



γ SEE: *gamma*.

G 1. The newtonian constant of gravitation. 2. Symbol for giga, 10^9 , in SI units.

g 1. Symbol for the standard force of attraction of gravity, 980.665 m/sec², or about 32.17 ft/sec². 2. *gingival*; *gram*; *gender*.

Ga Symbol for the element gallium.

GABA *gamma-aminobutyric acid*.

gabapentin (gă-bă-pĕn'tin) A gamma-aminobutyric acid (GABA) administered orally in adjunct with other treatment of adults with partial seizures with and without secondary generalization. Its U.S. Food and Drug Administration-approved therapeutic class is anticonvulsant.

gadfly (găd'fli) A fly belonging to the family Tabanidae that lays eggs under the skin of its victim, causing swelling simulating a boil. Multiple furuncles appear with hatching of larvae. SEE: *bot-fly*.

gadolinium (găd'ō-lin'ē-ūm) SYMB: Gd. A chemical element of the lanthanide series, atomic weight 157.25, atomic number 64. Gadolinium is used as a contrast agent in magnetic resonance imaging.

Gaenslen's test, Gaenslen's sign (gĕns'lĕnz) [Frederick J. Gaenslen, U.S. orthopedist, 1877–1937] A procedure used to identify the presence of sacroiliac dysfunction. The patient lies supine close to the edge of the examination table or is placed in a side-lying position with both legs pulled to the chest. The examiner extends the patient's leg and forces it into hyperextension while the other leg remains held against the chest. A positive test result produces pain in the sacroiliac region.

GAF *Global Assessment of Functioning*.

gag 1. A device for keeping the jaws open during surgery. 2. To retch or cause to retch. SEE: *gag reflex*. 3. To restrict free speech or expression.

gag clause Any item in a contract that restricts free speech or personal expression.

gage (gāj) Gauge.

Gail score (gāl) [Mitchell H. Gail, U.S. oncologist] A tool that assesses a woman's risk for developing breast cancer in the next 5 years. It uses several variables, including the woman's current age and the ages when she first menstruated and gave birth; any history of breast biopsies; and any history of the disease in her mother, sisters, or daughters.

gain 1. To increase in weight, strength, or health. 2. In electronics, the term used to describe the amplification factor for a given circuit or device. 3. The real or imagined positive effect of some action or situation. For example, an illness might allow a person to put off going to school or meeting some other obligation such as a court appearance.

brightness g. The increase in the intensity of a fluoroscopic image by the use of an image intensifier.

flux g. In radiographic image intensification, the ratio of the number of light photons at the output phosphor to the number of photons at the input phosphor.

minification g. In radiographic image intensification, the ratio of the square of the input phosphor diameter to the square of the output phosphor diameter.

primary g. In psychiatry, the relief of symptoms when the patient converts emotional anxiety to what he or she perceives as an organic illness (e.g., hysterical paralysis or blindness).

secondary g. The advantage gained by the patient indirectly from illness, such as attention, care, and release from responsibility.

gainsharing A financial collaboration between hospitals and health care professionals in which the parties agree to divide any benefits they achieve from increases in productivity or receipts or from decreases in costs.

Gaisböck's syndrome (gīs'bĕks) [Felix Gaisböck, Ger. physician, 1869–1955] Benign erythrocytosis. SYN: *spurious erythrocytosis*; *spurious polycythemia*; *stress erythrocytosis*.

gait (gāt) [ME. *gait*, passage] A manner of walking.

PATIENT CARE: Patients with gait problems should be evaluated by an interdisciplinary team, often including a neurologist, physiatrist, physical therapist, occupational therapist, and home health nurse. The home or care setting should be assessed for hazards that may increase the risk of falling; it should be altered to enhance its safety. Care providers should be taught how to safely assist an individual who has fallen, without compounding any injuries that may have occurred. Fall protection (hip pads, stair- and tub-rails, low bed position, appropriate chair-types) should be provided to safeguard the patient from injury, and patients should be encour-

aged to practice and use techniques that specifically address their strengths and weaknesses so that their mobility is optimized.

antalgic g. A gait in which the patient experiences pain during the stance phase and thus remains on the painful leg for as short a time as possible.

ataxic g. An unsteady, staggering gait pattern. If related to cerebellar pathology, the gait is unsteady, irregular, and generally characterized by use of a wide base of support. The deviation is equally severe if the individual walks with eyes open or closed. If the cerebellar lesion is localized to one hemisphere, the individual will sway toward the affected side. Ataxic gait patterns related to spinal ataxia are characterized by a wide base of support, with the feet thrown out. There is a characteristic double tapping sound, as the individual steps on heels first, then on toes. This gait pattern occurs in such conditions as tabes dorsalis and multiple sclerosis and is believed to result from the disruption of the sensory pathways in the central nervous system. SEE: *ataxia* and its subentries.

cerebellar g. An ataxic gait resulting, e.g., from a cerebellar stroke or tumor.

crouch g. A gait seen in cerebral palsy in which the hamstrings and psoas muscles are shorter than normal and the affected person walks with a stooped posture.

double step g. A gait in which alternate steps are of a different length or at a different rate.

drag-to g. A gait in which the crutches are advanced and the feet are dragged, rather than lifted, to the crutches.

equine g. A gait marked by high steps, characteristic of tibialis anterior paralysis. In a rigid equinus posture of the ankle, the person walks on the toes. This is also seen in spastic gait patterns.

festinating g. A gait in which short, shuffling steps are initially taken, with the feet barely clearing the floor. After several steps the walking pace becomes quicker and quicker. The upper body is flexed forward, and the head is bent toward the floor. The arms, elbows, hips, and knees are bent. This gait is typical of parkinsonism and related brain disorders.

four-point g. A gait in which first the right crutch and the left foot are advanced consecutively, and then the left crutch and the right foot are moved forward.

frontal g. Difficulty in walking caused by stroke, tumor, or atrophy of the frontal lobes of the brain. Affected persons have difficulty lifting their feet

from the floor, take short steps, and walk with their feet widely separated.

frozen g. Difficulty in walking caused by inability to initiate the necessary movements.

glue-footed g. A gait in which the individual has difficulty initiating the first step as if the feet were glued to the floor; once the gait is initiated, small, shuffling steps are taken. SYN: *magnetic gait*.

gluteus maximus g. A lurching gait, characterized by posterior leaning of the trunk at heel strike in order to keep the hip extended during the stance phase. It is caused by weakness of the gluteus maximus. It also is called hip extensor gait.

gluteus medius g. A gait deviation that occurs with weakness or paralysis of the gluteus medius muscle. In an uncompensated gluteus medius gait, the pelvis drops when the unaffected limb is in swing phase, and there is a lateral protrusion of the stationary affected hip. This is a result of weakness of the gluteus medius muscle, or congenital hip dislocations or coxa vara. A compensated gluteus medius gait appears with paralysis of the muscle, and is characterized by a shifting of the trunk to the affected side during the stance phase. It also is known as Trendelenburg gait.

helicopter g. A gait in which one or both feet describe a half circle with each step, sometimes seen in hysteria.

hemiplegic g. A gait in which the patient abducts the paralyzed limb, swings it around, and brings it forward so that the foot comes to the ground in front. During the stance phase the patient bears very little weight on the involved leg.

magnetic g. Glue-footed g.

Parkinson's g. In patients with Parkinson's disease, a gait marked by short steps with the feet barely clearing the floor in a shuffling and scraping manner. As the steps continue, they may become successively more rapid. The posture is marked by flexion of the upper body with the spine bent forward, head down, and arms, elbows, hips, and knees bent. SEE: *festination*.

propulsive g. A walking pattern characterized by a rigid, stooped posture and the relative inability to oppose forward momentum. A person with a propulsive gait may hold the head, neck, and center of balance more anteriorly than a person with a normal gait.

quadriceps g. A gait in which the trunk leans forward at the beginning of the stance phase to lock the knee when the quadriceps femoris muscle is weak or paralyzed.

retropulsive g. Retropulsion (2).

scissor g. A gait marked by excessive hip adduction in swing phase. As a re-

gait, the swing leg crosses in front of the stance leg. This gait pattern is seen in patients with an upper motor neuron lesion, and is accompanied by spasticity.

senile g. A gait marked by associated stooped posture, knee and hip flexion, diminished arm swinging, stiffness in turning, and broad-based, small steps. It is usually seen in older adults.

spastic g. A stiff movement of the legs while walking, usually the result of an upper motor neuron lesion and spasticity in the muscles of the lower extremity. There are several variations. Spasticity in the ankle plantar flexors results in the toes dragging or walking on the toes; spasticity in the hip adductors results in a scissoring or crossing of the legs; spasticity in the quadriceps femoris results in the knee being held rigid. If the upper extremities are involved, the arms do not swing rhythmically but are usually held still with the elbows and wrists flexed.

spondylitic cervical myelopathic g. A spastic, shuffling gait due to increased muscle tone resulting from deep tendon reflexes below the level of compression.

steppage g. A gait in which the foot is lifted high to clear the toes, there is no heel strike, and the toes hit the ground first. It is seen in anterior tibialis paralysis, peripheral neuritis, late stages of diabetic neuropathy, alcoholism, and chronic arsenic poisoning.

swing-through g. A gait in which the crutches are advanced and the legs are swung between and ahead of the crutches.

swing-to g. A gait in which the crutches are advanced and the legs are advanced to the crutches.

tabetic g. A high-stepping ataxic walk in which the feet slap the ground. It is caused by tabes dorsalis.

three-point g. A gait in which the crutches and the affected leg are advanced first, then the other leg.

toppling g. The tendency of an individual who has suffered a stroke to fall toward the affected side of the brain.

two-point g. A gait in which the right foot and left crutch are advanced simultaneously, then the left foot and right crutch are moved forward.

waddling g. A gait in which the feet are wide apart and the walk resembles that of a duck. It occurs in coxa vara and double congenital hip displacement when lordosis is present. In late pregnancy, hormone-induced softening allows some pelvic movement at the sacroiliac and pubic symphysis articulations on ambulation. Compensatory widening of the stance results in the characteristic waddle.

galact- [Gr. *gala*, milk] SEE: *galacto-*.

galactacrasia (gă-lăk'tă-kră-zē-ă) [" +

akrasia, bad mixture] An abnormality of breast milk.

galactagogue (gă-lăk'tă-gōg) [" + *ago-gos*, leading] An agent that promotes the flow of milk.

galactase (gă-lăk'tās) An enzyme of milk.

galactic (gă-lăk'tik) Pert. to the flow of milk.

galacto-, galact- Combining forms meaning *milk*.

galactoblast (gă-lăk'tō-blăst) [" + *blastos*, germ] A body found in mammary acini that contains fat globules.

galactocele (gă-lăk'tō-sēl) [" + *kele*, tumor, swelling] **1.** A cystic tumor of the female breast caused by occlusion of a milk duct. Fully emptying the breasts during feedings and cleaning the nipples to avoid nipple caking help the cyst resolve. SYN: *galactoma*; *lactocele*. **2.** A hydrocele containing a milk-like liquid.

galactogogue (gă-lăk'tō-gōg') [" + "'] Any substance that increases milk secretion. SYN: *lactogogue*.

galactography Radiological imaging of breast ducts in women who have spontaneous nipple discharge without an obvious breast mass. A radiological contrast medium is injected into the nipple to highlight tissue distortion, ductal obstruction, or other abnormalities. The image obtained by galactography is called a "galactogram."

galactokinase (gă-lăk'tō-kī'nās) An enzyme that catalyzes the transfer of high-energy phosphate groups from a donor to D-galactose. D-galactose-1-phosphate is produced by this reaction.

galactolipin (gă-lăk'tō-lip'in) [" + *lipos*, fat] A phosphorus-free lipid combined with galactose; a cerebroside.

galactoma (găl-ăk-tō'mă) [" + *oma*, tumor] Galactocele (1).

galactomannan (gă-lăk'tō-măn'in) [" + *mann(ose)*] A polysaccharide composed of a skeleton made of the sugar mannose to which galactose side groups are attached. Detection of galactomannan in blood is used to diagnose invasive aspergillosis infections in humans.

galactophagous (găl'ăk-tōf'ă-gūs) [" + *phagein*, to eat] Feeding on milk.

galactophore (găl-ăk'tō-for) [" + *pherein*, to bear] A lactiferous duct.

galactophoritis (găl-ăk'tō-for-ī'tis) [" + " + *itis*, inflammation] Inflammation of a milk duct.

galactopoiesis (gă-lăk'tō-poy-ē'sis) [" + *poiesis*, forming] Milk production.

galactopoeitic (gă-lăk'tō-poy-ēt'ik) [" + *poiein*, to make] **1.** Pert. to milk production. **2.** A substance that promotes galactopoiesis.

galactorrhœa (gă-lăk'tō-rē-ă) [" + *rhoia*, flow] **1.** The continuation of milk secretion at intervals after nursing has ceased. **2.** Excessive secretion of milk.

galactosamine (gă-lăk'tō-săm'in) A de-

rivative of galactose containing an amine group on the second carbon of the compound.

galactose (gä-läk'tōs) A dextrorotatory monosaccharide or simple hexose sugar, $C_6H_{12}O_6$. Galactose is an isomer of glucose and is formed, along with glucose, in the hydrolysis of lactose. It is a component of cerebrosides. Galactose is readily absorbed in the digestive tract; in the liver it is converted to glucose and may be stored as glycogen.

galactosemia (gä-läk'tō-sē'mē-ä) An autosomal recessive disorder marked by an inability to metabolize galactose because of a congenital absence of one of two enzymes needed to convert galactose to glucose. The diagnosis is confirmed by testing the newborn's urine for noncarbohydrate reducing substances or more accurately by tests for the missing enzymes in blood cells. The infant with galactosemia will fail to thrive within a week after birth due to anorexia, vomiting, and diarrhea unless galactose and lactose are removed from the diet. If untreated, the disease may progress to starvation and death. Untreated children who do survive usually fail to grow, are mentally retarded, and have cataracts. If galactose is excluded from the diet early in life, the child may live to adulthood but suffer reproductive and brain disorders. Galactosemia can be diagnosed in utero by amniocentesis. If a pregnant woman is a known carrier, it is advisable that she exclude lactose and galactose from her diet.

galactose tolerance test A test of the ability of the liver to metabolize galactose. A standard dose of galactose is administered to the fasting patient, and the amount of galactose excreted in the urine in the next 5 hr is determined. If the liver is damaged, the galactose is not metabolized to glycogen but is instead excreted in the urine.

galactosidase (gä-läk'tō-sī'dās) An enzyme that catalyzes the metabolism of galactosides.

galactoside (gä-läk'tō-sīd) A carbohydrate that contains galactose.

galactostasis (gäl'äk-tōs'tä-sīs) [" + *stasis*, a stopping] The cessation or checking of milk secretion.

galactosuria (gäl'äk'tō-sū'rē-ä) [" + *ouron*, urine] Galactose in the urine.

galactotherapy (gä-läk'tō-thēr'ä-pē) [" + *therapeia*, treatment] **1.** Treatment of a nursing infant by drugs administered to the mother and excreted in her milk. **2.** Therapeutic use of milk, as a milk diet. SYN: *lactotherapy*.

galactozymase (gä-läk'tō-zī'mās) [" + *zyme*, leaven] A starch-hydrolyzing enzyme in milk.

galacturia (gäl'äk-tū'rē-ä) [" + *ouron*, urine] Chyluria.

galanin (gäl'an-in) A peptide neuro-

transmitter with numerous functions in the central nervous system and the gastrointestinal tract. It stimulates gastrointestinal smooth muscle contraction and inhibits insulin secretion.

galea (gä'lē-ä) [L. *galea*, helmet] **1.** A helmet-like structure. **2.** A type of head bandage. **3.** Galea aponeurotica.

g. aponeurotica Epicranial aponeurosis.

GALEN A European effort to create reusable terminological classification services using a concept-oriented approach. It supplements the development of nursing terminology, allowing comparisons among present nursing terminologies and making them available for describing day-to-day nursing care.

Galen, Claudius (gä'lén) A noted Greek physician and medical writer, circa A.D. 130–200, residing in Rome, where he was physician to Emperor Marcus Aurelius. He is called the father of experimental physiology.

G.'s veins The veins running through the tela choroidea formed by the joining of the terminal and choroid veins and forming the great cerebral vein, which empties into the straight sinus of the brain.

galenic (gä-lén'ik) Pert. to Galen or his teachings.

galenicals, galenics (gä-lén'ī-käls, -īks) **1.** Herb and vegetable medicines. **2.** Crude drugs and medicinals as distinguished from the pure active principles contained in them. **3.** Medicines prepared according to an official formula.

galeophilia (gäl'ē-ō-fīl'ē-ä) [Gr. *gale*, cat, + *philein*, to love] A fondness for cats.

galeophobia (gäl'ē-ō-fō'bē-ä) [" + *phobos*, fear] An abnormal aversion to cats.

gall (gol) [AS. *gealla*, sore place] **1.** An excoriation. **2.** The bitter liver secretion stored in the gallbladder; bile. It has no enzymes, but emulsifies fats to permit digestion by pancreatic lipase, and stimulates peristalsis. Gall is discharged through the cystic duct into the duodenum.

Gallant reflex An infantile reflex in which the trunk curves toward the side of stimulation in a prone infant. It is present from birth to age 2 months.

gallate (gäl'lät) A salt of gallic acid.

gallbladder (gäl'bläd'ēr) [AS. *gealla*, sore place, + *blaedre*, bladder] A pear-shaped gray-blue sac that lies attached to the underside of the liver in a shallow depression between the right and quadrate lobes. The gallbladder has a capacity of approx. 50 ml and stores bile from the liver; while in the gallbladder, the bile is concentrated by the removal of water. Fat or acid in the duodenum stimulates the release of the hormone cholecystokinin (CCK), which

then causes the gallbladder to contract and push its bile out through the 4 cm (1.5 in) long cystic duct. This duct joins the common hepatic duct to form the bile duct. Variations in the extra hepatic ducts and the arterial supply of the organ are common.

gallium (gäl'ē-ūm) [L. *Gallia*, Gaul] SYMB: Ga. A rare metallic chemical element, small amounts of which are found in bauxite and zinc blends; atomic weight 69.72, atomic number 31. Gallium-67 (⁶⁷Ga) is used in nuclear medicine to provide images of tumors (such as lymphomas) and of inflamed tissues (such as are found in sarcoidosis, osteomyelitis, and abscesses).

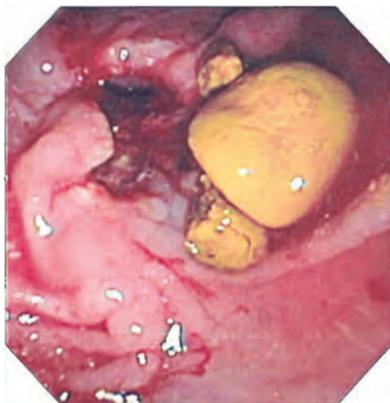
gallon [Med. L. *galleta*, jug] Four liquid measure quarts; 231 cu in or 3.79 L. In England the Imperial liquid gallon is 277.4 cu in or 4.55 L.

gallop An extra heart sound (i.e., a third or fourth heart sound), typically heard during diastole.

gallstone (gol'stōn) [AS. *gealla*, sore place, + *stan*, stone] A concretion formed in the gallbladder or bile ducts. Gallstones are found in about 15% of men and 30% of women in the U.S. They may cause pain in the right upper quadrant of the abdomen (biliary colic) or they may be clinically silent. Gallstones typically are made either of crystallized cholesterol deposits or calcium crystals ionized with bilirubin. Cholesterol stones are about four times as common as calcium-containing stones (also known as pigment stones). Either type of stone may cause biliary symptoms such as pain or inflammation of the gallbladder; the two types of stones differ in that cholesterol stones are nonradiopaque and may on occasion be dissolved by medication, whereas calcium-containing radiopaque stones are not amenable to chemical dissolution and are therefore visible on plain x-rays of the abdomen. SEE: *illus.*; *Nursing Diagnoses Appendix*. SYN: *biliary calculus*.

SYMPTOMS: Intense pain in the right upper quadrant of the abdomen that may radiate to the right flank, back, or shoulder is typical of biliary colic due to gallstones. The symptoms may occur after a fatty meal and may be associated with nausea or vomiting or fever. Jaundice may be present on physical examination.

TREATMENT: Asymptomatic gallstones are neither removed nor treated. Symptomatic gallstone disease is treated primarily in the U.S. by laparoscopic cholecystectomy which, when successful, avoids prolonged hospitalization. Drug therapy for gallstones may include the use of ursodiol. Stones found in the extrahepatic bile ducts are treated surgically according to the presentation. Cholecystotomy is reserved



GALLSTONES

Seen endoscopically (orig. mag. $\times 3$)

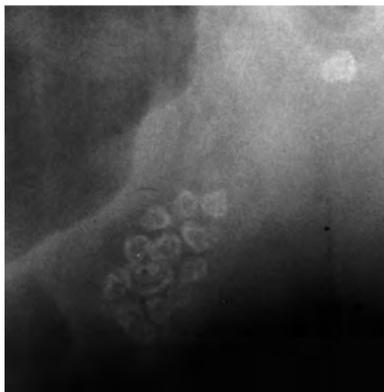
for patients who are judged to be too ill to tolerate cholecystectomy, usually as a temporizing procedure. Gallstone lithotripsy is infrequently used because it is technically more complex than laparoscopic cholecystectomy (and relatively equipment and labor is intensive, and less universally effective).



Ursodiol (ursodeoxycholic acid), taken orally, is sometimes effective in treating cholesterol gallstones. Treatment may need to be continued for 1 year. A similar agent, chenodiol, is no longer available as it caused unacceptable incidence of hepatotoxicity.

GALT *gut-associated lymphoid tissue.*

galvanic (gäl-vän'ik) [Luigi Galvani, It.



GALLSTONES

Gallstones as seen by a plain film of the abdomen

physiologist, 1737–1798] Pert. to galvanism.

g. battery A series of cells giving a combined effect of all the units and generating electricity by chemical reaction.

g. current Direct electric current, usually from a battery.

galvanism (gäl'vā-nīzm) **1.** In dentistry, an electrochemical reaction occurring in the mouth when dissimilar metals used to restore teeth come into contact, producing a direct electric current that may cause pain. **2.** Electricity caused by chemical reaction. **3.** The application of a direct current to the body.

galvanization (gäl'vān-ī-zā'shūn) Therapeutic use of a galvanic current. SEE: *faradism*.

galvanometer (gäl'vā-nōm'ē-tēr) [" + Gr. *metron*, measure] An instrument that measures electric current by electromagnetic action.

galvanopuncture (gäl'vā-nō-pūng'chūr) [" + L. *punctura*, puncture] Introduction of needles to complete a galvanic current.

gam- SEE: *gamo-*.

Gambierdiscus toxicus (gām'bē-ēr-dīs'kūs tōk'sī-kūs) [NL.] A species of dinoflagellate that produces ciguatera, a neurotoxin that is the cause of ciguatera poisoning acquired from fish. SEE: *ciguatera poisoning*.

gambling **1.** Wagering or betting. **2.** Risking something of value in the hope of winning something even more valuable or rare in exchange.

gambling, pathological Frequent, compulsive, uncontrolled, or addictive wagering or betting.

SYMPTOMS: The person may exhibit a constant preoccupation with gambling, resulting in impairment of social functioning or job performance; tolerance for very high levels of risk; denial of involvement in wagering activity; and anxiety, depression, irritability, or other withdrawal symptoms when unable to gamble.



Some drugs used to treat Parkinson's disease have been associated with the sudden onset of pathological gambling.

gamete (gām'ēt) [Gr. *gamein*, to marry] A mature male or female reproductive cell; the spermatozoon or ovum. **gametic** (-ēt'ik), *adj.*

gamete intrafallopian transfer ABBR: GIFT. A procedure developed by Ricardo Asch, a contemporary American physician, to help infertile couples conceive. After ovulation is induced, ova are retrieved from a mature follicle via laparoscopy and are transferred along with sperm to the woman's fallopian tube to facilitate fertilization. SEE: *em-*

bryo transfer; fertilization, in vitro; zygote intrafallopian transfer.

gametocide (gām'ē-tō-sīd") [" + L. *caedere*, to kill] An agent destructive to gametes or gametocytes, particularly those of malaria.

gametocyte (gā-mē'tō-sīt) [" + *kytos*, cell] **1.** A cell of the ovary or testis that will divide to produce an ovum or spermatozoa. **2.** A stage in the life cycle of the malarial protozoon (*Plasmodium*) that reproduces in the blood of the *Anopheles* mosquito.

gametogenesis (gām'ēt-ō-jēn'ē-sīs) [" + *genesis*, generation, birth] Development of gametes; oogenesis or spermatogenesis.

gametogony (gām'ē-tōg'ō-nē) The phase in the life cycle of the malarial parasite (*Plasmodium*) in which male and female gametocytes, which infect the mosquito, are formed.

gametophyte (gām'ē-tō-fit) [" + *phyton*, plant] In plants, the sexual (gamete-producing) generation that alternates with the asexual (spore-producing) generation.

gamic (gām'ik) [Gr. *gamein*, to marry] Sexual, esp. as applied to eggs that develop only after fertilization in contrast to those that develop without fertilization. SEE: *parthenogenesis*.

gamma (gām'a) **1.** The third letter of the Greek alphabet, γ. **2.** In chemistry, the third of a series (e.g., the third carbon atom in an aliphatic chain). **3.** Symbol for *microgram*; *immunoglobulin*.

gamma-aminobutyric acid ABBR: GABA. The brain's principal inhibitory neurotransmitter.

gamma benzene hexachloride (gām'ā bēn'zēn hēk'sā-klor'id) A miticide used to treat scabies. Trade names are Kwell and Scabene. SYN: *lindane*. SEE: *scabies*.

gamma camera A scintillation detector used in nuclear medical imaging to detect the release of radioisotopes taken up by diseased and healthy body tissues.

gammacism (gām'ā-sīzm) An inability to pronounce "g" and "k" sounds correctly.

gamma-glutamyl transpeptidase A tissue enzyme whose level is elevated in patients with many conditions involving hepatic damage, including that induced by alcohol; in patients with renal disease, pancreatitis, diabetes mellitus, coronary artery disease, or carcinoma of the prostate; and in individuals taking phenytoin and barbiturates.

gamma hydroxybutyrate (gām-ā hī-drōk-sē bū'tī-rāt) ABBR: GHB. A central nervous system depressant used in some countries as an anesthetic agent. It has no approved use in the U.S., where it is sometimes abused as an illicit drug. Its street names include

grievous bodily harm, liquid ecstasy, and organic qualude.

gamma knife surgery Radiosurgery that can destroy an intracranial target by directing gamma radiation at the lesion, while attempting to spare adjacent healthy tissue. The gamma knife consists of 201 cylindrical gamma ray (cobalt 60) beams designed to intersect at the target lesion, resulting in about 200 times the dose of any single beam aimed at the periphery. The area to be treated is carefully identified with neuroimaging before the gamma knife is used and the proper dose of gamma energy calculated. The procedure takes about 2 to 3 hr, with the patient under mild sedation, given intravenously, and local anesthesia. The gamma knife can be used to treat primary and metastatic brain tumors, trigeminal neuralgia, arteriovenous malformations, and other lesions. Complications include seizures, confusion, paralysis, nausea and vomiting, other radiation reactions, and radiation necrosis of normal brain tissue, but the incidence of side effects is no greater than with other brain irradiation or neurosurgical techniques.

PATIENT CARE: The patient's vital signs and neurological signs must be checked frequently during and after the procedure.

gamma motor neuron A small nerve originating in the anterior horns of the spinal cord that transmits impulses through type A gamma fibers to intrafusal fibers of the muscle spindle for muscle control.

gamma scan Any radiological technique that relies on the detection of gamma particle-emitting radionuclides. Examples of gamma scans are bone scans, gallium scans, and positron emission tomography scans.

gammopathy (gām-ōp'ā-thē) Any disease in which serum immunoglobulins are increased, such as multiple myeloma, benign monoclonal gammopathy, and cirrhosis.

monoclonal g. of unclear significance ABBR: MGUS. A condition marked by excessive levels of paraproteins in the blood. It is a precursor of multiple myeloma in roughly 20% of cases.

gamo-, gam- [Gr. *gamos*, marriage] Combining forms meaning *marriage* or *sexual union*.

gamogenesis (gām'ō-jěn'ē-sis) [" + *genesis*, generation, birth] Sexual reproduction.

gamont (gām'ōnt) [" + *on*, being] A sexual form of certain protozoa. SEE: *gametocyte* (2).

gangli-, ganglio- Combining forms meaning *swelling*.

ganglia (gāng'glē-ā) Pl. of ganglion.

gangliated (gāng'glē-ā-tēd) 1. Having ganglia. 2. Intermixed.

gangliectomy (gāng'glē-ēk'tō-mē) [" + *ektome*, excision] Excision of a ganglion.

gangliiform (gāng'li-form) [" + L. *forma*, shape] Formed like a ganglion.

gangliitis (gāng'glē-ī'tis) [" + *itis*, inflammation] Inflammation of a ganglion.

ganglioblast (gāng'glē-ō-blāst") [" + *blastos*, germ] An embryonic ganglion cell.

gangliocyte (gāng'glē-ō-sīt") [" + *kytos*, cell] A ganglion cell.

gangliocytoma (gāng'glē-ō-sī-tō'mā) [" + " + *oma*, tumor] Ganglioneuroma.

ganglioglioma (gāng'glē-ō-gli-ō'mā) [" + *glia*, glue, + *oma*, tumor] A ganglion-cell glioma.

ganglioglioneuroma (gāng'glē-ō-gli'ō-nū-rō'mā) [" + " + *neuron*, nerve, + *oma*, tumor] Ganglion cells, glia cells, and nerve fibers in a nerve tumor.

ganglioma (gāng-lē-ō'mā) [" + *oma*, tumor] 1. A tumor of neural or neuroectodermal origin. 2. A swelling of lymphoid tissue.

ganglion (gāng'glē-ōn) *pl. ganglia, ganglions* [Gr.] 1. A mass of nervous tissue composed principally of neuron cell bodies and lying outside the brain or spinal cord (e.g., the chains of ganglia that form the main sympathetic trunks; the dorsal root ganglion of a spinal nerve). 2. A cystic tumor developing on a tendon or aponeurosis. It sometimes occurs on the back of the wrist.

abdominal g. Any autonomic nerve ganglion located in the abdomen.

aorticorenal g. A ganglion lying near the lower border of the celiac ganglion. It is located near the origin of the renal artery.

autonomic g. A ganglion of the autonomic nervous system.

basal g. A mass of gray matter beneath the third ventricle consisting of the caudate, lentiform, and amygdaloid nuclei and the claustrum.

Bochdalek's g. SEE: *Bochdalek's ganglion*.

cardiac g. Superficial and deep cardiac plexuses that contain autonomic nerves and branches of the left vagus nerve. They are located on the right side of the ligamentum arteriosus.

carotid g. A ganglion formed by filamentous threads from the carotid plexus beneath the carotid artery.

celiac g. One of a pair of prevertebral or collateral ganglia located near the origin of the celiac artery. Together they form a part of the celiac plexus.

cephalic g. One of the parasympathetic ganglia (otic, pterygopalatine, and submandibular) in the head.

cervical g. One of the three pairs of ganglia (superior, middle, inferior) in

the cervical portion of the sympathetic trunk.

cervicothoracic g. Stellate g.

ciliary g. A tiny ganglion in the rear portion of the orbit. It receives preganglionic fibers through the oculomotor nerve from the Edinger-Westphal nucleus of the midbrain. Six short ciliary nerves pass from it to the eyeball. Postganglionic fibers innervate the ciliary muscle, the sphincter of the iris, the smooth muscles of blood vessels of these structures, and the cornea.

coccygeal g. A ganglion located in the coccygeal plexus and forming the lower termination of the two sympathetic trunks; sometimes absent.

collateral g. One of several ganglia of the sympathetic nervous system. They are in the mesenteric nervous plexuses near the abdominal aorta and include the celiac and mesenteric ganglia.

dorsal root g. A ganglion located on the dorsal root of a spinal nerve. It contains the cell bodies of sensory neurons. SYN: *spinal ganglion*.

false g. An enlargement on a nerve that does not contain a ganglion.

gasserian g. Trigeminal g.

geniculate g. A ganglion on the pars intermedia, the sensory root of the facial nerve. It lies in the anterior border of the anterior geniculum of the facial nerve.

inferior mesenteric g. A prevertebral sympathetic ganglion located in the inferior mesenteric plexus near the origin of the inferior mesenteric artery.

jugular g. A ganglion located on the root of the vagus nerve and lying in the upper portion of the jugular foramen.

lumbar g. One of the ganglia usually occurring in fours in the lumbar portion of the sympathetic trunk.

nodose g. A ganglion of the trunk of the vagus nerve located immediately below the jugular ganglion. It connects with the spinal accessory nerve, the hypoglossal nerve, and the superior cervical ganglion of the sympathetic trunk.

otic g. A small ganglion located deep in the zygomatic fossa immediately below the foramen ovale. It lies medial to the mandibular nerve and supplies postganglionic parasympathetic fibers to the parotid gland.

parasympathetic g. One of the ganglia on the cholinergic nerves of the parasympathetic nervous system. These are usually called "terminal ganglia" because (unlike sympathetic ganglia) they lie in or near the target tissues.

petrous g. A ganglion located on the lower margin of the temporal bone's petrous portion.

pharyngeal g. A ganglion in contact with the glossopharyngeal nerve.

phrenic g. One of a group of ganglia joining the phrenic plexus.

prevertebral g. Any of the ganglia of the sympathetic division of the autonomic nervous system, located near origins of the celiac and mesenteric arteries. These include the celiac and mesenteric ganglia.

renal g. One of a group of ganglia joining the renal plexus.

sacral g. One of the four small ganglia located in the sacral portion of the sympathetic trunk that lie on the anterior surface of the sacrum and are connected to the spinal nerves by gray rami.

semilunar g. Trigeminal g.

sensory g. One of the ganglia of the peripheral nervous system that transmit sensory impulses.

simple g. A cystic tumor in a tendon sheath. SYN: *wrist ganglion*.

spinal g. Dorsal root g.

spiral g. A long, coiled ganglion in the cochlea of the ear. It contains bipolar cells, the peripheral processes of which terminate in the organ of Corti. The central processes form the cochlear portion of the acoustic nerve and terminate in the cochlear nuclei of the medulla.

stellate g. A ganglion formed by joining of the inferior cervical ganglion with the first thoracic sympathetic ganglion. SYN: *cervicothoracic ganglion*.

submandibular g. A ganglion lying between the mylohyoideus and hyoglossus muscles and suspended from the lingual nerve by two small branches. Peripheral fibers pass to the submandibular, sublingual, lingual, and adjacent salivary glands.

superior mesenteric g. A prevertebral ganglion of the sympathetic nervous system located near the base of the superior mesenteric artery. It lies close to the celiac ganglion and with it forms a part of the celiac plexus.

suprarenal g. A ganglion situated in the suprarenal plexus.

sympathetic g. One of the ganglia of the thoracolumbar (sympathetic) division of the autonomic nervous system. It includes vertebral or lateral ganglia (those forming the sympathetic trunk) and prevertebral or collateral ganglia, more peripherally located.

thoracic g. One of 11 or 12 ganglia of the thoracic area of the sympathetic trunk.

trigeminal g. A ganglion on the sensory portion of the fifth cranial nerve. SYN: *gasserian ganglion*; *semilunar ganglion*.

vestibular g. A bilobed ganglion on the vestibular branch of the acoustic nerve at the base of the internal acoustic meatus. Its peripheral fibers begin in the maculae of the utricle and saccule

and in the cristae of the ampullae of the semicircular ducts.

wrist g. Simple g.

ganglion-, **gangliono-** Combining forms meaning *swelling*.

ganglionated (gǎng'lē-ō-nāt'éd) Having or consisting of ganglia.

ganglionectomy (gǎng'lē-ō-něk'tō-mē) [Gr. *ganglion*, knot, + *ektome*, excision] Excision of a ganglion.

ganglioneuroma (gǎng'lē-ō-nū-rō'mǎ) [" + *neuron*, nerve, + *oma*, tumor] A neuroma containing ganglion cells. SYN: *gangliocytoma*.

ganglionic (gǎng-lē-ōn'ík) Pert. to or of the nature of a ganglion.

ganglionic blockade Blocking of the transmission of stimuli in autonomic ganglia. Pharmacologically, this is done by using drugs that occupy receptor sites for acetylcholine and by stabilizing the postsynaptic membranes against the actions of acetylcholine liberated from presynaptic nerve endings. The usual effects of drugs that cause ganglionic blockade are vasodilatation of arterioles with increased peripheral blood flow; hypotension; dilation of veins with pooling of blood in tissues, decreased venous return, and decreased cardiac output; tachycardia; mydriasis; cycloplegia; reduced tone and motility of the gastrointestinal tract with consequent constipation; urinary retention; dry mouth; and decreased sweating. Ganglionic blocking drugs are not often used to treat hypertension but are used to treat autonomic hyperreflexia and to produce controlled hypotension during certain types of surgery. Several drugs are available for ganglionic blocking.

ganglionitis (gǎng'lē-ōn-ī'tis) [" + *itis*, inflammation] Inflammation of a ganglion.

ganglionostomy (gǎng'glē-ō-nōs'tō-mē) [" + *stoma*, mouth] Surgical incision of a simple ganglion. Ganglionectomy is generally more efficacious when feasible.

ganglioplegia (gǎng'glē-ō-plē'jē-ā) [" + *plege*, stroke] The failure of nervous stimuli to be transmitted by a ganglion. SEE: *blockade*, *ganglionic*.

ganglioplegic (gǎng'glē-ō-plē'jík) Any drug that prevents transmission of nervous impulses through sympathetic or parasympathetic ganglia. Such drugs have limited therapeutic applicability because of undesired side effects. They are useful in treating hypertensive crises. Because they decrease blood pressure, they are used to limit bleeding during certain surgical procedures.

ganglioside (gǎng'glē-ō-sīd) A particular class of glycosphingolipid present in nerve tissue and in the spleen.

gangliosidosis (gǎng'glē-ō-sī-dō'sis) *pl.* **gangliosidoses** An accumulation of ab-

normal amounts of specific gangliosides in the nervous system.

adult-onset g. A rare, slowly progressing dementing illness caused by the gradual accumulation of the GM ganglioside in neurons. It is marked clinically by impaired learning and social interactions, altered emotional expressions, psychosis, muscle atrophy, and clumsiness. SEE: *sphingolipidosis*.

gangosa (gǎng-gō'sǎ) [Sp. *gangosa*, muffled voice] Ulceration of the nose and hard palate, seen in the late stage of yaws, leishmaniasis, or leprosy.

gangrene (gǎng'grēn) [Gr. *gangraina*, an eating sore] Necrosis or death of tissue, usually resulting from deficient or absent blood supply. SEE: *illius*; *necrosis*.



ISCHEMIC FOOT

ETIOLOGY: Gangrene usually is caused by obstruction of the blood supply to an organ or tissue, e.g., from inflammatory processes, injury, or degenerative changes such as arteriosclerosis. It is commonly a sequela of infections, frostbite, crushing injuries, or diseases such as diabetes mellitus and Raynaud's disease. Emboli in large arteries in almost any part of the body can cause gangrene of the area distal to that point. The part that dies is known as a slough (for soft tissues) or a sequestrum (for bone). The dead matter must be removed before healing can take place.

PATIENT CARE: The older or diabetic patient is assessed for arterial insufficiency related to decreases in the strength and elasticity of blood vessels. Capillary refill also is assessed. The presence and strength of distal pulses and the patient's normal sensation response to light and deep palpation are checked. Symmetry, color, temperature, and quantitative and qualitative changes in fingernails or toenails, skin texture, and hair patterns also are assessed. Any unusual areas of pigmentation indicating new skin lesions or scarring from past injury or ulceration are observed for and documented, with description given of the extent and nature of gangrene that is present.

If prescribed, vasodilating and thrombolytic agents are administered, and the patient's response is evaluated. If surgical intervention is required, the patient's understanding of the procedure, its desired effects, and possible complications is evaluated. Health care professionals collaborate with the surgeon to fill in knowledge gaps and to prepare the patient for surgery and the postoperative period. Care required will depend on the particular procedure. If amputation is required, the patient needs to understand that the level of amputation depends on determining the presence of viable tissues to ensure healing, and the requirements for fitting a prosthesis. The entire health care team must understand the patient's perception of the amputation in order to assist with grief resolution and adjustment to a permanent change in body image. Physical and occupational therapists assist the patient to deal with changes in mobility and ability to perform ADL. The multidisciplinary rehabilitation team involves patient, nurse, physician, social worker, psychologist, and prosthetist, as well as physical and occupational therapists. The patient's age and presence of other body system dysfunctions impact his or her immediate and long-term response to treatment. The at-risk patient should be taught preventative measures such as avoiding cold exposure, keeping the extremities covered with clean, dry socks and gloves, and well insulated footwear, and promptly treating any breaks in skin integrity.

diabetic g. Gangrene, esp. of the lower extremities, occurring in some diabetics as a result of vascular insufficiency, neuropathy, and infection.

dry g. Gangrene that results when the necrotic part has a progressive reduction in its blood supply but does not typically become infected. This occurs when arterial blood flow to a tissue is obstructed. The tissue gradually dries, the process continuing for weeks or months. SEE: *Nursing Diagnoses Appendix*.

SYMPTOMS: Dry gangrene causes pain in the early stages. The affected part is cold and black and begins to atrophy. The most distal parts (e.g., the fingers or toes) are generally affected first. Dry gangrene is often seen in arteriosclerosis associated with diabetes mellitus.

PATIENT CARE: Patient care concerns for dry gangrene are similar to those in which there is liquefied underlying necrotic tissue (wet gangrene). Necrotic matter must be removed and circulation to the remaining tissues ensured before healing can occur. The older diabetic patient with microvascu-

lar and macrovascular disease may experience very little pain because of a reduction in feeling produced by peripheral neuropathy. The condition may come to light only upon inspection. For this reason, all patients with diabetes mellitus or peripheral vascular disease should avoid cigarette smoking; be taught proper foot inspection and care; and show their feet to their caregivers at every office and/or home visit.

The recommended plan of care may include removal of gangrenous tissue (amputation) or observation while the tissue sloughs on its own. The gangrenous limb should be kept clean and dry, and protected as much as possible from trauma or infection. Psychological needs resulting from the loss of a body part may require a psychiatric nurse practitioner, a psychologist, or a spiritual counselor of the patient's choice.

embolic g. Gangrene arising subsequent to an embolic obstruction.

Fournier's g. SEE: *Fournier's gangrene*.

gas g. Gangrene in a wound infected by a gas-forming microorganism, the most common causative agent being *Clostridium perfringens*.

TREATMENT: Gas gangrene is treated with débridement of the wound site, antibiotics, and clostridial antitoxin.

idiopathic g. Gangrene of unknown etiology.

inflammatory g. Gangrene associated with acute infections and inflammation.

moist g. Gangrene that is wet as a result of tissue necrosis and bacterial infection. The condition is marked by serous exudation and rapid decomposition.

SYMPTOMS: At first the affected part is hot and red; later it is cold and bluish, starting to slough. Moist gangrene spreads rapidly and carries a significant risk of local or systemic infection and occasionally death.

primary g. Gangrene developing in a part without previous inflammation.

secondary g. Gangrene developing subsequent to local inflammation.

symmetrical g. Gangrene on opposite sides of the body in corresponding parts, usually the result of vasomotor disturbances. It is characteristic of Raynaud's and Buerger's diseases.

traumatic g. Tissue death caused by serious injuries (e.g., compartment syndrome or crush injury).

gangrenous (gāng'grī-nīs) Pert. to gangrene.

Ganser's syndrome (gān'zēr's) [Sigbert J. M. Ganser, Ger. psychiatrist, 1853-1931] A psychological disorder in which a person mimics behavior he or she thinks is typical of a psychosis (e.g.,

giving nonsensical answers and doing simple things incorrectly). Psychiatrists debate whether this "syndrome of approximate answers" is factitious, a conversion reaction, or a form of psychosis. Although there may be amnesia, disturbance of consciousness, and hallucinations, the person is not psychotic.

gantry (gän'trē) [Gr. *kanthelios*, pack ass] **1.** The housing for the imaging source and detectors into which the patient is placed for computed tomography and magnetic resonance imaging. **2.** The portion of the radiation therapy machine (linear accelerator, cobalt unit) that houses the source of therapeutic particles.

gap [Old Norse *gap*, chasm] An opening or a break; an interruption in continuity.

anion g. The difference between the measured cations sodium (Na^+) and potassium (K^+) and the measured anions chloride (Cl^-) and bicarbonate (HCO_3^-). In accordance with the principle of electroneutrality, in any body fluid the number of net positive charges contributed by cations must equal the number of net negative charges contributed by anions. The apparent difference is accounted for by the unmeasured anions present (the *anion gap*); these include lactate, sulfates, phosphates, proteins, ketones, and other organic acids. In general, an anion gap of 8 to 18 mmol/L is normal. An increased value is present in some forms of metabolic acidosis.

auscultatory g. A period of silence that sometimes occurs in the determination of blood pressure by auscultation. It may occur in patients with hypertension or aortic stenosis. SEE: *blood pressure; pulsus paradoxus*.

health care g. A disparity between health care needs and health care services, esp. as it applies to the medically indigent.

gap junction Minute pores between cells that provide pathways for intercellular communication. Originally described in muscle tissue, they are known to be present in most animal cells.

Garcinia cambogia (gär-sin'ē-ä käm-bō'jä, jē-ä) [NL] An herbal agent promoted for the treatment of obesity. Evidence is insufficient to recommend its use for this purpose.

Gardasil (gär'dä-sil) Quadrivalent human papillomavirus (types 6, 11, 16, 18) recombinant vaccine.

Gardnerella vaginalis (gärd-nēr-ēl'ä väj-i-näl'is, nä'lis) [Herman Gardner, U.S. physician, d. 1947] One of several bacteria implicated in bacterial vaginosis in women. The bacilli are usually gram-negative, but in older cultures the bacilli may stain variably (some gram-negative and some falsely gram-positive). SEE: *bacterial vaginosis*.

Gardnerella vaginalis vaginitis (gärd'nē-rēl'ä vä-jī-näl'is, näl') Bacterial vaginosis.

Gardner's syndrome (gärd'nēr) [Eldon J. Gardner, U.S. geneticist, 1909–1989] Familial adenomatous polyposis.

Gardos channel A cell membrane pore that regulates intracellular volume with a pump that forces potassium ions out of the cell. The pump is activated by calcium ions.

gargle [Fr. *gargouille*, throat; but may be onomatopoeia for gargle] **1.** A throat wash. **2.** To wash out the mouth and throat by tipping the head back and allowing the fluid to accumulate in the back of the throat, while agitating it by the forceful expiration of air.

gargoylism (gär'goyl-ism) Hurler's syndrome.

garlic [AS. *gar*, spear, + *leac*, the leek] An edible, strongly flavored bulb, *Allium sativa*, used mainly for seasoning foods. Garlic is said to have beneficial effects on heart disease; however there is little scientific evidence to support this claim.

garment, front-opening Any female garment that opens from the front rather than the rear to increase dressing convenience for persons with limited function.

Garren gastric bubble (gär'ën) [Lloyd and Mary Garren, contemporary U.S. gastroenterologists] A deflated bladder that is placed into the stomach endoscopically and then inflated; used to treat morbid obesity by reducing the effective volume of the stomach and thereby decreasing hunger.

Garré's disease (gär-äz') [Carl Garré, Swiss surgeon, 1858–1928] Chronic sclerosing osteitis or osteomyelitis due to pyogenic cocci.

Gartner's cyst (gärt'nēr) [Hermann T. Gartner, Danish surgeon and anatomist, 1785–1827] A cyst developing from a vestigial mesonephric duct (Gartner's duct) in a female.

Gartner's duct (gärt'nēr) [Hermann T. Gartner, Danish surgeon and anatomist, 1785–1827] A small duct lying parallel to the uterine tube. It is a vestigial structure representing the persistent mesonephric duct. SYN: *duct of the epoophoron; ductus epoophori longitudinalis*.

GAS 1. general adaptation syndrome. 2. Group A streptococci.

gas One of the basic forms or states of matter. Gas molecules are free and move swiftly in all directions. Therefore, a gas not only takes the shape of the containing vessel but expands and fills the vessel no matter what its volume. Among the common important gases are oxygen; nitrogen; hydrogen; helium; sewer gas, which contains carbon monoxide; carbon dioxide; the anesthetic

gases; ammonia; and the poisonous war gases. Liquids and solids may release toxic fumes or gases when heated. SEE: *war gases*; *anesthesia*.

binary g. Any gas made of two gaseous components mixed with each other. Some chemical warfare agents are chemically benign when separate, but damaging to living organisms when combined. SEE: *war gases*.

blood g. The content of dissolved carbon dioxide and oxygen in plasma. Levels of these gases vary in response to many diseases that affect respiration (e.g., asthma, chronic obstructive lung disease, congestive heart failure, and ketoacidosis). SEE: *acidosis*; *alkalosis*; *arterial blood gas*; *blood gas analysis*.

coal g. A flammable, explosive, toxic gas produced from the distillation of coal; used for heating and lighting. The principal constituents are methane, carbon monoxide, and hydrogen.

digestive tract g. Intestinal gas.

illuminating g. A mixture of various combustible gases including hydrogen and carbon monoxide. Its poisonous effects are largely due to carbon monoxide.

inert g. The name formerly used for gases, such as helium, neon, and xenon, found in group 18 of the periodic table, and now known as "noble gases."

intestinal g. One of several gaseous compounds (e.g., carbon dioxide, oxygen, nitrogen, hydrogen, methane, methylmercaptan, and hydrogen sulfide) present in the intestinal tract. They are produced by digestive processes and intestinal bacteria. SYN: *digestive tract*. SEE: *digestion*; *flatus*.

lewisite g. SEE: *lewisite*.

lung irritant g. Any toxic or noxious gas that causes irritation or inflammation of the airways or alveoli. SEE: *Nursing Diagnoses Appendix*; *war gases*.

SYMPTOMS: Symptoms of exposure include a burning sensation of the eyes, nose, and throat; bronchitis; and pneumonitis. Pulmonary edema sometimes occurs and may cause severe respiratory failure and death.

TREATMENT: Supplemental oxygen and/or mechanical ventilation may be required for hours or days, depending on the extent of lung injury.

mustard g. Dichloroethyl sulfide, a poisonous gas used in warfare. SEE: *vesicant g.*; *war gases*.

nerve g. Gaseous materials used in chemical warfare. The agents may be stored in liquid form but are aerosolized at the time of use. These chemicals are readily absorbed through the skin. Some forms (organophosphates that inhibit acetylcholinesterase) cause copious secretions from the nose, eyes, mouth, lungs, and intestines. Muscle

fasciculations, twitching, and miosis will result from exposure. A large dose may cause sudden unconsciousness, convulsions, flaccid paralysis, apnea, and death. With some agents, only a few breaths of the vapor may cause death.

PROTECTION: Charcoal-lined suits offer barrier protection. The agents will penetrate ordinary clothing worn with a gas mask.

TREATMENT: Pretreatment with pyridostigmine and concurrent treatment at the time of exposure with atropine, pralidoxime, and diazepam may be life-saving. Artificial respiration is mandatory. The skin should be decontaminated with household bleach diluted with water at a ratio of 1:10, or with soap and water, and the eyes should be irrigated with plain water. Military personnel carry small towels impregnated with chloramine, hydroxide, and phenol.



Gas masks should cover face and eyes and be proven to be adequately effective. People treating patients must protect themselves from contact with toxic chemicals on clothing, hair, and skin.

SEE: *war gases*.

nitric oxide g. A toxic gas administered in very small concentrations during mechanical ventilation to treat persistent pulmonary hypertension.

noble g. Those minimally chemically reactive gases found in group 18 of the periodic table, formerly known as inert gases. They include: argon, helium, krypton, neon, radon, and xenon.

sewer g. A gas that is produced by decaying matter in sewage and contains methane and hydrogen sulfide. It is toxic, usually flammable, explosive, and may be used for fuel.

suffocating g. Any of several war gases, such as phosgene or diphenyl ether, made from chlorine compounds that irritate or injure the airways. SEE: *lung irritant g.*; *war gases*.

tear g. SEE: *riot control agent*.

vesicant g. A type of gas that blisters the skin. Clothing and boots become contaminated and a source of danger. Mustard and lewisite gases are examples.

SYMPTOMS: Symptoms do not appear at once; their onset may be delayed 6 hr or longer. Eye pain, lacrimation, and discharge may be the first evidence. The eyelids swell and the patient becomes unable to see. A diffuse redness of the skin is followed by blistering and ulceration.

TREATMENT: Decontamination is essential and must be thorough. The eyes should be bathed freely with normal sa-

line or plain water. No bandage should be worn. The patient should be scrubbed, if possible, under a hot or warm shower for 10 min. If blisters arise despite these precautionary measures, they should be treated with a mild antiseptic and a protective dressing.

vomiting g. A gas, particularly chloropicrin, that induces vomiting.

war g's. Any chemical substances, whether solid, liquid, or vapor, used to produce poisonous gases with irritant effects. They can be classified as lacrimators, sternutators (sneeze causing), lung irritants, vesicants, and systemic poisons, such as nerve gas. Some gases have multiple effects.

War gases are known as nonpersistent (diffusing and dispersing fairly rapidly) or persistent (lingering and evaporating slowly).

FIRST AID: When giving first aid, the rescuer avoids becoming a casualty by taking appropriate precautions. All gas masks are checked to ensure that they are in working order. The rescuer first puts on his or her own mask, then fits masks to patients. The rescuer's skin is covered, and exposed skin of persons at risk is flooded with water to flush off suspected chemical contaminants.

PATIENT CARE: Decontamination centers are essential to the rescue effort. Thorough decontamination of patients, clothing, foot coverings, equipment, and even ambulances precedes admitting patients to emergency care areas to prevent unaffected people in the area from becoming casualties. Pulmonary and neurological functions are closely monitored, and specific or supportive therapies instituted as necessary.

gas chromatography An analytical technique in which a sample is separated into its components between a gaseous mobile phase and a chemically active stationary phase.

gas distention Accumulation of excessive gas within the lumen of the gastrointestinal tract, the peritoneum, or the bowel wall. Treatment may be surgical or nonsurgical, depending on the etiology.

gaseous (gá'sé-ús) Having the nature or form of gas.

gas exchange, impaired The state in which the individual experiences a deficit in oxygenation and/or carbon dioxide elimination at the alveolar-capillary membrane, often producing subjective fatigue or anxiety. SEE: *Nursing Diagnoses Appendix*.

GASH (gásh) An acronym for glare, arc, starburst, and halo, four potential complications of refractive eye surgery.

gasoline A product of the destructive distillation of petroleum. Commercial gasoline may contain toxic additives.



Using the mouth to produce suction on a tube for siphoning gasoline from a tank is dangerous because the gasoline may be inhaled or swallowed.

gasoline poisoning SEE: under *poisoning*.

gasometric (gás'ō-mēt'rík) Pert. to the measurement of gases.

gasometry (gás-óm'ē-trē) Estimation of the amount of gas in a mixture.

gasp [Old Norse *geispa*] To catch the breath; to inhale and exhale with quick, difficult breaths; the act of gasping.

gasserectomy (gás'ēr-èk'tō-mē) The excision of a gasserian (trigeminal) ganglion. SEE: *ganglion, trigeminal*.

gaster- [Gr. *gaster*, belly] SEE: *gastro-*.

gastero- SEE: *gastro-*.

Gasterophilus (gás'tēr-òf'i-lüs) A genus of botflies belonging to the family Oestridae, order Diptera. The larvae infest horses.

G. hemorrhoidalis A species that infests the noses of horses.

G. intestinalis A species that infests the stomachs of horses.

G. nasalis The chin fly, which lays eggs on hair shafts on the lower lip and jaw of horses.

gastr- SEE: *gastro-*.

gastralgia (gás-trál'jē-à) [" + *algos*, pain] Pain in the stomach from any cause.

gastrectasia, gastrectasis (gás'trèk-tá'zē-à, gás'trèk-tá'sis) [" + *ektasis*, dilatation] Acute or chronic dilation of the stomach.

gastrectomy (gás-trèk'tō-mē) [" + *ektome*, excision] The surgical removal of part or all of the stomach.

gastric (gás'trík) [Gr. *gaster*, stomach] Pert. to the stomach. SEE: *digestion; stomach*.

gastric analysis Analysis of stomach contents to determine the stomach's basal acid secretion and maximal acidity after stimulation. The analysis is used to diagnose diseases such as pernicious anemia and Zollinger-Ellison syndrome.

gastric-inhibitory polypeptide ABBR: GIP. A polypeptide hormone secreted by the duodenum and jejunum that inhibits motility and the secretion of gastric hydrochloric acid and pepsin and that stimulates insulin secretion. SEE: *enterogastrone*.

gastric intramucosal pH An experimental procedure to measure the pH of gastric mucosa to determine the adequacy of its oxygenation. The goal is to obtain an index of tissue oxygenation in general.

gastric lavage SEE: under *lavage*.

gastrin (gás'trín) A hormone secreted by the mucosa of the pyloric area of the stomach and duodenum in various species of animals, including humans. The

hormone is released into gastric venous blood, from which it flows into the liver and into the general circulation. When the hormone reaches the stomach, it stimulates gastric acid secretion. Gastrin causes the lower esophageal sphincter to contract and the ileocecal valve to relax. Also, it has a mild effect on small-intestine and gallbladder motility. Gastrin is released in response to partially digested protein, ethyl alcohol in about 10% concentration, and distention of the antrum of the stomach. SEE: *Zollinger-Ellison syndrome*.

gastrinoma (gäs"trín-ó'má) The gastrin-secreting tumor associated with Zollinger-Ellison syndrome. SEE: *Zollinger-Ellison syndrome*.

gastritis (gäs-trí'tis) [" + "] Acute or chronic inflammation of the lining of the stomach. Worldwide, the most common cause is infection with *Helicobacter pylori*. Other relatively common causes of gastric inflammation include use of alcohol and tobacco products and injury to the lining of the stomach by nonsteroidal anti-inflammatory drugs (NSAIDs). Autoimmune diseases (e.g., pernicious anemia); duodenal reflux; and gastric ischemia are sometimes responsible. Acute gastritis may develop in hospitalized patients (e.g., those with major traumatic injuries, burns, severe infections, organ failure, or major surgery). SYN: *endogastritis*. SEE: *Helicobacter pylori*.

SYMPTOMS: The inflammation may be asymptomatic or evidenced only by mild upper abdominal discomfort (typically "burning"), or it may present with epigastric pain, nausea, vomiting, and hematemesis.

TREATMENT: When *H. pylori* is responsible, antibiotics and a potent acid-suppressing agent cure most patients. Abstaining from alcohol, tobacco, and NSAIDs improves gastritis caused by these agents. Antacids, an H₂ blocking drug (e.g., famotidine), or proton pump inhibitors (e.g., esomeprazole) are also given to promote healing.

PATIENT CARE: If the patient requires hospitalization, general patient care concerns apply. If bleeding occurs, the patient is monitored for anemia, and appropriate treatment is instituted. In severe hemorrhage blood transfusion, vasopressin infusion, and (less frequently) surgery may be required. The patient is educated about the disorder. Compliance with multidrug antibiotic regimens is encouraged when the patient is found to have gastritis caused by *H. pylori*. If gastritis is caused by smoking, alcohol, or NSAIDs, abstinence from these substances is encouraged. Patients are advised that, if they are unable to take foods or liquids by mouth or

begin to vomit blood, they should seek medical attention promptly.

acute g. Acute, sudden irritation of the gastric mucosa. It may be caused by ingestion of toxic substances such as alcohol or poisons or overuse of NSAIDs. Symptoms include anorexia, nausea, epigastric pain, vomiting, thirst, and, when patients become dehydrated, prostration. Therapy includes antacids, H₂ receptor blockers, or proton pump inhibitors (all of which reduce gastric acidity). Antibiotics treat bacterial and endotoxic infections. SEE: *Nursing Diagnoses Appendix*.

PATIENT CARE: A thorough patient history is conducted to assist in determining the cause. Vital signs, fluid intake and output, appearance, and gastric symptoms are monitored. Symptomatic and supportive therapy is given as prescribed (e.g., antiemetics, IV fluids). Prescribed histamine antagonists and proton pump inhibitors such as pantoprazole are administered, and the patient is instructed in their use. Antibiotic therapy for *H. pylori* is also discussed if appropriate. The patient is advised to avoid aspirin-containing over-the-counter (OTC) compounds and other NSAIDs. Antiemetics and analgesics may be provided before meals to manage associated nausea and pain. The patient is assisted to identify foods that contribute to symptoms and to eliminate them from the diet. The nurse can provide an initial diet that is bland and contains frequent small servings; referral to a dietitian enables further instruction. Emotional support is given to help the patient manage symptoms and to deal with lifestyle changes (e.g., stress reduction, smoking cessation, alcohol elimination) that may be required.

atrophic g. Chronic gastritis with atrophied mucosa and glands. The most common causes are autoimmune destruction of gastric glandular cells (a cause of pernicious anemia) or infection of the upper gastrointestinal tract with *H. pylori*.

chronic g. Prolonged continual or intermittent inflammation of the gastric mucosa. *H. pylori* is the most common cause. It typically produces superficial changes in the lining of the antrum of the stomach and is often also associated with peptic ulcers. Prolonged *H. pylori*-induced gastritis disposes patients to gastric adenocarcinoma and gastric lymphoma. SEE: *H. pylori*; *Nursing Diagnoses Appendix*.

PATIENT CARE: *H. pylori* infections are diagnosed and treated. Other common causes include pernicious anemia. A careful history helps determine the cause. Symptoms may be vague or, in the case of atrophic gastritis, absent. The patient is prepared for diagnostic

testing. He or she is instructed to avoid spicy foods and other foods noted to exacerbate symptoms and is also warned to avoid aspirin. If symptoms persist, the patient may take antacids. When pernicious anemia is the underlying cause, the patient (or significant other who provides care) is taught to administer vitamin B₁₂ parenterally or orally.

giant hypertrophic g. Gastritis in which the mucosal folds of the stomach become abnormally thick. It is sometimes a precursor to gastric malignancy. SYN: *Ménétrier's disease*.

toxic g. Gastritis due to any toxic agent, including poisons or corrosive chemicals.

gastro-, gaster-, gastero-, gastr- [Gr. *gaster*, stomach] Combining forms meaning *stomach*.

gastrocele (gäs'trō-sēl) [" + *kele*, hernia] A hernia of the stomach.

gastrocnemius (gäs'trōk-nē'mē-ūs) [" + *kneme*, leg] The large muscle of the posterior portion of the lower leg. It is the most superficial of the calf muscles. It plantar flexes the foot and flexes the knee.

gastrocolic (gäs'trō-kōl'ik) [" + *kolon*, colon] Pert. to the stomach and colon.

gastrocolitis (gäs'trō-kō-lī'tis) [" + " + *itis*, inflammation] Inflammation of the stomach and colon.

gastrocoloptosis (gäs'trō-kōl'ōp-tō'sis) [" + " + *ptosis*, dropping] Downward prolapse of the stomach and colon.

gastrocolpotomy (gäs'trō-kōl-pōt'ō-mē) [" + *kolpos*, vagina, + *tome*, incision] An incision through the abdominal wall into the upper part of the vagina.

gastrocutaneous (gäs'trō-kū-tā'nē-ūs) [" + *L. cutis*, skin] A communication between the stomach and the skin.

gastrodialysis (gäs'trō-dī-äl'ī-sis) [" + *dia*, through, + *lysis*, dissolution] Dialysis (i.e., washing out) of the stomach to clear both the stomach and the blood of toxic materials secreted into the stomach.

Gastrodiscoides (gäs'trō-dīs-koy'dēz) A genus of intestinal flukes endemic to India and Southeast Asia.

G. hominis A species commonly infesting hogs but occasionally found in humans.

gastroduodenal (gäs'trō-dū'ō-dēn'äl) [Gr. *gaster*, stomach, + *L. duodeni*, twelve] Rel. to the stomach and duodenum.

gastroduodenitis (gäs'trō-dū'ō-dēn'ī-tis) [" + " + Gr. *itis*, inflammation] Inflammation of the stomach and duodenum.

gastroduodenoscopy (gäs'trō-dū'ō-dē-nōs'kā-pē) [" + " + "] The visual examination of the stomach and duodenum.

gastroduodenostomy (gäs'trō-dū'ō-dēn-

ōs'tā-mē) [" + " + Gr. *stoma*, mouth] 1. Excision of the pylorus of the stomach with anastomosis of the upper portion of the stomach to the duodenum. SYN: *Billroth I operation*. 2. Any other opening formed between the stomach and the duodenum.

gastroenteralgia (gäs'trō-ēn'tēr-äl'jē-ä) [" + *enteron*, intestine, + *algos*, pain] Pain in the stomach and intestines.

gastroenteric (gäs'trō-ēn-tēr'ik) Pert. to the stomach and intestines or to a condition involving both.

gastroenteritis (gäs'trō-ēn-tēr'ī-tis) [" + *enteron*, intestine, + *itis*, inflammation] Inflammation of the stomach and intestinal tract that causes vomiting, diarrhea, or both. The most common causes are viruses (e.g., rotavirus) and bacteria (e.g., *Salmonella*) in food and water. SEE: *diarrhea*; *enterocolitis*; *Nursing Diagnoses Appendix*.

SYMPTOMS: The patient typically suffers episodes of vomiting and diarrhea and may develop symptoms of dehydration (such as thirst and dizziness when standing up), as well as malaise, abdominal cramps, or fever.

TREATMENT: Rehydration, usually with liquids taken by mouth, is the key to avoiding dehydration or electrolyte imbalance. Symptomatic remedies that reduce the frequency or volume of diarrhea (such as kaolin/pectin or loperamide) often are helpful.

PREVENTION: Prevention is emphasized by teaching children and adults correct handwashing techniques, water purification methods, and proper care of food. The basic principles of food handling should be taught to all those in the home, including the following topics: the need to wash hands frequently, particularly after using the toilet; use of a meat thermometer to check that meat and dishes containing eggs are adequately cooked; refrigeration of foods (below 40°F) until just before cooking and again within 1 hr after cooking (esp. in warm weather); separation of raw and cooked foods; and use of different utensils and dishes for raw and cooked meats. Travelers, esp. to developing countries, should not eat raw seafood, raw vegetables, or salads and should peel all fruit themselves. Campers should determine if they are in a location where streams are known to be contaminated with protozoa (e.g., New Hampshire, upstate New York, and Oregon).

viral g. Gastroenteritis caused by ingested viruses. The median incubation period is 24 to 48 hr and the median duration of the symptoms is 12 to 60 hr. Most patients will experience diarrhea, nausea, abdominal cramps, and vomiting and many become dehydrated. There is no specific treatment other than supportive therapy and fluid re-

placement. SYN: *epidemic viral gastroenteropathy*.

ETIOLOGY: The rotavirus, which causes more than 100 million cases and approx. 1 million deaths each year worldwide, most frequently strikes children 6 to 24 months of age, causing 3 to 8 days of diarrhea and vomiting. The Norwalk virus causes most food-borne infections in older children and adults and may cause epidemics in schools and institutions. Diarrhea, accompanied by vomiting and abdominal pain, lasts 1 to 3 days.

TREATMENT: Adequate fluid and electrolyte replacement through oral rehydration therapy (ORT) solutions or, when severe, intravenous fluids are the basis for treatment. Prevention is emphasized by teaching children and adults correct handwashing techniques and proper care of food.

PATIENT CARE: Because rotavirus is more prevalent in children under age 2, parents, day-care personnel, and other caregivers require teaching about methods to prevent the spread of infection (which is primarily fecal-oral transmission). Caregivers also must learn proper handling and disposal of diapers. They must understand that, while the illness usually is mild and self-limited (seldom lasting more than 3 days), infected children are at risk for dehydration. Caregivers are taught early indicators of dehydration that necessitate bringing the child to a physician or pediatric nurse practitioner; hospitalization may be required in severe cases.

If the child is hospitalized, he or she is isolated from children without diarrhea, and parents are taught necessary isolation procedures. Intravenous (IV) fluids are administered as prescribed for rehydration; fluid and electrolyte balance, body weight, and other indicators are monitored throughout. If the child is able to ingest oral fluids, an oral rehydration formula is used, with fluids given at room temperature for better tolerance. Age-appropriate foods are reintroduced gradually, once liquids are well tolerated. Protective mouth and skin care to relieve dryness and prevent breakdown is provided and taught to caregivers. Comfort measures are an important part of the child's care, including age-appropriate sensory stimulation and diversion. Additionally, the family requires support and reassurance, with explanations of therapeutic measures and diet. Good hygiene and sanitary measures are emphasized.

In older children or adults, anti-diarrheal agents may be used, although antiemetics should be avoided. The patient is encouraged to rest, which relieves symptoms and conserves strength, and to avoid sudden move-

ments, which can increase the severity of nausea. Warm sitz baths, witch hazel compresses, and petroleum jelly as a barrier may help to ease anal irritation. The patient is taught about prescribed treatments, preventive measures, and careful handwashing. Worldwide, waterborne gastroenteritis is a leading cause of death in at risk populations. Children, the elderly, and the debilitated are at greater risk for death because of their intolerance to fluid and electrolyte losses. Developing and safeguarding community water supplies, providing information on water testing protocols and interpretation, and encouraging use of point-of-use water purification systems are important public health education issues.

gastroenteroanastomosis (gās'trō-ēn'tēr-ō-ā-nās'tō-mō'sis) The formation of a passage between the stomach and small intestine.

gastroenterocolitis (gās'trō-ēn'tēr-ō-kōl-ī'tis) [" + " + *kolon*, colon, + *itis*, inflammation] Inflammation of the stomach, small intestine, and colon.

gastroenterology (gās'trō-ēn'tēr-ōl'ā-jē) [" + " + "] The branch of medical science concerned with the study of the anatomy, physiology, and diseases of the digestive organs and their treatment. The digestive organs include the stomach, intestines, and related structures (e.g., esophagus, liver, gallbladder, and pancreas).

gastroenteroptosis (gās'trō-ēn'tēr-ōp-tō'sis) [" + " + *ptosis*, a dropping] Prolapse of the stomach and intestines.

gastroenterostomy (gās'trō-ēn'tēr-ōs'tō-mē) [" + *enteron*, intestine, + *stoma*, mouth] Surgical anastomosis between the stomach and small bowel. This operation may be employed for a variety of malignant and benign gastroduodenal diseases.

gastroepiploic (gās'trō-ēp'i-plō'ik) [" + *epiploon*, omentum] Pert. to the stomach and greater omentum.

gastroesophageal (gās'trō-ē-sōf'ā-jē'āl) [" + *oisophagos*, esophagus] Concerning the stomach and esophagus.

gastroesophageal reflux Gastroesophageal reflux disease.

gastroesophageal reflux disease ABBR: GERD. A common condition in which acid from the stomach (gastric and/or duodenal contents) flows back into the esophagus, causing discomfort and, in some instances, damage to the esophageal lining. The condition is thought to affect nearly half of all adults at least once a month. SYN: *gastroesophageal reflux*.

ETIOLOGY: GERD occurs when the lower esophageal sphincter (LES) fails to keep gastric acid out of the esophagus. Predisposing factors include use of any agent that reduces LES pressure,

hiatal hernia with incompetent sphincter, any condition that raises intra-abdominal pressure, history of nasogastric intubation lasting more than 4 days, or pyloric surgery.

SYMPTOMS: Common symptoms include heartburn, indigestion, and non-cardiac chest pain (which may mimic angina pectoris by radiating to the neck, jaw, and/or arms). Patients occasionally experience asthma, cough, hoarseness, difficulty in swallowing, or nocturnal regurgitation. Patients are taught to avoid factors that decrease LES, cause esophageal irritation, or increase intra-abdominal pressure.

PATIENT CARE: Patients should avoid eating meals late in the evening or for several hours before lying down. Elevating the head of the bed 6 to 8 in (15 to 20 cm) on blocks may help in some cases. All affected patients should avoid food and beverages that worsen reflux, including alcohol, caffeine, chocolate, mints, and fatty and spicy foods. Patients should sit upright while eating rather than reclining and eat small, frequent meals. Tight clothing, bending, coughing, vigorous exercise, and straining should be avoided after eating. Smokers should be encouraged to quit. Many patients benefit from antacids (taken 1 hr before or 3 hr after meals and at bedtime) or over-the-counter histamine-2-receptor antagonists (e.g., ranitidine). Patients who do not respond to these therapies are usually treated with proton pump inhibitors to reduce gastric acidity. Relatively uncommon but worrying conditions caused by GERD include Barrett's esophagus and esophageal cancer. When patients do not respond to empirical treatment, they should undergo endoscopy after being educated about the procedure, its objectives, techniques, and potential complications.

gastroesophagitis (gäs"trō-ē-sōf"ä-jī'tis) [" + " + *itis*, inflammation] Inflammation of the stomach and esophagus.

gastroesophagostomy (gäs"trō-ē-sōf"ägōs'tō-mē) [" + " + *stoma*, mouth] The formation of a passage from the esophagus to the stomach.

gastrogastrostomy (gäs"trō-gäs-trōs'tō-mē) [" + *gaster*, stomach, + *stoma*, mouth] Surgical anastomosis between one portion of the stomach and another.

gastrogavage (gäs"trō-gä-vāzh') [" + Fr. *gavage*, cramming] Artificial feeding through an opening into the stomach or a tube passed into the stomach.

gastrogenic (gäs"trō-jën'ik) [" + *genan*, to produce] Originating in the stomach.

gastrohepatic (gäs"trō-hē-pät'ik) Pert. to the stomach and liver.

gastroileitis (gäs"trō-il-ē-i'tis) Inflammation of the stomach and ileum.

gastroileostomy (gäs"trō-īl-ē-ōs'tō-mē) A surgical anastomosis between the stomach and ileum performed only by surgical error.

gastrointestinal (gäs"trō-īn-tēs'tin-äl) [" + L. *intestinalis*, intestine] Pertaining to the entire digestive tract, from the mouth to the anus.

gastrointestinal decompression The removal of contents of the intestinal tract by use of suction through a tube inserted into the upper gastrointestinal tract. The tube may be inserted through the nasopharynx or oropharynx, or via gastrostomy. SEE: *Wangensteen tube*; *Salem sump tube*; *Levin's tube*.

gastrojejunostomy (gäs-trō-jē-jū-nōs'tō-mē) [" + L. *jejunum*, empty, + Gr. *stoma*, mouth] A connection, usually constructed surgically, between the stomach and the jejunum. SYN: *Billroth II operation*.

gastrolieal (gäs"trō-lī'ēn-äl) [" + L. *lien*, spleen] Concerning the stomach and spleen.

gastrolithiasis (gäs"trō-lith-i'ä-sis) [" + " + "] The formation of calculi in the stomach.

gastrology (gäs-trōl'ō-jē) [" + *logos*, word, reason] The study of function and diseases of the stomach.

gastrolysis (gäs-trōl'i-sis) [" + *lysis*, dissolution] Surgical breaking of adhesions between the stomach and adjoining structures.

gastromegaly (gäs"trō-mēg'ä-lē) [" + *megas*, large] An enlargement of the stomach.

gastromycosis (gäs"trō-mī-kō'sis) [" + *mykes*, fungus, + *osis*, condition] A disease of the stomach caused by fungi.

gastromyotomy (gäs"trō-mī-ōt'ō-mē) [" + *mys*, muscle, + *tome*, incision] An incision of the circular muscle fibers of the stomach.

gastropancreatitis (gäs"trō-pän"krē-ä-tī'tis) [" + "] Simultaneous inflammation of the stomach and pancreas.

gastroparalysis (gäs"trō-pär-äl'i-sis) [" + *para*, beyond, + *lyein*, to loosen] Paralysis of the stomach. SYN: *gastroplegia*.

gastroparesis (gäs"trō-pä-rēs'is) Delayed emptying of food from the stomach into the small bowel. Gastroparesis occurs acutely in patients receiving parenteral nutrition. It may also be a chronic complication of diseases marked by autonomic failure, such as diabetes mellitus, chronic renal failure, and amyloidosis. It may occur during pregnancy, as a result of elevated levels of progesterone.

gastropathy (gäs-trōp'ä-thē) [" + *pathos*, disease, suffering] Any disorder of the stomach.

hypertrophic g. An uncommon disorder marked by protein loss from the

upper gastrointestinal tract and enlarged gastric rugal folds.

gastropexy, gastropexis (gās'trō-pĕk'sē, -sis) [ʹ + *pexis*, fixation] Suturing of the stomach to the abdominal walls for correction of displacement.

gastroplasty (gās'trō-plās'tē) [ʹ + *plassein*, to form] Plastic surgery of the stomach. This procedure has been used in several ways to decrease the size of the stomach to treat morbid obesity; its success is variable.

gastroplegia (gās'trō-plĕ'jĕ-ă) [ʹ + *plege*, stroke] Gastroparalysis.

gastropliation (gās'trō-pli-kā'shūn) [ʹ + *L. plicare*, to fold] Stitching of the walls of the stomach to reduce dilatation. SYN: *gastrorrhaphy* (2).

gastroptosis (gās'trōp-tō'sis) [ʹ + ʹ] Downward displacement of the stomach, a condition that rarely causes symptoms or illness.

gastropulmonary (gās'trō-pŭl'mō-nār-ē) [ʹ + *L. pulmo*, lung] Concerning the stomach and lungs.

gastropylorectomy (gās'trō-pī'lor-ĕk'tō-mē) [ʹ + *pyloros*, pylorus, + *ektome*, excision] Excision of the pyloric part of the stomach.

gastropyloric (gās'trō-pī-lor'ik) Rel. to the stomach and pylorus.

gastroadiculitis (gās'trō-rā-dik'ū-lī'tis) [ʹ + *L. radix*, root, + *Gr. itis*, inflammation] Inflammation of the sensory nerves that supply the stomach.

gastrorrhagia (gās'trō-rā'jĕ-ă) [ʹ + *rhegnynai*, to burst forth] Hemorrhage from the stomach.

gastrorrhaphy (gās'tror'ă-fĕ) [ʹ + *rhaphe*, seam, ridge] 1. Suture of an injured stomach wall. 2. Gastropliation.

gastrorrhexis (gās'trō-rĕk'sis) A rupture or tearing of the stomach.

gastroschisis (gās'trōs'kī-sis) [ʹ + *schisis*, a splitting] A congenital fissure that remains open in the wall of the abdomen.

gastroscope (gās'trō-skōp) [ʹ + *skopein*, to examine] A rigid endoscope for inspecting the stomach's interior. This instrument has been replaced by flexible, fiberoptic endoscopes.

gastroscopy (gās'trōs'kō-pē) Examination of the upper gastrointestinal tract with a gastroscope.

gastrospasm (gās'trō-spāzm) [ʹ + *spasmos*, spasm] A spasm of the stomach.

gastrosplenic (gās'trō-splĕn'ik) [ʹ + *splen*, spleen] Of or pert. to the stomach and spleen.

gastrostenosis (gās'trō-stĕn-ō'sis) [ʹ + *stenosis*, narrowing] Contraction (stenosis) of the stomach.

g. cardiaca Stenosis of the cardiac orifice of the stomach.

g. pylorica Stenosis of the pylorus of the stomach.

gastrostogavage (gās'trōs'tō-gā-vāzh')

[ʹ + *stoma*, mouth, + *Fr. gaver*, to stuff] Feeding by means of a tube leading from outside the body into the stomach through a gastric fistula. SEE: *gavage*.

gastrostoma (gās'trōs'tō-mă) [ʹ + *stoma*, mouth] A fistula, or a passageway created from the stomach through the abdominal wall.

gastrostomy (gās'trōs'tō-mē) Surgical creation of a gastric fistula through the abdominal wall, used, for example, for introducing food into the stomach.

PATIENT CARE: The skin around the tube is inspected for signs of irritation or excoriation and kept clean, dry, and protected from excoriating gastric secretions. Tension on the tube that may cause the incision to widen and allow spillage of gastric secretions on the skin or into surrounding tissues is prevented.

Before the patient is fed, tube patency and position are assessed, and the volume of the remaining stomach contents is measured by aspirating the stomach. If the volume is greater than the amount permitted by protocol or the physician's direction, feeding is withheld. The patient should be placed in high Fowler's position during feedings, and the blenderized food or formula administered slowly by gravity in the prescribed amount (200 to 500 ml). Encouraging the patient to chew prior to enteral feeding promotes gastric secretions to aid digestion. After feedings and after introduction of medications, the tube is flushed with an adequate amount of water (at least 60 ml). Fluid intake and output (which includes aspirated feeding) should be monitored and recorded.

Assistance is provided with oral hygiene at intervals throughout the day to prevent dryness and parotitis. Both patient and family are taught correct techniques for tube and skin care and for feeding through the gastrostomy tube, for keeping track of intake and output, and concerns to be reported to the primary care provider.

percutaneous endoscopic g. ABBR: PEG. A feeding ostomy. PEG tubes are inserted transorally into the stomach with the aid of an endoscope and then pulled through a stab wound made in the abdominal wall.

gastrothoracopagus (gās'trō-thō'ră-kōp'ă-gŭs) [ʹ + *thorax*, chest, + *pagos*, thing fixed] Congenitally deformed twins joined at the stomach and thorax.

gastrotome (gās'trō-tōm) [ʹ + *tome*, incision] An instrument formerly used for incising the stomach or abdomen.

gastrotomy (gās'trōt'ō-mē) [ʹ + *tome*, incision] A gastric or abdominal incision.

gastrula (gās'troo-lă) [L., little belly]

The stage in embryonic development following the blastula in which the embryo assumes a two-layered condition. The outer layer is the ectoderm or epiblast; the inner layer, the endoderm or hypoblast. The latter lines a cavity, the gastrocoele or archenteron, that opens to the outside through an opening, the blastopore.

gastrulation (gās"troo-lā'shūn) The development of the gastrula in the embryo.

Gatch bed (gäch) [Willis Dew Gatch, U.S. surgeon, 1878–1962] An adjustable bed that provides elevation of the back and the knees. All hospital beds do this, using a crank or electrical motor.

gated blood pool study Gated blood pool imaging.

gatekeeper (gāt'kē'pēr) A person who decides whether further medical assistance or care should be sought or allowed.

gatekeeping (gāt'kē'pīng) In medical care, deciding the allocation, limitation, or rationing of services. Decisions are based on a variety of factors including need; cost; the potential for success of the proposed therapy; and the availability of facilities, staff, and equipment. SEE: *triage*.

gate theory The hypothesis that painful stimuli may be prevented from reaching higher levels of the central nervous system by stimulation of larger sensory nerves. This is one of the proposed explanations of the action of acupuncture and of transcutaneous electrical nerve stimulation (TENS) units.

gating (gāt'ing) In radiology, a procedure used to reduce image artifacts caused by involuntary motion.

cardiac g. Medical image information consistently collected during a specific phase of the cardiac cycle.

respiratory g. Medical image information consistently collected during a specific phase of respiration.

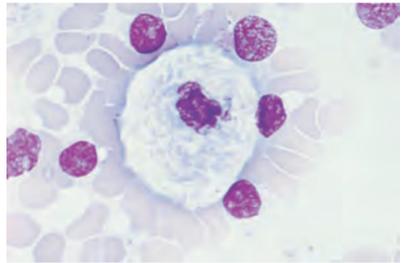
gatism (gā'tizm) [Fr. *gâter*, to spoil] Urinary or rectal incontinence.

Gaucher, Philippe C. E. (gō-shā') French physician, 1854–1918.

G.'s cell A large reticuloendothelial cell seen in Gaucher's disease, which contains a small, eccentrically placed nucleus and kersin. SEE: *illus.*

G.'s disease One of several autosomal recessive disorders of lipid metabolism caused by a deficiency of the enzyme beta-glucocerebrosidase. The severe form is rare, but milder forms frequently occur, esp. in people of Jewish extraction. Fatty substances called *glycosphingolipids* accumulate in the reticuloendothelial cells. SYN: *cerebroside lipoidosis*.

Three clinical subtypes of the disease exist. Type 1, comprising 99% of cases, is associated with an enlarged liver and



GAUCHER'S CELL IN BONE MARROW

(Orig. mag. ×640)

spleen, increased skin pigmentation, and painful bone marrow lesions. Enzyme replacement therapy is effective in this type but may be prohibitively expensive. Type 2 is characterized by neurological symptoms including oculomotor apraxia, strabismus, and hypertonicity. These symptoms usually occur in the first year of life, with death following by age 18 months. Therapy is symptomatic. Type 3 is similar to type 2, but the onset of symptoms is much later and the course is longer. Therapy is symptomatic.

gauge (gāj) **1.** A device for measuring the size, capacity, amount, or power of an object or substance. **2.** A standard of measurement.

Bourdon g. SEE: *Bourdon gauge*.

gauntlet (gawnt'lét) [Fr. *gant*, glove] A glovelike bandage that fits the hand and fingers.

gauss (gows) [Johann Carl F. Gauss, Ger. physicist, 1777–1855] The unit of intensity of a magnetic flux.

Gauss' sign (gows) [Carl J. Gauss, Ger. gynecologist, 1875–1957] An unusual mobility of the uterus in the early weeks of pregnancy.

gauze (gawz) [O.Fr. *gaze*, gauze] Thin, loosely woven muslin or similar material used for bandages and surgical sponges.

antiseptic g. Gauze containing any chemical that kills or retards the growth of microorganisms.

aseptic g. Sterilized gauze.

petrolatum g. Sterilized absorbent gauze saturated with petrolatum. It is used to cover wounds without adhering to them.

gavage (gā-vāzh') [Fr. *gaver*, to stuff] Feeding a patient via a tube passed through the nostrils, oropharynx, and esophagus into the stomach or duodenum. The food is typically infused in liquid or semiliquid form at room temperature.

G_{AW} *Airway conductance.*

gay Homosexual.

gay bowel syndrome Infectious diarrhea, condyloma acuminata, hemor-

rroids, anal fissures, and/or sexually transmitted proctitis in men who have receptive anal intercourse, esp. those infected with the human immunodeficiency virus.

Gay-Lussac's law (gā'lū-sāks') Charles' law.

gaze (gāz) **1.** To look or stare intently in one direction. **2.** The act of looking or staring intently in one direction.

conjugate g. The paired movements of the eyes as they track moving objects.

disconjugate g. Unpaired movements of the eyes. SEE: *ophthalmoplegia*.

ETIOLOGY: Uncoupling of eye movements may occur in many diseases and conditions, including injuries to the oculomotor nerves; fractures of the orbit; strokes affecting the brainstem, frontal lobes, or cerebrum; multiple sclerosis; some nutritional deficiencies (e.g., Wernicke-Korsakoff's syndrome); and Bell's palsy.

GB *gallbladder*.

GBS *group B streptococci*.

GCS *Glasgow Coma Scale*.

Gd Symbol for the element gadolinium.

Ge Symbol for the element germanium.

Gee, Samuel J. (gē) British physician, 1839–1911. He was the first person to describe the classic symptoms of celiac sprue.

Gee-Thaysen disease (gē'thī'sēn) [Gee; Thorwald E. H. Thaysen, Danish physician, 1883–1936] Celiac disease.

gegenhalten (gā'gēn-hält'ēn) [Ger.] In cerebrocortical disease, involuntary resistance to passive movement.

Geigel's reflex (gī'gēlz) [Richard Geigel, Ger. physician, 1859–1930] A reflex produced in the female when the inner anterior aspect of the upper thigh is stroked. It involves contraction of muscular fibers adjacent to the superior portion of Poupert's ligaments. This reflex corresponds to the male cremasteric reflex.

Geiger counter (gī'gēr) [Hans Geiger, Ger. physicist in England, 1882–1945] An instrument for detecting ionizing radiation.

gel (jēl) [L. *gelare*, to congeal] A semi-solid precipitated or coagulated colloid; a jelly-like colloid; jelly. It contains a large amount of water.

conductive g. A gel applied to the body to reduce its impedance and therefore to facilitate the delivery of an electric shock.

gelasmus (jē-lās'mūs) [Gr. *gelasma*, a laugh] **1.** Spasmodic laughter. **2.** Hysterical laughter.

gelate (jēl'āt) To cause formation of a gel.

gelatin (jēl'ā-tīn) [L. *gelatina*, gelatin] **1.** A derived protein obtained by the hydrolysis of collagen present in the connective tissues of the skin, bones, and

joints of animals. It is used as a food, in the preparation of pharmaceuticals, and as a medium for culture of bacteria. It is unusual as an animal protein in that it is not a good source of essential amino acids. **2.** The substance on an x-ray film in which the silver halide crystals are suspended in the radiographic emulsion.

nutrient g. A bacterial culture medium composed of broth and gelatin.

gelatinase (jēl'ā-tīn-ās) ABBR: MMP-2; MMP-9. Metalloproteinases that cleave gelatin, or nondenatured collagen. Two forms of gelatinase, A and B, have been identified. Gelatinase A (MMP-2) has a molecular weight of about 72,000, and gelatinase B (MMP-9) has a molecular weight of about 92,000. Both are involved in cancer angiogenesis and metastasis and are blocked by a variety of naturally occurring and synthetic inhibitors.

gelatinous (jēl-āt'in-ūs) Containing or of the consistency of gelatin.

gelation (jēl-ā'shūn) The transformation of a colloid from a sol into a gel.

gelling (jēl'īng) In arthritis, becoming stiff and fixed in any position in which movement does not occur for a prolonged period.

gelose (jē'lōs) [L. *gelare*, to congeal] **1.** The gelatinous component of agar (C₆H₁₀O₅)_n. **2.** A bacterial culture medium.

gelosis (jēl-ō'sīs) A hard lump that is so firm as to appear frozen. It occurs esp. in muscle tissue.

Gemella morbillorum (jē-mēl'ā mōr-bī-lōr'ūm) [NL] A gram-positive coccus formerly classified in the genus *Streptococcus*; it is a cause of septic arthritis, endocarditis, oral abscesses, and peritonitis.

gemellology (gēm'ēl-ōl'ō-jē) [L. *gemellus*, twin, + Gr. *logos*, study] The study of twins.

gemellus (jēm-ēl'ūs) *pl.* **gemelli** [L., twin] Either of two muscles inserted in the obturator internus tendon.

geminate (jēm'ī-nāt) [L. *geminatus*, paired] In pairs.

gemination (jēm-ī-nā'shūn) **1.** The development of two teeth or two crowns within a single root. **2.** A doubling.

geminism (jēm'ī-nīzm) [L. *geminus*, twin, double] Twinning of teeth.

gemistocyte (jēm-īs'tō-sīt) [Gr. *gemistos*, laden, full, + *kytos*, cell] In the central nervous system, a swollen astrocyte with an eccentric nucleus, seen adjacent to areas of edema or infarct.

gemma (jēm'mā) [L., bud] **1.** A small budlike reproductive structure produced by some invertebrates. **2.** Any small budlike structure such as a taste bud or endbulb. SYN: *gemma* (1).

gemmation (jēm-mā'shūn) [L. *gemmare*, to bud] Cell reproduction by bud-

ding. Budlike processes or daughter cells, each containing chromatin, separate from the mother cell from which the bud is projected.

gemma (jēm'ūl) [L. *gemma*, little bud] **1.** Gemma (2). **2.** One of numerous minute processes present on the dendrites of a neuron.

gen-, -gen [Gr. *genes*, born or producing] Combining form used as a prefix or suffix meaning *that which produces or forms*.

gena (jē'nā) [L.] The side of the face; the cheek.

gender [L. *genus*, kind] The sex of an individual (i.e., male or female).

gender identification Assignment of gender to a newborn. Genetic or chromosomal anomalies may create ambiguous genitalia, as may exposure of a female fetus to an androgenic hormone, or inhibition of androgen production or metabolism in a male fetus. In such cases, it is important to delay the final disposition until the chromosomal studies and endocrinological evaluation have been completed. These studies should be done as soon as possible. SEE: *gender identity*.

mistaken g.i. Assignment of incorrect gender to a newborn. This may lead to the individual's having a gender role opposite of the chromosomal sex.

gender identity One's self-concept with respect to being male or female; a person's sense of his or her true sexual identity.

gender identity disorder A disorder marked by a strong cross-gender identification and a persistent discomfort with one's biologically assigned sex. Generally, adults with the disorder are preoccupied with the wish to live as a member of the other sex. This often impairs social, occupational, or other types of functioning. SEE: *Nursing Diagnoses Appendix*.

gene (jēn) *pl. genes* [Gr. *gennan*, to produce] The basic unit of heredity, made of DNA, the code for a specific protein. Each gene occupies a certain location on a chromosome. Genes are self-replicating sequences of DNA nucleotides, subject to random structural changes (mutations). Hereditary traits are controlled by pairs of genes in the same position on a pair of chromosomes. These alleles may be either dominant or recessive. When both pairs of an allele are either dominant or recessive, the individual is said to be homozygous for the traits expressed by the gene. If the alleles differ (one dominant and one recessive), the individual is heterozygous. SEE: *illus. (Inheritance of Eye Color); chromosome; DNA; RNA*.

complementary g. Nonallelic, independently located genes, neither of

which will be expressed in the absence of the other.

dominant g. SEE: *dominant*.

histocompatibility g. One of the genes composing the HLA complex that determines the histocompatibility antigenic markers on all nucleated cells. These genes create the antigens by which the immune system recognizes "self" and determines the "nonself" nature of pathogens and other foreign antigens. These antigens are crucial determinants of the success or failure of organ transplantation. SEE: *histocompatibility locus antigen*.

holandric g. A gene located in the nonhomologous portion of the Y chromosome of males.

homeobox g. Any transcription factor that regulates the growth, differentiation, replication, and movement of cells in the body. These genes influence both normal and abnormal embryological development and the development or suppression of malignant tumors.

housekeeping g. A gene expressed in nearly every cell and every tissue of an organism, i.e., one that encodes a protein fundamental to cellular activity throughout the organism.

immune response g. One of the many genes that control the ability of leukocytes to respond to specific antigens. SEE: *antigen; B cell; HLA complex; T cell*.

inhibiting g. A gene that prevents the expression of another gene.

lethal g. A gene that creates a condition incompatible with life and usually results in the death of the fetus.

modifying g. A gene that influences or alters the expression of other genes.

mutant g. An altered gene that permanently functions differently than it did before its alteration.

operator g. A gene that controls the expression of other genes. SEE: *operon*.

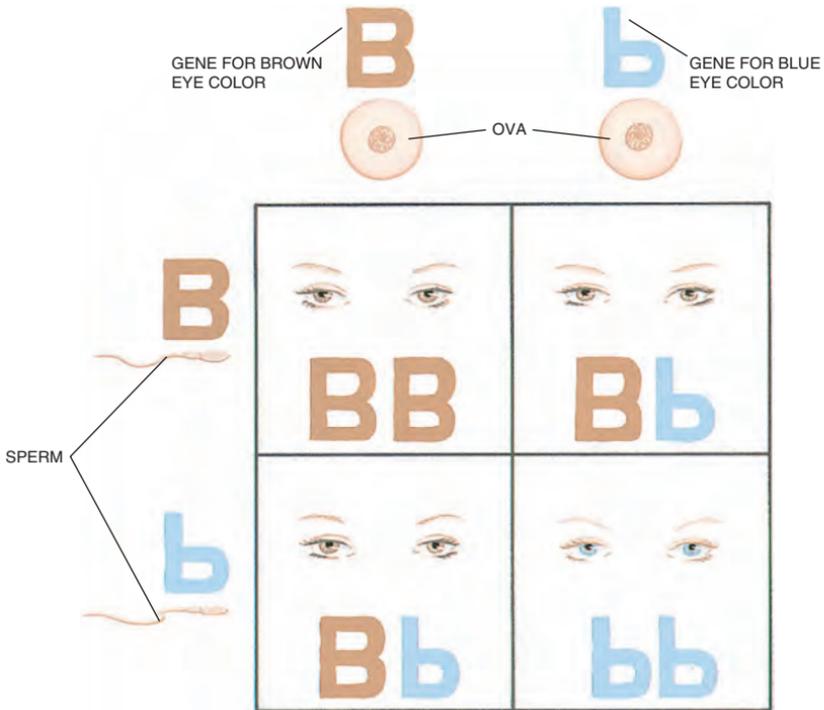
g. p53 A gene thought to be important in controlling the cell cycle, DNA repair and synthesis, and programmed cell death (apoptosis). Mutations of p53 have occurred in almost half of all types of cancer, arising from a variety of tissues. Mutant types may promote cancer. The normal, wild-type gene produces a protein important in tumor suppression.

pleiotropic g. A gene that has multiple effects.

posttranscriptional g. silencing RNA interference.

presenilin g. Rare traits responsible for early-onset Alzheimer's disease.

RB g. Tumor suppressor gene encoding for the retinoblastoma (RB) protein, mutations of which are associated with various human tumors, including retinoblastoma, osteosarcoma, some leuke-

**Key**

- BB Genotype: homozygous brown (2 dominant genes)
Phenotype: brown
- Bb Genotype: heterozygous (1 dominant and 1 recessive gene)
Phenotype: brown (since brown is dominant)
- bb Genotype: homozygous blue (2 recessive genes)
Phenotype: blue

INHERITANCE OF EYE COLOR

mias, and some adenocarcinomas. SEE: *tumor suppressor g.*; *retinoblastoma*.

recessive g. A trait that is not expressed unless it is present in the genes received from both parents. A recessive trait may be apparent in the phenotype only if both alleles are recessive. SYN: *recessive characteristic*.

regulator g. A gene that can control some specific activity of another gene.

sex-linked g. Sex-linked characteristic.

structural g. A gene that determines the structure of polypeptide chains by controlling the sequence of amino acids.

susceptibility g. A gene that increases a person's likelihood of contracting a heritable illness.

tumor suppressor g. A gene that suppresses the growth of malignant cells. SEE: *cancer*.

X-linked g. A gene on the X chromosome for which there is no corresponding gene on the Y chromosome. X-linked

genes (e.g., the gene for red-green color blindness) are expressed but in males even these genes are recessive because there is no corresponding gene to dominate them.

genealogy The study of the ancestry of an individual or group. Such investigations are particularly important in tracing the inheritance of genetically transmitted conditions or traits. One of the most important collections of genealogical information is in the archives of the Church of Jesus Christ of Latter Day Saints (i.e., the Mormon Church) in Salt Lake City, Utah.

gene amplification The duplication of regions of DNA to form multiple copies of a specific portion of the original region. This method of gene enhancement is important in increasing a tumor cell's resistance to cytotoxic drugs, and in allowing multiple drug resistance to a wide range of unrelated drugs after resistance to a single agent has developed.

gene expression The process by which genetic information from the DNA is carried to the RNA and translated into proteins.

gene family A group of genes that codes for related proteins.

gene flow The movement of genes from one group of organisms to another.

gene gun A device used to inject DNA into cells, membrane-bound organelles, or tissues.

gene knockout SEE: *knockout*.

gene mapping Determining the location of hereditary information carried on chromosomes. In humans, this requires determining the base pairs (chemical code) of each of the estimated 20,000 to 25,000 genes. Once a gene is mapped, that information may be used to compare abnormal genes with normal ones. Molecular biological techniques may then be used to search for methods of treating and preventing conditions resulting from genetic abnormality. SYN: *genome mapping*; *linkage map*. SEE: *gene splicing*.

gene probe The technique of matching a short segment of DNA or RNA with the matching sequence of bases on a chromosome. Use of this method permits identification of the precise area on a chromosome responsible for the genetic abnormality being investigated. SEE: *gene splicing*.

genera (jĕn'ĕr-ă) Pl. of genus.

general adaptation syndrome ABBR: GAS. The syndrome described by Hans Selye (Austrian-Canadian endocrinologist, 1907–1982) as the total organism's nonspecific response to stress. The response occurs in the following three stages:

1. The alarm reaction stage, in which the body recognizes the stressor and the pituitary-adrenocortical system responds by producing the hormones essential to "flight or fight." In this stage, heart rate increases, blood glucose is elevated, pupils dilate, and digestion slows.

2. The resistance or adaptive stage, in which the body begins to repair the effect of the arousal. The acute stress symptoms diminish or disappear.

3. The exhaustion stage, in which the body can no longer respond to the stress. As a consequence, one or several of a great variety of diseases such as emotional disturbances, cardiovascular and renal diseases, and certain types of asthma may develop. SEE: *stress*.

general intelligence factor ABBR: g. The hypothetical common feature identified by all intelligence (IQ) tests. The concept of general intelligence was developed by Charles Spearman, a British psychologist and statistician. Spearman noticed that students who do well in one

subject tend to do well in all school subjects and, conversely, that students who do poorly in one field of study also lag behind in others. He proposed that the general ability to master academic material resulted from superior general intelligence and that specific cognitive talents correlated with overall intellectual superiority. This concept, like many others in the field of psychometrics and intelligence testing, is controversial.

generalization The ability to apply a skill or strategy to a task in an environment that differs from the one in which the task was learned. SEE: *intelligence*.

generalize [L. *generalis*] 1. To become or render nonspecific. 2. To become systemic, as a local disease.

generalized neuropathy Polyneuropathy.

general systems framework A conceptual model of nursing developed by Imogene King in which individuals and groups are categorized into three interacting systems—personal, interpersonal, and social—and in which the goal of nursing is to help people remain healthy so that they can function in their social roles. It is now known as King's Conceptual System. SEE: *Nursing Theory Appendix*.

generation (jĕn'ĕr-ă-shŭn) [L. *generare*, to beget] 1. The act of reproducing offspring. 2. A group of animals or plants the same distance removed from an ancestor, as the first filial (F₁) generation. SEE: *filial g.* 3. The average period of time between the birth of parents and the birth of their children. This time could be 16 to 20 years in some cultures and 20 to 25 years in others. The time would also be different if only mothers were considered in computing this average, unless all marriages occurred between persons of the same age. 4. The production of an electric current.

alternation of g. Reproduction in which a sexual generation alternates with an asexual generation, characteristic of some fungi and protozoa.

asexual g. Asexual reproduction.

filial g. In genetics, the first offspring of a specific mating or crossmating. This is abbreviated F₁. Descendants resulting from F₁ matings are known as the F₂, or second, filial generation.

parental g. In genetics, the generation that precedes the first filial generation.

sexual g. Sexual reproduction.

generative (jĕn'ĕr-ă-tĭv) Concerned with reproduction of, or affecting, the species.

generator (gĕn'ĕr-ă'tor) That which produces something, esp. a device that produces heat, electricity, or impulses.

aerosol g. A device that produces minute particles suspended in air from liquid materials such as medicines in

solution. These particles may be used in inhalation therapy.

electric g. A device that changes mechanical energy into electrical energy.

flow g. A pneumatic engine that powers life-support equipment and uses a gauge of 5 to 50 lb/sq in to supply gas to a ventilator circuit, allowing for a constant flow pattern.

pressure g. A pneumatic engine that powers a life-support ventilator and incorporates a proportional meter, a motor-driven piston, or a blower. Pressure generators can adjust flow according to the patient's condition.

pulse g. A device that produces intermittent electrical discharges (e.g., in a cardiac pacemaker).

generic (jĕn-ĕr'ĭk) [L. *genus*, kind] 1. General. 2. Pert. to a genus. 3. Distinctive.

generic drugs Nonproprietary drugs (i.e., drugs not protected by a commercial trademark). In the U.S., generic drugs are required to meet strict bioequivalency standards. Manufacturers of brand name drugs produce the majority of generic drugs and allow them to be sold without the original brand name. Both generic and brand name drugs may experience manufacturing defects. Nearly half of all proprietary drugs available in the U.S. are also sold less expensively as generic drugs. SEE: *nonproprietary name*.

gene sequencing Sequencing (2).

genesis (jĕn'ĕ-sĭs) 1. The act of reproducing; generation. 2. The origin of anything.

gene splicing The insertion of a portion of a gene from one chromosome or one species into a gene from another. This allows the altered gene to function in a new context. Gene splicing can be used to alter the expression of gene products or to produce new proteins in cells. SEE: *recombinant DNA*.

gene testing Genetic testing.

gene therapy The treatment of genetic illnesses, metabolic diseases, cancers, and some infections by introducing nucleic acid sequences into the chromosomes of diseased cells. The goal of gene therapy is to modify the genetic instructions of the diseased cells, so that the cells will express a protein or enzyme that modifies or treats the disease.

somatic g.t. An experimental method of cloning genes and reintroducing them into cells for the purpose of correcting inherited disease. As this form of therapy develops so do ethical questions concerning its use: what diseases should be treated, and whether an individual could be treated to enhance his or her normal condition (e.g., to become a stronger or faster athlete).

genetic (jĕn-ĕt'ĭk) 1.. Pert. to genetics. 2.. Pert. to reproduction.

genetic burden 1. The number of diseases and deaths that occur as a result of inherited traits. 2. The cost to the genome of mutations or selection pressure that eliminate alleles from it.

genetic counseling The education of patients and families about prenatal diagnosis of illnesses; diagnosis and management of children with birth defects or developmental delay; or diagnosis and management of adult-onset syndromes and their potential effects on disability, employment, health, and longevity.

genetic counselor A health care professional who specializes in the education and support of patients, families, or prospective parents about inherited diseases to which they or their offspring may be susceptible.

genetic discrimination Unequal treatment of persons with either known genetic abnormalities or the inherited propensity for disease. Genetic discrimination may have a negative effect on employability, insurability, and other socioeconomic variables.

genetic engineering The synthesis, alteration, replacement, or repair of genetic material by artificial means.

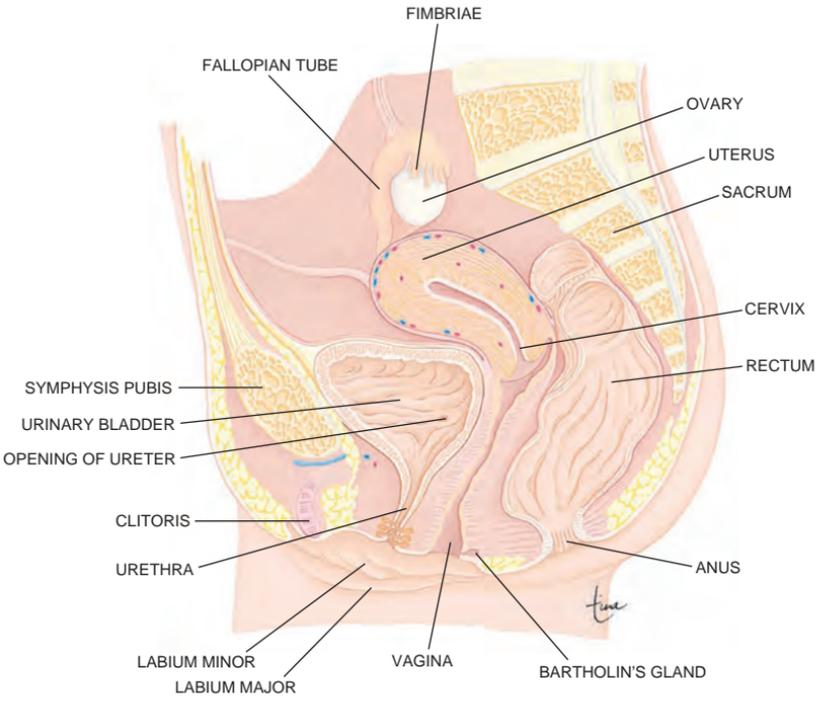
genetic enhancement The use of genetics to improve selected characteristics or traits of an organism. It is a practice common in agriculture, e.g., in the engineering of supersweet corn or pesticide-resistant soybeans and is both welcomed and feared in human affairs.

In general human enhancements differ from genetic therapies in that they concern the alteration of inherited traits that do not cause disease.

Nongenetic enhancements are common in contemporary medical practice: many middle-aged people undergo surgery to reduce facial wrinkles or replace lost hair; men with erectile dysfunction use drugs to facilitate sexual intercourse; and some parents obtain human growth hormone to increase their children's height.

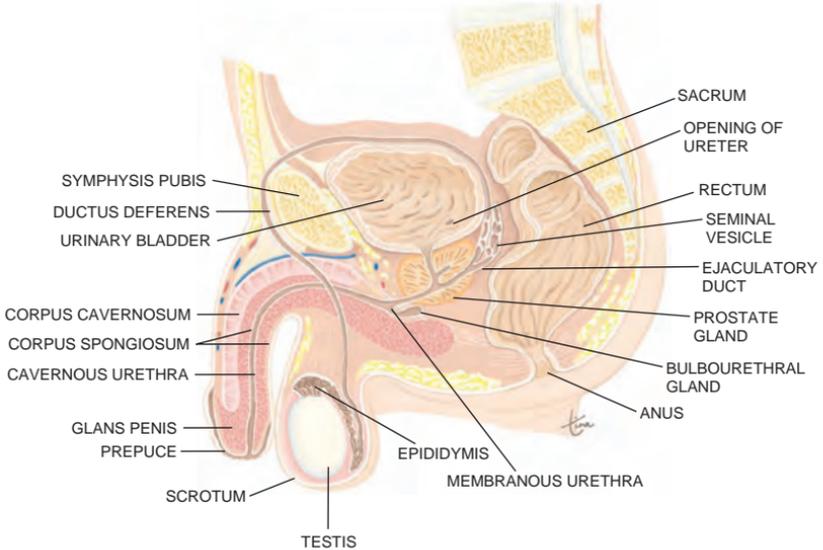
Ethicists and the general public hold varying opinions on whether it is advisable or desirable to use genetic technology to enhance human qualities, e.g., the selection of the sex of their offspring, or the enhancement of their children's musculature, intelligence, or behavior. Some genetic enhancements may have dual functions: genetic alterations that treat muscular dystrophies might also be used to enhance the athletic abilities of healthy individuals. These intersections between health and cosmetics provoke the thorniest ethical questions: Should humans try to optimize selected characteristics of their species through genetics? Who will pay for such enhancements? Will they be available only to those with the wealth to purchase

- them? Will they be restricted in some nations because of religious or social concerns and available in others where these considerations are not shared? These and other problems remain to be addressed by ethicists, scientists, families, and society at large.
- genetic exceptionalism** The unique privacy protections given by law to test results that identify genetic traits or diseases in an individual. The granting of special privacy status to genetic test results as opposed to other health care information is felt by some legal scholars to be necessary to avoid potential discrimination against the bearers of some genetic traits or illnesses.
- geneticist** (jĕn-ĕt'ĭ-sĭst) [Gr. *gennan*, to produce] One who specializes in genetics.
- genetic marker** An identifiable physical location on a chromosome (e.g., a gene or segment of DNA with no known coding function) whose inheritance can be monitored.
- genetics** (jĕ-nĕt'ĭks) The study of heredity and its variations.
biochemical g. The study of the impact of genes on enzymes and the cellular reactions they catalyze.
clinical g. The study and use of genetics in health and disease.
molecular g. The study of the molecular structure of genes and their cellular and subcellular functions. SEE: *gene splicing*.
- genetic screening** Testing individuals or communities for the presence of specific genetic traits.
- genetic sequencing** Sequencing.
- genetic testing** An assessment of a person's sex or somatic cells for evidence of specific genetic and chromosomal abnormalities and disease-causing genes. SYN: *gene testing*.
- genetotrophic** (jĕ-nĕt'ō-trōf'ĭk) Concerning genetics and nutrition.
- gene transfer** Removal of a gene from one organism and its insertion into another.
- Geneva Convention** (jĕ-nĕ'vǎ) Regulations concerning the status of those wounded in military action on land, established in 1864 by military powers meeting in Geneva, Switzerland. The sick and wounded and all those involved in their care, including physicians, nurses, corpsmen, ambulance drivers, and chaplains, were declared to be neutral and, therefore, would not be the target of military action. These provisions were expanded in 1868 to include naval military action. Much evidence indicates that warring nations have not always abided by the provisions of the Convention.
- genial** (jĕ'nĕ-ǎl) [Gr. *geneion*, chin] Pert. to the chin.
- genic** (jĕn'ĭk) [Gr. *gennan*, to produce] Relating to or caused by genes.
- genic** Suffix meaning *generation* or *production*.
- genicular** (jĕ-nĭk'ū-lǎr) Concerning the knee.
- geniculate** (jĕ-nĭk'ū-lāt) [L. *geniculare*, to bend the knee] 1. Bent, like a knee. 2. Pert. to the ganglion or geniculum of the facial nerve.
- geniculate otalgia** Pain transmitted from the facial nerve to the ear.
- geniculocalcarine tract** Optic radiation.
- geniculum** (jĕn-ĭk'ū-lŭm) [L. *geniculum*, little knee] A structure resembling a knot or a knee, indicating an abrupt bend or angle in a small structure.
- genioplasty** (jĕ'nĕ-ō-plās'tē) [ʹ + *plassein*, to form] Plastic surgery of the chin or cheek.
- genistein** (jĕ-nĭs'tĕn, tĕ-ĭn) A soy isoflavone that has been found to inhibit the activity of enzymes involved in the control of cell proliferation. It is a phytoestrogen with weak estrogenic and anti-estrogenic effects.
- genital** (jĕn'ĭ-tǎl) [L. *genitalis*, belonging to birth] Pert. to the genitals.
- genital cutting** Female circumcision.
- genitalia, genitals** (jĕn-ĭ-tǎl'ĕ-ǎ, jĕn'ĭ-tǎls) Organs of generation; reproductive organs.
ambiguous g. External reproductive organs that are not easily identified as male or female.
female g. Reproductive organs of the female sex. The external genitalia collectively are termed the vulva or pudendum and include the mons veneris, labia majora, labia minora, clitoris, fourchet, fossa navicularis, vestibule, vestibular bulb, Skene's glands, glands of Bartholin, hymen and vaginal introitus, and perineum. The internal genitalia are the two ovaries, two fallopian tubes, uterus, and vagina. SEE: *illus.*
male g. Reproductive organs of the male sex, including two bulbourethral (Cowper's) glands, two ejaculatory ducts, two glands producing spermatozoa (the testes or gonads), the penis with urethra, two seminal ducts (vasa deferentes or ducti deferentes), two seminal vesicles, two spermatic cords, the scrotum, and the prostate gland. SEE: *illus.*; *penis*; *prostate*.
- genital system** Reproductive system.
- genital ulcer disease** Any sexually transmitted illness that manifests with ulcers on the penis, vulva, scrotum, or other genital areas. The most common causes are herpes simplex infection, syphilis, and chancroid.
- genito-** [L. *genitivus*, of birth, of generation] Combining form meaning *reproduction*.
- genitocrural** (jĕn'ĭ-tō-kroo'rǎl) Concerning the genitalia and leg. SYN: *genitofemoral*.
- genitofemoral** (jĕn'ĭ-tō-fĕm'or-ǎl) Genitocrural.



FEMALE GENITAL ORGANS

Midsagittal section



MALE GENITAL ORGANS

Midsagittal section

genitoplasty (jěn'ī-tō-plās'tē) [L. *genitalis*, genital, + Gr. *plassein*, to form] Reparative surgery on the genital organs.

feminizing g. Surgical reduction in the size of the clitoris, along with construction of a vagina and labia, used to treat female children born with ambiguous genitalia.

genitourinary (jěn'ī-tō-ūr'ī-nār-ē) [" + Gr. *ouron*, urine] Pert. to the genitals and urinary organs; urogenital.

genitourinary system The urinary and reproductive systems, which are anatomically adjacent in the adult and develop from the same mesodermal ridge in the embryo. In men, the urethra is part of both systems. In women, the systems are entirely separate, but infections and other diseases in one may affect the other. SYN: *urogenital system*. SEE: *genitalia* for illus.

genius (jěn'yūs) **1.** The distinctive or inherent character of a disease. **2.** An individual with exceptional physical, mental, or creative power.

genocide (jěn'ō-sīd") [Gr. *genos*, race, + L. *caedere*, to kill] The willful and planned murder of a particular social or ethnic group.

genodermatosis (jěn"ō-dēr-mā-tō'sīs) [Gr. *gennan*, to produce, + *derma*, skin, + *osis*, condition] Any of a group of serious hereditary skin diseases such as hereditary angioedema, hereditary coproporphyrin, hereditary telangiectasia, tuberous sclerosis, Recklinghausen's disease, and Peutz-Jeghers syndrome.

genogram (jē'nō-grām") A family map of three or more generations that records relationships, deaths, occupations, and health and illness history.

genome (jē'nōm) The complete set of genetic information present in a cell, an organism, or a species. **genomic** (jē-nō'mīk), *adj.*

genome mapping Gene mapping.

genophore [Gr. *gennan*, to produce + *phoresis*, being born] A prokaryotic chromosome.

genotoxic (jěn"ō-tōks'īk) [" + *toxikon*, poison] Toxic to the genetic material in cells.

genotoxic damage Injury to the chromosomes of the cells. This may be determined by noting the number of micronuclei in the target tissues. When a cell with damaged genetic material divides, fragments of chromosomes and micronuclei remain in the cytoplasm.

genotype (jěn'ō-tīp) [" + *typos*, type] **1.** The total of the hereditary information present in an organism. **2.** The pair of genes present for a particular characteristic or protein. **3.** A type species of a genus. SEE: *phenotype*.

APOE g. A genetic variant with some

use in the diagnosis of Alzheimer's disease and other dementias.

CCR5 delta 32 g. A mutation that confers a survival advantage and substantial resistance to the human immunodeficiency virus (HIV). Homozygosity for this allele protects adults from HIV-1 after blood and body fluid exposure. Heterozygosity may confer some protection against disease progression.

gentian (jěn'shūn) Dried rhizome and roots of the plant *Gentiana lutea*.

gentianophil(e) (jěn'shān-ō-fīl, -fīl) A cell or cell part that stains readily with gentian violet. **gentianophilic** (-fīl'īk), *adj.*

gentianophobic (jěn'shān-ō-fō'bīk) Not staining well with gentian violet.

genu (jē'nū) *pl.* **genua** [L.] **1.** The knee. **2.** Any structure of angular form resembling a bent knee.

g. recurvatum Hyperextension at the knee joint. SEE: *illus.*



GENU RECURVATUM

g. valgum A medial alignment of the femur and tibia of less than 180 degrees.

g. varum A lateral alignment of the femur and tibia of greater than 195 degrees.

genucubital (jěn'ū-kū'bī-tāl) [" + *cubitus*, elbow] Pert. to the elbows and knees.

genupectoral (jěn'ū-pēk'tor-āl) [" + *pectus*, breast] Pert. to the chest and knees.

genus (jē'nūs) *pl.* **genera** [L. *genus*, kind] In taxonomy, the classification between the family and the species.

genioplasty (jēn'ī-plās'tē) [Gr. *genys*, jaw, + *plassein*, to form] Genioplasty.

Geobacillus (jē'ō-bā-sil'ūs) [Gr. *ge*, earth + ""] A genus of heat- and pressure-resistant motile gram-positive aerobic or facultatively anaerobic spore-forming rod-shaped bacteria. The bacteria thrive at temperatures from 35° to 75°C. The ability of this genus to survive at high temperatures is used as a biological indicator of the effectiveness of sterilizers used in medicine and dentistry.

geobiology (jē'ō-bī-ōl'ō-jē) [Gr. *geo*, earth, + *bios*, life, + *logos*, word, reason] The study of terrestrial life.

geode (jē'ōd) [Gr. *geodes*, earthlike] A subchondral (bony) cyst occasionally found in patients with rheumatological illnesses.

geographical bias (jē'ō-grāf'ī-kāl) The tendency of a scientist or educator to refer only to those journal articles published in his or her own country or native language. As a result of this bias, American health care educators are more likely to cite studies reported in the *New England Journal of Medicine* than in the (British) journal *Lancet*.

geographic distribution of disease The relationship between the prevalence of a disease and specific geographical-environmental conditions. For example, goiter occurs in inland iodine-deficient areas of the U.S., and pulmonary hypertension occurs in those who reside at high altitude. Certain infectious diseases, such as leprosy, leishmaniasis, and Chagas' disease, are endemic in specific tropical or subtropical areas.

geographic ulceration of the cornea An ulcer of the cornea with an irregular and lobulated border.

geohelminth (jē'ō-hēl'minth) [Gr., *geo*, earth + ""] Any of the tropical soil worms, including ascaris, hookworm, and *Trichuris trichiura* (whipworm), that may parasitize human beings and other organisms.

geomedicine (jē'ō-mēd'ī-sin) [Gr. *geo*, earth, + L. *medicina*, medicine] The study of the influence of geography and climate on health. SYN: *nosocthonography*.

geophagia, geophagism, geophagy (jē-ō-fā'jē-ā, -ōf'ā-jīm, -ōf'ā-jē) [" + *phagein*, to eat] A condition in which the patient eats inedible substances such as chalk, clay, or earth. SYN: *geotragia*. SEE: *pica*.

geotaxis (jē'ō-tāk'sis) [" + *taxis*, arrangement] Geotropism.

geotragia (jē'ō-trā'jē-ā) [" + *trogein*, to chew] Geophagia.

geotrichosis (jē'ō-trī-kō'sis) Infection by the fungus *Geotrichum*, which usually attacks the lungs, causing symptoms re-

sembling those of chronic bronchitis or tuberculosis. This infection may also affect the mouth or intestine.

Geotrichum (jē-ōt'rī-kūm) A genus of fungi belonging to the family Endomycetaceae; the causative agent of geotrichosis.

geotropism (jē'ōt'rō-pīzm) [" + *tropos*, a turning] The influence of gravity on living organisms. SYN: *geotaxis*.

GERD *gastroesophageal reflux disease*.

geriatric day hospital A form of adult day care providing rehabilitative, medical, and personal care services as well as social and recreational services for older adults. SEE: *care, respite*.

Geriatric Depression Scale ABBR: GDS. A 30-item questionnaire used to screen for depression in older adults, e.g., when they first become eligible for Medicare.

geriatric dosing In a person older than 65, any adjustment in the strength and/or the frequency of drug administration designed to minimize the risk of adverse drug reactions. Older patients should typically begin a new drug regimen by taking a smaller dose of a pharmaceutical agent than younger individuals.



In general, older people metabolize drugs more slowly than younger ones. Slower metabolism may produce higher drug concentrations or longer half-lives. In addition older people often excrete drugs more slowly than the young. Subtle impairments in kidney or liver function that occur with aging often combine to increase the risk of drug toxicity. Drugs that frequently impair thinking in the elderly include sedatives, hypnotics, analgesics, anticholinergics, and psychotropic medications. NSAIDs and anticoagulants are more likely to cause bleeding in older people than younger ones; NSAIDs also pose an increased risk of kidney failure in the elderly. This brief list of potential pharmaceutical problems in the elderly is not meant to be comprehensive. Before administering any drug to an older patient, it is prudent to assess the proposed benefits of the treatment relative to known risks.

geriatric evaluation and management unit, geriatric evaluation unit ABBR: GEM. An inpatient unit or program devoted to the assessment of the needs of the older patient.

geriatrician (jēr'ē-ā-trīsh'ūn) A clinician who specializes in the care of older people.

geriatrics (jēr'ē-āt'rīks) [Gr. *geras*, old age, + *iatrike*, medical treatment] The branch of health care concerned with the care of the aged, including physiological, pathological, psychological, economic, and sociological prob-

lems. As life expectancy in society as a whole increases, geriatrics takes on ever greater importance in health care. Also called *geriatric medicine*. SEE: *gerontology*; table. **geriatric, adj.**

dental g. SEE: *dental geriatrics*.

geriatric syndrome Any symptom or group of symptoms that is more common in the elderly than in other populations. Examples include falls, sleep disturbances, incontinence, pressure ulcers, and weight loss.

germ [L. *germen*, sprout, fetus] **1.** A colloquial term for a microorganism, esp. one that causes disease. **2.** The first rudiment of a developing organ or part.

dental g. The embryonic structure that gives rise to the tooth. It consists of the enamel organ, dental papilla, and dental sac. SYN: *tooth bud*. SEE: *enamel organ*.

hair g. The rudimentary structure from which a hair develops. It consists of an ingrowth of epidermal cells called *hair peg*, which pushes into the corium.

wheat g. SEE: *wheat germ*.

germanium (jër-má'ně-üm) [L. *Germania*, Germany] SYMB: Ge. A grayish-white metallic element of the silicon group. Atomic weight is 72.59, atomic number is 32, and specific gravity is 5.323 (25°C).

germicidal (jër'm'i-sī'däl) [L. *germen*, sprout, + *caedere*, to kill] **1.** Destructive to germs. **2.** Pert. to an agent destructive to germs.

germicide (jër'mī-sīd) A substance that destroys microorganisms. SEE: *antiseptic*; *disinfectant*.

germinal (jër'mī-näl) [L. *germen*, sprout]

Some Important Issues in Geriatric Health Care

The prevention and treatment of avoidable infectious diseases
 The prevention and treatment of delirium
 The prevention and treatment of dementia
 The prevention of falls; the treatment of gait disturbances
 The preservation of functional independence
 The prevention and treatment of heart failure
 The treatment of hypertension and the prevention of stroke
 The optimization of long-term care
 The maintenance of optimal nutrition
 The prevention of osteoporotic fractures
 The optimal use of palliation and end-of-life care
 The optimal use of physical or chemical restraints
 The prevention and treatment of urinary incontinence

Pert. to a germination, or to a reproductive cell such as egg or sperm.

germination (jër'mī-nā'shūn) [L. *germinare*, to sprout] **1.** The sprouting of the spore or seed of a plant. **2.** The development of a fertilized ovum into an embryo.

germinoma (jër'mī-nō'má) A neoplasm usually arising from germ cells in the testis, ovary, or mediastinum.

germ line, germline The cells from which the gametes (the ova and sperm) originate.

germ plasm The reproductive tissues.

germ theory SEE: *under theory*.

germ tube test A screening test used for the rapid identification and specification of candidiasis caused by *Candida albicans*, a common fungal infection in immunosuppressed hosts. A clinical specimen is added to serum. If *Candida* germ tubes appear in the specimen within 2 hr, the test is presumed to be positive, pending confirmation by other laboratory assays.

gero- [Gr. *geras*, old age] Combining form meaning *old age*.

Gerontological Society of America (jër-rōn'tō-lō'jī-kāl) ABBR: GSA. An organization established in 1945 for the main purpose of promoting scientific study of aging. Researchers, practitioners, and educators are members. The society publishes *The Journal of Gerontology* and *The Gerontologist*. The organization's website is www.geron.org/.

gerontology (jër-rōn-tōl'ō-jē) [ʹ + *logos*, word, reason] The scientific study of the processes and effects of aging and of age-related diseases on humans. SEE: *geriatrics*.

geronotherapeutics (jër-ōn'tō-thēr'ä-pū'tiks) [ʹ + *therapeia*, treatment] **1.** Treatments (such as antioxidants) designed to slow the aging process. **2.** In traditional Chinese and alternative medicine, walking and bathing in the forest ("shinrin-yoku") for health and the prevention of the effects of aging.

gerontoxon (jër-rōn-tōks'ōn) [ʹ + *toxon*, bow] Arcus senilis.

geropsychiatry (jër'ō-sī-kī'ě-trē) A subspecialty of psychiatry dealing with mental illness in the elderly.

Gerson Therapy (gër'sōn) [Max B. Gerson, Ger.-Am. physician, 1881–1959] A dietary therapy promoted as a treatment for cancer, migraine headaches, and tuberculosis, consisting of limited intake of sodium, potassium, protein, and fat, and frequent consumption of fruit juices and vegetables. The treatment also includes chamomile or coffee enemas, liver extract, pancreatic enzymes, and thyroid hormone.

Gerstmann-Sträussler-Scheinker syndrome (shtrōys'lër-shīng'kër) ABBR: GSS syndrome. A rare autosomal dom-

inant neurodegenerative disorder that may also be transmitted from person to person by infectious proteins (called prions). Clinically, the onset of symptoms and signs in midlife are related to progressive cerebellar dysfunction with ataxia, unsteadiness, incoordination, and progressive gait difficulty. The prognosis is poor and there is no specific therapy. SEE: *prion disease*.

Gerstmann syndrome (gĕrst'măn) [Josef Gerstmann, Austrian neurologist, 1887–1969] A neurological disorder resulting from a lesion in the left (or dominant) parietal area. Patients are unable to point or name different fingers, have confusion of the right and left sides of the body, and are unable to calculate or write. In addition, they may have word blindness and homonymous hemianopia.

-gest (jĕst) [Fr. (*pro*)*gest(in)*] A suffix used in pharmacology to designate a progestin.

gestagen (jĕs'tă-jĕn) Something that produces progestational effects. This general term is usually applied to natural or synthetic steroid hormones used to alter reproductive physiology.

gestalt (gĕs-tawlt') [Ger. *Gestalt*, form] The understanding of an experience in its entirety, rather than through an analysis of its components.

g. therapy A form of therapy that emphasizes the treatment of the person as a whole, with a focus on the reality of the present time and place and with an emphasis on personal growth and enhanced self-awareness.

gestation (jĕs-tă'shŭn) [L. *gestare*, to bear] In mammals, the length of time from conception to birth. The average gestation time is a species-specific trait. In humans, the average length, as calculated from the first day of the last normal menstrual period, is 280 days, with a normal range of 259 days (37 weeks) to 287 days (41 weeks). Infants born prior to the 37th week are considered premature and those born after the 41st week, postmature. SEE: *gestational assessment*; *pregnancy*. **gestational, adj.**

abdominal g. Ectopic pregnancy in which the embryo develops in the peritoneal cavity.

cornual g. Pregnancy in an ill-developed cornu of a bicornuate uterus.

ectopic g. Pregnancy in which the fetus develops outside the uterus.

interstitial g. Tubal pregnancy in which the embryo is developed in a portion of the fallopian tube that traverses the wall of the uterus.

multiple g. The presence of two or more embryos in the uterus. Twin and higher gestations have greatly increased in the past two decades due to the increased use of ovulation induction

agents and assisted reproduction technologies. Currently 3% of all births are multiple gestations. When twins are diagnosed by ultrasound early in the first trimester, in about half of these cases one twin will silently abort, and this may or may not be accompanied by bleeding. This phenomenon has been termed the vanishing twin. The incidence of birth defects in each fetus of a twin pregnancy is twice that in singular pregnancies. Triplet, quadruplet, and higher gestation pregnancies are usually a result of commonly used fertility drugs. Multiple gestations are associated with an increased risk of perinatal morbidity and mortality.

prolonged g. Pregnancy that continues past 41 weeks.

secondary g. Pregnancy in which the embryo becomes dislodged from the original seat of implantation and continues to develop in a new situation.

secondary abdominal g. Extrauterine pregnancy in which the embryo, originally situated in the oviduct or elsewhere, has developed in the abdominal cavity.

tubal g. Ectopic pregnancy in which the embryo grows in the fallopian tube.

tuboabdominal g. Extrauterine pregnancy in which the embryonic sac is formed partly in the abdominal extremity of the oviduct and partly in the abdominal cavity.

tubo-ovarian g. Extrauterine pregnancy in which the embryonic sac is partly in the ovary and partly in the abdominal end of the fallopian tube.

uterotubal g. Pregnancy in which the ovum develops partially in the uterine end of the fallopian tube and partially within the cavity of the uterus.

gestational assessment Determination of the prenatal age of the fetus. This information is essential for obstetrical care because it influences the decision to intervene and at what time. The age has been estimated by evaluating the menstrual history, time of initial detection of fetal heart tones, and date the level of the fundus reaches the umbilicus. These methods are not precise, esp. if the date of the last menstrual period is either vaguely remembered or unknown.

Use of ultrasound to measure the crown-rump length in the first trimester, the biparietal diameter in the second trimester, and other measurements permits a more nearly precise estimate of gestational age. Even so, these techniques, because of biological variation of fetal size and early intrauterine growth failure, may not be consistently accurate. SEE: *Dubowitz tool*.

gestational trophoblastic disease ABBR: GTD. Any of several neoplastic diseases of the fetal chorion, including

complete and partial hydatidiform mole, chorioadenoma destruens, and choriocarcinoma. Sudden rapid uterine enlargement and early second-trimester vaginal bleeding characterize all forms of GTD. Other common signs include hyperemesis gravidarum, pregnancy-induced hypertension before 24 weeks' gestation, vaginal discharge of hydropic vesicles, and an absence of fetal heart tones.

TREATMENT: Aggressive forms of GTD (e.g., choriocarcinoma), which can metastasize throughout the body, are treated with chemotherapy, radiation therapy, and surgery. Moles and chorioadenoma destruens are treated with prompt evacuation of the uterus.

PATIENT CARE: Close follow-up care of patients with GTD is needed to detect recurrent disease before it has a chance to spread. Quantitative serum human chorionic gonadotropin (hCG) levels should be drawn every 2 weeks until normal, then monthly for 1 year to assess for tumor recurrence. Affected women should avoid pregnancy during the year-long follow-up period. SEE: *choriocarcinoma*.

gestation period The period of pregnancy from conception to parturition. Average length is 10 lunar months or 280 days measured from the onset of the last menstrual period, but length varies from 250 to 310 days. SEE: *gestation*; *pregnancy* for table.

gestation sac The amnion and its contents.

gestation time The duration of a normal pregnancy for a particular species. SEE: *pregnancy* for table.

gestosis (jēs-tō'sis) [L. *gestare*, to bear, + *Gr. osis*, condition] Any disorder of pregnancy.

gesture 1. A body movement that helps to express or conceal thoughts or emphasize speech. SEE: *body language*. 2. An act, written or spoken, to indicate a feeling.

get-up-and-go test Timed up-and-go test.

GFR *glomerular filtration rate*.

GH *growth hormone*. SEE: under *hormone*.

Ghon complex (gõn) [Anton Ghon, Czech. pathologist, 1866–1936] A small, sharply defined shadow in radiographs of the lung seen in certain cases of pulmonary tuberculosis. It represents the necrotic, calcified remains of the primary lesion of tuberculosis. The mycobacteria within the lesion may remain viable and be the source of endogenous and generalized reinfection with tuberculosis. SYN: *Ghon's tubercle*.

Ghon's tubercle Ghon complex.

ghost sickness (göst) [AS *gast*, spirit] A culture-bound illness found in Native

Americans in which the affected person is consumed by thoughts of death or by visitations from spirits of dead ancestors.

ghrelin (grē'lin) A polypeptide made in the stomach that stimulates the release of growth hormone by the pituitary gland. It regulates appetite and body weight.

GH-RH *growth hormone–releasing hormone*. SEE: under *hormone*.

GI *gastrointestinal*.

Giannuzzi's cells (jăn-noot'sēz) [Giuseppe Giannuzzi, It. anatomist, 1839–1876] Crescent-shaped groups of serous cells found in the mixed salivary glands. They appear as darkly staining cells forming a caplike structure on the alveoli.

giant [Gr. *gigas*, giant] An individual or structure much larger than normal.

giantism (jī'ăn-tizm) Gigantism.

Giardia (jē-ăr'dē-ă) [Alfred Giard, Fr. biologist, 1846–1908] A genus of protozoa possessing flagella. They inhabit the small intestine of humans and other animals, are pear shaped, and have two nuclei and four pairs of flagella. They attach themselves to the cells of the intestinal mucosa, from which they absorb nourishment. Cysts can survive in water for up to 3 months. The concentration of chlorine routinely used in treating domestic water supplies does not kill *Giardia* cysts, but boiling water inactivates them.

G. lamblia A species of *Giardia* found in humans, transmitted by ingestion of cysts in fecally contaminated water or food. In current usage, the preferred name for *G. lamblia* is now *G. duodenalis*. These organisms are found worldwide. The most common symptoms of *G. duodenalis* infection are diarrhea, fever, cramps, anorexia, nausea, weakness, weight loss, abdominal distention, flatulence, greasy stools, belching, and vomiting. Onset of symptoms begins about 2 weeks after exposure; the disease may persist for up to 2 to 3 months.

There is no effective chemoprophylaxis for this disease. Metronidazole, quinacrine, or tinidazole are preferred treatments. SEE: *water*, *emergency preparation of safe drinking*.

DIAGNOSIS: Cysts or trophozoites can be identified in feces. Three consecutive negative tests are required before the feces are considered to be negative. Duodenal contents also can be examined by aspiration or string test, in which an ordinary string is swallowed and allowed to remain in the duodenum long enough for the protozoa to attach. On removal, it is examined for the presence of cysts or trophozoites. A stool antigen assay test detects *Giardia*. This involves either immunofluorescence or

enzyme-linked immunosorbent assay.
SEE: *illus.*

giardiasis (jī'ār-dī'ă-sīs) Infection of the small intestine with the flagellate protozoan *Giardia lamblia*. Also known as *G. duodenalis* and *G. intestinalis*. It occurs when cysts are ingested and parasitize the small bowel.

PATIENT CARE: Health care providers should suspect giardiasis in travelers with intestinal symptoms (such as bloating, diarrhea, weight loss, or abdominal pain) returning from endemic areas (developing countries, and other areas, e.g., parts of the world with poor sanitation and hygiene) and/or in campers who have been drinking unpurified water from contaminated streams. To help prevent giardiasis, travelers should be educated about the dangers of consuming uncooked or unpeeled fruits or vegetables, which may be contaminated. During travel, the consumption of bottled water is preferable to the consumption of tap water. Bottled water should be used for toothbrushing and for making ice or diluting drinks. During outdoor recreation, water should be purified or boiled before it is consumed. Antibiotics cannot prevent giardiasis or other intestinal infections, but should be considered at the onset of symptoms. Most patients with giardiasis have mild to moderately severe diarrhea with some measure of fluid and electrolyte losses. Oral rehydration therapy and oral antibiotics (such as metronidazole) typically provide effective relief. While the patient is symptomatic, he or she should be excluded from work or school. Careful handwashing after defecation may limit transmission of cysts from the infected to those individuals with whom they have contact. Hospitalization may be necessary for a patient with severe diarrhea or one with severe hypokalemia or hyponatremia. In these severely affected patients, careful attention to intravenous hydration, serum electrolyte levels, and renal function is an essential element of supportive care. The

hospitalized patient with giardiasis or other infectious diarrheas should be placed on enteric precautions to limit the spread of infection to others. Fecal material should be quickly disposed of, using the normal sewage system. Potential contacts of infected persons should have stool examinations for Giardia. Cases should be reported to public health authorities as required.

giardins (gē-ār'dinz) Proteins of the sucker disks of *Giardia lamblia* (also known as *G. duodenalis*) that help the parasite adhere to the lining of the small intestine.

gibbosity (gī-bōs'ī-tē) [LL. *gibbosus*, humped] **1.** The condition of having a humpback. **2.** A hump or gibbus, as the deformity of Pott's disease.

gibbous (gīb'būs) Humped; protuberant or hunchbacked.

gibbus (gīb'ūs) [*L. gibbosus*] Hump; protuberance. SEE: *protuberance*.

Gibney's boot, Gibney's bandage (gīb'nēz) [Virgil P. Gibney, U.S. surgeon, 1847–1927] A basket-weave bandage made of adhesive tape, used to treat ankle sprain or to support the ankle.

Gibraltar fever Brucellosis.

Gibson's murmur (gīb'sūnz) [George A. Gibson, Scot. physician, 1854–1913] A continuous cardiac murmur that increases in systole, occurring in patients with patent ductus arteriosus. It is heard best at the left of the sternum in the first and second intercostal spaces.

giddiness [AS. *gydig*, insane] Dizziness.

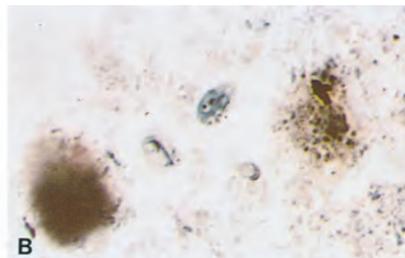
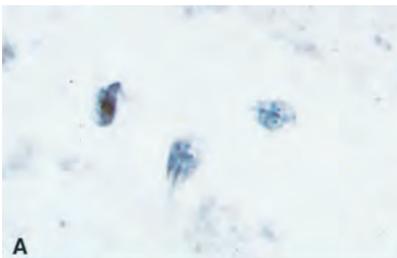
Giemsa's stain (gēm'zās) [Gustav Giemsa, Ger. chemist, 1867–1948] A stain for blood smears, used for differential leukocyte counts and to detect parasitic microorganisms.

Gierke's corpuscle Hassall's corpuscle.

Gifford's reflex (gif'fords) [Harold Gifford, U.S. ophthalmologist, 1858–1929] Pupillary contraction resulting from endeavoring forcibly to close eyelids that are held apart.

GIFT *gamete intrafallopian transfer*.

giga- (jīg'ă, jī'gă) In SI units, a prefix in-



GIARDIA DUODENALIS

(A) trophozoites (orig. mag. $\times 1000$), (B) cysts (orig. mag. $\times 1000$)

dicating that the entity following is to be multiplied by 10^9 .

gigantism (jī'gān-tizm) [Gr. *gigas*, giant, + *-ismos*, state of] The excessive development of the body or a body part. SYN: *giantism*.

acromegalic g. Gigantism characterized by overgrowth of the bones of the hands, feet, and face, owing to excessive production of pituitary growth hormone after full skeletal growth has been attained.

eunuchoid g. Gigantism accompanied by eunuchoid features and sexual insufficiency.

normal g. Gigantism in which the bodily proportions and sexual development are normal, usually the result of hypersecretion of growth hormone.

gigantoblast (jī-gān'tō-blāst) [' + *blastos*, germ] A very large nucleated red blood cell.

gigantocyte (jī-gān'tō-sīt) [' + *kytos*, cell] 1. A giant cell. 2. A very large erythrocyte.

Gigli's saw (jēl'yēz) [Leonardo Gigli, It. gynecologist, 1863–1908] A flexible wire saw with specialized teeth used for cutting bony structures. It is operated manually by pulling its handles back and forth. It was first used to section the symphysis pubis as a way of making difficult deliveries easier.

Gilbert's syndrome (zhēl-bārz') [Nicolas A. Gilbert, Fr. physician, 1858–1927] A benign, hereditary form of jaundice secondary to glucuronyl-transferase deficiency, resulting in elevated unconjugated bilirubin. There are no hemolytic changes. No treatment is necessary. The presence of jaundice may not be noticed by the patient until it is detected by a laboratory test for bilirubin. Food deprivation increases serum bilirubin in these patients.

Gilchrist's disease (gīl'krīst) [Thomas Caspar Gilchrist, U.S. dermatologist, 1862–1927] Blastomycosis.

Gilles de la Tourette's syndrome (zhēl'dē lă too-rēt's) SEE: *Tourette's syndrome*.

ginger A pungent, spicy material obtained from the root (rhizome) of the plant *Zingiber officinale* and used to flavor medicines and foods. It may prevent nausea, vomiting, and motion sickness in patients affected by these conditions.

gingiv- SEE: *gingivo-*.

gingiva (jīn-'jī-vā, jīn'jī-vā) [L.] The gums; the tissue that surrounds the necks of the teeth and covers the alveolar processes of the maxilla and mandible. The gingiva can be divided into three regions: the gingival margin, free gingiva, and attached gingiva. Normal gingival tissue is pale coral pink, firm, and resilient. The attached gingiva is stippled, the gingival margin and free gingiva are not.

alveolar g. The part of the gums that covers the alveolar processes of the jawbones.

attached g. Gingiva lying between the free gingival groove and the mucogingival line. It is firmly attached by lamina propria to underlying periosteum, bone, and tooth.

free g. The unattached portion of the gingiva. It forms part of the wall of the fissure surrounding the anatomical crown of a tooth.

labial g. Gingiva covering the labial surfaces of the teeth.

lingual g. Gingiva covering the lingual surfaces of the teeth.

marginal g. The crest of the free gingiva surrounding the tooth like a collar. It is about 1 mm wide and forms the soft tissue portion of the gingival sulcus.

gingival (jīn'jī-vāl), *adj.*

gingivalgia (jīn'jī-vāl'jē-ā) [' + Gr. *algos*, pain] Pain in the gums.

gingivally (jīn'jī-vāl'lē) Toward the gums.

gingivectomy (jīn'jī-vēk'tō-mē) [' + Gr. *ektome*, excision] Excision of diseased gingival tissue. It reduces the periodontal pocket depth to keep the pocket free of dental plaque.

gingivitis (jīn'jī-vī'tīs) [' + Gr. *itis*, inflammation] Inflammation of the gums characterized by redness, swelling, and tendency to bleed. SYN: *ulitis*.

ETIOLOGY: Gingivitis may be local due to improper dental hygiene, poorly fitting dentures or appliances, or poor occlusion. It may accompany generalized stomatitis associated with mouth and upper respiratory infections. It may also occur in deficiency diseases such as scurvy, blood dyscrasias, or metallic poisoning.

g. gravidum Pregnancy gingivitis.

hyperplastic g. Gum overgrowth associated with an increase in the number of the gingival component cells, usually in response to inflammation. Its causes include dental plaque, local irritants, long-term use of phenytoin, nifedipine, or cyclosporine, puberty, use of hormonal contraceptives, and leukemia, among others.

SYMPTOMS: The primary lesion starts as a painless enlargement of the gingiva. Its lesion may develop into tissue masses that cover the crowns of the teeth and produce periodontitis.

TREATMENT: Treatment includes avoiding causative factors and surgical removal of enlarged tissue.

PATIENT CARE: The presence of the enlarged gingiva makes plaque removal difficult. Patients should schedule regular dental appointments for dental prophylaxis and oral hygiene instruction.

necrotizing ulcerative g. ABBR: NUG. A relatively rare and severe form

of periodontal disease, marked by destruction of the gingiva and ulcerations of the epithelium of the mouth. It is associated with infection with multiple oral microbes. SYN: *trench mouth*; *Vincent's angina*.

TREATMENT: This condition is treated by débriding the teeth, and rinsing the mouth with saline or a dilute hydrogen peroxide solution. Chlorhexidine (2%) rinses are also effective. Chemical or physical trauma to the mucosa must be avoided. Fluids should be forced and proper nutrition and dental hygiene provided. Antibiotic therapy with penicillin or metronidazole is effective.

phagedenic g. A rapidly spreading ulceration of the gums accompanied by extensive ulceration and sloughing of tissue.

pregnancy g. Gingivitis of pregnancy, a form of hyperplastic gingivitis. SYN: *gingivitis gravidum*.

SYMPTOMS: The clinical picture varies considerably. The gingival tissue tends to be bright red or magenta, soft, and friable, with a smooth, shiny surface. Bleeding occurs spontaneously or with little provocation. Lesions are typically generalized and more prominent at interproximal areas.

PATIENT CARE: A dental professional must remove the local irritants. Patients should be referred for a dental prophylaxis and instructed about effective oral hygiene using a very soft toothbrush or sponge stick.

gingivo-, gingiv- [L. *gingiva*, gum (of the mouth)] Combining forms meaning *gums* (of the mouth).

gingivoglossitis (jīn'jī-vō-glōs-sī'tis) [+ Gr. *glossa*, tongue, + *itis*, inflammation] Inflammation of the gums and tongue. SYN: *stomatitis*.

gingivolabial (jīn'jī-vō-lā'bē-āl) Concerning the gums and lips.

gingivoplasty (jīn'jī-vō-plās'tē) [+ Gr. *plassein*, to form] Surgical repair of the gums. It may be performed to close a cleft in the gums to correct the gingival margin.

gingivostomatitis (jīn'jī-vō-stō'mā-tī'tis) [+ Gr. *stoma*, mouth, + *itis*, inflammation] Inflammation of the gingival tissue and the mucosa of the mouth due to herpesvirus types I or II.

ginglymoid (jīng'li-moyd) [+ *eidōs*, form, shape] Pert. to or shaped like a hinged joint.

ginglymus (jīng'li-mūs) [Gr. *ginglymos*, hinge] Ginglymoid joint.

Ginkgo biloba, ginkgo (gīng'kō bī-lō'bā) [Japanese (from Chinese) *ginkyō*, "silver apricot" + NL *bilobus*, two-lobed] An herbal remedy extracted from a deciduous tree of the genus *Ginkgo*, native to China, which has fan-shaped leaves and spherical cones. *Ginkgo biloba* is promoted as a treatment for memory

loss and dementia, for tinnitus, and for several other conditions. Occasional side effects of its use include bleeding and augmentation of the anticoagulant effect of warfarin.



Ginkgo should be avoided by pregnant or breastfeeding women. It should never be used by people with bleeding disorders and it should be used only under medical supervision by people taking warfarin or other anticoagulants.

ginseng (jīn'sēng) [Chinese *jen-shen*, man, man image] An herbal remedy used as a stimulant, a tonic, an immune booster, and for sexual potency. Scientific studies supporting these indications are limited.

girdle [AS. *gyrdel*, girdle] **1.** A zone or belt. **2.** A structure that resembles a circular belt or band.

pelvic g. The bones that attach the lower limbs to the axial skeleton; the two innominate or hip bones.

shoulder g. The bones that attach the upper limbs to the axial skeleton; the two clavicles and two scapulae.

girdle symptom A symptom in tabes as of a tight girdle, such as a feeling of constriction about the chest; also found in compression of the cord owing to collapse of the vertebrae, as in Pott's disease.

gitter cell A macrophage present at sites of brain injury. The cells are packed with lipid granules from phagocytosis of damaged brain cells. SEE: *microglia*.

gizzard (gīz'ārd) The very strong muscular stomach of certain birds. Food is mixed with gastric juice and macerated with the aid of small stones, called *grit*, that are ingested and remain in the gizzard.

glabella (glā-bēl'ā) [L. *glaber*, smooth] The smooth surface of the frontal bone lying between the superciliary arches; the portion directly above the root of the nose. SYN: *mesophryon*.

glabrate, glabrous (glāb'rāt, glāb'rūs) [L. *glaber*, smooth] **1.** Bald. **2.** Smooth.

glacial (glā'shīl) [L. *glacialis*, icy] **1.** Glassy; resembling ice. **2.** Highly purified.

glairy (glār'ē) Viscous; albuminous; mucoid.

gland (glānd) [L. *glans*, acorn] An organized cluster of cells or tissues that manufacture a substance to be secreted from or used within the body. Glands may be classified by their structure (e.g., tubular, saccular, villous, papillary, ductless), their complexity (simple, compound), their function (endocrine, exocrine), the quality of their secretions (mucous, serous, sebaceous, or mixed), or the way in which their secretions are

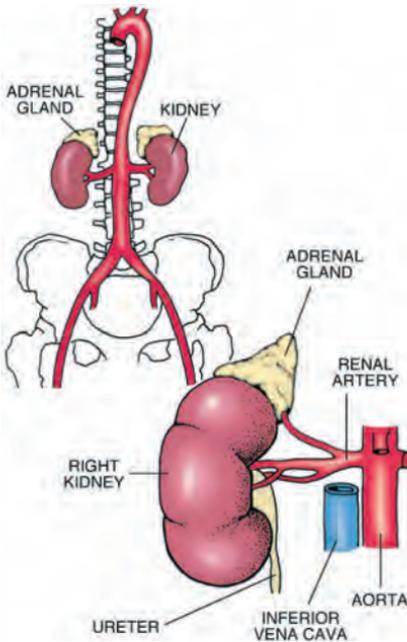
released (e.g., merocrine, apocrine, holocrine, eccrine).

accessory g. A small gland similar in function to another gland of similar structure some distance removed.

acinotubular g. A gland structurally midway between an acinous and a tubular gland.

acinous g. A gland whose secreting units are composed of saclike structures, each possessing a narrow lumen. SYN: *racemose gland*.

adrenal g. A triangular gland covering the superior surface of each kidney. SYN: *suprarenal gland*. SEE: *illus.*



ADRENAL GLANDS

EMBRYOLOGY: The adrenal gland is essentially a double organ composed of an outer cortex and an inner medulla. The cortex arises in the embryo from a region of the mesoderm that also gives rise to the gonads, or sex organs. The medulla arises from ectoderm, which also gives rise to the sympathetic nervous system.

ANATOMY: The gland is enclosed in a tough connective tissue capsule from which trabeculae extend into the cortex. The cortex consists of cells arranged into three zones: the outer zona glomerulosa, the middle zona fasciculata, and the inner zona reticularis. The cells are arranged in a cordlike fashion. The medulla consists of chromaffin cells arranged in groups or anastomosing cords. The two adrenal glands are situated retroperitoneally, each embedded

in perirenal fat above its respective kidney. In an adult, the average weight of an adrenal gland is 5 g, and the range is 4 to 14 g. It is usually heavier in men than in women.

PHYSIOLOGY: The adrenal medulla synthesizes and stores three catecholamines: dopamine, norepinephrine, and epinephrine. Dopamine's chief effects are dilation of systemic arteries, increased cardiac output, and increased flow of blood to the kidneys. The primary action of norepinephrine is to constrict the arterioles and venules, resulting in increased resistance to blood flow, elevated blood pressure, and slowing of the heart. Epinephrine constricts vessels in the skin and viscera, dilates vessels in skeletal muscle, increases heart rate, dilates the bronchi by relaxing bronchial smooth muscle, increases the conversion of glycogen to glucose in the liver to increase the blood glucose level, and diminishes activity of the gastrointestinal system. The three catecholamines are also produced in other parts of the body.

The adrenal medulla is controlled by the sympathetic nervous system and functions in conjunction with it. It is intimately related to adjustments of the body in response to stress and emotional changes. Anticipatory states tend to bring about the release of norepinephrine. More intense emotional reactions, esp. those in response to extreme stress, tend to increase the secretion of both norepinephrine and epinephrine; epinephrine is important in mobilizing the physiological changes that occur in the "fight or flight" response to emergency situations.

The cortex synthesizes three groups of steroid hormones from cholesterol. These are 1) glucocorticoids (cortisol, corticosterone), which regulate the metabolism of organic nutrients and have an anti-inflammatory effect; 2) mineralocorticoids (aldosterone, dehydroepiandrosterone), which affect metabolism of the electrolytes sodium and potassium; and 3) androgens and estrogens (estradiol), which contribute to body changes at puberty. SEE: *aldosterone*; *cortisol steroid*.

PATHOLOGY: Excess secretion of adrenal cortical hormones results in Cushing's syndrome; excessive secretion of aldosterone results in a surgically correctable form of hypertension called aldosteronism. Adrenocortical insufficiency may be acute or chronic; acute insufficiency of adrenal hormones produces circulatory shock, while chronic insufficiency results in Addison's disease. SEE: *Addison's disease*; *aldosteronism*; *Cushing's syndrome*; *pheochromocytoma*.

albuminous g. Glands secreting a

fluid containing albumin. SYN: *serous glands*.

anal g. Glands in the region of the anus. SYN: *circumanal glands*.

apocrine g. A gland whose cells lose some of their cytoplasmic contents in the formation of secretion. Examples include the mammary glands.

apocrine sweat g. Sweat glands located in the axillae and pubic region that open into hair follicles rather than directly onto the surface of the skin as do eccrine sweat glands. They appear after puberty and are better developed in women than in men. The characteristic odor of perspiration is produced by the action of bacteria on the material secreted by the apocrine sweat glands. SEE: *sweat glands*.

areolar g. Sebaceous glands in the areola surrounding the nipple of the female breast.

Bartholin's g. SEE: *Bartholin's gland*.

Bruch's g. Conjunctival lymph nodes in the lower lids.

Brunner's g. SEE: *Brunner's glands*.

buccal g. Acinous glands in the mucosa of the cheek. SYN: *genal gland*.

bulbourethral g. Either of two small, round, yellow glands, one on each side of the prostate gland, each with a duct about 1 in (2.5 cm) long, terminating in the wall of the urethra. They secrete a viscid fluid forming part of the seminal fluid. They correspond to the Bartholin glands in the female. SYN: *Cowper's gland*. SEE: *prostate*; *urethra*.

cardiac g. Mucus-secreting glands of the stomach near the cardiac orifice of the esophagus.

ceruminous g. Glands in the external auditory canal that secrete cerumen.

cervical g. Lymph nodes in the neck.

ciliary g. SEE: *Moll's glands*.

circumanal g. Anal glands.

compound g. A gland consisting of a number of branching duct systems that open into the main secretory duct.

compound tubular g. A gland composed of numerous tubules leading to a lone duct.

Cowper's g. Bulbourethral gland.

cutaneous g. Glands of the skin, esp. the sebaceous and sudoriferous glands. These include modified forms such as the ciliary, ceruminous, anal, preputial, areolar, and meibomian glands.

ductless g. A gland without ducts, secreting directly into capillaries one or more hormones that have specific effects on target organs or tissues. SEE: *endocrine gland*; *exocrine*.

duodenal g. SEE: *Brunner's glands*.

eccrine g. A simple tubular sweat gland of the skin. SEE: *apocrine g.*; *eccrine sweat g.*

eccrine sweat g. One of many glands

distributed over the entire skin surface that, because they secrete sweat, are important in regulating body heat. The total number of glands ranges from 2 million to 5 million. There are over 400 per square centimeter on the palms and about 80 per square centimeter on the thighs. SEE: *sweat gland* for illus.

endocrine g. A ductless gland that secretes one or more hormones directly into capillaries. The endocrine glands include the pituitary gland (which produces thyroid-stimulating hormone, adrenocorticotrophic hormone, luteinizing hormone, follicle-stimulating hormone, growth hormone, endorphins, and prolactin); the hypothalamus (which produces thyrotropin-releasing hormone, growth hormone-releasing hormone, somatostatin, dopamine, gonadotropic hormone-releasing hormone, antidiuretic hormone, and oxytocin); the thyroid gland; the parathyroid glands; the adrenal glands; the islets of the pancreas; and the gonads (testes and ovaries). During pregnancy, the placenta is an endocrine gland that secretes estrogen and progesterone to maintain pregnancy. SEE: *illus.*; table.

The hormones secreted by endocrine glands may exert their specific effects on one or a few target organs or tissues, or on virtually all body tissues, as does thyroxine, which increases metabolic rate. Other processes affected by hormones include cell division, protein synthesis, the use of food molecules for energy production, secretory activity of other endocrine glands, development and functioning of the reproductive organs, sexual characteristics and libido, development of personality and higher nervous functions, the ability of the body to meet conditions of stress, and resistance to disease.

Endocrine dysfunction may result from hyposecretion, in which an inadequate amount of hormone is secreted, or from hypersecretion, in which an excessive amount of hormone is produced. Secretion of endocrine glands may be controlled by the nervous system, by blood levels of nutrients and minerals, or, in some cases, by other hormones.

Fraenkel's g. Tiny glands located below the margin of the vocal cords.

gastric g. One of the tubular glands, or gastric pits, of the stomach. SYN: *peptic gland*. SEE: *stomach*.

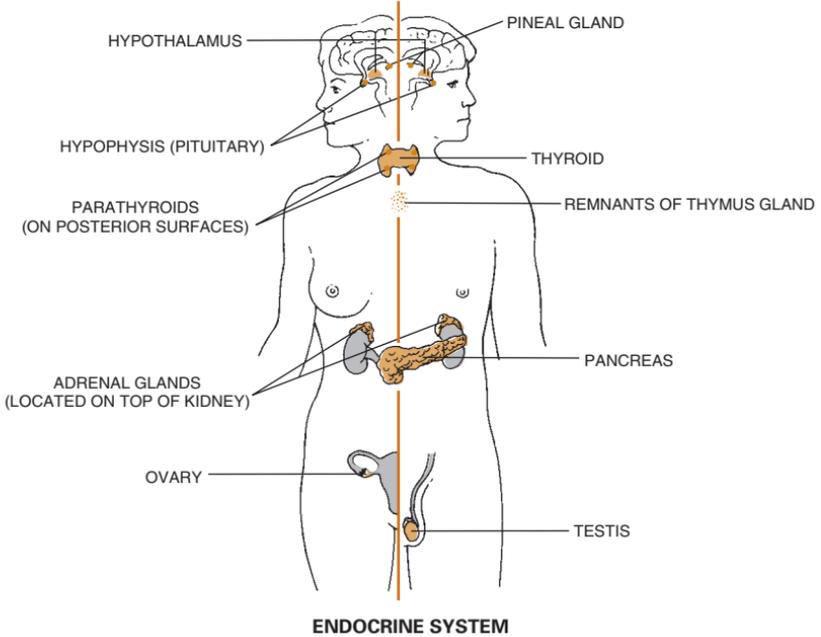
genal g. Buccal glands.

hepatic g. Lymph nodes located in front of the portal vein.

holocrine g. SEE: *holocrine*.

interstitial g. Leydig cell.

intestinal g. Simple tubular glands in the small intestine that open into the spaces between the villi. On the villi themselves the epithelium of these glands includes specialized cells: ab-



sorptive cells, goblet cells, paneth cells, M cells, and neuroendocrine cells. Intestinal glands include Brunner's glands and Lieberkühn crypts.

jugular g. A firm or enlarged lymph node lying beneath the sternocleidomastoid muscle, often associated with malignancy. SEE: *sentinel node* (1).

labial g. Multiple acinous glands of the mucosa of the lips.

lacrimal g. The gland that secretes tears. It is a tubuloalveolar gland located in the orbit, superior and lateral to the eyeball, and consists of a large superior portion (pars orbitalis) and a smaller inferior portion (pars palpebralis).

lactiferous g. Mammary g.

lingual g. Glands of the tongue, including the anterior lingual glands, posterior lingual glands (glands of von Ebner), and mucous glands at the root of the tongue.

lymph g. An obsolete term for lymph node.

mammary g. A compound alveolar gland that secretes milk. In women, these glands are made up of lobes and lobules bound together by areolar tissue. Each of the 15 to 20 main ducts, known as lactiferous ducts, discharges through a separate orifice on the surface of the nipple. The dilatations of the ducts form reservoirs for the milk during lactation. SYN: *lactiferous gland*.

meibomian g. Tarsal glands.

merocrine g. A gland in which the cells remain intact during the elabora-

tion and discharge of their secretion. SEE: *eccrine sweat gland*.

mixed g. 1. A gland that has both endocrine and exocrine function (e.g., the pancreas). 2. A salivary gland that has both mucous and serous secretions, often with both cell types in the same acinus. SEE: *submandibular gland*.

Morgagni's g. SEE: *Littre's gland*.

muciparous g. Glands that secrete mucus.

nabothian g. Dilated mucous glands in the uterine cervix.

odoriferous g. Glands exuding odoriferous materials, as those around the prepuce or anus.

olfactory g. Glands in the olfactory mucous membranes.

oxyntic g. Gastric glands found in the fundus and body of the gastric mucosa.

palatine g. Mucous glands in the tissue of the palate.

palpebral g. Tarsal glands.

parathyroid g. One of four small endocrine glands about 6 mm long by 3 to 4 mm broad on the back of and at the lower edge of the thyroid gland, or embedded within it. These glands secrete parathyroid hormone (parathormone), that regulates calcium and phosphorus metabolism.

ABNORMALITIES: Hypoparathyroidism or hyposecretion results in neuromuscular hyperexcitability manifested by convulsions and tetany, carpopedal spasm, wheezing, muscle cramps, urinary frequency, mood changes, and las-

Principal Endocrine Glands

| Name | Position | Function | Endocrine Disorders |
|------------------------------|--|---|--|
| Adrenal cortex | Outer portion of gland on top of each kidney | Cortisol regulates carbohydrate and fat metabolism; aldosterone regulates salt and water balance | Hypofunction: Addison's disease Hyperfunction: Adrenogenital syndrome; Cushing's syndrome |
| Adrenal medulla | Inner portion of adrenal gland; surrounded by adrenal cortex | Effects of epinephrine and norepinephrine mimic those of sympathetic nervous system; increases carbohydrate use for energy | Hypofunction: Almost unknown Hyperfunction: Pheochromocytoma |
| Pancreas (endocrine portion) | Abdominal cavity; head adjacent to duodenum; tail close to spleen and kidney | Secretes insulin and glucagon, which regulate carbohydrate metabolism | Hypofunction: Diabetes mellitus Hyperfunction: If a tumor produces excess insulin, hypoglycemia |
| Parathyroid | Four or more small glands on back of thyroid | Parathyroid hormone regulates calcium and phosphorus metabolism; indirectly affects muscular irritability | Hypofunction: Hypocalcemia; tetany Hyperfunction: Hypercalcemia; resorption of bone; kidney stones; nausea; vomiting; altered mental status |
| Pituitary, anterior | Front portion of small gland below hypothalamus | Influences growth, sexual development, skin pigmentation, thyroid function, adrenocortical function through effects on other endocrine glands (except for growth hormone, which acts directly on cells) | Hypofunction: Dwarfism in child; decrease in all other endocrine gland functions except parathyroids Hyperfunction: Acromegaly in adult; gigantism in child |
| Pituitary, posterior | Back portion of small gland below hypothalamus | Oxytocin increases uterine contraction Antidiuretic hormone increases absorption of water by kidney tubule | Hypofunction: Diabetes insipidus Hyperfunction: Unknown |
| Testes and ovaries | Testes—in the scrotum Ovaries—in the pelvic cavity | Testosterone and estrogen regulate sexual maturation and development of secondary sex characteristics; some effects on growth | Hypofunction: Lack of sex development or regression in adult Hyperfunction: Abnormal sex development |
| Thyroid | Two lobes in anterior portion of neck | Thyroxine and T ₃ increase metabolic rate; influence growth and maturation; calcitonin regulates calcium and phosphorus metabolism | Hypofunction: Cretinism in young; myxedema in adult; goiter Hyperfunction: Goiter; thyrotoxicosis |

situde. Blood calcium falls and blood phosphorus rises. Other symptoms include blurring of vision caused by cataracts, poorly formed teeth if onset was in childhood, maldevelopment of hair and nails, and dry and scaly skin. Hyperparathyroidism or hypersecretion results in a rise in blood calcium and fall in blood phosphorus. Calcium is removed from bones, resulting in increased fragility. Muscular weakness, reduced muscular tone, and general neuromuscular hypoexcitability occur. Generalized osteitis fibrosa, or osteitis fibrosa cystica, is a clinical entity associated with hyperplasia and resulting hypersecretion of the parathyroids.

paraurethral g. SEE: *Skene's glands*.

parotid g. The largest of the salivary glands, located below and in front of the ear. It is a compound tubuloacinar serous gland. Its secreting tubules and acini are long and branched, and it is enclosed in a sheath, the parotid fascia. Saliva lubricates food and makes it easier to taste, chew, and swallow. SEE: *mumps*.

peptic g. Gastric g.

pineal g. An endocrine gland in the brain, shaped like a pine cone and located in a pocket near the splenium of the corpus callosum. It is the site of melatonin synthesis, which is inhibited by light striking the retina. SEE: *melatonin*.

pituitary g. SEE: *pituitary gland*.

preputial g. A modified sebaceous gland located on the neck of the penis and the inner surface of the prepuce; its secretion is a component of smegma.

prostate g. The male gland that surrounds the neck of the bladder and the urethra. It is partly glandular, with ducts opening into the prostatic portion of the urethra, and partly muscular. It secretes a thin, opalescent, slightly alkaline fluid that forms part of the semen. The prostate consists of a median lobe and two lateral lobes measuring about $2 \times 4 \times 3$ cm and weighing about 20 g; it is enclosed in a fibrous capsule containing smooth muscle fiber in its inner layer. The nerve supply is from the inferior hypogastric plexus.

pyloric g. Gastric glands near the pylorus that secrete gastric juice.

racemose g. Acinuous g.

Rivinus' g. SEE: under *Rivinus*, *August Quirinus*.

salivary g. SEE: *salivary gland*.

sebaceous g. SEE: *sebaceous gland*.

seromucous g. A mixed serous and muciparous gland.

serous g. Albuminous glands.

sex g. The ovary or testis.

Skene's g. SEE: *Skene's glands*.

sublingual g. The smallest of the major salivary glands, located in the tissue in the floor of the mouth between the

tongue and mandible on each side. It is a mixed seromucous gland. Its main duct opens into or near the submandibular duct, but several smaller ducts may open to the oral cavity independently along the sublingual fold. Numerous minor sublingual glands are scattered throughout the mucosa under the tongue, each with its own duct to the oral surface.

submandibular g. One of the salivary glands, a mixed tubuloalveolar gland about the size of a walnut that lies in the digastric triangle beneath the mandible. Its main duct (Wharton's duct) opens at the side of the frenulum linguae.

sudoriferous g. Glands in the skin that secrete perspiration. SEE: *sweat glands* for illius.

suprarenal g. Adrenal gland.

sweat g. A simple, coiled, tubular gland found on all body surfaces except the margin of the lips, glans penis, and inner surface of the prepuce. The coiled secreting portion lies in the corium or subcutaneous portion of skin; the secretory duct follows a straight or oblique course through the dermis but becomes spiral in passing through the epidermis to its opening, a sweat pore. Most sweat glands are merocrine; those of the axilla, areola, mammary gland, labia majora, and circumanal region are apocrine. Sweat glands are most numerous on the palms of the hands and soles of the feet. SEE: *illius*; *apocrine g.*; *eccrine g.*

synovial g. Glands that secrete synovial fluid.

target g. Any gland affected by the action or secretion of another gland (e.g., the thyroid is a target gland of the pituitary).

tarsal g. Glands in the eyelid that secrete a sebaceous substance that keeps the lids from adhering to each other. SYN: *meibomian glands*; *palpebral glands*.

thymus g. The thymus. SEE: *thymus*.

thyroid g. SEE: *thyroid gland*.

tubular g. A gland whose terminal secreting portions are narrow tubes rather than sacs or alveoli.

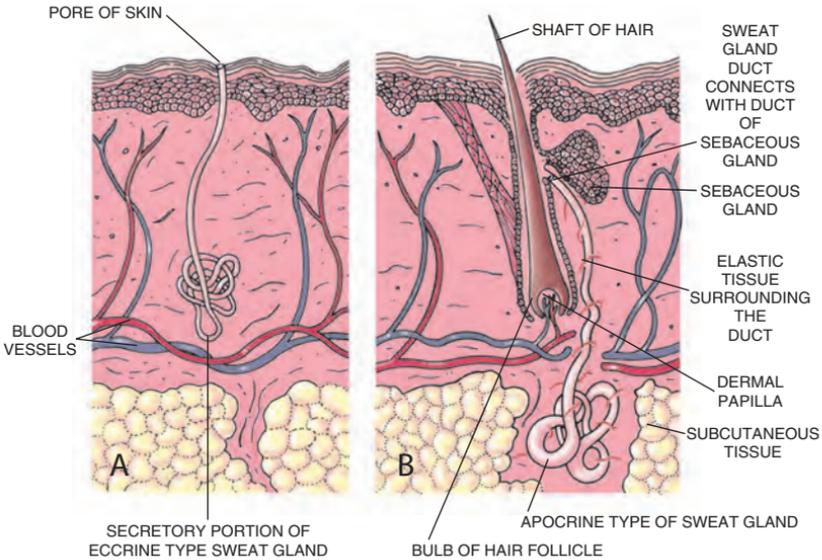
unicellular g. Mucus-secreting cells present in columnar or pseudostratified columnar epithelial tissue layers. They are called *goblet cells*.

urethral g. SEE: *Littre's gland*.

uterine g. One of the tubular glands in the endometrium.

vaginal g. Acinuous glands found in the uppermost portion of the vaginal mucosa near the cervix, most of the vaginal mucosa being devoid of glands.

vestibular g. Glands of the vaginal vestibule. They include the minor ves-



ECCRINE AND APOCRINE SWEAT GLANDS

tibular glands and the major vestibular glands (Bartholin's glands).

vulvovaginal g. SEE: *Bartholin's gland.*

Waldeyer's g. SEE: *Waldeyer's gland.*

g. of Zeis SEE: *Zeis gland.*

glanders (glän'dêrz) A contagious infection caused by *Burkholderia mallei* in horses, donkeys, mules, and other animals. It is communicable to humans, but no cases have occurred in the Western Hemisphere since 1938. Experience with the disease is limited, but sulfa drugs are the recommended therapy.

SYMPTOMS: Patients develop fever, inflammation of the skin and mucous membranes (esp. in the nasal cavity), with formation of ulcers and abscesses. Small subcutaneous nodules develop, break down, and give rise to ulcers. Beginning as small areas, these tend to spread and coalesce and finally involve large areas that exude a viscid, mucopurulent discharge with a foul odor. The infection may occur in an acute or chronic form. In the acute septicemic form, prognosis is grave and the disease is almost invariably fatal.

glandilemma (glän'di-lêm'ä) [*L. glans*, acorn, + *Gr. lemma*, sheath] The covering or capsule of a gland.

glandula (glän'dū-lä) *pl. glandulae* Glandule.

glandular (glän'dū-lär) [*L. glandula*, little acorn] Pert. to or of the nature of a gland.

glandular therapy Hormonotherapy.

glandule (glän'dül) A small gland. SYN: *glandula.*

glans (glänz) [*L. glans*, acorn] A gland.

g. clitoridis The tip of the clitoris. It is composed of the joining of two erectile bodies, the corpora cavernosa. It is covered by a prepuce (the front edge of the labia minora), and is the most highly innervated and sensitive part of the clitoris. SEE: *clitoris.*

g. penis The cone-shaped expanded end of the corpus cavernosa of the penis. The urethral orifice is at the tip of the glans, and the foreskin (prepuce) covers the glans (to a variable extent) in uncircumcised males. SEE: *penis.*

Glanzmann's thrombasthenia (glänz'mänz) [Edward Glanzmann, Swiss pediatrician, 1887–1959] A rare autosomal recessive abnormality of platelet glycoprotein IIb-IIIa, characterized by easy bruising and epistaxis that sometimes requires blood transfusions. Bleeding is prolonged, clot retraction is diminished, and platelets do not aggregate during blood coagulation or after addition of adenosine diphosphate. Treatments include platelet transfusions, progestational agents, and iron replacement, among others.

glare [ME. *glaren*, to gleam] A condition causing temporary blurring of vision with possible permanent injury to the retina. The condition is caused by intense light (visible radiation) emanating from highly reflective objects (such as sunlight reflected on water or snow), or projected by an automobile headlight or by a therapeutic lamp. SEE: *dazzle.*

Glasgow Coma Scale (gläs'gō) ABBR: GCS. A scale used to determine a patient's level of consciousness. It is a rat-

ing from 3 to 15 of the patient's ability to open his or her eyes, respond verbally, and move normally. The GCS is used primarily during the examination of patients with trauma or stroke. Repeated examinations can help determine if the patient's brain function is improving or deteriorating. Many EMS systems use the GCS for triage purposes and for determining which patients should be intubated in the field. SEE: *coma*; *Trauma Score*.

Glasgow Outcome Scale A scale that assesses current neurological awareness of the environment, and recovery and disability in all types of brain injury. The scale is to be used during the evaluation of trauma, stupor, or coma, and at prescribed time intervals, such as 3 months, 6 months, and 1 year after injury. The Glasgow group reports the greatest recovery in the 6-month period after injury. The nurse (or other health-care practitioner) notes the patient's abilities at a particular time using this practical scale:

1. *Good outcome*: may have minimal disabling sequelae but returns to independent functioning comparable to preinjury level and a full-time job
2. *Moderate disability*: is capable of independent functioning but not of returning to full-time employment
3. *Severe disability*: depends on others for some aspect of daily living
4. *Persistent vegetative state*: has no obvious cortical functioning
5. *Dead*

glass [AS. *glæs*] A hard, brittle, amorphous, transparent material composed of silica and various bases.

ground g. Abnormal shadowing seen radiographically. In chest x-ray films, it may indicate interstitial fibrosis of the lung; in abdominal films, it suggests ascites.

leaded g. Safety glass that contains lead, used in radiology to help protect personnel from x-rays.

photochromic g. Glass that is manufactured to appear clear until light strikes it. When used in sunglasses, the lens becomes dark and reduces the amount of light transmitted, becoming clear again when no longer exposed to bright light.

polarized g. Glass treated with a medium that permits the exiting light waves to vibrate in only one direction.

safety g. A type of laminated glass that meets specific requirements concerning the force necessary to break it and is designed to break without shattering. Its use in automobiles reduces the risk of injury from broken glass.

tempered g. Glass that has been heat-treated to increase the force required to break it.

ultraviolet transmitting g. Glass de-

signed to admit ultraviolet radiation through it. It transmits about half of the solar radiation, between the wavelengths of 290 and 320 nm.

watch g. A shallow, saucer-like glass dish, resembling the glass cover widely used to cover the face of a large pocket watch.

glasses [AS. *glæs*, *glass*] 1. A transparent refractive device worn to correct refraction errors in the patient's eyes. 2. A device worn to protect eyes from glare or particles in the air. SYN: *eyeglass*; *spectacles*.

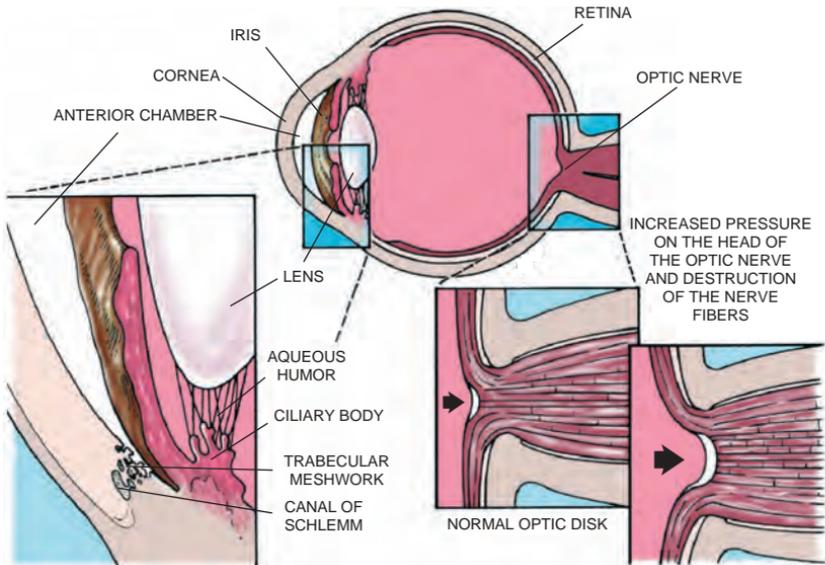
prism g. An optical device, used by persons who must lie supine for extended periods, to allow them to view objects in their environment without eye or neck strain. Prisms mounted on spectacle frames bend the image to make the feet visible while the person is looking straight ahead.

safety g. Glasses using heat-treated glass or impact-resistant plastic lenses. Their use serves to protect the eyes from dangerous slivers of glass that are produced when ordinary lenses are broken in an accident. Use of safety glass in manufacturing eyeglass lenses is mandatory in the U.S.

trifocal g. Glasses with three different corrections in each lens: one each for near, intermediate, and far vision.

glassy Hyaline; vitreous; glasslike, smooth, and shiny.

glaucoma (glaw-kō'mă) [L., *cataract*] A group of eye diseases characterized by increased intraocular pressure, resulting in atrophy of the optic nerve. Glaucoma causes gradual loss of peripheral vision, and ultimately, blindness. Glaucoma is the third most prevalent cause of visual impairment and blindness in the U.S., although the incidence of blindness is decreasing due to early detection and treatment. An estimated 15 million residents of the U.S. have glaucoma; of these, 150,000 have bilateral blindness. The three major categories of glaucoma are narrow- or closed-angle (acute) glaucoma, which occurs in persons whose eyes are anatomically predisposed to develop the condition; open-angle (chronic) glaucoma, in which the angle that permits the drainage of aqueous humor from the eye seems normal but functions inadequately due to overproduction of aqueous humor or outflow obstruction through the trabecular meshwork or the canal of Schlemm; and congenital glaucoma, in which intraocular pressure is increased because of an abnormal fluid drainage angle (which may result from congenital infections, Sturge-Weber syndrome, or prematurity-related retinopathy), or for an unknown reason. The increased pressure causes the globe of the eye to be enlarged, a condition known as *buphthal-*



GLAUCOMA

mia. The acute type of glaucoma often is attended by acute pain. The chronic type has an insidious onset. An initial visual dysfunction is loss of the mid-peripheral field of vision. The loss of central visual acuity occurs later in the disease. SEE: *visual field for illus*.

ETIOLOGY: Glaucoma occurs when the aqueous humor drains from the eye too slowly to keep up with its production in the anterior chamber. Thus, narrowing or closure of the filtration angle that interferes with drainage through the canal of Schlemm causes intraocular fluid to accumulate, after which intraocular pressure increases. Glaucoma may develop, however, even if the filtration angle is normal and the canal of Schlemm appears to be functioning; the cause of this form of glaucoma is not known.

DIAGNOSIS: Glaucoma may not cause symptoms. It is best detected early by measurements of elevated intraocular pressure (IOP), often made by adjusting the raw values that are obtained for changes in corneal thickness (as demonstrated with a pachymeter or with optical coherence tomography). A normal tonometer reading ranges from 13 to 22. The frequent need to change eyeglass prescriptions, vague visual disturbances, mild headache, and impaired dark adaptation may also be present. The standard for determining visual loss in glaucoma is the visual-field test.

Open-angle glaucoma causes mild aching in the eyes, loss of peripheral vision, halos around lights, and reduced visual acuity (esp. at night) that is un-

corrected by prescription lenses. Acute angle-closure glaucoma (an ophthalmic emergency) causes excruciating unilateral pain and pressure, blurred vision, decreased visual acuity, halos around lights, diplopia, lacrimation, and nausea and vomiting due to increased IOP. The eyes may show unilateral circumcorneal injection, conjunctival edema, a cloudy cornea, and a moderately dilated pupil that is nonreactive to light. It requires immediate treatment to reduce IOP.

TREATMENT: Nonoperative treatment includes the use of miotics (eserine, pilocarpine), timolol maleate, intravenous mannitol, and parenteral acetazolamide. Experimental studies indicate that marijuana alleviates the symptoms of severe glaucoma. Control of associated disorders such as diabetes mellitus should be maintained. Operative treatment includes laser trabeculoplasty, trabeculectomy, paracentesis of the cornea, iridectomy (broad peripheral), cyclodialysis, anterior sclerotomy, sclerotomy with inclusion of the iris, as iridotaxis or iridencleisis; sclerectomy. SEE: *illus.*; *ciliaryotomy*; *trabeculoplasty*.

! Acute glaucoma may be precipitated in patients with closed-angle glaucoma by dilating the pupils. In glaucoma patients, cycloplegic drops are given only after trabeculectomy and only in the eye that had the procedure. Administering drops in an eye affected with glaucoma can precipitate an acute attack in an eye already compromised by elevated IOP.

PATIENT CARE: Health care providers should wash their hands thoroughly before touching the patient's eye. Prescribed topical and systemic medications are administered and evaluated.

The patient is prepared physically and psychologically for diagnostic studies and surgery as indicated. If the patient has a trabeculectomy, prescribed cycloplegic drugs are administered to relax the ciliary muscle and decrease iris action, thus reducing inflammation and preventing development of adhesions.

After any surgery, an eye patch and shield are applied to protect the eye, the patient is positioned with the head slightly elevated, and general safety measures geared to the patient's level of sensory alteration are instituted. Usually, the patient is encouraged to ambulate as soon as possible following surgery.

Patients with glaucoma need to know that the disease can be controlled, but not cured. Fatigue, emotional upsets, excessive fluid intake, and use of antihistamines may increase IOP. Signs and symptoms such as vision changes or eye pain should be reported immediately. Both the patient and family are instructed in correct techniques for hand hygiene and eyedrop administration; the importance of adherence to the prescribed regimen; the need for regular follow-up care with an ophthalmologist; and any adverse reactions to report.

Information is provided to the patient and family as needed. Referral is made to local organizations and support groups.

Public education is carried out to encourage glaucoma screening for early detection of the disease. Because glaucoma is more common in African Americans than European Americans, all African Americans above age 35 (and earlier for those with a family history of glaucoma) should have an annual tonometric examination. Written information should be made available about detection and control of glaucoma. SEE: *Nursing Diagnoses Appendix*.

absolute g. An extremely painful form of glaucoma in which the eye is completely blind and hard as stone (as a result of elevated intraocular pressures) with an insensitive cornea, a shallow anterior chamber, and an excavated optic disk.

chronic g. Glaucoma in which the tonometer indicates an intraocular pressure reading of up to 45 or 50, the anterior ciliary veins are enlarged, the cornea is clear, the pupil is dilated, and pain is present. During attacks vision is poor. The visual field may be normal. Cupping of the optic disk is not present in the early stages.

closed-angle g. Glaucoma caused by a shallow anterior chamber and thus a narrow filtration angle through which the aqueous humor normally passes. Because the rate of movement of the aqueous humor is impaired, intraocular pressure increases. In general, headache, halos around single sources of light, blurred vision, and eye pain are symptomatic. SYN: *narrow-angle glaucoma*.

low-tension g. A type of glaucoma in which intraocular pressures are normal (less than 22 mm Hg).

narrow-angle g. Closed-angle g.
pigmentary g. Glaucoma produced by the dispersion of organic pigment from the zonula ciliaris to the trabecular meshwork of the eye.

primary open-angle g. The most common type of glaucoma. It usually affects both eyes, and there is a characteristic change in the appearance of the optic disk. The cup (the depression in the center of the disk) is enlarged. Visual loss is determined by the visual-field test. Many patients with glaucoma have increased intraocular pressure but this is not considered essential to the diagnosis because some patients have normal intraocular pressure.

secondary g. Glaucoma caused by ocular trauma or an underlying disease that affects the eye.

glaucomatous (glaw-kō' mā-tūs) Pert. to glaucoma.

GLC *gas-liquid chromatography*.

Gleason's score (glē'sūnz) [Donald F. Gleason, U.S. pathologist, b. 1920] A measure of the cellular differentiation of prostate cancers that uses the microscopic appearance of biopsied tissue to determine the tumor grade and stage. SYN: *Gleason's grade*.

gleet (glēt) A mucous discharge from the urethra in chronic gonorrhea.

glenohumeral (glē'nō-hū'mēr-āl) [Gr. *glene*, socket, + L. *humerus*, humerus] Pert. to the humerus and the glenoid cavity.

glenoid (glē'noyd) [ʹ + *eidōs*, form, shape] Having the appearance of a socket.

glenoid labrum The ring of fibrocartilaginous tissue around the glenoid cavity on the scapula. It deepens and increases the congruency of the articulating surface. SYN: *glenoid ligament*; *glenoid lip*.

glia (glī'ā) [Gr. *glia*, glue] The neuroglia; the nonnervous or supporting tissue of the brain and spinal cord.

glia cells Neuroglia cells, including astrocytes, oligodendroglia (oligoglia), and microglia. SEE: *cell*; *neuroglia*.

gliocyte (glī'ā-sīt) [ʹ + *kytos*, cell] A neuroglia cell.

gliadin (glī'ā-dīn) A water-insoluble glycoprotein present in the gluten of wheat. It is deficient in the essential amino acid lysine. The sticky mass that

results when wheat flour and water are mixed is due to gliadin. In some individuals the intestinal mucosa lacks the ability to digest this substance, which therefore damages the intestinal lining and causes gluten-induced enteropathy.

glial (glī'äl) Concerning glia or neuroglia.

glial fibrillary acidic protein ABBR: GFAP. An intermediate filament found only in astrocytes and astroglial cells. It forms part of the skeletal structure of neurons. Abnormalities in GFAP are found in a variety of neurological diseases, including Alzheimer's disease, Creutzfeldt-Jakob disease, and some brain tumors.

gliarase (glī'ä-räs) [Gr. *glia*, glue] An astrocytic mass with incomplete fission of cytoplasm.

glicentin (glī-sën'tin) A 69-amino acid peptide secreted by small intestinal cells. It inhibits gastric acid secretion, stimulates insulin secretion by the pancreas, regulates intestinal motility, and fosters the growth of intestinal mucosal cells.

glide 1. To move in a smooth, virtually frictionless manner. 2. Movement in a smooth, virtually frictionless manner. 3. A joint mobilization technique in which the clinician applies a force to move bones in a direction parallel to the treatment plane. This technique is used to maintain or increase joint play. 4. The smooth movement of acoustic frequencies, e.g., in audible speech.

mandibular g. The movement of the mandible in any direction as the teeth come into contact.

glioblastoma (glī'ō-bläs-tō'mä) [" + *blastos*, germ, + *oma*, tumor] A neuroglia cell tumor. SYN: *glioma*.

g. multiforme A type of astrocytoma marked pathologically by the presence of extremely abnormal malignant brain cells. Clinically, this tumor is among the most aggressive of the primary brain tumors. Survival 1 to 2 years after diagnosis is rare. Treatments include radiation therapy and chemotherapy.

gliocyte (glī'ō-sit) [" + *kytos*, cell] A neuroglia cell.

gliocytoma (glī'ō-sī-tō'mä) [" + " + *oma*, tumor] A neuroglia cell tumor.

gliogenous (glī-ōj'ē-nūs) [" + *gennan*, to produce] Of the nature of neuroglia.

glioma (glī-ō'mä) *pl.* **gliomata** [" + *oma*, tumor] 1. A sarcoma of neuroglial origin. 2. A neoplasm or tumor composed of neuroglial cells, (i.e., cells that provide the supportive structure for neurons). Examples of gliomas include astrocytomas, ependymomas, and oligodendrogliomas. SYN: *glioblastoma*; *neuroglioma*.

mixed g. A glioma composed of several different types of cells, including for

example astrocytes, ependymal cells, and/or oligodendrocytes

g. retinae A malignant tumor of the retina that occurs in children and metastasizes late. SEE: *pseudoglioma*.

gliomatosis (glī'ō-mä-tō'sis) [" + " + *osis*, condition] The formation of a large glioma or of multiple gliomas. SYN: *neurogliomatosis*.

gliomatous (glī-ō'mä-tūs) Affected with or of the nature of a glioma.

gliomyoma (glī'ō-mi-ō'mä) [" + *mys*, muscle, + *oma*, tumor] A mixed glioma and myoma.

glioneuroma (glī'ō-nū-rō'mä) [" + *neuron*, nerve, + *oma*, tumor] A tumor having the characteristics of glioma and neuroma.

gliosarcoma (glī'ō-sār-kō'mä) [" + *sarx*, flesh, + *oma*, tumor] A glioma combined with fusiform sarcoma cells.

gliosis (glī-ō'sis) [" + *osis*, condition] The proliferation of astrocytes in the central nervous system after an injury to the brain or spinal cord.

gliosome (glī'ō-sōm) [" + *soma*, body] A cytoplasmic granule of neuroglia.

glipezide (glīp'i-zid) An oral drug from the class of medications called sulfonylureas used to lower blood sugar levels in type 2 diabetes mellitus. It is used as part of a regimen that includes regular exercise and a calorically restricted diet. Its side effects may include weight gain and hypoglycemia.

Glisson, Francis (glīs'ün) A British physician and anatomist, 1597–1677.

G.'s capsule The fibrous connective tissue membrane that covers the liver and the bases of the hepatic duct, hepatic artery, and portal vein.

G.'s disease Vitamin D deficiency. SEE: *osteomalacia*; *rickets*.

glissonitis (glīs'ön-i'tis) An inflammation of Glisson's capsule.

global (glō'bil) [L.] 1. Encompassing; complete; overall. 2. Pertaining to the earth in its entirety. 3. Spherical.

Global Assessment of Functioning Scale ABBR: GAF scale. A tool rating a person's social, occupational, and psychological functioning. The scale rates from high functioning (i.e., highly adapted and integrated to one's environment) to poorly functioning (i.e., self-destructive, homicidal, isolated, or lacking the rudiments of self-care). There is a children's version of the scale, called the Children's Global Assessment of Functioning (CGAF).

Global Assessment of Relational Functioning Scale ABBR: GARF scale. A measure of the degree to which a family meets the emotional and functional needs of its members.

global warming The effect of increasing levels of greenhouse gases, esp. carbon dioxide, on the temperature of the earth, causing it to rise. Global warming

can adversely affect many biological systems, including that of human health (e.g., by allowing tropical disease vectors to spread to temperate climates). SEE: *greenhouse effect; ozone*.

globi (glō'bi) [L.] Pl. of globus.

globin (glō'bin) [L. *globus*, globe] **1.** A protein constituent of hemoglobin.

2. One of a particular group of proteins.

globoid (glō'boyd) [I' + Gr. *eidos*, form, shape] Resembling a globe. SYN: *spheroid*.

globular (glōb'ū-lār) [L. *globus*, a globe] Resembling a globe or globule; spherical.

globule (glōb'ūl) [L. *globulus*, globule] Any small, rounded body.

globulin (glōb'ū-lin) [L. *globulus*, globule] One of the group of plasma proteins that controls colloidal osmotic pressure (oncotic pressure) within capillaries, participates in the immune response, and binds with substances to transport them in blood. Globulins make up approx. 38% of all plasma proteins. Alpha globulins transport bilirubin and steroids; beta globulins carry copper and iron. Gamma globulins, the most common, are immunoglobulins (antibodies). SEE: *antibody; immunoglobulin; oncotic pressure*.

Acg. Accelerator globulin; a globulin present in blood serum that speeds up the conversion of prothrombin to thrombin in the presence of thromboplastin and calcium ions.

antihemophilic g. Antihemophilic factor.

antilymphocyte g. ABBR: ALG. A solution containing polyclonal antibodies, created by injecting animals with human lymphocytes, which is used as a nonspecific immunosuppressant in the treatment of transplant rejection. Because it is polyclonal, ALG is active against many antigens; in contrast, monoclonal antibodies act against one specific antigen only. SEE: *polyclonal antibody*.

antithymocyte g. An agent used for immunosuppression in organ transplantation.

gamma g. The name commonly used for immune globulin, a solution containing antibodies (immunoglobulins) to specific organisms that are obtained from human blood plasma of donors; most of these antibodies are gamma class (IgG). It is used to provide immediate, short-term protection against specific infectious diseases, such as measles, diphtheria, hepatitis A and B, varicella, and respiratory syncytial virus (RSV) if antibody-specific immune globulins are unavailable. It also is used to treat autoimmune illnesses, such as idiopathic thrombocytopenic purpura and Guillain-Barré syndrome. Intravenous immune globulin (IVIG) is also

called immunoglobulin. SEE: *antibody; globulin; immunoglobulin*.

immune g. Drug created from serum containing antibodies (immunoglobulins). SEE: *immune globulin*.

Rh immune g. A solution of gamma globulin containing anti-Rh; it is given to Rh-negative women at 28 weeks' gestation to minimize the potential for sensitization secondary to transplacental bleeding. The injection is repeated within 72 hr after delivery of an Rh-positive newborn if the mother's indirect and the newborn's direct Coombs tests are negative. The globulin also should be given to Rh-negative women after spontaneous or induced abortion. Previously called *Rh₀(D) immune globulin*.

Rh₀(D) immune g. SEE: under *immune globulin*.

serum g. Any of the globulins present in blood plasma or serum. By electrophoresis, they can be separated into alpha, beta, and gamma globulins, which differ in their isoelectric points. SEE: *oncotic pressure*.

sex hormone-binding g. A plasma glycoprotein that binds androgens or estrogens, leaving small concentrations of free hormones to circulate in the blood.

thyroxine-binding g. An acidic plasma glycoprotein; the principal carrier of thyroxine from the thyroid gland to cell membrane receptors on target tissue cells. It bonds more weakly to triiodothyronine.

varicella-zoster immune g. ABBR: VZIG. SEE: under *immune globulin*.

globulinuria (glōb'ū-lin-ū'rē-ā) [L. *globulus*, globule, + Gr. *ouron*, urine] Globulin in the urine.

globulose (glōb'ū-lōs) [L. *globulus*, globule] Protein produced by the digestion of globulins.

globus (glō'būs) [L.] A globe or sphere.

g. hystericus A lump in the throat felt as a choking sensation in anxiety, hypertension, or panic attacks.

g. pallidus A pale section within the lenticular nucleus of the brain. SEE: *paleostriatum*.

glomangioma (glō-mān'jē-ō-mā) [L. *glomus*, a ball, + Gr. *angeion*, vessel, + *oma*, tumor] A benign tumor that develops from an arteriovenous glomus (cluster of blood cells) of the skin.

glomectomy (glō-mēk'tō-mē) The surgical removal of a glomus.

glomerate (glōm'ēr-āt) [L. *glomerare*, to wind into a ball] Conglomerate, clustered, grouped.

glomerul-, glomerulo- Combining forms meaning *glomerulus*.

glomerular (glō-mēr'ū-lār) [L. *glomerulus*, little ball] Pert. to a glomerulus; clustered.

glomerular disease Any of a large group of diseases that affect the glomerulus of the kidneys. They may be classified by

clinical severity, by histological changes in the kidney, or by etiology. Etiological factors include *primary glomerular disease*; disease secondary to *systemic disease*, such as lupus erythematosus or polyarteritis; *infectious disease* such as streptococcal infection, malaria, syphilis, or schistosomiasis; *metabolic disease* such as diabetes or amyloidosis; *toxins* such as mercury, gold, or snake venom; *serum sickness*; and drug *hypersensitivity*.

Glomerular disease may also be associated with hereditary disorders (e.g., Alport's syndrome, Fabry's disease). SEE: *glomerulonephritis*; *kidney*; *nephritis*; *nephrotic syndrome*.

Clinical findings are those associated with the primary dysfunction and pathological changes in the glomerulus, which include proteinuria and hypertension. If protein loss exceeds 3 g/day, the nephrotic syndrome will develop.

glomerular filtration rate ABBR: GFR.

The rate of urine formation as plasma passes through the glomeruli of the kidneys.

glomerulitis (glō-mēr'ū-lī'tis) [l' + Gr. *itis*, inflammation] An inflammation of glomeruli, esp. of the renal glomeruli.

glomerulonephritis (glō-mēr'ū-lō-nē-frī'tis) [l' + Gr. *nephros*, kidney, + *itis*, inflammation] A form of nephritis in which the lesions involve primarily the glomeruli. It may be acute, subacute, or chronic. Acute glomerulonephritis, also known as acute nephritic syndrome, frequently follows infections, esp. those of the upper respiratory tract caused by particular strains of streptococci. It may also be caused by systemic lupus erythematosus, subacute bacterial endocarditis, cryoglobulinemia, various forms of vasculitis including polyarteritis nodosa, Henoch-Schönlein purpura, and visceral abscess. The condition is characterized by the presence of blood in the urine (hematuria), protein in the urine (proteinuria), and red cell casts; oliguria, edema, pruritus, nausea, constipation, and hypertension. Investigation of serum complement levels and renal biopsy facilitates diagnosis and helps to establish the prognosis. SEE: *glomerular disease*; *glomerulonephritis*, *rapidly progressive*; *Nursing Diagnoses Appendix*.

PATIENT CARE: The primary causative condition must be treated. Serum creatinine, blood urea nitrogen, and urine creatinine clearance levels are monitored to assess renal function, and the patient is assessed for electrolyte and acid-base imbalance. Fluid balance is monitored, and changes in the amount of edema, daily weight, and fluid intake and output are documented. Vital signs are monitored every 4 hr or as necessary, and skin is inspected for

signs of breakdown. Skin care and frequent repositioning are provided. General patient care concerns apply during hospitalization.

The patient is instructed to limit activities while at home during acute periods of hematuria, azotemia, gross edema, and hypertension; but self-care is encouraged as acute symptoms subside, depending on fatigue levels and changes in blood pressure. Appropriate activities are encouraged. Instruction is provided in dietary and fluid restrictions; the importance of low-sodium, high-calorie meals with adequate (though at times restricted) protein content is stressed. Prescribed medications should be taken as scheduled and the patient made aware of desired effects, as well as adverse effects, that should be reported.

The patient should avoid individuals with communicable illnesses, practice good handwashing, and should report signs of infection, particularly respiratory and urinary tract infections, immediately. The importance of keeping follow-up appointments during and following convalescence to detect any recurrence is stressed. Pregnant women with a history of glomerulonephritis should be encouraged to have frequent medical evaluations because of the added stress placed on the kidneys by the pregnancy (increasing the risk for real failure). The patient should be encouraged to express feelings and concerns. Staff should provide honest but empathic answers to questions, explaining all procedures and treatments. The patient's response is monitored, and the patient with severe renal dysfunction is prepared for dialysis or kidney transplant.

membranoproliferative g. A condition in which kidney biopsy shows subendothelial deposits and proliferating mesangial cells in the glomerulus. Some patients have progressive renal impairment.

SYMPTOMS: Edema and hypertension are frequently noted. Laboratory findings typically show proteinuria and hematuria.

TREATMENT: Patients with hypertension are medicated to lower their blood pressure. If creatinine levels rise, steroids or other immunosuppressive agents are used.

rapidly progressive g. ABBR: RPGN. Any glomerular disease in which there is rapid loss of renal function, usually with crescent-shaped lesions in more than 50% of the glomeruli.

glomerulopathy (glō-mēr'ū-lōp'ā-thē) Any disease of the renal glomeruli. SEE: *glomerular disease*.

glomerulosclerosis (glō-mēr'ū-lō-sklē-rō'sis) Fibrosis of renal glomeruli as-

sociated with protein loss in the urine; the loss of protein may be massive.

diabetic g. A type of glomerulosclerosis seen in some cases of diabetes mellitus. Eosinophilic material is present in various parts of the glomerulus. SYN: *intercapillary glomerulosclerosis*.

focal segmental g. An irreversible form of glomerular injury often seen in patients with a history of injection drug use or acquired immunodeficiency syndrome.

intercapillary g. Diabetic g.

glomerulus (glō-mēr'ū-lūs) *pl.* **glomeruli** [L.] **1.** One of the capillary networks that are part of the renal corpuscles in the nephrons of the kidney. Each is surrounded by a Bowman's capsule, the site of renal (glomerular) filtration, which is the first step in the formation of urine. SEE: *kidney* for illus. **2.** A group of twisted capillaries or nerve fibers.

olfactory g. A neural network found in the olfactory bulb, formed by the dendrites of mitral cells intertwined with the axons of olfactory receptor cells.

glomoid (glō'moyd) Appearing similar to a glomus.

glomus (glō'mūs) [L., a ball] A small, round swelling made of tiny blood vessels and found in stromata containing many nerve fibers.

periodontal g. The sensory endings of the periodontal ligament that provide acute sensitivity.

gloss- SEE: *glosso-*.

glossa (glōs'ā) [Gr. *glossa*, tongue] The tongue.

glossal (glōs'āl) Rel. to the tongue.

glossalgia (glōs-sāl'jē-ā) [ʹ + *algos*, pain] Glossodynia.

glossectomy (glōs-ēk'tō-mē) [ʹ + *ektome*, excision] Surgical excision of the tongue.

Glossina (glōs-sī'nā) A genus consisting of the tsetse flies, which includes 23 bloodsucking species that live principally in central and southern Africa. They transmit the trypanosomes (*Trypanosoma gambiense*, *T. rhodesiense*), the causative agents of sleeping sickness in humans, and other trypanosomes that infect wild and domestic animals. SEE: *sleeping sickness*; *Trypanosoma*.

glossitis (glōs-sī'tis) [ʹ + *itis*, inflammation] An inflammation of the tongue.

acute g. Glossitis that develops in hours or days, often associated with stomatitis. The tongue is painful, red, inflamed, and swollen. It may appear smooth or be covered with papular lesions. Fever may be present.

ETIOLOGY: It may be associated with diabetes mellitus, bacterial infections, candidal infections, adverse drug reactions, smoking, and trauma to the

tongue. Surrounding structures may be swollen sufficiently to produce asphyxia. Tracheostomy may be necessary to maintain the airway.

TREATMENT: The underlying disorder must be treated. In order to maintain oral cleanliness, patients should rinse the mouth with an anesthetic oral solution, such as 2% xylocaine.

g. areata exfoliativa A condition of the tongue marked by numerous denuded patches on the dorsal surface coalescing into freeform shapes similar to the geographic areas on a map. SYN: *geographic tongue*.

g. desiccans A painful, raw, and fissured tongue.

herpetic geometric g. Herpes simplex virus type 1 infection of the tongue. This may be seen in immunocompromised patients. High-dose acyclovir is an effective treatment.

median rhomboid g. An inflammatory area, somewhat diamond-shaped, found on the dorsum of the tongue anterior to the vallate papillae.

Moeller's g. [Julius O. L. Moeller, Ger. surgeon, 1819–1887] A chronic superficial glossitis characterized by burning or pain and an increased sensitivity to hot and spicy foods. SYN: *glossodynia exfoliativa*.

g. parasitica SEE: *tongue, hairy*.

gloss-, gloss- [Gr. *glossa*, tongue] Combining forms meaning *tongue*.

glossocele (glōs'sō-sēl) [ʹ + *kele*, swelling] A swelling and protrusion of the tongue resulting from disease or malformation.

glossodynamometer (glōs'sō-dī'nā-mōm'ē-tēr) [ʹ + *dynamis*, power, + *metron*, measure] A device for measuring the strength of the tongue muscles.

glossodynia (glōs'ō-dīn'ē-ā) [ʹ + *odyne*, pain] Pain in the tongue. SYN: *glossalgia*. SEE: *burning mouth syndrome*.

g. exfoliativa Moeller's glossitis.

glossograph (glōs'ō-grāf) [ʹ + *graphin*, to write] An instrument for recording the tongue's movements during speech.

glossokinesthetic (glōs'ō-kīn'ēs-thēt'ik) [ʹ + *kinesis*, movement, + *aisthētikos*, perceptive] Pert. to movements of the tongue, esp. those in speech.

glossolalia (glōs'ō-lā'lē-ā) [ʹ + *lalia*, babble] Speaking in tongues. In a spiritual context, it is thought to represent a form of possession. In neuropsychiatry, it is typically considered a symptom of organic or functional brain disease.

glossology (glō-sōl'ō-jē) [ʹ + *logos*, word, reason] The study of the tongue and its diseases. SYN: *glottology*.

glossopathy (glōs-sōp'ā-thē) [ʹ + *pathos*, disease, suffering] Any disease of the tongue.

glossoplasty (glōs'ō-plās'tē) [ʹ + *plas-*

sein, to form] Reparative surgery of the tongue.

glossoplegia (glōs"ō-plē'jē-ă) [l" + *plege*, stroke] Paralysis of the tongue, e.g., after a stroke or an injury to the 12th cranial nerve.

glossoptosis (glōs"ōp-tō'sis) [l" + *ptosis*, a dropping] A dropping of the tongue downward from its normal position. It is a common, potentially life-threatening finding in Pierre Robin syndrome.

glossopyrosis (glōs"ō-pī-rō'sis) [l" + *pyrosis*, a burning] Burning mouth syndrome.

glossorrhaphy (glō-sor'ă-fē) [l" + *rhapshe*, seam, ridge] Suture of a wound of the tongue.

glossospasm (glōs"ō-spăzm) [l" + *spasmos*, spasm] The spasmodic contraction of the muscles of the tongue.

glossotomy (glō-sōt'ō-mē) [l" + *tome*, incision] An incision of the tongue.

glossotrichia (glōs"ō-trik'ē-ă) [l" + *thrix*, hair] SEE: *tongue, hairy*.

glossy Smooth and shining.

glottic (glōt'ik) [Gr. *glottis*, back of tongue] Of or pert. to the tongue or glottis.

glottis (glōt'is) *pl. glottises, glottides* [Gr. *glottis*, back of tongue] The sound-producing apparatus of the larynx consisting of the two vocal cords and the intervening space, the rima glottidis. A leaf-shaped lid of cartilage (the epiglottis) protects this opening. SEE: *illus.*

edema of the g. Pathological accumulation of fluid in the tissues lining the vocal structures of the larynx. It may result from improper use of the voice, excessive use of tobacco or alcohol, chemical fumes, or viral, bacterial, or fungal infections. Clinically, the patient often presents with hoarseness or, in severe cases, with respiratory distress and stridor. SEE: *epiglottitis*.

SYMPTOMS: Initially hoarseness, and later complete aphonia, characterize this condition. Other symptoms are

extreme dyspnea, at first on inspiration only, but later on expiration also; stridor; and a barking cough when the epiglottis is involved.

glottology (glō-tōl'ō-jē) [l" + *logos*, word, reason] Glossology.

glove A protective covering for the hand. In medical care the glove is made of a flexible impervious material that permits full movement of the hand and fingers. Gloves are used to protect both the operative site from contamination with organisms from the health care worker and the health care worker from contamination with pathogens from the patient. SEE: *Standard Precautions Appendix*.

 It is not advisable to wash gloves and wear them again while treating another patient.

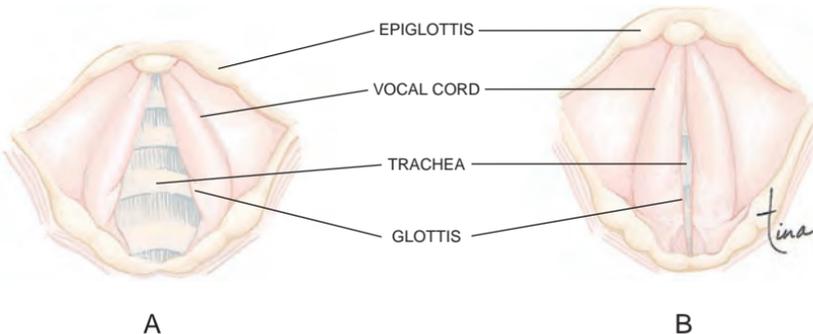
edema control g. An elastic pressure-gradient glove designed to facilitate tissue healing following hand injury.

glove box An anaerobic chamber used to support the growth of anaerobic bacteria that thrive in the absence of oxygen.

gloving Placing of gloves on the hands. During physical examination and invasive procedures, such as phlebotomy or surgery, this is done to protect both caregiver and patient from transmissible diseases.

gluc- SEE: *gluco-*.

glucagon (glō'kă-gōn) A polypeptide hormone secreted by the alpha cells of the pancreas that increases the blood glucose level by stimulating the liver to change stored glycogen to glucose. Glucagon opposes the action of insulin, and it is used as an injection in diabetes to reverse hypoglycemic reactions and insulin shock. It also increases the use of fats and excess amino acids for energy production. It is obtained from pork and beef pancreas glands. Parenteral ad-



GLOTTIS AND VOCAL CORDS

(A) during breathing, (B) during speaking

ministration of glucagon relaxes the smooth muscle of the stomach, duodenum, small bowel, and colon.

glucagonoma (glū'kā-gōn-ō'mā) A malignant tumor of the alpha cells of the pancreatic islets of Langerhans. The principal signs and symptoms include weight loss, diabetes mellitus, skin rash, glossitis, elevated serum glucagon levels, and anemia. The treatment is surgical excision or octreotide.

gluco-, gluc-, glucoso- Combining forms denoting relationship to sweetness. SEE: *glyco-*.

glucocerebroside (gloo'kō-sēr'ē-brō-sīd") A cerebroside with the carbohydrate glucose contained in the molecule; accumulates in tissues in individuals with Gaucher's disease.

glucocorticoid (gloo'kō-kort'ī-koyd) [Gr. *gleukos*, sweet (new wine), + *L. cortex*, + Gr. *eidōs*, form, shape] A general classification of adrenal cortical hormones that are primarily active in protecting against stress and in affecting protein and carbohydrate metabolism. The most important glucocorticoid is cortisol (hydrocortisone). SEE: *mineralocorticoid*.

glucofuranose (gloo'kō-fū'rā-nōs) The form of glucose containing the furanose ring.

glucogenesis (gloo'kō-jěn'ē-sīs) The formation of glucose.

glucokinase (gloo'kō-kī'nās) An enzyme in liver cells that, in the presence of ATP, catalyzes the conversion of glucose to glucose-6-phosphate. This is the first step in glycolysis, the breakdown of glucose to two molecules of pyruvic acid.

glucokinetic (gloo'kō-kī-nēt'īk) Acting to maintain the blood glucose level.

Glucometer (gloo-kōm'ī-tēr) A battery-operated device used to measure blood glucose from a few drops of blood obtained from the finger or ear lobe.

gluconeogenesis (gloo'kō-nē'ō-jěn'ē-sīs) [" + *neos*, new, + *genesis*, generation, birth] The formation of glucose from excess amino acids, fats, or other noncarbohydrate sources.

glucopenia, hypoglycemia (gloo'kō-pē'nē-ā) [" + Gr. *penia*, lack] Hypoglycemia.

glucopenic brain injury Neuroglycopenia.

Glucophage (gloo'kō-fāj") [" + "] SEE: *metformin*.

glucoprotein (gloo'kō-prō'tē-īn) Glycoprotein.

glucopyranose (gloo'kō-pī'rā-nōs) The form of glucose containing the six-carbon pyran ring.

glucosamine (gloo'kō-sām'ēn) A health food supplement used to treat pain caused by osteoarthritis. Studies show that it has limited, if any, effectiveness (e.g., in treating osteoarthritic pain in the knees).

glucose (gloo'kōs) [Gr. *gleukos*, sweet

(new wine)] A simple sugar or monosaccharide, C₆H₁₂O₆, that is the end product of carbohydrate digestion. Its right-handed (dextrorotatory) isomer (D-glucose) serves as a primary energy source for living organisms. Glucose is found naturally in fruits and other plants. It is also formed during digestion from the hydrolysis of disaccharides and polysaccharides. After absorption by the small intestine, glucose is carried by the portal vein, where it may be stored as the starch called glycogen. Within cells, glucose is used to synthesize the pentose sugars, ribose and deoxyribose, for RNA and DNA, respectively. SYN: *dextrose*. SEE: *carbohydrate*.

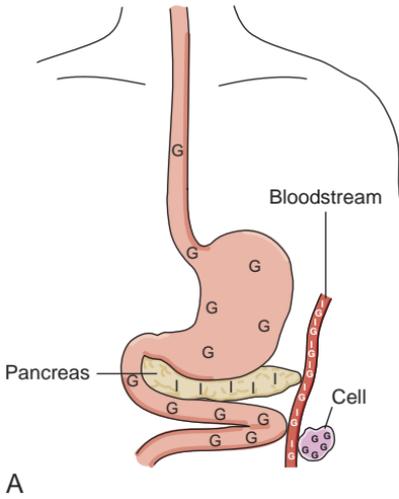
In healthy people, normal fasting blood glucose levels are maintained at about 70 to 100 mg/dl. Lower blood glucose levels (hypoglycemia) may cause confusion, anxiety, or other neurological complications. Higher blood glucose levels (hyperglycemia) may result in the "sugar-coating" (glycosylation) of body tissues. Hyperglycemia is characteristic of diabetes mellitus (which is diagnosed when a fasting patient has a blood glucose level exceeding 126 mg/dl); prediabetes fasting blood sugar (FBS) levels are 100 to 125 mg/dl; hypoglycemia may result from starvation, the treatment of diabetes mellitus, or rarely, insulin-secreting tumors of the pancreas.

GLUCOSE METABOLISM: Within most cells, glucose is the primary energy source and is oxidized in cell respiration to carbon dioxide and water to produce energy in the form of adenosine triphosphate (ATP). There are three stages of cellular respiration:

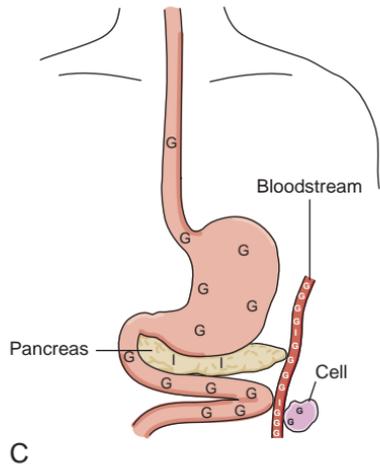
1. glycolysis, the initial breakdown of glucose into simpler substances;
2. the Krebs (or "citric acid") cycle; and
3. the electron transport chain.

Stage 1 takes place in the cytoplasm, whereas stages 2 and 3 take place in the mitochondria. Insulin facilitates the entry of glucose into cells, in essence fueling cellular respiration. Excess glucose may be converted to glycogen and stored in the liver and muscles; insulin and cortisol facilitate this process. The hormone glycogen (and epinephrine in stress situations) stimulates the liver to change glycogen back to glucose when the blood glucose level decreases. Any further excess glucose is converted to fat and stored in adipose tissue.

When the glucose level is below normal, fat stores are metabolized. Incomplete metabolism of fats leads to the formation of ketone bodies, a finding in poorly controlled diabetes. Blood glucose acts as a protein sparer. Neurons are esp. dependent on glucose as their source of energy; the brain oxidizes glucose directly. SEE: *illius*.



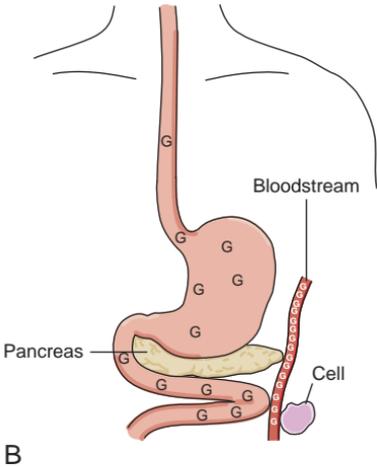
A



C

MAINTENANCE OF BLOOD GLUCOSE LEVELS

- (A) Normal physiology: foods (especially carbohydrates) are broken down into glucose, which is absorbed into the bloodstream for transport to the cells. Insulin, produced by beta cells of the islets of Langerhans in the pancreas, is needed to “open the door” to the cells, allowing the glucose to enter. (B) In type 1 diabetes mellitus, the pancreas does not produce insulin. Because glucose is unable to enter the cells, it builds up in the bloodstream, causing hyperglycemia. (C) In type 2 diabetes mellitus, insulin production is reduced and/or cells are resistant to insulin. Less glucose enters the cell, and hyperglycemia results. Key: G = Glucose; I = Insulin.



B

PATIENT CARE: Blood glucose monitoring is used by patients with diabetes mellitus to provide immediate glucose readings which then guide decisions on dietary intake, medications, and exercise. When a patient is feeling ill, checking blood glucose allows him or her to determine blood glucose level. Self-monitoring data (along with hemoglobin A1C values) gives the patient and the health care providers information on the effectiveness of treatment. While all blood glucose meters measure the level of glucose in whole blood, different meters offer different features. Discussing the various features with a diabetes educator can aid the patient in deciding which best suits his/her needs, personal preferences, abilities, and financial concerns. The patient should answer the

following questions to help guide his/her choice. Have you ever used a blood glucose meter? If so, what features did you find helpful, and what features were not important to you? Is cost a concern? Do you have insurance to cover the meter itself, lancets, and strips? Do you have vision problems? Do you have difficulty in using your hands to do small tasks? Would you like to use sites other than your fingertips to obtain blood? Are you interested in electronically tracking your blood glucose results, insulin dosages, and food intake?

Health insurance plans commonly cover the cost of blood glucose monitoring, but the patient should ask his/her carrier about specific coverage for the meter and needed supplies. Some plans cover only specific meters and accessories. Medicare (since 1998) pays for meters and supplies for all recipients regardless of their treatment regimen. The cost of test strips, lancets, and cartridges used to monitor blood glucose

may be prohibitive for some individuals. Before choosing a meter, the patient should know how many times each day levels will need to be checked, in order to help calculate expenses. A written prescription from a health care provider indicates how many times each day monitoring is required, and may help the patient to get needed insurance coverage.

Ease of use is an important concern. Larger meters may be easier to handle if manual dexterity is a problem, and meters with large digital readouts are helpful to patients with visual impairments. Some meters feature an electronic voice (available in several languages) to guide the user through the process and announce results. Most meters have a memory that automatically records reading. All blood glucose meters require calibration to maintain accuracy (monthly or according to manufacturer recommendations). Patients using a blood glucose monitor who suspect technical malfunctions should have a clinician review the user's technique, then draw blood for a lab assessment and comparison of results.

capillary blood g. ABBR: CBG. The level of circulating blood glucose as measured by glucometer analysis of a fingerstick sample. Regular measurements of CBG allow diabetic patients to participate actively in their own health management. SYN: *finger stick blood glucose*.

finger stick blood g. ABBR: FSBG. Capillary blood g.

liquid g. A thick, syrupy, sweet-tasting liquid obtained from the incomplete hydrolysis of starch, containing D-glucose (dextrose), dextrans, and other carbohydrates. It is used for nutritive purposes and in various pharmaceutical and food preparations.

glucose, risk for unstable blood Risk for variation of blood glucose/sugar levels from the normal range. SEE: *Nursing Diagnoses Appendix*.

glucose-6-phosphate dehydrogenase ABBR: G6PD. An enzyme that dehydrogenates glucose-6-phosphate to form 6-phospho-D-glucono- δ -lactone. This is the initial step in the pentose phosphate pathway of glucose catabolism.

glucose-6-phosphate dehydrogenase deficiency An inherited disorder transmitted as an X-linked (sex-linked) recessive trait. It is present in the U.S. in about 13% of black males and 2% of black females. The enzyme deficiency also occurs in Arabic, Mediterranean, and Asian ethnic groups. The enzyme is essential to maintaining the integrity of red blood cells; thus a deficiency of it causes nonimmune hemolytic anemia. There are many variants of the enzyme and great variation in severity of the disease. Some individuals do not have

clinical symptoms until they are exposed to certain drugs (e.g., antimalarials, antipyretics, sulfonamides) or to fava beans, or when they contract an infectious disease. In others the condition is present at birth. When present at birth, anemia, hepatomegaly, hypoglycemia, and interference with growth are present. In those who have the deficiency but are not affected until exposed to certain drugs or infections, hemolytic anemia and jaundice occur.

DIAGNOSIS: Laboratory tests for evidence of the enzyme deficiency are available.

TREATMENT: The only treatment is avoidance of drugs known to cause hemolysis and avoidance of fava beans if the individual is known to be sensitive to them.

glucose polymer A glucose saccharide mixture of 3% glucose, 7% maltose, 5% maltotriose, and 85% polysaccharides of 4 to 15 glucose units, used in oral glucose tolerance tests. SEE: *oral glucose tolerance test*.

glucose ratio The concentration of the glucose level in the cerebrospinal fluid divided by its concentration in the blood. A ratio of less than 0:3 suggests acute bacterial meningitis rather than viral or aseptic meningitis. SYN: *cerebrospinal fluid-to-blood glucose ratio*.

glucose toxicity The decrease in insulin secretion and the increase in insulin resistance that result from excessively high blood glucose levels.

glucosidase (gloo-kō'sī-dās) An enzyme that catalyzes the hydrolysis of a glucoside.

glucoside (gloo'kō-sīd) A glycoside that on hydrolysis yields a sugar, glucose, and one or two additional products. Glucosides are numerous and widely distributed in plants. Many glucosides have medicinal properties (e.g., digitalin, present in digitalis, the purple foxglove used for centuries to treat dysrhythmia and heart failure). SEE: *glycoside*.

glucoso- Combining form denoting relationship to sweetness. SEE: *glyco-*.

glucosuria (gloo'kō-sū'rē-ā) [*ur* + *ouros*, urine] Glycosuria.

Glucotrol XL (gloo'cō-trōl") [*ur* + (*con*)*trol*] SEE: *glipizide*.

glucuronidase deficiency disease (gloo'kyā-rōn'ī-dās" dī-fish'in-sē dī-zēz") Mucopolysaccharidosis VII.

glucuronic acid (gloo-kū'rōn-īd) The combination of glucuronic acid with phenol, alcohol, or any acid containing the carboxyl, -COOH, group.

glucuronyl transferase (gloo-kūr'ā-nīl) An enzyme that converts unconjugated or indirect bilirubin to conjugated or direct bilirubin.

glue-sniffing The inhalation of vapor from types of glue or solvents that con-

tain toxic chemicals such as benzene, toluene, or xylene. This may produce an altered state of consciousness and occasionally death.

Gluge's corpuscles (gloo'gēz) [Gottlieb Gluge, Ger. pathologist, 1812–1898] Granular cells containing fat droplets, usually found in degenerating nervous tissue.

GLUT (gloo't) Abbreviation for "glucose transporter," a family of six closely related cell membrane proteins that carry glucose from the blood into cells. Slightly different glucose transporters are found in different organs (e.g., in brain, muscle) and are designated GLUT 1, GLUT 2, up to GLUT 6.

glutamate (gloo'tā-māt) A salt of glutamic acid that functions as the brain's main excitatory neurotransmitter.

glutamic acid decarboxylase (glū-tām'ik as'īd dē'kār-bōk'sī-lās) ABBR: GAD. An enzyme (molecular mass 65 kD) found in the brain and the islet cells of the pancreas. It participates in the synthesis of gamma-aminobutyric acid (GABA)—the main inhibitory neurotransmitter. Antibodies to GAD are found in the blood of patients with diabetes mellitus, type 1, stiff-person syndrome, and several other disorders.

glutamic acid decarboxylase antibody ABBR: GADA. An antibody to glutamic acid decarboxylase. It is a serum marker of type 1 diabetes mellitus, and is found in the blood of patients with stiff-person syndrome.

glutaminase (gloo-tām'ī-nās) An enzyme that catalyzes the breakdown of glutamine into glutamic acid and ammonia.

glutamine (gloo'tā-mīn, -mēn") ABBR: Q, or, Gln. A nonessential amino acid thought to play a major role in maintaining the integrity of the gastrointestinal mucosa, esp. during the hypermetabolic phase of the stress response. By enhancing cellular proliferation, it may reduce the incidence of bacterial translocation from the gut and improve absorption from the mucosa.

glutaral (gloo'tā-rāl) A solution of glutaraldehyde in sterile water.

glutaraldehyde (gloo'tā-rāl'dē-hīd) **1.** A sterilizing agent effective against all microorganisms including viruses and spores. **2.** A fixative, usually followed by osmium, when preparing tissue specimens for transmission electron microscopy.

glutathione (gloo-tā-thī'ōn) [l' + Gr. *theon*, sulfur] ABBR: GSH. $C_{10}H_{17}N_3O_6S$; a tripeptide of glutamic acid, cysteine, and glycine. Found in small quantities in active animal tissues, it takes up and gives off hydrogen and is a powerful antioxidant important in cellular respiration.

PATIENT CARE: Overdose with acet-

aminophen depletes glutathione resources in the liver, resulting in hepatic failure. This toxic effect can be reversed by giving acetylcysteine (a biochemical precursor of cysteine and glutathione) to the intoxicated patient, if treatment can be initiated within 12 hr of dosing.

reduced g. The redox form of glutathione present in red blood cells.

glutathione peroxidase An antioxidant enzyme found in many mammalian cells, including red blood cells. Deficiencies of the enzyme have been linked to an increased risk of acute coronary syndrome.

gluteal (gloo'tē-āl) [Gr. *gloutos*, buttock] Pert. to the buttocks.

gluten (gloo'tēn) [L., glue] A group of proteins, found in barley, oats, rye, and wheat that give flour its stickiness. Immunologic intolerance to gluten causes celiac sprue.

gluten-free Containing little or no barley, oat, rye, or wheat proteins. The phrase is used to certify that particular foods or nutritional products are safe to eat for people with celiac disease.

glutenin (gloo'tēn-in) A protein, along with gliadin, that makes up gluten. One of its properties is giving elasticity to bread doughs.

gluten-sensitive enteropathy Celiac sprue.

glutinous (gloo'tīn-ūs) [L. *glutinosus*, glue] Adhesive; sticky.

glutinitis (gloo-tī'tīs) [Gr. *gloutos*, buttock, + *itis*, inflammation] An inflammation of the muscles of the buttocks.

gly Glycine.

glyburide (glī'bū-rīd) An oral drug, from the class of medications called sulfonylureas, used to lower blood glucose in type 2 diabetes mellitus. Glyburide should be used as part of a coordinated care plan that includes regular exercise and a diabetic diet. Its side effects include weight gain and excessively low blood glucose.

glyc- SEE: *glyco-*.

glycan (glī'kān) Polysaccharide.

glycase (glī'kās) [Gr. *glykys*, sweet] The enzyme that converts maltose into dextrose. SEE: *enzyme*.

glycation (glī-kā'shūn) The binding of a sugar molecule to an amino acid. In hyperglycemia and poorly controlled diabetes mellitus, sugar molecules become attached to cell surface proteins throughout the body; this sugar coating leads to microvascular damage in nerves, nephrons, and the retina.

advanced g. end products ABBR: AGE. Proteins that have been nonenzymatically modified by the addition of sugar residues to lysine. These altered proteins increase with aging, and in patients with hyperglycemia and diabetes mellitus. **glycated, adj.**

glycemia (glī-sē'mē-ā) [l' + *haima*,

blood] The level of sugar (glucose) in the blood. **glycemic, adj.**

DL-glyceraldehyde (glis'ēr-äl/dě-hīd) An aldose, CHOCH(OH)CH₂OH, produced by the metabolism of fructose in the liver.

glyceride (glis'ēr-id) [Gr. *glykys*, sweet] An ester of glycerin compounded with an acid.

glycerin (glis'ēr-in) C₃H₈O₃; a trihydric alcohol, trihydroxy-propane, present in chemical combination in all fats. It is a syrupy colorless liquid, soluble in all proportions in water and alcohol. It is made commercially by the hydrolysis of fats, esp. during the manufacture of soap, and is used extensively as a solvent, a preservative, and an emollient in various skin diseases. SYN: *glycerol*.

glycerol (glis'ēr-öl) [Gr. *glykys*, sweet] Glycerin.

glycerol monothioglycolate, glyceryl thioglycolate (món'ō-thī'ō-gli'kü-lät') [" + *glycolate*, a salt or ester of glycolic acid] ABBR: GMTG. A chemical used in permanent wave solutions. It is an occasional cause of allergic contact dermatitis in hairdressers and their clients.

glycerophosphocholine ABBR: GPC. A metabolite of lecithin. It is a phospholipid precursor.

glyceryl (glis'ēr-il) The trivalent radical C₃H₅ of glycerol.

glycine (gli'sēn, -sīn) [Gr. *glykys*, sweet] ABBR: gly. NH₂CH₂COOH; a nonessential amino acid. SYN: *aminoacetic acid*.

Glycine max (gli'sēn māk) [NL.] The scientific name for soybean.

glyco-, glyco- (gli-kō) [Gr. *glykys*, sweet] Combining forms indicating a relationship to sugars or the presence of glycerol or a similar substance. SEE: also *gluco-*.

glycocalyx (gli'kō-kāl'iks) 1. A thin layer of glycoprotein and oligosaccharides on the outer surface of cell membranes that contributes to cell adhesion and forms antigens involved in the recognition of "self." 2. An adhesive substance secreted by microorganisms such as *Staphylococcus epidermidis* that helps them to adhere to prosthetic material in the body and prevents their phagocytosis by white blood cells.

glycocholate (gli'kō-kōl'ät) A salt of glycocholic acid.

glycolastic (gli'kō-kläs'tik) [" + *klan*, to break] Pert. to the hydrolysis and digestion of sugars.

glycogen (gli'kō-jēn) [" + *gennan*, to produce] A polysaccharide, (C₆H₁₀O₅)_n, commonly called animal starch, which is the storage form for glucose in the liver and muscles. Formation of glycogen from carbohydrate sources is called glycogenesis; from noncarbohydrate sources, glycogeneogenesis. The conver-

sion of glycogen to glucose is called glycogenolysis. SEE: *glycogen storage disease; glycogeneogenesis*.

Glycogen is the form in which excess carbohydrate is stored in the liver and muscles; the hormones insulin and cortisol facilitate this process. When the blood glucose level decreases, the liver converts glycogen to glucose; this process is facilitated by the hormone glucagon or, in stressful situations, by epinephrine. In cells, glucose is oxidized to carbon dioxide and water with the release of energy in the forms of ATP and heat. In muscle cells under anaerobic conditions, glucose is metabolized only to lactic acid, and oxygen is needed to convert lactic acid back to glucose, primarily in the liver.

glycogenase (gli-kō'jēn-ās) A liver enzyme that converts glycogen to glucose.

glycogenesis (gli'kō-jēn'ēs-sīs) [" + *genesis*, generation, birth] The formation of glycogen from glucose. SEE: *glycogeneogenesis. glycogenetic, adj.*

glycogenic (gli'kō-jēn'ik) Rel. to glycogen.

glycogenolysis (gli'kō-jēn-öl'ī-sīs) [" + *gennan*, to produce, + *lysis*, dissolution] Conversion of glycogen into glucose in the liver and muscles. **glycogenolytic, adj.**

glycogenesis (gli'kō-jēn-ō'sīs) [" + " + *osis*, condition] A disorder associated with an abnormal accumulation of normal or abnormal forms of glycogen in tissue.

glycogen storage disease Any one of several heritable diseases characterized by the abnormal storage and accumulation of glycogen in the tissues, esp. in the liver. These diseases are grouped into various types according to the enzyme deficiency responsible.

phosphorylase b kinase deficiency

g.s.d. A form of glycogen storage disease caused by an X-linked deficiency of the kinase that activates phosphorylase. Previously called type VIa, VIII, or IX.

g.s.d. type Ia A form of glycogen storage disease with onset usually in the first year of life. This autosomal recessive genetic disorder is due to a glucose-6-phosphatase deficiency. SYN: *von Gierke disease*.

g.s.d. type Ib A form of glycogen storage disease similar to type Ia but occurring at only one tenth its frequency. The disorder is due to a deficiency of glucose-6-phosphatase microsomal translocase.

g.s.d. type II A form of glycogen storage disease caused by a deficiency of lysosomal α -glucosidase.

g.s.d. type III A form of glycogen storage disease caused by a deficiency of two debranching enzymes in liver and muscle tissues.

g.s.d. type IV A congenital glycogen

storage disease marked by liver failure, muscular weakness, muscular contractures, and death in the first few years of life. SYN: *Andersen's disease*; *branching enzyme deficiency*.

g.s.d. type V A form of glycogen storage disease caused by a muscle phosphorylase deficiency. SYN: *McArdle's disease*.

g.s.d. type VI A form of glycogen storage disease caused by a deficiency of liver phosphorylase and characterized by growth retardation, hepatomegaly, hypoglycemia, and acidosis.

g.s.d. type VII A form of glycogen storage disease caused by a deficiency of muscle phosphofructokinase and characterized by muscular weakness and cramping following exercise. SEE: *phosphofructokinase*; *Taru'i disease*.

glycosuria (glī'kō-jū'sē-ā) [Gr. *glykys*, sweet, + *geusis*, taste] A sweet taste.

glycohemoglobin (glī'kō-hēm'ā-glō-bīn) Glycosylated hemoglobin.

glycol (glī'kōl, -kōl) [+ *alcohol*] Any one of the dihydric alcohols related to ethylene glycol, C₂H₆O₂.

PATIENT CARE: The glycols, including ethylene and propylene glycol, are found in many antifreezes, solvents, detergents, and lacquers, and their ingestion is a common cause of accidental poisoning in the U.S. The intoxicated patient should be treated by decontaminating the stomach in order to decrease uptake of the chemical. Sodium bicarbonate is also given if metabolic acidosis develops. Seizures, brain damage, ophthalmic injury, and renal failure are common complications of exposure. Support of the patient often includes parenteral administration of thiamine and other vitamins, as well as of alcohol dehydrogenase inhibitors.

glycolipid(e) (glī'kō-līp'id) [+ *lipos*, fat] A compound of fatty acids with a carbohydrate, containing nitrogen but not phosphoric acid. It is found in the myelin sheath of nerves.

glycolysis (glī-kōl'ī-sīs) [+ *lysis*, dissolution] The first stage of cell respiration, the series of reactions that convert a molecule of glucose to two molecules of pyruvic acid with the formation of a small amount of ATP. **glycolytic**, *adj.*

glycometabolism (glī'kō-mē-tāb'ō-lizm) Use of glucose by the body. SEE: *metabolism*.

glyconeogenesis (glī'kō-nē'ō-jēn'ē-sīs) [+ *neos*, new, + *genesis*, generation, birth] The formation of glycogen from amino acids. It occurs in the liver when there are excess amino acids and decreased carbohydrate intake.

glyconucleoprotein (glī'kō-nū'klē-ō-prō'tē-in) [+ *L. nucleus*, kernel, + *Gr. protos*, first] A nucleoprotein so

named to emphasize the presence of glucose units in the substance.

glycopeptide (glī-kō'pēp'tīd') [+ +] A chemical compound in which carbohydrate molecules are linked covalently to a short amino acid chain.

glycopeptide antibiotic Any antibiotic composed of a short amino acid chain linked to a carbohydrate. Vancomycin and teicoplanin are glycopeptide antibiotics.

glycopexic (glī'kō-pēks'ik) [+ *pexis*, fixation] Pert. to the fixing or storing of glucose.

glycopexis (glī'kō-pēk'sīs) The storage of glycogen in the liver.

glycophorin (glī'kō-fō'rīn) A glycoprotein that spans the bilipid layer of the red blood cell membrane. The extracellular end attaches to oligosaccharide blood group antigens. This protein provides the conduit through which anions pass in and out of the red blood cell.

glycopolyuria (glī'kō-pōl'ē-ū-rē-ā) [+ *polys*, much, + *ouron*, urine] An obsolete term for glycosuria.

glycoprival, glycoprivous (glī'kō-prī'vāl, -vūs) [+ *L. privus*, deprived of] Lacking in or without carbohydrates.

glycoprotein (glī'kō-prō'tē-in) [+ *protos*, first] A compound consisting of a carbohydrate and protein. SYN: *glucoprotein*.

P-g. A cell membrane pump that influences cellular uptake and release of chemicals. It affects the relative resistance or susceptibility of cells to drug therapy.

glycoptyalism (glī'kō-tī'āl-izm) [+ *ptyalon*, saliva, + *-ismos*, condition] The excretion of glucose in the saliva. SYN: *melitoptyalism*.

glycorrachia (glī-kō-rā'kē-ā) [+ *rhachis*, spine] Glucose in the cerebrospinal fluid.

glycosaminoglycan (glī'kōs-āme-nō-glī'kān) A complex polysaccharide found in cartilage, intercellular material, and the basement membranes of epithelial tissues; also called mucopolysaccharide.

glycoscretory (glī'kō-sē-krē'tō-rē) [+ *L. secretus*, separate] Pert. to or determining the formation of glycogen.

glycosialia (glī'kō-sī-āl'ē-ā) [+ *sialon*, saliva] Glucose in the saliva.

glycosialorrhoea (glī'kō-sī-āl-ō-rē-ā) [+ + *rhoia*, flow] Excessive secretion of saliva containing glucose.

glycoside (glī'kō-sīd) A substance derived from plants that, on hydrolysis, yields a sugar and one or more additional products. Depending on the sugar formed, glycosides are designated glucosides or galactosides. Digitalis is a commonly used cardiac glycoside. SEE: *glucoside*.

glycosphingolipids (glī'kō-sfīng'ō-līp'ids) A group of carbohydrate-con-

taining fatty acid derivatives of ceramide. Three classes of these lipids are cerebrosides, gangliosides, and ceramide oligosaccharides. When the enzymes essential to the metabolism of these compounds are absent, the glycosphingolipids accumulate, particularly in the nervous system. Death is the usual outcome.

glycolstatic (glī'kō-stāt'ik) [Gr. *glykys*, sweet, + *statikos*, standing] Acting to maintain the level of glucose in the body.

glycosuria (glī'kō-sū'rē-ä) [" + *ouron*, urine] An abnormal amount of glucose in the urine. Traces of sugar, particularly glucose, may occur in normal urine but are not detected by ordinary qualitative methods. The presence of a reducing sugar found during routine urinalysis is suggestive but not diagnostic of diabetes mellitus. It is found when the blood glucose level exceeds the renal threshold (about 170 mg/dl of blood). The fasting level of blood glucose is normally between 70 and 99 mg/dl of blood. SYN: *glucosuria*. SEE: *diabetes mellitus*.

alimentary g. Glycosuria following ingestion of moderate to large amounts of starches or sugars, which are normally metabolized without appearing in the urine.

diabetic g. Glycosuria resulting from type 1 or type 2 diabetes mellitus.

emotional g. Glycosuria resulting from stress.

phloridzin g. Glycosuria resulting from the injection of phloridzin, which reduces the renal threshold for glucose.

pituitary g. Glycosuria caused by dysfunction of the anterior pituitary.

renal g. Glycosuria occurring when glucose is persistent and not accompanied by hyperglycemia and when the renal threshold for glucose is decreased.

glycosylation (glī'kōs-i-lä'shün) The chemical linkage of sugar molecules to proteins. In diabetes mellitus and some other diseases, excessive levels of glucose in the blood may over time sugarcoat tissues and cells, causing them to function improperly. Glycosylation may injure cytokines, cell receptors, the extracellular matrix, retinas, kidneys, nerves, and arteries, among other tissues.

glycosylphosphatidylinositol (glī'kō-sil-fōs'fä-ti-dil-in-ös'i-töl') ABBR: GPI. A lipid in the plasma membrane of cells that anchors proteins on the cell's surface. Some of the proteins held on the cell surface protect cells against attack by serum complement. Mutations that decrease or eliminate GPI are responsible for the destruction of blood cells by the complement system, which characterizes the disease called paroxysmal nocturnal hemoglobinuria.

glycuronuria (glī-kū'rō-nū'rē-ä) Glucuronic acid in the urine.

glycyltryptophan (glīs'īl-trīp'tō-fän) A dipeptide of glycine and tryptophan.

glycyrrhiza (glīs-ī-rī'zä) [" + *rhiza*, root] The dried root of *Glycyrrhiza glabra*, known commercially as Spanish licorice, used as an ingredient of glycyrrhiza fluid extract and glycyrrhiza syrup, both of which are used as flavoring agents in compounding medicine. This substance has a weak aldosterone-like effect and may therefore increase blood pressure. SEE: *licorice*.

glycyrrhiza glabra (glīs'ī-rī'zä glä'brä) [NL, lit. "hairless sweetroot"] Licorice.

glyoxalase (glē-ök'sä-läs) An enzyme that catalyzes the conversion of methylglyoxal to lactic acid by the addition of water.

glyoxylic acid (glī'ök-sil'ik) C₂H₂O₃; an acid produced by the action of glycine oxidase on glycine or sarcosine.

glyphosate (glī-fōs'ät) [gly(cine) + phos(ph)ate] A water-soluble, broad-spectrum herbicide commonly used in American agriculture. It is the active ingredient of several brand-name weed killers.

CAS Number: 1071-83-6. It is a suspected human health hazard.

GNA *geriatric nursing assistant*.

gnashing (näsh'ing) Grinding, as of the teeth. SEE: *bruxism*.

gnat (nä't) Any of a number of small insects belonging to the order Diptera, suborder Orthorrhapha, including black flies, midges, and sandflies. The term applies generally to insects smaller than mosquitoes.

buffalo g. A small dipterous insect belonging to the genus *Simulium*.

gnath- SEE: *gnatho-*.

gnathic (näth'ik) [Gr. *gnathos*, jaw] Pert. to an alveolar process or to the jaw.

gnathion (näth'ē-ön) The lowest point of the middle line of the lower jaw; a craniometric point.

gnatho-, gnath- (näth'ō) [Gr. *gnathos*, jaw] Combining forms meaning *jaw* or *cheek*.

gnathocephalus (näth'ō-sēf'ä-lūs) [" + *kephale*, head] A malformed fetus in which the head consists principally of the jaws.

gnathodynamometer (näth'ō-dī'nä-mōm'ē-tēr) [" + *dynamis*, power, + *metron*, measure] A device for measuring biting force. SYN: *occlusometer*.

gnathodynia (näth'ō-dīn'ē-ä) [" + *odyne*, pain] Gnathalgia.

gnathoplasty (näth'ō-pläs'tē) [" + *plassein*, to form] Reparative surgery of the jaws or cheek.

gnathoschisis (näth-ös'kī-sīs) [" + *schizein*, to split] A congenital jaw cleft.

Gnathostoma (näth-ös'tō-mä) [" + *stoma*, mouth] A genus of nematodes

(worms) that infest the intestines of cats, dogs, and other animals. They are endemic to Asia and occasionally are acquired by humans.

gnathostomiasis (năth'ō-stō-mī'ă-sīs) A form of visceral (larva migrans) infection of human tissues caused by the nematode parasite of dogs and cats, *Gnathostoma spinigerum*. Acquisition is by ingestion of undercooked fish and poultry containing the larvae. The parasite migrates through various body tissues and causes a transient inflammatory response and possibly abscess formation. If the brain is invaded, eosinophilic meningoencephalitis may develop and can be fatal. Travelers to Asia should avoid eating raw or undercooked fish or poultry.

TREATMENT: Therapy consists of surgical removal of lesions and administration of albendazole.

gnosia (nō'sē-ă) [Gr. *gnosis*, knowledge] The perceptive faculty of recognizing persons, things, and forms.

gnotobiotics (nō'tō-bi-ōt'iks) [Gr. *gnotos*, known, + *bios*, life] The study of animals that have been raised in germ-controlled or germ-free surroundings.

Gn-RH *gonadotropin-releasing hormone*. SEE: *hormone*.

goal The desired outcome of actions to alter status or behavior. SEE: *nursing goal*.

Godfrey's test (gōd'frēz) A test to identify a tear of the posterior cruciate ligament. With the patient lying supine and the hips flexed to 90 degrees, the examiner lifts both of the patient's lower legs and holds them parallel to the table. The relative position of the lower legs is then observed. Inferior displacement (a downward sagging) of the involved knee can indicate a tear of the posterior cruciate ligament.

goiter (goy'tēr) [L. *guttur*, throat] Thyroid gland enlargement. An enlarged thyroid gland may be caused by thyroiditis, benign thyroid nodules, malignancy, iodine deficiency, or any condition that causes hyperfunction or hypofunction of the gland. SEE: *illus.*



MASSIVE GOITER

aberrant g. A supernumerary goiter.

acute g. A goiter that grows rapidly.
adenomatous g. A goiter caused by the growth of an encapsulated adenoma.

colloid g. A goiter in which there is a great increase of the follicular contents.

congenital g. A goiter present at birth.

cystic g. A goiter in which a cyst or cysts are formed, possibly resulting from the degeneration of tissue or liquefaction within an adenoma.

diffuse g. A goiter in which the thyroid tissue is diffuse, in contrast to its nodular form as in adenomatous goiter.

diving g. A movable goiter, located either below or above the sternal notch.

endemic g. Goiter development in certain geographic localities, esp. where the iodine content in food and water is deficient. Goiters are more prevalent in fresh water and lake areas and less so on the seacoast, owing to the lack of iodine in fresh water. The treatment consists of iodine taken orally or in iodized salt.

fibrous g. A goiter with a hyperplastic capsule.

intra-thoracic g. A goiter in which a portion of the thyroid tissue lies within the thoracic cavity.

lingual g. The abnormal finding of thyroid glandular tissue within the tongue.

nodular g. A goiter that contains nodules.

parenchymatous g. A usually diffuse goiter characterized by multiplication of cells lining the follicles or alveoli. Colloid is usually reduced and the follicular cavities assume various sizes and are often obliterated by the infoldings of their walls. Fibrous tissue may increase markedly. The iodine content of the gland is low.

perivascular g. A goiter surrounding a large blood vessel.

retrovascular g. A goiter that develops behind a large blood vessel.

simple g. A goiter unaccompanied by constitutional symptoms.

substernal g. An enlargement of the lower part of the thyroid isthmus.

suffocative g. A goiter that causes shortness of breath owing to pressure.

toxic g. An exophthalmic goiter or a goiter in which there is an excessive production of the thyroid hormone.

vascular g. A goiter due to distention of the blood vessels of the thyroid gland.

goitrogen (goy'trō-jën) [L. *guttur*, throat, + *gennan*, to produce] A substance that produces massive enlargement of the thyroid by inhibiting iodide metabolism and thyroid hormone synthesis. Goitrogens are found naturally in cabbage, cassava, rutabagas, soy, and raw turnips.

gold [from L. *aurum*, gold] SYMB: Au. A yellow metallic element; atomic weight 196.967; atomic number 79; specific gravity 19.32. Its salts have been used to treat early rheumatoid arthritis not adequately controlled by other anti-inflammatory agents or conservative therapy. Injection of radioactive gold, ¹⁹⁸Au, is used to treat certain types of cancer and to help outline certain organs, as in liver scanning. SEE: *scanning*.

g. alloy An alloy of gold with copper, silver, platinum, or other metals added for strength or hardness. Pure gold is rated 24 carats. A gold alloy that contains other metals is less than 24 carats. Thus, 18 parts of gold mixed with 6 parts of another metal would be rated as 18-carat gold.

Goldblatt kidney (göld'blät) [Harry Goldblatt, U.S. physician, 1891–1977] Kidney injury and secondary hypertension due to inadequate kidney perfusion. This condition may occur as a result of renal artery stenosis.

Goldenhar sequence A rare congenital syndrome characterized by hemifacial hypoplasia and epibulbar dermoid tumors of the eye. Characteristic findings include unilateral underdevelopment of the jaw, with flattening of the maxilla and underdevelopment of the ear on the same side. Other variations of the syndrome are sometimes found. SYN: *Goldenhar syndrome*; *oculoauricular vertebral dysplasia*.

Goldenhar syndrome Hemifacial microsomia.

golden hour The first 60 min during which a critical trauma patient must receive definitive care and surgical intervention, as necessary, to counteract the long-term, often irreversible, damage to vital organs from decreased perfusion.



The concept of a “golden hour” is a rough approximation. It has not been determined whether critically injured patients on average do best when their care is provided in 60 min versus, say, 30 min or 75 min.

goldenseal (göld'ën-sēl) An herbal remedy used as an eyewash and as a treatment for irritated mucous membranes. Some illicit-drug users believe the herb will mask the results of drug-screening tests; this use has not been validated. It is also purported to enhance immunity. Although goldenseal is one of the top-selling herbal remedies, many commonly marketed products advertised as goldenseal contain adulterants (ingredients other than those in the natural herb). Goldenseal is an endangered plant species.

gold standard In medical care and exper-

imental medicine, a therapeutic action, drug, or procedure that is the best available. It is the one which other therapeutic actions, drugs, or procedures are compared to determine their efficacy.

Golgi apparatus (göl'jē) [Camillo Golgi, It. pathologist, 1843–1926] A lamellar membranous organelle in almost all cells, best viewed by electron microscopy. It contains curved parallel series of flattened sacs that are often expanded at their ends. In secretory cells, the apparatus concentrates and packages the secretory product. Its function in other cells, although apparently important, is poorly understood.

Golgi cell, Golgi neuron A multipolar nerve cell in the cerebral cortex and posterior horns of the spinal cord. Type I possesses long axons; type II, short axons.

Golgi-Mazzoni corpuscle (mä-zō'nē) A tactile corpuscle in the skin of the fingertips.

Golgi tendon organ ABBR: GTO. A spindle-shaped structure at the junction of a muscle and a tendon. This structure is thought to function as a feedback system that senses muscle tension through tendon stretch, inhibits muscle contraction of the agonist, and facilitates contraction of the antagonistic muscle. The purpose of this mechanism, known as autogenic facilitation, is to prevent overuse and damage to the muscle and corresponding joint.

go-live The moment when a new information system becomes active.

gomphosis (göm-fō'sis) [Gr., bolting together] A conical process fitting into a socket in an immovable joint (e.g., a tooth in its bony socket in the alveolus).

gon- SEE: *gono-*.

gonad (gō'nād, gōn'ād) [Gr. *gone*, seed]

1. The embryonic sex before differentiation into definitive testis or ovary. **2.** A generic term referring to the female ovaries and the male testes. Each forms the cells necessary for human reproduction: spermatozoa from the testes, ova from the ovaries. SEE: *estrogen*; *ovary*; *testicle*; *testosterone*.

HORMONES: *Female:* The follicles of the ovaries secrete estrogen, which helps regulate the menstrual cycle and the development of the secondary sex characteristics. The corpus luteum also produces progesterone, which stimulates growth of blood vessels in the endometrium for the implantation of a fertilized egg. *Male:* The interstitial cells of the testes secrete testosterone, which is essential for maturation of sperm and for development of the secondary sex characteristics.

Hormones from both sexes have been isolated and standardized and are used to treat conditions arising from an in-

sufficiency of these hormones. **gonadal**, *adj.*

gonadectomy (gŏn-ă-dĕk'tō-mĕ) [Gr. *gonos*, genitals, + *ektome*, excision] The excision of a testis or ovary.

gonado- (gŏn'ă-dŏ) [Gr. *gonos*, genitals] SEE: *gono-*.

gonadoblastoma (gŏn'ă-dŏ-blăs-tŏm'ă) A benign germ cell tumor typically found in children with gonadal dysgenesis or intersex disorders. It is associated with pseudohermaphroditism (the external development of masculine sexual organs coupled with the internal development of a uterus). Untreated patients may occasionally develop malignant germ cell tumors. Surgical removal is the preferred treatment.

gonadopathy (gŏn'ă-dŏp'ă-thĕ) [" + *pathos*, disease, suffering] Any disease of the sexual organs.

gonadotrophic, gonadotropic (gŏn'ă-dŏ-trŏf'ik) [" + *trophe*, nourishment] Rel. to stimulation of the gonads.

gonadotrophin (gŏn'ă-dŏ-trŏf'ĭn) Gonadotropin.

gonadotropin (gŏn'ă-dŏ-trŏp'ĭn) A gonad-stimulating hormone. SYN: *gonadotrophin*.

anterior pituitary g. One of the two anterior pituitary hormones that affects the ovaries or testes: follicle-stimulating hormone and luteinizing hormone.

human chorionic g. ABBR: hCG. A hormone, secreted in early pregnancy by the trophoblasts of the fertilized ovum, that maintains the corpus luteum during early pregnancy, stimulating it to secrete both estrogen and progesterone. Laboratory tests for hCG in maternal blood or urine are used as pregnancy tests and in follow-up assessments after treatment for hydatid mole and choriocarcinoma.

human menopausal g. ABBR: hMG. A purified form of the pituitary gonadotropins FSH and LH; it may be used therapeutically to treat infertility, hypogonadotropic hypogonadism, polycystic ovary disease, and other conditions. In the management of infertility, it is particularly used for women with ovulatory difficulties, in whom it stimulates follicular growth and maturation, ovulation, and development of the corpus luteum.

gonangiectomy (gŏn'ăn-jĕ-ĕk'tŏ-mĕ) [Gr. *gone*, seed, + *angeion*, vessel, + *ektome*, excision] Vasectomy.

gonarthrit (gŏn'ăr-thrĭ'tis) [Gr. *gony*, knee, + *arthron*, joint, + *itis*, inflammation] Inflammation of the knee joint.

gonarthrotomy (gŏn'ăr-thrŏt'ŏ-mĕ) [" + " + *tome*, incision] Incision of the knee joint.

gonatocele (gŏn-ăt'ŏ-sĕl) [" + *kele*, tumor, swelling] A tumor of the knee.

gonecystolith (gŏn'ĕ-sĭs'tŏ-lĭth) [" + "

+ *lithos*, stone] A stone in a seminal vesicle.

Gongylonema (gŏn'jĭ-lŏ-nĕ'mă) [Gr. *gongylos*, round, + *nema*, thread] A genus of nematode worms belonging to the suborder Spirurata, usually parasitic in the wall of the esophagus and stomach of domestic animals. Occasionally, they are parasitic in humans. *G. pulchrum* is the species most frequently involved.

goniometer (gŏ'nĕ-ŏm'ĕ-ter) [Gr. *gonia*, angle, + *metron*, measure] An apparatus to measure joint movements and angles. Various sizes and types of goniometers are available, including finger goniometers, bubble goniometers, gravity goniometers, and recording electrogoniometers. SEE: *illus.*



GONIOMETER

gonion (gŏ'nĕ-ŏn) [Gr. *gonia*, angle] The lowest and most lateral point of the angle of the mandible or lower jaw.

goniopuncture (gŏ'nĕ-ŏ-pŭnk'tŭr) A surgical procedure for allowing aqueous humor to drain from the eye, used in treating glaucoma.

gonioscope (gŏ'nĕ-ŏ-skŏp) [" + *skopein*, to examine] An instrument for inspecting the angle of the anterior chamber of the eye and for determining ocular motility and rotation.

goniosynechia (gŏ'nĕ-ŏ-sĭ-nĕk'ĕ-ă) Adhesion of the iris to the cornea of the eye.

goniotomy (gŏ'nĕ-ŏt'ŏ-mĕ) [" + *tome*, incision] A surgical procedure for removing obstructions to the free flow of aqueous humor into the canal of Schlemm of the eye.

gono-, gon-, gonado- (gŏn'ŏ, gŏn', gŏn'ă-dŏ) [Gr. *gonos*, genitals] Combining forms meaning *generation, genitals, offspring, semen*.

gonococcemia (gŏn'ŏ-kŏk-sĕ'mĕ-ă) [" + " + *haima*, blood] Gonococci in the blood; gonococcal septicemia.

gonococcic smear A smear using Gram's method and methylene blue. Gonococci, which appear in pairs and tetrads, are gram-negative and intracellular.

gonococcus (gŏn'ŏ-kŏk'ŭs) *pl. gonococci*

[Gr. *gonos*, genitals, + *kokkos*, berry] *Neisseria gonorrhoeae*, the gram-negative diplococcus that causes gonorrhea. SEE: *gonorrhea*. **gonococcal**, *adj.*

gonorrhea (gŏn"ō-rē"ă) [*"* + *rhoia*, flow] A sexually transmitted infection caused by the gram-negative diplococcus *Neisseria gonorrhoeae*. The disease often causes inflammation of the urethra, prostate, cervix, fallopian tubes, rectum, and/or pharynx. Blood-borne infection may spread to the joints and skin, and congenitally transmitted infection to the eyes of a newborn during vaginal birth may cause neonatal conjunctivitis. Infection around the liver may result from peritoneal spread of the disease. Although members of either sex with urogenital gonorrhea may be asymptomatic, women are much less likely to notice burning with urination, urethral discharge, or perineal pain than men, in whom these symptoms are present 98% of the time. Co-infection with *Chlamydia trachomatis* is common in both sexes: some studies have shown simultaneous infection with both organisms to be as high as 30%. Even though syphilis rarely accompanies gonorrheal infection, patients with gonorrhea are routinely tested for this disease. Young, sexually active teenagers and young adults with multiple partners are at highest risk for contracting gonorrhea. In 2006 in the U.S. the Centers for Disease Control and Prevention estimated there were 358,000 cases of gonorrhea reported annually. SEE: *safe sex*; *Nursing Diagnoses Appendix*; *Standard Precautions Appendix*.

SYMPTOMS: Urethral symptoms in men typically include discomfort with urination (dysuria) accompanied by a yellow, mucopurulent penile discharge. Painful induration of the penis may occur in some cases. Women may have urethral or vaginal, greenish-yellow discharge, dysuria, urinary frequency, lower abdominal pain, tender Skene's and Bartholin's glands, or fever, dyspareunia, and other symptoms of pelvic inflammatory disease. The majority of women are asymptomatic.

DIAGNOSIS: In men, Gram stain of the urethral discharge is very accurate in diagnosing gonorrhea; in men and women, urethral, cervical, or anal swabs for the disease are typically tested with nucleic acid testing that detects genetic sequences unique to the bacteria. Single swabs can be used to identify infections with gonorrhea and/or *chlamydia* simultaneously.

PROPHYLAXIS: Safe sexual practices limit the spread of gonorrhea and have decreased the disease's incidence. To prevent gonorrhea in newborns, all babies are treated with a thin ribbon of either erythromycin or tetracycline oint-

ment in the conjunctival sac of each eye. SEE: *ophthalmia neonatorum*.

TREATMENT: Gonorrhea can be treated with cephalosporins (such as ceftriaxone) or fluoroquinolones, although bacteria have evolved that are resistant to many of these antibiotics. Chlamydia co-infection is typical and is usually treated with doxycycline. For pregnant patients and those allergic to penicillin, a single dose of ceftriaxone and erythromycin is recommended (doxycycline is contraindicated in pregnancy). Patients should return for a follow-up visit 1 week after treatment for recheck of cultures to confirm that a cure has been effective. Updates on the treatment of gonorrhea and other sexually transmitted infections are available at www.cdc.gov/std.

PATIENT CARE: Antibiotics should be taken as prescribed, and, if more than one dose is needed, the full course of therapy completed. Moist heat or sitz baths should be taken as directed to relieve discomfort. The patient should avoid contact with his or her genitourinary discharges and wash hands carefully so that the eyes do not become contaminated. Until a course of treatment and follow-up cultures are completed, he or she should abstain from sexual intercourse, as he or she may still be infectious and able to transmit the infection.

The patient is taught to recognize and report adverse drug reactions. The need for testing for other sexually transmitted diseases is discussed, as well as prevention of future infections (using condoms, washing genitalia with soap and water preintercourse and postintercourse, avoiding sharing washcloths, etc.) and the importance of follow-up testing. All persons with whom the patient has had sexual contact should be tested and receive treatment, even if a culture is negative. The patient and known sexual contacts are reported to the local and public health department for appropriate follow-up. **gonorrheal**, *adj.*

Gonyaulax (gŏn"ē-aw'lăks) A genus of dinoflagellate that causes certain shellfish that eat them to become toxic. It is also one of the causes of "red tide" when present in massive numbers in the ocean. This condition has occurred on certain beaches of North America. Shellfish present in such water contain the toxin present in the dinoflagellate.

gonycampsis (gŏn"ĭ-kămp'sis) [Gr. *gony*, knee, + *kampsis*, bending] An abnormal curvature of the knee.

gonyoncus (gŏn"ē-ŏn'kūs) [*"* + *onkos*, tumor] A tumor of the knee.

Gonzalez regime [Nicholas J. Gonzalez, U.S. immunologist] A nutritional regimen for advanced cancer patients (es-

pecially pancreatic cancer) consisting of the ingestion of pancreatic enzymes, a tailored diet, nutritional supplements, and the use of coffee enemas.

Goodell's sign (gūd'élz) [William Goodell, U.S. gynecologist, 1829–1894] Softening of the cervix; a probable sign of pregnancy that may be present during the second and third months of gestation. Palpation reveals the cervix has altered from a nonpregnant firmness similar to the tip of the nose to a softness similar to the lips. This change is due to increasing uterine vascularity and edema.

Goodpasture's syndrome (gūd'pās-chěrz) [Ernest William Goodpasture, U.S. pathologist, 1886–1960] The rare autoimmune illness marked by progressive glomerulonephritis, hemoptysis, and hemosiderosis. Death is usually due to renal failure.

Good Samaritan Law The legal protection given to those who stop and render care in an emergency situation without expectation for remuneration. The necessity for this legislation arose when physicians who assisted in giving emergency care were later accused of malpractice by the patient.

gooseflesh (goos'flěsh) Piloerection.

Gordon's reflex (gor'dōnz) [Alfred Gordon, U.S. neurologist, 1874–1953] The extension of the great toe on sudden pressure on the deep flexor muscles of the calf of the leg. It is present in pyramidal tract disease. SEE: *Babinski's reflex*.

Gorlin cyst (gōr'lin) [Robert James Gorlin, American oral pathologist, b. 1923] A benign cystic lesion of dental embryological origin that may occasionally undergo transformation into a malignancy. Pathological examination of the cyst reveals a characteristic ghost body.

Gossypium (gō-sīp'ē-ūm) [L.] A genus of perennial shrub of the Malvaceae family, widely grown because of the cotton fiber derived from its seed covering. The bark of some species is diuretic, emmenagogic, and oxytocic. SEE: *cotton*; *gossypol*.

gossypol (gōs'ē-pōl) A toxic chemical present in cottonseed, which has been used experimentally as an infertility agent in men.

Gottron's sign (gō'trōnz) [H.A. Gottron, Ger. dermatologist, 1890–1974] Red or purple plaques on the dorsum of the hands and on the forearms, elbows, and knees; found in dermatomyositis.

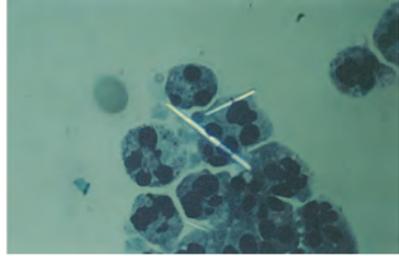
gouge (gowj) An instrument used for cutting away the hard tissue of bone.

goundou (goon'doo) [African] Periostitis of the nasal processes of the maxillae caused by prior infection with yaws or syphilis. The nasal bones become enlarged, and the orbit may be involved. The appearance of the nose has been

characterized colloquially as “big nose” or “dog nose.” SEE: *anakré*.

gout (gowt) [L. *gutta*, drop] A form of arthritis marked by the deposition of monosodium urate crystals in joints and other tissues. Any joint may be affected, but gout usually begins in the knee or the first metatarsophalangeal joint of the foot. SEE: *tophus*; *Nursing Diagnoses Appendix*.

SYMPTOMS: Most hyperuricemic people are asymptomatic between acute attacks. When an attack of acute gouty arthritis develops, it usually begins at night with moderate pain that increases in intensity to the point where no body position provides relief. Low-grade fever and joint inflammation (hot, exquisitely tender, dusky-red or cyanotic joints) may be present. SEE: *illius*.



GOUT

Uric acid crystals and white blood cells in synovial fluid (orig. mag. ×500)



ACUTE GOUT

TREATMENT: Colchicine, nonsteroidal anti-inflammatory agents, or corticosteroids are used to treat acute gouty attacks. Long-term therapy aims at preventing hyperuricemia by giving uricosuric drugs such as probenecid, or xanthine oxidase inhibitors such as allopurinol. Patients with gout have a tendency to form uric acid kidney

stones. The diet should be well balanced and devoid of purine-rich foods (e.g., anchovies, sardines, liver, kidneys, sweetbreads, lentils, beer, wine, and other alcoholic beverages) because these raise urate levels. Fluid intake should be encouraged.

PATIENT CARE: During the acute phase, bedrest is prescribed for at least the first 24 hr, and affected joints are elevated, immobilized, and protected by a bed cradle. Analgesics are administered, and hot or cold packs applied, depending on which the patient finds most helpful. The patient is taught about these measures. Colchicine, nonsteroidal anti-inflammatory agents, prednisone, or other prescribed drugs are administered. Allopurinol may be prescribed as maintenance therapy after acute attacks to suppress uric acid formation and control uric acid levels, thus preventing future attacks. Patients should be warned to report adverse effects of allopurinol (e.g., drowsiness, dizziness, nausea, vomiting, urinary frequency, dermatitis). A low-purine diet is recommended. The importance of gradual weight reduction is explained if obesity, which places additional stress on painful joints, is a factor. If soft-tissue tophi are present (e.g., near joints in fingers, knees, or feet), the patient should wear soft clothing to cover these areas and should use meticulous skin care and sterile dressings to prevent infection of open lesions.

Surgery may be required to excise or drain infected or ulcerated tophi, to correct joint deformities, or to improve joint function. Even minor surgery may precipitate gouty attacks (usually within 24 to 96 hr after surgery); therefore, the patient should be instructed about this risk and medications administered as prescribed to prevent acute attacks. The goal of chronic management of gout is to maintain serum uric acid levels below 6 mg/dl. At these levels chronic complications of gout are limited.

abarticular g. Periarticular g.

chronic g. A persistent form of gout.

lead g. Goutlike symptoms associated with lead poisoning. SYN: *saturnine gout*.

periarticular g. Gout that involves structures near the joints. SYN: *abarticular gout*.

saturnine g. Lead g.

tophaceous g. Gout marked by the development of tophi (deposits of sodium urate) in the joints and in the external ear.

gouty (gowt'ē) Of the nature of or rel. to gout.

Gowers' sign, Gowers' maneuver (gow'ērz) [Sir William R. Gowers, Brit. neurologist, 1845–1915] A clinical sign

of muscular dystrophy in childhood, indicative of weakness of the hip and knee extensors. Children with muscular dystrophy cannot stand up from a kneeling position without using their arms to push themselves erect by moving their hands up their legs and then their thighs.

GP *general practitioner*.

G6PD *glucose-6-phosphate dehydrogenase*.

gr *grain*.

graafian follicle (gräf'ē-ăn) [Regnier de Graaf, Dutch physician and anatomist, 1641–1673] A mature vesicular follicle of the ovary. Beginning with puberty and continuing until the menopause, except during pregnancy, a graafian follicle develops at approx. monthly intervals. Each follicle contains a nearly mature ovum (an oocyte) that, on rupture of the follicle, is discharged from the ovary, a process called ovulation. Ovulation usually occurs 12 to 16 days before the first day of the next menstrual period. Within the ruptured graafian follicle, the corpus luteum develops. Both the follicle and the corpus luteum are endocrine glands, the former secreting estrogens, and the latter, estrogen and progesterone. SEE: *ovum* for illus.

grab bar A bar attached to the wall to assist in climbing stairs or using the bath, shower, or toilet safely.

graceful degradation of care The deliberate restriction of the use of limited health care resources in a mass casualty incident to only those patients who are thought to have the best chance of survival.

gracile (gräs'ıl) [L. *gracilis*, slender] Slender; slight.

gracile nucleus A mass of medullary gray matter terminating the funiculus gracilis.

gracilis (gräs'ı-lis) [L., slender] A long slender muscle on the medial aspect of the thigh.

grade (gräd) A standard measurement or assessment.

Gleason's g. Gleason's score.

Gradenigo's syndrome (grä-dën-ē'gōz) [Giuseppe Gradenigo, It. physician, 1859–1926] Suppurative otitis media, pain in the distribution of the trigeminal nerve, and abducens palsy, typically associated with infection or cancer at the base of the skull.

gradient (grä'dē-ënt) **1.** A slope or grade.

2. An increase or decrease of varying degrees or the curve that represents such.

alveolar/arterial g. ABBR: A/a gradient. The difference between the calculated oxygen pressure available in the alveolus and the arterial oxygen tension. It measures the efficiency of gas exchange.

average g. In sensitometry, a measure of the contrast of the film or film-



screen system by determination of the slope of the sensitometric curve.

axial g. A gradient of physiological or metabolic activity exhibited by embryos and many adult animals, the principal one of which follows the main axis of the body, being highest at the anterior end and lowest at the posterior end.

concentration g. The difference in the amounts of a substance on either side of a membrane or in two areas of a biological system. Substances diffuse down a concentration gradient, from the area of higher concentration to lower concentration.

pressure g. The difference in hydrostatic pressure on either side of a membrane. As the difference in pressures rises, filtration increases from the area of high pressure to the area of low pressure.

graduate (grād'ū-āt, -ät) [L. *gradus*, a step] **1.** A vessel, usually a cylinder with one end closed, and marked by scribed lines for measuring liquids. **2.** One who has been awarded an academic or professional degree from a college or university.

graduated (gräj-oo-ā'tid) Marked by a series of lines indicating degrees of measurement, weight, or volume.

graduated tenotomy Partial surgical division of a tendon of an eye muscle.

Graefe's sign (grā'fēz) [Albrecht von Graefe, Ger. ophthalmologist, 1828–1870] Failure of the upper lid to follow a downward movement of the eyeball when the patient changes his or her vision from looking up to looking down. This finding, referred to colloquially as "lid lag," is seen in Graves' disease (hyperthyroidism) with exophthalmos.

graft (gräft) [L. *graphium*, grafting knife] **1.** Tissue transplanted or implanted in a part of the body to repair a defect. A homograft (or allograft) is a graft of material from another individual of the same species. A heterograft (or xenograft) is a graft of material from an individual of another species. **2.** The process of placing tissue from one site to another to repair a defect.

allogeneic g. A graft from a genetically nonidentical donor of the same species as the recipient. SYN: *allograft*; *homograft*.

autologous g. A graft taken from another part of the patient's body.

avascular g. A graft in which vascular infiltration does not occur.

axillofemoral bypass g. The surgical establishment of a connector between the axillary artery and the common femoral arteries. A synthetic artery graft is used and implanted subcutaneously. This technique is used in treating patients with insufficient blood flow to the legs (peripheral vascular disease).

bone g. A piece of bone usually taken

from the tibia and inserted elsewhere in the body to replace another osseous structure. Bone storage banks have been established.

brain g. An experimental technique in which brain cells are transplanted into the brain.

buttress g. A graft used to support another structure or tissue.

bypass g. A surgical conduit inserted into the vascular system that routes blood around an obstructed vessel. SEE: *coronary artery bypass surgery*.

cable g. A nerve graft made up of bundles of segments from an unimportant nerve. SYN: *rope graft*.

cadaver g. Grafting tissue, including skin, cornea, or bone, obtained from a body immediately after death.

delayed g. A skin graft that is partially elevated and then replaced so that it may be moved later to another site.

dermal g. A split-skin or full-thickness skin graft. The graft will grow hair and have active sweat and sebaceous glands.

endovascular g. A graft implanted within an existing blood vessel.

fascia g. A graft using fascia, usually removed from the fascia lata, for repairing defects in other tissues.

fascicular g. A nerve graft in which each bundle of nerves is separately sutured.

free g. A graft that is completely separated from its original site and then transferred.

full-thickness g. A graft of the entire layer of skin without the subcutaneous fat.

gingival g. A sliding graft employing the gingival papilla as the graft material.

heterodermic g. A skin graft taken from a donor of another species.

heteroplastic g. A graft taken from another person or species.

heterotopic g. SEE: *transplantation*, *heterotopic*.

homologous g. A graft taken from a donor of the same species as the recipient.

isologous g. A graft in which the donor and recipient are genetically identical (i.e., identical twins). SYN: *isograft*.

lamellar g. A very thin corneal graft used to replace the surface layer of opaque corneal tissue.

mesh g. A split-skin graft that contains multiple perforations or slits, which allow the graft to be expanded so that a much larger area is covered. The holes in the graft are covered by new tissue as the graft spreads.

nerve g. The transplantation of a healthy nerve to replace a segment of a damaged nerve.

Ollier's g. SEE: under *Ollier, Louis Xavier Edouard*.

omental g. The use of a portion of the omentum to cover or repair a defect in a hollow viscus or to cover a suture line in an abdominal organ.

ovarian g. The implantation of a section of an ovary into the muscles of the abdominal wall.

pedicle g. Pedicle flap.

periosteum g. The application of a piece of bone and its periosteum to another site.

pinch g. A graft consisting of small bits of skin.

postmortem g. Tissue taken from a body after death and stored under proper conditions to be used later on a patient requiring a graft of such tissue.

punch g. A full-thickness graft, usually circular, for transplanting skin containing hair follicles to a bald area.

rope g. Cable g.

sieve g. A graft similar to a mesh graft in which a section of skin is removed except for small, regularly spaced areas that remain. The removed portion is used at the new site. The small remaining areas will grow to cover the entire area at the donor site.

skin g. The use of small sections of skin harvested from a donor site and transplanted to an injured area of skin to repair a defect, such as a large full-thickness burn. Commonly used grafts include split-thickness, full thickness, and xenografts (grafts taken from animals and temporarily applied to human skin). Biosynthetic grafts (collagen and synthetics) also are used to minimize fluid and protein loss from burn injuries, prevent infection, and reduce pain. The skin surface at the receiving site should be clean and raw.

PATIENT CARE: Before surgery, assessments are made of the patient's general health. Confirmation is needed that appropriate laboratory parameters, including hemoglobin and coagulation studies, are acceptable as they may affect the surgical result. The donor and recipient sites are prepared according to protocol. The postsurgical appearance of the wound and dressing and, if applicable, the need to immobilize the part after surgery are explained. Both patient and family receive support and encouragement. The graft is observed at regular intervals postoperatively for swelling or for development of hematoma and signs of purulent drainage. Aseptic technique is followed in applying dressings and compresses to prevent infection. Prophylactic antibiotics are administered as prescribed, and the graft site is immobilized to allow healing. Analgesics are administered as necessary to relieve pain. Before discharge, the patient learns about wound care

and the need to keep the graft site clean, well lubricated, and away from sunlight according to the health care provider's instructions. Elastic support garments, reconstructive surgery, physical and occupational therapy, and psychological counseling may be required.

split-skin g. A graft of a part of the skin thickness.

thick-split g. A graft of about half or more of the skin's thickness.

Wolfe's g. SEE: *Wolfe's graft*.

grafting (grăf'ting) The act of applying a graft of skin or tissue from a healthy site to an injured site.

graft-versus-host disease ABBR: GVH. Immunological injury suffered by an immunosuppressed recipient of a bone marrow transplant. The donated lymphoid cells (the "graft") attack the recipient (the "host"), causing damage, esp. to the skin, liver, and gastrointestinal tract. GVH occurs in about 50% of allogeneic bone marrow transplants. It may develop in the first 60 days after transplantation ("acute" GVH) or many months later ("chronic" GVH).

Graham's law (gră'ămz) [Thomas Graham, Brit. chemist, 1805–1869] A law stating that the rate of diffusion of a gas is inversely proportional to the square root of its molecular mass (molecular weight).

Graham Steell's murmur [Graham Steell, Brit. physician, 1867–1942] A high-pitched diastolic murmur heard best along the left sternal border. It is caused by backflow (regurgitation) of blood through the dilated pulmonary valve of the heart. This type of murmur is usually associated with severe pulmonary hypertension.

grain [L. *granum*] ABBR: gr. **1.** A weight; 0.065 of a gram. **2.** The seed or seedlike fruit of many members of the grass family, esp. corn, wheat, oats, and other cereals. **3.** Direction of fibers or layers. SYN: *granum*.

gram ABBR: g. A unit of weight (mass) of the metric system. It equals approx. the weight of a cubic centimeter or a milliliter of water. One gram is equal to 15.432 gr or 0.03527 oz (avoirdupois), 1000 g are equal to 1 kg. SEE: *kilogram*; table.

fat g. A standard measure of fat and the calories (9 kcal/g) contained. Counting and limiting fat grams is a method used in weight-reduction diets.

gram-equivalent In chemistry, the mass in grams of a substance that will react with 1 g of hydrogen.

gram molecular mass, gram molecular weight The mass or weight in grams of a substance equal to its molecular mass/weight.

gram molecule The weight in grams of a substance equal to its molecular weight.

gram-negative Losing the crystal violet

Gram Conversion into Ounces (Avoirdupois)*

| g | Oz | g | Oz | g | Oz | g | Oz |
|----|------|----|------|----|------|------|-------|
| 1 | 0.03 | 30 | 1.06 | 59 | 2.08 | 88 | 3.10 |
| 2 | 0.07 | 31 | 1.09 | 60 | 2.12 | 89 | 3.14 |
| 3 | 0.11 | 32 | 1.13 | 61 | 2.15 | 90 | 3.17 |
| 4 | 0.14 | 33 | 1.16 | 62 | 2.18 | 91 | 3.21 |
| 5 | 0.18 | 34 | 1.20 | 63 | 2.22 | 92 | 3.24 |
| 6 | 0.21 | 35 | 1.23 | 64 | 2.26 | 93 | 3.28 |
| 7 | 0.25 | 36 | 1.27 | 65 | 2.29 | 94 | 3.31 |
| 8 | 0.28 | 37 | 1.30 | 66 | 2.33 | 95 | 3.35 |
| 9 | 0.32 | 38 | 1.34 | 67 | 2.36 | 96 | 3.38 |
| 10 | 0.35 | 39 | 1.37 | 68 | 2.40 | 97 | 3.42 |
| 11 | 0.39 | 40 | 1.41 | 69 | 2.43 | 98 | 3.46 |
| 12 | 0.42 | 41 | 1.44 | 70 | 2.47 | 99 | 3.49 |
| 13 | 0.45 | 42 | 1.48 | 71 | 2.50 | 100 | 3.53 |
| 14 | 0.49 | 43 | 1.51 | 72 | 2.54 | 125 | 4.41 |
| 15 | 0.53 | 44 | 1.55 | 73 | 2.57 | 150 | 5.30 |
| 16 | 0.56 | 45 | 1.59 | 74 | 2.61 | 175 | 6.18 |
| 17 | 0.60 | 46 | 1.62 | 75 | 2.64 | 200 | 7.05 |
| 18 | 0.63 | 47 | 1.65 | 76 | 2.68 | 250 | 8.82 |
| 19 | 0.67 | 48 | 1.69 | 77 | 2.71 | 300 | 10.58 |
| 20 | 0.70 | 49 | 1.73 | 78 | 2.75 | 350 | 12.34 |
| 21 | 0.74 | 50 | 1.76 | 79 | 2.79 | 400 | 14.11 |
| 22 | 0.77 | 51 | 1.80 | 80 | 2.82 | 450 | 15.87 |
| 23 | 0.81 | 52 | 1.83 | 81 | 2.85 | 454 | 16.00 |
| 24 | 0.84 | 53 | 1.87 | 82 | 2.89 | 500 | 17.64 |
| 25 | 0.88 | 54 | 1.90 | 83 | 2.93 | 600 | 21.16 |
| 26 | 0.91 | 55 | 1.94 | 84 | 2.96 | 700 | 24.69 |
| 27 | 0.95 | 56 | 1.97 | 85 | 3.00 | 800 | 28.22 |
| 28 | 0.99 | 57 | 2.01 | 86 | 3.03 | 900 | 30.75 |
| 29 | 1.02 | 58 | 2.04 | 87 | 3.07 | 1000 | 35.27 |

* 1 g is equal to 0.03527 oz (avoirdupois).

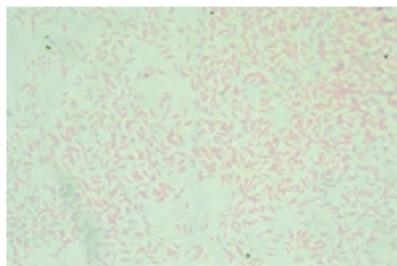
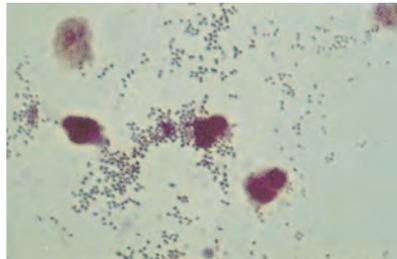
stain and taking the color of the red counterstain in Gram's method of staining, a primary characteristic of certain microorganisms. SEE: *Gram stain*.

gram-positive Retaining the color of the crystal violet stain in Gram's method of staining. SEE: *Gram stain*.

Gram stain (grām) [Hans C. J. Gram, Danish physician, 1853–1938] A method of staining bacteria, which is important in their identification.

PROCEDURE: A film on a slide is prepared, dried, and fixed with heat. The film is stained with crystal violet for 1 min; rinsed in water, then immersed in Gram's iodine solution for 1 min. The iodine solution is rinsed off and the slide decolorized in 95% ethyl alcohol. The slide is then counterstained with dilute carbofuchsin or safranin for 30 sec, after which it is rinsed with water, blotted dry, and examined. Gram-positive bacteria retain the violet stain and gram-negative bacteria adopt the red counterstain. SEE: *illus*.

NOTE: As a simple means of checking on the accuracy of the staining materials, a small amount of material from between one's teeth can be placed on the slide at the opposite end from that of the specimen being examined. As gram-negative and gram-positive organisms are always present in the mouth, that



GRAM STAIN

(Top) Gram-positive *Staphylococcus aureus* in a pus smear (orig. mag. $\times 500$)
(Bottom) Gram-negative *Campylobacter jejuni* bacilli (orig. mag. $\times 500$)

end of the slide should be examined first. If both types of organisms are seen, the specimen may then be examined.

grandiose (grăn'dē-ōs) In psychiatry, concerning one's unrealistic and exaggerated concept of self-worth, importance, wealth, and ability.

grandiosity (grăn'dē-ōs'i-tē) An exaggerated sense of self-importance, power, or status.

grand mal (gränd mäl) SEE: under *epilepsy*.

grant (gränt) [ME.] A financial award given to an academic or professional investigator to support his or her research.

grant writing The drafting of a written proposal seeking financial support for a demonstration or research project in the health sciences.

granul-, granulo- Combining forms meaning *granule*.

granular (grăn'ū-lār) [L. *granulum*, little grain] **1.** Of the nature of granules. **2.** Roughened by prominences like those of seeds.

granulation (grăn'ū-lā'shūn) **1.** The formation of granules or the condition of being granular. **2.** Fleshy projections formed on the surface of a gaping wound that is not healing by first intention or indirect union. Each granulation represents the outgrowth of new capillaries by budding from the existing capillaries and then joining up into capillary loops supported by cells that will later become fibrous scar tissue. Granulations bring a rich blood supply to the healing surface.

arachnoid g. Folds of the arachnoid layer of the cranial meninges that project through the inner layer of dura mater into the superior sagittal sinus and other venous sinuses of the brain. Through them, cerebrospinal fluid reenters the bloodstream. SYN: *arachnoid villus*; *pacchionian body*.

exuberant g. An excessive mass of granulation tissue formed in the healing of a wound or ulcer; proud flesh.

toxic g. The abnormal appearance of white blood cells in patients with serious infectious diseases. The intracytoplasmic granules in the white blood cells show increased staining caused by the increased acid mucoprotein content of the cells.

granule (grăn'ūl) [L. *granulum*, little grain] **1.** A small, grainlike mass. **2.** In histology, a small intracellular mass that has no apparent internal structure.

acidophil g. A granule that stains readily with acid dyes.

albuminous g. A cytoplasmic granule in many normal cells. It is not affected by ether or chloroform but dis-

appears from view when acetic acid is added.

amphophil g. Beta g.

azuophilic g. A small red or reddish-purple granule that easily takes a stain with azure dyes. Found in lymphocytes and monocytes, it is inconstant in number, being present in about 30% of the cells.

basal g. Basal body.

basophil g. A cellular granule that stains with a basic dye.

beta g. An azurophil granule found in beta cells of the hypophysis or islets of Langerhans of the pancreas that stains with both acid and basic dyes. SYN: *amphophil granule*.

chromophil g. Nissl body.

cone g. The nuclei of the cones, sensory cells of the retina. They form the outer zone of the outer nuclear layer of the retina.

delta g. A small granule in the delta cells of the pancreas.

eosinophil g. One of various granules that react with acid dyes. It is present in eosinophils.

glycogen g. One of the minute particles of glycogen seen in liver cells following fixation.

juxtaglomerular g. A granule found within the juxtaglomerular cells of the kidneys. Juxtaglomerular cells secrete renin.

Kölliker's interstitial g. A granule in the sarcoplasm of a striated muscle fiber.

metachromatic g. An irregularly sized granule found in the protoplasm of numerous bacteria. It stains a different color from that of the dye used.

neutrophil g. Any of the cytoplasmic granules of a neutrophil that often stain a pale blue.

Nissl g. Nissl bodies.

pigment g. A granule seen in pigment cells.

Plehn's g. A basophilic granule seen in the conjugating form of *Plasmodium vivax*.

protein g. A minute protein particle found in cells.

rod g. A nucleus of a rod photoreceptor found in the retina.

Schüffner's g. [Wilhelm A. P. Schüffner, Ger. pathologist, 1867–1949] A coarse, red, polychrome methylene blue-staining granule found in erythrocytes infected with *Plasmodium ovale* or *P. vivax* malaria. SYN: *Schüffner's dots*.

secretory g. Zymogen g.

seminal g. One of the minute particles in semen, supposed to derive from disintegrated nuclei in nutritive cells from seminiferous tubules.

zymogen g. A granule present in gland cells, esp. the secretory cells of the pancreas, the chief cells of the gastric

glands, and the serous cells of the salivary glands. It is the precursor of the enzyme secreted. SYN: *secretory granule*.

Granulicatella (grän'ü-lik-ä-tël'ä) A genus of disease-causing organisms, formerly referred to as "nutritionally variant streptococci." Species within the genus may cause infections of bones and joints, the central nervous system, heart valves, and other body parts.

granuloblast (grän'ü-lö-bläst") [" + Gr. *blastos*, germ] A term formerly used for myeloblast.

granulocyte (grän'ü-lö-sit") [" + Gr. *kytos*, cell] A granular leukocyte; a polymorphonuclear leukocyte (neutrophil, eosinophil, or basophil).

granulocyte colony-stimulating factor ABBR: G-CSF. A naturally occurring cytokine glycoprotein that stimulates the proliferation and functional activity of neutrophils. It is effective in treating bone marrow deficiency following cancer chemotherapy or bone marrow transplantation. The generic name is filgrastim. SEE: *colony-stimulating factor-1*.

granulocyte-macrophage colony-stimulating factor ABBR: GM-CSF. A naturally occurring cytokine glycoprotein that stimulates the production of neutrophils, monocytes, and macrophages. It is effective in treating bone marrow deficiency following cancer chemotherapy or bone marrow transplantation. The generic name is sargramostim; trade names are Leukine and Prokine. SEE: *colony-stimulating factor-1*.

granulocytopenia (grän'ü-lö-sit'pö-pé'nē-ä) [" + " + *penia*, poverty] An abnormal reduction of granulocytes in the blood. SYN: *granulopenia*.

granulocytopenia (grän'ü-lö-sit'pö-pöy-ē'sis) [" + " + *poiein*, to form] The formation of granulocytes. SEE: *illius*.

granulocytosis (grän'ü-lö-sit'ö'sis) [" + " + *osis*, condition] An abnormal increase in the number of granulocytes in the blood.

granuloma (grän'ü-lö-mä) [" + Gr. *ma*, tumor] An inflammatory response that results when macrophages are unable to destroy foreign substances that have entered or invaded body tissues. Large numbers of macrophages are drawn to the affected area over 7 to 10 days, surround the target, and enclose it. They in turn are surrounded by polymorphonuclear leukocytes, other immune cells, and fibroblasts. Granulomas are common in many conditions, including leprosy, tuberculosis, cat scratch disease, some fungal infections, and foreign body reactions (e.g., reactions to sutures). SEE: *giant cell*; *tuberculosis*; *Wegener's granulomatosis*.

g. annulare A circular rash with a raised red border, usually found on the hands, knuckles, or arms of young pa-

tients. The cause is unknown. The rash often lasts 1 or 2 years and then may disappear spontaneously. SEE: *illius*.

apical g. Dental g.

benign g. of the thyroid A lymphadenoma of the thyroid.

coccidioidal g. A chronic, generalized granulomatous disease caused by the fungus *Coccidioides immitis*. SEE: *coccidioidomycosis*.

dental g. A granuloma developing at the tip of a tooth root, usually the result of pulpitis. It consists of a proliferating mass of chronic inflammatory tissue and possibly epithelial nests or colonies of bacteria. It may be encapsulated by fibrous tissue of the periodontal ligament. SYN: *apical granuloma*; *apical periodontitis*.

eosinophilic g. A form of xanthomatosis accompanied by eosinophilia and the formation of cysts on bone.

g. fissuratum A circumscribed, firm, fissured, fibrotic, benign tumor caused by chronic irritation. It may occur where hard objects such as dentures or the earpieces of glasses rub against the labioalveolar fold or the retroauricular fold. The tumor disappears when the irritating object is removed.

foreign body g. Chronic inflammation around foreign bodies such as sutures, talc, splinters, or gravel. SYN: *reaction*, *foreign body*.

g. fungoides Mycosis fungoides.

infectious g. Any infectious disease in which granulomas are formed (e.g., tuberculosis or syphilis). Granulomas are also formed in mycoses and protozoan infections.

g. inguinale A granulomatous ulcerative disease in which the initial lesion commonly appears in the genital area as a painless nodule.

ETIOLOGY: This type of granuloma is caused by a short, gram-negative bacillus, *Calymatobacterium granulomatis*, commonly called a Donovan body.

TREATMENT: Erythromycin, trimethoprim-sulfamethoxazole, or tetracyclines are used in treating this disease. Single-dose therapy with intramuscular ceftriaxone or oral ciprofloxacin may be effective.

g. iridis A granuloma that develops on the iris.

lipoid g. A granuloma that contains fatty tissue or cholesterol.

lipophagic g. A granuloma in which the macrophages have phagocytosed the surrounding fat cells.

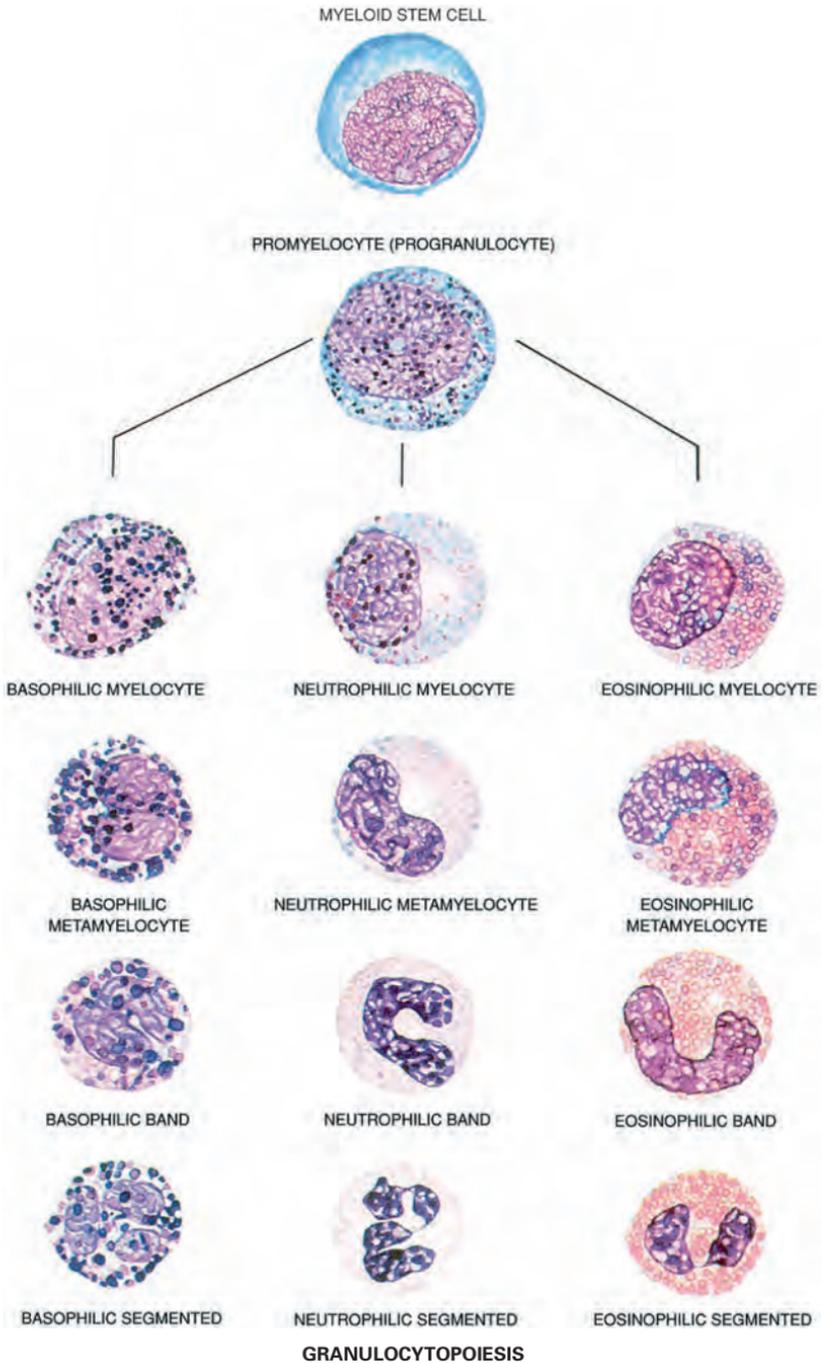
Majocchi's g. Majocchi's disease.

malignant g. Hodgkin's disease.

pyogenic g., pyrogenic g. Proud flesh.

swimming pool g. A chronic skin infection caused by *Mycobacterium marinum*.





g. telangiectaticum A very vascular granuloma at any site, but esp. in the nasal mucosa or pharynx.

trichophytic g. Majocchi's disease.

granulomatosis (grăn"ū-lō"mă-tō'sis) [L. *granulum*, little grain, + Gr. *oma*, tumor, + *osis*, condition] The development of multiple granulomas.



GRANULOMA ANNULARE

(On the back, near the left shoulder)

Wegener's g. SEE: *Wegener's granulomatosis*.

granulomatous (grăn"ũ-lõm'ã-tüs) Containing granulomas.

granulomere (grăn"ũ-lõ-mër) The centrally located, dark-blue-staining (azurophilic) region of a platelet. It contains glycogen, mitochondria, and electron-dense tubules.

granulopenia (grăn"ũ-lõ-pë'në-ã) [" + Gr. *penia*, poverty] Granulocytopenia.

granuloplasm (grăn"ũ-lõ-plãzm) A granular cytoplasm.

granuloplastic (grăn"ũ-lõ-plãs'tik) [" + Gr. *plassein*, to form] Developing granules.

granulopoiesis (grăn"ũ-lõ-poy-ë'sis) [" + Gr. *poiein*, to make] The formation of granulocytes.

granulopotent (grăn"ũ-lõ-põ'tënt) [" + *potentia*, power] Potentially capable of forming granules.

granulosa (grăn"ũ-lõ'sã) A layer of cells in the theca of the graafian follicle.

granulosis (grăn"ũ-lõ'sis) [" + Gr. *osis*, condition] A mass of minute granules.

g. rubra nasi A disease of the skin of the nose, characterized by a moist erythematous patch on numerous macules. The disease is caused by an inflammatory infiltration about the nose, with slightly elevated papules and dilated sweat glands.

granum (grã'nũm) [L.] Grain.

granzyme (grăn'zim) Any of a family of proteases stored in the granules of cytotoxic T lymphocytes. They are involved in cytolytic functions.

grape sugar Glucose.

graph (grãf) **1.** A visual presentation of statistical, clinical, or experimental data represented by a relationship between two sets of numbers or variables on the ordinate (y) (vertical) axis and the abscissa (x) (horizontal) axis. **2.** Any visual representation of a numerical relationship.

-graph [Gr. *graphos*, drawn or written; one who draws] Combining form used as a suffix meaning an instrument used to make a drawing or written record.

grapheme (grãf'ëm) **1.** A letter of an alphabet. **2.** The smallest element in a writing system. **3.** A written symbol or group of symbols used to represent a single sound.

graphesthesia (grãf"ës-thë'zë-ã) [" + *aisthesis*, sensation] The ability to recognize outlines, numbers, words, or symbols traced or written on the skin.

graphite (grãf'it) [Gr. *graphein*, to write] One of the allotropes of carbon. Graphite is considered the purest of the forms of coal-anthracite.

grapho- [Gr. *graphein*, to write] Combining form meaning *writing*.

graphology (grãf-õl'õ-jë) [" + *logos*, word, reason] The examination of handwriting, used to diagnose or analyze personality.

graphomotor (grãf"õ-mõ'tor) [" + L. *motor*, mover] Pert. to movements involved in writing.

graphospasm (grãf"õ-spãzm) [" + *spasmos*, spasm] Writer's cramp.

GRAS List A list of food additives generally recognized as safe by the U.S. Food and Drug Administration. SEE: *food additive*.

grasp A specific type of prehension involving the fingers, the palmar surface, or both.

pincher g. The apposition of the thumb and index finger to pick up small objects. This fine motor skill is a developmental milestone usually attained by 10 months of age.

plantar g. A type of prehension involving the toes, which curl forward in response to pressure from the examiner's finger across their base. This normal newborn reflex usually disappears by age 8 to 9 months. The reflex reappears in adults with frontal lobe diseases or dementia.

grasper (grãsp'ër) A device used to grab and hold tissue (e.g., during laparoscopic surgery).

grating In spectrophotometry, the element used in a monochromator that disperses white light into the visible spectrum.

grattage (grã-tãzh') [Fr., a scraping] The removal of epithelial lesions by rubbing with a brush or harsh sponge.

grave [L. *gravis*, heavy] Serious; dangerous; severe.

gravel (grãv'íl) [Fr. *gravelle*, coarse sand] Crystalline dust or concretions of crystals from the kidneys; generally made up of phosphates, calcium, oxalate, and uric acid.

Graves' disease (grãvz) [Robert James Graves, Irish physician, 1796-1853] A distinct type of hyperthyroidism caused by an autoimmune destruction of the thyroid gland. It typically increases thyroxine (T₄) production, produces enlargement of the thyroid gland, and also

may cause ocular findings (proptosis, lid lag, and stare).

SYMPTOMS: Other findings include palpitations, nervousness, heat intolerance, sweating, frequent defecation, insomnia, menstrual irregularities, tremor, and weight loss despite increased appetite, among others.

DIAGNOSIS: The clinical signs and symptoms (goiter, proptosis) in the setting of elevated thyroxine levels and a suppressed thyroid stimulating hormone are diagnostic.

TREATMENT: Drugs that limit the thyroid gland's output of thyroid hormone are effective as therapy. The thyroid gland may be removed surgically or it may be inactivated with radioactive iodine (¹³¹I) therapy. Beta-adrenergic blockers are prescribed to manage tachycardia and peripheral effects of excessive sympathetic nervous system activity.

PATIENT CARE: Assistance is provided to help the patient to cope with related anxiety, and the patient is encouraged to minimize emotional and physical stress and to balance rest and activity periods; a quiet environment is provided or encouraged. A high-calorie, high-protein diet of six meals a day is recommended to treat increased protein catabolism. Body weight and vital signs are monitored, along with serum electrolyte and glucose levels. The patient is taught comfort measures to deal with elevated body temperature and GI complaints (abdominal cramping, frequent bowel movements); safety measures to protect the eyes from injury, including moistening the conjunctiva frequently with isotonic eye drops and wearing sunglasses to protect the eyes from light; and appropriate administration and safety procedures for iodide therapy, beta-blocker therapy, and propylthiouracil and methimazole therapy, as prescribed. If the patient is being maintained on propylthiouracil or methimazole, potential side effects of the medications are reviewed with the patient, including the importance of having blood counts done periodically to detect blood dyscrasias. Special instructions are provided for therapeutic use of radioactive iodide (medication restrictions pretherapy and posttherapy; care with disposal of expectorated saliva and of urine which remain slightly radioactive for 24 hr, vomitus for 6 to 8 hr; need to drink fluids in large quantities for 48 hrs after therapy; and, if discharged less than 7 days after therapy, avoiding close contact with children and sleeping in same room as another person until 7 days have elapsed since therapy).

The patient is prepared physically and psychologically for surgery if planned, and postoperative care specific to thyroidectomy is provided. Regular

medical follow-up is needed to detect and treat hypothyroidism, which may develop 2 to 4 weeks after surgery and after radioactive iodine therapy. The patient is advised of the possible need for lifelong thyroid hormone replacement therapy, and should wear or carry a medical identification tag and keep a supply of medication with him or her at all times.

Graves' ophthalmopathy Ophthalmopathy associated with hyperthyroidism with the clinical characteristics of exophthalmos, periorbital edema, periorbital and conjunctival inflammation, decreased extraocular muscle mobility, and corneal injury. Accompanying these may be lacrimation, eye pain, blurring of vision, photophobia, diplopia, and loss of vision.

TREATMENT: The underlying hyperthyroidism must be treated. The patient should sleep with the head of the bed elevated. Methylcellulose eyedrops and diuretics will help to relieve eye discomfort. If the condition is severe and progressive, surgical decompression of the orbit will be required to treat impaired retinal function and exposure keratopathy.

gravid (grāv'īd) [L. *gravida*, pregnant] Pregnant; heavy with child.

gravida (grāv'ī-dā) [L.] A pregnant woman.

gravida macromastia Rapid enlargement of the breasts during pregnancy. This may progress to cause severe distention with sloughing of breast tissue, bleeding, and infection. Surgical therapy may be required.

gravidism (grāv'ī-dīzm) [L. *gravida*, pregnant, + Gr. *-ismos*, state of] SYN: *pregnancy*.

gravidity (grāv'ī-tē) [L. *gravida*, pregnant] The total number of a woman's pregnancies.

gravidocardiic (grāv'īd-ō-kār'dē-āk) [+ Gr. *kardia*, heart] Pert. to cardiac disorders that result from the physiological changes associated with pregnancy.

gravimetric (grāv'ī-mēt'rik) [L. *gravis*, heavy, + Gr. *metron*, measure] Determined by weight.

gravistatic (grāv'ī-stāt'ik) [+ Gr. *statikos*, causing to stand] Resulting from gravitation, as in a form of gravistatic pulmonary congestion.

gravitation (grāv'ī-tā'shūn) [L. *gravitas*, weight] The force and movement tending to draw every particle of matter together, esp. the attraction of the earth for bodies at a distance from its center.

gravity 1. The property of possessing weight. 2. The force of the earth's gravitational attraction.

specific g. SEE: *specific gravity*.

gravity-induced loss of consciousness ABBR: GLOC. The loss of consciousness.

ness due to positive gravity (G) forces. Certain aviation maneuvers produce increased downward force (i.e., positive G) that is measured as a multiple of the gravitational constant. When these forces are of sufficient intensity, blood flow to the brain is diminished, which, if continued, leads to unconsciousness.

gray [L. Harold Gray, Brit. physician, 1905–1965] ABBR: Gy. A measure of the quantity of ionizing radiation absorbed by any material per unit mass of matter. 1 Gy equals 100 rad. 1 μ Gy (microgray) = 10^{-6} Gy. SEE: *radiation absorbed dose*.

grayanotoxin (grā'an'ü-tök'sin) [Fr. NL *grayana*, species name + ".] A diterpene cyclic hydrocarbon found in honey produced by bees that feed on rhododendrons. Consumption of tainted honey or rhododendrons results in nausea, vomiting, and numbness and tingling around the mouth and in the arms and legs. Weakness, loss of coordination, and heart rhythm disturbances rarely occur, and only after massive ingestion. The poisoning typically resolves on its own within 24 hr.

gray literature Any information not commercially published and therefore difficult to retrieve with standard bibliographical techniques or electronic search engines. It includes information contained in reports of congressional committees or subcommittees, bulletins issued by private interest groups or government agencies (e.g., the Food and Drug Administration), summaries of conference proceedings, dissertations and theses, documentation of data closely held for internal use by commercial interests, scientific weblogs, and working papers.

gray platelet syndrome Alpha granule deficiency syndrome.

gray syndrome of the newborn The appearance of vomiting, lack of sucking response, irregular and rapid respiration, abdominal distention, and cyanosis in newborn infants treated at birth with chloramphenicol. Flaccidity and an ashen-gray color are present within 24 hr. About 40% of the patients die, most frequently on the fifth day of life. Because of the risk of this rare syndrome, chloramphenicol is rarely if ever used in pediatric care in the U.S.

green A color intermediate between blue and yellow, afforded by rays of wavelength between 492 and 575 nm. SEE: words beginning with *chloro*.

brilliant g. A derivative of malachite green, used in staining bacteria.

indocyanine g. SEE: *indocyanine green*.

malachite g. A dye used as a stain and antiseptic.

Greenfield's disease (grēn'fēldz) [J. Godwin Greenfield, Brit. neuropatholo-

gist, 1884–1958] Metachromatic leukodystrophy.

greenhouse effect Planetary warming as a result of the trapping of solar energy beneath atmospheric gases. The composition and concentration of the gases in the atmosphere influence the earth's surface temperature because some gases more effectively retain heat than others. Fossil fuel combustion, which has increased at a rapid rate since the 1950s, has deposited increasing amounts of carbon dioxide in the upper atmosphere. This is thought to be a contributory factor in global warming, a phenomenon suspected of having widespread effects on all ecosystems. SEE: *global warming*; *ozone*.

green nail syndrome Paronychia caused by infection of the nails with *Pseudomonas aeruginosa*. SYN: *chloronychia*.

greifer (grī'ēr) [Ger. lit. "gripper," "claw"] An electrically powered, hook-shaped prosthesis used to grip, grasp, or hold objects.

Grey Turner's sign (grā-tūr'nērz) [George Grey Turner, English surgeon, 1877–1951] A blue discoloration of the skin around the flanks or umbilicus in a patient with hemorrhagic pancreatitis.

grid (grīd) **1.** A chart with an abscissa (x) (horizontal) axis and an ordinate (y) (vertical) axis on which to plot graphs. **2.** A device made of parallel lead strips, used to absorb scattered radiation during radiography of larger body parts.

Fixott-Everett g. A plastic-embedded screen placed over dental radiographic film before x-ray exposure. It facilitates measurement of bone loss and other tissue changes.

grid ratio In a radiographical grid, the ratio of the height of the lead strips to the distance of the interspace. High ratios indicate increased ability of the grid to remove scatter.

grief The emotion that follows the loss of a loved person or thing. Symptoms may include fatigue, depressed mood, insomnia, anorexia, feelings of regret, or a variety of physical discomforts.

grief, chronic Unresolved denial of the reality of a personal loss. Also called *dysfunctional grieving*.

Grierson-Gopalan syndrome Burning foot syndrome.

grieving (grē'vīng) 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. This diagnosis was previously titled, "grieving, anticipatory". SEE: *Nursing Diagnoses Appendix*.

grieving, anticipatory (grē'vīng) Intellectual and emotional responses and behaviors by which individuals (families,

communities) work through the process of modifying self-concept based on the perception of potential loss. SEE: *Nursing Diagnoses Appendix*.

grieving, complicated 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. This diagnosis was previously titled, "grieving, dysfunctional". SEE: *Nursing Diagnoses Appendix*.

grieving, dysfunctional Extended, unsuccessful use of intellectual and emotional responses by which individuals (families, communities) attempt to work through the process of modifying self-concept based upon the perception of potential loss. SEE: *Nursing Diagnoses Appendix*.

grieving, risk for complicated 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. This diagnosis was previously titled, "grieving, risk for dysfunctional". SEE: *Nursing Diagnoses Appendix*.

Grifola frondosa (grī'fō-lā frōn-dō'sā, grīf') [NL "leafy griffin"] Maitake.

Grignard reaction (grē-nyār') [Victor Grignard, French chemist and Nobel laureate, 1871–1935] A classical organic-chemical process that forms carbon-carbon bonds. It is used to build carbon chains in compounds including drugs, food additives, toxins, and pesticides.

grinder (grīn'dēr) [AS. *grindan*, to gnash] A colloquial term for a molar tooth. SYN: *dens molaris*.

grinders' disease Pneumoconiosis.

grinding A forceful rubbing together, as in chewing. SEE: *bruxism*.

selective g. Altering and correcting the dental occlusion by grinding in accordance with what is required.

grip, gripe (grīp) [Fr. *gripper*, to seize] Influenza.

gripes (grīps) [AS. *gripan*, to grasp] Intermittent severe pains in the bowels. SYN: *intestinal colic*.

gripping (grī'pīng) An acute intermittent cramplike pain, esp. in the abdomen.

groin (groyn) [AS. *grynde*, abyss] The depression between the thigh and trunk; the inguinal region.

groin pull A colloquial term for a strained thigh adductor muscle.

grommet (grōm'īt) A device, also known as a ventilation tube, placed in an artificial opening in the tympanic membrane to permit air to flow freely between the inner ear and the external auditory canal. The prosthesis is used as a treatment adjunct in managing

chronic otitis media with effusion. The routine use of grommets as part of the initial therapy for otitis media is not advised. Their use should be reserved for persistent or recurrent infections that have failed to respond to appropriate antibiotic therapy.

groove [MD. *groeve*, ditch] A long narrow channel, depression, or furrow. SYN: *sulcus*.

bicipital g. The groove for the long tendon of the biceps brachii located on the anterior surface of the humerus.

branchial g. A groove in the embryo that is lined with ectoderm and lies between two branchial arches.

carotid g. A broad groove on the inner surface of the sphenoid bone lateral to its body. It lodges the carotid artery and the cavernous sinus.

coronary g. The groove encircling the external surface of the heart between the atria and the ventricles. Major coronary arteries and veins lie in the coronary groove.

costal g. The groove on the lower internal border of a rib. It lodges the intercostal vessels and nerve. SYN: *subcostal groove*.

infraorbital g. The groove on the orbital surface of the maxilla that transmits the infraorbital vessels and nerve.

labiomentental g. The horizontal depression between the lower lip and the chin.

lacrimial g. Two grooves, one on the posterior surface of the frontal process of the maxilla, and the other on the anterior surface of the posterior lacrimal crest of the lacrimal bone. These grooves lodge the lacrimal sac.

malleolar g. The groove on the anterior surface of the distal end of the tibia that lodges tendons of the tibialis posterior and flexor digitorum longus musculi. SYN: *malleolar sulcus*.

meningeal g. One of several depressions on the internal surface of the cranial bones where blood vessels follow the meningeal and osseous structures of the skull.

mylohyoid g. The groove on the inner surface of the mandible that runs obliquely forward and downward and contains the mylohyoid nerve and artery. In the embryo it lodges Meckel's cartilage.

nail g. The space between the nail wall and the nailbed.

neural g. A longitudinal indentation that forms on the dorsal surface of the embryonic ectoderm. It is bordered by the neural folds, which merge dorsally to form the neural tube, a cylinder around the groove. Superiorly, the groove forms the ventricles of the brain; inferiorly, it becomes the central canal of the spinal cord.

obturator g. The groove at the su-

perior and posterior angle of the obturator foramen through which pass the obturator vessels and nerve.

olfactory g. A shallow groove on the superior surface of the cribriform plate of the ethmoid on each side of the crista galli. It contains the olfactory bulb.

palatine g. One of several grooves on the inferior surface on the palatine process of the maxilla. They contain the palatine vessels and nerves.

peroneal g. A shallow groove on the lateral aspect of the calcaneus and a deep groove on the inferior surface of the cuboid bone. Each transmits the tendon of the peroneus longus muscle.

primitive g. In the embryo, a shallow groove in the primitive streak of the blastoderm, bordered by the primitive folds.

pterygopalatine g. The groove on the maxillary surface of the perpendicular portion of the palatine bone that, with corresponding grooves on the maxilla and pterygoid process of the sphenoid, transmits the palatine nerve and descending palatine artery.

radial g. A broad, shallow, spiraling groove on the posterior surface of the humerus. It transmits the radial nerve and the profunda branchi artery.

rhombic g. One of seven transverse grooves in the floor of the developing rhombencephalon of the brain. They separate the neuromeres.

sigmoid g. The groove on the inner surface of the mastoid portion of the temporal bone. It transmits the transverse sinus.

subcostal g. Costal g.

urethral g. The groove on the caudal surface of the genital tubercle or phallus bordered by the urethral folds. The latter close, transforming the groove into the cavernous urethra.

gross (grōs) [L. *grossus*, thick] **1.** Visible to the naked eye. **2.** Consisting of large particles or components; coarse or large.

gross motor skills The group of motor skills (including walking, running, and throwing) that require large muscle groups to produce the major action, and require less precision than that exerted by small muscles. Most motor activities combine some elements of both fine and gross motor function.

gross tumor volume The demonstrable extent of a tumor seen or felt with standard examination techniques. The gross tumor volume is used in radiation oncology as the basis for initial estimates of the extent of a tumor that will undergo treatment with external beam radiation or brachytherapy.

Grotthus-Draper, law of (grōt'hūs-drā'pēr) The inverse relationship between the amount of energy absorption and the depth of penetration of the en-

ergy. Energy that is absorbed by superficial layers is no longer available to deeper-lying tissues.

ground 1. Basic substance or foundation.

2. Reduced to a powder; pulverized.

3. In electronics, the negative or earth pole that has zero electrical potential.

ground state The state of the lowest energy of a system such as an atom or molecule.

group [It. *gruppo*, knot] A number of similar objects or structures considered together (e.g., bacteria with similar metabolic characteristics). Atomic molecules and compounds with similar structures or properties are classified with certain groups.

alcohol g. The hydroxyl, —OH, which imparts alcoholic characteristics to organic compounds. These may be in three forms: primary, —CH₂OH; secondary, =CHOH; and tertiary, ≡COH.

azo g. In chemistry, the group —N=N—.

coli-aerogenes g. Coliform bacteria.

colon-typhoid-dysentery g. The collective term for *Escherichia*, *Salmonella*, and *Shigella* bacteria.

focus g. An assembly of individuals affected by a specific subject (e.g., a disease, health care delivery system, marketed service, professional or management issue) to solicit and study their opinions, identify interests, and make strategic plans to meet expressed needs.

peptide g. The —CONH radical.

prosthetic g. SEE: *prosthetic group*.

resource utilization g. ABBR: RUG.

Any of 44 classifications into which nursing home patients may be assigned according to their activity levels, underlying illnesses, the complexity of care they need, their cognitive status, and other variables affecting their care. The primary use is for insurance reimbursement calculations.

saccharide g. The monosaccharide unit, C₆H₁₀O₅, which is a component of higher polysaccharides.

support g. Patients or families of patients with similar problems such as breast cancer, multiple sclerosis, alcoholism, or other life experiences, who meet to assist each other in coping with the problems and seeking solutions and ways of coping. The composition and focus of support groups varies. Some groups may comprise patients who are experiencing or have experienced the same disorder. Discussions often center on current treatments, resources available for assistance, and what individuals can do to improve or maintain their health. Other groups involve those who have experienced the same psychological and emotional trauma such as rape victims or persons who have lost a loved one. Benefits expressed by members in-

clude the knowledge that they are not alone, but that others have experienced the same or similar problems and that they have learned to cope effectively. SYN: *mutual help group*.

grouping The classification of individual traits according to a shared characteristic.



blood g. Classification of blood of different individuals according to agglutinating and hemolyzing qualities before making a blood transfusion. SEE: *blood group; blood transfusion*.

perceptual g. The processing of information derived from nerves in the eyes, ears, nose, tongue, skin, and any other sensory structures. This function helps in understanding the environment and forming a coherent image of what is perceived.

group therapy A form of psychiatric treatment in which six to eight patients meet a specific number of times with a therapist. The value of this type of therapy is the opportunity for gaining insight from others into one's life experience.

group transfer An oxidation-reduction chemical reaction involving the exchange of chemical groups. A transferase enzyme is required.

Grover's disease (grō'vērzh) [R. W. Grover, contemporary U.S. dermatologist] A common itchy (pruritic) condition of sudden onset, characterized by a few or numerous smooth or warty papules, vesicles, eczematous plaques, or shiny translucent nodules. The pruritus may be mild or severe and is aggravated by heat. Even though the condition is self-limiting, it may last months or years.

TREATMENT: The patient should be treated symptomatically. Heat and sweat-inducing activities should be avoided. Retinoic acid may be helpful.

growth [AS. *growan*, to grow] Development, maturation, or expansion of physical structures or cognitive and psychosocial abilities. The process may be normal, as in the development of a fetus or a child, or pathological, as in a cyst or malignant tumor.

TYPES:

1. General body growth is seen in the increase in the physical size of the body and increase in the total weight of the muscles and various internal organs. Growth is usually slow and steady but has a marked acceleration just after birth and at the time of puberty (the "growth spurt").

2. Lymphoid organs, such as the thymus and the lymph nodes, grow fastest early in life, reach their peak of development at about the age of 12 years, and then stop growing or regress.

3. The brain, cord, eye, and meninges grow in childhood but reach adult size by the age of 8 years. This size is maintained without regression.

4. The testes, ovaries, and other genitourinary structures grow slowly in infancy, but at puberty they develop rapidly and cause the striking changes in appearance that make up the secondary sex characteristics.

5. Cognitive growth is evidenced by the progressive maturation of thought, reasoning, and intellect, esp. in school-aged children.

6. Psychosocial growth involves the development of personality, judgment, and temperament; it evolves throughout life, as experience in work, play, and emotional interactions with others broaden.

risk for disproportionate g. At risk for growth above the 97th percentile or below the 3rd percentile for age, crossing two percentile channels; disproportionate growth. SEE: *Nursing Diagnoses Appendix*.

growth and development, delayed Deviations from age growth norms. SEE: *illus.; Nursing Diagnoses Appendix*.

growth attenuation A decrease in the rate of growth of a child or adolescent from a previously observed pattern of increasing height and weight. Growth attenuation may be caused by many factors such as genetics, malnutrition, hormone deficiencies, toxins, or medications.

growth hormone, human synthetic SEE: *hormone, synthetic human growth*.

growth hormone insensitivity syndrome ABBR: GHIS. Laron syndrome.

growth hormone receptor antagonist Any agent that blocks the effects of growth hormone on its cellular receptors, e.g., in treating diseases such as acromegaly or diabetes mellitus.

growth plate SEE: *under plate*.

gruel (groo'äl) [L. *grutum*, meal] Any cereal boiled in water.

grumose, grumous (groo'mōs, -mūs) [L. *grumus*, heap] 1. Made up of coarse granular bodies in the center. 2. Lumpy, clotted.

grunt (grünt) [ME. *grunten*] An abnormal sound heard during labored exhalation that indicates a need for high chest pressures to keep the airways open. It is caused by closing of the glottis at the end of expiration.

PATIENT CARE: A grunting patient is laboring to breathe and may soon suffer respiratory failure without intervention to improve respiratory status.

gryposis (grī-pō'sis) [G. *gryposis*, a crooking] Abnormal curvature of any part of the body, esp. the nails.

GSA *Gerontological Society of America*.

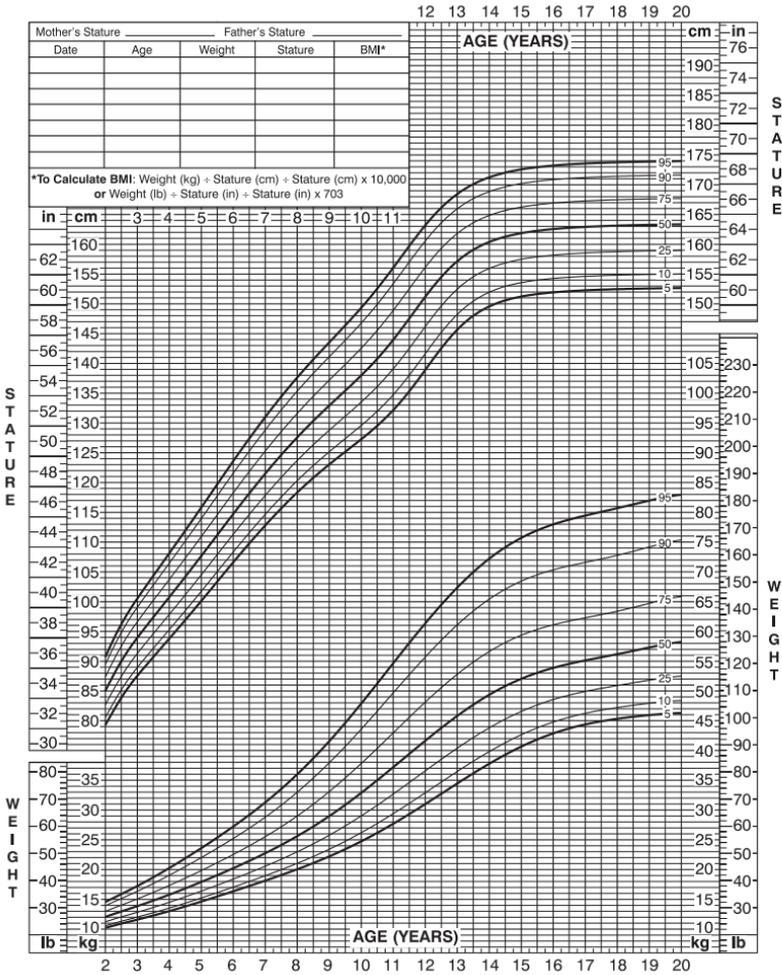
GSF *gingival sulcular fluid*.

GSR *galvanic skin response*.

G-suit (jē-sūt) A coverall-type garment designed for use by aviators. It contains compartments that inflate and bring pressure on the legs and abdomen to

2 to 20 years: Girls
Stature-for-age and Weight-for-age percentiles

NAME _____
 RECORD # _____



Published May 30, 2000 (modified 11/21/00).
 SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>



GROWTH CHART GIRLS

prevent blood from pooling there. In aviators this helps to prevent unconsciousness caused by positive acceleration with resulting pooling of blood in the lower extremities. The suit has been used in medicine to treat postural hypotension. SEE: *antishock garment*; *MAST*.

- GSW** *gunshot wound*.
- gt** *L. gutta*, a drop.
- gtt** *L. guttae*, drops.
- GU** *genitourinary*.

guaiac (gwī'āk) [NL. *Guaiacum*] A resin obtained from trees of the genus *Guaiacum*, either *G. officinale* or *G.*

sanctum. An alcoholic solution of guaiaic is used to test for occult blood in feces.

guaiac test A test for unseen blood in stool. SEE: *fecal occult blood test*.

guaifenesin (gwī-fēn'ē-sīn) An expectorant. Trade name is Robitussin.

Guanarito virus An arenavirus (from the Tacaribe virus group) that chronically infects rodents. It is the cause of sporadic outbreaks of Venezuelan hemorrhagic fever.

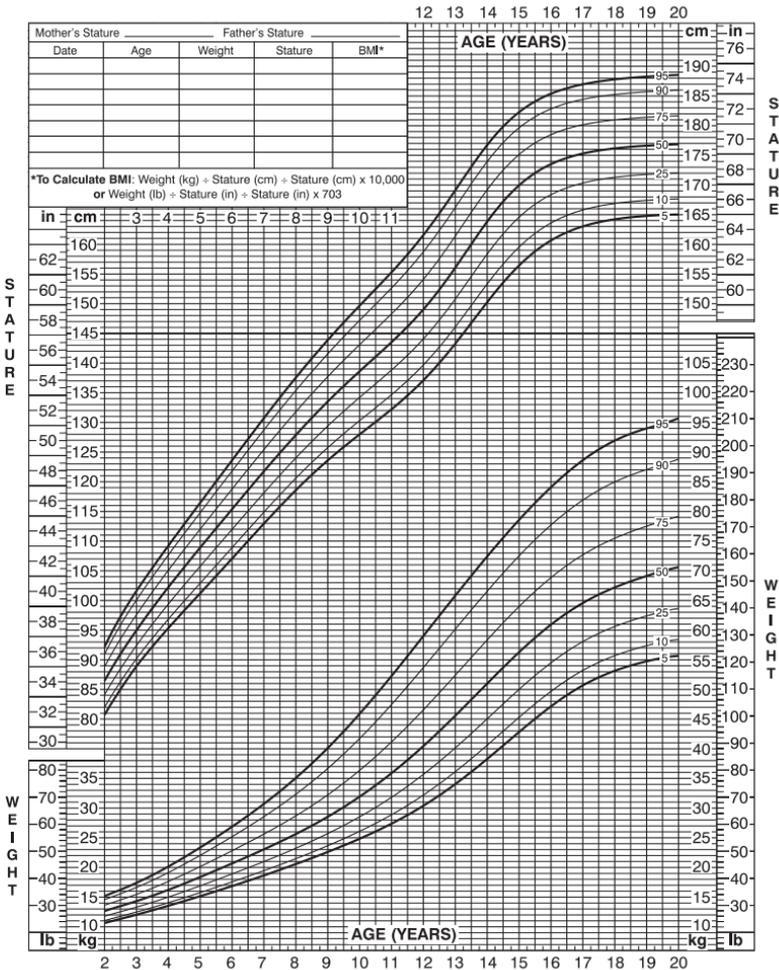
guanidine (gwān'ī-dēn) A crystalline organic compound, $(NH_2)_2C=NH$, found among the decomposition products of proteins.

2 to 20 years: Boys

Stature-for-age and Weight-for-age percentiles

NAME _____

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SAFER • HEALTHIER • PEOPLE™

GROWTH CHART BOYS

guanidinemia (gwǎn'ɪd-ən-ē'mē-ǎ) [*guanidine* + Gr. *haima*, blood] Guanidine in the blood.

guanidoacetic acid (gwǎn'ɪ-dō-ǎ-sēt'ik) A chemical formed in the liver, kidney, and other tissues. It is then metabolized to form creatine.

guanine (gwǎ'nēn) C₅H₅N₅O; one of the purine bases in DNA and RNA. Purine bases are degraded to urate and excreted in the urine.

guanosine (gwǎn'ō-sīn) The nucleoside formed from guanine and ribose. It is a major constituent of RNA.

guanosine triphosphate ABBR: GTP. A modified guanosine nucleotide with three phosphoric acid groups, important as an energy-transfer molecule in many cellular processes.

guarana (gwǎ-rǎ-nǎ') [Native Brazilian word] A stimulant derived from *Paulinia cupana*, a Brazilian plant used in folk remedies for its supposed effects on alertness and cognition. The plant contains caffeine and other chemicals, but has not been proven to enhance thinking, treat dementia, or alter any neuropsychiatric functions.



Because some guarana-based products have high levels of caffeine, care should be taken in their use to avoid caffeine overdose.

guard A device for protecting something (e.g., a mouth guard or a face guard).

occlusal g. A removable dental appliance that covers one or both arches and is designed to minimize the damaging effects of bruxism, jaw and head trauma during contact sports, or any detrimental occlusal habits. SEE: *night-guard*; *mouth guard*.

guarded prognosis A prognosis given by a physician when the outcome of a patient's illness is in doubt.

guardian ad litem (gār'dē-ān) [L.] In cases of child abuse, a guardian for the child appointed by the court to protect the best interests of the child.

guardianship A legal arrangement by which a person or institution assumes responsibility for an individual. When guardians are appointed, the individuals receiving the care are presumed to be incompetent and unable to care for themselves.

guarding A body defense method to prevent movement of an injured part, esp. spasm of abdominal muscles when an examiner attempts to palpate inflamed areas or organs in the abdominal cavity.

guar gum (gwär) [Hindi] A polysaccharide made of galactose and mannose and used as a food thickener, e.g., in ice cream. It is derived from an Asian bean, *Cyamopsis tetragonoloba*.

gua sha (gwā shah) [Chinese (Mandarin), lit., "rub petechiae"] A traditional Chinese method of massage of scraping or rubbing the skin with a rounded blade, oils, and herbs. It is used to relieve pain and improve circulation. The massage causes a petechial rash or bleeding into the skin that resolves after a few days.

gubernaculum (gū'bēr-nāk'ū-lūm) [L., helm] **1.** A structure that guides. **2.** A cordlike structure uniting two structures.

g. dentis A connective tissue band that connects the tooth sac of an unerupted tooth with the overlying gum.

g. testis A fibrous cord in the fetus that extends from the caudal end of the testis through the inguinal canal to the scrotal swelling. It is the guiding structure for the descent of the testis into the scrotum.

Gubler's paralysis A form of alternate hemiplegia in which a brainstem lesion causes paralysis of the cranial nerves on one side and of the body on the opposite side.

Gubler's tumor A fusiform swelling on the wrist in lead palsy.

Gudden's law A law stating that, in the

division of a nerve, degeneration in the proximal portion is toward the nerve cell.

guidance The act of aiding, instructing, coaching, or counseling (e.g., of a patient).

anticipatory g. Information concerning normal expectations of an age group (or regarding a disease entity) in order to provide support for coping with problems before they arise. It is a crucial component of many health care encounters, e.g., well-child checkups in infancy.

manual g. Physical cueing or prompting by a therapist, to facilitate the mastery of movements needed to perform a specific task or to extinguish or suppress undesired movements.

guide A mechanical aid or device that assists in setting a course or directing the motion either of one's hand or of an instrument one holds.

guide catheter A tube inserted into a blood vessel or body cavity that makes it easier to enter that vessel with other devices or instruments. Guide catheters are used to facilitate the placement of lasers, stents, and balloons for angioplasty.

guide dog A dog specifically trained to assist blind or partially sighted persons with mobility.

guideline An instructional guide or reference to indicate a course of action in a specified situation (e.g., critical care guideline).

guidewire A device used to assist in inserting, positioning, and moving a catheter. These wires vary in size, length, stiffness, composition, and shape of the tip.

guiding In osteopathic medicine the movement of a body part gently along its normal axis through its normal range of motion.

guile The use of deception or cunning in order to accomplish something.

Guillain-Barré syndrome (gē-yān'bā-rā') [Georges Guillain, Fr. neurologist, 1876–1961; J. A. Barré, Fr. neurologist, 1880–1967] ABBR: GBS. A rare autoimmune illness, affecting 1 to 2 persons per 100,000 in the U.S., marked by progressive and potentially fatal ascending paralysis with loss of motor reflexes. Loss of motor function begins in the extremities and moves upward through the body; when it includes the diaphragm, it may result in respiratory failure. The loss of motor function can occur in a few days to 2 to 3 weeks. Uncomfortable sensations (paresthesias and dysesthesias) in the hips, thighs, and back are commonly experienced. Recovery is spontaneous and complete in the vast majority of patients, but may take more than a year. The syndrome may produce only limited muscle weakness or complete paralysis, followed by

general recovery or partial recovery with residual weakness in the extremities. SYN: *acute inflammatory polyneuropathy*; *acute inflammatory polyradiculopathy*.

ETIOLOGY: The syndrome often follows an acute infection or vaccination. Antibodies react with antigens on the surface of peripheral myelinated nerves, causing demyelination.

TREATMENT: Treatment is aimed at supporting the patient until motor function returns and preventing complications. Approximately one third of patients need intubation and mechanical ventilation until they can breathe on their own. Total enteral or parenteral nutrition as necessary, physical therapy, cardiac monitoring, and close observation for infection are important to reduce complications. Plasmapheresis and use of intravenous immune globulin (IVIG) is most beneficial in treating patients with rapidly progressing paralysis.

PATIENT CARE: The patient is carefully assessed for evidence of impending respiratory failure, through the use of bedside spirometry. If the inspiratory force, vital capacity, or arterial blood gases deteriorate respiratory support is provided. Testing for thoracic sensation and monitoring and marking the level of diminished sensation as it ascends helps to predict impairment of intercostal muscle function.

Noninvasive interventions such as passive ROM exercises, massage, distraction, imagery, ice, heat, cutaneous stimulation, and transcutaneous electrical nerve stimulation should be offered and added to the patient's plan of care, depending upon his or her response. Range-of-motion exercises are provided three to four times daily within the patient's limits. As the patient's condition stabilizes, gentle stretching and active-assisted exercises are provided.

The GBS patient may be anxious, frightened, or depressed. Questions or misconceptions about the illness and the procedures used to address it should be answered thoughtfully and compassionately. Feelings of isolation and fear can be reduced by family visits, patient education, or the assistance of former GBS patients who can share feelings and offer hope and information on coping. Routine care of the paralyzed patient is implemented including range of motion exercises, turning and positioning every 2 hr, and scrupulous skin care.

Fluid and electrolyte balance is maintained. To prevent aspiration, the head of the bed is elevated and the gag reflex tested before oral intake. If the gag reflex is impaired, nasogastric enteral feedings are provided until the reflex re-

turns. The nurse encourages adequate fluid intake (2000 ml/day) orally, enterally, or if necessary, parenterally unless contraindicated. The bladder should be palpated and percussed to assess for urine retention. Either urinal or bedpan is offered every 3 to 4 hr. Intermittent urinary catheterization is instituted if necessary. To prevent or relieve constipation, prune juice and a high-bulk diet, stool softeners and laxatives, glycerin or bisacodyl suppositories, or enemas (as prescribed) are provided daily or on alternate days.

If the patient has facial paralysis, the nurse provides oral hygiene and eye care every 4 hr, protecting the corneas with shields and isotonic eye drops. If the patient cannot vocalize, establishing alternative methods of communication, such as eye blink or letter boards, is essential to ensure that patient needs are met. If the patient cannot use the regular call light to signal for assistance, a pressure-sensitive cell device activated with minimal pressure is placed near the hand or head; or a sip-and-puff call system should be used. The patient's legs are inspected regularly for signs of thrombophlebitis, and antiembolism devices are applied and anticoagulants given if prescribed.

During recovery, patients require physical and occupational therapy to reach their fullest potential. Patient and family should also meet with a social worker or case manager to discuss financial concerns (insurance coverage, disability-related income losses) and to learn about available community resources.

Before discharge, the nurse assists the patient and family to develop an appropriate home care plan and makes appropriate referrals for home care as necessary. The patient and family are also taught the skills required for home care or are referred for instruction. Additional information is available from support and educational associations, such as the Guillain-Barré Syndrome Foundation International (www.gbsfi.com). SEE: *Nursing Diagnoses Appendix*.

guillotine (gīl'ō-tēn) [Fr., instrument for beheading] An instrument for excising tonsils and laryngeal growths.

guilt (gīlt) [AS *gylt*, offense] **1.** The state or feeling of remorse or self-reproach for having committed a wrong or crime. **2.** Voluntary confession or conviction in a trial of commission of a crime.

guinea pig (gīn'ē pīg) **1.** A small rodent used in laboratory research. **2.** A colloquial term for persons used in medical experiments.

guinea worm *Dracunculus medinensis*.
gullet (gūl'ēt) [L. *gula*, throat] The esophagus.

gum **1.** A resinous substance given off by

or extracted from certain plants. It is sticky when moist but hardens on drying. Roughly, gum is any resin-like substance produced by plants. **2.** The mucosal tissue covering the alveolar processes of the mandible and maxilla. SYN: *gingiva*.

DIAGNOSIS: *Bleeding:* If the gums bleed easily, conditions such as gingivitis, scurvy, trench mouth, or anticoagulation may be present. Silver poisoning causes the gums to turn *blue*; mercurial stomatitis or lead poisoning turns the gums *bluish red*, with a bluish line at the edge of the teeth. A *greenish line* at the edge of the teeth may indicate copper poisoning. A *purplish line or color* indicates scurvy. In youth, gingivitis, pyorrhea, or scurvy may cause a *red line*. *Spongy gums and ulceration* may indicate gingivitis, scurvy, stomatitis, leukemia, tuberculosis, or diabetes.

gumboil (gŭm'boyl') A gum abscess. SYN: *parulis*.

SYMPTOMS: The gum is red, swollen, and tender. A fluctuating swelling containing pus may appear, which may point and break or require incision.

ETIOLOGY: The abscess may be caused by a subperiosteal infection associated with a carious tooth. It may also be caused by irritation or injury by a denture.

TREATMENT: The patient should receive hot mouthwashes and applications over the gum or externally. Frequent mouthwashes should continue after the lesion is evacuated.

gumma (gŭm'ă) *pl. gummata* [L. *gummi, cummi*, fr. Gr. *kommi*, gum] A soft granulomatous tumor characteristic of the tertiary stage of syphilis. It consists of a central necrotic mass surrounded by a zone of inflammation and fibrosis. Spirochetes may be present in the mass. Gummas vary in diameter from a millimeter or a centimeter or more and tend to occur in the liver, brain, testes, heart, and elsewhere. SEE: *syphilis*.

SYMPTOMS: Symptoms vary depending on the gumma location. Bursting of a gumma leads to a gummatous ulcer that is painless but slow to heal. The base is formed by a "wash-leather" slough, but surrounding tissues are healthy.

gummatous (gŭm'ă-tŭs) Having the character of a gumma.

gumiose (gŭm'ōs) C₆H₁₂O₆; a sugar from animal gum.

gummy [L. *gummi, gum*] Sticky, swollen, puffy.

Gunn's dots (gŭnz) [Robert Marcus Gunn, Brit. ophthalmologist, 1850–1909] White spots on the retina of the eye, close to the macula.

Gunn's syndrome SEE: *Marcus Gunn syndrome*.

gurney (gĕr'nĕ) Stretcher.

gustation (gŭs-tă'shŭn) [L. *gustare*, to taste] The sense of taste.

gustatory (gŭs'tă-tō-rĕ) Pert. to the sense of taste.

gustometry (gŭs-tŏm'ĕ-trĕ) [G. *metron*, measure] The measurement of the acuteness of the sense of taste.

gut [AS.] **1.** The bowel or intestine.

2. The primitive gut or embryonic digestive tube, which includes the foregut, midgut, and hindgut. **3.** Short term for catgut.

gut-associated lymphoid tissue ABBR: GALT. A term used for all lymphoid tissue associated with the gastrointestinal tract, including the tonsils, appendix, and Peyer's patches. GALT contains lymphocytes, primarily B cells, and is responsible for controlling microorganisms entering the body via the digestive system. SEE: *mucosal immune system*.

Guthrie test (gŭth'rĕ) [Robert Guthrie, U.S. microbiologist, 1916–1995] A blood test used to detect hyperphenylalaninemia and to diagnose phenylketonuria (PKU) in the newborn.

PATIENT CARE: The blood for the test is obtained by pricking a newborn's heel. The drop of blood obtained is placed on filter paper and allowed to dry. It can then be analyzed for evidence of particular sequences of DNA. The dried blood on the filter paper is often referred to as a "Guthrie spot." SEE: *phenylketonuria*.

gutta (gŭt'ă) [L., a drop] ABBR: *gt.* (*pl. gtt.*) A drop. The amount in a drop varies with the nature of the liquid and its temperature. It is therefore not advisable to use the number of drops per minute of a solution as anything more than a general guide to the amount of material being administered intravenously.

gutta-percha (gŭt'ă-pĕr'chă) The purified dried latex of certain trees, used in dentistry.

guttate (gŭt'ăt) [L. *gutta*, drop] Resembling a drop, said of certain cutaneous lesions.

guttatim (gŭt-tă'tim) [L.] Drop by drop.

guttering (gŭt'ĕr-ing) Cutting a channel or groove in a bone.

guttural (gŭt'ŭ-răl) Pert. to the throat.

gutturotety (gŭt'ŭr-ŏ-tĕt'ă-nĕ) [G. *tetanos*, tension] Stuttering or stammering caused by laryngeal spasm.

Guyon's canal (gĕ-yŏnz) A tunnel on the ulnar side of the wrist formed by the hook of the hamate and pisiform bones. The ulnar nerve may be compressed at this site in long-distance bicyclists, by falling on the wrist, or by repetitive wrist actions.

Guyon's sign [Felix J. C. Guyon, Fr. surgeon, 1831–1920] Ballottement of the kidney.

GVHD *graft-versus-host disease*.

Gy *gray* (unit of measurement of radiation).

gymnastics [Gr. *gymnastikos*, pert. to nakedness] Systematic body exercise with or without special apparatus.

ocular g. Systematic exercise of the eye muscles to improve muscular coordination and efficiency.

Swedish g. A system of movements made by the patient against a resistance provided by the attendant, once used worldwide in physical training. It influenced the development of modern gymnastics.

Gymnema (jīm-nē'mā) An herbal remedy extract from the leaves of a vine, *Gymnema sylvestre*, native to tropical India, and promoted for its effect on high blood glucose levels.

gyn- SEE: *gyneco-*.

gynandrisms (jī-nān'drīzm) 1. Male hermaphroditism. 2. Partial female pseudhermaphroditism.

gynandroid (jī-nān'drōyd, jī-, gī-) [" + " + *eidos*, form, shape] An individual having sufficient hermaphroditic sexual characteristics to be mistaken for a person of the opposite sex.

gynatresia (jī-nā-trē'zē-ā, jī-, gī-) [" + *a-*, not, + *tresis*, perforation] Occlusion of part of the female reproductive tract, especially of the vagina.

gyne- SEE: *gyneco-*.

gynecic (jī-nē'sīk, jī-, gī-) [Gr. *gyne*, woman] Pert. to women.

gyneco-, gyno-, gyn-, gyne- [Gr.] Combining forms meaning *woman, female*.

gynecogenic (jīn'ē-kō-jēn'īk) [Gr. *gyne*, woman, + *gennan*, to produce] Producing female characteristics.

gynecoid (jīn'ē-kōyd) [" + *eidos*, form, shape] Resembling the female of the species.

gynecologic, gynecological (gī'nē-kō-lōj'īk, jī', jīn'ē-; -ī-kāl) [" + *logos*, word, reason] Pert. to gynecology, the study of diseases specific to women.

gynecological operative procedures

Surgery involving the female reproductive tract. Included are dilation and curettage, hysterectomy, tubal ligation, ovarian procedures, cauterization of the cervix, and cesarean section.

PATIENT CARE: *Preoperative:* The patient is prepared physically and emotionally for the procedure.

Postoperative: Vital signs are monitored frequently in the immediate postoperative period. If they deteriorate, the patient is assessed for shock or internal hemorrhage. Abdominal dressings are inspected for drainage, the presence of surgical drains is noted, the incision is assessed and redressed, and any vaginal drainage or perineal sutures are managed. A calm, quiet environment and light blankets are provided.

Ventilatory function is monitored; the patient is encouraged to use incentive

spirometry and to breathe deeply and cough. Fluid and electrolyte balance is monitored, and intravenous fluid intake is maintained as prescribed until oral intake (clear liquids) is permitted and tolerated.

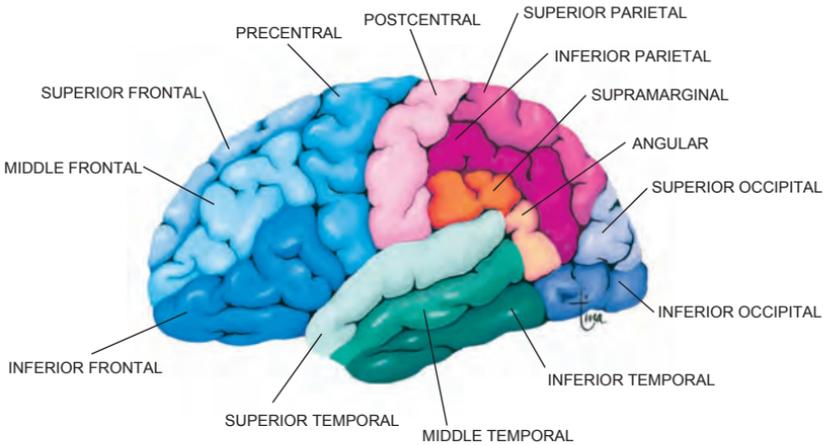
The urinary bladder is gently palpated and percussed for evidence of urinary retention. The patient is offered the bedpan frequently to encourage urination, and the time and amount of each voiding are documented. Ultrasound of the bladder evaluates urine retention volume. Intermittent catheterization is instituted for urinary retention (allowing no more than 12 hr to pass without urine output immediately postoperatively, then no more than 8 hr until the patient is able to void). Closed, continuous drainage is maintained via an indwelling catheter if the surgeon prefers or if the patient continues to be unable to void. Bowel activity is assessed, and stool softeners are provided as prescribed.

Regular assessments are made for signs of thrombophlebitis. Active leg exercises are encouraged, and antiembolism stockings, pneumatic boots, heparins, or warfarin are used as prescribed. Early ambulation is encouraged.

gynecologist (gī'nē-kōl'ō-jīst, jī', jīn'ē-) A physician who specializes in gynecology.

gynecology (gī'nē-kōl'ō-jē, jī', jīn'ē-) [" + *logos*, word, reason] The study of women's health care, esp. diseases and conditions that affect reproduction and the female reproductive organs. **gynecologic, adj.**

gynecomastia (jī'nē-kō-mās'tē-ā, gī', jīn'ē-) [" + *mastos*, breast] Enlargement of breast tissue in the male. This may occur during three distinct age periods: transiently at birth, again beginning with puberty and declining during the late teenage years, and finally in adults over age 50 years. In the newborn, it is caused by stimulation from maternal hormones. A milky secretion ("witch's milk") may be produced; the condition disappears within a few weeks. During middle adolescence, as many as 60% of boys may develop some degree of gynecomastia, either unilateral or bilateral and, if bilateral, often with varying degrees of growth between the two sides. It is considered a normal, nonpathological condition and usually disappears within 18 months. Hormonal assays should be performed only if the condition appears before puberty, persists longer than 2 years, or is associated with other signs of endocrine disorders. In older men, the condition can be caused by pituitary or testicular tumors, medications such as spironolactone or antiandrogens, or cirrhosis of the liver causing enhanced activity (due



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to delayed liver catabolism) of naturally produced estrogens.

TREATMENT: Therapy depends on the cause. Because gynecomastia has a high rate of spontaneous regression, medical therapies are most effective during the active proliferative phase. To help alleviate the acute embarrassment from the condition adolescent boys may suffer, they should be reassured that the problem will go away. Tender breasts should be treated with analgesics.

gynecopathy (jī-ně-kōp'ă-thē, gī', jīn'ě-) [*pathos*, disease, suffering] Diseases specific to women.

gynophobia (jī'ně-fō'bē-ă, gī', jīn'ě-) [*phobos*, fear] An abnormal aversion to the company of women, or fear of them. **gynophobic**, *adj.*

gyno- SEE: *gyneco-*.

gynopathic (gī'nō-păth'īk) [*pathos*, disease, suffering] Pert. to diseases of the female reproductive organs and breasts.

gynoplasty [*plassein*, to form] Reparative surgery of the female genitalia.

gypsum (jīp'sūm) [L.; G. *gypsos*, chalk]

1. A natural form of hydrated calcium sulfate. When heated to 130°C, it loses its water and becomes plaster of Paris. 2. A hemihydrate of gypsum resulting from heating gypsum and allowing it to dehydrate in the presence of sodium succinate or calcium hydrochloride. This form is used as a dental stone in preparing investments for dental casting.

gyrate (jī'rāt) [Gr. *gyros*, circle] 1. Ring-shaped, convoluted. 2. To revolve.

gyration (jī-rā'shūn) A rotary movement.

gyre (jīr) [Gr. *gyros*, circle] Gyrus.

gyrectomy (jī-rēk'tō-mē) [*ektome*,

excision] Surgical removal of a cerebral gyrus.

gyri (jī'rī) Pl. of gyrus.

gyro- [Gr.] Combining form meaning *circle, spiral, ring*.

gyroma (jī-rō'mă) [Gr. *gyros*, circle, + *oma*, tumor] An ovarian tumor consisting of a convoluted mass.

gyrose (jī'rōs) In bacteriology, marked by circular or wavy lines. This term is applied to bacterial colonies.

gyrospasm (jī'rō-spăzm) [*spasmos*, a convulsion] A spasmodic rotary head movement.

gyrus (jī'rūs) *pl. gyri* One of the convolutions of the cerebral hemispheres of the brain. The gyri are separated by shallow grooves (sulci) or deeper grooves (fissures). SYN: *gyre*. SEE: *illus.*; *convolution*.

angular g. A gyrus of the parietal lobe that encloses the posterior end of the superior temporal sulcus.

callosal g. A large gyrus on the medial surface of the cerebral hemisphere that lies directly above the corpus callosum and arches over its anterior end.

g. cerebelli A layer of the cerebellum.

cingulate g. An arch-shaped convolution of the cingulum, curved over the surface of the corpus callosum, from which it is separated by the callosal sulcus.

dentate g. A gyrus marked by indentations that lie on the upper surface of the hippocampal gyrus.

g. fornicatus A gyrus on the medial surface of the cerebrum, which includes the gyrus cinguli, isthmus, hippocampus, hippocampal gyrus, and uncus.

Heschl's g. SEE: *Heschl's gyrus*.

hippocampal g. A gyrus between the hippocampal and collateral fissures.

lingual g. A gyrus between the calcarine and collateral fissures.

occipital g. Any of the gyri on the lateral surface of the occipital lobe. They are classified roughly into two groups, the inferior or lateral occipital gyri and the superior occipital gyri. They are not always present.

orbital g. One of four gyri (anterior, posterior, lateral, and medial) forming the inferior surface of the frontal lobe.

paracentral g. The area on the medial aspect of the cerebrum above the cingulate sulcus.

parahippocampal g. A gyrus on the lower surface of each cerebral hemisphere between the hippocampal and collateral sulci.

paraterminal g. A small area of the cerebral cortex anterior to the lamina terminalis and below the rostrum of the corpus callosum.

parietal g. A gyrus of the parietal lobe; the largest are the postcentral, supramarginal, and angular.

postcentral g. A gyrus of the parietal lobe directly posterior to the central fissure (of Rolando); it contains most of the general sensory area. SYN: *posterior central gyrus*.

posterior central g. Postcentral gyrus.

precentral g. A dorsoventral gyrus on the lateral cerebral hemisphere just in front of the central sulcus of the brain. It marks the posterior edge of the frontal lobe and contains the primary motor area.

g. rectus A gyrus on the orbital aspect of the frontal lobe, located between the medial margin and the olfactory sulcus.

Retzius g. The supracallosal and subcallosal gyri.

subcallosal g. A narrow band of gray matter on the medial surface of the hemisphere below the rostrum of the corpus callosum.

supracallosal g. A rudimentary gyrus on the upper surface of the corpus callosum.

supracallosus g. The gray matter layer covering the corpus callosum.

supramarginal g. A gyrus of the parietal lobe, enclosing the posterior end of the sylvian fissure.

temporal g. A gyrus of the temporal lobe; the largest are the superior, middle, and inferior.