis	Less than 10%	0.10	6-B	Use EDTA as anticoagulant
Platelet count	150,000–350,000/ mm^3	150–350 $\times 10^9/\text{L}$	0.5-B	Use EDTA as anticoagulant; counts are performed on Clay Adams Ultraflow; when counts are low, results are confirmed by hand counting
Platelet function tests:				
Clot retraction	50–100%/2 hr	0.50–1.00/2 hr	4.5-P	Collect as in factor II
Platelet aggregation	Full response to ADP, epinephrine, and collagen	1.0	18-P	Collect as in factor II
Platelet factor 3	33–57 sec	33–57 sec	4.5-P	Collect as in factor II
Reticulocyte count	0.5–2.5% red cells	0.005–0.025	0.1-B	
Vitamin B ₁₂	205–876 pg/ml	150–674 pmol/L	12-S	
Borderline	140–204 pg/ml	102.6–149 pmol/L		

CEREBROSPINAL FLUID VALUES

<i>Determination</i>	Reference Range		<i>Minimal ml Required*</i>	<i>Note</i>
	<i>Conventional</i>	<i>SI</i>		
Bilirubin	0	0	2	
Cell count	0–5 mononuclear cells		0.5	
Chloride	120–130 mEq/L	120–130 mmol/L	0.5	
Colloidal gold	0000000000–0001222111	Same	0.1	

Albumin	Mean: 29.5 mg/100 ml ±2 SD: 11–48 mg/100 ml	0.295 g/L ±2 SD: 0.11–0.48	2.5	
IgG	Mean: 4.3 mg/100 ml ±2 SD: 0–8.6 mg/100 ml	0.043 g/L ±2 SD: –0.086		
Glucose	50–75 mg/100 ml	2.8–4.2 mmol/L	0.5	
Pressure (initial)	70–180 mm of water	70–180 arb. unit		
Protein:				
Lumbar	15–45 mg/100 ml	0.15–0.45 g/L	1	
Cisternal	15–25 mg/100 ml	0.15–0.25 g/L	1	
Ventricular	5–15 mg/100 ml	0.05–0.15 g/L	1	

MISCELLANEOUS VALUES

<i>Determination</i>	<i>Conventional</i>	<i>Reference Range</i>	<i>SI</i>	<i>Minimal ml Required *</i>	<i>Note</i>
Carcinoembryonic antigen (CEA)	0–2.5 ng/ml	0–2.5 µg/L		20-P	Must be sent on ice
Chylous fluid	17±6 ng/ml	22±7.8 nmol/L		1-S	Use fresh specimen
Digitoxin	1.2±0.4 ng/ml	1.54±0.5 nmol/L		1-S	Medication with digitoxin or digitoxin talis
Digoxin	1.5±0.4 ng/ml	1.92±0.5 nmol/L		1-S	Medication with digoxin 0.25 mg per day
Duodenal drainage					Medication with digoxin 0.5 mg per day
pH (urine)	5–7	5–7			pH should be in proper range with minimal amount of gastric juice
Gastric analysis	Basal: Females: 2.0±1.8 mEq/hr Males: 3.0±2.0 mEq/hr Maximal (after histalog or gastrin) Females: 16±5 mEq/hr Males: 23±5 mEq/hr	0.6±0.5 µmol/sec 0.8±0.6 µmol/sec			

MISCELLANEOUS VALUES (Continued)

Determination	Reference Range		Minimal ml Required*	Note
	Conventional	SI		
Gastrin-I	0–200 pg/ml	0–95 pmol/L	4-P	Heparinized sample
Immunologic tests:				
Alpha-fetoprotein	Undetectable in normal adults		2-S	
Alpha-1-antitrypsin	85–213 mg/100 ml	0.85–2.13 g/L	10-B	Fasting sample preferred
Rheumatoid factor	<60 IU/ml		10 ml clotted blood	Send to laboratory promptly
Antinuclear antibodies	Negative at a 1:8 dilution of serum		2-S	
Anti-DNA antibodies	Negative at a 1:10 dilution of serum		2-S	
Antibodies to Sm and RNP (ENA)	None detected		10 ml clotted blood	
Antibodies to SS-A (Ro) and SS-B (La)	None detected		10 ml clotted blood	
Autoantibodies to:				
Thyroid colloid and microsomal antigens	Negative at a 1:10 dilution of serum		2-S	Low titers in some elderly normal women
Gastric parietal cells	Negative at a 1:20 dilution of serum		2-S	
Smooth muscle	Negative at a 1:20 dilution of serum		2-S	
Mitochondria	Negative at a 1:20 dilution of serum		2-S	
Interstitial cells of the testes	Negative at a 1:10 dilution of serum		2-S	
Skeletal muscle	Negative at a 1:60 dilution of serum		2-S	
Adrenal gland	Negative at a 1:10 dilution of serum		2-S	
Bence Jones Protein	No Bence Jones protein detected in a 50-fold concentrate of urine		50-U	
Complement, total hemolytic	150–250 U/ml		10-B	Must be sent on ice

Cryoprecipitable proteins	None detected	0 arb. unit	10-S	Collect and transport at 37°C
C3	Range, 83–177 mg/100 ml	0.83–1.77 g/L	2-S	
C4	Range, 15–45 mg/100 ml	0.15–0.45 g/L	2-S	
Factor B	12–30 mg/100 ml		5 ml clotted blood	
C1 esterase inhibitor	13.2–24 mg/100 ml		5 ml clotted blood	
Hemoglobin A _{1c}	3.8–6.4%	0.038–0.064	5-P	Send EDTA tube on ice promptly to laboratory
Hypersensitivity pneumonitis screen	No antibodies to those antigens assayed		5 ml clotted blood	
Immunoglobulins:				
IgG	639–1349 mg/100 ml	6.39–13.49 g/L	2-S	
IgA	70–312 mg/100 ml	0.7–3.12 g/L	2-S	
IgM	86–352 mg/100 ml	0.86–3.52 g/L	2-S	
Viscosity	1.4–1.8 relative viscosity units		10-B	Expressed as the relative viscosity of serum compared with water
Iontophoresis	Children: 0–40 mEq sodium/L Adults 0–60 mEq sodium/L	0–40 mmol/L 0–60 mmol/L	1-S	Value given in terms of sodium
Propranolol (includes bioactive 4-OH metabolite)	100–300 ng/ml	386–1158 nmol/L		Obtain blood sample 4 hr after last dose of beta-blocking agent
Stool fat	Less than 5 g in 24 hr or less than 4.0% of measured fat intake in 3-day period	<5 g/day	24-hr or 3-day specimen	
Stool nitrogen	Less than 2 g/day or 10% of urinary nitrogen	<2 g/day	24-hr or 3-day specimen	
Synovial fluid:				
Glucose	Not less than 20 mg/100 ml lower than simultaneously drawn blood sugar	Blood glucose	ml of fresh fluid	Collect with oxalate–fluoride mixture
D-Xylose absorption	5–8 g/5 hr in urine; 40 mg per 100 ml in blood 2 hr after ingestion of 25 g of D-Xylose	33–53 mmol/day 2.7 mmol/L	5-U 5-B	For directions see Benson et al.: N Engl J Med 256:335, 1957

* Abbreviations used: SI, Système International d'Unités; P, plasma; S, serum; B, blood; and U, urine.

SOURCE: Adapted from Scully, Robert E. (ed): Case Records of the Massachusetts General Hospital, New England Journal of Medicine, vol. 314, pp. 39–49, January 2, 1986, with permission, and other sources. Copyright 1986 Massachusetts Medical Society. All rights reserved.

APPENDIX 4

Prefixes, Suffixes, and Combining Forms

- a-, an-.** Without; away from; not.
ab-, abs-. From; away from; absent.
abdomin-, abdomino-. Abdomen.
abort-, aborto-. To miscarry.
abs-. SEE: *ab-*.
acanth-, acantho-. Thorn; spine.
acous-, acoust-, acousto-. Hearing.
acro-. Extremity; top; extreme point.
actin-, actino-. Ray; some form of radiation.
ad-. Adherence; increase; toward.
-ad. Toward; in the direction of.
aden-, adeno-. Gland.
adip-, adipo-. Fat.
adren-, adreno-. Adrenal glands.
adrenal-, adrenalo-. Adrenal glands.
-aemia. Blood.
aer-, aero-. Air or gas.
-aesthesia, aesthesio-. SEE: *-esthesia*.
af-. Toward.
-agogue. An agent that promotes the expulsion of a specific substance.
-agra. Sudden severe pain.
-al. Relating to (e.g., abdominal, intestinal). In chemistry, an aldehyde.
albumin-, albumino-. Albumin.
-algnesia, -algia. Suffering; pain.
algi-. Pain.
all-. SEE: *allo-*.
allo-, all-. Other.
amb-, ambi-. Both; on both sides; around; about.
amph-, amphi-, amphi-. Both; on both sides; on all sides; double; around; about.
an-. SEE: *a-*.
ana-, an-. Up; against; back.
andro-. Man; male; masculine.
angi-, angio-. Blood or lymph vessels.
aniso-. Unequal; asymmetrical; dissimilar.
ankyl-, ankylo-. Crooked; bent; fusion or growing together of parts.
ant-, anti-. Against.
ante-. Before.
antero-. Anterior; front; before.
anthropo-. Human beings; human life.
antr-, antro-. Antrum.
apo-. From; derived from; separated from; opposed.
arch-, arche-, archi-. First; principal; beginning; original.
arteri-, arterio-. Artery.
arthr-, arthro-. Joint.
-ase. Enzyme.
-asis, -esis, -iasis, -isis, -sis. Condition; pathological state.
astro-. Star; star-shaped.
atelo-. Imperfect; incomplete.
ather-, athero-. Fatty plaque.
atmo-. Steam; vapor.
atreto-. Absence of an opening.
aut-, auto-. Self.
axio-. Axis; the long axis of a tooth.
axo-. Axis; axon.
azot-, azoto-. Nitrogenous compounds.
bacteri-, bacterio-. Bacteria; bacterium.
balan-, balano-. Glans clitoridis; glans penis.
bar-, baro-. Weight; pressure.
basi-, basio-. Base; foundation.
bi-, bis-. Two; double; twice.
bili-. Bile.
bio-. Life.
bis-. SEE: *bi-*.
blast-, -blast. Germ; bud; embryonic state of development.
blenn-, blenno-. Mucus.
blephar-, blepharo-. Eyelid.
brachio-. Arm.
brachy-. Short.
brady-. Slow.
brom-, bromo-. Bromine.
bronch-, bronchi-, broncho-. Airway.
bronchiol-, bronchiolo-. Bronchiole.
cac-, caci-, caco-. Bad; ill.
calc-, calco-. Calcium.
calcan-, calcaneo-. Calcaneum (heel bone).
carcin-, carcino-. Cancer.
cardi-, cardio-. Heart.
carpo-. Carpus.
cary-, caryo-. SEE: *karyo-*.
cat-, cata-, cath-, kat-, kata-. Down; downward; destructive; against; according to.
cath-. SEE: *cat-*.
cel-, celo-. 1. Tumor; hernia. 2. Cavity.
-cele. Tumor; swelling; hernia.
cent-. Hundred.
cephal-, cephalo-. Head.
cerebell-, cerebello-. Cerebellum.
cervic-, cervico-. Neck; the neck of an organ.
cheil-, cheilo-. SEE: *chil-*.
chem-, chemo-. Chemical; drug.
chil-, chilo-. Lip; lips.
chir-, chiro-. Hand.
chlor-, chloro-. Green.
chol-, chole-. Bile; gall.
cholangi-, cholangio-. Bile vessel.
cholecyst-, cholecysto-. Gallbladder.
choledoch-, choledocho-. Bile duct.
chondr-, chondro-. Cartilage.
chrom-, chromo-. Color.
-cide. Causing death.
cine-. Movement.
circum-. Around.
clavicul-, claviculo-. Clavicle.
-cle, -cule. Little (e.g., molecule, corpuscle).
cleid-, cleido-. Clavicle.
co-, com-, con-. Together.
colp-, colpo-. SEE: *kolp-*.
contra-. Against; opposite.
crani-, cranio-. Skull; cranium.
cry-, cryo-. Cold.
-cusia, -cuisis. Hearing.
cyan-, cyano-. Blue.

- cycl-, cyclo-**. Circular; cyclical; ciliary body of the eye.
- cyst-, cysto-, -cyst**. Cyst; urinary bladder.
- cyt-, cyto-, -cyte**. Cell.
- dacry-**. Tears.
- dactyl-, dactylo-**. Finger; toe.
- de-**. From; down; not.
- dec-, deca-**. Ten.
- deci-**. One tenth.
- demi-**. Half.
- dent-, denti-, dento-**. Teeth.
- derm-, derma-, dermato-, dermo-**. Skin.
- deuter-, deuterio-, deuto-**. Second; secondary.
- dextro-**. Right.
- di-**. Double; twice; two; apart from.
- dia-**. Through; between; asunder.
- dipla-, diplo-**. Double; twin.
- dips-, dipso-**. Thirst.
- dis-**. Negative; double; twice; apart; absence of.
- dors-, dorsi-, dorso-**. Back.
- duoden-, duodeno-**. Duodenum.
- dynia**. Pain.
- dys-**. Difficult; bad; painful.
- eal**. Pertaining to.
- ec-, ecto-**. Out; on the outside.
- ectomy**. Excision.
- ectro-**. Congenital absence of a part.
- ef-, es-, ex-, exo-**. Out.
- electr-, electro-**. Electricity.
- embol-, embolo-**. Plug.
- emesis**. Vomiting.
- emia**. Blood.
- en-**. In; into.
- enantio-**. Opposite.
- end-, endo-**. Within.
- ent-, ento-**. Within; inside.
- enter-, entero-**. Intestine.
- ep-, epi-**. Upon; over; at; in addition to; after.
- episi-, episio-**. Vulva.
- erythr-, erythro-**. Red.
- eschar-, escharo-**. Scab.
- esis**. SEE: *-asis*.
- esophag-, esophago-**. Esophagus.
- esthesia**. Sensation.
- etio-**. Causation.
- eu-**. Well; good; healthy; normal.
- eury-**. Broad.
- ex-**. Out; away from; completely.
- exo-**. Out; outside of; without.
- extra-**. Outside of; in addition; beyond.
- facient**. Causing; making happen.
- femor-, femoro-**. Thigh.
- ferous**. Producing.
- ferri-, ferro-**. Iron.
- fibro-**. Fibers; fibrous tissues.
- fluo-**. Flow.
- fluor-, fluoro-**. Luminous; fluorescence.
- fore-**. Before; in front of.
- form**. Form.
- fuge**. To expel; to drive away; fleeing.
- galact-, galacto-**. Milk.
- gam-, gamo-**. Marriage; sexual union.
- gaster-, gastero-, gastr-, gastro-**. Stomach.
- gen-**. Producing; forming.
- gen-, -gene-, -genesis, -genetic, -genic**. Producing; forming.
- genito-**. Organs of reproduction.
- gero-**. Old age.
- giga-**. Billion.
- gingiv-, gingivo-**. Gums (of the mouth).
- glauc-, glauco-**. Gray.
- globin**. Protein.
- gloss-, glosso-**. Tongue.
- gluc-, gluco-, glyc-, glyco-**. Sugar; glycerol or similar substance.
- gnath-, gnatho-**. Jaw; cheek.
- gog-, -gogue**. To make flow.
- gon-, gono-**. Semen; seed; genitals; offspring.
- gram**. A tracing; a mark.
- graph**. Instrument used to make a drawing or record.
- graphy**. Writing; record.
- gravid**. Pregnant.
- gyn-, gyne-, gyneco-, gyno-**. Woman; female.
- gyro-**. Circle; spiral; ring.
- hem-, hema-, hemato-, hemo-**. Blood.
- hemi-**. Half.
- hepat-, hepato-**. Liver.
- hept-, hepta-**. Seven.
- heredo-**. Heredity.
- heter-, hetero-**. Other; different.
- hex-, hexa-**. Six.
- histo-**. Tissue.
- hol-, holo-**. Complete; entire; homogeneous.
- homeo-**. Likeness; resemblance; constant unchanging state.
- homo-**. Same; likeness.
- hydra-, hydro-, hydr-**. Water.
- hyo-**. Hyoid bone.
- hyp-, hyp-, hypo-**. Less than; below or under; beneath; deficient.
- hyper-**. Above; excessive; beyond.
- hypno-**. Sleep; hypnosis.
- hyster-, hystero-**. Uterus.
- ia**. Condition, esp. an abnormal state.
- iasis**. SEE: *asis*.
- iatic**. Medicine; medical profession; physicians.
- ic**. Pertaining to; relating to.
- ichthyo-**. Fish.
- id**. Secondary skin eruption distant from primary infection site.
- ideo-**. Mental images.
- idio-**. Individual; distinct.
- ileo-**. Ileum.
- ilio-**. Ilium; flank.
- im-**. SEE: *in-*. Used before b,m, or p.
- immun-, immuno-**. Immune; immunity.
- in-**. In; inside; within; intensive action; negative.
- infra-**. Below; under; beneath; inferior to; after.
- inter-**. Between; in the midst.
- intra-, intro-**. Within; in; into.
- ipsi-**. Same; self.
- irid-, irido-**. Iris.
- ischio-**. Ischium.
- isis**. SEE: *-asis*.
- ism**. Condition; theory.
- iso-**. Equal.
- ite**. 1. Of the nature of. 2. In chemistry, a salt of an acid with the termination *-ous*.

- itis.** Inflammation of.
-ize. To treat by special method.
jejuno-. Jejunum.
juxta-. Close proximity.
kary-, karyo-, cary-, caryo-. Nucleus; nut.
kat-, kata-. SEE: *cat-.*
kera-, kerato-. Horny substance; cornea.
ket-, keto-. Ketone bodies (acids and acetones).
kilo-. Thousand.
kinesi-, kino-, -kinesis. Movement.
klepto-. To steal.
kolp-, kolpo-, colp-, colpo-. Vagina.
kypho-. Humped.
kysth-, kystho-. Vagina.
lab-, labi-. Lip.
lact-. Milk.
laparo-. Flank; abdominal wall.
laryng-, laryngo-. Larynx.
latero-. Side.
leio-. Smooth.
lepido-. Flakes; scales.
-lepsy. Seizure.
lepto-. Thin; fine; slight; delicate.
leuk-, leuko-, leuc-. White; white blood cell.
linguo-. Tongue.
lip-, lipo-. Fat.
-lite, -lith, lith-, litho-. Stone; calculus.
-logia, -logy. Science of; study of.
lord-, lordo-. Curve; swayback.
lumbo-. Loins.
lyo-. Loosen; dissolve.
-lysis. 1. Loosen; dissolve. 2. In medicine, reduction of; relief from.
macr-, macro-. Large; long.
mal-. Ill; bad; poor.
mamm-, mammo-. Breast.
-mania. Frenzy; madness.
mast-, masto-. Breast.
meat-, meato-. Opening; meatus.
med-, medi-, medio-. Middle.
medull-, medullo-. Soft inner part; medulla.
mega-, megal-, megal-. Large; of great size.
-megalia, -megaly. Enlargement of a body part.
meio-, mio-. Less; smaller.
melan-, melano-. Black.
mening-, meningo-. Meninges.
menta-, mento-. Mind.
mes-, meso-. 1. Middle. 2. In anatomy, the mesentery. 3. In medicine, secondary; partial.
mesio-. Toward the middle.
meta-. 1. Change; transformation; next in a series. 2. In chemistry, the 1,3 position of benzene derivatives.
metacarp-, metacarp-. Metacarpus (bones of the hand).
-meter. Measure.
metr-, metra-, metro-. Uterus.
micr-, micro-. Small.
mio-. SEE: *meio-.*
mon-, mono-. Single; one.
muc-, muc-, muco-, myxa-, myxo-. Mucus.
multi-. Many; much.
musculo-, my-, myo-. Muscle.
my-, myo-. SEE: *musculo-.*
myc-, myco-. Fungus.
myel-, myelo-. Spinal cord; bone marrow.
myring-, myringo-. Tympanic membrane, eardrum.
myx-, myxo-. SEE: *muc-.*
nano-. 1. One billionth. 2. Dwarfism (nanism).
narco-. Numbness; stupor.
naso-. Nose.
neur-, necro-. Death; necrosis.
neo-. New; recent.
nephr-, nephra-, nephro-. Kidney.
neur-, neuro-, neuro-. Nerve; nervous system.
nitr-, nitro-. Nitrogen.
non-. No.
normo-. Normal; usual.
noso-. Disease.
noto-. The back.
nucleo-. Nucleus.
nyct-, nycto-. Night; darkness.
ob-. Against.
occipit-, occipito-. Occiput.
octa-, octo-. Eight.
oculo-. Eye.
-ode, -oid. Form; shape; resemblance.
odont-, odonto-. Tooth; teeth.
-odynia, odyno-. Pain.
-oid. SEE: *-ode.*
oleo-. Oil.
olig-, oligo-. Few; small.
-ology. Science of; study of.
-oma. Tumor.
omo-. Shoulder.
omphal-, omphalo-. Navel.
onco-. Tumor; swelling; mass.
onych-, onycho-. Fingernails; toenails.
oo-, ovi-, ovo-. Egg; ovum.
oophor-, oophoro-, oophoron-. Ovary.
ophthalm-, ophthalm-. Eye.
-opia. Vision.
opisth-, opistho-. Backward.
-opsy. View of.
optico-, opto-. Eye; vision.
orch-, orchid-, orchido-. Testicle.
-orexia. Appetite.
oro-. Mouth.
orth-, ortho-. Straight; correct; normal; in proper order.
os-. Mouth; bone.
oscheo-. Scrotum.
-ose. 1. Carbohydrate. 2. Primary alteration of a protein.
-osis. Condition; status, process; abnormal increase.
osmo-. 1. Odor; smell. 2. Impulse. 3. Osmosis.
oste-, osteo-. Bone.
-ostomosis, -ostomy, -stomosis, -stomy. A created mouth or outlet.
ot-, oto-. Ear.
-otomy. Cutting.
-ous. 1. Possessing; full of. 2. Pertaining to.
ovi-, ovo-. SEE: *oo-.*
ox-. Oxygen.
oxy-. 1. Sharp; keen; acute; acid; pungent. 2. Oxygen in a compound. 3. Hydroxyl group.
pach-, pachy-. Thick.

- pagus.** Twins joined at a specific site (e.g., craniopagus).
- pali-, palin-** Recurrence; repetition.
- pan-** All; entire.
- pan-, panto-** All or the whole of something.
- papulo-** Pimple; papule.
- para-, para.** 1. Prefix: near; alongside of; departure from normal. 2. Suffix: Bearing offspring.
- patell-, patello-** Patella; kneecap.
- path-, patho-, -path, -pathic, -pathy.** Disease; suffering.
- ped-, pedi-, pedo-** Foot.
- pedia-** Child.
- pedicul-, pediculo-** Louse.
- penia.** Decrease from normal; deficiency.
- pent-, penta-** Five.
- pepsia.** Digestion.
- per-** Throughout; through; utterly; intense.
- peri-** Around; about.
- perineo-** Perineum.
- peritoneo-** Peritoneum.
- pero-** Deformed.
- petro-** Stone; the petrous portion of the temporal bone.
- pexy.** Fixation, usually surgical.
- phaco-** Lens of the eye.
- phag-, phago-** Eating; ingestion; devouring.
- phalang-, phalango-** Phalanges (bones of fingers and toes).
- phall-** Penis.
- pharmaco-** Drug; medicine.
- pharyng-, pharyngo-** Pharynx.
- phasia.** Speech.
- phil, -philia, -philic.** Love for; tendency toward; craving for.
- phlebo-** Vein.
- phobia.** Abnormal fear or aversion.
- phono-** Sound; voice.
- phoresis.** Transmission.
- phoria.** In ophthalmology, a turning with reference to the visual axis.
- photo-** Light.
- phren-, phreno-, -phrenia.** Mind; diaphragm.
- phylaxis.** Protection.
- physico-** Physical; natural.
- physio-** Rel. to nature.
- physo-** Air; gas.
- phyt-, phyto-** Plant; something that grows.
- pico-** One trillionth.
- pier-, picro-** Bitter.
- piesis.** Pressure.
- pimel-, pimelo-** Fat.
- plagio-** Slanting; oblique.
- plakia.** Plaque.
- plasia.** Growth; cellular proliferation.
- plasm-, -plasm.** 1. Prefix: Living substance or tissue. 2. Suffix: To mold.
- plastic.** Molded; indicates restoration of lost or badly formed features.
- platy-** Broad.
- plegia.** Paralysis; stroke.
- pleur-, pleuro-** Pleura; side; rib.
- ploid.** Chromosome pairs of a specific number.
- plur-, pluri-** Several; more.
- pneo-** Breath; breathing.
- pneum-, pneumonia-, pneumato-** Air; gas; respiration.
- pneumo-, pneumono-** Air; lung.
- pod-, podo-** Foot.
- poiesis, -poietic.** Production; formation.
- poikil-, poikilo-** Varied, irregular.
- polio-** Gray matter of the nervous system.
- poly-** Much; many.
- post-** After.
- postero-** Posterior; behind; toward the back.
- praxis.** 1. Act; activity. 2. Practice; use.
- pre-** Before; in front of.
- presby-** Old age.
- pro-** Before; in behalf of.
- proct-, procto-** Anus; rectum.
- proso-** Forward, anterior.
- prostat-, prostata-** Prostate gland.
- proto-** 1. First. 2. In chemistry, the lowest of a series of compounds with the same elements.
- pseud-, pseudo-** False.
- psych-, psycho-** Mind; mental processes.
- psychro-** Cold.
- ptosis.** Prolapse, downward displacement.
- pubio-, pubo-** Pubic bone or region.
- pulmo-** Lung.
- py-, pyo-** Pus.
- pycn-, pycno-, pykn-, pykno-** Dense; thick; compact; frequent.
- pyelo-** Pelvis.
- pyg-, pygo-** Buttocks.
- pykn-, pykno-** SEE: *pycn-*.
- pyle-** Orifice, esp. of the portal vein.
- pyloro-** Gatekeeper; applied to the pylorus.
- pyreto-** Fever.
- pyro-** Heat; fire.
- quadr-, quadri-** Four.
- quinqu-** Five.
- rachi-, rachio-** Spine.
- radio-** 1. Radiant energy; a radioactive substance. 2. In chemistry, a radioactive isotope.
- re-** Back; again.
- recto-** Straight; rectum.
- ren-, reno-** Kidney.
- reticulo-** Reticulum.
- retro-** Backward; back; behind.
- rhabdo-** Rod.
- rheo-, -(r)rhea.** Current; stream; to flow; to discharge.
- rhino-** Nose.
- rhizo-** Root.
- rhodo-** Red.
- roseo-** Rose-colored.
- (r)rhage, -(r)rhagia.** Rupture; profuse fluid discharge.
- (r)rhaphy.** A suturing or stitching.
- (r)rhexis.** Rupture of a specific body part.
- sacchar-, saccharo-** Sugar.
- sacro-** Sacrum.
- salping-, salpingo-** Auditory tube; fallopian tube.
- sapro-** Putrid; rotten.
- sarco-** Flesh.
- scapho-** Boat-shaped; scaphoid.
- scapulo-** Shoulder.
- scato-** Dung; fecal matter.

- schisto-**. Split; cleft.
schizo-. Division.
scirrho-. Hard; hard tumor or scirrhous.
sclero-. Hard; relating to the sclera.
-sclerosis. Dryness; hardness.
-scope. Instrument for viewing or examining (includes other methods of examination).
-scopy. Examination.
scoto-. Darkness.
sebo-. Fatty substance.
semi-. Half.
septi-. Seven.
sero-. Serum.
sesqui-. One and one half.
sial-, sialo-. Saliva.
sidero-. Iron; steel.
-sis. SEE: *-asis*.
sitio-, sito-. Bread; made from grain; food.
skeleto-. Skeleton.
skia-. Shadow.
sodio-. Sodium.
somat-, somato-. Body.
spectro-. Appearance; image; form; spectrum.
sperma-, spermat-, spermato-. Sperm; spermatozoa.
spheno-. Wedge; sphenoid bone.
sphygmo-. Pulse.
spir-, spiro-. Breathe.
spleno-. Spleen.
spondyl-, spondylo-. Vertebra.
spongio-. Spongelike.
staphylo-. Uvula; bunch of grapes; *Staphylococcus*.
steato-. Fat.
steno-. Narrow; short.
sterco-. Feces.
stere-, stereo-. Three dimensions.
sterno-. Sternum.
stetho-. Chest.
stomato-. Mouth.
-stomosis, -stomy. SEE: *-ostomosis*.
strepto-. Twisted.
sub-. Under; beneath; in small quantity; less than normal.
super-. Above; beyond; superior.
supra-. Above; beyond; on top.
sym-. With; together with; along; beside.
syn-. Joined; together.
tachy-. Swift; rapid.
taen-, taeni-, ten-, teni-. Tapeworm.
tarso-. Flat of the foot; edge of the eyelid.
tauto-. Same.
techno-. Art; skill.
tel-, tele-. 1. End. 2. Distant.
teleo-. Perfect; complete.
temporo-. Temples of the head.
ten-, teni-. SEE: *taen-*.
tendo-, teno-. Tendon.
ter-. Three.
tera-. One trillionth.
terato-. Severely malformed fetus.
tetra-. Four.
thalamo-. Chamber; part of the brain where a nerve originates; thalamus.
thanato-. Death.
theco-. Sheath; case; receptacle.
thermo-. Hot; heat.
thio-. Sulfur.
thorac-, thoraci-, thoraco-. Chest; chest wall.
thrombo-. Blood clot; thrombus.
thy-, thyro-. Thyroid gland; oblong; shield.
thymo-. 1. Thymus. 2. Soul; emotions.
thyroid-, thyroido-. Thyroid gland.
toco-. Childbirth.
-tome. Cutting instrument.
tomo-. Section; layer.
-tomy. Cutting operation; excision.
ton-, tono-. Tension.
top-, topo-. Place; locale.
tox-, toxi-, toxico-, toxo-, -toxic. Toxin; poison; toxic.
trachelo-. Neck.
tracheo-. Trachea; windpipe.
trans-. Across; over; beyond; through.
traumato-. Trauma.
tri-. Three.
trich-, trichi-, tricho-. Hair.
troph-, tropho-, -trophic. Nourishment.
-tropin. Stimulation of a target organ by a substance, esp. a hormone.
tubo-. Tube.
tympan-, tympano-. Eardrum; tympanum.
typhlo-. 1. Cecum. 2. Blindness.
typho-. Fever; typhoid.
ulo-. Scar; scarring.
ultra-. Beyond; excess.
uni-. One.
uretero-. Ureter.
urethro-. Urethra.
-uria. Urine.
urin-, urino-, uro-. Urine.
uter-, utero-. Uterus.
vagin-, vagino-. Vagina.
varic-, varico-. Dilated vein.
vaso-. Vessel (e.g., blood vessel).
veno-. Vein.
ventro-, ventr-, ventri-. Abdomen; anterior surface of the body.
vertebro-. Vertebra; vertebrae.
vesico-. Bladder; vesicle.
viscero-. Viscera.
vitr-, vitro-, vitre-, vitreo-. Vitreous body (eye); glassy.
vulvo-. Covering; vulva.
xanth-. Yellow.
xeno-. Strange; foreign.
xero-. Dry.
xiph-, xiphi-, xipho-. Xiphoid cartilage.
zoo-. Animal; animal life.

APPENDIX 5

Medical Abbreviations

A	accommodation; acetum; angström unit; anode; anterior artery	AMI	acute myocardial infarction
<u>a</u>	before	AMLS	Advanced Medical Life Support
\bar{a}		amp	ampule; amputation
A ₂	aortic second sound	ANA	antinuclear antibody
aa	of each; arteries	anat	anatomy or anatomic
abd	abdominal/abdomen	ANNA	anti-neuronal nuclear antibody
ABG	arterial blood gas	ant.	anterior
ABO	three basic blood groups	Ao.	aorta
AC	alternating current; air conduction; axiocervical; adrenal cortex	A-P	anterior-posterior
a.c.	before a meal	A&P	auscultation and percussion
acc.	accommodation	ap	before dinner
A/CA	accommodative/ convergence	AQ, aq	water
	accommodation ratio	aq. dest.	distilled water
ACE	angiotensin-converting enzyme	aq. frig.	cold water
ACH	acetylcholine	ARC	AIDS-related complex
ACLS	advanced cardiac life support	ARDS	acute respiratory distress syndrome
ACTH	adrenocorticotrophic hormone	ARMD	age-related macular degeneration
AD	advance directive	AS	ankylosing spondylitis; aortic stenosis; auris sinistra (left ear)
ad	to; up to	As.	astigmatism
ADH	antidiuretic hormone	asc.	ascending
ADHD	attention deficit- hyperactivity disorder	ASCVD	atherosclerotic cardiovascular disease
ADL	activities of daily living	ASD	atrial septal defect
ad lib.	freely; as desired	AsH	hypermetropic astigmatism
admov.	apply	AsM	myopic astigmatism
ad sat.	to saturation	AST	aspartate
AF	atrial fibrillation	Ast	aminotransferase
AFB	acid-fast bacillus	ATCC	astigmatism
AFP	alpha-fetoprotein		American Type Culture Collection
A/G; A-G ratio	albumin/globulin ratio	at. wt.	atomic weight
Ag	silver; antigen	Au	gold
AgNO ₃	silver nitrate	A-V; AV; A/V	arteriovenous; atrioventricular
ah	hypermetropic astigmatism	av.	avoiroduois
AHF	antihemophilic factor	B	boron; bacillus
AI	aortic incompetence; aortic insufficiency	Ba	barium
AICD	automatic implantable cardiac defibrillator	BAC	blood alcohol concentration
AIDS	acquired immunodeficiency syndrome	BBB	blood-brain barrier
AK	above the knee	BBT	basal body temperature
Al	aluminum	BCLS	basic cardiac life support
Alb	albumin	BE	barium enema
ALS	amyotrophic lateral sclerosis	Be	beryllium
ALT	alanine aminotransferase	Bi	bismuth
alt. dieb.	every other day	b.	bone
alt. hor.	every other hour	bib.	drink
alt. noc.	every other night	b.i.d.	twice a day
AM	morning	b.i.n.	twice a night
Am	mixed astigmatism	bipap	bilevel positive airway pressure
a.m.a.	against medical advice	BK	below the knee
		BLS	basic life support

BM	bowel movement	COLD	chronic obstructive lung disease
BMR	basal metabolic rate	comp.	compound; compounded of
bol.	pill	COPD	chronic obstructive pulmonary disease
BP	blood pressure	CP	cerebral palsy; cleft palate
B.P.	British Pharmacopeia	CPAP	continuous positive airway pressure
BPH	benign prostatic hyperplasia	CPC	clinicopathologic conference
bpm	beats per minute	CPD	cephalopelvic disproportion
BSA	body surface area	CPR	cardiopulmonary resuscitation
BSE	breast self-examination	CR	crown-rump length; conditioned reflex
BUN	blood urea nitrogen	CS	cesarean section; culture and sensitivity
BW	birth weight; body weight	CSF	cerebrospinal fluid
Bx	biopsy	CSH	combat support hospital
C	Calorie (kilocalorie); Celsius	CT	computed tomography
$\frac{c}{\bar{c}}$	calorie (small calorie) with	Cu	copper
ca.	about; approximately; cancer	CV	cardiovascular
CABG	coronary artery bypass graft	CVA	cerebrovascular accident; costovertebral angle
CaCO ₃	calcium carbonate	CVP	central venous pressure
CAD	coronary artery disease	CVRB	critical value read back
CAH	chronic active hepatitis	CVS	chorionic villi sampling
Cal	large calorie	CXR	chest X-ray
CAP	let (the patient) take a capsule	D	diopter; dose
cap.	capsule	d	density; right
cath	catheter	/d	per day
CBC	complete blood count	D and C	dilatation and curettage
CBRNE	chemical, biological, radiological, nuclear, and explosive agents	dB	decibel
CC	chief complaint	DC	direct current; doctor of chiropractic
cc	cubic centimeter	dc	discontinue
CCl ₄	carbon tetrachloride	det.	let it be given
CCU	coronary care unit; critical care unit	DIC	disseminated intravascular coagulation
CDC	Centers for Disease Control and Prevention	dieb. alt.	every other day
CF	cystic fibrosis; Christmas factor	dieb. tert.	every third day
cg	centigram	dil.	dilute; diluted
CHD	congenital heart disease; coronary heart disease	dim.	halved
ChE	cholinesterase	DJD	degenerative joint disease
CHF	congestive heart failure	DKA	diabetic ketoacidosis
CI	cardiac index	dl	deciliter
Ci	curie	DM	diabetes mellitus
CIS	carcinoma in situ	DNA	deoxyribonucleic acid
CK	creatin kinase	DNH	do not hospitalize
Cl	chlorine	DNR	do not resuscitate
cm	centimeter	DOA	dead on arrival
c.m.s.	to be taken tomorrow morning	DOB	date of birth
CMT	certified medication technician	DOE	dyspnea on exertion
CMV	cytomegalovirus	DPat	diphtheria-acellular pertussis tetanus (vaccine)
c.n.	tomorrow night	DPT	diphtheria-pertussis-tetanus (vaccine)
CNS	central nervous system	dr.	dram
c.n.s.	to be taken tomorrow night	DRG	diagnosis-related group
CO	carbon monoxide; cardiac output	DT's	delirium tremens
CO ₂	carbon dioxide	DTR	deep tendon reflex
Co	cobalt		
c/o	complains of		

dur. dolor	while pain lasts	GDS	Geriatric Depression Scale
Dx	diagnosis	GERD	gastroesophageal reflux disease
D5W	dextrose 5% in water	GFR	glomerular filtration rate
DWI	driving while intoxicated	GH	growth hormone
E	eye; <i>Escherichia</i>	GI	gastrointestinal
EBV	Epstein-Barr virus	GP	general practitioner
ECF	extended care facility; extracellular fluid	G6PD	glucose-6-phosphate dehydrogenase
ECG	electrocardiogram, electrocardiograph	gr	grain
ECHO	echocardiography	grad	by degrees
ECMO	extracorporeal membrane oxygenation	GRAS	generally recognized as safe
ECT	electroconvulsive therapy	GSW	gunshot wound
ED	emergency department; effective dose; erythema dose; erectile dysfunction	GTT	glucose tolerance test
EDD	estimated date of delivery (formerly EDC: estimated date of confinement)	Gtt, gtt	drops
EEG	electroencephalogram	GU	genitourinary
EENT	eye, ear, nose, and throat	guttat.	drop by drop
EIA	enzyme immunosorbent assay	GYN	gynecology
EKG	electrocardiogram; electrocardiograph	H	hydrogen
elix.	elixir	H ⁺	hydrogen ion
Em	emmetropia	h, hr	hour
EMG	electromyogram	HAV	hepatitis A virus
EMS	emergency medical service	HBV	hepatitis B virus
ENT	ear, nose, and throat	HCG	human chorionic gonadotropin
EOM	extraocular muscles	HCT	hematocrit
ER	Emergency Room	HCV	hepatitis C virus
ESR	erythrocyte sedimentation rate	HD	hearing distance
ESRD	end-stage renal disease	HDL	high-density lipoprotein
EST	electroshock therapy	HEENT	head, eye, ear, nose, and throat
ext.	extensor; external	HF	heart failure
F	Fahrenheit	Hg	mercury
f	female	hgb	hemoglobin
FA	fatty acid	Hib	<i>Haemophilus influenzae</i> type B
FD	fatal dose; focal distance	HIV	human immunodeficiency virus
Fe	iron	h/o	history of
FEV	forced expiratory volume	H ₂ O	water
fl.	flexor	H ₂ O ₂	hydrogen peroxide
Fld	fluid	hor. decub.	bedtime
FP	family practice; family practitioner	hor. som, h.s.	bedtime
FSH	follicle-stimulating hormone	HPI	history of present illness
FTT	failure to thrive	HR	heart rate
FUO	fever of unknown origin	HSV	herpes simplex virus
g, gm	gram	HTLV-III	human T lymphotropic virus type III
garg	gargle	HTN	hypertension
GB	gallbladder	hx, Hx	history
GC	gonococcus or gonorrheal	Hy	hyperopia
GDM	gestational diabetes mellitus	Hz	hertz (cycles per second)
		I	iodine
		¹³¹ I	radioactive isotope of iodine (atomic weight 131)
		¹³² I	radioactive isotope of iodine (atomic weight 132)
		I&O	intake and output
		IBW	ideal body weight
		IC	inspiratory capacity
		ICP	intracranial pressure

ICS	intercostal space	LVH	left ventricular hypertrophy
ICSH	interstitial cell-stimulating hormone	M	master; medicine; molar; thousand; muscle
ICU	intensive care unit	m	male; meter; minim; mole; meta; muscle
Id.	the same	MA	mental age
IDDM	insulin-dependent diabetes mellitus	man. prim.	first thing in the morning
IED	improvised explosive device	MAP	mean arterial pressure
Ig	immunoglobulin	MAT	Miller Analogies Test
IM	intramuscular	MBD	minimal brain dysfunction
in d.	daily	mc; mCi	millicurie
INF	interferon	mcg	microgram
inf.	inferior	MCH	mean corpuscular hemoglobin
inj.	injection	MCHC	mean corpuscular hemoglobin concentration
instill.	instillation	MCV	mean corpuscular volume
int.	internal	MD	muscular dystrophy
IOP	intraocular pressure	MDI	metered-dose inhaler
IPPB	intermittent positive pressure breathing	MED	minimum effective dose
IQ	intelligence quotient	med	medial
IRV	inspiratory reserve volume	μ Eq	microequivalent
I.U.*	international unit	mEq	milliequivalent
IUCD	intrauterine contraceptive device	mEq/L	milliequivalent per liter
IUD	intrauterine device	ME ratio	myeloid/erythroid ratio
IUFD	intrauterine fetal death	Mg	magnesium
IV	intravenous	μ g	microgram
IVP	intravenous pyelogram	mg	milligram
J	joule	MI	myocardial infarction
JRA	juvenile rheumatoid arthritis	MID	minimum infective dose
jt.	joint	mist.	a mixture
K	potassium	ml	milliliter
kg	kilogram	MLD	minimum lethal dose
KI	potassium iodine	MLF	medial longitudinal fasciculus
KUB	kidney, ureter, and bladder	MM	mucous membrane
kv	kilovolt	mm	millimeter
KVO	keep vein open	mm Hg	millimeters of mercury
L	liter	mMol	millimole
L&D	labor and delivery	MMR	measles-mumps-rubella (vaccine)
lab	laboratory	MMSE	Mini-Mental Status Examination
lat	lateral	Mn	manganese
lb	pound	mol wt	molecular weight
LBW	low birth weight	mor. dict.	as directed
LD ₅₀	lethal dose, median	mor. sol.	as accustomed
LDL	low-density lipoprotein	MPC	maximum permitted concentration
LE	lower extremity; lupus erythematosus	MPN	most probable number
LGA	large for gestational age	mr	milliroentgen
LH	luteinizing hormone	MRA	magnetic resonance angiography
Li	lithium	MRI	magnetic resonance imaging
lig	ligament	MS	mitral stenosis; multiple sclerosis
liq.	liquid; fluid	MV	mitral valve
LLE	left lower extremity	mV	millivolt
LLL	left lower lobe	MVA	motor vehicle accident
LLQ	left lower quadrant	MW	molecular weight
lmp	last menstrual period	My	myopia
LOC	level/loss of consciousness	N	nitrogen
LP	lumbar puncture		
LR	lactated Ringer's		
LTD	lowest tolerated dose		
LUE	left upper extremity		
LUL	left upper lobe		
LUQ	left upper quadrant		
LV	left ventricle		

n	nerve	PCO ₂	carbon dioxide pressure
N/A	not applicable	PCP	<i>Pneumocystis carinii</i>
Na	sodium		pneumonia; primary care physician;
NAD	no acute distress		primary care provider
n.b.	note well	PCWP	pulmonary capillary wedge pressure
nCi	nanocurie	PD	interpupillary distance
NDC	National Drug Code	pd	prism diopter; pupillary distance
NG, ng	nasogastric	PDA	patent ductus arteriosus
NH ₃	ammonia	PDR	<i>Physicians' Desk Reference</i>
Ni	nickel	PE	physical examination
NICU	neonatal intensive care unit	PEEP	positive end expiratory pressure
NIDDM	noninsulin-dependent diabetes mellitus	PEFR	peak expiratory flow rate
NIH	National Institutes of Health	PEG	percutaneous endoscopic gastrostomy
NKA	no known allergies		through or by pupils equal, regular, react to light and accommodation
nn	nerves	per	accommodation
noct.	in the night	PERRLA	positron emission tomography
noct. maneq.	night and morning		pay for performance
non rep; n.r.	do not repeat	PET	hydrogen ion concentration
NPN	nonprotein nitrogen	PF ₅ , P ₄ P	pharmacy
n.p.o.	nothing by mouth	pH	present illness; previous illness
NRC	normal retinal correspondence	Pharm; Phar.	peripherally inserted peripheral catheter
NS	normal saline	PI	pelvic inflammatory disease
NSAID	nonsteroidal anti-inflammatory drug	PICC	pill
NSR	normal sinus rhythm	PID	proximal
N&V, N/V	nausea and vomiting	pil.	interphalangeal
O	ounce	PIP	phenylketonuria
O ₂	oxygen	PKU	afternoon/evening
OB	obstetrics	PM	past medical history
OC	oral contraceptive	PMH	point of maximal impulse
O.D.	right eye	PMI	polymorphonuclear neutrophil leukocytes
ol.	oil	PMN	premenstrual syndrome
om. mane vel noc.	every morning or night	PMS	paroxysmal nocturnal dyspnea
omn. hor.	every hour	PND	paroxysmal nocturnal hemoglobinuria
omn. noct.	every night	PNH	peripheral nervous system
OOB	out of bed	PNS	orally (per os)
OPD	outpatient department	PO; p.o.	physician orders for life-sustaining therapy
OR	operating room	POLST	posterior
ORIF	open reduction and internal fixation		purified protein derivative (TB test)
O.S.	left eye		parts per million
os	mouth		through the rectum
OT	occupational therapy		as needed
OTC	over-the-counter		prothrombin time
OU	each eye		prostate-specific antigen
oz	ounce		prothrombin time; physical therapy
P, p	melting point		
\bar{p}	after		
P ₂	pulmonic second sound		
P-A; PA; pa	posteroanterior; pulmonary artery		
PABA	para-aminobenzoic acid (vitamin B10)		
PACU	postanesthesia care unit		
PALS	pediatric advanced life support		
Pap test	Papanicolaou smear		
part. vic	in divided doses		
Pb	lead		
PBI	protein-bound iodine		
p.c.	after meals		
PCA	patient-controlled analgesia		

Pt	platinum; patient	S.D.	standard deviation
pt	pint	S.E.	standard error
PTT	partial thromboplastin time	Se	selenium
		Sed rate	sedimentation rate
Pu	plutonium	semih.	half an hour
PUBS	percutaneous blood sampling	SGA	small for gestational age
p.v.	through the vagina	SI	international system of units (stroke index)
PVC	premature ventricular contraction	Si	silicon
q	every	SIDS	sudden infant death syndrome
q.d.*	every day	Sig.	write on label
q.h.	every hour	SLE	systemic lupus erythematosus
q.2h.	every 2 hours	SLP	speech-language pathology
q.3h.	every 3 hours		
q.4h.	every 4 hours	Sn	tin
q.i.d.*	four times a day	SNF	skilled nursing facility
q.l.	as much as wanted	SNRI	serotonin and norepinephrine reuptake inhibitor
qns	quantity not sufficient		
q.o.d.*	every other day	SOB	shortness of breath
q.p.	as much as desired	sol	solution, dissolved
q.s.	as much as needed	s.o.s.	if necessary
qt	quart	S/P	no change after
q.v.	as much as you please	sp gr	specific gravity
RA	rheumatoid arthritis	sph	spherical
Ra	radium	spt.	spirit
rad	radiation absorbed dose	s.q.	subcutaneous(ly)
RAI	radioactive iodine	Sr	strontium
RAIU	radioactive iodine uptake	ss	a half
RBC	red blood cell; red blood count	SSS	sick sinus syndrome
RDA	recommended daily/ dietary allowance	st.	let it (them) stand
RDS	respiratory distress syndrome	Staph	<i>Staphylococcus</i>
RE	right eye	stat.	immediately
Re	rhodium	STD	sexually transmitted disease
REM	rapid eye movement	Strep	<i>Streptococcus</i>
Rh	symbol of rhesus factor; symbol for rhodium	STS	serologic test for syphilis
RHD	rheumatic heart disease	STU	skin test unit
RLE	right lower extremity	sup.	superior
RL	right lower lobe	supf.	superficial
RLQ	right lower quadrant	SV	stroke volume; supraventricular
RML	right middle lobe of lung	SVC	superior vena cava
Rn	radon	Sx	symptoms
RNA	ribonucleic acid	syr.	syrup
R/O	rule out	T	temperature
ROM	range of motion	T ₃	triiodothyronine
ROS	review of systems	T ₄	thyroxine
RPM	revolutions per minute	TA	toxin-antitoxin
RQ	respiratory quotient	Ta	tantalum
RR	recovery room; respiratory rate	T&A	tonsillectomy and adenoidectomy
RT	radiation therapy; respiratory therapy	TAH	total abdominal hysterectomy
R/T	related to	TAT	thematic apperception test
RUE	right upper extremity	T.A.T.	toxin-antitoxin
RUL	right upper lobe	TB	tuberculin; tuberculosis; tubercle bacillus
RUQ	right upper quadrant		
S	mark	Tb	terbium
̄	without	t.d.s.	to be taken three times daily
S.	sacral		
S-A; S/A; SA	sinoatrial	Te	tellurium; tetanus
SB	small bowel	TENS	transcutaneous electrical nerve stimulation
Sb	antimony		
SC, sc, s.c.	subcutaneous(ly)		

Th	thorium	USP	United States
TIA	transient ischemic attack	ut. dict.	Pharmacopeia as directed
TIBC	total iron-binding capacity	UTI	urinary tract infection
t.i.d.	three times a day	UV	ultraviolet
t.i.n.	three times a night	v	vein
tinct., tr	tincture	VA	visual acuity
Tl	thallium	VC	vital capacity
TLC, tlc	tender loving care; thin layer chromatography; total lung capacity	VD	venereal disease
TM	tympanic membrane	VDRL	Venereal Disease Research Laboratories
TMJ	temporomandibular joint	Vf	field of vision
TNT	trinitrotoluene	VLBW	very low birth weight
TNTM	too numerous to mention	VLDL	very low density lipoprotein
top.	topically	VMA	vanillylmandelic acid
TORB	telephone order read back	VOE	VistA-Office Electronic Health Record
TPI	<i>Treponema pallidum</i> immobilization test for syphilis	vol.	volume
TPN	total parenteral nutrition	vol %	volume percent
TPR	temperature, pulse, and respiration	VORB	verbal order read back
Treg	regulatory T cell	VS	volumetric solution; vesicular sound; vital signs
trit.	triturate or grind	VSD	ventricular septal defect
TSD	time since death	vv	veins
TSE	testicular self-examination	VZIG	varicella zoster immune globulin
TSH	thyroid-stimulating hormone	W	tungsten
TUR	transurethral resection	w	watt
TURP	transurethral resection of the prostate	WAIS	Wechsler Adult Intelligence Scale
Tx	treatment	WAP	written action plan
U	uranium; unit*	WBC	white blood cell; white blood count
UA	urinalysis	WDWN	well-developed, well-nourished
UE	upper extremity	WF/BF	white female/black female
UHF	ultrahigh frequency	WH	well-hydrated
ult. praes.	the last ordered	WM/BM	white male/black male
Umb; umb	umbilicus	WN	well-nourished
ung.	ointment	WNL	within normal limits
URI	upper respiratory infection	wt.	weight
US	ultrasonic	w/v.	weight in volume
USAN	United States Adopted Name	x	multiplied by
		y	yocto-
		yo	years old
		yr	year
		Z	atomic number
		Zn	zinc

* To avoid errors in the administration of medications and infusions, spell out the word instead of using the indicated abbreviation. For example, use "international unit" instead of "I.U."; "every day" instead of "q.d."; "every other day" instead of "q.o.d."; and "unit" instead of "U."

APPENDIX 6 Symbols

GENERAL SYMBOLS

$\overline{3}$	Ounce	—	Minus; deficiency; alkaline reaction; negative
O	Pint	±	Plus or minus; either positive or negative; indefinite
$\overline{\text{lb}}$	Pound	#	Number; following a number, pounds
$\overline{\text{R}}$	Recipe (L. take)	÷	Divided by
$\overline{\text{M}}$	Misce (L. mix)	×	Multiplied by; magnification
$\overline{\text{aa}}$	Of each	/	Divided by
A, Å, ÅU	ångström unit	=	Equals
C-1, C-2, etc.	Complement	≈	Approximately equal
c, $\overline{\text{c}}$	cum (L. with)	>	Greater than; from which is derived
Δ	Change; heat	<	Less than; derived from
E_0	Electroaffinity	⋈	Not less than
F_1	First filial generation	⋈	Not greater than
F_2	Second filial generation	≤	Equal to or less than
$m\mu$	Millimicron, nanometer	≥	Equal to or greater than
μg	Microgram	≠	Not equal to
mEq	Milliequivalent	$\sqrt{\quad}$	Root; square root; radical
mg	Milligram	$\sqrt[3]{\quad}$	Square root
mg%	Milligrams percent; milligrams per 100 ml	$\sqrt[3]{\quad}$	Cube root
n	Subscripted n indicates the number of the molecules can vary from two to greater	∞	Infinity
QO_2	Oxygen consumption	:	Ratio; "is to"
m_0	Meta-	::	Equality between ratios, "as"
o-	Ortho-	∴	Therefore
p-	Para-	°	Degree
$\overline{\text{p}}$	After	%	Percent
PO_2	Partial pressure of oxygen	π	3.1416—ratio of circumference of a circle to its diameter
PCO_2	Partial pressure of carbon dioxide	♂	Male
$\overline{\text{s}}$	Without	♀	Female
ss, ss	[L. semis]. One half	⇌	Denotes a reversible reaction
μm	Micrometer	↑	Increase
μ	Micron (former term for micrometer)	↓	Decrease
$\mu\mu$	Micromicron		
+	Plus; excess; acid reaction; positive		

SPECIAL SYMBOLS USED IN TABERS



Caution/Safety note



Provided on Taber's *Plus* DVD

APPENDIX 7

Units of Measurement (Including SI Units)

Appendix 7-1 Scientific Notation

Sometimes it is necessary to use very large and very small numbers. These can best be indicated and handled in calculations by use of scientific notation, which is to say by use of exponents. Use of scientific notation requires writing the number so that it is the result of multiplying some whole number power of 10 by a number between 1 and 10. Examples are:

$$1234 = 1.234 \times 10^3$$

$$0.01234 = 1.234 \times \frac{1}{100} = 1.234 \times 10^{-2}$$

$$0.001234 = 1.234 \times \frac{1}{1000} = 1.234 \times 10^{-3}$$

To convert a number to its equivalent in scientific notation:

Place the decimal point to the right of the first non-zero digit. This will now be a number between 1 and 9.

Multiply this number by a power of 10, the exponent of which is equal to the number of places the decimal point was moved. The exponent is positive if the decimal point was moved to the left, and negative if it was moved to the right. For example:

$$\frac{1,234,000.0 \times 0.000072}{6000.0} = \frac{1.234 \times 10^6 \times 7.2 \times 10^{-5}}{6.0 \times 10^3}$$

Now, by simply adding or subtracting the exponents of ten, and remembering that moving an exponent from the denominator of the fraction to the numerator changes its sign,

$$= \frac{1.234 \times 10^6 \times 10^{-5} \times 10^{-3} \times 7.2}{6} = \frac{1.234 \times 10^{-2} \times 7.2}{6}$$

Now, dividing by 6,

$$= 1.234 \times 10^{-2} \times 1.2 = 1.4808 \times 10^{-2} = \frac{1.4808}{100} = 0.014808$$

The last operation changed 1.4808×10^{-2} into the final value, 0.014808, which is not expressed in scientific notation.

Appendix 7-2 SI Units (Système International d'Unités or International System of Units)

This system includes two types of units important in clinical medicine. The *base units* are shown in the first table, derived units in the second table, and derived units with special names in the third table.

SI BASE UNITS

Quantity	Name	Symbol
Length	meter	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Temperature	kelvin	K
Luminous intensity	candela	cd
Amount of a substance	mole	mol

SOME SI DERIVED UNITS

<i>Quantity</i>	<i>Name of Derived Unit</i>	<i>Symbol</i>
Area	square meter	m ²
Volume	cubic meter	m ³
Speed, velocity	meter per second	m/s
Acceleration	meter per second squared	m/s ²
Mass density	kilogram per cubic meter	kg/m ³
Concentration of a substance	mole per cubic meter	mol/m ³
Specific volume	cubic meter per kilogram	m ³ /kg
Luminescence	candela per square meter	cd/m ²
Body mass index	kilogram per meter squared	kg/m ²

SI DERIVED UNITS WITH SPECIAL NAMES

<i>Quantity</i>	<i>Name</i>	<i>Symbol</i>	<i>Expressed in Terms of Other Units</i>
Frequency	hertz	Hz	s ⁻¹
Force	newton	N	kg·m·s ⁻² or kg·m/s ²
Pressure	pascal	Pa	N·m ⁻² or N/m ²
Energy, work, amount of heat	joule	J	kg·m ² ·s ⁻² or N·m
Power	watt	W	J·s or J/s
Quantity of electricity	coulomb	C	A·s
Electromotive force	volt	V	W/A
Capacitance	farad	F	C/V
Electrical resistance	ohm	Ω	V/a
Conductance	siemens	S	A/V
Inductance	henry	H	Wφ/A
Illuminance	lux	lx	lm/m ²
Absorbed (radiation) dose	gray	Gy	J/kg
Dose equivalent (radiation)	sievert	Sv	J/kg
Activity (radiation)	becquerel	Bq	s ⁻¹

PREFIXES AND MULTIPLES USED IN SI

<i>Prefix</i>	<i>Symbol</i>	<i>Power</i>	<i>Multiple or Portion of a Multiple</i>
tera	T	10 ¹²	1,000,000,000,000.
giga	G	10 ⁹	1,000,000,000.
mega	M	10 ⁶	1,000,000.
kilo	k	10 ³	1,000.
hecto	h	10 ²	100.
deca	da	10 ¹	10.
unity			1
deci	d	10 ⁻¹	0.1
centi	c	10 ⁻²	0.01
milli	m	10 ⁻³	0.001
micro	μ	10 ⁻⁶	0.000001
nano	n	10 ⁻⁹	0.000000001
pico	p	10 ⁻¹²	0.000000000001
femto	f	10 ⁻¹⁵	0.000000000000001
atto	a	10 ⁻¹⁸	0.000000000000000001

Appendix 7-3 Metric System

MASSES

<i>Mass</i>	<i>Grams</i>
1 Kilogram	= 1000.0
1 Hectogram	= 100.0
1 Decagram (Dekagram)	= 10.0

MASSES (Continued)

<i>Mass</i>	<i>Grams</i>
1 gram	= 1.0
1 decigram	= 0.1
1 centigram	= 0.01
1 milligram	= 0.001
1 microgram	= 10^{-6}
1 nanogram	= 10^{-9}
1 picogram	= 10^{-12}
1 femtogram	= 10^{-15}
1 attogram	= 10^{-18}

Arabic numbers are used with masses and measures, as 10 g, or 3 ml. Portions of masses and measures are usually expressed decimally, e.g., 10^{-1} indicates 0.1; $10^{-6} = 0.000001$. Appendix 7-1: Scientific Notation Appendix.

Appendix 7-4 Weights and Measures

Arabic numerals are used with masses and measures, as 10 g, or 3 ml. Portions of masses and measures are usually expressed decimally. For practical purposes, 1 cm³ (cubic centimeter) is equivalent to 1 ml (milliliter) and 1 drop (gtt.) of water is equivalent to a minim (m).

LENGTH

<i>Millimeters (mm)</i>	<i>Centimeters (cm)</i>	<i>Inches (in)</i>	<i>Feet (ft)</i>	<i>Yards (yd)</i>	<i>Meters (m)</i>
1.0	0.1	0.03937	0.00328	0.0011	0.001
10.0	1.0	0.3937	0.03281	0.0109	0.01
25.4	2.54	1.0	0.0833	0.0278	0.0254
304.8	30.48	12.0	1.0	0.333	0.3048
914.40	91.44	36.0	3.0	1.0	0.9144
1000.0	100.0	39.37	3.2808	1.0936	1.0

1 μm = 1 micrometer = 0.001 millimeter. 1 mm = 100 μm .

1 km = 1 kilometer = 1000 meters = 0.62137 statute mile.

1 statute mile = 5280 feet = 1.609 kilometers.

1 nautical mile = 6076.042 feet = 1852.276 meters.

VOLUME (FLUID)

<i>Milliliters (ml)</i>	<i>Cubic Inches (in³)</i>	<i>U.S. Fluid Quarts (qt)</i>	<i>Liters (L)</i>
1.0	0.061	0.00106	0.001
3.697	0.226	0.00391	0.00369
16.3866	1.0	0.0173	0.01639
29.573	1.8047	0.03125	0.02957
946.332	57.75	1.0	0.9463
1000.0	61.025	1.0567	1.0

1 gallon = 4 quarts = 8 pints = 3.785 liters.

1 pint = 473.16 ml.

WEIGHT

<i>Grains (gr)</i>	<i>Grams (g)</i>	<i>Apothecaries' Ounces (ƒʒ)</i>	<i>Kilograms (kg)</i>
1.0	0.0648	0.00208	0.000065
15.432	1.0	0.03215	0.001
480.0	31.1	1.0	0.0311
7000.0	453.5924	14.583	0.45359
15432.358	1000.0	32.15	1.0

1 microgram (μg) = 0.001 milligram.

1 mg = 1 milligram = 0.001 g; 1000 mg = 1 g.

CIRCULAR MEASURE

60 seconds = 1 minute
90 degrees = 1 quadrant

60 minutes = 1 degree
4 quadrants = 360 degrees = circle

LIQUID MEASURE

16 ounces = 1 pint
1000 milliliters = 1 liter
4 gills = 1 pint

4 quarts = 1 gallon
31.5 gallons = 1 barrel (U.S.)
2 pints = 1 quart

1 quart = 946.35 milliliters
1 liter = 1.0566 quart

A U.S. gallon is equal to 0.8327 British gallon; therefore, a British gallon is equal to 1.201 U.S. gallons. 1 liter is equal to 1.0567 quarts.

LINEAR MEASURE

1 inch = 2.54 centimeters
12 inches = 1 foot
1 statute mile =
5280 feet

40 rods = 1 furlong
3 feet = 1 yard
3 statute miles =
1 statute league

8 furlongs = 1 statute mile
5.5 yards = 1 rod
1 nautical mile =
6076.042 feet

HOUSEHOLD MEASURES AND WEIGHTS*

Approximate Equivalents: 60 gtt. = 1 teaspoonful
= 5 ml = 60 minims = $\frac{1}{8}$ ounce

1 teaspoon = $\frac{1}{2}$ fl oz
3 teaspoons = 1 tablespoon
1 tablespoon = $\frac{1}{2}$ fl oz

16 teaspoons (liquid) = 1 cup
12 tablespoons (dry) = 1 cup
1 cup = 8 fl oz

1 tumbler or glass = 8 fl oz; $\frac{1}{2}$ pint

* Household measures are not precise. For instance, a household tsp will hold from 3 to 5 ml of liquid. Therefore, household equivalents should not be substituted for medication prescribed by the physician.

NOTE: Traditionally, the word "weights" is used in these tables, but "masses" is the correct term.

Appendix 7-5 Conversion Rules and Factors

To convert units of one system into the other, multiply the number of units in column I by the equivalent factor opposite that unit in column II.

WEIGHT

1 gram	=	0.03527 avoirdupois ounce
1 gram	=	0.03215 apothecaries' ounce
1 kilogram	=	35.274 avoirdupois ounces
1 kilogram	=	32.151 apothecaries' ounces
1 kilogram	=	2.2046 avoirdupois pounds
1 grain	=	64.7989 milligrams
1 grain	=	0.0648 gram
1 avoirdupois ounce	=	28.3495 grams
1 apothecaries' ounce	=	31.1035 grams
1 avoirdupois pound	=	453.5924 grams

VOLUME (AIR OR GAS)

1 cubic centimeter (cm ³)	=	0.06102 cubic inch
1 cubic meter (m ³)	=	35.314 cubic feet
1 cubic meter	=	1.3079 cubic yard
1 cubic inch (in ³)	=	16.3872 cubic centimeters
1 cubic foot (ft ³)	=	0.02832 cubic meter

CAPACITY (FLUID OR LIQUID)

1 liter	=	2.1134 pints
1 liter	=	1.0567 quart
1 liter	=	0.2642 gallon
1 fluid dram	=	3.697 milliliters
1 fluid ounce	=	29.573 milliliters
1 pint	=	473.1765 milliliters
1 quart	=	946.353 milliliters
1 gallon	=	3.785 liters

TIME

1 millisecond = one thousandth (0.001) of a second
 1 second = 1/60 of a minute

1 minute = 1/60 of an hour
 1 hour = 1/24 of a day

TEMPERATURE

Given a temperature on the Fahrenheit scale, to convert it to degrees Celsius, subtract 32 and multiply by 5/9. Given a temperature on the Celsius scale, to convert it to degrees Fahrenheit, multiply by 9/5 and add 32. Degrees Celsius are equivalent to degrees Centigrade. SEE: *thermometer, Celsius* for table.

PRESSURE

TO OBTAIN	MULTIPLY	BY
lb/sq in	atmospheres	14.696
lb/sq in	in of water	0.03609
lb/sq in	ft of water	0.4335
lb/sq in	in of mercury	0.4912
lb/sq in	kg/sq meter	0.00142
lb/sq in	kg/sq cm	14.22
lb/sq in	cm of mercury	0.1934
lb/sq ft	atmospheres	2116.8
lb/sq ft	in of water	5.204
lb/sq ft	ft of water	62.48
lb/sq ft	in of mercury	70.727
lb/sq ft	cm of mercury	27.845
lb/sq ft	kg/sq meter	0.20482
lb/cu in	g/ml	0.03613
lb/cu ft	lb/cu in	1728.0
lb/cu ft	gm/ml	62.428
lb/U.S. gal	gm/L	8.345
in of water	in of mercury	13.60
in of water	cm of mercury	5.3543
ft of water	atmospheres	33.95
ft of water	lb/sq in	2.307
ft of water	kg/sq meter	0.00328
ft of water	in of mercury	1.133
ft of water	cm of mercury	0.4461
atmospheres	ft of water	0.02947
atmospheres	in of mercury	0.03342
atmospheres	kg/sq cm	0.9678
bars	atmospheres	1.0133
in of mercury	atmospheres	29.921
in of mercury	lb/sq in	2.036
mm of mercury	atmospheres	760.0
g/ml	lb/cu in	27.68
g/sq cm	kg/sq meter	0.1
kg/sq meter	lb/sq in	703.1
kg/sq meter	in of water	25.40
kg/sq meter	in of mercury	345.32
kg/sq meter	cm of mercury	135.95
kg/sq meter	atmospheres	10332.0
kg/sq cm	atmospheres	1.0332

FLOW RATE

<i>TO OBTAIN</i>	<i>MULTIPLY</i>	<i>BY</i>
cu ft/hr	cc/min	0.00212
cu ft/hr	L/min	2.12
L/min	cu ft/hr	0.472

PARTS PER MILLION

Conversion of parts per million (ppm) to percent:

1 ppm = 0.0001%, 10 ppm = 0.001%, 100 ppm = 0.01%, 1000 ppm = 0.1%,
10,000 ppm = 1%, etc.

ENERGY

1 foot pound = 1.35582 joule

1 joule = 0.2389 Calorie (kilocalorie)

1 Calorie (kilocalorie) = 1000 calories = 4184 joules

A large Calorie, or kilocalorie, is always written with a capital C.

pH

The pH scale is simply a series of numbers stating where a given solution would stand in a series of solutions arranged according to acidity or alkalinity. At one extreme (high pH) lies a highly alkaline solution; at the other extreme (low pH) is an acid solution containing 3.65 g of hydrogen chloride per liter of water. Halfway between lies purified water, which is neutral. All other solutions can be arranged on this scale, and their acidity or alkalinity can be stated by giving the numbers that indicate their relative positions. If the pH of a certain solution is 5.3, it falls between gastric juice and urine on the above scale, is moderately acid, and will turn litmus red.

Tenth-normal HCl	-1.00	} Litmus is red in this acid range
Gastric juice	1.4	
Urine	* 6.0	
Water	7.00	— Neutral
Blood	7.35-7.45	} Litmus is blue in this alkaline range.
Bile	* 7.5	
Pancreatic juice	8.5	
Tenth-normal NaOH	13.00	

* These body fluids vary rather widely in pH; typical figures have been used for simplicity. Urine samples obtained from healthy individuals may have pH readings anywhere between 4.7 and 8.0.

APPENDIX 8

The Interpreter in Three Languages

Basic Medical Diagnosis and Treatment in English, Spanish, and French

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INTRODUCTION

When attempting to communicate with a patient whose language is foreign to you, it is important to establish that while you may be able to say a few words in his or her language you will not be able to understand the patient's replies. The patient may need to use signs in replying. The following paragraphs are given for your convenience in explaining your language difficulty to the patient.

English

Hello. I want to help you. I do not speak (English) but will use this book to ask you some questions. I will not be able to understand your spoken answers. Please respond by shaking your head or raising one finger to indicate "no"; nod your head or raise two fingers to indicate "yes."

Spanish

Translation

Saludos. Quiero ayudarlo. Yo no hablo español, pero voy a usar este libro para hacerle algunas preguntas. No voy a poder entender sus respuestas; por eso haga el favor de contestar, negando con la cabeza o levantando un dedo para indicar "no" y afirmando con la cabeza o levantando dos dedos para indicar "sí."

Phonetic

Sah-loo'dohs. Ki-air'oh ah-joo-dar'loh.
 Joh noh ah'bloh es'panyohl, pair'oh
 voy ah oo-sawr' es'tay lee'broh
 pah'r'ah ah-sair'lay ahl-goo'nahs pray-
 goon'tahs. Noh voy ah poh-dair' en-
 ten-dair' soos res-poo-es'tahs; pore es-
 soh ah'gah el fah-vohr' day
 kohn-tes-tahr', nay-gahn'doh kohn lah
 kah-bay'thah oh lay-vahn-tahn'doh
 oon day'doh pah'r'ah een-dee-kahr' noh
 ee ah-feer-mahn'doh kohn lah kah-
 bay'thah oh lay-vahn-tahn'doh dohs
 day'dohs pah'r'a een-dee-kahr' see.

French

Translation

Bonjour. Je veux bien vous aider. Je ne parle pas français mais tout en me servant de ce livre je vais vous poser des questions. Je ne comprendrai pas ce que vous dites en français. Je vous en prie, pour répondre: pour indiquer "non", secouez la tête ou levez un seul doigt; pour indiquer "oui", faites un signe de tête ou levez deux doigts.

Phonetic

Bon-zhoor'. Zheh veh bih-ehn' vooz ay-day'. Zheh neh parl pah frahn-say' may toot ahn meh sehr-vahn' d' seh lee' vrah zheh vay voo poh-say' day kehs-tih-on'. Zheh neh kahm-prahn'dry pah seh keh voo deet ahn frahn-say'. Zheh vooz ahn pree, por ray-pahn'drah; por ahn-dee-kay nohn, seh-kway' lah teht oo leh-vay' oon sool dwoit; por ahn-dee-kay wee', fayt oon seen deh teht oo leh-vay' duh dwoit.

GENERAL

Basic Questions and Replies

English	Spanish	French
Good morning.	Buenos días.	Bonjour.
My name is . . . I am a (nurse, physician, social worker, psychologist, etc.).	Me llamo . . . soy (enfermera, médico, trabajador social, psicólogo, etc.)	Je m'appelle . . . Je suis (infirmière, médecin, assistante sociale, psychologue, etc.)
What is your name?	¿Cómo se llama?	Quel est votre nom?
How old are you?	¿Cuántos años tiene?	Quel âge avez-vous?
Do you understand me?	¿Me entiende?	Me comprenez-vous?
Answer only . . .	Contestesolamente . . .	Répondez seulement . . .
Yes No	Sí No	Oui Non
What do you say?	¿Qué dice?	Que dites-vous?
Speak slower.	Hable más despacio.	Parlez plus lentement.
Say it once again.	Repítalo, por favor.	Répétez ça.
Don't be afraid.	No tenga miedo.	N'ayez pas peur.
Try to recollect.	Trate de recordar.	Cherchez à vous rappeler.
You cannot remember?	¿No recuerda?	Vous ne vous en souvenez pas?
Come to my office.	Venga a mi oficina.	Venez à mon bureau.
Please remove all your clothes and put on this gown.	Por favor, quítese la ropa y póngase esta bata.	S'il vous plaît, déshabillez-vous et mettez cette robe.
You will?	¿Ud. quiere? Ud.—Usted.	Vous voulez bien?
You will not?	¿No quiere Ud.?	Vous ne voulez pas?
You don't know?	¿No sabe?	Vous ne savez pas?
Is it impossible?	¿Es imposible?	C'est impossible?
It is necessary.	Es necesario.	C'est nécessaire.
That is right.	Está bien.	C'est bien.
Show me . . .	Enseñeme . . .	Montrez-moi . . .
Here There	Aquí Allí	Ici Là
Which side?	¿En qué lado?	Quel côté?
Since when?	¿Desde cuándo?	Depuis quand?
Right	Derecha	A droite
Left	Izquierda	A gauche
More or less	Más o menos	Plus ou moins
How long?	¿Cuánto tiempo?	Combien de temps?
Not much	No mucho	Pas beaucoup
Try again.	Trate otra vez.	Essayez encore une fois.
Never	Nunca	Jamais
Never mind.	Olvídelo.	Ça ne fait rien.
That will do.	Suficiente.	Ça suffit.
About how much daily?	¿Más o menos qué cantidad diariamente?	À peu près combien par jour?

<i>English</i>	<i>Spanish</i>	<i>French</i>
Seasons		
Spring	Primavera	Printemps
Summer	Verano	Été
Autumn	Otoño	Automne
Winter	Invierno	Hiver
Months		
January	Enero	Janvier
February	Febrero	Février
March	Marzo	Mars
April	Abril	Avril
May	Mayo	Mai
June	Junio	Juin
July	Julio	Juillet
August	Agosto	Août
September	Septiembre	Septembre
October	Octubre	Octobre
November	Noviembre	Novembre
December	Diciembre	Décembre
Days of the Week		
Sunday	Domingo	Dimanche
Monday	Lunes	Lundi
Tuesday	Martes	Mardi
Wednesday	Miércoles	Mercredi
Thursday	Jueves	Jeudi
Friday	Viernes	Vendredi
Saturday	Sábado	Samedi
Numbers and Time		
One	Uno	Un
Two	Dos	Deux
Three	Tres	Trois
Four	Cuatro	Quatre
Five	Cinco	Cinq
Six	Seis	Six
Seven	Siete	Sept
Eight	Ocho	Huit
Nine	Nueve	Neuf
Ten	Diez	Dix
Twenty	Veinte	Vingt
Thirty	Treinta	Trente
Forty	Cuarenta	Quarante
Fifty	Cincuenta	Cinquante
Sixty	Sesenta	Soixante
Seventy	Setenta	Soixante-dix
At 10:00	A las diez	A dix heures
At 2:30	A las dos y media	A deux heures et demie
Early in the morning	Temprano por la mañana	De bon matin
In the daytime	En el día	Pendant la journée
At noon	Al mediodía	A midi
At bedtime	Al acostarse	A l'heure de se coucher
At night	Por la noche	Le soir
With meals	Con las comidas	Avec les repas
Before meals	Antes de las comidas	Avant les repas
After meals	Después de las comidas	Après les repas
Today	Hoy	Aujourd'hui
Tomorrow	Mañana	Demain
Every day	Todos los días	Chaque jour
Every other day	Cada dos días	Tous les deux jours
Every hour	Cada hora	Chaque heure
How long have you felt this way?	¿Desde cuándo se siente así?	Depuis quand vous sentez-vous comme ça?

<i>English</i>	<i>Spanish</i>	<i>French</i>
It came all of a sudden?	¿Vino de repente?	Ça vous est arrivé tout à coup?
For how many days or weeks?	¿Cuántos días o semanas?	Depuis combien de jours ou semaines?
Do they come every day?	¿Los tiene todos los días?	Ça vous gêne tous les jours?
At the same hour?	¿A la misma hora?	A la même heure?
At intervals?	¿De vez en cuando?	De temps à autre?
It will be too late.	Será demasiado tarde.	Çe sera trop tard.

Colors

Black	Negro	Noir
Blue	Azul	Bleu
Green	Verde	Vert
Pink	Rosado	Rose
Red	Rojo	Rouge
White	Blanco	Blanc
Yellow	Amarillo	Jaune

Parts of Body

In the abdomen	En el vientre	Dans l'abdomen
The ankle	El tobillo	La cheville
The arm	El brazo	Le bras
The back	La espalda	Le dos
The bones	Los huesos	Les os
The chest	El pecho	La poitrine
The ears	Los	Les oreilles
The elbow	El codo	Le coude
The eye	El ojo	L'oeil
The foot	El pie	Le pied
The gums	Las encías	Les gencives
The hand	La mano	La main
The head	La cabeza	La tête
The heart	El corazón	Le cœur
The leg	La pierna	La jambe
The liver	El hígado	Le foie
The lungs	Los pulmones	Les poumons
The mouth	La boca	La bouche
The muscles	Los músculos	Les muscles
The neck	El cuello	Le cou
The nerves	Los nervios	Les nerfs
The nose	La nariz	Le nez
The penis	El pene	Le pénis
The perineum	El perineo	Le périnée
The rectal area	La parte rectal	La partie rectale
The ribs	Las costillas	Les côtes
The shoulder blades	Las paletillas	Les omoplates
The side	El flanco	Le côté
The skin	La piel	La peau
The skull	El cráneo	Le crâne
The stomach	El estómago	L'estomac
The teeth	Los dientes	Les dents
The temples	Las sienas	Les tempes
The thigh	El muslo	La cuisse
The throat	La garganta	La gorge
The thumb	El dedo pulgar	Le pouce
The tongue	La lengua	La langue
The wrist	La muñeca	Le poignet
The vagina	La vagina	Le vagin

English	Spanish	French
HISTORY		
Family		
Are you married?	¿Es Ud. casado?	Etes-vous marié?
A widower?	¿Viudo?	Veuf?
A widow?	¿Viuda?	Veuve?
Do you have children?	¿Tiene Ud. hijos?	Avez-vous des enfants?
Are they still living?	¿Viven todavía?	Sont-ils encore vivants?
Do you have any sisters?	¿Tiene hermanas?	Avez-vous des soeurs?
Do you have any brothers?	¿Tiene hermanos?	Avez-vous des frères?
Of what did your mother die?	¿De qué murió su madre?	De quoi est morte votre mère?
And your father?	¿Y su padre?	Et votre père?
Your grandfather?	¿Su abuelo?	Votre grand-père?
Your grandmother?	¿Su abuela?	Votre grand-mère?
General		
Do you have . . . ?	¿Tiene . . . ?	Avez-vous . . . ?
Have you ever had . . . ?	¿Ha tenido . . . ?	Avez-vous jamais eu . . . ?
Chills	Escalofrios	Les frissons
Dizziness	El vértigo	Le vertige
Shortness of breath	Corto de aliento	Essoufflement
Night sweats	Sudores de noche	Transpiration dans la nuit
An attack of fever	Un ataque de calentura	Une attaque de fièvre
Toothache	Dolor de muelas	Mal aux dents
Hemorrhage	Hemorragia	Hémorragie
Hoarseness	Ronquera	Enrouement
Nosebleeds	Hemorragia por la nariz	Saignements de nez
Unusual vaginal bleeding	Hemorragia vaginal fuera de los períodos	Du saignement vaginal anormal
When did you last have a period?	¿Cuándo tuvo Ud. su última menstruación?	Quand avez-vous eu vos règles pour la dernière fois?
Are you menopausal?	¿Padece de la menopausia?	Passez-vous par la ménopause?
Are you on hormone therapy?	¿Sigue un tratamiento hormonal?	Faites-vous un traitement hormonal?
Do you take birth control pills?	¿Toma. Ud. píldoras anticonceptivas?	Est-ce que vous prenez des médicaments anti-conceptionnels?
How many pregnancies (abortions or miscarriages) have you had?	¿Cuántos embarazos (abortos, abortos involuntarios) ha tenido Ud.?	Combien de grossesses (avortements, fausses couches) avez-vous eu?
How many living children do you have? What are their ages?	¿Cuántos hijos vivos tiene Ud.? ¿Cuántos años de edad tienen?	Combien d'enfants vivants avez-vous? Quel âge ont-ils?
Any difficulties in pregnancies? Deliveries?	¿Dificultades con el embarazo? ¿En el parto?	Des difficultés avec la grossesse? Avec l'accouchement?
Do you have any sexual difficulties?	¿Tiene problemas sexuales?	Avez-vous des problèmes sexuels?
Work History		
What work do you do?	¿Cuál es su ocupación?	Quelle est votre profession?
Is it heavy physical work?	¿Es un trabajo corporal pesado?	Est-ce que c'est un travail physiquement fatigant?
What work have you done?	¿Qué trabajo ha hecho?	A quoi avez-vous travaillé?

English	Spanish	French
Diseases		
What diseases have you had?	¿Qué enfermedades ha tenido?	Quelles maladies avez-vous eu?
What type of allergy (types of allergies) do you have?	¿Qué clase de alergia tiene Ud.?	Quelle sorte d'allergie avez-vous?
What is the reaction?	¿Cuál es la reacción?	Quelle est la réaction?
What is the treatment?	¿Cuál es el tratamiento?	Quel est le traitement?
Anemia	Anemia	L'anémie
Bleeding tendency	Tendencia a sangrar	Une tendance à saigner
Bowel problems	Problemas de vientre (evacuación)	Problèmes au ventre (évacuation)
Broken bones	Huesos partidos	Des os cassés
Cancer	Cáncer	Le cancer
Chickenpox	Varicela	La varicelle
Diabetes	Diabetes	Le diabète
Diphtheria	Difteria	La diphthérie
German measles	Rubéola	Rubéole
Gonorrhea	Gonorrea	La gonorrhée
Heart disease	Enfermedad del corazón	Une maladie de cœur
High blood pressure	Presión sanguínea elevada	La tension artérielle trop élevée
HIV (AIDS)	HIV (SIDA)	HIV (SIDA)
Influenza	Gripe (influenza)	La grippe
Injuries	Daños	Blessures
Lead poisoning	Envenenamiento con plomo	Empoisonnement causé par le plomb
Liver disease	Enfermedad del hígado	Une maladie de foie
Malaria	Malaria (paludismo)	La malaria
Measles	Sarampión	La rougeole
Mental disease	Enfermedades mentales	Une maladie mentale
Mumps	Paperas	Les oreillons
Nervous disease	Enfermedades nerviosas	Une maladie nerveuse
Pleurisy	Pleurisia	Une pleurésie
Pneumonia	Pulmonía	Pneumonie
Rheumatic fever	Reumatismo (fiebre reumática)	La fièvre rhumatismale
Rheumatism	Reumatismo	Le rhumatisme
Scarlet fever	Escarlatina	La fièvre scarlatine
Seizures	Ataques	Des crises
Skin rashes	Erupciones de la piel	Eruptions de la peau
Smallpox	Viruela	La variole
Syphilis	Sífilis	La syphilis
Tuberculosis	Tuberculosis	Tuberculose
Typhoid fever	Tifoidea	La fièvre typhoïde
What immunizations have you had?	¿Qué inmunizaciones ha tenido Ud.?	Quelles immunisations avez-vous eu?

EXAMINATION

General

How do you feel?	¿Cómo se siente?	Comment vous sentez-vous?
Good	Bien	Bien
Bad	Mal	Mal
Let me look at . . . ; listen to your heart/lungs.	Déjeme reconocerle el corazón/los pulmones.	Permettez-moi de vous examiner le cœur/les poumons.
Let me feel your pulse.	Déjeme tomarle el pulso.	Permettez-moi de vous tâter le pouls.
Let me check your temperature.	Déjeme tomarle la temperatura.	Permettez-moi de vous prendre la température.
Whisper: one, two, three.	Repita en voz baja: uno, dos, tres.	Dites tout bas: un, deux, trois.

English	Spanish	French
Say it out loud.	Dígalo en voz alta.	Dites-le à voix haute.
Sit down.	Siéntese.	Asseyez-vous.
Stand up.	Levántese.	Levlez-vous.
Walk a little way.	Ande algunos pasos.	Faites quelques pas.
Turn back and come this way.	Dé la vuelta y regrese por aquí.	Faites demi-tour et revenez par ici.
Do you feel like falling?	¿Le parece que se va a caer?	Vous sentez-vous comme si vous allez tomber?
Do you feel dizzy?	¿Tiene Ud. vértigo?	Avez-vous le vertige?
Are you tired?	¿Está Ud. cansado?	Êtes-vous fatigué?
Do you exercise? What type? How often? How long?	¿Hace ejercicio? ¿De qué tipo? ¿Con qué frecuencia? ¿Por cuánto tiempo?	Prenez-vous de l'exercice? De quelle sorte? Combien de fois? Pour combien de temps?
Do you sleep well?	¿Duerme Ud. bien?	Dormez-vous bien?
Do you wake up feeling rested?	¿Se despierta Ud. descansado(a)?	Vous réveillez-vous bien reposé(e)?
Do you have any difficulty in breathing?	¿Tiene dificultad para respirar?	Avez-vous du mal à respirer?
Have you lost weight?	¿Ha perdido Ud. peso?	Avez-vous maigri?
How long have you had this skin rash?	¿Desde cuándo tiene Ud. esta erupción en la piel?	Depuis quand avez-vous cette éruption sur la peau?
Are you usually (now) cold?	¿Tiene Ud. frío usualmente (ahora)?	Avez-vous froid d'habitude (maintenant)?
Are you usually (now) warm?	¿Tiene Ud. calor usualmente (ahora)?	Avez-vous chaud d'habitude (maintenant)?
Can you swallow easily?	¿Puede Ud. tragar fácilmente?	Pouvez-vous avaler facilement?
Have you a good appetite?	¿Tiene Ud. buen apetito?	Avez-vous bon appétit?
Are you thirsty?	¿Tiene sed?	Avez-vous soif?
Do you feel weak?	¿Se siente Ud. débil?	Vous sentez-vous faible?
Had you been drinking alcohol? Have you been drinking alcohol?	¿Había tomado Ud. alcohol? ¿Ha tomado Ud. alcohol?	Aviez-vous bu de l'alcool? Avez-vous bu de l'alcool?
Do you drink wine? Beer? Whisky? Gin? Rum? Vodka? Something else?	¿Toma Ud. vino? ¿Cerveza, whisky, gin, ron, vodka? ¿Otra cosa?	Buvez-vous du vin? Bière, whisky, gin, rhum, vodka? Quelque chose d'autre?
Are you a drinking person?	¿Toma Ud. bebidas alcohólicas normalmente?	Buvez-vous de l'alcool d'habitude?
How much do you drink at one time?	¿Cuánto toma Ud. cada vez?	Combien buvez-vous chaque fois?
How often do you drink? Every day? On weekends?	¿Con qué frecuencia toma Ud.? ¿Cada día? ¿El fin de semana?	Combien de fois buvez-vous? Tous les jours? Le weekend?
Do you smoke tobacco? Cigarettes? Pipe? Cigars?	¿Fuma Ud. tabaco? ¿Cigarrillos? ¿Pipa? ¿Cigarros?	Fumez-vous le tabac? Cigarettes? Pipe? Cigares?
How many do you smoke per day?	¿Cuántos fuma Ud. al día?	Combien fumez-vous par jour?
For how many years?	¿Por cuántos años?	Depuis combien d'années?
Do you inhale?	¿Traga Ud. el humo?	Avalez-vous la fumée?
Do you use caffeine? What beverages?	¿Usa Ud. la cafeína? ¿Qué bebidas?	Prenez-vous de la caféine? Quelles boissons?
How much/how frequently?	¿Cuántas/con qué frecuencia?	Combien/combien de fois?
What drugs do you take (prescriptions, over-the-counter, street)?	¿Qué medicinas/drogas toma Ud. (recetas, sin recetas, droga de la calle)?	Quels médicaments/drogues prenez-vous (ordonnances, sans-ordonnance, drogues de la rue)?

<i>English</i>	<i>Spanish</i>	<i>French</i>
Are you nervous?	¿Está Ud. nervioso?	Etes-vous nerveux?
When were you first taken sick?	¿Cuándo le empezó esta enfermedad?	Quand êtes-vous tombé malade d'abord?
How did this illness begin?	¿Cómo empezó esta enfermedad?	Comment cette maladie a-t-elle commencé?
Did you take anything for it?	¿Tomó algo para mejorarla?	Avez-vous pris quelque chose pour cela?
Have you taken the (any) medicine?	¿Ha tomado Ud. la (alguna) medicina?	Avez-vous pris du (quelque) médicament?
Did it (the medicine) help?	¿Le ayudó (la medicina)?	Il vous a fait du bien (le médicament)?
Did a dog bite you?	¿Le mordió un perro?	Est-ce qu'un chien vous a mordu?
Did an insect sting you?	¿Le picó un insecto?	Un insecte vous a piqué?
Did you prick yourself with a pin?	¿Se ha pinchado con un alfiler?	Vous êtes-vous piqué avec une épingle?
Did you burn yourself?	¿Se quemó?	Vous êtes-vous brûlé?
Did you twist your ankle?	¿Se torció Ud. el tobillo?	Vous êtes-vous tordu la cheville?
Pain		
Have you any pain?	¿Tiene dolor?	Avez-vous mal quelque part?
Show me where it hurts.	Enseñeme donde le duele.	Montrez-moi où vous avez mal.
Does it move to another area?	¿Se mueve para otra parte?	Cela se déplace à un autre endroit?
What did you feel in the beginning?	¿Qué sentía cuando empezó?	Qu'avez-vous senti au commencement?
Sharp pain	Dolor agudo	Élancement
Shooting pains	Dolores agudos	Des élancements
Dull pain	Dolor sordo	Douleur sourde
Heavy aching pain	Dolor continuo fuerte	Grosse et vive douleur
Is the pain always there?	¿Le duele constantemente?	Ça vous fait mal continuellement?
Does it come and go?	¿Se va y vuelve?	Ça s'en va et revient?
How bad is the pain now? usually?	¿Cuánto le duele ahora? ¿Usualmente?	Combien de mal avez-vous maintenant? D'habitude?
Small/little	Un poco/muy poco	Un peu/très peu
Very bad	Muchísimo	Beaucoup
In between	Así, así	Entre les deux
Does anything make it worse?	¿Hay algo que lo hace peor?	Quelque chose le rend pire?
Does anything make it better/easier?	¿Hay algo que lo hace mejor/más fácil?	Quelque chose le rend mieux/plus facile?
Is the pain better since the medicine I gave you?	¿El dolor está mejor con la medicina que le di?	La douleur va mieux depuis le médicament que je vous ai donné?
A little better? A lot?	¿Un poco mejor? ¿Mucho mejor?	Un peu mieux? Beaucoup mieux?
Head		
How does your head feel?	¿Cómo siente la cabeza?	Comment va votre tête?
Can you remember things that happened?	¿Puede Ud. recordar lo que le ha pasado?	Pouvez-vous vous souvenir de ce qui s'est passé?
Can you remember what you did today? yesterday? Last month/year? Many years ago?	¿Puede Ud. recordar lo que hizo hoy? ¿Ayer? ¿El mes/año pasado? ¿Muchos años atrás?	Pouvez-vous vous souvenir de ce que vous avez fait aujourd'hui? Hier? Le mois dernier? L'année dernière? Il y a beaucoup d'années?
Have you any pain in the head?	¿Le duele la cabeza?	Avez-vous mal à la tête?

<i>English</i>	<i>Spanish</i>	<i>French</i>
Did you fall? How did you fall?	¿Se cayó? ¿Cómo se cayó?	Etes-vous tombé? Comment êtes-vous tombé?
Did you faint? Have you ever had fainting spells? Do you feel dizzy?	¿Se desmayó? ¿Ha tenido desmayos alguna vez? ¿Tiene Ud. vértigo?	Vous êtes-vous évanoui? Avez-vous jamais eu des évanouissements? Avez-vous le vertige?
Ears		
Do you have ringing in the ears? Can you hear me speaking? [Examiner then repeats more loudly and more softly.] [Examiner should look for discharge from ears rather than ask about it.]	¿Le pitan los oídos? ¿Puede Ud. oírme cuando hablo?	Avez-vous des bourdonnements d'oreilles? Pouvez-vous m'entendre quand je parle?
Eyes		
Do you wear eyeglasses? Contact lenses? What type? When did you last have your eyes examined?	¿Usa Ud. anteojos? ¿Lentes de contacto? ¿Qué tipo? ¿Cuándo fue la última vez que le examinaron los ojos?	Portez-vous des lunettes? Des verres de contact? Quelle sorte? Quand est-ce que vous vous êtes fait examiner les yeux la dernière fois?
Look up. Look down. Look toward your nose. Look at me. Can you see what is on the wall? Can you see it now?	Mire para arriba. Mire para abajo. Mire la nariz. Míreme. ¿Puede ver lo que está en la pared? ¿Puede verlo ahora?	Regardez en haut. Regardez en bas. Regardez le nez. Regardez-moi. Pouvez-vous voir ce qu'il y a contre le mur? Le voyez-vous maintenant?
And now? What is it? Tell me what number it is. Tell me what letter it is.	¿Y ahora? ¿Qué es esto? Dígame qué número es éste. Dígame qué letra es ésta.	Et maintenant? Qu'est-ce que c'est? Dites-moi quel est le numéro. Dites-moi quelle est la lettre.
Can you see clearly? Better at a distance?	¿Puede ver claramente? ¿Mejor a cierta distancia?	Pouvez-vous voir clairement? Mieux à distance?
(Can you see) better at close range? Is your vision cloudy? Blurred? Double?	¿Puede Ud. ver mejor de cerca? ¿Tiene Ud. la vista velada? ¿Borrosa? ¿Doble?	Pouvez-vous voir mieux de près? Avez-vous la vue trouble? Voilée? Double?
Do you see haloes/rings around things?	¿Ve Ud. halos/anillos alrededor de las cosas?	Voyez-vous des halos/ronds autour des choses?
Do you see flashing lights? Does light (sun) bother your eyes? Do(es) your eye(s) hurt? Sting? Burn? Itch?	¿Ve Ud. destellos? ¿La luz (el sol) le molesta los ojos? ¿Le duele(n) el ojo (los ojos)? ¿Le pica(n)? ¿Está(n) irritado(s)? ¿Le arde(n)?	Voyez-vous des lumières à éclats? La lumière (le soleil) vous gêne les yeux? Avez-vous mal à l'œil (aux yeux)? Cela pique, brûle, démange?
Can you read? Can you read a newspaper/newsprint?	¿Puede Ud. leer? ¿Puede Ud. leer el periódico?	Pouvez-vous lire? Pouvez-vous lire le journal?

<i>English</i>	<i>Spanish</i>	<i>French</i>
Do your eyes water a good deal?	¿Le lagrimean mucho los ojos?	Est-ce que les yeux vous coulent beaucoup?
Can't you open your eye?	¿No puede abrir el ojo?	Ne pouvez-vous pas ouvrir l'oeil?
Did anything get into your eye?	¿Le entró algo en el ojo?	Est-ce que quelque chose est entré dans l'oeil?
Does the eyeball feel as if it were swollen?	¿Le parece que el ojo está hinchado?	L'oeil vous semble-t-il gonflé?
Wear this patch (shield) on your eye [give time frame].	Use Ud. este parche en el ojo.	Mettez-vous ce couvre-oeil.
It would harm your eyes.	Le haría daño a los ojos.	Cela vous abîmerait les yeux.
How long has your eyesight been failing?	¿Desde cuando ha bajado su vista?	Depuis quand diminue votre vue?
Nose, Throat, and Mouth		
How long have you been hoarse?	¿Desde cuando está Ud. ronco(a)?	Depuis quand êtes-vous enroué(e)?
Can you breathe through your nose?	¿Puede Ud. respirar por la nariz?	Pouvez-vous respirer par le nez?
Can you breathe through each nostril?	¿Puede Ud. respirar por cada ventana de la nariz?	Pouvez-vous respirer par chaque narine?
Open your mouth.	Abra la boca.	Ouvrez la bouche.
Can you swallow easily?	¿Puede Ud. tragar fácilmente?	Pouvez-vous avaler facilement?
Does it hurt you to open your mouth?	¿Le duele al abrir la boca?	Ouvrir la bouche vous fait-il mal?
Do you go to (have you been to) a dentist?	¿Consulta Ud. (ha consultado) a un dentista?	Consultez-vous (avez-vous consulté) un OW>
Do you go regularly? When was the last time?	¿Lo consulta regularmente? ¿Cuándo fue la última vez?	Vous le consultez régulièrement? Quand a été la dernière fois?
Do you brush your teeth?	¿Se lava Ud. los dientes?	Vous lavez-vous les dents?
Do you floss?	¿Usa Ud. hilo dental?	Utilisez-vous le fil dentaire?
Do you wear dentures?	¿Usa Ud. dentadura postiza?	Portez-vous des dentiers?
Please remove your denture(s).	Por favor, quítese la(s) dentadura(s).	S'il vous plaît, enlevez le(s) dentier(s).
Take a deep breath.	Respire profundamente.	Respirez profondément.
Cough.	Tosa.	Toussez.
Cough again.	Tosa otra vez.	Toussez encore une fois.
How long have you had this cough?	¿Desde cuándo tiene la tos?	Depuis quand avez-vous la toux?
Is it worse at night? In the morning?	¿Está peor por la noche? ¿Por la mañana?	C'est pire dans la nuit? Pendant le matin?
Do you expectorate much?	¿Escupe mucho?	Crachez-vous beaucoup?
What is the color of your expectorations?	¿De qué color es el esputo?	De quelle couleur sont vos crachats?
Does your tongue feel swollen?	¿Siente Ud. la lengua hinchada?	Est-ce que la langue vous paraît gonflée?
Do you have a sore throat?	¿Le duele la garganta?	Avez-vous mal à la gorge?
Does it hurt to swallow?	¿Le duele al tragar?	Ça vous fait mal quand vous avaler?
Upper Extremities		
Let me see your hand.	Enseñeme la mano.	Montrez-moi la main.
Grasp my hand.	Apriete mi mano.	Serrez-moi la main.
Squeeze (my hand) harder.	Apriete Ud. (mi mano) más fuerte.	Serrez-moi (la main) plus fort.

<i>English</i>	<i>Spanish</i>	<i>French</i>
Can you not do it better than that?	¿No puede hacerlo más fuerte?	Vous ne pouvez pas ser- rer plus fort que cela?
Your arm feels paralyzed?	¿Parece que el brazo está paralizado?	Est-ce que le bras vous paraît paralysé?
Raise your arm.	Levante el brazo.	Levez le bras.
Raise it more.	Más alto.	Plus haut.
Now the other.	Ahora el otro.	Maintenant l'autre.
Hold both arms out in front of you and push against my hand.	Extienda los brazos delante de Ud. y empuje contra mi mano.	Tendez vos bras devant vous et poussez contre ma main.
Your arm feels weak?	¿El brazo le parece débil?	Le bras vous semble faible?
How long have you had no strength in your arm?	¿Desde cuándo no tiene fuerza en el brazo?	Depuis quand vous n'avez pas de force dans le bras?
Had you been sleeping on your arm?	¿Ha dormido encima del brazo?	Vous êtes-vous endormi sur le bras?
Cardiopulmonary		
Do you experience a rapid (irregular) heart-beat?	¿Siente el latido del corazón rápido (irregular)?	Eprouvez-vous le battement du coeur rapide (irrégulier)?
Do you have pain in your chest? Your jaw? Your arm?	¿Le duele el pecho? ¿La mandíbula? ¿El brazo?	Avez-vous mal à la poitrine? A la mâchoire? Au bras?
Do you get short of breath? With exertion?	¿Se le corta la respiración? ¿Después de un esfuerzo?	Vous vous essoufflez? Après de l'effort?
Do you breathe more easily sitting upright?	¿Respira mejor cuando está sentado?	Respirez-vous mieux quand vous êtes assis?
How many pillows do you need to sleep?	¿Cuántas almohadas necesita Ud. para dormir?	Vous avez besoin de combien d'oreillers pour dormir?
Does it hurt you to breathe?	¿Le duele cuando respira?	Vous avez mal quand vous respirez?
Do you breathe in dust or chemicals at home? At work?	¿Respira Ud. polvos o productos químicos en casa? ¿En el trabajo?	Respirez-vous des poussières ou des produits chimiques chez vous? Au travail?
Do you cough up mucus (phlegm/sputum)?	¿Tose mocos (flema/esputo)?	Toussez-vous gras (flegme/crachats)?
What is the color of your sputum?	¿De qué color es el esputo?	De quelle couleur sont les crachats?
[Examiner should demonstrate any desired motion for patient.]		
Gastrointestinal		
Do you have stomach cramps?	¿Tiene calambres en el estómago?	Avez-vous des crampes de l'estomac?
How long has your tongue been that color?	¿Desde cuándo tiene la lengua de ese color?	Depuis quand votre langue a-t-elle cette couleur?
Have you a pain in the pit of your stomach?	¿Tiene dolor en la boca del estómago?	Est-ce que ça vous fait mal dans le creux de l'estomac?
Does eating make you vomit?	¿El comer le hace vomitar?	Rendez-vous ce que vous mangez?
Are you constipated?	¿Está estreñido?	Etes-vous constipé?
Do you have diarrhea?	¿Tiene diarrea?	Avez-vous la diarrhée?
Do you pass any blood?	¿Con sangre?	Y-a-t-il du sang?
Do you belch gas?	¿Eructa Ud. (gases)?	Eructez-vous (des gaz)?
Do you have burning pain (indigestion)?	¿Padece Ud. de la res-coldera (indigestión)?	Avez-vous des brûlures d'estomac (indigestions)?

<i>English</i>	<i>Spanish</i>	<i>French</i>
What have you been eating? How much? How often?	¿Qué come? ¿Cuánto? ¿Con qué frecuencia?	Qu'est-ce que vous mangez? Combien? Combien de fois?
Are your stools formed? Soft? Hard? Liquid?	¿Cómo son sus evacuaciones de vientre? ¿Sueltas? ¿Duras? ¿Líquidas?	Comment sont vos évacuations de ventre? Molles? Dures? Liquides?
When do you usually have a bowel movement?	¿Cuándo evacúa el vientre usualmente?	Quand évacuez-vous le ventre d'habitude?
Do you pass gas?	¿Suelta gases del vientre?	Lâchez-vous des gaz du ventre?
Do you pass stools involuntarily?	¿Evacúa el vientre sin querer?	Evacuez-vous le ventre involontairement?
Do you feel nauseated (sick to your stomach)?	¿Tiene náuseas (asco grande)?	Avez-vous la nausée (mal au cœur)?
Have you been vomiting? How long? How many times?	¿Ha vomitado? ¿Desde cuándo? ¿Cuántas veces?	Avez-vous vomi? Depuis quand? Combien de fois?
What does the vomitus look like?	¿A qué se parece el vómito?	A quoi ressemble le vomissement?
Is the vomitus (or stool) brown? Black?	¿Es de color café el vómito (o la evacuación)? ¿Negro?	Le vomissement est brun (ou la selle)? Noir?
Genitourinary		
Have you any difficulty passing water?	¿Tiene dificultad en orinar?	Avez-vous de la difficulté à uriner?
Do you pass water involuntarily?	¿Orina sin querer?	Urinez-vous involontairement?
Are any of your limbs swollen?	¿Están hinchados algunos de sus miembros?	Avez-vous des membres gonflés?
How long have they been swollen like this?	¿Desde cuándo están hinchados así?	Depuis quand sont-ils gonflés comme ça?
Were they ever swollen before?	¿Han estado hinchados alguna vez antes?	Ont-ils jamais été gonflés autrefois?
What color is your urine? Is it clear?	¿De qué color es su orina? ¿Clara?	De quelle couleur est votre urine? Claire?
Do you have any burning when you urinate?	¿Le arde al orinar?	Cela brûle quand vous urinez?
Do you have vaginal itching? Burning? Discharge?	¿Tiene irritación vaginal? ¿Sensaciones ardientes? ¿Derrames?	Avez-vous de l'irritation vaginale? Sensations de chaleur? Écoulements?
What does the discharge look like?	¿A qué se parece el derrame?	A quoi ressemblent les écoulements?
Do your breasts hurt?	¿Le duelen los senos?	Avez-vous mal aux seins?
Are there any lumps?	¿Hay alguna masa?	Il y a des grosseurs?
Is there any discharge from the nipples?	¿Hay derrame de los pezones?	Les bouts des seins écoulent?
Were they ever swollen before?	¿Han estado hinchados antes?	Ils ont été gonflés avant?
Have you ever breastfed? Are you breastfeeding?	¿Ha criado al pecho alguna vez? ¿Cria al pecho ahora?	Avez-vous allaité un enfant? Vous allaitez maintenant?
Back and Lower Extremities		
Is your movement limited in any way?	¿Está Ud. limitado para moverse de alguna forma?	Etes-vous limité pour vous déplacer de quelque manière?
Do your legs/feet hurt? Feel cold? Numb?	¿Le duelen las piernas/los pies? ¿Sensación de frío? ¿Entumecidas/entumecidos?	Avez-vous mal aux jambes/aux pieds? Sensation de froid? Engourdis/engourdis?

<i>English</i>	<i>Spanish</i>	<i>French</i>
Do you have pins and needles?	¿Tiene sensaciones de pinchazos?	Eprenevez-vous des fourmillements?
Is the pain/symptom worse when you walk?	¿El dolor/síntoma está peor cuando Ud. anda?	La douleur/le symptôme est pire quand vous marchez?
Is it eased when you stop walking?	¿Se alivia cuando deja de andar?	Ça se calme quand vous arrêtez de marcher?
Raise your right leg (your left leg) (both legs).	Levante su pierna derecha (su pierna izquierda) (las dos piernas).	Levez la jambe droite (la jambe gauche) (les deux jambes).
Bend your knees.	Doble las rodillas.	Pliez les genoux.
Wiggle your toes.	Mueva los dedos (de pie).	Remuez les doigts (de pied).
Do you have back pain? Where?	¿Le duele la espalda? ¿Dónde?	Avez-vous mal au dos? Oú?
Bend forward at the waist.	Inclínese hacia adelante.	Penchez-vous en avant.
Bend from side to side. [Examiner should demonstrate desired motion for patient.]	Inclínese de lado en lado.	Penchez-vous d'un côté à l'autre.
I need to check other pulses in your legs.	Necesito tomarle otros pulsos en sus piernas.	J'ai besoin de vous tâter d'autres pouls dans vos jambes.

TREATMENT

General

It is nothing serious.	No es nada grave.	Ce n'est rien de grave.
You will get better.	Ud. se mejorará.	Vous vous remettrez.
You will need to follow these directions.	Tiene Ud. que seguir estas instrucciones.	Vous devez suivre ces indications.
You will need to take this medicine until it is finished.	Tiene Ud. que tomar esta medicina hasta que se le acabe.	Il faut prendre ce médicament jusqu'à le terminer.
You will need to take this treatment until your doctor (nurse) tells you to stop.	Tiene Ud. que seguir este tratamiento hasta que el médico (la enfermera) diga que lo deje.	Vous devez suivre ce traitement jusqu'à ce que le médecin (l'infirmière) vous dise de l'arrêter.
Take a bath.	Tome un baño.	Prenez un bain.
A sponge bath.	Un baño de esponja.	Un bain à l'éponge.
An oatmeal bath.	Un baño de harina de avena.	Un bain de farine d'avoine.
A cornmeal bath.	Un baño de harina de maíz.	Un bain de farine de maïs.
Soak in warm water (for 20 minutes three times a day for the next week).	Báñese en agua caliente (por 20 minutos tres veces al día durante la semana que viene).	Baignez-vous dans de l'eau chaude (pour 20 minutes trois fois par jour pendant la semaine prochaine).
[Length and duration of treatment are specified.]		
Apply ice (for 20 minutes of every hour for the next 2 days).	Ponga hielo (por 20 minutos de cada hora durante los 2 próximos días).	Mettez de la glace (pour 20 minutes de chaque heure pendant les 2 jours suivants).
[Length and duration of treatment are specified.]		
Wash the wound with . . .	Lave la herida con . . .	Lavez la blessure avec . . .
Apply a bandage to . . .	Ponga un vendaje a . . .	Mettez un bandage à . . .
Keep the bandage dry and clean.	Mantenga el vendaje limpio y seco.	Gardez le bandage propre et sec.
Wash your hands thoroughly before and after treatment (caring for the wound/applying drops).	Lávase las manos completamente antes y después del tratamiento (cuidando la herida/aplicando gotas).	Lavez-vous les mains complètement avant et après le traitement (soignant la blessure/applicant les gouttes).

<i>English</i>	<i>Spanish</i>	<i>French</i>
Apply ointment (lotion/cream/powder). Keep very quiet. You must not speak.	Aplíquese ungüento (loción, crema, polvos). Estése muy quieto. No debe hablar.	Appliquez un onguent (lotion, crème, poudre). Resterz tranquille. Vous ne devez pas parler.
Swallow small pieces of ice.	Trague pedacitos de hielo.	Avalez de petits morceaux de glace.
Diet		
In a few days you may eat food.	Dentro de algunos días podrá comer.	Après quelques jours vous pouvez prendre de la nourriture.
You will need to eat a special (high-protein/low-fat/diabetic) diet.	Tiene que estar a una dieta de (alta proteína/baja grasa/diabética).	Vous devez suivre un régime de (haute protéine/basses graisses/diabétique).
You may eat . . .	Puede comer . . .	Vous pouvez manger . . .
Soft foods only.	Solamente comida blanda.	Seulement de la nourriture molle.
Your regular diet when your symptoms are gone.	Su dieta normal cuando terminados sus síntomas.	Votre régime normal quand vos symptômes seront terminés.
You may drink . . .	Puede tomar . . .	Vous pouvez boire . . .
Water	Agua	De l'eau
Clear liquids (tea, bouillon, Jell-O)	Líquidos claros (té, caldo, Jell-O)	Liquides clares (thé, bouillon, Jell-O)
All liquids including milk and juices	Todo líquido, inclusive leche y jugo	Toute liquide, lait et jus y compris
No caffeine (coffee, tea, chocolate, cola)	Ninguna cafeína (café, té, chocolate, cola)	Pas de caféine (café, thé, chocolat, cola)
Only decaffeinated drinks	Únicamente bebidas descafeinadas	Seulement les boissons décaféinées
Surgery		
You will need an operation on your . . . (to remove . . .)	Tendrá Ud. que operarse en su . . . (para quitarle . . .)	Il faut que l'on vous fasse une opération (pour enlever votre . . .)
You will need tests before the operation (blood tests, chest radiograph, electrocardiogram). [Examiner explains nature of tests and tells patient when and where they will be given.]	Tendrá que hacerse análisis antes de la operación (análisis de sangre, radiografía del pecho, electrocardiograma).	Il faut que l'on vous fasse des analyses avant l'opération (analyse du sang, radiographie de la poitrine, électrocardiogramme).
You will be in the hospital for [length of time]. [Examiner tells patient when and where the surgery will take place.]	Ud. estará en el hospital por [cuanto tiempo].	Vous resterez à l'hôpital pour [combien de temps].
Medication (Use with Numbers and Time)		
I will give you something for that.	Le daré algo para eso.	Je vous donnerai quelque chose pour cela.
I will leave a prescription.	Le dejaré una receta.	Je laisserai une ordonnance.
Use it as directed [give dosing intervals] until it is gone (until you are told to stop).	Tómelo según indicado [intervalo de dosis] hasta terminarlo (hasta que se le diga dejarlo).	Prenez-le [intervalle de dose] jusqu'au bout (jusqu'à ce que l'on vous dise d'arrêter).

<i>English</i>	<i>Spanish</i>	<i>French</i>
Take 1 teaspoonful three times daily (in water).	Tome 1 cucharadita tres veces al día, con agua.	Prenez-en une cuillerée à café trois fois par jour (avec de l'eau).
Take 1 tablespoonful.	Tome una cucharada.	Prenez-en une cuillerée à soupe.
Mix in [amount] of water (juice) and drink the entire amount.	Mescle en [cantidad] de agua (jugo) y beba lo todo.	Mélangez avec [quantité] d'eau (jus) et buvez le tout.
Gargle.	Haga gárgaras.	Gargarissez-vous.
Inject the drug into your abdomen (arm, leg, buttock, muscle tissue).	Inyéctese la medicina en el abdomen (el brazo, la pierna, la nalga, el tejido muscular).	Faites-vous une piqûre du médicament dans l'abdomen (le bras, la jambe, la fesse, le tissu musculaire).
Insert the suppository into your rectum (vagina).	Métase el supositorio en el recto (la vagina).	Mettez le suppositoire dans votre rectum (votre vagin).
A pill	Una píldora	Une pilule
Do not crush the tablet (open the capsule).	No aplaste el comprimido (no abra la cápsula).	N'écrasez pas le comprimé (n'ouvrez pas la capsule).
Drop [number of drops] into the right (left) eye.	Vierta [número de gotas] en el ojo derecho (izquierdo).	Versez [nombre de gouttes] dans l'oeil droit (gauche).
Drop [number of drops] into each eye.	Vierta [número de gotas] en cada ojo.	Versez [nombre de gouttes] dans chaque oeil.
Who is available to assist you at home? With medications? With diet?	¿Quién está disponible en su casa para atenderle a Ud.? ¿Con las medicinas? ¿Con la dieta?	Qui est disponible chez vous pour vous aider? Avec les médicaments? Avec le régime?
Who is available to transport you to the doctor (hospital) (home)?	¿Quién está disponible para llevarle al médico (hospital) (a casa)?	Qui est disponible pour vous conduire au médecin (à l'hôpital) (chez vous)?
NURSING CARE CONCERNS		
Do you need to pass water?	¿Necesita Ud. orinar?	Avez-vous besoin d'uriner?
Do you need to have a bowel movement?	¿Necesita Ud. evacuar el vientre?	Avez-vous besoin d'évacuer le ventre?
Do you need a drink of water?	¿Necesita Ud. tomar agua?	Avez-vous besoin de prendre de l'eau?
Do you need your mouth rinsed?	¿Necesita que le limpien la boca?	Avez-vous besoin de vous faire rincer la bouche?
Do you need something to eat?	¿Necesita Ud. algo de comer?	Avez-vous besoin de manger quelque chose?
Do you need your position changed?	¿Necesita que le cambien de posición?	Avez-vous besoin de vous faire changer de position?
Do you need medicine for pain?	¿Necesita medicina contra el dolor?	Avez-vous besoin d'un médicament pour la douleur?
You will be getting oxygen.	Le van a poner oxígeno.	On va vous donner de l'oxygène.
You will be getting a breathing treatment.	Le van a dar un tratamiento de respiración.	On va vous donner un traitement de respiration.
You will be getting intravenous fluid.	Le van a dar un fluido intravenoso.	On va vous donner un fluide intraveineux.
You will be getting a bland diet.	Le van a poner una dieta blanda.	On va vous mettre au régime simple.
You will be getting an injection.	Le van a dar una inyección.	On va vous faire une piqûre.

APPENDIX 9 Medical Emergencies

Appendix 9-1 Poisons and Poisoning

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Acetaminophen	Production of toxic intermediate metabolite that cannot be detoxified due to glutathione depletion.	Phase 1 (0–24 hr): Sometimes asymptomatic—anoxia, nausea, vomiting. Phase 2 (24–48 hr): GI symptoms resolve; hepatotoxicity is subclinical, but liver function tests and coagulation tests are abnormal. If liver damage is significant, patient may progress to phase 3. Phase 3 (48–96 hr): Problems due to severe hepatic compromise—bleeding disorders, hypoglycemia, hepatic encephalopathy. Phase 4 (>96 hr): Recovery period. Laboratory values return to normal and symptoms resolve.	Administer activated charcoal. Toxicity is unlikely at a dose <140 mg/kg. For significant serum levels of acetaminophen, acetylcysteine can be administered orally in a loading dose followed by a maintenance regimen.	Patients with toxic levels of acetaminophen 4 hr after ingestion require hospitalization for observation and supportive measures. Hepatic failure can occur several days after the ingestion, and renal complications or failure can also develop. Most patients recover fully without further sequelae. In some instances, hepatic failure may require transplantation. Check acetaminophen levels routinely in patients with any oral overdose.
Acids Acetic Hydrochloric Nitric Phosphoric Sulfuric Any other strong acid	Immediate destruction and necrosis with eschar formation of mucous membranes and tissues on contact.	Burning pain on contact with mucous membranes of the mouth and throat, dysphagia, abdominal pain, nausea, hemoatemesis, thirst, esophageal or gastric perforation, shock, death.	Establishment of airway patency, aggressive volume resuscitation, radiographic evaluation of damage, irrigation of exposed tissues. Surgical intervention may be required.	Permanent damage to the esophagus and stomach can result in chronic dysphagia and stricture formation.

Alkalis	Irreversible destruction and liquefactive tissue necrosis that penetrates beyond surface contact with alkali.	Immediate burning and blistering of tissue on contact; severe pain of mouth, esophagus, and chest; esophageal or gastric perforation; pancreatitis; hematemesis; shock; death.	Establishment of airway patency, aggressive volume resuscitation, radiographic evaluation of damage, irrigation of exposed tissues. Surgical intervention may be required.	Permanent damage to the esophagus and stomach can result in chronic dysphagia, stricture formation, and necrosis of tissue.
Ammonia and ammonium hydroxide	Tissue destruction due to alkaline injury on contact with mucous membranes. Degree of destruction depends on alkalinity of product and amount and length of exposure.	Burning of mouth and throat, chest pain, esophageal and gastric damage, hematemesis. Inhalation of gas can cause coughing, bronchospasm, and pulmonary edema.	Airway protection if needed, supplemental humidified oxygen and bronchodilators for inhalation exposures, moderate amounts of water or milk to dilute ingestion, analgesics for pain. Additional procedures may be required to assess extent of tissue injury.	Most significant damage is seen with intentional massive ingestions or occupational exposures to concentrated strengths of ammonia. Most accidental exposures to household strength products resolve without residual damage.
Amphetamines and amphetamine-like agents	Excessive stimulation of the CNS and of peripheral alpha and beta receptor sites.	Excitement, restlessness, tremors, hyperactive reflexes, nausea, vomiting, diarrhea, palpitations, arrhythmias, hypertension, hyperthermia, dehydration, mydriasis, agitation, seizures, coma, death.	Supportive care including airway maintenance and cardiac monitoring; administration of activated charcoal and a cathartic; cooling measures for hyperthermia; benzodiazepines for seizures; vasodilators and beta-adrenergic blockers.	Toxicity can occur with slightly higher than therapeutic doses. Tolerance can readily develop with repeated use.
Antidepressants: selective serotonin reuptake inhibitors (SSRI)	CNS depression, excessive stimulation of serotonin receptors.	Serotonin syndrome: hyperomania, confusion, myoclonus, diaphoresis, hyperreflexia, tremor, hyperthermia, agitation, restlessness, insomnia, nausea, vomiting, drowsiness, ataxia, seizures, coma.	Maintenance of airway, breathing, and circulation; oral administration of activated charcoal to adsorb ingested drug from the gastrointestinal tract. Cooling measures for febrile patients, e.g., those with serotonin excess.	SSRIs are less likely than tricyclic antidepressants to cause airway compromise, cardiac dysrhythmias, coma, ICU admission, or death. Drugs (such as alcohol or sedatives) that are coingested with SSRIs may pose health risks.
Fluoxetine Paroxetine Sertraline Bupropion Fluvoxamine				

Poisons and Poisoning (Continued)

Substance	Pathology	Symptoms	Emergency Measures	Comments
Antidepressants: cyclic	Toxic cardiovascular and CNS effects secondary to anticholinergic activity, inhibited reuptake of neurotransmitters, peripheral alpha-adrenergic blockade, alteration of cardiac cells resulting in conduction disturbances.	Confusion, dizziness, altered mental status (lethargy to coma), hypotension, tachycardia, hyperthermia, mydriasis, dry mucous membranes, prolonged QRS complex, cardiac dysrhythmias, seizures.	Cardiac monitoring; assessment of width of QRS complex on the 12-lead ECG; gastric decontamination with activated charcoal; alkalization of the urine with bicarbonate-containing solutions.	Patients with wide QRS complexes (>0.12s) or cardiac dysrhythmias are monitored in the CCU or ICU.
Antihistamines: sedating (major classes)	Excessive central and peripheral anticholinergic effects.	Lethargy, agitation, confusion, miosis, tachycardia, hyperthermia, decreased GI motility, hypotension, respiratory depression, ataxia, stupor, seizures, dysrhythmias, coma, circulatory collapse, death.	Maintenance of airway, breathing, circulation, and fluids for hypotension; gastric lavage for hypotension by activated charcoal. If patient is sedated, intubate the airway. Give IV physostigmine for anticholinergic toxicity, benzodiazepines for seizures.	Most ingestions are complex to manage because many antihistamines are commercially available in combination with various analgesics and decongestants. With early intervention, most overdoses have excellent outcomes without consequences.
Alkylamines				
Ethanolamines				
Ethylenediamines				
Phenothiazines				
Piperazines				
Arsenic and arsenic salts	Disruption of enzymatic reactions that are essential for cellular metabolism; possible phosphate replacement or interaction with sulfhydryl groups.	Nausea, vomiting, hemorrhagic gastritis, severe watery diarrhea, dehydration, pulmonary edema, hypotension, delirium, encephalopathy, arrhythmias, convulsions, shock, death. Symptoms may have delayed onset.	Aggressive fluid replacement, activated charcoal or gastric lavage for larger ingestions, dimercaprol (BAL) 3–5 mg/kg IM every 4–6 hr for symptomatic patients.	Toxicity depends on the type of arsenic, amount involved, and route of exposure. Systemic toxicity can result from percutaneous absorption. Arsenic is a carcinogen.

Aspirin —SEE: *salicylates*

Atropine and anticholinergic agents	Acetylcholine blockade at muscarinic receptor sites; affects exocrine glands and cardiac tissue.	Dry mouth and burning pain in throat, thirst, blurred vision, mydriasis, dry, hot, flushed skin, hyperpyrexia, tachycardia, palpitations, restlessness, excitement, confusion, convulsions, delirium; rarely, death.	Airway maintenance and ventilation assistance, gastric lavage, activated charcoal and cathartic, diazepam for sedation and control of convulsions, physostigmine 0.5-1 mg IV for severe atropine toxicity, cooling measures for hyperthermia.	Classes of drugs that possess anticholinergic activity include antihistamines, antipsychotics, antispasmodics, cyclic antidepressants, and skeletal muscle relaxants. Atropine in ophthalmic preparations may be toxic to infants/young children.
Barbiturates	Depressed neuronal activity of the brain, hypotension caused by depression of central sympathetic tone, inhibition of cardiac contractility.	Drowsiness, confusion, ataxia, vertigo, slurred speech, shallow respiration and pulse, headache, stupor, hypotension, areflexia, cyanosis, hypothermia, cardiovascular collapse, respiratory arrest, death.	Airway maintenance and ventilation assistance, treatment of hypotension, activated charcoal and cathartic, alkalinization of urine to enhance phenobarbital elimination, hemoperfusion for severe toxicity.	Severity of toxicity depends on the agent ingested.
Amobarbital				
Aprobarbital				
Butabarbital				
Mephobarbital				
Methohexital				
Pentobarbital				
Phenobarbital				
Secobarbital				
Talbutal				
Thiopental				
Benzene	Irritation of mucous membranes and airway caused by agents and their metabolites, CNS depression, myocardial effects resulting in conduction disturbances.	Burning sensation of mouth and stomach, nausea, vomiting, chest pain, cough, headache, pneumonitis (if inhaled), vertigo, ataxia, confusion, stupor, ventricular dysrhythmias, convulsions, coma, respiratory failure, death.	Airway maintenance and ventilation assistance, activated charcoal and cathartic, therapy for arrhythmias and seizures. Gastric lavage within 30 min is useful for larger ingestions.	Chronic exposure can result in permanent renal damage, bone marrow suppression, and neuropsychological damage.
Xylene				
Toluene				

Poisons and Poisoning (Continued)

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Benzodiazepines	Generalized CNS depressant effects caused by enhanced activity of gamma-aminobutyric acid, an inhibitory neurotransmitter.	Confusion, dizziness, somnolence, ataxia, hypotension, coma, respiratory depression, cardiovascular depression.	Airway maintenance and ventilatory assistance, if necessary; administration of activated charcoal. For ingestions by patients with no history of chronic use, flumazenil (a benzodiazepine antagonist) can be administered as a specific antidote. Flumazenil should be avoided in chronic users – it may trigger seizures.	Generally considered safe, even in high doses. Fatalities are rare and usually due to coingestions with other CNS depressants.
Alprazolam				
Chlordiazepoxide				
Clonazepam				
Clorazepate				
Diazepam				
Estazolam				
Flurazepam				
Lorazepam				
Midazolam				
Oxazepam				
Prazepam				
Quazepam				
Temazepam				
Triazolam				
Boric acid and borate salts	Exact mechanism of toxicity unknown.	Headache, nausea, vomiting (vomitus may be blue green), fever, oliguria or anuria, diarrhea, stomach pain, lethargy, restlessness, distinctive erythroderma, tremor, convulsions, renal and hepatic injury or failure, cyanosis, coma, shock with vascular collapse, death.	Airway maintenance and ventilatory assistance. Treat convulsions with benzodiazepines. Activated charcoal is not effective. Hemodialysis may sometimes be needed for large ingestions (e.g., more than 12 g).	Reports of toxicity from boric acid ingestions and exposures has declined in recent years due to decreased use as an irrigant and antiseptic agent.

Botulinum toxin	Potent neurotoxicity produced by <i>Clostridium botulinum</i> ; prevents release of acetylcholine by irreversibly binding to cholinergic nerve terminals.	Nausea, vomiting, occasional diarrhea, dysphagia, diplopia, loss of visual acuity and pupillary reflexes, profuse sweating, rapid and weak pulse, death usually caused by respiratory failure. Symptoms may present up to a week after ingestion.	Airway maintenance and ventilatory assistance, as needed. Trivalent botulinum antitoxin may be administered in severe overdoses to bind free toxin, although it is often causes hypersensitivity reactions.	Even with excellent supportive care, recovery may take months to years. Common long-term sequelae include dysgeusia, dry mouth, dyspepsia, constipation, tachycardia, arthralgias, and fatigue. Botulinum antitoxin is available from the local health department or the CDC [(404) 329-2888].
Cadmium salts or fumes	Diverse multisystemic toxicities that are not clearly understood.	Nausea, vomiting, diarrhea, abdominal cramps, salivation, gastritis, headache, vertigo, exhaustion, collapse, acute renal failure, chemical pneumonitis with pulmonary edema on inhalation, death.	Gastric lavage and catharsis, with chelating agents such as EDTA, may be useful in some acute exposures. Inhalation may require ventilatory support.	Long-term effects vary with duration and severity of exposure. Renal function may be affected. Chronic exposures have resulted in osteomalacia, emphysema, and increased risk of lung or prostate cancer.
Calcium channel blockers Myocardial and vascular effects Bepridil Diltiazem Verapamil Primarily vascular effects Amlodipine Felodipine Isradipine Nicardipine Nifedipine	Prevention of calcium entry into cells, resulting in decreased myocardium contractility, blockade of AV and SA nodes, and peripheral vasodilation.	Nausea, vomiting, dizziness, headache, confusion, stupor, hyperglycemia, hypotension, bradycardia, metabolic acidosis, cardiac conduction disturbances, seizures, coma, death.	Maintenance of airway, breathing, and circulation; fluids and vasopressors for hypotension; multiple-dose activated charcoal; calcium chloride or calcium gluconate for hypotension and bradycardia; atropine or isoproterenol for bradycardia.	Intentional overdoses of calcium channel blockers are life threatening and often fatal despite aggressive management.

Poisons and Poisoning (Continued)

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Camphor	CNS stimulant with toxic effects; underlying mechanism is not known.	Burning of mouth and throat, nausea, vomiting, headache, CNS hyperactivity followed by CNS depression, vertigo, liver function abnormalities, delirium, tremor, convulsions, apnea, coma, death from respiratory arrest secondary to status epilepticus.	Airway maintenance, gastric lavage with copious amounts of fluid, activated charcoal and cathartic, benzodiazepines for seizures.	Fatalities have been reported with 1- or 2-g doses; however, most exposures can be effectively managed and resolved without residual complications.
Carbon monoxide	Hemoglobin binding preventing delivery of oxygen to cells; has significantly greater affinity for hemoglobin than oxygen.	Mild headache, dyspnea with moderate exertion, irritability, fatigue, nausea, vomiting, confusion, ataxia, syncope, convulsions, death from respiratory arrest.	100% oxygen by face mask or endotracheal tube, IV fluids, cardiac monitoring, hyperbaric oxygen for significant exposures.	Residual effects can include dementia, psychosis, paralysis, peripheral neuropathy, and parkinsonism. Consider CO toxicity in persons with significant smoke inhalation burns.
Carbon tetrachloride	Metabolites cause renal and hepatic toxicity; potent CNS depressant effects.	Nausea, vomiting, abdominal pain, headache, confusion, drowsiness, coma, renal and hepatic failure. Death is caused by respiratory arrest, circulatory collapse, or ventricular fibrillation.	Airway maintenance and ventilation assistance, gastric lavage, activated charcoal and cathartic, acetylcysteine to decrease effects of intermediate metabolite.	Toxicity from inhalation can be severe; small ingestions (<10 ml) can be fatal.
Chlorate salts	Potent oxidative properties that destroy red blood cells; toxicity to kidneys are due to direct effects and hemolysis.	Abdominal pain, nausea, vomiting, diarrhea, methemoglobinemia, intravascular hemolysis, delirium, coagulopathy, coma, convulsions, cyanosis, renal failure, death.	Activated charcoal and methylene blue for mild toxicities, hemodialysis to remove toxin. Sodium thiosulfate IV has been used to inactivate the chlorate ion, with inconsistent results.	In some instances, exchange transfusions have been advocated to reverse effects of poisoning.

Chlorinated compounds	Corrosive effect on contact with mucous membranes.	Immediate burning of mouth and throat, coughing, choking, bronchospasm, chest and abdominal pain, stridor, pulmonary edema, esophageal burns.	For inhalation, humidified supplemental oxygen and bronchodilators; for dilute ingestions, water or milk; for concentrated ingestions, gastric lavage and endoscopic evaluation.	Esophageal damage can result in stricture formation.
Chlorinated hydrocarbon pesticides	Direct toxicity to neuronal axons, interfering with transmission; affects myocardium stability resulting in arrhythmias.	Vomiting, headache, fatigue, tremors, ataxia, weakness, confusion, seizures, respiratory depression, arrhythmias, coma. In agents other than DDT, seizure may be first sign of toxicity.	Maintenance of airway, breathing, circulation; activated charcoal and cathartic; lavage for large ingestions; multiple-dose activated charcoal and cholestyramine to enhance removal; appropriate therapy for seizures and arrhythmias.	These agents can be absorbed transdermally and by inhalation. Toxicity and outcomes vary.
Aldrin				
Chlordane				
DDT (chlorophenothane)				
Dieldrin				
Heptachlor				
Lindane				
Thiodan				
Toxaphene				
Cocaine	CNS stimulation and inhibition of neuronal uptake of catecholamines, depressed conduction, and myocardial contractility.	Anxiety, agitation, delirium, hypertension, tachycardia, hyperthermia, diaphoresis, tremor, mydriasis, flushing, seizures, ECG abnormalities, stroke, areflexia, coma, death.	Airway maintenance and ventilatory assistance, cardiac monitoring, activated charcoal for ingestion, benzodiazepines, cooling measures.	Overdose can result from inhalation, injection, or absorption of the drug from the gastrointestinal tract ("body packing").
Copper salts	Mucous membrane irritation, multisystemic toxicities with salts. Elemental copper is poorly absorbed and causes little toxicity.	Pain in mouth, esophagus, and stomach; abdominal pain; vomiting; gastroenteritis; shock; hepatic and renal injury; hemolysis; seizures; coma; death.	Fluid replacement and preservatives, whole-bowel irrigation; dimercaprol and penicillamine for large ingestions.	Long-term copper exposures have resulted in liver fibrosis, cirrhosis, and renal dysfunction.

Poisons and Poisoning (Continued)

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Cyanide	Nonspecific inhibition of enzyme systems; binds to cytochrome oxidase of cells, blocking oxygen use.	Nausea, vomiting, abdominal pain, almond odor of breath, headache, dyspnea, agitation, confusion, syncope, convulsions, lethargy, coma, cardiovascular collapse, death. Onset of symptoms is abrupt.	Oxygen and assisted ventilation, if needed; gastric lavage, activated charcoal, and cathartic; inhalation of amyl nitrite pearls until antidote is available. Antidote kit contains amyl and sodium nitrites and sodium thiosulfate. The administration of vitamin B ₁₂ may be helpful.	Oxygen and assisted ventilation, if needed; activated charcoal by mouth. Antidotes include amyl and sodium nitrites and sodium thiosulfate. Vitamin B ₁₂ may also be used.
Digoxin and digitalis	Excessive excitability and automaticity of myocardium resulting in conduction disturbances and dysrhythmias; AV block.	Anorexia, nausea, vomiting, diarrhea, headache, fatigue, weakness, drowsiness, electrolyte disturbances, confusion, delirium, visual disturbances, dysrhythmias, bradycardia, AV block, death from ventricular fibrillation.	Cardiac monitoring, activated charcoal, digoxin-specific antibody fragments (Fab) for severe toxicity, lidocaine or phenytoin for ventricular irritability. Correct electrolyte abnormalities, such as hypokalemia, immediately.	Most poisonings result from ingestion of prescribed digoxin, esp. in patients with renal failure, hypokalemia, or advanced age.
Dinitrophenol and pentachlorophenol	Uncoupling of oxidative phosphorylation in mitochondria, hypermetabolic state and lactic acid production. Dinitrophenol oxidizes hemoglobin to methemoglobin.	Fatigue, thirst, nausea, vomiting, abdominal pain, sweating, flushing, restlessness, excitement, hyperthermia, tachycardia, hyperpnea, metabolic acidosis, cyanosis, seizures, coma, death from respiratory or circulatory failure.	Maintenance of airway, breathing, circulation; activated charcoal by mouth; methylene blue IV; fluid replacement; benzodiazepines; cooling measures.	Ingestion of 1–3 g of these agents can be lethal. Many accidental transdermal poisonings have been reported.

Ergotamines or ergot alkaloids	Central sympatholytic effects: serotonin release and interference with neuronal uptake. Peripherally, may act as a partial alpha-adrenergic agonist or an antagonist at adrenergic, dopaminergic, and tryptaminergic receptors.	Nausea, vomiting, dizziness, diarrhea, headache, thirst, weak pulse, tingling and numbness of extremities, dyspnea, hallucinations, blood pressure changes, hemorrhagic vesiculations, paresthesias, peripheral ischemia, convulsions, loss of consciousness, gangrene.	Protect the airway, and provide ventilatory assistance as needed. Give multiple doses of activated charcoal to enhance drug elimination. Provide benzodiazepines to control seizures. Use nitroglycerin, heparin, or thrombolytics for organ ischemia.	Outcome is based on route and amount of ingestion.
Ethanol	CNS depression; effects can be additive when combined with other CNS depressants.	Impaired motor coordination, slurred speech, inebriation, ataxia, peripheral vasodilation, rapid pulse, nausea, vomiting, drowsiness, stupor, coma, peripheral vascular collapse, hypotension, tachycardia, hypothermia, death from respiratory or circulatory failure.	Provide intravenous fluids, esp. with dextrose, to prevent hypoglycemia. Give patient thiamine. Provide other supportive measures, including airway control and ventilation, external warming, and prophylaxis against alcohol withdrawal symptoms as indicated.	Ethanol is often coingested with other toxic substances in suicide attempts; emergency treatment may vary depending on other substances ingested.
Ethylene glycol	Metabolism to oxalic, glycolic, and glycolic acids; conversion to lactate, increasing the lactic acid level; calcium oxalate crystal formation and deposition in tissues; metabolite toxicity to kidneys, CNS, and lungs.	Nausea, vomiting, excitability, hypotension, abdominal cramps, weakness, metabolic acidosis, ataxia, vertigo, arrhythmias, stupor, coma, death from respiratory or renal failure with uremia.	Maintain airway, breathing, and circulation. Provide ethanol, folic acid, 4-methylpyrazole, pyridoxine, and thiamine. Hemodialysis will remove ethylene glycol from the blood in cases of severe toxicity.	Outcomes vary; in general, comatose patients have a poor prognosis.
Fluoride salts	Direct metabolic and cytotoxic effects; multiple adverse effects from calcium and magnesium binding.	Salivation, thirst, nausea, abdominal pain, vomiting, diarrhea, muscle weakness, hypocalcemia, hyperkalemia, tetanic contractions, death due to vascular collapse and shock.	Maintenance of airway, breathing, circulation; cardiac monitoring; calcium salts; for severe toxicity, IV calcium chloride; therapy for electrolyte disturbances.	Degree of toxicity depends on salt solubility and the amount of elemental fluoride ingested. Pediatric toxicities are often caused by fluorinated toothpaste ingestions.

Poisons and Poisoning (Continued)

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Hydrogen sulfide gas	Inhibition of oxidative phosphorylation enzymes, potent inhibition of cytochrome oxidase. Exposure results in cellular hypoxia.	Irritated mucous membranes, conjunctivitis, headache, nausea, vomiting, weakness, bradycardia, hypotension, dyspnea, rapid loss of consciousness with larger exposure, pulmonary edema, cyanosis, convulsions, coma, death due to cardiac or respiratory arrest.	High-flow oxygen, advanced cardiac life support as indicated, sodium nitrite, blood pressure monitoring, hyperbaric oxygen if available. Methemoglobin level should be recorded 30 min after sodium nitrate infusion.	If patient is immediately removed from the exposure, recovery may be rapid and complete. More severe exposures have resulted in permanent neurological changes and myocardial ischemia.
Ipecac syrup or fluid extract	Cardiac and neuromuscular toxicity with systemic absorption; toxicities are seen with chronic and prolonged use.	Vomiting, diarrhea, lethargy, irritability, hypothermia, hypotonia, dehydration, gastritis, seizures, cardiac toxicity, neuromuscular toxicity, shock, death.	Activated charcoal may be given if the patient is not vomiting. Supportive care includes fluid replacement, correction of electrolyte abnormalities, cardiac monitoring, and therapy for dysrhythmias.	Chronic exposures are reported in patients with eating disorders; cases of toxicity secondary to Munchausen's syndrome by proxy have also been documented.
Iron salts	Several mechanisms: direct corrosive effects on GI mucosa, hepatocellular toxicity, cardiovascular compromise, metabolic acidosis. Neurological manifestations are caused by hypoperfusion, metabolic acidosis, and hepatic compromise.	Nausea, vomiting, severe gastroenteritis, hematemesis, diarrhea, tachypnea, tachycardia, hypotension, lethargy, cyanosis, convulsions, coma, shock, or death.	Use gastric lavage or whole-bowel irrigation to remove tablets from the gastrointestinal tract. Intravenous deferoxamine is used as an iron-chelating agent.	Patients with systemic complications require hospital admission, constant monitoring, and supportive care until resolution. Late complications (2–8 wk) include GI stricture and obstruction. Toxicity is unlikely at a dose <20 mg/kg.

Isopropanol Isopropyl alcohol Rubbing alcohol	Potent, CNS depressant metabolized to acetone; may contribute to CNS depression.	Nausea, vomiting, abdominal pain, hypotension, ataxia, areflexia, inebriation, muscle weakness, ketonemia, ketonuria, respiratory depression, hemorrhagic tracheobronchitis, myocardial depression, coma, death.	Maintain airway and provide ventilatory support when neurological depression is present. Do not induce emesis. Irrigate the GI tract after recent ingestions. Use hemodialysis for near-fatal overdoses.	A majority of cases resolve without consequences.
Lead and lead salts	Heavy metal interaction with sulfhydryl groups and interference with action of numerous enzymes, interference with heme production and survival of red blood cells. Chronic exposure can cause irreversible CNS and developmental effects.	Abdominal pain, vomiting, lethargy, behavioral changes, ataxia, arthralgias, abdominal or renal colic, anemia, acute encephalopathy, seizures, coma, death.	Use whole-bowel irrigation to empty the GI tract shortly after oral ingestions. Chelating agents that remove lead from the blood include Calcium Disodium Versenate, dimercaprol and related compounds, and D-penicillamine. Seizures are treated with benzodiazepines.	Chronic exposure to lead can produce renal and neuro-psychiatric effects, esp. in children. Blood lead levels and erythrocyte protoporphyrin levels are used to gauge the effect of treatment.
Lithium	Lithium often produces cellular disturbances in the central nervous system, kidneys, and gastrointestinal tract. This is probably due to its effects on cell membrane ion transport, as well as its effects on cAMP.	Nausea, vomiting, diarrhea, fine resting tremor, lethargy, confusion, tremors, ataxia, ECG abnormalities, profound weakness, muscle fasciculations, hyperreflexia, clonus, stupor, seizures, acute renal failure, coma, death.	Maintain the airway and provide assisted ventilation to patients who are comatose or difficult to arouse. For acute ingestions use gastric lavage or whole bowel irrigation. Activated charcoal is ineffective because it does not bind to metals. Hemodialysis is used to clear lithium from the body in life-threatening intoxications.	Chronic or acute-on-chronic overdoses are more life threatening than acute poisonings. Chronic exposure permits intracellular accumulation. In acute poisonings, most lithium remains in the extracellular fluid for many hours, causing toxicity.

Poisons and Poisoning (Continued)

Substance	Pathology	Symptoms	Emergency Measures	Comments
Mercuric salts	Reaction with carboxyl, sulphydryl, phosphoryl, and amide groups; interference with enzyme and cellular functions; toxicity involving multiple organ systems.	Burning of mouth and throat, thirst, abdominal pain, nausea, corrosive gastroenteritis, hematemesis, diarrhea, dehydration, shock, acute tubular necrosis. Neurological symptoms such as tremor, irritability and other personality changes, and depression are common.	The patient should be treated with oxygen and the gastrointestinal tract decontaminated (e.g., with whole-bowel irrigation). Chelating agents such as dimercaprol, dimercaptosuccinic acid, or D-penicillamine, should be given to bind and remove mercury from the body.	Doses of 1–4 g of mercuric chloride can be fatal. Chronic poisonings have resulted in neurological abnormalities, renal dysfunction, and gastrointestinal symptoms.
Methanol	Metabolism to formaldehyde and formic acid.	Latent period (24–72 hr) before development of symptoms, dizziness, inebriation, blurred vision, headache, nausea, vomiting, abdominal pain, delirium, visual disturbances that may progress to blindness, weak and rapid pulse, shallow respirations, cyanosis, coma, metabolic acidosis, respiratory failure, death.	Activated charcoal for recent ingestion, ethanol IV or orally to inhibit toxic metabolites, hemodialysis in severe cases, aggressive management of metabolic acidosis. Folic acid and 4-methylpyrazole can be used as antidotes.	Visual impairment, optic atrophy, and blindness are due to effects of formic acid on the optic nerve.
Mushrooms containing cyclopeptides <i>Amanita phalloides</i> (death cap) <i>Amanita tennifolia</i> <i>Amanita virosa</i> (destroying angels) <i>Galerina autumnalis</i> <i>Galerina marginata</i> <i>Galerina venenata</i> <i>Lepiota helveola</i> <i>Lepiota josserrandii</i>	Cytotoxicity of cyclopeptides (phallotoxins, amatoxins, virotoxins), cellular insult causing hepatic, renal, GI, and CNS damage.	Phase 1 (6–12 hr): Nausea, abdominal pain, vomiting, watery diarrhea, thirst. Phase 2 (12–24 hr): Symptomatic improvement, elevated hepatic enzymes. Phase 3 (1–6 days): Restlessness, delirium, hallucinations, hematuria, gastroenteritis, pancreatitis, hypoglycemia, shock, acute renal failure, jaundice, hepatic coma, death.	Activated charcoal; fluid and electrolyte resuscitation; hepatic transplantation in fulminant hepatic failure.	Cyclopeptide-containing mushrooms are responsible for most mushroom fatalities in North America. Toxic cyclopeptides are heat stable, insoluble in water, and not affected by drying.

<p>Mushrooms containing muscarine</p> <p><i>Amanita muscaria</i> (fly agaric)</p> <p><i>Amanita pantherina</i> (panther)</p> <p><i>Clitocybe dealbata</i> (sweater)</p> <p><i>Clitocybe dilatata</i></p> <p><i>Clitocybe illudens</i></p> <p>Most <i>Inocybe</i> species</p> <p>Naphthalene</p>	<p>Peripheral cholinergic effect due to muscarine; stimulation of autonomic nervous system.</p>	<p>Lacrimation, diaphoresis, salivation, abdominal cramps, vomiting, loss of bowel and bladder control</p>	<p>Gastric decontamination with activated charcoal may adsorb recently ingested mushroom toxins from the GI tract. Patients with fulminant hepatic failure will need intensive care and possible referral for liver transplantation.</p>	<p>Identification of ingested mushroom may help guide therapy if uneaten mushroom samples are available for analysis. Patients afflicted with fulminant liver failure have a high risk of death if a donor liver is not available.</p>
	<p>Metabolism to numerous by-products including alpha-naphthol, a potent hemolytic agent.</p>	<p>Fever, nausea, vomiting, abdominal pain, diarrhea, lethargy, seizures, hemolysis, pallor, jaundice, cyanosis.</p>	<p>Activated charcoal; IV hydration and urinary alkalimetry; transfusions for hemolysis.</p>	<p>Hemolysis is acute and severe in patients with glucose-6-phosphate dehydrogenase deficiency. Naphthalene is used in mothballs and toilet bowl cleaners, but less toxic agents are available.</p>
<p>Nicotine</p>	<p>Binding to cholinergic nicotine receptors; toxicity due to sympathetic and parasympathetic stimulation followed by ganglionic and neuromuscular blockade.</p>	<p>Nausea, vomiting, abdominal pain, headache, salivation, diarrhea, hyperpnea, diaphoresis, tachycardia, hypertension, pallor, agitation, tremor, ataxia, confusion, dysrhythmias, hypotension, shock, muscle paralysis, coma, death.</p>	<p>Maintenance of airway, breathing, circulation; activated charcoal; thorough washing of exposed skin; therapy for seizures, hypertension, hypotension, and arrhythmias.</p>	<p>Because most commercial sources of nicotine are not concentrated, a majority of exposures cause mild toxicity and resolve without complications.</p>
<p>Nitroglycerines, nitrates, nitrites</p>	<p>Vasodilation causing hypotension. Nitrites are potent oxidizing agents that cause methemoglobinemia.</p>	<p>Headache, hypotension, syncope, skin flushing, nausea, methemoglobinemia, cyanosis, symptoms of cardiac ischemia or cerebrovascular disease, seizures secondary to hypotension.</p>	<p>Activated charcoal; administration of intravenous fluids, anticonvulsant medication, hemodialysis, or therapies for GI bleeding (if needed).</p>	<p>Most cases can be managed successfully with early, aggressive interventions. Drugs for erectile dysfunction should not be taken by patients being treated with nitrates.</p>

Poisons and Poisoning (Continued)

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Nonsteroidal anti-inflammatory agents	Inhibition of prostacyclin and prostaglandin E ₂ production resulting in acute renal failure.	Nausea, vomiting, gastrointestinal distress and bleeding, tinnitus, metabolic acidosis, CNS depression, respiratory depression, mild hepatic toxicity, acute renal failure, seizures.	Activated charcoal for recent ingestions; intravenous fluids; administration of gastric protectants, e.g., proton pump inhibitors or H ₂ receptor antagonists.	Baseline renal and hepatic function should be assessed. Most toxic exposures to this class of agents are successfully treated and resolve fully without residual sequelae.
Ibuprofen				
Ketoprofen				
Naproxen and many others				
Opioids and Opiates	Excessive stimulation of CNS opiate receptors causing sedation and respiratory failure.	Drowsiness, nausea, dyspnoea, bradypnoea, miosis, hypothermia, respiratory depression, hypotension, bradycardia, weak pulse, coma, apnea, death.	The airway should be secured and ventilatory assistance provided to comatose or apneic patients. Naloxone, naltrexone, or nalmeferone can be given as an antidote. Activated charcoal may adsorb recently ingested pills.	Antidotes are useful in reversing effects of the opiates, but administration may precipitate severe withdrawal symptoms. The effects of naloxone are short-term. The drug may need to be given repeatedly or by intravenous infusion to prevent repeated episodes of respiratory depression or coma.
Codeine				
Dilaudid				
Fentanyl				
Heroin				
Morphine				
Methadone				
Oxycodone				
Oxycotin and other synthetic opioids				
Oxalic acid and oxalate salts	Corrosion of tissues on contact; precipitation with calcium to form insoluble deposits throughout organs, causing systemic damage.	Irrigation of mouth and esophagus, vomiting, weakness, shock, tetany, convulsions, cardiac arrest, death. Inhalation can cause pneumonitis and pulmonary edema.	Calcium chloride, calcium gluconate, or calcium carbonate to precipitate oxalate; flushing and lavage with copious amounts of water; IV calcium chloride or calcium gluconate for symptomatic hypocalcemia; maintenance of high urine output; therapy for seizures and arrhythmias.	Ingestions of 5–15 g of oxalic acid have resulted in death.

Parathion and other organophosphates	Acetylcholinesterase inhibition, resulting in excessive acetylcholine stimulation of muscarinic and nicotinic receptors.	Nausea, vomiting, diarrhea, abdominal pain, tremor, muscle fasciculations, excessive salivation and sweating, dehydration, bradycardia, weakness, shock, death usually caused by respiratory paralysis.	Maintain airway and clear secretions. Provide assistance with ventilation. Decontaminate exposed skin and remove soaked clothing. Decontaminate the GI tract. Use atropine and/or pralidoxime for anticholinergic crises. Give diazepam or related drugs for seizures, and standard antiarrhythmic protocols for ventricular rhythm disturbances.	Toxicity depends on the relative toxicity of the organophosphate and the quantity involved.
Phenol	Corrosive injury to skin, eyes, and respiratory tract; protein denaturation and coagulation necrosis.	Vomiting, diarrhea, gastrointestinal injury, agitation, confusion, seizures, hypotension, shock, coma, respiratory failure, death.	Multiple-dose activated charcoal and cathartic; washing of exposed areas; benzodiazepines for seizures. Low molecular weight polyethylene glycol has been used for gastric decontamination and topical exposures. If corrosion has occurred, tube passage may cause rupture.	Corrosive burns of the skin and mucous membranes and GI perforation can occur. Esophageal stricture and renal failure rarely occur.
Phenothiazines and neuroleptics	Prominent cardiovascular and CNS effects; toxicity due to inhibitory effects of dopaminergic, cholinergic, alpha-adrenergic, histaminic, and serotonergic receptors.	Sedation, somnolence, stupor, dry mouth, tachycardia, labile blood pressure, hypothermia or hyperthermia, dysrhythmias, extrapyramidal symptoms, coma, NMS, seizures, cardiac arrest, death, akathisia.	Maintain airway and provide ventilatory and circulatory support if necessary. Decontaminate the GI tract. Follow standard ACLS protocols for managing cardiac rhythm disturbances. Give diphenhydramine or benzotropine for dystonias. Bromocriptine, benzodiazepines, and/or dantrolene may be helpful in NMS.	Although death from neuroleptic overdose is rare, NMS may be fatal in 20% or more of affected patients.

Poisons and Poisoning (Continued)

<i>Substance</i>	<i>Pathology</i>	<i>Symptoms</i>	<i>Emergency Measures</i>	<i>Comments</i>
Phosphorus and phosphides	Local irritation and tissue burns; direct toxic effect to myocardium and vessels; hepatic, renal, and GI damage due to latent systemic toxicity.	Painful burns to mucous membranes and skin on contact, nausea, vomiting and diarrhea with garlicky odor, jaundice, metabolic derangements, dysrhythmias, coma, shock, seizures, hepatic or renal failure, cardiac arrest. Inhalation can cause pneumonitis and pulmonary edema.	Maintenance of airway, breathing, circulation; endoscopy to assess GI burns; cautious gastric lavage with hydrogen peroxide or potassium permanganate, followed by activated charcoal and mineral oil cathartic; fluid replacement and correction of electrolyte imbalance.	After acute effects from ingestion, a symptom-free period of a few weeks may be followed by a stage of systemic toxicity involving the liver, kidneys, heart, CNS, and GI tract.
Salicylates Aspirin Salicylate salts	Effect on multiple organ systems, metabolic derangement. Effects are due to stimulation of respiratory center, intracellular uncoupling of oxidative phosphorylation, and alteration of platelet function.	Nausea, vomiting, agitation, hyperthermia, lethargy, hyperglycemia or hypoglycemia, hyperpnea, tachypnea, tinnitus, hemorrhagic gastritis, delirium, stupor, acid-base disturbances, electrolyte imbalances, cerebral edema, convulsions, cardiovascular collapse.	Maintenance of airway, breathing, circulation; lavage; activated charcoal; urinary alkalization; correction of acid-base and fluid-electrolyte abnormalities; hemodialysis for severe toxicity or deteriorating condition.	The prognosis of patients suffering from an acute toxic ingestion can be assessed on the basis of serum levels obtained within 6 hr of ingestion.
Strychnine	Competitive antagonism of glycine at postsynaptic spinal cord motor neuron.	Muscle twitching, extensor spasm, opisthotonos, trismus or facial grimacing, seizures, medullary paralysis, death. Symptoms occur within 20 min.	Activated charcoal; dark and quiet environment; benzodiazepines or neuromuscular blockade; mechanical ventilation.	Poisonings are rare since commercial use in rodenticides has decreased. Most exposures result in death. The approximate fatal dose for a child is 15 mg; for an adult, 5–10 mg/kg.

Thallium salts	Combination with mitochondrial sulfhydryl groups, interference with oxidative phosphorylation.	Nausea, vomiting, abdominal pain, hematemesis, bloody diarrhea, headache, alopecia, hematuria, proteinuria, elevated hepatic enzymes, lethargy, tremors, ataxia, delirium, seizures, coma, death.	Activated charcoal; fluids and electrolytes intravenously; benzodiazepines for seizures. Hemoperfusion and hemodialysis may be moderately successful.	Alopecia and Mees's sign, single white transverse lines on the nails 2-3 weeks postexposure, are common diagnostic features. Long-term neurological impairment can occur.
Theophylline —SEE: <i>xanthine derivatives</i>				
Xanthine derivatives				
Aminophylline	Antagonism of adenosine activity and release of catecholamines; in high doses, phosphodiesterase inhibition. Toxic effects are secondary to smooth muscle relaxation, peripheral vasodilation, myocardial stimulation, and CNS excitation.	Nausea, protracted vomiting, hypotension, respiratory alkalosis, metabolic acidosis, hypokalemia, tachycardia, hypercalcemia, ventricular dysrhythmias, seizures, death due to cardiovascular collapse.	Activated charcoal. For deteriorating conditions, charcoal hemoperfusion. Treat seizures with benzodiazepines or barbiturates, and cardiac rhythm disturbances with standard ACLS protocols. Monitor theophylline levels several times a day.	Eliminate drugs that increase theophylline levels, such as erythromycins or related antibiotics, cimetidine, estrogens, or allopurinol. Consider use of safer drugs for obstructive lung diseases, such as albuterol or other inhaled medications.
Warfarin and related anticoagulant compounds	Inhibition of vitamin K 2,3-epoxide reductase and quinone reductase activity (these are necessary to activate vitamin K, which is essential in coagulation).	Fatigue, hematuria, nosebleeds, ecchymoses, GI hemorrhage, hypotension, intracranial hemorrhage, hemorrhagic shock, death (rare).	Decontaminate the GI tract (for recent ingestions only). Hold warfarin if the prothrombin time is slightly elevated and no bleeding is present. Give vitamin K for markedly prolonged prothrombin time with INR greater than 6-9 or fresh frozen plasma for life-threatening bleeding.	Most accidental ingestions resolve without further sequelae. Intentional ingestions or delay in seeking treatment may result in severe coagulopathy. Bleeding patients require hospitalization, frequent monitoring of blood pressure, pulse, and hemoglobin levels. Cauterization of bleeding lesions may be needed.

AV = atrioventricular; BAL = British anti-lewisite; CNS = central nervous system; ECG = electrocardiogram; EDTA = ethylenediaminetetra-acetic acid; GI = gastrointestinal; NMS = neuroleptic malignant syndrome; PT = prothrombin time; SA = sinoatrial.

Appendix 9-2 Emergency Situations

Medical Emergency	Underlying Causes	Findings	Treatment
<p>Acute myocardial infarction (MI, AMI) Acute coronary syndromes (ACS)</p>	<p>Most heart attacks are caused by the rupture of a plaque in the wall of the coronary artery that results in the blockage of blood flow and the death of myocardial tissue. Risk factors often present include tobacco use, hypertension, hypercholesterolemia, diabetes mellitus, obesity, physical inactivity, or family history of heart disease. Men and postmenopausal women are at greater risk than premenopausal women. Modification of risk factors lowers the risk for disease.</p>	<p>Patients often complain of tightness, heaviness, pressure, pain, or burning in the chest. The symptoms may radiate into the neck, jaw, shoulders, back, or arms. Shortness of breath, nausea and vomiting, or sweating often accompany the chest pain or pressure. Some patients (esp. older individuals, women, or diabetics) may report difficulty breathing, nausea and vomiting, or loss of consciousness as their only symptoms. A 12-lead ECG may show evidence of an MI, although a large percentage of patients may have a nondiagnostic ECG initially. Abnormal levels of cardiac enzymes (e.g., troponins, creatinine kinase) usually appear in the blood about 8 hr after chest pain begins.</p>	<p>Supplemental oxygen, aspirin, other antiplatelet drugs, anticoagulants, beta blockers, and narcotics like morphine should be used acutely to alleviate pain, improve oxygenation and blood flow, and reduce stress. Cardiac monitoring, oximetry, and automatic blood pressure monitors are used to identify changes in heart rhythm, hemodynamics, and breathing. A 12-lead ECG should be completed within 10 min of the patient's presentation to the hospital, and preferably while the patient is in transit to the hospital. If an ST segment elevation MI is identified, patients should be triaged to percutaneous coronary intervention (PCI) in the first 90 min or, if PCI is not available, to fibrinolytic therapy within 30 min (unless contraindicated). Other treatments depend on the presentation (e.g., the patient in shock may be treated with pressors; a patient with acute pulmonary edema may need diuretics, etc.). Nonsteroidal anti-inflammatory drugs (esp. those that are COX-2 selective) should be discontinued. The patient in full cardiac arrest is treated with advanced life support protocols.</p>

Airway obstruction

Complete or partial obstruction of the oropharynx or nasopharynx, larynx, or trachea, with impairment of gas exchange, caused by foreign bodies, anatomical abnormalities, allergic reactions, infection, or trauma.

Signs of respiratory distress, including a rapid respiratory rate, wheezing, stridor, or labored breath are usually present. The patient usually appears agitated. Cyanosis of the fingers or lips may be present when there is inadequate oxygen in the blood. Loss of consciousness may occur if airway obstruction is not effectively relieved.

Foreign body airway obstruction is treated using the Heimlich maneuver in adults and back blows and chest thrusts in infants and children. Endotracheal intubation or cricothyroidotomy, along with mechanical ventilation, may be lifesaving interventions.

Angina pectoris

Inadequate supply of oxygen to the myocardium when oxygen demand exceeds supply. Unstable angina, marked by more frequent attacks, pain with less exertion or at rest, reduced response to nitroglycerin, or more severe episodes may indicate a progression in the patient's coronary artery disease and a higher risk for MI. Stable angina is discomfort typical of the patient's usual pattern.

Similar to MI. Chest discomfort typically resolves in less than 15 min, and improves with nitroglycerin and rest. There may be evidence of ischemia on a 12-lead ECG. Cardiac enzymes usually do not show evidence of acute MI on initial testing.

Oxygen, nitroglycerin, and aspirin are given initially, and the patient's response is noted. Beta blockers, to slow heart rate and lower blood pressure, are used unless there is evidence of heart block, heart failure, or active wheezing. Morphine is used for refractory pain and breathlessness. Heparins are used for pain that does not resolve with initial treatments. Persistent symptoms, ECG changes, or elevated cardiac enzymes suggest an acute coronary syndrome and may require further treatments (see above under Acute Myocardial Infarction). The patient with new or unstable angina is usually admitted to the hospital for further studies and stabilization.

Emergency Situations (Continued)

<i>Medical Emergency</i>	<i>Underlying Causes</i>	<i>Findings</i>	<i>Treatment</i>
Arterial bleeding	Trauma to blood vessels; surgery; erosion of arteries by ulcers, infection, or cancer.	Blood that spurts out in pulsatile fashion from a vessel is characteristic of bleeding from an artery. (Blood that oozes from a vessel continuously is characteristic of bleeding from a vein.)	Arterial bleeding from a vessel in an arm or leg can often be controlled with pressure applied directly over the bleeding vessel or just proximal to it. Arterial ligation may be performed surgically if direct pressure does not limit blood loss. Arterial bleeding from peptic ulcers is typically controlled with the injection of sclerosing agents during endoscopy or with electrocoagulation or coaptation. Bleeding from other internal vessels may also be controlled endoscopically (e.g., bleeding from bronchial arteries during bronchoscopy). In some instances, blood flow through internal arteries can be stopped with therapeutic embolization.
Asthma	Episodic bronchospasm, caused by exposure to allergens (such as pollen), smoke, pollutants, cold air, exercise, or other triggers of airway inflammation.	Difficulty breathing, wheezing, and chest tightness. Patients are often able to identify the triggering event. They may report that their inhalers are not providing adequate relief. Physical findings include tachypnea, tachycardia, and labored breathing, often with prolonged expiratory phase and wheezing. Cyanosis of the fingers or the lips suggests inadequate oxygenation. Patients may be agitated, frightened, or, in severe attacks, lethargic or comatose.	Supplemental oxygen should be supplied, and the patient should be given inhaled bronchodilators (e.g., albuterol and ipratropium). Oral or intravenous steroids are used to reduce airway inflammation. Epinephrine may be injected subcutaneously in severe asthma; antibiotics are used when there is evidence or suspicion of a bacterial infection. Severe asthma may result in respiratory failure and the need for ventilatory support (e.g., noninvasive ventilation or tracheal intubation).

Chronic Obstructive Pulmonary Disease (COPD), exacerbation of

An acute or gradual worsening of pulmonary function in patients with chronic lung disease, typically brought on by a viral or bacterial infection, or by congestive heart failure, allergies, pulmonary emboli, or the rupture of an emphysematous bleb at the margins of the lung.

Patients typically report increased shortness of breath, cough, sputum production, and fever, and appear to labor more than usual to breathe. Tachypnea, tachycardia, and hypoxemia or carbon dioxide retention are often present. Breath sounds may be distant, or wheezing may be present.

Oxygen is supplied, and the patient is carefully monitored clinically. Continuous oximetry should be used, and arterial blood gases checked when there is clinical suspicion of impending respiratory failure. Bronchodilators (such as albuterol and ipratropium) are given by inhalation. Corticosteroids are used to reduce airway inflammation. Antibiotics are used when there is evidence or suspicion of a bacterial infection. Severe exacerbations may result in respiratory failure and the need for ventilatory support (e.g., noninvasive ventilation or tracheal intubation).

Cold-induced soft tissue injury (frostnip, chilblain, frostbite)

Frostnip: superficial, reversible injury caused by ice crystal formation on the surface of the skin.
Chilblain: superficial injury caused by exposure to cold, humid air. Tissue does not freeze. *Frostbite*: destruction of tissue by freezing. The extent of tissue loss reflects the duration of cold exposure and the magnitude of temperature depression.

Frostnip: usually, paresthesias, pain, and numbness. *Chilblain*: redness, itching, numbness, burning, and pain. *Frostbite*: similar to chilblain. Frostbitten skin may be waxy and white or mottled and cyanotic. The frozen part will have no sensation. Surrounding tissue may be painful and tender. As the tissue thaws its appearance changes. In partial-thickness frostbite the skin becomes red and warm. Blisters containing clear fluid may appear. In full-thickness frostbite the blisters contain a bloody fluid. There is no sensation in full-thickness frostbite.

Initial treatment involves removing the patient from the cold environment. Concomitant hypothermia is a hazard. The frozen parts should not be rewarmed if there is danger of refreezing. Rapid rewarming should be performed by soaking the injured part in warm water (42°C). Rubbing or other manipulation of frozen tissue may worsen the injury. Further treatment may be needed for more serious injuries.

Emergency Situations (Continued)

<i>Medical Emergency</i>	<i>Underlying Causes</i>	<i>Findings</i>	<i>Treatment</i>
Congestive heart failure (CHF)	An impairment in the ability of the heart to move blood into the systemic circulation, either because of damage to heart muscle (e.g., after a heart attack), failure of the heart muscle to relax properly, pericardial restriction, valvular heart disease, or other causes.	Most patients are winded with exertion, and some are short of breath at rest. Many cannot lie flat in bed at night because the supine position makes them breathless. Lower extremity and sacral swelling are common physical findings, along with ascites, liver enlargement, and elevated jugular veins. Crackles or wheezes may be heard in the lung bases or throughout the lungs in left ventricular CHF. The patient is often hypoxemic. Chest x-rays may show an enlarged heart with fluffy infiltrates near the hila.	Oxygen, potent diuretics, morphine sulfate, nitroglycerin, nesiritide, and ACE inhibitors may be used to manage CHF or acute pulmonary edema as long as the patient is not hypotensive. Noninvasive positive pressure ventilation, or intubation and mechanical ventilation may be needed to support respiration. Hypotensive patients may be treated with dobutamine, combinations of dopamine and nitroprusside, or other drugs and interventions.
Fractures and Dislocations	Most fractures and dislocations are caused by significant trauma, e.g., automobile collisions, falls, or sports injuries. Fractures that occur without a powerful mechanism of injury are termed "pathological." ⁹ They may occur in patients with underlying malignancies that have spread to bone or in patients with osteoporosis.	Limb fractures or joint dislocations are often clinically obvious. The affected limbs are usually swollen, visibly deformed or rotated, and exquisitely painful to gentle touch or any movement. Patients with rib fractures may complain of pain on breathing or coughing. The injured chest wall is tender and may be bruised. Patients with fractures of the vertebral bodies (or patients suspected of having vertebral fractures) often complain of neck, thoracic, or lumbar pain after a fall or automobile accident. X-rays of the affected bones confirm the diagnosis.	Primary treatment includes immobilization (splinting) of any affected bones or joints until diagnostic x-rays can be obtained. Analgesics are given as required, and cold packs or ice are applied to limit pain and inflammation. Limb fractures or dislocations are sometimes amenable to immediate treatment with closed reduction, although operative reductions and placement of fasteners may be needed to obtain optimal healing. Patients suspected of having vertebral fractures should be placed in firm cervical collars or restrained on spinal boards until examination and x-rays clearly demonstrate that the spine is stable.

Gastrointestinal (GI) bleeding

Upper gastrointestinal bleeding often results from esophagitis, esophageal tears, gastritis, peptic ulcer disease, esophageal varices, or vascular malformations. Lower GI bleeding typically is caused by hemorrhoids, anal fissures, diverticuli, vascular malformations, or cancers.

The rapidly bleeding patient may present in shock (i.e., dizzy on arising, hypotensive, tachycardic, cool, clammy, diaphoretic, and confused). Bleeding from the upper GI tract often reveals itself when the patient vomits bright red blood or digested blood that resembles coffee grounds. Occasionally, bleeding from the upper tract is so vigorous that it causes the loss of bright red blood from the rectum. Usually, however, this is a finding in lower GI bleeding. Digested blood that is expelled in the feces is typically black and tarry (melanic).

Patients with significant blood loss are treated immediately with intravenous fluids. Blood is obtained for typing and cross-matching, and transfusions are given when indicated. Upper GI bleeding resulting from peptic ulcer disease, esophagitis, or gastritis may respond to treatment with IV or oral proton pump inhibitors. The loss of bright red blood from the upper GI tract should be promptly evaluated with esophagogastroduodenoscopy (EGD). Patients with a bleeding ulcer vessel or esophageal varices may be treated with endoscopic therapies to cauterize or band bleeding vessels or with medical therapies including agents such as octreotide. Patients suspected of having lower GI blood loss are evaluated with colonoscopy, e.g., to identify arteriovenous malformations, cancers, diverticuli, or ulcerative colitis.

Hyperglycemia

Elevated blood glucose is usually caused by impairments in glucose metabolism (type 1 or type 2 diabetes mellitus, gestational diabetes mellitus, or drugs or infections that temporarily predispose patients to high blood glucose levels). In diabetes sudden elevations of blood glucose are typically caused by failure to maintain a careful dietary and medical regimen, taking medications such as corticosteroids, or serious illnesses (e.g., infections, heart attack, stroke).

Patients often report thirst, frequent urination, increased appetite, and increased consumption of fluids. Those who become dehydrated may be dizzy when they get up from a bed or chair. Blood chemistries typically reveal a blood glucose of more than 200 mg/dl, and glucose is present in the urine.

Fluids are administered by mouth (if possible) and intravenously. Insulin or oral hypoglycemic agents are given.

Emergency Situations (Continued)

Medical Emergency	Underlying Causes	Findings	Treatment
Hyperthermia (heat cramps, heat exhaustion, heatstroke)	<p>Inability of the body to cope with heat stress resulting from excessive heat production or decreased heat loss. <i>Heat cramps</i>: muscle cramps and fatigue accompanied by water and mild salt depletion. <i>Heat exhaustion</i>: serious dehydration with water and electrolyte depletion. Patients maintain thermoregulatory control. Heat exhaustion may progress to <i>heatstroke</i>, characterized by thermoregulatory failure and profound dehydration.</p>	<p>The person with heat cramps complains of painful muscle spasms. There is a history of recent exertion in a hot environment. The patient has been sweating profusely with inadequate or hypotonic fluid replacement. The patient with heat exhaustion has also been sweating in a hot environment. Symptoms include thirst, weakness, fatigue, vomiting, and anorexia. The skin is cool and clammy. Body temperature may be normal or subnormal. The heatstroke victim will have an altered mental status and will be tachycardic, hypotensive, hyperthermic, and tachypneic. Signs of dehydration will be present.</p>	<p>First aid begins with removal of the patient from the hot environment. Heat cramp victims are treated with an oral or intravenous fluid and electrolyte solution. Heat exhaustion is treated by intravenous fluids. Patients with severe dehydration may require more than 4 L of IV fluid. Patients with heatstroke require rapid cooling. Many techniques are available, but evaporation with water is practical and effective. The patient may be sprayed with water and fanned until the core temperature is about 38.5°C. Cooling beyond this may cause overshoot hypothermia. IV fluid resuscitation as for heat exhaustion is also needed.</p>
Hypoglycemia	<p>The most frequent causes are an excessive dose of insulin or an oral hypoglycemic agent, or inadequate food intake by a diabetic patient treated with those drugs (e.g., during an illness that causes anorexia, nausea, or vomiting). Low blood sugars deprive the brain and other organs of the glucose they need for normal metabolism.</p>	<p>Mental status may vary from confused to agitated to unconscious. The patient is often sweaty, tremulous, and tachycardic. Occasionally, hypoglycemia may mimic strokes or seizures.</p>	<p>Glucose or dextrose should be given immediately—intravenously if the patient is unable to safely eat, orally if the patient is conscious and sufficiently oriented. One mg of glucagon, administered by intramuscular injection, is an alternative. Blood sugar levels should be tested with a glucometer. Hospitalization may be necessary if the patient has taken an overdose of long-acting insulin or an oral antihyperglycemic agent.</p>

Hypothermia

Core temperature less than 35°C (95°F), caused by decreased heat production, increased heat loss, or impaired temperature regulation. Exposure to cold or wet conditions, sepsis, or profound hypothyroidism may be predisposing conditions. Central nervous system, cardiovascular, and respiratory systems are impaired when the temperature is below 35°C.

Lethargy, confusion, and fatigue in mild cases. Heart rate and respiratory rate may be increased. As hypothermia worsens, the patient stops shivering. Heart rate, blood pressure, and respirations slow. The patient eventually loses consciousness. Respirations and pulses may be difficult to detect.

Cold or wet clothing should be removed. The patient should be rewarmed. Warm blankets, warm oxygen, and warm IV fluids may be used. An accurate core temperature must be recorded, if possible. Temperatures less than 32°C may require more aggressive rewarming techniques, such as gastric lavage, peritoneal lavage, hemodialysis, or cardiopulmonary bypass. If pulses are absent, cardiopulmonary resuscitation is indicated.

Seizure

An abnormal electrical discharge by central nervous system neurons that produces autonomic, behavioral, motor, or sensory abnormalities. Seizures may result from structural diseases of the brain (e.g., arteriovenous malformations, strokes, trauma, or tumors), from metabolic disorders (e.g., severe electrolyte disorders, low blood sugars, renal failure, or hypoxia), or from drugs (or drug or alcohol withdrawal).

During a generalized motor seizure, the patient is unconscious and has repetitive back-and-forth movements of the upper and lower extremities. Patients may bite the tongue, lose control of the bowels or bladder, or injure themselves when they fall. After the seizure, there is usually a period of gradual and progressive return to normal consciousness, which may take 30 to 60 min. Some patients may have a brief period of focal paralysis after the event.

During the seizure, the patient should be guarded against injury. This may involve helping the patient to the floor and moving furniture out of the way. Supplemental oxygen should be given. Objects should not be inserted into the patient's mouth—an obstructed airway may result. Medications such as lorazepam, diazepam, fosphenytoin, or phenobarbital may be used to abort the seizure. Most seizure patients will require some investigation into the cause of the seizure. In patients with a history of prior seizures, this may include checking blood levels of anticonvulsant medications. Patients with first-time seizures may need a more extensive evaluation, including a CT scan, an EEG, MRI, blood work, and a lumbar puncture.

Emergency Situations (Continued)

<i>Medical Emergency</i>	<i>Underlying Causes</i>	<i>Findings</i>	<i>Treatment</i>
Stroke (cerebrovascular accident)	Inadequate blood flow to an area of the brain causing tissue death. In thrombotic stroke, blood vessels narrowed by atherosclerosis limit delivery of oxygenated blood to the brain or a portion of it. In embolic stroke, clots travel from other areas of the body to block cerebral vessels. Hemorrhagic stroke results from bleeding caused by hypertension or rupture of cerebral aneurysms.	Patients often present with weakness or numbness on one side of the body or the face; with speech disturbances; or with confusion, clumsiness, difficulty walking, loss of consciousness, or coma.	Oxygen is administered and cardiac monitoring is begun. A computed tomographic (CT) scan of the brain is used to rule out a hemorrhage as a cause of new neurological deficits. Tissue plasminogen activator (a thrombolytic, or "clot-busting" drug) may be given to patients who present in the first 3 hr of nonhemorrhagic stroke.
Suicidal ideation	Major depression; alcohol abuse; dysphoria; adjustment disorders; borderline personality disorders; psychotic disorders; poor social situations and recent stressful events. Older men living alone are most likely to use lethal means to harm or kill themselves. Younger persons are most likely to come to an emergency department in distress.	Patients may report feelings of hopelessness, misery, anxiety or tension, or may feel that life has lost its meaning or joy. People who have taken medications in an attempt to overdose may have signs and symptoms related to the ingested drug(s) and may need inpatient stabilization. Consult Appendix 9-1.	Hospitalization is indicated for patients who are intoxicated by drug or alcohol overdose or who have a concrete plan to take their own lives. Outpatient therapy may be appropriate for people without the means to use potentially lethal drugs or devices to jeopardize their health and safety. Antidepressant medications, counseling, alcohol and drug rehabilitation, therapies, and psychiatric consultation are used individually or in combination for selected suicidal patients.

Thermal burns

First- and second-degree burns: partial-thickness injuries involving only the epidermis or the epidermis and dermis. *Third-degree burns:* full-thickness injuries involving the deeper tissues. Burns impair the skin's ability to prevent heat and water loss. Burned skin is not an effective barrier to injection. Severity depends on the character and temperature of the agent, the duration of exposure, and the type of skin injured.

See *Stroke*.

First-degree burns: red and painful. *Second-degree burns:* red, painful, and blistered. These burns heal without scarring. *Third-degree burns:* may be white or charred. The subcutaneous nerves have been destroyed; thus there is no pain. Surrounding areas are painful. Full-thickness burns heal poorly, leaving a scar.

The first step is to stop the burning process. Oxygen should be administered if there has been smoke inhalation. Jewelry and clothing should be removed in anticipation of swelling. Sterile sheets or dressings should be applied to the burned areas.

Symptoms and signs are similar to those of a stroke, but usually last less than 1 or 2 hr.

Patients with TIAs are treated with antiplatelet therapies, such as aspirin or clopidogrel, and are evaluated with electrocardiographic monitoring (e.g., to rule out atrial fibrillation), CT scans of the head (to rule out small strokes), and carotid ultrasonography (to determine whether the patient has a surgically correctable stenosis of the carotid arteries).

APPENDIX 10

Professional Designations and Titles in
the Health Sciences

AARCF	American Association for Respiratory Care Fellow	CLPNI	Certified Licensed Practitioner Nursing, Intravenous
ADN	Associate Degree in Nursing	CLS	Clinical Laboratory Specialist
ANP	Adult Nurse Practitioner	CLT	Certified Laboratory Technician; Clinical Laboratory Technician
AOCN	American Oncology Certified Nurse	CM	<i>Chirurgiae Magister</i> , Master in Surgery
ARNP	Advanced Registered Nurse Practitioner	CMA-A	Certified Medical Assistant, Administrative
ARRT	American Registry of Radiologic Technologists	CMA-C	Certified Medical Assistant, Clinical
ART	Accredited Record Technologist	CNA	Certified Nursing Assistant; Certified in Nursing Administration
ASPO	American Society for Psychoprophylaxis in Obstetrics	CNAA	Certified in Nursing Administration, Advanced
ATC	Athletic Trainer, Certified	CNDLTC	Certified Nursing Director of Long-Term Care
BA	Bachelor of Arts	CNM	Certified Nurse Midwife
BC	Bachelor of Surgery	CNMT	Certified Nuclear Medical Technologist
BCh	Bachelor of Surgery	CNN	Certified Nephrology Nurse
BM	Bachelor of Medicine	CNOR	Certified Nurse, Operating Room
BMS	Bachelor of Medical Science	CNP	Community Nurse Practitioner
BS	Bachelor of Science; Bachelor of Surgery	CNRN	Certified Neuroscience Registered Nurse
BSN	Bachelor of Science in Nursing	CNS	Clinical Nurse Specialist
CAPA	Certified Ambulatory Post- Anesthesia Nurse	CNSN	Certified Nutrition Support Nurse
CARN	Certified Addiction Registered Nurse	COCN	Certified Ostomy Care Nurse
CB	Bachelor of Surgery	COHN	Certified Occupational Health Nurse
CCCN	Certified Continence Care Nurse	COHN-S	Certified Occupational Health Nurse—Specialty
CCE	Certified Childbirth Educator	CORLN	Certified Otorhinolaryngology Nurse
CCM	Certified Case Manager	CORN	Certified Operating Room Nurse
CCP	Certified Clinical Perfusionist	COTA	Certified Occupational Therapy Assistant
CCRN	Certified Critical Care Registered Nurse	CPAN	Certified Post-Anesthesia Nurse
CD	Clinical Dietitian	CPDN	Certified Peritoneal Dialysis Nurse
CDA	Certified Dental Assistant	CPN	Certified Pediatric Nurse
CDE	Certified Diabetes Educator	CPNP	Certified Pediatric Nurse Practitioner
CEN	Certified Emergency Nurse	CPON	Certified Pediatric Oncology Nurse
CETN	Certified Enterostomal Therapy Nurse	CPSN	Certified Plastic Surgical Nurse
CFNP	Certified Family Nurse Practitioner	CRNA	Certified Registered Nurse Anesthetist
CFRN	Certified Flight Registered Nurse	CRNFA	Certified Registered Nurse, First Assistant
CGN	Certified Gastroenterology Nurse	CRNH	Certified Registered Hospice Nurse
CGRN	Certified Gastroenterology Registered Nurse		
CGT	Certified Gastroenterology Technician		
ChB	Bachelor of Surgery		
ChD	Doctor of Surgery		
CHN	Certified Hemodialysis Nurse		
CHUC	Certified Health Unit Coordinator		
CIC	Certified Infection Control Nurse		
CLA	Certified Laboratory Assistant		

CRNI	Certified Registered Nurse Infusion	FAAP	Fellow of the American Academy of Pediatrics
CRNO	Certified Registered Nurse, Ophthalmology	FACC	Fellow of the American College of Cardiology
CRRN	Certified Rehabilitation Registered Nurse	FACCP	Fellow of the American College of Chest Physicians
CRTT	Certified Respiratory Therapy Technician	FACD	Fellow of the American College of Dentists
CSN	Certified School Nurse	FACE	Fellow of the American College of Endocrinology
CST	Certified Surgical Technologist	FACEP	Fellow of the American College of Emergency Physicians
CURN	Certified Urology Registered Nurse	FACOG	Fellow of the American College of Obstetrics and Gynecology
CWCN	Certified Wound Care Nurse	FACP	Fellow of the American College of Physicians
DC	Doctor of Chiropractic	FACS	Fellow of the American College of Surgeons
DCh	Doctor of Surgery	FACSM	Fellow of the American College of Sports Medicine
DDS	Doctor of Dental Surgery	FAOTA	Fellow of the American Occupational Therapy Association
DM	Doctor of Medicine	FAPHA	Fellow of the American Public Health Association
DMD	Doctor of Dental Medicine	FCCM	Fellow of Critical Care Medicine
DME	Doctor of Medical Education	FCPS	Fellow of the College of Physicians and Surgeons
DMSc	Doctor of Medical Science	FFA	Fellow of the Faculty of Anaesthetists
DMV	Doctor of Veterinary Medicine	FFARCS	Fellow of the Faculty of Anaesthetists of the Royal College of Surgeons
DN	Doctor of Nursing	FICC	Fellow of the International College of Chiropractors
DNE	Doctor of Nursing Education	FNAAOM	Fellow of the National Academy of Acupuncture and Oriental Medicine
DNS	Doctor of Nursing Science	FNP	Family Nurse Practitioner
DNSc	Doctor of Nursing Science	FP	Family Practitioner
DO	Doctor of Osteopathy	FRCGP	Fellow of the Royal College of General Practitioners
DP	Doctor of Pharmacy	FRCOG	Fellow of the Royal College of Obstetricians and Gynaecologists
DPH	Doctor of Public Health	FRCP	Fellow of the Royal College of Physicians
DPhil	Doctor of Philosophy	FRCPC	Fellow of the Royal College of Physicians of Canada
DPHN	Doctor of Public Health Nursing	FRCR	Fellow of the Royal College of Radiologists
DPM	Doctor of Podiatric Medicine	FRCS	Fellow of the Royal College of Surgeons
DrPH	Doctor of Public Health	FRCS C	Fellow of the Royal College of Surgeons of Canada
DS	Doctor of Science	FRCVS	Fellow of the Royal College of Veterinary Surgeons
DSc	Doctor of Science	FRS	Fellow of the Royal Society
DSW	Doctor of Social Work	GNP	Gerontological Nurse Practitioner
DVM	Doctor of Veterinary Medicine	GPN	General Pediatric Nurse
DVMS	Doctor of Veterinary Medicine and Surgery	HT	Histologic Technician/ Histologic Technologist
EdD	Doctor of Education	LAC	Licensed Acupuncturist
EMT-B	Emergency Medical Technician—Basic	LAT	Licensed Athletic Trainer
EMT-D	Emergency Medical Technician— Defibrillation		
EMT-I	Emergency Medical Technician—Intermediate		
EMT-P	Emergency Medical Technician—Paramedic		
FAAAI	Fellow of the American Academy of Allergy and Immunology		
FAAFP	Fellow of the American Academy of Family Physicians		
FAAN	Fellow of the American Academy of Neurology		
FAAN	Fellow of the American Academy of Nursing		
FAAO	Fellow of the American Academy of Ophthalmology		
FAAO	Fellow of the American Academy of Osteopathy		
FAAOS	Fellow of the American Academy of Orthopedic Surgeons		

LATC	Licensed Athletic Trainer, Certified	PharmG	Graduate in Pharmacy
LNC	Legal Nurse Consultant	PhD	Doctor of Philosophy
LPN	Licensed Practical Nurse	PNP	Pediatric Nurse Practitioner
LRCPC	Licentiate of the Royal College of Physicians	PT	Physical Therapist
LRCS	Licentiate of the Royal College of Surgeons	PTA	Physical Therapist Assistant
LVN	Licensed Visiting Nurse; Licensed Vocational Nurse	RD	Registered Dietitian
MA	Master of Arts	RDA	Registered Dental Assistant
MB	Bachelor of Medicine	RDCS	Registered Diagnostic Cardiac Sonographer
MBBS	Bachelor of Medicine; Bachelor of Surgery	RDH	Registered Dental Hygienist
MC	Master of Surgery	RDMS	Registered Diagnostic Medical Sonographer
MCh	Master of Surgery	REEGT	Radiologic Electroencephalography Technologist
MD	Doctor of Medicine	REPT	Registered Evoked Potentials Technologist
ME	Medical Examiner	RMA	Registered Medical Assistant
MEd	Master of Education	RN	Registered Nurse
MPH	Master of Public Health	RNA	Registered Nurse Anesthetist
MPharm	Master in Pharmacy	RNC	Registered Nurse Certified (OB/GYN and Neonatal)
MRCPC	Member of the Royal College of Physicians	RPh	Registered Pharmacist
MRCs	Member of the Royal College of Surgeons	RPT	Registered Physical Therapist
MRL	Medical Records Librarian	RRA	Registered Record Administrator
MS	Master of Science; Master of Surgery	RRT	Registered Respiratory Therapist
MSc	Master of Surgery	RT	Radiologic Technologist
MSN	Master of Science in Nursing	RT(BD)	Radiologic Technologist Bone Densitometry
MSurg	Master of Surgery	RT(CI)	Radiologic Technologist (Cardiac Interventional Therapy)
MSW	Master of Social Work	RT(CT)	Radiologic Technologist (Computed Tomography)
MT	Medical Technologist	RT(CV)	Radiologic Technologist (Cardiovascular-Interventional Technology)
MTA	Medical Technologist Assistant	RT(M)	Radiologic Technologist (Mammography)
MT-(ASCP)	Medical Technologist (American Society of Clinical Pathologists)	RT (MR)	Radiologic Technologist (Magnetic Resonance Imaging)
MV	<i>Medicus Veterinarius</i> , Latin for veterinary physician	RT(N)	Nuclear Medicine Technologist
ND	Doctor of Naturopathy	RT(R)	Registered Technologist, Radiographer
NMT	Nurse Massage Therapist; Nursing Massage Therapist	RTR	Registered Recreational Therapist
NP	Nurse Practitioner	RT(S)	Registered Technologist (Sonography)
NREMT-P	Nationally Registered Paramedic	RT(T)	Radiation Therapy Technologist
OCN	Oncology Certified Nurse	RT(VI)	Radiologic Technologist (Vascular Interventional Therapy)
OD	Doctor of Optometry	RVT	Registered Vascular Technologist
ONC	Orthopedic Nurse Certified	ScD	Doctor of Science
OT	Occupational Therapist	SCT	Specialist in Cytotechnology
OTA	Occupational Therapist Assistant	SM	Master of Surgery
OTC	Orthopedic Technician, Certified	ST	Surgical Technician
OT-C	Occupational Therapist (Canada)	VMD	Veterinary Medical Doctor
OTL	Occupational Therapist, Licensed		
OTR	Registered Occupational Therapist		
OTR/L	Licensed Occupational Therapist		
PA	Physician Assistant		
PA-C	Physician's Assistant Certified		
PD	Doctor of Pharmacy		
PharmD	Doctor of Pharmacy		

APPENDIX 11

Standard Precautions

Appendix 11–1 Recommendations for Isolation Precautions

RATIONALE

Standard precautions combine the major features of Universal Precautions and Body Substance Isolation and are based upon the principle that all blood, body fluids, secretions (except sweat), non-intact skin, and mucous membranes may contain transmissible infectious agents. Standard precautions include a group of infection-prevention practices that apply to all patients, regardless of suspected or confirmed infectious status, in any setting in which health care is delivered. These include hand hygiene; use of gloves, gown, mask, eye protection or face shield, depending on the anticipated exposure; and safe injection practices. Equipment in the patient environment that is likely to have been contaminated with infectious body fluids must also be handled in a manner designed to prevent transmission of infectious agents (e.g., reusable equipment must be properly cleaned and disinfected or sterilized before being used on another patient).

RECOMMENDATIONS

Health care professionals should assume that every person is potentially infected or colonized with an organism that can be transmitted in the health care setting and should apply infection control practices during the delivery of health care. These practices include hand hygiene, respiratory hygiene/cough etiquette, and safe injection practices. Details of these are found on the CDC website as below.

SOURCE: CDC Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007. Retrieved May 31, 2008 from http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html.

Appendix 11–2 Revision to OSHA’s Bloodborne Pathogens Standard

Technical Background and Summary

Background

The Occupational Safety and Health Administration (OSHA) published the Occupational Exposure to Bloodborne Pathogens standard in 1991 because of a significant health risk associated with exposure to viruses and other microorganisms that cause bloodborne diseases. Of primary concern are the human immunodeficiency virus (HIV) and the hepatitis B and hepatitis C viruses.

The standard sets forth requirements for employers with workers exposed to blood or other potentially infectious materials. In order to reduce or eliminate the hazards of occupational exposure, an employer must implement an exposure control plan for the worksite with details on employee protection measures. The plan must also describe how an employer will use a combination of engineering and work practice controls, ensure the use of personal protective clothing and equipment, and provide training, medical surveillance, hepatitis B vaccinations, and signs and labels, among other provisions. Engineering controls are the primary means of eliminating or minimizing employee exposure and include the use of safer medical devices, such as needleless devices, shielded needle devices, and plastic capillary tubes.

Nearly 10 years have passed since the bloodborne pathogens standard was published. Since then, many different medical devices have been developed to reduce the risk of needlesticks and other sharps injuries. These devices replace sharps with non-needle devices or incorporate safety features designed to reduce injury. Despite these advances in technology, needlesticks and other sharps injuries continue to be of concern due to the high frequency of their occurrence and the severity of the health effects.

The Centers for Disease Control and Prevention estimate that health care workers sustain nearly 600,000 percutaneous injuries annually involving contaminated sharps. In response to both the continued concern over such exposures and the technological developments which can increase employee protection, Congress passed the Needlestick Safety and Prevention Act directing OSHA to revise the bloodborne pathogens standard

to establish in greater detail requirements that employers identify and make use of effective and safer medical devices. That revision was published on Jan. 18, 2001 and became effective on April 18, 2001.

Summary

The revision to OSHA's bloodborne pathogens standard added new requirements for employers, including additions to the exposure control plan and keeping a sharps injury log. It does not impose new requirements for employers to protect workers from sharps injuries; the original standard already required employers to adopt engineering and work practice controls that would eliminate or minimize employee exposure from hazards associated with bloodborne pathogens.

The revision does, however, specify in greater detail the engineering controls, such as safer medical devices, which must be used to reduce or eliminate worker exposure.

Exposure Control Plan

The revision includes new requirements regarding the employer's Exposure Control Plan, including an annual review and update to reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens. The employer must:

- take into account innovations in medical procedure and technological developments that reduce the risk of exposure (e.g., newly available medical devices designed to reduce needlesticks); and
- document consideration and use of appropriate, commercially available, and effective safer devices (e.g., describe the devices identified as candidates for use, the method(s) used to evaluate those devices, and justification for the eventual selection).

No one medical device is considered appropriate or effective for all circumstances.

Employers must select devices that, based on reasonable judgment:

- will not jeopardize patient or employee safety or be medically inadvisable; and
- will make an exposure incident involving a contaminated sharp less likely to occur.

Employee Input

Employers must solicit input from nonmanagerial employees responsible for direct patient care regarding the identification, evaluation, and selection of effective engineering controls, including safer medical devices. Employees selected should represent the range of exposure situations encountered in the workplace, such as those in geriatric, pediatric, or nuclear medicine and others involved in direct care of patients.

OSHA will check for compliance with this provision during inspections by questioning a representative number of employees to determine if and how their input was requested.

Documentation of Employee Input

Employers are required to document, in the Exposure Control Plan, how they received input from employees. This obligation can be met by:

- Listing the employees involved and describing the process by which input was requested; or
- Presenting other documentation, including references to the minutes of meetings, copies of documents used to request employee participation, or records of responses received from employees.

Recordkeeping

Employers who have employees who are occupationally exposed to blood or other potentially infectious materials, and who are required to maintain a log of occupational injuries and illnesses under existing recordkeeping rules, must also maintain a sharps injury log. That log will be maintained in a manner that protects the privacy of employees. At a minimum, the log will contain the following:

- the type and brand of device involved in the incident;
- location of the incident (e.g., department or work area); and
- description of the incident.

The sharps injury log may include additional information as long as an employee's privacy is protected. The format of the log can be determined by the employer.

Modification of Definitions

The revision to the bloodborne pathogens standard includes modification of definitions relating to engineering controls. Two terms have been added to the standard, while the description of an existing term has been amended.

Engineering Controls

Engineering controls include all control measures that isolate or remove a hazard from the workplace, such as sharps disposal containers and self-sheathing needles. The original bloodborne pathogens standard was not specific regarding the applicability of various engineering controls (other than the above examples) in the health care setting. The revision now specifies that “safer medical devices, such as sharps with engineered sharps injury protections and needleless systems” constitute an effective engineering control, and must be used where feasible.

Sharps with Engineered Sharps Injury Protections

This is a new term which includes non-needle sharps or needle devices containing built-in safety features that are used for collecting fluids or administering medications or other fluids or other procedures involving the risk of sharps injury. This description covers a broad array of devices, including:

- syringes with a sliding sheath that shields the attached needle after use;
- needles that retract into a syringe after use;
- shielded or retracting catheters; and
- intravenous medication (IV) delivery systems that use a catheter port with a needle housed in a protective covering.

Needleless Systems

This is a new term defined as devices which provide an alternative to needles for various procedures to reduce the risk of injury involving contaminated sharps. Examples include:

- IV medication systems which administer medication or fluids through a catheter port using non-needle connections; and
- jet injection systems which deliver liquid medication beneath the skin or through a muscle.

SOURCE: Adapted from <http://www.osha.gov/needlesticks/needlefact.html>.

APPENDIX 12

General Patient Care Concerns

Standard precautions Standard precautions are used whenever blood and body fluids may be encountered and when patient hygiene is provided.

Confidentiality Information about the patient, including details of his/her illness and treatments are shared only with those parties specifically designated by the patient.

Communication with patients, families and other supportive persons The patient and his/her significant others are encouraged to express their concerns; questions they have are answered honestly or referred to the appropriate member of the health team for answers; support, comfort and encouragement are offered to assist the patient and family to cope with the stresses of illness and therapy.

Empathy The patient's emotional status is assessed regularly. Emotional and psychological support for the patient and significant others is offered on an ongoing basis, with referral for specialized therapy if needed.

Monitoring Vital signs, fluid and electrolyte balance (including all fluid intake, urine and all other fluid output), weight, ventilation, cardiovascular, gastrointestinal (including food intake, bowel sounds, and bowel activity), neuromuscular, neurological, and pain status are monitored. Changes in status are recorded and reported.

Rest and activity Environmental stimuli (especially noise and light) are minimized to assist the patient to rest, and relaxation and verbalization of concerns are encouraged. The patient is assisted to turn and reposition in good body alignment while in bed, and is aided to sit in a chair and to ambulate using prescribed assistive devices at prescribed frequencies and lengths of time. Hygienic care is encouraged and provided for patients unable to care for themselves.

Preparation for diagnostic tests and treatments The patient is prepared for diagnostic testing by explaining all procedures and sensations that are expected to occur, including their duration and intensity, as well as common side effects. The patient is advised to report any sensations outside the norm for the particular test and anything that concerns

him/her. (See individual tests and treatments for specific information.)

Medication administration All prescribed medications are reviewed with the patient (and a family member as necessary), including prescribed dosage and dosing schedules, desired actions, potential for drug interactions, and common adverse and allergic reactions. This review may involve collaboration and clarification from other health care professionals, including nurse specialists, pharmacists, and the medication prescriber.

Pain management Pain status re location, quality, severity, and duration is monitored frequently, prescribed analgesics are administered and the patient assessed for effectiveness (in both situations using a #1-10 severity scale). Noninvasive pain relief strategies such as application of ice or heat, relaxation techniques, imagery, repositioning, massage, or music therapy may be effective adjuncts for individual conditions/patients.

Postoperative concerns The surgical site is assessed and cared for based on the agency's or specific surgeon's protocol for the particular surgical procedure. Surgical drains and associated hardware also require assessment, management, and recordkeeping. The patient is monitored for nausea and vomiting, fluid balance, and body temperature.

Patient education The education of patients (and their significant others as necessary) emphasizes self-care procedures, signs and symptoms to report immediately to the primary caregiver, activities and restrictions, nutrition, and the potential emotional impact of illness, treatment, and recovery. Effective coping strategies related to the patient's condition are explained. Desired outcomes include an understanding of and compliance with the prescribed treatment regimen.

Support groups The patient and family are encouraged to talk with others in similar circumstances, e.g., by contacting and enrolling in available and appropriate support groups and services.

Referrals Referrals for rehabilitative services or home health care specific to the particular illness problem may be prescribed or may be needed to help the chronically ill patient manage activities of daily living. Hospice referrals may be initiated for end of life care.

APPENDIX 13
**Recommended Immunization
Schedules**

Recommended Adult Immunization Schedule

UNITED STATES • OCTOBER 2007–SEPTEMBER 2008

Note: These recommendations must be read with the footnotes that follow.

Figure 1. Recommended schedule for adult immunization, by vaccine and age group

VACCINE ▼	AGE GROUP ▶	19–49 years	50–64 years	≥65 years
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}			1 dose Td booster every 10 yrs Substitute 1 dose of Tdap for Td	
Human papillomavirus (HPV) ^{2,*}		3 doses females (0, 2, 6 mos)		
Measles, mumps, rubella (MMR) ^{3,*}		1 or 2 doses	1 dose	
Varicella ^{4,*}			2 doses (0, 4–8 wks)	
Influenza ^{5,*}			1 dose annually	
Pneumococcal (polysaccharide) ^{6,7}			1–2 doses	1 dose
Hepatitis A ^{8,*}			2 doses (0, 6–12 mos or 0, 6–18 mos)	
Hepatitis B ^{9,*}			3 doses (0, 1–2, 4–6 mos)	
Meningococcal ^{10,*}			1 or more doses	
Zoster ¹¹				1 dose

*Covered by the Vaccine Injury Compensation Program.

For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at www.vaers.hhs.gov or by telephone, 800-827-9892. Information on how to file a Vaccine Injury Compensation Program claim is available at www.hhs.gov/vaccineinjurycompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400. Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines/imz/ from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 24 hours a day, 7 days a week.

Recommended Immunization Schedule for Persons Aged 7–18 Years—UNITED STATES • 2008

For those who fall behind or start late, see the green bars and the catch-up schedule

Vaccine ▼	Age ►	7-10 years	11-12 years	13-18 years
Diphtheria, Tetanus, Pertussis ¹	see footnote 1		Tdap	Tdap
Human Papillomavirus ²	see footnote 2		HPV (3 doses)	HPV Series
Meningococcal ³		MCV4	MCV4	MCV4
Pneumococcal ⁴			PPV	
Influenza ⁵			Influenza (Yearly)	
Hepatitis A ⁶			HepA Series	
Hepatitis B ⁷			HepB Series	
Inactivated Poliovirus ⁸			IPV Series	
Measles, Mumps, Rubella ⁹			MMR Series	
Varicella ¹⁰			Varicella Series	

Range of recommended ages
Catch-up immunization
Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2007, for children aged 7–18 years. Additional information is available at www.cdc.gov/vaccines/recs/schedules. Any dose not administered at the recommended age should be administered at any subsequent visit, when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not

contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective Advisory Committee on Immunization Practices statement for detailed recommendations, including for **high risk conditions**: <http://www.cdc.gov/vaccines/pubs/ACIP-list.htm>. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete VAERS form is available at www.vaers.hhs.gov or by telephone, 800-822-7967.

1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). (Minimum age: 10 years for BOOSTRIX[®] and 11 years for ADACEL[™])

- Administer at age 11–12 years for those who have completed the recommended childhood DTP/DTaP vaccination series and have not received a tetanus and diphtheria toxoids (Td) booster dose.
- 13–18 year olds who missed the 11–12 year Tdap or received Td only, are encouraged to receive one dose of Tdap 5 years after the last Td/DTaP dose.

2. Human papillomavirus vaccine (HPV). (Minimum age: 9 years)

- Administer the first dose of the HPV vaccine series to females at age 11–12 years.
- Administer the second dose 2 months after the first dose and the third dose 6 months after the first dose.
- Administer the HPV vaccine series to females at age 13–18 years if not previously vaccinated.

3. Meningococcal vaccine.

- Administer MCV4 at age 11–12 years and at age 13–18 years if not previously vaccinated. MPSV4 is an acceptable alternative.
- Administer MCV4 to previously unvaccinated college freshmen living in dormitories.
- MCV4 is recommended for children aged 2–10 years with terminal complement deficiencies or anatomic or functional asplenia and certain other high-risk groups.
- Persons who received MPSV4 3 or more years prior and remain at increased risk for meningococcal disease should be vaccinated with MCV4.

4. Pneumococcal polysaccharide vaccine (PPV).

- Administer PPV to certain high-risk groups.

5. Influenza vaccine.

- Administer annually to all close contacts of children aged 0–59 months.
- Administer annually to persons with certain risk factors, health-care workers, and other persons (including household members) in close contact with persons in groups at higher risk.

- Administer 2 doses (separated by 4 weeks or longer) to children younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time last season, but only received one dose.

6. Hepatitis A vaccine (HepA).

- The 2 doses in the series should be administered at least 6 months apart.
- HepA is recommended for certain other groups of children, including in areas where vaccination programs target older children.

7. Hepatitis B vaccine (HepB).

- Administer the 3-dose series to those who were not previously vaccinated.
- A 2-dose series of Recombivax HB[®] is licensed for children aged 11–15 years.

8. Inactivated poliovirus vaccine (IPV).

- For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was administered at age 4 years or older.
- If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child's current age.

9. Measles, mumps, and rubella vaccine (MMR).

- If not previously vaccinated, administer 2 doses of MMR during any visit, with 4 or more weeks between the doses.

10. Varicella vaccine.

- Administer 2 doses of varicella vaccine to persons younger than 13 years of age at least 3 months apart. Do not repeat the second dose, if administered 28 or more days following the first dose.
- Administer 2 doses of varicella vaccine to persons aged 13 years or older at least 4 weeks apart.

The Recommended Immunization Schedules for Persons Aged 0–18 Years are approved by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/recs/acip), the American Academy of Pediatrics (<http://www.aap.org>), and the American Academy of Family Physicians (<http://www.aafp.org>).

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Recommended Immunization Schedule for Persons Aged 0–6 Years—UNITED STATES • 2008

For those who fall behind or start late, see the catch-up schedule

Vaccine ▼ Age ►	Birth	1 month	2 months	4 months <i>see footnote 1</i>	6 months	12 months <i>see footnote 3</i>	15 months	18 months	19–23 months	2–3 years	4–6 years
Hepatitis B ¹	HepB	HepB	HepB	HepB	HepB	HepB	HepB	HepB			
Rotavirus ²		Rota	Rota	Rota	Rota						
Diphtheria, Tetanus, Pertussis ³		DTaP	DTaP	DTaP	DTaP	DTaP	DTaP	DTaP			DTaP
<i>Haemophilus influenzae</i> type b ⁴		Hib	Hib	Hib	Hib ⁴	Hib	Hib	Hib			
Pneumococcal ⁵		PCV	PCV	PCV	PCV	PCV	PCV	PCV			PPV
Inactivated Poliovirus		IPV	IPV	IPV	IPV	IPV	IPV	IPV			IPV
Influenza ⁶							Influenza (Yearly)	Influenza (Yearly)			
Measles, Mumps, Rubella ⁷							MMR	MMR			MMR
Varicella ⁸							Varicella	Varicella			Varicella
Hepatitis A ⁹								HepA (2 doses)			HepA Series
Meningococcal ¹⁰											MCV4

Range of recommended ages

Certain high-risk groups







This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2007, for children aged 0 through 6 years. Additional information is available at www.cdc.gov/vaccines/recs/schedules. Any dose not administered at the recommended age should be administered at any subsequent visit, when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective Advisory Committee on Immunization Practices statement for detailed recommendations, including for high-risk conditions: <http://www.cdc.gov/vaccines/pubs/ACIP-list.htm>. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.hhs.gov or by telephone, 800-822-7967.

- healthy children and two doses of PCV at least 8 weeks apart to incompletely vaccinated children with underlying medical conditions.
- 6. Influenza vaccine.** (*Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live attenuated influenza vaccine [LAIV]*)
- Administer annually to children aged 6-59 months and to close contacts of children aged 6-59 months.
 - Administer annually to children 5 years of age and older with certain risk factors, to other persons (including household members) in close contact with persons in groups at higher risk, and to any child whose parents request vaccination.
 - For healthy persons (those who do not have underlying medical conditions that predispose them to influenza complications) ages 2-49 years, either LAIV or TIV may be used.
 - Children receiving TIV should receive 0.25 mL if age 6-35 mos or 0.5 mL if age 3 years or older.
 - Administer 2 doses (separated by 4 weeks or longer) to children younger than 3 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time last season, but only received one dose.
- 7. Measles, mumps, and rubella vaccine (MMR).** (*Minimum age: 12 months*)
- Administer the second dose of MMR at age 4-6 years. MMR may be administered before age 4-6 years, provided more than 4 weeks have elapsed since the first dose and both doses are administered at age 12 months or older.
- 8. Varicella vaccine.** (*Minimum age: 12 months*)
- Administer the second dose of varicella vaccine at age 4-5 years. Varicella vaccine may be administered before age 4-6 years, provided that 3 months or older have elapsed since the first dose and both doses are administered at age 12 months or older. If second dose was administered 28 days or more following the first dose, the second dose does not need to be repeated.
- 9. Hepatitis A vaccine (HepA).** (*Minimum age: 12 months*)
- HepA is recommended for all children aged 1 yr (i.e., aged 12-23 months). The 2 doses in the series should be administered at least 6 months apart.
 - Children not fully vaccinated by age 2 years can be vaccinated at subsequent visits.
 - HepA is recommended for certain other groups of children, including in areas where vaccination programs target older children.
- 10. Meningococcal vaccine.** (*Minimum age: 2 years for meningococcal conjugate vaccine [MCV4] and for meningococcal polysaccharide vaccine [MPSV4]*)
- MCV4 is recommended for children aged 2-10 years with terminal complement deficiency, asplenic or functional asplenia and certain other high-risk groups. Use of MPSV4 is also acceptable.
 - For persons at high risk previously vaccinated with MPSV4, revaccination may be indicated.
- 1. Hepatitis B vaccine (HepB).** (*Minimum age: birth*)
- At birth:**
- Administer monovalent HepB to all newborns prior to hospital discharge.
 - If mother is hepatitis surface antigen (HBsAg)-positive, administer HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
 - If mother's HBsAg status is unknown, administer HepB within 12 hours of birth. Determine the HBsAg status as soon as possible and if HBsAg-positive, administer HBIG (no later than age 1 week).
 - If mother is HBsAg-negative, the birth dose can be delayed, in rare cases, with a provider's order and a copy of the mother's negative HBsAg laboratory report in the infant's medical record.
- After the birth dose:**
- The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be administered at age 1-2 months. The final dose should be administered no earlier than age 24 weeks. Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg after completion of at least 3 doses of a licensed HepB series, at age 9-18 months (generally at the next well-child visit).
- 4-month dose:**
- It is permissible to administer 4 doses of HepB when combination vaccines are administered after the birth dose. If monovalent HepB is used for doses after the birth dose, a dose at age 4 months is not needed.
- 2. Rotavirus vaccine (Rota).** (*Minimum age: 6 weeks*)
- Administer the first dose at age 6-12 weeks.
 - If PRP-OMP is used, do not start the series later than age 12 weeks.
 - Administer the final dose in the series by age 32 weeks. Do not administer any dose later than age 32 weeks.
 - Data on safety and efficacy outside of these age ranges are insufficient.
- 3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP).** (*Minimum age: 6 weeks*)
- The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose.
 - Administer the final dose in the series at age 4-6 years.
- 4. Haemophilus influenzae type b conjugate vaccine (Hib).** (*Minimum age: 6 weeks*)
- If PRP-OMP (PedvaxHIB® or ComVax® [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required.
 - TriHIBit® (DTaP/Hib) combination products should not be used for primary immunization but can be used as boosters following any Hib vaccine in children age 12 months or older.
- 5. Pneumococcal vaccine.** (*Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV4]*)
- At ages 24-59 months administer one dose of PCV to incompletely vaccinated

The Recommended Immunization Schedules for Persons Aged 0-18 Years are approved by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/imz/iacip/), the American Academy of Pediatrics (<http://www.aap.org/>), and the American Academy of Family Physicians (<http://www.aafp.org/>).

Nursing Appendix

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APPENDIX N1

Conceptual Models and Theories of Nursing

Jacqueline Fawcett, PhD, FAAN

Appendix N1-1 The Forerunners

FLORENCE NIGHTINGALE'S NOTES ON NURSING

Overview

Nightingale maintained that *every* woman is a nurse because every woman, at one time or another in her life, has charge of the personal health of someone. Nightingale equated knowledge of nursing with knowledge of sanitation. The focus of nursing knowledge was how to keep the body free from disease or in such a condition that it could recover from disease. According to Nightingale, nursing ought to signify the proper use of fresh air, light, warmth, cleanliness, quiet, and the proper selection and administration of diet—all at the least expense of vital power to the patient. That is, she maintained that the purpose of nursing was to put patients in the best condition for nature to act upon them.

Implications for Nursing Practice

Nursing practice encompasses care of both well and sick people. Nursing actions focus on both patients and their environments. Thirteen “hints” provided the boundaries of nursing practice:

1. **Ventilation and warming**—the nurse must be concerned first with keeping the air that patients breathe as pure as the external air, without chilling them.
2. **Health of houses**—attention to pure air, pure water, efficient drainage, cleanliness, and light will secure the health of houses.
3. **Petty management**—all the results of good nursing may be negated by one defect: not knowing how to manage what you do when you are there and what shall be done when you are not there.
4. **Noise**—unnecessary noise, or noise that creates an expectation in the mind, is that which hurts patients. Anything that wakes patients suddenly out of their sleep will invariably put them into a state of greater excitement and do them more serious and lasting mischief than any continuous noise, however loud.
5. **Variety**—the nerves of the sick suffer from seeing the same walls, the same ceiling, the same surroundings during a long confinement to one or two rooms. The majority of cheerful cases are to be found among those patients who are not confined to one room, whatever their suffering, and the majority of depressed cases will be seen among those subjected to a long monotony of objects about them.
6. **Taking food**—the nurse should be conscious of patients' diets and remember how much food each patient has had and ought to have each day.
7. **What food?**—to watch for the opinions the patient's stomach gives, rather than to read “analyses of foods,” is the business of all those who have to decide what the patient should eat.
8. **Bed and bedding**—the patient should have a clean bed every 12 hours. The bed should be narrow, so that the patient does not feel “out of humanity's reach.” The bed should not be so high that the patient cannot easily get in and out of it. The bed should be in the lightest spot in the room, preferably near a window. Pillows should be used to support the back below the breathing apparatus, to allow shoulders room to fall back, and to support the head without throwing it forward.
9. **Light**—with the sick, second only to their need of fresh air is their need of light. Light, especially direct sunlight, has a purifying effect upon the air of a room.
10. **Cleanliness of rooms and walls**—the greater part of nursing consists in preserving cleanliness. The inside air can be kept clean only by excessive care to rid rooms and their furnishings of the organic matter and dust with which they become saturated. Without cleanliness, you cannot have all the effects of ventilation; without ventilation, you can have no thorough cleanliness.
11. **Personal cleanliness**—nurses should always remember that if they allow patients to remain unwashed or to remain in clothing saturated with perspiration or other excretion, they are interfering injuriously with the natural processes of health just as much as if they were to give their patients a dose of slow poison.

12. **Chattering hopes and advices**—there is scarcely a greater worry which invalids have to endure than the incurable hopes of their friends. All friends, visitors, and attendants of the sick should avoid the practice of attempting to cheer the sick by making light of their danger and by exaggerating their probabilities of recovery.
13. **Observation of the sick**—the most important practical lesson nurses can learn is what to observe, how to observe, which symptoms indicate improvement, which indicate the reverse, which are important, which are not, and which are the evidence of neglect and what kind of neglect.

Implications for Nursing Education

Nightingale's primary contribution to nursing education was her belief that nursing schools should be administratively and economically independent from hospitals, even though the training could take place in the hospital. The purpose of nursing education was to teach the theoretical and practical knowledge underlying physician's orders. Knowledge of the 13 "hints" for nursing practice was considered an essential part of the training of every nurse.

Reference

Nightingale, F. (1859). *Notes on nursing: What it is, and what it is not*. London: Harrison and Sons. [Commemorative edition printed by J. B. Lippincott Company, Philadelphia, 1992]

VIRGINIA HENDERSON'S DEFINITION OF NURSING

Overview

The unique function of the nurse is to help individuals, sick or well, to perform those activities contributing to health or its recovery (or to peaceful death) that they would perform unaided if they had the necessary strength, will, or knowledge, and to do this in such a way as to help them gain independence as soon as possible.

Implications for Nursing Practice

The practice of nursing requires nurses to know and understand patients by putting themselves in the place of the patients. Nurses should not take at face value everything that patients say, but rather should interact with patients to ascertain their true feelings. *Basic nursing care* involves helping the patient perform the following activities unaided:

1. Breathe normally.
2. Eat and drink adequately.
3. Eliminate body wastes.
4. Move and maintain desirable postures.
5. Sleep and rest.
6. Select suitable clothes and dress and undress.
7. Maintain body temperature within normal range by adjusting clothing and modifying the environment.
8. Keep the body clean and well groomed and protect the integument.
9. Avoid dangers in the environment and avoid injuring others.
10. Communicate with others in expressing emotions, needs, fears, or opinions.
11. Worship according to one's faith.
12. Work in such a way that there is a sense of accomplishment.
13. Play or participate in various forms of recreation.
14. Learn, discover, or satisfy the curiosity that leads to normal development and health and use the available health facilities.

Implications for Nursing Education

Henderson's definition of nursing identifies an area of health and human welfare in which the nurse is an expert and independent practitioner. This kind of nursing requires a liberal education within a college or university, with grounding in the physical, biological, and social sciences and ability to use analytic processes. The professional aspects of the curriculum should focus on the nurse's major function of supplementing patients when they need strength, will, or knowledge in performing daily activities or in carrying out prescribed therapy, with emphasis on the individualization of patient care.

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Appendix N1-2 Conceptual Models

A conceptual model is defined as a set of relatively abstract and general concepts that address the phenomena of central interest to a discipline, the propositions that broadly describe those concepts, and the propositions that state relatively abstract and general relations between two or more of the concepts. Conceptual models of nursing, which also are referred to as conceptual frameworks, conceptual systems, and paradigms, provide distinctive frames of reference for thinking about human beings, their environments, their health, and nursing.

DOROTHY JOHNSON'S BEHAVIORAL SYSTEM MODEL

Overview

Focus is on the person as a behavioral system, made up of all the patterned, repetitive, and purposeful ways of behavior that characterize life. Seven subsystems carry out specialized tasks or functions needed to maintain the integrity of the whole behavioral system and to manage its relationship to the environment:

1. **Attachment or affiliative**—function is the security needed for survival as well as social inclusion, intimacy, and formation and maintenance of social bonds.
2. **Dependency**—function is the succoring behavior that calls for a response of nurturance as well as approval, attention or recognition, and physical assistance.
3. **Ingestive subsystem**—function is appetite satisfaction in terms of when, how, what, how much, and under what conditions the individual eats, all of which is governed by social and psychological considerations as well as biological requirements for food and fluids.
4. **Eliminative**—function is elimination in terms of when, how, and under what conditions the individual eliminates wastes.
5. **Sexual**—functions are procreation and gratification, with regard to behaviors dependent upon the individual's biological sex and gender role identity, including but not limited to courting and mating.
6. **Aggressive**—function is protection and preservation of self and society.
7. **Achievement**—function is mastery or control of some aspect of self or environment, with regard to intellectual, physical, creative, mechanical, social, and care-taking (of children, partner, home) skills.

The *structure* of each subsystem includes four elements:

1. **Drive or goal**—the motivation for behavior.
2. **Set**—the individual's predisposition to act in certain ways to fulfill the function of the subsystem.
3. **Choice**—the individual's total behavioral repertoire for fulfilling subsystem functions, which encompasses the scope of action alternatives from which the person can choose.
4. **Action**—the individual's actual behavior in a situation. Action is the only structural element that can be observed directly; all other elements must be inferred from the individual's actual behavior and from the consequences of that behavior.

Three *functional requirements* are needed by each subsystem to fulfill its functions:

1. **Protection** from noxious influences with which the system cannot cope.
2. **Nurturance** through the input of appropriate supplies from the environment.
3. **Stimulation** to enhance growth and prevent stagnation.

Implications for Nursing Practice

Nursing practice is directed toward restoration, maintenance, or attainment of behavioral system balance and dynamic stability at the highest possible level for the individual. Johnson's practice methodology, which is called the Nursing Diagnostic and Treatment Process, encompasses four steps:

1. **Determination of the existence of a problem** The nurse obtains past and present family and individual behavioral system histories by means of interviews, structured and unstructured observations, and objective methodologies. The nurse obtains data about the nature of behavioral system functioning in terms of the ef-

efficiency and effectiveness with which the client's goals are obtained. The nurse obtains data to determine the degree to which the behavior is purposeful, orderly, and predictable. The nurse interviews the client and family to determine the condition of the subsystem structural components and uses the obtained data to: make inferences about drive strength, direction, and value; make inferences about the solidity and specificity of the set; make inferences about the range of behavior patterns available to the client; make inferences about the usual behavior in a given situation. The nurse assesses and compares the client's behavior with the following indices for behavioral system balance and stability: the behavior is succeeding to achieve the consequences sought; effective motor, expressive, or social skills are evident; the behavior is purposeful; the behavior is orderly; the behavior is predictable; the amount of energy expended to achieve desired goals is acceptable; the behavior reflects appropriate choices; the client is sufficiently satisfied with the behavior; the nurse makes inferences about the organization, interaction, and integration of the subsystems.

2. **Diagnostic classification of problems** *Internal Subsystem Problems* are present when: functional requirements are not met; inconsistency or disharmony among the structural components of subsystems is evident; the behavior is inappropriate in the ambient culture. *Intersystem Problems* are present when: the entire behavioral system is dominated by one or two subsystems; a conflict exists between two or more subsystems.
3. **Management of nursing problems** The general goals of action are to: restore, maintain, or attain the client's behavioral system balance and stability; help the client to achieve a more optimum level of balance and functioning when this is possible and desired. The nurse determines what nursing is to accomplish on behalf of the behavioral system by determining who makes the judgment regarding the acceptable level of behavioral system balance and stability. The nurse identifies the value system of the nursing profession as well as his or her own explicit value system.

The nurse negotiates with the client to select a type of treatment: The nurse temporarily *Imposes External Regulatory or Control Mechanisms* by: setting limits for behavior by either permissive or inhibitory means; inhibiting ineffective behavioral responses; assisting the client to acquire new responses; reinforcing appropriate behaviors. The nurse *Repairs Damaged Structural Components* in the desirable direction by: reducing drive strength by changing attitudes; redirecting goals by changing attitudes; altering set by instruction or counseling; adding choices by teaching new skills. The nurse *Fulfills Functional Requirements* of the subsystems by: protecting the client from overwhelming noxious influences; supplying adequate nurturance through an appropriate input of essential supplies; providing stimulation to enhance growth and to inhibit stagnation. The nurse negotiates the treatment modality with the client by: establishing a contract with the client; helping the client to understand the meaning of the nursing diagnosis and the proposed treatment. If the diagnosis and/or proposed treatment is rejected, the nurse continues to negotiate with the client until agreement is reached.

4. **Evaluation of behavioral system balance and stability** The nurse compares the client's behavior after treatment to indices of behavioral system balance and stability.

Implications for Nursing Education

Education for nursing practice requires a thorough grounding in the natural and social sciences, with emphasis on the genetic, neurological, and endocrine bases of behavior; psychological and social mechanisms for the regulation and control of behavior; social learning theories; and motivational structures and processes. The professional aspects of the curriculum focus on study of the behavioral system as a whole and as a composite of subsystems; pathophysiology; the clinical sciences of nursing and medicine; and the health care system.

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IMOGENE KING'S CONCEPTUAL SYSTEM

Overview

Focus is on the continuing ability of individuals to meet their basic needs so that they may function in their socially defined roles, and on individuals' interactions within three open, dynamic, interacting systems.

- 1. Personal systems** are individuals, who are regarded as rational, sentient, social beings. Concepts related to the personal system are:

 - Perception*— a process of organizing, interpreting, and transforming information from sense data and memory that gives meaning to one's experience, represents one's image of reality, and influences one's behavior.
 - Self*— a composite of thoughts and feelings that constitute a person's awareness of individual existence, of who and what he or she is.
 - Growth and development*— cellular, molecular, and behavioral changes in human beings that are a function of genetic endowment, meaningful and satisfying experiences, and an environment conducive to helping individuals move toward maturity.
 - Body image*— a person's perceptions of his or her body.
 - Time*— the duration between the occurrence of one event and the occurrence of another event.
 - Space*— the physical area called territory that exists in all directions.
 - Learning*— gaining knowledge.
- 2. Interpersonal systems** are composed of two, three, or more individuals interacting in a given situation. The concepts associated with this system are:

 - Interactions*— the acts of two or more persons in mutual presence; a sequence of verbal and nonverbal behaviors that are goal directed.
 - Communication*— the vehicle by which human relations are developed and maintained; encompasses intrapersonal, interpersonal, verbal, and nonverbal communication.
 - Transaction*— a process of interaction in which human beings communicate with the environment to achieve goals that are valued; goal-directed human behaviors.
 - Role*— a set of behaviors expected of a person occupying a position in a social system.
 - Stress*— a dynamic state whereby a human being interacts with the environment to maintain balance for growth, development, and performance, involving an exchange of energy and information between the person and the environment for regulation and control of stressors.
 - Coping*— a way of dealing with stress.
- 3. Social systems** are organized boundary systems of social roles, behaviors, and practices developed to maintain values and the mechanisms to regulate the practices and roles. The concepts related to social systems are:

 - Organization*— composed of human beings with prescribed roles and positions who use resources to accomplish personal and organizational goals.
 - Authority*— a transactional process characterized by active, reciprocal relations in which members' values, backgrounds, and perceptions play a role in defining, validating, and accepting the authority of individuals within an organization.
 - Power*— the process whereby one or more persons influence other persons in a situation.
 - Status*— the position of an individual in a group or a group in relation to other groups in an organization.
 - Decision making*— a dynamic and systematic process by which goal-directed choice of perceived alternatives is made and acted upon by individuals or groups to answer a question and attain a goal.
 - Control*— being in charge.

Implications for Nursing Practice

Nursing practice is directed toward helping individuals maintain their health so they can function in their roles. King's practice methodology, which is the essence of the Theory of Goal Attainment, is called the Interaction-Transaction Process.

1. Assessment phase

Perception The nurse and the client meet in some nursing situation and perceive each other. Accuracy of perception will depend upon verifying the nurse's inferences with the client. The nurse can use the Goal-Oriented Nursing Record (GONR) throughout the assessment phase.

Judgment The nurse and the client make mental judgments about the other.

Action The nurse and the client take some mental action.

- Reaction* The nurse and the client mentally react to each one's perceptions of the other.
- Disturbance** is the *diagnosis phase* of the interaction-transaction process. The nurse and the client communicate and interact, and the nurse identifies the client's concerns, problems, and disturbances in health. The nurse conducts a nursing history to determine the client's activities of daily living, using the Criterion-Referenced Measure of Goal Attainment Tool (CRMGAT); roles; environmental stressors; perceptions; and values, learning needs, and goals. The nurse records the data from the nursing history on the GONR, the medical history and physical examination data, results of laboratory tests and x-ray examination, and information gathered from other health professionals and the client's family members on the GONR. The nurse also records diagnoses on the GONR.
 - Planning phase**
 - Mutual Goal Setting* The nurse and the client interact purposefully to set mutually agreed on goals. The nurse interacts with family members if the client cannot verbally participate in goal setting. Mutual goal setting is based on the nurse's assessment of the client's concerns, problems, and disturbances in health; the nurse's and client's perceptions of the interference; and the nurse's sharing of information with the client and his or her family to help the client attain the goals identified. The nurse records the goals on the GONR.
 - Exploration of Means to Achieve Goals* The nurse and the client interact purposefully to explore the means to achieve the mutually set goals.
 - Agreement on Means to Achieve Goals* The nurse and the client interact purposefully to agree on the means to achieve the mutually set goals. The nurse records the nursing orders with regard to the means to achieve goals on the GONR.
 - Transaction** is the *implementation phase* of the interaction-transaction process. Transaction refers to the valuational components of the interaction. The nurse and the client carry out the measures agreed upon to achieve the mutually set goals. The nurse can use the GONR flow sheet and progress notes to record the implementation of measures used to achieve goals.
 - Attainment of goals** is the *evaluation phase* of the interaction-transaction process. The nurse and the client identify the outcome of the interaction-transaction process. The outcome is expressed in terms of the client's state of health, or ability to function in social roles. The nurse and the client make a decision with regard to whether the goal was attained and, if necessary, determine why the goal was not attained. The nurse can use the CRMGAT to record the outcome and the GONR to record the discharge summary.

Implications for Nursing Education

King's Conceptual System and the theory of goal attainment lead to a focus on the dynamic interaction of the nurse-client dyad. This focus, in turn, leads to emphasis on nursing student behavior as well as client behavior. The concepts related to the personal, interpersonal, and social systems serve as the theoretical content for nursing courses in associate degree, baccalaureate, and master's nursing programs. The theoretical knowledge is used by students in learning experiences involving concrete nursing situations.

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MYRA LEVINE'S CONSERVATION MODEL

Overview

Focus is on conservation of the person's wholeness. Adaptation is the process by which people maintain their wholeness or integrity as they respond to environmental challenges and become congruent with the environment. Sources of challenges are:

- Perceptual environment**—encompasses that part of the environment to which individuals respond with their sense organs.

2. **Operational environment**—includes those aspects of the environment that are not directly perceived, such as radiation, odorless and colorless pollutants, and microorganisms.
3. **Conceptual environment**—the environment of language, ideas, symbols, concepts, and invention.

Individuals respond to the environmental challenges by means of four integrated processes:

1. *Fight-or-flight mechanism*
2. *Inflammatory-immune response*
3. *Stress response*
4. *Perceptual awareness*—includes the basic orienting, haptic, auditory, visual, and taste-smell systems.

Implications for Nursing Practice

Nursing practice is directed toward promoting wholeness for all people, well or sick. Patients are partners or participants in nursing care and are temporarily dependent on the nurse. The nurse's goal is to end the dependence as quickly as possible. Levine's practice methodology is a nursing process directed toward conservation, which is defined as "keeping together," and consists of three steps:

1. **Trophicgnosis**—formulation of a nursing care judgment arrived at by the scientific method. The nurse observes and collects data that will influence nursing practice rather than medical practice. The nurse uses appropriate assessment tools derived from the Conservation Model and data to establish an objective and scientific rationale for nursing practice. The nurse fully understands his or her role in medical and paramedical prescriptions and the basis for the prescribed medical regimen. The nurse consults with the physician to share information and clarify nursing decisions. The nurse understands the basis for the prescribed paramedical regimen and determines the nursing processes required by medical and paramedical treatment. The nurse assesses the patient's *Conservation of Energy* by determining his or her ability to perform necessary activities without producing excessive fatigue. The nurse assesses the patient's *Conservation of Structural Integrity* by determining his or her physical functioning. The nurse assesses the patient's *Conservation of Personal Integrity* by determining his or her moral and ethical values and life experiences. The nurse assesses the patient's *Conservation of Social Integrity* by taking the patient's family members, friends, and conceptual environment into account. The nurse understands the basis for implementation of the nursing care plan, including principles of nursing science, and how to adapt nursing techniques to the unique cluster of needs demonstrated in the individual patient. The nurse identifies the provocative facts within the data collected, that is, the data that provoke attention on the basis of knowledge of the situation. The provocative facts provide the basis for an hypothesis, or trophicgnosis.
2. **Intervention/Action**—test of the hypothesis. The nurse implements the nursing care plan within the structure of administrative policy, availability of equipment, and established standards of nursing. The nurse accurately records and transmits evaluation of the patient's response to implementation of the nursing care plan and identifies the general type of nursing intervention required:
 - Therapeutic*—when nursing intervention influences adaptation favorably or toward renewed social well-being.
 - Supportive*—when nursing intervention cannot alter the course of the adaptation and can only maintain the status quo or fail to halt a downward course.
 Intervention is structured according to four conservation principles:
 - Principle of conservation of energy*—balancing the patient's energy output and energy input to avoid excessive fatigue.
 - Principle of conservation of structural integrity*—focusing attention on healing by maintaining or restoring the structure of the body through prevention of physical breakdown and promotion of healing.
 - Principle of conservation of personal integrity*—maintaining or restoring the individual patient's sense of identity, self-worth, and acknowledgment of uniqueness.
 - Principle of conservation of social integrity*—acknowledging patients as social beings and helping them to preserve their places in family, community, and society.
3. **Evaluation of Intervention/Action**—the nurse's evaluation of the effects of the intervention/action. The nurse evaluates the effects of intervention and revises the trophicgnosis as necessary. An indicator of the success of nursing interventions is the patient's organismic response.

Implications for Nursing Education

Education focuses on understanding both the person and the environment, with emphasis placed on processes by which the person adapts to environmental challenges. Theoretical and clinical knowledge related to the four conservation principles provides the structure for nursing courses. Students are prepared for the practice of holistic nursing and for lifelong learning.

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BETTY NEUMAN'S SYSTEMS MODEL

Overview

Focus is on the wellness of the client system in relation to environmental stress and reactions to stress. The client system, which can be an individual, a family or other group, or a community, is a composite of five interrelated variables:

1. **Physiological variables**—bodily structure and function.
2. **Psychological variables**—mental processes and relationships.
3. **Sociocultural variables**—social and cultural functions.
4. **Developmental variables**—developmental processes of life.
5. **Spiritual variables**—aspects of spirituality on a continuum from complete unawareness or denial to a consciously developed high level of spiritual understanding.

The client system is depicted as a central core, which is a basic structure of survival factors common to the species, surrounded by three types of concentric rings:

1. **Flexible line of defense**—the outermost ring; a protective buffer for the client's normal or stable state that prevents invasion of stressors and keeps the client system free from stressor reactions or symptomatology.
2. **Normal line of defense**—lies between the flexible line of defense and the lines of resistance; represents the client system's normal or usual wellness state.
3. **Lines of resistance**—the innermost concentric rings; involuntarily activated when a stressor invades the normal line of defense. They attempt to stabilize the client system and foster a return to the normal line of defense. If they are effective, the system can reconstitute; if ineffective, death may ensue.

Environment is defined as “all internal and external factors or influences surrounding the client system”:

1. **Internal environment**—“all forces or interactive influences internal to or contained solely within the boundaries of the defined client system”; the source of *intrapersonal stressors*.
2. **External environment**—all forces or interactive influences external to or existing outside the defined client system; the source of *interpersonal and extrapersonal stressors*.
3. **Created environment**—subconsciously developed by the client as a symbolic expression of system wholeness. It supersedes and encompasses the internal and external environments, and functions as a subjective safety mechanism that may block the true reality of the environment and the health experience.

Implications for Nursing Practice

Nursing practice is directed toward facilitating optimal wellness through retention, attainment, or maintenance of client system stability. Neuman's practice methodology is the Neuman Systems Model Nursing Process Format, which encompasses three steps:

1. **Nursing diagnosis** —formulated on the basis of assessment of the variables and lines of defense and resistance making up the client system.
2. **Nursing goals**—negotiated with the client for desired prescriptive changes to correct variances from wellness.
3. **Nursing outcomes** The nurse implements nursing interventions through the use of one or more of the three prevention-as-intervention modalities.

Primary Prevention as Intervention—nursing actions to retain system stability are implemented by: preventing stressor invasion; providing resources to retain or strengthen existing client/client system strengths; supporting positive coping and functioning; desensitizing existing or possible noxious stressors; motivating the client/client system toward wellness; coordinating and integrating interdisciplinary theories and epidemiological input; educating or reeducating the client/client system; using stress as a positive intervention strategy.

Secondary Prevention as Intervention—nursing actions to attain system stability are implemented by: protecting the client/client system's basic structure; mobilizing and optimizing the client/client system's internal and external resources to attain stability and energy conservation; facilitating purposeful manipulation of stressors and reactions to stressors; motivating, educating, and involving the client/client system in mutual establishment of health care goals; facilitating appropriate treatment and intervention measures; supporting positive factors toward wellness; promoting advocacy by coordination and integration; providing primary preventive intervention as required.

Tertiary Prevention as Intervention—nursing actions to maintain system stability are implemented by: attaining and maintaining the highest possible level of client/client system wellness and stability during reconstitution; educating, reeducating, and/or reorienting the client/client system as needed; supporting the client/client system toward appropriate goals; coordinating and integrating health services resources; providing primary and/or secondary preventive intervention as required. The nurse evaluates the outcome goals by: confirming attainment of outcome goals with the client/client system; reformulating goals as necessary with the client/client system. The nurse and client/client system set intermediate and long-range goals for subsequent nursing action that are structured in relation to short-term goal outcomes. The nurse uses the Neuman Systems Model Assessment and Intervention Tool, the Neuman Systems Model Nursing Diagnosis Taxonomy, and any other relevant clinical tools to guide collection of data and facilitate documentation of nursing diagnoses, nursing goals, and nursing outcomes.

Implications for Nursing Education

The model is an appropriate curriculum guide for all levels of nursing education. The components of the model serve as curriculum content, including the five variable areas (physiological, psychological, sociocultural, developmental, spiritual), the three categories of stressors (intrapersonal, interpersonal, extrapersonal), and the three prevention-as-intervention modalities (primary, secondary, tertiary).

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DOROTHEA OREM'S SELF-CARE FRAMEWORK

Overview

Focus is on patients' deliberate actions to meet their own and dependent others' therapeutic self-care demands and nurses' deliberate actions to implement nursing systems designed to assist individuals and multiperson units who have limitations in their abilities to provide continuing and therapeutic self-care or care of dependent others. The concepts of Orem's conceptual model are:

1. **Self-care**—behavior directed by individuals to themselves or their environments to regulate factors that affect their own development and functioning in the interests of life, health, or well-being.
2. **Self-care agency**—a complex capability of maturing and mature individuals to determine the presence and characteristics of specific requirements for regulating their own functioning and development, make judgments and decisions about what to do, and perform care measures to meet specific self-care requisites. The person's ability to perform self-care is influenced by 10 *power components*:

- Ability to maintain attention and exercise requisite vigilance with respect to self as self-care agent and internal and external conditions and factors significant for self-care.
 - Controlled use of available physical energy that is sufficient for the initiation and continuation of self-care operations.
 - Ability to control the position of the body and its parts in the execution of the movements required for the initiation and completion of self-care operations.
 - Ability to reason within a self-care frame of reference.
 - Motivation (i.e., goal orientations for self-care that are in accord with its characteristics and its meaning for life, health, and well-being).
 - Ability to make decisions about care of self and to operationalize these decisions.
 - Ability to acquire technical knowledge about self-care from authoritative sources, to retain it, and to operationalize it.
 - A repertoire of cognitive, perceptual, manipulative, communication, and interpersonal skills adapted to the performance of self-care operations.
 - Ability to order discrete self-care actions or action systems into relationships with prior and subsequent actions toward the final achievement of regulatory goals of self-care.
 - Ability to consistently perform self-care operations, integrating them with relevant aspects of personal, family, and community living.
- The person's ability to perform self-care as well as the kind and amount of self-care required are influenced by 10 internal and external factors called *basic conditioning factors*:
- Age
 - Gender
 - Developmental state
 - Health state
 - Sociocultural orientation
 - Health care system factors; for example, medical diagnostic and treatment modalities
 - Family system factors
 - Patterns of living including activities regularly engaged in
 - Environmental factors
 - Resource availability and adequacy
3. **Therapeutic self-care demand**—the action demand on individuals to meet three types of self-care requisites:
 - Universal self-care requisites*—actions that need to be performed to maintain life processes, the integrity of human structure and function, and general well-being.
 - Developmental self-care requisites*—actions that need to be performed in relation to human developmental processes, conditions, and events and in relation to events that may adversely affect development.
 - Health deviation self-care requisites*—actions that need to be performed in relation to genetic and constitutional defects, human structural and functional deviations and their effects, and medical diagnostic and treatment measures prescribed or performed by physicians.
 4. **Self-care deficit**—the relationship of inadequacy between self-care agency and the therapeutic self-care demand.
 5. **Nursing agency**—a complex property or attribute that enables nurses to know and help others to know their therapeutic self-care demands, meet their therapeutic self-care demands, and regulate the exercise or development of their self-care agency.
 6. **Nursing system**—a series of coordinated deliberate practical actions performed by nurses and patients directed toward meeting the patient's therapeutic self-care demand and protecting and regulating the exercise or development of the patient's self-care agency.

Implications for Nursing Practice

Nursing practice is directed toward helping people to meet their own and their dependent others' therapeutic self-care demands. Orem's practice methodology encompasses the Professional-Technologic Operations of Nursing Practice:

1. **Case Management Operations**—The nurse uses a case management approach to control, direct, and check each of the nursing diagnostic, prescriptive, regulatory, and control operations. The nurse maintains an overview of the interrelationships between the social, interpersonal, and professional-technologic systems of nursing. The nursing history and other appropriate tools are used for collection and documentation of information and measurement of the quality of nursing. The nurse records appropriate information in the patient's chart and records progress notes as appropriate.
2. **Diagnostic Operations**—The nurse identifies the unit of service for nursing practice as an individual, an individual member of a multiperson unit, or a multiperson

unit. The nurse determines why the person needs nursing in collaboration with the patient or family and with continued review of decisions by the patient or family. The nurse collects demographic data about the patient and information about the nature and boundaries of the patient's health care situation and nursing's jurisdiction within those boundaries. The nurse calculates the person's present and future therapeutic self-care demand and determines the person's self-care agency or dependent-care agency. The nurse identifies the influence of power components and basic conditioning factors on the exercise and operability of self-care or dependent-care agency.

The nurse determines whether the person should be helped to refrain from self-care actions or dependent-care actions for therapeutic purposes and whether the person should be helped to protect already developed self-care or dependent-care capabilities for therapeutic purposes. The nurse determines the person's potential for self-care or dependent-care agency in the future by: identifying the person's ability to increase or deepen self-care or dependent-care knowledge; identifying the person's ability to learn techniques of care; identifying the person's willingness to engage in self-care or dependent-care; identifying the person's ability to effectively and consistently incorporate essential self-care or dependent-care measures into daily living.

The nurse calculates the self-care deficit or dependent-care deficit by: determining the qualitative or quantitative inadequacy of self-care agency or dependent-care agency in relation to the calculated therapeutic self-care demand; determining the nature of and reasons for the existence of the self-care deficit or dependent-care deficit; specifying the extent of the self-care deficit or dependent-care deficit as complete or partial.

The nurse states the nursing diagnosis for the individual or a multiperson unit within the context of four levels:

Level 1: Focuses on health and well-being, with emphasis on the relationship of self-care and self-care management to the overall life situation.

Level 2: Deals with the relationship between the therapeutic self-care demand and self-care agency.

Level 3: Expresses the relationship of the action demand by particular self-care requisites to particular self-care operations as influenced by the power components.

Level 4: Expresses the influence of the basic conditioning factors on the therapeutic self-care demand and self-care agency.

3. **Prescriptive Operations**—The nurse specifies the means to be used and all measures needed to meet the therapeutic self-care demand, in collaboration with the patient or family. The nurse specifies the roles to be played by the nurse(s), patient, and dependent-care agent(s) in meeting the therapeutic self-care demand and in regulating the patient's exercise or development of self- or dependent-care agency, in collaboration with the patient or family.
4. **Regulatory Operations: Design of Nursing Systems for Performance of Regulatory Operations**—The nurse designs a *nursing system*, which is a series of coordinated deliberate practical actions performed by the nurse and the patient directed toward meeting the patient's therapeutic self-care demand and protecting and regulating the exercise or development of the patient's self- or dependent-care agency, in collaboration with the patient or family.

The nursing system includes one or more *methods of helping*, which are sequential series of actions that will overcome or compensate for the health-associated limitations of patients to regulate their own or their dependents' functioning and development.

The selection of the appropriate nursing system is based on the answer to the question of who can or should perform self-care actions, and the determination of the patient's role (no role, some role) in the production and management of self-care. The *wholly compensatory nursing system* is selected when the patient cannot or should not perform any self-care actions, and thus the nurse must perform them. The *partly compensatory nursing system* is selected when the patient can perform some, but not all, self-care actions. The *supportive-educative nursing system* is selected when the patient can and should perform all self-care actions. A single patient may require one or a sequential combination of the three types of nursing systems. All three nursing systems are most appropriately used with individuals. Multiperson units usually require combinations of the partly compensatory and supportive-educative nursing systems, although it is possible that such multiperson units as families or residence groups would need wholly compensatory nursing systems under some circumstances.

Wholly compensatory nursing system—The nurse accomplishes the patient's therapeutic self-care, compensates for the patient's inability to engage in self-care, and supports and protects the patient. The nurse selects wholly compensatory

nursing system subtype 1 for persons unable to engage in any form of deliberate action, including persons who are unable to control their position and movement in space; are unresponsive to stimuli or responsive to internal and external stimuli only through hearing and feeling; are unable to monitor the environment and convey information to others because of loss of motor ability.

The nurse selects the following *method of helping*: Acting for or doing for the patient.

The nurse selects *wholly compensatory nursing system subtype 2* for persons who are aware and who may be able to make observations, judgments, and decisions about self-care and other matters but cannot or should not perform actions requiring ambulation and manipulative movements.

The nurse selects one or more of the following *methods of helping*: providing a developmental environment; acting for or doing for the patient; supporting the patient psychologically; guiding the patient; teaching the patient.

The nurse selects *wholly compensatory nursing system subtype 3* for persons who are unable to attend to themselves and make reasoned judgments and decisions about self-care and other matters but who can be ambulatory and may be able to perform some measures of self-care with continuous guidance and supervision.

The nurse selects one or more of the following *methods of helping*: providing a developmental environment; guiding the patient; providing support for the patient; acting for or doing for the patient.

Partly compensatory nursing system—The nurse performs some self-care measures for the patient, compensates for self-care limitations of the patient, assists the patient as required, and regulates the patient's self-care agency; the patient performs some self-care measures, regulates self-care agency, and accepts care and assistance from the nurse.

When the nurse selects *partly compensatory nursing system subtype 1*, the patient performs universal measures of self-care and the nurse performs medically prescribed measures and some universal self-care measures. The nurse selects one or more of the following *methods of helping*: acting for or doing for the patient; guiding the patient; supporting the patient; providing a developmental environment; teaching the patient.

When the nurse selects *partly compensatory nursing system subtype 2*, the patient learns to perform some new care measures. The nurse selects one or more of the following *methods of helping*: acting for or doing for the patient; guiding the patient; supporting the patient; providing a developmental environment; teaching the patient.

Supportive-educative nursing system—The nurse regulates the exercise and development of the patient's self-care agency or dependent-care agency; the patient accomplishes self-care or dependent-care and regulates the exercise and development of self-care agency or dependent-care agency.

The nurse selects *supportive-educative nursing system subtype 1* if the patient can perform care measures, and the appropriate methods of helping are guiding the patient and supporting the patient. The nurse selects *supportive-educative nursing system subtype 2* if the patient can perform care measures and the appropriate method of helping is teaching the patient. The nurse selects *supportive-educative nursing system subtype 3* if the patient can perform care measures and the appropriate method of helping is providing a developmental environment. The nurse selects *supportive-educative nursing system subtype 4* if the patient is competent in self-care and the appropriate method of helping is guiding the patient periodically.

5. **Regulatory Operations: Planning for Regulatory Operations**—The nurse specifies what is needed to produce the nursing system(s) selected for the patient.

6. **Regulatory Operations: Production of Regulatory Care**—Nursing systems are produced by means of the actions of nurses and patients during nurse-patient encounters. The nurse produces and manages the designated nursing system(s) and method(s) of helping for as long as the patient's self-care deficit or dependent-care deficit exists. The nurse provides the following direct nursing care operations:

Performs and regulates self-care or dependent-care tasks for patients or assists patients with their performance of self- or dependent-care tasks.

Coordinates self- or dependent-care task performance so that a unified system of care is produced and coordinated with other components of health care.

Helps patients, their families, and others bring about systems of daily living for patients that support the accomplishment of self-care or dependent-care and are, at the same time, satisfying in relation to patients' interests, talents, and goals.

Guides, directs, and supports patients in their exercise of, or in the withholding of the exercise of, their self-care agency or dependent-care agency.

Stimulates patients' interests in self-care or dependent-care by raising questions and promoting discussions of care problems and issues when conditions permit.

Is available to patients at times when questions are likely to arise.

Supports and guides patients in learning activities and provides cues for learning as well as instructional sessions.

Supports and guides patients as they experience illness or disability and the effects of medical care measures and as they experience the need to engage in new measures of self-care or change their ways of meeting ongoing self-care requisites.

The nurse carries out the following decision-making operations regarding the continuation of or need for changes in direct nursing care:

Monitors and assists patients to monitor themselves to determine if self-care or dependent-care measures were performed and to determine the effects of self-care or dependent-care, the results of efforts to regulate the exercise or development of self-care agency or dependent-care agency, and the sufficiency and efficiency of nursing action directed to these ends.

Makes judgments about the sufficiency and efficiency of self-care or dependent-care, the regulation of the exercise or development of self-care agency or dependent-care, and nursing assistance.

Makes judgments about the meaning of the results derived from nurses' performance when monitoring patients and judging outcomes of self-care or dependent-care for the well-being of patients. Makes or recommends adjustments in the nursing care system through changes in nurse and patient roles.

7. **Control Operations**—The nurse performs control operations concurrently with or separate from the production of regulatory care. The nurse makes observations and evaluates the nursing system to determine whether:

The nursing system that was designed is actually produced.

There is a fit between the current prescription for nursing and the nursing system that is being produced.

Regulation of the patient's functioning is being achieved through performance of care measures to meet the patient's therapeutic self-care demand.

Exercise of the patient's self-care agency or dependent-care agency is being properly regulated.

Developmental change is in process and is adequate.

The patient is adjusting to any declining powers to engage in self-care or dependent-care.

Implications for Nursing Education

The Self-Care Framework provides a body of knowledge that can be used for curriculum development. The focus of both undergraduate and graduate nursing curricula is on components of self-care, self-care agency, self-care deficits, nursing agency, and nursing systems. Education for clinical skills emphasizes the methods of helping.

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MARTHA ROGERS' SCIENCE OF UNITARY HUMAN BEINGS

Overview

Focus is on unitary, irreducible human beings and their environments. The four basic concepts are:

1. **Energy fields**—irreducible, indivisible, pandimensional unitary human beings and environments that are identified by pattern and manifesting characteristics that are specific to the whole and cannot be predicted from knowledge of the parts. Human and environmental energy fields are integral with each other.
2. **Openness**—a characteristic of human and environmental energy fields; energy fields are continuously and completely open.
3. **Pattern**—the distinguishing characteristic of an energy field. Pattern is perceived as a single wave that gives identity to the field. Each human field pattern is unique and is integral with its own unique environmental field pattern. Pattern is an abstraction that cannot be seen; what are seen or experienced are manifestations of field pattern.

4. **Pandimensionality**—a nonlinear domain without spatial or temporal attributes.

The three principles of homeodynamics, which describe the nature of human and environmental energy fields, are:

1. **Resonancy**—asserts that human and environmental fields are identified by wave patterns that manifest continuous change from lower to higher frequencies.
2. **Helicy**—asserts that human and environmental field patterns are continuous, innovative, and unpredictable, and are characterized by increasing diversity.
3. **Integrality**—emphasizes the continuous mutual human field and environmental field process.

Implications for Nursing Practice

Nursing practice is directed toward promoting the health and well-being of all persons, wherever they are. Rogers' practice methodology, which is called the Health Patterning Practice Method, encompasses the following phases:

1. **Pattern Manifestation Knowing and Appreciation—Assessment**—The continuous process of apprehending and identifying manifestations of the human energy field and environmental energy field patterns that relate to current health events. The nurse uses one or more Science of Unitary Human Beings–based research instruments or clinical tools to guide application and documentation of the practice methodology. The nurse acts with pandimensional authenticity, that is, with a demeanor of genuineness, trustworthiness, and knowledgeable caring. The nurse focuses on the client as a unified whole (a unitary human being) and participates in individualized nursing by looking at each client and determining the range of behaviors that are normal for him or her. The nurse always takes diversity among clients into account, for that diversity has distinct implications for what will be done and how it will be done. The nurse comes to know human energy field pattern and environmental energy field pattern through manifestations of that pattern in the form of the client's experiences, perceptions, and expressions. The nurse attends to expressions of experiences and perceptions in such forms as the client's verbal responses, responses to questionnaires, and personal ways of living and relating. The nurse collects such relevant pattern information as the client's sensations, thoughts, feelings, awareness, imagination, memory, introspective insights, intuitive apprehensions, recurring themes and issues that pervade the client's life, metaphors, visualizations, images, nutrition, work and play, exercise, substance use, sleep/wake cycles, safety, decelerated/accelerated field rhythms, space-time shifts, interpersonal networks, and professional health care access and use.
2. **Voluntary Mutual Patterning**—The continuous process whereby the nurse, with the client, patterns the environmental energy field to promote harmony related to the health events. The nurse facilitates the client's actualization of potentials for health and well-being. The nurse has no investment in the client's changing in a particular way. The nurse does not attempt to change anyone to conform to arbitrary health ideals. Rather, the nurse enhances the client's efforts to actualize health potentials from his or her point of view. The nurse helps to create an environment where healing conditions are optimal and invites the client to heal him- or herself as the nurse and the client participate in various health patterning modalities. The nurse uses many different modes of health patterning, including such noninvasive modalities as therapeutic touch; imagery; meditation; relaxation; balancing activity and rest; unconditional love; attitudes of hope, humor, and upbeat moods; the use of sound, color, and motion; health education; wellness counseling; nutrition counseling; meaningful presence; meaningful dialogue; affirmations (expressions of intentionality); bibliotherapy; journal keeping; esthetic experiences of art, poetry, and nature; collaborative advocacy; and computer-based virtual reality. The nurse recognizes that both noninvasive modalities and technology are simply tools used to apply knowledge in practice.
3. **Pattern Manifestation Knowing and Appreciation—Evaluation**—The nurse evaluates voluntary mutual patterning by means of pattern manifestation knowing. The nurse monitors and collects additional pattern information as it unfolds during voluntary mutual patterning and considers the pattern information within the context of continually emerging health patterning goals affirmed by the client.

Implications for Nursing Education

Education for nursing practice requires a commitment to lifelong learning. Education for professional nursing occurs at the baccalaureate, masters, and doctoral levels in college and university settings. The purpose of professional nursing educational programs is to provide the knowledge and tools necessary for nursing practice. The liberal

arts and sciences are a predominant component of the curriculum. The principles of resonancy, helicy, and integrality represent the major integrating concepts of the nursing courses.

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CALLISTA ROY'S ADAPTATION MODEL

Overview

Focuses on the responses of the human adaptive system, which can be an individual or a group, to a constantly changing environment. Adaptation is the central feature of the model. Problems in adaptation arise when the adaptive system is unable to cope with or respond to constantly changing stimuli from the internal and external environments in a manner that maintains the integrity of the system. Environmental stimuli are categorized as:

1. **Focal**—the stimuli most immediately confronting the person.
2. **Contextual**—the contributing factors in the situation.
3. **Residual**—other unknown factors that may influence the situation. When the factors making up residual stimuli become known, they are considered focal or contextual stimuli.

Adaptation occurs through two types of innate or acquired coping mechanisms used to respond to changing environmental stimuli:

1. **Regulator coping subsystem**—for individuals; receives input from the external environment and from changes in the individual's internal state and processes the changes through neural-chemical-endocrine channels to produce responses.
2. **Cognator coping subsystem**—for individuals; also receives input from external and internal stimuli that involve psychological, social, physical, and physiological factors, including regulator subsystem outputs. These stimuli then are processed through cognitive/emotive pathways, including perceptual/information processing, learning, judgment, and emotion.
3. **Stabilizer subsystem control process**—for groups; involves the established structures, values, and daily activities used by a group to accomplish its primary purpose and contribute to common purposes of society.
4. **Innovator Subsystem control process**—pertains to humans in groups; involves the structures and processes necessary for change and growth in human social systems.

Responses take place in four modes for individuals and groups:

1. **Physiological/physical mode**

Physiological mode—for individuals; concerned with basic needs requisite to maintaining the physical and physiological integrity of the individual human system. It encompasses oxygenation; nutrition; elimination; activity and rest; protection; senses; fluid, electrolyte, and acid-base balance; neurologic function; and endocrine function. The basic underlying need is physiologic integrity.

Physical mode—for groups; pertains to the manner in which the collective human adaptive system manifests adaptation relative to basic operating resources, that is, participants, physical facilities, and fiscal resources. The basic underlying need is resource adequacy, or wholeness achieved by adapting to change in physical resource needs.

2. Self-concept/group identity mode

Self-concept mode—for the individual; addresses the composite of beliefs and feelings that a person holds about him- or herself at a given time. The basic underlying need is psychic and spiritual integrity, the need to know who one is so that one can be or exist with a sense of unity, meaning, and purposefulness in the universe. The Physical Self refers to the individual's appraisal of his or her own physical being, including physical attributes, functioning, sexuality, health and illness states, and appearance; includes the components of body sensation and body image. The Personal Self refers to the individual's appraisal of his or her own characteristics, expectations, values, and worth, including self-consistency, self-ideal, and the moral-ethical-spiritual self.

Group identity mode—for groups; addresses shared relations, goals, and values, which create a social milieu and culture, a group self-image, and coresponsibility for goal achievement. Identity integrity is the underlying need, which implies the honesty, soundness, and completeness of the group members' identification with the group and involves the process of sharing identity and goals. This mode encompasses Interpersonal Relationships, Group Self-Image, Social Milieu, and Group Culture.

3. **Role function mode**—for the individual, focuses on the roles that the individual occupies in society. The basic underlying need is social integrity, the need to know who one is in relation to others so that one can act. For the group, focuses on the action components associated with group infrastructure that are designed to contribute to the accomplishment of the group's mission, or the tasks or functions associated with the group. The basic underlying need is role clarity, the need to understand and commit to fulfill expected tasks, so that the group can achieve common goals.
4. **Interdependence mode**—behavior pertaining to interdependent relationships of individuals and groups. The basic underlying need is relational integrity, the feeling of security in nurturing relationships. For the individual, focuses on interactions related to the giving and receiving of love, respect, and value, and encompasses Affective Adequacy, Developmental Adequacy, Resource Adequacy, Significant Others, and Support Systems. For the group, pertains to the social context in which the group operates including both private and public contacts both within the group and with those outside the group, and encompasses Affective Adequacy, Developmental Adequacy, Resource Adequacy, Context, Infrastructure, and Resources.

The four modes are interrelated. Responses in any one mode may have an effect on or act as a stimulus in one or all of the other modes. Responses in each mode are judged as either:

1. **Adaptive**—promote the goals of human adaptive system, including survival, growth, reproduction, and mastery.
2. **Ineffective**—those that do not contribute to the goals of the human adaptive system.

Implications for Nursing Practice

Nursing practice is directed toward promoting adaptation in each of the four response modes, thereby contributing to the person's health, quality of life, and dying with dignity. Roy's practice methodology is the Roy Adaptation Model Nursing Process, which encompasses six steps:

1. **Assessment of behavior**—The nurse systematically gathers data about the behavior of the human adaptive system and judges the current state of adaptation in each adaptive mode.

The nurse uses one or more of the Roy Adaptation Model–based research instruments or clinical tools to guide application and documentation of the practice methodology and systematically gathers data about observable and nonobservable behaviors for each aspect of the four adaptive modes, focusing on the individual or the group of interest. The nurse gathers behavioral data by means of observation, objective measurement, and purposeful interviews.

The nurse, in collaboration with the human adaptive system of interest, makes a tentative judgment about behaviors in each adaptive mode. Behaviors are tentatively judged as adaptive or ineffective responses, using the criteria of the human adaptive system's individualized goals and comparison of the behaviors with norms signifying adaptation. If norms are not available, the nurse considers adaptation difficulty as pronounced regulator activity with cognator ineffectiveness for individuals, or pronounced stabilizer activity with innovator ineffectiveness for groups. The nurse sets priorities for further assessment, taking the goals of adaptation into account.

The first priority is behaviors that threaten the survival of the individual, family, group, or community. The second priority is behaviors that affect the growth of the individual, family, group, or community. The third priority is behaviors that affect the continuation of the human race or of society. The fourth priority is behaviors that affect the attainment of full potential for the individual or group.

2. **Assessment of stimuli**—The nurse recognizes that stimuli must be amenable to independent nurse functions. Consequently, factors such as medical diagnoses and medical treatments are not considered stimuli because those factors cannot be independently managed by nurses.

The nurse identifies the internal and external focal and contextual stimuli that are influencing the behaviors of particular interest. The nurse recognizes that residual stimuli typically are present and attempts to confirm the presence of those stimuli by asking the human adaptive system about other stimuli and/or by recourse to theoretical or experiential knowledge. When residual stimuli finally are identified, they are classified as contextual or focal stimuli. The nurse identifies the internal stimulus of the adaptation level, and determines whether it reflects integrated, compensatory, or compromised life processes.

In situations where all behaviors are judged as adaptive responses, assessment of stimuli focuses on identifying potential threats to adaptation. The nurse identifies stimuli by means of observation, objective measurement, and purposeful interviews.

The nurse validates perceptions and thoughts about relevant stimuli with the human adaptive system of interest, using Orlando's deliberative nursing process:

The nurse shares perceptions and thoughts about relevant stimuli with the human adaptive system.

The nurse asks if those are the relevant stimuli.

The human adaptive system confirms or does not confirm the identified stimuli as relevant.

If the stimuli are not confirmed as relevant, the nurse and the human adaptive system discuss their perceptions of the situation until agreement about relevant stimuli is reached.

3. **Nursing diagnosis**—The nurse uses a process of judgment to make a statement conveying the adaptation status of the human adaptive system of interest. The nursing diagnosis is a statement that identifies the behaviors of interest together with the most relevant influencing stimuli. The nurse uses one of three different approaches to state the nursing diagnosis:

Behaviors are stated within each adaptive mode and with their most relevant influencing stimuli.

A summary label for behaviors in each adaptive mode with relevant stimuli is used.

A label that summarizes a behavioral pattern across adaptive modes that is affected by the same stimuli is used.

The nurse may link the Roy Adaptation Model-based nursing diagnosis with a relevant diagnosis from the taxonomy of the North American Nursing Diagnosis Association (NANDA). The nurse assigns a priority to each nursing diagnosis—the first priority is behaviors that threaten the survival of the individual, family, group, or community; the second priority is behaviors that affect the growth of the individual, family, group, or community; the third priority is behaviors that affect the continuation of the human race or of society; the fourth priority is behaviors that affect the attainment of full potential for the individual or group.

4. **Goal setting**—The nurse articulates a clear statement of the behavioral outcomes in response to nursing provided to the human adaptive system. The nurse actively involves the human adaptive system in the formation of behavioral goals if possible. The nurse states goals as specific short-term and long-term behavioral outcomes of nursing intervention. The goal statement designates the behavior of interest, the way in which the behavior will change, and the time frame for attainment of the goal. Goals may be stated for ineffective behaviors that are to be changed to adaptive behaviors and also for adaptive behaviors that should be maintained or enhanced.
5. **Nursing intervention**—The nurse selects and implements nursing approaches that have a high probability of changing stimuli or strengthening adaptive processes. Nursing intervention is the management of stimuli. The nurse manages the focal stimulus first if possible, and then manages the contextual stimuli. The nurse uses the McDonald and Harms nursing judgment method, in collaboration with the human adaptive system, to select a nursing intervention:

Alternative approaches to management of stimuli are listed, along with the consequences of management of each stimulus.

The probability (high, moderate, low) for each consequence is determined.

The value of the outcomes of each approach is designated as desirable or undesirable.

The options are shared with the human adaptive system. The nursing intervention with the highest probability of reaching the valued goal is selected. The nurse determines and implements the steps that will manage the stimulus appropriately.

6. **Evaluation**—The nurse judges the effectiveness of nursing interventions in relation to the behaviors of the human adaptive system. The nurse systematically reassesses observable and nonobservable behaviors for each aspect of the four adaptive modes. The nurse gathers the behavioral data by means of observation, objective measurement, and purposeful interviews. The nurse uses the following criteria to judge the effectiveness of nursing intervention:

The goal was attained.

The human adaptive system manifests behavior stated in the goals.

The human adaptive system demonstrates a positive response to the stimuli that frees energy for responses to other stimuli.

If the criteria for nursing intervention effectiveness are met, and if there is no threat that the behavior will become ineffective again, then that behavior may be deleted from nursing concern. If, however, the criteria are not met, the nurse must determine what went wrong. Possibilities are:

The goals were unrealistic or unacceptable to the human adaptive system.

The assessment data were inaccurate or incomplete.

The selected nursing intervention approaches were not implemented properly.

The nurse then returns to Assessment of Behaviors to closely examine behaviors that continue to be ineffective and to try to further understand the situation. The end result of the Roy Adaptation Model Nursing Process is an update of the nursing care plan.

Implications for Nursing Education

The model is an appropriate curriculum guide for diploma, associate degree, baccalaureate degree, and master's degree nursing education programs. Curriculum content is based on the components of the conceptual model. The vertical strands of the curriculum focus on theory and practice. The theory strand encompasses content on the adapting person, health/illness, and stress/disruption. The practice strand emphasizes nursing management of environmental stimuli. The horizontal strands include the nursing process and student adaptation and leadership.

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Appendix N1–3 Nursing Theories

A theory is defined as one or more relatively concrete and specific concepts that are derived from a conceptual model, the propositions that narrowly describe those concepts, and the propositions that state relatively concrete and specific relations between two or more of the concepts. Grand theories are rather broad in scope. They are made up of concepts and propositions that are less abstract and general than the concepts and propositions of a conceptual model but are not as concrete and specific as the concepts and propositions of a middle-range theory. Middle-range theories are narrower in scope than grand theories. They are made up of a limited number of concepts and propositions that are written at a relatively concrete and specific level.

HELEN ERICKSON, EVELYN TOMLIN, AND MARY ANN SWAIN'S THEORY OF MODELING AND ROLE MODELING

Overview

A grand theory or paradigm for the practice of professional nursing that focuses on the processes by which the nurse seeks to understand the client's unique model of the world and by which the nurse understands that unique model within the context of scientific theories and plans nursing interventions that promote health. The two major concepts of the theory are:

1. **Modeling**—an act that represents the process the nurse uses to develop an image and understand the client's world from the client's perspective. Modeling encompasses the art and science of nursing. The art of modeling is the development of a

mirror image of the situation from the client's perspective, which requires communication skills that help the nurse to enter into the foreign world of the client. The science of modeling is the scientific aggregation and analysis of data collected about the client's model of the world.

2. **Role Modeling**—occurs only after modeling has been accomplished. It involves the facilitation of the individual in attaining, maintaining, or promoting health through purposeful interventions, which are planned on the basis of the analysis and synthesis of data about the client's model of the world. Role modeling also encompasses the art and science of nursing. The art of role modeling occurs when the nurse plans and implements unique interventions with respect to a theoretical base for the practice of nursing. Role modeling is the essence of nurturance, the basis for the predictive and prescriptive component of nursing practice. It requires an unconditional acceptance of the client as the client is while gently encouraging and facilitating growth and development at the client's own pace and within the client's own model of the world.

Implications for Nursing Practice

The nursing process is an ongoing, interactive exchange of information, feelings, and behavior between nurses and clients. The nurse's goal is to nurture and support the client's self-care. Nursing practice is directed toward collection of data primarily from clients but also from families, nurses, and other health care providers. Data collection is organized into four categories:

1. **Description of the situation, including:** *Overview of the situation*—an overview of the client's situation from the client's perspective;
Etiology—identification of relevant etiological factors, including stressors and distressors;
Therapeutic needs—identification of possible therapeutic interventions.
2. **Immediate and long-term expectations**—development of an understanding of the client's personal orientation regarding present and future expectations.
3. **Resource potential**—available internal and external resources.
External—determination of the nature of the external support system, from the social network, support system, and health care system.
Internal—determination of the client's strengths, virtues, and currently available internal resources, including adaptive potential, feeling states, and psychological status.
4. **Current and future goals and life tasks**—determination of the client's current developmental status so as to understand his or her personal model and to use appropriate communication skills.

Data collection is followed by aggregation, analysis, and synthesis of the data. Nursing diagnoses are derived from the analysis and synthesis of the data. Nursing interventions that are acceptable within the client's model of the world are then developed. The goals of nursing intervention and their associated aims are:

1. **Goal:** Develop a trusting and functional nurse-client relationship. *Aim:* Build trust.
2. **Goal:** Facilitate a futuristic and positive self-projection. *Aim:* Promote the client's positive orientation.
3. **Goal:** Promote affiliated individuation with the minimum possible degree of ambivalence. *Aim:* Promote client's control.
4. **Goal:** Promote a dynamic, adaptive, and holistic health state. *Aim:* Affirm and promote the client's strengths.
5. **Goal:** Promote and nurture coping mechanisms that satisfy basic needs and permit growth-need satisfaction. *Aim:* Set mutual goals that are health-directed.

Implications for Nursing Education

Education of professional nursing practice requires consideration of seven factors that are required for implementation of the modeling and role modeling theory. These factors are:

- Have confidence in nursing.
- Establish a belief system.
- Promote adherence.
- Develop a language.
- Give and get collegial support.
- Be willing to take risks.
- Believe in yourself.

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MADELEINE LEININGER'S THEORY OF CULTURE CARE DIVERSITY AND UNIVERSALITY

Overview

A grand theory focusing on the discovery of human care diversities and universalities and ways to provide culturally congruent care to people. The concepts of the theory are:

1. **Care**—abstract and concrete phenomena related to assisting, supporting, or enabling experiences or behaviors toward or for others with evident or anticipated needs to ameliorate or improve a human condition or lifeway.
2. **Caring**—the actions and activities directed toward assisting, supporting, or enabling another individual or group with evident or anticipated needs to ameliorate or improve a human condition or lifeway or to face death.
3. **Culture**—the learned, shared, and transmitted values, beliefs, norms, and lifeways of a particular group that guide thinking, decisions, and actions in patterned ways; encompasses several cultural and social structure dimensions: technological factors, religious and philosophical factors, kinship and social factors, political and legal factors, economic factors, educational factors, and cultural values and lifeways.
4. **Language**—word usages, symbols, and meanings about care.
5. **Ethnohistory**—past facts, events, instances, experiences of individuals, groups, cultures, and institutions that are primarily people centered (ethno) and that describe, explain, and interpret human lifeways within particular cultural contexts and over short or long periods of time.
6. **Environmental context**—the totality of an event, situation, or particular experiences that give meaning to human expressions, interpretations, and social interactions in particular physical, ecological, sociopolitical, and/or cultural settings.
7. **Health**—a state of well-being that is culturally defined, valued, and practiced, and which reflects the ability of individuals (or groups) to perform their daily role activities in culturally expressed, beneficial, and patterned lifeways.
8. **Worldview**—the way people tend to look out on the world or their universe to form a picture of or a value stance about their life or the world around them.
9. **Cultural care**—the subjectively and objectively transmitted values, beliefs, and patterned lifeways that assist, support, or enable another individual or group to maintain well-being and health, to improve his or her human condition and lifeway, to deal with illness, handicaps, or death. The two dimensions are:
 - Cultural care diversity*—the variabilities and/or differences in meanings, patterns, values, lifeways, or symbols of care within or between collectivities that are related to assistive, supportive, or enabling human care expressions.
 - Cultural care universality*—the common, similar, or dominant uniform care meanings, patterns, values, lifeways, or symbols that are manifest among many cultures and reflect assistive, supportive, facilitative, or enabling ways to help people.
10. **Care systems**—the values, norms, and structural features of an organization designed for serving people's health needs, concerns, or conditions. The two types of care systems are:
 - Generic (emic) lay care system*—traditional or local indigenous health care or cure practices that have special meanings and uses to heal or assist people, which are generally offered in familiar home or community environmental contexts with their local practitioners.
 - Professional (etic) health care system*—professional care or cure services offered by diverse health personnel who have been prepared through formal professional programs of study in special educational institutions.
11. **Culturally congruent care**—culturally based care knowledge, acts, and decisions used in sensitive and knowledgeable ways to appropriately and meaningfully fit the cultural values, beliefs, and lifeways of clients for their health and well being, or to prevent illness, disabilities, or death. The three modes of culturally congruent care are:
 - Culture care preservation and/or maintenance* refers to assistive, supportive, facilitative, or enabling professional acts or decisions that help cultures to retain, preserve, or maintain beneficial care beliefs and values or to face handicaps and death.
 - Culture care accommodation and/or negotiation* refers to assistive, accommodating, facilitative, or enabling creative provider care actions or decisions

that help cultures to adapt to or negotiate with others for culturally congruent, safe, and effective care for their health, well being, or to deal with illness or dying.

Culture care repatterning and/or restructuring refers to assistive, supportive, facilitative, or enabling professional actions and mutual decisions that would help people to reorder, change, modify, or restructure their life ways and institutions for better (or beneficial) health care patterns, practices, or outcomes.

12. **Cultural and social structure factors** — Factors that influence expressions and meanings of care, including gender and class differences in religion or spirituality, kinship or social ties, politics, legal issues, education, economics, technology, philosophy of life, and cultural beliefs and values.

Implications for Nursing Practice

Nursing practice is directed toward improving and providing culturally congruent care to people. A practice methodology for the Theory of Culture Care Diversity and Universality is as follows:

Goals of Nursing Practice are: to improve and to provide culturally congruent care to people that is beneficial, will fit with, and be useful to the client, family, or culture group healthy lifeways; to provide culturally congruent nursing care in order to improve or offer a different kind of nursing care service to people of diverse or similar cultures.

Clients include individuals, families, subcultures, groups, communities, and institutions.

Culturalogical Assessment The nurse maintains a holistic or total view of the client's world by using the Sunrise Model and Enablers to guide assessment of cultural beliefs, values, and lifeways.

The nurse is aware that the client may belong to a subculture or special group that maintains its own values and beliefs that differ from the values and beliefs of the dominant culture. The nurse shows a genuine interest in the client and learns from and maintains respect for the client. The nurse asks open-ended questions and maintains the role of an active listener, learner, and reflector. The nurse shares professional knowledge only if the client asks about such knowledge.

The nurse begins the assessment with such questions as: What would you like to share with me today about your experiences or beliefs, to help you keep well? Are there some special ideas or ways you would like nurses to care for you? The nurse gives attention to clients' gender differences, communication modes, special language terms, interpersonal relationships, and use of space and foods.

Nursing Judgments, Decisions, and Actions Nursing practice requires the coparticipation of nurses and clients working together to identify, plan, implement, and evaluate the appropriate mode(s) of culturally congruent care. Nursing decisions and actions encompass assisting, accommodating, supporting, facilitating, and enabling. Nurse and client select one or more mode of culturally congruent care.

Culture Care Preservation and/or Maintenance—used when professional decisions and actions are needed to help clients of a designated culture to retain, preserve, or maintain care beliefs

Culture Care Accommodation and/or Negotiation—used when professional decisions and actions are needed to help clients of a designated culture adapt to or negotiate with others for care.

Culture Care Repatterning and/or Restructuring—used when professional decisions and actions are needed to help clients of a designated culture to reorder, change, modify, or restructure their life ways and institutions.

Clinical Protocols Specific nursing practices or clinical protocols are derived from the findings of research guided by the Theory of Culture Care Diversity and Universality. The research findings are used to develop protocols for cultural-congruent care that blends with the particular cultural values, beliefs, and lifeways of the client, and is assessed to be beneficial, satisfying, and meaningful to the client.

Implications for Nursing Education

Professional nursing care, learned in formal educational programs, builds upon the generic care given by naturalistic lay and folk care givers. The curriculum emphasizes transcultural nursing knowledge, with formal study about different cultures in the world, as well as culture-universal and culture-specific health care needs of people and nursing care practices. Transcultural nurse generalists are prepared at the baccalaureate level for the general use of transcultural nursing concepts, principles, and practices. Transcultural nurse specialists, who are prepared at the doctoral level, have in-depth understanding of a few cultures and can function as field practitioners, teachers, researchers, or consultants. Certification is awarded by the Transcultural Nursing So-

ciety to nurses who have educational preparation in transcultural nursing or the equivalent and who demonstrate basic clinical competence in transcultural nursing.

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MARGARET NEWMAN'S THEORY OF HEALTH AS EXPANDING CONSCIOUSNESS

Overview

A grand theory focusing on health as the expansion of consciousness, with emphasis on the idea that every person in every situation, no matter how disordered and hopeless the situation may seem, is part of the universal process of expanding consciousness. The concepts of the theory are:

1. **Consciousness**—the informational capacity of human beings, that is, the ability of humans to interact with their environments. Consciousness encompasses interconnected cognitive and affective awareness, physiochemical maintenance including the nervous and endocrine systems, growth processes, the immune system, and the genetic code. Consciousness can be seen in the quantity and quality of the interaction between human beings and their environments. The process of life is toward higher levels of consciousness; sometimes this process is smooth, pleasant, harmonious; other times it is difficult and disharmonious, as in disease.
2. **Pattern**—a fundamental attribute of all there is and reveals unity in diversity; information that depicts the whole, understanding of the meaning of all the relationships at once; relatedness; self-organizing over time, such that it becomes more highly organized with more information. Pattern identifies particular people and is an identification of the wholeness of the person. Pattern is manifested as exchanging (interchanging matter and energy between person and environment and transforming energy from one form to another); communicating (interchanging information from one system to another); relating (connecting with other persons and the environment); valuing (assigning worth); choosing (selecting of one or more alternatives); moving (rhythmic alternating between activity and rest); perceiving (receiving and interpreting information); feeling (sensing physical and intuitive awareness); and knowing (personal recognition of self and world). Pattern encompasses three dimensions—Movement-Space-Time, Rhythm, and Diversity.

Movement-Space-Time—movement is the natural condition of life, an essential property of matter and a means of communicating; when movement ceases, it is an indication that life has gone out of the organism; movement is the means whereby one perceives reality and becomes aware of self; movement is a means whereby space and time become a reality. Space encompasses personal space, inner space, and life space as dimensions of space relevant to the individual, and territoriality, shared space, and distancing as dimensions relevant to the family. Time is a function of movement; the amount of time perceived to be passing (subjective time); clock time (objective time). Time and space have a complementary relationship.

Rhythm—basic to movement; the rhythm of movement is an integrating experience.

Diversity—seen in the parts.

Implications for Nursing Practice

Nursing practice is directed toward facilitating pattern recognition by connecting with the client in an authentic way, and assisting the client to discover new rules for a higher level of organization or consciousness. Newman's Research as Praxis Protocol is a research/practice methodology. The phenomenon of interest is the process of expanding consciousness.

The Interview The meeting of the nurse and the study participant/client occurs when there is a mutual attraction via congruent patterns, i.e., interpenetration of the two fields. The nurse and study participant/client enter into a partnership, with the mutual goal of participating in an authentic relationship, trusting that in the process of its unfolding, both will emerge at a higher level of consciousness.

Transcription The nurse listens carefully to and transcribes the tape of the interview soon after the interview is completed. The nurse is sensitive to the relevance of the data and may omit comments made by the study participant/client that do not directly relate to his or her life pattern, with an appropriate note to the place on the tape where such comments occurred, in case those comments seem important later.

Development of the Narrative: Pattern Recognition The nurse selects the statements deemed most important to the study participant/client and arranges the key segments of the data in chronological order to highlight the most significant events and persons. The data remain the same except in the order of presentation. Natural breaks where a pattern shift occurs are noted and form the basis of the sequential patterns. Recognition of the pattern of the whole, made up of segments of the study participant/client's relationships over time, will emerge for the nurse. The nurse then transmutes the narrative into a simple diagram of the sequential pattern configurations.

Diagram: Pattern Recognition The nurse then transmutes the narrative into a simple diagram of the sequential pattern configurations.

Follow-Up: Pattern Recognition The nurse conducts a second interview with the study participant/client to share the diagram or other visual portrayal of the pattern. The nurse does not interpret the diagram. Rather, it is used simply to illustrate the study participant/client's story in graphic form, which tends to accentuate the contrasts and repetitions in relationships over time. The mutual viewing of the graphic form is an opportunity for the study participant/client to confirm and clarify or revise the story being portrayed. The mutual viewing also is an opportunity for the nurse to clarify any aspect of the story about which he or she has any doubt.

The nature of the pattern of person-environment interaction will begin to emerge in terms of energy flow (e.g., blocked, diffuse, disorganized, repetitive, or whatever descriptors and metaphors come to mind to describe the pattern). The study participant/client may express signs that pattern recognition is occurring (or already has occurred) in the interval following the first interview) as the nurse and study participant/client reflect together on the study participant/client's life pattern. Sometimes, no signs of pattern recognition emerge, and if so, that characterizes the pattern for that person. It is not to be forced.

Application of Theory of Health as Expanding Consciousness The nurse undertakes more intense analysis of the data in light of the Theory of Health as Expanding Consciousness after the interviews are completed. The nurse evaluates the nature of the sequential patterns of interaction in terms of quality and complexity and interprets the patterns according to the study participant/client's position on Young's spectrum of consciousness. The sequential patterns represent presentational construing or relationships. Any similarities of pattern among a group of study participants/clients having a similar experience may be designated by themes and stated in propositional form.

Implications for Nursing Education

Education for nursing should be the professional doctoral degree, the Doctor of Nursing (ND), which requires a strong arts and sciences background as pre-professional education. Students and practicing nurses who plan to use the Theory of Health as Expanding Consciousness have to be prepared for personal transformation in the way that they view the world and nursing.

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IDA JEAN ORLANDO'S THEORY OF THE DELIBERATIVE NURSING PROCESS OVERVIEW

Overview

A middle-range predictive theory focusing on an interpersonal process that is directed toward facilitating identification of the nature of the patient's distress and his or her immediate needs for help. The concepts of the theory are:

- 1. Patient's behavior**—behavior observed by the nurse in an immediate nurse-patient situation. The two dimensions are:

Need for help—a requirement of the patient that, if supplied, relieves or diminishes immediate distress or improves immediate sense of adequacy or well-being.

Improvement—an increase in patients' mental and physical health, their well-being, and their sense of adequacy. The need for help and improvement can

be expressed in both nonverbal and verbal forms. Visual manifestations of nonverbal behavior include such motor activities as eating, walking, twitching, and trembling, as well as such physiological forms as urinating, defecating, temperature and blood pressure readings, respiratory rate, and skin color. Vocal forms of nonverbal behavior—nonverbal behavior that is heard—include crying, moaning, laughing, coughing, sneezing, sighing, yelling, screaming, groaning, and singing. Verbal behavior refers to what a patient says, including complaints, requests, questions, refusals, demands, and comments or statements.

2. **Nurse's reaction**—the nurse's nonobservable response to the patient's behavior. The three dimensions are:

Perception—physical stimulation of any one of the five senses by the patient's behavior.

Thought—an idea that occurs in the nurse's mind.

Feeling—a state of mind inclining the nurse toward or against a perception, thought, or action; occurs in response to the nurse's perceptions and thoughts.

3. **Nurse's activity**—the observable actions taken by nurses in response to their reactions, including instructions, suggestions, directions, explanations, information, requests, and questions directed toward the patient; making decisions for the patient; handling the patient's body; administering medications or treatments; and changing the patient's immediate environment. The two dimensions of nurse's activity are:

Automatic nursing process—actions decided on by the nurse for reasons other than the patient's immediate need.

Deliberative nursing process (process discipline)—a specific set of nurse behaviors or actions directed toward the patient's behavior that ascertain or meet the patient's immediate needs for help.

Implications for Nursing Practice

Nursing practice is directed toward identifying and meeting the patient's immediate needs for help through use of Orlando's Practice Methodology.

Observations encompass any and all information pertaining to a patient that the nurse acquires while on duty.

Direct Observations are the nurse's reaction to the patient's behavior. Direct observations are any perception, thought, or feeling the nurse has from his or her own experience of the patient's behavior at any or several moments in time.

Indirect Observations consist of any information that is derived from a source other than the patient. This information pertains to, but is not directly derived from, the patient. Actions are carried out with or for the patient.

Nurse's Activity: Deliberative Nursing Process—The process used to share and validate the nurse's direct and indirect observations is the Deliberative Nursing Process. Clinical protocols contain the specific requirements for the Deliberative Nursing Process. The nurse may express and explore any aspect of his or her reaction to the patient's behavior—perception, thought, or feeling. If exploration of one aspect of the nurse's reaction does not result in identification of the patient's need for help, then another aspect of the reaction can be explored. If exploration of all aspects of the nurse's reaction does not yield a verbal response from the patient, then the nurse may use negative expressions to demonstrate continued interest in the patient's behavior and to give the patient permission to respond with his or her own negative reaction. Examples of negative expressions by the nurse are: Is it that you don't think I'll understand? Am I wrong? It looked like that procedure was very painful, and you didn't say a word about it.

Direct Help—The nurse meets the patient's need directly when the patient is unable to meet his or her own need and when the activity is confined to the nurse-patient contact.

Indirect Help—The nurse meets the patient's need indirectly when the activity extends to arranging the services of a person, agency, or resource that the patient cannot contact by himself or herself.

Reporting The nurse receives reports about the patient's behavior from other nurses, and from other health professionals. The nurse reports his or her observations of the patient's behavior to other nurses and other health professionals.

Recording The nurse records the nursing process, including: the nurse's perception of or about the patient; the nurse's thought and/or feeling about the perception; what the nurse said and/or did to, with, or for the patient.

Implications for Nursing Education

Students should be trained in the use of the deliberative nursing process for all person-to-person contacts. The purpose of training is to change the nurse's activity from personal and automatic to disciplined and professional. Training is facilitated by use of

process recordings that include perceptions of or about the patient, thoughts and/or feelings about the perception, and what was said and/or done to, with, or for the patient. The process discipline can be successfully taught in 6 to 12 weeks.

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ROSEMARIE PARSE'S THEORY OF HUMAN BECOMING

Overview

A grand theory focusing on human experiences of participation with the universe in the cocreation of health. The concepts of the theory are:

1. **Human becoming**—a unitary construct referring to the human being's living health.
2. **Meaning**—the linguistic and imagined content of something and the interpretation that one gives to something.
3. **Rhythmicity**—the cadent, paradoxical patterning of the human-universe mutual process.
4. **Transcendence**—reaching beyond with possibles—the hopes and dreams envisioned in multidimensional experiences [and] powering the originating of transforming.
5. **Imaging**—reflective/prereflective coming to know the explicit/tacit all-at-once.
6. **Valuing**—confirming/not confirming cherished beliefs in light of a personal world view.
7. **Languaging**—signifying valued images through speaking/being silent and moving/being still.
8. **Revealing/Concealing**—disclosing/not disclosing all-at-once.
9. **Enabling/Limiting**—living the opportunities/restrictions present in all choosings all-at-once.
10. **Connecting/Separating**—being with and apart from others, ideas, objects, and situations all-at-once.
11. **Powering**—the pushing/resisting process of affirming/not affirming being in light of nonbeing.
12. **Originating**—inventing new ways of conforming/nonconforming in the certainty/uncertainty of living.
13. **Transforming**—shifting the view of the familiar/unfamiliar, the changing of change in coconstituting anew in a deliberate way.

The three major principles of the theory of human becoming are:

1. **Structuring meaning multidimensionally is cocreating reality through the languaging of valuing and imaging**—means that humans construct what is real for them from choices made at many realms of the universe.
2. **Cocreating rhythmical patterns of relating is living the paradoxical unity of revealing-concealing and enabling-limiting while connecting-separating**—means that humans live in rhythm with the universe coconstituting patterns of relating.
3. **Cotranscending with the possibles is powering unique ways of originating in the process of transforming**—means that humans forge unique paths with shifting perspectives as a different light is cast on the familiar.

Implications for Nursing Practice

Nursing practice is directed toward respecting the quality of life as perceived by the person and the family. The practice methodology is as follows:

Principle 1: Structuring meaning multidimensionally. *Illuminating Meaning:* explicating what was, is, and will be. *Explicating:* making clear what is appearing now through languaging.

Principle 2: Cocreating rhythmical patterns. *Synchronizing rhythms:* dwelling with the pitch, yaw, and roll of the human-universe process. *Dwelling with:* immersing with the flow of connecting/separating.

Principle 3: *Mobilizing transcendence:* moving beyond the meaning moment with what is not-yet. *Moving beyond:* propelling with envisioned possibles of transforming.

Contexts of nursing: Nurse-person situations and nurse-group situations. Participants include children and adults. Locations include homes, shelters, health care centers,

parish halls, all departments of hospitals and clinics, rehabilitation centers, offices, and other milieus where nurses are with people.

Goal of discipline of nursing is quality of life from the person's, family's, and community's perspective.

Goal of the human becoming nurse is to be truly present with people as they enhance their quality of lives.

True presence is a special way of "being with" in which the nurse is attentive to moment-to-moment changes in meaning as she or he bears witness to the person's or group's own living of value priorities.

Coming-to-be Present is an all-at-once gentling down and lifting up. True presence begins in the coming-to-be-present moments of preparation and attention. Preparation involves: an emptying to be available to bear witness to the other or others; being flexible, not fixed but gracefully present from one's center; dwelling with the universe at the moment, considering the attentive presence about to be. Attention involves focusing on the moment at hand for immersion.

Face-to-face discussions—Nurse and person engage in dialogue. Conversation may be through discussion in general or through interpretations of stories, films, drawings, photographs, music, metaphors, poetry, rhythmic movements, and other expressions.

Silent immersion—A process of the quiet that does not refrain from sending and receiving messages. A chosen way of becoming in the human-universe process lived in the rhythm of speaking—being silent, moving—being still as valued images incarnate meaning. True presence without words.

Lingering presence—Recalling a moment through a lingering presence that arises after an immediate engagement. A reflective-prereflective "abiding with" attended to through glimpses of the other person, idea, object, or situation.

Ways of Changing Health Patterns in True Presence *Creative Imagining Picturing* by seeing, hearing, and feeling what a situation might be like if lived in a different way.

Affirming Personal Becoming Uncovering preferred personal health patterns by critically thinking about how or who one is.

Glimpsing the paradoxical Changing one's view of a situation by recognizing incongruities in that situation.

Implications for Nursing Education

Course content flows from the three principles of the theory. Clinical courses emphasize the knowledge and skills requisite to the application of the practice methodology. Graduate education builds on baccalaureate education and prepares specialists who concentrate on creating and testing concepts of the theory of human becoming.

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NOLA PENDER'S HEALTH PROMOTION MODEL

Overview

A middle-range theory focusing on the relation of individual characteristics and experiences, behavior-specific, cognitions and affect, commitment to a plan of action, and competing demands and preferences as to health-promoting behavior. The concepts of the theory are as follows:

1. **Individual characteristics and experiences** —prior related behavior and inherited and acquired characteristics that influence beliefs, affect, and performance of health-promoting behavior.

Prior related behavior—a behavior, enacted in the past, that is the same as or similar to the health-promoting behavior of interest.

Personal factors—inherited and acquired biological, psychological, and socio-cultural characteristics.

Personal biological factors—encompass characteristics such as age, gender, body mass index, pubertal status, menopausal status, aerobic capacity, strength, agility, and balance.

Personal psychological factors—encompass characteristics such as self-esteem, self-motivation, personal competence, perceived health status, and definition of health.

Personal sociocultural factors—encompass characteristics such as race, ethnicity, acculturation, education, and socioeconomic status.

2. **Behavior-specific cognitions and affect**—factors that act as motivators for commitment to a plan of action and performance of health-promoting behavior and that are modifiable through nursing actions.

Perceived benefits of action—perception of anticipated positive outcomes that will occur as a result of performing a health-promoting behavior. There is a positive relation between perceived benefits of action and commitment to a plan of action.

Perceived barriers to action—perception of anticipated, imagined, or real blocks and personal costs of performing a health-promoting behavior; a constraint on commitment to a plan of action.

Perceived self-efficacy—perception of personal capability to organize and execute a health-promoting behavior; the higher the perceived self-efficacy, the lower the perceived barriers to action and the higher the likelihood of commitment to a plan of action and actual performance of a health-promoting behavior.

Activity-related affect—subjective positive or negative feelings that occur before, during, or following performance of a health-promoting behavior. There is a reciprocal positive relation between affect toward a behavior and perceived self-efficacy, such that the more positive the affect, the greater the perceived self-efficacy and vice versa. There is a positive relation between affect toward a behavior and commitment to a plan of action and performance of a health-promoting behavior.

Interpersonal influences—cognitions about the behaviors, beliefs, or attitudes of significant others, including family, peers, and health care providers. Commitment to a plan of action and performance of health-promoting behavior is more likely to occur when significant others model the behavior, expect the behavior to occur, and provide assistance and support to enable the behavior. The cognitions include:

- Norms that reflect expectations of significant others;
- Social support, including instrumental and emotional encouragement;
- Modeling, which refers to vicarious learning through observing others who are performing a health-promoting behavior.

Situational influences—personal perceptions and cognitions of a particular external environmental situation that can facilitate or impede performance of health-promoting behavior, including perceptions of options available, demand characteristics, and aesthetic environmental features.

3. **Commitment to a plan of action**—intention to perform a health-promoting behavior and identification of a planned strategy that leads to performance of the behavior. There is a positive relation between commitment to a plan of action and maintenance of performance of a health-promoting behavior over time.
4. **Immediate competing demands and preferences**—competing demands are alternative behaviors over which individuals have low control due to environmental contingencies, such as work or family care responsibilities; competing preferences are alternative behaviors over which individuals exert relatively high control, such as choice of a particular food for a snack or meal. Commitment to a plan of action is less likely to result in the desired health-promoting behavior when competing demands require immediate attention or when competing preferences are more attractive.
5. **Health-promoting behavior**—action outcome directed toward attaining positive health outcomes.

Implications for Nursing Practice

Nursing practice is directed toward modification of cognitions, affect, and the interpersonal and physical environment to create incentives for health actions for people of all ages.

Implications for Nursing Education

Education for nursing practice focuses on promotion of health and prevention of illness and disease prevention. Health education strategies are emphasized.

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HILDEGARD PEPLAU'S THEORY OF INTERPERSONAL RELATIONS

Overview

A middle-range descriptive theory focusing on the phases of the interpersonal process that occurs when an ill person and a nurse come together to resolve a difficulty felt in relation to health. The one concept of the theory is nurse-patient relationship, which is an interpersonal process made up of four components—two persons, the professional expertise of the nurse, and the client's problem or need for which expert nursing services are sought, and which has three discernible phases; one phase has two subphases:

1. **Orientation**—the phase in which the nurse first identifies himself or herself by name and professional status and states the purpose, nature, and time available for the patient; the phase during which the nurse conveys professional interest and receptivity to the patient, begins to know the patient as a person, obtains essential information about the patient's health condition, and sets the tone for further interactions.
2. **Working**—the phase in which the major course occurs. The two subphases are:
 - Identification**—the subphase during which the patient learns how to make use of the nurse-patient relationship.
 - Exploitation**—the subphase during which the patient makes full use of available professional services.
3. **Termination**—the phase in which the work accomplished is summarized and closure occurs.

Implications for Nursing Practice

Nursing practice is directed toward promoting favorable changes in patients, which is accomplished through the nurse-patient relationship. Within that relationship, the nurse's major function is to study the interpersonal relations between the patient/client and others. Peplau's clinical methodology, which can be used for both nursing practice and nursing research, is as follows:

Observation—Purpose is the identification, clarification, and verification of impressions about the interactive drama of the pushes and pulls in the relationship between nurse and patient, as they occur.

Participant Observation—Nurse's Behavior includes observation of the nurse's words, voice tones, body language, and other gestural messages. Patient's Behavior includes observation of the patient's words, voice tones, body language, and other gestural messages

Interpersonal phenomena include observation of what goes on between the patient and the nurse.

Reframing empathic linkages occurs when the nurse's and/or the patient's ability to feel in self the emotions experienced by the other person in the same situation is converted to verbal communications by the nurse asking: What are you feeling right now?

Communication aims are the selection of symbols or concepts that convey both the reference, or meaning in the mind of the individual, and referent, the object or actions symbolized in the concept; and the wish to struggle toward the development of common understanding for words between two or more people.

Interpersonal techniques are verbal interventions used by nurses during nurse-patient relationships aimed at accomplishing problem resolution and competence development in patients.

Principle of clarity—Words and sentences used to communicate are clarifying events when they occur within the frame of reference of common experiences of both or all participants, or when their meaning is established or made understandable as a result of joint and sustained effort of all parties concerned. Clarity in communication is promoted when the nurse and the patient discuss their preconceptions about the meaning of words and work toward a common understanding. Clarity is achieved when the meaning of a word to the patient is expressed and talked over and a new view is expanded in awareness.

Principle of continuity—Continuity in communication occurs when language is used as a tool for the promotion of coherence or connections of ideas expressed and leads to discrimination of relationships or connections among ideas and the feelings, events, or themes conveyed in those ideas. Continuity is promoted when the nurse is able to pick up threads of conversation that the patient offers in the course of a conversation

and over a longer period such as a week, and when he or she aids the patient to focus and to expand these threads.

Recording is the written record of the communication between nurse and patient, that is, the data collected through participant observation and reframing of empathic linkages. The aim is to capture the exact wording of the interaction between the nurse and the patient.

Data analysis focuses on testing the nurse's hypotheses, which are formulated from first impressions or hunches about the patient.

Phases of the nurse-patient relationship—Identify the phase of nurse-patient relationship in which communication occurred.

Roles: Identify the roles taken by the nurse and the patient in each phase of the nurse-patient relationship.

Relations: Identify the connections, linkages, ties, and bonds that go on or went on between a patient and others, including family, friends, staff, or the nurse. Analyze the relations to identify their nature, origin, function, and mode.

Pattern integrations: Identify the patterns of the interpersonal relation between two or more people which together link or bind them and which enable the people to transform energy into patterns of action that bring satisfaction or security in the face of a recurring problem. Determine the type of pattern integration: complementary—the behavior of one person fits with and thereby complements the behavior of the other person; mutual—the same or similar behaviors are used by both persons; alternating—different behaviors used by two persons alternate between the two persons; antagonistic—the behaviors of the two persons do not fit but the relationship continues.

Implications for Nursing Education

Nursing is an educative instrument, a maturing force, that aims to promote forward movement of personality in the direction of creative, constructive, productive, personal, and community living. The task of each school of nursing is the fullest development of the nurse as a person who is aware of how he or she functions in a situation and as a person who wants to nurse patients in a helpful way.

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REVA RUBIN'S THEORY OF CLINICAL NURSING

Overview

A grand theory focusing on patients as persons undergoing subjectively involved experiences of varying degrees of tension or stress in a health problem situation. The major concepts are the situation of the patient and nursing care. Statements related to the patient situation and nursing care are:

1. Nursing care is dependent on the best estimate available of the situation of the patient.
2. Nursing care exists in a one-to-one relationship with the patient.
3. The relationship of nursing care to the situation of the patient is an ever-changing process of interaction.
4. The situation of the patient is expressed as a fraction or ratio that reflects the level or intensity of nursing care required.

If the situation for the patient is relatively insignificant, one that the patient can cope with quite well, then nursing care probably need not go beyond careful assessment.

If the situation for the patient is overwhelming, nursing care may have to encompass a whole series of activities to reduce the effects of the situation or reinforce the capacities of the patient in coping with the situation.

5. Situations within the sphere of proper nursing concern are fluid.

Implications for Nursing Practice

Nursing practice is directed toward helping the patient adjust to, endure, and usefully integrate the health problem situation in its many ramifications through the phenomenon of *situational fluidity*, which characterizes nursing care in terms of:

1. **Time**—nursing operates within the immediate present; patient needs and behavior have an immediacy if not an urgency.
2. **Definition or diagnostic sets**—nursing diagnoses are based on the definition of capacities and limitations of the persons who are patients in relation to the situations in which they find themselves.
3. **Actions**—nursing actions are primarily directed toward helping the patient realign observations and expectations into a better “fit” with each other; nursing conveys a message to patients about themselves in their immediate situations.

Implications for Nursing Education

Education for nursing practice and nursing research emphasizes learning the naturalistic method of observation of patients in action, involved in a natural situation and setting. The learners typically are graduate students in nursing. The nurse-observer is viewed as an identifiable and functional part of the setting, as well as a helpful adjunct in the situation. The student is trained to observe while providing nursing care for the patient in a particular situation and to then record the entire nurse-patient interaction. The recorded observation serves as a database for evaluation of the quality and adequacy of nursing care as well as for generation of new theories.

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JEAN WATSON'S THEORY OF HUMAN CARING

Overview

A middle-range explanatory theory focusing on the human component of caring and the moment-to-moment encounters between the one who is caring and the one who is being cared for, especially the caring activities performed by nurses as they interact with others. The concepts of the theory are:

1. **Transpersonal caring relationship**—human-to-human connectedness, whereby each person is touched by the human center of the other; a special kind of relationship involving a high regard for the whole person and his or her being-in-the-world. The concept transpersonal caring relationship encompasses three dimensions:
 - Self*—transpersonal-mindbodyspirit oneness, an embodied self, and an embodied spirit.
 - Phenomenal field*—the totality of human experience, one's being-in-the-world.
 - Intersubjectivity*—refers to an intersubjective human-to-human relationship in which the person of the nurse affects and is affected by the person of the other, both of whom are fully present in the moment and feel a union with the other.
2. **Caring occasion/caring moment**—The coming together of nurse and other(s), which involves action and choice both by the nurse and the other. The moment of coming together in a caring occasion presents them with the opportunity to decide how to be in the relationship—what to do with the moment.
3. **Caring (healing) consciousness**—A holographic dynamic that is manifest within a field of consciousness, and which exists through time and space and is dominant over physical illness.
4. **Clinical Caritas Processes**—those aspects of nursing that actually potentiate therapeutic healing processes for both the one caring and the one being cared for. The 10 carative factors are:
 - Practice of loving kindness and equanimity within the context of caring consciousness
 - Being authentically present and enabling and sustaining the deep belief system and subjective life world of self and one-being-cared-for
 - Cultivation of one's own spiritual practices and transpersonal self, going beyond ego self, opening to others with sensitivity and compassion
 - Developing and sustaining a helping-trusting, authentic caring relationship
 - Being present to, and supportive of, the expression of positive and negative feelings as a connection with deeper spirit of self and the one-being-cared-for
 - Creative use of self and all ways of knowing as part of the caring process; to engage in artistry of caring-healing practices

- Engaging in genuine teaching-learning experience that attends to unity of being and meaning, attempting to stay within others' frames of reference
- Creating healing environments at all levels (physical as well as non-physical, subtle environment of energy and consciousness, whereby wholeness, beauty, comfort, dignity, and peace are potentiated)
- Assisting with basic needs, with an intentional caring consciousness, administering "human care essentials," which potentiate alignment of mind-body-spirit, wholeness, and unity of being in all aspects of care, tending to both embodied spirit and evolving spiritual emergence
- Opening and attending to spiritual-mysterious, and existential dimensions of one's own life-death; soul care for self and the one-being-cared-for

Implications for Nursing Practice

Nursing practice is directed toward helping persons gain a higher degree of harmony within the mind, body, and soul, which generates self-knowledge, self-reverence, self-healing, and self-care processes while increasing diversity, which is pursued through use of the 10clinical caritas processes.

Requirements for a Transpersonal Caring Relationship: The nurse considers the person to be valid and whole, regardless of illness or disease, and makes a moral commitment and directs intentionality and consciousness to the protection, enhancement, and potentiation of humanity, wholeness, and healing, such that a person creates or co-creates his or her own meaning for existence, healing, wholeness, and caring.

The nurse orients intent, will, and consciousness toward affirming the subjective/ intersubjective significance of the person; a search to sustain mind-body-spirit unity and I/Thou versus I/It relationships.

The nurse has the ability to realize, accurately detect, and connect with the inner condition (spirit) of another.

The nurse recognizes that actions, words, behaviors, cognition, body language, feelings, intuition, thought, senses, and the energy field gestalt all contribute to the interconnection.

The nurse has the ability to assess and realize another's condition of being in the world and to feel a union with the other. This ability is translated via movements, gestures, facial expressions, procedures, information, touch, sound, verbal expressions, and other scientific, aesthetic, and human means of communication into nursing art acts wherein the nurse responds to, attends to, or reflects the condition of the other. Drawn from the ontological caring consciousness stance and basic competencies of the nurse, this ability expands and translates into advanced caring healing modalities, nursing arts, advanced nursing therapeutics, and healing arts.

The nurse understands that the caring healing modalities potentiate harmony, wholeness, and comfort and produce inner healing by releasing some of the disharmony and blocked energy that interfere with the natural healing processes. Transpersonal caring-healing modalities include intentional conscious use of auditory modalities (music, sounds of nature, wind, sea, chimes, chants, familiar sounds), visual modalities (light, color, form, texture, works of art), olfactory modalities (aromatherapy, breathwork, breathing fresh air, inhalation-exhalation), tactile modalities (acupressure, body therapy, caring touch, foot reflexology, shiatsu, therapeutic massage), gustatory modalities (foods in one's diet), mental-cognitive modalities (importance of mind and imagination through story), kinesthetic modalities (basic skin care, deep massage and other body work, movement, dance, yoga, Tai Chi, applied kinesiology, chiropractic), caring consciousness modalities (physical presence, psychological presence, therapeutic presence).

The nurse understands that his or her own life history and previous experiences, including opportunities, studies, consciousness of having lived through or experienced human feelings and various human conditions, or of having imagined others' feelings in various circumstances, are valuable contributors to the transpersonal caring relationship.

Authentic Presencing: The nurse is authentically present as self and other in a reflective mutuality of being and becoming and centers consciousness and intentionality on caring, healing, and wholeness, rather than on disease, problems, illness, complications, and technocures.

The nurse attempts to stay within the other's frame of reference, join in a mutual search for meaning and wholeness of being, and potentiate comfort measures, pain control, a sense of well being, or spiritual transcendence of suffering.

Implications for Nursing Education

Professional nursing education should be at the postbaccalaureate level of the Doctorate of Nursing (N.D.). The nature of human life is the subject matter of nursing. The

curriculum acknowledges caring as a moral ideal and incorporates philosophical theories of human caring, health, and healing. Core areas of content are the humanities, social-biomedical science, and human caring content and process. Courses should use art, music, literature, poetry, drama, and movement to facilitate understanding of responses to health and illness as well as to new caring-healing modalities.

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APPENDIX N2

Nursing Interventions Classification System

Intervention Labels and Definitions

- Abuse Protection Support**—Identification of high-risk dependent relationships and actions to prevent further infliction of physical or emotional harm
- Abuse Protection Support: Child**—Identification of high-risk, dependent child relationships and actions to prevent possible or further infliction of physical, sexual, or emotional harm or neglect of basic necessities of life
- Abuse Protection Support: Domestic Partner**—Identification of high-risk, dependent domestic relationships and actions to prevent possible or further infliction of physical, sexual, or emotional harm or exploitation of a domestic partner
- Abuse Protection Support: Elder**—Identification of high-risk, dependent elder relationships and actions to prevent possible or further infliction of physical, sexual, or emotional harm; neglect of basic necessities of life; or exploitation
- Abuse Protection Support: Religious**—Identification of high-risk, controlling religious relationships and actions to prevent infliction of physical, sexual, or emotional harm and/or exploitation
- Acid-Base Management**—Promotion of acid-base balance and prevention of complications resulting from acid-base imbalance
- Acid-Base Management: Metabolic Acidosis**—Promotion of acid-base balance and prevention of complications resulting from serum HCO_3 levels lower than desired
- Acid-Base Management: Metabolic Alkalosis**—Promotion of acid-base balance and prevention of complications resulting from serum HCO_3 levels higher than desired
- Acid-Base Management: Respiratory Acidosis**—Promotion of acid-base balance and prevention of complications resulting from serum PCO_2 levels higher than desired
- Acid-Base Management: Respiratory Alkalosis**—Promotion of acid-base balance and prevention of complications resulting from serum PCO_2 levels lower than desired
- Acid-Base Monitoring**—Collection and analysis of patient data to regulate acid-base balance
- Active Listening**—Attending closely to and attaching significance to a patient's verbal and nonverbal messages
- Activity Therapy**—Prescription of and assistance with specific physical, cognitive, social, and spiritual activities to increase the range, frequency, or duration of an individual's (or group's) activity
- Acupressure**—Application of firm, sustained pressure to special points on the body to decrease pain, produce relaxation, and prevent or reduce nausea
- Admission Care**—Facilitating entry of a patient into a health care facility
- Airway Insertion and Stabilization**—Insertion or assisting with insertion and stabilization of an artificial airway
- Airway Management**—Facilitation of patency of air passages
- Airway Suctioning**—Removal of airway secretions by inserting a suction catheter into the patient's oral airway and/or trachea
- Allergy Management**—Identification, treatment, and prevention of allergic responses to food, medications, insect bites, contrast material, blood, or other substances
- Amnioinfusion**—Infusion of fluid into the uterus during labor to relieve umbilical cord compression or to dilute meconium-stained fluid
- Amputation Care**—Promotion of physical and psychological healing before and after amputation of a body part
- Analgesic Administration**—Use of pharmacologic agents to reduce or eliminate pain
- Analgesic Administration: Intraspinal**—Administration of pharmacologic agents into the epidural or intrathecal space to reduce or eliminate pain
- Anaphylaxis Management**—Promotion of adequate ventilation and tissue perfusion for an individual with a severe allergic (antigen-antibody) reaction
- Anesthesia Administration**—Preparation for and administration of anesthetic agents and monitoring of patient responsiveness during administration
- Anger Control Assistance**—Facilitation of the expression of anger in an adaptive nonviolent manner
- Animal-Assisted Therapy**—Purposeful use of animals to provide affection, attention, diversion, and relaxation
- Anticipatory Guidance**—Preparation of patient for an anticipated developmental and/or situational crisis
- Anxiety Reduction**—Minimizing apprehension, dread, foreboding, or uneasiness related to an unidentified source of anticipated danger
- Area Restriction**—Use of least restrictive limitation of patient mobility to a specified area for purposes of safety or behavior management

- Aroma therapy**—Administration of essential oils through massage, topical ointments or lotions, baths, inhalation, douches, or compresses (hot or cold) to calm and soothe, provide pain relief, enhance relaxation and comfort
- Art Therapy**—Facilitation of communication through drawings or other art forms
- Artificial Airway Management**—Maintenance of endotracheal and tracheostomy tubes and preventing complications associated with their use
- Aspiration Precautions**—Prevention or minimization of risk factors in the patient at risk for aspiration
- Assertiveness Training**—Assistance with the effective expression of feelings, needs, and ideas while respecting the rights of others
- Asthma Management**—Identification, treatment, and prevention of reactions to inflammation/constriction in airway passages
- Attachment Promotion**—Facilitation of the development of the parent-infant relationship
- Autogenic Training**—Assisting with self-suggestions about feelings of heaviness and warmth for the purpose of inducing relaxation
- Autotransfusion**—Collecting and reinfusing blood which has been lost intraoperatively or postoperatively from clean wounds
- Bathing**—Cleaning of the body for the purposes of relaxation, cleanliness, and healing
- Bed Rest Care**—Promotion of comfort and safety and prevention of complications for a patient unable to get out of bed
- Bedside Laboratory Testing**—Performance of laboratory tests at the bedside or point of care
- Behavior Management**—Helping a patient to manage negative behavior
- Behavior Management: Overactivity/Inattention**—Provision of a therapeutic milieu which safely accommodates the patient's attention deficit and/or overactivity while promoting optimal function
- Behavior Management: Self-Harm**—Assisting the patient to decrease or eliminate self-mutilating or self-abusive behaviors
- Behavior Management: Sexual**—Delineation and prevention of socially unacceptable sexual behaviors
- Behavior Modification**—Promotion of a behavior change
- Behavior Modification: Social Skills**—Assisting the patient to develop or improve interpersonal social skills
- Bibliotherapy**—Therapeutic use of literature to enhance expression of feelings, active problem solving, coping, or insight
- Biofeedback**—Assisting the patient to gain voluntary control over physiological responses using feedback from electronic equipment that monitors physiological processes.
- Bioterrorism Preparedness**—Preparing for an effective response to bioterrorism events or disaster
- Birthing**—Delivery of a baby
- Bladder Irrigation**—Instillation of a solution into the bladder to provide cleansing or medication
- Bleeding Precautions**—Reduction of stimuli that may induce bleeding or hemorrhage in at-risk patients
- Bleeding Reduction**—Limitation of the loss of blood volume during an episode of bleeding
- Bleeding Reduction: Antepartum Uterus**—Limitation of the amount of blood loss from the pregnant uterus during third trimester of pregnancy
- Bleeding Reduction: Gastrointestinal**—Limitation of the amount of blood loss from the upper and lower gastrointestinal tract and related complications
- Bleeding Reduction: Nasal**—Limitation of the amount of blood loss from the nasal cavity
- Bleeding Reduction: Postpartum Uterus**—Limitation of the amount of blood loss from the postpartum uterus
- Bleeding Reduction: Wound**—Limitation of the blood loss from a wound that may be a result of trauma, incisions, or placement of a tube or catheter
- Blood Products Administration**—Administration of blood or blood products and monitoring of patient's response
- Body Image Enhancement**—Improving a patient's conscious and unconscious perceptions and attitudes toward his/her body
- Body Mechanics Promotion**—Facilitating the use of posture and movement in daily activities to prevent fatigue and musculoskeletal strain or injury
- Bottle Feeding**—Preparation and administration of fluids to an infant via a bottle
- Bowel Incontinence Care**—Promotion of bowel continence and maintenance of perianal skin integrity
- Bowel Incontinence Care: Encopresis**—Promotion of bowel continence in children
- Bowel Irrigation**—Instillation of a substance into the lower gastrointestinal tract
- Bowel Management**—Establishment and maintenance of a regular pattern of bowel elimination
- Bowel Training**—Assisting the patient to train the bowel to evacuate at specific intervals
- Breast Examination**—Inspection and palpation of the breasts and related areas
- Breastfeeding Assistance**—Preparing a new mother to breastfeed her infant
- Calming Technique**—Reducing anxiety in patient experiencing acute distress
- Capillary Blood Sample**—Obtaining and arteriovenous sample from peripheral body site, such as the heel, finger, or other transcutaneous site

- Cardiac Care**—Limitation of complications resulting from an imbalance between myocardial oxygen supply and demand for a patient with symptoms of impaired cardiac function
- Cardiac Care: Acute**—Limitation of complications for a patient recently experiencing an episode of an imbalance between myocardial oxygen supply and demand resulting in impaired cardiac function
- Cardiac Care: Rehabilitative**—Promotion of maximum functional activity level for a patient who has suffered an episode of impaired cardiac function which resulted from an imbalance between myocardial oxygen supply and demand
- Cardiac Precautions**—Prevention of an acute episode of impaired cardiac function by minimizing myocardial oxygen consumption or increasing myocardial oxygen supply
- Caregiver Support**—Provision of the necessary information, advocacy, and support to facilitate primary patient care by someone other than a health care professional
- Case Management**—Coordinating care and advocating for specified individuals and patient populations across settings to reduce cost, reduce resource use, improve quality of health care, and achieve desired outcomes
- Cast Care: Maintenance**—Care of a cast after the drying period
- Cast Care: Wet**—Care of a new cast during the drying period
- Cerebral Edema Management**—Limitation of secondary cerebral injury resulting from swelling of brain tissue
- Cerebral Perfusion Promotion**—Promotion of adequate perfusion and limitation of complications for a patient experiencing or at risk for inadequate cerebral perfusion
- Cesarean Section Care**—Preparation and support of patient delivering a baby by cesarean section
- Chemical Restraint**—Administration, monitoring, and discontinuation of psychotropic agents used to control an individual's extreme behavior
- Chemotherapy Management**—Assisting the patient and family to understand the action and minimize side effects of anti-neoplastic agents
- Chest Physiotherapy**—Assisting the patient to move airway secretions from peripheral airways to more central airways for expectoration and/or suctioning
- Childbirth Preparation**—Providing information and support to facilitate childbirth and to enhance the ability of an individual to develop and perform the role of parent
- Circulatory Care: Arterial Insufficiency**—Promotion of arterial circulation
- Circulatory Care: Mechanical Assist Device**—Temporary support of the circulation through the use of mechanical devices or pumps
- Circulatory Care: Venous Insufficiency**—Promotion of venous circulation
- Circulatory Precautions**—Protection of a localized area with limited perfusion
- Circumcision Care**—Preprocedural and postprocedural support to males undergoing circumcision
- Code Management**—Coordination of emergency measures to sustain life
- Cognitive Restructuring**—Challenging a patient to alter distorted thought patterns and view self and the world more realistically
- Cognitive Stimulation**—Promotion of awareness and comprehension of surroundings by utilization of planned stimuli
- Communicable Disease Management**—Working with a community to decrease and manage the incidence and prevalence of contagious diseases in a specific population
- Communication Enhancement: Hearing Deficit**—Assistance in accepting and learning alternate methods for living with diminished hearing
- Communication Enhancement: Speech Deficit**—Assistance in accepting and learning alternate methods for living with impaired speech
- Communication Enhancement: Visual Deficit**—Assistance in accepting and learning alternate methods for living with diminished vision
- Community Disaster Preparedness**—Preparing for an effective response to a large-scale disaster
- Community Health Development**—Facilitating members of a community to identify a community's health concerns, mobilize resources, and implement solutions
- Complex Relationship Building**—Establishing a therapeutic relationship with a patient to promote insight and behavioral change
- Conflict Mediation**—Facilitation of constructive dialogue between opposing parties with a goal of resolving disputes in a mutually acceptable manner
- Constipation/Impaction Management**—Prevention and alleviation of constipation/impaction
- Consultation**—Using expert knowledge to work with those who seek help in problem-solving to enable individuals, families, groups, or agencies to achieve identified goals
- Contact Lens Care**—Prevention of eye injury and lens damage by proper use of contact lenses
- Controlled Substance Checking**—Promoting appropriate use and maintaining security of controlled substances
- Coping Enhancement**—Assisting a patient to adapt to perceived stressors, changes, or threats which interfere with meeting life demands and roles

- Cost Containment**—Management and facilitation of efficient and effective use of resources
- Cough Enhancement**—Promotion of deep inhalation by the patient with subsequent generation of high intrathoracic pressures and compression of underlying lung parenchyma for the forceful expulsion of air
- Counseling**—Use of an interactive helping process focusing on the needs, problems, or feelings of the patient and significant others to enhance or support coping, problem-solving, and interpersonal relationships
- Crisis Intervention**—Use of short-term counseling to help the patient cope with a crisis and resume a state of functioning comparable to or better than the pre-crisis state
- Critical Path Development**—Constructing and using a timed sequence of patient care activities to enhance desired patient outcomes in a cost-efficient manner
- Culture Brokerage**—The deliberate use of culturally competent strategies to bridge or mediate between the patient's culture and the biomedical health care system
- Cutaneous Stimulation**—Stimulation of the skin and underlying tissues for the purpose of decreasing undesirable signs and symptoms such as pain, muscle spasm, or inflammation
- Decision-Making Support**—Providing information and support for a patient who is making a decision regarding health care
- Delegation**—Transfer of responsibility for the performance of patient care while retaining accountability for the outcome
- Delirium Management**—Provision of a safe and therapeutic environment for the patient who is experiencing an acute confusional state
- Delusion Management**—Promoting the comfort, safety, and reality orientation of a patient experiencing false, fixed beliefs that have little or no basis in reality
- Dementia Management**—Provision of a modified environment for the patient who is experiencing a chronic confusional state
- Dementia Management: Bathing**—Reduction of aggressive behavior during cleaning of the body
- Deposition/Testimony**—Provision of recorded sworn testimony for legal proceedings based upon knowledge of the case
- Developmental Care**—Structuring the environment and providing care in response to the behavioral cues and states of the preterm infant
- Developmental Enhancement: Adolescent**—Facilitating optimal physical, cognitive, social, and emotional growth of individuals during the transition from childhood to adulthood
- Developmental Enhancement: Child**—Facilitating or teaching parents/caregivers to facilitate the optimal gross motor, fine motor, language, cognitive, social, and emotional growth of preschool and school-aged children
- Dialysis Access Maintenance**—Preservation of vascular (arterial-venous) access sites
- Diarrhea Management**—Prevention and alleviation of diarrhea
- Diet Staging**—Instituting required diet restrictions with subsequent progression of diet as tolerated
- Discharge Planning**—Preparation for moving a patient from one level of care to another within or outside the current health care agency
- Distraction**—Purposeful focusing of attention away from undesirable sensations
- Documentation**—Recording of pertinent patient data in a clinical record
- Dressing**—Choosing, putting on, and removing clothes for a person who cannot do this for self
- Dying Care**—Promotion of physical comfort and psychological peace in the final phase of life
- Dysreflexia Management**—Prevention and elimination of stimuli which cause hyperactive reflexes and inappropriate autonomic responses in a patient with a cervical or high thoracic cord lesion
- Dysrhythmia Management**—Preventing, recognizing, and facilitating treatment of abnormal cardiac rhythms
- Ear Care**—Prevention or minimization of threats to ear or hearing
- Eating Disorders Management**—Prevention and treatment of severe diet restriction and overexercising or bingeing and purging of food and fluids
- Electroconvulsive Therapy (ECT) Management**—Assisting with the safe and efficient provision of electroconvulsive therapy in the treatment of psychiatric illness
- Electrolyte Management**—Promotion of electrolyte balance and prevention of complications resulting from abnormal or undesired serum electrolyte levels
- Electrolyte Management: Hypocalcemia**—Promotion of calcium balance and prevention of complications resulting from serum calcium levels higher than desired
- Electrolyte Management: Hyperkalemia**—Promotion of potassium balance and prevention of complications resulting from serum potassium levels higher than desired
- Electrolyte Management: Hypermagnesemia**—Promotion of magnesium balance and prevention of complications resulting from serum magnesium levels higher than desired
- Electrolyte Management: Hyponatremia**—Promotion of sodium balance and prevention of complications resulting from serum sodium levels higher than desired
- Electrolyte Management: Hyperphosphatemia**—Promotion of phosphate bal-

- ance and prevention of complications resulting from serum phosphate levels higher than desired
- Electrolyte Management: Hypocalcemia**—Promotion of calcium balance and prevention of complications resulting from serum calcium levels lower than desired
- Electrolyte Management: Hypokalemia**—Promotion of potassium balance and prevention of complications resulting from serum potassium levels lower than desired
- Electrolyte Management: Hypomagnesemia**—Promotion of magnesium balance and prevention of complications resulting from serum magnesium levels lower than desired
- Electrolyte Management: Hyponatremia**—Promotion of sodium balance and prevention of complications resulting from serum sodium levels lower than desired
- Electrolyte Management: Hypophosphatemia**—Promotion of phosphate balance and prevention of complications resulting from serum phosphate levels lower than desired
- Electrolyte Monitoring**—Collection and analysis of patient data to regulate electrolyte balance
- Electronic Fetal Monitoring: Antepartum**—Electronic evaluation of fetal heart rate response to movement, external stimuli, or uterine contractions during antepartum testing
- Electronic Fetal Monitoring: Intrapartum**—Electronic evaluation of fetal heart rate response to uterine contractions during intrapartum care
- Elopement Precautions**—Minimizing the risk of a patient leaving a treatment setting without authorization when departure presents a threat to the safety of patient or others
- Embolus Care: Peripheral**—Limitation of complications for a patient experiencing, or at risk for, occlusion of peripheral circulation
- Embolus Care: Pulmonary**—Limitation of complications for a patient experiencing, or at risk for, occlusion of pulmonary circulation
- Embolus Precautions**—Reduction of the risk of an embolus in a patient with thrombi or at risk for developing thrombus formation
- Emergency Care**—Providing life-saving measures in life-threatening situations
- Emergency Cart Checking**—Systematic review and maintenance of the contents of an emergency cart at established time intervals
- Emotional Support**—Provision of reassurance, acceptance, and encouragement during times of stress
- Endotracheal Extubation**—Purposeful removal of the endotracheal tube from the nasopharyngeal or oropharyngeal airway
- Energy Management**—Regulating energy use to treat or prevent fatigue and optimize function
- Enteral Tube Feeding**—Delivering nutrients and water through a gastrointestinal tube
- Environmental Management**—Manipulation of the patient's surroundings for therapeutic benefit, sensory appeal, and psychological well-being
- Environmental Management: Attachment Process**—Manipulation of the patient's surroundings to facilitate the development of the parent-infant relationship
- Environmental Management: Comfort**—Manipulation of the patient's surroundings for promotion of optimal comfort
- Environmental Management: Community**—Monitoring and influencing the direction of the physical, social, cultural, economic, and political conditions that affect the health of groups and communities
- Environmental Management: Home Preparation**—Preparing the home for safe and effective delivery of care
- Environmental Management: Safety**—Monitoring and manipulation of the physical environment to promote safety
- Environmental Management: Violence Prevention**—Monitoring and manipulation of the physical environment to decrease the potential for violent behavior directed toward self, others, or environment
- Environmental Management: Worker Safety**—Monitoring and manipulating of the worksite environment to promote safety and health of workers
- Environmental Risk Protection**—Preventing and detecting disease and injury in populations at risk from environmental hazards
- Examination Assistance**—Providing assistance to the patient and another health care provider during a procedure or exam
- Exercise Promotion**—Facilitation of regular physical activity to maintain or advance to a higher level of fitness and health
- Exercise Promotion: Strength Training**—Facilitating regular resistive muscle training to maintain or increase muscle strength
- Exercise Promotion: Stretching**—Facilitation of systematic slow-stretch-hold muscle exercises to induce relaxation, prepare muscles/joints for more vigorous exercise, or to increase or maintain body flexibility
- Exercise Therapy: Ambulation**—Promotion and assistance with walking to maintain or restore autonomic and voluntary body functions during treatment and recovery from illness or injury
- Exercise Therapy: Balance**—Use of specific activities, postures, and movements to maintain, enhance, or restore balance

- Exercise Therapy: Joint Mobility**—Use of active or passive body movement to maintain or restore joint flexibility
- Exercise Therapy: Muscle Control**—Use of specific activity or exercise protocols to enhance or restore controlled body movement
- Eye Care**—Prevention or minimization of threats to eye or visual integrity
- Fall Prevention**—Instituting special precautions with patient at risk for injury from falling
- Family Integrity Promotion**—Promotion of family cohesion and unity
- Family Integrity Promotion: Child-bearing Family**—Facilitation of the growth of individuals or families who are adding an infant to the family unit
- Family Involvement Promotion**—Facilitating family participation in the emotional and physical care of the patient
- Family Mobilization**—Utilization of family strengths to influence patient's health in a positive direction
- Family Planning: Contraception**—Facilitation of pregnancy prevention by providing information about the physiology of reproduction and methods to control conception
- Family Planning: Infertility**—Management, education, and support of the patient and significant other undergoing evaluation and treatment for infertility
- Family Planning: Unplanned Pregnancy**—Facilitation of decision-making regarding pregnancy outcome
- Family Presence Facilitation**—Facilitation of the family's presence in support of an individual undergoing resuscitation and/or invasive procedures
- Family Process Maintenance**—Minimization of family process disruption effects
- Family Support**—Promotion of family values, interests, and goals
- Family Therapy**—Assisting family members to move their family toward a more productive way of living
- Feeding**—Providing nutritional intake for patient who is unable to feed self
- Fertility Preservation**—Providing information, counseling, and treatment that facilitate reproductive health and the ability to conceive
- Fever Treatment**—Management of a patient with hyperpyrexia caused by nonenvironmental factors
- Financial Resource Assistance**—Assisting an individual/family to secure and manage finances to meet health care needs
- Fire-Setting Precautions**—Prevention of fire-setting behaviors
- First Aid**—Providing initial care of a minor injury
- Fiscal Resource Management**—Procuring and directing the use of financial resources to ensure the development and continuation of programs and services
- Flatulence Reduction**—Prevention of flatus formation and facilitation of passage of excessive gas
- Fluid Management**—Promotion of fluid balance and prevention of complications resulting from abnormal or undesired fluid levels
- Fluid Monitoring**—Collection and analysis of patient data to regulate fluid balance
- Fluid Resuscitation**—Administering prescribed intravenous fluids rapidly
- Fluid/Electrolyte Management**—Regulation and prevention of complications from altered fluid and/or electrolyte levels
- Foot Care**—Cleansing and inspecting the feet for the purposes of relaxation, cleanliness, and healthy skin
- Forgiveness Facilitation**—Assisting an individual's willingness to replace feelings of anger and resentment toward another, self, or higher power, with beneficence, empathy, and humility
- Gastrointestinal Intubation**—Insertion of a tube into the gastrointestinal tract
- Genetic Counseling**—Use of an interactive helping process focusing on assisting an individual, family, or group, manifesting or at risk for developing or transmitting a birth defect or genetic condition, to cope
- Grief Work Facilitation**—Assistance with the resolution of a significant loss
- Grief Work Facilitation: Perinatal Death**—Assistance with the resolution of a perinatal loss
- Guided Imagery**—Purposeful use of imagination to achieve relaxation and/or direct attention away from undesirable sensations
- Guilt Work Facilitation**—Helping another to cope with painful feelings of responsibility, actual or perceived
- Hair Care**—Promotion of neat, clean, attractive hair
- Hallucination Management**—Promoting the safety, comfort, and reality orientation of a patient experiencing hallucinations
- Health Care Information Exchange**—Providing patient care information to other health professionals
- Health Education**—Developing and providing instruction and learning experiences to facilitate voluntary adaptation of behavior conducive to health in individuals, families, groups, or communities
- Health Policy Monitoring**—Surveillance and influence of government and organization regulations, rules, and standards that affect nursing systems and practices to ensure quality care of patients
- Health Screening**—Detecting health risks or problems by means of history, examination, and other procedures
- Health System Guidance**—Facilitating a patient's location and use of appropriate health services

- Heat Exposure Treatment**—Management of patient overcome by heat due to excessive environmental heat exposure
- Heat/Cold Application**—Stimulation of the skin and underlying tissues with heat or cold for the purpose of decreasing pain, muscle spasms, or inflammation
- Hemodialysis Therapy**—Management of extracorporeal passage of the patient's blood through a dialyzer
- Hemodynamic Regulation**—Optimization of heart rate, preload, afterload, and contractility
- Hemofiltration Therapy**—Cleansing of acutely ill patient's blood via a hemofilter controlled by the patient's hydrostatic pressure
- Hemorrhage Control**—Reduction or elimination of rapid and excessive blood loss
- High-Risk Pregnancy Care**—Identification and management of a high-risk pregnancy to promote healthy outcomes for mother and baby
- Home Maintenance Assistance**—Helping the patient/family to maintain the home as a clean, safe, and pleasant place to live
- Hope Inspiration**—Facilitation of the development of a positive outlook in a given situation
- Hormone Replacement Therapy**—Facilitation of safe and effective use of hormone replacement therapy
- Humor**—Facilitating the patient to perceive, appreciate, and express what is funny, amusing, or ludicrous in order to establish relationships, relieve tension, release anger, facilitate learning, or cope with painful feelings
- Hyperglycemia Management**—Preventing and treating above normal blood glucose levels
- Hypervolemia Management**—Reduction in extracellular and/or intracellular fluid volume and prevention of complications in a patient who is fluid overloaded
- Hypnosis**—Assisting a patient to achieve a state of attentive focused concentration with suspension of some peripheral awareness to create changes in sensations, thoughts, or behavior
- Hypoglycemia Management**—Preventing and treating low blood glucose levels
- Hypothermia Treatment**—Rewarming and surveillance of a patient whose core body temperature is below 35°C
- Hypovolemia Management**—Expansion of intravascular fluid volume in a patient who is volume depleted
- Immunization/Vaccination Management**—Monitoring immunization status, facilitating access to immunizations, and providing immunizations to prevent communicable disease
- Impulse Control Training**—Assisting the patient to mediate impulsive behavior through application of problem-solving strategies to social and interpersonal situations
- Incident Reporting**—Written and verbal reporting of any event in the process of patient care that is inconsistent with desired patient outcomes or routine operations of the health care facility
- Incision Site Care**—Cleansing, monitoring, and promotion of healing in a wound that is closed with sutures, clips, or staples
- Infant Care**—Provision of developmentally appropriate family-centered care to the child under 1 year of age
- Infection Control**—Minimizing the acquisition and transmission of infectious agents
- Infection Control: Intraoperative**—Preventing nosocomial infection in the operating room
- Infection Protection**—Prevention and early detection of infection in a patient at risk
- Insurance Authorization**—Assisting the patient and provider to secure payment for health services or equipment from a third party
- Intracranial Pressure (ICP) Monitoring**—Measurement and interpretation of patient data to regulate intracranial pressure
- Intrapartal Care**—Monitoring and management of stages one and two of the birth process
- Intrapartal Care: High-Risk Delivery**—Assisting vaginal birth of multiple or malpositioned fetuses
- Intravenous (IV) Insertion**—Insertion of a needle into a peripheral vein for the purpose of administering fluids, blood, or medications
- Intravenous (IV) Therapy**—Administration and monitoring of intravenous fluids and medications
- Invasive Hemodynamic Monitoring**—Measurement and interpretation of invasive hemodynamic parameters to determine cardiovascular function and regulate therapy as appropriate
- Kangaroo Care**—Promoting closeness between parent and physiologically stable preterm infant by preparing the parent and providing the environment for skin-to-skin contact
- Labor Induction**—Initiation or augmentation of labor by mechanical or pharmacological methods
- Labor Suppression**—Controlling uterine contractions prior to 37 weeks of gestation to prevent preterm birth
- Laboratory Data Interpretation**—Critical analysis of patient laboratory data in order to assist with clinical decision-making
- Lactation Counseling**—Use of an interactive helping process to assist in maintenance of successful breastfeeding
- Lactation Suppression**—Facilitating the cessation of milk production and mini-

- mizing breast engorgement after giving birth
- Laser Precautions**—Limiting the risk of injury to the patient related to use of a laser
- Latex Precautions**—Reducing the risk of systemic reaction to latex
- Learning Facilitation**—Promoting the ability to process and comprehend information
- Learning Readiness Enhancement**—Improving the ability and willingness to receive information
- Leech Therapy**—Application of medicinal leeches to help drain replanted or transplanted tissue engorged with venous blood
- Limit Setting**—Establishing the parameters of desirable and acceptable patient behavior
- Lower Extremity Monitoring**—Collection, analysis, and use of patient data to categorize risk and prevent injury to the lower extremities
- Malignant Hyperthermia Precautions**—Prevention or reduction of hypermetabolic response to pharmacological agents used during surgery
- Massage**—Stimulation of the skin and underlying tissues with varying degrees of hand pressure to decrease pain, produce relaxation, and/or improve circulation
- Mechanical Ventilation**—Use of an artificial device to assist a patient to breathe
- Mechanical Ventilatory Weaning**—Assisting the patient to breathe without the aid of a mechanical ventilator
- Medication Administration**—Preparing, giving, and evaluating the effectiveness of prescription and nonprescription drugs
- Medication Administration: Ear**—Preparing and instilling otic medications
- Medication Administration: Enteral**—Delivering medications through a tube inserted into the gastrointestinal system
- Medication Administration: Eye**—Preparing and instilling ophthalmic medications
- Medication Administration: Inhalation**—Preparing and administering inhaled medications
- Medication Administration: Interpleural**—Administration of medication through an interpleural catheter for reduction of pain
- Medication Administration: Intradermal**—Preparing and giving medications via the intradermal route
- Medication Administration: Intramuscular (IM)**—Preparing and giving medications via the intramuscular route
- Medication Administration: Intraosseous**—Insertion of a needle through the bone cortex into the medullary cavity for the purpose of short-term, emergency administration of fluid, blood, or medication
- Medication Administration: Intraspinal**—Administration and monitoring of medication via an established epidural or intrathecal route
- Medication Administration: Intravenous (IV)**—Preparing and giving medications via the intravenous route
- Medication Administration: Nasal**—Preparing and giving medications via nasal passages
- Medication Administration: Oral**—Preparing and giving medications by mouth
- Medication Administration: Rectal**—Preparing and inserting rectal suppositories
- Medication Administration: Skin**—Preparing and applying medications to the skin
- Medication Administration: Subcutaneous**—Preparing and giving medications via the subcutaneous route
- Medication Administration: Vaginal**—Preparing and inserting vaginal medications
- Medication Administration: Ventricular Reservoir**—Administration and monitoring of medication through an indwelling catheter into the lateral ventricle of the brain
- Medication Management**—Facilitation of safe and effective use of prescription and over-the-counter drugs
- Medication Prescribing**—Prescribing medication for a health problem
- Meditation Facilitation**—Facilitating a person to alter his/her level of awareness by focusing specifically on an image or thought
- Memory Training**—Facilitation of memory
- Milieu Therapy**—Use of people, resources, and events in the patient's immediate environment to promote optimal psychosocial functioning
- Mood Management**—Providing for safety, stabilization, recovery, and maintenance of a patient who is experiencing dysfunctionally depressed mood or elevated mood
- Multidisciplinary Care Conference**—Planning and evaluating patient care with health professionals from other disciplines
- Music Therapy**—Using music to help achieve a specific change in behavior, feeling, or physiology
- Mutual Goal Setting**—Collaborating with patient to identify and prioritize care goals, then developing a plan for achieving those goals
- Nail Care**—Promotion of clean, neat, attractive nails and prevention of skin lesions related to improper care of nails
- Nausea Management**—Prevention and alleviation of nausea
- Neurologic Monitoring**—Collection and analysis of patient data to prevent or minimize neurologic complications

- Newborn Care**—Management of neonate during the transition to extrauterine life and subsequent period of stabilization
- Newborn Monitoring**—Measurement and interpretation of physiologic status of the neonate the first 24 hours after delivery
- Nonnutritive Sucking**—Provision of sucking opportunities for the infant
- Normalization Promotion**—Assisting parents and other family members of children with chronic illnesses or disabilities in providing normal life experiences for their children and families
- Nutrition Management**—Assisting with or providing a balanced dietary intake of foods and fluids
- Nutrition Therapy**—Administration of food and fluids to support metabolic processes of a patient who is malnourished or at high risk for becoming malnourished
- Nutritional Counseling**—Use of an interactive helping process focusing on the need for diet modification
- Nutritional Monitoring**—Collection and analysis of patient data to prevent or minimize malnourishment
- Oral Health Maintenance**—Maintenance and promotion of oral hygiene and dental health for the patient at risk for developing oral or dental lesions
- Oral Health Promotion**—Promotion of oral hygiene and dental care for a patient with normal oral and dental health
- Oral Health Restoration**—Promotion of healing for a patient who has an oral mucosa or dental lesion
- Order Transcription**—Transferring information from order sheets to the nursing patient care planning and documentation system
- Organ Procurement**—Guiding families through the donation process to ensure timely retrieval of vital organs and tissue for transplant
- Ostomy Care**—Maintenance of elimination through a stoma and care of surrounding tissue
- Oxygen Therapy**—Administration of oxygen and monitoring of its effectiveness
- Pacemaker Management: temporary**—Temporary support of cardiac pumping through the insertion and use of temporary pacemakers
- Pain Management**—Alleviation of pain or a reduction in pain to a level of comfort that is acceptable to the patient
- Parent Education: Adolescent**—Assisting parents to understand and help their adolescent children
- Parent Education: Childrearing Family**—Assisting parents to understand and promote the physical, psychological, and social growth and development of their toddler, preschool, or school-aged child/children
- Parent Education: Infant**—Instruction on nurturing and physical care needed during the first year of life
- Parenting Promotion**—Providing parenting information, support and coordination of comprehensive services to high-risk families
- Pass Facilitation**—Arranging a leave for a patient from a health care facility
- Patient Contracting**—Negotiating an agreement with an individual that reinforces a specific behavior change
- Patient-Controlled Analgesia (PCA) Assistance**—Facilitating patient control of analgesic administration and regulation
- Patient Rights Protection**—Protection of health care rights of a patient, especially a minor, incapacitated, or incompetent patient unable to make decisions
- Peer Review**—Systematic evaluation of a peer's performance compared with professional standards of practice
- Pelvic Muscle Exercise**—Strengthening and training the levator ani and urogenital muscles through voluntary, repetitive contraction to decrease stress, urge, or mixed types of urinary incontinence
- Perineal Care**—Maintenance of perineal skin integrity and relief of perineal discomfort
- Peripheral Sensation Management**—Prevention or minimization of injury or discomfort in the patient with altered sensation
- Peripherally Inserted Central (PIC) Catheter Care**—Insertion and maintenance of a peripherally inserted central catheter, either midline or centrally located
- Peritoneal Dialysis Therapy**—Administration and monitoring of dialysis solution into and out of the peritoneal cavity
- Pessary Management**—Placement and monitoring of a vaginal device for treating stress urinary incontinence, uterine retroversion, genital prolapse, or incompetent cervix
- Phlebotomy: Arterial Blood Sample**—Obtaining a blood sample from an uncanalulated artery to assess oxygen and carbon dioxide levels and acid-base balance
- Phlebotomy: Blood Unit Acquisition**—Procuring blood and blood products from donors
- Phlebotomy: Cannulated Vessel**—Aspirating a blood sample through an indwelling vascular catheter for laboratory tests
- Phlebotomy: Venous Blood Sample**—Removal of a sample of venous blood from an uncanalulated vein
- Phototherapy: Mood/Sleep Regulation**—Administration of doses of bright light in order to elevate mood and/or normalize the body's internal clock
- Phototherapy: Neonate**—Use of light therapy to reduce bilirubin levels in newborn infants
- Physical Restraint**—Application, monitoring, and removal of mechanical restraining devices or manual restraints

- which are used to limit physical mobility of a patient
- Physician Support**—Collaborating with physicians to provide quality patient care
- Pneumatic Tourniquet Precautions**—Applying a pneumatic tourniquet while minimizing the potential for patient injury from use of the device
- Positioning**—Deliberative placement of the patient or a body part to promote physiological and/or psychological well-being
- Positioning: Intraoperative**—Moving the patient or body part to promote surgical exposure while reducing the risk of discomfort and complications
- Positioning: Neurologic**—Achievement of optimal, appropriate body alignment for the patient experiencing or at risk for spinal cord injury or vertebrae irritability
- Positioning: Wheelchair**—Placement of a patient in a properly selected wheelchair to enhance comfort, promote skin integrity, and foster independence
- Postanesthesia Care**—Monitoring and management of the patient who has recently undergone general or regional anesthesia
- Postmortem Care**—Providing physical care of the body of an expired patient and support for the family viewing the body
- Postpartal Care**—Monitoring and management of the patient who has recently given birth
- Preceptor: Employee**—Assisting and supporting a new or transferred employee through a planned orientation to a specific clinical area
- Preceptor: Student**—Assisting and supporting learning experiences for a student
- Preconception Counseling**—Screening and providing information and support to individuals of childbearing age before pregnancy to promote health and reduce risks
- Pregnancy Termination Care**—Management of the physical and psychological needs of the woman undergoing a spontaneous or elective abortion
- Premenstrual Syndrome (PMS) Management**—Alleviation/attenuation of physical and/or behavioral symptoms occurring during the luteal phase of the menstrual cycle
- Prenatal Care**—Monitoring and management of patient during pregnancy to prevent complications of pregnancy and promote a healthy outcome for both mother and infant
- Preoperative Coordination**—Facilitating preadmission diagnostic testing and preparation of the surgical patient
- Preparatory Sensory Information**—Describing in concrete and objective terms the typical sensory experiences and events associated with an upcoming stressful health care procedure/treatment
- Presence**—Being with another, both physically and psychologically, during times of need
- Pressure Management**—Minimizing pressure to body parts
- Pressure Ulcer Care**—Facilitation of healing in pressure ulcers
- Pressure Ulcer Prevention**—Prevention of pressure ulcers for an individual at high risk for developing them
- Product Evaluation**—Determining the effectiveness of new products or equipment
- Program Development**—Planning, implementing, and evaluating a coordinated set of activities designed to enhance wellness, or to prevent, reduce, or eliminate one or more health problems for a group or community
- Progressive Muscle Relaxation**—Facilitating the tensing and releasing of successive muscle groups while attending to the resulting differences in sensation
- Prompted Voiding**—Promotion of urinary continence through the use of timed verbal toileting reminders and positive social feedback for successful toileting
- Prosthesis Care**—Care of a removable appliance worn by a patient and the prevention of complications associated with its use
- Pruritus Management**—Preventing and treating itching
- Quality Monitoring**—Systematic collection and analysis of an organization's quality indicators for the purpose of improving patient care
- Radiation Therapy Management**—Assisting the patient to understand and minimize the side effects of radiation treatments
- Rape-Trauma Treatment**—Provision of emotional and physical support immediately following a reported rape
- Reality Orientation**—Promotion of patient's awareness of personal identity, time, and environment
- Recreation Therapy**—Purposeful use of recreation to promote relaxation and enhancement of social skills
- Rectal Prolapse Management**—Prevention and/or manual reduction of rectal prolapse
- Referral**—Arrangement for services by another care provider or agency
- Relaxation Therapy**—Use of techniques to encourage and elicit relaxation for the purpose of decreasing undesirable signs and symptoms such as pain, muscle tension, or anxiety
- Religious Addiction Prevention**—Prevention of a self-imposed controlling religious lifestyle
- Religious Ritual Enhancement**—Facilitating participation in religious practices
- Relocation Stress Reduction**—Assisting the individual to prepare for and cope with movement from one equipment to another
- Reminiscence Therapy**—Using the recall of past events, feelings, and thoughts

- to facilitate pleasure, quality of life, or adaptation to present circumstances
- Reproductive Technology Management**—Assisting a patient through the steps of complex infertility treatment
- Research Data Collection**—Collecting research data
- Resiliency Promotion**—Assisting individuals, families, and communities in development, use, and strengthening of protective factors to be used in coping with environmental and societal stressors
- Respiratory Monitoring**—Collection and analysis of patient data to ensure airway patency and adequate gas exchange
- Respite Care**—Provision of short-term care to provide relief for family caregiver
- Resuscitation**—Administering emergency measures to sustain life
- Resuscitation: Fetus**—Administering emergency measures to improve placental perfusion or correct fetal acid-base status
- Resuscitation: Neonate**—Administering emergency measures to support newborn adaptation to extrauterine life
- Risk Identification**—Analysis of potential risk factors, determination of health risks, and prioritization of risk reduction strategies for an individual or group
- Risk Identification: Childbearing Family**—Identification of an individual or family likely to experience difficulties in parenting and prioritization of strategies to prevent parenting problems
- Risk Identification: Genetic**—Identification and analysis of potential genetic risk factors in an individual, family, or group
- Role Enhancement**—Assisting a patient, significant other, and/or family to improve relationships by clarifying and supplementing specific role behaviors
- Seclusion**—Solitary containment in a fully protective environment with close surveillance by nursing staff for purposes of safety or behavior management
- Security Enhancement**—Intensifying a patient's sense of physical and psychological safety
- Sedation Management**—Administration of sedatives, monitoring of the patient's response, and provision of necessary physiological support during a diagnostic or therapeutic procedure
- Seizure Management**—Care of a patient during a seizure and the postictal state
- Seizure Precautions**—Prevention or minimization of potential injuries sustained by a patient with a known seizure disorder
- Self-Awareness Enhancement**—Assisting a patient to explore and understand his/her thoughts, feelings, motivations, and behaviors
- Self-Care Assistance**—Assisting another to perform activities of daily living
- Self-Care Assistance: Bathing/Hygiene**—Assisting patient to perform personal hygiene
- Self-Care Assistance: Dressing/Grooming**—Assisting patient with clothes and makeup
- Self-Care Assistance: Feeding**—Assisting a person to eat
- Self-Care Assistance (IADL)**—Assisting and instructing a person to perform instrumental activities of daily living (IADL) needed to function in the home or community
- Self-Care Assistance: Toileting**—Assisting a patient with limitation of independent movement to learn to change body location
- Self-Care Assistance: Transfer**—Assisting a person to change body location
- Self-Esteem Enhancement**—Assisting a patient to increase his/her personal judgment of self-worth
- Self-Hypnosis Facilitation**—Teaching and monitoring the use of self-initiated hypnotic state for therapeutic benefit
- Self-Modification Assistance**—Reinforcement of self-directed change initiated by the patient to achieve personally important goals
- Self-Responsibility Facilitation**—Encouraging a patient to assume more responsibility for own behavior
- Sexual Counseling**—Use of an interactive helping process focusing on the need to make adjustments in sexual practice or to enhance coping with a sexual event/disorder
- Shift Report**—Exchanging essential patient care information with other nursing staff at change of shift
- Shock Management**—Facilitation of the delivery of oxygen and nutrients to systemic tissue with removal of cellular waste products in a patient with severely altered tissue perfusion
- Shock Management: Cardiac**—Promotion of adequate tissue perfusion for a patient with severely compromised pumping function of the heart
- Shock Management: Vasogenic**—Promotion of adequate tissue perfusion for a patient with severe loss of vascular tone
- Shock Management: Volume**—Promotion of adequate tissue perfusion for a patient with severely compromised intravascular volume
- Shock Prevention**—Detecting and treating a patient at risk for impending shock
- Sibling Support**—Assisting a sibling to cope with a brother's or sister's illness/chronic condition/disability
- Skin Care: Donor Site**—Prevention of wound complications and promotion of healing at the donor site
- Skin Care: Graft Site**—Prevention of wound complications and promotion of graft site healing
- Skin Care: Topical Treatments**—Application of topical substances or manipulation of devices to promote skin integrity and minimize skin breakdown

- Skin Surveillance**—Collection and analysis of patient data to maintain skin and mucous membrane integrity
- Sleep Enhancement**—Facilitation of regular sleep/wake cycles
- Smoking Cessation Assistance**—Helping another to stop smoking
- Socialization Enhancement**—Facilitation of another person's ability to interact with others
- Specimen Management**—Obtaining, preparing, and preserving a specimen for a laboratory test
- Spiritual Growth Facilitation**—Facilitation of growth in patient's capacity to identify, connect with, and call upon the source of meaning, purpose, comfort, strength, and hope in his/her life
- Spiritual Support**—Assisting the patient to feel balance and connection with a greater power
- Splinting**—Stabilization, immobilization, and/or protection of an injured body part with a supportive appliance
- Sports-Injury Prevention: Youth**—Reduce the risk of sport-related injury in young athletes
- Staff Development**—Developing, maintaining, and monitoring competence of staff
- Staff Supervision**—Facilitating the delivery of high-quality patient care by others
- Subarachnoid Hemorrhage Precautions**—Reduction of internal and external stimuli or stressors to minimize risk of rebleeding prior to surgery or endovascular procedure to secure ruptured aneurysm
- Substance Use Prevention**—Prevention of an alcoholic or drug use lifestyle
- Substance Use Treatment**—Supportive care of patient/family members with physical and psychosocial problems associated with the use of alcohol or drugs
- Substance Use Treatment: Alcohol Withdrawal**—Care of the patient experiencing sudden cessation of alcohol consumption
- Substance Use Treatment: Drug Withdrawal**—Care of a patient experiencing drug detoxification
- Substance Use Treatment: Overdose**—Monitoring, treatment, and emotional support of a patient who has ingested prescription or over-the-counter drugs beyond the therapeutic range
- Suicide Prevention**—Reducing risk of self-inflicted harm with intent to end life
- Supply Management**—Ensuring acquisition and maintenance of appropriate items for providing patient care
- Support Group**—Use of a group environment to provide emotional support and health-related information for members
- Support System Enhancement**—Facilitation of support to patient by family, friends, and community
- Surgical Assistance**—Assisting the surgeon/dentist with operative procedures and care of the surgical patient
- Surgical Precautions**—Minimizing the potential for iatrogenic injury to the patient related to a surgical procedure
- Surgical Preparation**—Providing care to a patient immediately prior to surgery and verification of required procedures/tests and documentation in the clinical record
- Surveillance**—Purposeful and ongoing acquisition, interpretation, and synthesis of patient data for clinical decision-making
- Surveillance: Community**—Purposeful and ongoing acquisition, interpretation, and synthesis of data for decision-making in the community
- Surveillance: Late Pregnancy**—Purposeful and ongoing acquisition, interpretation, and synthesis of maternal-fetal data for treatment, observation, or admission
- Surveillance: Remote Electronic**—Purposeful and ongoing acquisition of patient data via electronic modalities (telephone, video, conferencing, e-mail) from distant locations as well as interpretation and synthesis of patient data for clinical decision-making with individuals or populations
- Surveillance: Safety**—Purposeful and ongoing collection and analysis of information about the patient and the environment for use in promoting and maintaining patient safety
- Sustenance Support**—Helping a needy individual/family to locate food, clothing, or shelter
- Suturing**—Approximating edges of a wound using sterile suture material and a needle
- Swallowing Therapy**—Facilitating swallowing and preventing complications of impaired swallowing
- Teaching: Disease Process**—Assisting the patient to understand information related to a specific disease process
- Teaching: Foot Care**—Preparing a patient at risk and/or significant other to provide preventive foot care
- Teaching: Group**—Development, implementation, and evaluation of a patient-teaching program for a group of individuals experiencing the same health condition
- Teaching: Individual**—Planning, implementation, and evaluation of a teaching program designed to address a patient's particular needs
- Teaching: Preoperative**—Assisting a patient to understand and mentally prepare for surgery and the postoperative recovery period
- Teaching: Prescribed Activity/Exercise**—Preparing a patient to achieve and/or maintain a prescribed level of activity
- Teaching: Prescribed Diet**—Preparing a patient to correctly follow a prescribed diet
- Teaching: Prescribed Medication**—Preparing a patient to safely take pre-

- scribed medications and monitor for their effects
- Teaching: Procedure/Treatment**—Preparing a patient to understand and mentally prepare for a prescribed procedure or treatment
- Teaching: Psychomotor Skill**—Preparing a patient to perform a psychomotor skill
- Teaching: Safe Sex**—Providing instruction concerning sexual protection during sexual activity
- Teaching: Sexuality**—Assisting individuals to understand physical and psychosocial dimensions of sexual growth and development
- Teaching: Toilet Training**—Instruction on determining the child's readiness and strategies to assist the child to learn independent toileting skills
- Technology Management**—Use of technical equipment and devices to monitor patient condition or sustain life
- Telephone Consultation**—Eliciting patient's concerns, listening, and providing support, information, or teaching in response to patient's stated concerns, over the telephone
- Telephone Follow-up**—Providing results of testing or evaluating patient's response and determining potential for problems as a result of previous treatment, examination, or testing, over the telephone
- Temperature Regulation**—Attaining and/or maintaining body temperature within a normal range
- Temperature Regulation: Intraoperative**—Attaining and/or maintaining desired intraoperative body temperature
- Therapeutic Play**—Purposeful and directive use of toys and other materials to assist children in communicating their perception and knowledge of their world and to help in gaining mastery of their environment
- Therapeutic Touch**—Attuning to the universal healing field, seeking to act as an instrument for healing influence, and using the natural sensitivity of the hands to gently focus and direct the intervention process
- Therapy Group**—Application of psychotherapeutic techniques to a group, including the utilization of interactions between members of the group
- Total Parenteral Nutrition (TPN) Administration**—Preparation and delivery of nutrients intravenously and monitoring of patient responsiveness
- Touch**—Providing comfort and communication through purposeful tactile contact
- Traction/Immobilization Care**—Management of a patient who has traction and/or a stabilizing device to immobilize and stabilize a body part
- Transcutaneous Electrical Nerve Stimulation (TENS)**—Stimulation of skin and underlying tissues with controlled, low-voltage electrical vibration via electrodes
- Trauma Therapy: Child**—Use of an interactive helping process to resolve a trauma experienced by a child
- Triage: Disaster**—Establishing priorities of patient care for urgent treatment while allocating scarce resources
- Triage: Emergency Center**—Establishing priorities and initiating treatment for patients in an emergency center
- Triage: Telephone**—Determining the nature and urgency of a problem(s) and providing directions for the level of care required, over the telephone
- Truth Telling**—Use of whole truth, partial truth, or decision delay to promote the patient's self-determination and well-being
- Tube Care**—Management of a patient with an external drainage device exiting the body
- Tube Care: Chest**—Management of a patient with an external water-seal drainage device exiting the chest cavity
- Tube Care: Gastrointestinal**—Management of a patient with a gastrointestinal tube
- Tube Care: Umbilical Line**—Management of a newborn with an umbilical catheter
- Tube Care: Urinary**—Management of a patient with urinary drainage equipment
- Tube Care: Ventriculostomy/Lumbar Drain**—Management of a patient with an external cerebrospinal fluid drainage system
- Ultrasonography: Limited Obstetric**—Performance of ultrasound exams to determine ovarian, uterine, or fetal status
- Unilateral Neglect Management**—Protecting and safely reintegrating the affected part of the body while helping the patient adapt to disturbed perceptual abilities
- Urinary Bladder Training**—Improving bladder function for those with urge incontinence by increasing the bladder's ability to hold urine and the patient's ability to suppress urination
- Urinary Catheterization**—Insertion of a catheter into the bladder for temporary or permanent drainage of urine
- Urinary Catheterization: Intermittent**—Regular periodic use of a catheter to empty the bladder
- Urinary Elimination Management**—Maintenance of an optimum urinary elimination pattern
- Urinary Habit Training**—Establishing a predictable pattern of bladder emptying to prevent incontinence for persons with limited cognitive ability who have urge, stress, or functional incontinence
- Urinary Incontinence Care**—Assistance in promoting continence and maintaining perineal skin integrity
- Urinary Incontinence Care: Enuresis**—Promotion of urinary continence in children

Urinary Retention Care—Assistance in relieving bladder distention

Values Clarification—Assisting another to clarify her/his own values in order to facilitate effective decision-making

Vehicle Safety Promotion—Assisting individuals, families, and communities to increase awareness of measures to reduce unintentional injuries in motorized and non-motorized vehicles

Venous Access Devices (VAD) Maintenance—Management of the patient with prolonged venous access via tunneled and non-tunneled (percutaneous) catheters, and implanted ports

Ventilation Assistance—Promotion of an optimal spontaneous breathing pattern that maximizes oxygen and carbon dioxide exchange in the lungs

Visitation Facilitation—Promoting beneficial visits by family and friends

Vital Signs Monitoring—Collection and analysis of cardiovascular, respiratory, and body temperature data to determine and prevent complications

Vomiting Management—Prevention and alleviation of vomiting

Weight Gain Assistance—Facilitating gain of body weight

Weight Management—Facilitating maintenance of optimal body weight and percent body fat

Weight Reduction Assistance—Facilitating loss of weight and/or body fat

Wound Care—Prevention of wound complications and promotion of wound healing

Wound Care: Closed Drainage—Maintenance of a pressure drainage system at the wound site

Wound Irrigation—Flushing of an open wound to cleanse and remove debris and excessive drainage

SOURCE: Dochterman, J McCloskey and Bulechek, GM: Nursing Interventions Classification, ed. 5, Mosby (Elsevier), St. Louis, 2007, with permission.

APPENDIX N3

Nursing Outcomes Classification System

Outcome Labels and Definitions

- Abuse Cessation**—Evidence that the victim is no longer exploited
- Abuse Protection**—Protection of self or dependent others from abuse
- Abuse Recovery: Emotional**—Extent of healing of psychological injuries due to abuse
- Abuse Recovery: Financial**—Extent of control of monetary and legal matters following financial exploitation
- Abuse Recovery: Physical**—Extent of healing of physical injuries due to abuse
- Abuse Recovery: Sexual**—Extent of healing of physical and psychological injuries due to sexual abuse or exploitation
- Abuse Recovery Status**—Extent of healing following physical or psychological abuse that may include sexual or financial exploitation
- Abusive Behavior Self-Restraint**—Self-restraint of abuse and neglectful behaviors towards others
- Acceptance: Health Status**—Reconciliation significant change in health circumstances
- Activity Tolerance**—Psychological response to energy-consuming movements with daily activities
- Adaptation to Physical Disability**—Adaptive response to a significant functional challenge due to a physical disability
- Adherence Behavior**—Self-initiated actions to promote wellness, recovery, and rehabilitation
- Aggression Self-Control**—Self-restraint of assaultive, combative, or destructive behavior toward others
- Allergic Response: Localized**—Severity of localized hypersensitive immune response to a specific environmental (exogenous) antigen
- Allergic Response: Systemic**—Severity of systemic hypersensitive immune response to a specific environmental (exogenous) antigen
- Ambulation**—Ability to walk from place to place independently with or without assistive device
- Ambulation: Wheelchair**—Ability to move from place to place in a wheelchair
- Anxiety Self-Control**—Personal actions to eliminate or reduce feelings of apprehension, tension, or uneasiness from an identifiable source
- Anxiety Level**—Severity of manifested apprehension, tension, or uneasiness arising from an identifiable source
- Appetite**—Desire to eat when ill or receiving treatment
- Aspiration Prevention**—Personal actions to prevent the passage of fluid and solid particles into the lung
- Asthma Self-Management**—Personal actions to reverse inflammatory condition resulting in bronchial constriction of the airways
- Balance**—Ability to maintain body equilibrium
- Blood Coagulation**—Extent to which blood clots within normal period of time
- Blood Glucose Level**—Extent to which plasma glucose levels in plasma and urine are maintained in normal range
- Blood Loss Severity**—Severity of internal or external bleeding/hemorrhage
- Blood Transfusion Reaction**—Severity of complications with blood transfusions reaction
- Body Image**—Perception of own appearance and body functions
- Body Mechanics Performance**—Personal actions to maintain proper body alignment and to prevent muscular skeletal strain
- Body Positioning: Self-Initiated**—Ability to change own body position independently with or without assistive device
- Bone Healing**—Extent of regeneration of cells and tissues following bone injury
- Bowel Continence**—Control of passage of stool from the bowel
- Bowel Elimination**—Formation and evacuation of stool
- Breastfeeding Establishment: Infant**—Infant attachment to and sucking from the mother's breast for nourishment during the first 3 weeks of breastfeeding
- Breastfeeding Establishment: Maternal**—Maternal establishment of proper attachment of an infant to and sucking from the breast for nourishment during the first 3 weeks of breastfeeding
- Breastfeeding Maintenance**—Continuation of breastfeeding for nourishment of an infant/toddler
- Breastfeeding Weaning**—Progressive discontinuation of breastfeeding
- Cardiac Disease Self-Management**—Personal actions to manage heart disease and prevent disease progression
- Cardiac Pump Effectiveness**—Adequacy of blood volume ejected from the left ventricle to support systemic perfusion pressure
- Caregiver Adaptation to Patient Institutionalization**—Adaptive response of family caregiver when the care recipient is moved to an institution

- Caregiver Emotional Health**—Emotional well-being of a family care provider while caring for a family member
- Caregiver Home Care Readiness**—Extent of preparedness of a caregiver to assume responsibility for the health care of a family member in the home
- Caregiver Lifestyle Disruption**—Severity of disturbances in the lifestyle of a family member due to caregiving
- Caregiver-Patient Relationship**—Positive interactions and connections between the caregiver and care recipient
- Caregiver Performance: Direct Care**—Provision by family care provider of appropriate personal and health care for a family member
- Caregiver Performance: Indirect Care**—Arrangement and oversight by family care provider of appropriate care for a family member
- Caregiver Physical Health**—Physical well-being of a family care provider while caring for a family member
- Caregiver Stressors**—Severity of biopsychosocial pressure on a family care provider caring for another over an extended period of time
- Caregiver Well-Being**—Extent of positive perception of primary care provider's health status and life circumstances
- Caregiving Endurance Potential**—Factors that promote family care provider continuance over an extended period of time
- Child Adaptation to Hospitalization**—Adaptive response of a child from 3 years through 17 years of age to hospitalization
- Child Development: 1 month**—Milestones of physical, cognitive, and psychosocial progression by 1 month of age
- Child Development: 2 months**—Milestones of physical, cognitive, and psychosocial progression by 2 months of age
- Child Development: 4 months**—Milestones of physical, cognitive, and psychosocial progression by 4 months of age
- Child Development: 6 months**—Milestones of physical, cognitive, and psychosocial progression by 6 months of age
- Child Development: 12 months**—Milestones of physical, cognitive, and psychosocial progression by 12 months of age
- Child Development: 2 years**—Milestones of physical, cognitive, and psychosocial progression by 2 years of age
- Child Development: 3 years**—Milestones of physical, cognitive, and psychosocial progression by 3 years of age
- Child Development: 4 years**—Milestones of physical, cognitive, and psychosocial progression by 4 years of age
- Child Development: Preschool**—Milestones of physical, cognitive, and psychosocial progression from 3 years through 5 years of age
- Child Development: Middle Childhood**—Milestones of physical, cognitive, and psychosocial progression from 6 years through 11 years of age
- Child Development: Adolescence**—Milestones of physical, cognitive, and psychosocial progression from 12 years through 17 years of age
- Circulation Status**—Unobstructed, unidirectional blood flow at an appropriate pressure through large vessels of the systemic and pulmonary circuits
- Client Satisfaction: Access to Care Resources**—Extent of positive perception of access to nursing staff, supplies, and equipment needed for care
- Client Satisfaction: Caring**—Extent of positive perception of nursing staff's concern for the client
- Client Satisfaction: Communication**—Extent of positive perception of information exchanged between client and nursing staff
- Client Satisfaction: Continuity of Care**—Extent of positive perception of coordination of cares as the patient moves from one care setting to another
- Client Satisfaction: Cultural Needs Fulfillment**—Extent of positive perception of integration of cultural beliefs, values, and social structures into nursing care
- Client Satisfaction: Functional Assistance**—Extent of positive perception of nursing assistance to achieve mobility and self-care as independently as health conditions permit
- Client Satisfaction: Physical Care**—Extent of positive perception of nursing care to maintain body functions and cleanliness
- Client Satisfaction: Physical Environment**—Extent of positive perception of living environment, treatment environment, equipment and supplies in acute or long term care settings
- Client Satisfaction: Protection of Rights**—Extent of positive perception of protection of a client's legal and moral rights provided by nursing staff
- Client Satisfaction: Psychological Care**—Extent of positive perception of nursing assistance to perform emotional and mental activities as independently as health condition permits
- Client Satisfaction: Safety**—Extent of positive perception of procedures, information, and nursing care to prevent harm or injury
- Client Satisfaction: Symptom Control**—Extent of positive perception of nursing care to relieve symptoms of illness
- Client Satisfaction: Teaching**—Extent of positive perception of instruction provided by nursing staff to improve knowledge, understanding, and participation in care
- Client Satisfaction: Technical Aspects of Care**—Extent of positive perception of nursing staff's knowledge and expertise used in providing care

- Cognition**—Ability to execute complex mental processes
- Cognitive Orientation**—Ability to identify person, place, and time accurately
- Comfort Level**—Extent of positive perception of physical and psychological ease
- Comfortable Death**—Physical and psychological ease with the impending end of life
- Communication**—Reception, interpretation, and expression of spoken, written, and nonverbal messages
- Communication: Expressive**—Expression of meaningful verbal and/or nonverbal messages
- Communication: Receptive**—Reception and interpretation of verbal and/or nonverbal messages
- Community Competence**—Capacity of a community to collectively problem solve to achieve community goals
- Community Disaster Readiness**—Community preparedness to respond to a natural or man-made calamitous event
- Community Health Status**—The general state of well-being of a community or population
- Community Health Status: Immunity**—Resistance of community members to the invasion and spread of an infectious agent that could threaten public health
- Community Risk Control: Chronic Disease**—Community actions to reduce the risk of chronic diseases and related complications
- Community Risk Control: Communicable Disease**—Community actions to eliminate or reduce the spread of infectious agents (bacteria, fungi, parasites, and viruses) that threaten public health
- Community Risk Control: Lead Exposure**—Community actions to reduce lead exposure and poisoning
- Community Risk Control: Violence**—Community actions to eliminate or reduce intentional violent acts resulting in serious physical or psychological harm
- Community Violence Level**—Incidence of violent acts compared with local, state or national values
- Compliance Behavior**—Personal actions to promote wellness, recovery, and rehabilitation based on professional advice
- Concentration**—Ability to focus on a specific stimulus
- Coordinated Movement**—Ability of muscles to work together voluntarily for purposeful movement
- Coping**—Personal actions to manage stressors that tax an individual's resources
- Decision Making**—Ability to make judgments and choose between two or more alternatives
- Depression Self-Control**—Personal actions to minimize melancholy and maintain interest in life events
- Depression Level**—Severity of melancholic mood and loss of interest in life events
- Diabetes Self-Management**—Personal actions to manage diabetes mellitus and prevent disease progression
- Dignified Life Closure**—Personal actions to maintain control during approaching end of life
- Discharge Readiness: Independent Living**—Readiness of a patient to relocate from a health care institution to living independently
- Discharge Readiness: Supported Living**—Readiness of a patient to relocate from a health care institution to a lower level of supported living
- Distorted Thought Self-Control**—Self-restraint or disruption in perception, thought processes, and thought content
- Electrolyte Acid/Base Balance**—Balance of the electrolytes and non-electrolytes in the intracellular and extracellular compartments of the body
- Endurance**—Capacity to sustain activity
- Energy Conservation**—Personal actions to manage energy for initiating and sustaining activity
- Falls Occurrence**—Number of falls in the past (define period of time)
- Fall Prevention Behavior**—Personal or family caregiver actions to minimize risk factors that might precipitate falls in the personal environment
- Family Coping**—Family actions to manage stressors that tax family resources
- Family Functioning**—Capacity of the family system to meet the needs of its members during developmental transitions
- Family Health Status**—Overall health and social competence of family unit
- Family Integrity**—Family members' behaviors that collectively demonstrate cohesion, strength, and emotional bonding
- Family Normalization**—Capacity of the family system to maintain routines and develop strategies for optimal functioning when a member has a chronic illness or disability
- Family Participation in Professional Care**—Family involvement in decision-making, delivery, and evaluation of care provided by health care personnel
- Family Physical Environment**—Physical arrangements in the home that provide safety and stimulation to family members
- Family Resiliency**—Capacity of the family system to successfully adapt and function competently following significant adversity or crises
- Family Social Climate**—Supportive milieu as characterized by family member relationships and goals
- Family Support During Treatment**—Family presence and emotional support for an individual undergoing treatment
- Fear Self-Control**—Personal actions to eliminate or reduce disabling feelings of apprehension, tension, or uneasiness from an identifiable source

- Fear Level**—Severity of manifested apprehension, tension, or uneasiness arising from an identifiable source
- Fear Level: Child**—Severity of manifested apprehension, tension, or uneasiness arising from an identifiable source in a child from 1 year through 17 years of age
- Fetal Status: Antepartum**—Extent to which fetal signs are within normal limits from conception to the onset of labor
- Fetal Status: Intrapartum**—Extent to which fetal signs are within normal limits from onset of labor to delivery
- Fluid Balance**—Water balance in the intracellular and extracellular compartments of the body
- Fluid Overload Severity**—Severity of excess fluids in the intracellular and extracellular compartments of the body
- Grief Resolution**—Adjustment to actual or impending loss
- Growth**—Normal increase in bone size and body weight during growth years
- Health Beliefs**—Personal convictions that influence health behaviors
- Health Beliefs: Perceived Ability to Perform**—Personal conviction that one can carry out a given health behavior
- Health Beliefs: Perceived Control**—Personal conviction that one can influence a health outcome
- Health Beliefs: Perceived Resources**—Personal conviction that one has adequate means to carry out a health behavior
- Health Beliefs: Perceived Threat**—Personal conviction that threatening health problem is serious and has potential negative consequences for lifestyle
- Health Orientation**—Personal commitment to health behaviors as lifestyle priorities
- Health-Promoting Behavior**—Personal actions to sustain or increase wellness
- Health-Seeking Behavior**—Personal actions to promote optimal wellness, recovery, and rehabilitation
- Hearing Compensation Behavior**—Personal actions to identify, monitor, and compensate for hearing loss
- Hemodialysis Access**—Functionality of a dialysis access site
- Hope**—Optimism that is personally satisfying and life-supporting
- Hydration**—Adequate water in the intracellular and extracellular compartments of the body
- Hyperactivity Level: Child**—Severity of patterns of inattention or impulsivity in a child from 1 year through 17 years of age
- Identity**—Distinguishes between self and nonself and characterizes one's essence
- Immobility Consequences: Physiological**—Severity of compromise in physiological functioning due to impaired physical mobility
- Immobility Consequences: Psychocognitive**—Severity of compromise in psycho-cognitive functioning due to impaired physical mobility
- Immune Hypersensitivity Response**—Severity of inappropriate immune responses
- Immune Status**—Natural and acquired appropriately targeted resistance to internal and external antigens
- Immunization Behavior**—Personal actions to obtain immunization to prevent a communicable disease
- Impulse Self-Control**—Self-restraint of compulsive or impulsive behaviors
- Infection Severity**—Severity of infection and associated symptoms
- Infection Severity: Newborn**—Severity of infection and associated symptoms during the first 28 days of life
- Information Processing**—Ability to acquire, organize, and use information
- Joint Movement: Ankle**—Active range of motion of the ankle with self-initiated movement
- Joint Movement: Elbow**—Active range of motion of the elbow with self-initiated movement
- Joint Movement: Fingers**—Active range of motion of the fingers with self-initiated movement
- Joint Movement: Hip**—Active range of motion of the hip with self-initiated movement
- Joint Movement: Knee**—Active range of motion of the knee with self-initiated movement
- Joint Movement: Neck**—Active range of motion of the neck with self-initiated movement
- Joint Movement: Passive**—Joint movement with assistance
- Joint Movement: Shoulder**—Active range of motion of the shoulder with self-initiated movement
- Joint Movement: Spine**—Active range of motion of the spine with self-initiated movement
- Joint Movement: Wrist**—Active range of motion of the wrist with self-initiated movement
- Kidney Function**—Filtration of blood and elimination of metabolic waste products through the formation of urine
- Knowledge: Body Mechanics**—Extent of understanding conveyed about proper body alignment, balance and coordinated movement
- Knowledge: Breastfeeding**—Extent of understanding conveyed about lactation and nourishment of infant through breastfeeding
- Knowledge: Cardiac Disease Management**—Extent of understanding conveyed about heart disease and the prevention of complications
- Knowledge: Child Physical Safety**—Extent of understanding conveyed about

safely caring for a child from 1 year through 17 years of age

Knowledge: Conception Prevention—Extent of understanding conveyed about prevention of unintended pregnancy

Knowledge: Diabetes Management—Extent of understanding conveyed about diabetes mellitus and the prevention of complications

Knowledge: Diet—Extent of understanding conveyed about recommended diet

Knowledge: Disease Process—Extent of understanding conveyed about a specific disease process

Knowledge: Energy Conservation—Extent of understanding conveyed about energy conservation techniques

Knowledge: Fall Prevention—Extent of understanding conveyed about prevention of falls

Knowledge: Fertility Promotion—Extent of understanding conveyed about fertility testing and the conditions that affect conception

Knowledge: Health Behavior—Extent of understanding conveyed about the promotion and protection of health

Knowledge: Health Promotion—Extent of understanding conveyed about information needed to obtain and maintain optimal health

Knowledge: Health Resources—Extent of understanding conveyed about relevant health care resources

Knowledge: Illness Care—Extent of understanding conveyed about illness-related information needed to achieve and maintain optimal health

Knowledge: Infant Care—Extent of understanding conveyed about caring for a baby from birth to 1st birthday

Knowledge: Infection Control—Extent of understanding conveyed about prevention and control of infection

Knowledge: Labor and Delivery—Extent of understanding conveyed about labor and vaginal delivery

Knowledge: Medication—Extent of understanding conveyed about the safe use of medication

Knowledge: Ostomy Care—Extent of understanding conveyed about maintenance of an ostomy for elimination

Knowledge: Parenting—Extent of understanding about provision of a nurturing and constructive environment for a child from 1 year through 17 years of age

Knowledge: Personal Safety—Extent of understanding conveyed about preventing unintentional injuries

Knowledge: Postpartum Maternal Health—Extent of understanding conveyed about maternal health following delivery

Knowledge: Preconception Maternal Health—Extent of understanding conveyed about maternal health prior to conception to ensure a healthy pregnancy

Knowledge: Pregnancy—Extent of understanding conveyed about promotion of a healthy pregnancy and prevention of complications

Knowledge: Prescribed Activity—Extent of understanding conveyed about prescribed activity and exercise

Knowledge: Sexual Functioning—Extent of understanding conveyed about sexual development and responsible sexual practices

Knowledge: Substance Use Control—Extent of understanding conveyed about controlling the use of drugs, tobacco, or alcohol

Knowledge: Treatment Procedure(s)—Extent of understanding conveyed about procedure(s) required as part of a treatment regimen

Knowledge: Treatment Regimen—Extent of understanding conveyed about a specific treatment regimen

Leisure Participation—Use of relaxing, interesting, and enjoyable activities to promote well-being

Loneliness Severity—Severity of emotional, social, or existential isolation response

Maternal Status: Antepartum—Extent to which maternal well-being is within normal limits from conception to the onset of labor

Maternal Status: Intrapartum—Extent to which maternal well-being is within normal limits from onset of labor to delivery

Maternal Status: Postpartum—Extent to which maternal well-being is within normal limits from delivery of placenta to completion of involution

Mechanical Ventilation Response: Adult—Alveolar exchange and tissue perfusion are supported by mechanical ventilation

Mechanical Ventilation Weaning Response: Adult—Respiratory and psychological adjustment to progressive removal of mechanical ventilation

Medication Response—Therapeutic and adverse effects of prescribed medication

Memory—Ability to cognitively retrieve and report previously stored information

Mobility—Ability to move purposefully in own environment independently with or without assistive device

Mood Equilibrium—Appropriate adjustment of prevailing emotional tone in response to circumstances

Motivation—Inner urge that moves or prompts an individual to positive action(s)

Nausea and Vomiting Control—Personal actions to control nausea, retching, and vomiting symptoms

Nausea and Vomiting Disruptive Effects—Severity of observed or reported disruptive effects of nausea, retching, and vomiting on daily functioning

Nausea and Vomiting Severity—Severity of nausea, retching, and vomiting symptoms

- Neglect Cessation**—Evidence that the victim is no longer receiving substandard care
- Neglect Recovery**—Extent of healing following the cessation of substandard care
- Neurological Status**—Ability of the peripheral and central nervous system to receive, process, and respond to internal and external stimuli
- Neurological Status: Autonomic**—Ability of the autonomic nervous system to coordinate visceral and homeostatic function
- Neurological Status: Central Motor Control**—Ability of the central nervous system to coordinate skeletal muscle activity for body movement
- Neurological Status: Consciousness**—Arousal, orientation, and attention to the environment
- Neurological Status: Cranial Sensory/Motor Function**—Ability of the cranial nerves to convey sensory and motor impulses
- Neurological Status: Spinal Sensory/Motor Function**—Ability of the spinal nerves to convey sensory and motor impulses
- Newborn Adaptation**—Adaptive response to the extrauterine environment by a physiologically mature newborn during the first 28 days
- Nutritional Status**—Extent to which nutrients are available to meet metabolic needs
- Nutritional Status: Biochemical Measures**—Body fluid components and chemical indices of nutritional status
- Nutritional Status: Energy**—Extent to which nutrients and oxygen provide cellular energy
- Nutritional Status: Food and Fluid Intake**—Amount of food and fluid taken into the body over a 24-hour period
- Nutritional Status: Nutrient Intake**—Adequacy of usual pattern of nutrient intake
- Oral Hygiene**—Condition of the mouth, teeth, gums, and tongue
- Ostomy Self-Care**—Personal actions to maintain ostomy for elimination
- Pain: Adverse Psychological Response**—Severity of observed or reported adverse cognitive and emotional responses to physical pain
- Pain Control**—Personal actions to control pain
- Pain: Disruptive Effects**—Severity of observed or reported disruptive effects of chronic pain on daily functioning
- Pain Level**—Severity of observed or reported pain
- Parent-Infant Attachment**—Parent and infant behaviors that demonstrate an enduring affectionate bond
- Parenting Performance**—Parental actions taken to provide a child a nurturing and constructive physical, emotional, and social environment
- Parenting: Adolescent Physical Safety**—Parental actions to avoid physical injury in an adolescent from 12 years through 17 years of age
- Parenting: Early/Middle Childhood Physical Safety**—Parental actions to avoid physical injury of a child from 3 years through 11 years of age
- Parenting: Infant/Toddler Physical Safety**—Parental actions to avoid physical injury to a child from birth through 2 years of age
- Parenting: Psychosocial Safety**—Parental actions to protect a child from social contacts that might cause harm or injury
- Participation in Health Care Decisions**—Personal involvement in selecting and evaluating health care options to achieve desired outcome
- Personal Autonomy**—Personal actions of a competent individual to exercise governance in life decisions
- Personal Health Status**—Overall physical, psychological, social, and spiritual functioning of an adult 18 years or older
- Personal Safety Behavior**—Personal actions of an adult to control behaviors that can cause physical injury
- Personal Well-Being**—An individual's expressed satisfaction with health status
- Physical Aging**—Normal physical changes that occur with the natural aging process
- Physical Fitness**—Performance of physical activities with vigor
- Physical Injury Severity**—Severity of injuries from accidents and trauma
- Physical Maturation: Female**—Normal physical changes in the female that occur with the transition from childhood to adulthood
- Physical Maturation: Male**—Normal physical changes in the male that occur with the transition from childhood to adulthood
- Play Participation**—Use of activities by a child from 1 year through 11 years of age to promote enjoyment, entertainment, and development
- Postprocedure Recovery Status**—Extent to which an individual returns to baseline function following a procedure(s) requiring anesthesia or sedation
- Prenatal Health Behavior**—Personal actions to promote a healthy pregnancy and a healthy newborn
- Preterm Infant Organization**—Extrauterine integration of physiologic and behavioral function by the infant born 24 to 37 (term) weeks of gestation
- Psychomotor Energy**—Personal drive and energy to maintain activities of daily living, nutrition, and personal safety
- Psychosocial Adjustment: Life Change**—Adaptive psychosocial response of an individual to a significant life change
- Quality of Life**—Extent of positive perception of current life circumstances

- Respiratory Status: Airway Patency**—Open, clear tracheobronchial passages for air exchange
- Respiratory Status: Gas Exchange**—Alveolar exchange of CO₂ or O₂ to maintain arterial blood gas concentrations
- Respiratory Status: Ventilation**—Movement of air in and out of the lungs
- Rest**—Quantity and pattern of diminished activity for mental and physical rejuvenation
- Risk Control**—Personal actions to prevent, eliminate, or reduce modifiable health threats
- Risk Control: Alcohol Use**—Personal actions to prevent, eliminate, or reduce alcohol use that poses a threat to health
- Risk Control: Cancer**—Personal actions to detect or reduce the threat of cancer
- Risk Control: Cardiovascular Health**—Personal actions to eliminate or reduce threats to cardiovascular health
- Risk Control: Drug Use**—Personal actions to prevent, eliminate, or reduce drug use that poses a threat to health
- Risk Control: Hearing Impairment**—Personal actions to prevent, eliminate, or reduce threats to hearing function
- Risk Control: Sexually Transmitted Diseases (STDs)**—Personal actions to prevent, eliminate, or reduce behaviors associated with sexually transmitted disease
- Risk Control: Tobacco Use**—Personal actions to prevent, eliminate, or reduce tobacco use
- Risk Control: Unintended Pregnancy**—Personal actions to prevent or reduce the possibility of unintended pregnancy
- Risk Control: Visual Impairment**—Personal actions to prevent, eliminate, or reduce the threats to visual function
- Risk Detection**—Personal actions to identify personal health threats
- Role Performance**—Congruence of an individual's role behavior with role expectations
- Safe Home Environment**—Physical arrangements to minimize environmental factors that might cause physical harm or injury in the home
- Seizure Control**—Personal actions to reduce or minimize the occurrence of seizure episodes
- Self-Care Status**—Ability to perform basic personal care activities and household tasks
- Self-Care: Activities of Daily Living (ADLs)**—Ability to perform the most basic physical tasks and personal care activities independently with or without assistive device
- Self-Care: Bathing**—Ability to cleanse own body independently with or without assistive device
- Self-Care: Dressing**—Ability to dress oneself independently with or without assistive device
- Self-Care: Eating**—Ability to prepare and ingest food and fluid independently with or without assistive device
- Self-Care: Hygiene**—Ability to maintain own personal cleanliness and kept appearance independently with or without assistive device
- Self-Care: Instrumental Activities of Daily Living (IADLs)**—Ability to perform activities needed to function in the home or community independently with or without assistive device
- Self-Care: Nonparenteral Medication**—Ability to administer oral and topical medications to meet therapeutic goals independently with or without assistive device
- Self-Care: Oral Hygiene**—Ability to care for own mouth and teeth independently with or without assistive device
- Self-Care: Parenteral Medication**—Ability to administer parenteral medications to meet therapeutic goals independently with or without assistive device
- Self-Care: Toileting**—Ability to toilet self independently with or without assistive device
- Self-Direction of Care**—Care recipient actions taken to direct others who assist with or perform physical tasks and personal health care
- Self-Esteem**—Personal judgment of self-worth
- Self-Mutilation Restraint**—Personal actions to refrain from intentional self-inflicted injury (nonlethal)
- Sensory Function Status**—Extent to which an individual correctly perceives skin stimulation, sounds, proprioception, taste and smell, and visual images
- Sensory Function: Cutaneous**—Extent to which stimulation of the skin is correctly sensed
- Sensory Function: Hearing**—Extent to which sounds are correctly sensed
- Sensory Function: Proprioception**—Extent to which the position and movement of the head and body are correctly sensed
- Sensory Function: Taste and Smell**—Extent to which chemicals inhaled or dissolved in saliva are correctly sensed
- Sensory Function: Vision**—Extent to which visual images are correctly sensed
- Sexual Functioning**—Integration of physical, socioemotional, and intellectual aspects of sexual expression and performance
- Sexual Identity**—Acknowledgment and acceptance of own sexual identity
- Skeletal Function**—Ability of the bones to support the body and facilitate movement
- Sleep**—Natural periodic suspension of consciousness during which the body is restored
- Social Interaction Skills**—Personal behaviors that promote effective relationships

- Social Involvement**—Social interactions with persons, groups, or organizations
- Social Support**—Perceived availability and actual provision of reliable assistance from others
- Spiritual Health**—Connectedness with self, others, higher power, all life, nature, and the universe that transcends and empowers the self
- Stress Level**—Severity of manifested physical or mental tension resulting from factors that alter an existing equilibrium
- Student Health Status**—Physical, cognitive/emotional, and social status of school age children that contribute to school attendance, participation in school activities, and ability to learn
- Substance Addiction Consequences**—Severity of change in health status and social functioning due to substance addiction
- Suffering Severity**—Severity of anguish associated with a distressing symptom, injury, or loss that has potential long-term effects
- Suicide Self-Restraint**—Personal actions to refrain from gestures and attempts at killing self
- Swallowing Status**—Safe passage of fluids and/or solids from the mouth to the stomach
- Swallowing Status: Esophageal Phase**—Safe passage of fluids and/or solids from the pharynx to the stomach
- Swallowing Status: Oral Phase**—Preparation, containment, and posterior movement of fluids and/or solids in the mouth
- Swallowing Status: Pharyngeal Phase**—Safe passage of fluids and/or solids from the mouth to the esophagus
- Symptom Control**—Personal actions to minimize perceived adverse changes in physical and emotional functioning
- Symptom Severity**—Severity of perceived adverse changes in physical, emotional, and social functioning
- Symptom Severity: Perimenopause**—Severity of symptoms caused by declining hormonal levels
- Symptom Severity: Premenstrual Syndrome (PMS)**—Severity of symptoms caused by cyclic hormonal fluctuations
- Systemic Toxin Clearance: Dialysis**—Clearance of toxins from the body with peritoneal or hemodialysis
- Thermoregulation**—Balance among heat production, heat gain, and heat loss
- Thermoregulation: Newborn**—Balance among heat production, heat gain, and heat loss during the first 28 days of life
- Tissue Integrity: Skin and Mucous Membranes**—Structural intactness and normal physiological function of skin and mucous membranes
- Tissue Perfusion: Abdominal Organs**—Adequacy of blood flow through the small vessels of the abdominal viscera to maintain organ function
- Tissue Perfusion: Cardiac**—Adequacy of blood flow through the coronary vasculature to maintain heart function
- Tissue Perfusion: Cerebral**—Adequacy of blood flow through the cerebral vasculature to maintain brain function
- Tissue Perfusion: Peripheral**—Adequacy of blood flow through the small vessels of the extremities to maintain tissue function
- Tissue Perfusion: Pulmonary**—Adequacy of blood flow through pulmonary vasculature to perfuse alveoli/capillary unit
- Transfer Performance**—Ability to change body location independently with or without assistive device
- Treatment Behavior: Illness or Injury**—Personal actions to palliate or eliminate pathology
- Urinary Continence**—Control of the elimination of urine from the bladder
- Urinary Elimination**—Collection and discharge of urine
- Vision Compensation Behavior**—Personal actions to compensate for visual impairment
- Vital Signs**—Extent to which temperature, pulse, respiration, and blood pressure are within normal range
- Weight: Body Mass**—Extent to which body weight, muscle, and fat are congruent to height, frame, gender, and age
- Weight Control**—Personal actions to achieve and maintain optimum body weight
- Will to Live**—Desire, determination, and effort to survive
- Wound Healing: Primary Intention**—Extent of regeneration of cells and tissues following intentional closure
- Wound Healing: Secondary Intention**—Extent of regeneration of cells and tissues in an open wound

SOURCE: Moorhead, S, Johnson, M, and Maas, M: Nursing Outcomes Classification, ed. 3, Mosby, St. Louis, 2004, with permission.

APPENDIX N4

Nursing Diagnoses *

Quick View of Contents

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Appendices N4-1 and N4-2 Organize all approved NANDA nursing diagnoses by two nursing models: Gordon's Functional Health Patterns and Doenges and Moorhouse's Diagnostic Divisions. The use of a nursing model as a framework helps to organize the data needed to identify and validate nursing diagnoses.

Appendix N4-3 Lists the most recently approved NANDA nursing diagnoses (2007–2008) for quick reference.

Appendix N4-4 Provides a guide to choosing appropriate nursing diagnoses by alphabetically listing almost 300 diseases/disorders with their commonly associated nursing diagnoses. Each of the listed diseases/disorders has been cross-referenced from its position in the body of the dictionary. The nursing diagnoses are written in the form of patient problem statements, also known as PES format (Problem, Etiology, Signs/Symptoms). The phrases "may be related to" and "possibly evidenced by" in the patient problem statements serve to help one individualize the care for the specific patient situations. A "risk for" diagnosis is not evidenced by signs and symptoms, as the problem has not occurred and nursing interventions are directed at prevention. Because the patient's health status is perpetual and ongoing, other nursing diagnoses may be appropriate based on changing patient situations. To identify other applicable nursing diagnoses, check Appendix N4-1, then turn to Appendix N4-5 to test and validate your choices.

Appendix N4-5 Details the NANDA-approved diagnoses through 2007–2008 in alphabetical order with their associated etiology [Related/Risk Factors] and signs and symptoms [Defining Characteristics]. This specific focus on assessment data/evaluation criteria helps you complete the validation process.

*Adapted from North American Nursing Diagnosis Association (2007). NANDA Nursing Diagnoses: Definitions and Classification 2007–2008. Philadelphia: NANDA.

Appendix N4-1 Gordon's Functional Health Patterns

HEALTH PERCEPTION—HEALTH MANAGEMENT PATTERN

Death syndrome, risk for sudden infant
 Energy Field Disturbance
 Environmental Interpretation Syndrome, impaired
 Falls, risk for
 Health Maintenance, ineffective
 Health-Seeking Behaviors (specify)
 Infection, risk for
 Injury (trauma), risk for
 Latex Allergy
 Latex Allergy, risk for
 Noncompliance (specify)
 Perioperative Positioning Injury, risk for
 Poisoning, risk for
 Protection, ineffective
 Recovery, delayed surgical
 Suffocation, risk for
 Suicide, risk for
 Therapeutic Regimen: effective management
 Therapeutic Regimen: ineffective management
 Therapeutic Regimen management: readiness for enhanced
 Therapeutic Regimen: family, ineffective management
 Therapeutic Regimen: community, ineffective management
 Trauma, risk for
 Wandering (specify sporadic or continual)

NUTRITIONAL—METABOLIC PATTERN

Aspiration, risk for
 Body Temperature, imbalanced, risk for
 Breastfeeding, effective
 Breastfeeding, ineffective
 Breastfeeding, interrupted
 Dentition, impaired
 Failure to thrive, adult
 Fluid Balance, readiness for enhanced
 Fluid Volume, risk for deficient
 Fluid Volume Deficient [active loss]
 Fluid Volume Deficit [regulatory failure]
 Fluid Volume Deficit, risk for
 Fluid Volume Excess
 Fluid Volume Imbalance, risk for
 Hyperthermia
 Hypothermia
 Infant Feeding Pattern, ineffective
 Latex Allergy Response
 Latex Allergy Response, risk for
 Nausea
 Nutrition: imbalanced, less than body requirements
 Nutrition: imbalanced, more than body requirements
 Nutrition: imbalanced, risk for more than body requirements
 Nutrition: readiness for enhanced

Oral Mucous Membrane, impaired
 Skin Integrity, impaired
 Skin Integrity, impaired, risk for
 Swallowing, impaired
 Thermoregulation, ineffective
 Tissue Integrity, impaired

ELIMINATION PATTERN

Bowel Incontinence
 Constipation
 Constipation, perceived
 Constipation, risk for
 Diarrhea
 Failure to Thrive, adult
 Growth, risk for altered
 Hyperthermia
 Hypothermia
 Incontinence, functional
 Incontinence, reflex
 Incontinence, stress
 Incontinence, total
 Incontinence, urge
 Urinary Elimination, impaired
 Urinary Elimination, readiness for enhanced
 Urinary Retention [acute/chronic]
 Urinary Urge Incontinence, risk for

ACTIVITY—EXERCISE PATTERN

Activity Intolerance [specify level]
 Activity Intolerance, risk for
 Adaptive Capacity, decreased, intracranial
 Airway Clearance, ineffective
 Autonomic Dysreflexia
 Autonomic Dysreflexia, risk for
 Bed Mobility, impaired
 Breathing Pattern, ineffective
 Cardiac Output, decreased
 Development, altered, risk for
 Development, risk for delayed
 Disorganized Infant Behavior
 Disorganized Infant Behavior, risk for
 Disuse Syndrome, risk for
 Diversional Activity, deficient
 Dysfunctional Ventilatory Weaning Response
 Dysreflexia
 Dysreflexia, autonomic, risk for
 Enhanced Organized Infant Behavior, potential for
 Fatigue
 Gas Exchange, impaired
 Growth and Development, altered
 Growth and Development, delayed
 Growth, risk for disproportionate
 Home Maintenance, impaired
 Home Maintenance Management, impaired
 Infant Behavior, disorganized
 Infant Behavior, readiness for enhanced organized
 Infant Behavior, risk for disorganized
 Injury, preoperative positioning, risk for
 Mobility, Bed, impaired

Mobility, Wheelchair, impaired
 Peripheral Neurovascular Dysfunction,
 risk for
 Physical Mobility, impaired
 Self-Care Deficit [specify level]:
 feeding, bathing/hygiene, dressing/
 grooming, toileting
 Spontaneous Ventilation, inability to
 sustain
 Surgical Recovery, delayed
 Tissue Perfusion, altered (specify):
 cerebral, cardiopulmonary, renal,
 gastrointestinal, peripheral
 Transfer Ability, impaired
 Ventilation, impaired spontaneous
 Ventilatory Weaning Response,
 dysfunctional (DVWR)
 Walking, impaired
 Wandering
 Wheelchair Transfer Ability, impaired

SLEEP—REST PATTERN

Sleep, readiness for enhanced
 Sleep Deprivation
 Sleep Pattern Disturbance

COGNITIVE—PERCEPTUAL PATTERN

Adaptive Capacity: intracranial,
 decreased
 Confusion, acute
 Confusion, chronic
 Decisional Conflict
 Environmental Interpretation
 Syndrome, impaired
 Knowledge, readiness for enhanced
 Knowledge Deficit [learning need]
 (specify)
 Memory, impaired
 Pain
 Pain, acute
 Pain, chronic
 Sensory/Perceptual Alterations
 (specify): visual, auditory,
 kinesthetic, gustatory, tactile,
 olfactory
 Thought Processes, altered
 Thought Processes, disturbed
 Unilateral Neglect

SELF-PERCEPTION—SELF-CONCEPT PATTERN

Anxiety [Mild, Moderate, Severe,
 Panic]
 Anxiety, death
 Body Image Disturbance
 Fear
 Hopelessness
 Loneliness, risk for
 Personal Identity Disturbance
 Powerlessness
 Powerlessness, risk for
 Self-Concept, readiness for enhanced
 Self-Esteem, chronic low
 Self-Esteem Disturbance
 Self-Esteem, situational low
 Self-Esteem, situational low, risk for
 Self-Mutilation

Self-Mutilation, risk for
 Violence, self-directed, risk for

ROLE—RELATIONSHIP PATTERN

Caregiver Role Strain
 Caregiver Role Strain, risk for
 Communication, impaired, verbal
 Communication, readiness for
 enhanced
 Family Process, altered: alcoholism
 [substance abuse]
 Family Processes, altered
 Family Processes, interrupted
 Family Processes, readiness for
 enhanced
 Grieving, anticipatory
 Grieving, dysfunctional
 Parental Role Conflict
 Parent/Infant/Child Attachment,
 altered, risk for
 Parenting, altered
 Parenting, altered, risk for
 Parenting, impaired
 Relocation Stress Syndrome
 Relocation Stress Syndrome, risk for
 Role Performance, altered
 Role Performance, ineffective
 Social Interaction, impaired
 Social Isolation
 Sorrow, chronic
 Violence, directed at others, risk for
 Violence, self-directed, risk for

SEXUALITY—REPRODUCTIVE PATTERN

Rape-Trauma Syndrome [specify]
 Rape-Trauma Syndrome: compound
 reaction
 Rape-Trauma Syndrome: silent
 reaction
 Sexual Dysfunction
 Sexuality Patterns, ineffective

COPING—STRESS TOLERANCE PATTERN

Adjustment, impaired
 Community Coping, enhanced,
 potential for
 Community Coping, ineffective
 Coping, defensive
 Coping, enhanced, readiness for
 Coping, individual, ineffective
 Coping, ineffective
 Denial, ineffective
 Family Coping, ineffective:
 compromised
 Family Coping, ineffective: disabling
 Family Coping, readiness for enhanced
 Family Coping: potential for growth
 Post-Trauma Response [specify stage]
 Post-Trauma Syndrome
 Post-Trauma Syndrome, risk for
 Self-Mutilation
 Self-Mutilation, risk for
 Suicide, risk for
 Violence, directed at others, risk for
 Violence, self-directed, risk for

VALUE—BELIEF PATTERN

Spiritual Distress (distress of the human spirit)

Spiritual Distress, risk for
Spiritual Well-Being, enhanced,
potential for

Note: Information appearing in parentheses has been added to clarify and facilitate the use of nursing diagnoses.

SOURCE: Adapted from Gordon, M: Manual of Nursing Diagnosis, ed. 10, St. Louis, MO, Mosby/Elsevier Science, 2002, with permission.

Appendix N4-2 Doenges and Moorhouse's Diagnostic Divisions

ACTIVITY/REST

Activity Intolerance
Activity Intolerance, risk for
Disuse Syndrome, risk for
Diversional Activity, deficient
Fatigue
Insomnia
Lifestyle, sedentary
Mobility, impaired bed
Mobility, impaired wheelchair
Sleep, readiness for enhanced
Sleep Deprivation
Transfer ability, impaired
Walking, impaired

Rape-Trauma Syndrome: silent reaction
Religiosity, impaired
Religiosity, readiness for enhanced
Religiosity, risk for impaired
Relocation Stress Syndrome
Relocation Stress Syndrome, risk for
Self-Concept, readiness for enhanced
Self-Esteem, chronic low
Self-Esteem, situational low
Self-Esteem, risk for situational low
Sorrow, chronic
Spiritual Distress
Spiritual Distress, risk for
Spiritual Well-Being, readiness for enhanced

CIRCULATION

Autonomic Dysreflexia
Autonomic Dysreflexia, risk for
Cardiac Output, decreased
Intracranial Adaptive Capacity, decreased
Tissue Perfusion, ineffective (specify type: cerebral, cardiopulmonary, renal, gastrointestinal, peripheral)

ELIMINATION

Bowel Incontinence
Constipation
Constipation, perceived
Constipation, risk for
Diarrhea
Urinary Elimination, impaired
Urinary Elimination, readiness for enhanced
Urinary Incontinence, functional
Urinary Incontinence, overflow
Urinary Incontinence, reflex
Urinary Incontinence, risk for urge
Urinary Incontinence, stress
Urinary Incontinence, total
Urinary Incontinence, urge
Urinary Retention [acute/chronic]

EGO INTEGRITY

Anxiety [specify level]
Anxiety, death
Behavior, risk-prone health
Body Image, disturbed
Conflict, decisional (specify)
Coping, defensive
Coping, ineffective
Coping, readiness for enhanced
Decision Making, readiness for enhanced
Denial, ineffective
Dignity, risk for compromised human
Distress, moral
Energy Field, disturbed
Fear
Grieving
Grieving, complicated
Grieving, risk for complicated
Hope, readiness for enhanced
Hopelessness
Personal Identity, disturbed
Post-Trauma Syndrome
Post-Trauma Syndrome, risk for
Power, readiness for enhanced
Powerlessness
Powerlessness, risk for
Rape-Trauma Syndrome
Rape-Trauma Syndrome: compound reaction

FOOD/FLUID

Breastfeeding, effective
Breastfeeding, ineffective
Breastfeeding, interrupted
Dentition, impaired
Failure to Thrive, adult
Fluid Balance, readiness for enhanced [Fluid Volume, deficient (hyper/hypotonic)]
Fluid Volume, deficient [isotonic]
Fluid Volume, excess
Fluid Volume, risk for deficient
Fluid Volume, risk for imbalanced
Glucose, risk for unstable blood
Infant Feeding Pattern, ineffective
Liver Function, risk for impaired
Nausea
Nutrition: less than body requirements, imbalanced
Nutrition: more than body requirements, imbalanced

Nutrition: risk for more than body requirements, imbalanced
 Nutrition, readiness for enhanced
 Oral Mucous Membrane, impaired
 Swallowing, impaired

HYGIENE

Self-Care, readiness for enhanced
 Self-Care Deficit, bathing/hygiene
 Self-Care Deficit, dressing/grooming
 Self-Care Deficit, feeding
 Self-Care Deficit, toileting

NEUROSENSORY

Confusion, acute
 Confusion, chronic
 Confusion, risk for acute
 Infant Behavior, disorganized
 Infant Behavior, readiness for enhanced organized
 Infant Behavior, risk for disorganized
 Memory, impaired
 Neglect, unilateral
 Peripheral Neurovascular Dysfunction, risk for
 Sensory/Perception, disturbed (specify: visual, auditory, kinesthetic, gustatory, tactile, olfactory)
 Stress Overload
 Thought Processes, disturbed

PAIN/DISCOMFORT

Comfort, readiness for enhanced
 Pain, acute
 Pain, chronic

RESPIRATION

Airway Clearance, ineffective
 Aspiration, risk for
 Breathing Pattern, ineffective
 Gas Exchange, impaired
 Ventilation, impaired spontaneous
 Ventilatory Weaning Response, dysfunctional

SAFETY

Allergy Response, latex
 Allergy Response, risk for latex
 Body Temperature, risk for imbalanced
 Contamination
 Contamination, risk for
 Death Syndrome, risk for sudden infant
 Environmental Interpretation Syndrome, impaired
 Falls, risk for
 Health Maintenance, ineffective
 Home Maintenance, impaired
 Hyperthermia
 Hypothermia
 Immunization status, readiness for enhanced
 Infection, risk for
 Injury, risk for
 Injury, risk for perioperative positioning
 Mobility, impaired physical
 Poisoning, risk for

Protection, ineffective
 Self-Mutilation
 Self-Mutilation, risk for
 Skin Integrity, impaired
 Skin Integrity, risk for impaired
 Suffocation, risk for
 Suicide, risk for
 Surgical Recovery, delayed
 Thermoregulation, ineffective
 Tissue Integrity, impaired
 Trauma, risk for
 Violence, [actual/] risk for other-directed
 Violence, [actual/] risk for self-directed
 Wandering [specify sporadic or continual]

SEXUALITY

Sexual Dysfunction
 Sexuality Pattern, ineffective

SOCIAL INTERACTION

Attachment, risk for impaired parent/child
 Caregiver Role Strain
 Caregiver Role Strain, risk for
 Communication, impaired, verbal
 Communication, readiness for enhanced
 Conflict, parental role
 Coping, compromised family
 Coping, disabled family
 Coping, ineffective community
 Coping, readiness for enhanced community
 Coping, readiness for enhanced family
 Family Processes: Alcoholism, dysfunctional
 Family Processes, interrupted
 Family Processes, readiness for enhanced
 Loneliness, risk for
 Parenting, impaired
 Parenting, risk for impaired
 Role Performance, ineffective
 Social Interaction, impaired
 Social Isolation

TEACHING/LEARNING

Development, risk for delayed
 Growth, risk for disproportionate
 Growth and Development, delayed
 Health-Seeking Behaviors (specify)
 Knowledge, deficient [Learning Need] (specify)
 Knowledge (specify), readiness for enhanced
 Noncompliance [Adherence, ineffective] (specify)
 Therapeutic Regimen Management, effective
 Therapeutic Regimen Management, ineffective
 Therapeutic Regimen Management, ineffective community
 Therapeutic Regimen Management, ineffective family
 Therapeutic Regimen Management, readiness for enhanced

Appendix N4-3 Additional Nursing Diagnoses Approved Through 2007-2008

Confusion, risk for Acute
Comfort, readiness for enhanced
Contamination
Contamination, risk for
Decision Making, readiness for enhanced
Dignity, risk for compromised Human
Glucose, risk for unstable Blood
Hope, readiness for enhanced
Immunization Status, readiness for enhanced
Liver Function, risk for impaired
Moral Distress
Self-Care, readiness for enhanced
Stress Overload
Urinary Incontinence, overflow

Appendix N4-4 Nursing Diagnoses Grouped by Diseases/ Disorders

abdominal perineal resection

(also refer to *surgery, general*)

disturbed Body Image may be related to presence of surgical wounds possibly evidenced by verbalizations of feelings/perceptions, fear of reaction by others, preoccupation with change.

risk for Constipation: risk factors may include decreased physical activity/gastric motility, abdominal muscle weakness, insufficient fluid intake, change in usual foods/eating pattern.

risk for Sexual Dysfunction: risk factors may include altered body structure/function, radical resection/treatment procedures, vulnerability/psychological concern about response of significant other(s), and disruption of sexual response pattern (e.g., erection difficulty).

abortion, elective termination

risk for decisional Conflict: risk factors may include unclear personal values/beliefs, lack of experience or interference with decision making, information from divergent sources, deficient support system.

deficient Knowledge [Learning Need] regarding reproduction, contraception, self-care, Rh factor may be related to lack of exposure/recall or misinterpretation of information possibly evidenced by request for information, statement of misconception, inaccurate follow-through of instructions, development of preventable events/complications.

risk for Spiritual Distress/Moral Distress: risk factors may include perception of moral/ethical implications of therapeutic procedure, time constraints for decision making.

abortion, spontaneous termination

deficient Fluid Volume [isotonic] may be related to excessive blood loss, possibly evidenced by decreased pulse volume and pressure, delayed capillary refill, or changes in sensorium.

risk for Spiritual Distress: risk factors may include need to adhere to personal religious beliefs/practices, blame for loss directed at self or God.

deficient Knowledge [Learning Need] regarding cause of abortion, self-care, contraception/future pregnancy may be related to lack of familiarity with new self/health care needs, sources for support, possibly evidenced by requests for information and statement of concern/misconceptions, development of preventable complications.

Grieving related to perinatal loss, possibly evidenced by crying, expressions of sorrow, or changes in eating habits/sleep patterns.

risk for ineffective Sexuality Pattern: risk factors may include increasing fear of pregnancy and/or repeat loss, impaired relationship with significant other(s), self-doubt regarding own femininity.

abruptio placentae

deficient Fluid Volume [isotonic] may be related to excessive blood loss, possibly evidenced by hypotension, increased heart rate, decreased pulse volume and pressure, delayed capillary refill, or changes in sensorium.

Fear related to threat of death (perceived or actual) to fetus/self, possibly evidenced by verbalization of specific concerns, increased tension, sympathetic stimulation.

acute Pain may be related to collection of blood between uterine wall and placenta, possibly evidenced by verbal reports, abdominal guarding, muscle tension, or alterations in vital signs.

impaired fetal Gas Exchange may be related to altered uteroplacental oxygen transfer, possibly evidenced by alterations in fetal heart rate and movement.

abscess, brain (acute)

acute Pain may be related to inflammation, edema of tissues, possibly evidenced by reports of headache, restlessness, irritability, and moaning.

risk for Hyperthermia: risk factors may include inflammatory process/hypermetabolic state and dehydration.

acute Confusion may be related to physiologic changes (e.g., cerebral edema/altered perfusion, fever), possibly evidenced by fluctuation in cognition/level of consciousness, increased agitation/restlessness, hallucinations.

risk for Suffocation/Trauma: risk factors may include development of clonic/tonic muscle activity and changes in consciousness (seizure activity).

abuse

(also refer to *battered child syndrome*)

risk for Trauma: risk factors may include vulnerable client, recipient of verbal threats, history of physical abuse.

Powerlessness may be related to abusive relationship, lifestyle of helplessness as evidenced by verbal expressions of having no control, reluctance to express true feelings, apathy, passivity.

chronic low Self-Esteem may be related to continual negative evaluation of self/capabilities, personal vulnerability, willingness to tolerate possible life-threatening domestic violence as evidenced by self-negative verbalization, evaluates self as unable to deal with events, rationalizes away/rejects positive feedback.

acidosis, metabolic

Refer to *diabetic ketoacidosis*.

acidosis, respiratory

(also refer to underlying cause/condition)

impaired Gas Exchange may be related to ventilation perfusion imbalance (decreased oxygen-carrying capacity of blood, altered oxygen supply, alveolar-capillary membrane changes) possibly evidenced by dyspnea with exertion, tachypnea, changes in mentation, irritability, tachycardia, hypoxia, hypercapnia.

acne

impaired Skin Integrity may be related to secretions, infectious process as evidenced by disruptions of skin surface.

disturbed Body Image may be related to change in visual appearance as evidenced by fear of rejection of others, focus on past appearance, negative feelings about body, change in social involvement.

situational low Self-Esteem may be related to adolescence, negative perception of appearance as evidenced by self-negating verbalizations, expressions of helplessness.

acute respiratory distress syndrome (ARDS)

ineffective Airway Clearance may be related to loss of ciliary action, increased amount and viscosity of secretions, and increased airway resistance, possibly evidenced by presence of dyspnea, changes in depth/rate of respiration, use of accessory muscles for breathing, wheezes/crackles, cough with or without sputum production.

impaired Gas Exchange may be related to changes in pulmonary capillary permeability with edema formation, alveolar hypoventilation and collapse, with intrapulmonary shunting; possibly evidenced by tachypnea, use of accessory muscles, cyanosis, hypoxia per arterial blood gases (ABGs)/oximetry; anxiety and changes in mentation.

risk for deficient Fluid Volume: risk factors may include active loss from diuretic use and restricted intake.

risk for decreased Cardiac Output: risk factors may include alteration in preload (hypovolemia, vascular pooling, diuretic therapy, and increased intrathoracic pressure/use of ventilator/positive end-expiratory pressure, PEEP).

Anxiety [specify level]/Fear may be related to physiologic factors (effects of hypoxemia); situational crisis, change in health status/threat of death; possibly evidenced by increased tension, apprehension, restlessness, focus on self, and sympathetic stimulation.

risk for barotrauma Injury: risk factors may include increased airway pressure associated with mechanical ventilation (PEEP).

Addison's disease

deficient Fluid Volume [hypotonic] may be related to vomiting, diarrhea, increased renal losses, possibly evidenced by delayed capillary refill, poor skin turgor, dry mucous membranes, report of thirst.

decreased Cardiac Output may be related to hypovolemia and altered electrical conduction (dysrhythmias) and/or diminished cardiac muscle mass, possibly evidenced by alterations in vital signs, changes in mentation, and irregular pulse or pulse deficit.

Fatigue may be related to decreased metabolic energy production, altered body chemistry (fluid, electrolyte, and glucose imbalance), possibly evidenced by unremitting, overwhelming lack of energy, inability to maintain usual routines, decreased performance, impaired ability to concentrate, lethargy, and disinterest in surroundings.

disturbed Body Image may be related to changes in skin pigmentation and mucous membranes, loss of axillary/pubes hair, possibly evidenced by verbalization of negative feelings about body and decreased social involvement.

risk for impaired physical Mobility: risk factors may include neuromuscular impairment (muscle wasting/weakness) and dizziness/syncope.

imbalanced Nutrition: less than body requirements may be related to glucocorticoid deficiency; abnormal fat, protein, and carbohydrate metabolism; nausea, vomiting, anorexia, possibly evidenced by weight loss, muscle wasting, abdominal cramps, diarrhea, and severe hypoglycemia.

risk for impaired Home Maintenance: risk factors may include effects of disease process, impaired cognitive functioning, and inadequate support systems.

adenoidectomy

Anxiety [specify level]/Fear may be related to separation from supportive others, unfamiliar surroundings, and perceived threat of injury/abandonment, possibly evidenced by crying, apprehension, trembling, and sympathetic stimulation (pupil dilation, increased heart rate).

risk for ineffective Airway Clearance: risk factors may include sedation, collection of secretions/blood in oropharynx, and vomiting.

risk for deficient Fluid Volume: risk factors may include operative trauma to highly vascular site/hemorrhage.

acute Pain may be related to physical trauma to oronasopharynx, presence of packing, possibly evidenced by restlessness, crying, and facial mask of pain.

adjustment disorder

moderate to severe Anxiety may be related to situational/maturational crisis, threat to self-concept, unmet needs, fear of failure, dysfunctional family system, fixation in earlier level of development, possibly evidenced by overexcitement/restlessness, increased tension, insomnia, feelings of inadequacy, focus on self, difficulty concentrating, continuous attention-seeking behaviors, numerous physical complaints.

risk for self/other-directed Violence: risk factors may include depressed mood, hopelessness, powerlessness, inability to tolerate frustration, rage reactions, unmet needs, negative role modeling, substance use/abuse, history of suicide attempt.

ineffective Coping may be related to situational/maturational crisis, dysfunctional family system, negative role modeling, unmet dependency needs, retarded ego development possibly evidenced by inability to problem-solve, chronic worry, depressed/anxious mood, manipulation of others, destructive behaviors, increased dependency, refusal to follow rules.

complicated Grieving may be related to real or perceived loss of any concept of value to individual, bereavement overload/cumulative grief, thwarted grieving response, feelings of guilt generated by ambivalent relationship with the lost concept/person, possibly evidenced by difficulty in expressing/denial of loss, excessive/inappropriately expressed anger, labile affect, developmental regression, changes in concentration/pursuit of tasks.

adrenal crisis, acute

(also refer to *Addison's disease*; *shock*)

deficient Fluid Volume [hypotonic] may be related to failure of regulatory mechanism (damage to/suppression of adrenal gland), inability to concentrate urine, possibly evidenced by decreased venous filling/pulse volume and pressure, hypotension, dry mucous membranes, changes in mentation, decreased serum sodium.

acute pain may be related to effects of disease process/metabolic imbalances, decreased tissue perfusion, possibly evidenced by reports of severe pain in abdomen, lower back, or legs.

impaired physical Mobility may be related to neuromuscular impairment, decreased muscle strength/control, possibly evidenced by generalized weakness, inability to perform desired activities/movements.

risk for Hyperthermia: risk factors may include presence of illness/infectious process, dehydration.

risk for ineffective Protection: risk factors may include hormone deficiency, drug therapy, nutritional/metabolic deficiencies.

adrenalectomy

ineffective Tissue Perfusion [specify] may be related to hypovolemia and vascular pooling (vasodilation), possibly evidenced by diminished pulse, pallor/cyanosis, hypotension, and changes in mentation.

risk for Infection: risk factors may include inadequate primary defenses (incision, traumatized tissues), suppressed inflammatory response, invasive procedures.

deficient Knowledge [Learning Need] regarding condition, prognosis, self-care and treatment needs may be related to unfamiliarity with long-term therapy requirements, possibly evidenced by request for information and statement of concern/misconceptions.

adult respiratory distress syndrome (ARDS)

Refer to *acute respiratory distress syndrome*.

affective disorder

Refer to *bipolar disorder; depressive disorders, major*.

affective disorder, seasonal

(also refer to *depressive disorders, major*)

intermittent ineffective Coping may be related to situational crisis (fall/winter season), disturbance in pattern of tension release, and inadequate resources available, possibly evidenced by verbalizations of inability to cope, changes in sleep pattern (too little or too much), reports of lack of energy/fatigue, lack of resolution of problem, behavioral changes (irritability, discouragement).

risk for imbalanced Nutrition: more/less than body requirements: risk factors may include eating in response to internal cues other than hunger, alteration in usual coping patterns, change in usual activity level, decreased appetite, lack of energy/interest to prepare food.

AIDS (acquired immunodeficiency syndrome)

(also refer to *HIV positive*)

risk for Infection [progression to sepsis/onset of new opportunistic infection]: risk factors may include depressed immune system, use of antimicrobial agents, inadequate primary defenses; broken skin, traumatized tissue; malnutrition; and chronic disease processes.

risk for deficient Fluid Volume: risk factors may include excessive losses: copious diarrhea, profuse sweating, vomiting, hypermetabolic state or fever; and restricted intake (nausea, anorexia; lethargy).

acute/chronic Pain may be related to tissue inflammation/destruction: infections, internal/external cutaneous lesions, rectal excoriation, malignancies, necrosis, peripheral neuropathies, myalgias, and arthralgias, possibly evidenced by verbal reports, self-focusing/narrowed focus, alteration in muscle tone, paresthesias, paralysis, guarding behaviors, changes in vital signs (acute), autonomic responses, and restlessness.

imbalanced Nutrition: less than body requirements may be related to altered ability to ingest, digest, and/or absorb nutrients (nausea/vomiting, hyperactive gag reflex, intestinal disturbances); increased metabolic activity/nutritional needs (fever, infection), possibly evidenced by weight loss, decreased subcutaneous fat/muscle mass; lack of interest in food/aversion to eating, altered taste sensation; abdominal cramping, hyperactive bowel sounds, diarrhea, sore and inflamed buccal cavity.

Fatigue may be related to decreased metabolic energy production, increased energy requirements (hypermetabolic state), overwhelming psychological/emotional demands; altered body chemistry (side effects of medication, chemotherapy), possibly evidenced by unremitting/overwhelming lack of energy, inability to maintain usual routines, decreased performance; impaired ability to concentrate, lethargy/restlessness, and disinterest in surroundings.

ineffective Protection may be related to chronic disease affecting immune and neurological systems, inadequate nutrition, drug therapies, possibly evidenced by deficient

immunity, impaired healing, neurosensory alterations, maladaptive stress response, fatigue, anorexia, disorientation.

Social Isolation may be related to changes in physical appearance/mental status, state of wellness, perceptions of unacceptable social or sexual behavior/values, physical isolation, phobic fear of others (transmission of disease); possibly evidenced by expressed feelings of aloneness/rejection, absence of supportive significant other(s) (SOs), and withdrawal from usual activities.

disturbed Thought Processes/chronic Confusion may be related to physiologic changes (hypoxemia, central nervous system [CNS] infection by HIV, brain malignancies, and/or disseminated systemic opportunistic infection); altered drug metabolism/excretion, accumulation of toxic elements (renal failure, severe electrolyte imbalance, hepatic insufficiency), possibly evidenced by clinical evidence of organic impairment, altered attention span, distractibility, memory deficit, disorientation, cognitive dissonance, delusional thinking, impaired ability to make decisions/problem solve, inability to follow complex commands/mental tasks, loss of impulse control and altered personality.

AIDS dementia

(also refer to *Dementia, presenile/senile*)

impaired Environmental Interpretation Syndrome may be related to dementia, depression, possibly evidenced by consistent disorientation, inability to follow simple directions/instructions, loss of social functioning from memory decline.

ineffective Protection may be related to chronic disease affecting immune and neurological systems, inadequate nutrition, drug therapies, possibly evidenced by deficient immunity, impaired healing, neurosensory alterations, maladaptive stress response, fatigue, anorexia, disorientation.

alcohol abuse/withdrawal

Refer to *Drug overdose, acute [depressants]; Delirium tremens; Substance dependency/abuse rehabilitation*.

alcohol intoxication, acute

(also refer to *Delirium tremens*)

acute Confusion may be related to substance abuse, hypoxemia, possibly evidenced by hallucinations, exaggerated emotional response, fluctuation in cognition/level of consciousness, increased agitation.

risk for ineffective Breathing Pattern: risk factors may include neuromuscular impairment/CNS depression.

risk for Aspiration: risk factors may include reduced level of consciousness, depressed cough/gag reflexes, delayed gastric emptying.

aldosteronism, primary

deficient Fluid Volume [isotonic] may be related to increased urinary losses, possibly evidenced by dry mucous membranes, poor skin turgor, dilute urine, excessive thirst, weight loss.

impaired physical Mobility may be related to neuromuscular impairment, weakness, and pain, possibly evidenced by impaired coordination, decreased muscle strength, paralysis, and positive Chvostek's and Trousseau's signs.

risk for decreased Cardiac Output: risk factors may include hypovolemia and altered electrical conduction/dysrhythmias.

alkalosis, respiratory

(also refer to underlying cause/condition)

impaired Gas Exchange may be related to ventilation perfusion imbalance (decreased oxygen-carrying capacity of blood, altered oxygen supply, alveolar-capillary membrane changes), possibly evidenced by dyspnea, tachypnea, changes in mentation, tachycardia, hypoxia, hypocapnia.

allergy, latex

Refer to *latex allergy*.

Alzheimer's disease

(also refer to *dementia, presenile/senile*)

risk for Injury/Trauma: risk factors may include inability to recognize/identify danger in environment, disorientation, confusion, impaired judgment, weakness, muscular incoordination, balancing difficulties, and altered perception.

chronic Confusion related to physiological changes (neuronal degeneration); possibly evidenced by inaccurate interpretation of/response to stimuli, progressive/long-standing cognitive impairment, short-term memory deficit, impaired socialization, altered personality, and clinical evidence of organic impairment.

disturbed Sensory Perception (specify) may be related to altered sensory reception, transmission, and/or integration (neurologic disease/deficit), socially restricted environment (homebound/institutionalized), sleep deprivation possibly evidenced by changes in usual response to stimuli, change in problem-solving abilities, exaggerated emotional responses (anxiety, paranoia, hallucinations), inability to tell position of body parts, diminished/altered sense of taste.

Insomnia may be related to sensory impairment, changes in activity patterns, psychological stress (neurologic impairment), possibly evidenced by wakefulness, disorientation (day/night reversal); increased aimless wandering, inability to identify need/time for sleeping, changes in behavior/performance, lethargy; dark circles under eyes and frequent yawning.

ineffective Health Maintenance may be related to deterioration affecting ability in all areas including coordination/communication, cognitive impairment; ineffective coping, possibly evidenced by reported or observed inability to take responsibility for meeting basic health practices, lack of equipment/financial or other resources, and impairment of personal support system.

risk for Stress Overload: risk factors may include inadequate resources, chronic illness, physical demands, threats of violence.

Compromised family Coping/Caregiver Role Strain may be related to family disorganization, role changes, family/caregiver isolation, long-term illness/complexity and amount of homecare needs exhausting supportive/financial capabilities of family member(s), lack of respite; possibly evidenced by verbalizations of frustrations in dealing with day-to-day care, reports of conflict, feelings of depression, expressed anger/guilt directed toward client, and withdrawal from interaction with client/social contacts.

risk for Relocation Stress Syndrome: risk factors may include little or no preparation for transfer to a new setting, changes in daily routine, sensory impairment, physical deterioration, separation from support systems.

amputation

risk for ineffective peripheral Tissue Perfusion: risk factors may include reduced arterial/venous blood flow; tissue edema, hematoma formation; hypovolemia.

acute Pain may be related to tissue and nerve trauma, psychological impact of loss of body part, possibly evidenced by reports of incisional/phantom pain, guarding/protective behavior, narrowed/self-focus, and autonomic responses.

impaired physical Mobility may be related to loss of limb (primarily lower extremity), altered sense of balance, pain/discomfort, possibly evidenced by reluctance to attempt movement, impaired coordination; decreased muscle strength, control, and mass.

disturbed Body Image may be related to loss of a body part, possibly evidenced by verbalization of feelings of powerlessness, grief, preoccupation with loss, and unwillingness to look at/touch stump.

amyotrophic lateral sclerosis (ALS)

impaired physical Mobility may be related to muscle wasting/weakness, possibly evidenced by impaired coordination, limited range of motion, and impaired purposeful movement.

ineffective Breathing Pattern/impaired spontaneous Ventilation may be related to neuromuscular impairment, decreased energy, fatigue, tracheobronchial obstruction, possibly evidenced by shortness of breath, fremitus, respiratory depth changes, and reduced vital capacity.

impaired Swallowing may be related to muscle wasting and fatigue, possibly evidenced by recurrent coughing/choking and signs of aspiration.

Powerlessness [specify level] may be related to chronic/debilitating nature of illness, lack of control over outcome, possibly evidenced by expressions of frustration about inability to care for self and depression over physical deterioration.

Grieving may be related to perceived potential loss of self/physiopsychosocial well-being, possibly evidenced by sorrow, choked feelings, expression of distress, changes in eating habits/sleeping patterns, and altered communication patterns/libido.

impaired verbal Communication may be related to physical barrier (neuromuscular impairment), possibly evidenced by impaired articulation, inability to speak in sentences, and use of nonverbal cues (changes in facial expression).

risk for Caregiver Role Strain: risk factors may include illness severity of care receiver, complexity and amount of home-care needs, duration of caregiving required, caregiver is spouse, family/caregiver isolation, lack of respite/recreation for caregiver.

anaphylaxis

(also refer to *shock*)

ineffective Airway Clearance may be related to airway spasm (bronchial), laryngeal edema possibly evidenced by diminished/adventitious breath sounds, cough ineffective or absent, difficulty vocalizing, wide-eyed.

decreased Cardiac Output may be related to decreased preload—increased capillary permeability (third spacing) and vasodilation, possibly evidenced by tachycardia/palpitations, changes in blood pressure (BP), anxiety, restlessness.

anemia

Activity Intolerance may be related to imbalance between oxygen supply (delivery) and demand, possibly evidenced by reports of fatigue and weakness, abnormal heart rate or blood pressure (BP) response, decreased exercise/activity level, and exertional discomfort or dyspnea.

imbalanced Nutrition: less than body requirements may be related to failure to ingest/inability to digest food or absorb nutrients necessary for formation of normal red blood cells (RBCs); possibly evidenced by weight loss/weight below normal for age, height, body build; decreased triceps skinfold measurement, changes in gums/oral mucous membranes; decreased tolerance for activity, weakness, and loss of muscle tone.

deficient Knowledge [Learning Need] regarding condition, prognosis, self-care, and treatment needs may be related to inadequate understanding or misinterpretation of dietary/physiologic needs, possibly evidenced by inadequate dietary intake, request for information, and development of preventable complications.

anemia, sickle cell

impaired Gas Exchange may be related to decreased oxygen-carrying capacity of blood, reduced RBC life span, abnormal RBC structure, increased blood viscosity, predisposition to bacterial pneumonia/pulmonary infarcts, possibly evidenced by dyspnea, use of accessory muscles, cyanosis/signs of hypoxia, tachycardia, changes in mentation, and restlessness.

ineffective Tissue Perfusion: [specify] may be related to stasis, vaso-occlusive nature of sickling, inflammatory response, atrioventricular (AV) shunts in pulmonary and peripheral circulation, myocardial damage (small infarcts, iron deposits, fibrosis), possibly evidenced by signs and symptoms dependent on system involved, for example: renal: decreased specific gravity and pale urine in face of dehydration; cerebral: paralysis and visual disturbances; peripheral: distal ischemia, tissue infarctions, ulcerations, bone pain; cardiopulmonary: angina, palpitations.

acute/chronic Pain may be related to intravascular sickling with localized vascular stasis, occlusion, infarction/necrosis and deprivation of oxygen and nutrients, accumulation of noxious metabolites, possibly evidenced by reports of localized, generalized, or migratory joint and/or abdominal/back pain; guarding and distraction behaviors (moaning, crying, restlessness), facial grimacing, narrowed focus, and autonomic responses.

deficient Knowledge [Learning Need] regarding disease process, genetic factors, prognosis, self-care and treatment needs may be related to lack of exposure/recall, misinterpretation of information, unfamiliarity with resources, possibly evidenced by questions, statement of concern/misconceptions, exacerbation of condition, inadequate follow-through of therapy instructions, and development of preventable complications.

delayed Growth and Development may be related to effects of physical condition, possibly evidenced by altered physical growth and delay/difficulty performing skills typical of age group.

risk for sedentary Lifestyle: risk factors may include lack of interest/motivation, resources; lack of training or knowledge of specific exercise needs, safety concerns/fear of injury.

compromised family Coping may be related to chronic nature of disease/disability, family disorganization, presence of other crises/situations impacting significant person/parent, lifestyle restrictions, possibly evidenced by significant person/parent expressing preoccupation with own reaction and displaying protective behavior disproportionate to patient's ability or need for autonomy.

angina pectoris

acute Pain may be related to decreased myocardial blood flow, increased cardiac workload/oxygen consumption, possibly evidenced by verbal reports, narrowed focus, distraction behaviors (restlessness, moaning), and autonomic responses (diaphoresis, changes in vital signs).

decreased Cardiac Output may be related to inotropic changes (transient/prolonged myocardial ischemia, effects of medications), alterations in rate/rhythm and electrical conduction, possibly evidenced by changes in hemodynamic readings, dyspnea, restlessness, decreased tolerance for activity, fatigue, diminished peripheral pulses, cool/pale skin, changes in mental status, and continued chest pain.

Anxiety [specify level] may be related to situational crises, change in health status and/or threat of death, negative self-talk possibly evidenced by verbalized apprehension, facial tension, extraneous movements, and focus on self.

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by exertional dyspnea, abnormal pulse/BP response to activity, and electrocardiogram (ECG) changes.

deficient Knowledge [Learning Need] regarding condition, prognosis, self-care and treatment needs may be related to lack of exposure, inaccurate/misinterpretation of information, possibly evidenced by questions, request for information, statement of concern, and inaccurate follow-through of instructions.

risk for sedentary Lifestyle: risk factors may include lack of training or knowledge of specific exercise needs, safety concerns/fear of myocardial injury.

risk for risk-prone health Behavior: risk factors may include condition requiring long-term therapy/change in lifestyle, multiple stressors, assault to self-concept, and altered locus of control.

anorexia nervosa

imbalanced Nutrition: less than body requirements may be related to psychological restrictions of food intake and/or excessive activity, self-induced vomiting, laxative abuse, possibly evidenced by weight loss, poor skin turgor/muscle tone, denial of hunger, unusual hoarding or handling of food, amenorrhea, electrolyte imbalance, cardiac irregularities, hypotension.

risk for deficient Fluid Volume: risk factors may include inadequate intake of food and liquids, chronic/excessive laxative or diuretic use, self-induced vomiting.

disturbed Thought Processes may be related to severe malnutrition/electrolyte imbalance, psychological conflicts; possibly evidenced by impaired ability to make decisions, problem-solve, nonreality-based verbalizations, ideas of reference, altered sleep patterns, altered attention span/distractibility; perceptual disturbances with failure to recognize hunger, fatigue, anxiety, and depression.

disturbed Body Image/chronic low Self-Esteem may be related to altered perception of body, perceived loss of control in some aspect of life, unmet dependency needs, personal vulnerability, dysfunctional family system, possibly evidenced by negative feelings, distorted view of body, use of denial, feeling powerless to prevent/make changes, expressions of shame/guilt, overly conforming, dependent on others' opinions.

interrupted Family Processes may be related to ambivalent family relationships and ways of transacting issues of control, situational/maturational crises, possibly evidenced by enmeshed family, dissonance among family members, family developmental tasks not being met, family members acting as enablers.

antisocial personality disorder

risk for other-directed Violence: risk factors may include contempt for authority/rights of others, inability to tolerate frustration, need for immediate gratification, easy agitation, vulnerable self-concept, inability to verbalize feelings, use of maladjusted coping mechanisms including substance use.

ineffective Coping may be related to very low tolerance for external stress, lack of experience of internal anxiety (e.g., guilt/shame), personal vulnerability, unmet expectations, multiple life changes possibly evidenced by choice of aggression and manipulation to handle problems/conflicts, inappropriate use of defense mechanisms (e.g., denial, projection), chronic worry, anxiety, destructive behaviors, high rate of accidents.

chronic low Self-Esteem may be related to lack of positive and/or repeated negative feedback, unmet dependency needs, retarded ego development, dysfunctional family system possibly evidenced by acting-out behaviors (e.g., substance abuse, sexual promiscuity), feelings of inadequacy, nonparticipation in therapy.

compromised/disabled family Coping may be related to family disorganization/role changes, highly ambivalent family relationships, client providing little support in turn for the primary person(s), history of abuse/neglect in the home, possibly evidenced by expressions of concern or complaints, preoccupation of primary person with own reactions to situation, display of protective behaviors disproportionate to client's abilities or need for autonomy.

impaired Social Interaction may be related to inadequate personal resources (shallow feelings), immature interests, underdeveloped conscience, unaccepted social values, possibly evidenced by difficulty meeting expectations of others, lack of belief that rules pertain to self, sense of emptiness/inadequacy covered by expressions of self-conceit/arrogance/contempt, behavior unaccepted by dominant cultural group.

anxiety disorder, generalized

Anxiety [specify level]/Powerlessness may be related to real or perceived threat to physical integrity or self-concept (may or may not be able to identify the threat), unconscious conflict about essential values/beliefs and goals of life, unmet needs, negative self-talk, possibly evidenced by sympathetic stimulation, extraneous movements (foot shuffling, hand/arm fidgeting, rocking movements, restlessness), persistent feelings

of apprehension and uneasiness, a general anxious feeling that patient has difficulty alleviating, poor eye contact, focus on self, impaired functioning, free-floating anxiety, and nonparticipation in decision making.

ineffective Coping may be related to level of anxiety being experienced by the patient, personal vulnerability; unmet expectations/unrealistic perceptions, inadequate coping methods and/or support systems, possibly evidenced by verbalization of inability to cope/problem-solve, excessive compulsive behaviors (e.g., smoking, drinking), and emotional/muscle tension, alteration in societal participation, high rate of accidents.

Insomnia may be related to psychological stress, repetitive thoughts, possibly evidenced by reports of difficulty in falling asleep/awakening earlier or later than desired, reports of not feeling rested, dark circles under eyes, and frequent yawning.

risk for compromised family Coping: risk factors may include inadequate/incorrect information or understanding by a primary person, temporary family disorganization and role changes, prolonged disability that exhausts the supportive capacity of significant other(s).

impaired Social Interaction/Social Isolation may be related to low self-concept, inadequate personal resources, misinterpretation of internal/external stimuli, hypervigilance possibly evidenced by discomfort in social situations, withdrawal from or reported change in pattern of interactions, dysfunctional interactions; expressed feelings of difference from others; sad, dull affect.

aortic aneurysm repair, abdominal

(also refer to *Surgery, general*)

Fear related to threat of injury/death, surgical intervention, possibly evidenced by verbal reports, apprehension, decreased self-assurance, increased tension, changes in vital signs.

risk for deficient Fluid Volume: risk factors may include weakening of vascular wall, failure of vascular repair.

risk for ineffective renal/peripheral Tissue Perfusion: risk factors may include interruption of arterial blood flow, hypovolemia.

aortic stenosis

decreased Cardiac Output may be related to structural changes of heart valve, left ventricular outflow obstruction, alteration of afterload (increased left ventricular end-diastolic pressure and systemic vascular resistance—SVR), alteration in preload/increased atrial pressure and venous congestion, alteration in electrical conduction, possibly evidenced by fatigue, dyspnea, changes in vital signs/hemodynamic parameters, and syncope.

risk for impaired Gas Exchange: risk factors may include alveolar-capillary membrane changes/congestion.

risk for acute Pain: risk factors may include episodic ischemia of myocardial tissues and stretching of left atrium.

Activity Intolerance may be related to imbalance between oxygen supply and demand (decreased/fixated cardiac output), possibly evidenced by exertional dyspnea, reported fatigue/weakness, and abnormal blood pressure or ECG changes/dysrhythmias in response to activity.

aplastic anemia

(also refer to *anemia*)

risk for ineffective Protection: risk factors may include abnormal blood profile (leukopenia, thrombocytopenia), drug therapies (antineoplastics, antibiotics, NSAIDs [nonsteroidal anti-inflammatory drugs], anticonvulsants).

Fatigue may be related to anemia, disease states, malnutrition, possibly evidenced by verbalization of overwhelming lack of energy, inability to maintain usual routines/level of physical activity, tired, decreased libido, lethargy, increase in physical complaints.

appendicitis

acute Pain may be related to distention of intestinal tissues by inflammation, possibly evidenced by verbal reports, guarding behavior, narrowed focus, and autonomic responses (diaphoresis, changes in vital signs).

risk for deficient Fluid Volume: risk factors may include nausea, vomiting, anorexia, and hypermetabolic state.

risk for Infection: risk factors may include release of pathogenic organisms into peritoneal cavity.

arrhythmia, cardiac

Refer to *dysrhythmia, cardiac*.

arthritis, juvenile rheumatoid

(also refer to *arthritis, rheumatoid*)

risk for delayed Development: risk factors may include effects of physical disability and required therapy.

risk for Social Isolation: risk factors may include delay in accomplishing developmental task, altered state of wellness, and changes in physical appearance.

arthritis, rheumatoid

acute/chronic Pain may be related to accumulation of fluid/inflammatory process, degeneration of joint, and deformity, possibly evidenced by verbal reports, narrowed focus, guarding/protective behaviors, and physical and social withdrawal.

impaired physical Mobility may be related to musculoskeletal deformity, pain/discomfort, decreased muscle strength, possibly evidenced by limited range of motion, impaired coordination, reluctance to attempt movement, and decreased muscle strength/control and mass.

Self-Care Deficit [specify] may be related to musculoskeletal impairment, decreased strength/endorance and range of motion, pain on movement, possibly evidenced by inability to manage activities of daily living (ADLs).

disturbed Body Image/ineffective Role Performance may be related to change in body structure/function, impaired mobility/ability to perform usual tasks, focus on past strength/function/appearance, possibly evidenced by negative self-talk, feeling of helplessness, change in lifestyle/physical abilities, dependence on others for assistance, decreased social involvement.

arthroplasty

risk for Infection: risk factors may include breach of primary defenses (surgical incision), stasis of body fluids at operative site, and altered inflammatory response.

risk for deficient Fluid Volume [isotonic]: risk factors may include surgical procedure/trauma to vascular area.

impaired physical Mobility may be related to decreased strength, pain, musculoskeletal changes, possibly evidenced by impaired coordination and reluctance to attempt movement.

acute Pain may be related to tissue trauma, local edema, possibly evidenced by verbal reports, narrowed focus, guarded movement, and autonomic responses (diaphoresis, changes in vital signs).

arthroscopy, knee

deficient Knowledge [Learning Need] regarding procedure/outcomes and self-care needs may be related to unfamiliarity with information/resources, misinterpretations, possibly evidenced by questions and requests for information, misconceptions.

risk for impaired Walking: risk factors may include joint stiffness, discomfort, prescribed movement restrictions, use of assistive devices/crutches for ambulation.

asthma

(also refer to *emphysema*)

ineffective Airway Clearance may be related to increased production/retained pulmonary secretions, bronchospasm, decreased energy/fatigue, possibly evidenced by wheezing, difficulty breathing, changes in depth/rate of respirations, use of accessory muscles, and persistent ineffective cough with or without sputum production.

impaired Gas Exchange may be related to altered delivery of inspired oxygen/air trapping, possibly evidenced by dyspnea, restlessness, reduced tolerance for activity, cyanosis, and changes in ABGs and vital signs.

Anxiety [specify level] may be related to perceived threat of death, possibly evidenced by apprehension, fearful expression, and extraneous movements.

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by fatigue and exertional dyspnea.

risk for Contamination: risk factors may include presence of atmospheric pollutants, environmental contaminants in the home (e.g., smoking/secondhand tobacco smoke).

athlete's foot

impaired Skin Integrity may be related to fungal invasion, humidity, secretions, possibly evidenced by disruption of skin surface, reports of painful itching.

risk for Infection [spread]: risk factors may include multiple breaks in skin, exposure to moist/warm environment.

attention deficit disorder (ADD)

ineffective Coping may be related to situational/maturational crisis, retarded ego development, low self-concept possibly evidenced by easy distraction by extraneous stimuli, shifting between uncompleted activities.

chronic low Self-Esteem may be related to retarded ego development, lack of positive/repeated negative feedback, negative role models, possibly evidenced by lack of eye contact, derogatory self-comments, hesitance to try new tasks, inadequate level of confidence.

deficient Knowledge regarding condition, prognosis, therapy may be related to misinformation/misinterpretations, unfamiliarity with resources, possibly evidenced by verbalization of problems/misconceptions, poor school performance, unrealistic expectations of medication regimen.

autistic disorder

impaired Social Interaction may be related to abnormal response to sensory input/inadequate sensory stimulation, organic brain dysfunction; delayed development of secure attachment/trust, lack of intuitive skills to comprehend and accurately respond to social cues, disturbance in self-concept, possibly evidenced by lack of responsiveness to others, lack of eye contact or facial responsiveness, treating persons as objects, lack of awareness of feelings in others, indifference/aversion to comfort, affection, or physical contact; failure to develop cooperative social play and peer friendships in childhood.

impaired verbal Communication may be related to inability to trust others, withdrawal into self, organic brain dysfunction, abnormal interpretation/response to and/or inadequate sensory stimulation, possibly evidenced by lack of interactive communication mode, no use of gestures or spoken language, absent or abnormal nonverbal communication; lack of eye contact or facial expression; peculiar patterns of speech (form, content, or speech production), and impaired ability to initiate or sustain conversation despite adequate speech.

risk for Self-Mutilation: risk factors may include organic brain dysfunction, inability to trust others, disturbance in self-concept, inadequate sensory stimulation or abnormal response to sensory input (sensory overload); history of physical, emotional, or sexual abuse; and response to demands of therapy, realization of severity of condition.

disturbed Personal Identity may be related to organic brain dysfunction, lack of development of trust, maternal deprivation, fixation at presymbiotic phase of development, possibly evidenced by lack of awareness of the feelings or existence of others, increased anxiety resulting from physical contact with others, absent or impaired imitation of others, repeating what others say, persistent preoccupation with parts of objects, obsessive attachment to objects, marked distress over changes in environment; autoerotic/ritualistic behaviors, self-touching, rocking, swaying.

compromised/disabled family Coping may be related to family members unable to express feelings; excessive guilt, anger, or blaming among family members regarding child's condition; ambivalent or dissonant family relationships, prolonged coping with problem exhausting supportive ability of family members, possibly evidenced by denial of existence or severity of disturbed behaviors, preoccupation with personal emotional reaction to situation, rationalization that problem will be outgrown, attempts to intervene with child are achieving increasingly ineffective results, family withdraws from or becomes overly protective of child.

battered child syndrome

(also refer to *abuse*)

risk for Trauma: risk factors may include dependent position in relationship(s), vulnerability (e.g., congenital problems/chronic illness), history of previous abuse/neglect, lack/nonuse of support systems by caregiver(s).

interrupted Family Processes/impaired Parenting may be related to poor role model/identity, unrealistic expectations, presence of stressors, and lack of support, possibly evidenced by verbalization of negative feelings, inappropriate caretaking behaviors, and evidence of physical/psychological trauma to child.

chronic low Self-Esteem may be related to deprivation and negative feedback of family members, personal vulnerability, feelings of abandonment, possibly evidenced by lack of eye contact, withdrawal from social contacts, discounting own needs, nonassertive/passive, indecisive, or overly conforming behaviors.

Post-Trauma Syndrome may be related to sustained/recurrent physical or emotional abuse; possibly evidenced by acting-out behavior, development of phobias, poor impulse control, and emotional numbness.

ineffective Coping may be related to situational or maturational crisis, overwhelming threat to self, personal vulnerability, inadequate support systems, possibly evidenced by verbalized concern about ability to deal with current situation, chronic worry,

anxiety, depression, poor self-esteem, inability to problem-solve, high illness rate, destructive behavior toward self/others.

benign prostatic hypertrophy

acute/chronic Urinary Retention/overflow Urinary Incontinence may be related to mechanical obstruction (enlarged prostate), decompensation of detrusor musculature, inability of bladder to contract adequately, possibly evidenced by frequency, hesitancy, inability to empty bladder completely, incontinence/dribbling, nocturia, bladder distention, residual urine.

acute Pain may be related to mucosal irritation, bladder distention, colic, urinary infection, and radiation therapy, possibly evidenced by reports (bladder/rectal spasm), narrowed focus, altered muscle tone, grimacing, distraction behaviors, restlessness, and autonomic responses.

risk for deficient Fluid Volume: risk factors may include postobstructive diuresis, endocrine/electrolyte imbalances.

Fear/Anxiety [specify level] may be related to change in health status (possibility of surgical procedure/malignancy); embarrassment/loss of dignity associated with genital exposure before, during, and after treatment, and concern about sexual ability, possibly evidenced by increased tension, apprehension, worry, expressed concerns regarding perceived changes, and fear of unspecified consequences.

bipolar disorder

risk for other-directed Violence: risk factors may include irritability, impulsive behavior; delusional thinking; angry response when ideas are refuted or wishes denied; manic excitement, with possible indicators of threatening body language/verbalizations, increased motor activity, overt and aggressive acts; and hostility.

imbalanced Nutrition: less than body requirements may be related to inadequate intake in relation to metabolic expenditures, possibly evidenced by body weight 20% or more below ideal weight, observed inadequate intake, inattention to mealtimes, and distraction from task of eating; laboratory evidence of nutritional deficits/imbbalances.

risk for Poisoning [lithium toxicity]: risk factors may include narrow therapeutic range of drug, patient's ability (or lack of) to follow through with medication regimen and monitoring, and denial of need for information/therapy.

Insomnia may be related to psychological stress, lack of recognition of fatigue/need to sleep, hyperactivity, possibly evidenced by denial of need to sleep, interrupted nighttime sleep, one or more nights without sleep, changes in behavior and performance, increasing irritability/restlessness, and dark circles under eyes.

disturbed Sensory/Perception [specify] [overload] may be related to decrease in sensory threshold, endogenous chemical alteration, psychological stress, sleep deprivation, possibly evidenced by increased distractibility and agitation, anxiety, disorientation, poor concentration, auditory/visual hallucination, bizarre thinking, and motor incoordination.

interrupted Family Processes may be related to situational crises (illness, economics, change in roles); euphoric mood and grandiose ideas/actions of patient, manipulative behavior and limit-testing, patient's refusal to accept responsibility for own actions, possibly evidenced by statements of difficulty coping with situation, lack of adaptation to change or not dealing constructively with illness; ineffective family decision-making process, failure to send and to receive clear messages, and inappropriate boundary maintenance.

borderline personality disorder

risk for self/other-directed Violence/Self-Mutilation: risk factors may include use of projection as a major defense mechanism, pervasive problems with negative transference, feelings of guilt/need to "punish" self, distorted sense of self, inability to cope with increased psychological or physiological tension in a healthy manner.

Anxiety [severe to panic] may be related to unconscious conflicts (experience of extreme stress), perceived threat to self-concept, unmet needs, possibly evidenced by easy frustration and feelings of hurt, abuse of alcohol/other drugs, transient psychotic symptoms and performance of self-mutilating acts.

chronic low Self-Esteem/ disturbed personal Identity may be related to lack of positive feedback, unmet dependency needs, retarded ego development/fixation at an earlier level of development, possibly evidenced by difficulty identifying self or defining self-boundaries, feelings of depersonalization, extreme mood changes, lack of tolerance of rejection or being alone, unhappiness with self, striking out at others, performance of ritualistic self-damaging acts, and belief that punishing self is necessary.

Social Isolation may be related to immature interests, unaccepted social behavior, inadequate personal resources, and inability to engage in satisfying personal relationships, possibly evidenced by alternating clinging and distancing behaviors, difficulty meeting expectations of others, experiencing feelings of difference from others, ex-

pressing interests inappropriate to developmental age, and exhibiting behavior unaccepted by dominant cultural group.

botulism (food-borne)

deficient Fluid Volume [isotonic] may be related to active losses—vomiting, diarrhea; decreased intake—nausea, dysphagia, possibly evidenced by reports of thirst; dry skin/mucous membranes, decreased BP and urine output, change in mental state, increased hematocrit (Hct).

impaired physical Mobility may be related to neuromuscular impairment, possibly evidenced by limited ability to perform gross/fine motor skills.

Anxiety [specify level]/Fear may be related to threat of death, interpersonal transmission, possibly evidenced by expressed concerns, apprehension, awareness of physiological symptoms, focus on self.

risk for impaired spontaneous Ventilation: risk factors may include neuromuscular impairment, presence of infectious process.

Contamination may be related to lack of proper precautions in food storage/preparation as evidenced by gastrointestinal and neurological effects of exposure to biological agent.

brain tumor

acute Pain may be related to pressure on brain tissues, possibly evidenced by reports of headache, facial mask of pain, narrowed focus, and autonomic responses (changes in vital signs).

disturbed Thought Processes may be related to altered circulation to and/or destruction of brain tissue, possibly evidenced by memory loss, personality changes, impaired ability to make decisions/conceptualize, and inaccurate interpretation of environment.

disturbed Sensory/Perception [specify] may be related to compression/displacement of brain tissue, disruption of neuronal conduction, possibly evidenced by changes in visual acuity, alterations in sense of balance/gait disturbance, and paresthesia.

risk for deficient Fluid Volume: risk factors may include recurrent vomiting from irritation of vagal center in medulla, and decreased intake.

Self-Care Deficit [specify] may be related to sensory/neuromuscular impairment interfering with ability to perform tasks, possibly evidenced by unkempt/disheveled appearance, body odor, and verbalization/observation of inability to perform activities of daily living.

breast cancer

(also refer to *cancer*)

Anxiety [specify level] may be related to change in health status, threat of death, stress, interpersonal transmission, possibly evidenced by expressed concerns, apprehension, uncertainty, focus on self, diminished productivity.

deficient Knowledge [Learning Need] regarding diagnosis, prognosis, and treatment options may be related to lack of exposure/unfamiliarity with information resources, information misinterpretation, cognitive limitation/anxiety, possibly evidenced by verbalizations, statements of misconceptions, inappropriate behaviors.

risk for disturbed Body Image: risk factors may include significance of body part with regard to sexual perceptions.

risk for ineffective Sexuality Pattern: risk factors may include health-related changes, medical treatments, concern about relationship with significant other.

bronchitis

ineffective Airway Clearance may be related to excessive, thickened mucous secretions, possibly evidenced by presence of rhonchi, tachypnea, and ineffective cough.

Activity Intolerance [specific level] may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of fatigue, dyspnea, and abnormal vital sign response to activity.

acute Pain may be related to localized inflammation, persistent cough, aching associated with fever, possibly evidenced by reports of discomfort, distraction behavior, and facial mask of pain.

bronchopneumonia

(also refer to *bronchitis*)

ineffective Airway Clearance may be related to tracheal bronchial inflammation, edema formation, increased sputum production, pleuritic pain, decreased energy, fatigue, possibly evidenced by changes in rate/depth of respirations, abnormal breath sounds, use of accessory muscles, dyspnea, cyanosis, effective/ineffective cough—with or without sputum production.

impaired Gas Exchange may be related to inflammatory process, collection of secretions affecting oxygen exchange across alveolar membrane, and hypoventilation, possibly

evidenced by restlessness/changes in mentation, dyspnea, tachycardia, pallor, cyanosis, and ABGs/oximetry evidence of hypoxia.

risk for Infection [spread]: risk factors may include decreased ciliary action, stasis of secretions, presence of existing infection.

bulimia nervosa

(also refer to *anorexia nervosa*)

impaired Dentition may be related to dietary habits, poor oral hygiene, chronic vomiting, possibly evidenced by erosion of tooth enamel, multiple caries, abraded teeth.

impaired Oral Mucous Membrane may be related to malnutrition or vitamin deficiency; poor oral hygiene; chronic vomiting, possibly evidenced by sore, inflamed buccal mucosa; swollen salivary glands; ulcerations of mucosa; reports of constant sore mouth/throat.

risk for deficient Fluid Volume: risk factors may include consistent self-induced vomiting, chronic/excessive laxative/diuretic use, esophageal erosion or tear (Mallory-Weiss syndrome).

deficient Knowledge [Learning Need] regarding condition, prognosis, complication, treatment may be related to lack of exposure to/unfamiliarity with information about condition, learned maladaptive coping skills, possibly evidenced by verbalization of misconception of relationship of current situation and behaviors, distortion of body image, bingeing and purging behaviors, verbalized need for information/desire to change behaviors.

burn (dependent on type, degree, and severity of the injury)

risk for deficient Fluid Volume: risk factors may include loss of fluids through wounds, capillary damage and evaporation, hypermetabolic state, insufficient intake, hemorrhagic losses.

risk for ineffective Airway Clearance: risk factors may include mucosal edema and loss of ciliary action (smoke inhalation), direct upper airway injury by flame, steam, chemicals.

risk for Infection: risk factors may include loss of protective dermal barrier, traumatized/necrotic tissue, decreased hemoglobin, suppressed inflammatory response, environmental exposure/invasive procedures.

acute/chronic Pain may be related to destruction of/trauma to tissue and nerves, edema formation, and manipulation of impaired tissues, possibly evidenced by verbal reports, narrowed focus, distraction and guarding behaviors, facial mask of pain, and autonomic responses (changes in vital signs).

risk for imbalanced Nutrition: less than body requirements: risk factors may include hypermetabolic state in response to burn injury/stress, inadequate intake, protein catabolism.

Post-Trauma Syndrome may be related to life-threatening event, possibly evidenced by re-experiencing the event, repetitive dreams/nightmares, psychic/emotional numbness, and sleep disturbance.

ineffective Protection may be related to extremes of age, inadequate nutrition, anemia, impaired immune system, possibly evidenced by impaired healing, deficient immunity, fatigue, anorexia.

deficient Diversional Activity may be related to long-term hospitalization, frequent lengthy treatments, and physical limitations, possibly evidenced by expressions of boredom, restlessness, withdrawal, and requests for something to do.

risk for delayed Development: risk factors may include effects of physical disability, separation from significant other(s), and environmental deficiencies.

bursitis

acute/chronic Pain may be related to inflammation of affected joint, possibly evidenced by verbal reports, guarding behavior, and narrowed focus.

impaired physical Mobility may be related to inflammation and swelling of joint, and pain, possibly evidenced by diminished range of motion, reluctance to attempt movement, and imposed restriction of movement by medical treatment.

calculi, urinary

acute Pain may be related to increased frequency/force of ureteral contractions, tissue distention/trauma and edema formation, cellular ischemia, possibly evidenced by reports of sudden, severe, colicky pains; guarding and distraction behaviors, self-focus, and autonomic responses.

impaired Urinary Elimination may be related to stimulation of the bladder by calculi, renal or ureteral irritation, mechanical obstruction of urinary flow, edema, inflammation, possibly evidenced by urgency and frequency; oliguria (retention); hematuria.

risk for deficient Fluid Volume: risk factors may include stimulation of renal-intestinal reflexes causing nausea, vomiting, and diarrhea; changes in urinary output, postoperative diuresis; and decreased intake.

risk for Infection: risk factors may include stasis of urine.

deficient Knowledge [Learning Need] regarding condition, prognosis, self-care and treatment needs may be related to lack of exposure/recall and information misinterpretation, possibly evidenced by requests for information, statements of concern, and recurrence/development of preventable complications.

cancer

(also refer to *chemotherapy*)

Fear/death Anxiety may be related to situational crises, threat to/change in health/socioeconomic status, role functioning, interaction patterns; threat of death, separation from family, interpersonal transmission of feelings, possibly evidenced by expressed concerns, feelings of inadequacy/helplessness, insomnia; increased tension, restlessness, focus on self, sympathetic stimulation.

Grieving may be related to potential loss of physiologic well-being (body part/function), perceived separation from significant other(s)/lifestyle (death), possibly evidenced by anger, sadness, withdrawal, choked feelings, changes in eating/sleep patterns, activity level, libido, and communication patterns.

acute/chronic Pain may be related to the disease process (compression of nerve tissue, infiltration of nerves or their vascular supply, obstruction of a nerve pathway, inflammation), or side effects of therapeutic agents, possibly evidenced by verbal reports, self-focusing/narrowed focus, alteration in muscle tone, facial mask of pain, distraction/guarding behaviors, autonomic responses, and restlessness.

Fatigue may be related to decreased metabolic energy production, increased energy requirements (hypermetabolic state), overwhelming psychological/emotional demands, and altered body chemistry (side effects of medications, chemotherapy), possibly evidenced by unremitting/overwhelming lack of energy, inability to maintain usual routines, decreased performance, impaired ability to concentrate, lethargy/listlessness, and disinterest in surroundings.

impaired Home Maintenance may be related to debilitation, lack of resources, and/or inadequate support systems, possibly evidenced by verbalization of problem, request for assistance, and lack of necessary equipment or aids.

compromised/disabled family Coping may be related to chronic nature of disease and disability, ongoing treatment needs, parental supervision, and lifestyle restrictions, possibly evidenced by expression of denial/despair, depression, and protective behavior disproportionate to client's abilities or need for autonomy.

readiness for enhanced family Coping may be related to the fact that the individual's needs are being sufficiently gratified and adaptive tasks effectively addressed, enabling goals of self-actualization to surface, possibly evidenced by verbalizations of impact of crisis on own values, priorities, goals, or relationships.

cardiac surgery

Anxiety [specify level]/Fear may be related to change in health status and threat to self-concept/of death, possibly evidenced by sympathetic stimulation, increased tension, and apprehension.

risk for decreased Cardiac Output: risk factors may include decreased preload (hypovolemia), depressed myocardial contractility, changes in SVR (afterload), and alterations in electrical conduction (dysrhythmias).

deficient Fluid Volume [isotonic] may be related to intraoperative bleeding with inadequate blood replacement; bleeding related to insufficient heparin reversal, fibrinolysis, or platelet destruction; or volume depletion effects of intraoperative/postoperative diuretic therapy, possibly evidenced by increased pulse rate, decreased pulse volume/pressure, decreased urine output, hemoconcentration.

risk for impaired Gas Exchange: risk factors may include alveolar-capillary membrane changes (atelectasis), intestinal edema, inadequate function or premature discontinuation of chest tubes, and diminished oxygen-carrying capacity of the blood.

acute Pain/[Discomfort] may be related to tissue inflammation/trauma, edema formation, intraoperative nerve trauma, and myocardial ischemia, possibly evidenced by reports of incisional discomfort/pain in chest and donor site; paresthesia/pain in hand, arm, shoulder, anxiety, restlessness, irritability; distraction behaviors, and autonomic responses.

impaired Skin/Tissue Integrity related to mechanical trauma (surgical incisions, puncture wounds) and edema, evidenced by disruption of skin surface/tissues.

carpal tunnel syndrome

acute/chronic Pain may be related to pressure on median nerve, possibly evidenced by verbal reports, reluctance to use affected extremity, guarding behaviors, expressed fear of reinjury, altered ability to continue previous activities.

impaired physical Mobility may be related to neuromuscular impairment and pain, possibly evidenced by decreased hand strength, weakness, limited range of motion, and reluctance to attempt movement.

risk for Peripheral Neurovascular Dysfunction: risks include mechanical compression (e.g., brace, repetitive tasks/motions), immobilization.

deficient Knowledge [Learning Need] regarding condition, prognosis and treatment/safety needs may be related to lack of exposure/recall, information misinterpretation, possibly evidenced by questions, statements of concern, request for information, inaccurate follow-through of instructions/development of preventable complications.

casts

(also refer to *fractures*)

risk for Peripheral Neurovascular Dysfunction: risk factors may include presence of fracture(s), mechanical compression (cast), tissue trauma, immobilization, vascular obstruction.

risk for impaired Skin Integrity: risk factors may include pressure of cast, moisture/debris under cast, objects inserted under cast to relieve itching, and/or altered sensation/circulation.

Self-Care Deficit [specify] may be related to impaired ability to perform self-care tasks, possibly evidenced by statements of need for assistance and observed difficulty in performing activities of daily living.

cataract

disturbed visual Sensory/Perception may be related to altered sensory reception/status of sense organs, and therapeutically restricted environment (surgical procedure, patching), possibly evidenced by diminished acuity, visual distortions, and change in usual response to stimuli.

risk for Trauma: risk factors may include poor vision, reduced hand/eye coordination.

Anxiety [specify level]/Fear may be related to alteration in visual acuity, threat of permanent loss of vision/independence, possibly evidenced by expressed concerns, apprehension, and feelings of uncertainty.

deficient Knowledge [Learning Need] regarding ways of coping with altered abilities, therapy choices, lifestyle changes may be related to lack of exposure/recall, misinterpretation, or cognitive limitations, possibly evidenced by requests for information, statement of concern, inaccurate follow-through of instructions/development of preventable complications.

cat scratch disease

acute Pain may be related to effects of circulating toxins (fever, headache, and lymphadenitis), possibly evidenced by verbal reports, guarding behavior, and autonomic response (changes in vital signs).

Hyperthermia may be related to inflammatory process, possibly evidenced by increased body temperature, flushed warm skin, tachypnea, and tachycardia.

cerebrovascular accident (CVA)

ineffective cerebral Tissue Perfusion may be related to interruption of blood flow (occlusive disorder, hemorrhage, cerebral vasospasm/edema), possibly evidenced by altered level of consciousness, changes in vital signs, changes in motor/sensory responses, restlessness, memory loss; sensory, language, intellectual, and emotional deficits.

impaired physical Mobility may be related to neuromuscular involvement (weakness, paresthesia, flaccid/hypotonic paralysis, spastic paralysis), perceptual/cognitive impairment, possibly evidenced by inability to purposefully move involved body parts/limited range of motion; impaired coordination and/or decreased muscle strength/control.

impaired verbal [and/or written] Communication may be related to impaired cerebral circulation, neuromuscular impairment, loss of facial/oral muscle tone and control; generalized weakness/fatigue, possibly evidenced by impaired articulation, does not/cannot speak (dysarthria); inability to modulate speech, find and/or name words, identify objects, and/or inability to comprehend written/spoken language; inability to produce written communication.

Self-Care Deficit [specify] may be related to neuromuscular impairment, decreased strength/endurance, loss of muscle control/coordination, perceptual/cognitive impairment, pain/discomfort, and depression, possibly evidenced by stated/observed inability to perform ADLs, requests for assistance, disheveled appearance, and incontinence.

risk for impaired Swallowing: risk factors may include muscle paralysis and perceptual impairment.

risk for unilateral Neglect: risk factors may include sensory loss of part of visual field with perceptual loss of corresponding body segment.

impaired Home Maintenance may be related to condition of individual family member, insufficient finances/family organization or planning, unfamiliarity with resources, and inadequate support systems, possibly evidenced by members expressing difficulty in managing home in a comfortable manner/requesting assistance with home maintenance, disorderly surroundings, and overtaxed family members.

situational low Self-Esteem/disturbed Body Image/ineffective Role performance may be related to biophysical, psychosocial, and cognitive/perceptual changes, possibly evidenced by actual change in structure and/or function, change in usual patterns of responsibility/physical capacity to resume role; and verbal/nonverbal response to actual or perceived change.

cesarean birth, postpartal

(also refer to *postpartal period*)

risk for impaired parent/infant Attachment: risk factors may include developmental transition/gain of a family member, situational crisis (e.g., surgical intervention, physical complications interfering with initial acquaintance/interaction, negative self-appraisal).

acute Pain/[Discomfort] may be related to surgical trauma, effects of anesthesia, hormonal effects, bladder/abdominal distention, possibly evidenced by verbal reports (e.g., incisional pain, cramping/afterpains, spinal headache), guarding/distraction behaviors, irritability, facial mask of pain.

risk for situational low Self-Esteem: risk factors may include perceived “failure” at life event, maturational transition, perceived loss of control in unplanned delivery.

risk for Injury: risk factors may include biochemical or regulatory functions (e.g., orthostatic hypotension, development of pregnancy-induced hypertension or eclampsia), effects of anesthesia, thromboembolism, abnormal blood profile (anemia/excessive blood loss, rubella sensitivity, Rh incompatibility), tissue trauma.

risk for Infection: risk factors may include tissue trauma/broken skin, decreased Hb, invasive procedures and/or increased environmental exposure, prolonged rupture of amniotic membranes, malnutrition.

Self-Care Deficit [specify] may be related to effects of anesthesia, decreased strength and endurance, physical discomfort, possibly evidenced by verbalization of inability to perform desired ADL(s).

cesarean birth, unplanned

(also refer to *cesarean birth, postpartal*)

deficient Knowledge [Learning Need] regarding underlying procedure, pathophysiology, and self-care needs may be related to incomplete/inadequate information, possibly evidenced by request for information, verbalization of concerns/misconceptions, and inappropriate/exaggerated behavior.

Anxiety [specify level] may be related to actual/perceived threat to mother/fetus, emotional threat to self-esteem, unmet needs/expectations, and interpersonal transmission, possibly evidenced by increased tension, apprehension, feelings of inadequacy, sympathetic stimulation, and narrowed focus, restlessness.

Powerlessness may be related to interpersonal interaction, perception of illness-related regimen, lifestyle of helplessness, possibly evidenced by verbalization of lack of control, lack of participation in care or decision making, passivity.

risk for impaired fetal Gas Exchange: risk factors may include altered blood flow to placenta and/or through umbilical cord.

risk for acute Pain: risk factors may include increased/prolonged contractions, psychological reaction.

risk for Infection: risk factors may include invasive procedures, rupture of amniotic membranes, break in skin, decreased hemoglobin, exposure to pathogens.

chemotherapy

(also refer to *cancer*)

risk for deficient Fluid volume: risk factors may include gastrointestinal losses (vomiting), interference with adequate intake (stomatitis/anorexia), losses through abnormal routes (indwelling tubes, wounds, fistulas), and hypermetabolic state.

imbalanced Nutrition: less than body requirements may be related to inability to ingest adequate nutrients (nausea, stomatitis, and fatigue), hypermetabolic state, possibly evidenced by weight loss (wasting), aversion to eating, reported altered taste sensation, sore, inflamed buccal cavity; diarrhea and/or constipation.

impaired Oral Mucous Membrane may be related to side effects of therapeutic agents/radiation, dehydration, and malnutrition, possibly evidenced by ulcerations, leukoplakia, decreased salivation, and reports of pain.

disturbed Body Image may be related to anatomical/structural changes; loss of hair and weight, possibly evidenced by negative feelings about body, preoccupation with change, feelings of helplessness/hopelessness, and change in social environment.

ineffective Protection may be related to inadequate nutrition, drug therapy/radiation, abnormal blood profile, disease state (cancer), possibly evidenced by impaired healing, deficient immunity, anorexia, fatigue.

readiness for enhanced Hope may be related to expectations of therapeutic interventions, results of diagnostic procedures as evidenced by expressed desire to enhance belief in possibilities/sense of meaning to life.

cholecystectomy

acute Pain may be related to interruption in skin/tissue layers with mechanical closure (sutures/staples) and invasive procedures (including T-tube/nasogastric (NG) tube), possibly evidenced by verbal reports, guarding/distraction behaviors, and autonomic responses (changes in vital signs).

ineffective Breathing Pattern may be related to decreased lung expansion (pain and muscle weakness), decreased energy/fatigue, ineffective cough, possibly evidenced by fremitus, tachypnea, and decreased respiratory depth/vital capacity.

risk for deficient Fluid Volume: risk factors may include vomiting/NG aspiration, medically restricted intake, altered coagulation.

cholelithiasis

acute Pain may be related to inflammation and distortion of tissues, ductal spasm, possibly evidenced by verbal reports, guarding/distraction behaviors, and autonomic responses (changes in vital signs).

imbalanced Nutrition: less than body requirements may be related to inability to ingest/absorb adequate nutrients (food intolerance/pain, nausea/vomiting, anorexia), possibly evidenced by aversion to food/decreased intake and weight loss.

deficient Knowledge [Learning Need] regarding pathophysiology, therapy choices, and self-care needs may be related to lack of information, misinterpretation, possibly evidenced by verbalization of concerns, questions, and recurrence of condition.

chronic obstructive lung disease

impaired Gas Exchange may be related to altered oxygen delivery (obstruction of airways by secretions/bronchospasm, air-trapping) and alveoli destruction, possibly evidenced by dyspnea, restlessness, confusion, abnormal ABG values, and reduced tolerance for activity.

ineffective Airway Clearance may be related to bronchospasm, increased production of tenacious secretions, retained secretions, and decreased energy/fatigue, possibly evidenced by presence of wheezes, crackles, tachypnea, dyspnea, changes in depth of respirations, use of accessory muscles, cough (persistent), and chest x-ray findings.

Activity Intolerance may be related to imbalance between oxygen supply and demand, and generalized weakness, possibly evidenced by verbal reports of fatigue, exertional dyspnea, and abnormal vital sign response.

imbalanced Nutrition: less than body requirements may be related to inability to ingest adequate nutrients (dyspnea, fatigue, medication side effects, sputum production, anorexia), possibly evidenced by weight loss, reported altered taste sensation, decreased muscle mass/subcutaneous fat, poor muscle tone, and aversion to eating/lack of interest in food.

risk for Infection: risk factors may include decreased ciliary action, stasis of secretions, and debilitated state/malnutrition.

cirrhosis

(also refer to *substance dependence/abuse rehabilitation; hepatitis, acute viral*)

risk for impaired Liver Function: risk factors may include viral infection, alcohol abuse.

imbalanced Nutrition: less than body requirements may be related to inability to ingest/absorb nutrients (anorexia, nausea, indigestion, early satiety), abnormal bowel function, impaired storage of vitamins, possibly evidenced by aversion to eating, observed lack of intake, muscle wasting, weight loss, and imbalances in nutritional studies.

excess Fluid Volume may be related to compromised regulatory mechanism (e.g., syndrome of inappropriate antidiuretic hormone [SIADH]), decreased plasma proteins/malnutrition) and excess sodium/fluid intake, possibly evidenced by generalized or abdominal edema, weight gain, dyspnea, BP changes, positive hepatojugular reflex, change in mentation, altered electrolytes, changes in urine specific gravity, and pleural effusion.

risk for impaired Skin Integrity: risk factors may include altered circulation/metabolic state, poor skin turgor, skeletal prominence, and presence of edema/ascites, accumulation of bile salts in skin.

risk for acute Confusion: risk factors may include alcohol abuse, increased serum ammonia level, and inability of liver to detoxify certain enzymes/drugs.

situational low Self-Esteem [specify]/disturbed Body Image may be related to biophysical changes/altered physical appearance, uncertainty of prognosis, changes in role function, personal vulnerability, self-destructive behavior (alcohol-induced disease), possibly evidenced by verbalization of changes in lifestyle, fear of rejection/reaction of others, negative feelings about body/abilities, and feelings of helplessness/hopelessness/powerlessness.

risk for ineffective Protection: risk factors may include abnormal blood profile (altered clotting factors), portal hypertension/development of esophageal varices.

cocaine hydrochloride poisoning, acute

(also refer to *substance dependence/abuse rehabilitation*)

ineffective Breathing Pattern may be related to pharmacological effects on respiratory center of the brain, possibly evidenced by tachypnea, altered depth of respiration, shortness of breath, and abnormal ABGs.

risk for decreased Cardiac Output: risk factors may include drug effect on myocardium (degree dependent on drug purity/quality used), alterations in electrical rate/rhythm/conduction, pre-existing myocardopathy.

risk for impaired Liver Function: risk factors may include cocaine abuse

imbalanced Nutrition: less than body requirements may be related to anorexia, insufficient/inappropriate use of financial resources, possibly evidenced by reported inadequate intake, weight loss/less than normal weight gain; lack of interest in food, poor muscle tone, signs/laboratory evidence of vitamin deficiencies.

risk for Infection: risk factors may include injection techniques, impurities of drugs; localized trauma/nasal septum damage, malnutrition, altered immune state.

ineffective Coping may be related to personal vulnerability, negative role modeling, inadequate support systems; ineffective/inadequate coping skills with substitution of drug, possibly evidenced by use of harmful substance, despite evidence of undesirable consequences.

disturbed Sensory/Perception (specify) may be related to exogenous chemical, altered sensory reception/transmission/integration (hallucination), altered status of sense organs, possibly evidenced by responding to internal stimuli from hallucinatory experiences, bizarre thinking, anxiety/panic, changes in sensory acuity (sense of smell/taste).

coccidioidomycosis (San Joaquin/Valley Fever)

acute Pain may be related to inflammation, possibly evidenced by verbal reports, distraction behaviors, and narrowed focus.

Fatigue may be related to decreased energy production; states of discomfort, possibly evidenced by reports of overwhelming lack of energy, inability to maintain usual routine, emotional lability/irritability, impaired ability to concentrate, and decreased endurance/libido.

deficient Knowledge [Learning Need] regarding nature/course of disease, therapy and self-care needs may be related to lack of information, possibly evidenced by statements of concern and questions.

colitis, ulcerative

Diarrhea may be related to inflammation or malabsorption of the bowel, presence of toxins and/or segmental narrowing of the lumen, possibly evidenced by increased bowel sounds/peristalsis, urgency, frequent/watery stools (acute phase), changes in stool color, and abdominal pain/cramping.

acute/chronic Pain may be related to inflammation of the intestines/hyperperistalsis and anal/rectal irritation, possibly evidenced by verbal reports, guarding/distraction behaviors.

risk for deficient Fluid Volume: risk factors may include continued gastrointestinal losses (diarrhea, vomiting, capillary plasma loss), altered intake, hypermetabolic state.

imbalanced Nutrition: less than body requirements may be related to altered intake/absorption of nutrients (medically restricted intake, fear that eating may cause diarrhea) and hypermetabolic state, possibly evidenced by weight loss, decreased subcutaneous fat/muscle mass, poor muscle tone, hyperactive bowel sounds, steatorrhea, pale conjunctiva and mucous membranes, and aversion to eating.

ineffective Coping may be related to chronic nature and indefinite outcome of disease, multiple stressors (repeated over time), personal vulnerability, severe pain, inadequate sleep, lack of/ineffective support systems, possibly evidenced by verbalization

of inability to cope, discouragement, anxiety; preoccupation with physical self, chronic worry, emotional tension; depression, and recurrent exacerbation of symptoms.

risk for Powerlessness: risk factors may include unresolved dependency conflicts, feelings of insecurity/resentment, repression of anger and aggressive feelings, lacking a sense of control in stressful situations, sacrificing own wishes for others, and retreat from aggression or frustration.

colostomy

risk for impaired Skin Integrity: risk factors may include absence of sphincter at stoma and chemical irritation from caustic bowel contents, reaction to product/removal of adhesive, and improperly fitting appliance.

risk for Diarrhea/Constipation: risk factors may include interruption/alteration of normal bowel function (placement of ostomy), changes in dietary/fluid intake, and effects of medication.

deficient Knowledge [Learning Need] regarding changes in physiologic function and self-care/treatment needs may be related to lack of exposure/recall, information misinterpretation, possibly evidenced by questions, statement of concern, and inaccurate follow-through of instruction/development of preventable complications.

disturbed Body Image may be related to biophysical changes (presence of stoma; loss of control of bowel elimination) and psychosocial factors (altered body structure, disease process/associated treatment regimen, e.g., cancer, colitis), possibly evidenced by verbalization of change in perception of self, negative feelings about body, fear of rejection/reaction of others, not touching/looking at stoma, and refusal to participate in care.

impaired Social Interaction may be related to fear of embarrassing situation secondary to altered bowel control with loss of contents, odor, possibly evidenced by reduced participation and verbalized/observed discomfort in social situations.

risk for Sexual Dysfunction: risk factors may include altered body structure/function, radical resection/treatment procedures, vulnerability/psychological concern about response of significant other(s), and disruption of sexual response pattern (e.g., erection difficulty).

coma, diabetic

Refer to *diabetic ketoacidosis*.

concussion of the brain

acute Pain may be related to trauma to/edema of cerebral tissue, possibly evidenced by reports of headache, guarding/distraction behaviors, and narrowed focus.

risk for deficient Fluid Volume: risk factors may include vomiting, decreased intake, and hypermetabolic state (fever).

risk for disturbed Thought Processes: risk factors may include trauma to/edema of cerebral tissue.

deficient Knowledge [Learning Need] regarding condition, treatment/safety needs, and potential complications may be related to lack of recall, misinterpretation, cognitive limitation, possibly evidenced by questions/statement of concerns, development of preventable complications.

conduct disorder (childhood, adolescence)

risk for self/other-directed Violence: risk factors may include retarded ego development, antisocial character, poor impulse control, dysfunctional family system, loss of significant relationships, history of suicidal/acting-out behaviors.

defensive Coping may be related to inadequate coping strategies, maturational crisis, multiple life changes/losses, lack of control of impulsive actions, and personal vulnerability, possibly evidenced by inappropriate use of defense mechanisms, inability to meet role expectations, poor self-esteem, failure to assume responsibility for own actions, hypersensitivity to slight or criticism, and excessive smoking/drinking/drug use.

disturbed Thought Processes may be related to physiological changes, lack of appropriate psychological conflict, biochemical changes, as evidenced by tendency to interpret the intentions/actions of others as blaming and hostile; deficits in problem-solving skills, with physical aggression the solution most often chosen.

chronic low Self-Esteem may be related to life choices perpetuating failure, personal vulnerability, possibly evidenced by self-negating verbalizations, anger, rejection of positive feedback, frequent lack of success in life events.

compromised/disabled family Coping may be related to excessive guilt, anger, or blaming among family members regarding child's behavior; parental inconsistencies; disagreements regarding discipline, limit setting, and approaches; and exhaustion of parental resources (prolonged coping with disruptive child), possibly evidenced by unrealistic parental expectations, rejection or overprotection of child; and exaggerated

expressions of anger, disappointment, or despair regarding child's behavior or ability to improve or change.

impaired Social Interaction may be related to retarded ego development, developmental state (adolescence), lack of social skills, low self-concept, dysfunctional family system, and neurological impairment, possibly evidenced by dysfunctional interaction with others (difficulty waiting turn in games or group situations, not seeming to listen to what is being said), difficulty playing quietly and maintaining attention to task or play activity, often shifting from one activity to another and interrupting or intruding on others.

Conn's syndrome

Refer to *aldosteronism, primary*.

constipation

Constipation may be related to weak abdominal musculature, gastrointestinal obstructive lesions, pain on defecation, diagnostic procedures, pregnancy, possibly evidenced by change in character/frequency of stools, feeling of abdominal/rectal fullness or pressure, changes in bowel sounds, abdominal distention.

acute Pain may be related to abdominal fullness/pressure, straining to defecate, and trauma to delicate tissues, possibly evidenced by verbal reports, reluctance to defecate, and distraction behaviors.

deficient Knowledge [Learning Need] regarding dietary needs, bowel function, and medication effect may be related to lack of information/misconceptions, possibly evidenced by development of problem and verbalization of concerns/questions.

coronary artery bypass surgery

risk for decreased Cardiac Output: risk factors may include decreased myocardial contractility, diminished circulating volume (preload), alterations in electrical conduction, and increased SVR (afterload).

acute Pain may be related to direct chest tissue/bone trauma, invasive tubes/lines, donor site incision, tissue inflammation/edema formation, intraoperative nerve trauma, possibly evidenced by verbal reports, autonomic responses (changes in vital signs), and distraction behaviors/ (restlessness), irritability.

disturbed Sensory/Perception [specify] may be related to restricted environment (post-operative/acute), sleep deprivation, effects of medications, continuous environmental sounds/activities, and psychological stress of procedure, possibly evidenced by disorientation, alterations in behavior, exaggerated emotional responses, and visual/auditory distortions.

ineffective Role Performance may be related to situational crises (dependency role)/re-cuperative process, uncertainty about future, possibly evidenced by delay/alteration in physical capacity to resume role, change in usual role or responsibility change in self/others' perception of role.

Crohn's disease

(also refer to *colitis, ulcerative*)

imbalanced Nutrition: less than body requirements may be related to intestinal pain after eating; and decreased transit time through bowel, possibly evidenced by weight loss, aversion to eating, and observed lack of intake.

Diarrhea may be related to inflammation of small intestines, presence of toxins, particularly dietary intake, possibly evidenced by hyperactive bowel sounds, cramping, and frequent loose liquid stools.

deficient Knowledge [Learning Need] regarding condition, nutritional needs, and prevention of recurrence may be related to insufficient information/misinterpretation, unfamiliarity with resources, possibly evidenced by statements of concern/questions, inaccurate follow-through of instructions, and development of preventable complications/exacerbation of condition.

croup

ineffective Airway Clearance may be related to presence of thick, tenacious mucus and swelling/spasms of the epiglottis, possibly evidenced by harsh/brassy cough, tachypnea, use of accessory breathing muscles, and presence of wheezes.

deficient Fluid Volume [isotonic] may be related to decreased ability/aversion to swallowing, presence of fever, and increased respiratory losses, possibly evidenced by dry mucous membranes, poor skin turgor, and scanty/concentrated urine.

croup, membranous

(also refer to *croup*)

risk for Suffocation: risk factors may include inflammation of larynx with formation of false membrane.

Anxiety [specify level]/Fear may be related to change in environment, perceived threat to self (difficulty breathing), and transmission of anxiety of adults, possibly evidenced by restlessness, facial tension, glancing about, and sympathetic stimulation.

Cushing's syndrome

risk for excess Fluid Volume: risk factors may include compromised regulatory mechanism (fluid/sodium retention).

risk for Infection: risk factors may include immunosuppressed inflammatory response, skin and capillary fragility, and negative nitrogen balance.

imbalanced Nutrition: less than body requirements may be related to inability to utilize nutrients (disturbance of carbohydrate metabolism), possibly evidenced by decreased muscle mass and increased resistance to insulin.

Self-Care Deficit [specify] may be related to muscle wasting, generalized weakness, fatigue, and demineralization of bones, possibly evidenced by statements of/observed inability to complete or perform ADLs.

disturbed Body Image may be related to change in structure/appearance (effects of disease process, drug therapy), possibly evidenced by negative feelings about body, feelings of helplessness, and changes in social involvement.

Sexual Dysfunction may be related to loss of libido, impotence, and cessation of menses, possibly evidenced by verbalization of concerns and/or dissatisfaction with and alteration in relationship with significant other.

risk for Trauma [fractures]: risk factors may include increased protein breakdown, negative protein balance, demineralization of bones.

cystic fibrosis

ineffective Airway Clearance may be related to excessive production of thick mucus and decreased ciliary action, possibly evidenced by abnormal breath sounds, ineffective cough, cyanosis, and altered respiratory rate/depth.

risk for Infection: risk factors may include stasis of respiratory secretions and development of atelectasis.

imbalanced Nutrition: less than body requirements may be related to impaired digestive process and absorption of nutrients, possibly evidenced by failure to gain weight, muscle wasting, and retarded physical growth.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, medical management, and available community resources may be related to insufficient information/misconceptions, possibly evidenced by statements of concern, questions; inaccurate follow-through of instructions, development of preventable complications.

compromised family Coping may be related to chronic nature of disease and disability, inadequate/incorrect information or understanding by a primary person, and possibly evidenced by significant person attempting assistive or supportive behaviors with less than satisfactory results, protective behavior disproportionate to patient's abilities or need for autonomy.

cystitis

acute Pain may be related to inflammation and bladder spasms, possibly evidenced by verbal reports, distraction behaviors, and narrowed focus.

impaired Urinary Elimination may be related to inflammation/irritation of bladder, possibly evidenced by frequency, nocturia, and dysuria.

deficient Knowledge [Learning Need] regarding condition, treatment, and prevention of recurrence may be related to inadequate information/misconceptions, possibly evidenced by statements of concern and questions; recurrent infections.

cytomegalic inclusion disease

Refer to *herpes*.

cytomegalovirus (CMV) infection

risk for disturbed visual Sensory Perception: risk factors may include inflammation of the retina.

risk for fetal Infection: risk factors may include transplacental exposure, contact with blood/body fluids.

deep vein thrombosis (DVT)

Refer to *thrombophlebitis*.

dehiscence (abdominal)

impaired Skin Integrity may be related to altered circulation, altered nutritional state (obesity/malnutrition), and physical stress on incision, possibly evidenced by poor/delayed wound healing and disruption of skin surface/wound closure.

risk for Infection: risk factors may include inadequate primary defenses (separation of incision, traumatized intestines, environmental exposure).

risk for impaired Tissue Integrity: risk factors may include exposure of abdominal contents to external environment.

Fear/[severe] Anxiety may be related to crises, perceived threat of death, possibly evidenced by fearfulness, restless behaviors, and sympathetic stimulation.

deficient Knowledge [Learning Need] regarding condition/prognosis and treatment needs may be related to lack of information/recall and misinterpretation of information, possibly evidenced by development of preventable complication, requests for information, and statement of concern.

dehydration

deficient Fluid volume [specify] may be related to etiology as defined by specific situation, possibly evidenced by dry mucous membranes, poor skin turgor, decreased pulse volume/pressure, and thirst.

risk for impaired Oral Mucous Membrane: risk factors may include dehydration and decreased salivation.

deficient Knowledge [Learning Need] regarding fluid needs may be related to lack of information/misinterpretation, possibly evidenced by questions, statement of concern, and inadequate follow-through of instructions/development of preventable complications.

delirium tremens (acute alcohol withdrawal)

Anxiety [severe/panic]/Fear may be related to cessation of alcohol intake/physiological withdrawal, threat to self-concept, perceived threat of death, possibly evidenced by increased tension, apprehension, fear of unspecified consequences; identifies object of fear.

disturbed Sensory/Perception [specify] may be related to exogenous (alcohol consumption/sudden cessation)/endogenous (electrolyte imbalance, elevated ammonia and blood urea nitrogen—BUN) chemical alterations, sleep deprivation, and psychological stress, possibly evidenced by disorientation, restlessness, irritability, exaggerated emotional responses, bizarre thinking and visual and auditory distortions/hallucinations.

risk for decreased Cardiac Output: risk factors may include direct effect of alcohol on heart muscle, altered SVR, presence of dysrhythmias.

risk for Trauma: risk factors may include alterations in balance, reduced muscle coordination, cognitive impairment, and involuntary clonic/tonic muscle activity.

imbalanced Nutrition: less than body requirements may be related to poor dietary intake, effects of alcohol on organs involved in digestion, interference with absorption/metabolism of nutrients and amino acids, possibly evidenced by reports of inadequate food intake, altered taste sensation, lack of interest in food, debilitated state, decreased subcutaneous fat/muscle mass, signs of mineral/electrolyte deficiency, including abnormal laboratory findings.

delivery, precipitous/out of hospital

(also refer to *labor, precipitous; labor, stages I and II*)

risk for deficient Fluid Volume: risk factors may include presence of nausea/vomiting, lack of intake, excessive vascular loss.

risk for Infection: risk factors may include broken/traumatized tissue, increased environmental exposure, rupture of amniotic membranes.

risk for fetal Injury: risk factors may include rapid descent/pressure changes, compromised circulation, environmental exposure.

delusional disorder

risk for self/other-directed Violence: risk factors may include perceived threats of danger, increased feelings of anxiety, acting out in an irrational manner.

[severe] Anxiety may be related to inability to trust, possibly evidenced by rigid delusional system, frightened of other people and own hostility.

Powerlessness may be related to lifestyle of helplessness, feelings of inadequacy, interpersonal interaction, possibly evidenced by verbal expressions of no control/influence over situation(s), use of paranoid delusions, aggressive behavior to compensate for lack of control.

disturbed Thought Processes may be related to psychological conflicts, increasing anxiety/fear, possibly evidenced by interference with ability to think clearly/logically, fragmentation and autistic thinking, delusions, beliefs and behaviors of suspicion/violence.

impaired Social Interaction may be related to mistrust of others/delusional thinking, lack of knowledge/skills to enhance mutuality, possibly evidenced by discomfort in

social situations, difficulty in establishing relationships with others, expression of feelings of rejection, no sense of belonging.

dementia, presenile/senile

(also refer to *Alzheimer's disease*)

impaired Memory may be related to neurological disturbances, possibly evidenced by observed experiences of forgetting, inability to determine if a behavior was performed, inability to perform previously learned skills, inability to recall factual information or recent/past events.

Fear may be related to decreases in functional abilities, public disclosure of disabilities, further mental/physical deterioration, possibly evidenced by social isolation, apprehension, irritability, defensiveness, suspiciousness, aggressive behavior.

Self-Care Deficit [specify] may be related to cognitive decline, physical limitations, frustration over loss of independence, depression, possibly evidenced by impaired ability to perform ADLs.

risk for Trauma: risk factors may include changes in muscle coordination/balance, impaired judgment, seizure activity.

risk for sedentary Lifestyle: risk factors may include lack of interest/motivation, resources; lack of training or knowledge of specific exercise needs, safety concerns/fear of injury.

risk for Caregiver Role Strain: risk factors may include illness severity of care receiver, duration of caregiving required, care receiver exhibiting deviant/bizarre behavior; family/caregiver isolation, lack of respite/recreation, spouse is caregiver.

risk for complicated Grieving: risk factors may include preloss psychological symptoms, predisposition for anxiety and feelings of inadequacy, frequency of major life events.

depressant abuse

(also refer to *drug overdose, acute [depressants]*)

ineffective Denial may be related to weak underdeveloped ego, unmet self-needs, possibly evidenced by inability to admit impact of condition on life, minimizes symptoms/problem, refuses health care attention.

ineffective Coping may be related to weak ego, possibly evidenced by abuse of chemical agents, lack of goal-directed behavior, inadequate problem solving, destructive behavior toward self.

imbalanced Nutrition: less than body requirements may be related to use of substance in place of nutritional food, possibly evidenced by loss of weight, pale conjunctiva and mucous membranes, electrolyte imbalances, anemias.

risk for Injury: risk factors may include changes in sleep, decreased concentration, loss of inhibitions.

depressive disorders, major depression, dysthymia

risk for self-directed Violence: risk factors may include depressed mood and feeling of worthlessness and hopelessness.

[moderate to severe] Anxiety/disturbed Thought Processes may be related to psychological conflicts, unconscious conflict about essential values/goals of life, unmet needs, threat to self-concept, sleep deprivation, interpersonal transmission/contagion, possibly evidenced by reports of nervousness or fearfulness, feelings of inadequacy; agitation, angry/tearful outbursts, rambling/discoordinated speech, restlessness, hand rubbing or wringing, tremulousness; poor memory/concentration, decreased ability to grasp ideas, inability to follow/impaired ability to make decisions, numerous/repetitious physical complaints without organic cause, ideas of reference, hallucinations/delusions.

Insomnia may be related to biochemical alterations (decreased serotonin), unresolved fears and anxieties, and inactivity, possibly evidenced by difficulty in falling/remaining asleep, early morning awakening/awakening later than desired, reports of not feeling rested, and physical signs (e.g., dark circles under eyes, excessive yawning); hypersomnia (using sleep as an escape).

Social Isolation/ impaired Social Interaction may be related to alterations in mental status/thought processes (depressed mood), inadequate personal resources, decreased energy/inertia, difficulty engaging in satisfying personal relationships, feelings of worthlessness/low self-concept, inadequacy in or absence of significant purpose in life, and knowledge/skill deficit about social interactions, possibly evidenced by decreased involvement with others, expressed feelings of difference from others, remaining in home/room/bed, refusing invitations/suggestions of social involvement, and dysfunctional interaction with peers, family, and/or others.

interrupted Family Processes may be related to situational crises of illness of family member with change in roles/responsibilities, developmental crises (e.g., loss of family member/relationship), possibly evidenced by statements of difficulty coping with situation, family system not meeting needs of its members, difficulty accepting or re-

ceiving help appropriately, ineffective family decision-making process, and failure to send and to receive clear messages.

risk for impaired Religiosity: risk factors may include ineffective support/coping, lack of social interaction, depression.

risk for Injury [effects of electroconvulsive therapy (ECT): risk factors may include effects of therapy on the cardiovascular, respiratory, musculoskeletal, and nervous systems; and pharmacological effects of anesthesia.

dermatitis seborrheica

impaired Skin Integrity may be related to chronic inflammatory condition of the skin, possibly evidenced by disruption of skin surface with dry or moist scales, yellowish crusts, erythema, and fissures.

diabetes mellitus

deficient Knowledge [Learning Need] regarding disease process/treatment and individual care needs may be related to unfamiliarity with information/lack of recall, misinterpretation, possibly evidenced by requests for information, statements of concern/misconceptions, inadequate follow-through of instructions, and development of preventable complications.

risk for unstable Blood Glucose: risk factors may include lack of adherence to diabetes management, medication management, inadequate blood glucose monitoring, physical activity level, health status, stress, rapid growth periods.

imbalanced Nutrition: less than body requirements may be related to inability to utilize nutrients (imbalance between intake and utilization of glucose) to meet metabolic needs, possibly evidenced by change in weight, muscle weakness, increased thirst/urination, and hyperglycemia.

risk for risk-prone health Behavior: risk factors may include all-encompassing change in lifestyle, self-concept requiring lifelong adherence to therapeutic regimen and internal/altered locus of control.

risk for Infection: risk factors may include decreased leukocytic function, circulatory changes, and delayed healing.

risk for disturbed Sensory/Perception [specify]: risk factors may include endogenous chemical alteration (glucose/insulin and/or electrolyte imbalance).

compromised family Coping may be related to inadequate or incorrect information or understanding by primary person(s), other situational/developmental crises or situations the significant person(s) may be facing, lifelong condition requiring behavioral changes impacting family, possibly evidenced by family expressions of confusion about what to do, verbalizations that they are having difficulty coping with situation; family does not meet physical/emotional needs of its members; significant other(s) preoccupied with personal reaction (e.g., guilt, fear), display protective behavior disproportionate (too little/too much) to client's abilities or need for autonomy.

diabetic ketoacidosis

deficient Fluid Volume [specify] may be related to hyperosmolar urinary losses, gastric losses, and inadequate intake, possibly evidenced by increased urinary output/dilute urine, reports of weakness, thirst; sudden weight loss, hypotension, tachycardia, delayed capillary refill, dry mucous membranes, poor skin turgor.

unstable Blood Glucose: may be related to medication management, lack of diabetes management, inadequate blood glucose monitoring, presence of infection, possibly evidenced by elevated serum glucose level, presence of ketones in urine, nausea, weight loss, blurred vision, irritability.

imbalanced Nutrition: less than body requirements may be related to inadequate utilization of nutrients (insulin deficiency), decreased oral intake, hypermetabolic state, possibly evidenced by recent weight loss, reports of weakness, lack of interest in food, gastric fullness/abdominal pain.

Fatigue may be related to decreased metabolic energy production, altered body chemistry (insufficient insulin), increased energy demands (hypermetabolic state/infection), possibly evidenced by overwhelming lack of energy, inability to maintain usual routines, decreased performance, impaired ability to concentrate, listlessness.

risk for Infection: risk factors may include high glucose levels, decreased leukocyte function, stasis of body fluids, invasive procedures, alteration in circulation/perfusion.

dialysis, general

(also refer to *dialysis, peritoneal; hemodialysis*)

imbalanced Nutrition: less than body requirements may be related to inadequate ingestion of nutrients (dietary restrictions, anorexia, nausea/vomiting, stomatitis), loss of peptides and amino acids (building blocks for proteins) during procedure, possibly evidenced by reported inadequate intake, aversion to eating, altered taste sensation,

poor muscle tone/weakness, sore/inflamed buccal cavity, pale conjunctiva/mucous membranes.

Grieving may be related to actual or perceived loss, chronic and/or fatal illness, and thwarted grieving response to a loss, possibly evidenced by verbal expression of distress/unresolved issues, denial of loss; altered eating habits, sleep and dream patterns, activity levels, libido; crying, labile affect; feelings of sorrow, guilt, and anger.

disturbed Body Image/situational low Self-Esteem may be related to situational crisis and chronic illness with changes in usual roles/body image, possibly evidenced by verbalization of changes in lifestyle, focus on past function, negative feelings about body, feelings of helplessness/powerlessness, extension of body boundary to incorporate environmental objects (e.g., dialysis setup), change in social involvement, over-dependence on others for care, not taking responsibility for self-care/lack of follow-through, and self-destructive behavior.

Self-Care Deficit [specify] may be related to perceptual/cognitive impairment (accumulated toxins); intolerance to activity, decreased strength and endurance; pain/discomfort, possibly evidenced by reported inability to perform ADLs, disheveled/unkept appearance, strong body odor.

Powerlessness may be related to illness-related regimen and health care environment, possibly evidenced by verbal expression of having no control, depression over physical deterioration, nonparticipation in care, anger, and passivity.

compromised/ disabled family Coping may be related to inadequate or incorrect information or understanding by a primary person, temporary family disorganization and role changes, patient providing little support in turn for the primary person, and prolonged disease/disability progression that exhausts the supportive capacity of significant persons, possibly evidenced by expressions of concern or reports about response of significant other(s)/family to patient's health problem, preoccupation of significant other(s) with own personal reactions, display of intolerance/rejection, and protective behavior disproportionate (too little or too much) to patient's abilities or need for autonomy.

dialysis, peritoneal

(also refer to *dialysis, general*)

risk for excess Fluid Volume: risk factors may include inadequate osmotic gradient of dialysate, fluid retention (dialysate drainage problems/inappropriate osmotic gradient of solution, bowel distention), excessive PO/IV intake.

risk for Trauma: risk factors may include improper placement during insertion or manipulation of catheter.

acute Pain may be related to procedural factors (catheter irritation, improper catheter placement), presence of edema/abdominal distention, inflammation, or infection, rapid infusion/infusion of cold or acidic dialysate, possibly evidenced by verbal reports, guarding/distraction behaviors, and self-focus.

risk for Infection [peritoneal]: risk factors may include contamination of catheter/infusion system, skin contaminants, sterile peritonitis (response to composition of dialysate).

risk for ineffective Breathing Pattern: risk factors may include increased abdominal pressure with restricted diaphragmatic excursion, rapid infusion of dialysate, pain/discomfort, inflammatory process (e.g., atelectasis/pneumonia).

diarrhea

deficient Knowledge [Learning Need] regarding causative/contributing factors and therapeutic needs may be related to lack of information/misconceptions, possibly evidenced by statements of concern, questions, and development of preventable complications.

risk for deficient Fluid Volume: risk factors may include excessive losses through gastrointestinal tract, altered intake.

acute Pain may be related to abdominal cramping and irritation/excoriation of skin, possibly evidenced by verbal reports, facial grimacing, and autonomic responses.

impaired Skin Integrity may be related to effects of excretions on delicate tissues, possibly evidenced by reports of discomfort and disruption of skin surface/destruction of skin layers.

digitalis toxicity

decreased Cardiac Output may be related to altered myocardial contractility/electrical conduction, properties of digitalis (long half-life and narrow therapeutic range), concurrent medications, age/general health status and electrolyte/acid-base balance, possibly evidenced by changes in rate/rhythm/conduction (development/worsening of dysrhythmias), changes in mentation, worsening of heart failure, elevated serum drug levels.

risk for imbalanced Fluid Volume: risk factors may include excessive losses from vomiting/diarrhea, decreased intake/nausea, decreased plasma proteins, malnutrition, continued use of diuretics; excess sodium/fluid retention.

deficient Knowledge [Learning Need] regarding condition/therapy and self-care needs may be related to information misinterpretation and lack of recall, possibly evidenced by inaccurate follow-through of instructions and development of preventable complications.

risk for disturbed Thought Processes: risk factors may include physiologic effects of toxicity/reduced cerebral perfusion.

dilation and curettage (D and C)

(also refer to *abortion, spontaneous*)

deficient Knowledge [Learning Need] regarding surgical procedure, possible postprocedural complications, and therapeutic needs may be related to lack of exposure/unfamiliarity with information, possibly evidenced by requests for information and statements of concern/misconceptions.

dilation of cervix, premature

(also refer to *labor, preterm*)

Anxiety [specify level] may be related to situational crisis, threat of death/fetal loss, possibly evidenced by increased tension, apprehension, feelings of inadequacy, sympathetic stimulation, and repetitive questioning.

risk for maternal Injury: risk factors may include surgical intervention, use of tocolytic drugs.

risk for fetal Injury: risk factors may include premature delivery, surgical procedure.

Grieving may be related to perceived potential fetal loss, possibly evidenced by expression of distress, guilt, anger, choked feelings

disseminated intravascular coagulation (DIC)

risk for deficient Fluid Volume: risk factors may include failure of regulatory mechanism (coagulation process) and active loss/hemorrhage.

ineffective Tissue Perfusion [specify] may be related to alteration of arterial/venous flow (microemboli throughout circulatory system and hypovolemia), possibly evidenced by changes in respiratory rate and depth, changes in mentation, decreased urinary output, and development of acral cyanosis/focal gangrene.

Anxiety [specify level]/Fear may be related to sudden change in health status/threat of death, interpersonal transmission/contagion, possibly evidenced by sympathetic stimulation, restlessness, focus on self, and apprehension.

risk for impaired Gas Exchange: risk factors may include reduced oxygen-carrying capacity, development of acidosis, fibrin deposition in microcirculation, and ischemic damage of lung parenchyma.

acute Pain may be related to bleeding into joints/muscles, with hematoma formation, and ischemic tissues with areas of acral cyanosis/focal gangrene, possibly evidenced by verbal reports, narrowed focus, alteration in muscle tone, guarding/distraction behaviors, restlessness, autonomic responses.

dissociative disorders

Anxiety [severe/panic]/Fear may be related to maladaptation of ineffective coping continuing from early life, unconscious conflict(s), threat to self-concept, unmet needs, or phobic stimulus, possibly evidenced by maladaptive response to stress (e.g., dissociating self/fragmentation of the personality), increased tension, feelings of inadequacy, and focus on self, projection of personal perceptions onto the environment.

risk for self/other-directed Violence: risk factors may include dissociative state/conflicting personalities, depressed mood, panic states, and suicidal/homicidal behaviors.

disturbed personal Identity may be related to psychological conflicts (dissociative state), childhood trauma/abuse, threat to physical integrity/self-concept, and underdeveloped ego, possibly evidenced by alteration in perception or experience of self, loss of one's own sense of reality/the external world, poorly differentiated ego boundaries, confusion about sense of self, purpose or direction in life; memory loss, presence of more than one personality within the individual.

compromised family Coping may be related to multiple stressors repeated over time, prolonged progression of disorder that exhausts the supportive capacity of significant person(s), family disorganization and role changes, high-risk family situation, possibly evidenced by family/significant other(s) describing inadequate understanding or knowledge that interferes with assistive or supportive behaviors; relationship and marital conflict.

diverticulitis

acute Pain may be related to inflammation of intestinal mucosa, abdominal cramping, and presence of fever/chills, possibly evidenced by verbal reports, guarding/distraction behaviors, autonomic responses, and narrowed focus.

Diarrhea/Constipation may be related to altered structure/function and presence of inflammation, possibly evidenced by signs and symptoms dependent on specific problem (e.g., increase/decrease in frequency of stools and change in consistency).

deficient Knowledge [Learning Need] regarding disease process, potential complications, therapeutic and self-care needs may be related to lack of information/misconceptions, possibly evidenced by statements of concern, request for information, and development of preventable complications.

risk for Powerlessness: risk factors may include chronic nature of disease process with recurrent episodes despite cooperation with medical regimen.

Down syndrome

(also refer to *mental retardation*)

delayed Growth and Development may be related to effects of physical/mental disability, possibly evidenced by altered physical growth; delay/inability in performing skills and self-care/self-control activities appropriate for age.

risk for Trauma: risk factors may include cognitive difficulties and poor muscle tone/coordination, weakness.

imbalanced Nutrition: less than body requirements may be related to poor muscle tone and protruding tongue, possibly evidenced by weak and ineffective sucking/swallowing and observed lack of adequate intake with weight loss/failure to gain.

interrupted Family Processes may be related to situational/maturational crisis requiring incorporation of new skills into family dynamics, possibly evidenced by confusion about what to do, verbalized difficulty coping with situation, unexamined family myths.

risk for complicated Grieving: risk factors may include loss of "the perfect child," chronic condition requiring long-term care, and unresolved feelings.

risk for impaired parent/infant/child Attachment: risk factors may include ill infant/child who is unable to effectively initiate parental contact due to altered behavioral organization, inability of parents to meet the personal needs.

risk for Social Isolation: risk factors may include withdrawal from usual social interactions and activities, assumption of total child care, and becoming overindulgent/overprotective.

drug overdose, acute (depressants)

(also refer to *substance dependence/abuse rehabilitation*)

ineffective Breathing Pattern/impaired Gas Exchange may be related to neuromuscular impairment/CNS depression, decreased lung expansion, possibly evidenced by changes in respirations, cyanosis, and abnormal ABGs.

risk for Trauma/Suffocation/Poisoning: risk factors may include CNS depression/agitation, hypersensitivity to the drug(s), psychological stress.

risk for self/other-directed Violence: risk factors may include suicidal behaviors, toxic reactions to drug(s).

risk for Infection: risk factors may include drug injection techniques, impurities in injected drugs, localized trauma; malnutrition, altered immune state.

Duchenne's muscular dystrophy

Refer to *muscular dystrophy (Duchenne's)*.

dysmenorrhea

acute Pain may be related to exaggerated uterine contractility, possibly evidenced by verbal reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

risk for Activity Intolerance: risk factors may include severity of pain and presence of secondary symptoms (nausea, vomiting, syncope, chills), depression.

ineffective Coping may be related to chronic, recurrent nature of problem; anticipatory anxiety, and inadequate coping methods, possibly evidenced by muscular tension, headaches, general irritability, chronic depression, and verbalization of inability to cope, report of poor self-concept.

dysrhythmia, cardiac

risk for decreased Cardiac Output: risk factors may include altered electrical conduction and reduced myocardial contractility.

Anxiety [specify level] may be related to perceived threat of death, possibly evidenced by increased tension, apprehension, and expressed concerns.

deficient Knowledge [Learning Need] regarding medical condition/therapy needs may be related to lack of information/misinterpretation and unfamiliarity with information resources, possibly evidenced by questions, statement of misconception, failure to improve on previous regimen, and development of preventable complications.

risk for Activity Intolerance: risk factors may include imbalance between myocardial oxygen supply and demand, and cardiac depressant effects of certain drugs (beta blockers, antidysrhythmics).

risk for Poisoning [digitalis toxicity]: risk factors may include limited range of therapeutic effectiveness, lack of education/proper precautions, reduced vision/cognitive limitations.

eclampsia

Refer to *pregnancy-induced hypertension*.

ectopic pregnancy (tubal)

(also refer to *abortion, spontaneous termination*)

acute Pain may be related to distention/rupture of fallopian tube, possibly evidenced by reports, guarding/distraction behaviors, facial mask of pain, and autonomic responses (diaphoresis, changes in vital signs).

risk for deficient Fluid Volume [isotonic]: risk factors may include hemorrhagic losses and decreased/restricted intake.

Anxiety [specify level]/Fear may be related to threat of death and possible loss of ability to conceive, possibly evidenced by increased tension, apprehension, sympathetic stimulation, restlessness, and focus on self.

eczema (dermatitis)

Pain [Discomfort] may be related to cutaneous inflammation and irritation, possibly evidenced by verbal reports, irritability, and scratching.

risk for Infection: risk factors may include broken skin and tissue trauma.

Social Isolation may be related to alterations in physical appearance, possibly evidenced by expressed feelings of rejection and decreased interaction with peers.

edema, pulmonary

excess Fluid Volume may be related to decreased cardiac functioning, excessive fluid/sodium intake, possibly evidenced by dyspnea, presence of crackles (rales), pulmonary congestion on x-ray, restlessness, anxiety, and increased central venous pressure (CVP)/pulmonary pressures.

impaired Gas Exchange may be related to altered blood flow and decreased alveolar/capillary exchange (fluid collection/shifts into interstitial space/alveoli), possibly evidenced by hypoxia, restlessness, and confusion.

Anxiety [specify level]/Fear may be related to perceived threat of death (inability to breathe), possibly evidenced by responses ranging from apprehension to panic state, restlessness, and focus on self.

emphysema

impaired Gas Exchange may be related to alveolar capillary membrane changes/destruction, possibly evidenced by dyspnea, restlessness, changes in mentation, abnormal ABG values.

ineffective Airway Clearance may be related to increased production/retained tenacious secretions, decreased energy level, and muscle wasting, possibly evidenced by abnormal breath sounds (rhonchi), ineffective cough, changes in rate/depth of respirations, and dyspnea.

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of fatigue/weakness, exertional dyspnea, and abnormal vital sign response to activity.

imbalanced Nutrition: less than body requirements may be related to inability to ingest food (shortness of breath, anorexia, generalized weakness, medication side effects), possibly evidenced by lack of interest in food, reported altered taste, loss of muscle mass and tone, fatigue, and weight loss.

risk for Infection: risk factors may include inadequate primary defenses (stasis of body fluids, decreased ciliary action), chronic disease process, and malnutrition.

Powerlessness may be related to illness-related regimen and health care environment, possibly evidenced by verbal expression of having no control, depression over physical deterioration, nonparticipation in therapeutic regimen; anger, and passivity.

encephalitis

risk for ineffective cerebral Tissue Perfusion: risk factors may include cerebral edema altering/interrupting cerebral arterial/venous blood flow, hypovolemia, exchange problems at cellular level (acidosis).

Hyperthermia may be related to increased metabolic rate, illness, and dehydration, possibly evidenced by increased body temperature, flushed/warm skin, and increased pulse and respiratory rates.

acute Pain may be related to inflammation/irritation of the brain and cerebral edema, possibly evidenced by verbal reports of headache, photophobia, distraction behaviors, restlessness, and autonomic response (changes in vital signs).

risk for Trauma/Suffocation: risk factors may include restlessness, clonic/tonic activity, altered sensorium, cognitive impairment; generalized weakness, ataxia, vertigo.

endocarditis

risk for decreased Cardiac Output: risk factors may include inflammation of lining of heart and structural change in valve leaflets.

Anxiety [specify level] may be related to change in health status and threat of death, possibly evidenced by apprehension, expressed concerns, and focus on self.

acute Pain may be related to generalized inflammatory process and effects of embolic phenomena, possibly evidenced by reports, narrowed focus, distraction behaviors, and autonomic responses (changes in vital signs).

risk for Activity Intolerance: risk factors may include imbalance between oxygen supply and demand, debilitating condition.

risk for ineffective Tissue Perfusion [specify]: risk factors may include embolic interruption of arterial flow (embolization of thrombi/valvular vegetations).

endometriosis

acute/chronic Pain may be related to pressure of concealed bleeding/formation of adhesions, possibly evidenced by verbal reports (pain between/with menstruation), guarding/distraction behaviors, and narrowed focus.

Sexual Dysfunction may be related to pain secondary to presence of adhesions, possibly evidenced by verbalization of problem, and altered relationship with partner.

deficient Knowledge [Learning Need] regarding pathophysiology of condition and therapy needs may be related to lack of information/misinterpretations, possibly evidenced by statements of concern and misconceptions.

enteritis

Refer to *colitis, ulcerative; Crohn's disease*.

epididymitis

acute Pain may be related to inflammation, edema formation, and tension on the spermatic cord, possibly evidenced by verbal reports, guarding/distraction behaviors (restlessness), and autonomic responses (changes in vital signs).

risk for Infection [spread]: risk factors may include presence of inflammation/infectious process, insufficient knowledge to avoid spread of infection.

deficient Knowledge [Learning Need] regarding pathophysiology, outcome, and self-care needs may be related to lack of information/misinterpretations, possibly evidenced by statements of concern, misconceptions, and questions.

epilepsy

Refer to *seizure disorder*.

erectile dysfunction

Sexual Dysfunction may be related to altered body function possibly evidenced by reports of disruption of sexual response pattern, inability to achieve desired satisfaction.

situational low Self-Esteem may be related to functional impairment; rejection of other(s).

failure to thrive, infant/child

imbalanced Nutrition: less than body requirements, may be related to inability to ingest/digest/absorb nutrients (defects in organ function/metabolism, genetic factors), physical deprivation/psychosocial factors), possibly evidenced by lack of appropriate weight gain/weight loss, poor muscle tone, pale conjunctiva, and laboratory tests reflecting nutritional deficiency.

delayed Growth and Development may be related to inadequate caretaking (physical/emotional neglect or abuse); indifference, inconsistent responsiveness, multiple caretakers; environmental and stimulation deficiencies, possibly evidenced by altered physical growth, flat affect, listlessness, decreased response; delay or difficulty in performing skills or self-control activities appropriate for age group.

risk for impaired Parenting: risk factors may include lack of knowledge, inadequate bonding, unrealistic expectations for self/infant, and lack of appropriate response of child to relationship.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, nutritional needs, growth/development expectations, and parenting skills may be related to lack of information/misinformation or misinterpretation, possibly evidenced by verbalization of concerns, questions, misconceptions; and development of preventable complications.

fatigue syndrome, chronic

Fatigue may be related to disease state, inadequate sleep, possibly evidenced by verbalization of unremitting/overwhelming lack of energy, inability to maintain usual routines, listlessness, compromised concentration.

chronic Pain may be related to chronic physical disability, possibly evidenced by verbal reports of headache, sore throat, arthralgias, abdominal pain, muscle aches; altered ability to continue previous activities, changes in sleep pattern.

Self-Care Deficit [specify] may be related to tiredness, pain/discomfort, possibly evidenced by reports of inability to perform desired ADLs.

risk for ineffective Role Performance: risk factors may include health alterations, stress.

fetal alcohol syndrome

risk for Injury [CNS damage]: risk factors may include external chemical factors (alcohol intake by mother), placental insufficiency, fetal drug withdrawal in utero/postpartum and prematurity.

disorganized Infant Behavior may be related to prematurity, environmental overstimulation, lack of containment/boundaries, possibly evidenced by change from baseline physiological measures; tremors, startles, twitches, hyperextension of arms/legs, deficient self-regulatory behaviors, deficient response to visual/auditory stimuli.

risk for impaired Parenting: risk factors may include mental and/or physical illness, inability of mother to assume the overwhelming task of unselfish giving and nurturing, presence of stressors (financial/legal problems), lack of available or ineffective role model, interruption of bonding process, lack of appropriate response of child to relationship.

ineffective [maternal] Coping may be related to personal vulnerability, low self-esteem, inadequate coping skills, and multiple stressors (repeated over period of time), possibly evidenced by inability to meet basic needs/fulfill role expectations/problem solve, and excessive use of drug(s).

dysfunctional Family Processes: alcoholism may be related to lack of/insufficient support from others, mother's drug problem and treatment status, together with poor coping skills, lack of family stability/overinvolvement of parents with children and multigenerational addictive behaviors, possibly evidenced by abandonment, rejection, neglectful relationships with family members, and decisions and actions by family that are detrimental.

fetal demise

Grieving may be related to death of fetus/infant (wanted or unwanted), possibly evidenced by verbal expression of distress, anger, loss; crying; alteration in eating habits or sleep pattern.

situational low Self-Esteem may be related to perceived "failure" at a life event, possibly evidenced by negative self-appraisal in response to life event in a person with a previous positive self-evaluation, verbalization of negative feelings about the self (helplessness, uselessness), difficulty making decisions.

risk for Spiritual Distress: risk factors may include loss of loved one, low self-esteem, poor relationships, challenged belief and value system (birth is supposed to be the beginning of life, not of death) and intense suffering.

fractures

(also refer to *casts; traction*)

risk for Trauma [additional injury]: risk factors may include loss of skeletal integrity/movement of skeletal fragments, use of traction apparatus, and so on.

acute Pain may be related to muscle spasms, movement of bone fragments, tissue trauma/edema, traction/immobility device, stress and anxiety, possibly evidenced by verbal reports, distraction behaviors, self-focusing/narrowed focus, facial mask of pain, guarding/protective behavior, alteration in muscle tone, and autonomic responses (changes in vital signs).

risk for Peripheral Neurovascular Dysfunction: risk factors may include reduction/interruption of blood flow (direct vascular injury, tissue trauma, excessive edema, thrombus formation, hypovolemia).

impaired physical Mobility may be related to neuromuscular/skeletal impairment, pain/discomfort, restrictive therapies (bedrest, extremity immobilization), and psychological immobility, possibly evidenced by inability to purposefully move within the phys-

ical environment, imposed restrictions, reluctance to attempt movement, limited range of motion, and decreased muscle strength/control.

risk for impaired Gas Exchange: risk factors may include altered blood flow, blood/fat emboli, alveolar/capillary membrane changes (interstitial/pulmonary edema, congestion).

deficient Knowledge [Learning Need] regarding healing process, therapy requirements, potential complications, and self-care needs may be related to lack of exposure, misinterpretation of information, possibly evidenced by statements of concern, questions, and misconceptions.

frostbite

impaired Tissue Integrity may be related to altered circulation and thermal injury, possibly evidenced by damaged/destroyed tissue.

acute Pain may be related to diminished circulation with tissue ischemia/necrosis and edema formation, possibly evidenced by reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

risk for Infection: risk factors may include traumatized tissue/tissue destruction, altered circulation, and compromised immune response in affected area.

gallstones

Refer to *cholelithiasis*.

gangrene, dry

ineffective peripheral Tissue Perfusion may be related to interruption in arterial flow, possibly evidenced by cool skin temperature, change in color (black), atrophy of affected part, and presence of pain.

acute Pain may be related to tissue hypoxia and necrotic process, possibly evidenced by reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

gas, lung irritant

ineffective Airway Clearance may be related to irritation/inflammation of airway, possibly evidenced by marked cough, abnormal breath sounds (wheezes), dyspnea, and tachypnea.

risk for impaired Gas Exchange: risk factors may include irritation/inflammation of alveolar membrane (dependent on type of agent and length of exposure).

Anxiety [specify level] may be related to change in health status and threat of death, possibly evidenced by verbalizations, increased tension, apprehension, and sympathetic stimulation.

gastritis, acute

acute Pain may be related to irritation/inflammation of gastric mucosa, possibly evidenced by verbal reports, guarding/distraction behaviors, and autonomic responses (changes in vital signs).

risk for deficient Fluid Volume [isotonic]: risk factors may include excessive losses through vomiting and diarrhea, continued bleeding, reluctance to ingest/restrictions of oral intake.

gastritis, chronic

risk for imbalanced Nutrition: less than body requirements: risk factors may include inability to ingest adequate nutrients (prolonged nausea/vomiting, anorexia, epigastric pain).

deficient Knowledge [Learning Need] regarding pathophysiology, psychological factors, therapy needs, and potential complications may be related to lack of information/misinterpretation, possibly evidenced by verbalization of concerns, questions, misconceptions, and continuation of problem.

gastroenteritis

Refer to *gastritis, chronic*.

gender identity disorder (For individuals experiencing persistent and marked distress regarding uncertainty about issues relating to personal identity, e.g., sexual orientation and behavior)

Anxiety [specify level] may be related to unconscious/conscious conflicts about essential values/beliefs (ego-dystonic gender identification), threat to self-concept, unmet needs, possibly evidenced by increased tension, helplessness, hopelessness, feelings of inadequacy, uncertainty, insomnia, focus on self, and impaired daily functioning.

ineffective Role Performance/disturbed personal Identity may be related to crisis in development in which person has difficulty knowing/accepting to which sex he or she

belongs or is attracted, sense of discomfort and inappropriateness about anatomic sex characteristics, possibly evidenced by confusion about sense of self, purpose or direction in life, sexual identification/preference, verbalization of desire to be/insistence that person is the opposite sex, change in self-perception of role, and conflict in roles. ineffective Sexuality Pattern may be related to ineffective or absent role models and conflict with sexual orientation and/or preferences, lack of/impaired relationship with significant other, possibly evidenced by verbalizations of discomfort with sexual orientation/role and lack of information about human sexuality.

risk for compromised/disabled family Coping: risk factors may include inadequate/incorrect information or understanding, significant other unable to perceive or to act effectively in regard to patient's needs, temporary family disorganization and role changes, and patient providing little support in turn for primary person.

readiness for enhanced family Coping may be related to individual's basic needs being sufficiently gratified and adaptive tasks effectively addressed to enable goals of self-actualization to surface, possibly evidenced by family member(s)' attempts to describe growth/impact of crisis on own values, priorities, goals, or relationships; family member(s) is moving in direction of health-promoting and enriching lifestyle that supports patient's search for self; and choosing experiences that optimize wellness.

genetic disorder

Anxiety may be related to presence of specific risk factors (e.g., exposure to teratogens), situational crisis, threat to self-concept, conscious or unconscious conflict about essential values and life goals, possibly evidenced by increased tension, apprehension, uncertainty, feelings of inadequacy, expressed concerns.

deficient Knowledge [Learning Need] regarding purpose/process of genetic counseling may be related to lack of awareness of ramifications of diagnosis, process necessary for analyzing available options, and information misinterpretation, possibly evidenced by verbalization of concerns, statement of misconceptions, request for information.

risk for interrupted Family Processes: risk factors may include situational crisis, individual/family vulnerability, difficulty reaching agreement regarding options.

Spiritual Distress may be related to intense inner conflict about the outcome, normal grieving for the loss of the perfect child, anger that is often directed at God/greater power, religious beliefs/moral convictions, possibly evidenced by verbalization of inner conflict about beliefs, questioning of the moral and ethical implications of therapeutic choices, viewing situation as punishment, anger, hostility, and crying.

risk for complicated Grieving: risk factors may include preloss psychological symptoms, predisposition for anxiety and feelings of inadequacy, frequency of major life events.

glaucoma

disturbed visual Sensory/Perception, may be related to altered sensory reception and altered status of sense organ (increased intraocular pressure/atrophy of optic nerve head), possibly evidenced by progressive loss of visual field.

Anxiety [specify level] may be related to change in health status, presence of pain, possibility/reality of loss of vision, unmet needs, and negative self-talk, possibly evidenced by apprehension, uncertainty, and expressed concern regarding changes in life event.

glomerulonephritis

excess Fluid Volume may be related to failure of regulatory mechanism (inflammation of glomerular membrane inhibiting filtration), possibly evidenced by weight gain, edema/anasarca, intake greater than output, and blood pressure changes.

acute Pain may be related to effects of circulating toxins and edema/distention of renal capsule, possibly evidenced by verbal reports, guarding/distraction behaviors, and autonomic responses (changes in vital signs).

imbalanced Nutrition: less than body requirements may be related to anorexia and dietary restrictions, possibly evidenced by aversion to eating, reported altered taste, weight loss, and decreased intake.

deficient Diversional Activity may be related to treatment modality/restrictions, fatigue, and malaise, possibly evidenced by statements of boredom, restlessness, and irritability.

risk for disproportionate Growth: risk factors may include infection, malnutrition, chronic illness.

goiter

disturbed Body Image may be related to visible swelling in neck, possibly evidenced by verbalization of feelings, fear of reaction of others, actual change in structure, change in social involvement.

Anxiety may be related to change in health status/progressive growth of mass, perceived threat of death.

risk for imbalanced Nutrition: less than body requirements: risk factors may include decreased ability to ingest/difficulty swallowing.

risk for ineffective Airway Clearance: risk factors may include tracheal compression/obstruction.

gonorrhoea

(also refer to *sexually transmitted disease [STD]*)

risk for Infection [dissemination/bacteremia]: risk factors may include presence of infectious process in highly vascular area and lack of recognition of disease process.

acute Pain may be related to irritation/inflammation of mucosa and effects of circulating toxins, possibly evidenced by verbal reports of genital or pharyngeal irritation, perineal/pelvic pain, guarding/distraction behaviors.

deficient Knowledge [Learning Need] regarding disease cause/transmission, therapy, and self-care needs may be related to lack of information/misinterpretation, denial of exposure, possibly evidenced by statements of concern, questions, misconceptions, and inaccurate follow-through of instructions/development of preventable complications.

gout

acute Pain may be related to inflammation of joint(s), possibly evidenced by verbal reports, guarding/distraction behaviors, and autonomic responses (changes in vital signs).

impaired physical Mobility may be related to joint pain/edema, possibly evidenced by reluctance to attempt movement, limited range of motion, and therapeutic restriction of movement.

deficient Knowledge [Learning Need] regarding cause, treatment, and prevention of condition may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and inaccurate follow-through of instructions.

Guillain-Barré syndrome (acute polyneuritis)

risk for ineffective Breathing Pattern/Airway Clearance: risk factors may include weakness/paralysis of respiratory muscles, impaired gag/swallow reflexes, decreased energy/fatigue.

disturbed Sensory/Perception [specify] may be related to altered sensory reception/transmission/integration (altered status of sense organs, sleep deprivation), therapeutically restricted environment, endogenous chemical alterations (electrolyte imbalance, hypoxia), and psychological stress, possibly evidenced by reported or observed change in usual response to stimuli, altered communication patterns, and measured change in sensory acuity and motor coordination.

impaired physical Mobility may be related to neuromuscular impairment, pain/discomfort, possibly evidenced by impaired coordination, partial/complete paralysis, decreased muscle strength/control.

Anxiety [specify level]/Fear may be related to situational crisis, change in health status/threat of death, possibly evidenced by increased tension, restlessness, helplessness, apprehension, uncertainty, fearfulness, focus on self, and sympathetic stimulation.

risk for Disuse Syndrome: risk factors include paralysis and pain.

hay fever

Pain [Discomfort] may be related to irritation/inflammation of upper airway mucous membranes and conjunctiva, possibly evidenced by verbal reports, irritability, and restlessness.

deficient Knowledge [Learning Need] regarding underlying cause, appropriate therapy, and required lifestyle changes may be related to lack of information, possibly evidenced by statements of concern, questions, and misconceptions.

heart failure, chronic

decreased Cardiac Output may be related to altered myocardial contractility/inotropic changes; alterations in rate, rhythm, and electrical conduction; and structural changes (valvular defects, ventricular aneurysm), possibly evidenced by tachycardia/dysrhythmias, changes in blood pressure, extra heart sounds, decreased urine output, diminished peripheral pulses, cool/ashen skin, orthopnea, crackles; dependent/generalized edema and chest pain.

excess Fluid Volume may be related to reduced glomerular filtration rate/increased ADH production, and sodium/water retention, possibly evidenced by orthopnea and abnormal breath sounds, S₃ heart sound, jugular vein distention, positive hepatojugular reflex, weight gain, hypertension, oliguria, generalized edema.

risk for impaired Gas Exchange: risk factors may include alveolar capillary membrane changes (fluid collection/shifts into interstitial space/alveoli).

Activity Intolerance may be related to imbalance between oxygen supply/demand, generalized weakness, and prolonged bedrest/sedentary lifestyle, possibly evidenced by reported/observed weakness, fatigue; changes in vital signs, presence of dysrhythmias; dyspnea, pallor, and diaphoresis.

deficient Knowledge [Learning Need] regarding cardiac function/disease process, therapy and self-care needs may be related to lack of information/misinterpretation, possibly evidenced by questions, statements of concern/misconceptions; development of preventable complications or exacerbations of condition.

heatstroke

Hyperthermia may be related to prolonged exposure to hot environment/vigorous activity with failure of regulating mechanism of the body, possibly evidenced by high body temperature (greater than 105°F/40.6°C), flushed/hot skin, tachycardia, and seizure activity.

decreased Cardiac Output may be related to functional stress of hypermetabolic state, altered circulating volume/venous return, and direct myocardial damage secondary to hyperthermia, possibly evidenced by decreased peripheral pulses, dysrhythmias/tachycardia, and changes in mentation.

hemodialysis

(also refer to *dialysis, general*)

risk for Injury [loss of vascular access]: risk factors may include clotting/thrombosis, infection, disconnection/hemorrhage.

risk for deficient Fluid Volume: risk factors may include excessive fluid losses/shifts via ultrafiltration, hemorrhage (altered coagulation/disconnection of shunt), and fluid restrictions.

risk for excess Fluid volume: risk factors may include excessive fluid intake; rapid IV, blood/plasma expanders/saline given to support BP during procedure.

ineffective Protection may be related to chronic disease state, drug therapy, abnormal blood profile, inadequate nutrition, possibly evidenced by altered clotting, impaired healing, deficient immunity, fatigue, anorexia.

hemophilia

risk for deficient Fluid Volume [isotonic]: risk factors may include impaired coagulation/hemorrhagic losses.

risk for acute/chronic Pain: risk factors may include nerve compression from hematomas, nerve damage or hemorrhage into joint space.

risk for impaired physical Mobility: risk factors may include joint hemorrhage, swelling, degenerative changes, and muscle atrophy.

ineffective Protection may be related to abnormal blood profile, possibly evidenced by altered clotting.

compromised family Coping may be related to prolonged nature of condition that exhausts the supportive capacity of significant person(s), possibly evidenced by protective behaviors disproportionate to patient's abilities/need for autonomy.

hemorrhoidectomy

acute Pain may be related to edema/swelling and tissue trauma, possibly evidenced by verbal reports, guarding/distraction behaviors, focus on self, and autonomic responses (changes in vital signs).

risk for Urinary Retention: risk factors may include perineal trauma, edema/swelling, and pain.

deficient Knowledge [Learning Need] regarding therapeutic treatment and potential complications may be related to lack of information/misconceptions, possibly evidenced by statements of concern and questions.

hemorrhoids

acute Pain may be related to inflammation and edema of prolapsed varices, possibly evidenced by verbal reports, and guarding/distraction behaviors.

Constipation may be related to pain on defecation and reluctance to defecate, possibly evidenced by frequency, less than usual pattern and hard, formed stools.

hemothorax

(also refer to *pneumothorax*)

risk for Trauma/Suffocation: risk factors may include concurrent disease/injury process, dependence on external device (chest drainage system), and lack of safety education/precautions.

Anxiety [specify level] may be related to change in health status and threat of death, possibly evidenced by increased tension, restlessness, expressed concern, sympathetic stimulation, and focus on self.

hepatitis, acute viral

impaired Liver Function related to viral infection as evidenced by jaundice, hepatic enlargement, abdominal pain, marked elevations in serum liver function tests.

Fatigue may be related to decreased metabolic energy production and altered body chemistry, possibly evidenced by reports of lack of energy/inability to maintain usual routines, decreased performance, and increased physical complaints.

imbalanced Nutrition: less than body requirements may be related to inability to ingest adequate nutrients (nausea, vomiting, anorexia); hypermetabolic state, altered absorption and metabolism, possibly evidenced by aversion to eating/lack of interest in food, altered taste sensation, observed lack of intake, and weight loss.

acute Pain/[Discomfort] may be related to inflammation and swelling of the liver, arthralgias, urticarial eruptions, and pruritus, possibly evidenced by verbal reports, guarding/distraction behaviors, focus on self, and autonomic responses (changes in vital signs).

risk for Infection: risk factors may include inadequate secondary defenses and immunosuppression, malnutrition, insufficient knowledge to avoid exposure to pathogens/spread to others.

risk for impaired Tissue Integrity: risk factors may include bile salt accumulation in the tissues.

risk for impaired Home Management: risk factors may include debilitating effects of disease process and inadequate support systems (family, financial, role model).

deficient Knowledge [Learning Need] regarding disease process/transmission, treatment needs, and future expectations may be related to lack of information/recall, misinterpretation, unfamiliarity with resources, possibly evidenced by questions, statements of concerns/misconceptions, inaccurate follow-through of instructions, and development of preventable complications.

hernia, hiatal

chronic Pain may be related to regurgitation of acidic gastric contents, possibly evidenced by verbal reports, facial grimacing, and focus on self.

deficient Knowledge [Learning Need] regarding pathophysiology, prevention of complications and self-care needs may be related to lack of information/misconceptions, possibly evidenced by statements of concern, questions, and recurrence of condition.

herniation of nucleus pulposus (ruptured intervertebral disk)

acute/chronic Pain may be related to nerve compression/irritation and muscle spasms, possibly evidenced by verbal reports, guarding/distraction behaviors, preoccupation with pain, self/narrowed focus, and autonomic responses (changes in vital signs when pain is acute), altered muscle tone/function, changes in eating/sleeping patterns and libido, physical/social withdrawal.

impaired physical Mobility may be related to pain (muscle spasms), therapeutic restrictions (e.g., bedrest, traction/braces), muscular impairment, and depression, possibly evidenced by reports of pain on movement, reluctance to attempt/difficulty with purposeful movement, decreased muscle strength, impaired coordination, and limited range of motion.

deficient Diversional Activity may be related to length of recuperation period and therapy restrictions, physical limitations, pain and depression, possibly evidenced by statements of boredom, disinterest, "nothing to do," and restlessness, irritability, withdrawal.

herpes, herpes simplex

acute Pain may be related to presence of localized inflammation and open lesions, possibly evidenced by verbal reports, distraction behaviors, and restlessness.

risk for [secondary] Infection: risk factors may include broken/traumatized tissue, altered immune response, and untreated infection/treatment failure.

risk for ineffective Sexuality Patterns: risk factors may include lack of knowledge, values conflict, and/or fear of transmitting the disease.

herpes zoster (shingles)

acute Pain may be related to inflammation/local lesions along sensory nerve(s), possibly evidenced by verbal reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

deficient Knowledge [Learning Need] regarding pathophysiology, therapeutic needs, and potential complications may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

high altitude pulmonary edema (HAPE)

(also refer to *mountain sickness, acute [AMS]*)

impaired Gas Exchange may be related to ventilation perfusion imbalance, alveolar-capillary membrane changes, altered oxygen supply possibly evidenced by dyspnea, confusion, cyanosis, tachycardia, abnormal ABGs.

excess Fluid Volume may be related to compromised regulatory mechanism, possibly evidenced by shortness of breath, anxiety, edema, abnormal breath sounds, pulmonary congestion.

HIV positive

(also refer to *AIDS [acquired immunodeficiency syndrome]*)

risk-prone health Behavior may be related to life-threatening, stigmatizing condition/disease; assault to self-esteem, altered locus of control, inadequate support systems, incomplete grieving, medication side effects (fatigue/depression), possibly evidenced by verbalization of nonacceptance/denial of diagnosis, nonexistent or unsuccessful involvement in problem solving/goal setting; extended period of shock and disbelief or anger; lack of future-oriented thinking.

deficient Knowledge [Learning Need] regarding disease, prognosis, and treatment needs may be related to lack of exposure/recall, information misinterpretation, unfamiliarity with information resources, or cognitive limitation, possibly evidenced by statements of misconception/request for information, inappropriate/exaggerated behaviors (hostile, agitated, hysterical, apathetic), inaccurate follow-through of instructions/development of preventable complications.

risk for complicated Grieving: risk factors may include preloss psychological symptoms, predisposition for anxiety and feelings of inadequacy, frequency of major life events.

Hodgkin's disease

(also refer to *cancer; chemotherapy*)

Anxiety [specify level]/Fear may be related to threat to self-concept and threat of death, possibly evidenced by apprehension, insomnia, focus on self, and increased tension.

deficient Knowledge [Learning Need] regarding diagnosis, pathophysiology, treatment, and prognosis may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

acute Pain/[Discomfort] may be related to manifestations of inflammatory response (fever, chills, night sweats) and pruritus, possibly evidenced by verbal reports, distraction behaviors, and focus on self.

risk for ineffective Breathing Pattern/Airway Clearance: risk factors may include tracheobronchial obstruction (enlarged mediastinal nodes and/or airway edema).

hospice/end of life care

acute/chronic Pain may be related to biological, physical, psychological agent, possibly evidenced by verbal/coded report, changes in appetite/eating, sleep pattern; protective behavior, restlessness, irritability.

Activity Intolerance/Fatigue may be related to generalized weakness, bedrest/immobility, pain, imbalance between oxygen supply and demand, possibly evidenced by inability to maintain usual routine, verbalized lack of desire/interest in activity, decreased performance, lethargy.

Grieving/death Anxiety may be related to anticipated loss of physiological well-being, perceived threat of death.

compromised/disabled family Coping/Caregiver Role Strain may be related to prolonged disease/disability progression, temporary family disorganization and role changes, unrealistic expectations, inadequate or incorrect information or understanding by primary person.

risk for moral Distress: risk factors may include conflict among decision makers, cultural conflicts, end-of-life decisions, loss of autonomy, physical distance of decision makers.

hydrocephalus

ineffective cerebral Tissue Perfusion may be related to decreased arterial/venous blood flow (compression of brain tissue), possibly evidenced by changes in mentation, restlessness, irritability, reports of headache, pupillary changes, and changes in vital signs.

disturbed visual Sensory/Perception may be related to pressure on sensory/motor nerves, possibly evidenced by reports of double vision, development of strabismus, nystagmus, pupillary changes, and optic atrophy.

risk for impaired physical Mobility: risk factors may include neuromuscular impairment, decreased muscle strength, and impaired coordination.

risk for decreased Adaptive Intracranial Capacity: risk factors may include brain injury, changes in perfusion pressure/intracranial pressure.

risk for Infection: risk factors may include invasive procedure/presence of shunt.

deficient Knowledge [Learning Need] regarding condition, prognosis, and long-term therapy needs/medical follow-up may be related to lack of information/misperceptions, possibly evidenced by questions, statements of concern, request for information, and inaccurate follow-through of instruction/development of preventable complications.

hyperactivity disorder

defensive Coping may be related to mild neurological deficits, dysfunctional family system, abuse/neglect, possibly evidenced by denial of obvious problems, projection of blame/responsibility, grandiosity, difficulty in reality testing perceptions.

impaired Social Interaction may be related to retarded ego development, negative role models, neurological impairment, possibly evidenced by discomfort in social situations, interrupts/intrudes on others, difficulty waiting turn in games/group activities, difficulty maintaining attention to task.

disabled family Coping may be related to excessive guilt, anger, or blaming among family members, parental inconsistencies, disagreements regarding discipline/limit setting/approaches, exhaustion of parental expectations, possibly evidenced by unrealistic parental expectations, rejection or overprotection of child, exaggerated expression of feelings, despair regarding child's behavior.

hyperbilirubinemia

risk for Injury [CNS involvement]: risk factors may include prematurity, hemolytic disease, asphyxia, acidosis, hyponatremia, and hypoglycemia.

risk for Injury [effects of treatment]: risk factors may include physical properties of phototherapy and effects on body regulatory mechanisms, invasive procedure (exchange transfusion), abnormal blood profile, chemical imbalances.

deficient Knowledge [Learning Need] regarding condition, prognosis, treatment/safety needs may be related to lack of exposure/recall and information misinterpretation, possibly evidenced by questions, statement of concern, and inaccurate follow-through of instructions/development of preventable complications.

hyperemesis gravidarum

deficient Fluid Volume [isotonic] may be related to excessive gastric losses and reduced intake, possibly evidenced by dry mucous membranes, decreased/concentrated urine, decreased pulse volume and pressure, thirst, and hemoconcentration.

imbalanced Nutrition: less than body requirements may be related to inability to ingest/digest/absorb nutrients (prolonged vomiting), possibly evidenced by reported inadequate food intake, lack of interest in food/aversion to eating, and weight loss.

risk for ineffective Coping: risk factors may include situational/maturational crisis (pregnancy, change in health status, projected role changes, concern about outcome).

hypertension

deficient Knowledge [Learning Need] regarding condition, therapeutic regimen, and potential complications may be related to lack of information/recall, misinterpretation, cognitive limitations, and/or denial of diagnosis, possibly evidenced by statements of concern/questions, and misconceptions, inaccurate follow-through of instructions, and lack of BP control.

risk-prone health Behavior may be related to condition requiring change in lifestyle, altered locus of control, and absence of feelings/denial of illness, possibly evidenced by verbalization of nonacceptance of health status change and lack of movement toward independence.

risk for Sexual Dysfunction: risk factors may include side effects of medication.

risk for decreased Cardiac Output: risk factors may include increased afterload (vasoconstriction), fluid shifts/hypovolemia, myocardial ischemia, ventricular hypertrophy/rigidity.

acute Pain may be related to increased cerebrovascular pressure, possibly evidenced by verbal reports (throbbing pain located in suboccipital region, present on awakening and disappearing spontaneously after being up and about), reluctance to move head, avoidance of bright lights and noise, or increased muscle tension.

hypertension, pulmonary

Refer to *pulmonary hypertension*.

hyperthyroidism

(also refer to *thyrotoxicosis*)

Fatigue may be related to hypermetabolic imbalance with increased energy requirements, irritability of CNS, and altered body chemistry, possibly evidenced by verbalization of overwhelming lack of energy to maintain usual routine, decreased performance, emotional lability/irritability, and impaired ability to concentrate.

Anxiety [specify level] may be related to increased stimulation of the CNS (hypermetabolic state, pseudocatecholamine effect of thyroid hormones), possibly evidenced by increased feelings of apprehension, overexcited/distressed, irritability/emotional lability, shakiness, restless movements, or tremors.

risk for imbalanced Nutrition: less than body requirements: risk factors may include inability to ingest adequate nutrients for hypermetabolic rate/constant activity, impaired absorption of nutrients (vomiting/diarrhea), hyperglycemia/relative insulin insufficiency.

risk for impaired Tissue Integrity: risk factors may include altered protective mechanisms of eye related to periorbital edema, reduced ability to blink, eye discomfort/dryness, and development of corneal abrasion/ulceration.

hypoglycemia

disturbed Thought Processes may be related to inadequate glucose for cellular brain function and effects of endogenous hormone activity, possibly evidenced by irritability, changes in mentation, memory loss, altered attention span, and emotional lability.

risk for unstable blood Glucose: risk factors may include dietary intake, lack of adherence to diabetes management, inadequate blood glucose monitoring, medication management.

deficient Knowledge [Learning Need] regarding pathophysiology of condition and therapy/self-care needs may be related to lack of information/recall, misinterpretations, possibly evidenced by development of hypoglycemia and statements of questions/misconceptions.

hypoparathyroidism (acute)

risk for Injury: risk factors may include neuromuscular excitability/tetany and formation of renal stones.

acute Pain may be related to recurrent muscle spasms and alteration in reflexes, possibly evidenced by verbal reports, distraction behaviors, and narrowed focus.

risk for ineffective Airway Clearance: risk factors may include spasm of the laryngeal muscles.

Anxiety [specify level] may be related to threat to, or change in, health status, physiological responses.

hypothermia (systemic)

(also refer to *frostbite*)

Hypothermia may be related to exposure to cold environment, inadequate clothing, age extremes (very young/elderly), damage to hypothalamus, consumption of alcohol/medications causing vasodilation, possibly evidenced by reduction in body temperature below normal range, shivering, cool skin, pallor.

deficient Knowledge [Learning Need] regarding risk factors, treatment needs, and prognosis may be related to lack of information/recall, misinterpretation, possibly evidenced by statements of concerns/misconceptions, occurrence of problem, and development of complications.

hypothyroidism

(also refer to *myxedema*)

impaired physical Mobility may be related to weakness, fatigue, muscle aches, altered reflexes, and mucin deposits in joints and interstitial spaces, possibly evidenced by decreased muscle strength/control and impaired coordination.

Fatigue may be related to decreased metabolic energy production, possibly evidenced by verbalization of unremitting/overwhelming lack of energy, inability to maintain usual routines, impaired ability to concentrate, decreased libido, irritability, listlessness, decreased performance, increase in physical complaints.

disturbed Sensory/Perception (specify) may be related to mucin deposits and nerve compression, possibly evidenced by paresthesias of hands and feet or decreased hearing.

Constipation may be related to decreased peristalsis/physical activity, possibly evidenced by frequency less than usual pattern, decreased bowel sounds, hard dry stools, and development of fecal impaction.

hysterectomy

acute Pain may be related to tissue trauma/abdominal incision, edema/hematoma formation, possibly evidenced by verbal reports, guarding/distraction behaviors, and autonomic responses (changes in vital signs).

impaired Urinary Elimination /risk for [acute] Urinary Retention: risk factors may include mechanical trauma, surgical manipulation, presence of localized edema/hematoma, or nerve trauma with temporary bladder atony.

ineffective Sexuality Pattern/risk for Sexual Dysfunction: risk factors may include concerns regarding altered body function/structure, perceived changes in femininity, changes in hormone levels, loss of libido, and changes in sexual response pattern.
risk for complicated Grieving: risk factors may include preloss psychological symptoms, predisposition for anxiety and feelings of inadequacy, frequency of major life events.

ileocolitis

Refer to *Crohn's disease*.

ileostomy

Refer to *colostomy*.

ileus

acute Pain may be related to distention/edema and ischemia of intestinal tissue, possibly evidenced by verbal reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

Diarrhea/Constipation may be related to presence of obstruction/changes in peristalsis, possibly evidenced by changes in frequency and consistency or absence of stool, alterations in bowel sounds, presence of pain, and cramping.

risk for deficient Fluid Volume: risk factors may include increased intestinal losses (vomiting and diarrhea) and decreased intake.

impetigo

impaired Skin Integrity may be related to presence of infectious process and pruritus, possibly evidenced by open/crusted lesions.

acute Pain may be related to inflammation and pruritus, possibly evidenced by verbal reports, distraction behaviors, and self-focusing.

risk for [secondary] Infection: risk factors may include broken skin, traumatized tissue, altered immune response, and virulence/contagious nature of causative organism.

risk for Infection [transmission]: risk factors may include virulent nature of causative organism, insufficient knowledge to prevent infection of others.

infection, prenatal

(also refer to *AIDS [acquired immunodeficiency syndrome]*)

risk for maternal/fetal Infection: risk factors may include inadequate primary defenses (e.g., broken skin, stasis of body fluids), inadequate secondary defenses (e.g., decreased hemoglobin, immunosuppression), inadequate acquired immunity, environmental exposure, malnutrition, rupture of amniotic membranes.

deficient Knowledge regarding treatment/prevention, prognosis of condition may be related to lack of exposure to information and/or unfamiliarity with resources, misinterpretation, possibly evidenced by verbalization of problem, inaccurate follow-through of instructions, development of preventable complications/continuation of infectious process.

Discomfort may be related to body response to infective agent, properties of infection (e.g., skin/tissue irritation, development of lesions), possibly evidenced by verbal reports, restlessness, withdrawal from social contacts.

inflammatory bowel disease

Refer to *colitis, ulcerative*; *Crohn's disease*.

influenza

Pain [Discomfort] may be related to inflammation and effects of circulating toxins, possibly evidenced by verbal reports, distraction behaviors, and narrowed focus.

risk for deficient Fluid Volume: risk factors may include excessive gastric losses, hypermetabolic state, and altered intake.

Hyperthermia may be related to effects of circulating toxins and dehydration, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

risk for ineffective Breathing: risk factors may include response to infectious process, decreased energy/fatigue.

insulin shock

Refer to *hypoglycemia*.

intestinal obstruction

Refer to *ileus*.

irritable bowel syndrome

acute Pain may be related to abnormally strong intestinal contractions, increased sensitivity of intestine to distention, hypersensitivity to hormones gastrin and cholecys-

tokinin, skin/tissue irritation/perirectal excoriation possibly evidenced by verbal reports, guarding behavior, expressive behavior (restlessness, moaning, irritability).

Constipation may be related to motor abnormalities of longitudinal muscles/changes in frequency and amplitude of contractions, dietary restrictions, stress, possibly evidenced by change in bowel pattern/decreased frequency, sensation of incomplete evacuation, abdominal pain/distention.

Diarrhea may be related to motor abnormalities of longitudinal muscles/changes in frequency and amplitude of contractions, possibly evidenced by precipitous passing of liquid stool on rising or immediately after eating, rectal urgency/incontinence, bloating.

Kawasaki disease

Hyperthermia may be related to increased metabolic rate and dehydration, possibly evidenced by increased body temperature greater than normal range, flushed skin, increased respiratory rate, and tachycardia.

acute Pain may be related to inflammation and edema/swelling of tissues, possibly evidenced by verbal reports, restlessness, guarding behaviors, and narrowed focus.

impaired Skin Integrity may be related to inflammatory process, altered circulation, and edema formation, possibly evidenced by disruption of skin surface including macular rash and desquamation.

impaired Oral Mucous Membranes may be related to inflammatory process, dehydration, and mouth breathing, possibly evidenced by pain, hyperemia, and fissures of lips.

risk for decreased Cardiac Output: risk factors may include structural changes/inflammation of coronary arteries and alterations in rate/rhythm or conduction.

kidney stone(s)

Refer to *calculi, urinary*.

labor, induced/augmented

deficient Knowledge [Learning Need] regarding procedure, treatment needs, and possible outcomes may be related to lack of exposure/recall, information misinterpretation, and unfamiliarity with information resources, possibly evidenced by questions, statements of concern/misconception, and exaggerated behaviors.

risk for maternal Injury: risk factors may include adverse effects/response to therapeutic interventions.

risk for impaired fetal Gas Exchange: risk factors may include altered placental perfusion/cord prolapse.

acute Pain may be related to altered characteristics of chemically stimulated contractions, psychological concerns, possibly evidenced by verbal reports, increased muscle tone, distraction/guarding behaviors, and narrowed focus.

labor, precipitous

Anxiety [specify level] may be related to situational crisis, threat to self/fetus, interpersonal transmission possibly evidenced by increased tension; scared, fearful, restless/jittery; sympathetic stimulation.

risk for impaired Skin/Tissue Integrity: risk factors may include rapid progress of labor, lack of necessary equipment.

acute Pain may be related to occurrence of rapid, strong muscle contractions; psychological issues possibly evidenced by verbalizations of inability to use learned pain-management techniques, sympathetic stimulation, distraction behaviors (e.g., moaning, restlessness).

labor, preterm

Activity Intolerance may be related to muscle/cellular hypersensitivity, possibly evidenced by continued uterine contractions/irritability.

risk for Poisoning: risk factors may include dose-related toxic/side effects of tocolytics.

risk for fetal Injury: risk factors may include delivery of premature/immature infant.

Anxiety [specify level] may be related to situational crisis, perceived or actual threats to self/fetus and inadequate time to prepare for labor, possibly evidenced by increased tension, restlessness, expressions of concern, and autonomic responses (changes in vital signs).

deficient Knowledge [Learning Need] regarding preterm labor treatment needs and prognosis may be related to lack of information and misinterpretation, possibly evidenced by questions, statements of concern, misconceptions, inaccurate follow-through of instruction, and development of preventable complications.

labor, stage I (active phase)

acute Pain/[Discomfort] may be related to contraction-related hypoxia, dilation of tissues, and pressure on adjacent structures, combined with stimulation of both parasympathetic and sympathetic nerve endings, possibly evidenced by verbal reports, guarding/distraction behaviors (restlessness), muscle tension, and narrowed focus.

impaired Urinary Elimination may be related to altered intake/dehydration, fluid shifts, hormonal changes, hemorrhage, severe intrapartum hypertension, mechanical compression of bladder, and effects of regional anesthesia, possibly evidenced by changes in amount/frequency of voiding, urinary retention, slowed progression of labor, and reduced sensation.

risk for ineffective Coping [Individual/Couple]: risk factors may include situational crises, personal vulnerability, use of ineffective coping mechanisms, inadequate support systems, and pain.

labor, stage II (expulsion)

acute Pain may be related to strong uterine contractions, tissue stretching/dilation, and compression of nerves by presenting part of the fetus, and bladder distention, possibly evidenced by verbalizations, facial grimacing, guarding/distraction behaviors (restlessness), narrowed focus, and autonomic responses (diaphoresis).

Cardiac Output [fluctuation] may be related to changes in SVR, fluctuations in venous return (repeated/prolonged Valsalva's maneuvers, effects of anesthesia/medications, dorsal recumbent position occluding the inferior vena cava and partially obstructing the aorta), possibly evidenced by decreased venous return, changes in vital signs (BP, pulse), urinary output, or fetal bradycardia.

risk for impaired fetal Gas Exchange: risk factors may include mechanical compression of head/cord, maternal position/prolonged labor affecting placental perfusion, and effects of maternal anesthesia, hyperventilation.

risk for impaired Skin/Tissue Integrity: risk factors may include untoward stretching/lacerations of delicate tissues (precipitous labor, hypertonic contractile pattern, adolescence, large fetus) and application of forceps.

risk for Fatigue: risk factors may include pregnancy, stress, anxiety, sleep deprivation, increased physical exertion, anemia, humidity/temperature, lights.

laminectomy (lumbar)

ineffective Tissue Perfusion [specify]: may be related to diminished/interrupted blood flow (dressing, edema/hematoma formation), hypovolemia, possibly evidenced by paresthesia, numbness; decreased range of motion, muscle strength.

risk for [spinal] Trauma: risk factors may include temporary weakness of spinal column, balancing difficulties, changes in muscle tone/coordination.

acute Pain may be related to traumatized tissues, localized inflammation, and edema, possibly evidenced by altered muscle tone, verbal reports, and distraction/guarding behaviors, autonomic changes.

impaired physical Mobility may be related to imposed therapeutic restrictions, neuromuscular impairment, and pain, possibly evidenced by limited range of motion, decreased muscle strength/control, impaired coordination, and reluctance to attempt movement.

risk for [acute] Urinary Retention: risk factors may include pain and swelling in operative area and reduced mobility/restrictions of position.

laryngectomy

(also refer to *cancer; chemotherapy*)

ineffective Airway Clearance may be related to partial/total removal of the glottis, temporary or permanent change to neck breathing, edema formation, and copious/thick secretions, possibly evidenced by dyspnea/difficulty breathing, changes in rate/depth of respiration, use of accessory respiratory muscles, weak/ineffective cough, abnormal breath sounds, and cyanosis.

impaired Skin/Tissue Integrity may be related to surgical removal of tissues/grafting, effects of radiation or chemotherapeutic agents, altered circulation/reduced blood supply, compromised nutritional status, edema formation, and pooling/continuous drainage of secretions, possibly evidenced by disruption of skin/tissue surface and destruction of skin/tissue layers.

impaired Oral Mucous Membrane may be related to dehydration/absence of oral intake, poor/inadequate oral hygiene, pathological condition (oral cancer), mechanical trauma (oral surgery), decreased saliva production, difficulty swallowing and pooling/drooling of secretions, and nutritional deficits, possibly evidenced by xerostomia (dry mouth), oral discomfort, thick/mucoid saliva, decreased saliva production, dry and crusted/coated tongue, inflamed lips, absent teeth/gums, poor dental health, and halitosis.

impaired verbal Communication may be related to anatomic deficit (removal of vocal cords), physical barrier (tracheostomy tube), and required voice rest, possibly evi-

denced by inability to speak, change in vocal characteristics, and impaired articulation.

risk for Aspiration: risk factors include impaired swallowing, facial/neck surgery, presence of tracheostomy/feeding tube.

laryngitis

Refer to *croup*.

latex allergy

latex Allergy Response may be related to no immune mechanism response, possibly evidenced by contact dermatitis–erythema, blisters; delayed hypersensitivity: eczema, irritation; hypersensitivity: generalized edema, wheezing/bronchospasm, hypotension, cardiac arrest.

Anxiety [specify level]/Fear may be related to threat of death possibly evidenced by expressed concerns, hypervigilance, restlessness, focus on self.

risk for risk-prone health Behavior: risk factors may include health status requiring change in occupation.

lead poisoning, acute

(also refer to *lead poisoning, chronic*)

Contamination may be related to flaking/peeling paint (young children), improperly lead-glazed ceramic pottery, unprotected contact with lead (e.g., battery manufacture/recycling, bronzing, soldering/welding), imported herbal products/medicinals, possibly evidenced by abdominal cramping, headache, irritability, decreased attentiveness, constipation, tremors.

risk for Trauma: risk factors may include loss of coordination, altered level of consciousness, clonic or tonic muscle activity, neurologic damage.

risk for deficient Fluid Volume: risk factors may include excessive vomiting, diarrhea, or decreased intake.

deficient Knowledge [Learning Need] regarding sources of lead and prevention of poisoning may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

lead poisoning, chronic

(also refer to *lead poisoning, acute*)

Contamination may be related to flaking/peeling paint (young children), improperly lead-glazed ceramic pottery, unprotected contact with lead (e.g., battery manufacture/recycling, bronzing, soldering/welding), imported herbal products/medicinals, possibly evidenced by chronic abdominal pain, headache, personality changes, cognitive deficits, seizures, neuropathy.

imbalanced Nutrition: less than body requirements may be related to decreased intake (chemically induced changes in the gastrointestinal tract), possibly evidenced by anorexia, abdominal discomfort, reported metallic taste, and weight loss.

disturbed Thought Processes may be related to deposition of lead in CNS and brain tissue, possibly evidenced by personality changes, learning disabilities, and impaired ability to conceptualize and reason.

chronic Pain may be related to deposition of lead in soft tissues and bone, possibly evidenced by verbal reports, distraction behaviors, and focus on self.

leukemia, acute

(also refer to *chemotherapy*)

risk for Infection: risk factors may include inadequate secondary defenses (alterations in mature white blood cells, increased number of immature lymphocytes, immunosuppression and bone marrow suppression), invasive procedures, and malnutrition.

Anxiety [specify level]/Fear may be related to change in health status, threat of death, and situational crisis, possibly evidenced by sympathetic stimulation, apprehension, feelings of helplessness, focus on self, and insomnia.

Activity Intolerance [specify level] may be related to reduced energy stores, increased metabolic rate, imbalance between oxygen supply and demand, or therapeutic restrictions (bedrest)/effect of drug therapy, possibly evidenced by generalized weakness, reports of fatigue and exertional dyspnea; abnormal heart rate or BP response.

acute Pain may be related to physical agents (infiltration of tissues/organs/CNS, expanding bone marrow) and chemical agents (antileukemic treatments), possibly evidenced by verbal reports (abdominal discomfort, arthralgia, bone pain, headache); distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

risk for deficient Fluid Volume: risk factors may include excessive losses (vomiting, hemorrhage, diarrhea), decreased intake (nausea, anorexia), increased fluid need (hy-

permetabolic state/fever), predisposition for kidney stone formation/tumor lysis syndrome.

long-term care

(also refer to condition requiring/contributing to need to facility placement)

Anxiety [specify level]/Fear may be related to change in health status, role functioning, interaction patterns, socioeconomic status, environment; unmet needs, recent life changes, and loss of friends/significant other(s), possibly evidenced by apprehension, restlessness, insomnia, repetitive questioning, pacing, purposeless activity, expressed concern regarding changes in life events, and focus on self.

Grieving may be related to perceived/actual or potential loss of physiopsychosocial well-being, personal possessions, and significant other(s), as well as cultural beliefs about aging/debilitation, possibly evidenced by denial of feelings, depression, sorrow, guilt; alterations in activity level, sleep patterns, eating habits, and libido.

risk for Poisoning [drug toxicity]: risk factors may include effects of aging (reduced metabolism, impaired circulation, precarious physiological balance, presence of multiple diseases/organ involvement), and use of multiple prescribed/OTC drugs.

disturbed Thought Process may be related to physiological changes of aging (loss of cells and brain atrophy, decreased blood supply); altered sensory input, pain, effects of medications, and psychological conflicts (disrupted life pattern), possibly evidenced by slower reaction times, memory loss, altered attention span, disorientation, inability to follow, altered sleep patterns, and personality changes.

Insomnia may be related to internal factors (illness, psychological stress, inactivity) and external factors (environmental changes, facility routines), possibly evidenced by reports of difficulty in falling asleep/not feeling rested, interrupted sleep/awakening earlier than desired; change in behavior/performance, increasing irritability, and listlessness.

risk for ineffective Sexuality Pattern: risk factors may include biopsychosocial alteration of sexuality; interference in psychological/physical well-being, self-image, and lack of privacy/significant other.

risk for Relocation Stress Syndrome: risk factors may include multiple losses, feeling of powerlessness, lack of/inappropriate use of support system, changes in psychosocial/physical health status.

risk for impaired Religiosity: risk factors may include ineffective support/coping, lack of social interaction, depression.

lupus erythematosus, systemic (SLE)

Fatigue may be related to inadequate energy production/increased energy requirements (chronic inflammation), overwhelming psychological or emotional demands, states of discomfort, and altered body chemistry (including effects of drug therapy), possibly evidenced by reports of unremitting and overwhelming lack of energy/inability to maintain usual routines, decreased performance, lethargy, and decreased libido.

acute Pain may be related to widespread inflammatory process affecting connective tissues, blood vessels, serosal surfaces, and mucous membranes, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

impaired Skin/Tissue integrity may be related to chronic inflammation, edema formation, and altered circulation, possibly evidenced by presence of skin rash/lesions, ulcerations of mucous membranes, and photosensitivity.

disturbed Body Image may be related to presence of chronic condition with rash, lesions, ulcers, purpura, mottled erythema of hands, alopecia, loss of strength, and altered body function, possibly evidenced by hiding body parts, negative feelings about body, feelings of helplessness, and change in social involvement.

Lyme disease

acute/chronic Pain may be related to systemic effects of toxins, presence of rash, urticaria, and joint swelling/inflammation, possibly evidenced by verbal reports, guarding behavior, autonomic responses, and narrowed focus.

Fatigue may be related to increased energy requirements, altered body chemistry, and states of discomfort evidenced by reports of overwhelming lack of energy/inability to maintain usual routines, decreased performance, lethargy, and malaise.

risk for decreased Cardiac Output: risk factors may include alteration in rate/rhythm/conduction.

macular degeneration

disturbed visual Sensory Perception may be related to altered sensory reception, possibly evidenced by reported/measured change in sensory acuity, change in usual response to stimuli.

Anxiety [specify level]/Fear may be related to situational crisis, threat to or change in health status and role function, possibly evidenced by expressed concerns, apprehension, feelings of inadequacy, diminished productivity, impaired attention.

risk for impaired Home Maintenance: risk factors may include impaired cognitive functioning, inadequate support systems.

risk for impaired Social Interaction: risk factors may include limited physical mobility, environmental barriers.

Mallory-Weiss syndrome

risk for deficient Fluid Volume: risk factors may include excessive vascular losses, presence of vomiting, and reduced intake.

deficient Knowledge [Learning Need] regarding causes, treatment, and prevention of condition may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and recurrence of problem.

mastectomy

impaired Skin/Tissue Integrity may be related to surgical removal of skin/tissue, altered circulation, drainage, presence of edema, changes in skin elasticity/sensation, and tissue destruction (radiation), possibly evidenced by disruption of skin surface and destruction of skin layers/subcutaneous tissues.

impaired physical Mobility may be related to neuromuscular impairment, pain, and edema formation, possibly evidenced by reluctance to attempt movement, limited range of motion, and decreased muscle mass/strength.

bathing/dressing Self-Care deficit may be related to temporary loss/altered action of one or both arms, possibly evidenced by statements of inability to perform/complete self-care tasks.

disturbed Body Image may be related to loss of body part denoting femininity, possibly evidenced by not looking at/touching area, negative feelings about body, preoccupation with loss, and change in social involvement/relationship.

risk for complicated Grieving: risk factors may include preloss psychological symptoms, predisposition for anxiety and feelings of inadequacy, frequency of major life events.

mastitis

acute Pain may be related to erythema and edema of breast tissues, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, autonomic responses (changes in vital signs).

risk for Infection [spread/abscess formation]: risk factors may include traumatized tissues, stasis of fluids, and insufficient knowledge to prevent complications.

deficient Knowledge [Learning Need] regarding pathophysiology, treatment, and prevention may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

risk for ineffective Breastfeeding: risk factors may include inability to feed on affected side/interruption in breastfeeding.

mastoidectomy

risk for Infection [spread]: risk factors may include pre-existing infection, surgical trauma, and stasis of body fluids in close proximity to brain.

acute Pain may be related to inflammation, tissue trauma, and edema formation, possibly evidenced by verbal reports, distraction behaviors, restlessness, self-focusing, and autonomic responses (changes in vital signs).

disturbed auditory Sensory Perception may be related to presence of surgical packing, edema, and surgical disturbance of middle ear structures, possibly evidenced by reported/tested hearing loss in affected ear.

measles

acute Pain may be related to inflammation of mucous membranes, conjunctiva, and presence of extensive skin rash with pruritus, possibly evidenced by verbal reports, distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

Hyperthermia may be related to presence of viral toxins and inflammatory response, possibly evidenced by increased body temperature, flushed/warm skin, and tachycardia.

risk for [secondary] Infection: risk factors may include altered immune response and traumatized dermal tissues.

deficient Knowledge [Learning Need] regarding condition, transmission, and possible complications may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and development of preventable complications.

melanoma, malignant

Refer to *cancer*; *chemotherapy*.

meningitis, acute meningococcal

risk for Infection [spread]: risk factors may include hematogenous dissemination of pathogen, stasis of body fluids, suppressed inflammatory response (medication-induced), and exposure of others to pathogens.

risk for ineffective cerebral Tissue Perfusion: risk factors may include cerebral edema altering/interrupting cerebral arterial/venous blood flow, hypovolemia, exchange problems at cellular level (acidosis).

Hyperthermia may be related to infectious process (increased metabolic rate) and dehydration, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

acute Pain may be related to inflammation/irritation of the meninges with spasm of extensor muscles (neck, shoulders, and back), possibly evidenced by verbal reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

risk for Trauma/Suffocation: risk factors may include alterations in level of consciousness, possible development of clonic/tonic muscle activity (seizures), and generalized weakness/prostration, ataxia, vertigo.

meniscectomy

impaired Walking may be related to pain, joint instability, and imposed medical restrictions of movement, possibly evidenced by impaired ability to move about environment as needed/desired.

deficient Knowledge [Learning Need] regarding postoperative expectations, prevention of complications, and self-care needs may be related to lack of information, possibly evidenced by statements of concern, questions, and misconceptions.

menopause

ineffective Thermoregulation may be related to fluctuation of hormonal levels, possibly evidenced by skin flushed/warm to touch, diaphoresis, night sweats; cold hands/feet.

Fatigue may be related to change in body chemistry, lack of sleep, depression, possibly evidenced by reports of lack of energy, tiredness, inability to maintain usual routines, decreased performance.

risk for ineffective Sexuality Pattern: risk factors may include perceived altered body function, changes in physical response, myths/inaccurate information, impaired relationship with significant other.

risk for stress Urinary Incontinence: risk factors may include degenerative changes in pelvic muscles and structural support.

Health-Seeking Behaviors: management of life cycle changes may be related to maturational change, possibly evidenced by expressed desire for increased control of health practice, demonstrated lack of knowledge in health promotion.

mental retardation

(also refer to *Down syndrome*)

impaired verbal Communication may be related to developmental delay/impairment of cognitive and motor abilities, possibly evidenced by impaired articulation, difficulty with phonation, and inability to modulate speech/find appropriate words (dependent on degree of retardation).

risk for Self-Care Deficit [specify]: risk factors may include impaired cognitive ability and motor skills.

risk for imbalanced Nutrition: more than body requirements: risk factors may include decreased metabolic rate coupled with impaired cognitive development, dysfunctional eating patterns, and sedentary activity level.

risk for sedentary Lifestyle: risk factors may include lack of interest/motivation, resources; lack of training or knowledge of specific exercise needs, safety concerns/fear of injury.

impaired Social Interaction may be related to impaired thought processes, communication barriers, and knowledge/skill deficit about ways to enhance mutuality, possibly evidenced by dysfunctional interactions with peers, family, and/or significant other(s), and verbalized/observed discomfort in social situation.

compromised family Coping may be related to chronic nature of condition and degree of disability that exhausts supportive capacity of significant other(s), other situational or developmental crises or situations the significant other(s) may be facing, unrealistic expectations of significant other(s), possibly evidenced by preoccupation of significant other with personal reaction, significant other withdraws or enters into limited interaction with individual, protective behavior disproportionate (too much or too little) to patient's abilities or need for autonomy.

impaired Home Maintenance may be related to impaired cognitive functioning, insufficient finances/family organization or planning, lack of knowledge, and inadequate support systems, possibly evidenced by requests for assistance, expression of difficulty in maintaining home, disorderly surroundings, and overtaxed family members.

risk for Sexual Dysfunction: risk factors may include biopsychosocial alteration of sexuality, ineffectual/absent role models, misinformation/lack of knowledge, lack of significant other(s), and lack of appropriate behavior control.

miscarriage

Refer to *abortion, spontaneous termination*.

mitral stenosis

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of fatigue, weakness, exertional dyspnea, and tachycardia.

impaired Gas Exchange may be related to altered blood flow, possibly evidenced by restlessness, hypoxia, and cyanosis (orthopnea/paroxysmal nocturnal dyspnea).

decreased Cardiac Output may be related to impeded blood flow as evidenced by jugular vein distention, peripheral/dependent edema, orthopnea/paroxysmal nocturnal dyspnea.

deficient Knowledge [Learning Need] regarding pathophysiology, therapeutic needs, and potential complications may be related to lack of information/recall, misinterpretation, possibly evidenced by statements of concern, questions, inaccurate follow-through of instructions, and development of preventable complications.

mononucleosis, infectious

Fatigue may be related to decreased energy production, states of discomfort, and increased energy requirements (inflammatory process), possibly evidenced by reports of overwhelming lack of energy, inability to maintain usual routines, lethargy, and malaise.

acute Pain/[Discomfort] may be related to inflammation of lymphoid and organ tissues, irritation of oropharyngeal mucous membranes, and effects of circulating toxins, possibly evidenced by verbal reports, distraction behaviors, and self-focusing.

Hyperthermia may be related to inflammatory process, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

deficient Knowledge [Learning Need] regarding disease transmission, self-care needs, medical therapy, and potential complications may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, misconceptions, and inaccurate follow-through of instructions.

mood disorders

Refer to *depressive disorders*.

mountain sickness, acute (AMS)

acute Pain may be related to reduced oxygen tension, possibly evidenced by reports of headache.

Fatigue may be related to stress, increased physical exertion, sleep deprivation, possibly evidenced by overwhelming lack of energy, inability to restore energy even after sleep, compromised concentration, decreased performance.

risk for deficient Fluid Volume: risk factors may include increased water loss (e.g., over-breathing dry air), exertion, altered fluid intake (nausea).

multiple personality

Refer to *dissociative disorders*.

multiple sclerosis

Fatigue may be related to decreased energy production/increased energy requirements to perform activities, psychological/emotional demands, pain/discomfort, medication side effects, possibly evidenced by verbalization of overwhelming lack of energy, inability to maintain usual routine, decreased performance, impaired ability to concentrate, increase in physical complaints.

disturbed visual, kinesthetic, tactile Sensory Perception may be related to delayed/interrupted neuronal transmission, possibly evidenced by impaired vision, diplopia, disturbance of vibratory or position sense, paresthesias, numbness, and blunting of sensation.

impaired physical Mobility may be related to neuromuscular impairment, discomfort/pain, sensoriperceptual impairments, decreased muscle strength, control, and/or mass, deconditioning, as evidenced by limited ability to perform motor skills, limited range of motion, gait changes/postural instability.

Powerlessness/Hopelessness may be related to illness-related regimen and lifestyle of helplessness, possibly evidenced by verbal expressions of having no control or influence over the situation, depression over physical deterioration that occurs despite patient compliance with regimen, nonparticipation in care or decision making when opportunities are provided, passivity, decreased verbalization/affect.

impaired Home Maintenance may be related to effects of debilitating disease, impaired cognitive and/or emotional functioning, insufficient finances, and inadequate support systems, possibly evidenced by reported difficulty, observed disorderly surroundings, and poor hygienic conditions.

compromised/disabled family Coping may be related to situational crises/temporary family disorganization and role changes, patient providing little support in turn for significant other(s), prolonged disease/disability progression that exhausts the supportive capacity of significant other(s), feelings of guilt, anxiety, hostility, despair, and highly ambivalent family relationships, possibly evidenced by client expressing/confirming concern or report about significant other(s)' response to client's illness, significant other(s) preoccupied with own personal reactions, intolerance, abandonment, neglectful care of the patient, and distortion of reality regarding client's illness.

mumps

acute Pain may be related to presence of inflammation, circulating toxins, and enlargement of salivary glands, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

Hyperthermia may be related to inflammatory process (increased metabolic rate), and dehydration, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

risk for deficient Fluid Volume: risk factors may include hypermetabolic state and painful swallowing with decreased intake.

muscular dystrophy (Duchenne's)

impaired physical Mobility may be related to musculoskeletal impairment/weakness, possibly evidenced by decreased muscle strength, control, and mass; limited range of motion; and impaired coordination.

delayed Growth and Development may be related to effects of physical disability, possibly evidenced by altered physical growth and altered ability to perform self-care/self-control activities appropriate to age.

risk for imbalanced Nutrition: more than body requirements: risk factors may include sedentary lifestyle and dysfunctional eating patterns.

compromised family Coping may be related to situational crisis/emotional conflicts around issues about hereditary nature of condition and prolonged disease/disability that exhausts supportive capacity of family members, possibly evidenced by preoccupation with personal reactions regarding disability and displaying protective behavior disproportionate (too little/too much) to client's abilities/need for autonomy.

myasthenia gravis

ineffective Breathing Pattern/Airway Clearance may be related to neuromuscular weakness and decreased energy/fatigue, possibly evidenced by dyspnea, changes in rate/depth of respiration, ineffective cough, and adventitious breath sounds.

impaired verbal Communication may be related to neuromuscular weakness, fatigue, and physical barrier (intubation), possibly evidenced by facial weakness, impaired articulation, hoarseness, and inability to speak.

impaired Swallowing may be related to neuromuscular impairment of laryngeal/pharyngeal muscles and muscular fatigue, possibly evidenced by reported/observed difficulty swallowing, coughing/choking, and evidence of aspiration.

Anxiety [specify level]/Fear may be related to situational crisis, threat to self-concept, change in health/socioeconomic status or role function, separation from support systems, lack of knowledge, and inability to communicate, possibly evidenced by expressed concerns, increased tension, restlessness, apprehension, sympathetic stimulation, crying, focus on self, uncooperative behavior, withdrawal, anger, and noncommunication.

deficient Knowledge [Learning Need] regarding drug therapy, potential for crisis (myasthenic or cholinergic), and self-care management may be related to inadequate information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions; development of preventable complications.

impaired physical Mobility may be related to neuromuscular impairment, possibly evidenced by reports of progressive fatigability with repetitive/prolonged muscle use, impaired coordination, and decreased muscle strength/control.

disturbed visual Sensory Perception may be related to neuromuscular impairment, possibly evidenced by visual distortions (diplopia) and motor incoordination.

myeloma, multiple

(also refer to *cancer*)

acute/chronic Pain may be related to destruction of tissues/bone, side effects of therapy, possibly evidenced by verbal or coded reports, guarding/protective behaviors, changes in appetite/weight, sleep; reduced interaction with others.

impaired physical Mobility may be related to loss of integrity of bone structure, pain, deconditioning, depressed mood possibly evidenced by verbalizations, limited range of motion, slowed movement, gait changes.

risk for ineffective Protection: risk factors may include presence of cancer, drug therapies, radiation treatments, inadequate nutrition.

myocardial infarction

(also refer to *myocarditis*)

acute Pain may be related to ischemia of myocardial tissue, possibly evidenced by verbal reports, guarding/distraction behaviors (restlessness), facial mask of pain, self-focusing, and autonomic responses (diaphoresis, changes in vital signs).

Anxiety [specify level]/Fear may be related to threat of death, threat of change of health status/role functioning and lifestyle, interpersonal transmission/contagion, possibly evidenced by increased tension, fearful attitude, apprehension, expressed concerns/uncertainty, restlessness, sympathetic stimulation, and somatic complaints.

risk for decreased Cardiac Output: risk factors may include changes in rate and electrical conduction, reduced preload, increased systemic vascular resistance, and altered muscle contractility/depressant effects of some medications, infarcted/dyskinetic muscle, structural defects.

risk for sedentary Lifestyle: risk factors may include lack of resources; lack of training or knowledge of specific exercise needs, safety concerns/fear of injury.

myocarditis

(also refer to *myocardial infarction*)

Activity Intolerance may be related to imbalance in oxygen supply and demand (myocardial inflammation/damage), cardiac depressant effects of certain drugs, and enforced bedrest, possibly evidenced by reports of fatigue, exertional dyspnea, tachycardia/palpitations in response to activity, ECG changes/dysrhythmias, and generalized weakness.

risk for decreased Cardiac Output: risk factors may include degeneration of cardiac muscle.

deficient Knowledge [Learning Need] regarding pathophysiology of condition/outcomes, treatment, and self-care needs/lifestyle changes may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, misconceptions, inaccurate follow-through of instructions, and development of preventable complications.

myringotomy

Refer to *mastoidectomy*.

myxedema

(also refer to *hypothyroidism*)

disturbed Body Image may be related to change in structure/function (loss of hair/thickening of skin, masklike facial expression, enlarged tongue, menstrual and reproductive disturbances), possibly evidenced by negative feelings about body, feelings of helplessness, and change in social involvement.

imbalanced Nutrition: more than body requirements may be related to decreased metabolic rate and activity level, possibly evidenced by weight gain greater than ideal for height and frame.

risk for decreased Cardiac Output: risk factors may include altered electrical conduction and myocardial contractility.

neglect/abuse

Refer to *abuse; battered child syndrome*.

neonatal, normal newborn

risk for impaired Gas Exchange: risk factors may include prenatal or intrapartum stressors, excess production of mucus, or cold stress.

risk for imbalanced Body Temperature: risk factors may include large body surface in relation to mass, limited amounts of insulating subcutaneous fat, nonrenewable sources of brown fat and few white fat stores, thin epidermis with close proximity of blood vessels to the skin, inability to shiver, and movement from a warm uterine environment to a much cooler environment.

risk for impaired parent/infant Attachment: risk factors may include developmental transition (gain of a family member); anxiety associated with the parent role, or lack of privacy (intrusive family/visitors).

risk for imbalanced Nutrition: less than body requirements: risk factors may include rapid metabolic rate, high caloric requirement, increased insensible water losses through pulmonary and cutaneous routes, fatigue, and a potential for inadequate or depleted glucose stores.

risk for Infection: risk factors may include inadequate secondary defenses (inadequate acquired immunity, e.g., deficiency of neutrophils and specific immunoglobulins) and inadequate primary defenses (e.g., environmental exposure, broken skin, traumatized tissues, decreased ciliary action).

neonatal, premature newborn

impaired Gas Exchange may be related to alveolar-capillary membrane changes (inadequate surfactant levels), altered blood flow (immaturity of pulmonary arteriole musculature), altered oxygen supply (immaturity of central nervous system and neuromuscular system, tracheobronchial obstruction), altered oxygen-carrying capacity of blood (anemia), and cold stress, possibly evidenced by respiratory difficulties, inadequate oxygenation of tissues, and acidemia.

ineffective Breathing Pattern/Infant Feeding Pattern may be related to immaturity of the respiratory center, poor positioning, drug-related depression, metabolic imbalances, or decreased energy/fatigue, possibly evidenced by dyspnea, tachypnea, periods of apnea, nasal flaring/use of accessory muscles, cyanosis, abnormal ABGs, and tachycardia.

risk for ineffective Thermoregulation: risk factors may include immature CNS development (temperature regulation center), decreased ratio of body mass to surface area, decreased subcutaneous fat, limited brown fat stores, inability to shiver or sweat, poor metabolic reserves, muted response to hypothermia, and frequent medical/nursing manipulations and interventions.

risk for deficient Fluid Volume: risk factors may include extremes of age and weight, excessive fluid losses (thin skin, lack of insulating fat, increased environmental temperature, immature kidney/failure to concentrate urine).

risk for disorganized Infant Behavior: risk factors may include prematurity (immature central nervous system, hypoxia), lack of containment/boundaries, pain, or overstimulation, separation from parents.

nephrectomy

acute Pain may be related to surgical tissue trauma with mechanical closure (suture), possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

risk for deficient Fluid Volume: risk factors may include excessive vascular losses and restricted intake.

ineffective Breathing Pattern may be related to incisional pain with decreased lung expansion, possibly evidenced by tachypnea, fremitus, changes in respiratory depth/chest expansion, and changes in ABGs.

Constipation may be related to reduced dietary intake, decreased mobility, gastrointestinal obstruction (paralytic ileus), and incisional pain with defecation, possibly evidenced by decreased bowel sounds, reduced frequency/amount of stool, and hard/formed stool.

nephrolithiasis

Refer to *calculi, urinary*.

nephrotic syndrome

excess Fluid Volume may be related to compromised regulatory mechanism with changes in hydrostatic/oncotic vascular pressure and increased activation of the renin-angiotensin-aldosterone system, possibly evidenced by edema/anasarca, effusions/ascites, weight gain, intake greater than output, and blood pressure changes.

imbalanced Nutrition: less than body requirements may be related to excessive protein losses and inability to ingest adequate nutrients (anorexia), possibly evidenced by weight loss/muscle wasting (may be difficult to assess due to edema), lack of interest in food, and observed inadequate intake.

risk for Infection: risk factors may include chronic disease and steroidal suppression of inflammatory responses.

risk for impaired Skin Integrity: risk factors may include presence of edema and activity restrictions.

neuralgia, trigeminal

acute Pain may be related to neuromuscular impairment with sudden violent muscle spasm, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

deficient Knowledge [Learning Need] regarding control of recurrent episodes, medical therapies, and self-care needs may be related to lack of information/recall and misinterpretation, possibly evidenced by statements of concern, questions, and exacerbation of condition.

neuritis

acute/chronic Pain may be related to nerve damage usually associated with a degenerative process, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

deficient Knowledge [Learning Need] regarding underlying causative factors, treatment, and prevention may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

obesity

imbalanced Nutrition: more than body requirements may be related to food intake that exceeds body needs, psychosocial factors, socioeconomic status, possibly evidenced by weight of 20% or more over optimum body weight, excess body fat by skinfold/other measurements, reported/observed dysfunctional eating patterns, intake more than body requirements.

sedentary Lifestyle may be related to lack of interest/motivation, resources; lack of training or knowledge of specific exercise needs, safety concerns/fear of injury, possibly evidenced by demonstration of physical deconditioning, choice of a daily routine lacking physical exercise.

disturbed Body Image/chronic low Self-Esteem may be related to view of self in contrast with societal values, family/subculture encouragement of overeating; control, sex, and love issues; possibly evidenced by negative feelings about body, fear of rejection/reaction of others, feelings of hopelessness/powerlessness, and lack of follow-through with treatment plan.

Activity Intolerance may be related to imbalance between oxygen supply and demand, and sedentary lifestyle, possibly evidenced by fatigue or weakness, exertional discomfort, and abnormal heart rate/blood pressure response.

impaired Social Interaction may be related to verbalized/observed discomfort in social situations, self-concept disturbance, possibly evidenced by reluctance to participate in social gatherings, verbalization of a sense of discomfort with others, feeling of rejection, absence of/ineffective supportive significant other(s).

opioid abuse

Refer to *depressant abuse*.

organic brain syndrome

Refer to *Alzheimer's disease*.

osteoarthritis (degenerative joint disease)

Refer to *arthritis, rheumatoid*. (Although this is a degenerative process versus the inflammatory process of rheumatoid arthritis, nursing concerns are the same.)

osteomyelitis

acute Pain may be related to inflammation and tissue necrosis, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Hyperthermia may be related to increased metabolic rate and infectious process, possibly evidenced by increased body temperature and warm/flushed skin.

ineffective bone Tissue Perfusion may be related to inflammatory reaction with thrombosis of vessels, destruction of tissue, edema, and abscess formation, possibly evidenced by bone necrosis, continuation of infectious process, and delayed healing.

risk for impaired Walking: risk factors may include inflammation and tissue necrosis, pain, joint instability.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, long-term therapy needs, activity restriction, and prevention of complications may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions and misconceptions, and inaccurate follow-through of instructions.

osteoporosis

risk for Trauma: risk factors may include loss of bone density/integrity, increasing risk of fracture with minimal or no stress.

acute/chronic Pain may be related to vertebral compression on spinal nerve/muscles/ligaments, spontaneous fractures, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and changes in sleep pattern.

impaired physical Mobility may be related to pain and musculoskeletal impairment, possibly evidenced by limited range of motion, reluctance to attempt movement/expressed fear of reinjury, and imposed restrictions/limitations.

palsy, cerebral (spastic hemiplegia)

impaired physical Mobility may be related to muscular weakness/hypertonicity, increased deep tendon reflexes, tendency to contractures, and underdevelopment of affected limbs, possibly evidenced by decreased muscle strength, control, mass, limited range of motion, and impaired coordination.

compromised family Coping may be related to permanent nature of condition, situational crisis, emotional conflicts/temporary family disorganization, and incomplete information/understanding of client's needs, possibly evidenced by verbalized anxiety/guilt regarding client's disability, inadequate understanding and knowledge base, and displaying protective behaviors disproportionate (too little/too much) to client's abilities or need for autonomy.

delayed Growth and Development may be related to effects of physical disability, possibly evidenced by altered physical growth, delay or difficulty in performing skills (motor, social, expressive), and altered ability to perform self-care/self-control activities appropriate to age.

pancreatitis

acute Pain may be related to obstruction of pancreatic/biliary ducts, chemical contamination of peritoneal surfaces by pancreatic exudate/autodigestion, extension of inflammation to the retroperitoneal nerve plexus, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, grimacing, autonomic responses (changes in vital signs), and alteration in muscle tone.

risk for deficient Fluid Volume: risk factors may include excessive gastric losses (vomiting, nasogastric suctioning), increase in size of vascular bed (vasodilation, effects of kinins), third-space fluid transudation, ascites formation, alteration of clotting process, hemorrhage.

imbalanced Nutrition: less than body requirements may be related to vomiting, decreased oral intake as well as altered ability to digest nutrients (loss of digestive enzymes/insulin), possibly evidenced by reported inadequate food intake, aversion to eating, reported altered taste sensation, weight loss, and reduced muscle mass.

risk for Infection: risk factors may include inadequate primary defenses (stasis of body fluids, altered peristalsis, change in pH secretions), immunosuppression, nutritional deficiencies, tissue destruction, and chronic disease.

paranoid personality disorder

risk for other/self-directed Violence: risk factors may include perceived threats of danger, paranoid delusions, and increased feelings of anxiety.

[severe] Anxiety may be related to inability to trust (has not mastered tasks of trust versus mistrust), possibly evidenced by rigid delusional system (serves to provide relief from stress that justifies the delusion), frightened of other people and own hostility.

Powerlessness may be related to feelings of inadequacy, lifestyle of helplessness, maladaptive interpersonal interactions (e.g., misuse of power, force; abusive relationships), sense of severely impaired self-concept, and belief that individual has no control over situation(s), possibly evidenced by paranoid delusions, use of aggressive behavior to compensate, and expressions of recognition of damage paranoia has caused self and others.

disturbed Thought Processes may be related to psychological conflicts, increased anxiety and fear, possibly evidenced by difficulties in the process and character of thought, interference with the ability to think clearly and logically, delusions, fragmentation, and autistic thinking.

compromised family Coping may be related to temporary or sustained family disorganization/role changes, prolonged progression of condition that exhausts the supportive capacity of significant other(s), possibly evidenced by family system not meeting physical/emotional/spiritual needs of its members, inability to express or to accept wide range of feelings, inappropriate boundary maintenance; significant other(s) describes preoccupation with personal reactions.

paraplegia

(also refer to *quadriplegia*)

impaired Transfer Ability may be related to loss of muscle function/control, injury to upper extremity joints (overuse).

disturbed kinesthetic/tactile Sensory Perception may be related to neurological deficit with loss of sensory reception and transmission, psychological stress, possibly evidenced by reported/measured change in sensory acuity and loss of usual response to stimuli.

reflex Urinary Incontinence/impaired Urinary Elimination may be related to loss of nerve conduction above the level of the reflex arc, possibly evidenced by lack of awareness of bladder filling/fullness, absence of urge to void, and uninhibited bladder contraction, urinary tract infections, kidney stone formation.

disturbed Body Image/ineffective Role Performance may be related to loss of body functions, change in physical ability to resume role, perceived loss of self/identity, possibly evidenced by negative feelings about body/self, feelings of helplessness/powerlessness, delay in taking responsibility for self-care/participation in therapy, and change in social involvement.

Sexual Dysfunction may be related to loss of sensation, altered function, and vulnerability, possibly evidenced by seeking of confirmation of desirability, verbalization of concern, and alteration in relationship with significant other, and change in interest in self/others.

parathyroidectomy

acute Pain may be related to presence of surgical incision and effects of calcium imbalance (bone pain, tetany), possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

risk for excess Fluid Volume: risk factors may include preoperative renal involvement, stress-induced release of ADH, and changing calcium/electrolyte levels.

risk for ineffective Airway Clearance: risk factors may include edema formation and laryngeal nerve damage.

deficient Knowledge [Learning Need] regarding postoperative care/complications and long-term needs may be related to lack of information/recall, misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

Parkinson's disease

impaired Walking may be related to neuromuscular impairment (muscle weakness, tremors, bradykinesia) and musculoskeletal impairment (joint rigidity), possibly evidenced by inability to move about the environment as desired, increased occurrence of falls.

impaired Swallowing may be related to neuromuscular impairment/muscle weakness, possibly evidenced by reported/observed difficulty in swallowing, drooling, evidence of aspiration (choking, coughing).

impaired verbal Communication may be related to muscle weakness and incoordination, possibly evidenced by impaired articulation, difficulty with phonation, and changes in rhythm and intonation.

Caregiver Role Strain may be related to illness, severity of care receiver, psychological/cognitive problems in care receiver, caregiver is spouse, duration of caregiving required, lack of respite/recreation for caregiver, possibly evidenced by feeling stressed, depressed, worried; lack of resources/support, family conflict.

pelvic inflammatory disease

risk for Infection [spread]: risk factors may include presence of infectious process in highly vascular pelvic structures, delay in seeking treatment.

acute Pain may be related to inflammation, edema, and congestion of reproductive/pelvic tissues, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Hyperthermia may be related to inflammatory process/hypermetabolic state, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

risk for situational low Self-Esteem: risk factors may include perceived stigma of physical condition (infection of reproductive system).

deficient Knowledge [Learning Need] regarding cause/complications of condition, therapy needs, and transmission of disease to others may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and development of preventable complications.

periarteritis nodosa

Refer to *polyarteritis (nodosa)*.

pericarditis

acute Pain may be related to inflammation and presence of effusion, possibly evidenced by verbal reports of pain affected by movement/position, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Activity Intolerance may be related to imbalance between oxygen supply and demand (restriction of cardiac filling/ventricular contraction, reduced cardiac output), possibly evidenced by reports of weakness/fatigue, exertional dyspnea, abnormal heart rate or blood pressure response, and signs of congestive heart failure.

risk for decreased Cardiac Output: risk factors may include accumulation of fluid (effusion), restricted cardiac filling/contractility.

Anxiety [specify level] may be related to change in health status and perceived threat of death, possibly evidenced by increased tension, apprehension, restlessness, and expressed concerns.

perinatal loss/death of child

Grieving may be related to death of fetus/infant, possibly evidenced by verbal expressions of distress, anger, loss, guilt; crying, change in eating habits/sleep.

situational low Self-Esteem may be related to perceived failure at a life event, inability to meet personal expectations, possibly evidenced by negative self-appraisal in response to situation/personal actions, expressions of helplessness/hopelessness, evaluation of self as unable to deal with situation.

risk for ineffective Role Performance: risk factors may include stress, family conflict, inadequate support system.

risk for interrupted Family Processes: risk factors may include situational crisis, developmental transition [loss of child], family roles shift.

risk for Spiritual Distress: risk factors may include blame for loss directed at self/God, intense suffering, alienation from other/support systems.

peripheral vascular disease (atherosclerosis)

ineffective peripheral Tissue Perfusion may be related to reduction or interruption of arterial/venous blood flow, possibly evidenced by changes in skin temperature/color, lack of hair growth, blood pressure/pulse changes in extremity, presence of bruits, and reports of claudication.

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of muscle fatigue/weakness and exertional discomfort (claudication).

risk for impaired Skin/Tissue Integrity: risk factors may include altered circulation with decreased sensation and impaired healing.

peritonitis

risk for Infection [spread/septicemia]: risk factors may include inadequate primary defenses (broken skin, traumatized tissue, altered peristalsis), inadequate secondary defenses (immunosuppression), and invasive procedures.

deficient Fluid Volume [mixed] may be related to fluid shifts from extracellular, intravascular, and interstitial compartments into intestines and/or peritoneal space, excessive gastric losses (vomiting, diarrhea, nasogastric suction), hypermetabolic state, and restricted intake, possibly evidenced by dry mucous membranes, poor skin turgor, delayed capillary refill, weak peripheral pulses, diminished urinary output, dark/concentrated urine, hypotension, and tachycardia.

acute Pain may be related to chemical irritation of parietal peritoneum, trauma to tissues, accumulation of fluid in abdominal/peritoneal cavity, possibly evidenced by verbal reports, muscle guarding/rebound tenderness, distraction behaviors, facial mask of pain, self-focus, autonomic responses (changes in vital signs).

risk for imbalanced Nutrition: less than body requirements: risk factors may include nausea/vomiting, intestinal dysfunction, metabolic abnormalities, or increased metabolic needs.

pheochromocytoma

Anxiety [specify level] may be related to excessive physiological (hormonal) stimulation of the sympathetic nervous system, situational crises, threat to/change in health status, possibly evidenced by apprehension, shakiness, restlessness, focus on self, fearfulness, diaphoresis, and sense of impending doom.

deficient Fluid Volume [mixed] may be related to excessive gastric losses (vomiting/diarrhea), hypermetabolic state, diaphoresis, and hyperosmolar diuresis, possibly evidenced by hemoconcentration, dry mucous membranes, poor skin turgor, thirst, and weight loss.

decreased Cardiac Output/ineffective Tissue Perfusion [specify] may be related to altered preload/decreased blood volume, altered systemic vascular resistance, and increased sympathetic activity (excessive secretion of catecholamines), possibly evidenced by cool/clammy skin, change in blood pressure (hypertension/postural hypotension), visual disturbances, severe headache, and angina.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, outcome, preoperative and postoperative care needs may be related to lack of information/recall, possibly evidenced by statements of concern, questions, and misconceptions.

phlebitis

Refer to *thrombophlebitis*.

phobia

(also refer to *anxiety disorder, generalized*)

Fear may be related to learned irrational response to natural or innate origins (phobic stimulus), unfounded morbid dread of a seemingly harmless object/situation, possibly evidenced by sympathetic stimulation and reactions ranging from apprehension to panic, withdrawal from/total avoidance of situations that place individual in contact with feared object.

impaired Social Interaction may be related to intense fear of encountering feared object/activity or situation and anticipated loss of control, possibly evidenced by reported change of style/pattern of interaction, discomfort in social situations, and avoidance of phobic stimulus.

placenta previa

risk for deficient Fluid Volume: risk factors may include excessive vascular losses (vessel damage and inadequate vasoconstriction).

impaired fetal Gas Exchange may be related to altered blood flow, altered carrying capacity of blood (maternal anemia), and decreased surface area of gas exchange at site of placental attachment, possibly evidenced by changes in fetal heart rate/activity and release of meconium.

Fear may be related to threat of death (perceived or actual) to self or fetus, possibly evidenced by verbalization of specific concerns, increased tension, sympathetic stimulation.

risk for deficient Diversional Activity: risk factors may include imposed activity restrictions/bedrest.

pleurisy

acute Pain may be related to inflammation/irritation of the parietal pleura, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

ineffective Breathing Pattern may be related to pain on inspiration, possibly evidenced by decreased respiratory depth, tachypnea, and dyspnea.

risk for Infection [pneumonia]: risk factors may include stasis of pulmonary secretions, decreased lung expansion, and ineffective cough.

pneumonia

Refer to *bronchitis; bronchopneumonia*.

pneumothorax

(also refer to *hemothorax*)

ineffective Breathing Pattern may be related to decreased lung expansion (fluid/air accumulation), musculoskeletal impairment, pain, inflammatory process, possibly evidenced by dyspnea, tachypnea, altered chest excursion, respiratory depth changes, use of accessory muscles/nasal flaring, cough, cyanosis, and abnormal ABGs.

risk for decreased Cardiac Output: risk factors may include compression/displacement of cardiac structures.

acute Pain may be related to irritation of nerve endings within pleural space by foreign object (chest tube), possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

polyarteritis (nodosa)

ineffective Tissue Perfusion [specify] may be related to reduction/interruption of blood flow, possibly evidenced by organ tissue infarctions, changes in organ function, and development of organic psychosis.

Hyperthermia may be related to widespread inflammatory process, possibly evidenced by increased body temperature and warm/flushed skin.

acute Pain may be related to inflammation, tissue ischemia, and necrosis of affected area, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Grieving may be related to perceived loss of self, possibly evidenced by expressions of sorrow and anger, altered sleep and/or eating patterns, and changes in activity level or libido.

polycythemia vera

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of fatigue/weakness.

ineffective Tissue Perfusion [specify] may be related to reduction/interruption of arterial/venous blood flow (insufficiency, thrombosis, or hemorrhage), possibly evidenced by pain in affected area, impaired mental ability, visual disturbances, and color changes of skin/mucous membranes.

polyradiculitis

Refer to *Guillain-Barré syndrome*.

postoperative recovery period

ineffective Breathing Pattern may be related to neuromuscular and perceptual/cognitive impairment, decreased lung expansion/energy, and tracheobronchial obstruction, possibly evidenced by changes in respiratory rate and depth, reduced vital capacity, apnea, cyanosis, and noisy respirations.

risk for imbalanced Body Temperature: risk factors may include exposure to cool environment, effect of medications/anesthetic agents, extremes of age/weight, and dehydration.

disturbed Sensory Perception [specify]/disturbed Thought Processes may be related to chemical alteration (use of pharmaceutical agents, hypoxia), therapeutically restricted environment, excessive sensory stimuli and physiologic stress, possibly evidenced by changes in usual response to stimuli, motor incoordination, impaired ability to concentrate, reason, and make decisions; and disorientation to person, place, and time.

risk for deficient Fluid Volume: risk factors may include restriction of oral intake, loss of fluid through abnormal routes (indwelling tubes, drains), normal routes (vomiting, loss of vascular integrity, changes in clotting ability), and extremes of age and weight.

acute Pain may be related to disruption of skin, tissue, and muscle integrity, musculoskeletal/bone trauma, and presence of tubes and drains, possibly evidenced by verbal reports, alteration in muscle tone, facial mask of pain, distraction/guarding behaviors, narrowed focus, and autonomic responses.

impaired Skin/Tissue Integrity may be related to mechanical interruption of skin/tissues, altered circulation, effects of medication, accumulation of drainage, and altered metabolic state, possibly evidenced by disruption of skin surface/layers and tissues.

risk for Infection: risk factors may include broken skin, traumatized tissues, stasis of body fluids, presence of pathogens/contaminants, environmental exposure, and invasive procedures.

postpartal period

risk for impaired parent/infant Attachment/Parenting: risk factors may include lack of support between/from significant other(s), ineffective or no role model, anxiety associated with the parental role, unrealistic expectations, presence of stressors (e.g., financial, housing, employment).

risk for deficient Fluid Volume: risk factors may include excessive blood loss during delivery, reduced intake/inadequate replacement, nausea/vomiting, increased urine output, and insensible losses.

acute Pain/[Discomfort] may be related to tissue trauma/edema, muscle contractions, bladder fullness, and physical/psychological exhaustion, possibly evidenced by reports of cramping (afterpains), self-focusing, alteration in muscle tone, distraction behavior, and autonomic responses (changes in vital signs).

impaired Urinary Elimination may be related to hormonal effects (fluid shifts/continued elevation in renal plasma flow), mechanical trauma/tissue edema, and effects of medication/anesthesia, possibly evidenced by frequency, dysuria, urgency, incontinence, or retention.

Constipation may be related to decreased muscle tone associated with diastasis recti, prenatal effects of progesterone, dehydration, excess analgesia or anesthesia, pain (hemorrhoids, episiotomy, or perineal tenderness), prelabor diarrhea, and lack of intake, possibly evidenced by frequency less than usual pattern, hard-formed stool, straining at stool, decreased bowel sounds, and abdominal distention.

Insomnia may be related to pain/discomfort, intense exhilaration/excitement, anxiety, exhausting process of labor/delivery, and needs/demands of family members, possibly evidenced by verbal reports of difficulty in falling asleep or staying asleep/dissatisfaction with sleep, lack of energy, nonrestorative sleep.

post-traumatic stress disorder

Post-Trauma Syndrome related to having experienced a traumatic life event, possibly evidenced by re-experiencing the event, somatic reactions, psychic/emotional numbness, altered lifestyle, impaired sleep, self-destructive behaviors, difficulty with in-

terpersonal relationships, development of phobia, poor impulse control/irritability, and explosiveness.

risk for other-directed Violence: risk factors may include a startle reaction, an intrusive memory causing a sudden acting-out of a feeling as if the event were occurring; use of alcohol/other drugs to ward off painful effects and produce psychic numbing, breaking through the rage that has been walled off, response to intense anxiety or panic state, and loss of control.

ineffective Coping may be related to personal vulnerability, inadequate support systems, unrealistic perceptions, unmet expectations, overwhelming threat to self, and multiple stressors repeated over period of time, possibly evidenced by verbalization of inability to cope or difficulty asking for help, muscular tension/headaches, chronic worry, and emotional tension.

complicated Grieving may be related to actual/perceived object loss (loss of self as seen before the traumatic incident occurred as well as other losses incurred in/after the incident), loss of physiopsychosocial well-being, thwarted grieving response to a loss, and lack of resolution of previous grieving responses, possibly evidenced by verbal expression of distress at loss, anger, sadness, labile affect, alterations in eating habits, sleep/dream patterns, libido; reliving of past experiences, expression of guilt, and alterations in concentration.

interrupted Family Processes may be related to situational crisis, failure to master developmental transitions, possibly evidenced by expressions of confusion about what to do and that family is having difficulty coping, family system not meeting physical/emotional/spiritual needs of its members, not adapting to change or dealing with traumatic experience constructively, and ineffective family decision-making process.

pregnancy (prenatal period)

risk for imbalanced Nutrition: less than body requirements: risk factors may include changes in appetite, insufficient intake (nausea/vomiting, inadequate financial resources and nutritional knowledge); meeting increased metabolic demands (increased thyroid activity associated with the growth of fetal and maternal tissues).

[Discomfort]/acute Pain may be related to hormonal influences, physical changes, possibly evidenced by verbal reports (nausea, breast changes, leg cramps, hemorrhoids, nasal stuffiness), alteration in muscle tone, restlessness, and autonomic responses (changes in vital signs).

risk for fetal Injury: risk factors may include environmental/hereditary factors and problems of maternal well-being that directly affect the developing fetus (e.g., malnutrition, substance use).

[maximally compensated] Cardiac Output may be related to increased fluid volume/maximal cardiac effort and hormonal effects of progesterone and relaxin (that place the patient at risk for hypertension and/or circulatory failure), and changes in peripheral resistance (afterload), possibly evidenced by variations in blood pressure and pulse, syncopal episodes, or presence of pathological edema.

readiness for enhanced family Coping may be related to situational/maturational crisis with anticipated changes in family structure/roles, needs sufficiently met and adaptive tasks effectively addressed to enable goals of self-actualization to surface, as evidenced by movement toward health-promoting and enriching lifestyle, choosing experiences that optimize pregnancy experience/wellness.

risk for Constipation: risk factors may include changes in dietary/fluid intake, smooth muscle relaxation, decreased peristalsis, and effects of medications (e.g., iron).

Fatigue/Insomnia may be related to increased carbohydrate metabolism, altered body chemistry, increased energy requirements to perform activities of daily living, discomfort, anxiety, inactivity, possibly evidenced by reports of overwhelming lack of energy/inability to maintain usual routines, difficulty falling asleep/dissatisfaction with sleep, decreased quality of life.

risk for ineffective Role Performance: risk factors may include maturational crisis, developmental level, history of maladaptive coping, or absence of support systems.

deficient Knowledge [Learning Need] regarding normal physiological/psychological changes and self-care needs may be related to lack of information/recall and misinterpretation of normal physiological/psychological changes and their impact on the client/family, possibly evidenced by questions, statements of concern, misconceptions, and inaccurate follow-through of instructions/development of preventable complications.

pregnancy, adolescent

(also refer to *pregnancy [prenatal period]*)

interrupted Family Processes may be related to situational/developmental transition (economic, change in roles/gain of a family member), possibly evidenced by family expressing confusion about what to do, unable to meet physical/emotional/spiritual needs of the members, family inability to adapt to change or to deal with traumatic

experience constructively, does not demonstrate respect for individuality and autonomy of its members, ineffective family decision-making process, and inappropriate boundary maintenance.

Social Isolation may be related to alterations in physical appearance, perceived unacceptable social behavior, restricted social sphere, stage of adolescence, and interference with accomplishing developmental tasks, possibly evidenced by expressions of feelings of aloneness/rejection/difference from others, uncommunicative, withdrawn, no eye contact, seeking to be alone, unacceptable behavior, and absence of supportive significant other(s).

disturbed Body Image/situational/chronic low Self-Esteem may be related to situational/maturational crisis, biophysical changes, and fear of failure at life events, absence of support systems, possibly evidenced by self-negating verbalizations, expressions of shame/guilt, fear of rejection/reaction of others, hypersensitivity to criticism, and lack of follow-through/nonparticipation in prenatal care.

deficient Knowledge [Learning Need] regarding pregnancy, developmental/individual needs, future expectations may be related to lack of exposure, information misinterpretation, unfamiliarity with information resources, lack of interest in learning, possibly evidenced by questions, statements of concern/misconception, sense of vulnerability/denial of reality, inaccurate follow-through of instruction, and development of preventable complications.

risk for impaired Parenting may be related to chronological age/developmental stage, unmet social/emotional/maturational needs of parenting figures, unrealistic expectation of self/infant/partner, ineffective role model/social support, lack of role identity, and presence of stressors (e.g., financial, social).

pregnancy, high-risk

Anxiety [specify level] may be related to situational crisis, threat of maternal/fetal death (perceived or actual), interpersonal transmission/contagion, possibly evidenced by increased tension, apprehension, feelings of inadequacy, somatic complaints, difficulty sleeping.

deficient Knowledge [Learning Need] regarding high-risk situation/preterm labor may be related to lack of exposure to/misinterpretation of information, unfamiliarity with individual risks and own role in risk prevention/management, possibly evidenced by request for information, statement of concerns/misconceptions, inaccurate follow-through of instructions.

risk of maternal Injury: risk factors may include pre-existing medical conditions, complications of pregnancy.

risk for Activity Intolerance: risk factors may include presence of circulatory/respiratory problems, uterine irritability.

risk for Ineffective Therapeutic Regimen Management: risk factors may include client value system, health beliefs/cultural influences, issues of control, presence of anxiety, complexity of therapeutic regimen, economic difficulties, perceived susceptibility.

pregnancy-induced hypertension (pre-eclampsia)

deficient Fluid Volume [isotonic] may be related to a plasma protein loss, decreasing plasma colloid osmotic pressure allowing fluid shifts out of vascular compartment, possibly evidenced by edema formation, sudden weight gain, hemoconcentration, nausea/vomiting, epigastric pain, headaches, visual changes, decreased urine output.

decreased Cardiac Output may be related to hypovolemia/decreased venous return, increased SVR, possibly evidenced by variations in blood pressure/hemodynamic readings, edema, shortness of breath, change in mental status.

ineffective [uteroplacental] Tissue Perfusion may be related to vasospasm of spiral arteries and relative hypovolemia, possibly evidenced by changes in fetal heart rate/activity, reduced weight gain, and premature delivery/fetal demise.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, therapy, self-care/nutritional needs, and potential complications may be related to lack of information/recall, misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, inaccurate follow-through of instructions/development of preventable complications.

premenstrual tension syndrome (PMS)

chronic/acute Pain may be related to cyclic changes in female hormones affecting other systems (e.g., vascular congestion/spasms), vitamin deficiency, fluid retention, possibly evidenced by increased tension, apprehension, jitteriness, verbal reports, distraction behaviors, somatic complaints, self-focusing, physical and social withdrawal.

excess Fluid Volume may be related to abnormal alterations of hormonal levels, possibly evidenced by edema formation, weight gain, and periodic changes in emotional status/irritability.

Anxiety [specify level] may be related to cyclic changes in female hormones affecting other systems, possibly evidenced by feelings of inability to cope/loss of control, depersonalization, increased tension, apprehension, jitteriness, somatic complaints, and impaired functioning.

deficient Knowledge [Learning Need] regarding pathophysiology of condition and self-care/treatment needs may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and continuation of condition, exacerbating symptoms.

pressure ulcer or sore

(also refer to *ulcer, decubitus*)

ineffective peripheral Tissue Perfusion may be related to reduced/interrupted blood flow, possibly evidenced by presence of inflamed, necrotic lesion.

deficient Knowledge [Learning Need] regarding cause/prevention of condition and potential complications may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and inaccurate follow-through of instructions.

preterm labor

Refer to *labor, preterm*.

prostatectomy

impaired Urinary Elimination may be related to mechanical obstruction (blood clots, edema, trauma, surgical procedure, pressure/irritation of catheter/balloon) and loss of bladder tone, possibly evidenced by dysuria, frequency, dribbling, incontinence, retention, bladder fullness, suprapubic discomfort.

risk for deficient Fluid Volume: risk factors may include trauma to highly vascular area with excessive vascular losses, restricted intake, postobstructive diuresis.

acute Pain may be related to irritation of bladder mucosa and tissue trauma/edema, possibly evidenced by verbal reports (bladder spasms), distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

disturbed Body Image may be related to perceived threat of altered body/sexual function, possibly evidenced by preoccupation with change/loss, negative feelings about body, and statements of concern regarding functioning.

risk for Sexual Dysfunction: risk factors may include situational crisis (incontinence, leakage of urine after catheter removal, involvement of genital area) and threat to self-concept/change in health status.

pruritus

acute Pain may be related to cutaneous hyperesthesia and inflammation, possibly evidenced by verbal reports, distraction behaviors, and self-focus.

risk for impaired Skin Integrity: risk factors may include mechanical trauma (scratching) and development of vesicles/bullae that may rupture.

psoriasis

impaired Skin Integrity may be related to increased epidermal cell proliferation and absence of normal protective skin layers, possibly evidenced by scaling papules and plaques.

disturbed Body Image may be related to cosmetically unsightly skin lesions, possibly evidenced by hiding affected body part, negative feelings about body, feelings of helplessness, and change in social involvement.

pulmonary embolus

ineffective Breathing Pattern may be related to tracheobronchial obstruction (inflammation, copious secretions, or active bleeding), decreased lung expansion, inflammatory process, possibly evidenced by changes in depth and/or rate of respiration, dyspnea/use of accessory muscles, altered chest excursion, abnormal breath sounds (crackles, wheezes), and cough (with or without sputum production).

impaired Gas Exchange may be related to altered blood flow to alveoli or to major portions of the lung, alveolar-capillary membrane changes (atelectasis, airway/alveolar collapse, pulmonary edema/effusion, excessive secretions/active bleeding), possibly evidenced by profound dyspnea, restlessness, apprehension, somnolence, cyanosis, and changes in ABGs/pulse oximetry (hypoxemia and hypercapnia).

ineffective cardiopulmonary Tissue Perfusion may be related to interruption of blood flow (arterial/venous), exchange problems at alveolar level or at tissue level (acidotic shifting of the oxyhemoglobin curve), possibly evidenced by radiology/laboratory evidence of ventilation/perfusion mismatch, dyspnea, and central cyanosis.

Fear/Anxiety [specify level] may be related to severe dyspnea/inability to breathe normally, perceived threat of death, threat to/change in health status, physiological re-

sponse to hypoxemia/acidosis, and concern regarding unknown outcome of situation, possibly evidenced by restlessness, irritability, withdrawal or attack behavior, sympathetic stimulation (cardiovascular excitation, pupil dilation, sweating, vomiting, diarrhea), crying, voice quivering, and impending sense of doom.

pulmonary hypertension

impaired Gas Exchange may be related to changes in alveolar membrane, increased pulmonary vascular resistance, possibly evidenced by dyspnea, irritability, decreased mental acuity, somnolence, abnormal ABGs.

decreased Cardiac Output may be related to increased pulmonary vascular resistance, decreased blood return to left side of heart, possibly evidenced by increased heart rate, dyspnea, fatigue.

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of weakness/fatigue, abnormal vital signs with activity.

Anxiety may be related to change in health status, stress, threat to self-concept, possibly evidenced by expressed concerns, uncertainty, anxiety, awareness of physiological symptoms, diminished productivity/ability to problem-solve.

purpura, idiopathic thrombocytopenic

ineffective Protection may be related to abnormal blood profile, drug therapy (corticosteroids or immunosuppressive agents), possibly evidenced by altered clotting, fatigue, deficient immunity.

Activity Intolerance may be related to decreased oxygen-carrying capacity/imbalance between oxygen supply and demand, possibly evidenced by reports of fatigue/weakness.

deficient Knowledge [Learning Need] regarding therapy choices, outcomes, and self-care needs may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

pyelonephritis

acute Pain may be related to acute inflammation of renal tissues, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Hyperthermia may be related to inflammatory process/increased metabolic rate, possibly evidenced by increase in body temperature, warm/flushed skin, tachycardia, and chills.

impaired Urinary Elimination may be related to inflammation/irritation of bladder mucosa, possibly evidenced by dysuria, urgency, and frequency.

deficient Knowledge [Learning Need] regarding therapy needs and prevention may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and recurrence of condition.

quadriplegia

(also refer to *paraplegia*)

ineffective Breathing Pattern may be related to neuromuscular impairment (diaphragm and intercostal muscle function), reflex abdominal spasms, gastric distention, possibly evidenced by decreased respiratory depth, dyspnea, cyanosis, and abnormal ABGs.

risk for Trauma [additional spinal injury]: risk factors may include temporary weakness/instability of spinal column.

Grieving may be related to perceived loss of self, anticipated alterations in lifestyle and expectations, and limitation of future options/choices, possibly evidenced by expressions of distress, anger, sorrow; choked feelings; and changes in eating habits, sleep, and communication patterns.

total Self-Care Deficit related to neuromuscular impairment, evidenced by inability to perform self-care tasks.

impaired bed/wheelchair Mobility may be related to loss of muscle function/control.

risk for Autonomic Dysreflexia: risk factors may include altered nerve function (spinal cord injury at T6 or above), bladder/bowel/skin stimulation (tactile, pain, thermal).

impaired Home Maintenance may be related to permanent effects of injury, inadequate/absent support systems and finances, and lack of familiarity with resources, possibly evidenced by expressions of difficulties, requests for information and assistance, outstanding debts/financial crisis, and lack of necessary aides and equipment.

rape

deficient Knowledge [Learning Need] regarding required medical/legal procedures, prophylactic treatment for individual concerns (STDs, pregnancy), community resources/supports may be related to lack of information, possibly evidenced by statements of concern, questions, misconceptions, and exacerbation of symptoms.

Rape-Trauma Syndrome (acute phase) related to actual or attempted sexual penetration without consent, possibly evidenced by wide range of emotional reactions, including anxiety, fear, anger, embarrassment, and multisystem physical complaints.

risk for impaired Tissue Integrity: risk factors may include forceful sexual penetration and trauma to fragile tissues.

ineffective Coping may be related to personal vulnerability, unmet expectations, unrealistic perceptions, inadequate support systems/coping methods, multiple stressors repeated over time, overwhelming threat to self, possibly evidenced by verbalizations of inability to cope or difficulty asking for help, muscular tension/headaches, emotional tension, chronic worry.

Sexual Dysfunction may be related to biopsychosocial alteration of sexuality (stress of post-trauma response), vulnerability, loss of sexual desire, impaired relationship with significant other, possibly evidenced by alteration in achieving sexual satisfaction, change in interest in self/others, preoccupation with self.

Raynaud's phenomenon

acute/chronic Pain may be related to vasospasm/altered perfusion of affected tissues and ischemia/destruction of tissues, possibly evidenced by verbal reports, guarding of affected parts, self-focusing, and restlessness.

ineffective peripheral Tissue Perfusion may be related to periodic reduction of arterial blood flow to affected areas, possibly evidenced by pallor, cyanosis, coolness, numbness, paresthesia, slow healing of lesions.

deficient Knowledge [Learning Need] regarding pathophysiology of the condition, potential for complications, therapy/self-care needs may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions; development of preventable complications.

reflex sympathetic dystrophy (RSD)

acute/chronic Pain may be related to continued nerve stimulation, possibly evidenced by verbal reports, distraction/guarding behaviors, narrowed focus, changes in sleep patterns, and altered ability to continue previous activities.

ineffective peripheral Tissue Perfusion may be related to reduction of arterial blood flow (arteriole vasoconstriction), possibly evidenced by reports of pain, decreased skin temperature and pallor, diminished arterial pulsations, and tissue swelling.

disturbed tactile Sensory Perception may be related to altered sensory reception (neurological deficit, pain), possibly evidenced by change in usual response to stimuli/abnormal sensitivity of touch, physiological anxiety, and irritability.

risk for ineffective Role Performance: risk factors may include situational crisis, chronic disability, debilitating pain.

risk for compromised family Coping: risk factors may include temporary family disorganization and role changes and prolonged disability that exhausts the supportive capacity of significant other(s).

regional enteritis

Refer to *Crohn's disease*.

renal failure, acute

excess Fluid Volume may be related to compromised regulatory mechanisms (decreased kidney function), possibly evidenced by weight gain, edema/anasarca, intake greater than output, venous congestion, changes in BP/CVP, and altered electrolyte levels.

imbalanced Nutrition: less than body requirements may be related to inability to ingest/digest adequate nutrients (anorexia, nausea/vomiting, ulcerations of oral mucosa, and increased metabolic needs) in addition to therapeutic dietary restrictions, possibly evidenced by lack of interest in food/aversion to eating, observed inadequate intake, weight loss, loss of muscle mass.

risk for Infection: risk factors may include depression of immunological defenses, invasive procedures/devices, and changes in dietary intake/malnutrition.

disturbed Thought Processes may be related to accumulation of toxic waste products and altered cerebral perfusion, possibly evidenced by disorientation, changes in recent memory, apathy, and episodic obtundation.

renal transplantation

risk for excess Fluid Volume: risk factors may include compromised regulatory mechanism (implantation of new kidney requiring adjustment period for optimal functioning).

disturbed Body Image may be related to failure and subsequent replacement of body part and medication-induced changes in appearance, possibly evidenced by preoccupation with loss/change, negative feelings about body, and focus on past strength/function.

Fear may be related to potential for transplant rejection/failure and threat of death, possibly evidenced by increased tension, apprehension, concentration on source, and verbalizations of concern.

risk for Infection: risk factors may include broken skin/traumatized tissue, stasis of body fluids, immunosuppression, invasive procedures, nutritional deficits, and chronic disease.

risk for ineffective Coping/compromised family Coping: risk factors may include situational crises, family disorganization and role changes, prolonged disease exhausting supportive capacity of significant others/family, therapeutic restrictions/long-term therapy needs.

respiratory distress syndrome (premature infant)

(also refer to *neonatal, premature newborn*)

impaired Gas Exchange may be related to alveolar/capillary membrane changes (inadequate surfactant levels), altered oxygen supply (tracheobronchial obstruction, atelectasis), altered blood flow (immaturity of pulmonary arteriole musculature), altered oxygen-carrying capacity of blood (anemia), and cold stress, possibly evidenced by tachypnea, use of accessory muscles/retractions, expiratory grunting, pallor or cyanosis, abnormal ABGs, and tachycardia.

impaired Spontaneous Ventilation may be related to respiratory muscle fatigue and metabolic factors, possibly evidenced by dyspnea, increased metabolic rate, restlessness, use of accessory muscles, and abnormal ABGs.

risk for Infection: risk factors may include inadequate primary defenses (decreased ciliary action, stasis of body fluids, traumatized tissues), inadequate secondary defenses (deficiency of neutrophils and specific immunoglobulins), invasive procedures, and malnutrition (absence of nutrient stores, increased metabolic demands).

risk for ineffective gastrointestinal Tissue Perfusion: risk factors may include persistent fetal circulation and exchange problems.

risk for impaired parent/infant Attachment: risk factors may include premature/ill infant who is unable to effectively initiate parental contact (altered behavioral organization), separation, physical barriers, anxiety associated with the parental role/demands of infant.

retinal detachment

disturbed visual Sensory Perception related to decreased sensory reception, possibly evidenced by visual distortions, decreased visual field, and changes in visual acuity.

deficient Knowledge [Learning Need] regarding therapy, prognosis, and self-care needs may be related to lack of information/misconceptions, possibly evidenced by statements of concern and questions.

risk for impaired Home Maintenance: risk factors may include visual limitations, activity restrictions.

Reye's syndrome

deficient Fluid Volume [isotonic] may be related to failure of regulatory mechanism (diabetes insipidus), excessive gastric losses (pernicious vomiting), and altered intake, possibly evidenced by increased/dilute urine output, sudden weight loss, decreased venous filling, dry mucous membranes, decreased skin turgor, hypotension, and tachycardia.

ineffective cerebral Tissue Perfusion may be related to diminished arterial/venous blood flow and hypovolemia, possibly evidenced by memory loss, altered consciousness, and restlessness/agitation.

risk for Trauma: risk factors may include generalized weakness, reduced coordination, and cognitive deficits.

ineffective Breathing Pattern may be related to decreased energy and fatigue, cognitive impairment, tracheobronchial obstruction, and inflammatory process (aspiration pneumonia), possibly evidenced by tachypnea, abnormal ABGs, cough, and use of accessory muscles.

rheumatic fever

acute Pain may be related to migratory inflammation of joints, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Hyperthermia may be related to inflammatory process/hypermetabolic state, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

Activity Intolerance may be related to generalized weakness, joint pain, and medical restrictions/bedrest, possibly evidenced by reports of fatigue, exertional discomfort, and abnormal heart rate in response to activity.

risk for decreased Cardiac Output: risk factors may include cardiac inflammation/enlargement and altered contractility.

rickets (osteomalacia)

delayed Growth and Development may be related to dietary deficiencies/indiscretions, malabsorption syndrome, and lack of exposure to sunlight, possibly evidenced by altered physical growth and delay or difficulty in performing motor skills typical for age.

deficient Knowledge [Learning Need] regarding cause, pathophysiology, therapy needs, and prevention may be related to lack of information, possibly evidenced by statements of concern, questions, misconceptions, and inaccurate follow-through of instructions.

ringworm, tinea

(also refer to *athlete's foot*)

impaired Skin Integrity may be related to fungal infection of the dermis, possibly evidenced by disruption of skin surfaces/presence of lesions.

deficient Knowledge [Learning Need] regarding infectious nature, therapy, and self-care needs may be related to lack of information/misinformation, possibly evidenced by statements of concern, questions, and recurrence/spread.

rubella

acute Pain/[Discomfort] may be related to inflammatory effects of viral infection and presence of desquamating rash, possibly evidenced by verbal reports, distraction behaviors/restlessness.

deficient Knowledge [Learning Need] regarding contagious nature, possible complications, and self-care needs may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and inaccurate follow-through of instructions.

scabies

impaired Skin Integrity may be related to presence of invasive parasite and development of pruritus, possibly evidenced by disruption of skin surface and inflammation.

deficient Knowledge [Learning Need] regarding communicable nature, possible complications, therapy, and self-care needs may be related to lack of information/misinterpretation, possibly evidenced by questions and statements of concern about spread to others.

scarlet fever

Hyperthermia may be related to effects of circulating toxins, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

acute Pain/[Discomfort] may be related to inflammation of mucous membranes and effects of circulating toxins (malaise, fever), possibly evidenced by verbal reports, distraction behaviors, guarding (decreased swallowing), and self-focus.

risk for deficient Fluid Volume: risk factors may include hypermetabolic state (hyperthermia) and reduced intake.

schizophrenia (schizophrenic disorders)

disturbed Thought Processes may be related to disintegration of thinking processes, impaired judgment, presence of psychological conflicts, disintegrated ego boundaries, sleep disturbance, ambivalence, and concomitant dependence, possibly evidenced by impaired ability to reason/problem solve, inappropriate affect, presence of delusional system, command hallucinations, obsessions, ideas of reference, cognitive dissonance.

Social Isolation may be related to alterations in mental status, mistrust of others/delusional thinking, unacceptable social behaviors, inadequate personal resources, and inability to engage in satisfying personal relationships, possibly evidenced by difficulty in establishing relationships with others; dull affect, uncommunicative/withdrawn behavior, seeking to be alone, inadequate/absent significant purpose in life, and expression of feelings of rejection.

ineffective Health Maintenance/impaired Home Maintenance may be related to impaired cognitive/emotional functioning, altered ability to make deliberate and thoughtful judgments, altered communication, and lack/inappropriate use of material resources, possibly evidenced by inability to take responsibility for meeting basic health practices in any or all functional areas and demonstrated lack of adaptive behaviors to internal or external environmental changes, disorderly surroundings, accumulation of dirt/unwashed clothes, repeated hygienic disorders.

risk for self/other-directed Violence: risk factors may include disturbances of thinking/feeling (depression, paranoia, suicidal ideation), lack of development of trust and appropriate interpersonal relationships, catatonic/manic excitement, toxic reactions to drugs (alcohol).

ineffective Coping may be related to personal vulnerability, inadequate support system(s), unrealistic perceptions, inadequate coping methods, and disintegration of

thought processes, possibly evidenced by impaired judgment/cognition and perception, diminished problem-solving/decision-making capacities, poor self-concept, chronic anxiety, depression, inability to perform role expectations, and alteration in social participation.

interrupted Family Processes/disabled family Coping may be related to ambivalent family system/relationships, changes of roles, and difficulty of family member in coping effectively with patient's maladaptive behaviors, possibly evidenced by deterioration in family functioning, ineffective family decision-making process, difficulty relating to each other, client's expression of despair at family's lack of reaction/involvement, neglectful relationships with patient, extreme distortion regarding patient's health problem, including denial about its existence/severity or prolonged overconcern.

Self-Care Deficit [specify] may be related to perceptual and cognitive impairment, immobility (withdrawal/isolation and decreased psychomotor activity), and side effects of psychotropic medications, possibly evidenced by inability or difficulty in areas of feeding self, keeping body clean, dressing appropriately, toileting self, and/or changes in bowel/bladder elimination.

sciatica

acute/chronic Pain may be related to peripheral nerve root compression, possibly evidenced by verbal reports, guarding/distraction behaviors, and self-focus.

impaired physical Mobility may be related to neurological pain and muscular involvement, possibly evidenced by reluctance to attempt movement and decreased muscle strength/mass.

scleroderma

(also refer to *lupus erythematosus, systemic [SLE]*)

impaired physical Mobility may be related to musculoskeletal impairment and associated pain, possibly evidenced by decreased strength, decreased range of motion, and reluctance to attempt movement.

ineffective Tissue Perfusion, (specify) may be related to reduced arterial blood flow (arteriolar vasoconstriction), possibly evidenced by changes in skin temperature/color, ulcer formation, and changes in organ function (cardiopulmonary, gastrointestinal, renal).

imbalanced Nutrition: less than body requirements may be related to inability to ingest/digest/absorb adequate nutrients (sclerosis of the tissues rendering mouth immobile, decreased peristalsis of esophagus/small intestines, atrophy of smooth muscle of colon), possibly evidenced by weight loss, decreased intake/food, and reported/observed difficulty swallowing.

risk-prone health Behavior may be related to disability requiring change in lifestyle, inadequate support systems, assault to self-concept, and altered locus of control, possibly evidenced by verbalization of nonacceptance of health status change and lack of movement toward independence/future-oriented thinking.

disturbed Body Image may be related to skin changes with induration, atrophy, and fibrosis, loss of hair, and skin and muscle contractures, possibly evidenced by verbalization of negative feelings about body, focus on past strength/function or appearance, fear of rejection/reaction by others, hiding body part, and change in social involvement.

scoliosis

disturbed Body Image may be related to altered body structure, use of therapeutic device(s), and activity restrictions, possibly evidenced by negative feelings about body, change in social involvement, and preoccupation with situation or refusal to acknowledge problem.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, therapy needs, and possible outcomes may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and inaccurate follow-through of instructions.

risk-prone health Behavior may be related to lack of comprehension of long-term consequences of behavior, possibly evidenced by failure to adhere to treatment regimen/keep appointments and failure to improve.

seizure disorder

deficient Knowledge [Learning Need] regarding condition and medication control may be related to lack of information/misinterpretations, scarce financial resources, possibly evidenced by questions, statements of concern/misconceptions, incorrect use of anticonvulsant medication, recurrent episodes/uncontrolled seizures.

chronic low Self-Esteem/disturbed personal Identity may be related to perceived neurological functional change/weakness, perception of being out of control, stigma associated with condition, possibly evidenced by negative feelings about "brain"/self,

change in social involvement, feelings of helplessness, and preoccupation with perceived change or loss.

impaired Social Interaction may be related to unpredictable nature of condition and self-concept disturbance, possibly evidenced by decreased self-assurance, verbalization of concern, discomfort in social situations, inability to receive/communicate a satisfying sense of belonging/caring, and withdrawal from social contacts/activities.

risk for Trauma/Suffocation: risk factors may include weakness, balancing difficulties, cognitive limitations/altered consciousness, loss of large- or small-muscle coordination (during seizure).

sepsis, puerperal

(also refer to *septicemia*)

risk for Infection [spread/septic shock]: risk factors may include presence of infection, broken skin, and/or traumatized tissues, rupture of amniotic membranes, high vascularity of involved area, stasis of body fluids, invasive procedures, and/or increased environmental exposure, chronic disease (e.g., diabetes, anemia, malnutrition), altered immune response, and untoward effect of medications (e.g., opportunistic/secondary infection).

Hyperthermia may be related to inflammatory process/hypermetabolic state, possibly evidenced by increase in body temperature, warm/flushed skin, and tachycardia.

risk for impaired parent/infant Attachment: risk factors may include interruption in bonding process, physical illness, perceived threat to own survival.

risk for ineffective peripheral Tissue Perfusion: risk factors may include interruption/reduction of blood flow (presence of infectious thrombi).

septicemia

(also refer to *sepsis, puerperal*)

ineffective Tissue Perfusion [specify] may be related to changes in arterial/venous blood flow (selective vasoconstriction, presence of microemboli) and hypovolemia, possibly evidenced by changes in skin temperature/color, changes in blood/pulse pressure; changes in sensorium, and decreased urinary output.

risk for deficient Fluid Volume: risk factors may include marked increase in vascular compartment/massive vasodilation, vascular shifts to interstitial space, and reduced intake.

risk for decreased Cardiac Output: risk factors may include decreased preload (venous return and circulating volume), altered afterload (increased SVR), negative inotropic effects of hypoxia, complement activation, and lysosomal hydrolase.

serum sickness

acute Pain may be related to inflammation of the joints and skin eruptions, possibly evidenced by verbal reports, guarding/distraction behaviors, and self-focus.

deficient Knowledge [Learning Need] regarding nature of condition, treatment needs, potential complications, and prevention of recurrence may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, and inaccurate follow-through of instructions.

sexually transmitted disease (STD)

risk for Infection [transmission]: risk factors may include contagious nature of infecting agent and insufficient knowledge to avoid exposure to/transmission of pathogens.

impaired Skin/Tissue Integrity may be related to invasion of/irritation by pathogenic organism(s), possibly evidenced by disruptions of skin/tissue and inflammation of mucous membranes.

deficient Knowledge [Learning Need] regarding condition, prognosis/complications, therapy needs, and transmission may be related to lack of information/misinterpretation, lack of interest in learning, possibly evidenced by statements of concern, questions, misconceptions, inaccurate follow-through of instructions, and development of preventable complications.

shock

(also refer to *shock, cardiogenic; shock, hemorrhagic/hypovolemic*)

ineffective Tissue Perfusion [specify] may be related to changes in circulating volume and/or vascular tone, possibly evidenced by changes in skin color/temperature and pulse pressure, reduced blood pressure, changes in mentation, and decreased urinary output.

Anxiety [specify level] may be related to change in health status and threat of death, possibly evidenced by increased tension, apprehension, sympathetic stimulation, restlessness, and expressions of concern.

shock, cardiogenic

(also refer to *shock*)

decreased Cardiac Output may be related to structural damage, decreased myocardial contractility, and presence of dysrhythmias, possibly evidenced by ECG changes, variations in hemodynamic readings, jugular vein distention, cold/clammy skin, diminished peripheral pulses, and decreased urinary output.

risk for impaired Gas Exchange: risk factors may include ventilation perfusion imbalance, alveolar-capillary membrane changes.

shock, hemorrhagic/hypovolemic

(also refer to *shock*)

deficient Fluid Volume [isotonic] may be related to excessive vascular loss, inadequate intake/replacement, possibly evidenced by hypotension, tachycardia, decreased pulse volume and pressure, change in mentation, and decreased/concentrated urine.

shock, septic

Refer to *septicemia*.

sick sinus syndrome

(also refer to *dysrhythmia, cardiac*)

decreased Cardiac Output may be related to alterations in rate, rhythm, and electrical conduction, possibly evidenced by ECG evidence of dysrhythmias, reports of palpitations/weakness, changes in mentation/consciousness, and syncope.

risk for Trauma: risk factors may include changes in cerebral perfusion with altered consciousness/loss of balance.

smallpox

risk of Infection [spread]: risk factors may include contagious nature of organism, inadequate acquired immunity, presence of chronic disease, immunosuppression.

deficient Fluid Volume may be related to hypermetabolic state, decreased intake (pharyngeal lesions, nausea), increased losses (vomiting), fluid shifts from vascular bed, possibly evidenced by reports of thirst, decreased blood pressure, venous filling, and urinary output; dry mucous membranes, decreased skin turgor, change in mental state, elevated Hct.

impaired Tissue Integrity may be related to immunological deficit, possibly evidenced by disruption of skin surface, cornea, mucous membranes.

Anxiety [specify level]/Fear may be related to threat of death, interpersonal transmission/contagion, separation from support system, possibly evidenced by expressed concerns, apprehension, restlessness, focus on self.

interrupted Family Processes may be related to temporary family disorganization, situational crisis, change in health status of family member, possibly evidenced by changes in satisfaction with family, stress-reduction behaviors, mutual support; expression of isolation from community resources.

ineffective community Coping may be related to human-made disaster (bioterrorism), inadequate resources for problem-solving, possibly evidenced by deficits of community participation, high illness rate, excessive community conflicts, expressed vulnerability/powerlessness.

snow blindness

disturbed visual Sensory Perception may be related to altered status of sense organ (irritation of the conjunctiva, hyperemia), possibly evidenced by intolerance to light (photophobia) and decreased/loss of visual acuity.

acute Pain may be related to irritation/vascular congestion of the conjunctiva, possibly evidenced by verbal reports, guarding/distraction behaviors, and self-focus.

Anxiety [specify level] may be related to situational crisis and threat to/change in health status, possibly evidenced by increased tension, apprehension, uncertainty, worry, restlessness, and focus on self.

somatoform disorders

ineffective Coping may be related to severe level of anxiety that is repressed, personal vulnerability, unmet dependency needs, fixation in earlier level of development, retarded ego development, and inadequate coping skills, possibly evidenced by verbalized inability to cope/problem-solve, high illness rate, multiple somatic complaints of several years' duration, decreased functioning in social/occupational settings, narcissistic tendencies with total focus on self/physical symptoms, demanding behaviors, history of "doctor shopping" and refusal to attend therapeutic activities.

chronic Pain may be related to severe level of repressed anxiety, low self-concept, unmet dependency needs, history of self or loved one having experienced a serious illness, possibly evidenced by verbal reports of severe/prolonged pain, guarded move-

ment/protective behaviors, facial mask of pain, fear of reinjury, altered ability to continue previous activities, social withdrawal, demands for therapy/medication.

disturbed Sensory Perception [specify] may be related to psychological stress (narrowed perceptual fields, expression of stress as physical problems/deficits), poor quality of sleep, presence of chronic pain, possibly evidenced by reported change in voluntary motor or sensory function (paralysis, anosmia, aphonia, deafness, blindness, loss of touch or pain sensation), *la belle indifférence* (lack of concern over functional loss).

impaired Social Interaction may be related to inability to engage in satisfying personal relationships, preoccupation with self and physical symptoms, altered state of wellness, chronic pain, and rejection by others, possibly evidenced by preoccupation with own thoughts, sad/dull affect, absence of supportive significant other(s), uncommunicative/withdrawn behavior, lack of eye contact, and seeking to be alone.

spinal cord injury (SCI)

Refer to *paraplegia*; *quadriplegia*.

sprain of ankle or foot

acute Pain may be related to trauma to/swelling in joint, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focusing, and autonomic responses (changes in vital signs).

impaired Walking may be related to musculoskeletal injury, pain, and therapeutic restrictions, possibly evidenced by reluctance to attempt movement, inability to move about environment easily.

stapedectomy

risk for Trauma: risk factors may include increased middle-ear pressure with displacement of prosthesis and balancing difficulties/dizziness.

risk for Infection: risk factors may include surgically traumatized tissue, invasive procedures, and environmental exposure to upper respiratory infections.

acute Pain may be related to surgical trauma, edema formation, and presence of packing, possibly evidenced by verbal reports, guarding/distraction behaviors, and self-focus.

substance dependence/abuse rehabilitation (following acute detoxification)

ineffective Denial/Coping may be related to personal vulnerability, difficulty handling new situations, learned response patterns, cultural factors, personal/family value systems, possibly evidenced by lack of acceptance that drug use is causing the present situation, use of manipulation to avoid responsibility for self, altered social patterns/participation, impaired adaptive behavior and problem-solving skills, employment difficulties, financial affairs in disarray, and decreased ability to handle stress of recent events.

Powerlessness may be related to substance addiction with/without periods of abstinence, episodic compulsive indulgence, attempts at recovery, and lifestyle of helplessness, possibly evidenced by ineffective recovery attempts, statements of inability to stop behavior/requests for help, continuous/constant thinking about drug and/or obtaining drug, alteration in personal/occupational and social life.

imbalanced Nutrition: less than body requirements may be related to insufficient dietary intake to meet metabolic needs for psychological/physiological/economic reasons, possibly evidenced by weight less than normal for height/body build, decreased subcutaneous fat/muscle mass, reported altered taste sensation, lack of interest in food, poor muscle tone, sore/inflamed buccal cavity, laboratory evidence of protein/vitamin deficiencies.

Sexual Dysfunction may be related to altered body function (neurological damage and debilitating effects of drug use), changes in appearance, possibly evidenced by progressive interference with sexual functioning, a significant degree of testicular atrophy, gynecomastia, impotence/decreased sperm counts in men; and loss of body hair, thin/soft skin, spider angiomas, and amenorrhea/increase in miscarriages in women.

dysfunctional Family Processes: alcoholism [substance abuse] may be related to abuse/history of alcoholism/drug use, inadequate coping skills/lack of problem-solving skills, genetic predisposition/biochemical influences, possibly evidenced by feelings of anger/frustration/responsibility for alcoholic's behavior, suppressed rage, shame/embarrassment, repressed emotions, guilt, vulnerability; disturbed family dynamics/deterioration in family relationships, family denial/rationalization, closed communication systems, triangulating family relationships, manipulation, blaming, enabling to maintain substance use, inability to accept/receive help.

risk for fetal Injury: risk factors may include drug/alcohol use, exposure to teratogens.

deficient Knowledge [Learning Need] regarding condition/pregnancy, prognosis, treatment needs may be related to lack/misinterpretation of information, lack of recall, cognitive limitations/interference with learning, possibly evidenced by statements of

concern, questions/misconceptions, inaccurate follow-through of instructions, development of preventable complications, continued use in spite of complications.

surgery, general

(also refer to *postoperative recovery period*)

deficient Knowledge [Learning Need] regarding surgical procedure/expectation, postoperative routines/therapy, and self-care needs may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

Anxiety [specify level]/Fear may be related to situational crisis, unfamiliarity with environment, change in health status/ threat of death and separation from usual support systems, possibly evidenced by increased tension, apprehension, decreased self-assurance, fear of unspecified consequences, focus on self, sympathetic stimulation, and restlessness.

risk for perioperative-positioning Injury: risk factors may include disorientation, immobilization, muscle weakness, obesity/edema.

risk for ineffective Breathing Pattern: risk factors may include chemically induced muscular relaxation, perception/cognitive impairment, decreased energy.

risk for deficient Fluid Volume: risk factors may include preoperative fluid deprivation, blood loss, and excessive gastrointestinal losses (vomiting/gastric suction).

synovitis (knee)

acute Pain may be related to inflammation of synovial membrane of the joint with effusion, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

impaired Walking may be related to pain and decreased strength of joint, possibly evidenced by reluctance to attempt movement, inability to move about environment as desired.

syphilis, congenital

(also refer to *sexually transmitted disease [STD]*)

acute Pain may be related to inflammatory process, edema formation, and development of skin lesions, possibly evidenced by irritability/crying that may be increased with movement of extremities and autonomic responses (changes in vital signs).

impaired Skin/Tissue Integrity may be related to exposure to pathogens during vaginal delivery, possibly evidenced by disruption of skin surfaces and rhinitis.

delayed Growth and Development may be related to effect of infectious process, possibly evidenced by altered physical growth and delay or difficulty performing skills typical of age group.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, transmissibility, therapy needs, expected outcomes, and potential complications may be related to caretaker/parental lack of information, misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

syringomyelia

disturbed Sensory Perception [specify] may be related to altered sensory perception (neurological lesion), possibly evidenced by change in usual response to stimuli and motor incoordination.

Anxiety [specify level]/Fear may be related to change in health status, threat of change in role functioning and socioeconomic status, and threat to self-concept, possibly evidenced by increased tension, apprehension, uncertainty, focus on self, and expressed concerns.

impaired physical Mobility may be related to neuromuscular and sensory impairment, possibly evidenced by decreased muscle strength, control, and mass and impaired coordination.

Self-Care Deficit [specify] may be related to neuromuscular and sensory impairments, possibly evidenced by statement of inability to perform care tasks.

Tay-Sachs disease

delayed Growth and Development may be related to effects of physical condition, possibly evidenced by altered physical growth, loss of/failure to acquire skills typical of age, flat affect, and decreased responses.

disturbed visual Sensory Perception may be related to neurological deterioration of optic nerve, possibly evidenced by loss of visual acuity.

[family] Grieving may be related to expected eventual loss of infant/child, possibly evidenced by expressions of distress, denial, guilt, anger, and sorrow; choked feelings; changes in sleep/eating habits; and altered libido.

[family] Powerlessness may be related to absence of therapeutic interventions for progressive/fatal disease, possibly evidenced by verbal expressions of having no control over situation/outcome and depression over physical/mental deterioration.

risk for Spiritual Distress: risk factors may include challenged belief and value system by presence of fatal condition with racial/religious connotations and intense suffering. compromised family Coping may be related to situational crisis, temporary preoccupation with managing emotional conflicts and personal suffering, family disorganization, and prolonged/progressive disease, possibly evidenced by preoccupation with personal reactions, expressed concern about reactions of other family members, inadequate support of one another, and altered communication patterns.

thrombophlebitis

ineffective peripheral Tissue Perfusion may be related to interruption of venous blood flow, venous stasis, possibly evidenced by changes in skin color/temperature over affected area, development of edema, pain, diminished peripheral pulses, slow capillary refill.

acute Pain/[discomfort] may be related to vascular inflammation/irritation and edema formation (accumulation of lactic acid), possibly evidenced by verbal reports, guarding/distraction behaviors, and self-focus.

risk for impaired physical Mobility: risk factors may include pain and discomfort and restrictive therapies/safety precautions.

deficient Knowledge [Learning Need] regarding pathophysiology of condition, therapy/self-care needs, and risk of embolization may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, inaccurate follow-through of instructions, and development of preventable complications.

thrombosis, venous

Refer to *thrombophlebitis*.

thrush

impaired Oral Mucous Membrane may be related to presence of infection as evidenced by white patches/plaques, oral discomfort, mucosal irritation, bleeding.

thyroidectomy

(also refer to *hyperthyroidism*; *hypoparathyroidism*; *hypothyroidism*)

risk for ineffective Airway Clearance: risk factors may include hematoma/edema formation with tracheal obstruction, laryngeal spasms.

impaired verbal Communication may be related to tissue edema, pain/discomfort, and vocal cord injury/laryngeal nerve damage, possibly evidenced by impaired articulation, does not/cannot speak, and use of nonverbal cues/gestures.

risk for Injury [tetany]: risk factors may include chemical imbalance/excessive CNS stimulation.

risk for head/neck Trauma: risk factors may include loss of muscle control/support and position of suture line.

acute Pain may be related to presence of surgical incision/manipulation of tissues/muscles, postoperative edema, possibly evidenced by verbal reports, guarding/distraction behaviors, narrowed focus, and autonomic responses (changes in vital signs).

thyrotoxicosis

(also refer to *hyperthyroidism*)

risk for decreased Cardiac Output: risk factors may include uncontrolled hypermetabolic state increasing cardiac workload, changes in venous return and SVR; and alterations in rate, rhythm, and electrical conduction.

Anxiety [specify level] may be related to physiological factors/CNS stimulation (hypermetabolic state and pseudocatecholamine effect of thyroid hormones), possibly evidenced by increased feelings of apprehension, shakiness, loss of control, panic, changes in cognition, distortion of environmental stimuli, extraneous movements, restlessness, and tremors.

risk for disturbed Thought Processes: risk factors may include physiological changes (increased CNS stimulation/accelerated mental activity), and altered sleep patterns.

deficient Knowledge [Learning Need] regarding condition, treatment needs, and potential for complications/crisis situation may be related to lack of information/recall, misinterpretation, possibly evidenced by statements of concern, questions, misconceptions; and inaccurate follow-through of instructions.

TIA (transient ischemic attack)

ineffective cerebral Tissue Perfusion may be related to interruption of blood flow (e.g., vasospasm), possibly evidenced by altered mental status, behavioral changes, language deficit, change in motor/sensory response.

Anxiety/Fear may be related to change in health status, threat to self-concept, situational crisis, interpersonal contagion, possibly evidenced by expressed concerns, apprehension, restlessness, irritability.

risk for ineffective Denial: risk factors may include change in health status requiring change in lifestyle, fear of consequences, lack of motivation.

tic douloureux

Refer to *neuralgia, trigeminal*.

tonsillectomy

Refer to *adenoidectomy*.

tonsillitis

acute Pain may be related to inflammation of tonsils and effects of circulating toxins, possibly evidenced by verbal reports, guarding/distraction behaviors, reluctance/refusal to swallow, self-focus, and autonomic responses (changes in vital signs).

Hyperthermia may be related to presence of inflammatory process/hypermetabolic state and dehydration, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

deficient Knowledge [Learning Need] regardless cause/transmission, treatment needs, and potential complications may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, inaccurate follow-through of instructions, and recurrence of condition.

total joint replacement

risk for Infection: risk factors may include inadequate primary defenses (broken skin, exposure of joint), inadequate secondary defenses/immunosuppression (long-term corticosteroid use), invasive procedures/surgical manipulation, implantation of foreign body, and decreased mobility.

impaired physical Mobility may be related to pain and discomfort, musculoskeletal impairment, and surgery/restrictive therapies, possibly evidenced by reluctance to attempt movement, difficulty purposefully moving within the physical environment, reports of pain/discomfort on movement, limited range of motion, and decreased muscle strength/control.

risk for ineffective peripheral Tissue Perfusion: risk factors may include reduced arterial/venous blood flow, direct trauma to blood vessels, tissue edema, improper location/dislocation of prosthesis, and hypovolemia.

acute Pain may be related to physical agents (traumatized tissues/surgical intervention, degeneration of joints, muscle spasms) and psychological factors (anxiety, advanced age), possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

toxemia of pregnancy

Refer to *pregnancy-induced hypertension*.

toxic shock syndrome

(also refer to *septicemia*)

Hyperthermia may be related to inflammatory process/hypermetabolic state and dehydration, possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

deficient Fluid Volume [isotonic] may be related to increased gastric losses (diarrhea, vomiting), fever/hypermetabolic state, and decreased intake, possibly evidenced by dry mucous membranes, increased pulse, hypotension, delayed venous filling, decreased/concentrated urine, and hemoconcentration.

acute Pain may be related to inflammatory process, effects of circulating toxins, and skin disruptions, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

impaired Skin/Tissue Integrity may be related to effects of circulating toxins and dehydration, possibly evidenced by development of desquamating rash, hyperemia, and inflammation of mucous membranes.

traction

(also refer to *casts; fractures*)

acute Pain may be related to direct trauma to tissue/bone, muscle spasms, movement of bone fragments, edema, injury to soft tissue, traction/immobility device, anxiety, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, alteration in muscle tone, and autonomic responses (changes in vital signs).

impaired physical Mobility may be related to neuromuscular/skeletal impairment, pain, psychological immobility, and therapeutic restrictions of movement, possibly evi-

denced by limited range of motion, inability to move purposefully in environment, reluctance to attempt movement, and decreased muscle strength/control.

risk for Infection: risk factors may include invasive procedures (including insertion of foreign body through skin/bone), presence of traumatized tissue, and reduced activity with stasis of body fluids.

deficient Diversional Activity may be related to length of hospitalization/therapeutic intervention and environmental lack of usual activity, possibly evidenced by statements of boredom, restlessness, and irritability.

transfusion reaction, blood

(also refer to *anaphylaxis*)

risk for imbalanced Body Temperature: risk factors may include infusion of cold blood products, systemic response to toxins.

Anxiety [specify level] may be related to change in health status and threat of death, exposure to toxins possibly evidenced by increased tension, apprehension, sympathetic stimulation, restlessness, and expressions of concern.

risk for impaired Skin Integrity: risk factors may include immunological response.

trichinosis

acute Pain may be related to parasitic invasion of muscle tissues, edema of upper eyelids, small localized hemorrhages, and development of urticaria, possibly evidenced by verbal reports, guarding/distraction behaviors (restlessness), and autonomic responses (changes in vital signs).

deficient Fluid Volume [isotonic] may be related to hypermetabolic state (fever, diaphoresis); excessive gastric losses (vomiting, diarrhea); and decreased intake/difficulty swallowing, possibly evidenced by dry mucous membranes, decreased skin turgor, hypotension, decreased venous filling, decreased/concentrated urine, and hemoconcentration.

ineffective Breathing Pattern may be related to myositis of the diaphragm and intercostal muscles, possibly evidenced by resulting changes in respiratory depth, tachypnea, dyspnea, and abnormal ABGs.

deficient Knowledge [Learning Need] regarding cause/prevention of condition, therapy needs, and possible complications may be related to lack of information, misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

tuberculosis (pulmonary)

risk for Infection [spread/reactivation]: risk factors may include inadequate primary defenses (decreased ciliary action/stasis of secretions, tissue destruction/extension of infection), lowered resistance/suppressed inflammatory response, malnutrition, environmental exposure, insufficient knowledge to avoid exposure to pathogens, or inadequate therapeutic intervention.

ineffective Airway Clearance may be related to thick, viscous, or bloody secretions; fatigue/poor cough effort, and tracheal/pharyngeal edema, possibly evidenced by abnormal respiratory rate, rhythm, and depth; adventitious breath sounds (rhonchi, wheezes), stridor, and dyspnea.

risk for impaired Gas Exchange: risk factors may include decrease in effective lung surface, atelectasis, destruction of alveolar-capillary membrane, bronchial edema; thick, viscous secretions.

Activity Intolerance may be related to imbalance between oxygen supply and demand, possibly evidenced by reports of fatigue, weakness, and exertional dyspnea.

imbalanced Nutrition: less than body requirements may be related to inability to ingest adequate nutrients (anorexia, effects of drug therapy, fatigue, insufficient financial resources), possibly evidenced by weight loss, reported lack of interest in food/altered taste sensation, and poor muscle tone.

risk for ineffective Therapeutic Regimen Management: risk factors may include complexity of therapeutic regimen, economic difficulties, family patterns of health care, perceived seriousness/benefits (especially during remission), side effects of therapy.

tympanoplasty

Refer to *stapedectomy*.

typhus (tick-borne/Rocky Mountain spotted fever)

Hyperthermia may be related to generalized inflammatory process (vasculitis), possibly evidenced by increased body temperature, warm/flushed skin, and tachycardia.

acute Pain may be related to generalized vasculitis and edema formation, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Tissue Perfusion, ineffective [specify] may be related to reduction/interruption of blood flow (generalized vasculitis/thromb formation), possibly evidenced by reports of head-

ache/abdominal pain, changes in mentation, and areas of peripheral ulceration/necrosis.

ulcer, decubitus

impaired Skin/Tissue Integrity may be related to altered circulation, nutritional deficit, fluid imbalance, impaired physical mobility, irritation of body excretions/secretions, and sensory impairments, evidenced by tissue damage/destruction.

acute Pain may be related to destruction of protective skin layers and exposure of nerves, possibly evidenced by verbal reports, distraction behaviors, and self-focus.

risk for Infection: risk factors may include broken/traumatized tissue, increased environmental exposure, and nutritional deficits.

ulcer, peptic (acute)

Fluid Volume, deficient [isotonic] may be related to vascular losses (hemorrhage), possibly evidenced by hypotension, tachycardia, delayed capillary refill, changes in mentation, restlessness, concentrated/decreased urine, pallor, diaphoresis, and hemoconcentration.

Tissue Perfusion, risk for altered [specify]: risk factors may include hypovolemia.

Fear/Anxiety [specify level] may be related to change in health status and threat of death, possibly evidenced by increased tension, restlessness, irritability, fearfulness, trembling, tachycardia, diaphoresis, lack of eye contact, focus on self, verbalization of concerns, withdrawal, and panic or attack behavior.

acute Pain may be related to caustic irritation/destruction of gastric tissues, possibly evidenced by verbal reports, distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

deficient Knowledge [Learning Need] regarding condition, therapy/self-care needs, and potential complications may be related to lack of information/recall, misinterpretation, possibly evidenced by statements of concern, questions, misconceptions, inaccurate follow-through of instructions, and development of preventable complications/recurrence of condition.

unconsciousness (coma)

risk for Suffocation: risk factors may include cognitive impairment/loss of protective reflexes and purposeful movement.

risk for deficient Fluid Volume/imbalanced Nutrition: less than body requirements: risk factors may include inability to ingest food/fluids, increased needs/hypermetabolic state.

total Self-Care Deficit may be related to cognitive impairment and absence of purposeful activity, evidenced by inability to perform ADLs.

risk for ineffective cerebral Tissue Perfusion: risk factors may include reduced or interrupted arterial/venous blood flow (direct injury, edema formation, space-occupying lesions), metabolic alterations, effects of drug/alcohol overdose, hypoxia/anoxia.

risk for Infection: risk factors may include stasis of body fluids (oral, pulmonary, urinary), invasive procedures, and nutritional deficits.

urinary diversion

risk for impaired Skin Integrity: risk factors may include absence of sphincter at stoma, character/flow of urine from stoma, reaction to product/chemicals, and improperly fitting appliance or removal of adhesive.

disturbed Body Image related factors may include biophysical factors (presence of stoma, loss of control of urine flow) and psychosocial factors (altered body structure, disease process/associated treatment regimen, such as cancer), possibly evidenced by verbalization of change in body image, fear of rejection/reaction of others, negative feelings about body, not touching/looking at stoma, refusal to participate in care.

acute Pain may be related to physical factors (disruption of skin/tissues, presence of incisions/drains), biological factors (activity of disease process, such as cancer, trauma), and psychological factors (fear, anxiety), possibly evidenced by verbal reports, self-focusing, guarding/distraction behaviors, restlessness, and autonomic responses (changes in vital signs).

impaired Urinary Elimination may be related to surgical diversion, tissue trauma, and postoperative edema, possibly evidenced by loss of continence, changes in amount and character of urine, and urinary retention.

urolithiasis

Refer to *calculi, urinary*.

uterine bleeding, abnormal

Anxiety [specify level] may be related to perceived change in health status and unknown etiology, possibly evidenced by apprehension, uncertainty, fear of unspecified consequences, expressed concerns, and focus on self.

Activity Intolerance may be related to imbalance between oxygen supply and demand/decreased oxygen-carrying capacity of blood (anemia), possibly evidenced by reports of fatigue/weakness.

uterus, rupture of, in pregnancy

deficient Fluid Volume [isotonic] may be related to excessive vascular losses, possibly evidenced by hypotension, increased pulse rate, decreased venous filling, and decreased urine output.

decreased Cardiac Output may be related to decreased preload (hypovolemia), possibly evidenced by cold/clammy skin, decreased peripheral pulses, variations in hemodynamic readings, tachycardia, and cyanosis.

acute Pain may be related to tissue trauma and irritation of accumulating blood, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Anxiety [specify level] may be related to threat of death of self/fetus, interpersonal contagion, physiological response (release of catecholamines), possibly evidenced by fearful/scared affect, sympathetic stimulation, stated fear of unspecified consequences, and expressed concerns.

vaginismus

acute Pain may be related to muscle spasm and hyperesthesia of the nerve supply to vaginal mucous membrane, possibly evidenced by verbal reports, distraction behaviors, and self-focus.

Sexual Dysfunction may be related to physical and/or psychological alteration in function (severe spasms of vaginal muscles), possibly evidenced by verbalization of problem, inability to achieve desired satisfaction, and alteration in relationship with significant other.

vaginitis

impaired Tissue Integrity may be related to irritation/inflammation and mechanical trauma (scratching) of sensitive tissues, possibly evidenced by damaged/destroyed tissue, presence of lesions.

acute Pain may be related to localized inflammation and tissue trauma, possibly evidenced by verbal reports, distraction behaviors, and self-focus.

deficient Knowledge [Learning Need] regarding hygienic/therapy needs and sexual behaviors/transmission of organisms may be related to lack of information/misinterpretation, possibly evidenced by statements of concern, questions, and misconceptions.

varices, esophageal

(also refer to *ulcer, peptic [acute]*)

deficient Fluid Volume [isotonic] may be related to excessive vascular loss, reduced intake, and gastric losses (vomiting), possibly evidenced by hypotension, tachycardia, decreased venous filling, and decreased/concentrated urine.

Anxiety [specify level]/Fear may be related to change in health status and threat of death, possibly evidenced by increased tension/apprehension, sympathetic stimulation, restlessness, focus on self, and expressed concerns.

varicose veins

chronic Pain may be related to venous insufficiency and stasis, possibly evidenced by verbal reports.

disturbed Body Image may be related to change in structure (presence of enlarged, discolored, tortuous superficial leg veins), possibly evidenced by hiding affected parts and negative feelings about body.

risk for impaired Skin/Tissue Integrity: risk factors may include altered circulation/venous stasis and edema formation.

venereal disease

Refer to *sexually transmitted disease [STD]*.

West Nile fever

Hyperthermia may be related to infectious process, possibly evidenced by elevated body temperature, skin flushed/warm to touch, tachycardia, increased respiratory rate.

acute Pain may be related to infectious process/circulating toxins, possibly evidenced by reports of headache, myalgia, eye pain, abdominal discomfort.

risk for deficient Fluid Volume: risk factors may include hypermetabolic state, decreased intake, anorexia, nausea, losses from normal routes (vomiting, diarrhea).

risk for impaired Skin Integrity: risk factors may include hyperthermia, decreased fluid intake, alterations in skin turgor, bedrest, circulating toxins.

Wilms' tumor

(also refer to *cancer; chemotherapy*)

Anxiety [specify level]/Fear may be related to change in environment and interaction patterns with family members and threat of death with family transmission and contagion of concerns, possibly evidenced by fearful/scared affect, distress, crying, insomnia, and sympathetic stimulation.

risk for Injury: risk factors may include nature of tumor (vascular, mushy with very thin covering) with increased danger of metastasis when manipulated.

interrupted Family Processes may be related to situational crisis of life-threatening illness, possibly evidenced by a family system that has difficulty meeting physical, emotional, and spiritual needs of its members, and inability to deal with traumatic experience effectively.

deficient Diversional Activity may be related to environmental lack of age-appropriate activity (including activity restrictions) and length of hospitalization/treatment, possibly evidenced by restlessness, crying, lethargy, and acting-out behavior.

wound, gunshot (depends on site and speed/character of bullet)

risk for deficient Fluid Volume: risk factors may include excessive vascular losses, altered intake/restrictions.

acute Pain may be related to destruction of tissue (including organ and musculoskeletal), surgical repair, and therapeutic interventions, possibly evidenced by verbal reports, guarding/distraction behaviors, self-focus, and autonomic responses (changes in vital signs).

Tissue Integrity, impaired may be related to mechanical factors (yaw of projectile and muzzle blast), possibly evidenced by damaged or destroyed tissue.

risk for Infection: risk factors may include tissue destruction and increased environmental exposure, invasive procedures, and decreased hemoglobin.

Post-Trauma Syndrome, risk for: risk factors may include nature of incident (catastrophic accident, assault, suicide attempt) and possibly injury/death of other(s) involved.

Note: Information appearing in brackets has been added to clarify and facilitate the use of nursing diagnoses.

Appendix N4-5 Nursing Diagnoses Through 2007-2008 in Alphabetical Order

Information appearing in brackets has been added by the authors to clarify and facilitate the use of nursing diagnoses.

A "RISK FOR" diagnosis is *not* evidenced by signs and symptoms, because the problem has not yet occurred, and nursing interventions are directed at prevention. Therefore, *risk* factors that are present are noted instead.

New nursing diagnoses for 2007-2008 appear in Appendix N4-3.

ACTIVITY INTOLERANCE [SPECIFY LEVEL]

Diagnostic Division: Activity/Rest

Definition: Insufficient physiological or psychological energy to endure or complete required or desired daily activities.

RELATED FACTORS

Generalized weakness; Sedentary lifestyle; Bedrest; Immobility; Imbalance between oxygen supply and demand; [Anemia]; [Cognitive deficits, extreme stress; depression]; [Pain, dysrhythmias, vertigo]

DEFINING CHARACTERISTICS**Subjective**

Report of fatigue or weakness; Exertional discomfort or dyspnea; [Verbalizes no desire and/or lack of interest in activity]

Objective

Abnormal heart rate or blood pressure response to activity; Electrocardiographic changes reflecting dysrhythmias or ischemia; [Pallor, cyanosis]

ACTIVITY INTOLERANCE, RISK FOR

Diagnostic Division: Activity / Rest

Definition: At risk of experiencing insufficient physiologic or psychologic energy to endure or complete required or desired daily activities.

RISK FACTORS

History of previous intolerance; Presence of circulatory/respiratory problems; [Dysrhythmias]; Deconditioned status; [Aging]; Inexperience with the activity; [Diagnosis of progressive disease state/debilitating condition, anemia, extensive surgical procedures]; [Verbalized reluctance/inability to perform expected activity]

AIRWAY CLEARANCE, INEFFECTIVE

Diagnostic Division: Respiration

Definition: Inability to clear secretions or obstructions from the respiratory tract to maintain a clear airway.

RELATED FACTORS**Environmental**

Smoking; Secondhand smoke; Smoke inhalation

Obstructed Airway

Retained secretions; Secretions in the bronchi; Exudate in the alveoli; Excessive mucus; Airway spasm; Foreign body in airway; Presence of artificial airway

Physiological

Chronic obstructive pulmonary disease (COPD); Asthma; Allergic airways; Hyperplasia of the bronchial walls; Neuromuscular dysfunction; Infection

DEFINING CHARACTERISTICS**Subjective**

Dyspnea

Objective

Diminished/adventitious breath sounds [rales, crackles, rhonchi, wheezes]; Cough, ineffective/absent; Excessive sputum; Changes in respiratory rate and rhythm; Difficulty vocalizing; Wide-eyed; Restlessness; Orthopnea; Cyanosis

ALLERGY RESPONSE, LATEX

Diagnostic Division: Safety

Definition: An allergic response to natural latex rubber products.

RELATED FACTORS

Hypersensitivity to natural latex rubber protein

DEFINING CHARACTERISTICS**Subjective**

Life-threatening reactions occurring <1 hour after exposure to latex proteins

Tightness in chest; [Feeling breathless]

Gastrointestinal characteristics

Abdominal pain; Nausea

Orofacial characteristics

Itching of the eyes; Nasal/facial/oral itching; Nasal congestion

Generalized characteristics

Generalized discomfort; Increasing complaint of total body warmth

Type IV reactions occurring >1 hour after exposure to latex proteins
Discomfort reaction to additives such as thiurams and carbamates

Objective

Life-threatening reactions occurring <1 hour after exposure to latex proteins

Contact urticaria progressing to generalized symptoms; Edema of the lips/tongue/uvula/throat; Dyspnea; Wheezing; Bronchospasm; Respiratory arrest; Hypotension; Syncope; Cardiac arrest

Orofacial characteristics

Edema of sclera/eyelids; Erythema/tearing of the eyes; Nasal/facial erythema; Rhinorrhea

Generalized Characteristics

Flushing; Generalized edema; Restlessness

Type IV reactions occurring >1 hour after exposure to latex proteins

Eczema; Irritation; Redness

ALLERGY RESPONSE, RISK FOR LATEX

Diagnostic Division: Safety

Definition: Risk of hypersensitivity to natural latex rubber products.

RISK FACTORS

History of reactions to latex; Allergies to bananas, avocados, tropical fruits, kiwi, chestnuts, poinsettia plants; History of allergies and asthma; Professions with daily exposure to latex; Multiple surgical procedures, especially from infancy

ANXIETY [MILD, MODERATE, SEVERE, PANIC]

Diagnostic Division: Ego Integrity

Definition: Vague uneasy feeling of discomfort or dread accompanied by an autonomic response (the source often nonspecific or unknown to the individual); a feeling of apprehension caused by anticipation of danger. It is an altering signal that warns of impending danger and enables the individual to take measures to deal with threat.

RELATED FACTORS

Unconscious conflict about essential [beliefs]/goals/values of life; Situational/maturational crises; Stress; Familial association/heredity; Interpersonal transmission/contagion; Threat to self-concept [perceived or actual]; [Unconscious conflict]; Threat of death [perceived or actual]; Threat to or change in health status [progressive/debilitating disease, terminal illness], interaction patterns, role function/status, environment [safety], economic status; Unmet needs; Exposure to toxins; Substance abuse; [Positive or negative self-talk]; [Physiological factors, e.g., hyperthyroidism, pheochromocytoma, drug therapy including steroids]

DEFINING CHARACTERISTICS

Subjective

Behavioral

Expressed concerns due to change in life events; Insomnia

Affective

Regretful; Scared; Rattled; Distressed; Apprehensive; Uncertainty; Fearful; Feelings of inadequacy; Jittery; Worried; Painful/persistent increased helplessness; [Sense of impending doom]; [Hopelessness]

Cognitive

Fear of unspecified consequences; awareness of physiologic symptoms

Physiological

Shakiness

Sympathetic: Dry mouth; Heart pounding; Weakness; Respiratory difficulties; Anorexia; Diarrhea

Parasympathetic: Tingling in extremities; Nausea; Abdominal pain; Diarrhea; Urinary hesitancy/frequency; Faintness; Fatigue; Sleep disturbance; [Chest, back, neck pain]

Objective**Behavioral**

Poor eye contact; Glancing about; Scanning; Vigilance; Extraneous movement [e.g., foot shuffling, hand/arm movements, rocking motion]; Fidgeting; Restlessness; Diminished productivity; [Crying/tearfulness]; [Pacing/purposeless activity]; [Immobility]

Affective

Increased wariness; Focus on self; Irritability; Overexcited; Anguish

Physiological

Voice quivering; Trembling/hand tremor; Increased tension; Facial tension; Increased perspiration

Sympathetic: Cardiovascular excitation; Facial flushing; Superficial vasoconstriction; Increased pulse/respiration; Increased blood pressure; Twitching; Pupil dilation; Increased reflexes

Parasympathetic: Urinary urgency; Decreased blood pressure/pulse

Cognitive

Preoccupation; Impaired attention; Difficulty concentrating; Forgetfulness; Diminished ability to problem-solve; Diminished learning ability; Rumination; Tendency to blame others; Blocking of thought; Confusion; Decreased perceptual field

ANXIETY, DEATH

Diagnostic Division: Ego Integrity

Definition: Vague uneasy feeling of discomfort or dread generated by perceptions of a real or imagined threat to one's existence.

RELATED FACTORS

Anticipating; pain/suffering/adverse consequences of general anesthesia/impact of death on others; Confronting reality of terminal disease; Experiencing dying process; Perceived proximity of death; Discussions on topic of death; Observations related to death; Near death experience; Uncertainty of prognosis; Nonacceptance of own mortality; Uncertainty about: the existence of a higher power/life after death/an encounter with a higher power

DEFINING CHARACTERISTICS**Subjective**

Fear of: developing a terminal illness/the process of dying/prolonged dying/loss of mental [physical] abilities when dying/pain or suffering relating to dying/premature death

Negative thoughts related to death and dying; Feeling powerlessness over dying; Worrying about: The impact of one's own death on significant others; [about meeting one's creator or feeling doubt about the existence of God or highr being]; Concerns of overworking the caregiver

ASPIRATION, RISK FOR

Diagnostic Division: Respiration

Definition: At risk for entry of gastrointestinal secretions, oropharyngeal sections, [or exogenous food] or solids or fluids into tracheobronchial passages [due to dysfunction or absence of normal protective mechanisms].

RISK FACTORS

Reduced level of consciousness [sedation/anesthesia]; Depressed cough/gag reflexes; Impaired swallowing [inability of the epiglottis and true vocal cords to close off traches]; Facial/oral/neck surgery or trauma; Wired jaws; [Congenital malformations]; Situation hindering elevation of upper body [weakness, paralysis]; Incomplete lower esophageal sphincter [hiatal hernia or other esophageal disease affecting stomach valve function]; Delayed gastric emptying; Decreased gastrointestinal motility; Increased intragastric pressure; Increased gastric residual; Presence of tracheostomy or endotracheal (ET) tube; [Inadequate or overinflation of tracheostomy/ET tube cuff]; [Presence of] gastrointestinal tubes; Tube feedings/medication administration

ATTACHMENT, RISK FOR IMPAIRED PARENT/INFANT/CHILD

Diagnostic Division: Social Interaction

Definition: Disruption of the interactive process between parent/significant other and child/infant that fosters the development of a protective and nurturing reciprocal relationship.

RISK FACTORS

Inability of parents to meet personal needs; Anxiety associated with the parent role; [Parents who themselves experienced altered attachment]; Premature infant/ill infant/child who is unable to effectively initiate parental contact due to altered behavioral organization; Separation; Physical barriers; Lack of privacy; Substance abuse; [Difficult pregnancy and/or birth (actual or perceived)]; [Uncertainty of paternity; conception as a result of rape/sexual abuse]

AUTONOMIC DYSREFLEXIA

Diagnostic Division: Circulation

Definition: Life-threatening, uninhibited sympathetic response of the nervous system to a noxious stimulus after a spinal cord injury (SCI) at T7 or above.

RELATED FACTORS

Bladder/bowel distention; [Catheter insertion, obstruction, irrigation]; Skin irritation; Deficient patient/caregiver knowledge; [Sexual excitation, menstruation, pregnancy, labor/delivery]; [Environmental temperature extremes]

DEFINING CHARACTERISTICS**Subjective**

Headache (a diffuse pain in different portions of the head and not confined to any nerve distribution area); Paresthesia; Chilling; Blurred vision; Chest pain; Metallic taste in mouth; Nasal congestion

Objective

Paroxysmal hypertension (sudden periodic elevated blood pressure in which systolic pressure >140 mm Hg and diastolic >90 mm Hg); Bradycardia or tachycardia (heart rate <60 or >100 beats per minute, respectively); Diaphoresis (above the injury); Red splotches on skin (above the injury); Pallor (below the injury); Horner's syndrome [contraction of the pupil, partial ptosis of the eyelid, enophthalmos and sometimes loss of sweating over the affected side of the face]; Conjunctival congestion; Pilo motor reflex [gooseflesh formation when skin is cooled]

AUTONOMIC DYSREFLEXIA, RISK FOR

Diagnostic Division: Circulation

Definition: At risk for life-threatening, uninhibited response of the sympathetic nervous system postspinal shock, in an individual with a spinal cord injury [SCI] or lesion at T6 or above (has been demonstrated in clients with injuries at T7 and T8).

RISK FACTORS**Musculoskeletal—Integumentary Stimuli**

Cutaneous stimulations (e.g., pressure ulcer, ingrown toenail, dressing, burns, rash); Sunburns; Wounds; Pressure over bony prominences/genitalia; Range of motion exercises; Spasms; Fractures; Heterotrophic bone

Gastrointestinal Stimuli

Constipation; Difficult passage of feces; Fecal impaction; Bowel distention; Hemorrhoids; Digital stimulation; Suppositories; Enemas; Gastrointestinal system pathology; Esophageal reflux; Gastric ulcers; Gallstones

Urologic Stimuli

Bladder distention/spasm; Detrusor sphincter dyssynergia; Instrumentation; Surgery; Urinary tract infection; Cystitis; Urethritis; Epididymitis; Calculi

Regulatory Stimuli

Temperature fluctuations; Extreme environmental temperatures

Situational Stimuli

Positioning; Surgical [diagnostic] procedure; Constrictive clothing (e.g., straps, stockings, shoes); Drug reactions (e.g., decongestants, sympathomimetics, vasoconstrictors, narcotic withdrawal)

Neurological Stimuli

Painful/irritating stimuli below the level of injury; Cardiac/pulmonary Problems: Pulmonary emboli; Deep vein thrombosis

Reproductive [and Sexuality] Stimuli

Sexual intercourse; Ejaculation; [Vibrator overstimulation; Scrotal compression]; Menstruation; Pregnancy; Labor and delivery; Ovarian cyst

BEHAVIOR, RISK-PRONE HEALTH

Diagnostic Division: Ego Integrity

Definition: Inability to modify lifestyle/behaviors in a manner consistent with a change in health status.

RELATED FACTORS

Inadequate comprehension; Low self-efficacy; Multiple stressors; Inadequate social support; Low socioeconomic status; Negative attitudes toward health care

DEFINING CHARACTERISTICS**Subjective**

Minimizes health status change; Failure to achieve optimal sense of control

Objective

Failure to take actions that prevents health problems; Demonstrates nonacceptance of health status change

BODY IMAGE, DISTURBED

Diagnostic Division: Ego Integrity

Definition: Confusion [and/or dissatisfaction] in mental picture of one's physical self.

RELATED FACTORS

Biophysical; Illness; Trauma; Injury; Surgery; [Mutilation, pregnancy]; Illness treatment [change caused by biochemical agents (drugs), dependence on machine]; Psychosocial; Cultural; Spiritual; Cognitive; Perceptual; Developmental changes; [Maturational changes]; [Significance of body part or functioning with regard to age, sex, developmental level, or basic human needs]

DEFINING CHARACTERISTICS**Subjective**

Verbalization of feelings that reflect an altered view of one's body (e.g., appearance, structure, function); Verbalization of perceptions that reflect an altered view of one's body in appearance; Change in lifestyle; Fear of rejection/ reaction by others; Focus on past strength/function/appearance; Negative feelings about body (e.g., feelings of helplessness, hopelessness, or powerlessness); [Depersonalization/grandiosity]; Preoccupation with change/loss; Refusal to verify actual change; Emphasis on remaining strengths; Heightened achievement; Personalization of part/loss by name; Depersonalization of part or loss by impersonal pronouns

Objective

Behaviors of: acknowledgment/monitoring/avoidance of one's body; Nonverbal response to actual/perceived change in body (e.g., appearance, structure, function); Missing body part; Actual change in structure/function; Not looking at/not touching body part; Trauma to nonfunctioning part; Change in ability to estimate spatial relationship of body to environment; Extension of body boundary to incorporate environmental objects; Intentional/unintentional hiding/ overexposing body part; Change in social involvement; [Aggression; low frustration tolerance level]

BODY TEMPERATURE, RISK FOR IMBALANCED

Diagnostic Division: Safety

Definition: At risk for failure to maintain body temperature within normal range.

RISK FACTORS

Extremes of age/weight; Exposure to cold/cool or warm/hot environments; Inappropriate clothing for environmental temperature; Dehydration; Inactivity; Vigorous activity; Medications causing vasoconstriction/vasodilation/sedation; [Use or overdose of certain drugs or exposure to anesthesia]; Illness/trauma affecting temperature regulation [e.g., infections, systemic or localized; neoplasms, tumors; collagen/vascular disease]; Altered metabolic rate

BOWEL INCONTINENCE*Diagnostic Division: Elimination*

Definition: Change in normal bowel habits characterized by involuntary passage of stool.

RELATED FACTORS

Toileting self-care deficit; Environmental factors (e.g., inaccessible bathroom); Impaired cognition; Immobility; Dietary habits; Medications; Laxative abuse; Stress; Colorectal lesions; Impaired reservoir capacity; Incomplete emptying of bowel; Impaction; Chronic diarrhea; General decline in muscle tone; Abnormally high abdominal/intestinal pressure; Rectal sphincter abnormality; Loss of rectal sphincter control; Lower/upper motor nerve damage

DEFINING CHARACTERISTICS**Subjective**

Recognizes rectal fullness but reports inability to expel formed stool; Urgency; Inability to delay defecation; Self-report of inability to feel rectal fullness

Objective

Constant dribbling of soft stool; Fecal staining of clothing/bedding; Fecal odor; Red perianal skin; Inability to recognize/inattention to urge to defecate

BREASTFEEDING, EFFECTIVE*Diagnostic Division: Food / Fluid*

Definition: Mother-infant dyad/family exhibits adequate proficiency and satisfaction with breastfeeding process.

RELATED FACTORS

Basic breastfeeding knowledge; Normal [maternal] breast structure; Normal infant oral structure; Infant gestational age greater than 34 weeks; Support sources [available]; Maternal confidence

DEFINING CHARACTERISTICS**Subjective**

Maternal verbalization of satisfaction with the breastfeeding process

Objective

Mother able to position infant at breast to promote a successful latch-on response; Infant is content after feedings; Regular and sustained sucking at the breast (8 to 10 times/24 hours); Appropriate infant weight patterns for age; Effective mother/infant communication pattern (infant cues, maternal interpretation and response); Signs and/or symptoms of oxytocin release (let-down or milk ejection reflex); Adequate infant elimination patterns for age; [soft stools; more than 6 wet diapers per day of unconcentrated urine]; Eagerness of infant to nurse [breastfeed]

BREASTFEEDING, INEFFECTIVE*Diagnostic Division: Food / Fluid*

Definition: Dissatisfaction or difficulty a mother, infant, or child experiences with the breastfeeding process.

RELATED FACTORS

Prematurity; Infant anomaly; Poor infant sucking reflex; Infant receiving [numerous or repeated] supplemental feedings with artificial nipple; Maternal anxiety/ambivalence; Knowledge deficit; Previous history of breastfeeding failure; Interruption in breastfeeding; Nonsupportive partner/family; Maternal breast anomaly; Previous breast surgery; [Maternal physical discomfort during feeding]

DEFINING CHARACTERISTICS**Subjective**

Unsatisfactory breastfeeding process; Persistence of sore nipples beyond the first week of breastfeeding; Insufficient emptying of each breast per feeding; Inadequate/perceived inadequate milk supply

Objective

Observable signs of inadequate infant intake [decrease in number of wet diapers, inappropriate weight loss/inadequate gain]; Nonsustained/insufficient opportunity for suckling at the breast; Infant inability [failure] to latch onto maternal breast correctly; Infant arching/crying at the breast; Resistant latching on; Infant exhibiting fussiness/crying within the first hour after breastfeeding; Unresponsive to other comfort measures; No observable signs of oxytocin release

BREASTFEEDING, INTERRUPTED

Diagnostic Division: Food / Fluid

Definition: Break in the continuity of the breastfeeding process as a result of inability or inadvisability to put a baby to breast for feeding.

RELATED FACTORS

Maternal/infant illness; Prematurity; Maternal employment; Contraindications to breastfeeding [e.g., drugs, true breast milk jaundice]; Need to abruptly wean infant

DEFINING CHARACTERISTICS**Subjective**

Infant receives no nourishment at the breast for some or all of feedings; Maternal desire to maintain breastfeeding for infant/child's nutritional needs; Lack of knowledge regarding expression/storage of breast milk

Objective

Separation of mother and infant

BREATHING PATTERN, INEFFECTIVE

Diagnostic Division: Respiration

Definition: Inspiration and/or expiration that does not provide adequate ventilation.

RELATED FACTORS

Neuromuscular dysfunction; Spinal cord injury; Neurological immaturity; Musculoskeletal impairment; Bony/chest wall deformity; Anxiety [panic attack]; Pain; Perception/cognitive impairment; Fatigue; [Deconditioning]; Respiratory muscle fatigue; Body position; Obesity; Hyperventilation; Hypoventilation syndrome; [alteration of patient's normal O₂ : CO₂ ratio (e.g., O₂ therapy in COPD)]

DEFINING CHARACTERISTICS**Subjective**

[Feeling breathless]

Objective

Dyspnea; Orthopnea; Bradypnea; Tachypnea; Alterations in depth of breathing; Timing ratio; Prolonged expiration phases; Pursed-lip breathing; Decreased minute ventilation/vital capacity; Decreased inspiratory/expiratory pressure; Use of accessory muscles to breathe; Assumption of three-point position; Altered chest excursion, [paradoxical breathing patterns]; Nasal flaring; [Grunting]; Increased anterior-posterior diameter

CARDIAC OUTPUT, DECREASED

Diagnostic Division: Circulation

Definition: Inadequate blood pumped by the heart to meet the metabolic demands of the body.

NOTE: In a hypermetabolic state, although cardiac output may be within normal range, it may still be inadequate to meet the needs of the body's tissues. Cardiac output and tissue perfusion are interrelated, although there are differences. When cardiac output is decreased, tissue perfusion problems will develop; however, tissue perfusion problems can exist without decreased cardiac output.

RELATED FACTORS

Altered heart rate/rhythm [conduction]; Altered stroke volume; Altered preload [e.g., decreased venous return]; Altered afterload [e.g., altered systemic vascular resistance]; Altered contractility [e.g., ventricular-septal rupture, ventricular aneurysm, papillary muscle rupture, valvular disease]

DEFINING CHARACTERISTICS**Subjective****Altered Heart Rate/Rhythm**

Palpitations

Altered Preload

Fatigue

Altered Afterload

[Feeling breathless]

Altered Contractility

Orthopnea/paroxysmal nocturnal dyspnea [PND]

Behavioral/Emotional

Anxiety

Objective**Altered Heart Rate/Rhythm**

[Dys]arrhythmias (tachycardia, bradycardia); EKG [ECG] changes

Altered Preload

Jugular vein distention (JVD); Edema; Weight gain; Increased/decreased central venous pressure (CVP); Increased/decreased pulmonary artery wedge pressure (PAWP); Murmurs

Altered Afterload

Dyspnea; Clammy skin; Skin [and mucous membrane] color changes [cyanosis, pallor]; Prolonged capillary refill; Decreased peripheral pulses; Variations in blood pressure readings; Increased/decreased systemic vascular resistance (SVR); Increased/decreased pulmonary vascular resistance (PVR); Oliguria; [Anuria]

Altered Contractility

Crackles; Cough; Decreased cardiac output/cardiac index; Decreased ejection fraction; Decreased stroke volume index (SVI)/left ventricular stroke work index (LVSWI); S3 or S4 sounds [gallop rhythm]

Behavioral/Emotional

Restlessness

CAREGIVER ROLE STRAIN*Diagnostic Division: Social Interaction***Definition:** Difficulty in performing the family caregiver role.**RELATED FACTORS****Care Receiver Health Status**

Illness severity/chronicity; Unpredictability of illness course; Instability of care receiver's health; Increasing care needs; Dependency; Problem behaviors; Psychological or cognitive problems; Addiction; Codependency

Caregiving Activities

Discharge of family member to home with significant care needs [e.g., premature birth/congenital defect, frail elder poststroke]; Unpredictability of care situation; 24-hour care responsibilities; Amount/complexity of activities; Ongoing changes in activities; Years of caregiving

Caregiver Health Status

Physical problems; Psychological/cognitive problems; Inability to fulfill one's own/others' expectations; Unrealistic expectations of self; Marginal coping patterns; Addiction; Codependency

Socioeconomic

Competing role commitments; Alienation/isolation from others; Insufficient recreation

Caregiver–Care Receiver Relationship

Unrealistic expectations of caregiver by care receiver; History of poor relationship; Mental status of elder inhibits conversation; Presence of abuse/violence

Family Processes

History of marginal family coping/family dysfunction

Resources

Inadequate physical environment for providing care (e.g., housing, temperature, safety); Inadequate equipment for providing care; Inadequate transportation; Insufficient finances; Inexperience with caregiving; Insufficient time; Physical energy; Emotional strength; Lack of support; Lack of caregiver privacy; Deficient knowledge about community resources; Difficulty accessing community resources; Inadequate community services (e.g., respite services, recreational resources); Formal/informal assistance; Formal/informal support; Caregiver is not developmentally ready for caregiver role

DEFINING CHARACTERISTICS**Subjective****Caregiving Activities**

Apprehension about: Possible institutionalization of care receiver; The future regarding care receiver's health/ caregiver's ability to provide care; Care receiver's care if caregiver unable to provide care

Caregiver Health Status—physical

GI upset; Weight change; Fatigue; Headaches; Rash; Hypertension; Cardiovascular disease; Diabetes

Caregiver Health Status—emotional

Feeling depressed; Anger; Stress; Frustration; Increased nervousness; Disturbed sleep; Lack of time to meet personal needs

Caregiver Health Status—socioeconomic

Changes in leisure activities; Refuses career advancement

Caregiver–Care Receiver Relationship

Difficulty watching care receiver go through the illness; Grief/uncertainty regarding changed relationship with care receiver

Family Processes

Concern about family members

Objective**Caregiving Activities**

Difficulty performing/completing required tasks; Preoccupation with care routine; Dysfunctional change in caregiving activities

Caregiver Health Status—emotional

Impatience; Increased emotional lability; Somatization; Impaired individual coping

Caregiver Health status—socioeconomic

Low work productivity; Withdraws from social life

Family Processes

Family conflict

NOTE: [Authors' note: The presence of this problem may encompass other numerous problems/high-risk concerns such as deficient Diversional Activity, Insomnia, Fatigue, Anxiety, ineffective Coping, compromised/disabled family Coping, decisional Conflict, ineffective Denial, Grieving, Hopelessness, Powerlessness, Spiritual Distress, ineffective Health Maintenance, impaired Home Maintenance, ineffective Sexuality Pattern, readiness for enhanced family Coping, interrupted Family Processes, Social Isolation. Careful attention to data gathering will identify and clarify the client's specific needs, which can then be coordinated under this single diagnostic label]

CAREGIVER ROLE STRAIN, RISK FOR*Diagnostic Division: Social Interaction*

Definition: Caregiver is vulnerable for felt difficulty in performing the family caregiver role.

RISK FACTORS

Illness severity of the care receiver; Psychological/cognitive problems in care receiver; Addiction; Codependency; Discharge of family member with significant home-care needs; Premature birth; Congenital defect; Unpredictable illness course; Instability in the care receiver's health; Duration of caregiving required; Inexperience with caregiving; Complexity/amount of caregiving tasks; Caregiver's competing role commitments; Caregiver health impairment; Caregiver is female/spouse; Caregiver not developmentally ready for caregiver role [e.g., a young adult needing to provide care for middle-aged parent]; Developmental delay/retardation of the care receiver/caregiver; Presence of situational stressors that normally affect families (e.g., significant loss,

disaster or crisis, economic vulnerability, major life events [such as birth, hospitalization, leaving home, returning home, marriage, divorce, change in employment, retirement, death]; Inadequate physical environment for providing care (e.g., housing, transportation, community services, equipment); Family/caregiver isolation; Lack of respite/recreation for caregiver; Marginal family adaptation; Family dysfunction prior to the caregiving situation; Marginal caregiver's coping patterns; Past history of poor relationship between caregiver and care receiver; Care receiver exhibits deviant/bizarre behavior; Presence of abuse/violence

COMFORT, READINESS FOR ENHANCED

Diagnostic Division: Pain / Discomfort

Definition: A pattern of ease, relief, and transcendence in physical, psychospiritual, environmental, and/or social dimensions that can be strengthened.

DEFINING CHARACTERISTICS

Subjective

Expresses desire to enhance: comfort/feeling of contentment; Relaxation; Resolution of complaints

Objective

[Appears relaxed/calm]; [Participates in comfort measures of choice]

COMMUNICATION, IMPAIRED VERBAL

Diagnostic Division: Social Interaction

Definition: Decreased, delayed, or absent ability to receive, process, transmit, and use a system of symbols.

RELATED FACTORS

Decrease in circulation to brain; Brain tumor; Anatomic deficit (e.g., cleft palate, alteration of the neurovascular visual system, auditory system, or phonatory apparatus); Difference related to developmental age; Physical barrier (tracheostomy, intubation); Physiological conditions [e.g., dyspnea]; Alteration of central nervous system (CNS); Weakening of the musculoskeletal system; Psychological barriers (e.g., psychosis, lack of stimuli); Emotional conditions [depression, panic, anger]; Stress; Environmental barriers; Cultural difference; Lack of information; Side effects of medication; Alteration of self-esteem/self-concept; Altered perceptions; Absence of Significant others

DEFINING CHARACTERISTICS

Subjective

[Reports of difficulty expressing self]

Objective

Inability to speak dominant language; Speaks/verbalizes with difficulty; Stuttering; Slurring; Does not/cannot speak; Willful refusal to speak; Difficulty forming words/sentences (e.g., phonias, dyslalia, dysarthria); Difficulty expressing thoughts verbally (e.g., aphasia, dysphasia, apraxia, dyslexia); Inappropriate verbalization, [incessant, loose association of ideas, flight of ideas]; Difficulty in comprehending/maintaining usual communicating pattern; Absence of eye contact; Difficulty in selective attending; Partial/total visual deficit; Inability/difficulty in use of facial/body expressions; Disorientation to person/space/time; Dyspnea; [Inability to modulate speech]; [Message inappropriate to content]; [Use of nonverbal cues (e.g., pleading eyes, gestures, turning away)]; [Frustration; Anger; Hostility]

COMMUNICATION, READINESS FOR ENHANCED

Diagnostic Division: Social Interaction

Definition: A pattern of exchanging information and ideas with others that is sufficient for meeting one's needs and life's goals and can be strengthened.

DEFINING CHARACTERISTICS

Subjective

Expresses willingness to enhance communication; Expresses thoughts/feelings; Expresses satisfaction with ability to share information/ideas with others

Objective

Able to speak or write a language; Forms words, phrases, and language; Uses and interprets nonverbal cues appropriately

CONFLICT, DECISIONAL (SPECIFY)

Diagnostic Division: Ego Integrity

Definition: Uncertainty about course of action to be taken when choice among competing actions involves risk, loss, or challenge to values and beliefs.

RELATED FACTORS

Unclear personal values/beliefs; Perceived threat to value system; Lack of experience/interference with decision making; Lack of relevant information; Multiple/divergent sources of information; Moral obligations require performing/not performing actions; Moral principles/rules/values support mutually inconsistent courses of action; Support system deficit; [Age, developmental state]; [Family system; Sociocultural factors]; [Cognitive/ emotional/behavioral level of functioning]

DEFINING CHARACTERISTICS**Subjective**

Verbalizes: Uncertainty about choices; Undesired consequences of alternative actions being considered; Feeling of distress while attempting a decision; Questioning moral principles/rules/values or personal values/beliefs while attempting a decision

Objective

Vacillation between alternative choices; Delayed decision making; Self-focusing; Physical signs of distress or tension (increased heart rate; increased muscle tension; restlessness; etc.)

CONFLICT, PARENTAL ROLE

Diagnostic Division: Social Interaction

Definition: Parent experience of role confusion and conflict in response to crisis.

RELATED FACTORS

Separation from child due to chronic illness [/disability]; Intimidation with invasive modalities (e.g., intubation)/restrictive modalities (e.g., isolation); Specialized care centers; Home care of a child with special needs [e.g., apnea monitoring, hyperalimentation]; Change in marital status; [Conflicts of the role of the single parent]; Interruptions of family life due to home care regimen (e.g., treatments, caregivers, lack of respite)

DEFINING CHARACTERISTICS**Subjective**

Parent(s) express(es) concerns/feeling of inadequacy to provide for child's needs (e.g., physical and emotional); Parent(s) express(es) concerns about changes in parental role; Parent(s) express(es) concern about family (e.g., functioning, communication, health); Express(es) concern about perceived loss of control over decisions relating to their child; Verbalize(s) feelings of frustration/ guilt; Anxiety; Fear; [Verbalizes concern about role conflict of wanting to date while having responsibility of child care]

Objective

Demonstrates disruption in caretaking routines; Reluctant to participate in usual caretaking activities even with encouragement and support

CONFUSION, ACUTE

Diagnostic Division: Neurosensory

Definition: Abrupt onset of reversible disturbances of consciousness, attention, cognition, and perception that develop over a short period of time

RELATED FACTORS

Alcohol abuse; Drug abuse; [Medication reaction/interaction; Anesthesia/surgery; Metabolic imbalances]; Fluctuation in sleep-wake cycle; Over 60 years of age; Delirium [including febrile epilepticum—following or instead of an epileptic attack; toxic and traumatic]; Dementia; [Exacerbation of a chronic illness, hypoxemia]; [Severe pain]

NOTE: Although no time frame is presented to aid in differentiating acute from chronic confusion, the definition of chronic confusion identifies an irreversible state. Therefore, our belief is that acute confusion is potentially reversible.

DEFINING CHARACTERISTICS

Subjective

Hallucinations [Visual/auditory]; [Exaggerated emotional responses]

Objective

Fluctuation in cognition/level of consciousness; Fluctuation in psychomotor activity [tremors, body movement]; Increased agitation/restlessness; Misperceptions; [Inappropriate responses]; Lack of motivation to initiate/follow through with goal-directed/purposeful behavior

CONFUSION, CHRONIC

Diagnostic Division: Neurosensory

Definition: Irreversible, long-standing, and/or progressive deterioration of intellect and personality characterized by decreased ability to interpret environmental stimuli; decreased capacity for intellectual thought processes; and manifested by disturbances of memory, orientation, and behavior.

RELATED FACTORS

Alzheimer's disease [dementia of Alzheimer's type]; Korsakoff's psychosis; Multi-infarct dementia; Cerebrovascular attack; Head injury

DEFINING CHARACTERISTICS

Objective

Clinical evidence of organic impairment; Altered interpretation/response to stimuli; Progressive/long-standing cognitive impairment; No change in level of consciousness; Impaired socialization; Impaired short-term/long-term memory; Altered personality

CONFUSION, RISK FOR ACUTE

Diagnostic Division: Neurosensory

Definition: At risk for reversible disturbances of consciousness, attention, cognition, and perception that develop over a short period of time.

RISK FACTORS

Alcohol abuse; Substance abuse; Medication/Drugs: anesthesia; Anticholinergics, diphenhydramine, opioids, psychoactive drugs, multiple medications; Metabolic abnormalities: decreased hemoglobin, electrolyte imbalances, dehydration, increased BUN/creatinine, azotemia, malnutrition; Infection; Urinary retention; Pain; Fluctuation in sleep-wake cycle; Decreased mobility; Decreased restraints; History of stroke; Impaired cognition; Dementia; Sensory deprivation; Over 60 years of age; Male gender

CONSTIPATION

Diagnostic Division: Elimination

Definition: Decrease in normal frequency of defecation accompanied by difficult or incomplete passage of stool and/or passage of excessively hard, dry stool.

RELATED FACTORS

Functional

Irregular defecation habits; Inadequate toileting (e.g., timeliness, positioning for defecation, privacy); Insufficient physical activity; Abdominal muscle weakness; Recent environmental changes; Habitual denial/ignoring of urge to defecate

Psychological

Emotional stress; Depression; Mental confusion

Pharmacological

Antilipemic agents; Laxative overdose; Calcium carbonate; Aluminum-containing antacids; Nonsteroidal anti-inflammatory agents; Opiates; Anticholinergics; Diuretics; Iron salts; Phenothiazides; Sedatives; Bismuth salts; Sympathomimetics; Anticonvulsants; Antidepressants; Calcium channel blockers

Mechanical

Hemorrhoids; Pregnancy; Obesity; Rectal abscess/ulcer/prolapse; Rectal anal fissures/strictures; Rectocele; Prostate enlargement; Postsurgical obstruction; Neurological impairment; Hirschsprung's disease; Tumors; Electrolyte imbalance

Physiological

Poor eating habits; Change in usual foods/eating patterns; Insufficient fiber/fluid intake; Dehydration; Inadequate dentition/oral hygiene; Decreased motility of gastrointestinal tract

DEFINING CHARACTERISTICS**Subjective**

Change in bowel pattern; Unable to pass stool; Decreased volume/frequency of stool; Increased abdominal pressure; Feeling of rectal fullness/pressure; Abdominal pain; Pain with defecation; Nausea; Vomiting; Headache; Indigestion; Generalized fatigue

Objective

Hard, formed stool; Straining with defecation; Hypoactive/ hyperactive bowel sounds; Borborygmi; Distended abdomen; Abdominal tenderness with/without palpable muscle resistance; Palpable abdominal/rectal mass; Percussed abdominal dullness; Presence of soft pastelike stool in rectum; Oozing liquid stool; Bright red blood with stool; Severe flatus; Anorexia; Atypical presentations in older adults (e.g., change in mental status, urinary incontinence, unexplained falls, elevated body temperature)

CONSTIPATION, PERCEIVED

Diagnostic Division: Elimination

Definition: Self-diagnosis of constipation and abuse of laxatives, enemas, and suppositories to ensure a daily bowel movement.

RELATED FACTORS

Cultural/family health beliefs; Faulty appraisal [long-term expectations/habits]; Impaired thought processes

DEFINING CHARACTERISTICS**Subjective**

Expectation of a daily bowel movement; Expected passage of stool at same time every day; Overuse of laxatives/enemas/suppositories

CONSTIPATION, RISK FOR

Diagnostic Division: Elimination

Definition: At risk for a decrease in normal frequency of defecation accompanied by difficult or incomplete passage of stool and/or passage of excessively hard, dry stool.

RISK FACTORS**Functional**

Irregular defecation habits; Inadequate toileting (e.g., timeliness, positioning for defecation, privacy); Insufficient physical activity; Abdominal muscle weakness; Recent environmental changes; Habitual denial/ignoring of urge to defecate

Psychological

Emotional stress; Depression; Mental confusion

Physiological

Change in usual foods/eating patterns; Insufficient fiber/fluid intake; Dehydration; Poor eating habits; Inadequate dentition or oral hygiene; Decreased motility of gastrointestinal tract

Pharmacological

Phenothiazides; Nonsteroidal anti-inflammatory agents; Sedatives; Aluminum-containing antacids; Laxative overuse; Bismuth salts; Iron salts; Anticholinergics; Antidepressants; Anticonvulsants; Antilipemic agents; Calcium channel blockers; Calcium carbonate; Diuretics; Sympathomimetics; Opiates

Mechanical

Hemorrhoids; Pregnancy; Obesity; Rectal abscess/ulcer; Rectal anal stricture/fissures; Rectal prolapse; Rectocele; Prostate enlargement; Postsurgical obstruction; Neurological impairment; Hirschsprung's disease; Tumors; Electrolyte imbalance

CONTAMINATION

Diagnostic Division: Safety

Definition: Exposure to environmental contaminants in doses sufficient to cause adverse health effects.

RELATED FACTORS**External**

Chemical contamination of food/water; Presence of atmospheric pollutants; Inadequate municipal services (trash removal, sewage treatment facilities); Geographic area (living in area where high level of contaminants exist); Playing in outdoor areas where environmental contaminants are used; Personal/household hygiene practices; Living in poverty (increases potential for multiple exposures, lack of access to health care, and poor diet); Use of environmental contaminants in the home (e.g., pesticides, chemicals, environmental tobacco smoke); Lack of breakdown of contaminants once indoors (breakdown is inhibited without sun and rain exposure); Flooring surface (carpeted surfaces hold contaminant residue more than hard floor surfaces); Flaking, peeling paint/plaster in presence of young children; Paint, lacquer, etc. in poorly ventilated areas/without effective protection; Inappropriate use/lack of protective clothing; Unprotected contact with heavy metals or chemicals (e.g., arsenic, chromium, lead); Exposure to radiation (occupation in radiography, employment in nuclear industries and electrical generating plants, living near nuclear industries and electrical generation plants); Exposure to disaster (natural or man-made); exposure to bioterrorism

Internal

Age (children less than 5 years, older adults); Gestational age during exposure; Developmental characteristics of children; Female gender; Pregnancy; Nutritional factors (e.g., obesity, vitamin and mineral deficiencies); Pre-existing disease states; Smoking; Concomitant exposure; Previous exposures

DEFINING CHARACTERISTICS

(Defining characteristics are dependent on the causative agent. Agents cause a variety of individual organ responses as well as systemic responses.)

Pesticides

Major categories of pesticides: Insecticides, herbicides, fungicides, antimicrobials, rodenticides (Major pesticides: organophosphates, carbamates, organochlorines, pyrethrum, arsenic, glyphosphates, bipyridyls, chlorophenoxy) Dermatological/gastrointestinal/neurological/pulmonary/renal effects of pesticide exposure

Chemicals

(Major chemical agents: petroleum-based agents, anticholinesterases; Type I agents act on proximal tracheobronchial portion of the respiratory tract, Type II agents act on alveoli, Type III agents produce systemic effects) Dermatological/ gastrointestinal/immunologic/neurological/pulmonary/renal effects of chemical exposure

Biologics

Dermatological/gastrointestinal/neurological/pulmonary/renal effects of exposure to biologicals (toxins from living organisms (bacteria, viruses, fungi))

Pollution

(Major locations: Air, water, soil); (Major agents: Asbestos, radon, tobacco [smoke], heavy metals, lead, noise, exhaust); Neurological/pulmonary effects of pollution exposure

Waste

(Categories of waste: trash, raw sewage, industrial waste) Dermatological/gastrointestinal/hepatic/pulmonary effects of waste exposure

Radiation

(Categories: Internal—ingestion of radioactive material [e.g., food/water contamination], External—exposure through direct contact with radioactive material); Immunologic/genetic/neurological/oncologic effects of radiation exposure

CONTAMINATION, RISK FOR

Diagnostic Division: Safety

Definition: Accentuated risk of exposure to environmental contaminants in doses sufficient to cause adverse health effects.

RISK FACTORS**External**

Chemical contamination of food/water; Presence of atmospheric pollutants; Inadequate municipal services (trash removal, sewage treatment facilities); Geographic area (living in area where high levels of contaminants exist); Playing in outdoor areas where environmental contaminants are used; Personal/household hygiene practices; Living in poverty (increases potential for multiple exposure, lack of access to health care, and poor diet); Use of environmental contaminants in the home (e.g., pesticides, chemicals, environmental tobacco smoke); Lack of breakdown of contaminants once indoors (breakdown is inhibited without sun and rain exposure); Flooring surface (carpeted surfaces hold contaminant residue more than hard floor surfaces); Flaking, peeling paint/plaster in presence of young children; Paint, lacquer, etc. in poorly ventilated areas/without effective protection; Inappropriate use/lack of protective clothing; Unprotected contact with heavy metals or chemicals (e.g., arsenic, chromium, lead); Exposure to radiation (occupation in radiography, employment in nuclear industries and electrical generating plants, living near nuclear industries and electrical generation plants); Exposure to disaster (natural or man-made); exposure to bioterrorism

Internal

Age (children less than 5 years, older adults); Gestational age during exposure; Developmental characteristics of children; Female gender; Pregnancy; Nutritional factors (e.g., obesity, vitamin and mineral deficiencies); Pre-existing disease states; Smoking; Concomitant exposure; Previous exposures

COPING, COMPROMISED FAMILY*Diagnostic Division: Social Interaction*

Definition: Usually supportive primary person (family member or close friend [significant other]) provides insufficient, ineffective, or compromised support, comfort, assistance, or encouragement that may be needed by the client to manage or master adaptive tasks related to his/her health challenge.

RELATED FACTORS

Coexisting situations affecting the significant person; Situational/developmental crises the significant person may be facing; Prolonged disease [/disability progression] that exhausts the supportive capacity of significant other(s); Exhaustion of supportive capacity of significant people; Inadequate/incorrect information or understanding by a primary person; Temporary preoccupation by a significant person; Temporary family disorganization/role changes; [Lack of mutual decision-making skills]; [Diverse coalitions of family members]

DEFINING CHARACTERISTICS**Subjective**

Client expresses a complaint/concern about significant other's response to health problem; Significant other expresses an inadequate understanding/knowledge base, which interferes with effective supportive behaviors; Significant other describes preoccupation with personal reaction (e.g., fear, anticipatory grief, guilt, anxiety) to client's need

Objective

Significant person attempts assistive/supportive behaviors with unsatisfactory results; Significant other displays protective behavior disproportionate to the client's abilities/need for autonomy; Significant other enters into limited personal communication with client; Significant other withdraws from client; [Significant other displays sudden outbursts of emotions/emotional lability or interferes with necessary nursing/medical interventions]

COPING, DEFENSIVE*Diagnostic Division: Ego Integrity*

Definition: Repeated projection of falsely positive self-evaluation based on a self-protective pattern that defends against underlying perceived threats to positive self-regard.

RELATED FACTORS

To be developed [Refer to ND Coping, ineffective]

DEFINING CHARACTERISTICS**Subjective**

Denial of obvious problems/weaknesses; Projection of blame/responsibility; Hypersensitive to slight/criticism; Grandiosity; Rationalizes failures; [Refuses/rejects assistance]

Objective

Superior attitude toward others; Difficulty establishing/maintaining relationships; [Avoidance of intimacy]; Hostile laughter; Ridicule of others; [Aggressive behavior]; Difficulty in perception of reality/reality testing; Lack of follow-through or participation in treatment/therapy; [Attention-seeking behavior]

COPING, DISABLED FAMILY*Diagnostic Division: Social Interaction*

Definition: The behavior of a significant person (family member or other primary person) that disables his or her own capacities and the client's capacity to effectively address tasks essential to either person's adaptation to the health challenge.

RELATED FACTORS

Significant person with chronically unexpressed feelings (e.g., guilt, anxiety, hostility, despair); Dissonant coping styles for dealing with adaptive tasks by the significant person and client or among significant people; Highly ambivalent family relationships; Arbitrary handling of a family's resistance to treatment [that tends to solidify defensiveness as it fails to deal adequately with underlying anxiety]; [High-risk family situations, such as single or adolescent parent, abusive relationship, substance abuse, acute/chronic disabilities, member with terminal illness]

DEFINING CHARACTERISTICS**Subjective**

[Expresses despair regarding family reactions/lack of involvement]

Objective

Psychosomaticism; Intolerance; Rejection; Abandonment; Desertion; Agitation; Aggression; Hostility; Depression; Carrying on usual routines without regard for client's needs; Disregarding client's needs; Neglectful care of the client in regard to basic human needs/illness treatment; Neglectful relationships with other family members; Family behaviors that are detrimental to well-being; Distortion of reality regarding the client's health problem; Impaired restructuring of a meaningful life for self; Impaired individualization; Prolonged overconcern for client; Taking on illness signs of client; Client's development of dependence

COPING, INEFFECTIVE*Diagnostic Division: Ego Integrity*

Definition: Inability to form a valid appraisal of the stressors, inadequate choices of practiced responses, and/or inability to use available resources.

RELATED FACTORS

Situational/maturational crises; High degree of threat; Inadequate opportunity to prepare for stressor; Disturbance in pattern of appraisal of threat; Inadequate level of confidence in ability to cope; Inadequate level of perception of control; Uncertainty; Inadequate resources available; Inadequate social support created by characteristics of relationships; Disturbance in pattern of tension release; Inability to conserve adaptive energies; Gender differences in coping strategies; [Work overload; No vacations; Too many deadlines]; [Impairment of nervous system; Cognitive/sensory/perceptual impairment; Memory loss]; [Severe/chronic pain]

DEFINING CHARACTERISTICS**Subjective**

Verbalization of inability to cope or inability to ask for help; Sleep disturbance; Fatigue; Abuse of chemical agents; [Reports of muscular/emotional tension]; [Lack of appetite]

Objective

Lack of goal-directed behavior/resolution of problem, including inability to attend to and difficulty with organizing information; [Lack of assertive behavior]; Use of forms of coping that impede adaptive behavior [including inappropriate use of defense mechanisms, verbal manipulation]; Inadequate problem solving; Inability to meet role ex-

pectations/basic needs [e.g., skipping meals, little/no exercise]; Decreased use of social support; Poor concentration; Change in usual communication patterns; High illness rate [e.g., high blood pressure, ulcers, irritable bowel, frequent headaches/neckaches]; Risk taking; Destructive behavior toward self [including overeating, excessive smoking/drinking, overuse of prescribed/OTC medications, illicit drug use]; [Behavioral changes, e.g., impatience, frustration, irritability, discouragement]

COPING, INEFFECTIVE COMMUNITY

Diagnostic Division: Social Interaction

Definition: A pattern of community activities for adaption and problem solving that is unsatisfactory for meeting the demands or needs of the community. [Community is defined as “a group of people with a common identity or perspective, occupying space during a given period of time, and functioning through a social system to meet its needs within a larger social environment.”]

RELATED FACTORS

Deficits in social support services and resources; Inadequate resources for problem solving; Ineffective or nonexistent community systems (e.g., lack of emergency medical system, transportation system, or disaster planning systems); Natural or man-made disasters

DEFINING CHARACTERISTICS

Subjective

Community does not meet its own expectations; Expressed vulnerability; Community powerlessness; Stressors perceived as excessive

Objective

Deficits of community participation; Excessive community conflicts; High illness rates; Increased social problems (e.g., homicides, vandalism, arson, terrorism, robbery, infanticide, abuse, divorce, unemployment, poverty, militancy, mental illness)

COPING, READINESS FOR ENHANCED

Diagnostic Division: Ego Integrity

Definition: A pattern of cognitive and behavioral efforts to manage demands that is sufficient for well-being and can be strengthened.

RELATED FACTORS

To be developed

DEFINING CHARACTERISTICS

Subjective

Defines stressors as manageable; Seeks social support/knowledge of new strategies; Acknowledges power

Objective

Uses a broad range of problem-oriented/emotion-oriented strategies; Uses spiritual resources

COPING, READINESS FOR ENHANCED COMMUNITY

Diagnostic Division: Social Interaction

Definition: Pattern of community activities for adaptation and problem solving that is satisfactory for meeting the demands or needs of the community but can be improved for management of current and future problems/stressors.

RELATED FACTORS

Social supports available; Resources available for problem solving; Community has a sense of power to manage stressors

DEFINING CHARACTERISTICS

Subjective

Agreement that community is responsible for stress management

Objective

Active planning by community for predicted stressors; Active problem solving by community when faced with issues; Positive communication among community members;

Positive communication between community/aggregates and larger community; Programs available for recreation/relaxation; Resources sufficient for managing stressors

COPING, READINESS FOR ENHANCED FAMILY

Diagnostic Division: Social Interaction

Definition: Effective managing of adaptive tasks by family member involved with the client's health challenge, who now exhibits desire and readiness for enhanced health and growth in regard to self and in relation to the client.

RELATED FACTORS

Needs sufficiently gratified to enable goals of self-actualization to surface; Adaptive tasks effectively addressed to enable goals of self-actualization to surface; [Developmental stage, situational crises/supports]

DEFINING CHARACTERISTICS

Subjective

Family member attempts to describe growth impact of crisis [on his or her own values, priorities, goals, or relationships]; Individual expresses interest in making contact with others who have experienced a similar situation

Objective

Family member moves in direction of health promoting/enriching; Chooses experiences that optimize wellness

DEATH SYNDROME, RISK FOR SUDDEN INFANT

Diagnostic Division: Safety

Definition: Presence of risk factors for sudden death of an infant under 1 year of age [Sudden Infant Death Syndrome (SIDS) is the sudden death of an infant under 1 year of age, which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history. SIDS is a subset of Sudden Unexpected Death in Infancy (SUDI) that is the sudden and unexpected death of an infant due to natural or unnatural causes.].

RISK FACTORS

Modifiable

Delayed/lack of prenatal care; Infants placed to sleep in the prone/side-lying position; Soft underlayment (loose articles in the sleep environment); Infant overheating/overwrapping; Prenatal/postnatal smoke exposure

Potentially Modifiable

Young maternal age; Low birth weight; Prematurity

Nonmodifiable

Male gender; Ethnicity (e.g., African American, Native American); Seasonality of SIDS deaths (higher in winter and fall months); Infant age of 2 to 4 months

RELATED FACTORS

To be developed

DECISION MAKING, READINESS FOR ENHANCED

Diagnostic Division: Cognitive-Perceptual Pattern

Definition: A pattern of choosing courses of action that is sufficient for meeting short- and long-term health-related goals and can be strengthened.

RELATED FACTORS

To be developed

DEFINING CHARACTERISTICS

Subjective

Expresses desire to enhance: Decision making; Congruency of decisions with personal values and goals; Congruency of decisions with sociocultural values and goals; Risk benefit analysis of decisions; Understanding of choices for decision making; Understanding of the meaning of choices; Use of reliable evidence for decisions

DENIAL, INEFFECTIVE

Diagnostic Division: Ego Integrity

Definition: Conscious or unconscious attempt to disavow the knowledge or meaning of an event to reduce anxiety/fear to the detriment of health.

RELATED FACTORS

Anxiety; Threat of inadequacy in dealing with strong emotions; Lack of control of life situation; Fear of loss of autonomy; Overwhelming stress; Lack of competency in using effective coping mechanisms; Threat of unpleasant reality; Fear of separation/death; Lack of emotional support from others

DEFINING CHARACTERISTICS**Subjective**

Minimizes symptoms; Displaces source of symptoms to other organs; Unable to admit impact of disease on life pattern; Displaces fear of impact of the condition; Does not admit fear of death or invalidism

Objective

Delays seeking health care attention to the detriment of health; Does not perceive personal relevance of symptoms or danger; Unable to admit impact of disease on life pattern; Does not perceive personal relevance of danger; Makes dismissive gestures/comments when speaking of distressing events; Displays inappropriate affect; Uses self-treatment

DENTITION, IMPAIRED

Diagnostic Division: Food / Fluid

Definition: Disruption in tooth development/eruption patterns or structural integrity of individual teeth.

RELATED FACTORS

Dietary habits; Nutritional deficits; Selected prescription medications; Chronic use of tobacco/coffee/tea/red wine; Ineffective oral hygiene; Sensitivity to heat or cold; Chronic vomiting; Deficient knowledge regarding dental health; Excessive use of abrasive cleaning agents/intake of fluorides; Barriers to self-care; Lack of access/economic barriers to professional care; Genetic predisposition; Bruxism; [Traumatic injury/surgical intervention]

DEFINING CHARACTERISTICS**Subjective**

Toothache

Objective

Halitosis; Tooth enamel discoloration; Erosion of enamel; Excessive plaque; Worn down/abraded teeth; Crown/root caries; Tooth fracture(s); Loose teeth; Missing teeth; Absence of teeth; Premature loss of primary teeth; Incomplete eruption for age (may be primary or permanent teeth); Excessive calculus; Malocclusion/tooth misalignment; Asymmetrical facial expression

DEVELOPMENT, RISK FOR DELAYED

Diagnostic Division: Teaching / Learning

Definition: At risk for delay of 25% or more in one or more of the areas of social or self-regulatory behavior, or cognitive, language, gross or fine motor skills.

RISK FACTORS**Prenatal**

Maternal age <15 or >35 years; Unplanned/unwanted pregnancy; Lack of/late/poor prenatal care; Inadequate nutrition; Poverty; Illiteracy; Genetic/ endocrine disorders; Infections; Substance abuse

Individual

Prematurity; Congenital/genetic disorders; Vision/hearing impairment; Frequent otitis media; Inadequate nutrition; Failure to thrive; Chronic illness; Chemotherapy; Radiation therapy; Brain damage (e.g., hemorrhage in postnatal period, shaken baby, abuse, accident); Seizures; Positive drug screening(s); Substance abuse; Lead poisoning; Foster/adopted child; Behavior disorders; Technology-dependent; Natural disaster

Environmental

Poverty; Violence

Caregiver

Mental retardation; Severe learning disability; Abuse; Mental illness

DIARRHEA*Diagnostic Division: Elimination***Definition:** Passage of loose, unformed stools.**RELATED FACTORS****Psychological**

High stress levels and anxiety

Situational

Laxative/alcohol abuse; toxins; contaminants; Adverse effects of medications; radiation; Tube feedings; Travel

Physiological

Inflammation; Irritation; Infectious processes; Parasites; Malabsorption

DEFINING CHARACTERISTICS**Subjective**

Abdominal pain; Urgency; Cramping

Objective

Hyperactive bowel sounds; At least three loose or liquid stools per day

DIGNITY, RISK FOR COMPROMISED HUMAN*Diagnostic Division: Ego Integrity***Definition:** At risk for perceived loss of respect and honor.**RISK FACTORS**

Loss of control of body functions; Exposure of the body; Perceived humiliation/invasion of privacy; Disclosure of confidential information; Stigmatizing label; Use of undefined medical terms; Perceived dehumanizing treatment/intrusion by clinicians; Inadequate participation in decision making; Cultural incongruity

DISTRESS, MORAL*Diagnostic Division: Ego Integrity***Definition:** Response to the inability to carry out one's chosen ethical/moral decision/action.**RELATED FACTORS**

Conflict among decision makers [e.g., patient/family, health care providers, insurance payers, regulatory agencies]; Conflicting information guiding moral/ethical decision making; Cultural conflicts; Treatment decisions; End of life decisions; Loss of autonomy; Time constraints for decision making; Physical distance of decision maker

DEFINING CHARACTERISTICS**Subjective**

Expresses anguish (e.g., powerlessness, guilt, frustration, anxiety, self-doubt, fear) over difficulty acting on one's moral choice

DISUSE SYNDROME, RISK FOR*Diagnostic Division: Activity/Rest***Definition:** At risk for deterioration of body systems as the result of prescribed or unavoidable musculoskeletal inactivity.

NOTE: NANDA identifies complications from immobility that can include pressure ulcer, constipation, stasis of pulmonary secretions, thrombosis, urinary tract infection/retention, decreased strength/endurance, orthostatic hypotension, decreased range of joint motion, disorientation, body image disturbance, and powerlessness.

RISK FACTORS

Severe pain [chronic pain]; Paralysis [other neuromuscular impairment]; Mechanical or prescribed immobilization; Altered level of consciousness [chronic physical or mental illness]

DIVERSIONAL ACTIVITY, DEFICIENT

Diagnostic Division: Activity/Rest

Definition: Decreased stimulation from (or interest or engagement in) recreational or leisure activities.

NOTE: Internal/external factors that may or may not be beyond the individual's control.

RELATED FACTORS

Environmental lack of diversional activity [e.g., long-term hospitalization; frequent, lengthy treatments, homebound]; [Physical/ developmental limitations]; [Bedridden]; [Fatigue]; [Pain]; [Situational crisis]; [Lack of resources]; [Psychological condition/depression]

DEFINING CHARACTERISTICS**Subjective**

Patient's statement regarding boredom (e.g., wish there were something to do, to read, etc.); Usual hobbies cannot be undertaken in hospital [home or other care setting]; [Changes in abilities/physical limitations]

Objective

[Flat affect; disinterest, inattentiveness]; [Lethargy]; [Withdrawal]; [Restlessness]; [Crying]; [Hostility]; [Overeating or lack of interest in eating]; [Weight loss or gain]

ENERGY FIELD, DISTURBED

Diagnostic Division: Ego Integrity

Definition: Disruption of the flow of energy [aura] surrounding a person's being that results in a disharmony of the body, mind, and/or spirit.

RELATED FACTORS

Slowing or blocking of energy flow secondary to:

Pathological factors

Illness; Pregnancy; Injury

Treatment related factors

Immobility; Labor and delivery; Perioperative experience; Chemotherapy

Situational factors

Pain; Fear; Anxiety; Grieving

Maturational factors

Age-related developmental difficulties/crisis

DEFINING CHARACTERISTICS**Objective**

Perception of changes in patterns of energy flow, such as: Movement wave/spike/tingling/dense/flowing); Sounds (tone/words); Temperature change (warmth/coolness); Visual changes (image/color); Disruption of the field (deficient, hole, spike, bulge, obstruction, congestion, diminished flow in energy field)

ENVIRONMENTAL INTERPRETATION SYNDROME, IMPAIRED

Diagnostic Division: Safety

Definition: Consistent lack of orientation to person, place, time, or circumstances over more than 3 to 6 months, necessitating a protective environment.

RELATED FACTORS

Dementia [e.g., Alzheimer's disease, multi-infarct, Pick's disease, AIDS dementia]; Huntington's disease; Depression

DEFINING CHARACTERISTICS**Subjective**

[Loss of occupation or social function from memory decline]

Objective

Consistent disorientation; Chronic confusional states; Inability to follow simple directions; Inability to reason/concentrate; Slow in responding to questions; Loss of occupation/social functioning

FAILURE TO THRIVE, ADULT

Diagnostic Division: Food/Fluid

Definition: A progressive functional deterioration of a physical and cognitive nature; the individual's ability to live with multisystem diseases, cope with ensuing problems, and manage his/her care is remarkably diminished.

RELATED FACTORS

Depression; [Major disease/degenerative condition]; [Aging process]

DEFINING CHARACTERISTICS**Subjective**

Expresses loss of interest in pleasurable outlets; Altered mood state; Verbalizes desire for death

Objective

Inadequate nutritional intake; Consumption of minimal to no food at most meals (i.e., consumes less than 75% of normal requirements); Anorexia; Unintentional weight loss (e.g., 5% in 1 month, 10% in 6 months); Physical decline (e.g., fatigue, dehydration, incontinence of bowel and bladder); Cognitive decline: problems with responding to environmental stimuli; demonstrated difficulty in reasoning, decision making, judgment, memory, concentration, decreased perception; Apathy; Decreased participation in activities of daily living [ADLs]; Self-care deficit; Neglect of home environment/financial responsibilities; Decreased social skills/social withdrawal; Frequent exacerbations of chronic health problems

FALLS, RISK FOR

Diagnostic Division: Safety

Definition: Increased susceptibility to falling that may cause physical harm.

RISK FACTORS**Adults**

History of falls; Wheelchair use; Use of assistive devices (e.g., walker, cane); Age 65 or over; Lives alone; Lower limb prosthesis

Physiological

Presence of acute illness; Postoperative conditions; Visual/hearing difficulties; Arthritis; Orthostatic hypotension; Faintness when turning/extending neck; Sleeplessness; Anemias; Vascular disease; Neoplasms (i.e., fatigue/limited mobility); Urgency; Incontinence; Diarrhea; Postprandial blood sugar changes; [Hypoglycemia]; Impaired physical mobility; Foot problems; Decreased lower extremity strength; Impaired balance; Difficulty with gait; Proprioceptive deficits [e.g., unilateral neglect]; Neuropathy

Cognitive

Diminished mental status [e.g., confusion, delirium, dementia, impaired reality testing]

Medications

Antihypertensive agents; ACE inhibitors; Diuretics; Tricyclic antidepressants; Anti-anxiety agents; Hypnotics; Tranquilizers; Narcotics; Alcohol use

Environment

Restraints; Weather conditions (e.g., wet floors/ice); Cluttered environment; Throw/scatter rugs; No antislip material in bath/shower; Unfamiliar, dimly lit room

Children

<2 years of age; Male gender when <1 year of age; Lack of: gate on stairs; window guards; auto restraints; Unattended infant on elevated surface; Bed located near window; Lack of parental supervision

FAMILY PROCESSES, DYSFUNCTIONAL: ALCOHOLISM

Diagnostic Division: Social Interaction

Definition: Psychosocial, spiritual, and physiological functions of the family unit are chronically disorganized, which leads to conflict, denial of problems, resistance to change, ineffective problem solving, and a series of self-perpetuating crises.

RELATED FACTORS

Abuse of alcohol [/addictive substances]; Family history of alcoholism/resistance to treatment; Inadequate coping skills; Addictive personality; Lack of problem-solving skills; Biochemical influences; Genetic predisposition

DEFINING CHARACTERISTICS**Subjective****Feelings**

Anxiety; Tension; Distress; Decreased self-esteem; Worthlessness; Lingering resentment; Anger; Suppressed rage; Frustration; Shame; Embarrassment; Hurt; Unhappiness; Guilt; Emotional isolation; Loneliness; Powerlessness; Insecurity; Hopelessness; Rejection; Responsibility for alcoholic's behavior; Vulnerability; Mistrust; Depression; Hostility; Fear; Confusion; Dissatisfaction; Loss; Being different from other people; Misunderstood; Emotional control by others; Being unloved; Lack of identity; Abandonment; Confused love and pity; Moodiness; Failure

Roles and Relationships

Family denial; Deterioration in family relationships; Disturbed family dynamics; Ineffective spouse communication; Marital problems; Intimacy dysfunction; Altered role function; Disrupted family roles/rituals; Inconsistent parenting; Low perception of parental support; Chronic family problems; Lack of skills necessary for relationships; Lack of cohesiveness; Pattern of rejection; Economic problems; Neglected obligations

Objective**Feelings**

Repressed emotions

Roles and Relationships

Closed communication systems; Triangulating family relationships; Reduced ability of family members to relate to each other for mutual growth and maturation; Family does not demonstrate respect for individuality/autonomy of its members

Behaviors

Alcohol abuse; Substance abuse other than alcohol; Nicotine addiction; Enabling to maintain drinking [/substance use]; Inadequate understanding/deficient knowledge about alcoholism [/substance abuse]; Family special occasions are alcohol-centered; Rationalization/denial of problems; Refusal to get help; Inability to accept/receive help appropriately; Inappropriate expression of anger; Blaming; Criticizing; Verbal abuse of children/spouse/parent; Lying; Broken promises; Lack of reliability; Manipulation; Dependency; Inability to express/accept wide range of feelings; Difficulty with intimate relationships; Diminished physical contact; Harsh self-judgment; Difficulty having fun; Self-blaming; Isolation; Unresolved grief; Seeking approval/affirmation; Impaired/contradictory/paradoxical/controlling communication; Power struggles; Ineffective problem-solving skills; Lack of dealing with conflict; Orientation toward tension relief rather than achievement of goals; Agitation; Escalating conflict; Chaos; Disturbances in concentration; Disturbances in academic performance in children; Failure to accomplish developmental tasks; Difficulty with life-cycle transitions; Inability to meet emotional/security/spiritual needs of its members; Inability to adapt to change; Immaturity; Stress-related physical illnesses; Inability to accept health; Inability to deal with traumatic experiences constructively

FAMILY PROCESSES, INTERRUPTED

Diagnostic Division: Social Interaction

Definition: A change in family relationships and/or functioning.

RELATED FACTORS

Situational transition/crises; Developmental transition/crises [e.g., loss or gain of a family member, adolescence, leaving home for college]; Shift in health status of a family member; Family roles shift; Power shift of family members; Modification in family finances/social status; Interaction with community

DEFINING CHARACTERISTICS**Subjective**

Changes in: Power alliances; Satisfaction with family; Expressions of conflict within family; Effectiveness in completing assigned tasks; Stress-reduction behaviors; Expressions of conflict with/isolation from community resources; Somatic complaints; [Family expresses confusion about what to do; verbalizes they are having difficulty responding to change]

Objective

Changes in: Assigned tasks; Participation in problem solving/decision making; Communication patterns; Mutual support; Availability for emotional support/affective responsiveness; Intimacy; Patterns; Rituals

FAMILY PROCESSES, READINESS FOR ENHANCED

Diagnostic Division: Social Interaction

Definition: A pattern of family functioning that is sufficient to support the well-being of family members and can be strengthened.

RELATED FACTORS

To be developed

DEFINING CHARACTERISTICS**Subjective**

Expresses willingness to enhance family dynamics; Communication is adequate; Relationships are generally positive; Interdependent with community; Family tasks are accomplished; Energy level of family supports activities of daily living; Family adapts to change

Objective

Family functioning meets needs of family members; Activities support the safety/growth of family members; Family roles are appropriate/flexible for developmental stages; Respect for family members is evident; Boundaries of family members are maintained; Family resilience is evident; Balance exists between autonomy and cohesiveness

FATIGUE

Diagnostic Division: Activity/Rest

Definition: An overwhelming sustained sense of exhaustion and decreased capacity for physical and mental work at usual level.

RELATED FACTORS**Psychological**

Stress; Anxiety; Boring lifestyle; Depression

Environmental

Noise; Lights; Humidity; Temperature

Situational

Occupation; Negative life events

Physiological

Increased physical exertion; Sleep deprivation; Pregnancy; Disease states; Malnutrition; Anemia; Poor physical condition; [Altered body chemistry (e.g., medications, drug withdrawal, chemotherapy)]

DEFINING CHARACTERISTICS**Subjective**

Verbalization of an unremitting/overwhelming lack of energy; Inability to maintain usual routines/level of physical activity; Perceived need for additional energy to accomplish routine tasks; Increase in rest requirements; Tired; Inability to restore energy even after sleep; Feelings of guilt for not keeping up with responsibilities; Compromised libido; Increase in physical complaints

Objective

Lethargic; Listless; Drowsy; Lack of energy; Compromised concentration; Disinterest in surroundings; Introspection; Decreased performance; [Accident-prone]

FEAR

Diagnostic Division: Ego Integrity

Definition: Response to perceived threat [real or imagined] that is consciously recognized as a danger.

RELATED FACTORS

Innate origin (e.g., sudden noise, height, pain, loss of physical support); Innate releasers (neurotransmitters); Phobic stimulus; Learned response (e.g., conditioning, modeling)

from or identification with others); Unfamiliarity with environmental experience(s); Separation from support system in potentially stressful situation (e.g., hospitalization, hospital procedures [/treatments]); Language barrier; Sensory impairment

DEFINING CHARACTERISTICS

Subjective

Report of: Apprehension; Excitement; Being scared; Alarm; Panic; Terror; Dread; Decreased self-assurance; Increased tension; Jitteriness

Cognitive

Identifies object of fear; Stimulus believed to be a threat

Physiological

Anorexia; Nausea; Fatigue; Dry mouth; [Palpitations]

Objective

Cognitive

Diminished productivity/learning ability/problem solving

Behaviors

Increased alertness; Avoidance [/flight]; Attack behaviors; Impulsiveness; Narrowed focus on the source of the fear

Physiological

Increased pulse; Vomiting; Diarrhea; Muscle tightness; Increased respiratory rate; Dyspnea; Increased systolic blood pressure; Pallor; Increased perspiration; Pupil dilation

FLUID BALANCE, READINESS FOR ENHANCED

Diagnostic Division: Food / Fluid

Definition: A pattern of equilibrium between fluid volume and chemical composition of body fluids that is sufficient for meeting physical needs and can be strengthened.

RELATED FACTORS

To be developed

DEFINING CHARACTERISTICS

Subjective

Expresses willingness to enhance fluid balance; No excessive thirst

Objective

Stable weight; No evidence of edema; Moist mucous membranes; Intake adequate for daily needs; Straw-colored urine; Specific gravity within normal limits; Urine output appropriate for intake; Good tissue turgor; [No signs of] dehydration

[FLUID VOLUME, DEFICIENT (HYPER/HYPOTONIC)]

Diagnostic Division: Food / Fluid

Definition: Decreased intravascular, interstitial, and/or intracellular fluid. This refers to dehydration with changes in sodium.

NOTE: NANDA has restricted Fluid Volume deficit to address only isotonic dehydration. For patient needs related to dehydration associated with alterations in sodium, the authors have provided this second diagnostic category

RELATED FACTORS

Hypertonic dehydration: uncontrolled diabetes mellitus/insipidus, HHNC, increased intake of hypertonic fluids/IV therapy, inability to respond to thirst reflex/inadequate free water supplementation (high-osmolality enteral feeding formulas), renal insufficiency/failure; [Hypotonic dehydration: chronic illness/malnutrition, excessive use of hypotonic IV solutions (e.g., D5W), renal insufficiency]

DEFINING CHARACTERISTICS

Subjective

[Fatigue]; [Nervousness]; [Exhaustion]; [Thirst]

Objective

[Increased urine output, dilute urine (initially)]; [Decreased output/oliguria]; [Weight loss]; [Decreased venous filling]; [Hypotension (postural)]; [Increased pulse rate]; [Decreased pulse volume/pressure]; [Decreased skin turgor]; [Dry skin/mucous mem-

branes]; [Increased body temperature]; [Change in mental status (e.g., confusion)]; [Hemoconcentration]; [Altered serum sodium]

FLUID VOLUME, DEFICIENT [ISOTONIC]

Diagnostic Division: Food / Fluid

Definition: Decreased intravascular, interstitial, and/or intracellular fluid. This refers to dehydration, water loss alone without change in sodium.

NOTE: This diagnosis has been structured to address isotonic dehydration (hypovolemia) when fluids and electrolytes are lost in even amounts and excluding states in which changes in sodium occur. For client needs related to dehydration associated with alterations in sodium, refer to [deficient Fluid Volume: hyper/hypotonic]

RELATED FACTORS

Active fluid volume loss [e.g., hemorrhage, gastric intubation, diarrhea, wounds; abdominal cancer; burns, fistulas, ascites (third spacing); use of hyperosmotic radiopaque contrast agents]; Failure of regulatory mechanisms [e.g., fever/thermoregulatory response, renal tubule damage]; [Impaired access/intake/absorption of fluids]

DEFINING CHARACTERISTICS

Subjective

Thirst; Weakness

Objective

Decreased urine output; Increased urine concentration; Decreased venous filling; Decreased pulse volume/pressure; Sudden weight loss (except in third spacing); Decreased BP; Increased pulse rate; Increased body temperature; Decreased skin/tongue turgor; Dry skin/mucous membranes; Change in mental state; Elevated hematocrit

FLUID VOLUME EXCESS

Diagnostic Division: Food / Fluid

Definition: Increased isotonic fluid retention.

RELATED FACTORS

Compromised regulatory mechanism [e.g., syndrome of inappropriate antidiuretic hormone (SIADH), or decreased plasma proteins as found in conditions such as malnutrition, draining fistulas, burns, organ failure]; Excess fluid intake; Excess sodium intake; [Drug therapies such as chlorpropamide, tolbutamide, vincristine, triptylines, carbamazepine]

DEFINING CHARACTERISTICS

Subjective

Anxiety; [Difficulty breathing]

Objective

Edema; Anasarca; Weight gain over short period of time; Intake exceeds output; Oliguria; Specific gravity changes; Adventitious breath sounds [rales or crackles]; Changes in respiratory pattern; Dyspnea; Orthopnea; Pulmonary congestion; Pleural effusion; Pulmonary artery pressure changes; BP changes; Increased central venous pressure; Jugular vein distention; Positive hepatojugular reflex; S₃ heart sound; Change in mental status; Restlessness; Decreased Hb/Hct; Altered electrolytes; Azotemia

FLUID VOLUME, RISK FOR DEFICIENT

Diagnostic Division: Food / Fluid

Definition: At risk for experiencing vascular, cellular, or intracellular dehydration.

RISK FACTORS

Extremes of age/weight; Loss of fluid through abnormal routes (e.g., indwelling tubes); Knowledge deficiency; Factors influencing fluid needs (e.g., hypermetabolic states); Medications (e.g., diuretics); Excessive losses through normal routes (e.g., diarrhea); Deviations affecting access/intake/absorption of fluids

FLUID VOLUME, RISK FOR IMBALANCED

Diagnostic Division: Food / Fluid

Definition: A risk of a decrease, an increase, or a rapid shift from one to the other of intravascular, interstitial, and/or intracellular fluid. This refers to body fluid loss, gain, or both.

RISK FACTORS

Scheduled for major invasive procedures [Rapid/sustained loss, e.g., hemorrhage, burns, fistulas]; [Rapid fluid replacement]

GAS EXCHANGE, IMPAIRED

Diagnostic Division: Respiration

Definition: Excess or deficit in oxygenation and/or carbon dioxide elimination at the alveoli-capillary membrane. [This may be an entity of its own but also may be an end result of other pathology with an interrelatedness between airway clearance and/or breathing pattern problems.]

RELATED FACTORS

Ventilation-perfusion imbalance [as in altered blood flow (e.g., pulmonary embolus, increased vascular resistance), vasospasm, heart failure, hypovolemic shock]; Alveolar-capillary membrane changes [e.g., acute adult respiratory distress syndrome]; chronic conditions such as restrictive/obstructive lung disease, pneumoconiosis, respiratory depressant drugs, brain injury, asbestosis/silicosis]; [Altered oxygen supply (e.g., altitude sickness)]; [Altered oxygen-carrying capacity of blood (e.g., sickle cell/other anemia, carbon monoxide poisoning)]

DEFINING CHARACTERISTICS**Subjective**

Dyspnea; Visual disturbances; Headache upon awakening; [Sense of impending doom]

Objective

Confusion; [Decreased mental acuity]; Restlessness; Irritability; [Agitation]; Somnolence; [Lethargy]; Abnormal ABGs/arterial pH; Hypoxia; Hypoxemia; Hypercapnia; Hypercarbia; Decreased carbon dioxide; Cyanosis (in neonates only); Abnormal skin color (e.g., pale, dusky); Abnormal breathing (e.g., rate, rhythm, depth); Nasal flaring; Tachycardia; [Dysrhythmias]; Diaphoresis; [Polycythemia]

GLUCOSE, RISK FOR UNSTABLE BLOOD

Diagnostic Division: Food / Fluid

Definition: Risk for variation of blood glucose/sugar levels from the normal range.

RISK FACTORS

Lack of acceptance of diagnosis; Deficient knowledge of diabetes management (e.g., action plan); Lack of diabetes management/adherence to diabetes management (e.g., action plan); Inadequate blood glucose monitoring; Medication management; Dietary intake; Weight gain/loss; Rapid growth periods; Pregnancy; Physical health status/activity level; Stress; Mental health status; Developmental level

GRIEVING

Diagnostic Division: Ego Integrity

Definition: A normal complex process that includes emotional, physical, spiritual, social, and intellectual responses and behaviors by which individuals, families, and communities incorporate an actual, anticipated, or perceived loss into their daily lives.

RELATED FACTORS

Anticipatory loss of significant other/significant object (e.g., possessions, job, status, home, parts and processes of body); Death of significant other; Loss of significant object

DEFINING CHARACTERISTICS**Subjective**

Anger; Pain; Suffering; Despair; Blame; Alteration in: activity level, sleep/dream patterns; Making meaning of the loss; Personal growth; Experiencing relief

Objective

Detachment; Disorganization; Psychological distress; Panic behavior; Maintaining the connection to the deceased; Alterations in immune/neuroendocrine function

GRIEVING, COMPLICATED

Diagnostic Division: Ego Integrity

Definition: A disorder that occurs after the death of a significant other [/object], in which the experience of distress accompanying bereavement fails to follow normative expectations and manifests in functional impairment.

RELATED FACTORS

Death/sudden death of a significant other; Emotional instability; Lack of social support; [Loss of significant object (e.g., possessions, job, status, home, ideals, parts and processes of the body—amputation, paralysis, chronic/terminal illness)]

DEFINING CHARACTERISTICS**Subjective**

Verbalizes: Anxiety; Lack of acceptance of the death; Persistent painful memories; Distressful feelings about the deceased; Self-blame; Verbalizes feelings of: Anger; Disbelief; Detachment from others; Verbalizes feeling: Dazed; Empty; Stunned; In shock; Decreased sense of well-being; Fatigue; Low levels of intimacy; Depression; Yearning

Objective

Decreased functioning in life roles; Persistent emotional distress; Separation/traumatic distress; Preoccupation with thoughts of the deceased; Longing/searching for the deceased; Self-blame; Experiencing somatic symptoms of the deceased; Rumination; Grief avoidance

GRIEVING, RISK FOR COMPLICATED

Diagnostic Division: Ego Integrity

Definition: At risk for a disorder that occurs after the death of a significant other, in which the experience of distress accompanying bereavement fails to follow normative expectations and manifests in functional impairment.

RISK FACTORS

Death of a significant other; Emotional instability; Lack of social support; [Loss of significant object (e.g., possessions, job, status, home, parts and processes of body)]

GROWTH, RISK FOR DISPROPORTIONATE

Diagnostic Division: Teaching/Learning

Definition: At risk for growth above the 97th percentile or below the 3rd percentile for age, crossing two percentile channels; disproportionate growth.

RISK FACTORS**Prenatal**

Maternal nutrition; Maternal infection; Multiple gestation; Substance use/abuse; Teratogen exposure; Congenital/genetic disorders [e.g., dysfunction of endocrine gland, tumors]

Individual

Prematurity; Malnutrition; Caregiver/individual maladaptive feeding behaviors; Insatiable appetite; Anorexia; [Impaired metabolism, greater-than-normal energy requirements]; Infection; Chronic illness [e.g., chronic inflammatory diseases]; Substance [use]/abuse [including anabolic steroids]

Environmental

Deprivation; Poverty; Violence; Natural disasters; Teratogen; Lead poisoning

Caregiver

Abuse; Mental illness/retardation; Severe learning disability

GROWTH AND DEVELOPMENT, DELAYED

Diagnostic Division: Teaching/Learning

Definition: Deviations from age growth norms.

RELATED FACTORS

Inadequate caretaking; [Physical/emotional neglect or abuse]; Indifference; Inconsistent responsiveness; Multiple caretakers; Separation from significant others; Environmental/stimulation deficiencies; Effects of physical disability [handicapping condition]; Prescribed dependence [insufficient expectations for self-care]; [Physical/emotional illness (chronic, traumatic), e.g., chronic inflammatory disease, pituitary tumors, impaired nutrition/metabolism, greater-than-normal energy requirements; prolonged/painful treatments; prolonged/repeated hospitalizations]; [Sexual abuse]; [Substance use/abuse]

DEFINING CHARACTERISTICS**Subjective**

Inability to perform self-care or self-control activities appropriate for age

Objective

Delay/difficulty in performing skills typical of age group; [Loss of previously acquired skills, precocious/accelerated skill attainment]; Altered physical growth; Flat affect, listlessness, decreased responses; [Sleep disturbances, negative mood/response]

HEALTH MAINTENANCE, INEFFECTIVE

Diagnostic Division: Safety

Definition: Inability to identify, manage, and/or seek out help to maintain health.

NOTE: This diagnosis contains components of other nursing diagnoses. We recommend subsuming health maintenance interventions under the “basic” nursing diagnosis when a single causative factor is identified (e.g., deficient Knowledge; Communication, impaired verbal; Thought Processes, disturbed; Individual/Family Coping, ineffective; Growth and Development, delayed).

RELATED FACTORS

Deficient communication skills [written, verbal, gestural]; Unachieved developmental tasks; Inability to make appropriate judgments; Perceptual/cognitive impairment; Diminished/lack of gross motor skills; Diminished/lack of fine motor skills; Ineffective individual/family coping; Complicated grieving; Spiritual distress; Insufficient resource (e.g., equipment, finances); [Lack of psychosocial supports]

DEFINING CHARACTERISTICS**Subjective**

Lack of expressed interest in improving health behaviors; [Reported compulsive behaviors]

Objective

Demonstrated lack of knowledge regarding basic health practices; Inability to take the responsibility for meeting basic health practices; History of lack of health-seeking behavior; Demonstrated lack of adaptive behaviors to environmental changes; Impairment of personal support system; [Observed compulsive behaviors]

HEALTH-SEEKING BEHAVIORS (SPECIFY)

Diagnostic Division: Teaching / Learning

Definition: Active seeking (by a person in stable health) of ways to alter personal health habits and/or the environment in order to move toward higher level of health.

NOTE: Stable health is defined as achievement of age-appropriate illness-prevention measures; client reports good or excellent health, and signs and symptoms of disease, if present, are controlled.

RELATED FACTORS

To be developed; [Situational/maturational occurrence precipitating concern about current health status]

DEFINING CHARACTERISTICS**Subjective**

Expressed desire to seek a higher level of wellness; Expressed desire for increased control of health practice; Expression of concern about current environmental conditions on health status; Stated unfamiliarity with wellness community resources; [Expressed desire to modify codependent behaviors]

Objective

Demonstrated lack of knowledge in health promotion behaviors; Observed unfamiliarity with wellness community resources

HOME MAINTENANCE, IMPAIRED*Diagnostic Division: Safety***Definition:** Inability to independently maintain a safe, growth-promoting immediate environment.**RELATED FACTORS**

Disease; Injury; Insufficient family organization/planning; Insufficient finances; Impaired functioning; Lack of role modeling; Unfamiliarity with neighborhood resources; Deficient knowledge; Inadequate support systems

DEFINING CHARACTERISTICS**Subjective**

Household members express difficulty in maintaining their home in a comfortable [safe] fashion; Household members request assistance with home maintenance; Household members describe outstanding debts/financial crises

Objective

Disorderly/unclean surroundings; Offensive odors; Inappropriate household temperature; Presence of vermin; Repeated hygienic disorders/infections; Lack of necessary equipment; Unavailable cooking equipment; Insufficient/lack of clothes/linen; Over-taxed family members

HOPE, READINESS FOR ENHANCED*Diagnostic Division: Ego Integrity***Definition:** A pattern of expectations and desires that is sufficient for mobilizing energy on one's own behalf and can be strengthened.**DEFINING CHARACTERISTICS****Subjective**

Expresses desire to enhance: Hope; Belief in possibilities; Congruency of expectations with desires; Ability to set achievable goals; Problem-solving to meet goals; Expresses desire to enhance: Sense of meaning to life; Interconnectedness with others; Spirituality

HOPELESSNESS*Diagnostic Division: Ego Integrity***Definition:** A subjective state in which an individual sees limited or no alternatives or personal choices available and is unable to mobilize energy on own behalf.**RELATED FACTORS**

Prolonged activity restriction, creating isolation; Failing or deteriorating physiologic condition; Long-term stress; abandonment; Lost belief in transcendent values [/God]

DEFINING CHARACTERISTICS**Subjective**

Verbal cues (despondent content, "I can't," sighing); [Believes things will not change/problems will always be there]

Objective

Passivity; Decreased verbalization; Decreased affect; Decreased appetite; Decreased response to stimuli; [Depressed cognitive functions, problems with decisions, thought processes; regression]; Lack of initiative/involvement in care; Sleep pattern disturbance; Turning away from speaker; Shrugging in response to speaker; [Withdrawal from environs]; [Closing eyes]; [Lack of involvement/interest in significant others]; [Angry outbursts]; [Substance abuse]

HYPERTHERMIA*Diagnostic Division: Safety***Definition:** Body temperature is elevated above normal range.**RELATED FACTORS**

Exposure to hot environment; Inappropriate clothing; Vigorous activity; Dehydration; Decreased perspiration; Medications; Anesthesia; Increased metabolic rate; Illness; Trauma

DEFINING CHARACTERISTICS**Subjective**

[Headache]

Objective

Increase in body temperature above normal range; Flushed skin; Warm to touch; Increased respiratory rate; Tachycardia; [Unstable BP]; Seizures; [Muscle rigidity/fasciculations]; [Confusion]

HYPOTHERMIA

Diagnostic Division: Safety

Definition: Body temperature is below normal range.

RELATED FACTORS

Exposure to cool or cold environment [prolonged exposure, e.g., homeless, immersion in cold water/near-drowning; induced hypothermia/cardiopulmonary bypass]; Inadequate clothing; Evaporation from skin in cool environment; Decreased ability to shiver; Aging [or very young]; [Debilitating] illness; Trauma; Damage to hypothalamus; Malnutrition; Decreased metabolic rate; Inactivity; Consumption of alcohol; Medications; [Drug overdose]

DEFINING CHARACTERISTICS**Objective**

Body temperature below normal range; Shivering; Piloerection; Cool skin; Pallor; Slow capillary refill; Cyanotic nail beds; Hypertension; Tachycardia; [Core temperature 95°F/35°C: increased respirations, poor judgment, shivering]; [Core temperature 95° to 93.2°F/35° to 34°C: bradycardia or tachycardia, myocardial irritability/dysrhythmias, muscle rigidity, shivering, lethargic/confused, decreased coordination]; [Core temperature 93.2° to 86°F/34° to 30°C: hypoventilation, bradycardia, generalized rigidity, metabolic acidosis, coma]; [Core temperature below 86°F/30°C: no apparent vital signs, heart rate unresponsive to drug therapy, comatose, cyanotic, dilated pupils, apneic, areflexic, no shivering (appears dead)]

IDENTITY, DISTURBED PERSONAL

Diagnostic Division: Ego Integrity

Definition: Inability to distinguish between self and nonself.

RELATED FACTORS

To be developed; [Organic brain syndrome]; [Poor ego differentiation, as in schizophrenia]; [Panic/dissociative states]; [Biochemical body change]

DEFINING CHARACTERISTICS

To be developed

Subjective

[Confusion about sense of self, purpose or direction in life, sexual identification/preference]

Objective

[Difficulty in making decisions]; [Poorly differentiated ego boundaries]; [See ND Anxiety, panic, for additional characteristics]

IMMUNIZATION STATUS, READINESS FOR ENHANCED

Diagnostic Division: Safety

Definition: A pattern of conforming to local, national, and/or international standards of immunization to prevent infectious disease(s) that is sufficient to protect a person, family, or community and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses desire to enhance: Knowledge of immunization standards; Immunization status; Identification of providers of immunizations; Record-keeping of immunizations; Identification of possible problems associated with immunizations; Behavior to prevent infectious diseases

INFANT BEHAVIOR, DISORGANIZED*Diagnostic Division: Neurosensory*

Definition: Disintegrated physiological and neurobehavioral responses to the environment.

RELATED FACTORS**Prenatal**

Congenital/genetic disorders; Teratogenic exposure; [Exposure to drugs/substances]

Postnatal

Prematurity; Oral/motor problems; Feeding intolerance; Malnutrition; Invasive procedures; Pain

Individual

Gestational/postconceptual age; Immature neurological system; Illness; [Infection]; [Hypoxia/birth asphyxia]

Environmental

Physical environment inappropriateness; Sensory inappropriateness/overstimulation/deprivation; Lack of containment within environment

Caregiver

Cue misreading; Cue knowledge deficit; Environmental stimulation contribution

DEFINING CHARACTERISTICS**Objective****Regulatory Problems**

Inability to inhibit startle; Irritability

State-Organization System

Active-awake (fussy, worried gaze); Quiet-awake (staring, gaze aversion); Diffuse sleep; State oscillation; Irritable crying

Attention-Interaction System

Abnormal response to sensory stimuli (e.g., difficult to soothe, inability to sustain alert status)

Motor System

Finger splay; Fisting; Hands to face; Hyperextension of extremities; Tremors; Startles; Twitches; Jittery; Uncoordinated movement; Changes to motor tone; Altered primitive reflexes

Physiological

Bradycardia; Tachycardia; Arrhythmias; Skin color changes; "Time-out signals" (e.g., gaze, grasp, hiccough, cough, sneeze, sigh, slack jaw, open mouth, tongue thrust); Feeding intolerances

INFANT BEHAVIOR, READINESS FOR ENHANCED ORGANIZED*Diagnostic Division: Neurosensory*

Definition: A pattern of modulation of the physiologic and behavioral systems of functioning of an infant (i.e., autonomic, motor, state, organizational, self-regulatory, and attentional-interactional systems) that is satisfactory but that can be improved.

RELATED FACTORS

Prematurity; Pain

DEFINING CHARACTERISTICS**Objective**

Stable physiological measures; Definite sleep-wake states; Use of some self-regulatory behaviors; Response to stimuli (e.g., visual, auditory)

INFANT BEHAVIOR, RISK FOR DISORGANIZED*Diagnostic Division: Neurosensory*

Definition: Risk for alteration in integration and modulation of the physiologic and behavioral systems of functioning (i.e., autonomic, motor, state, organizational, self-regulatory, and attentional-interactional systems).

RISK FACTORS

Pain; Oral/motor problems; Environmental overstimulation; Lack of containment/boundaries; Invasive/painful procedures; Prematurity; [Immaturity of the central nervous system; generic problems that alter neurologic and/or physiologic functioning conditions resulting in hypoxia and/or birth asphyxia]; [Malnutrition; infection; drug addiction]; [Environmental events or conditions such as separation from parent, exposure to loud noise, excessive handling, bright lights]

INFANT FEEDING PATTERN, INEFFECTIVE

Diagnostic Division: Food / Fluid

Definition: Impaired ability to suck or coordinate the suck-swallow response, resulting in inadequate oral nutrition for metabolic needs.

RELATED FACTORS

Prematurity; Neurological impairment/delay; Oral hypersensitivity; Prolonged NPO; Anatomic abnormality

DEFINING CHARACTERISTICS**Subjective**

[Caregiver reports infant is unable to initiate or sustain an effective suck]

Objective

Inability to initiate/sustain an effective suck; Inability to coordinate sucking, swallowing, and breathing

INFECTION, RISK FOR

Diagnostic Division: Safety

Definition: At increased risk for being invaded by pathogenic organisms.

RISK FACTORS

Inadequate primary defenses (broken skin, traumatized tissue, decrease in ciliary action, stasis of body fluids, change in pH secretions, altered peristalsis); Inadequate secondary defenses (e.g., decreased hemoglobin, leukopenia, suppressed inflammatory response); Inadequate acquired immunity; Immunosuppression; Tissue destruction; Increased environmental exposure; Invasive procedures; Chronic disease; Malnutrition; Trauma; Pharmaceutical agents (e.g., immunosuppressants, [antibiotic therapy]); Rupture of amniotic membranes; Insufficient knowledge to avoid exposure to pathogens

INJURY, RISK FOR

Diagnostic Division: Safety

Definition: At risk of injury as a result of environmental conditions interacting with the individual's adaptive and defensive resources.

NOTE: The potential for injury differs from individual to individual, and situation to situation. It is our belief that the environment is not safe, and there is no way to list everything that might present a danger to someone. Rather, we believe nurses have the responsibility to educate people throughout their life cycles to live safely in their environment.

RISK FACTORS**Internal**

Physical (e.g., broken skin, altered mobility); Tissue hypoxia; Malnutrition; Abnormal blood profile (e.g., leukocytosis/leukopenia, altered clotting factors, thrombocytopenia, sickle cell, thalassemia, decreased hemoglobin); Biochemical dysfunction; Sensory dysfunction; Integrative/effector dysfunction; Immune/autoimmune dysfunction; Developmental age (physiological, psychosocial); Psychological (affective, orientation)

External

Biological (e.g., immunization level of community, microorganism); Chemical (e.g., pollutants, poisons, drugs, pharmaceutical agents, alcohol, nicotine, preservatives, cosmetics, dyes); Nutritional (e.g., vitamins, food types); Physical (e.g., design, structure, and arrangement of community, building, and/or equipment), mode of transport or transportation; Human (e.g., nosocomial agents, staffing patterns; cognitive, affective, and psychomotor factors)

INJURY, RISK FOR PERIOPERATIVE POSITIONING*Diagnostic Division: Safety*

Definition: At risk for injury as a result of the environmental conditions found in the perioperative setting.

RISK FACTORS

Disorientation; sensory/perceptual disturbances due to anesthesia; Immobilization; Muscle weakness; [Pre-existing musculoskeletal conditions]; Obesity; Emaciation; Edema; [Elderly]

INSOMNIA*Diagnostic Division: Activity/Rest*

Definition: A sustained disruption in amount and quality of sleep that impairs functioning.

RELATED FACTORS

Intake of stimulants/alcohol; Medications; Gender-related hormonal shifts; Stress (e.g., ruminative presleep pattern); Depression; Fear; Anxiety; Grief; Impairment of normal sleep pattern (e.g., travel, shift work, parental responsibilities, interruptions for interventions); Inadequate sleep hygiene (current); Activity pattern (e.g., timing, amount); Physical discomfort (e.g., body temperature, pain, shortness of breath, cough, gastroesophageal reflux, nausea, incontinence/urgency); Environmental factors (e.g., ambient noise, daylight/darkness exposure, ambient temperature/humidity, unfamiliar setting)

DEFINING CHARACTERISTICS**Subjective**

Patient reports: Difficulty falling/staying asleep; Waking up too early; Dissatisfaction with sleep (current); Nonrestorative sleep; Sleep disturbances that produce next-day consequences; Lack of energy; Difficulty concentrating; Changes in mood; Decreased health status/quality of life; Increased accidents

Objective

Observed lack of energy; Observed changes in affect; Increased work/school absenteeism

INTRACRANIAL ADAPTIVE CAPACITY, DECREASED*Diagnostic Division: Circulation*

Definition: Intracranial fluid dynamic mechanisms that normally compensate for increases in intracranial volumes are compromised, resulting in repeated disproportionate increases in intracranial pressure (ICP) in response to a variety of noxious and nonnoxious stimuli.

RELATED FACTORS

Brain injuries; Sustained increase in ICP equal to 10 to 15 mm Hg; Decreased cerebral perfusion pressure ≤ 50 to 60 mm Hg; Systemic hypotension with intracranial hypertension

DEFINING CHARACTERISTICS**Objective**

Repeated increases in ICP of >10 mm Hg for more than 5 min following a variety of external stimuli; Disproportionate increase in ICP following stimulus; Elevated P2 ICP waveform; Volume pressure response test variation (volume-pressure ratio 2, pressure-volume index <10); Baseline ICP ≤ 10 mm Hg; Wide-amplitude ICP waveform; [Altered level of consciousness—coma]; [Changes in vital signs, cardiac rhythm]

KNOWLEDGE, DEFICIENT [LEARNING NEED] (SPECIFY)*Diagnostic Division: Teaching/Learning*

Definition: Absence or deficiency of cognitive information related to specific topic. [Lack of specific information necessary for patient/significant other(s) to make informed choices regarding condition/lifestyle changes.]

RELATED FACTORS

Lack of exposure; Information misinterpretation; Unfamiliarity with information resources; Lack of recall; Cognitive limitation; Lack of interest in learning; [Request for no information]; [Inaccurate/incomplete information presented]

DEFINING CHARACTERISTICS**Subjective**

Verbalization of the problem; [Request for information]; [Statements reflecting misconceptions]

Objective

Inaccurate follow-through of instruction; Inadequate performance of test; Exaggerated/inappropriate behaviors (e.g., hysterical, hostile, agitated, apathetic); [Development of preventable complication]

KNOWLEDGE (SPECIFY), READINESS FOR ENHANCED

Diagnostic Division: Teaching / Learning

Definition: The presence or acquisition of cognitive information related to a specific topic is sufficient for meeting health-related goals and can be strengthened.

RELATED FACTORS

To be developed

DEFINING CHARACTERISTICS**Subjective**

Expresses an interest in learning; Explains knowledge of the topic; Describes previous experiences pertaining to the topic

Objective

Behaviors congruent with expressed knowledge

LIFESTYLE, SEDENTARY

Diagnostic Division: Activity / Rest

Definition: Reports a habit of life that is characterized by a low physical activity level.

RELATED FACTORS

Lack of interest/motivation/resources (time, money, companionship, facilities); Lack of training for accomplishment of physical exercise; Deficient knowledge of health benefits of physical exercise

DEFINING CHARACTERISTICS**Subjective**

Verbalizes preference for activities low in physical activity

Objective

Chooses a daily routine lacking physical exercise; Demonstrates physical deconditioning

LIVER FUNCTION, RISK FOR IMPAIRED

Diagnostic Division: Food / Fluid

Definition: At risk for liver dysfunction.

RISK FACTORS

Viral infection (e.g., hepatitis A, hepatitis B, hepatitis C, Epstein-Barr); HIV co-infection; Hepatotoxic medications (e.g., acetaminophen, statins); Substance abuse (e.g., alcohol, cocaine)

LONELINESS, RISK FOR

Diagnostic Division: Social Interaction

Definition: At risk for experiencing discomfort associated with a desire or need for more contact with others.

RISK FACTORS

Affectional deprivation; Physical isolation; Cathetic deprivation; Social isolation; [Problems of attachment for children]; [Chaotic family relationships]

MEMORY, IMPAIRED

Diagnostic Division: Neurosensory

Definition: Inability to remember or recall bits of information or behavioral skills [Impaired memory may be attributed to physiopathological or situational causes that are either temporary or permanent.]

RELATED FACTORS

Hypoxia; Anemia; Fluid and electrolyte imbalance; Decreased cardiac output; Neurological disturbances [e.g., brain injury/concussion]; Excessive environmental disturbances; [Manic state, fugue, traumatic event]; [Substance use/abuse]; [Effects of medications]; [Age]

DEFINING CHARACTERISTICS**Subjective**

[Reported] experiences of forgetting; Inability to recall recent or past events/factual information [/familiar persons, places, items]

Objective

[Observed] experiences of forgetting; Inability to determine if a behavior was performed; Inability to learn/retain new skills/information; Inability to perform a previously learned skill; Forgetting to perform a behavior at a scheduled time

MOBILITY, IMPAIRED BED

Diagnostic Division: Safety

Definition: Limitation of independent movement from one bed position to another.

RELATED FACTORS

Neuromuscular/musculoskeletal impairment; Insufficient muscle strength; Deconditioning; Obesity; Environmental constraints (i.e., bed size/type, treatment equipment, restraints); Pain; Sedating medications; Deficient knowledge; Cognitive impairment

DEFINING CHARACTERISTICS**Subjective**

[Reported difficulty performing activities]

Objective

Impaired ability to: Turn from side to side; Move from supine to sitting or sitting to supine; "Scoot" or reposition self in bed; Move from supine to prone or prone to supine; Move from supine to long-sitting or long-sitting to supine

MOBILITY, IMPAIRED PHYSICAL

Diagnostic Division: Safety

Definition: A limitation in independent, purposeful physical movement of the body or of one or more extremities.

RELATED FACTORS

Sedentary lifestyle; Activity intolerance; Disuse; Deconditioning; Decreased endurance; Limited cardiovascular endurance; Decreased muscle strength/control/mass; Joint stiffness; Contracture; Loss of integrity of bone structures; Pain/discomfort; Neuromuscular/musculoskeletal impairment; Sensoriperceptual/cognitive impairment; Developmental delay; Depressive mood state; Anxiety; Malnutrition; Altered cellular metabolism; Body mass index above 75th age-appropriate percentile; Deficient knowledge regarding value of physical activity; Cultural beliefs regarding age-appropriate activity; Lack of environmental supports (e.g., physical or social); Prescribed movement restrictions; Medications; Reluctance to initiate movement

DEFINING CHARACTERISTICS**Subjective**

[Report of pain/discomfort on movement]; [Unwillingness to move]

Objective

Limited range of motion; Limited ability to perform gross fine/motor skills; Difficulty turning; Slowed movement; Uncoordinated/jerky movements; Movement-induced tremor; Decreased [slower] reaction time; Postural instability; Gait changes; Engages in substitutions for movement (e.g., increased attention to other's activity, controlling behavior, focus on preillness disability/activity)

MOBILITY, IMPAIRED WHEELCHAIR

Diagnostic Division: Safety

Definition: Limitation of independent operation of wheelchair within environment.

RELATED FACTORS

Neuromuscular/musculoskeletal impairments (e.g., contractures); Insufficient muscle strength; Limited endurance; Deconditioning; Obesity; Impaired vision; Pain; Depressed mood; Cognitive impairment; Deficient knowledge; Environmental constraints (e.g., stairs, inclines, uneven surfaces, unsafe obstacles, distances, lack of assistive devices or persons, wheelchair type)

DEFINING CHARACTERISTICS

Inability to operate manual/power wheelchair on: Even/uneven surface; An incline/decline; Curbs

NAUSEA

Diagnostic Division: Food / Fluid

Definition: A subjective, unpleasant, wavelike sensation in the back of the throat, epigastrium, or abdomen that may lead to the urge or need to vomit.

RELATED FACTORS**Treatment**

Gastric irritation; Gastric distention; Pharmaceuticals [e.g., analgesics—*aspirin*/non-steroidal anti-inflammatory drugs/opioids, anesthesia, antivirals for HIV, steroids, antibiotics, chemotherapeutic agents]; [Radiation therapy/exposure]

Biophysical

Biochemical disorders (e.g., uremia, diabetic ketoacidosis, pregnancy); Localized tumors (e.g., acoustic neuroma, primary or secondary brain tumors, bone metastases at base of skull); Intra-abdominal tumors; Toxins (e.g., tumor-produced peptides, abnormal metabolites due to cancer); Esophageal/pancreatic disease; Liver/splenic capsule stretch; Gastric distention [e.g., delayed gastric emptying, pyloric intestinal obstruction, external compression of the stomach, other organ enlargement that slows stomach functioning (squashed stomach syndrome)]; Gastric irritation [e.g., pharyngeal and/or peritoneal inflammation]; Motion sickness; Ménière's disease; Labyrinthitis; Increased intracranial pressure; Meningitis

Situational

Noxious odors/taste; Unpleasant visual stimulation; Pain; Psychological factors; Anxiety; Fear

DEFINING CHARACTERISTICS**Subjective**

Reports nausea ["sick to stomach"]

Objective

Aversion toward food; Increased salivation; Sour taste in mouth; Increased swallowing; Gagging sensation

NEGLECT, UNILATERAL

Diagnostic Division: Neurosensory

Definition: Impairment in sensory and motor response, mental representation, and spatial attention to body and the corresponding environment characterized by inattention to one side and overattention to the opposite side. Left side neglect is more severe and persistent than right side neglect.

RELATED FACTORS

Brain injury from: Cerebrovascular problems; Neurological illness; Trauma; Tumor; Left hemiplegia from cerebrovascular accident of the right hemisphere; Hemianopsia

DEFINING CHARACTERISTICS**Subjective**

[Reports feeling that part does not belong to own self]

Objective

Marked deviation of the eyes/head/trunk (as if drawn magnetically) to the nonneglected side and to stimuli and activities on that side; Failure to move eyes/head/limbs/trunk in the neglected hemisphere despite being aware of a stimulus in that space; Failure to notice people approaching from the neglected side; Displacement of sounds to the non-neglected side; Appears unaware of positioning of neglected limb; Lack of safety precautions with regard to the neglected side; Failure to eat food from portion of the plate on the neglected side; dress/groom neglected side; Difficulty remembering details of internally represented familiar scenes that are on the neglected side; Use of only vertical half of page when writing; Failure to cancel lines on the half of the page on the neglected side; Substitution of letters to form alternative words that are similar to the original in length when reading; Distortion/omission of drawing on the half of the page on the neglected side; Perseveration of visual-motor tasks on nonneglected side; Transfer of pain sensation to the nonneglected side

NONCOMPLIANCE [ADHERENCE, INEFFECTIVE] (SPECIFY)

Diagnostic Division: Teaching/Learning

Definition: Behavior of person and/or caregiver that fails to coincide with a health-promoting or therapeutic plan agreed upon by the person (and/or family, and/or community) and health care professional. In the presence of an agreed-on health-promoting or therapeutic plan, person's or caregiver's behavior is fully or partially adherent or nonadherent and may lead to clinically ineffective, partially ineffective outcomes.

NOTE: When the plan of care is reviewed with the client/significant other, use of the term *noncompliance* may create a negative response and sense of conflict between health care providers and client. Labeling the client noncompliant may also lead to problems with third-party reimbursement. Where possible, use of the Nursing Diagnosis: ineffective Therapeutic Regimen Management is recommended.

RELATED FACTORS**Health Care Plan**

Duration; Cost; Intensity; Complexity; Financial flexibility of plan

Individual factors

Personal/developmental abilities; Knowledge/skill relevant to the regimen behavior; Motivational forces; Individual's value system; Health beliefs; Cultural influences; Spiritual values; Significant others; [Altered thought processes such as depression, paranoia]; [Difficulty changing behavior, as in addictions]; [Denial]; [Issues of secondary gain]

Health System

Individual health coverage; Credibility of provider; Client-provider relationships; Provider continuity/regular follow-up; Provider reimbursement; Communication/teaching skills of the provider; Access/ convenience of care; Satisfaction with care

Network

Involvement of members in health plan; Social value regarding plan; Perceived beliefs of significant others

DEFINING CHARACTERISTICS**Subjective**

[Does not perceive illness/risk to be serious, does not believe in efficacy of therapy, unwilling to follow treatment regimen or accept side effects/limitations]

Objective

Behavior indicative of failure to adhere; Objective tests (e.g., physiological measures, detection of physiologic markers); Failure to progress; Evidence of development of complications/exacerbation of symptoms; Failure to keep appointments; [Inability to set or attain mutual goals]

NUTRITION: LESS THAN BODY REQUIREMENTS, IMBALANCED

Diagnostic Division: Food/Fluid

Definition: Intake of nutrients insufficient to meet metabolic needs.

RELATED FACTORS

Inability to ingest/digest food; Inability to absorb nutrients; Biological/psychological/economic factors; [Increased metabolic demands, e.g., burns]; [Lack of information, misinformation, misconceptions]

DEFINING CHARACTERISTICS**Subjective**

Reported food intake less than RDA (recommended daily allowances); Lack of food; Lack of interest in food; Aversion to eating; Reported altered taste sensation; Perceived inability to digest food; Satiety immediately after ingesting food; Abdominal pain/cramping; Lack of information, misinformation, misconceptions

Objective

Body weight 20% or more under ideal [for height and frame]; [Decreased subcutaneous fat/muscle mass]; Loss of weight with adequate food intake; Hyperactive bowel sounds; Diarrhea; Steatorrhea; Weakness of muscles required for swallowing or mastication; Poor muscle tone; Sore buccal cavity; Pale mucous membranes; Capillary fragility; Excessive loss of hair [or increased growth of hair on body (lanugo)]; [Cessation of menses]; [Abnormal laboratory studies (e.g., decreased albumin, total proteins; iron deficiency; electrolyte imbalances)]

NUTRITION: MORE THAN BODY REQUIREMENTS, IMBALANCED

Diagnostic Division: Food / Fluid

Definition: Intake of nutrients that exceed metabolic needs.

RELATED FACTORS

Excessive intake in relationship to metabolic need

NOTE: Underlying cause is often complex and may be difficult to diagnose/treat

DEFINING CHARACTERISTICS**Subjective**

Dysfunctional eating patterns (e.g., pairing food with other activities); Eating in response to external cues (e.g., time of day, social situation); Concentrating food intake at end of day; Eating in response to internal cues other than hunger (e.g., anxiety); Sedentary activity level

Objective

Weight 20% over ideal for height and frame [obese]; Triceps skinfold >15 mm in men and 25 mm in women; [Percentage of body fat greater than 22% for trim women and 15% for trim men]

NUTRITION: READINESS FOR ENHANCED

Diagnostic Division: Food / Fluid

Definition: A pattern of nutrient intake that is sufficient for meeting metabolic needs and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses knowledge of healthy food and fluid choices/willingness to enhance nutrition; Eats regularly; Attitude toward eating/drinking is congruent with health goals

Objective

Consumes adequate food/fluid; Follows an appropriate standard for intake (e.g., the food pyramid or American Diabetic Association guidelines); Safe preparation/storage for food/fluids

NUTRITION: RISK FOR MORE THAN BODY REQUIREMENTS, IMBALANCED

Diagnostic Division: Food / Fluid

Definition: At risk for an intake of nutrients that exceed metabolic needs.

RISK FACTORS

Dysfunctional eating patterns; Pairing food with other activities; Eating in response to external cues other than hunger (e.g., time of day, social situation); Eating in response

to internal cues other than hunger (such as anxiety); Concentrating food intake at end of day; Parental obesity; Rapid transition across growth percentiles in children; Reported use of solid food as major food source before 5 months of age; Higher baseline weight at beginning of each pregnancy; Observed use of food as reward/comfort measure; [Frequent/repeated dieting]; [Alteration in usual activity patterns/sedentary lifestyle]; [Majority of foods consumed are concentrated, high-calorie/fat sources]; [Lower socioeconomic status]

ORAL MUCOUS MEMBRANE, IMPAIRED

Diagnostic Division: Food/Fluid

Definition: Disruption of the lips and/or soft tissue of the oral cavity.

RELATED FACTORS

Dehydration; NPO for more than 24 hours; Malnutrition; Decreased salivation; Medication side effects; Diminished hormone levels (women); Mouth breathing; Deficient knowledge of appropriate oral hygiene; Ineffective oral hygiene; Barriers to oral self-care/professional care; Mechanical factors (e.g., ill-fitting dentures; braces; tubes [endotracheal, nasogastric], surgery in oral cavity); Loss of supportive structures; Trauma; Cleft lip or palate; Chemical irritants (e.g., alcohol, tobacco, acidic foods, regular use of inhalers or other noxious agents); Chemotherapy; Immunosuppression; Immunocompromised; Decreased platelets; Infection; Radiation therapy; Stress; Depression

DEFINING CHARACTERISTICS

Subjective

Xerostomia [dry mouth]; Oral pain/discomfort; Reports bad taste in mouth; Diminished taste; Difficulty eating/swallowing

Objective

Coated tongue; Smooth atrophic tongue; Geographic tongue; Gingival/mucosal pallor; Stomatitis; Hyperemia; Gingival hyperplasia; Macroplesia; Vesicles; Nodules; Papules; White patches/plaques; Spongy patches; White curdlike exudate; Oral lesions/ulcers; Fissures; Bleeding; Chelitis; Desquamation; Mucosal denudation; Purulent drainage/exudates; Presence of pathogens; Enlarged tonsils; Edema; Halitosis; Gingival recession, pockets deeper than 4 mm; [Cariou teeth]; Red or bluish masses (e.g., hemangiomas); Difficult speech

PAIN, ACUTE

Diagnostic Division: Pain/Discomfort

Definition: Unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage (International Association for the Study of Pain); sudden or slow onset of any intensity from mild to severe with an anticipated or predictable end and a duration of less than 6 months.

RELATED FACTORS

Injuring agents (biological, chemical, physical, psychological)

DEFINING CHARACTERISTICS

Subjective

Verbal/coded report; [may be less from patients under 40, men, and some cultural groups]; Changes in appetite and eating; [Pain unrelieved and/or increased beyond tolerance]

Objective

Observed evidence of pain; Guarded behavior; Protective gestures; Positioning to avoid pain; Facial mask; Sleep disturbance (eyes lack luster, beaten look, fixed or scattered movement, grimace); Expressive behavior (e.g., restlessness, moaning, crying, vigilance, irritability, sighing); Distraction behavior (e.g., pacing, seeking out other people and/or activities, repetitive activities); Changes in muscle tone (may span from listless [flaccid] to rigid); Diaphoresis; Changes in blood pressure/heart rate/respiration rate; Pupillary dilation; Self-focusing; Narrowed focus (altered time perception, impaired thought process, reduced interaction with people and environment)

PAIN, CHRONIC*Diagnostic Division: Pain/Comfort*

Definition: An unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage (International Association for the Study of Pain); sudden or slow onset of any intensity from mild to severe, constant or recurring without anticipated or predictable end and a duration of greater than 6 months.

NOTE: Pain is a signal that something is wrong. Chronic pain can be recurrent and periodically disabling (e.g., migraine headaches) or may be unremitting. Although chronic pain syndrome includes various learned behaviors, psychologic factors become the primary contribution to impairment. It is a complex entity, combining elements from other nursing diagnoses (e.g., Powerlessness; deficient Diversional Activity; interrupted Family Processes; Self-care Deficit, and risk for Disuse Syndrome).

RELATED FACTORS

Chronic physical/psychosocial disability

DEFINING CHARACTERISTICS**Subjective**

Verbal/coded report; Fear of reinjury; Altered ability to continue previous activities; Changes in sleep patterns; Fatigue; Anorexia; [Preoccupation with pain]; [Desperately seeks alternative solutions/therapies for relief/control of pain]

Objective

Observed protective behavior; Guarding behavior; Irritability; Restlessness; Facial mask; Self-focusing; Reduced interaction with people; Depression; Atrophy of involved muscle group; Sympathetic mediated responses (temperature, cold, changes of body position, hypersensitivity)

PARENTING, IMPAIRED*Diagnostic Division: Social Interaction*

Definition: Inability of the primary caretaker to create, maintain, or regain an environment that promotes the optimum growth and development of the child.

RELATED FACTORS**Infant or Child**

Premature birth; Multiple births; Not gender desired; Illness; Separation from parent; Difficult temperament; Temperamental conflicts with parental expectations; Handicapping condition; Developmental delay; Altered perceptual abilities; Attention-deficit hyperactivity disorder

Knowledge

Deficient knowledge about child development/health maintenance, parenting skills; Inability to respond to infant cues; Unrealistic expectation [for self, infant, partner]; Lack of education; Limited cognitive functioning; Lack of cognitive readiness for parenthood; Poor communication skills; Preference for physical punishment

Physiological

Physical illness

Psychological

Young parental age; Lack of prenatal care; Difficult birthing process; High number of closely spaced pregnancies; Sleep disruption/deprivation; Depression; History of substance abuse; Disability; History of mental illness

Social

Presence of stress (e.g., financial, legal, recent crisis, cultural move [e.g., from another country/cultural group within same country]); Job problems; Unemployment; Financial difficulties; Relocations; Poor home environment; Situational/chronic low self-esteem; Lack of family cohesiveness; Marital conflict; Change in family unit; Inadequate child-care arrangements; Role strain; Single parents; Father/mother of child not involved; Lack of or poor parental role model; Lack of valuing of parenthood; Inability to put child's needs before own; Unplanned or unwanted pregnancy; Low socioeconomic class; Poverty; Lack of resources; Lack of transportation; Poor problem-solving skills; Maladaptive coping strategies; Lack of social support networks; Social isolation; History of being abusive/being abused; Legal difficulties

DEFINING CHARACTERISTICS**Subjective****Parental**

Statements of inability to meet child's needs; Verbalization of inability to control child;
Negative statements about child; Verbalization of frustration/role inadequacy

Objective**Infant or Child**

Frequent accidents/illness; Failure to thrive; Poor academic performance/cognitive development; Poor social competence; Behavior disorders; Incidence of trauma (e.g., physical and psychological)/abuse; Lack of attachment; Lack of separation anxiety; Runaway

Parental

Maternal-child interaction deficit; Poor parent-child interaction; Little cuddling; Inadequate attachment; Inadequate child health maintenance; Unsafe home environment; Inappropriate child-care arrangements; Inappropriate stimulation (e.g., visual, tactile, auditory); Inappropriate caretaking skills; Inconsistent care/behavior management; Inflexibility to meet needs of child; Frequently punitive; Rejection of/hostility to child; Child abuse/neglect; Abandonment

PARENTING, READINESS FOR ENHANCED*Diagnostic Division: Social Interaction*

Definition: A pattern of providing an environment for children or other dependent persons that is sufficient to nurture growth and development and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses willingness to enhance parenting; Children or other dependent person(s) express(es) satisfaction with home environment

Objective

Emotional support of children [/dependent person(s)]; Evidence of attachment; Needs of children [/dependent person(s)] are met (e.g., physical and emotional); Exhibits realistic expectations of children [/dependent person(s)]

PARENTING, RISK FOR IMPAIRED*Diagnostic Division: Social Interaction*

Definition: Risk for inability of the primary caretaker to create, maintain, or regain an environment that promotes the optimum growth and development of the child.

RISK FACTORS**Infant or Child**

Altered perceptual abilities; Attention-deficit hyperactivity disorder; Difficult temperament; Temperamental conflicts with parental expectation; Premature birth; Multiple births; Not gender desired; Illness; Prolonged separation from parent; Handicapping condition/developmental delay

Knowledge

Unrealistic expectation of child; Deficient knowledge about child development/health maintenance, parenting skills; Low educational level or attainment; Lack of cognitive readiness for parenthood; Low cognitive functioning; Poor communication skills; Inability to respond to infant cues; Preference for physical punishment

Physiological

Physical illness

Psychological

Young parental age; Closely spaced pregnancies; High number of pregnancies; Difficult birthing process; Sleep disruption/deprivation; Depression; History of substance abuse; Disability; History of mental illness

Social

Stress; Unemployment; Financial difficulties; Poor home environments; Relocation [including cultural move (e.g., from another country/cultural group within same country)]; Situational/chronic low self-esteem; Lack of family cohesiveness; Marital conflict; Change in family unit; Inadequate child-care arrangements; Role strain; Single parent; Father/mother of child not involved; Parent-child separation; Poor/lack of pa-

rental role model; Lack of valuing of parenthood; Unplanned/unwanted pregnancy; Late/lack of prenatal care; Low socioeconomic class; Poverty; Lack of resources/access to resources; Lack of transportation; Poor problem-solving skills; Maladaptive coping strategies; Lack of social support network; Social isolation; History of being abused/being abusive; Legal difficulties

PERIPHERAL NEUROVASCULAR DYSFUNCTION, RISK FOR

Diagnostic Division: Neurosensory

Definition: At risk of experiencing a disruption in circulation, sensation, or motion of an extremity.

RISK FACTORS

Fractures; Trauma; Vascular obstruction; Mechanical compression (e.g., tourniquet, cane, cast, brace, dressing, restraint); Orthopedic surgery; Immobilization

POISONING, RISK FOR

Diagnostic Division: Safety

Definition: Accentuated risk of accidental exposure to or ingestion of drugs or dangerous products in doses sufficient to cause poisoning [or the adverse effects of prescribed medication/drug use].

RISK FACTORS

Internal

Reduced vision; Lack of safety/drug education; Lack of proper precaution; [Unsafe habits]; [Disregard for safety measures]; [Lack of supervision]; Verbalization of occupational setting without adequate safeguards; Cognitive/emotional difficulties; [Age, e.g., young child, elderly person]; [Chronic disease state/disability]; [Cultural or religious beliefs/practices]

External

Large supplies of drugs in house; Medicines stored in unlocked cabinets accessible to children/confused individuals; Availability of illicit drugs potentially contaminated by poisonous additives; Dangerous products placed within reach of children/confused individuals; [Therapeutic margin of safety of specific drugs (e.g., therapeutic versus toxic level, half-life, method of uptake and degradation in body, adequacy of organ function)]; [Use of multiple herbal supplements or megadosing]

POST-TRAUMA SYNDROME [SPECIFY STAGE]

Diagnostic Division: Ego Integrity

Definition: Sustained maladaptive response to a traumatic, overwhelming event.

RELATED FACTORS

Events outside the range of usual human experience; Serious threat to self/loved ones; Serious injury to self/loved ones; Serious accidents (e.g., industrial, motor vehicle); Abuse (physical and psychosocial); Criminal victimization; Rape; Witnessing mutilation/violent death; Tragic occurrence involving multiple deaths; Disasters; Sudden destruction of one's home/community; Epidemics; Wars; Being held prisoner of war; Torture

DEFINING CHARACTERISTICS

Subjective

Intrusive thoughts/dreams; Nightmares; Flashbacks; Palpitations; Headaches; [Loss of interest in usual activities]; [Loss of feeling of intimacy/sexuality]; Hopelessness; Shame; [Excessive verbalization of the traumatic event]; [Verbalization of survival guilt/guilt about behavior required for survival]; Anxiety; Fear; Grieving; Reports feeling numb; Depression; Difficulty in concentrating; Gastric irritability; [Changes in appetite/sleep pattern]; [Chronic fatigue/easy fatigability]

Objective

Hypervigilance; Exaggerated startle response; Irritability; Neurosensory irritability; Denial; Repression; Avoidance; Alienation; Detachment; Psychogenic amnesia; Altered mood states; Aggression; [Poor impulse control/explosiveness]; Rage; Panic attacks; Horror; Substance abuse; Compulsive behavior; Enuresis (in children); [Difficulty with interpersonal relationships]; [Dependence on others]; [Work/school failure]

[Stages: Acute subtype: Begins within 6 months and does not last longer than 6 months; Chronic subtype: Lasts longer than 6 months; Delayed subtype: Period of latency of 6 months or longer before onset of symptoms]

POST-TRAUMA SYNDROME, RISK FOR

Diagnostic Division: Ego Integrity

Definition: A risk for sustained maladaptive response to a traumatic, overwhelming event.

RISK FACTORS

Occupation (e.g., police, fire, rescue, corrections, emergency room staff, mental health worker, [responder family members]); Perception of event; Exaggerated sense of responsibility; Diminished ego strength; Survivor's role in the event; Inadequate social support; Nonsupportive environment; Displacement from home; Duration of the event

POWER, READINESS FOR ENHANCED

Diagnostic Division: Ego Integrity

Definition: A pattern of participating knowingly in change that is sufficient for well-being and can be strengthened.

DEFINING CHARACTERISTICS

Subjective

Expresses readiness to enhance: Power; Knowledge for participation in change; Awareness of possible changes to be made; Identification of choices that can be made for change; Expresses readiness to enhance: Freedom to perform actions for change; Involvement in creating change; Participation in choices for daily living and health

POWERLESSNESS [SPECIFY LEVEL]

Diagnostic Division: Ego Integrity

Definition: Perception that one's own action will not significantly affect an outcome; a perceived lack of control over a current situation or immediate happening.

RELATED FACTORS

Health care environment [e.g., loss of privacy, personal possessions, control over therapies]; Interpersonal interaction [e.g., misuse of power, force; abusive relationships]; Illness-related regimen [e.g., chronic/debilitating conditions]; Lifestyle of helplessness [e.g., repeated failures, dependency]

DEFINING CHARACTERISTICS

Subjective

Low

Expressions of uncertainty about fluctuating energy levels

Moderate

Expressions of dissatisfaction/frustration over inability to perform previous tasks/activities; Expression of doubt regarding role performance; Fear of alienation from caregivers; Reluctance to express true feelings; Resentment; Anger; Guilt

Severe

Verbal expressions of having no control (e.g., over self-care, situation, outcome); Depression over physical deterioration

Objective

Low

Passivity

Moderate

Dependence on others that may result in irritability; Inability to seek information regarding care; Passivity; Nonparticipation in care/decision making when opportunities are provided; Does not monitor progress; Does not defend self-care practices when challenged

Severe

Apathy; [Withdrawal]; [Resignation]; [Crying]

POWERLESSNESS, RISK FOR

Diagnostic Division: Ego Integrity

Definition: Risk for perceived lack of control over a situation and/or one's ability to significantly affect an outcome.

RISK FACTORS**Physiological**

Illness [hospitalization, intubation, ventilator, suctioning]; Dying; Acute injury; Progressive debilitating disease process (e.g., spinal cord injury, multiple sclerosis); Aging [e.g., decreased physical strength, decreased mobility]

Psychosocial

Deficient knowledge (e.g., illness or health care system); Lifestyle of dependency; Inadequate coping patterns; Absence of integrality (e.g., essence of power); Situational/chronic low self-esteem; Disturbed body image

PROTECTION, INEFFECTIVE

Diagnostic Division: Safety

Definition: Decrease in the ability to guard self from internal or external threats such as illness or injury.

RELATED FACTORS

Extremes of age; Inadequate nutrition; Alcohol abuse; Abnormal blood profiles (e.g., leukopenia, thrombocytopenia, anemia, coagulation); Drug therapies (e.g., antineoplastic, corticosteroid, immune, anticoagulant, thrombolytic); Treatments (e.g., surgery, radiation); Cancer; Immune disorders

DEFINING CHARACTERISTICS**Subjective**

Neurosensory alterations; Chilling; Itching; Insomnia; Fatigue; Weakness; Anorexia

Objective

Deficient immunity; Impaired healing; Altered clotting; Maladaptive stress response; Perspiring [inappropriate]; Dyspnea; Cough; Restlessness; Immobility; Disorientation; Pressure sores

RAPE-TRAUMA SYNDROME

Diagnostic Division: Ego Integrity

Definition: Sustained maladaptive response to a forced, violent sexual penetration against the victim's will and consent. [Rape is not a sexual crime, but a crime of violence and identified as sexual assault. Although attacks are most often directed toward women, men also may be victims.]

NOTE: This syndrome includes the following three subcomponents: Rape-Trauma, Compound reaction, and Silent reaction

RELATED FACTORS

Rape [actual/attempted forced sexual penetration]

DEFINING CHARACTERISTICS**Subjective**

Embarrassment; Humiliation; Shame; Guilt; Self-blame; Loss of self-esteem; Helplessness; Powerlessness; Shock; Fear; Anxiety; Anger; Revenge; Nightmares; Sleep disturbances; Change in relationships; Sexual dysfunction

Objective

Physical trauma [e.g., bruising, tissue irritation]; Muscle tension/spasms; Confusion; Disorganization; Inability to make decisions; Agitation; Hyperalertness; Aggression; Mood swings; Vulnerability; Dependence; Depression; Substance abuse; Suicide attempts; Denial; Phobias; Paranoia; Dissociative disorders

RAPE-TRAUMA SYNDROME: COMPOUND REACTION*Diagnostic Division: Ego Integrity*

Definition: Forced violent sexual penetration against the victim's will and consent. The trauma syndrome that develops from this attack or attempted attack includes an acute phase of disorganization of the victim's lifestyle and a long-term process of reorganization of lifestyle.

RELATED FACTORS

To be developed.

DEFINING CHARACTERISTICS**Subjective****Acute Phase**

Multiple physical symptoms (e.g., gastrointestinal irritability, genitourinary discomfort, muscle tension, sleep pattern disturbance); Reactivated symptoms of such previous conditions (i.e., physical/psychiatric illness); Substance abuse

Objective**Acute Phase**

Emotional reactions (e.g., anger, embarrassment, fear of physical violence and death, humiliation, self-blame, revenge); Long-term phase: Changes in lifestyle (e.g., changes in residence, dealing with repetitive nightmares and phobias, seeking family/social network support)

RAPE-TRAUMA SYNDROME: SILENT REACTION*Diagnostic Division: Ego Integrity*

Definition: Forced violent sexual penetration against the victim's will and consent. The trauma syndrome that develops from this attack or attempted attack includes an acute phase of disorganization of the victim's lifestyle and a long-term process of reorganization of lifestyle.

RELATED FACTORS

To be developed.

DEFINING CHARACTERISTICS**Subjective**

Increase in nightmares; Abrupt changes in relationships with men; Pronounced changes in sexual behavior

Objective

Increasing anxiety during interview (e.g., blocking of associations, long periods of silence; minor stuttering, physical distress); No verbalization of the occurrence of rape; Sudden onset of phobic reactions

RELIGIOSITY, IMPAIRED*Diagnostic Division: Ego Integrity*

Definition: Impaired ability to exercise reliance on beliefs and/or participate in rituals of a particular faith tradition.

NOTE: NANDA recognizes that the term *religiosity* may be culture specific; however, the term is useful in the U.S. and is well supported in the U.S. literature.

RELATED FACTORS**Developmental and Situational**

Life transitions; Aging; End-stage life crisis

Physical

Illness; Pain

Psychological Factors

Ineffective support/coping; Anxiety; Fear of death; Personal crisis [/disaster]; Lack of security; Use of religion to manipulate

Sociocultural

Cultural/environmental barriers to practicing religion; Lack of social integration; Lack of sociocultural interaction

Spiritual

Spiritual crisis; Suffering

DEFINING CHARACTERISTICS**Subjective**

Expresses emotional distress because of separation from faith community; Expresses a need to reconnect with previous belief patterns/customs; Questions religious belief patterns/customs; Difficulty adhering to prescribed religious beliefs and rituals (e.g., religious ceremonies, dietary regulations, clothing, prayer, worship/religious services, private religious behaviors/reading religious materials/media, holiday observances, meetings with religious leaders)

RELIGIOSITY, READINESS FOR ENHANCED*Diagnostic Division: Ego Integrity*

Definition: Ability to increase reliance on religious beliefs and/or participate in rituals of a particular faith tradition.

RELATED FACTORS

To be developed

DEFINING CHARACTERISTICS**Subjective**

Expresses desire to strengthen religious belief patterns/customs that had provided comfort/religion in the past; Request for assistance to increase participation in prescribed religious beliefs (e.g., religious ceremonies, dietary regulations/rituals, clothing, prayer, worship/religious services, private religious behaviors, reading religious materials/media, holiday observances); Requests assistance expanding religious options/religious materials/experiences; Requests meeting with religious leaders/facilitators; Requests forgiveness/reconciliation; Questions/rejects belief patterns/customs that are harmful

RELIGIOSITY, RISK FOR IMPAIRED*Diagnostic Division: Ego Integrity*

Definition: At risk for an impaired ability to exercise reliance on religious beliefs and/or participate in rituals of a particular faith tradition.

NOTE: NANDA recognizes that the term *religiosity* may be culture specific; however, the term is useful in the U.S. and is well supported in the U.S. literature.

RISK FACTORS**Developmental**

Life transitions

Environmental

Lack of transportation; Barriers to practicing religion

Physical

Illness; Hospitalization; Pain

Psychological

Inadequate coping/caregiving; Ineffective support; Depression; Lack of security

Sociocultural

Lack of social interaction; Social isolation; Cultural barrier to practicing religion

Spiritual

Suffering

RELOCATION STRESS SYNDROME*Diagnostic Division: Ego Integrity*

Definition: Physiologic and/or psychological disturbances as a result of transfer from one environment to another.

RELATED FACTORS

Losses; Feeling of powerlessness; Lack of adequate support system; Lack of predeparture counseling; Unpredictability of experience; Isolation; Language barrier; Impaired psychosocial health; Passive coping; Decreased health status

DEFINING CHARACTERISTICS**Subjective**

Anxiety (e.g., separation); Anger; Insecurity; Worry; Fear; Loneliness; Depression; Unwillingness to move; Concern over relocation; Sleep disturbance

Objective

Move from one environment to another; Increased [frequency of] verbalization of needs; Pessimism; Frustration; Increased physical symptoms/illness; Withdrawal; Aloneness; Alienation; [Hostile behavior/outbursts]; Loss of identity; Loss of self-worth/self-esteem; Dependency; [Increased confusion]; [Cognitive impairment]

RELOCATION STRESS SYNDROME, RISK FOR

Diagnostic Division: Ego Integrity

Definition: At risk for physiological and/or psychosocial disturbance following transfer from one environment to another.

RISK FACTORS

Move from one environment to another; Moderate to high degree of environmental change [e.g., physical, ethnic, cultural]; Lack of adequate support system/group; Lack of predeparture counseling; Passive coping; Feelings of powerlessness; Losses; Moderate mental competence; Unpredictability of experiences

ROLE PERFORMANCE, INEFFECTIVE

Diagnostic Division: Social Interaction

Definition: The patterns of behavior and self-expression do not match the environmental context, norms, and expectations.

NOTE: There is a typology of roles: sociopersonal (friendship, family, marital, parenting, community), home management, intimacy (sexuality, relationship building), leisure/exercise/recreation, self-management, socialization (developmental transitions), community contributor, and religious.

RELATED FACTORS**Knowledge**

Inadequate/lack of role model; Inadequate role preparation (e.g., role transition, skill, rehearsal, validation); Lack of education; [Developmental transitions]; Unrealistic role expectations

Physiological

Body image alteration; Cognitive deficits; Neurological deficits; Physical illness; Mental illness; Depression; Low self-esteem; Fatigue; Pain; Substance abuse

Social

Inadequate role socialization [e.g., role model, expectations, responsibilities]; Young age; Developmental level; Lack of resources; Low socioeconomic status; Stress; Conflict; Job schedule demands; Domestic violence; Inadequate support system; Lack of rewards; Inappropriate linkage with the health care system

DEFINING CHARACTERISTICS**Subjective**

Altered role perceptions; Change in self-/other's perception of role; Change in usual patterns of responsibility/capacity to resume; Inadequate opportunities for role enactment; Role dissatisfaction; Role overload; Role denial; Discrimination [by others]; Powerlessness

Objective

Deficient knowledge; Inadequate role competency/skills; Inadequate adaptation to change; Inappropriate developmental expectations; Inadequate confidence; Inadequate motivation; Inadequate self-management/coping; Inadequate external support for role enactment; Role strain; Role conflict/confusion; Role ambivalence; [Failure to assume role]; Uncertainty; Anxiety; Depression; Pessimistic; Domestic violence; Harassment; System conflict

SELF-CARE, READINESS FOR ENHANCED

Diagnostic Division: Hygiene

Definition: A pattern of performing activities for oneself that helps to meet health-related goals and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses desire to enhance independence in maintaining: life/health/personal development/well-being; Expresses desire to enhance: Self-care; Knowledge for strategies for self-care; Responsibility for self-care

NOTE: Note: Based on the definition and defining characteristics of this ND, the focus appears to be broader than simply meeting routine basic ADLs and addresses independence in maintaining overall health, personal development, and general well-being.

**SELF-CARE DEFICIT, [SPECIFY LEVEL] FEEDING, BATHING/
HYGIENE, DRESSING/GROOMING, TOILETING**

Diagnostic Division: Hygiene

Definition: Impaired ability to perform or complete feeding, bathing/hygiene, dressing and grooming, or toileting activities for oneself [on a temporary, permanent, or progressing basis] (Specify level of independence using a standardized functional scale).

NOTE: Self-care also may be expanded to include the practices used by the client to promote health, the individual responsibility for self, a way of thinking. Refer to Nursing Diagnoses impaired Home Maintenance, ineffective Health Maintenance

RELATED FACTORS

Weakness; Fatigue; Decreased motivation; Neuromuscular/musculoskeletal impairment; Environmental barriers; Severe anxiety; Pain; Discomfort; Perceptual/cognitive impairment; [Mechanical restrictions such as cast, splint, traction, ventilator]; Inability to perceive body part/spatial relationship [bathing/hygiene]; Impaired transfer ability [self-toileting]; Impaired mobility status [self-toileting]

DEFINING CHARACTERISTICS**Bathing/Hygiene**

(levels 0–4) Inability to: Get bath supplies; Wash body; Obtain water source; Regulate bath water; Access bathroom [tub]; Dry body

Dressing/Grooming

(levels 0–4) Inability to: Choose clothing; Pick up clothing; Put clothing on upper/lower body; Put on socks/shoes; Use zippers/assistive devices; Remove clothes; Maintain appearance at a satisfactory level; Impaired ability to: Obtain clothing; Put on/take off necessary items of clothing; Fasten clothing

Feeding

(levels 0–4) Inability to: Prepare food for ingestion; Open containers; Handle utensils; Get food onto utensil; Bring food from a receptacle to the mouth; Ingest food safely; Manipulate food in mouth; Chew/swallow food; Pick up cup or glass; Use assistive device; Ingest sufficient food; Complete a meal; Ingest food in a socially acceptable manner

Toileting

(levels 0–4) Inability to: Get to toilet or commode; Manipulate clothing for toileting; Sit on/rise from toilet or commode; Carry out proper toilet hygiene; Flush toilet or [empty] commode

SELF-CONCEPT, READINESS FOR ENHANCED

Diagnostic Division: Ego Integrity

Definition: A pattern of perceptions or ideas about the self that is sufficient for well-being and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses willingness to enhance self-concept; Accepts strengths/limitations; Expresses confidence in abilities; Expresses satisfaction with thoughts about self/sense of worthiness; Expresses satisfaction with body image/personal identity/role performance

Objective

Actions are congruent with expressed feelings and thoughts

SELF-ESTEEM, CHRONIC LOW

Diagnostic Division: Ego Integrity

Definition: Long-standing negative self-evaluation/feelings about self or self-capabilities.

RELATED FACTORS

To be developed; [Fixation in earlier level of development]; [Continual negative evaluation of self/capabilities from childhood]; [Personal vulnerability]; [Life choices perpetuating failure]; [Ineffective social/occupational functioning]; [Feelings of abandonment by significant other]; [Willingness to tolerate possibly life-threatening domestic violence]; [Chronic physical/psychiatric conditions]; [Antisocial behaviors]

DEFINING CHARACTERISTICS**Subjective**

Self-negating verbalization; Expressions of shame/guilt; Evaluates self as unable to deal with events; Rejects positive feedback/exaggerates negative feedback about self

Objective

Hesitant to try new things/situations; Frequent lack of success in life events; Overly conforming; Dependent on others' opinions; Excessively seeks reassurance; Lack of eye contact; Nonassertive; Passive; Indecisive

SELF-ESTEEM, SITUATIONAL LOW

Diagnostic Division: Ego Integrity

Definition: Development of a negative perception of self-worth in response to a current situation (specify).

RELATED FACTORS

Developmental changes [e.g., maturational transitions, adolescence, aging]; Functional impairments; Disturbed body image; Loss [e.g., loss of health status, body part, independent functioning; memory deficit/cognitive impairment]; Social role changes; Failures/rejections; Lack of recognition [/rewards]; [Feelings of abandonment by SO]; Behavior inconsistent with values

DEFINING CHARACTERISTICS**Subjective**

Verbally reports current situational challenge to self-worth; Expressions of helplessness/uselessness; Evaluation of self as unable to deal with situations or events

Objective

Self-negating verbalizations; Indecisive/nonassertive behavior

SELF-ESTEEM, SITUATIONAL LOW, RISK FOR

Diagnostic Division: Ego Integrity

Definition: At risk for developing a negative perception of self-worth in response to a current situation. (specify situation)

RISK FACTORS

Developmental changes; Disturbed body image; Functional impairment; Loss [e.g., loss of health status, body part, independent functioning, memory deficit/cognitive impairment]; Social role changes; Unrealistic self-expectations; History of learned helplessness; History of neglect/abuse/abandonment; Behavior inconsistent with values; Lack of recognition [/rewards]; Failures; Rejections; Decreased control over environment; Physical illness

SELF-MUTILATION*Diagnostic Division: Safety*

Definition: Deliberate, self-injurious behavior causing tissue damage with the intent of causing nonfatal injury to attain relief of tension.

RELATED FACTORS

Adolescence; Peers who self-mutilate; Isolation from peers; Dissociation; Depersonalization; Psychotic state (e.g., command hallucinations); Character disorder; Borderline personality disorders; Emotionally disturbed; Developmentally delayed/autistic individuals; History of self-injurious behavior; History of inability to plan solutions/see long-term consequences; Childhood illness/surgery; Childhood sexual abuse; Battered child; Disturbed/unstable body image; Eating disorders; Inadequate coping; Perfectionism; Negative feelings (e.g., depression, rejection, self-hatred, separation anxiety, guilt); Low/unstable self-esteem; Poor communication between parent and adolescent; Lack of family confidante; Feels threatened with loss of significant relationship [e.g., loss of parent/parental relationship]; Disturbed interpersonal relationships; Use of manipulation to obtain nurturing relationship with others; Family alcoholism/divorce; Violence between parental figures; Family history of self-destructive behaviors; Living in nontraditional settings (e.g., foster, group, or institutional care); Incarceration; Inability to express tension verbally; Mounting tension that is intolerable; Needs quick reduction of stress; Irresistible urge to cut/damage self; Impulsivity; Labile behavior; Sexual identity crisis; Substance abuse

DEFINING CHARACTERISTICS**Subjective**

Self-inflicted burns (e.g., eraser, cigarette); Ingestion/inhalation of harmful substances/objects

Objective

Cuts/scratches on body; Picking at wounds; Biting; Abrading; Severing; Insertion of object(s) into body orifice(s); Hitting; Constricting a body part

SELF-MUTILATION, RISK FOR*Diagnostic Division: Safety*

Definition: At risk for deliberate self-injurious behavior causing tissue damage with the intent of causing nonfatal injury to attain relief of tension.

RISK FACTORS

Adolescence; Peers who self-mutilate; Isolation from peers; Dissociation; Depersonalization; Psychotic state (e.g., command hallucinations); Character disorders; Borderline personality disorders; Emotionally disturbed child; Developmentally delayed/autistic individuals; History of self-injurious behavior; History of inability to plan solutions/see long-term consequences; Childhood illness/surgery; Childhood sexual abuse; Battered child; Disturbed/unstable body image; Eating disorders; Ineffective coping; Loss of control over problem-solving situations; Perfectionism; Negative feelings (e.g., depression, rejection, self-hatred, separation anxiety, guilt); Low/unstable self-esteem; Feels threatened with loss of significant relationship [e.g., loss of parent/parental relationship]; Loss of significant relationship; Lack of family confidante; Disturbed interpersonal relationships; Use of manipulation to obtain nurturing relationship with others; Family alcoholism/divorce; Violence between parental figures; Family history of self-destructive behaviors; Living in nontraditional settings (e.g., foster, group, or institutional care); Incarceration; Inability to express tension verbally; Mounting tension that is intolerable; Needs quick reduction of stress; Irresistible urge to damage self; Impulsivity; Sexual identity crisis; Substance abuse

SENSORY/PERCEPTION, DISTURBED (SPECIFY: VISUAL, AUDITORY, KINESTHETIC, GUSTATORY, TACTILE, OLFACTORY)*Diagnostic Division: Neurosensory*

Definition: Change in the quantity or patterning of incoming stimuli accompanied by a diminished, exaggerated, distorted, or impaired response to such stimuli.

RELATED FACTORS**Insufficient environmental stimuli**

[e.g., therapeutically restricted environments— isolation, intensive care, bedrest, traction, confining illnesses, incubator; socially restricted environment— institutionaliza-

tion, homebound, aging, chronic/terminal illness, infant deprivation; stigmatized—mentally ill/developmentally delayed/handicapped]

Excessive environmental stimuli

[e.g., excessive noise level, such as work environment, client's immediate environment (ICU with support machinery and the like)]

Altered sensory reception/transmission/integration

[e.g., neurological disease, trauma, or deficit; altered status of sense organs]

Biochemical imbalances

[e.g., elevated BUN, elevated ammonia, hypoxia]; Electrolyte imbalance; [Drugs, e.g., stimulants or depressants, mind-altering drugs] Psychological stress; [Sleep deprivation]

DEFINING CHARACTERISTICS

Subjective

[Reported] change in sensory acuity [e.g., photosensitivity, hypoesthesias/hyperesthesias, diminished/altered sense of taste, inability to tell position of body parts (proprioception)]; Sensory distortions

Objective

[Measured] change in sensory acuity; Change in usual response to stimuli [e.g., rapid mood swings, exaggerated emotional responses, anxiety/panic state; Change in behavior pattern; Restlessness; Irritability; Change in problem-solving abilities; Poor concentration; Disorientation; Hallucinations; [Illusions]; [Bizarre thinking]; Impaired communication; [Motor incoordination, altered sense of balance/falls (e.g., Ménière's syndrome)]

SEXUAL DYSFUNCTION

Diagnostic Division: Sexuality

Definition: The state in which an individual experiences a change in sexual function during the sexual response phases of desire, excitation, and/or orgasm that is viewed as unsatisfying, unrewarding, inadequate.

RELATED FACTORS

Ineffectual/ absent role models; Lack of significant other; Lack of privacy; Misinformation or lack of knowledge; Vulnerability; Physical abuse; Psychosocial abuse (e.g., harmful relationships); Altered body function/structure (e.g., pregnancy, recent childbirth, drugs, surgery, anomalies, disease process, trauma, [paraplegia/quadruplegia], radiation, [effects of aging]); Biopsychosocial alteration of sexuality; Values conflict

DEFINING CHARACTERISTICS

Subjective

Verbalization of problem [e.g., loss of sexual desire, premature ejaculation, dyspareunia, vaginismus]; Actual/perceived limitation imposed by disease/therapy; Perceived deficiency of sexual desire; Perceived alteration in sexual excitation; Alterations in achieving sexual satisfaction; Inability to achieve desired satisfaction; Alterations in achieving perceived sex role; Seeking confirmation of desirability [concern about body image]; Change of interest in self/others

SEXUALITY PATTERNS, INEFFECTIVE

Diagnostic Division: Sexuality

Definition: Expressions of concern regarding one's own sexuality.

RELATED FACTORS

Knowledge/skill deficit about alternative responses to health-related transitions, altered body function or structure, illness, or medical treatment; Lack of privacy; Impaired relationship with a significant other; Lack of significant other; Ineffective/absent role models; Conflicts with sexual orientation or variant preferences; Fear of pregnancy/acquiring a sexually transmitted disease

DEFINING CHARACTERISTICS

Subjective

Reported: Difficulties in sexual behaviors/activities; Changes in sexual behaviors/activities; Limitations in sexual behaviors/activities; Alteration in relationship with sig-

nificant other; Alterations in achieving perceived sex role; Conflicts involving values; [Expressions of feeling alienated, lonely, loss, powerless, angry]

SKIN INTEGRITY, IMPAIRED

Diagnostic Division: Safety

Definition: Altered epidermis and/or dermis.

RELATED FACTORS

External

Hyperthermia; Hypothermia; Chemical substance; Radiation; Medications; Physical immobilization; Humidity; Moisture; [Excretions/secretions]; Mechanical factors (e.g., shearing forces, pressure, restraint); [Trauma/injury]; [Surgery]; Extremes in age

Internal

Imbalanced nutritional state (e.g., obesity, emaciation); Impaired metabolic state; Changes in fluid status; Skeletal prominence; Changes in turgor (change in elasticity); [Presence of edema]; Impaired circulation/sensation; Changes in pigmentation; Developmental factors; Immunological deficit; [Psychogenic factors, e.g., obsessive-compulsive behaviors]

DEFINING CHARACTERISTICS

Subjective

[Reports of itching, pain, numbness of affected/surrounding area]

Objective

Disruption of skin surface [epidermis]; Destruction of skin layers [dermis]; Invasion of body structures

SKIN INTEGRITY, RISK FOR IMPAIRED

Diagnostic Division: Safety

Definition: At risk for skin being adversely altered.

NOTE: Risk should be determined by the use of a standardized risk assessment tool [e.g., Braden, Norton, or similar scale].

RISK FACTORS

External

Chemical substance; Radiation; Hypothermia; Hyperthermia; Physical immobilization; Humidity; Moisture; Excretions; Secretions; Mechanical factors (e.g., shearing forces, pressure, restraint); Extremes of age

Internal

Imbalanced nutritional state (e.g., obesity, emaciation); Impaired metabolic state; [Presence of edema]; Skeletal prominence; Changes in skin turgor [elasticity]; Impaired circulation/sensation; Changes in pigmentation; Developmental factors; Immunologic factors; Medications; Psychogenetic factors

SLEEP, READINESS FOR ENHANCED

Diagnostic Division: Activity/Rest

Definition: pattern of natural, periodic suspension of consciousness that provides adequate rest, sustains a desired lifestyle, and can be strengthened.

DEFINING CHARACTERISTICS

Subjective

Expresses willingness to enhance sleep; Expresses a feeling of being rested after sleep; Follows sleep routines that promote sleep habits

Objective

Amount of sleep and REM sleep is congruent with developmental needs; Occasional or infrequent use of medications to induce sleep

SLEEP DEPRIVATION

Diagnostic Division: Activity/Rest

Definition: Prolonged periods of time without sleep (sustained natural, periodic suspension of relative consciousness).

RELATED FACTORS

Sustained environmental stimulation; Sustained uncomfortable sleep environment; Inadequate daytime activity; Sustained circadian asynchrony; Aging-related sleep stage shifts; Non-sleep-inducing parenting practices; Sustained inadequate sleep hygiene; Prolonged use of pharmacological or dietary antisoporifics; Prolonged discomfort (e.g., physical, psychological); Periodic limb movement (e.g., restless leg syndrome, nocturnal myoclonus); Sleep-related enuresis/painful erections; Nightmares; Sleepwalking; Sleep terror; Sleep apnea; Sundowner's syndrome; Dementia; Idiopathic central nervous system hypersomnolence; Narcolepsy; Familial sleep paralysis

DEFINING CHARACTERISTICS**Subjective**

Daytime drowsiness; Decreased ability to function; Malaise; Lethargy; Fatigue; Anxiety; Perceptual disorders (e.g., disturbed body sensation, delusions, feeling afloat); Heightened sensitivity to pain

Objective

Restlessness; Irritability; Inability to concentrate; Slowed reaction; Listlessness; Apathy; Fleeting nystagmus; Hand tremors; Acute confusion; Transient paranoia; Agitation; Combativeness; Hallucinations

SOCIAL INTERACTION, IMPAIRED

Diagnostic Division: Social Interaction

Definition: Insufficient or excessive quantity or ineffective quality of social exchange.

RELATED FACTORS

Deficit about ways to enhance mutuality (e.g., knowledge, skill); Communication barriers [including head injury, stroke, other neurological conditions affecting ability to communicate]; Self-concept disturbance; Absence of significant others; Limited physical mobility [e.g., neuromuscular disease]; Therapeutic isolation; Sociocultural dissonance; Environmental barriers; Disturbed thought processes

DEFINING CHARACTERISTICS**Subjective**

Discomfort in social situations; Inability to receive/communicate a satisfying sense of social engagement (e.g., belonging, caring, interest, or shared history); Family report of changes in interaction (e.g., style, pattern)

Objective

Use of unsuccessful social interaction behaviors; Dysfunctional interaction with others

SOCIAL ISOLATION

Diagnostic Division: Social Interaction

Definition: Aloneness experienced by the individual and perceived as imposed by others and as a negative or threatened state.

RELATED FACTORS

Factors contributing to the absence of satisfying personal relationships (e.g., delay in accomplishing developmental tasks); Immature interests; Alterations in physical appearance; Altered state of wellness; Alterations in mental status; Unaccepted social behavior/values; Inadequate personal resources; Inability to engage in satisfying personal relationships; [Traumatic incidents or events causing physical and/or emotional pain]

DEFINING CHARACTERISTICS**Subjective**

Expresses feelings of aloneness imposed by others; Expresses feelings of rejection; Insecurity in public; Inability to meet expectations of others; Inadequate purpose in life;

Developmentally inappropriate interests; Experiences feelings of difference from others; Expresses values unacceptable to the dominant cultural group

Objective

Absence of supportive SO(s) [family, friends, group]; Sad/dull affect; Uncommunicative; Withdrawn; No eye contact; Evidence of handicap (e.g., physical, mental); Illness; Developmentally inappropriate behaviors; Repetitive meaningless actions; Seeks to be alone; Preoccupation with own thoughts; Shows behavior unaccepted by dominant cultural group; Exists in a subculture; Projects hostility

SORROW, CHRONIC

Diagnostic Division: Ego Integrity

Definition: A cyclical, recurring, and potentially progressive pattern of pervasive sadness that is experienced by a client (parent or caregiver, or individual with chronic illness or disability) in response to continual loss, throughout the trajectory of an illness or disability.

RELATED FACTORS

Death of a loved one; Experiences chronic illness/ disability (e.g., physical or mental); Crises in management of the illness; Crises related to developmental stages; Missed opportunities/milestones; Unending caregiving

DEFINING CHARACTERISTICS

Subjective

Expresses negative feelings (e.g., anger, being misunderstood, confusion, depression, disappointment, emptiness, fear, frustration, guilt, self-blame, helplessness, hopelessness, loneliness, low self-esteem, recurring loss, overwhelmed); Expresses feelings of sadness (e.g., periodic, recurrent); Expresses feelings that may interfere with ability to reach highest level of personal/social well-being

SPIRITUAL DISTRESS

Diagnostic Division: Ego Integrity

Definition: Impaired ability to experience and integrate meaning and purpose in life through a person's connectedness with self, others, art, music, literature, nature, or a power greater than oneself.

RELATED FACTORS

Active dying; Loneliness; Social alienation; Self-alienation; Sociocultural deprivation; Anxiety; Pain; Life change; Chronic illness [of self or others]; Death; [Challenged belief/value system (e.g., moral/ethical implications of therapy)]

DEFINING CHARACTERISTICS

Subjective

Connections to Self

Expresses lack of: Hope; Meaning/purpose in life; Serenity (e.g., peace); Love; Acceptance; Forgiveness of self; Courage; [Expresses:] Anger; Guilt

Connections with Others

Refuses interactions with significant other(s)/spiritual leaders; Verbalizes being separated from support system; Expresses alienation

Connections with Art, Music, Literature, Nature

Inability to express previous state of creativity (e.g., singing/listening to music/writing); Uninterested in nature/reading spiritual literature

Connections with Power Greater Than Self

Sudden changes in spiritual practices; Inability to pray/participate in religious activities; Inability to experience the transcendent; Expresses being abandoned; Expresses hopelessness/suffering/having anger toward God; Requests to see a religious leader

Objective

Connections to Self

Poor coping

Connections with Power Greater Than Self

Inability to be introspective

SPIRITUAL DISTRESS, RISK FOR*Diagnostic Division: Ego Integrity*

Definition: At risk for an impaired ability to experience and integrate meaning and purpose in life through connectedness with self, others, art, music, literature, nature, and/or a power greater than oneself.

RISK FACTORS**Physical**

Physical/chronic illness; Substance abuse

Psychosocial

Stress; Anxiety; Depression; Low self-esteem; Poor relationships; Blocks to experiencing love; Inability to forgive; Loss; Separated support system; Racial/cultural conflict; Changes in religious rituals/spiritual practices

Developmental

Life changes

Environmental

Environmental changes; Natural disasters

SPIRITUAL WELL-BEING, READINESS FOR ENHANCED*Diagnostic Division: Ego Integrity*

Definition: Ability to experience and integrate meaning and purpose in life through connectedness with self, others, art, music, literature, nature, or a power greater than oneself.

DEFINING CHARACTERISTICS**Subjective****Connections to Self**

Expresses desire for enhanced: Acceptance; Coping; Courage; Forgiveness of self; Hope; Joy; Love; Meaning/purpose in life; Satisfying philosophy of life; Surrender; Expresses lack of serenity (e.g., peace); Meditation

Connections with Others

Requests interactions with significant others/spiritual leaders; Requests forgiveness of others

Connections with Powers Greater Than Self

Participates in religious activities; Prays; Expresses reverence/awe; Reports mystical experiences

Objective**Connections with Others**

Provides service to others

Connections with Art, Music, Literature, and Nature

Displays creative energy (e.g., writing, poetry, singing); Listens to music; Reads spiritual literature; Spends time outdoors

STRESS OVERLOAD*Diagnostic Division: Ego Integrity*

Definition: Excessive amounts and types of demands that require action.

RELATED FACTORS

Inadequate resources (e.g., financial, social, education/knowledge level); Intense, repeated stressors (e.g., family violence, chronic illness, terminal illness); Multiple co-existing stressors (e.g., environmental threats/demands; physical threats/demands; social threats/demands)

DEFINING CHARACTERISTICS**Subjective**

Expresses difficulty in functioning/problems with decision making; Expresses a feeling of pressure/tension/increased impatience/anger; Reports negative impact from stress (e.g., physical symptoms, psychological distress, feeling of "being sick" or of "going to

get sick”); Reports situational stress as excessive (e.g., rates stress level as a seven or above on a 10-point scale)

Objective

Demonstrates increased feelings of impatience/anger

SUFFOCATION, RISK FOR

Diagnostic Division: Safety

Definition: Accentuated risk of accidental suffocation (inadequate air available for inhalation).

RISK FACTORS**Internal**

Reduced olfactory sensation; Reduced motor abilities; Lack of safety education/precautions; Cognitive/emotional difficulties [e.g., altered consciousness/mentation]; Disease/injury process

External

Pillow/propped bottle placed in an infant’s crib; Hanging a pacifier around infant’s neck; Playing with plastic bags; Inserting small objects into airway; Leaving children unattended in water; Discarded refrigerators without removed doors; Vehicle warming in closed garage [/faulty exhaust system]; Use of fuel-burning heaters not vented to outside; Household gas leaks; Smoking in bed; Low-strung clothesline; Eating large mouthfuls [or pieces] of food

SUICIDE, RISK FOR

Diagnostic Division: Safety

Definition: Risk for self-inflicted, life-threatening injury.

RISK FACTORS**Behavioral**

History of prior suicide attempt; Buying a gun; Stockpiling medicines; Making/changing a will; Giving away possessions; Sudden euphoric recovery from major depression; Impulsiveness; Marked changes in behavior/attitude/school performance

Demographic

Age (e.g., elderly, young adult males, adolescents); Race (e.g., Caucasian, Native American); Male gender; Divorced; Widowed

Physical

Physical/terminal illness; Chronic pain

Psychological:

Family history of suicide; Abuse in childhood; Substance use/abuse; Psychiatric illness/disorder (e.g., depression, schizophrenia, bipolar disorder); Guilt; Gay or lesbian youth

Situational

Living alone; Retired; Economic instability; Relocation; Institutionalization; Loss of autonomy/independence; Presence of gun in home; Adolescents living in nontraditional settings (e.g., juvenile detention center, prison, halfway house, group home)

Social

Loss of important relationship; Disrupted family life; Poor support systems; Social isolation; Grief; Loneliness; Hopelessness; Helplessness; Legal/disciplinary problems; Cluster suicides

Verbal

Threats of killing oneself; States desire to die [/end it all]

SURGICAL RECOVERY, DELAYED

Diagnostic Division: Pain / Discomfort

Definition: Extension of the number of postoperative days required to initiate and perform activities that maintain life, health, and well-being.

RELATED FACTORS

Extensive/prolonged surgical procedure; Pain; Obesity; Preoperative expectations; Postoperative surgical site care

DEFINING CHARACTERISTICS**Subjective**

Perception that more time is needed to recover; Report of pain/discomfort; Fatigue; Loss of appetite with or without nausea; Postpones resumption of work/employment activities

Objective

Evidence of interrupted healing of surgical area (e.g., red, indurated, draining, immobilized); Difficulty in moving about; Requires help to complete self-care

SWALLOWING, IMPAIRED

Diagnostic Division: Food / Fluid

Definition: Abnormal functioning of the swallowing mechanism associated with deficits in oral, pharyngeal, or esophageal structure or function.

RELATED FACTORS**Congenital Deficits**

Upper airway anomalies; Mechanical obstruction (e.g., edema, tracheostomy tube, tumor); History of tube feeding; Neuromuscular impairment (e.g., decreased or absent gag reflex, decreased strength or excursion of muscles involved in mastication, perceptual impairment, facial paralysis); Conditions with significant hypotonia; Respiratory disorders; Congenital heart disease; Behavioral feeding problems; Self-injurious behavior; Failure to thrive; Protein energy malnutrition

Neurological Problems

Nasal/nasopharyngeal cavity defects; Upper airway anomalies; Oropharyngeal/laryngeal abnormalities; Tracheal/laryngeal/esophageal defects; Gastroesophageal reflux disease; Achalasia; Traumas; Acquired anatomic defects; Cranial nerve involvement; Traumatic head injury; Prematurity; Developmental delay; Cerebral palsy

DEFINING CHARACTERISTICS**Subjective****Esophageal Phase Impairment**

Complaints [reports] of "something stuck"; Odynophagia; Food refusal; Volume limiting; Heartburn; Epigastric pain; Nighttime coughing/awakening

Objective**Oral Phase Impairment**

Weak suck resulting in inefficient nippleing; Slow bolus formation; Lack of tongue action to form bolus; Premature entry of bolus; Incomplete lip closure; Food pushed out of falls from mouth; Lack of chewing; Coughing/choking/gagging before a swallow; Piece-meal deglutition; Abnormality in oral phase of swallow study; Inability to clear oral cavity; Pooling in lateral sulci; Nasal reflux; Sialorrhea or drooling; Long meals with little consumption

Pharyngeal Phase Impairment

Food refusal; Altered head positions; Delayed/multiple swallows; Inadequate laryngeal elevation; Abnormality in pharyngeal phase by swallow study; Choking; Coughing; Gagging; Nasal reflux; Gurgly voice quality; Unexplained fevers; Recurrent pulmonary infections

Esophageal Phase Impairment

Observed evidence of difficulty in swallowing (e.g., stasis of food in oral cavity, coughing/choking); Abnormality in esophageal phase by swallow study; Hyperextension of head (e.g., arching during or after meals); Repetitive swallowing; Bruxism; Unexplained irritability surrounding mealtime; Acidic smelling breath; Regurgitation of gastric contents (wet burps); Vomitus on pillow; Vomiting; Hematemesis

THERAPEUTIC REGIMEN MANAGEMENT: EFFECTIVE

Diagnostic Division: Teaching / Learning

Definition: Pattern of regulating and integrating into daily living a program for treatment of illness and its sequelae that is satisfactory for meeting specific health goals.

RELATED FACTORS

NOTE: To be developed; [Complexity of health care management; therapeutic regimen]; [Added demands made on individual or family]; [Adequate social supports]

DEFINING CHARACTERISTICS**Subjective**

Verbalized desire to manage the treatment of illness and prevention of sequelae; Verbalized intent to reduce risk factors for progression of illness and sequelae

Objective

Appropriate choices of daily activities for meeting the goals of a treatment or prevention program; Illness symptoms are within a normal range of expectation

THERAPEUTIC REGIMEN MANAGEMENT: INEFFECTIVE

Diagnostic Division: Teaching / Learning

Definition: A pattern of regulating and integrating into daily living a program for treatment of illness and the sequelae of illness that is unsatisfactory for meeting specific health goals.

RELATED FACTORS

Complexity of health care system/therapeutic regimen; Decisional conflicts; Economic difficulties; Excessive demands made (e.g., individual or family); Family conflict; Family patterns of health care; Inadequate number of cues to action; Knowledge deficits; Mistrust of regimen/health care personnel; Perceived seriousness/susceptibility/barriers/benefits; Powerlessness; Social support deficits

DEFINING CHARACTERISTICS**Subjective**

Verbalized desire to manage the illness; Verbalized difficulty with prescribed regimens

Objective

Failure to include treatment regimens in daily routines/take action to reduce risk factors; Makes choices in daily living ineffective for meeting the health goals; [Unexpected acceleration of illness symptoms]

THERAPEUTIC REGIMEN MANAGEMENT, INEFFECTIVE COMMUNITY

Diagnostic Division: Teaching / Learning

Definition: Pattern of regulating and integrating into community processes programs for treatment of illness and the sequelae of illness that are unsatisfactory for meeting health-related goals.

RELATED FACTORS

To be developed; [Lack of safety for community members]; [Economic insecurity]; [Healthcare not available]; [Unhealthy environment]; [Education not available for all community members]; [Lack of means to meet human needs for recognition, fellowship, security, and membership]

DEFINING CHARACTERISTICS**Subjective**

[Community members/agencies verbalize overburdening of resources for meeting therapeutic needs of all members]

Objective

Deficits in advocates for aggregates; Deficits in community activities for prevention; Illness symptoms above the norm expected for the population; Unexpected acceleration of illness; Insufficient health care resources (e.g., people, programs); Unavailable health care resources for illness care; [Deficits in community for collaboration and development of coalitions to address needs]

THERAPEUTIC REGIMEN MANAGEMENT, INEFFECTIVE FAMILY

Diagnostic Division: Teaching / Learning

Definition: A pattern of regulating and integrating into family processes a program for treatment of illness and the sequelae of illness that is unsatisfactory for meeting specific health goals.

RELATED FACTORS

Complexity of health care system/therapeutic regimen; Decisional conflicts; Economic difficulties; Excessive demands; Family conflicts

DEFINING CHARACTERISTICS**Subjective**

Verbalizes difficulty with therapeutic regimen; Verbalizes desire to manage the illness

Objective

Inappropriate family activities for meeting health goals; Acceleration of illness symptoms of a family member; Failure to take action to reduce risk factors; Lack of attention to illness

THERAPEUTIC REGIMEN MANAGEMENT: READINESS FOR ENHANCED

Diagnostic Division: Teaching/Learning

Definition: A pattern of regulating and integrating into daily living programs for treatment of illness and its sequelae that are sufficient for meeting health-related goals and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses desire to manage the illness (e.g., treatment, prevention); Expresses little difficulty with prescribed regimens; Describes reduction of risk factors

Objective

Choices of daily living are appropriate for meeting goals (e.g., treatment, prevention); No unexpected acceleration of illness symptoms

THERMOREGULATION, INEFFECTIVE

Diagnostic Division: Safety

Definition: Temperature fluctuation between hypothermia and hyperthermia.

RELATED FACTORS

Trauma [e.g., intracranial surgery, head injury]; Illness [e.g., cerebral edema, CVA]; Immaturity; Aging [e.g., loss/absence of brown adipose tissue]; Fluctuating environmental temperature; [Changes in hypothalamic tissue causing alterations in emission of thermosensitive cells and regulation of heat loss/production]; [Changes in metabolic rate/activity]; [Changes in level/action of thyroxine and catecholamines]; [Chemical reactions in contracting muscles]

DEFINING CHARACTERISTICS**Objective**

Fluctuations in body temperature above and below the normal range; Tachycardia; Reduction in body temperature below normal range; Cool skin; Moderate pallor; Mild shivering; Piloerection; Cyanotic nail beds; Slow capillary refill; Hypertension; Warm to touch; Flushed skin; Increased respiratory rate; Seizures

THOUGHT PROCESSES, DISTURBED

Diagnostic Division: Neurosensory

Definition: Disruption in cognitive operations and activities.

RELATED FACTORS

To be developed; [Physiological changes]; [Aging]; [Hypoxia]; [Head injury]; [Malnutrition]; [Infections]; [Biochemical changes]; [Medications]; [Substance abuse]; [Sleep deprivation]; [Psychological conflicts]; [Emotional changes]; [Mental disorders]

DEFINING CHARACTERISTICS**Subjective**

[Ideas of reference]; [Hallucinations]; [Delusions]

Objective

Inaccurate interpretation of environment; Inappropriate/non-reality-based thinking; Egocentricity; Memory deficit; [Confabulation]; Hypervigilance; Hypovigilance; Cognitive dissonance, [Decreased ability to grasp ideas, make decisions, problem-solve, use abstract reasoning or conceptualize, calculate; disordered thought sequencing]; Distractibility; [Altered attention span]; [Inappropriate social behavior]

TISSUE INTEGRITY, IMPAIRED

Diagnostic Division: Safety

Definition: Damage to mucous membrane, corneal, integumentary, or subcutaneous tissues.

RELATED FACTORS

Altered circulation; Nutritional factors (e.g., deficit or excess); [Metabolic/endocrine dysfunction]; Fluid deficit/excess; Knowledge deficit; Impaired physical mobility; Chemical irritants [e.g., body excretions, secretions, medications]; Radiation; Temperature extremes; Mechanical (e.g., pressure, shear, friction); [Surgery]; Knowledge deficit; [Infection]

TISSUE PERFUSION, INEFFECTIVE (SPECIFY TYPE): RENAL, CEREBRAL, CARDIOPULMONARY, GASTROINTESTINAL, PERIPHERAL

Diagnostic Division: Circulation

Definition: Decrease in oxygen resulting in the failure to nourish the tissues at the capillary level. [Although tissue perfusion problems can exist without decreased cardiac output, there may be a relationship between cardiac output and tissue perfusion.]

RELATED FACTORS

Hypervolemia; Hypovolemia; Interruption of flow; Decreased hemoglobin concentration in blood; Enzyme poisoning; Altered affinity of hemoglobin for oxygen; Impaired transport of oxygen; Mismatch of ventilation with blood flow; Exchange problems; Hypoventilation

DEFINING CHARACTERISTICS**Subjective****Cardiopulmonary**

Chest pain; Dyspnea; Sense of “impending doom”

Gastrointestinal

Nausea; Abdominal pain or tenderness

Peripheral

Claudication

Objective**Renal**

Altered blood pressure outside of acceptable parameters; Oliguria; Anuria; Hematuria; Elevation in BUN/creatinine ratio

Cerebral

Altered mental status; Speech abnormalities; Behavioral changes; [Restlessness]; Changes in motor response; Extremity weakness; Paralysis; Changes in pupillary reactions; Difficulty in swallowing

Cardiopulmonary

Arrhythmias; Capillary refill >3 sec; Altered respiratory rate outside of acceptable parameters; Use of accessory muscles; Chest retraction; Nasal flaring; Bronchospasms; Abnormal arterial blood gases; [Hemoptysis]

Gastrointestinal

Hypoactive/absent bowel sounds; Abdominal distention; [Vomiting]

Peripheral

Altered skin characteristics (e.g., hair, nails, moisture); Skin temperature changes; Skin discolorations; Skin color pales on elevation, color does not return on lowering the leg; Altered sensations; Blood pressure changes in extremities; Weak/absent pulses; Diminished arterial pulsations; Bruits; Edema; Delayed healing; Positive Homans' sign

TRANSFER ABILITY, IMPAIRED*Diagnostic Division: Safety***Definition:** Limitation of independent movement between two nearby surfaces.

NOTE: Specify level of independence using a standardized functional scale.

RELATED FACTORS

Insufficient muscle strength; Deconditioning; Neuromuscular impairment; Musculoskeletal impairment (e.g., contractures); Impaired balance; Pain; Obesity; Impaired vision; Lack of knowledge; Cognitive impairment; Environment constraints (e.g., bed height, inadequate space, wheelchair type, treatment equipment, restraints)

DEFINING CHARACTERISTICS

Inability to transfer from: Bed to chair/chair to bed; Bed to standing/standing to bed; Chair to standing/standing to chair; Chair to floor/floor to chair; Standing to floor/floor to standing; Chair to car/car to chair; Inability to transfer: On/off a toilet or commode; In/out of tub or shower; Between uneven levels

TRAUMA, RISK FOR*Diagnostic Division: Safety***Definition:** Accentuated risk of accidental tissue injury (e.g., wound, burn, fracture).**RISK FACTORS****Internal**

Weakness; Balancing difficulties; Reduced muscle coordination; Reduced hand/eye coordination; Poor vision; Reduced sensation; Lack of safety education/precautions; Insufficient finances; Cognitive/emotional difficulties; History of previous trauma

External [includes but is not limited to:]

Slippery floors (e.g., wet or highly waxed); Unanchored rugs/electic wires; Bathtub without antislip equipment; Use of unsteady ladder/chairs; Obstructed passageways; Entering unlighted rooms; Inadequate stair rails; Children playing without gates at top of stairs; High beds; Inappropriate call-for-aid mechanisms for bed-resting client; Unsafe window protection in homes with young children; Pot handles facing toward front of stove; Bathing in very hot water (e.g., unsupervised bathing of young children); Potential igniting gas leaks; Delayed lighting of gas appliances; Wearing flowing clothing around open flames; Flammable children's clothing/toys; Smoking in bed/near oxygen; Grease waste collected on stoves; Children playing with dangerous objects; Accessibility of guns; Playing with explosives; Experimenting with chemical; Inadequately stored combustibles (e.g., matches, oily rags)/corrosives (e.g., lye); Contact with corrosives; Overloaded fuse boxes; Faulty electrical plugs; Frayed wires; Defective appliances; Overloaded electrical outlets; Exposure to dangerous machinery; Contact with rapidly moving machinery; Struggling with restraints; Contact with intense cold; Lack of protection from heat source; Overexposure to radiotherapy; Large icicles hanging from the roof; Use of cracked dishware; Knives stored uncovered; High-crime neighborhood; Driving a mechanically unsafe vehicle; Driving at excessive speeds; Driving without necessary visual aids; Driving while intoxicated; Children riding in the front seat of car; Nonuse/misuse of seat restraints; Unsafe road/walkways; Physical proximity to vehicle pathways (e.g., driveways, lanes, railroad tracks); Misuse [nonuse] of necessary headgear [e.g., for bicycles, motorcycles, skateboarding, skiing]

URINARY ELIMINATION, IMPAIRED*Diagnostic Division: Elimination***Definition:** Disturbance in urine elimination.**RELATED FACTORS**

Multiple causality; Sensory motor impairment; Anatomical obstruction; UTI; [Mechanical trauma; [Fluid/volume states]; [Psychogenic factors]; [Surgical diversion]

DEFINING CHARACTERISTICS**Subjective**

Frequency; Urgency; Hesitancy; Dysuria; Nocturia; [Enuresis]

Objective

Incontinence; Retention

URINARY ELIMINATION, READINESS FOR ENHANCED

Diagnostic Division: Elimination

Definition: A pattern of urinary functions that is sufficient for meeting eliminatory needs and can be strengthened.

DEFINING CHARACTERISTICS**Subjective**

Expresses willingness to enhance urinary elimination; Positions self for emptying of bladder

Objective

Urine is straw colored/odorless; Amount of output/specific gravity is within normal limits; Fluid intake is adequate for daily needs

URINARY INCONTINENCE, FUNCTIONAL

Diagnostic Division: Elimination

Definition: Inability of usually continent person to reach toilet in time to avoid unintentional loss of urine.

RELATED FACTORS

Altered environmental factors [e.g., poor lighting or inability to locate bathroom]; Neuromuscular limitations; Weakened supporting pelvic structures; Impaired vision/cognition; Psychological factors; [Reluctance to request assistance/use bedpan]; [Increased urine production]

DEFINING CHARACTERISTICS**Subjective**

Senses need to void; [voiding in large amounts]

Objective

Loss of urine before reaching toilet; Amount of time required to reach toilet exceeds length of time between sensing urge and uncontrolled voiding; Able to completely empty bladder; May be incontinent only in early morning

URINARY INCONTINENCE, OVERFLOW

Diagnostic Division: Elimination

Definition: Involuntary loss of urine associated with overdistention of the bladder.

RELATED FACTORS

Bladder outlet obstruction; Fecal impaction; Urethral obstruction; Severe pelvic prolapse; Detrusor external sphincter dyssynergia; Detrusor hypocontractility; Side effects of calcium channel blockers/anticholinergic/decongestant medications

DEFINING CHARACTERISTICS**Subjective**

Reports involuntary leakage of small volumes of urine; Nocturia

Objective

Bladder distention; High postvoid residual volume; Observed involuntary leakage of small volumes of urine

URINARY INCONTINENCE, REFLEX

Diagnostic Division: Elimination

Definition: Involuntary loss of urine at somewhat predictable intervals when a specific bladder volume is reached.

RELATED FACTORS

Tissue damage (e.g., due to radiation cystitis, inflammatory bladder conditions, or radical pelvic surgery); Neurological impairment above level of sacral or pontine micturition center

DEFINING CHARACTERISTICS**Subjective**

No sensation of bladder fullness/urge to void/voiding; Sensation of urgency without voluntary inhibition of bladder contraction; Sensations associated with full bladder (e.g., sweating, restlessness, and abdominal discomfort)

Objective

Predictable pattern of voiding; Inability to voluntarily inhibit/initiate voiding; Complete emptying with [brain] lesion above pontine micturition center; Incomplete emptying with [spinal cord] lesion above sacral micturition center

URINARY INCONTINENCE, RISK FOR URGE

Diagnostic Division: Elimination

Definition: At risk for involuntary loss of urine associated with a sudden, strong sensation or urinary urgency.

RISK FACTORS

Effects of medications/caffeine/alcohol; Detrusor hyperreflexia (e.g., from cystitis, urethritis, tumors, renal calculi, CNS disorders above pontine micturition center; Impaired bladder contractility; Involuntary sphincter relaxation; Ineffective toileting habits; Small bladder capacity

URINARY INCONTINENCE, STRESS

Diagnostic Division: Elimination

Definition: Sudden leakage of urine with activities that increase intra-abdominal pressure.

RELATED FACTORS

Degenerative changes in pelvic muscles; Weak pelvic muscles; High intra-abdominal pressure [e.g., obesity, gravid uterus]; Intrinsic urethral sphincter deficiency

DEFINING CHARACTERISTICS**Subjective**

Reported involuntary leakage of small amounts of urine: On exertion [e.g., lifting, impact aerobics]; With sneezing, laughing, or coughing; In the absence of detrusor contraction/an overdistended bladder

Objective

Observed involuntary leakage of small amounts of urine: On exertion [e.g., lifting, impact aerobics]; With sneezing, laughing, or coughing; In the absence of detrusor contraction/an overdistended bladder

URINARY INCONTINENCE, TOTAL

Diagnostic Division: Elimination

Definition: Continuous and unpredictable loss of urine.

RELATED FACTORS

Neuropathy preventing transmission of reflex [signals to the reflex arc] indicating bladder fullness; Neurological dysfunction [e.g., cerebral lesions]; Independent contraction of detrusor reflex; Trauma/disease affecting spinal cord nerves [destruction of sensory or motor neurons below the injury level]; Anatomic (fistula)

DEFINING CHARACTERISTICS**Subjective**

Constant flow of urine at unpredictable times without uninhibited bladder contractions/spasm or distention; Nocturia; Lack of bladder/perineal filling [awareness]; Unawareness of incontinence

Objective

Unsuccessful incontinence refractory treatments

URINARY INCONTINENCE, URGE

Diagnostic Division: Elimination

Definition: Involuntary passage of urine occurring soon after a strong sense of urgency to void.

RELATED FACTORS

Decreased bladder capacity [e.g., history of pelvic inflammatory disease (PID), abdominal surgeries, indwelling urinary catheter]; Bladder infection; Atrophic urethritis/vaginitis; Alcohol/caffeine intake; [Increased fluids]; Use of diuretics; Fecal impaction; Detrusor hyperactivity with impaired bladder contractility

DEFINING CHARACTERISTICS**Subjective**

Reports: Urinary urgency; Involuntary loss of urine with bladder contractions/spasms; Inability to reach toilet in time to avoid urine loss

Objective

Observed inability to reach toilet in time to avoid urine loss

URINARY RETENTION [ACUTE/CHRONIC]

Diagnostic Division: Elimination

Definition: Incomplete emptying of the bladder.

RELATED FACTORS

High urethral pressure; Inhibition of reflex arc; Strong sphincter; Blockage [e.g., benign prostatic hypertrophy—BPH, perineal swelling]; [Habituation of reflex arc]; [Infections]; [Neurological diseases/trauma]; [Use of medications with side effect of retention (e.g., atropine, belladonna, psychotropics, antihistamines, opiates)]

DEFINING CHARACTERISTICS**Subjective**

Sensation of bladder fullness; Dribbling; Dysuria

Objective

Bladder distention; Small, frequent voiding or absence of urine output; Residual urine [150 ml or more]; Overflow incontinence; [Reduced stream]

VENTILATION, IMPAIRED SPONTANEOUS

Diagnostic Division: Respiration

Definition: Decreased energy reserves results in an individual's inability to maintain breathing adequate to support life.

RELATED FACTORS

Metabolic factors; [hypermetabolic state (e.g., infection), nutritional deficits/depletion of energy stores]; Respiratory muscle fatigue; [Airway size/resistance; problems with secretion management]

DEFINING CHARACTERISTICS**Subjective**

Apprehension; [Difficulty breathing]

Objective

Dyspnea; Increased metabolic rate; Increased heart rate; Increased restlessness; Decreased cooperation; Increased use of accessory muscles; Decreased tidal volume; Decreased PO_2 ; Decreased SAO_2 ; Increased PCO_2

VENTILATORY WEANING RESPONSE, DYSFUNCTIONAL (DVWR)

Diagnostic Division: Respiration

Definition: Inability to adjust to lowered levels of mechanical ventilator support, which interrupts and prolongs the weaning process.

RELATED FACTORS**Physiological**

Ineffective airway clearance; Sleep pattern disturbance; Inadequate nutrition; Uncontrolled pain; [Muscle weakness/fatigue]; [Inability to control respiratory muscles]; [Immobility]

Psychological

Knowledge deficit of the weaning process; Patient's perceived inefficacy about the ability to wean; Decreased motivation; Decreased self-esteem; Anxiety; Fear; Insufficient trust in the nurse [care provider]; Hopelessness; Powerlessness; [Unprepared for weaning attempt]

Situational

Uncontrolled episodic energy demands; Inappropriate pacing of diminished ventilator support; Inadequate social support; Adverse environment (e.g., noisy, active environment, negative events in the room, low nurse-patient ratio; unfamiliar nursing staff [extended nurse absence from bedside]); History of ventilator dependence >4 days; History of multiple unsuccessful weaning attempts

DEFINING CHARACTERISTICS

Responds to lowered levels of mechanical ventilator support with:

Mild DVWR**Subjective**

Expressed feelings of increased need for oxygen; Breathing discomfort; Fatigue; Warmth; Queries about possible machine malfunction

Objective

Restlessness; Slight increased respiratory rate from baseline; Increased concentration on breathing

Moderate DVWR**Subjective**

Apprehension

Objective

Slight increase from baseline blood pressure (<20 mm Hg); Slight increase from baseline heart rate (<20 beats/min); Baseline increase in respiratory rate (<5 breaths/min); Slight respiratory accessory muscle use; Decreased air entry on auscultation; Hypervigilance to activities; Wide-eyed look; Inability to respond to coaching/cooperate; Diaphoresis; Color changes; Pale; Slight cyanosis

Severe DVWR**Objective**

Agitation; Decreased level of consciousness; Deterioration in arterial blood gases [ABGs] from current baseline; Increase from baseline BP (>20 mm Hg); Increase from baseline heart rate (>20 beats/min); Respiratory rate increases significantly from baseline; Full respiratory accessory muscle use; Shallow/gasping breaths; Paradoxical abdominal breathing; Adventitious breath sounds; Audible airway secretions; Asynchronized breathing with the ventilator; Profuse diaphoresis; Cyanosis

VIOLENCE, [ACTUAL]/RISK FOR OTHER-DIRECTED*Diagnostic Division: Safety*

Definition: At risk for behaviors in which an individual demonstrates that he/she can be physically, emotionally, and/or sexually harmful to others.

RISK FACTORS

History of: Violence against others (e.g., hitting, kicking, scratching, biting or spitting, throwing objects at someone; attempted rape, rape, sexual molestation; urinating/defecating on a person); Threats (e.g., verbal threats against property/person, social threats, cursing, threatening notes/letters, threatening gestures, sexual threats); Violent antisocial behavior (e.g., stealing, insistent borrowing, insistent demands for privileges, insistent interruption of meetings; refusal to eat/take medication, ignoring instructions); Indirect violence (e.g., tearing off clothes, urinating/defecating on floor, stamping feet, temper tantrum; running in corridors, yelling, writing on walls, ripping objects off walls, throwing objects, breaking a window, slamming doors; sexual advances); Substance abuse; Childhood abuse/witnessing family violence; Neurological impairment (e.g., positive EEG, CT, MRI, neurological findings; head trauma; seizure disorders, [temporal lobe epilepsy]); Cognitive impairment (e.g., learning disabilities,

attention deficit disorder, decreased intellectual functioning); [Organic brain syndrome]; Pathological intoxication [toxic reaction to medication]; Psychotic symptomatology (e.g., auditory, visual, command hallucinations; paranoid delusions; loose, rambling, or illogical thought processes); [Panic states]; [Rage reactions]; [Catatonic/manic excitement]; Cruelty to animals; Firesetting; Motor vehicle offenses (e.g., frequent traffic violations, use of motor vehicle to release anger); Suicidal behavior; Impulsivity; Availability of weapon(s); Body language (e.g., rigid posture, clenching of fists and jaw, hyperactivity, pacing, breathlessness, threatening stances); [Hormonal imbalance (e.g., premenstrual syndrome—PMS, postpartal depression/psychosis)]; Prenatal/perinatal complications; [Expressed intent/desire to harm others directly or indirectly]; [Almost continuous thoughts of violence]

VIOLENCE, [ACTUAL]/RISK FOR SELF-DIRECTED

Diagnostic Division: Safety

Definition: Behaviors in which an individual demonstrates that he/she can be physically, emotionally, and/or sexually harmful to self.

RISK FACTORS

Age 15 to 19, over 45; Marital status (single, widowed, divorced); Employment problems (e.g., unemployed, recent job loss/failure); Occupation (executive, administrator/owner of business, professional, semiskilled worker); Conflictual interpersonal relationships; Family background (e.g., chaotic or conflictual, history of suicide); Sexual orientation (bisexual [active], homosexual [inactive]); Physical health problems (e.g., hypochondriac, chronic or terminal illness); Mental health problems (e.g., severe depression, [bipolar disorder], psychosis, severe personality disorder, alcoholism or drug abuse); Emotional problems (e.g., hopelessness [lifting of depressed mood], despair, increased anxiety, panic, anger, hostility); History of multiple suicide attempts; Suicidal ideation; Suicide plan; Lack of personal resources (e.g., poor achievement, poor insight, affect unavailable and poorly controlled); Lack of social resources (e.g., poor rapport, socially isolated, unresponsive family); Verbal clues (e.g., talking about death, “better off without me,” asking questions about lethal dosages of drugs); Behavioral clues (e.g., writing forlorn love notes, directing angry messages at a significant other who has rejected the person, giving away personal items, taking out a large life insurance policy)

WALKING, IMPAIRED

Diagnostic Division: Safety

Definition: Limitation of independent movement within the environment on foot.

NOTE: Specific level of independence using a standardized functional scale

RELATED FACTORS

Insufficient muscle strength; Neuromuscular impairment; Musculoskeletal impairment (e.g., contractures); Limited endurance; Deconditioning; Fear of falling; Impaired balance; Impaired vision; Pain; Obesity; Depressed mood; Cognitive impairment; Lack of knowledge; Environmental constraints (e.g., stairs, inclines, uneven surfaces, unsafe obstacles, distances, lack of assistive devices or person, restraints)

DEFINING CHARACTERISTICS

Impaired ability to: Walk required distances; Walk on an incline/decline; Walk on uneven surfaces; Navigate curbs; Climb stairs

WANDERING [SPECIFY SPORADIC OR CONTINUAL]

Diagnostic Division: Safety

Definition: Meandering, aimless, or repetitive locomotion that exposes the individual to harm; frequently incongruent with boundaries, limits, or obstacles.

RELATED FACTORS

Cognitive impairment (e.g., memory and recall deficits, disorientation, poor visuoconstructive or visuospatial ability, language defects); Sedation; Cortical atrophy; Premorbid behavior (e.g., outgoing, sociable personality; premorbid dementia); Separation from familiar environment; Overstimulating environment; Emotional state (e.g.,

frustration, anxiety, boredom, depression, agitation); Physiological state or need (e.g., hunger, thirst, pain, urination, constipation); Time of day

DEFINING CHARACTERISTICS**Objective**

Frequent/continuous movement from place to place, often revisiting the same destinations; Persistent locomotion in search of something; Scanning/ searching behaviors; Haphazard locomotion; Fretful locomotion/pacing; Long periods of locomotion without an apparent destination; Locomotion into unauthorized or private spaces; Trespassing; Locomotion resulting in unintended leaving of a premise; Inability to locate significant landmarks in a familiar setting; Getting lost; Locomotion that cannot be easily dissuaded; Shadowing a caregiver's locomotion; Hyperactivity; Periods of locomotion interspersed with periods of nonlocomotion (e.g., sitting, standing, sleeping)