

# N

**N** 1. Symbol for the element nitrogen. 2. *normal*, esp. with reference to solutions.

**n** 1. Symbol for *index of refraction*. 2. *nasal*; *number*. 3. In statistics, the *sample size*.

<sup>15</sup>N Symbol for radioactive isotope of nitrogen.

**NA** *nicotinic acid*; *Nomina Anatomica*; *numerical aperture*; *nurse's aide*.

**Na** [L. *natrium*] Symbol for the element sodium.

**nabothian cyst** (nā-bō'thē-ān) [Martin Naboth, Ger. anatomist and physician, 1675–1721] A cyst caused by closure of the ducts of the nabothian glands in the uterine cervix as a result of chronic cervicitis.

**NaBr** Sodium bromide.

**NaCl** Sodium chloride.

**NaClO** Sodium hypochlorite.

**Na<sub>2</sub>CO<sub>3</sub>** Sodium carbonate.

**nacreous** (nā'krē-ūs) [L. *nacer*, mother of pearl] Having an iridescent pearl-like luster, as bacterial colonies.

**NAD** *nicotinamide adenine dinucleotide*; *no appreciable disease*.

**NADH** *nicotinamide adenine dinucleotide*, reduced form.

**nadir** (nā'dēr) [ME. fm. Arabic] 1. A low point in any measurement. 2. The lowest concentration of blood cells (esp. white blood cells) found after taking a drug that suppresses the bone marrow. The term is usually used for the low blood cell counts that occur after cancer chemotherapy. When the absolute neutrophil count reaches a nadir below 1000 cells/mm<sup>3</sup>, the risk of life-threatening infections increases dramatically.

**NADP** *nicotinamide adenine dinucleotide phosphate*.

**NADPH** *nicotinamide adenine dinucleotide phosphate*, reduced form.

**NAD<sup>+</sup>** *nicotinamide adenine dinucleotide*, oxidized form.

**NADP<sup>+</sup>** *nicotinamide adenine dinucleotide phosphate*, oxidized form.

**Naegele, Franz Carl** (nā'gē-lē) [German obstetrician, 1777–1851]

***N.*'s obliquity.** Anterior parietal presentation of the fetal head in labor. SYN: *anterior asynclitism*.

***N.*'s rule** A numerical formula for estimating the date labor will begin; by subtracting 3 months from the first day of the last menstrual period and adding 7 days to that date, a provisional date of delivery is identified.

**Naegleria** (nā-glēr'ē-ā) A genus of amoeba present in soil, ground water, and sewage. One species, *N. fowleri*, is

the cause of a rapidly lethal form of hemorrhagic meningoencephalitis (brain and meningeal infection). Other species include *N. gruberi* and *N. lovaniensis*. SEE: *acanthamebiasis*; *meningoencephalitis*.

**NAEMSE** *National Association of Emergency Medical Services Educators*.

**NAEMSP** *National Association of EMS Physicians*.

**NAEMT** *National Association of Emergency Medical Technicians*.

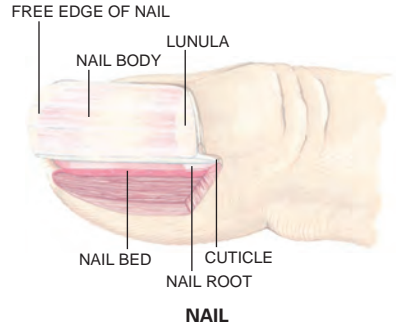
**NaF** Sodium fluoride.

**Nagi disablement model** A descriptive scheme that describes the progression from pathology or disease to disability. The components are pathology, impairment, functional limitation, and disability. Physical therapists use a modification of this model to make diagnoses and to help direct intervention.

**NaHCO<sub>3</sub>** Sodium bicarbonate.

**NaHSO<sub>3</sub>** Sodium bisulfite.

**nail** [AS. *naegel*] 1. A rod made of metal, bone, or solid material used to attach the ends or pieces of broken bones. 2. A horny cell structure of the epidermis forming flat plates upon the dorsal surface of the fingers and toes. SYN: *onyx*; *unguis*. SEE: *illus*.



Longitudinal section

A fingernail or toenail consists of a body composed of keratin (the exposed portion) and a root (the proximal portion hidden by the nail fold), both of which rest on the nailbed (matrix). The latter consists of epithelium and corium continuous with the epidermis and dermis of the skin of the nail fold. The crescent-shaped white area near the root is called the lunula. The epidermis extending from the margin of the nail fold over the root is called eponychium; that

underlying the free border of the distal portion is called hyponychium.

A nail grows in length and thickness through cell division in the stratum germinativum of the root. The average rate of growth in fingernails is about 1 mm per week. Growth is slower in toenails and slower in summer than in winter. Nail growth varies with age and is affected by disease and certain hormone deficiencies. The onset of a disease that briefly interferes with nail growth and development may be estimated by measuring the distance of the line (Beau's line) across the nail from the root of the nail.

**DIFFERENTIAL** Changes in the nails, such as ridges, may occur after a serious illness or indicate defective nutrition. In achlorhydria and hypochromic anemia, excessively spoon-shaped nails that are depressed in the center may occur. In chronic pulmonary conditions and congenital heart disease, a spongy excess of soft tissue at the base of the nails may be associated with clubbed fingers. SEE: *clubbing*.

Atrophy may occur as a result of hereditary or congenital tendencies. Permanent atrophy may follow injuries, scars from disease, frostbite, nerve injuries, and hyperthyroidism. Nail shedding is due to the same causes. Fragile or split nails often occur as a congenital condition or may be due to prolonged contact with chemicals or too frequent buffing or filing of the flat surface of the nail during manicuring. In a healthy person brittle nails are usually caused by exposure to solvents, detergents, and soaps. The brittleness disappears when the external causes are avoided. Dry, malformed nails may be due to trophic changes resulting from injury to a nerve or a finger or from neuritis, Raynaud's disease, pulmonary osteoarthropathy, syphilis, onychia, scleroderma, acrodermatitis, or granuloma fungoides of the fingers. Transverse lines (Beau's lines) may result from previous interference of nail matrix growth. These lines may be caused by local or systemic conditions. The approximate date of the lesion may be determined because it takes 4 to 6 months for the fingernail to be replaced. Chancre may be suspected if a small indolent ulcer appears near the nail, esp. if indurated and associated with enlarged lymph glands above the inner condyle. Quincke's capillary pulsation, indicated by a rhythmic flushing and blanching under the nails, is seen most frequently in aortic regurgitation and often in anemia.

Discoloration of nails is seen in various medical conditions. *Black* discoloration may be seen in diabetic as well as some other forms of gangrene. *Blue-*

*black* discoloration is a common condition due to hemorrhage caused by bleeding diseases, such as hemophilia, or trauma. This condition may be painful and can be relieved by drilling a small hole in the nail at the site of the hemorrhage. A dental drill, the heated tip of a paper clip, or a similar rigid wire of small diameter may be used. *Brown* discoloration may be due to arsenic poisoning. *Brownish-black* discoloration often indicates chronic mercury poisoning due to the formation of sulfide of mercury in the tissues. *Cyanosis* of the nails usually indicates anemia, poor circulation, or venous stasis. *Green* staining of the nail fold or under the nail is associated with the growth of *Pseudomonas* in a wet area. *Slate* discoloration is an early manifestation of argyria, and intake of silver should be stopped at once. *White* spots or striate lesions may be due to trauma and are more frequently seen in women. Transverse white bands in all nails may be a sign of acute or chronic arsenic poisoning or, rarely, of thallium acetate poisoning. SEE: *Mees lines*.

**eggshell n.** A condition in which the nail plate is soft and semitransparent, bends easily, and splits at the end. The condition is associated with arthritis, peripheral neuritis, leprosy, and hemiplegia. It may be the only visible sign of late syphilis.

**fungal infection of n.** Infection of a nail by one of a number of fungi. Systemic therapy with antifungal drugs may eradicate the infection.

**habit deformity n.** Disruption of the nail surface by the habit of abrading or stroking that area. This produces a wavy or washboard-like nail surface.

**hang n.** Broken epidermis at the edge of a nail.

**ingrown n.** Growth of the nail edge into the soft tissue, causing inflammation and sometimes an abscess. Ingrown nails may be due to improper paring of the nails or pressure on a nail edge from improperly fitted shoes. In many cases, this condition may be prevented by cutting the nails straight across.

**intramedullary n.** A surgical rod inserted into the intramedullary canal to act as an immobilization device to hold the two ends of a fractured long bone in position.

**reedy n.** A nail marked by longitudinal fissures.

**Smith-Petersen n.** SEE: *Smith-Petersen nail*.

**spoon n.** A nail with a depressed center and elevated lateral edges. This condition may follow trauma to the nail fold or iron deficiency anemia or may develop naturally. SEE: *koilonychia* for ill.

**nailbed** The portion of a finger or toe covered by the nail. SYN: *nail matrix*.

**nail biting** An anxious behavior in which the free edges of the nails are chewed down as a means of expressing or relieving stress. SYN: *onychophagy*.

**nail fold** SEE: *fold, nail*.

**nailing** Fixing fragments of bone by use of a nail.

**nail matrix** Nailbed.

**nail-patella syndrome** Onycho-osteodysplasia.

**nail root** Proximal portion of nail covered by nail fold.

**nail wall** Epidermis covering edges of the nail. SYN: *vallum unguis*.

**nairovirus** (nā'rō-vī'rūs, nī') A genus of RNA viruses that includes the causative agent of Crimean-Congo hemorrhagic fever.

**Naja** (nā'jā) [NL fm. Sanskrit *naga*, snake] The scientific name of the group of venomous snakes, native to Africa, India, Asia, and Australia, commonly known as cobras. Their venom contains tissue-destroying enzymes that cause local necrosis at the site of a bite and produce cardiotoxic and neurotoxic polypeptides.

**naked** (nā'kéd) [AS *naced*, nude] Uncovered, exposed to view, nude, bare, devoid of clothing.

**nalorphine hydrochloride** (nāl-or'fēn) A narcotic antagonist used in the treatment of narcotic overdose.

**naloxone hydrochloride** (nāl-ōks'ōn) A drug that is antagonistic to the actions of narcotics and opiates such as morphine, methadone, and opium. It is helpful in reversing the respiratory depression caused by an overdose of the narcotics.

**naltrexone** (nāl-trēk'sōn) An opioid antagonist used to treat addiction to narcotics and alcohol.



Naltrexone may cause liver damage when given in high doses.

**NANDA** *North American Nursing Diagnosis Association*.

**nanism** (nā'nīzm) [L. *nanus*, dwarf, + Gr. *-ismos*, condition] Dwarfism.

**symptomatic n.** Nanism with deficient dentition, sexual development, and ossification.

**nano-** (nā'nō) [L. *nanus*, dwarf] **1.** Prefix indicating one billionth ( $10^{-9}$ ) of the unit following; thus, a nanogram is one billionth ( $10^{-9}$ ) of a gram. **2.** Combining form indicating dwarfism (nanism).

**nanobacteria** (nā'nō-bāk-tēr-ē-ā) The smallest known bacteria with intact gram-negative cell walls. These microbes produce biologically available apatite crystals that mineralize into structures similar to those found in kidney stones. The organisms have been isolated from nearly all kidney stones and

are suspected of being a causative agent in stone formation.

**nanocephaly** (nā-nō-sēf'ā-lē) [n + Gr. *kephale*, head, + *-ismos*, condition] Microcephaly. **nanocephalous** (nā-nō-sēf'ā-lūs), *adj.*

**nanocormia** (nā'nō-kor'mē-ā) [L. *nanus*, dwarf, + Gr. *kormos*, trunk] Abnormal smallness of thorax or body.

**nanocurie** (nā'nō-kū'rē) A unit of radioactivity equal to  $10^{-9}$  curie.

**nanogram** (nān'o-grām) One billionth ( $10^{-9}$ ) of a gram.

**nanoid** (nā'noyd) [n + Gr. *eidōs*, form, shape] Dwarflike.

**nanometer** (nā'nō-mē'tēr) A unit of length equal to  $10^{-9}$  meter.

**nanomole** (nān'ō-mōl) One billionth ( $10^{-9}$ ) mole.

**nanophthalmia** (nān'ōf-thāl'mē-ā) [n + Gr. *ophthalmos*, eye] Microphthalmia.

**nanophyetus** Any species of parasitic flatworms ("flukes") that live in freshwater fish. They may infest humans who consume raw, smoked, or partially cooked salmon and steelhead. Characteristic symptoms include nausea, vomiting, and abdominal pain.

**nanoscale** (nā'nō-skāl') [L. *nanus*, dwarf, + *scala*, staircase] Pert. to objects approx. 1 nanometer (nm) in size, i.e., about the size of an atom.

**nanosecond** (nā'nō-sēk'ōnd) A unit of time measurement equal to  $10^{-9}$  second.

**nanotechnology** (nā'nō-tēk-nōl'ō-jē) [L. *nanus*, dwarf, + Gr. *technē*, art, + *logos*, word, reason] The scientific study and engineering of chemical or biological objects measuring between 1 and 1000 nanometers. Objects this small are about the size of atoms or small molecules. "Wet" nanotechnology is the manipulation of organic or biological compounds in solution. "Dry" nanotechnology is the engineering of objects on silicon or carbon surfaces, such as those used in computing.

**nanous** (nā'nūs) [L. *nanus*, dwarf] Dwarfed or stunted.

**nanukayami** (nā'nū-kā-yā'mē) A form of leptospirosis present in Japan.

**NaOH** Sodium hydroxide.

**nap** (nāp) [AS. *hnappian*, nap] **1.** To slumber. **2.** A short sleep; a doze. SEE: *sleep*.

**napalm** (nā'pālm) [from *naphthene* + *palmitate*] Gasoline made thick or jelly-like for use in incendiary bombs and flame throwers.

**nape** (nāp, nāp) The back of the neck.

**naphtha** (nāf'thā) **1.** A volatile inflammable liquid distilled from carbonaceous substances. **2.** Petroleum, esp. more volatile varieties.

**naphthalene** (nāf'thā-lēn) A toxic hydrocarbon,  $C_{10}H_8$ . It is used as a disinfectant, in moth balls, and in the manufacture of dyes and explosives.

**naphthol** (năf'thōl)  $C_{10}H_8O$ ; a toxic petroleum derivative used as an antiseptic and in some dyes. It is prepared from naphthalene.

**NAPNAP** *National Association of Pediatric Nurse Associates and Practitioners.*

**NAPNES** *National Association for Practical Nurse Education and Services.*

**naprapathy** [naprapavit (Czech, to correct) + pathos (Gr.)] The use of electrical stimulation of the body, topical application of heat and cold, manipulation, massage, nutritional counseling, stretching, and ultrasonography to improve neuromuscular and connective tissue diseases. Practitioners of naprapathy are called naprapaths. The first school of naprapathy was founded in the U.S. in 1907 by Dr. Oakley Smith.

**Naprosyn, Napreelan, Napron X** Naproxen.

**naproxen** (nă-prōk'sĕn) A propionic acid, administered orally to relieve mild to moderate pain, dysmenorrhea, fever, and inflammatory disorders, including rheumatoid arthritis and osteoarthritis. Its therapeutic classes are nonopioid analgesic, nonsteroidal anti-inflammatory agent, and antipyretic. SYN: *Naprosyn*.

**narcissism** (năr'sis-izm) [Narcissus, a Gr. mythical character who fell in love with his own reflection] 1. Self-love or self-admiration. 2. Sexual pleasure derived from observing one's own naked body. **narcissistic** (năr-sis-sist'ik), *adj.*

**narcissistic object choice** (năr'si-sis'tik) Selection of another like one's own self as the object of love, friendship, or liking.

**narco-** [Gr. *narke*, numbness] Combining form meaning *numbness, stupor*.

**narchohypnia** (năr'kō-hip'nĕ-ă) [Gr. *narke*, numbness, + *hypnos*, sleep] Numbness following sleep.

**narchohypnosis** (năr'kō-hip-nō'sis) Stupor or a deep sleep produced by hypnosis.

**narcolepsy** (năr'kō-lĕp'sĕ) [Gr. *narke*, numbness, + *lepsis*, seizure] A disorder marked by recurrent, uncontrollable attacks of daytime sleepiness, often associated with temporary muscular paralysis (cataplexy), which may occur after powerful emotional experiences. People affected by this condition may have several sleep attacks each day. Typically, narcoleptic patients arouse from sleep relatively easily. **narcoleptic** (năr'kō-lĕp'tik), *adj.*

**ETIOLOGY:** Narcolepsy occurs in families, and about 90% of affected people have specific human leukocyte antigens (HLA-DQw6 or HLA-DR2). People with narcolepsy have diminished levels of peptides in the brain, called orexins, that influence sleep and consciousness.

**TREATMENT:** Scheduled naps during

the day may prevent sleep attacks, especially if the naps are timed to occur when the patient usually experiences sleep attacks. Drugs used to treat narcolepsy include stimulants such as dextroamphetamine sulfate, pemoline, or methylphenidate hydrochloride.



Narcoleptics should avoid activities that require constant alertness (e.g., driving or flying). At the first sign of drowsiness, affected patients should seek a safe place to sleep. In many states in the U.S., loss of consciousness is grounds for revocation of driving privileges. Patients with narcolepsy should review their motor vehicle usage with their health care professionals.

**narcosis** (năr-kō'sis) [Gr. *narkosis*, a numbing] Unconsciousness or stupor produced by drugs.

**basal n.** Initial narcosis produced by sedatives used prior to administration of a general anesthetic.

**carbon dioxide n.** Personality changes, confusion, and coma due to an increase in carbon dioxide content of the blood. This may occur during oxygen therapy of patients with chronic obstructive pulmonary disease or in patients receiving inadequate levels of artificial respiration.

**medullary n.** General anesthesia induced by a local anesthetic injected into the sheath of the spinal cord in lumbar region. SYN: *spinal anesthesia*.

**narcotic** (năr-kōt'ik) [Gr. *narkotikos*, numbing] 1. Producing stupor or sleep. 2. A drug that depresses the central nervous system, thus relieving pain and producing sleep. Most narcotics are habit-forming. Excessive doses produce unconsciousness, stupor, coma, respiratory depression, pulmonary edema, and sometimes death. Opium, morphine, codeine, papaverine, and heroin are examples of narcotics. A more precise term is *opioid analgesic*. SEE: *pain*.

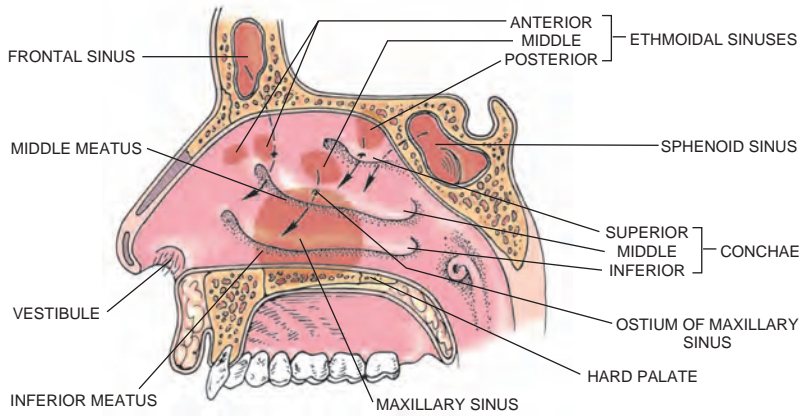
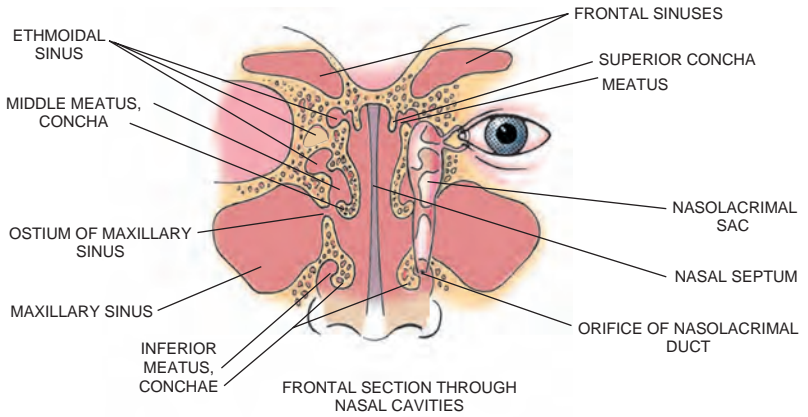
**narcotism** (năr'kō-tizm) [Gr. *narke*, stupor, + *-ismos*, condition] An addiction to the use of narcotics. Addiction may be said to exist when discontinuance causes abstinence symptoms that are speedily relieved by a dose of the drug. SEE: *withdrawal*.

**TREATMENT:** Treatment is ordinarily successful only during hospitalization. Relapses are frequent. Participation in group therapy (e.g., in a program such as Narcotics Anonymous) may be helpful.

**narcotize** (năr'kōt-iz) [Gr. *narkotikos*, numbing] To place under the influence of a narcotic.

**naris** (nă'rĭs) *pl. naris* [L.] The nostril. SEE: *nose*.

**narrative competence** (năr'ĭ-tĭv) [L.]



FRONTAL SECTION THROUGH NASAL CAVITIES

VIEW FROM THE NASAL SEPTUM TOWARD THE LATERAL AREA OF THE NASAL CAVITY

**TWO VIEWS OF NASAL CAVITY**

*narrativus*] A communication skill with two components: the ability to listen actively and empathetically to the underlying meanings of patient's histories, and the ability to craft a narrative for use in relaying meanings to patients.

**narrowing** Decreasing the width or diameter of some space or channel (e.g., narrowing of the size of the coronary arteries), usually due to some pathological process.

**NASA** *National Aeronautics and Space Administration.*

**nasal** (nā'zī) [L. *nasus*, nose] **1.** Pert. to the nose. **2.** Uttered through the nose. **3.** A nasal bone.

**nasal cavity** One of two cavities between the floor of the cranium and the roof of the mouth, opening to the nose anteriorly and the nasopharynx posteriorly. Its lining of ciliated epithelium warms and moistens inhaled air, and traps

dust and pathogens on mucus that are then swept toward the pharynx. The nasal septum (ethmoid and vomer) separates the nasal cavities, and the olfactory receptors are in the upper part of each cavity. The paranasal sinuses (frontal, maxillary, sphenoidal, and ethmoidal) open into the meatus below the conchae. The orifices of the frontal, anterior ethmoidal, and maxillary sinuses are in the middle meatus. The orifices of the posterior ethmoidal and sphenoidal sinuses are in the superior meatus. The nasal mucosa is highly vascular; blood is supplied by the maxillary arteries from the external carotid arteries and by the ethmoidal arteries from the internal carotid arteries. **SEE: illus.; nose.**

**nasal challenge, nasal allergen challenge** A test used to determine if an individual is allergic to a particular allergen. A sample of the allergen is placed in the

nose, and symptoms are evaluated. Nasal allergen tests are considered to be the best tests to use to determine whether a particular substance is a cause of a patient's allergic rhinitis.

**nasal flaring** Intermittent outward movement of the nostrils with each inspiratory effort; indicates an increase in the work of breathing.

**nasal gavage** SEE: *enteral tube feeding*.

**nasal height** Distance between the lower border of the nasal aperture and the nasion.

**nasal hemorrhage** Epistaxis.

**nasal index** The greatest width of the nasal aperture in relation to a line from the lower edge of the nasal aperture to the nasion.

**nasal meatus** SEE: under *meatus*.

**nasal obstruction** Blockage of the nasal passages. Common causes of nasal obstruction in adults are irregular septum, enlarged turbinates, and nasal polyps. In children, a common cause is a foreign body, such as food, buttons, or pins. Complications such as infections, sinusitis, and otitis may develop.

**TREATMENT:** Depending upon the cause of the obstruction, nasal douches, inhalations, or operative care, including resection of septum, turbinectomy, removal of polyp, opening and draining sinuses, or removal of foreign body.

**nasal reflex** Sneezing resulting from irritation of nasal mucosa.

**nasal septum** SEE: *septum, nasal*.

**nasal tip** The inferior third of the nose.

**nasal width** The maximum width of the nasal aperture.

**nascent** (nās'ēnt; nā'sēnt) [L. *nascens*, born] **1.** Just born; incipient or beginning. **2.** Pert. to a substance being set free from a compound.

**nasendoscope** (nāz'ēn'dō-skōp") [" + "] A small, angled endoscope that is inserted into a nostril and used to visualize the nose, sinuses, pharynx, and larynx.

**nasion** (nā'zē-ōn) [L. *nasus*, nose] The point at which the nasofrontal suture is cut across by the median anteroposterior plane.

**Nasmyth's membrane** (nāz'mīths) [Alexander Nasmyth, Scottish dental surgeon, d. 1847] A thin cuticle consisting of the cellular remnants of the enamel organ and the mucopolysaccharide basement membrane that attaches them to the enamel surface. This covering is very friable and usually lost after eruption of the tooth into the oral cavity; however, it may persist in protected areas, such as the labial surface of maxillary incisors. SYN: *enamel membrane*.

**naso-** [L. *nasus*, nose] Combining form denoting *nose*.

**nasoantritis** (nā'zō-ān-trī'tis) [" + " +

*itis*, inflammation] Inflammation of the nose and maxillary sinus.

**nasociliary** (nā'zō-sīl'ē-ār-ē) Pert. to the nose, eyebrow, and eyes. Applied esp. to the nerve supplying these structures.

**nasoduodenal tube** (nā'zō-dū-ā-dē'nāl-, -doo, nā'zō-dū-ōd'ē-nāl-, -doo) A flexible tube of silicone or a similar synthetic material, inserted through the nose into the duodenum for short-term enteral feeding. The small weight on the distal end of the tube moves the tube into place through the stomach into the duodenum. Aspiration is less likely than with a nasogastric tube.

**nasofrontal** (nā'zō-frōn'tāl) [" + *frontalis*, forehead] Pert. to nasal and frontal bones.

**nasogastric** (nā'zō-gās'trīk) [" + Gr. *gaster*, belly] Pert. to the nasal passages and the stomach, esp. relating to intubation.

**nasogastric tube** A tube inserted through the nose and extending into the stomach. It may be used for emptying the stomach of gas and liquids or for administering liquids to the patient. SEE: *illus.*



**NASOGASTRIC TUBE**

**nasointestinal tube** A long tube inserted through the nose into the stomach for decompression. A weight at the end promotes its advancement into the small intestine. The most common use is to relieve the abdominal distention associated with intestinal obstruction.

**nasojejunal tube** (nā'zō-jē-joon'āl) A tube passed through the nose into the jejunum for formula feeding.

**nasolabial** (nā'zō-lā'bē-āl) [" + *labium*, lip] Pert. to the nose and lip.

**nasolacrimal** (nā'zō-lāk'rīm-āl) [" + *lacrima*, tear] Pert. to the nose and lacrimal apparatus.

**nasology** (nā-zōl'ō-jē) [" + Gr. *logos*, word, reason] Study of the nose and its diseases.

**nasomental reflex** Contraction of mentalis muscle with elevation of lower lip and wrinkling of skin of chin. The reflex is elicited by percussion of the side of the nose.

**Nasonex** SEE: *mometasone*.

**naso-oral** (nā"zō-ō'rāl) [" + *oralis*, pert. to the mouth] Pert. to the nose and oral cavity.

**nasopalatine** (nā"zō-pāl'ā-tīn) [L. *nasus*, nose, + *palatum*, palate] Pert. to the nose and palate.

**nasopharyngeal airway, maintenance of** (nā"zō-fā-rīn'jē-āl) By means of a flexible tube that is inserted into the nose of an unresponsive patient and rests above the hypopharynx, the airway is maintained. Used in patients with intact gag reflexes to prevent retching during attempts to maintain an open airway.

**nasopharyngitis** (nā"zō-fār-in'jī'tīs) [" + Gr. *pharynx*, throat + *itis*, inflammation] Inflammation of the nasopharynx.

**nasopharyngoscope** (nā"zō-fā-rīn'jō-skōp) Device used to visualize the nasal passage and pharynx.

**nasopharyngoscopy** Inspection of the nasopharynx and posterior nares. SYN: *pharyngorhinoscopy*.

**nasopharynx** (nā"zō-fār'īnks) [L. *nasus*, nose, + Gr. *pharynx*, throat] The part of the pharynx situated above the soft palate (postnasal space). **nasopharyngeal** (nā"zō-fār-in'jē-āl), *adj.*

**nasoseptitis** (nā"zō-sēp-tī'tīs) [" + *saepium*, partition, + Gr. *itis*, inflammation] Inflammation of the nasal septum.

**nasosinusitis** (nā"zō-sī'nū-sī'tīs) [" + *sinus*, cavity] Inflammation of the nasal cavities and paranasal sinuses.

**nasotracheal intubation** (nā"zō-trā'kē-āl) SEE: under *intubation*.

**nasus** (nā'sūs) [L.] The nose.

**NATA** *National Athletic Trainers Association, Inc.*

**NATABOC** *National Athletic Trainers Association Board of Certification, Inc.*

**natal** (nā'tāl) [L. *natus*, birth] Pert. to birth or the day of birth.

**natal** (nā'tāl) [L. *nates*, buttocks] Pert. to the buttocks.

**natality** (nā-tāl'ī-tē) [L. *natalis*, birth] The birth rate; the ratio of births to population of a given community.

**nates** (nā'tēz) *sing.*, **natis** [L.] The buttocks.

**natimortality** (nā"tī-mor-tāl'ī-tē) [L. *natus*, birth, + *mortalitas*, death] Rate of stillbirths in proportion to birth rate.

**National Academy of Sciences, National Academies** ABBR: NAS. An organization comprising a selected group of honored or distinguished engineers and scientists who are called upon to review and explore the uses of science and technology as they may further or enlighten national interests in the U.S.

**National Academy of Sports Medicine** ABBR: NASM. An international health, fitness and sports medicine organization offering evidence-based education, training, certification, and advanced specialization programs to

qualified athletic and health care professionals.

**National Adult Reading Test** ABBR: NART. An intelligence test in which subjects are asked to read and pronounce words with unusual spellings.

**National Association of EMS Educators** A trade association of professionals who provide course work and training for health care professionals who want to study how to assess and manage health care crises.

**National Association of Social Workers** ABBR: NASW. An international organization of professional social workers.

**National Athletic Trainers' Association, Inc.** ABBR: NATA. A not-for-profit organization dedicated to advancing the quality of health care provided by athletic trainers and advancing the athletic training profession.

**National Athletic Trainers' Association Board of Certification, Inc.** ABBR: NATABOC, BOC. The national certification agency for athletic trainers. It establishes standards for certification and develops the continuing education requirements that a certified athletic trainer must satisfy. The BOC credential (ATC) is recognized by many states as the standard for licensure.

**National Board for Certification in Occupational Therapy** An independent agency recognized to certify the eligibility of occupational therapists and occupational therapy assistants to practice in the U.S.

**National Board for Respiratory Care** ABBR: NBRC. The national accrediting agency for pulmonary function technologists and respiratory care practitioners.

**National Center for Complementary and Alternative Medicine** ABBR: NCCAM. National Institutes of Health center for research into alternative medical treatments. It was established in 1992 as the Office of Alternative Medicine.

**National Center for Health Statistics** ABBR: NCHS. A branch of the Centers for Disease Control and Prevention that gathers and analyzes a broad array of data about the health of Americans.

**National Clinicians' Post-Exposure Prophylaxis Hotline** ABBR: PEpline. A public health resource that offers "up-to-the minute advice on managing occupational exposures (i.e., needle sticks, splashes) to HIV, hepatitis, and other blood-borne pathogens." Telephone: 1-888-448-4911, 24 hours a day, 7 days a week.

**National Conference of Gerontological Nurse Practitioners** ABBR: NCGNP. An advanced-practice nursing organization founded in 1981 to provide continuing education and peer support for gerontological nurse practitioners. Website: [www.ncgnp.org](http://www.ncgnp.org)

**National Council Licensure Examination—Practical Nurse** ABBR: NCLEX-PN. Computer-administered standardized tests taken by new applicants for state licensure as practical nurses that attempt to determine the candidate's minimum competence for safe practice. The examinations are available in all states and are administered by the National Council of State Boards of Nursing.

**National Council Licensure Examination—Registered Nurse** ABBR: NCLEX-RN. Computer-administered standardized tests taken by new applicants for state licensure as registered nurses that attempt to determine the candidate's minimum competence for safe practice. The examinations are available in all states and are administered by the National Council of State Boards of Nursing.

**National Disaster Medical System** ABBR: NDMS. A partnership between U.S. Federal and State health care institutions that provides emergency responses to catastrophes, including emergency on-site health care, evacuation, and interstate hospital coordination.

**National Drug Code** ABBR: NDC. A numerical designation assigned by the Food and Drug Administration to each drug marketed and used in the U.S.

**National Formulary** ABBR: NF. Collection of officially recognized drug names originally issued by the American Pharmaceutical Association, but now published by the U.S. Pharmacopeial Convention. Included in the NF are drugs of established usefulness that are not listed in the U.S. Pharmacopeia.

**National Gerontological Nursing Association** ABBR: NGNA. A national nursing organization founded in 1984 to improve clinical care for older adults. Members include researchers, clinicians, educators, clinical nurse specialists, and other advanced practice nurses. Website: <http://www.ngna.org>.

**National Health and Nutrition Examination Survey** ABBR: NHANES. A survey of the population of the U.S., conducted periodically by the National Center for Health Statistics, that reviews the height, weight, and nutritional habits of Americans (and other demographic, environmental, and socioeconomic variables) and links those data to health outcomes, such as the incidence of heart disease, hypertension, hyperlipidemia, kidney disease, diabetes mellitus, obesity, osteoporosis, psychiatric illnesses, sexually transmitted illnesses, and stroke.

Other accomplishments of NHANES have included the development of normal growth charts for children and infants and the reduction of blood lead

levels among this population and the diseases caused by excessive exposure to lead.

**National Highway Traffic Safety Administration** ABBR: NHTSA. The division of the U.S. Department of Transportation that conducts research on driver behavior and traffic safety, and investigates and enforces safety standards for motor vehicles and their operation. Established in 1970, it is also responsible for developing the national standard emergency medical services training curriculum. Website: <http://www.nhtsa.dot.gov/>.

**National Incident Management System** ABBR: NIMS. A U.S. federal agency that coordinates responses to major disasters, such as, earthquakes, fires, hurricanes, spills, terrorist attacks, and major transportation accidents.

**National Institute of Arthritis and Musculoskeletal and Skin Diseases** A federal agency of the U.S. National Institutes of Health that supports research in diseases associated with aging. The diseases include osteoporosis, Paget's disease, degenerative joint diseases, and skin diseases such as psoriasis.

**National Institute of Environmental Health Sciences** ABBR: NIEHS. An agency that conducts research on aging, the effects of environmental agents, and the combined effects of aging and exposure to environmental agents.

**National Institute of Mental Health** ABBR: NIMH. The division of the National Institutes of Health that sponsors and promotes research, education, and training in the study of the brain and behavioral science. The stated goals of the organization are to understand, treat, and prevent mental illness. The website address is [www.nimh.nih.gov/](http://www.nimh.nih.gov/).

**National Institute of Neurological Disorders and Stroke** ABBR: NINDS. An agency that conducts research on nervous system disorders, including Alzheimer's disease, Parkinson's disease, and stroke, that occur with greater frequency in the elderly.

**National Institute of Occupational Safety and Health** ABBR: NIOSH. A research branch of the Centers for Disease Control and Prevention that investigates workplace hazards and makes recommendations for the prevention of worker injuries, illnesses, and disabilities.

**National Institute on Aging** ABBR: NIA. A federal agency of the U.S. National Institutes of Health that conducts and supports biomedical, social, and behavioral research and training related to aging.

**National Institute of Standards and Technology** ABBR: NIST. A federal agency that proposes and develops standards of measurement and the means to support advances in technology.



**National League for Nursing** ABBR: NLN. An organization originally formed by the merging of three other nursing organizations. The principal concern of the League is improvement of nursing education and service.

**Nationally Registered Emergency Medical Technician** ABBR: NREMT. The designation awarded after successful completion of written and practical examinations administered by the National Registry of Emergency Medical Technicians. Website: [www.nremt.org](http://www.nremt.org).

**National Marrow Donor Program** ABBR: NMDP. The coordinating center for bone marrow donors. Phone 1-800-654-1247. Website: [www.marrow.org/2ndPage.html](http://www.marrow.org/2ndPage.html).  
**National Organization for Rare Disorders** ABBR: NORD. An organization created by a group of voluntary agencies, medical researchers, and individuals concerned about orphan diseases and orphan drugs. Orphan diseases are rare, debilitating illnesses that strike small numbers of people. Orphan drugs are therapies that alleviate symptoms of some rare diseases but have not been developed by the pharmaceutical industry because they are unprofitable.

NORD's address is P.O. Box 8923, New Fairfield, CT 06812, phone (203) 746-6518. Website: [www.rarediseases.org](http://www.rarediseases.org)

**National Practitioner Data Bank** ABBR: NPDB. A national databank, created by the Health Care Quality Improvement Act of 1986, that receives, stores, and disseminates records on the conduct and competence of medical professionals. Health care facilities use the information contributed to the databank during hiring and credentialing. The databank stores information relating to medical malpractice payments made on behalf of health care practitioners; information relating to adverse actions taken against clinical privileges of physicians, osteopaths, or dentists; and information concerning actions by professional societies that adversely affect membership.

**national provider identifier** ABBR: NPI. A unique 10-digit identification number used to identify health care personnel (e.g., physicians and other clinicians) and facilities (e.g., hospitals and laboratories). The NPI is used by all health plans for administrative and financial transactions.

**National Quality Forum** ABBR: NQF. A private nonprofit organization, founded in 1999 and devoted to the systematic study of the implementation of optimal practices in the delivery of U.S. health care.

**National Safety Council** A nonprofit organization whose mission is to promote and influence safety and health at work,

on the road, at home, and in the environment.

**National Stroke Association** A nonprofit organization devoted to stroke prevention, treatment, rehabilitation, and research and to the support of people who have had strokes as well as their partners and families. Website: <http://www.stroke.org/>. Phone: 1-800-STROKES.

**National Student Nurses Association** ABBR: NSNA. The primary organization for student nurses in the U.S., a counterpart of the American Nurses Association.

**native** (nā'tiv) [L. *nativus*] 1. Born with; inherent. 2. Natural, normal. 3. Belonging to, as place of one's birth.

**natremia** (nā-trē-mē-ā) [L. *natrium*, sodium, + Gr. *haima*, blood] Sodium in the blood.

**sodium** (nā'trē-ūm) [L.] SYMB: Na. Sodium.

**natriuresis** (nā'trē-ū-rē'sis) [n + Gr. *ouresis*, make water] The excretion of abnormal amounts of sodium in the urine.

**natriuretic** (nā'trē-ūr-ēt'ik) A drug that increases rate of excretion of sodium in the urine. SYN: *saluretic*. SEE: *diuretic*.

**natural** [L. *natura*, nature] Not abnormal or artificial.

**natural childbirth** SEE: under *childbirth*.

**natural history (of disease)** The expected or predictable course of an untreated illness. The knowledge of the expected course of a disease is usually based on prior study of the effects of the illness on a large group of patients over time.

**natural killer cells** SEE: under *cells*.

**natural selection** A mechanism of evolution proposed by Charles Darwin stating that the genotypes best adapted to their environment have a tendency to survive and reproduce.

**nature and nurture** The combination of a person's genetic constitution and the environmental conditions to which he is exposed. The interplay of these forces produces physical and mental characteristics that make each human being different from another.

**nature of illness** ABBR: NOI. The expression(s) of a disease and its meaning(s) to the patient and significant others.

**naturopath** (nā'tūr-ō-pāth) [n + Gr. *pathos*, disease, suffering] One who practices naturopathic medicine.

**naturopathy** (nā'tūr-ōp'ā-thē) Naturopathic medicine.

**nausea** (naw'sē-ā, naw-zē-ā) [Gr. *nausia*, seasickness] An unpleasant, queasy, or wavelike sensation in the back of the throat, epigastrium, or abdomen that may or may not lead to the urge or need to vomit. SEE: *Nursing Diagnoses Appendix*.

**PATIENT CARE:** Any materials or en-

vironmental factors that precipitate the nausea should be removed. Frequency, time, amount, and characteristics of nausea-associated emesis are noted. Vomitus is tested for blood when indicated. Oral hygiene and comfort measures are provided. If nausea persists, professional evaluation may be advisable.

**n. gravidarum** Morning sickness. SEE: *hyperemesis gravidarum*.

**nauseant** (naw'vik'ū-lār, naw'sē-ānt)

1. Provoking nausea. 2. An agent that causes nausea.

**nauseate** (naw'shē-āt, naw'sē-āt) To cause nausea.

**nauseous** (naw'shūs, naw'shē-ūs)

1. Producing nausea, disgust, or loathing. 2. Affected with nausea.

**navel** (nā'vel) [AS. *nafela*] Umbilicus.

**navicular** (nā-vik'ū-lār) 1. Shaped like a boat. 2. Scaphoid bones in the carpus (wrist) and in the tarsus (ankle). SEE: *skeleton*.

**navicular drop test** A test used to quantify pronation of the foot. While the patient's foot is in a non-weight-bearing position, the examiner places a mark over the navicular tuberosity. Next, the foot is placed on the floor, again in a non-weight-bearing position, and a mark is made on a 3 × 5 index card to measure the distance between the floor and the navicular tubercle. The measure is repeated when the patient bears weight on the foot and the distance between the two marks is recorded. Inferior displacement of greater than 10 mm while bearing weight is considered hyperpronation of the foot.

**navicular fossa** SEE: *fossa, navicular*.

**navigation** (nāv'i-gā'shūn) [L. *navigatio, voyage*] 1. Determining, calculating, and guiding an action in which an object, e.g., a catheter or a surgical instrument, is directed to a particular anatomic position, typically with radiological guidance. 2. The ability to direct one's movements through space, i.e., through both familiar and new environments.

**navigation deficits** Any difficulties in orienting oneself in one's environment or in finding a sure path through a maze. It is more common in elderly persons than in the young and especially in those who have suffered traumatic brain injury or neurodegenerative diseases that cause dementia.

**-navir** (nā-vīr") A suffix used in pharmacology to designate an antiviral protease inhibitor.

**Nb** Symbol for the element niobium.

**N-benzylpiperazine** (běn'zīl-pī-pēr'ū-zēn, zīn, pīp'er) ABBR: BZP. An amphetamine-like drug used illicitly for its euphoric effects. Originally marketed as an antiparasitic agent.

**NBT-PABA test** The N-benzoyl-L-tyrosyl-

p-aminobenzoic acid test, a noninvasive test primarily used to measure the function of the exocrine pancreas. The test is performed by administering NBT-PABA to patients with suspected chronic pancreatitis and measuring the amount of PABA excreted in the urine. In patients with chronic pancreatitis, chymotrypsin is not released by the exocrine pancreas into the gastrointestinal tract; NBT is not cleaved from PABA, and thus the excretion of PABA in the urine is diminished.

**NCC** *National Certification Corporation*.

**NCHS** *National Center for Health Statistics*.

**NCI** *National Cancer Institute*.

**nCi** *nanocurie*.

**NCLEX-PN** *National Council Licensure Examination—Practical Nurse*.

**NCLEX-RN** *National Council Licensure Examination—Registered Nurse*.

**NCMHD** *National Center on Minority Health and Health Disparities*

**nCPAP** *Nasal continuous positive airway pressure, a treatment for sleep apnea, and in neonates, for respiratory distress*.

**NCRR** *National Center for Research Resources*

**Nd** *Symbol for the element neodymium*.

**NDA** *National Dental Association*.

**NIDDK** *National Institute of Diabetes and Digestive and Kidney Diseases*.

**Ne** *Symbol for the element neon*.

**near-death experience** ABBR: NDE.

The perception held by certain individuals that they have glimpsed an afterlife when coming close to death. SEE: *out-of-body experience*.

**near-drowning** *Survival after immersion in water. This term is being replaced with the term "submersion," which is more accurate and was agreed upon at the Utstein Guidelines Conference for uniform reporting of drowning and submersion incidents.*

About 330,000 persons, most of whom are children, adolescents, or young adults, survive an immersion injury in the U.S. each year; of these, about 10% receive professional attention. Many who suffer near-drowning do so because of preventable or avoidable conditions, such as the use of alcohol or drugs in aquatic settings or the inadequate supervision of children by adults. Water sports (e.g., diving, swimming, surfing, or skiing) and boating or fishing accidents also are common causes of near-drowning. A small percentage of near-drowning episodes occur when patients with known seizure disorders convulse while swimming or boating. SEE: *drowning*.

**ETIOLOGY:** The injuries suffered result from breath holding ("dry drowning"), the aspiration of water into the

lungs ("wet drowning"), and/or hypothermia.

**SYMPTOMS:** Common symptoms of near-drowning result from oxygen deprivation, retention of carbon dioxide, or direct damage to the lungs by water. These include cough, dyspnea, coma, and seizures. Additional complications of prolonged immersion may include aspiration pneumonitis, noncardiogenic pulmonary edema, electrolyte disorders, hemolysis, disseminated intravascular coagulation, and arrhythmias.

**TREATMENT:** In unconscious patients rescued from water, the airway is secured, ventilation is provided, and cardiopulmonary resuscitation is begun. Oxygen, cardiac, and blood pressure monitoring, rewarming techniques, and other forms of support are provided (e.g., anticonvulsants are given for seizures; electrolyte and acid-base disorders are corrected).

**PROGNOSIS:** Most patients who are rapidly resuscitated from a dry drowning episode recover fully. The recovery of near-drowning victims who have inhaled water into the lungs depends on the underlying health of the victim, the duration of immersion, and the speed and efficiency with which oxygenation, ventilation, and perfusion are restored.

**near fall** An event in which a person feels a fall is imminent but avoids it by compensatory action, such as grabbing a nearby object or controlling the fall. People who experience near falls may be at risk of falling and require preventive intervention to avoid potential injury.

**near-infrared fluorescence imaging**  
**ABBR:** NIRI. The visualization of tissues within the body after they are bound by fluorescent molecules and stimulated with light in the 700-900 nm wavelength range. NIRI is used to provide images of solid cancers, bone and joint inflammation, and blood flow to tissues.

**near point** **ABBR:** np. Closest point of distinct vision with maximum accommodation. This point becomes more distant with age, varying from about 3 in (7.62 cm) at age 2 to 40 in. (101.60 cm) at age 60. **SYN:** *punctum proximum*.

**nearsighted** Able to see clearly only those objects held close to the eye. **SEE:** *myopia*.

**nearsightedness** Myopia.

**nearthrosis** (nē'ār-thrō'sis) [Gr. *neos*, new, + *arthron*, joint, + *osis*, condition] A false joint or abnormal articulation, as one developing after a fracture that has not united. **SYN:** *nearthrosis*; *pseudarthrosis*.

**nebula** (nēb'ū-lā) *pl. nebulae* [L., mist, cloud] **1.** Slight haziness on the cornea. **2.** A translucent corneal scar. **3.** Cloud-

iness in urine. **4.** Aqueous or oily substance for use in an atomizer.

**nebulization** (nēb'ū-lī-zā'shūn) Production of particles such as a spray or mist from liquid. The size of particles produced depends upon the method used. **SEE:** *nebulizer*.

**nebulizer** (nēb'ū-lī'zēr) [L. *nebula*, mist] An apparatus for producing a fine spray or mist. This may be done by rapidly passing air through a liquid or by vibrating a liquid at a high frequency so that the particles produced are extremely small. **SEE:** *aerosol*; *atomizer*; *vaporizer*; *illus.*



**NEBULIZER**

**ultrasonic n.** An aerosol produced by the action of a vibrating ultrasonic transducer under water.

**NEC**  *necrotizing enterocolitis.*

**Necator** (nē-kā'tor) [L., murderer] A genus of parasitic hookworms belonging to the family Ancylostomidae.

**N. americanus** A parasitic hookworm found worldwide that is responsible for iron-deficiency anemia and impaired growth in children. **SEE:** *hookworm*; *illus.*



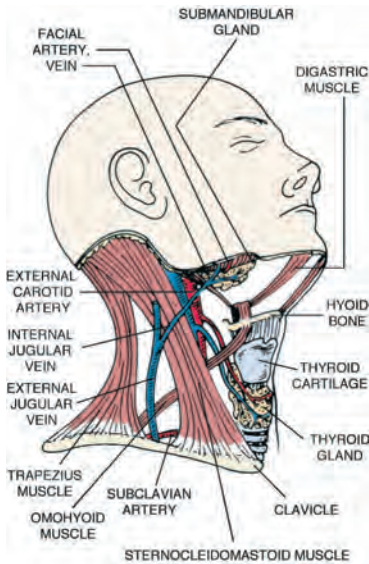
**NECATOR**

Infective filariform larva (orig. mag.  $\times 100$ )

**necatoriasis** (nē-kā'tō-rī'ā-sīs) Hookworm.

**neck** [AS. *hnecca*, nape] **1.** The part of the body between the head and shoulders. **SEE:** *illus.*; *muscle* for *illus.* **2.** The constricted portion of an organ, or that

resembling a neck. **3.** The region between the crown and the root of a tooth.



#### LATERAL ASPECT OF THE NECK

**n. of the femur** The heavy column of bone that connects the head of the femur to the shaft.

**Madelung's n.** Madelung's disease.

**n. of the mandible** The constricted area below the articular condyle; the area of attachment for the articular capsule and the lateral pterygoid muscle.

**surgical neck of the humerus** The segment of the shaft of the humerus just distal to the greater and lesser tubercles. It is a region prone to fractures.

**n. of the tooth** The constricted area that connects the crown of a tooth to the root of a tooth.

**webbed n.** A broad neck as seen anteriorly or posteriorly. The breadth is due to a fold of skin that extends from the clavicle to the head. Webbed neck is present in Turner's syndrome.

**wry n.** Torticollis.

**neck conformer** A splint, usually fabricated of thermoplastic material, that positions the neck to prevent flexion-contractions due to burns of the anterior neck.

**neck-righting reflex** SEE: *reflex, neck-righting.*

**necr-** SEE: *necro-*.

**necrectomy, necronecrotomy** (nĕkrĕk'tō-mĕ, nĕk-rō-nĕk'tō-mĕ) [Gr. *nekros*, corpse, + *ektome*, excision] Surgical removal of necrotic tissue.

**necro-, necr-** [Gr. *nekros*, corpse] Combining forms meaning *death, necrosis*.

**necrobiosis** (nĕk-rō-bi-ō'sis) [' + *biosis*, life] Gradual degeneration and

swelling of collagen bundles in the dermis. SEE: *necrosis*. **necrobiotic** (nĕ'krō-bi-ōt'ik), *adj.*

**n. lipoidica diabetorum** A skin disease marked by necrotic atrophy of connective and elastic tissue. The lesions have a central yellowish area surrounded by a brownish border and telangiectases and usually present on the anterior surface of the legs. The disease is commonly found in people who have had diabetes mellitus for many years. Beginning as 1 to 3 mm papules or nodules, the lesions enlarge to become waxy or shiny round plaques that are reddish brown at first and later become yellow atrophic lesions. SYN: *diabetic dermatopathy*.

**PATIENT CARE:** Infection and, occasionally, ulceration result when an affected area is traumatized. A variety of treatments have been tried for patients who find the rash unsightly; none are definitively effective. The patient also should be taught methods for protecting legs and other affected areas from injury. Graduated compression stockings should be worn, and the legs should be rested frequently.

**necrogenic, necrogenous** (nĕkrō-jĕn'ik, -krōj'ĕn-ŭs) [' + *gennan*, to produce] Caused by, pert. to, or originating in dead matter.

**necrology** (nĕk-rōl'ō-jĕ) The study of mortality statistics.

**necrolysis** (nĕkrōl'ī-sis) [' + *lysis*, dissolution] Necrosis and dissolution of tissue.

**toxic epidermal n.** ABBR: TEN. A rare, often life-threatening illness marked by scaling and shedding of the skin and mucous membranes. It usually is caused by an adverse reaction to a drug. Treatment is similar to that for patients with extensive burns. SYN: *Lyell disease*.

**necromania** (nĕk-rō-mā'nĕ-ă) [' + *mania*, madness] Abnormal interest in dead bodies or in death.

**necroparasite** (nĕk'rō-pār'ă-sīt) [' + *para*, beside, + *sitos*, food] Saprophyte.

**necrophagous** (nĕkrōf'ă-gŭs) [' + *phagein*, to eat] Feeding on dead flesh.

**necrophile** (nĕk'rō-fīl) [' + *philein*, to love] One who is affected with necrophilia.

**necrophilia** (nĕk'rō-fīl'ĕ-ă) [' + *philein*, to love] **1.** Abnormal interest in corpses. **2.** Sexual intercourse with a dead body.

**necrophilic** (nĕk'rō-fīl'ik) [' + *philein*, to love] **1.** Pert. to necrophilia. **2.** Pert. to bacteria that thrive best in dead tissue.

**necropsy** (nĕk'rōp-sĕ) [' + *opsis*, view] Autopsy.

**necroscopy** (nĕkrōs'kō-pĕ) [' + *skopein*, to examine] Autopsy.

**necrose** (nĕk-rōs') [Gr. *nekroun*, to make dead] To cause or to undergo necrosis.

**necrosis** (nĕ-krō'sis) *pl.* **necroses** [Gr. *nekrosis*, state of death] The death of cells, tissues, or organs. Necrosis may be caused by numerous insults to tissues (e.g., insufficient blood supply, burns, compression, pathogenic microorganisms, medications, radiation, toxins, or tissue trauma). **SEE:** *illus.*; *gangrene*; *mortification*. **necrotizing** (nĕk'rō-tiz'ing), *adj.*



### NECROSIS

Necrotic wound of the foot

The causes of necrosis include insufficient blood supply, physical agents such as trauma or radiant energy (electricity, infrared, ultraviolet, roentgen, and radium rays), chemical agents acting locally, acting internally following absorption, or placed into the wrong tissue. Some medicines cause necrosis if injected into the tissues rather than the vein, and some, such as iron dextran, cause necrosis if injected into areas other than deep muscle or vein.

**acute tubular n.** ABBR: ATN. Acute damage to the renal tubules; usually due to ischemia associated with shock. **SEE:** *renal failure*, *acute*.

**anemic n.** Necrosis caused by inadequate blood flow to a body part.

**aseptic n.** Necrosis occurring without infection, e.g., as a result of trauma or drug use.

**caseous n.** Necrosis with soft, dry, cheeselike formation, seen in diseases such as tuberculosis or syphilis. **SYN:** *cheesy n.*

**central n.** Necrosis that affects only the center of a body part.

**cheesy n.** Caseous necrosis.

**coagulation n.** Necrosis occurring esp. in infarcts. Coagulation occurs in the necrotic area, converting it into a homogeneous mass and depriving the organ or tissue of blood. **SYN:** *fibrinous n.*; *ischemic n.*

**colliquative n.** Necrosis caused by liquefaction of tissue due to autolysis or bacterial putrefaction. **SYN:** *liquefactive n.*

**dry n.** Dry gangrene.

**embolic n.** Necrosis resulting from an embolic occlusion of an artery.

**fat n.** Destruction or dissolution of fatty tissues, as seen, for example, in patients with severe cases of pancreatitis.

**fibrinous n.** Coagulation necrosis.

**focal n.** Necrosis in small scattered areas, often seen in infection.

**gummatous n.** Necrosis forming a dry rubbery mass resulting from syphilis.

**ischemic n.** Coagulation necrosis.

**liquefactive n.** Colliquative necrosis.

**medial n.** Necrosis of cells in the tunica media of an artery.

**moist n.** Necrosis with softening and wetness of the dead tissue.

**putrefactive n.** Necrosis caused by bacterial decomposition.

**radiation n.** Necrosis caused by radiation exposure.

**subcutaneous fat n. of newborn** An inflammatory disorder of fat tissue that may occur in the newborn at the site of application of forceps during delivery, and occasionally in premature infants. The cause is unknown.

**superficial n.** Necrosis affecting only the outer layers of bone or any tissue.

**thrombotic n.** Necrosis due to thrombus formation.

**total n.** Necrosis affecting an entire organ or body part.

**necrotic** (nĕ-krōt'ik) [Gr. *nekrosis*, state of death] Relating to or descriptive of death of a portion of tissue.

**necrotomy** (nĕ-krōt'ō-mē) [n + *tome*, incision] **1.** Dissection of a cadaver. **2.** Incision into necrotic tissue.

**need** **1.** Something required, wanted, or essential. **2.** A duty or obligation. **3.** Any disease or condition for which a patient seeks a remedy. **4.** A motivation. **5.** Extreme want or poverty.

**certificate of n.** ABBR: CON. A declaration from a government planning agency indicating that the construction or alteration of an existing health facility is justified. Designed initially in the 1970s to prevent the construction of duplicate health care facilities in local or regional markets, some analysts have suggested that CONs have instead defended existing hospitals from unwanted competition.

**needle** [AS. *naedl*] A pointed instrument for stitching, ligaturing, puncturing, or cannulating. It may be straight, half-curved, full-curved, semicircular, double-curved (sometimes called "S-" or sigmoid-shaped), double-ended, sharp or blunt-tipped, solid, or hollow. Cutting edge and round point are the two classifications of needles. Cutting edge needles are used in skin and dense tissue, while round point needles are used for more delicate operations, esp. on soft tissues. When a needle is used for stitching, the suture material may be

attached via an eye, french eye, or more commonly, a swaged-on which is easily detachable. **SEE:** *illus.*



#### TYPES OF NEEDLES

**aneurysm n.** A blunt, curved needle with an eye in the tip used for passing a suture around a vessel.

**aspirating n.** A long, hollow needle, usually fitted to a syringe, for withdrawing fluids from a cavity.

**atraumatic n.** Pencil-point needle.

**cataract n.** A needle used in removing a cataract.

**discission n.** A special cataract needle for making multiple cuts into the lens capsule.

**Hagedorn n.** *SEE:* *Hagedorn needle.*

**hypodermic n.** A hollow needle of varying length and diameter used for intradermal, subcutaneous, intramuscular, and intravenous injection.

**knife n.** A narrow, needle-pointed knife.

**ligature n.** Aneurysm needle.

**obturator n.** A device that fits into the lumen of a needle to prevent blockage during the puncture procedure.

**pencil-point n.** A needle with a tapered tip that does not damage tissue as much as a beveled needle. Pencil-point needles are commonly used in lumbar puncture to reduce leakage of cerebrospinal fluid from the subarachnoid space. **SYN:** *atraumatic n.*

**Reverdin's n.** *SEE:* *Reverdin's needle.*

**scalp vein n.** A specially designed needle for the administration of intravenous fluids, with a flat flange on each side to facilitate anchoring it after its placement in a small vein.

**stop n.** A needle with an eye at its tip, with a flange or shelf extending out from its shank end that prevents the needle from being inserted farther than the shelf.

**needleholder** (nĕd'ĭl-hōld'ĕr) A forceps used to drive a needle with an attached suture into tissue.

**needleless intravenous infusion system** A device for administering intravenous solutions that permits intravascular ac-

cess without the necessity of handling a needle. These systems were developed to reduce the number of needle-stick injuries related to traditional intravenous administration of fluids. **SEE:** *needle-stick injury.*

**needle-stick injury** Accidental puncturing of the skin with an unsterilized needle. Health care workers are esp. at risk for injury while handling needles. Prevention of needle-stick injury is essential because of the danger of exposure to infection from diseases transmitted by blood (e.g., AIDS, hepatitis B or C). More than 600,000 needle-stick injuries are estimated to occur each year among health care providers in the U.S. **SEE:** *sharps.*

**needling** (nĕd'ĭng) Inserting an acupuncture needle into the body.

**NEFA** *nonesterified fatty acids.*

**negation** (nĕ-gā'shŭn) [L. *negare*, to deny] Denial.

**negative** (nĕg'ā-tĭv) [L. *negare*, to deny]

**1.** Possessing a numerical value that is less than zero. **2.** Lacking results or indicating an absence, as in a test result. **3.** Marked by resistance or retreat.

**negative crossmatch** In organ transplantation, a lack of reaction between recipient and donor cells.

**negative predictive value** The proportion of people whose test results are "true" negatives and who are truly disease free.

**negative pressure pulmonary edema**

Pulmonary edema occurring in a patient with upper airway obstruction and negative intrapleural pressures, e.g., in a child with epiglottitis.

**negative sign** Minus sign (–) used in subtraction, to denote something that is below zero, or to indicate a lack.

**negative study** An investigation in which no benefit of a treatment, or no association between a risk factor and an outcome, is demonstrated; also called negative trial. Such studies may be important in disproving misconceptions about a disease, treatment, or presumed associations between risk factors and outcomes.

**negativism** (nĕg'ā-tĭv-ĭz-m) **1.** A behavioral peculiarity marked by not performing suggested actions (passive negativism) or in doing the opposite of what one has been asked to do (active negativism). **2.** Pervasive doubt or skepticism. **3.** Pessimism.

**neglect** (nĕ-glĕkt) **1.** In neurology, absence of perception of—or disregard for—the nondominant part of the body in patients who have had a stroke that has damaged the nondominant hemisphere of the brain. **2.** Inattention to one's responsibilities, esp. to those dependent on one's care.

**altitudinal n.** Unilateral inattention.

**hemispatial n.** Unilateral inattention.

**negligence** The failure of a health care professional to meet his or her responsibilities to a patient, with resultant injury. There are four elements of negligence: duty owed, breach of duty or standard of care, proximate cause or causal connection (between the breach and damages), and damages or injuries or harm. Medical professionals are legally liable for their own negligence or can be held liable for negligence of others of which they have knowledge but fail to report or intercede.

**comparative n.** SEE: *comparative negligence*.

**contributory n.** In forensic medicine, the concept that the plaintiff's negligence in combination with the defendant's negligence is the cause of the plaintiff's injuries or damages.

**corporate n.** Failure of a corporation to meet its legal obligations to its clients. With regard to health care facilities, responsibilities included under the doctrine of corporate negligence are monitoring and supervision of the competence of medical and nursing personnel within the facility; investigating physicians' credentials before granting staff privileges; and negligent hiring of health care professionals (including failure to conduct appropriate background investigations).

**gross n.** Any voluntary, intentional, and conscious act or omission committed by an individual, with reckless disregard for the consequences, esp. how they may affect another person's life or property.

**ordinary n.** Failure to exercise the care that an ordinary prudent person would exercise under similar circumstances.

**negotiation** (nĕ-gō'shĕ-ā'shŭn) [L. *negotium*, business] A form of conflict resolution in which two or more parties discuss their differences in the hope of reaching a mutually acceptable conclusion. SEE: *alternative dispute resolution*; *conflict resolution*.

**Negri bodies** (nā'grĕ) [Adelchi Negri, It. physician, 1876–1912] Inclusion bodies found in the cells of the central nervous system of animals infected with rabies. They are acidophilic masses appearing in large ganglion cells or in cells of the brain, esp. those of the hippocampus and cerebellum. Their presence is considered conclusive proof of rabies.

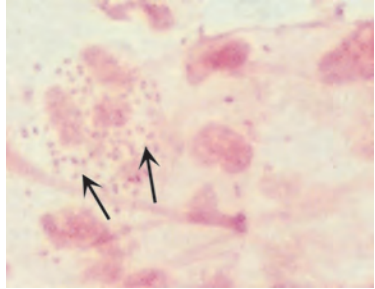
**NEI** *National Eye Institute*.

**Neisseria** (nī-sĕ'rĕ-ā) [Albert Neisser, Ger. physician, 1855–1916] A genus of gram-negative diplococci of the family Neisseriaceae. The most significant human pathogens are *Neisseria meningi-*

*tidis* (the meningococcus) and *Neisseria gonorrhoeae* (the gonococcus)

**N. catarrhalis** SEE: under *Moraxella catarrhalis*.

**N. gonorrhoeae** The species causing gonorrhea. SYN: *gonococcus*. SEE: *illus.*; *gonorrhea*.



**NEISSERIA GONORRHOEAE WITHIN A POLYMORPHONUCLEAR LEUKOCYTE**

(Orig. mag. ×500)

**N. meningitidis** The species causing epidemic cerebrospinal meningitis. SEE: *meningitis*.

**N. sicca** Species found in mucous membrane of the respiratory tract. Occasionally, this species may cause bacterial endocarditis.

**Neisseriaceae** (nīs-sĕ'rĕ-ā'sĕ-ĕ) A family of bacteria that are spherical, gram-negative, and nonmotile.

**nemathelminth** (nĕm'ā-thĕl'mĭnth) [Gr. *nema*, thread, + *helmins*, worm] A roundworm belonging to the phylum Nematelminthes.

**Nematelminthes** (nĕm'ā-thĕl-mĭn'thĕz) The phylum of the roundworms.

**nematocide** (nĕm'ā-tō-sĭd') [Gr. *nema*, thread, + L. *caedere*, to kill] An agent that kills nematodes.

**nematocyst** (nĕm'ā-tō-sĭst) [n + *kystis*, bladder] The small stinging barb present in jellyfish and some other coelenterates. It can penetrate the skin of salt water swimmers or divers and cause painful stings. In some rare cases, multiple contact can be fatal.

**Nematoda** (nĕm'ā-tō'dā) [n + *eidos*, form, shape] A class of the phylum Nematelminthes that includes the true roundworms or threadworms, many species of which are parasitic. They are cylindrical or spindle-shaped worms that possess a resistant cuticle, have a complete alimentary canal, and lack a true coelom. The sexes usually are separate, and development usually is direct and simple.

**nematode** (nĕm'ā-tōd) [Gr. *nema*, thread, + *eidos*, form, shape] A member of the class Nematoda. **nematoid**, *adj.*

**nematodiasis** (nĕm'ā-tō-dĭ'ā-sĭs) [n + -iasis, condition] Infestation by a

parasite belonging to the class Nematoda.

**nematology** (něm"á-tól'ò-jē) The division of parasitology that deals with worms belonging to the class Nematoda.

**neo-** [Gr. *neos*] Combining form meaning *new, recent*.

**neoadjuvant therapy** (ně"ò-ad'joo-vánt) In treating cancer, the use of chemotherapy before radiation or surgery.

**neoantigen** (ně"ò-án'tí-jěn) [" + *anti*, against, + *gennan*, to produce] A nonspecific term for various tumor antigens.

**neoarthritis** (ně"ò-ár-thrò'sís) [" + *ar-thron*, joint, + *osis*, condition] Near-arthritis.

**neobladder** (ně-ò-blád'děr) A surgically constructed urinary reservoir, usually made from a segment of small bowel, that is used to replace a bladder removed during radical cystectomy. It is surgically connected to the patient's native urethra and typically maintains urinary continence, while limiting or eliminating the need for self-catheterization. Neobladders are often used after bladder cancer surgery as an alternative to a urostomy. They cannot be used in patients whose malignancy involves the distal urethra.

**neoblastic** (ně"ò-blás'tík) [" + *blastos*, germ] Pert. to or constituting a new growth of tissue.

**neocerebellum** (ně"ò-sěr-ě-běl'úm) [Gr. *neos*, new, + L. *cerebellum*, little brain] The portion of the corpus cerebelli of the cerebellum that lies between the primary and prepyramidal fissures and consists principally of the ansiform lobules. Phylogenetically, it develops last, in conjunction with the cerebral cortex, and is concerned with the integration of voluntary movements. It is the posterior lobe of the cerebellum.

**neocortex** (ně"ò-kor'těks) The nonolfactory portion of the cerebral cortex. It is composed of six layers of neurons and nerve fibers having a similar distribution pattern. Phylogenetically, it is the new part of the cerebral cortex. SYN: *isocortex*.

**neodymium** (ně"ò-dím'ě-úm) SYMB: Nd. A shiny, silvery, rare-earth chemical element, atomic weight 144.24, atomic number 60.

**neoformation** (ně"ò-for-má'shün) [" + L. *formatio*, a shaping] 1. Regeneration. 2. A neoplasm or new growth.

**neogenesis** (ně-ò-jěn'ě-sís) [" + *genesis*, generation, birth] Regeneration; reformation, as of tissue. **neogenetic** (ně"ò-jěn-ět'ík), *adj.*

**neointima** (ně"ò-in'tí-má) New growth of intimal tissue.

**neointimal hyperplasia** (ně"ò-in'tí-míl hí"pěr-plá'zhá, -plá'zě-á) An increase in the thickness of the lining of a blood vessel in response to injury or vascular

reconstruction. It is an important cause of vein graft obstruction after coronary artery bypass surgery and in the premature closure of other vascular conduits (e.g., in dialysis access devices). It is characterized by the migration of smooth muscle cells into the graft, followed by the release of cytokines that damage the vessel wall and contribute to its degradation by inflammation.

**neokinetic** (ně"ò-kí-nět'ík) [" + *kinetikos*, pert. to movement] Concerning the portion of the nervous system that regulates voluntary muscular control.

**neologism** (ně-òl'á-jízím) [" + *logos*, word, reason, + *-ismos*, state] 1. A newly invented word. 2. A nonsensical word, or verbal tic, the use of which is sometimes associated with neuropsychiatric disorders, such as psychoses or Tourette's syndrome.

**neomembrane** (ně-ò-měm'brān) [" + L. *membrana*, membrane] Pseudomembrane.

**neon** (ně'ón) [Gr. *neos*, new] SYMB: Ne. A rare, inert, gaseous element in the air. Only 18 parts per million parts of air are neon. Neon's atomic mass is 20.183, and its atomic number is 10.

**n. gas** A colorless gas that makes a reddish-orange glow when an electric charge strikes it.

**neonatal** (ně"ò-nā'tál) [" + L. *natus*, born] Concerning the first 28 days after birth.

**neonatal abstinence syndrome** The adverse consequences in the newborn of exposure to addictive or dangerous intoxicants during fetal development. The consequences include, but are not limited to, preterm delivery, intrauterine growth retardation, asphyxia, low birth weight, and behavioral, psychiatric, and learning disabilities later in life.

**neonatal hemochromatosis** ABBR: NH. A rare congenital disorder causing iron overload in the fetus and newborn, resulting in intrauterine growth retardation, premature birth, end-stage liver disease at birth, or intrauterine death.

**neonatal mortality rate** The number of deaths in 1 year of infants aged 0 to 28 days divided by the number of live births in that same year. SEE: *maternal mortality rate; perinatal mortality rate*.

**neonatal period** The first 30 days of infant life.

**neonate** (ně"ò-nāt) A newborn infant up to 1 month of age. SEE: *Nursing Diagnostics Appendix*.

**neonaticide** (ně"ò-nāt'í-síd') [" + (hom)icide] Killing of a newborn child, usually during the first day of life.

**neonatologist** (ně"ò-nā-tól'ò-jíst) [" + " + Gr. *logos*, word, reason] A physician who specializes in the study, care, and treatment of neonates.

**neonatology** (ně"ò-nā-tól'ò-jē) The study, care, and treatment of neonates.



**neophallus** (nē'ō-fāl'ūs) [Gr. *neos*, new, + *phallos*, penis] A surgically constructed penis, made, e.g., from tissue grafts taken from other parts of the body.

**neopharynx** (nē-ō-fār'inks) A surgically reconstructed pharynx. The surgery reestablishes the integrity of the throat after laryngectomy.

**neoplasia** (nē'ō-plā'zē-ā) [" + *plassein*, to form] The development of neoplasms.

**intraepithelial n.** Abnormal cell growth that is found within epithelial cells but has not yet spread to neighboring, underlying, or distant tissues. Intraepithelial neoplasia is thought to be an early marker of some cancers, e.g., cancers of the breast, prostate, or uterine cervix. SEE: *cervical intraepithelial neoplasia*.

**vulvar intraepithelial n.** ABBR: VIN. Precancerous, noninvasive lesions of the squamous epithelium of the vulva, often associated with infection with human papillomavirus 16. Treatments may include brief observation to see if the condition spontaneously remits, topically applied chemotherapy, laser ablation, or wide surgical excision. SYN: *vaginal intraepithelial neoplasia*.

**neoplasia, cervical intraepithelial** SEE: *cervical intraepithelial neoplasia*.

**neoplasm** (nē'ō-plāzm) [" + LL. *plasma*, form, mold] A new and abnormal formation of tissue, as a tumor or growth. It serves no useful function but grows at the expense of the healthy organism. **neoplastic** (nē'ō-plās'tik), *adj.*

**benign n.** Growth not spreading by metastases or infiltration of tissue.

**histoid n.** Neoplasm in which structure resembles the tissues and elements that surround it.

**malignant n.** Growth that infiltrates tissue, metastasizes, and often recurs after attempts at surgical removal. SYN: *cancer*.

**mixed n.** Neoplasm composed of tissues from two of the germinal layers.

**noninvasive n.** A tumor that has not spread or does not spread.

**organoid n.** Neoplasm in which the structure is similar to that of some organ of the body.

**Neorickettsia** (nē'ō-rī-kēt'sēā) [" + "] A genus of bacteria of the family Anaplasmataceae. They are intracellular parasites transmitted to mammals by insect or animal vectors, including trematodes that infest salmon and trout.

**neosis** (nē-ō'sis) [" + Gr. *-sis*, condition or state] A novel form of cell division in cancer cells, in which genetic material from the malignant cell separates by budding from its nucleus, followed by cytokinesis and the production of

daughter cells with a uniquely long mitotic life span.

**neostomy** (nē-ōs'tō-mē) [" + *stoma*, mouth] Surgical formation of artificial opening into an organ or between two organs.

**neostriatum** (nē'ō-strī-ā'tūm) [" + L. *striatum*, grooved] The caudate nucleus and the putamen considered together.

**neoteny** (nē-ōt'ē-nē) [" + *teinein*, to extend] Sexual maturation in larvae.

**neovascular** (nē'ō-vās'kū-lār) Pert. to new blood vessels.

**neovascularization** (nē'ō-vās'kū-lā-rī-zā'shūn) The formation of new blood vessels, e.g., in the retina, in inflamed tissue or in a malignant tumor.

**neper** (nē'pēr, nā') [John Napier, Scot. mathematician, 1550–1617] ABBR: Np. A unit of measure denoting the ratio of two amplitudes. It is similar to the decibel but is expressed as a natural logarithm instead of a logarithm of the base 10. 1 Np = 8.687 dB.

**nephelometer** (nēf'ēl-ōm'ē-ter) [Gr. *nephele*, mist, + *metron*, measure] A device used in nephelometry to measure the number of particles in a solution. For example, it is used to measure the turbidity of a fluid and also may be used to estimate the degree of contamination of air by particulate matter.

**nephelometry** (nēf'ēl-ōm'ē-trē) A technique for detecting proteins in body fluids, based on the tendency of proteins to scatter light in identifiable ways. SEE: *nephelometer*.

**nephro-** [Gr. *nephros*, kidney] SEE: *nephro-*.

**nephralgia** (nē-frāl'jē-ā) [" + *algos*, pain] Renal pain. **nephralgic** (nē-frāl'jik), *adj.*

**nephrectasia, nephrectasis, nephrectasy** (nēf-rēk-tā'zē-ā, -rēk'tā-sīs, -tā-sē) [Gr. *nephros*, kidney, + *ektasis*, distention] Distention of the kidney.

**nephrectomize** (nē-frēk'tō-mīz) [" + *ektome*, excision] To remove one or both kidneys.

**nephrectomy** (nē-frēk'tō-mē) [" + *ektome*, excision] Surgical removal of a kidney, e.g., to remove a renal cell carcinoma or injured organ, or to harvest an organ for transplantation. The surgery may be performed with a large, open incision or laparoscopically. Complications sometimes include spontaneous pneumothorax, infection, azotemia, or secondary hemorrhage. SEE: *Nursing Diagnoses Appendix*.

**PATIENT CARE:** The patient is prepared for surgery according to protocol. Aspirin or other medications that may cause postoperative hemorrhage are withheld. The patient and family are assured that, in most instances, the body will adapt to functioning with only one kidney. Postoperatively, vital signs are

checked frequently; analgesics are administered (often by intravenous or epidural patient-controlled analgesia); and excessive bleeding is reported. Dressing changes are performed per surgeon or agency protocol. Fluid intake and output, body weight, and electrolytes are carefully monitored. Hemodynamics are monitored closely; the patient is assessed for evidence of postoperative complications such as stroke, myocardial infarction, pneumonia, or atelectasis. The patient is encouraged to breathe deeply (using incentive spirometry) and to cough to prevent atelectasis and other pulmonary complications. Oral hygiene is provided, and early fluid and food intake encouraged. Antithrombotic or sequential compression hose are applied, and the patient is assisted to turn and move in bed. Positioning on the surgical side helps other organs fill operative dead space. Early ambulation is encouraged, usually within 24 hr. Discharge teaching focuses on the components of a renal diet (if necessary), incisional care, recommended activities and restrictions, medications, and the need for follow-up.

**abdominal n.** Nephrectomy through an incision in the abdominal wall.

**paraperitoneal n.** Removal of a kidney through an extraperitoneal incision.

**nephric** (něf'řík) [Gr. *nephros*, kidney] Pert. to the kidney or kidneys. SYN: *renal*.

**nephritic** (ně-frít'ík) **1.** Relating to the kidney. **2.** Pert. to nephritis. **3.** An agent used in nephritis.

**nephritis** (něf-rí'tis) *pl.* **nephritides** Inflammation of the kidneys. The condition may be either acute or chronic and is caused by bacteria or their toxins (e.g., pyelonephritis), autoimmune disorders (e.g., poststreptococcal glomerulonephritis, systemic lupus erythematosus), or toxic chemicals (e.g., pesticides, mercury, arsenic, lead, alcohol, nonsteroidal anti-inflammatory drugs, antibiotics, chemotherapeutic agents, or radiological contrast materials). The glomeruli, tubules, interstitial tissues, and renal pelvis may be affected.

**PATIENT CARE:** Renal function is assessed by measuring serum creatinine, blood urea nitrogen, and urine creatinine clearance levels. Signs of renal failure (oliguria, azotemia, acidosis) are reported. Hemoglobin, hematocrit, electrolyte levels, intake and output of fluids, and body weights are monitored. Aseptic technique is used in handling catheters and in other invasive procedures to prevent secondary infections from occurring in the debilitated patient. The health care provider observes, records, and reports hematuria and monitors blood pressure using the

same cuff, arm, and position each time. Antihypertensive drugs are administered as prescribed. The patient is encouraged to maintain adequate hydration and follow the prescribed dietary restrictions, which may include limits on the amounts of sodium, potassium, fluid volume, and protein ingested. Intravenous fluid intake is monitored. Complications of hypertension are anticipated and prevented.

**acute n.** An inflammatory form of nephritis involving the glomeruli, the tubules, or the entire kidney. It may be called degenerative, diffuse, suppurative, hemorrhagic, interstitial, or parenchymal, depending upon the portion of the kidney involved.

**analgesic n.** Chronic nephritis caused by excess intake of almost any of the anti-inflammatory analgesics (e.g., salicylates, acetaminophen, nonsteroidal anti-inflammatory agents).

**chronic n.** A progressive form of nephritis in which the entire structure of the kidney or only the glomerular or tubular processes may be affected.

**glomerular n.** Glomerulonephritis.

**hereditary n.** Alport's syndrome.

**interstitial n.** Nephritis associated with pathological changes in the renal interstitial tissue that in turn may be primary or due to a toxic agent such as a drug or chemical. The end result is the destruction of the nephrons and serious impairment of renal function.

**scarlatinial n.** Acute glomerulonephritis complicating scarlet fever.

**suppurative n.** Nephritis associated with abscesses in the kidney.

**transfusion n.** Renal failure and tubular disease caused by transfusion of incompatible blood.

**nephritogenic** (ně-frít'ō-jěn'ík) [*'* + *gennan*, to produce] Causing nephritis.

**nephro-, nephr-** [Gr. *nephros*, kidney] Combining forms meaning *kidney*.

**nephroabdominal** (něf'rō-áb-dóm'ĭ-nāl) [*'* + *L. abdominalis*, abdomen] Concerning the kidney and abdomen.

**nephroblastoma** (něf'rō-blās-tō'mā) [*'* + *blastos*, germ, + *oma*, tumor] Wilms' tumor.

**nephrocalcinos** (něf'rō'kāl'sĭn-ō'sis) The deposition of calcium phosphate in the renal tubules.

**nephrocapsectomy** (něf'rō-kāp-sĕk'tō-mĕ) [*'* + *L. capsula*, capsule, + *Gr. ektome*, excision] Excision of the renal capsule.

**nephrocele** (něf'rō-sĕl) [*'* + *kele*, tumor, swelling] Renal hernia.

**nephrocolic** (něf'rō-kól'ík) [Gr. *nephros*, kidney, + *kolikos*, colic] **1.** Renal colic. **2.** Concerning the kidney and the colon.

**nephrocolopexy** (něf'rō-kól'ō-pĕks'ĕ) [*'* + *kolon*, colon, + *pexis*, fixation] Surgical suspension of the kidney and

the colon using the nephrocolic ligament.

**nephrocystanastomosis** (něf'ró-síst-ã-nãs'tô-mô'sís) [n + *kystis*, bladder, + *anastomosis*, outlet] A surgical connection between the kidney and the bladder.

**nephrocystitis** (něf'ró-sís-tí'tís) [n + " + *itis*, inflammation] Inflammation of the kidneys and the bladder.

**nephrocystosis** (něf'ró-sís-tô'sís) [n + " + *osis*, condition] Formation of renal cysts.

**nephrogenetic** (něf'ró-jěn-ět'ík) [n + *gennan*, to produce] Arising in or from the renal organs; capable of giving rise to kidney tissue.

**nephroid** (něf'róid) [n + *eidōs*, form, shape] Resembling a kidney; kidney-shaped. SYN: *reniform*.

**nephrolithiasis** (něf'ró-lith-í'ã-sís) The presence of calculi (stones) in the kidney. SEE: *calculus*, *renal*.

**nephrolithotomy** (něf'ró-lith-öt'ô-mē) [n + *lithos*, stone, + *tome*, incision] Renal incision for removal of kidney stones.

**nephrology** (ně-frö'l'ã-jē) [n + " ] The branch of medical science concerned with the structure and function of the kidneys and the prevention and treatment of kidney disease.

**nephrolysis** (ně-frö'l'í-sís) [n + " ]  
1. Surgical detachment of an inflamed kidney from paranephric adhesions.  
2. Destruction of renal tissue by nephrotoxins.

**nephroma** (ně-frö'mã) [n + *oma*, tumor] Renal tumor.

**nephromalacia** (něf'ró-mã-lã'sē-ã) [n + *malakia*, softening] Abnormal renal softness or softening.

**nephromegaly** (něf'ró-měg'ã-lē) [n + *megas*, great] Extreme enlargement of a kidney.

**nephron** (něf'rön) [Gr. *nephros*, kidney] The structural and functional unit of the kidney, consisting of a renal (malpighian) corpuscle (a glomerulus enclosed within Bowman's capsule), the proximal convoluted tubule, the loop of Henle, and the distal convoluted tubule. These connect by arched collecting tubules with straight collecting tubules. Urine is formed by filtration in renal corpuscles and selective reabsorption and secretion by the cells of the renal tubule. There are approx. one million nephrons in each kidney. SEE: *kidney* for illus.; *malpighian capsule*; *urine*.

**nephropathia epidemica** (něf'ró-pãth'ē-ã ép'í-dēm'í-kã, -dēm') [NL, "epidemic nephropathy"] ABBR: NE. A mosquito-borne viral infection found almost exclusively in northern European nations (e.g., Finland and Sweden). Its principal symptoms are fever, abdominal pain, and renal failure.

**nephropathy** (ně-fröp'ã-thē) [n + *pa-*

*thos*, disease, suffering] Disease of the kidney. It includes inflammatory (nephritis), degenerative (nephrosis), and sclerotic lesions of the kidney.

**analgesic n.** Analgesic nephritis.

**hypercalcemic n.** Renal damage due to hypercalcemia. It is usually caused by hyperparathyroidism, sarcoidosis, excess intake of vitamin D, excess use of calcium-containing antacids, multiple myeloma, malignant disease, and, occasionally, by immobilization or Paget's disease.

**hypokalemic n.** Renal damage due to abnormal depletion of potassium, regardless of the basic cause of the electrolyte abnormality. Characteristically, there are multiple vacuoles in microscopic sections of the renal tubular epithelium. Clinically, the patient is unable to concentrate urine. Therapy for the primary cause of the hypokalemia may allow the kidney lesions to become completely reversed.

**immunoglobulin A n.** ABBR: IgA n. A form of glomerulonephritis in which immunoglobulin A molecules are deposited in the glomeruli. The disease, more common in boys than girls, may eventually cause renal failure in as many as 40% of patients. The cause is unknown. SEE: *glomerulonephritis*.

**membranous n.** A glomerular disease of unknown cause that produces nephrotic syndrome. It may be distinguished from lipid nephrosis by immunofluorescence and electron microscopy. SEE: *glomerular disease*; *nephrotic syndrome*.

**TREATMENT:** Treatment consists of corticosteroids with or without other immunosuppressive drugs.

**radiocontrast-induced n.** Nephropathy caused by the use of radiological contrast media (e.g., the "dye" used during angiography). It is usually defined as one of the following: an increase in the serum creatinine of 0.5 mg/dL within 48 hr of exposure to contrast agents when no other cause is apparent; a decrease in renal function of 25%; or any deterioration in renal function that results in clinically significant adverse effects on a patient's health.

**PATIENT CARE:** Kidney damage due to injected contrast occurs most often in people who are dehydrated or have diabetes mellitus, heart failure, impaired renal blood flow or kidney disease, liver failure, or multiple myeloma. It sometimes results in serious illness and death, increased hospital length of stay, and end-stage renal disease. Health care professionals should acquire complete medical histories and baseline blood tests to identify at-risk patients. Aggressive preprocedure hydration with sodium bicarbonate in saline decreases the incidence of radiocontrast

nephropathy (RCN) in at-risk patients. Maintaining a urine volume more than 150 mL/hr before, during, and after contrast-requiring procedures reduces the rate of RCN significantly.

**nephropexy** (něf'rō-pěks-ē) [*"* + *pexis*, fixation] Surgical fixation of a floating kidney.

**nephrophthisis** (ně-frōf'thī-sīs) [*"* + *phthisis*, a wasting] 1. Tuberculosis of the kidney with caseous degeneration. 2. Suppurative nephritis.

**nephrorrhaphy** (něf-ror'ā-fē) [*"* + *rhaphe*, seam, ridge] Suturing the kidney.

**nephros** (něf'rōs) [Gr.] The kidney.

**nephrosclerosis** (něf'rō-sklē-rō'sīs) [*"* + *sklerosis*, a hardening] Renal sclerosis, that is, hardening of the connective tissues of the kidneys.

**arterial n.** Arteriosclerosis of the renal arteries resulting in ischemia, atrophy of parenchyma, and fibrosis of the kidney.

**arteriolar n.** Sclerosis of the smaller renal arterioles, esp. the afferent glomerular arterioles with resulting fibrosis, ischemic necrosis, and glomerular degeneration and failure. This type of nephrosclerosis occurs in most cases of essential hypertension.

**malignant n.** Nephrosclerosis that develops rapidly in patients with severe hypertension. SEE: *hypertension*.

**nephroscope** (něf'rā-skōp') A rigid or flexible endoscope used to inspect and/or treat conditions present inside the urinary tract.

**nephrosis** (něf'rō'sīs) *pl.* **nephroses**

1. Clinical classification of kidney disease in which protein loss is so extensive that edema and hypoproteinemia are produced. 2. Degenerative changes in the kidneys, esp. the renal tubules, without the occurrence of inflammation. SEE: *nephrotic syndrome*.

**amyloid n.** A nephrotic syndrome from amyloid deposits in the kidney.

**lipoid n.** Idiopathic nephrotic syndrome.

**nephrosonephritis** (ně-frō'sō-ně-frī'tīs) [*"* + *osis*, condition, + *nephros*, kidney, + *itis*, inflammation] Renal disease with characteristics of nephritis and nephrosis.

**nephrostomy** (ně-frōs'tō-mē) The formation of an artificial fistula into the renal pelvis. It may be used to drain an obstructed kidney or relieve hydronephrosis.

**percutaneous n.** The placement of a catheter into the renal pelvis from the posterolateral aspect of the body below the 11th rib using radiologic guidance.

**nephrotic** (ně-frōt'ik) [Gr. *nephros*, kidney] Relating to, or caused by, nephrosis.

**nephrotic syndrome** ABBR: NS. A condition marked by increased renal glomerular permeability to proteins, re-

sulting in massive loss of proteins in the urine, edema, hypoalbuminemia, hyperlipidemia, and hypercoagulability. Several different types of glomerular injury can cause the syndrome, including membranous glomerulopathy, minimal-change disease (lipoid nephrosis), focal segmental glomerulosclerosis, glomerulonephritis, and membranoproliferative glomerulonephritis. These pathological findings in the kidney result from a broad array of diseases such as diabetic injury to the glomerulus, amyloidosis, immune-complex deposition disease, vasculitis, systemic lupus erythematosus, allergic reactions, infections, and toxic injury to the kidneys by drugs or heavy metals. The disease's prognosis depends on the cause. For example, if the cause is exposure to a drug or toxin, the removal of that substance may be curative. When the disease results from glomerulosclerosis caused by AIDS, death may occur within months. Renal biopsy usually is needed to determine the precise histological cause, treatment, and prognosis. Idiopathic NS is diagnosed when the known causes of NS have been excluded. It is usually diagnosed in adults by use of renal biopsy. Causes are classified according to the changes found in the capillaries of the glomerulus when examined by use of electron microscopy. SEE: *proteinuria*; *Nursing Diagnoses Appendix*.

**SYMPTOMS:** Patients with nephrotic syndrome may initially present with fluid retention in the legs (occasionally with presacral or periorbital edema) or symptoms caused by blood clotting (e.g., in the renal vein). The hyperlipidemia that often accompanies the syndrome may lead to symptoms caused by atherosclerosis.

**TREATMENT:** Angiotensin-converting enzyme (ACE) inhibitors significantly reduce the degree of protein loss. Diuretics are used to treat symptomatic edema, antibiotics to treat infection. Anticoagulants may be used to treat and prevent clotting. Antihypertensive agents and lipid-lowering medications are used to prevent atherosclerotic complications. Renally tailored diets, with defined quantities of sodium, potassium, and protein, often are recommended.

Corticosteroids and immunosuppressive drugs (e.g., cyclophosphamide) are used to manage nephrosis caused by some histological subtypes. Infusions of salt-poor albumin help to replace protein. When renal failure accompanies nephrotic syndrome, dialysis may be required.

**PATIENT CARE:** Patients are weighed every day at the same time (usually on awakening) and fluid intake

and output checked at that time so that changes in fluid retention can be documented, and, if necessary, remediated. The skin over edematous areas must be handled carefully to prevent trauma. Urine protein levels are checked frequently. Because of the loss of protein through the urine and lack of appetite, patients with nephrosis often have protein-calorie malnutrition. Many find it difficult to adjust to the low sodium, moderate to low protein, low potassium diet recommended for disease management. Small frequent meals using as many of the patients' food preferences as possible may help improve nutritional status. Antiembolism stockings are provided and incentive spirometry and leg exercises, and other preventive activities are encouraged. Symptoms such as leg pain, pleuritic chest pain, or shortness of breath should be evaluated carefully for evidence of thromboses. Psychosocial support is often needed by patients to help them cope with the changes in their appearance and functioning that accompany the edema.

**nephrotomogram** (něf'ró-tó'mō-grām) A tomogram of the kidney.

**nephrotomography** (něf'ró-tō-mōg'rā-fē) [" + " + *graphein*, to write] Tomograph of the kidney after the intravenous injection of a radiopaque contrast medium that is excreted by the kidney.

**nephrotomy** (ně-frót'ō-mē) [" + *tome*, incision] Surgical incision of the kidney.

**nephrotoxin** (něf'ró-tōk'sin) [" + *toxikon*, poison] A toxic substance that damages kidney tissues. Commonly encountered nephrotoxins include aminoglycoside antibiotics (e.g., gentamicin, tobramycin, or amikacin), nonsteroidal anti-inflammatory drugs (e.g., indomethacin), lead (e.g., in "moonshine" whiskey and some paints), and some ionic radiopaque contrast agents.

**nephrotropic** (něf'ró-trōp'ik) [" + *tropos*, turning] 1. Affecting the kidneys. 2. An agent or drug that exerts its effect principally on the kidney or renal function.

**nephroureterectomy** (něf'ró-ū-rē'tēr-ēk'tō-mē) [" + *oureter*, ureter, + *ektome*, excision] Surgical excision of the kidney with all or part of the ureter.

**neptunium** (něp-too'nē-ūm) [planet Neptune] SYMB: Np. An element obtained by bombarding uranium with neutrons. Its atomic weight is 237 and its atomic number is 93.

**nerve** [L. *nervus*, sinew] A bundle of neurons that transmits electrochemical impulses between the central nervous system and body tissues. Afferent nerves conduct sensory impulses from receptors to the CNS; efferent nerves conduct motor impulses from the CNS to effector organs and tissues. A peripheral nerve

consists of axons of neurons whose cell bodies are located within the brain, the spinal cord, or ganglia. A bundle of nerve fibers is called a fasciculus. The fibers within a fasciculus are surrounded and held together by delicate connective tissue fibers forming the endoneurium. Each fasciculus is surrounded by a sheath of connective tissue (perineurium). The entire nerve is enclosed in a thick sheath of connective tissue (epineurium), which may contain numerous fat cells. Small nerves may lack an epineurium. SYN: *nervus*. SEE: *cell*.

**SYMPTOMS:** A broad array of insults may damage nerves, including direct trauma, repetitive motion injuries, compression by neighboring structures, glycosylation, infections, drugs, toxins, and paraneoplastic syndromes. Symptoms of nerve injury include paresthesias, loss of sensation and position sense, impaired motor function, cranial nerve malfunction, changes in reflexes, and impairments in glandular secretion.

**TESTS FOR LOSS OF FUNCTION:** The assessment of nerve injury includes a careful neurological examination, sometimes accompanied by tests (e.g., electromyography or nerve conduction studies).

**abducens n.** The nerve that innervates the lateral rectus muscle of the eye. It exits the brainstem between the pons and medulla and leaves the cranium through the superior orbital fissure. SYN: *abducent nerve*; *sixth cranial nerve*. SEE: *cranial n.*

**abducent n.** Abducens nerve.

**accelerator n.** A sympathetic nerve to the heart that carries impulses that speed the heart rate.

**accessory n.** Either of a pair of motor nerves made up of a cranial part and a spinal part that supplies the trapezius and sternomastoid muscles and the pharynx. The cranial portion joins the vagus to supply motor fibers to the pharynx and larynx. SYN: *eleventh cranial nerve*; *spinal accessory nerve*. SEE: *cranial nerve for illus*.

**acoustic n.** The nerve that relays impulses for hearing and equilibrium.

**PHYSIOLOGY:** It consists of two separate parts: the vestibular and cochlear nerves, with superficial origin at the junction of the pons and medulla. The vestibular and cochlear nerves consist of somatic afferent fibers. Cells of origin of the vestibular nerve are bipolar and lie in the vestibular ganglion, peripheral branches terminating in receptors of semicircular ducts, saccule, and utricle. Cells of origin of the cochlear nerve are bipolar and lie in the spiral ganglion, peripheral branches terminating in the spiral organ of Corti. The two nerves become joined, enter the internal

acoustic meatus with the facial nerve, and then separate. **SYN:** *auditory n.*; *eighth cranial n.*; *vestibulocochlear n.* **SEE:** *illus.*

**adrenergic n.** A nerve whose axons release norepinephrine from their terminals.

**afferent n.** Sensory nerve.

**auditory n.** Acoustic nerve.

**autonomic n.** **SEE:** *autonomic nervous system.*

**cervical n.** Any nerve in the first eight pairs of spinal nerves. **SEE:** *skeleton.*

**carotid sinus n.** A sensory branch of the glossopharyngeal nerve (CN IX) carrying signals from the baroreceptors (blood pressure receptors) in the bifurcation of the carotid artery to the nucleus of the solitary tract (nucleus solitarius).

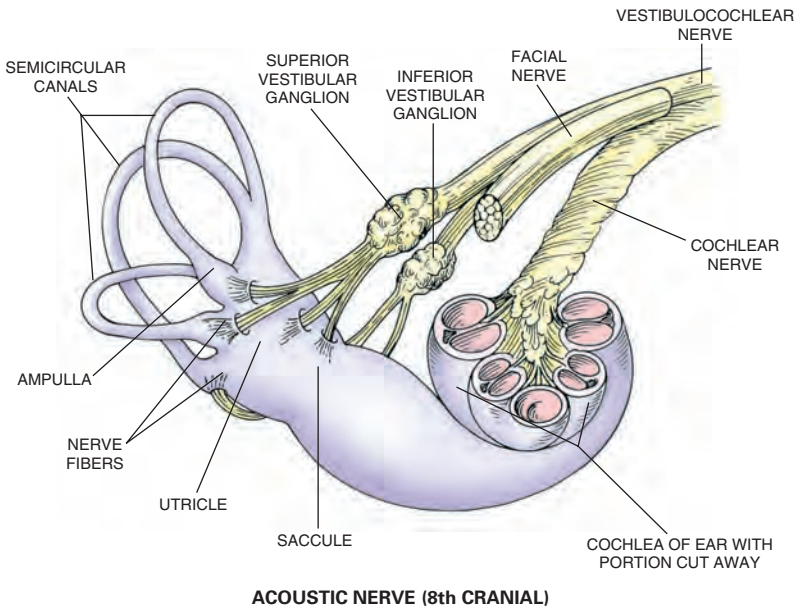
**cholinergic n.** A nerve that releases acetylcholine at a synapse when it transmits an impulse.

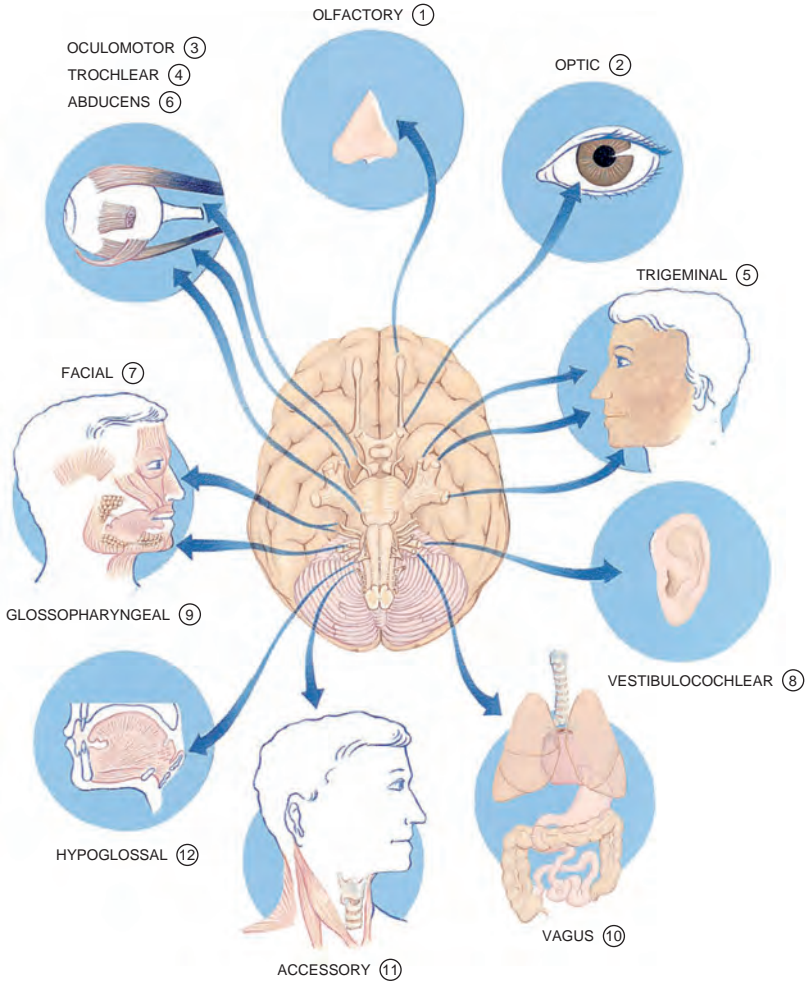
**cranial n.** Any of the 12 pairs of nerves (CN I — CN XII) originating in the brainstem and mainly controlling the activities of the face and head. **SEE:** *illus.*

**DIAGNOSIS:** Lesions of the cranial nerves give rise to the following alteration(s) (lesions are described as if one of each pair of nerves were diseased): *First* (CN I; olfactory): Loss or disturbance of the sense of smell. *Second* (CN II; optic): Blindness of various types, depending on the exact location of the lesion. *Third* (CN III; oculomotor): Ptosis (drooping) of the eyelid, deviation of the eyeball outward, dilatation of the pupil,

double vision. *Fourth* (CN IV; trochlear): Rotation of the eyeball upward and outward, double vision. *Fifth* (CN V; trigeminal): Sensory root: Pain or loss of sensation in the face, forehead, temple, and eye. Motor root: Deviation of the jaw toward the paralyzed side, difficulty in chewing. *Sixth* (CN VI; abducens): Deviation of the eye outward, double vision. *Seventh* (CN VII; facial): Paralysis of all the muscles on one side of the face; inability to wrinkle the forehead, to close the eye, to whistle; deviation of the mouth toward the sound side. *Eighth* (CN VIII; vestibulocochlear): Deafness or ringing in the ears; dizziness; nausea and vomiting; reeling. *Ninth* (CN IX; glossopharyngeal): Disturbance of taste; difficulty in swallowing. *Tenth* (CN X; vagus): Disease of the vagus nerve is usually limited to one or more of its divisions. Paralysis of the main trunk on one side causes hoarseness and difficulty in swallowing and talking. The commonest disease of the vagus is of its left recurrent branch, which causes hoarseness as its principal manifestation. *Eleventh* (CN XI; spinal accessory): Drooping of the shoulder; inability to rotate the head away from the affected side. *Twelfth* (CN XII; hypoglossal): Paralysis of one side of the tongue; deviation of the tongue toward the paralyzed side; thick speech.

**dorsal n.** The branch of a spinal nerve that passes dorsally to innervate skin, muscle, and bone near the vertebral column. It is also called a *dorsal ramus* or *posterior branch*.





CRANIAL NERVES AND THEIR DISTRIBUTIONS

**efferent n.** A nerve that carries motor impulses from the central nervous system to an effector. These impulses may be excitatory, causing muscle contraction or glandular secretion, or inhibitory, diminishing muscle contraction or glandular secretion. SYN: *motor n.*

**eighth cranial n.** ABBR: CN VIII. Acoustic nerve.

**eleventh cranial n.** ABBR: CN XI. Accessory nerve.

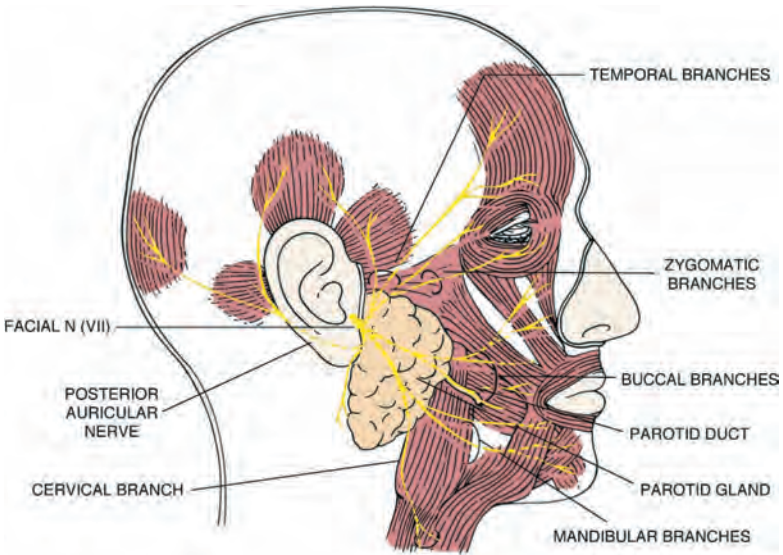
**excitatory n.** A nerve that transmits impulses that stimulate function.

**excitoflex n.** A visceral nerve whose stimulation causes reflex action.

**facial n.** A mixed nerve consisting of efferent fibers supplying the facial muscles, the platysma muscle, the submandibular and sublingual glands; and of

afferent fibers from taste buds of the anterior two thirds of the tongue and from the muscles. The afferent fibers originate from the geniculate ganglion and the motor and secretory fibers from nuclei in the pons. They are distributed throughout the ear, face, palate, and tongue. Branches are the tympanic, chorda tympani, posterior auricular, digastric, stylohyoid, temporal, zygomatic, malar, buccal, mandibular, and cervical. SYN: *seventh cranial n.* SEE: *illus.*; *cranial n.*

**femoral n.** A nerve emerging from the lumbar plexus that takes axons from spinal levels L2-L4 to the extensor muscles of the leg and the iliopsoas, sartorius, and pectineus muscles and also to the skin along the front of the thigh



**SUPERFICIAL BRANCHES OF FACIAL NERVE (7TH CRANIAL)**

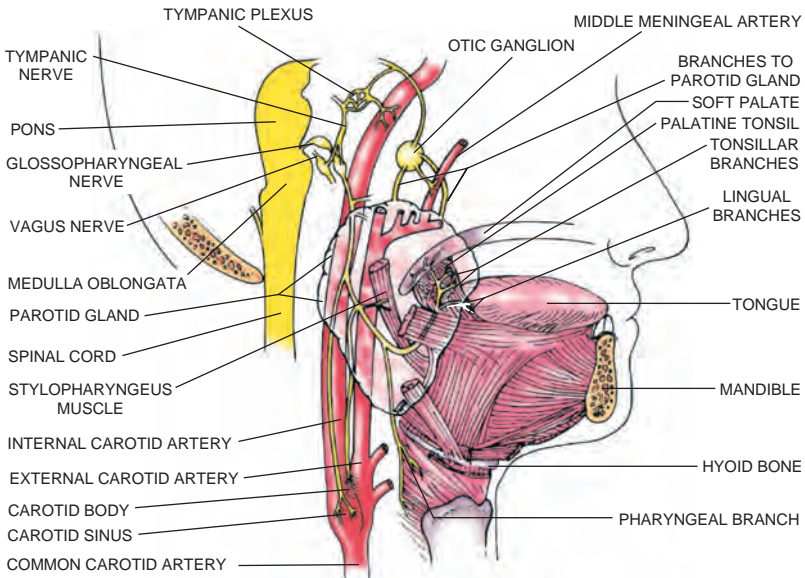
and along the inner side of the leg and foot. The femoral nerve carries the sensory and motor axons for the patellar reflex.

**fifth cranial n.** ABBR: CN V. Trigeminal nerve.

**glossopharyngeal n.** A mixed nerve that is sensory for taste and for the ca-

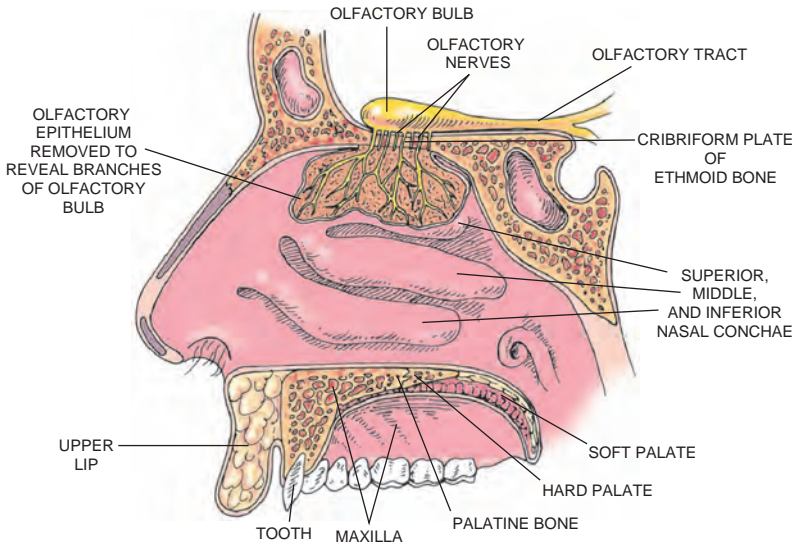
rotid sinus and body, and motor for secretion of saliva and contraction of the pharynx. SYN: *ninth cranial n.* SEE: *illus.*

**hypoglossal n.** A motor nerve to the intrinsic and extrinsic muscles of the tongue. It emerges from the brainstem between the pyramid and the olive as a



**GLOSSOPHARYNGEAL NERVE**





### RIGHT OLFACTORY NERVE

(1ST CRANIAL)

row of pure motor rootlets. These axons merge, and the hypoglossal nerve exits the brain through the hypoglossal canal. The nerve drops under the mandible and then rises into the tongue. It is joined by motor axons from spinal nerves C1 and C2 and sensory axons from C2. SYN: *twelfth cranial n.*

**iliohypogastric n.** A nerve emerging from the lumbar plexus and carrying axons mainly from spinal segment L1 to the internal oblique and transverse abdominal muscles and to the skin of the lower abdomen.

**infratrochlear n.** A sensory nerve and branch of the nasociliary nerve (which is itself a branch of the ophthalmic division [CN VI] of the trigeminal nerve). The infratrochlear nerve receives sensation from the upper eyelid and the upper portion of the nose.

**inhibitory n.** A nerve whose signals decrease the activity of target cells, organs, or tissues.

**intermediate n.** The smaller of the two divisions of the facial nerve (CN VII).

**lumbar n.** Any nerve of the five pairs of spinal nerves, corresponding with the lumbar vertebrae. All are mixed nerves.

**mandibular n.** Any of the three divisions of the trigeminal nerve (CN V). It is a mixed sensory and motor nerve.

**median n.** A combined motor and sensory nerve of the arm having its origin in the brachial plexus.

**mixed n.** A nerve containing both afferent (sensory) and efferent (motor) fibers.

**motor n.** Efferent nerve.

**ninth cranial n.** ABBR: CN IX. Glossopharyngeal nerve.

**oculomotor n.** A nerve that innervates the superior, inferior, and medial rectus and the inferior oblique muscle of the eye (for movement of the eyeball), the levator palpebrae superioris of the eyelid (for raising upper eyelid), the ciliary muscle (for contraction for near vision), and the sphincter muscle fibers of the iris (for pupillary constriction). It originates in the midbrain and consists of somatic and visceral efferent fibers and somatic afferent fibers. SYN: *third cranial n.*

**olfactory n.** Either of the first pair of cranial nerves (CN I) supplying the nasal olfactory mucosa. These nerves consist of delicate bundles of unmyelinated fibers (fila olfactoria) that pass through the cribriform plate and terminate in olfactory glomeruli of the olfactory bulb. The fila are central processes of bipolar receptor neurons of the olfactory mucous membrane. SEE: *illus.*; *cranial nerve.*

**optic n.** Either of the second pair of cranial nerves (CN II); sensory for vision. Each is formed by the axons of the ganglion neurons of the retina and passes posteriorly to the optic chiasma, where the medial fibers cross to the opposite side. All of the fibers terminate in the lateral geniculate nucleus of the thalamus; thalamic neurons continue to the visual area of the optical lobe.

**parasympathetic n.** SEE: *parasympathetic nervous system.*

**peripheral n.** Any nerve that connects the brain or spinal cord with peripheral receptors or effectors.

**phrenic n.** A nerve arising in the cervical plexus (originating from spinal segments C3-C5), entering the thorax, and running in the mediastinum between the pleura and the pericardium to end in the central portion of the diaphragm; a motor nerve to the diaphragm with additional sensory fibers to the pericardium.

**pilomotor n.** A motor nerve that innervates the arrectores pilorum muscles of hair follicles.

**pressor n.** An afferent nerve whose stimulation excites the vasoconstrictor center, thus increasing the blood pressure.

**radial n.** One of the main nerves emerging from the brachial plexus of the lower lateral neck. It contains axons from spinal segments C5-C7, innervates the extensor muscles of the elbow, hand, and fingers; the brachioradialis muscle; the abductor pollicis longus muscle, and also the skin of the posterior (dorsal) surface of most of the upper extremity.

**secretory n.** A nerve whose stimulation excites secretion in a gland or a tissue.

**sensory n.** A nerve that transmits impulses from receptors to the central nervous system. SYN: *afferent nerve*.

**seventh cranial n.** ABBR: CN VII. Facial n.

**sixth cranial n.** ABBR: CN VI. Abducens n.

**somatic n.** A nerve that innervates somatic structures. These include skeletal muscle (motor nerves) and receptors in skin, joints, and skeletal muscle (sensory nerves).

**spinal accessory n.** Accessory nerve.

**spinal n.** Any of the nerves arising from the spinal cord. They consist of 31 pairs: eight cervical, 12 thoracic, five lumbar, five sacral, and one coccygeal, corresponding with the spinal vertebrae. Each spinal nerve is attached to the spinal cord by two roots: a dorsal or posterior sensory root and a ventral or anterior motor root. The former consists of afferent fibers conveying impulses to the cord; the latter of efferent fibers conveying impulses from the cord. A typical spinal nerve, on passing through the intervertebral foramen, divides into four branches, a recurrent branch, a dorsal ramus or posterior primary division, a ventral ramus or anterior primary division, and two rami communicantes (white and gray), which pass to ganglia of the sympathetic trunk. SEE: *illus.*

**splanchnic n.** Any of the nerves from the thoracic sympathetic ganglia that supply the visceral organs.

**sudomotor n.** Any of the nerves that supply sweat glands.

**sympathetic n.** Any nerve of the sympathetic division of the autonomic nervous system. SEE: *autonomic nervous system*.

**tenth cranial n.** ABBR: CN X. Vagus n.

**third cranial n.** ABBR: CN III. Oculomotor n.

**thoracic n.** Any of the 12 pairs of spinal nerves that emerge from the foramina between the thoracic vertebrae. All are mixed nerves.

**trigeminal n.** A large, mixed nerve arising from the pons in a large sensory root and a smaller motor root. At the junction of the roots, the semilunar gas-serian ganglion gives rise to three branches. These branches are *ophthalmic*, purely sensory, from the skin of the upper part of the head, mucous membranes of the nasal cavity and sinuses, cornea, and conjunctiva; *maxillary*, purely sensory, from the dura mater, gums and teeth of the upper jaw, upper lip, and orbit; and *mandibular*, sensory fibers from the tongue, gums, and teeth of the lower jaw, skin of the cheek, lower jaw and lip, and motor fibers supplying principally the muscles of mastication. SYN: *fifth cranial nerve*.

**twelfth cranial n.** ABBR: CN XII. Hypoglossal n.

**vagus n.** A mixed nerve that arises from the medulla and has branches to many organs. Its impulses slow the heart rate, constrict the bronchioles, and increase peristalsis and digestive secretions. SYN: *tenth cranial nerve*. SEE: *illus.*; *cranial nerve*.

**vasoconstrictor n.** A nerve (usually an autonomic sympathetic nerve) conducting impulses that bring about constriction of a blood vessel.

**vasosensory n.** Any nerve providing sensory fibers for a vessel.

**vestibulocochlear n.** Acoustic nerve.

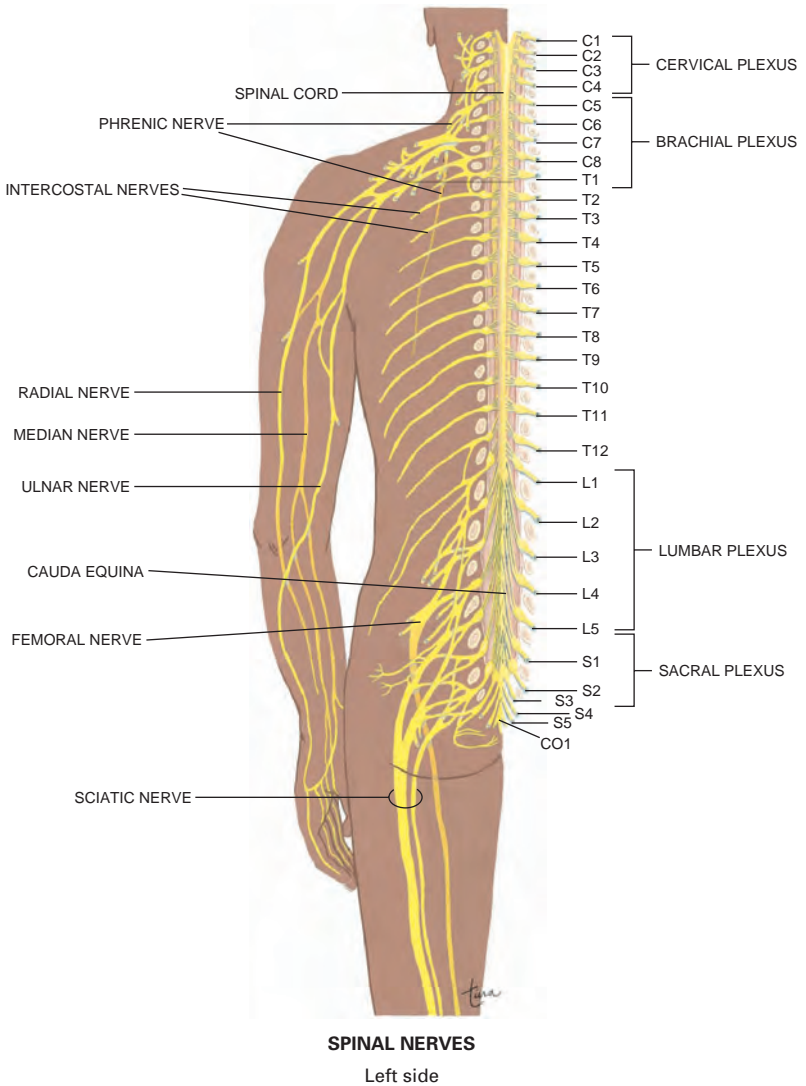
**vidian n.** A branch from the sphenopalatine ganglion.

**nerve block** SEE: *block, nerve*.

**nerve cell** Neuron.

**nerve ending** The termination of a nerve fiber (axon or dendrite) in a peripheral structure. It may be sensory (receptor) or motor (effector). Sensory endings can be nonencapsulated (e.g., free nerve endings, peritrichal endings, or tactile corpuscles of Merkel) or they can be encapsulated (e.g., end-bulbs of Krause, Meissner's corpuscles, Vater-Pacini corpuscles, or neuromuscular and neurotendinous spindles).

**nerve entrapment syndrome** Compression of a nerve or nerves resulting in nerve damage. This may cause anesthesia or pain if a sensory nerve is affected and paralysis if a motor nerve is involved. The compression may be due to physical pressure on the nerve (i.e., sleeping in a position in which a nerve

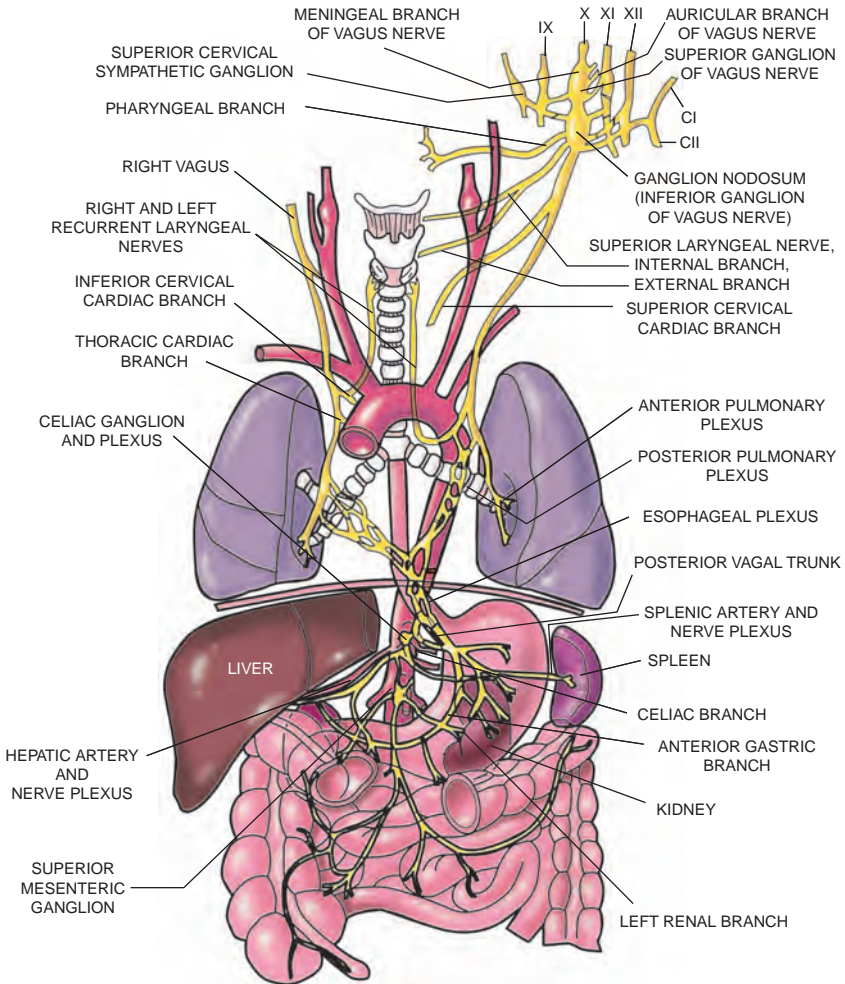


is pressed upon by surrounding tissue) or to swelling of tissue in a compartment through which the nerve passes. SEE: *carpal tunnel syndrome*; *muscle compartment syndrome*.

**nerve fiber** **1.** A neuron. **2.** The elongated process of a neuron, often the axon, concerned with the transmission of impulses. Nerve fibers form the major portion of the white matter of the brain and spinal cord and all nerves. Most fibers in peripheral nerves are myelinated; the myelin sheath is the layer of Schwann cell membranes wrapped around the process. Myelin is an electrical insulator. Spaces between adjacent Schwann

cells are called nodes of Ranvier. The cytoplasm and nuclei of Schwann cells, outside the myelin sheath, are called the neurilemma, which is important in the regeneration of damaged neurons. Nerve fibers without a myelin sheath are called unmyelinated; such peripheral fibers may still have a neurilemma. Schwann cells are not found in the central nervous system (the myelin sheath is made by oligodendrocytes); therefore central nervous system fibers do not have a neurilemma.

**adrenergic n.f.** A nerve fiber that releases norepinephrine at its synapse when an impulse is transmitted. Most



VAGUS NERVE (10TH CRANIAL)

postganglionic fibers of the sympathetic division are adrenergic.

**cholinergic n.f.** A nerve fiber that releases acetylcholine at its synapse when an impulse is transmitted. Sympathetic and parasympathetic preganglionic fibers, parasympathetic postganglionic fibers, and efferent somatic fibers ending in skeletal muscle are cholinergic.

**climbing n.f. of the cerebellum 1.** Afferent nerve fibers entering the cortex and synapsing with dendrites of Purkinje cells. SYN: *fiber, mossy*. **2.** Collateral branches of Purkinje cell axons that return to the molecular layer terminating about Purkinje or basket cell dendrites.

**collateral n.f.** A small branch extending at a right angle from an axon.

**commissural n.f.** A nerve fiber that

passes from one cerebral hemisphere to the other.

**decussating nerve fiber** An axon that crosses from one side of the central nervous system to the other.

**myelinated n.f.** A nerve fiber with a myelin sheath.

**nonmyelinated n.f.** A nerve fiber without a myelin sheath.

**postganglionic n.f.** A nerve fiber of the autonomic nervous system that terminates in smooth or cardiac muscle or in a gland. Its cell body lies in an autonomic ganglion.

**preganglionic n.f.** A nerve fiber of the autonomic nervous system that terminates and synapses in one of the autonomic ganglia. Its cell body lies in the brain or spinal cord.

**nerve fibril** Neurofibril.

**nerve gas** SEE: under *gas*.

**nerve growth factor** ABBR: NGF. A protein necessary for the growth and maintenance of sympathetic and certain sensory neurons.

**nerve impulse** SEE: *impulse, nerve*.

**nerve plexus** SEE: *plexus, nerve*.

**nerve tissue** SEE: under *tissue*.

**nerve trunk** The main stem of a peripheral nerve.

**nerveone** (nĕr'vōn) A cerebroside present in brain tissue. It contains nervonic acid.

**nervous** (nĕr'veŝ) [L. *nervosus*] **1.** Anxious. **2.** Characterized by excitability. **3.** Pert. to the nerves.

**n. breakdown** A colloquial term for any incapacitating mental illness, esp. one having acute onset and interfering with normal function, thought, or action.

**n. tissue** Tissue that makes up the nervous system, including neurons and neuroglia.

**nervousness** Anxiety; tension.

**nervous system** One of the regulatory systems, made of millions of neurons in precise pathways to transmit electrochemical impulses, and of neuroglial cells that have several functions, including formation of myelin sheaths of neurons. It consists of the brain and spinal cord (central nervous system [CNS]) and the cranial nerves and spinal nerves (peripheral nervous system), which include the nerves of the autonomic nervous system and its ganglia. SEE: *autonomic nervous system; central nervous system*.

**FUNCTION:** Receptors detect external and internal changes and transmit impulses along sensory nerves to the CNS. Receptors are found in the skin, muscles and joints, viscera, and the organs of special sense: the eyes, the ears, and the organs of taste and smell. The CNS uses this sensory information to initiate appropriate responses to changes; reflexes involving muscle contraction or glandular secretion, or voluntary movement, all mediated by motor nerves. A function specific to the brain is the integration, analysis, and storage of information for possible later use; this function is learning and memory.

**nervus** (nĕr'vūs) [L.] Nerve.

**n. erigens** A bundle of parasympathetic autonomic fibers originating from the 2nd to 4th sacral nerves and passing to terminal ganglia from which postganglionic fibers pass to the pelvic organs (bladder, colon, rectum, prostate gland, seminal vesicles, external genitalia).

**n. intermedius** A branch of the facial nerve consisting principally of sensory fibers.

**n. nervorum** Nerve fibers that innervate sheaths of nerves.

**n. terminales** A terminal nerve accompanying the olfactory nerve to the brain and consisting principally of sensory fibers from the mucosa of the nasal septum.

**nesidioblastoma** (nĕ-sīd'ē-ō-blās-tō'mă) [*n* + *blastos*, germ, + *oma*, tumor] Islet-cell tumor of the pancreas.

**nesidioblastosis** (nĕ-sīd'ē-ō-blās-tō'sīs) Diffuse hyperplasia of the beta cells in the islets of Langerhans of the pancreas. It is a rare cause of hypoglycemia.

**nest** A small cluster of unusual cells found within normal tissue. SYN: *rest* (4).

**cancer n.** A mass of cells extending from a common center seen in cancerous growths.

**cell n.** A mass of epithelial cells set apart from surrounding cells by connective tissue.

**net reproductive rate** ABBR: NRR. A measure of whether a population is reproducing at a greater or lesser rate than needed for its replacement. It is determined by calculating the average number of surviving daughters born to the women in that population during their reproductive years. An NRR of 1 indicates that each woman in the population has one surviving daughter during her lifetime.

**nettle** [AS. *netel*] Any plant of the genus *Urtica*. A nettle's sawtoothed leaves contain hairs that secrete a fluid that irritates the skin.

**network** [AS. *net*, net, + *wyrcan*, to work] Fiber arrangement in a structure resembling a net. SYN: *rete; reticulum*.

**neural n.** A form of artificial intelligence that relies on a group of interconnected mathematical equations that accept input data and that calculate an output. The more often the equations are used, the more reliable and valuable they become in drawing conclusions from data. Neural networks have been used in health care to interpret electrocardiograms and to make and suggest diagnoses.

**Neuman, Betty** (nū'măn) Nursing educator, born 1924, who developed Neuman's systems model, a conceptual model of nursing. SEE: *Nursing Theory Appendix*.

**N's systems model** A conceptual model of nursing developed by Betty Neuman in which individuals and groups are considered client systems made up of physiological, psychological, sociocultural, developmental, and spiritual variables. The goal of nursing is to facilitate optimal wellness through retention, attainment, or maintenance of client system stability.

**neur-, neuro-, neuro-** Combining forms denoting *nerve, nervous system*.

**neuragmia** (nū-răg'mē-ă) [Gr. *neuron*, nerve, sinew, + *agmos*, break] The tearing or rupturing of a nerve trunk.

**neural** (nū-rāl) [L. *neuralis*] Pert. to nerves or connected with the nervous system.

**n. crest** A band of cells extending longitudinally along the neural tube of an embryo from which cells forming cranial, spinal, and autonomic ganglia arise as well as the cells (ectomesenchyme) that migrate into the forming facial region and become odontoblasts, which form the dentin of the teeth.

**n. fold** One of two longitudinal elevations of the neural plate of an embryo that unite to form the neural tube.

**n. grafting** An experimental procedure for transplanting tissue into the brain and spinal cord. Possible sources of material to be used include human fetal tissue, cultured and genetically engineered cells, and tissues from the patient's own body.

**n. plate** SEE: *under plate*.

**neuralgia** (nū-rāl'jē-ă) [Gr. *neuron*, nerve, sinew, + *algos*, pain] Pain occurring along the course of a nerve. It may be caused by pressure on nerve trunks, nutritional deficiencies, toxins, or inflammation. SYN: *neurodynia*. SEE: *sciatica*. **neuralgic** (nū-rāl'jīk), *adj.*

**facial n.** Trigeminal n.

**geniculate n.** Ramsay hunt syndrome.

**glossopharyngeal n.** Neuralgia along the course of the glossopharyngeal nerve, characterized by severe pain in back of the throat, tonsils, and middle ear.

**hallucinatory n.** An impression of local pain without an actual stimulus to cause the pain.

**Hunt's n.** Ramsay Hunt syndrome.

**idiopathic n.** Neuralgia without structural lesion or pressure from a lesion.

**intercostal n.** Pain between the ribs. It is frequently associated with eruption of herpes zoster on the chest, and with costochondritis, an inflammatory condition of the ribs and their cartilage. SYN: *pleuralgia*.

**mammary n.** Neuralgia of the breast. SYN: *mastodynia*.

**Morton's n.** SEE: *Morton's neuralgia*.

**nasociliary n.** Neuralgia of the eyes, brows, and root of the nose.

**occipital n.** Neuralgia involving the upper cervical nerves, usually caused by nerve entrapment.

**otic n.** Geniculate n.

**postherpetic n.** Neuralgia following an attack of herpes zoster (shingles). It is caused by irritation of the nerve roots

of the spinal cord. Treatments include gabapentin. SEE: *herpes zoster*.

**reminiscent n.** Continued mental perception of pain after neuralgia has ceased.

**sphenopalatine n.** Neuralgia of the sphenopalatine ganglion, causing pain in the area of the upper jawbone and radiating into the neck and shoulders. There is pain on one side of the face radiating to the eyeball, ear, and occipital and mastoid areas of the skull, and sometimes to the nose, upper teeth, and shoulder on the same side.

**stump n.** Neuralgia due to irritation of nerves at the site of an amputation.

**symptomatic n.** Neuralgia not primarily involving the nerve structure but occurring as a symptom of local or systemic disease.

**trigeminal n.** A painful disease of the trigeminal (fifth cranial) nerve marked by brief attacks of lightning-like stabs along the distribution of one or more of its branches, but usually along the maxillary nerve. The attacks typically last from a few seconds to 2 min and may be triggered by light touch to a hypersensitive area, drinking hot or cold beverages, chewing, brushing teeth, smiling, or talking. It occurs most frequently in persons over 40 and in women more often than men and on the right side of the face more often than the left. SYN: *facial neuralgia*; *tic douloureux*. SEE: *Nursing Diagnoses Appendix*.

**SYMPTOMS:** Symptoms include episodes of facial pain, often accompanied by painful spasms of facial muscles. Between attacks the patient may be pain-free. When observed during an attack, the patient will often try to splint or in other ways protect the affected area. In long-standing cases, the hair on the affected side sometimes becomes coarse and bleached. Physical examination shows no motor or sensory function impairment.

**ETIOLOGY:** The cause is thought to be the pressure of blood vessels on the trigeminal nerve root at its point of entrance into the brainstem. Magnetic resonance imaging is used to identify other potentially hazardous causes of facial pain.

**TREATMENT:** Carbamazepine, phenytoin, or other anticonvulsant drugs in gradually increasing doses are often effective. Other therapeutic options include narcotic analgesics or muscle relaxers such as lioresal. Nerve block provides temporary relief. Surgical therapies are various and may include rhizotomy, microvascular nerve root decompression, or nerve root injections. Radiation therapy is sometimes employed.

**PATIENT CARE:** The characteristics of each attack are observed and recorded. Analgesic drugs are adminis-



tered as prescribed and observed for desired and adverse effects. Before surgery is contemplated, an effort should be made to reduce factors that make symptoms worse (e.g., by having the patient use a cotton pad to cleanse the face and a blunt-toothed comb to comb the hair).

After surgery, sensory deficits are assessed to prevent trauma to the face and affected areas. The patient who has had an ophthalmic branch resection should avoid rubbing his or her the eye, avoid using aerosol sprays, wear glasses or goggles outdoors, blink often, and examine the eye for foreign substances with a hand mirror frequently. The patient who has had a mandibular or maxillary branch resection should eat carefully to avoid oral injuries from hot food or drinks or chewing (e.g., by eating food on the unaffected side to prevent inner cheek injury). Frequent dental examinations detect abnormalities that the patient cannot feel. The patient and significant others require emotional support throughout treatment. Expression of feelings should be encouraged, and independence promoted, helping the patient to avoid trigger stimulation while carrying out self-care and physical activities.

**neuralgiform** (nū-rāl'jī-form) [" + " + *L. forma, form*] Similar to neuralgia.

**neurally adjusted ventilatory assistance**  
ABBR: NAVA. A form of mechanical ventilation in which each machine-generated breath initiates after the detection of diaphragmatic muscle depolarization. A lead inserted into the esophagus detects signals from the diaphragm.

**neural tension tests** Various assessment techniques that stretch neural tissues (meninges, nerve roots, axons, and peripheral nerves) and assess the mobility and/or length of the structures and their ability to withstand tensile forces. Positive signs may include the reproduction of symptoms, limitation of motion, or asymmetric responses. The tests include the slump test, the straight leg raise, and the upper limb tension test.

**neural tube** Tube formed from fusion of the neural folds from which the brain and spinal cord arise.

**n.t. defect** ABBR: NTD. A group of congenital structural disorders that result from a failure of the embryonic neural tube to close during development. Cranial fusion disorders, including anencephaly and encephalocele or spinal fusion disorders, including spina bifida, lumbar meningocele, and meningocele, may occur as a consequence of this failure. In the U.S. about 3000 children are born each year with neural tube defects. Although there may be a family history of such disorders, roughly

85% of affected infants are born to women who have not been considered at risk. Prenatal folic acid deficiency has been implicated in NTD, but other predisposing factors may be involved as well. To reduce the risk of NTDs, the U.S. Public Health Service recommends a daily folic acid intake of 0.4 mg for all fertile women of childbearing age. Prior supplementation with folic acid prevents damage to the embryonic neural tube during the first 3 to 4 weeks of its development, when many women are unaware that they are pregnant. The importance of an adequate intake before pregnancy is predicated on the fact that damage to the developing embryo often occurs before the woman knows she is pregnant. The neural tube develops from the neural plate at 3 weeks' gestation. At 4 weeks' gestation, closure has been achieved except at the cranial and caudal ends; cranial closure occurs at 24 days and caudal closure at 26 days' gestation. SEE: *microencephaly*; *spina bifida cystica*; *spina bifida occulta*.

Elevated levels of maternal serum alpha-fetoprotein (MSAFP) are found in NTDs such as fetal anencephaly. Screening for MSAFP is done between 15 and 19 weeks' gestation. Alpha-fetoprotein also is found in amniotic fluid. The prognosis for infants born with NTDs depends on the area and the degree of involvement. Despite supportive care, some defects (such as anencephaly) are fatal shortly after birth. Others, such as myelomeningocele, may benefit from surgery done within 24 to 48 hr after birth; in some cases, however, surgery does not improve the deformity, disability, and chronic health problems that compromise the individual's quality of life.

**neuraminidase** (nūr-ām'in-ī-dās") An enzyme present on the surface of influenza virus particles. The activity of this enzyme enables the virus to separate itself from cells. Persons with increased levels of antibodies against neuraminidase in their serum have increased resistance to influenza infection.

**neurapraxia** (nūr'a-prāk'sē-ā) A temporary impairment in nerve conduction, typically caused by an injury that does not produce permanent structural damage to the nerve.

**neuroarthropathy** (nūr'rār-thrōp'ā-thē) [" + *arthron, joint, + pathos, disease, suffering*] Neuroarthropathy.

**neurasthenia** (nūr'rās-thē'nē-ā) [" + *astheneia, weakness*] An old term occasionally used to signify functional (psychosomatic) illness, marked by symptoms such as chronic fatigue, weakness, lassitude, noncardiogenic chest pain, panic attacks, irritability, anxiety, depression, headache, insomnia, joint and muscle discomfort, and

sexual disorders. Contemporary terms that encompass the idea of neurasthenia include chronic fatigue, anxiety, fibromyalgia, depression, and dysphoria. SYN: *nervous debility*.

**neuraxial blockade** (nū-rāk's'ē-āl) Spinal or epidural anesthesia.

**neuraxial infusion** An invasive approach to the relief of unremitting pain in which analgesic drugs are injected directly into the spinal fluid.

**neuraxis** (nū-rāk's'is) [" + L. *axon*, axis] The cerebrospinal axis.

**neurectasia, neurectasis, neurectasy** (nū-rēk-tā'sē-ā, -rēk'tā-s'is, -rēk'tā-sē) [" + *ektasis*, a stretching] Surgical stretching of a nerve. SYN: *neurotension*.

**neurectomy** (nū-rēk'tō-mē) [" + *ektome*, excision] Partial or total excision or resection of a nerve.

**presacral n.** Surgical procedure for removing the hypogastric (presacral) nerve plexus. This is done to treat conditions such as dysmenorrhea and chronic idiopathic pelvic pain.

**neurotopia, neurotopy** (nū-rēk-tō'pē-ā, nūr-ēk'tō-pē) [" + *ek*, out, + *topos*, place] Displacement or abnormal position of a nerve.

**neurepithelium** (nūr'ēp-ī-thē'lē-ūm) [" + *epi*, upon, + *thele*, nipple] Neuroepithelium.

**neurexeresis** (nūr'ēks-ēr'ē-s'is) [" + *exairein*, to draw out] The tearing out of a nerve to relieve neuralgia.

**neurilemma, neurolemma** (nū'rā-lēm'mā) [" + *lemma*, husk] In the peripheral nervous system, the cytoplasm and nuclei of Schwann cells wrapped around the myelin sheath or the unmyelinated processes of nerve fibers. This contributes to regeneration of damaged nerve fibers by producing growth factors and serving as a tunnel or guide for regrowth. SEE: *nerve fiber*; *neuron* for illus.

**neurilemmitis** (nū'rī-lēm-mī'tis) [" + " + *itis*, inflammation] Inflammation of a neurilemma.

**neurilemmosarcoma** (nū'rī-lēm"ō-sār-kō-mā) A malignant neurilemmoma.

**neurilemmoma, neurolemmoma** (nū'rā-lēm-ō'mā) [" + *eilema*, tight sheath, + *oma*, tumor] A firm, encapsulated fibrillar tumor of a peripheral nerve. SYN: *neurinoma*; *schwannoma*.

**neurinoma** (nū-rī-nō'mā) [" + *oma*, tumor] Neurilemmoma.

**neurinomatosis** (nū'rī-nō-mā-tō's'is) [" + " + *osis*, condition] Neurofibromatosis.

**neurite** (nū'rīt) [Gr. *neuron*, nerve, sinew] An axon or a dendrite.

**neuritis** (nū-rī'tis) [" + *itis*, inflammation] Inflammation of a nerve, usually associated with a degenerative process. SEE: *Guillain-Barré syndrome*; *polyneuritis*; *Nursing Diagnoses Appendix*.

SYMPTOMS: There are many forms of

neuritis, which produce a variety of symptoms, including neuralgia in the part affected, hyperesthesia, paresthesia, dysesthesia, hypesthesia, anesthesia, muscular atrophy of the body part supplied by the affected nerve, paralysis, and lack of reflexes.

**ETIOLOGY:** Neuritis may be caused by mechanical factors (e.g., compression or contusion of the nerve) or localized infection involving direct infection of a nerve. It may accompany diseases such as leprosy, tetanus, tuberculosis, malaria, or measles. Toxins, esp. poisoning by heavy metals (arsenic, lead, mercury), alcohol, or carbon tetrachloride, may also be a cause. Neuritis may accompany thiamine deficiency, gastrointestinal dysfunction, diabetes, toxemias of pregnancy, or peripheral vascular disease.

**PATIENT CARE:** Changes in motor and sensory function are monitored. Correct positioning and prescribed analgesic drugs are used to relieve pain. Rest is provided, and affected extremities are rested by limiting their use and by using supportive appliances. Passive range-of-motion exercises are performed to help prevent contracture formation. Skin care is provided, and proper nutrition and dietary therapy are prescribed for metabolic disorders. Health care providers remove causative factors or counsel the patient about their avoidance. After pain subsides, prescribed activities are performed (e.g., massage, electrostimulation, and exercise).

**adventitial n.** Inflammation of a nerve sheath.

**ascending n.** Neuritis moving upward along a nerve trunk away from the periphery.

**axial n.** Inflammation of the inner portion of a nerve.

**degenerative n.** Neuritis with rapid degeneration of a nerve.

**descending n.** Neuritis that leads away from the central nervous system toward the periphery.

**disseminated n.** Neuritis involving a large group of nerves.

**interstitial n.** Neuritis involving the connective tissue of a nerve.

**intraocular n.** Neuritis of the retinal fibers of the optic nerve causing disturbed vision, contracted field, enlarged blind spot, and fundus findings such as exudates, hemorrhages, and abnormal condition of the blood vessels. Treatment depends on the cause (e.g., brain tumor, meningitis, syphilis, nephritis, diabetes). SEE: *optic n.*

**n. migrans** Ascending or descending neuritis that passes along a nerve trunk, affecting one area and then another.

**multiple n.** Simultaneous impair-



ment of a number of peripheral nerves. SYN: *polyneuritis*.

**SYMPTOMS:** Symptoms are related to the suddenness of onset and severity. Usually, lower limbs are affected first, with weakness that may progress until the entire body is affected. Muscle strength, deep tendon reflexes, sensory nerves, and autonomic nerves become involved.

**ETIOLOGY:** Causes include infectious diseases (e.g., diphtheria), metabolic disorders (e.g., alcoholism, diabetes, pellagra, beriberi, sprue), and various poisons, including lead. In some instances, the disease arises without apparent cause.

**TREATMENT:** Causative factors should be removed if possible. Treatment includes skilled nursing, with particular care taken to prevent bedsores, and dietary therapy (depending upon the cause).

**optic n.** Inflammation of the optic nerve causing varying degrees of visual loss. It is often the first recognized symptom in patients with multiple sclerosis.

**peripheral n.** Neuritis of terminal nerves or end organs.

**retrobulbar n.** Neuritis of the portion of the optic nerve behind the eyeball.

**SYMPTOMS:** The main symptom is acute loss of vision in one or both eyes. Pain may be absent or may be unbearable, lasting for only a brief period or for days.

**ETIOLOGY:** This type of neuritis may be caused by a variety of illnesses, but in adults it is most frequently associated with multiple sclerosis.

**rheumatic n.** Neuritis with symptoms of rheumatism.

**segmental n.** Neuritis affecting segments of a nerve interspersed with healthy segments.

**sympathetic n.** Neuritis of the opposite nerve without attack of the nerve center.

**syphilitic n.** Neuritis in locomotor ataxia caused by syphilis.

**tabetic n.** Syphilitic neuritis.

**toxic n.** Neuritis resulting from metallic poisons (e.g., arsenic, mercury, and thallium) or nonmetallic poisons (e.g., various hydrocarbons and organic solvents).

**traumatic n.** Neuritis following an injury.

**vestibular n.** A condition marked by vertigo, nausea and vomiting, and gait disturbance of relatively acute onset, usually caused by inflammatory processes within the bony labyrinth of the ear.

**neuro-** [Gr. *neuron*, nerve, sinew] Combining form denoting *nerve*, *nervous tissue*, *nervous system*.

**neuroablation** (nūr'ō-āb-lā'shūn) The

destruction or inactivation of nerve tissue, with surgery, cautery, injections of sclerosing agents, lasers, or cryotherapy.

**neuroacanthosis** (noor'ō-āk'ān-thō'sīs, nūr') [" + "'] An autosomal recessive neurological disorder associated with acanthosis of red blood cells beginning between the ages of 25 and 45. It is marked by the development of choreiform movements, oral dystonias, motor and vocal tics, and other neurological abnormalities. SYN: *Levine-Critchley syndrome*.

**neuroactive** [Gr. *neuron*, nerve, sinew + *active*] Capable of modifying the activities of nerves or the behavior of organisms. The term is used to describe the actions of many chemicals, drugs, foods, or toxins.

**neuroanastomosis** (nūr'ō-ā-nās'tō-mō'sīs) [" + *anastomosis*, opening] Surgical attachment of one end of a severed nerve to the other end.

**neuroanatomy** (nūr'ō-ān-āt'ō-mē) The anatomy of the nervous system.

**neuroarthropathy** (nūr'ō-ār-thrōp'ā-thē) [" + " + *pathos*, disease, suffering] Disease of a joint associated with disease of the central nervous system.

**neuroastrocytoma** (nūr'ō-ās'trō-sī-tō'mā) [" + *kytos*, cell, + *oma*, tumor] A tumor of the central nervous system composed of neurons and glial cells.

**neuroaugmentation** (nūr'ō-āwg-mēn-tā'shūn) Any method used to increase the function of a nerve, esp. in managing pain. One example is transcutaneous electrical nerve stimulation.

**neurobiology** (nūr'ō-bī-ōl'ō-jē) [" + *bios*, life, + *logos*, word, reason] Biology of the nervous system.

**neuroblast** (nūr'ō-blāst) [" + *blastos*, germ] An embryonic cell derived from the neural tube or neural crest, giving rise to a neuron.

**neuroblastoma** (nūr'ō-blās-tō'mā) [" + " + *oma*, tumor] A malignant hemorrhagic tumor composed principally of cells resembling neuroblasts that give rise to cells of the sympathetic system, esp. adrenal medulla. This tumor occurs chiefly in infants and children. The primary sites are in the mediastinal and retroperitoneal regions.

**neurocanal** (nūr'ō-kā-nāl') [" + *L. canalis*, passage] The central canal of the spinal cord.

**neurocardiac** (nūr'ō-kār-dē-āk) [" + *kardia*, heart] 1. Pert. to the nerves supplying the heart or nervous system and the heart. 2. Concerning a cardiac neurosis.

**neurocardiogenic syncope** (nūr'ō-kār-dē-ō-jēn'ik) Vasodepressor syncope.

**neurocentral** (nūr'ō-sēn'trāl) [" + *ken-tron*, center] Pert. to the centrum of a vertebra and the neural arch.

**neurocentrum** (nū'rō-sēn'trūm) The body of a vertebra.

**neurochemistry** (nū'rō-kēm'is-trē) The chemistry of the nervous system.

**neurochorioretinitis** (nū'rō-kō'rē-ō-rē'tin-ī'tis) [Gr. *neuron*, nerve, sinew, + *chorion*, skin, + L. *retina*, retina, + Gr. *itis*, inflammation] Inflammation of choroid and retina combined with optic neuritis.

**neurochoroiditis** (nū'rō-kō-roy-dī'tis) [" + " + *oidos*, form, shape, + *itis*, inflammation] Inflammation of the choroid coat and optic nerve.

**neurocirculatory** (nū'rō-sūr'kū-lā-tō'rē) [" + L. *circulatio*, circulation] Pert. to circulation and the nervous system.

**neurocladism** (nū-rōk'lā-dīzm) [" + *klados*, a young branch, + *-ismos*, condition] Phenomenon occurring after a nerve is severed, where an outgrowth of axons meet to reestablish the nerve's integrity. SYN: *odogenesis*.

**neuroclonic** (nū'rō-klōn'īk) [" + *klonos*, spasm] Marked by spasms of neural origin.

**neurocranium** (nū'rō-krā'nē-ūm) [" + *kranion*, skull] The portion of the skull that surrounds the brain, eyes, nose, and ears. The skull has two separate embryonic portions: the neurocranium and the viscerocranium. The neurocranium develops from the mesenchyme surrounding the cerebral vesicles.

**neurocrine** (nū'rō-krīn) [" + *krinein*, to secrete] **1.** Indicating an endocrine influence on nerves or the influence of nerves on endocrine tissue. **2.** A chemical transmitter.

**neurocutaneous** (nū'rō-kū-tā'nē-ūs) [" + L. *cutis*, skin] Pert. to the nervous system and skin.

**neurocytolysis** (nū'rō-sī-tōl'ī-sīs) [" + *kytos*, cell, + *lysis*, dissolution] Dissolution or destruction of nerve cells.

**neurocytoma** (nū'rō-sī-tō'mā) [" + " + *oma*, tumor] A tumor formed of cells of nervous origin (usually ganglionic). SEE: *neuroma*.

**neurodealgia** (nū-rō'dē-āl'jē-ā) [Gr. *neurodes*, retina, + *algos*, pain] Pain in the retina.

**neurodegeneration with brain iron accumulation** (nū'rō-dē-gēn'ēr-ā'shūn) ABBR: NBIA. Hallervorden-Spatz disease.

**neurodegenerative** (nū'rō-dē-jēn'ēr-ā-tīv) Concerning wasting, necrosis, or deterioration of nerves, neurons, or the nervous system.

**neurodendrite, neurodendron** (nū'rō-dēn'drīt, -drōn) [Gr. *neuron*, nerve, sinew, + *dendron*, tree] Cytoplasmic branched process of a nerve cell. SEE: *dendrite* for illus.

**neurodermatitis** (nū'rō-dēr-mā-tī'tis) [" + *derma*, skin, + *itis*, inflammation] Cutaneous inflammation with itching that is associated with, but not entirely

due to, emotional stress. After an initial irritant, scratching becomes a habit and prolongs the condition. Treatment is corticosteroid ointment or cream. Circumscribed neurodermatitis is used as a synonym for lichen simplex chronicus. SEE: *illus*.



### NEURODERMATITIS ON NECK

**disseminated n.** Chronic superficial inflammation of the skin characterized by thickening, excoriation, and lichenification, usually beginning in infancy. It is common in families with a high incidence of allergic diseases. SYN: *atopic dermatitis*.

**neurodermatosis** (nū'rō-dēr-mā-tō'sis) [" + " + *osis*, condition] Any skin disease of neural origin, including neurofibromatosis, von Hippel-Lindau disease, Sturge-Weber syndrome, and tuberous sclerosis. SYN: *phacomatosis*.

**neurodermatrophia** (nū'rō-dēr-m'ā-trōf'ē-ā) Atrophy of the skin from nervous disease.

**neurodevelopmental treatment** (nūr'ō-dē-vēl'ōp-mēn'tāl) ABBR: NDT. A rehabilitation treatment approach for cerebral palsy, hemiplegia, and other central nervous system deficits that emphasizes the use of carefully considered handling to inhibit abnormal reflexes and movement patterns and facilitate higher level reactions and patterns in order to attain normal movement. This method was first promoted by Karel and Bertha Bobath (German physiotherapists).

**neurodynamic** (nū'rō-dī-nām'īk) Pert. to nervous energy.

**neurodynia** (nū'rō-dīn'ē-ā) [Gr. *neuron*, nerve, + *odyne*, pain] Neuralgia.

**neuroectoderm** (nū'rō-ēk'tō-dērm) [" + *ektos*, outside, + *derma*, skin] The embryonic tissue that gives rise to nerve tissue.

**neuroencephalomyelopathy** (nū'rō-ēn-sēf'ā-lō-mī'ē-lōp'ā-thē) [" + *enkephalos*, brain, + *myelos*, marrow, + *pathos*, disease, suffering] Disease of the brain, spinal cord, and nerves.

**neuroendocrine** (nū'rō-ēn'dō-krīn) Pert. to the nervous and endocrine systems as an integrated functioning mechanism.

**neuroendocrinology** (nū'rō-ēn'dō-krī-nōl'ō-jē) [" + *endon*, within, + *kri-*

*nein*, to secrete, + *logos*, word, reason] The study of the relationship between the nervous and endocrine systems.

**neuroenteric** (nū'rō-ēn-tēr'ik) Concerning the nervous system and the gastrointestinal tract.

**neuroepidermal** (nū'rō-ēp-i-dēr'mäl) [" + *epi*, upon, + *derma*, skin] Pert. to or giving rise to the nervous system and epidermis.

**neuroepithelioma** (nū'rō-ēp'ī-thē-lē-ō'mä) [" + " + *thele*, nipple, + *oma*, tumor] A relatively rare tumor of the neuroepithelium in a nerve of special sense.

**neuroepithelium** (nū'rō-ēp'ī-thē-lē-üm)

1. A specialized epithelial structure forming the termination of a nerve of special sense, including gustatory cells, olfactory cells, hair cells of the inner ear, and the rods and cones of the retina.

2. The embryonic layer of the epiblast from which the cerebrospinal axis is developed. SYN: *neurepithelium*.

**neurofibril, neurofibrilla** (nū'rō-fi-brīl, -fi-brīl'ä) [" + L. *fibrilla*, a small fiber] Any of the many tiny fibrils that extend in every direction in the cytoplasm of the neuron cell body. They maintain the shape of the neuron and extend into the axon and dendrites. SEE: *neuron*.

**neurofibroma** (nū'rō-fi-brō'mä) *pl. neurofibromata, -mas* [Gr. *neuron*, nerve, + L. *fibra*, fiber, + Gr. *oma*, tumor] A tumor of the connective tissue (esp. Schwann cells) of a nerve. SYN: *fibrosarcoma*. SEE: *neurofibromatosis*.

**neurofibromatosis** (nū'rō-fi-brō'mä-tō'sis) [" + " + " + *osis*, condition] A group of genetic disorders that affects the cell growth of neural tissues. A characteristic of the disease is the growth of neurofibromas in many locations within or on the surface of the body. For those persons with affected family members, genetic assessment and counseling of parents may be indicated. Genetic assessment and counseling can identify the parents' risk of being a gene carrier and passing the disease on to subsequent offspring. SEE: *illius*.



NEUROFIBROMATOSIS

**type 1 n.** ABBR: NF-1. An autosomal dominant disease that affects about 1 in 3000 persons. Its clinical hallmarks include hyperpigmented macules on the skin (café au lait spots) and multiple cutaneous and subcutaneous tumors that appear in late childhood (there may be only a few or thousands). When the tumors are pressed, they pass through a small opening in the skin, leaving the space previously occupied vacant. This characteristic, called buttonholing, helps to distinguish these tumors from lipomas. In about 2% to 5% of cases, the tumors become malignant. No cure has yet been found. Tumors that give rise to symptoms or those that become malignant should be excised; however, if the tumor is on a vital nerve, excision may be impossible. Radiation therapy and surgery are of benefit. SYN: *Recklinghausen's disease*.

**type 2 n.** ABBR: NF-2. An autosomal dominant disease, affecting 1 in 50,000 persons, that causes intracranial and spinal tumors, esp. of the eighth cranial nerve. Although the disease is incurable, its symptoms can be palliated with multidisciplinary care.

**neurofibromin** (nū'rō-fi-brō'mīn, noo") [" + " ] A tumor suppressor protein whose expression is reduced in the neurons of patients with neurofibromatosis and increased in the skin of patients who suffer tissue trauma.

**neurofibrosarcoma** (nū'rō-fi-brō-sär-kō'mä) [" + " + Gr. *sarx*, flesh, + *oma*, tumor] A malignant neurofibroma.

**neuroganglitis** (nū'rō-gän-glē-'ītis) [" + *ganglion*, knot, + *itis*, inflammation] Inflammation of a neuroganglion.

**neuroganglion** (nū'rō-gän'glē-ōn) A group of neuron cell bodies outside the central nervous system.

**neurogastric** (nū'rō-gäs'trik) [" + *gaster*, belly] Concerning the nerves of the stomach.

**neurogenesis** (nū'rō-jēn'ē-sis) [" + *genesis*, generation, birth] 1. Growth or development of nerves. 2. Development from nervous tissue. **neurogenetic** (nū'rō-jēn-ēt'ik), *adj.*

**neurogenic** (nū'rō-jēn'ik) 1. Originating from nervous tissue. 2. Due to or resulting from nerve impulses.

**neurogenic communication disorder** Inability to exchange information with others because of hearing, speech, or language problems caused by impaired functioning of the nervous system.

**neurogenic thoracic outlet syndrome** Scalenus syndrome.

**neuroglia** (nū-rög'lē-ä) [" + *glia*, glue] The interstitial and supporting tissue of the nervous system, also called glia. The cells, of ectodermal origin, are astrocytes, oligodendrocytes, satellite cells, ependymal cells, and Schwann cells. Mi-

croglia are phagocytic cells that are esp. active during injury or infection. **neuroglial** (nū-rōg'lē-āl), *adj.*

**neurogliocyte** (nū-rōg'lē-ā-sīt) [ " + " + *kytos*, cell] Any of the cells found in neuroglial tissue. SYN: *glia cell*.

**neuroglioma** (nū'rō-glī-ō'mā) [Gr. *neuron*, nerve, + *glia*, glue, + *oma*, tumor] Glioma.

**n. ganglionare** A glioma containing ganglion cells. SYN: *ganglioneuroma*.

**neurogliomatosis** (nū'rō-glī'ō-mā-tō'sīs) [ " + " + " + *osis*, condition] Gliomatosis.

**neurogliosis** (nū-rōg'lē-ō'sīs) [ " + " + *osis*, condition] Development of numerous neurogliomas.

**neuroglycopenia** (nūr'ō-glī-kō-pē'nē-ā) Hypoglycemia of sufficient duration and degree to interfere with normal brain metabolism. Patients with an insuloma or hypoglycemia due to an insulin overdose may have this condition, which produces confusion, agitation, coma, or brain damage. SYN: *glucopenic brain injury*.

**neurography** (noor-ōg'rū-fē, nūr-) [ " + " ] Radiological imaging of the brain, spinal cord, or peripheral nerves.

**neurohistology** (nū'rō-his-tōl'ō-jē) [ " + *histos*, tissue, + *logos*, study] The microscopic anatomy of peripheral nerves and the central nervous system.

**neurohypophysis** (nū'rō-hī-pōf'is-īs) [ " + *hypo*, under, + *physis*, growth] Posterior pituitary gland (*pars nervosa*).

**neuroimaging** The visual or graphic representation of the anatomy, blood flow, electrical activity, metabolism, oxygen usage, receptor sites, or other physiological functions of the central nervous system.

**neurokeratin** (nū'rō-kēr'ā-tīn) [ " + *keras*, horn] The type of keratin found in myelinated nerve fibers.

**neurolaw** (noor'ō-law, nūr') [ " + " ] That branch of the system of justice that treats problems resulting from injuries or illnesses of the central or peripheral nervous system.

**neurolemmitis** (nū'rō-lē-mī'tīs) [ " + *lemma*, husk, + *itis*, inflammation] Neurilemmitis.

**neuroleptic** (nū'rō-lēp'tīk) [ " + *leptis*, a taking hold] **1.** Any drug that modifies or treats psychotic behaviors, usually by blocking dopamine receptors in the brain. Examples include haloperidol (a butyrophenone), thiorazine (a phenothiazine), and clozapine (a tricyclic dibenzodiazepine). **2.** A condition produced by a neuroleptic agent.

**n. malignant syndrome** ABBR: NMS. A potentially fatal syndrome marked by hyperthermia, catatonic rigidity, altered mental status, profuse sweating, and occasionally rhabdomyolysis, renal failure, seizures, and

death. It typically occurs after exposure to drugs that alter levels of dopamine in the brain (such as antipsychotic agents) or after the withdrawal of agents that increase central nervous system dopamine levels (such as levodopa/carbidopa). The mortality may be as high as 30%. Antipyretics, curare-based paralytic drugs, bromocriptine, and dantrolene are used to treat the syndrome. SEE: *hyperpyrexia, malignant*.

**neurologist** (nū-rōl'ō-jīst) A specialist in diseases of the nervous system.

**neurology** (nū-rōl'ō-jē) [ " + *logos*, word, reason] The branch of medicine that deals with the nervous system and its diseases. **neurologic, neurological** (nū-rō-lōj'īk, -ī-kāl), *adj.*

**clinical n.** The branch of medicine concerned with the study and treatment of people with diseases of the nervous system.

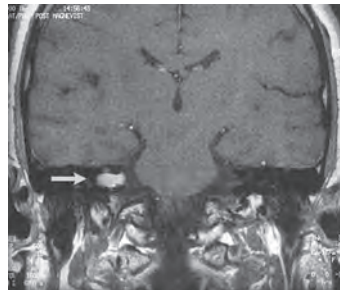
**neurolymphomatosis** (nū'rō-līm'fō-mā-tō'sīs) [ " + L. *lymphā*, lymph, + Gr. *oma*, tumor, + *osis*, condition] Malignant lymphoma involving the nervous system.

**neurolysin** (nū-rōl'īs-īn) [ " + *lysis*, dissolution] A peptide-cleaving enzyme that destroys nerve cells.

**neurolysis** (nū-rōl'īs-īs) **1.** The loosening of adhesions surrounding a nerve. **2.** The disintegration or destruction of nerve tissue. **neurolytic** (nū-rō-līt'īk), *adj.*

**neuroma** (nū-rō'mā) [ " + *oma*, tumor] Former term for any type of tumor composed of nerve cells. Classification is now made with respect to the specific portion of the nerve involved. SEE: *ganglioneuroma; neurilemmoma. neuro-matous* (nū-rō'mā-tūs), *adj.*

**acoustic n.** A benign tumor of the eighth cranial nerve. The symptoms may include hearing loss, balance disturbances, pain, headache, and tinnitus. SEE: *illius*.



ACOUSTIC NEUROMA

Coronal section

**amputation n.** Neuroma occurring on the nerves of a stump after amputation.

**amyelinic n.** Neuroma composed principally of unmyelinated nerve fibers.

**appendiceal n.** Neuroma found in the mucosa and submucosa of the appendix.

**n. cutis** Neuroma in the skin.

**cystic n.** Neuroma with cystic formations.

**false n.** A tumor arising from the connective tissue of the nerves, including the myelin sheath. SYN: *neurofibroma*;

*pseudoneuroma*.

**ganglionated n.** Neuroma composed of true nerve cells.

**multiple n.** Neurofibromatosis.

**myelinic n.** Neuroma composed of medullated nerve fibers.

**plexiform n.** Neuroma of nerve trunks that appear to be twisted.

**n. telangiectodes** Neuroma containing an abundance of blood vessels.

**traumatic n.** An unorganized mass of nerve fibers occurring in wounds or on an amputation stump, resulting after accidental or intentional incision of the nerve.

**neuromalacia** (nū'rō-māl-ā-sē-ā) [" + *malakia*, softening] Pathological softening of neural tissue.

**neuromatosis** (nū-rō-mā-tō'sis) [" + *oma*, tumor, + *osis*, condition] A condition characterized by the occurrence of multiple neuromas in the body.

**neuromechanical dyssynchrony** Any difference between the respiratory support provided to a patient by a mechanical ventilator and the patient's breathing. In neuromechanical dyssynchrony, typically the ventilator's inspiration lasts longer than the patient's. It is referred to colloquially as "fighting the ventilator."

**neuromere** (nū'rō-mēr) [" + *meros*, part] One of a series of segmental elevations on the ventrolateral surface of the rhombencephalon. SYN: *rhombomere*.

**neuromodulation** (nū'rō-mōd'ū-lā'shūn) Controlled stimulation of the peripheral or central nervous system with electricity.

**neuromodulator** (nū'rō-mōd'ū-lā-tōr) Biologically active substances produced by neurons that enhance or diminish the effects of neurotransmitters. Some neuromodulators are substance P, cholecystokinin, and somatostatin. SEE: *neuron*; *neurotransmitter*.

**neuromuscular** (nū'rō-mūs'kū-lār) [" + *L. musculus*, a muscle] Pert. to both nerves and muscles.

**neuromyelitis** (nū'rō-mī-ēl-ī'tis) [" + *myelos*, marrow, + *itis*, inflammation] Inflammation of nerves and the spinal cord.

**n. optica** A rare syndrome in which there is a severe transverse myelitis and optic nerve damage, probably as a

result of immunological injury to the optic nerve and spinal cord. It shares some features with multiple sclerosis (i.e., predilection for young women, demyelination of nerve cells) but is believed to be a distinct disease.

**neuromyopathy** (nū'rō-mī-ōp'ā-thē) [" + *mys*, muscle, + *pathos*, disease, suffering] A pathological condition involving both muscles and nerves.

**neuromyositis** (nū'rō-mī'ō-sī'tis) [" + " + *itis*, inflammation] Neuritis complicated by inflammation of muscles that come in contact with the affected nerves.

**neuromyotonia** (nū'rō-mī'ō-tō'nē-ā) [+ *Gr. mys*, muscle + *tonikos*, tone] Isaac's syndrome.

**neuron** (nū'rōn) [*Gr. neuron*, nerve, sinew] A nerve cell, the structural and functional unit of the nervous system. A neuron consists of a cell body (perikaryon) and its processes, an axon and one or more dendrites. Neurons function in initiation and conduction of impulses. They transmit impulses to other neurons or cells by releasing neurotransmitters at synapses. Alternatively, a neuron may release neurohormones into the bloodstream. SYN: *nerve cell*. SEE: *illus. neuronal* (nū'rō-nāl), *adj.*

**afferent n.** A neuron that conducts sensory impulses toward the brain or spinal cord. SYN: *sensory n.*

**associative n.** A neuron that mediates impulses between a sensory and a motor neuron.

**bipolar n.** 1. A neuron that bears two processes. 2. A neuron of the retina that receives impulses from the rods and cones and transmits them to a ganglion neuron. SEE: *retina* for *illus.*

**central n.** A neuron confined entirely to the central nervous system.

**commissural n.** A neuron whose axon crosses to the opposite side of the brain or spinal cord.

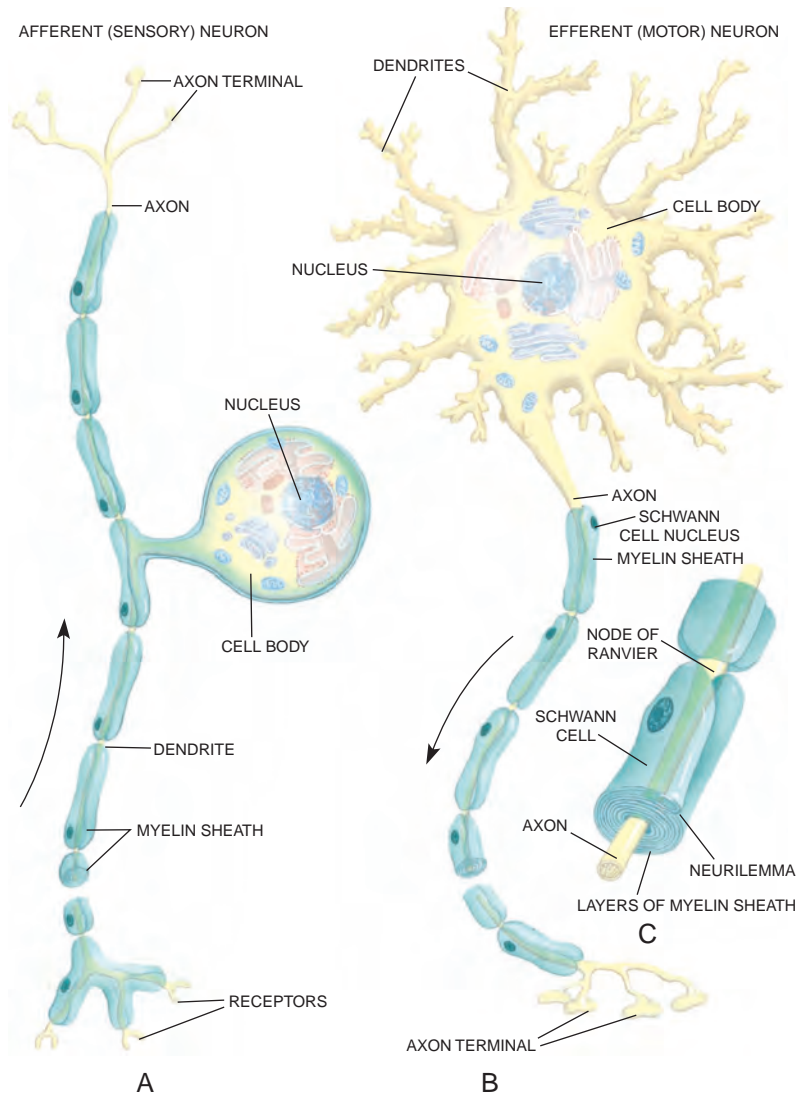
**efferent n.** A neuron whose axon carries motor impulses away from the brain or spinal cord.

**ganglion n.** A neuron of the retina that receives impulses from bipolar neurons. Axons of ganglion neurons converge at the optic disk to form the optic nerve. SEE: *retina* for *illus.*

**internuncial n.** Interneuron.

**lower motor n.** A peripheral motor neuron that originates in the ventral horns of the gray matter of the spinal cord and terminates in skeletal muscles. Lesions of these neurons produce flaccid paralysis of the muscles they innervate. SYN: *lower motoneuron*.

**motor n.** A neuron that carries impulses from the central nervous system either to muscle tissue to stimulate contraction or to glandular tissue to stimulate secretion.



### NEURON STRUCTURE

(A) Sensory neuron, (B), motor neuron (arrows indicate direction of impulse transmission), (C) myelin sheath and neurilemma formed by Schwann cells

**multipolar n.** A neuron with one axon and many dendrites.

**peripheral n.** A neuron whose process constitutes a part of the peripheral nervous system (cranial, spinal, or autonomic nerves).

**peripheral motor n.** A motor neuron that transmits impulses to skeletal muscle. SYN: *peripheral motoneuron*.

**postganglionic n.** A neuron of the autonomic nervous system whose cell

body lies in an autonomic ganglion and whose axon terminates in a visceral effector (smooth or cardiac muscle or glands).

**preganglionic n.** A neuron of the autonomic nervous system whose cell body lies in the central nervous system and whose axon terminates in a peripheral ganglion, synapsing with postganglionic neurons.

**sensory n.** Afferent neuron.

**unipolar n.** A neuron whose cell body bears one process.

**neuronal intestinal dysplasia** ABBR: NID. A disorder of bowel motility in which the innervation of the intestines is ectopic, i.e., the ganglions that provide nervous control of intestinal musculature are misplaced.

**neuronal migration disorders** ABBR: NMD. A group of rare neurological disorders in which embryological development of the central nervous system is flawed, resulting in structural abnormalities of the brain. Developmental delays, mental retardation, movement and muscle disorders, and seizures are common consequences.

**neuronavigation** (nū"rō-nāv"ī-gā"shūn) Radiological guidance for neurosurgery. The surgeon may rely on information obtained from ultrasonic images ("sononavigation"), magnetic resonance images, PET scans, or CT data, to select tissues for excision while avoiding eloquent (speech-controlling) regions of the brain.

**neuronephric** (nū"rō-nēf"rīk) [" + *nephros*, kidney] Concerning the nervous and renal systems.

**neuronevus** (nū"rō-nē"vūs) An intradermal nevus.

**neuroneuritis** (nū-rō-nī"tīs) [Gr. *neuron*, nerve, + *itis*, inflammation] Inflammation of nerve cells; e.g., inflammation of middle ear nerve cells is called vestibular neuroneuritis.

**neuronophage** (nū-rōn"ō-fāj) [" + *phagein*, to eat] A phagocyte that destroys tissue in the nervous system.

**neuronophagia, neuronophagy** (nū-rōn"ō-fājē-ā, -ōf"ā-jē) Destruction of nerve cells by phagocytes.

**Neurontin** (noor"ōn-tīn) SEE: *gabapentin*.

**neuro-ophthalmology** (nū"rō-ōf"thāl-mōl"ō-jē) [" + *ophthalmos*, eye, + *logos*, word, reason] The branch of ophthalmology concerned with the neurology of the visual system.

**neuro-optic** (nū"rō-ōp"tīk) [" + *optikos*, pert. to vision] Concerning the central nervous system and the eye.

**neuro-otology** (nū"rō-ō-tōl"ā-jē) [" + *ous*, ear, + *logos*, word, reason] Oto-neurology.

**neuropacemaker** (nūr"ō-pās"mā-kēr) An implantable device used to stimulate the brain or spinal cord (e.g., in the management of motor movement disorders or chronic and intractable pain). The electrical energy is provided in pulses at an appropriate rate to inhibit the perception of pain.

**neuropapillitis** (nū"rō-pāp"ī-lī"tīs) [" + *L. papilla*, nipple, + Gr. *itis*, inflammation] Optic neuritis.

**neuropathic arthritis** Arthritis associated with diseases of the nervous system. It occurs most commonly as a re-

sult of diabetes but can occur in tabes dorsalis, syphilis, and syringomyelia. SEE: *Charcot's joint*.

**neuropathogenesis** (nū"rō-pāth"ō-jēn"ē-sīs) [" + *pathos*, disease, suffering, + *genesis*, generation, birth] The origin and development of a neural disease.

**neuropathogenicity** (nū"rō-pāth"ō-jē-nīs"ī-tē) [" + *pathos*, disease, suffering, + *gennan*, to produce] The ability to cause pathological changes in nerves.

**neuropathology** (nū"rō-pā-thōl"ō-jē) + " + *logos*, word, reason] The study of diseases of the nervous system and the structural and functional changes occurring in them. Neurological diseases may affect the peripheral nerves or the central nervous system and may be congenital or acquired. Congenital defects tend to occur during embryonic or fetal development and become obvious in the early years of life. Acquired diseases that affect neurological function include vascular injuries (e.g., strokes), inflammatory diseases (e.g., encephalitis or meningitis), autoimmune diseases (multiple sclerosis), toxic illnesses (lead or mercury exposure), trauma (closed head injury), or neoplastic diseases (metastatic or primary brain tumors).

**neuropathy** (nū-rōp"ā-thē) Any disease of the nerves. **neuropathic** (nū-rō-pāth"īk), *adj.* SEE: table; *polyneuropathy*.

**AIDS peripheral n.** Direct infection of peripheral nerves by the human immunodeficiency virus (HIV) resulting in sensory and motor changes due to destruction of axons or their myelin covering. Acute or chronic inflammatory myelin damage may be the first sign of peripheral nerve involvement. Patients display gradual or abrupt onset of motor weakness and diminished or absent reflexes. Diagnostic biopsies of peripheral nerves show inflammatory changes and loss of myelin. Distal sensory neuropathy occurs in up to 30% of patients with AIDS, usually late in the disease. There is increased risk in older patients and those with diabetes mellitus, nutritional deficiencies, low CD4 cell counts, and vitamin B<sub>12</sub> deficiencies. Patients report sharp pain, numbness, or burning in the feet. Destruction of dorsal root ganglions and degeneration of central peripheral axons are seen on autopsy. Some older antiretroviral drugs (ddI, ddC, and d4T) also cause a reversible peripheral neuropathy in about 20% of patients. SEE: *AIDS; Guillain-Barré syndrome; chronic inflammatory demyelinating polyneuropathy*.

**TREATMENT:** Nonsteroidal anti-inflammatory drugs, opioids, gabapentin, anticonvulsants, and topical agents have all been used with variable success to treat the pain of AIDS-related sen-

## Common Neuropathies

Name	Affected nerve(s)	Affected part(s)	Affects sensation?	Affects movement?	Clinical features	Type of neuropathy
Bell's palsy	Facial	Eye, nasolabial fold, lip (corner of the mouth)	Occasionally	Yes	Paralysis of the facial muscles, usually on just one side of the face	Inflammatory
Carpal tunnel syndrome	Median	Wrist and hand	Yes	Yes	Pain and numbness of the hand and wrist, often caused by repetitive movements or overuse such as typing, sawing, hammering, or polishing	Entrapment
Diabetic sensory neuropathy	Multiple	Feet, lower extremities; sometimes hands late in the course	Yes	No	Burning, stinging pain beginning in both feet, typically occurring after several years of poorly controlled diabetes. Can predispose to foot injury and infections.	Metabolic
Idiopathic brachial plexopathy (neuralgic amyotrophy; Parsonage-Turner syndrome; shoulder girdle syndrome)	Brachial	Shoulder	Yes	Yes	Pain in the shoulder, esp. after vigorous physical activity. Occasionally followed by shoulder girdle muscle atrophy	Entrapment
Meralgia paresthetica	Lateral femoral cutaneous	Thigh	Yes	No	Stinging pain in the anterolateral thigh. Usually found in obesity or in diabetes mellitus	Entrapment
Morton's neuroma (interdigital neuropathy)	Interdigital nerves of the feet	Ball of foot	Yes	No	Pain often occurring between the web spaces of the 3rd and 4th toes during walking or standing	Entrapment
Piriformis syndrome	Sciatic	Buttock, with radiation into the leg	Yes	No	Buttock pain <i>without</i> back pain that is worsened by sitting and is relieved by walking	Entrapment/ compression



Radial nerve palsy (musculospiral paralysis; Saturday night palsy)	Radial nerve (spiral groove entrapment)	Wrist, hand, and forearm	Yes	Yes	Temporary paralysis and numbness of the hand and arm, which may mimic a stroke. Caused by nerve compression, e.g., falling asleep on one's side on a hard surface	Entrapment compression
Suprascapular neuropathy	Suprascapular	Back of the shoulder	Yes	Yes	Shoulder pain and muscular atrophy. Decreased ability to rotate or abduct the shoulder	Entrapment
Tarsal tunnel syndrome	Posterior tibial	Sole of the foot	Yes	No	Pain under the foot that is worsened by walking	Entrapment
Trigeminal neuralgia	Trigeminal	Cheek, nose, upper lip	Yes	No	Intense, repetitive facial pains that are often worsened by chewing, shaving, or toothbrushing, usually accompanied by spasm on the affected side of the face	Entrapment

sory neuropathy. Acupuncture is not effective. Human nerve growth factor, which stimulates regeneration of damaged nerve fibers, is being studied, esp. to minimize the neuropathy that anti-retroviral drugs cause.

**ascending n.** Pathological condition of the nervous system that ascends from the lower part of the body to the upper.

**auditory n.** ABBR: AN. Impaired hearing resulting from an absence of auditory evoked potentials, despite the presence of normal cochlear hair cell structure and function.

**descending n.** Pathological condition of the nervous system that descends from the upper part of the body to the lower.

**diabetic n.** Damage to autonomic, motor, and/or sensory nerves that results from metabolic or vascular derangements in patients with long-standing diabetes mellitus. Symptoms usually include loss of sensation (or unpleasant sensations) in the feet, erectile dysfunction, focal motor deficits, gastroparesis, loss of the ability to maintain postural blood pressure, and diseases of cardiac innervation. Sensory loss in the feet may result in undetected injuries that become infected or gangrenous. SYN: *diabetic polyneuropathy*. SEE: *illus.*



NEUROPATHIC FOOT DUE TO DIABETES

**TREATMENT:** Tight control of blood sugar levels may prevent some neuropathic symptoms in patients with diabetes mellitus.

**entrapment n.** Nerve entrapment syndrome.

**facial sensory n.** Trigeminal neuralgia.

**glue-sniffer's n.** Malfunction of sensory and motor nerves due to inhaling toxic hydrocarbons. The lower extremities and trigeminal nerve are most often damaged.

**interdigital n.** Morton's neuroma.

**multifocal motor n.** An asymmetrical motor weakness occasionally found in middle-aged men.

**optic n.** Pathological injury to the optic nerves or the blood supply to them. Usually, only one eye is affected. Several forms have been described, including ischemic optic neuropathy (which if prolonged leads to blindness in the affected eye); optic neuritis due to acute demyelination of optic nerve fibers; infiltrative optic neuropathy (in which the optic nerve is compressed by a tumor or aneurysm); and optic neuropathy due to toxic nutritional factors (e.g., methanol or a combined nutritional and vitamin deficiency).

**peripheral n.** Any syndrome in which muscle weakness, paresthesias, impaired reflexes, and autonomic symptoms in the hands and feet are common. This syndrome occurs in patients with diabetes mellitus, renal or hepatic failure, alcoholism, or in those who take certain medications such as phenytoin and isoniazid. Also called *polyneuritis*; *polyneuropathy*.

**subacute myelo-optic, myelo-optico n.** ABBR: SMON. A neurological disease that usually begins with abdominal pain or diarrhea, followed by sensory and motor disturbances in the lower limbs, ataxia, impaired vision, and convulsions or coma. It is reported mostly in Japan and Australia. Most patients survive, but neurological disability remains. Many of those who have the disease have a history of taking drugs of the halogenated oxyquinoline group such as clioquinol (formerly called iodochlorhydroxyquin).

**tomaculous n.** (tō-mā'cū-lūs) The presence of sausage-shaped areas of thickened myelin with secondary axon constriction in some cases of familial recurrent brachial neuropathy.

**toxic-nutritional optic n.** Bilateral visual impairment with central scotomas. This is usually associated with a toxic or nutritional disorder (e.g., the ingestion of methyl alcohol).

**vibration-induced n.** Hand-arm vibration syndrome.

**neuropeptidase** (noor"ō-pēp'tī-dās, nūr") [" + "] An enzyme that cleaves peptides in neurons.

**neuropharmacology** (nūr"ō-fār"mā-kōl'ō-jē) [" + *pharmakon*, drug, + *logos*, word, reason] The branch of pharmacology concerned with the effects of drugs on the nervous system.

**neurophilic** (nūr"ō-fīl'īk) [" + *philos*,

- fond] Having an affinity for nervous tissue.
- neurophonia** (nū'rō-fō'nē-ă) [Gr. *neuron*, nerve, + *phone*, voice] A tic or spasm of the muscles of speech resulting in an involuntary cry or sound.
- neurophthalmology** (nū'rōf-thāl-mōl'ō-jē) [" + *ophthalmos*, eye, + *logos*, word, reason] Neuro-ophthalmology.
- neurophysin** (nū'rō-fī'zīn) Proteins secreted by the hypothalamus that are involved in the transport of oxytocin and antidiuretic hormone (vasopressin).
- neurophysiological treatment approach** (nūr'ō-fīz'ē-ō-lōj'ī-kāl) In occupational and physical therapy, various techniques used in sensorimotor rehabilitation that rely on voluntary and involuntary activation, facilitation, and inhibition of muscle action through the reflex arc.
- neurophysiology** (nū'rō-fīz'ē-ōl'ō-jē) [" + *physis*, growth, + *logos*, word, reason] Physiology of the nervous system.
- neuropil** (nū'rō-pīl) [" + *pilos*, felt] The gray matter of the CNS, a network of neurons, neuroglia, and their cell processes resembling intermingled fibers of felt.
- neuroplasm** (nū'rō-plāzm) [" + LL. *plasma*, form, mold] The cytoplasm of a neuron. **neuroplasmic** (nū'rō-plāz'mīk), *adj.*
- neuroplasticity** (nūr'ō-plās-tīs'ī-tē) The ability of the nervous system to adapt to trauma or disease; the ability of nerve cells to grow and form new connections to other neurons.
- neuroplasty** (nū'rō-plās'tē) [" + *plassein*, to form] Plastic surgery of the nerves.
- neuropodium** (nū'rō-pō'dē-ŭm) *pl.* **neuropodia** [" + *podion*, little feet] The expanded tips of the axon terminals at a synapse.
- neuropore** (nū'rō-por') [" + *poros*, an opening] Embryonic opening from the neural canal to the exterior.
- neuroprotection** (nūr'ō-prō-tēk'shŭn) The science of minimizing secondary neurologic damage following stroke or trauma. Certain drugs, enzymes, hormones, and physical actions, such as inducing hypothermia, may act as neuroprotectors.
- neuropsychiatrist** (nū'rō-sī-kī'ă-trīst) [" + *psyche*, mind, + *iatria*, healing] A specialist in neuropsychiatry.
- neuropsychiatry** (nū'rō-sī-kī'ă-trē) The branch of medicine concerned with the study and treatment of both neurologic and psychiatric diseases.
- neuropsychopharmacology** (nū'rō-sī'kō-făr'mă-kōl'ō-jē) [" + " + *pharmacology*, drug, + *logos*, word, reason] The study of the effects of drugs on mental illness.
- neuroradiography** (nū'rō-rā'dē-ōg'ră-fē) [" + L. *radius*, ray, + Gr. *graphein*, to write] Radiography of the structures of the nervous system.
- neuroradiology** (nū'rō-rā'dē-ōl'ō-jē) [" + " + Gr. *logos*, word, reason] The branch of medicine that utilizes radiography for diagnosis of pathology of the nervous system.
- neurorretinitis** (nū'rō-rēt'īn-ī'tīs) [" + L. *retina*, retina, + Gr. *itis*, inflammation] Inflammation of the optic nerve and retina.
- neurorretinopathy** (nū'rō-rēt'ī-nōp'ă-thē) [" + " + Gr. *pathos*, disease, suffering] Pathology of the retina and optic nerve.
- neurorrhaphy** (nū-ror'ă-fē) [" + *rhaphe*, seam, ridge] The suturing of the ends of a severed nerve.
- neurosarcocleisis** (nū'rō-săr'kō-klī'sīs) [" + *sarx*, flesh, + *kleisis*, closure] Operation for the relief of neuralgia by resection of a wall of the osseous canal carrying a nerve and transplanting the nerve to soft tissues.
- neurosarcoma** (nū'rō-săr-kō'mă) [" + " + *oma*, tumor] A sarcoma containing neuromatous components.
- neuroscience** (nū'rō-sī'ēns) Any one of the various branches of science (e.g., embryology, anatomy, physiology, histopathology, biochemistry, pharmacology) concerned with the growth, development, and function of the nervous system.
- neurosclerosis** (nū'rō-sklēr-ō'sīs) [" + *sklerosis*, a hardening] Hardening of nerves.
- neurosecretion** (nū'rō-sē-krē'shŭn) [" + L. *secretio*, separation] The manufacture and discharge of chemicals by neurons, such as the secretion of hormones by cells of the hypothalamus or anterior pituitary.
- neurosensory** (nū'rō-sēn'sō-rē) [" + L. *sensorius*, pert. to a sensation] Concerning a sensory nerve.
- neurosis** (nū-rō'sīs) *pl.* **neuroses** [" + *osis*, condition] **1.** In traditional (e.g., Freudian) psychiatry, an unconscious conflict that produces anxiety and other symptoms and leads to maladaptive use of defense mechanisms. **2.** An unpleasant or maladaptive psychological disorder that may affect personality, mood, or certain limited aspects of behavior but that does not distract the affected individual from carrying out most activities of daily living. **3.** A term formerly used to describe anxiety disorders, phobias, obsessions and compulsions, or somatoform disorders. SYN: *psychoneurosis*.
- TREATMENT:** Psychotherapy, cognitive therapy, behavioral therapy, family therapy, minor tranquilizers, and/or sedatives may be used.
- Many neuroses are chronic and debilitating; others are minor, manageable,

or adaptive. Treatment may be difficult in some cases.

**anxiety n.** Anxiety disorder. SEE: *effort syndrome*.

**cardiac n.** Neurasthenia.

**compensation n.** A form of malinger that develops subsequent to an injury in the belief that financial or other forms of compensation can be obtained or will be continued by being ill. SEE: *factitious disorder*.

**compulsion n.** Compulsion.

**expectation n.** Anxiety disorder.

**obsessional n.** Obsessive-compulsive disorder.

**war n.** Post-traumatic stress disorder

**neurosonography** (nū'rō-sō-nōg'rā-fē)

The use of ultrasound to obtain diagnostic images of the brain, cranial bones, intracranial and extracranial vascular structures, ventricles, and spinal cord.

**neurosonology** (nū'rō-sō-nōl'ō-gē) [" + L. *sonus*, sound + "] Ultrasonic imaging of the brain and other neural structures.

**neurospasm** (nū'rō-spāzm) [" + *spasmos*, a convulsion] Spasmodic muscular twitching due to a neurological disorder.

**neurosplanchic** (nū'rō-splāngk'nīk) [" + *splanchnikos*, pert. to the viscera] Concerning the sympathetic and parasympathetic nervous systems.

**neurospingioma** (nū'rō-spōn'jē-ō'mā) [" + *spongos*, sponge, + *oma*, tumor] Spongioblastoma.

**Neurospora** (nū-rōs'pō-rā) Genus of fungi belonging to the Ascomycetes class. It includes certain bread molds.

**neurostimulation** (nū'rō-stīm'ū-lā'shūn, noo") [" + "] The delivery of low voltage electricity to a specific nerve or target in the spinal cord or brain in an attempt to affect neuronal transmission. It is used to treat neuropathic pain.

**neurosurgeon** (nū'rō-sūr'jūn) A physician specializing in surgery of the nervous system.

**neurosurgery** (nūr'ō-sūr'jē-rē) [Gr. *neuron*, nerve, sinew, + L. *chirurgia*, hand, + *ergon*, work] Surgery of the brain, spinal cord, cranial nerves, or peripheral nerves.

**neurosyphilis** (nū'rō-sīf'ī-līs) Infection of the central nervous system with *Treponema pallidum*, the spirochete that causes syphilis. It may produce acute or chronic meningitis, dementia, damage to the posterior columns, gummatous lesions, or myelopathy. The disease is diagnosed most often when cerebrospinal fluid tests positive for syphilis on standard serological testing with Venereal Disease Research Laboratories. In patients with AIDS, neurosyphilis is more common and more difficult to

eradicate than in those with intact immunity.

**asymptomatic n.** Neurosyphilis that is clinically occult. It is diagnosed by changes in spinal fluid.

**meningovascular n.** Meningovascular syphilis.

**paretic n.** Dementia paralytica.

**tabetic n.** Tabes dorsalis.

**neurotendinous** (nū'rō-tēn'dī-nūs) [" + L. *tendinosus*, tendinous] Concerning a nerve and tendon.

**neurotensin** (nū'rō-tēn'sīn) A peptide containing 13 amino acids that is produced by cells of the brain and the small intestine. It is released after the consumption of fats and acts both as a neurotransmitter with psychostimulant properties and as a peripheral hormone that stimulates colonic motility, pancreatic and biliary secretion, and the growth of developing gastrointestinal tissues.

**neurotension** (nū'rō-tēn'shūn) [" + L. *tensio*, a stretching] Neurectasia.

**neurothele** (nū'rō-thē'lē) [" + *thele*, nipple] A nerve papilla.

**neurotic** (nū-rōt'īk) [Gr. *neuron*, nerve, sinew] **1.** One suffering from a neurosis. **2.** Pert. to neurosis. **3.** Nervous.

**neurotic disorder** Neurosis.

**neuroticism** (nū-rōt'ī-sīzm) [" + *-ismos*, condition] A condition or trait of neurosis.

**neurotization** (nū'rōt-ī-zā'shūn) [Gr. *neuron*, nerve, sinew] **1.** Regeneration of a nerve after division. **2.** Surgical introduction of a nerve into a paralyzed muscle.

**neurotmesis** (nū'rōt-mē'sīs) [" + *tmesis*, cutting] Nerve injury with complete loss of function of the nerve even though there is little apparent anatomic damage.

**neurotome** (nū'rō-tōm) A fine knife used in the division of a nerve.

**neurotomy** (nū-rōt'ō-mē) [" + *tome*, an incision] Division or dissection of a nerve.

**neurotonic** (nū'rō-tōn'īk) [" + *tonos*, tension] **1.** Concerning neural stretching. **2.** Having a stimulating effect upon nerves or the nervous system.

**neurotony** (nū-rōt'ō-nē) Nerve stretching, usually to ease pain.

**neurotoxicity** (nū'rō-tōk-sīs'ī-tē) [" + *toxikon*, poison] Capability of harming nerve cells or tissues.

**neurotoxin** (nū'rō-tōks'īn) A substance that attacks or damages nerve cells.

**neurotoxic** (-īk), *adj.*

**neurotransmitter** (nū'rō-trāns'mīt-ēr) A chemical (e.g., acetylcholine, dopamine, norepinephrine, or serotonin) that is released when the axon of a presynaptic neuron is excited and acts by inhibiting or exciting a target cell. Disorders of neurotransmitters have been impli-

cated in a variety of neurological and psychiatric illnesses.

**neurotrauma** (nū-rō-traw'mă) [*"* + *trauma*, wound] Injury to peripheral nerves or the central nervous system.

**neurotripsy** (nū'rō-trīp'sē) [*"* + *tripsis*, a rubbing] Surgical crushing of a nerve.

**neurotubule** (nū'rō-too'būl) [*"* + *L. tubulus*, a tubule] A microtubule within the cytoplasm of a neuron.

**neurovaccine** (nū'rō-văk'sīn) A standardized vaccine virus of specific strength, usually prepared by cultivation in a rabbit's brain.

**neurovascular** (nū'rō-văs'kū-lăr) [*"* + *L. vasculus*, a small vessel] **1.** Pert. to both the nervous and vascular systems. **2.** Pert. to the nerves that innervate the blood vessels.

**Neurovax** (noor'ō-văks, nūr') T-cell vaccination for multiple sclerosis.

**neurovegetative** (nū'rō-věj'ē-tă'tīv) Concerning the autonomic nervous system.

**neurovirus** (nū'rō-vī'rūs) Virus that has been modified by its growth in nervous tissue and used in preparing vaccines.

**neurula** (nū'roo-lă) The stage in the development of an embryo (esp. amphibian embryos) during which the neural plate develops and axial embryonic nervous structures are elaborated.

**neurulation** (nū'roo-lă'shūn) Formation of the neural plate in the embryo and the development and closure of the neural tube.

**neutral** (nū'trăl) [*L. neutralis*, neither] **1.** Neither alkaline nor acid. **2.** Indifferent; having no positive qualities or opinions. **3.** Pert. to electrical charges that are neither positive nor negative.

*n. fat* SEE: under *fat*.

*n. point* A point on the pH scale (pH 7.0) that represents neutrality (i.e., the solution is neither acid or alkaline in reaction).

*n. red* SEE: under *red*.

**neutralization** (nū'trăl-ī-ză'shūn) **1.** The opposing of one force or condition with an opposite force or condition to such degree as to cause counteraction that permits neither to dominate. **2.** In chemistry, the process of destroying the peculiar properties or effect of a substance (e.g., the neutralization of an acid with a base or vice versa). **3.** In medicine, the process of checking or counteracting the effects of any agent that produces a morbid effect.

**neutralization test** A test of the ability of an antibody to neutralize the effects of an antigen.

**neutralize** (nū'trăl-īz) **1.** To counteract and make ineffective. **2.** In chemistry, to destroy peculiar properties or effect; to make inert.

**neutral reaction** In chemistry, a reaction indicating the absence of acid or alkaline properties; expressed as pH 7.0.

**neutrino** (nū-trē'nō) In physics, a subatomic particle at rest, with no mass and no electric charge. These particles are constantly flowing through the universe and are not known to affect the matter through which they pass.

**neurooclusion** (nū'trō-kloo'zhūn) [*L. neuter*, neither, + *occludo*, to close] A state in which the anteroposterior occlusal positions of the teeth or the mesiodistal positions are normal but malocclusion of other teeth exists.

**neutron** (nū'trōn) [*L. neuter*, neither] A subatomic particle equal in mass to a proton but without an electric charge. It is believed to be a particle of all nuclei of mass number greater than one.

**neutron capture analysis** The use of the ability of a neutron to be absorbed (captured) by an atomic nucleus to detect the presence of various substances.

**neutropenia** (nū-trō-pē'nē-ă) [*"* + *Gr. penia*, lack] The presence of an abnormally small number of neutrophils in the blood, usually less than 1500 to 2000 per microliter. Severely low levels of neutrophils predispose patients to infection.

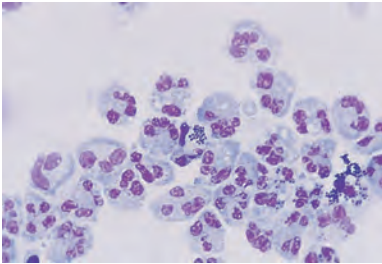
*cyclic n.* A rare blood disorder in which patients suffer recurring fevers and infections, oral ulcers, and malaise and are found to have periodically depressed numbers of neutrophils in the blood. Cyclic neutropenia can be treated with drugs that stimulate neutrophil production.

*malignant n.* Agranulocytosis.

**neutrophil, neutrophile** (nū'trō-fīl, -fīl) [*"* + *Gr. philein*, to love] A granular white blood cell (WBC), the most common type (55% to 70%) of WBC. Neutrophils are responsible for much of the body's protection against infection. They play a primary role in inflammation, are readily attracted to foreign antigens (chemotaxis), and destroy them by phagocytosis. Neutrophils killed during inflammation release destructive enzymes and toxic oxygen radicals that eradicate infectious microorganisms. An inadequate number of neutrophils (neutropenia) leaves the body at high risk for infection from many sources and requires protective precautions on the part of health care workers. Cancer patients receiving chemotherapy, which destroys leukocytes, must be carefully protected from infections during the course of therapy and until the bone marrow produces additional leukocytes.

As part of a severe inflammatory response or autoimmune disorder, neutrophils may begin attacking normal cells and cause tissue damage. This occurs in adult respiratory distress syndrome, inflammatory bowel disease, myocarditis, and rheumatoid arthritis. Corticosteroids are the most commonly used drugs to minimize the damage caused by se-

vere inflammation. SYN: *neutrophilic leukocyte*. SEE: *illius*; *blood* for *illius*.



### NEUTROPHILS

With ingested bacteria (orig. mag.  $\times 1000$ )

**polysegmented n.** Polymorphonuclear leukocyte.

**neutrophilia** (nū'trō-fil'ē-ā) Increase in the number of neutrophils in the blood (e.g., as a result of inflammation, infection, corticosteroid drugs, or malignancies).

**neutrophilic, neutrophilous** (nū-trō-fil'ik, -trōf'i-lūs) [" + Gr. *philein*, to love] Staining readily with neutral dyes.

**neutrophil recovery** In neutropenic patients, esp. those who have been treated with chemotherapy or bone marrow transplantation, the return of neutrophil counts to higher than 500 cells/mm<sup>3</sup>.

**neutrotaxis** (nū'trō-tāk'sis) [*neutrophil* + Gr. *taxis*, arrangement] The phenomenon in which neutrophils are repelled by or attracted to a substance.

**nevocarcinoma** (nē'vō-kār'sī-nō'mā) [L. *naevus*, birthmark, + Gr. *karkinos*, crab, + *oma*, tumor] Malignant melanoma.

**nevoid** (nē'voyd) [" + Gr. *eidos*, form, shape] Resembling a nevus.

**nevolipoma** (nē'vō-lī-pō'mā) [" + Gr. *lipos*, fat, + *oma*, tumor] Nevus lipomatous.

**nevose** (nē'vōs) [L. *naevus*, birthmark] Spotted or marked with nevi. SEE: *nevus*.

**nevus** (nē'vūs) *pl. nevi* [L. *naevus*, birthmark] **1.** A congenital discoloration of a circumscribed area of the skin due to pigmentation. SYN: *birthmark*; *mole*. **2.** A circumscribed vascular tumor of the skin, usually congenital, due to hyperplasia of the blood vessels. SEE: *angioma*.

**n. araneus** Acquired or congenital dilatation of the capillaries, marked by red lines radiating from a central red dot. SEE: *spider nevus*.

**blue n.** A dark blue nevus covered by smooth skin. It is composed of melanin-pigmented spindle cells in the mid-dermis.

**blue rubber bleb n.** An erectile, eas-

ily compressible, bluish, cavernous hemangioma that is present in the skin and gastrointestinal tract.

**capillary n.** A nevus of dilated capillary vessels elevated above the skin. It is usually treated by ligature and excision.

**n. comedonicus** A horny nevus that contains a hard plug of keratin. It is caused by failure of the pilosebaceous follicles to develop normally.

**compound n.** Clusters of melanocytes found both in the epidermis and the dermis.

**connective tissue n.** A nevus composed of collagenous tissue.

**cutaneous n.** A nevus formation on the skin.

**dysplastic n.** A nevus composed of cells having some malignant characteristics.

**epidermal n.** Raised lesions present at birth. They may be hyperkeratotic and widely distributed.

**faun tail n.** At birth, a tuft of hair over the lower spinal column. It may be associated with spina bifida occulta.

**n. flammeus** A large reddish-purple discoloration of the face or neck, usually not elevated above the skin. It is considered a serious deformity due to its large size and color. In children, these have been treated with the flashlamp-pulsed tunable dye laser. SYN: *port-wine stain*.

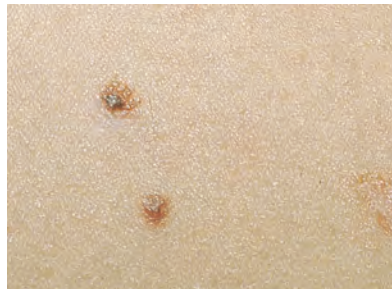
**hairy n.** A nevus covered by a heavy growth of hair. It is usually darkly pigmented.

**halo n.** A papular brown nevus with an oval halo occurring in the first three decades of life. This type of nevus is usually benign, but should be evaluated for malignancy.

**intra-dermal n.** A nevus in which the melanocytes are found in nests in the dermis and have no connection with the deeper layers from which they were formed.

**Ito's n.** SEE: *Ito's nevus*.

**junction n.** A nevus in the basal cell zone at the junction of the epidermis and dermis. It is slightly raised, pigmented, and does not contain hair. This type of nevus may become malignant. SEE: *illius*.



JUNCTION NEVI

**n. lipomatous** A tumor composed of fatty connective tissue. It is probably a degenerated nevus containing numerous blood vessels. SYN: *nevopiloma*.

**melanocytic n.** Any nevus that contains melanocytes.

**nevocytic n.** A common mole. Moles may appear at any age. They are classified according to their stage of growth and whether or not they are still growing.

**Ota's n.** SEE: *Ota's nevus*.

**n. pigmentosus** A congenital pigmented spot varying in color from light yellow to black. Intradermal or nevocytic nevi are benign. Other types of nevi may become malignant.

**TREATMENT:** Malignant or suspicious lesions should be treated by wide surgical excision. Benign lesions do not require treatment except when located at sites of friction causing bleeding or ulceration. Some nevi are removed for cosmetic reasons.

**sebaceous n.** An epidermal nevus containing sebaceous gland tissue.

**spider n.** A branched growth of dilated capillaries on the skin, resembling a spider. This abnormality may be associated with cirrhosis of the liver. SEE: *illus.*



SPIDER NEVUS

**n. spilus** A pigmented nevus with a smooth, unraised surface.

**n. spongiosus albus mucosae** A white, spongy nevus that may occur in the mouth, labia, vagina, or rectum. SYN: *white sponge n.*

**strawberry n.** Nevus vascularis.

**telangiectatic n.** A nevus containing dilated capillaries.

**n. unius lateris** A congenital nevus that occurs in streaks or linear bands on one side of the body. It usually occurs between the neurotomes of the lumbar or sacral area.

**n. vascularis** A nevus in which superficial blood vessels are enlarged. Nevi of this type are usually congenital.

They are of variable size and shape, slightly elevated, and red or purple in color. They generally appear on the face, head, neck, and arms, though no region is exempt. The nevi usually disappear spontaneously, but wrinkling, pigmentation, and scarring are sometimes seen. SYN: *strawberry n.*; *strawberry mark*.

**n. venosus** A nevus formed of dilated venules.

**n. verrucosus** A nevus with a raised, wartlike surface.

**white sponge n.** Nevus spongiosus albus mucosae.

**nevus anemicus** A patch of pale skin in which blood vessels are narrowed or contracted and blood flow is locally limited.

**newborn** 1. Born recently. 2. A term applied to human infants less than 28 days old. SEE: *neonate*.

**Newcastle disease** (nū'kās-əl) [Newcastle, England] An acute viral disease of birds, particularly chickens. It occasionally produces incidental infections in humans, usually in the form of a mild conjunctivitis.

**new drug application** ABBR: NDA. An application requiring approval by the Food and Drug Administration before any new drug is marketed to the general public. Before approval, the manufacturer must provide the FDA with scientifically acceptable evidence of the new drug's safety and efficacy.

**New Freedom Initiative** A comprehensive U.S. federal program to promote the participation of disabled people in society by increasing access to built environments and transportation, making devices usable despite physical and sensory limitations, expanding educational and employment opportunities, and promoting increased access to community life.

**newly born** Born within the last few minutes. Contrast the terms *newborn* and *neonate*.

**Newman, Margaret** (nū'măn) Nursing educator, born 1933, who developed the Theory of Health as Expanding Consciousness. SEE: *Nursing Theory Appendix*.

**newton** (nū'tūn) SYMB: N. The name of a measure of force derived from the base units used in SI units of measurement. It is equal to the force that will accelerate one kilogram a meter per second squared,  $10^5$  dynes. SEE: *SI Units Appendix*.

**newton meter** SYMB: Nm. In SI units, one newton per square meter. This is called one pascal (Pa). Thus  $1 \text{ Pa} = 1 \text{ N/m}^2$ .

**New World** The Western hemisphere. Used in the biological sciences to designate plants, animals, and infections

that live or thrive primarily in North, South, and Central America.

**nexus** (něk'sūs) *pl.* **nexus** [L., bond] A connection or link; a binding together. It is used to designate a bond between components of a group.

**NF** *National Formulary.*

**NFLPN** *National Federation of Licensed Practical Nurses.*

**NFPA** *National Fire Protection Association.* Website: NFPA.org.

**ng** *nanogram.*

**NG tube** *nasogastric tube.*

**NH<sub>3</sub>** Ammonia.

**NH<sub>4</sub><sup>+</sup>** The univalent ammonium radical.

**NHANES** *National Health and Nutrition Examination Survey.*

**NHBLI** *National Health Lung and Blood Institute.*

**NH<sub>4</sub>Br** Ammonium bromide.

**NH<sub>4</sub>Cl** Ammonium chloride.

**NHGRI** *National Human Genome Research Institute.*

**NHI** *National Heart Institute.*

**NHL** *non-Hodgkin's lymphoma.*

**NH<sub>4</sub>NO<sub>3</sub>** Ammonium nitrate.

**NH<sub>4</sub>OH** Ammonium hydroxide.

**NHTSA** *National Highway Traffic Safety Administration.*

**Ni** Symbol for the element nickel.

**NIA** *National Institute on Aging.*

**NIAAA** *National Institute on Alcohol Abuse and Alcoholism.*

**niacin** (nī'ā-sin) A B vitamin existing in two forms, nicotinic acid (niacin) and nicotinamide, both of which are modified within cells to form NAD and NADP, coenzymes that are essential for cellular metabolic processes. It naturally occurs in mushrooms, wheat bran, fish, poultry, meat, asparagus, and peanuts. The many products made with flour fortified with niacin are good sources of this nutrient. As tryptophan is readily converted to niacin, foods such as eggs and milk that lack niacin are good sources of this vitamin. Niacin is the form used orally or parenterally for the treatment of pellagra; oral administration of niacin is used to treat hyperlipidemia. SYN: *nicotinic acid.*



The use of niacin is sometimes associated with nausea, vomiting, flushing, abnormal liver function tests, hyperglycemia, dry skin, itching, muscle injury, and rarely liver failure. In doses much higher than the Recommended Daily Allowance, niacin lowers the production of VLDL lipoproteins (precursors to LDL lipoproteins), increases blood HDL lipoproteins, and reduces blood triglycerides. Common side effects of high doses of niacin include red, scaly, itchy skin; stomach irritation and ulcers; liver disease; and elevations of blood sugar, uric acid, and homocysteine.

**niacinamide** (nī'ā-sin-ām'id) Nicotinamide.

**NIAID** *National Institute of Allergy and Infectious Diseases.*

**NIAMD** *National Institute of Arthritis and Metabolic Diseases.*

**NIAMSD** *National Institute of Arthritis and Musculoskeletal and Skin Diseases.*

**nib** (nīb) In dentistry, the smooth or serrated blade of a condensing instrument that contacts the restorative material placed in a cavity preparation.

**NIBIB** *National Institute of Biomedical Imaging and Bioengineering.*

**niche** (nich) [Fr.] 1. A depression or recess on a smooth surface, esp. an erosion in the wall of a hollow organ, detected by radiography. 2. A habitat and way of life to which a particular organism is adapted.

**enamel n.** One of two depressions that develop between the dental lamina and the enamel organ.

**NICHHD** *National Institute of Child Health and Human Development.*

**nick** 1. To cleave or cut a molecular bond. 2. A gap made in the backbone of a DNA molecule.

**nickel** SYMB: Ni. A metallic element with an atomic mass of 58.70 and an atomic number of 28.

**n. carbonyl** Ni(CO)<sub>4</sub>; an industrial chemical used in plating metals. It is toxic when inhaled, causing pulmonary edema.

**nicking, A-V nicking** (nīk'ing) 1. Compression of the retinal vessels of the eye at the point where a vein and an artery cross, seen in hypertensive cardiovascular disease. 2. To notch a tissue.

**Nicolas-Favre disease** (nē'kō-lā-fāv'r) [Josef Nicolas, b. 1868, and M. Favre, 1876–1954, Fr. physicians] Lymphogranuloma venereum.

**nicotinamide** (nīk'ō-tīn'ā-mīd) A basic amide that is a member of the vitamin B complex, used in the prophylaxis and treatment of pellagra. SYN: *niacinamide.*

**n. adenine dinucleotide** ABBR: NAD. An enzyme that is important in accepting electrons in the course of metabolic reactions. In its oxidized form, NAD<sup>+</sup> gives up its electron and is converted to the reduced form, NADH. SYN: *V factor.*

**n. adenine dinucleotide-dehydrogenase** SEE: *nicotinamide adenine dinucleotide phosphate.*

**n. adenine dinucleotide phosphate** ABBR: NADP. A coenzyme that contains adenosine, nicotinamide, and phosphoric acid. When in its oxidized form (NADP<sup>+</sup>), it serves as an electron carrier in catabolic and anabolic reactions. In its reduced form (NADPH or NADPH-diaphorase), it is important in reducing the ferric iron (Fe<sup>+++</sup>) to its ferrous (Fe<sup>++</sup>) form, thus converting met-



hemoglobin (which is unable to transport oxygen) to hemoglobin (which can transport oxygen). Deficiency of NADPH-diaphorase causes congenital methemoglobinemia. SYN: *methemoglobin reductase*.

**nicotine** (nik'ō-tēn, -tīn) [L. *nicotiana*, tobacco] A poisonous and highly addictive alkaloid found in all parts of the tobacco plant, but esp. in the leaves. When pure, it is a colorless oily fluid with little odor but a sharp burning taste. On exposure to air or in crude materials, it becomes deep brown with a characteristic tobacco-like smell. Cigarettes, cigars, and chewing tobacco contain varying amounts of nicotine. During cigarette smoking the blood nicotine level rises 10 to 15 sec after each puff. A person's average daily nicotine intake varies with the number and type of tobacco products used, the depth of inhalation during smoking, and any exposure to second-hand smoke. Many smokers experience withdrawal symptoms when their daily nicotine exposures fall below 5 mg/day. SEE: *cancer, lung; cotinine; nicotine chewing gum; nicotine poisoning, acute; patch, nicotine; tobacco, smokeless*.

Smoking during pregnancy is associated with high risk for low-birth-weight infants, prematurity, and perinatal respiratory infections.

**SYMPTOMS:** In healthy subjects who are not accustomed to using nicotine, nausea, vomiting, dizziness, headache, sleep disturbances, and sweating are commonly reported.

**TREATMENT:** Nicotine replacement therapy, administered by chewing gum, nasal spray, transdermal patch, or inhaler, can help motivated smokers to abstain from tobacco use. This type of therapy should be offered to patients who have specific plans to quit and who have received some form of structured counseling about smoking cessation.

Nicotine replacement is sometimes helpful in managing active ulcerative colitis, esp. in former smokers with the disease. Other treatments for nicotine addiction include some antidepressant medications (e.g., bupropion) and nicotine-receptor blocking drugs.

**nicotine chewing gum** The oral form of nicotine, used primarily as an aid to stop smoking.

**nicotine patch** A transdermal method of administering nicotine, used as an aid in quitting smoking.

**nicotinic** (nik'ō-tīn'īk) Pert. to the stimulating effect of acetylcholine on the parasympathetic and sympathetic ganglionic or somatic skeletal muscle receptors.

**nicotinic acid** Niacin.

**nicotinism** (nik'ō-tīn-īzm) Poisoning from excessive use of tobacco or nicotine.

**nictitate** (nik'tī-tāt) To wink.

**nictitating** (nik'tī-tāt-ing) Winking.

**n. membrane** SEE: *membrane, nictitating*.

**n. spasm** Clonic spasm of the eyelid with continuous winking.

**NICU** *neonatal intensive care unit*.

**NIDA** *National Institute on Drug Abuse*.

**nidation** (nī-dā'shūn) Implantation (2).

**NIDCD** *National Institute on Deafness and Other Communication Disorders*.

**NIDDM** *Noninsulin-dependent diabetes mellitus*, the former abbreviation for the disease now known as type 2 diabetes mellitus.

**NIDR** *National Institute of Dental Research*.

**NIDRR** *National Institute of Disability and Rehabilitation Research* (U.S. Department of Education.)

**nidus** (nī'dūs) *pl. nidi* [L., nest] **1.** A nestlike structure. **2.** Focus of infection. **3.** A nucleus or origin of a nerve. **nidal** (nī'däl), *adj.*

**Niemann-Pick cell** A foamy, lipid-filled cell present in the spleen and bone marrow in Niemann-Pick disease.

**Niemann-Pick disease** (nē'män-pīk) [Albert Niemann, Ger. pediatrician, 1880–1921; Ludwig Pick, Ger. physician, 1868–1944] A disturbance of sphingolipid metabolism characterized by enlargement of liver and spleen (hepatosplenomegaly), anemia, lymphadenopathy, and progressive mental and physical deterioration. It is an autosomal recessive lysosomal storage disease, with its onset in early infancy. Death usually occurs before the third year. A typical cell, having a foamy appearance and filled with a lipid believed to be sphingomyelin, can be found in the bone marrow, spleen, or lymph nodes, and aids in establishing the diagnosis. SYN: *histiocytosis, lipid*.

**night blindness** SEE: *under blindness*.

**nightguard** A dental prosthesis worn at night to prevent traumatic grinding of the teeth during sleep. SEE: *occlusal guard*.

**Nightingale, Florence** (nīt'in-gāl) A British philanthropist, 1820–1910, who is considered the founder of nursing as a profession, a formidable statistician, and a pioneering hospital reformer. She was one of many trained nurses to serve in Crimea and dramatically lowered the death rate in the British army by advocating cleanliness and reform of sanitary conditions in hospitals at the battlefront. The astonishing decrease in morbidity and mortality at the front riveted the public both in Britain and in the rest of the West, and the Nightingale Fund gained large contributions from donors around the world. The fund was used to establish a school of nursing at St. Thomas' Hospital in London, England, in 1860. The school became a

model for nursing schools around the world, and the first nursing school based on the Nightingale model to be established in the U.S. was at Bellevue Hospital in New York.

**Nightingale Pledge** An oath sometimes used by nurses on graduation from professional school. The pledge was formulated by a committee of the Farrand School of Nursing, Harper Hospital, Detroit, Michigan, of which Lystra Gretter was the chairperson, and was first administered to the graduating class in 1893.

"I solemnly pledge myself before God and in the presence of this assembly to pass my life in purity and to practice my profession faithfully. I will abstain from whatever is deleterious and mischievous, and will not take or knowingly administer any harmful drug. I will do all in my power to maintain and elevate the standard of my profession, and will hold in confidence all personal matters committed to my keeping and all family affairs coming to my knowledge in the practice of my calling. With loyalty will I endeavor to aid the physician in his work, and devote myself to the welfare of those committed to my care." SEE: *Declaration of Hawaii; Declaration of Geneva; Hippocratic Oath.*

**nightmare** (nī't mā) [AS. *nyht*, night, + *mara*, a demon] A frightening dream. SYN: *incubus; oneirodynia*. SEE: *sleep disorder.*

**nightshade** (nī't shād) [AS. *nihtscada*] Any of several of the poisonous plants of the genus *Solanum*, which contain atropine-like toxins.

**deadly n.** Belladonna.

**night sweat** [AS. *nyht*, night, + *swat*, sweat] Profuse sweating during sleep. It may be a symptom of lymphoma or other cancers, numerous infectious diseases, or menopause.

**night terrors** [ + *L. terrere*, to frighten] A form of nightmare typically experienced by children in which a frightening hallucination is accompanied by an inability to awaken from sleep. The fear continues for a period after the return to consciousness. SYN: *pavor nocturnus*. SEE: *sleep disorder.*

**night vision** The ability to see at night or in light of low intensity. It results from dark adaptation in which the pupil dilates, rhodopsin increases, and the intensity threshold of the retina is lowered. Any decrease in the oxygen content of the blood is accompanied by some loss of night vision. Thus, smoking cigarettes or being in an atmosphere with decreased oxygen content decreases night vision. SEE: *scotopic vision.*

**nightwalking** Sleepwalking. SEE: *sleep disorder.*

**night work, maladaptation to** Difficulty

in adapting to sleeping during the day and working at night. In the U.S. about 7.3 million people work at night and are forced to attempt to readjust their day-night schedule for working and sleeping. Adaptation may be facilitated by making the work space as light as possible and scheduling the sleep period (8 hours) in a totally dark environment. SEE: *clock, biological; shift work.*

**NIGMS** *National Institute of General Medical Sciences.* A division of the National Institutes of Health of the U.S. Department of Health and Human Services.

**nigra** (nī'grā) [L., black] Substantia nigra.

**nigricans** (nī'grī-kāns) Blackened.

**nigrities** (nī-grīsh'ī-ēz) Blackness; black pigmentation.

**n. linguae** A black pigmentation of the tongue.

**nigrostriatal** (nī'grō-strī-ā'tāl) Concerning a bundle of nerve fibers that connect the substantia nigra of the brain to the corpus striatum.

**NIH** *National Institutes of Health* (of the U.S. Department of Health and Human Services).

**nihilism** (nī'ī-līz-m) [L. *nihil*, nothing, + Gr. *-ismos*, condition] 1. Disbelief in efficacy of medical therapy. SYN: *therapeutic pessimism*. 2. In psychiatry, a delusion in which everything is unreal or does not exist.

**Nikolsky's sign** (nī-kōl'skēz) [Pyotr Nikolsky, Russ. dermatologist, 1855–1940] A condition seen in pemphigus, where the external layer of the skin can be detached from the basal layer and rubbed off by slight friction or injury.

**NIMH** *National Institute of Mental Health*, a division of the National Institutes of Health of the U.S. Department of Health and Human Services.

**NINCDS** *National Institute of Neurological and Communicative Disorders and Stroke.*

**NINDB** *National Institute of Neurological Diseases and Blindness*, a division of the National Institutes of Health of the U.S. Department of Health and Human Services.

**Nine-Hole Peg Test** ABBR: 9-HPT. A timed performance test in which a subject places nine dowels in nine holes and then removes them, first with the dominant hand and then with the nondominant one. The more rapidly the test is performed, the greater the dexterity of the subject.

**ninhydrin test** (nīn-hī'drīn) A neurological test of sensation following peripheral nerve injury; used to detect a sympathetic response as indicated by sweat.

**NINR** *National Institute of Nursing Research.*

**ninth cranial nerve** Glossopharyngeal nerve.

**niobium** (nī-ō'bē-um) [Mythological Gr. woman, Niobe, who was turned into stone] SYMB: Nb. A chemical element, formerly called columbium, with an atomic number of 41 and an atomic weight of 92.906.

**nipple** (nĭp'l) [AS. *neble*, a little protuberance] 1. The erectile protuberance at the tip of each breast from which the lactiferous ducts discharge. The nipple projects from the center of the more heavily pigmented areola; both the nipple and the areola contain small sebaceous glands (Montgomery's glands), which secrete a protective, oily substance. SYN: *mammae papilla*; *teat*. SEE: *breast* for illus.

**PATIENT CARE:** *Assessment:* Instructions and demonstrations to help patients examine their own breasts should include inspecting the nipples and areolae for symmetry of shape, size, color, and texture and reporting any sign of retraction or evidence of discharge.

*Pregnancy-related:* Prenatal instructions about breastfeeding and postpartum breast care emphasize signs to report promptly to the health care provider (e.g., nipple cracking, inversion, redness, or bleeding). SEE: *breast cancer*; *breastfeeding*.

2. An artificial substitute for a female nipple, used for bottle-feeding infants. Nipple-shaped pacifiers may be used to satisfy infant needs for sucking as a self-consoling activity.

**crater n.** Retracted nipple.

**retracted n.** A nipple whose tip lies below the level of the surrounding skin. Retraction is caused by deficiency of muscle tissue or the flattening of erectile tissue. SYN: *crater n.*

**n. shield** A cover to protect the sore nipples of a nursing woman.

**nisin** (nī'sĭn) An antibiotic that is active against gram-positive bacteria; it is used primarily as a food preservative.

**Nissl body** (nĭs'l) [Franz Nissl, Ger. neurologist, 1860–1919] A large granular body found in nerve cells. They can be demonstrated by selective staining. They are rough endoplasmic reticulum (with ribosomes) and are the site of protein synthesis. Nissl bodies show changes under various physiological conditions, and in pathological conditions they may dissolve and disappear (chromatolysis). SYN: *Nissl granules*. SEE: *tigroid bodies*.

**Nissl degeneration** Nerve cell degeneration after division of the axon.

**NIST** *National Institute of Standards and Technology.*

**nit** (nĭt) [AS. *hnutu*] The egg of a louse or any other parasitic insect. SEE: *Pediculus*.

**nitro-** [Gr. *nitron*, salt] Combining form denoting combination with nitrogen or presence of the group NO<sub>2</sub>.

**nitrate** (nĭ'trāt) [L. *nitratum*] A salt of nitric acid. Agents in this class include isosorbide dinitrate or mononitrate and nitroglycerin. They are arteriovenous dilators and are used to treat angina pectoris, hypertension, and congestive heart failure, among other conditions.

**nitrated** (nĭ'trā-tĕd) Combined with nitric acid or a nitrate.

**nitration** (nĭ-trā'shŭn) Combination with nitric acid or a nitrate.

**nitrazine** A chemical indicator used to determine pH, especially of vaginal secretions. It is often used in gynecological and obstetrical evaluations, e.g., to determine whether a pregnant woman has premature rupture of membranes with leaking amniotic fluid in the vaginal vault.

**nitremia** (nĭ-trĕ'mĕ-ă) Azotemia.

**nitric acid** (nĭ'trĭk) HNO<sub>3</sub>; a colorless, corrosive, poisonous liquid in concentrated form, employed as a caustic. It is widely used in industry and in chemical laboratories.

**n.a. poisoning** SEE: under *poisoning*.

**nitric oxide** ABBR: NO. A soluble gas that is normally produced in the human body and is present in expired air at a concentration of about 10 parts per billion. Produced by endothelial cells, neurons in the brain, and macrophages during inflammation, it is a potent vasodilator. Nitric oxide has many other roles: it inhibits the adhesion, activation, and aggregation of platelets and the inflammatory process induced by mast cells; controls chemotaxis of lymphocytes; regulates smooth muscle cell proliferation, penile erection, and other sexual functions; participates in programmed cell death; and interacts with oxygen radicals to form metabolites that destroy pathogens. When NO is given as part of a mixture of inhaled gas, it decreases recruitment of lymphocytes. In the acute respiratory distress syndrome, NO improves oxygenation but does not impact patient survival. Previously, NO was called endothelium-derived relaxing factor. SEE: *oxygen radical*; *phagocytosis*.

**nitride** (nĭ'trĭd) A binary compound formed by direct combination of nitrogen with another element (e.g., lithium nitride [Li<sub>3</sub>N], formed from nitrogen and lithium).

**nitrification** (nĭ'trĭ-fi-kā'shŭn) The process by which the nitrogen of ammonia or other compounds is oxidized to nitric or nitrous acid or their salts (nitrates, nitrites). This process takes place continually in the soil through the action of nitrifying bacteria.

**nitrifying bacteria** (nĭ'trĭ-fi-ĭng) Bacteria that induce nitrification, including the nitrite bacteria of the genus *Nitrosomonas*, which convert ammonia to ni-

trites, and nitrate bacteria of the genus *Nitrobacter*, which convert nitrites to nitrates.

**nitriole** (nī'trīl) An organic compound in which trivalent nitrogen is attached to a carbon atom. It is used to make latex-free gloves for use in health care.

**nitrite** (nī'trīt) [Gr. *nitron*, salt] A salt of nitrous acid. Nitrites dilate blood vessels, reduce blood pressure, depress motor centers of the spinal cord, and act as antispasmodics.

**nitrituria** (nī-trī-tū'rē-ā) [*n* + *ouron*, urine] Nitrites present in the urine.

**nitro-** [Gr. *nitron*, salt] Combining form denoting combination with nitrogen or presence of the group NO<sub>2</sub>.

**nitrobenzene** (nī'trō-bēn'zēn) A toxic derivative of benzene used esp. in making aniline.

**nitroblue tetrazolium test** (nī'trō-blū) A test of the ability of leukocytes to reduce nitroblue tetrazolium from a colorless state to a deep blue. It is used as a marker of nitric oxide synthase. The reduction of NBT may be used in the rapid diagnosis of urinary tract infections and in the study and diagnosis of chronic granulomatous disease and other illnesses in which there are defects in the oxidative metabolism of phagocytic white blood cells.

**nitrocellulose** (nī'trō-sēl'ū-lōs) Pyroxylin.

**nitrogen** (nī'trō-jēn) [Fr. *nitrogene*] SYMB: N. A colorless, odorless, tasteless, gaseous element occurring free in the atmosphere, forming approx. 80% of its volume. Its atomic number is 7 and its atomic weight is 14.0067.

A component of all proteins, nitrogen is essential to plant and animal life for tissue building. Generally it is found organically only in the form of compounds such as ammonia, nitrites, and nitrates. These are transformed by plants into proteins and, being consumed by animals, are converted into animal proteins of the blood and tissues.

**n. cycle** A natural cycle in which nitrogen is discharged from animal life into the soil; it is then taken up from soil into plants for their nourishment; and in turn nitrogen returns to animal life through plants eaten.

**n. equilibrium** Condition during which nitrogen excreted in the urine, feces, and sweat equals the amount taken in by the body in food.

**n. fixation** The conversion of atmospheric nitrogen into nitrates through the action of bacteria in the soil.

**n. lag** The extent of time required after a given protein is ingested before an amount of nitrogen equal to that in the protein has been excreted.

**liquid n.** Nitrogen cooled to 77° K. (77° above absolute zero). Liquid nitrogen is used to cool or freeze body parts

(esp. the skin) in anesthesia and some surgeries.

**n. monoxide** Nitrous oxide.

**n. mustard** 1. Any of the alkylating drugs used to treat several solid and hematological malignancies such as Hodgkin's disease, multiple myeloma, and some leukemias. Nitrogen mustards include mechlorethamine, cyclophosphamide, uracil mustard, melphalan, and chlorambucil. 2. Gases used in chemical warfare (e.g., mustard gas, vesicant gas).

**n. narcosis** A condition of euphoria, impaired judgment, and decreased coordination and motor ability seen in people exposed to high atmosphere pressure (e.g., divers and submariners). The effects, caused by the increased concentration of nitrogen gas in body tissues (including the brain), are similar to those produced by alcohol intoxication.

**nonprotein n.** A nitrogen-containing constituent of blood or milk that is neither a protein nor an amino acid. Most nonprotein nitrogen in the human body is in the form of urea.

**nitrogenase** (nī'trō-jēn-ās) [*nitrogen* + *-ase*, enzyme] An enzyme that catalyzes the reduction of nitrogen to ammonia.

**nitrogenous** (nī'trōj'ēn-ūs) Pert. to or containing nitrogen. Foods that contain nitrogen are the proteins; those that do not contain nitrogen are the fats and carbohydrates. The retention of nitrogenous waste products such as urea in the blood indicates kidney disease.

**nitroglycerin** (nī'trō-glis'ēr-in) [Gr. *nitron*, salt, + *glycerin*] Any nitrate of glycerol, but specifically the trinitrate. The trinitrate is a heavy, oily, colorless liquid obtained by treating glycerol with nitric and sulfuric acids, well known as the explosive constituent of dynamite. In medicine it is used as an arterial and venous dilator, esp. to treat angina pectoris, congestive heart failure, and acute pulmonary edema.

It is available as an intravenous infusion (in critical care), as an ointment that can be applied to the chest, as transdermal patches, and as an oral drug (either a tablet that dissolves under the tongue or a spray that can be applied to the mucous membranes of the mouth). Its most common side effects include lowering of blood pressure and headache.

**PATIENT CARE:** Nitroglycerin tablets used at home should be stored in a tightly sealed dark glass container and replaced every 6 months to ensure that the drug maintains optimal activity. Patients using nitroglycerin during episodes of angina pectoris should take a single dose and sit quietly or lie down for 5 min while waiting for relief of chest

discomfort. If, after 5 min the discomfort has not abated, the patient may take a second dose. He may take a third dose of medication if symptoms have not resolved in another 5 min, but if this dose is also ineffective, the patient or a family member should call for emergency assistance (dial 911). For patients who are prescribed long-acting nitrates (e.g., nitroglycerin patches or pills containing isosorbide), an interval overnight during which no nitrates are used may improve the effectiveness of prescribed nitrates and prevent drug tolerance. SYN: *glyceryl triacetate*.



Nitroglycerin should not be taken by men using sildenafil (Viagra) or related compounds for erectile dysfunction because of the risk of fatal hypotension.

**nitromersol** (nī'trō-mēr'sōl) An organic mercurial antiseptic.

**nitrous** (nī'trūs) [Gr. *nitron*, salt] Containing nitrogen in its lowest valency.

**nitrous acid** HNO<sub>2</sub>; a chemical reagent used in biological laboratories.

**nitrous oxide** An inhaled, flammable anesthetic and analgesic gas, first developed in the 1840s, and used in both general and outpatient dental anesthesia. Some observers have associated its use with miscarriage, organ injuries, and dependence and abuse, although the data linking N<sub>2</sub>O to these problems are controversial. SYN: *laughing gas*.

Nitrous oxide has little or no effect on body temperature, metabolism, blood pressure, volume, or composition, or on the genitourinary system. Diaphoresis, increased muscle tone, or both may occur with induction of anesthesia with nitrous oxide.

Asphyxiation may occur if it is not administered properly. Prolonged administration of nitrous oxide will cause depression of bone marrow.

**SYMPTOMS:** Signs of deep nitrous oxide anesthesia include a slight increase in respirations and some dyspnea. The pupils become fixed and dilated and there is muscular rigidity and cyanosis that increases to a grayish pallor.

**TREATMENT:** The patient who suffers from an overdose should be oxygenated and ventilated.

**exhaled n.o.** The concentration of nitrous oxide (N<sub>2</sub>O) in expired air.

**NK cells** *natural killer cells*.

**NLM** *National Library of Medicine*.

**NLN** *National League for Nursing*.

**nm** *nanometer*.

**NMDP** *National Marrow Donor Program*.

**NMDS** *Nursing Minimum Data Set*.

**NMRI** *Naval Medical Research Institute* (U.S. Navy); *nuclear magnetic resonance imaging*.

**NMR spectroscopy** *nuclear magnetic resonance spectroscopy*.

**NMSS** *National Multiple Sclerosis Society*.

**NND** *New and Nonofficial Drugs*, a former publication of the American Medical Association, which described new drugs that had not been admitted to the U.S. Pharmacopeia.

**N,** **N-diethyl-3-methylbenzamide** (ĕn'ĕn'dī-ĕth'ĭl thrĕ' mĕth'ĭl-bĕn'zā-mĭd) DEET.

**N,** **N-dimethyltryptamine** (dī-mĕth'ĭl-trĭp'tā-mĭn) [*dimethyl* + *tryptamine*] ABBR: DMT. A hallucinogenic compound found in ayahuasca, a woody vine, *Banisteriopsis caapi*, and in other tropical plants. It has also been manufactured synthetically.

**NNRTI** *Nonnucleoside analog reverse transcriptase inhibitor*.

**NO** Nitric oxide.

**no** Symbol for the element nobelium.

**no** [L. *numero*] Abbreviation meaning *to the number of*.

**N<sub>2</sub>O** Nitrous oxide.

**N<sub>2</sub>O<sub>3</sub>** Nitrogen trioxide.

**N<sub>2</sub>O<sub>5</sub>** Nitrogen pentoxide.

**nobelium** (nō-bĕ'lĕ-ŭm) [Named for Nobel Institute, where it was first isolated] SYMB: No. An element obtained from the bombardment of curium. Its atomic number is 102. The atomic mass of the most stable isotope of nobelium is 254; other isotopes vary in weight from 252 through 256.

**Nobel Prize** (nō-bĕl') [Alfred B. Nobel, Swedish chemist and philanthropist who developed nitroglycerin, 1833–1896, and whose will provided funds for awarding the annual prizes] Awards given almost every year since 1901 to honor distinguished contributions to world peace, chemistry, physics, literature, economics, physiology, and medicine.

**Nocardia** (nō-kār'dĕ-ă) [Edmund I. E. Nocard, Fr. veterinary pathologist, 1850–1903] A genus of gram-positive aerobic bacilli that often appear in filaments. Some species are acid-fast and thus may be confused with the causative organism for tuberculosis when stained. A species pathogenic for humans causes the disease nocardiosis.

**nocardial** (nō-kār'dĕ-ăl), *adj.*

**N. asteroides** A species pathogenic for humans in which abscesses called mycetomas arise in the skin. The invasion site may be the lungs or skin. SEE: *nocardiosis*; *illus.*

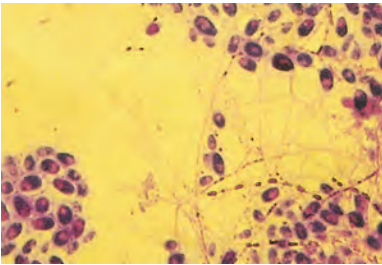
**N. brasiliensis** A species pathogenic for humans in which chronic subcutaneous abscesses are formed.

**nocardiosis** (nō-kār'dĕ-ō'sis) A pulmonary or brain infection caused by the bacteria *Nocardia asteroides* or, less commonly, by other *Nocardia* species that are found in soil. *Nocardia* are con-



**NOCARDIA ASTEROIDES IN CULTURE**

sidered opportunistic pathogens, primarily infecting patients with a compromised immune system (e.g., patients with the acquired immunodeficiency syndrome [AIDS] or end-stage renal disease), but approx. 15% of cases occur in healthy persons. Inhalation of contaminated dust causes the infection. **SEE: illus.**



**NOCARDIOSIS**

*Nocardia* (chains of bacilli) in tissue (orig. mag.  $\times 500$ )

**SYMPTOMS:** Infection occurs in the lungs in 75% of patients, causing pneumonia characterized by a productive cough, hemoptysis, and, at times, abscesses; pleural invasion may occur, producing pain. The remaining 25% of patients develop brain abscesses marked by headache, nausea, vomiting, and changes in mental status.

**DIAGNOSIS:** Infection is diagnosed through cultures of sputum or transtracheal aspirates, which may require 4 weeks of growth.

**TREATMENT:** Nocardiosis usually is treated with 6 months of oral sulfasoxazole or trimethoprim/sulfamethoxazole; persons with AIDS need lifelong suppressive therapy. Pneumonia producing severe respiratory distress is treated with intravenous cefotaxime plus imipenem, followed by oral therapy. In patients with brain abscesses, mortality is approx. 40%; in patients with pneumonia, it ranges from 10% to 30%.

**nocebo** (nō-sē'bō) [L., I will harm] A

substance (such as a sugar pill) or an exposure (such as to an odor or fragrance) that makes a person feel ill, even though it has no measurable negative effects. The nocebo effect can be contagious, as in cases of mass sociogenic illness. **SEE: placebo.**

**noci-** (nō'sē) [L. *nocere*, to injure] Combining form indicating *pain, injury*.

**nociassociation** (nō'sē-ā-sō'sē-ā'shūn) [n + *ad*, to, + *socius*, companion] The involuntary release of nervous energy during surgical shock or following trauma.

**noception** The stimulus-response process involving the stimulation of peripheral pain-carrying nerve fibers (e.g., C-fibers, A-delta fibers) and the transmission of impulses along peripheral nerves to the central nervous system, where the stimulus is perceived as pain. **SEE: nociceptor; nociceptive impulse.**

**nociceptive impulse** (nō'sī-sēp'tiv) Impulse giving rise to sensations of pain.

**nociceptor** (nō'sē-sēp'tor) [n + *receptor*, receiver] A free nerve ending that is a receptor for painful stimuli. **nociceptive** (nō'sī-sēp'tiv), *adj.*

**nociperception** (nō'sī-pēr-sēp'shūn) [n + *perceptio*, apprehension] The perception by the nerve centers of injurious influences or painful stimuli.

**no code orders** (nō-kōd) An indication on the chart of a patient that he or she does not want heroic or lifesaving measures to be instituted when death is imminent.

**noct-, nocto-** (nōkt) Combining forms meaning *night*.

**nocturia** (nōk-tū'rē-ā) [n + Gr. *ouron*, urine] Excessive or frequent urination after going to bed, typically caused by excessive fluid intake, congestive heart failure, uncontrolled diabetes mellitus, urinary tract infections, diseases of the prostate, impaired renal function, or the use of diuretics. Less often, diabetes insipidus is the cause. **SYN: nycturia.** **SEE: enuresis.**

**PATIENT CARE:** Patients may find that they can reduce the need to void at night by limiting fluid intake during the evening. Safety is emphasized for patients who need to get up to go to the bathroom at night because they may not be fully awake or alert. Specific recommendations include use of night lights and removal of objects blocking the route from the bedroom to the bathroom. The patient should be assessed for cause and treatment instituted to resolve the problem if possible.

**nocturnal** (nōk-tūr'nāl) [L. *nocturnus*, at night] Pert. to or occurring in the night. Opposed to diurnal. See words beginning with *nyct-*.

**n. emission** **SEE: emission, nocturnal.**

**n. myoclonus** SEE: *myoclonus, nocturnal*.

**n. penile tumescence** ABBR: NPT. Erection occurring during sleep. In the normal male, erections during sleep begin in early childhood and continue to at least the eighth decade. The total time of NPT averages 100 minutes per night. In evaluating erectile dysfunction (ED), the presence of NPT suggests the patient has psychogenic rather than neurogenic or vascular ED.

**nocturnal eating (drinking) syndrome** A rare disorder involving frequent awakenings from sleep to eat or drink. Those affected are unable to return to sleep without eating a meal. The condition is most commonly observed in infants, young children, and people being treated with some sedatives. In adults it is considered to be both a sleep disorder and a binge eating disorder.

**nocturnal hypoglycemia** A low blood glucose level (<50 mg/dl or 3.3 mmol/L) that occurs after bedtime. It may be asymptomatic, or it may cause nightmares, night sweats, other sleep disturbances, tachycardia, convulsions, or, rarely, death. It typically results from relatively high levels of insulin in insulin-treated diabetic patients. It may be prevented by consuming a bedtime snack or by adjusting evening doses of insulin based on bedtime blood glucose levels.

**NOD** *Nucleotide-binding oligomerization domain proteins*.

**nodal** (nō'däl) [L. *nodus*, knot] Pert. to a protuberance.

**n. rhythm** Cardiac rhythm with origin at the atrioventricular node.

**nodding** (nōd'ing) Involuntary motion of the head downward, as when momentarily dozing.

**nodding spasm** SEE: *spasm, nodding*.

**node** (nōd) [L. *nodus*, knot] **1.** A knot, knob, protuberance, or swelling. **2.** A constricted region. **3.** A small rounded organ or structure.

**atrioventricular n.** ABBR: AV node. Specialized cardiac muscle fibers in the lower interatrial septum that receive impulses from the sinoatrial node and transmit them to the bundle of His. SEE: *bundle, atrioventricular; conduction system of the heart* for illus.

**AV n.** Atrioventricular node.

**Bouchard's n.** In osteoarthritis, bony enlargement of the proximal interphalangeal joints.

**Haygarth's n.** Joint swelling seen in rheumatoid arthritis.

**Heberden's n.** SEE: *Heberden's nodes*.

**Hensen's n.** A mass of rapidly proliferating cells at the anterior end of the primitive streak of the embryo.

**lymph n.** SEE: *lymph node*.

**neurofibril n.** Ranvier's node.

**Osler's n.** SEE: *Osler's nodes*.

**Parrot's n.** SEE: *Parrot's nodes*.

**pedic n.** A node on the hair shaft seen in *piedra*.

**Ranvier's n.** SEE: *Ranvier's node*.

**Schmorl's n.** Node seen in radiographs of the spine. It is caused by prolapse of the nucleus pulposus into the end plate of the vertebra.

**sentinel n.** **1.** A lymph node that receives drainage from a tumor and is likely to harbor metastatic disease before cancer cells have the opportunity to spread elsewhere. **2.** Signal node.

**signal n.** Enlargement of one of the supraclavicular lymph nodes; usually indicative of primary carcinoma of thoracic or abdominal organs. SYN: *sentinel n (2); Troisier's n.*

**singer's n.** Noncancerous, callus-like growths on the inner parts of the vocal cords, usually caused by voice abuse or overuse. Hoarseness and an inability of singers to produce the desired sounds mark this condition. It is treated by resting the voice. Surgical removal of the nodules is necessary if they do not respond to conservative therapy. SYN: *chorditis nodosa; laryngeal nodule*.

**sinoatrial n.** ABBR: SA node. A specialized group of cardiac muscle cells in the wall of the right atrium at the entrance of the superior vena cava. These cells depolarize spontaneously and rhythmically to initiate normal heartbeats. SYN: *pacemaker (2); sinus n.*

**sinus n.** Sinoatrial node.

**syphilitic n.** Circumscribed swelling at the end of long bones due to congenital syphilis. The nodes are sensitive and painful during inflammation, esp. at night. SEE: *Parrot's nodes*.

**Troisier's n.** Signal node.

**Virchow n.** Signal node.

**nodose** (nō'dōs) [L. *nodosus*, knotted] Swollen or knotlike at intervals; marked by nodes or projections.

**nodosity** (nō-dōs'ī-tē) [L. *nodositas*, a knot] **1.** A protuberance or knot. **2.** Condition of having nodes.

**nodular** (nōd'ū-lār) Containing or resembling nodules.

**n. elastosis** A severe form of elastosis caused by prolonged exposure to the sun. Elastotic material accumulates in the skin and forms cysts and comedones around the face. This condition occurs almost exclusively in middle-aged or elderly white men.

**TREATMENT:** Treatment consists of removal of cysts and evacuation of comedones, followed by nightly application of retinoic acid cream to the area for 6 to 8 weeks. The patient should avoid sun exposure to prevent recurrence.

**nodular worm** The common name of worms of the genus *Oesophagostomum*.

**nodule** (nōd'ūl) [L. *nodulus*, little knot]

1. A small node. 2. A small cluster of cells.

**aggregate n.** A group of unencapsulated lymph nodules, such as Peyer's patches of the small intestine.

**apple jelly n.** The jelly-like lesion of lupus vulgaris.

**Arantius' n.** Arantius' body.

**Aschoff's n.** SEE: *Aschoff's nodules*.

**laryngeal n.** Singer's node.

**lymph n.** A mass of compact, densely staining lymphocytes forming the structural unit of lymphatic tissue. These nodules may occur singly, in groups (as in Peyer's patches), or in encapsulated organs such as lymph nodes. Each contains a lighter-staining germinal center where new lymphocytes are formed.

**miliary n.** Small round density, 1 to 5 mm in diameter, as seen on the chest radiograph (e.g., in disseminated tuberculosis).

**milker's n.** Painless smooth or warty lesions due to a poxvirus that is transmitted from the udders of infected cows to the hands of milkers. SEE: *paravaccinia*.

**rheumatic n.** Subcutaneous nodes of fibrous tissue that may be present in patients with rheumatic fever. SEE: *subcutaneous n.* for *illus*.

**Schmorl's n.** Schmorl's node.

**n. of the semilunar valve** Arantius' body.

**siderotic n.** Small brown nodules seen in the spleen and other organs and consisting of necrotic tissue encrusted by iron salts.

**solitary n.** An isolated nodule of lymphatic tissue such as occurs in mucous membranes.

**solitary pulmonary n.** Any isolated mass lesion found in the lung, usually during an x-ray study performed for another reason. Most small masses that are identified in this way are benign, although smokers, patients already known to have cancer in another organ system, and older patients have an increased risk that a solitary nodule will be a new malignancy or a metastasis from another source.

**PATIENT CARE:** The first step in evaluating a solitary lung nodule is to search for prior chest x-ray films. If the nodule can be found on films done many months or years earlier and has not changed in size, shape, or calcification, it is likely to be benign and can be followed conservatively. Newly identified lesions within the lung that were not previously present usually are evaluated with further studies, such as computed tomography of the lungs, sputum studies, or biopsies.

**subcutaneous n.** Small, nontender swellings resembling Aschoff's bodies and found over bony prominences in persons with rheumatic fever or rheu-

matoid arthritis (in rheumatoid arthritis, they are called rheumatoid nodules). SEE: *illus*.



SUBCUTANEOUS NODULES

**surfer's n.** Nodular swelling and possible bone changes of the area of the lower leg and foot exposed to pressure and trauma while on a surfboard. The nodules may be painful. SYN: *surfer's knots*.

**thyroid n.** A visible or palpable mass in the thyroid gland, benign about 90% to 95% of the time. A history of radiation to the head or neck increases the likelihood that the lesion will be malignant, as does the appearance of the nodule in the first decades of life. Fine-needle aspiration biopsy is the first and often the definitive diagnostic test.

**typhoid n.** Nodules characteristic of typhoid fever and found in the liver.

**typhus n.** Small nodules of the skin seen in typhus. They are composed of mononuclear cell infiltration around vessels.

**nodulus** (nŏd'ū-lŭs) *pl.* **noduli** [L.]

1. Nodule. 2. The anterior portion of the vermis of the cerebellum.

**nodus** (nŏ-dŭs) *pl.* **nodī** [L.] 1. Node.

2. Anatomically, a small circumscribed mass of undifferentiated tissue.

**noesis** (nŏ-ē'sis) [Gr. *noesis*, thought]

The act of thinking; cognition.

**noetic therapy** (nŏ-ēt'ik) [Gr. *noetikos*,

intelligent] Any therapy based on deeply held belief systems, prayer, or spirituality rather than on tangible or visible interventions, e.g., the use of drugs, radiation, or surgery.

**noise** [O.Fr. *noise*, strife, brawl]

1. Sound of any sort, including that which is loud, harsh, confused, or senseless. SEE: *table*; *acoustic trauma*; *pollution*, *noise*. 2. In electronics or physics, any electronic disturbance that interferes with the signal being recorded or monitored. In electrocardiography, the 60-cycle alternating current used to power the machine may be inadvertently recorded. This obscures the signal from the electrical activity of the heart. 3. Unwanted information on a ra-



### Typical Noise Levels in Decibels and Their Effect

Situation	Level (decibels)	Effect
Jet engine (close by)*	140	Harmful to hearing
Jet takeoff*	130	
Propeller aircraft*	120	Risk of hearing loss
Live rock band	110	
Jackhammer	100	
Heavy-duty truck	90	
Private car; business office	70	Probably no risk of permanent damage to hearing
Wooded residential area	50	No harm
Whisper	30	
Rustle of leaf	10	

\* Outside aircraft

diograph caused by fogging or scattered radiation.

**ambient n.** The total noise from all sources in a given environment.

**n. pollution** A level of environmental noise of such nature or intensity as to cause mental or physical discomfort or damage to the hearing system.

**noma** (nō'mā) [Gr. *nome*, a spreading] Cancrum oris.

**n. pudendi** An infected ulcer affecting the labia majora, esp. in young children.

**nomadism** (nō'mād-izm) [Gr. *nomas*, roaming about] Having a constantly migratory lifestyle, as is practiced by some animals and humans.

**nomenclature** (nō'mēn-klā'chūr) [L. *nomen*, name, + *calare*, to call] A classified system of technical or scientific names. SEE: *terminology*.

**binomial n.** The system of classifying living organisms by the use of two Latin-derived words to indicate the genus and species.

**nomen nudum** (nō'mēn noo'dūm, nū') [L. "mere name"] A named but as yet undescribed organism.

**Nomina Anatomica** (nō'mī-nā ān-ātōm'ī-kā) [" + Gr. *anatomy*, dissection] ABBR: NA. Formerly, the official anatomical nomenclature prepared by revising the Basle Nomina Anatomica and adopted by the Sixth International Congress of Anatomists at meetings held periodically since 1955. It was replaced by the Terminologia Anatomica in 1998. SEE: *Basle Nomina Anatomica*; *Terminologia Anatomica*.

**nomogram** (nōm'ō-grām) [Gr. *nomos*, law, + *gramma*, something written] Representation by graphs, diagrams, or charts of the relationship between numerical variables.

**Rumack n.** A nomogram that predicts both the severity of acetaminophen overdose and the need for specific treatment.

**weight-based n.** A nomogram used

to prescribe medications based on patient size.

**nomography** (nō-mōg'rā-fē) [" + *graphein*, to write] The construction of a nomogram.

**nonabandonment** (nōn'ā-bān'dūn-mēnt) The ethical obligation of a health care provider to remain in a continuous caring partnership with his or her patient. This partnership remains in place during periods of health and illness and is particularly important when the patient has a chronic or life-threatening disease. Several aspects of modern medical care, in which the patient's choice of physician may be limited and disrupt the continuity of the physician-patient relationship, make carrying out this obligation difficult. SEE: *abandonment*.

**nonagenarian** (nōn'ā-jē-nār-ē-ān) A person whose age is between 90 and 99 years.

**noncommunicable disease** (nōn'kūm-ū'nī-kā-bīl) An infectious disease such as tetanus or botulism that cannot be transmitted from one person to another.

**noncompliance** (nōn'cōm-plī'āns) The failure or refusal of a patient to cooperate by carrying out that portion of the medical care plan under his or her control (e.g., not taking prescribed medicines or not adhering to the diet or rehabilitation procedures ordered). SEE: *Nursing Diagnoses Appendix*.

**noncompliance [adherence, ineffective] (specify)** Behavior of person and/or caregiver that fails to coincide with a health-promoting or therapeutic plan agreed upon by the person (and/or family, and/or community) and health care professional. In the presence of an agreed-on health-promoting or therapeutic plan, person's or caregiver's behavior is fully or partially adherent or nonadherent and may lead to clinically ineffective, partially ineffective outcomes. SEE: *Nursing Diagnoses Appendix*.

**non compos mentis** (nōn kōm'pōs

měn'tís) [L.] Not of sound mind; mentally incompetent to handle one's affairs.

**nonconductor** (nōn'cōn-dŭk'tōr) [L. *non*, not, + *con*, with, + *ductor*, a leader] Any substance that does not transmit heat, sound, or electricity or that conducts it with difficulty. Strictly speaking, there is no perfect nonconductor. On the application of a sufficiently high voltage, current may be caused to flow through materials usually spoken of as nonconductors. SEE: *insulator*.

**nondihydropyridine calcium antagonist** Any calcium channel blocker that is not based on a pyridine molecule. Examples include verapamil and diltiazem.

**nondipping blood pressure** (nōn'dīp'īng) Blood pressure that does not drop by at least 10% after the onset of sleep. During sleep blood pressure normally decreases by about 10% to 20% compared to daytime values. In patients undergoing ambulatory blood pressure monitoring, a failure of blood pressure to drop has been associated with several health concerns, including an increased risk of obstructive sleep apnea and stroke.

**nondisclosure** (nōn'dīs-klō'zhŭr) The withholding of relevant information.

**nondisjunction** (nōn'dis-jŭnk'shŭn) The failure of a pair of chromosomes to separate during meiosis, allowing one daughter cell to have two chromosomes and the other to have none.

**nondominant** (nōn'dōm'ī-nīnt) In neurology, that hemisphere of the brain that does not control speech or the preferentially used hand. SEE: *dominance*, *cerebral*.

**nonelectrolyte** (nōn'ē-lĕk'trō-līt) [" + *Gr. elektron*, amber, + *lytos*, dissolved] A solution that will not conduct electricity because its chemical constituents are not sufficiently dissociated into ions.

**nonfeasance** (nōn-fĕ'zĕns) [L. *non*, not + O.Fr. *faisance*, doing, action] In law, failure to meet an obligation, esp. an official duty or a legal one.

**nongonococcal urethritis** (nōn'gōn-ō-kōk'āl) SEE: *urethritis*, *nongonococcal*.

**nonheartbeating organ donation** ABBR: NHOD. An organ (e.g., a kidney or liver) derived from a patient who is asystolic, apneic, and unresponsive to stimulation. Organs used in transplantation may be donated by living donors such as friends or relatives or deceased donors who have chosen to donate their body parts.

**non-Hodgkin's lymphoma** (nōn-hōj'kīnz) SEE: *lymphoma*, *non-Hodgkin's*.

**noni** (nō'nē) [Hawaiian] A tropical fruit tree, *Morinda citrifolia*, studied for its possible use as an immune booster and a treatment for cancer.

**nonigravida** (nō'nī-grā'vī-dā) [L. *nonus*, ninth, + *gravida*, pregnant] A

woman pregnant for the ninth time. Written gravida IX. SEE: *nonipara*.

**noninvasive** (nōn'in-vā'sīv) **1.** Not tending to spread, as certain tumors. **2.** A device or procedure that does not penetrate the skin or enter any orifice in the body.

**nonipara** (nō-nīp'ār-ā) [" + *parere*, to bring forth, to bear] A woman who has given birth nine times. Written para IX.

**nonmaleficence** (nōn'mā-lĕf'ī-sīns) The principle of not doing something that causes harm. Hippocrates felt this was the underpinning of all medical practice. He advised his students, *primum non nocere* ("first, do no harm").

**nonmyelinated** (nōn-mī'ĕ-lī-nāt'ĕd) [" + *Gr. myelos*, marrow] Containing no myelin.

**nonmyeloablative, nonablative** (nōn-mī'ĕl-ō-ā-blā'tiv, nōn-ā-blā'tiv) [L. *non*, not, + *Gr. myelos*, narrow, + *L. ablativus*, taken away] Not completely destructive of bone marrow. The term describes chemotherapeutic treatments for cancer that do not deplete the marrow of all its blood cells.

**nonnucleated** (nōn-nū'klĕ-āt'ĕd) [" + *nucleatus*, having a kernel] Containing no nucleus.

**nonocclusion** (nōn'ō-kloo'zhŭn) [" + *occlusio*, occlusion] A type of malocclusion in which the teeth fail to make contact.

**nonopaque** (nōn'ō-pāk') Not opaque, esp. to x-rays.

**nonose** (nōn'ōs) [L. *nonus*, ninth] A nine-carbon carbohydrate.

**nonoxynol** (nō-nōks'ī-nōl) A general class of surface-active agents with the basic formula of  $C_{15}H_{24}O(C_2H_4O)_n$ , named with respect to the value of *n*. Nonoxynol 9 is a spermicide.

**nonpalpable** (nōn-pāl'pā-b'l) [L. *non*, not + "] Not detectable during manual examination but identified instead with radiological or other diagnostic means.

**nonpolar** (nōn-pō'lār) [" + *polus*, a pole] Not having separate poles; sharing electrons.

**n. compound** A compound formed by the sharing of electrons.

**nonproblematic drinking** (nōn'prōb-lĕ-māt'īk) In alcohol-related research, alcohol consumption that does not adversely affect a person's physical or mental health, or his or her occupation, family life, or functioning in society. The consumption of less than one standard drink daily normally constitutes nonproblematic drinking.

**nonprogressor** (nōn'prō-grĕs'ōr) An individual infected with the human immunodeficiency virus who does not develop worsening immune function or symptoms of active disease.

**nonproprietary name** (nōn'prō-prī'ĕ-tār-ĕ) The name of a drug other than its trademarked (proprietary) name.

The nonproprietary name for a new drug is usually the same as that selected by the United States Adopted Name (USAN) Council. The official names for older drugs may differ from the nonproprietary names. In some cases the generic name is the same as the nonproprietary name. Drugs also have chemical names; in most cases those names are too long and complex to permit their use. The use of a USAN-selected name simplifies and standardizes drug nomenclature. SEE: *generic drugs.*; SEE: *proprietary medicine.*

**nonprotein** (nŏn-prŏ'tĕn) [L. *non*, not, + Gr. *protos*, first] Any substance not derived from protein.

**nonprotein nitrogen** SEE: under *nitrogen*.

**non rep** [L. *non repetatur*] Abbreviation meaning *do not repeat*.

**nonresectable** (nŏn'rĕ-sĕk'tă-bĭl) Not removable by surgery.

**nonresponder** (nŏn'rĕ-spŏn'dĕr) 1. An individual who does not achieve an immunological response to a vaccine. 2. A person who does not respond in the expected way to therapy, particularly medication.

**nonresponse bias** (nŏn'rĭ-spŏns') Distortion introduced into a research investigation by incomplete collection of data from all possible respondents. This bias is most likely to influence the results of a study when those who do not participate or who refuse to be sampled have other crucial characteristics that the study is designed to identify.

**nonrestraint** (nŏn'rĕ-strănt') [L. *non*, not, + *re*, back, + *stringere*, to bind back] Treatment of the uncooperative without using mechanical restraints.

**nonsecretor** (nŏn'sĕ-krĕ'tŏr) [I' + *secretio*, separation] An individual whose saliva and other body fluids do not contain the ABO blood antigens.

**nonsexual** (nŏn-sĕk'shŭ-ăl) Asexual.

**nonspecific** 1. Inexact, imprecise, not well delimited or defined. 2. Vague. 3. Poorly identified; described without certainty.

**nonspecific therapy** The use of injections of foreign proteins or bacterial vaccines in the treatment of infection to stimulate general immunological responses. SEE: *specific therapy*.

**nonstochastic effect** (nŏn-stă-kăs'tĭk) A radiation effect whose severity increases in direct proportion to the dose and for which there usually is a threshold. An example is radiation-induced cataracts.

**nonstress test** ABBR: NST. An external electronic monitoring procedure to assess fetal well-being. An acceleration in fetal heart rate should be evident in response to fetal movement. *Reactive test*: Two criteria indicate satisfactory fetal status. The monitor records a minimum

of two episodes of heart rate acceleration accompanying fetal movement within one 20-min period, and accelerations of 15 beats per minute (BPM) persist for a minimum of 15 sec per episode. *Nonreactive test*: The monitor record does not meet either criterion for reactivity. This indicates the need for a second test within the next several hours—contraction stress testing, a fetal biophysical profile, or all three. *Inconclusive test*: The monitor records less than one acceleration in 20 min or an acceleration less than 15 BPM lasting less than 15 sec.

**nontoxic** (nŏn-tŏk'sĭk) [L. *non*, not, + Gr. *toxikon*, poison] Not poisonous or productive of poison. A list of substances considered generally nontoxic is provided in the Appendix.

**nonunion** (nŏn-ŭn'yŭn) [I' + *unio*, oneness] Failure to unite, as a fractured bone that fails to heal completely. Diagnosis of nonunion is established when a minimum of 9 months has elapsed since the injury and the fracture site shows no progressive signs of healing for a minimum of 3 months and is not complicated by a synovial pseudoarthrosis.

**nonverbal IQ test** (nŏn'vŭr'bŭl) Any of several standard psychometric tests that measure intelligence without the confounding effect posed by differences in speech, reading, and language ability. Such tests include visuospatial tests, pattern recognition tests, and picture-completion tests.

**nonviable** (nŏn-vĭ'ă-bĭl) [L. *non*, not, + *via*, life] Incapable of life or of living. This term is frequently used to indicate a fetus that has either died in utero or been born prior to 20th week of gestation.

**nylon** (nŏ'nil) A univalent radical,  $\text{CH}_2(\text{CH}_2)_8^-$ , that contains nine carbon atoms.

**noopsyche** (nŏ'ŏ-sĭ'kĕ) [Gr. *nous*, mind, + *psyche*, soul] Mental processes.

**nootropic** (nŏ'ă-trŏp'ĭk) [Gr. *nous*, mind + *tropikos*, turning, affecting] Capable of improving or preserving memory, of potentiating learning, or of preventing cognitive decline or dementia.

**nopal** (nŏ-păl') *pl.* **nopales** [Sp. fm. Nahuatl] Prickly pear cactus.

**NORD** *National Organization for Rare Disorders*.

**norepinephrine** (nor-ĕp'ĭ-nĕf'rĭn) 1. A hormone produced by the adrenal medulla, similar in chemical and pharmacological properties to epinephrine but chiefly a vasoconstrictor with little effect on cardiac output. 2. A neurotransmitter released by most sympathetic postganglionic neurons and by some neurons of the brain. A disturbance in its metabolism at important brain sites has been implicated in affective disorder.

ders. It is used to manage severe hypotension, esp. in patients with neurogenic or septic shock.

**n. bitartrate** A standardized preparation of norepinephrine. The former name was levarterenol bitartrate.

**norgestimate** (nŏr-jēs'ti-māt) An estrogen/progestin used as a tricyclic contraceptive hormone. It is administered orally to healthy women and girls over 14 years of age to prevent pregnancy, regulate the menstrual cycle, and manage acne if topical treatment has failed.

**norm** [L. *norma*, rule] **1.** A standard or ideal for a specific group. **2.** Normal.

**norma** (nŏr'mā) [L., rule] A view or aspect, esp. with reference to the skull.

**anterior n.** Norma frontalis.

**n. basilaris** Norma ventralis.

**n. facialis** Norma frontalis.

**n. frontalis** The outline of the skull viewed from the front. SYN: *anterior n.*; *n. facialis*.

**inferior n.** Norma ventralis.

**n. lateralis** A view of the skull as seen from the side; a profile view.

**n. occipitalis** A view of the skull as seen from behind.

**n. sagittalis** A view of the skull as seen in sagittal section.

**superior n.** Norma verticalis.

**n. ventralis** A view of the inferior surface of skull. SYN: *n. basilaris*; *inferior n.*

**n. verticalis** A view of the skull as seen from above. SYN: *superior n.*

**normal** (nor'māl) [L. *normalis*, according to pattern] **1.** Standard; performing proper functions; natural; regular. **2.** In biology, not affected by experimental treatment; occurring naturally and not because of disease or experimentation. **3.** In psychology, free from mental disorder; of average development or intelligence.

**n. distribution** SEE: *distribution, normal*.

**n. salt** SEE: *salt, normal*.

**normalization** (nor'māl-i-zā'shŭn) [L. *normalis*, according to pattern] Modification or reduction to the normal standard.

**normetanephrine** (nor-mēt'ā-nēf'rĭn) A metabolite of epinephrine.

**normo-** Prefix indicating *normal*.

**normoblast** (nor'mŏ-blāst) [ + Gr. *blastos*, germ] An immature nucleated red blood cell similar in size to a mature erythrocyte and usually found in the bone marrow. SYN: *erythroblast*. **normoblastic** (-blās'tĭk), *adj.*

**normoblastosis** (nor'mŏ-blās-tŏ'sĭs) [ + " + *osis*, condition] Increased production and circulation of normoblasts. This indicates a need for greater oxygen-carrying capacity of the blood, as when mature erythrocytes are being rapidly destroyed.

**normocalcemia** (nor'mŏ-kāl-sē'mē-ā) Normal level of blood calcium.

**normocapnia** (nor'mŏ-kāp'nē-ā) The presence of a normal concentration of carbon dioxide in the blood and serum.

**normocapnic** (-kāp'nĭk), *adj.*

**normocholesterolemia** (nor'mŏ-kŏ-lēs'tēr-ŏ-lē'mē-ā) The presence of a normal concentration of cholesterol in the blood.

**normochromasia** (nor'mŏ-krŏ-mā'zē-ā) [ + Gr. *chroma*, color] Average staining capacity in a cell or tissue.

**normocyte** (nor'mŏ-sĭt) [ + Gr. *kytos*, cell] An average-sized red blood cell. SYN: *erythrocyte*.

**normoglycemia** (nor'mŏ-glĭ-sē'mē-ā) [ + Gr. *glykys*, sweet, + *haima*, blood] Normal sugar content of the blood. **normoglycemic** (-sē'mĭk), *adj.*

**normokalemia** (nor'mŏ-kā-lē'mē-ā) Normal level of blood potassium.

**normospermic** (nor'mŏ-spēr'mĭk) [ + Gr. *sperma*, seed] Producing normal spermatozoa.

**normosthenuria** (nor'mŏ-sthĕn-ŭ'rē-ā) [ + Gr. *sthenos*, strength, + *ouron*, urine] Urination which is of a normal amount and specific gravity.

**normotensive** (nor'mŏ-tĕn'sĭv) **1.** Normal blood pressure. **2.** A person with normal blood pressure.

**normothermia** (nor'mŏ-thĕr'mē-ā) [ + Gr. *therme*, heat] Normal body temperature.

**normovolemia** (nor'mŏ-vŏ-lē'mē-ā) [ + *volumen*, volume, + Gr. *haima*, blood] Normal blood volume. **normovolemic**, *adj.*

**norovirus** (nŏr'ŏ-vĭ'rŭs) Any Norwalk-like virus. Diarrheal outbreaks caused by norovirus infections of the gastrointestinal tract have been reported in nursing homes, schools, and cruise ships, settings in which large groups of people congregate in relatively confined spaces. SEE: *Norwalk virus*.

**Norrie's disease** (nŏr'ēz) [Gordon Norrie, Danish ophthalmologist, 1855-1941] A rare form of x-linked hereditary blindness due to retinal malformation. Also present are peripheral vascular pathology, vitreous opacities, microphthalmia, and sometimes mental retardation and loss of hearing.

**Norton scale** (nor-tan') A scale used to predict the likelihood a patient will develop pressure ulcers. The patient is rated from 1 (low risk) to 4 (high risk) using the following five criteria: physical condition, mental condition, activity, mobility, and incontinence. SEE: *pressure sore* for table.

**Norvasc** SEE: *amlodipine*.

**Norwalk agent** (nŏr'wawk) [virus first identified in Norwalk, Ohio, U.S.A.] SEE: under *virus*.

**Norwegian itch** (nŏr-wē'jĭn) SEE: *Norwegian scabies*.

**Norwegian scabies** A rare form of sca-

bies in which the mites are present in great number. It often is found in patients with human immunodeficiency virus infection. Ivermectin is used to treat the infestation.

**NOS** *not otherwise specified*. In medical billing and coding, it refers to a diagnosis without specific or distinguishing features.

**nose** [AS. *nosw*] The projection in the center of the face that is the organ of smell and the entrance to the nasal cavities. The nose is a triangle composed of and bounded by bone and cartilage covered with skin and lined with mucous membrane. Hairs just inside the nostrils block the entrance of dusts and small insects. SYN: *nasus; organum olfactus*.

**EXAMINATION:** Note the shape, size, color, and state of the alae nasi, and any discharge, interference with respiration, evidence of injury, deflected or perforated septum, enlarged turbinates, or tenderness over frontal and maxillary sinuses.

**DIAGNOSIS:** *Chronic red nose:* Dilated capillaries as a result of alcoholism, lupus erythematosus, acne rosacea, pustules, and boils. *Superficial ulceration:* Basal cell carcinoma, tuberculosis, syphilis, tuberculous ulcer, epithelioma. *Broad and coarse:* Cretinism, myxedema, acromegaly. *Sunken:* Syphilis or injury. *Pinched with small nares:* Hypertrophied adenoid tissue or chronic obstructions; tumors. *Inoffensive watery discharge:* Allergic rhinitis, the common cold, early stages of measles. *Offensive discharge:* Nasopharyngeal diphtheria, lupus, local infection, impacted foreign bodies, caries, rhinitis, glanders, syphilitic infection.

**bridge of the n.** The superior portion of the external nose formed by the union of the two nasal bones.

**foreign body in the n.** Presence of material in the nasal cavity that was either inhaled or accidentally placed there. A child may place a foreign object in his or her own or another child's nose.

**SYMPTOMS:** Coughing or watery or purulent discharge; occasionally pain and obstruction of nose. The foreign body may cause a nasal obstruction and infection, often with a foul-smelling discharge. If the foreign body is very small, symptoms may be absent.

**TREATMENT:** Vigorous nose blowing should be discouraged because it may spread infection to the various cavities and sinuses about the nose or to the middle ear. The foreign body should be removed by a health care professional.

**hammer n.** Rhinophyma.

**saddle n.** A nose with a depressed bridge due to congenital absence of bony or cartilaginous support, to a disease such as leprosy or congenital syphilis, or

to postoperative complications of supuration and destruction of the supporting framework.

**nosebleed** Hemorrhage from the nose. **SEE:** *illius; epistaxis; Kiesselbach's area*.

**Nosema** (nō-sē'mā) A genus of parasites of the order Microsporidia. **SEE:** *microsporidiosis*.

**nosepiece** (nōz'pēs) The portion of a microscope to which the objective lenses attach.

**nose springs** A springlike device applied to the bridge of the nose that pulls the nostrils open slightly. The device may reduce nasal airway resistance, thereby improving sleep quality and decreasing snoring.

**nosō** [Gr. *nosos*, disease] Combining form denoting *disease*.

**nosochthonography** (nōs'ōk-thō-nōg'rā-fē) [n' + *chthon*, earth, + *graphein*, to write] Geomedicine.

**nosocomial** (nōs'ō-kō-mē-āl) [Gr. *nosokomos*, one who tends the sick] Pert. to or occurring in a health care setting, such as a hospital or nursing home.

**nosocomial infection** An infection acquired in a hospital, nursing home, or other health care settings. Patients in burn units and surgical intensive care units have the highest rates of nosocomial infections.

**PATIENT CARE:** Hospital-acquired infections result from the exposure of debilitated patients to the drug-altered environment of the hospital, where indwelling urinary catheters, intravenous lines, and endotracheal tubes enter normally sterile body sites and allow microbes to penetrate and multiply. Over 2 million nosocomial infections occur in the U.S. annually. Antibiotic-resistant organisms such as *Enterobacter* spp., *Pseudomonas* spp., staphylococci, enterococci, *Clostridium difficile*, and fungi often are responsible for the infectious outbreaks that result. Standard precautions and infection control procedures limit the incidence of nosocomial infections.

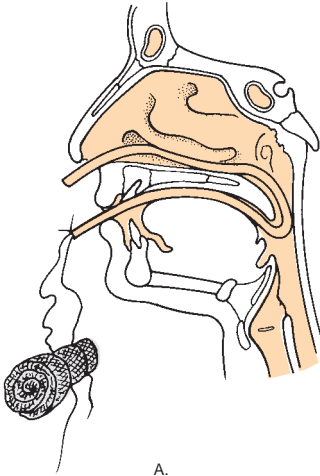
**nosode** (nōs'ōd) [n' + *os*, word] A homeopathic vaccination. A very dilute pathological tissue sample, taken from the blood, feces, mucus, pus, or tissue of an infected or diseased organism, administered to a human to promote immunity against disease.

**nosology** (nō-sōl'ō-jē) [n' + *logos*, word, reason] The science of description or classification of diseases.

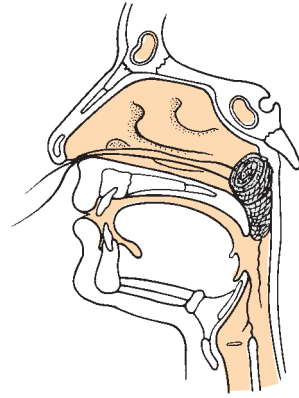
**nosomycosis** (nōs'ō-mī-kō-sīs) [n' + *mykes*, fungus, + *osis*, condition] Any disease caused by a parasitic fungus or schizomycete.

**nosophyte** (nōs'ō-fit) [n' + *phyton*, plant] A disease-causing plant microorganism.

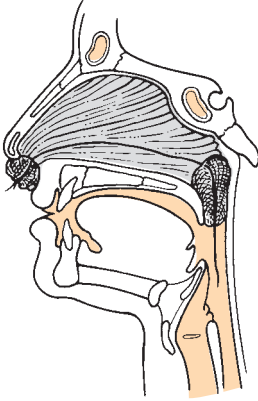
**Nosopsyllus** (nōs'ō-sīl'ūs) [n' + *psylla*,



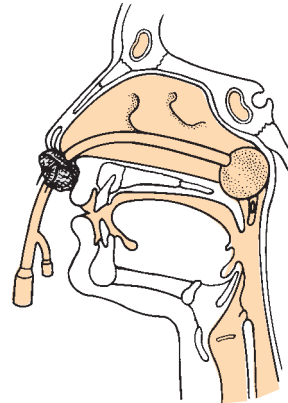
A.  
INSERT SOFT FLEXIBLE CATHETER INTO NOSE AND BRING DISTAL TIP OUT THROUGH THE MOUTH. ATTACH MOISTENED PACK TO CATHETER



B.  
BY PULLING ON CATHETER DRAW PACK IN PLACE SO IT IS PLACED SECURELY IN POSTERIOR NASAL CAVITY



C.  
REMOVE CATHETER AND USE STRING TO ATTACH TO A SOFT CUSHION OF SUFFICIENT SIZE TO PREVENT ITS PASSING INTO THE NOSTRIL



D.  
ALTERNATIVELY, A FOLEY CATHETER MAY BE USED. THE INFLATED TIP IS HELD SECURELY IN PLACE AS IN PREVIOUS ILLUSTRATIONS

#### TECHNIQUE FOR CONTROL OF HEMORRHAGE FROM POSTERIOR NASAL CAVITY

flea] A genus of fleas belonging to the order Siphonaptera.

**N. fasciatus** A species of rat fleas responsible for transmission of murine typhus and possibly plague.

**nostalgia** (nōs-tāl'jē-ă) [Gr. *nostos*, a return home, + *algos*, pain] **1.** Homesickness; longing to return home. **2.** A longing to return to a previously experienced time or place.

**nostril** [AS. *nosu*, nose, + *thyrel*, a hole] One of the external apertures of the nose. SYN: *naris*. SEE: *nose*.

**n. reflex** Reduction of the opening of

the naris on the affected side in lung disease in proportion to lessened alveolar air capacity on the affected side.

**nostrum** (nōs'trūm) [L., our] A patent, secret, or quack remedy.

**notancephalia** (nō'tăn-sē-fă'lē-ă) [n + -an, not, + *kephale*, head] Congenital absence of the back of the skull.

**notanencephalia** (nō'tăn-ēn-sē-fă'lē-ă) [n + " + *enkephalos*, brain] Absence of the cerebellum.

**notch** (nōch) A deep indentation or narrow gap in the edge of a structure. SYN: *incisure*.

**antegonial n.** A depression in the inferior border of the mandible at the anterior edge of the insertion of the masseter muscle.

**aortic n.** The notch in a sphygmogram caused by rebound at the aortic valve closure.

**cardiac n.** The concavity on the anterior border of the left lung into which the heart projects.

**cerebellar n.** Either of two deep notches (anterior and posterior) separating the hemispheres of the cerebellum.

**cardial notch** The angle or indentation on the top of the stomach between its orifice (the cardia) and its fundus.

**clavicular n.** A notch at the upper angle of the sternum with which the clavicle articulates.

**costal n.** Any of seven pairs of indentations on the lateral surfaces of the sternum, for articulation with costal cartilages.

**greater sciatic n.** A large notch on the posterior border of the hip bone between the posterior inferior iliac spine and the spine of the ischium.

**interclavicular n.** A rounded notch at the top of the manubrium of the sternum between the surfaces articulating with the clavicles.

**jugular n. (of sternum)** A notch on the upper surface of the manubrium of the anterior superior chest between the two clavicular notches. SYN: *sternal n.*; *suprasternal n.*

**labial n.** A notch in the labial flange of a denture at the point where it crosses the frenum.

**lesser sciatic n.** A notch immediately below the spine of the ischium on the posterior border of the hip bone, which is converted into a foramen by the sacrotuberous ligament.

**mandibular n.** A notch on the superior border of the ramus of the mandible separating the coronoid and condyloid processes.

**manubrial n.** A depression on the superior edge of the sternum.

**nasal n. 1.** A deep notch on the anterior surface of the maxilla, forming the lateral border of the piriform aperture. **2.** A notch between the internal angular processes of the frontal bone.

**pancreatic n.** A notch on the lateral surface of the head of the pancreas for the superior mesenteric artery and vein. It separates the uncinat process of the head from the remaining portion.

**radial n.** A notch on the lateral surface of the coronoid process of the ulna for receiving the circumference of the head of the radius.

**scapular n.** A deep notch on the superior border of the scapula that transmits the suprascapular nerve.

**semilunar n.** A notch on the anterior

aspect of the proximal end of the ulna for articulation with the trochlea of the humerus. SYN: *trochlear n.*

**sphenopalatine n.** A notch between the orbital and sphenoidal processes of the palatine bone.

**sternal n.** Jugular notch (of sternum).

**superior thyroid n.** Thyroid notch.

**suprasternal n.** Jugular notch (of sternum).

**tentorial n.** An arched cavity in the free border of the tentorium cerebelli through which the brainstem passes.

**thyroid n.** A notch on the superior border of the thyroid cartilage of the larynx that separates the two laminae. SYN: *superior thyroid n.* SEE: *thyroid cartilage.*

**trochlear n.** Semilunar notch.

**ulnar n.** The notch on the distal end of the radius that receives the head of the ulna.

**vertebral n.** A concavity on the inferior surface of the vertebral arch for transmission of a spinal nerve.

**notchplasty** (nŏch'plās-tē) A surgical procedure to enlarge the intercondylar notch and space available for an anterior cruciate ligament graft during knee reconstruction. The lateral wall of the notch, which is the medial portion of the lateral femoral condyle, may be removed by various means.

**notch width index** The width of the femoral intercondylar notch divided by the width of the femoral condyles.

**note** [L. *nota*, a mark] **1.** A sound of definite pitch. **2.** A brief comment or condensed report.

**notencephalocele** (nŏ'tĕn-sĕf'äl-ŏ-sĕl) [Gr. *noton*, back, + *enkephalos*, brain, + *kele*, tumor, swelling] Protrusion of the brain from the back of the head.

**notencephalus** (nŏ'tĕn-sĕf'äl-lŭs) [" + *enkephalos*, brain] A deformed fetus with notencephalocele.

**nothing by mouth** An instruction used in patient care to indicate that the patient is not to take or receive food, solids, liquid, or medicine orally. This order is usually indicated by the abbreviation NPO.

**notifiable disease** In the U.S., a disease or condition under surveillance by public health officials (e.g., at the Centers for Disease Control and Prevention or the Council of State and Territorial Epidemiologists) typically because of its widespread effects on public health or its potentially explosive consequences. Regulations require that clinical practitioners or laboratory staff report instances of West Nile virus, meningococcal disease, SARS, yellow fever, elevated blood lead levels, silicosis, tobacco use, and many other illnesses to public health authorities. SYN: *reportable disease.*

**PATIENT CARE:** To report a notifica-



ble disease to U.S. federal authorities, go to the National Notifiable Diseases Surveillance System website: [www.cdc.gov/epo/dphsi/contact.htm](http://www.cdc.gov/epo/dphsi/contact.htm)

**noto-** [Gr. *noton*, back] Combining form indicating a relationship to the back.

**notochord** (nō'tō-kord) [*n* + *chorde*, cord] An embryonic rod of cells lying dorsal to the intestine and extending from the anterior to the posterior end. The notochord forms the axial skeleton in embryos of all chordates. In vertebrates it is replaced partially or completely by the bodies of vertebrae. A remnant persists in humans as a portion of the nucleus pulposus of the intervertebral disk.

**notomelus** (nō-tōm'ē-lūs) [*n* + *melos*, limb] A deformed fetus with one or more accessory limbs attached to the back.

**Nottingham Extended Activities of Daily Living Scale** A widely used European scale of a person's independent activities of daily living that measures mobility and the ability to function in domestic tasks, kitchen tasks, and leisure activities.

**nourishment** [L. *nutrire*, to nurse] **1.** Sustenance; nutrient; food. **2.** The act of nourishing or of being nourished. SEE: *trophic*.

**Novocaine** (nō'vō-kān") A trade name for procaine, a local anesthetic. "Novocaine" is often loosely used to signify any local or topical anesthetic in discussions with laypersons.

**Novolin 70/30** Human insulin consisting of 70% NPH and 30% regular insulins. SEE: *human insulin*.

**noxious** (nōk'shūs) [L. *noxius*, injurious] Harmful; not wholesome.

**NP** *nucleoprotein; nurse practitioner; nursing practice; nursing procedure; neuropsychiatrist; neuropsychiatry*.

**Np** Symbol for the element neptunium.

**NPC** *nodal premature complex*.

**NPDB** *National Practitioner Data Bank*.

**NPH insulin** A pancreatic hormone and antidiabetic, administered intravenously or subcutaneously to manage type 1 and some cases of type 2 diabetes mellitus.

**NPN** *nonprotein nitrogen*.

**NPO, npo** [L.] *non per os*, nothing by mouth.

**NPT** *normal pressure and temperature; nocturnal penile tumescence*.

**NREM** *nonrapid eye movement*. SEE: *sleep, nonrapid eye movement*.

**NREMT** *National Registry of Emergency Medical Technicians*.

**NRMS** *National Registry of Medical Secretaries*.

**NRTI** *Nucleoside reverse transcriptase inhibitor*.

**ns** **1.** *nanosecond*. **2.** *nonsignificant*.

**NSA** *Neurosurgical Society of America*.

**NSAID** *nonsteroidal anti-inflammatory drug*.

**NSCC** *National Society for Crippled Children*.

**NSD in ret** *nominal standard dose* in radiation equivalent therapy. SEE: *ret*.

**nsec** *nanosecond*.

**NSNA** *National Student Nurses' Association*.

**NSR** *normal sinus rhythm*.

**N-telopeptide** ABBR: NTx. A biomarker of osteoclast-induced bone resorption. Detection of NTx is used, for example, to detect bone breakdown in patients with osteopenia or osteolysis.

Also known as *cross-linked N-telopeptide of type 1 collagen*.

**nth** (ēnth) A symbol used in statistics to indicate the continuation of data or subjects to large numbers in a progression or series. Thus one indicates patients numbered P1, P2, P3, etc., through Pnth. In this method of listing patients, Pnth is the last patient indicated.

**Nélaton's line** (nā-lā-tōnz') [Auguste Nélaton, Fr. surgeon, 1807–1873] Line from the anterior superior spine of the ilium to tuberosity of the ischium.

**nuad bo rarn** (noo'ād bō rārñ) [Thai, literally, "traditional massage"] A traditional Thai method of massage, practiced for centuries in Thailand as a means of improving health and well-being.

**nucha** (nū'kā) [L.] The nape (back) of the neck. **nuchal** (nū'kāl), *adj*.

**nuchal translucency measurement** (trāns-loos'ēn-sē) Intrauterine ultrasonography of the nape of the fetal neck, measured in the first trimester of pregnancy. Abnormal thickening of this part of the body has been associated with a variety of congenital, chromosomal diseases.

**Nuck's canal** (nūks) [Anton Nuck, Dutch anatomist, 1650–1692] A persistent peritoneal pouch that accompanies the round ligament of the uterus through the inguinal canal.

**nuclear** (nū'klē-ār) [L. *nucleus*, a kernel] Pert. to a cellular, atomic, or anatomical nucleus. SEE: *nucleus; nuclear medicine; n. medicine scanning test*; names of specific anatomical nuclei.

**n. arc** Spiral patterns on the surface of the lens due to a concentric pattern of fiber growth.

**n. envelope** SEE: *envelope, nuclear*.

**n. family** The basic family unit consisting of parents and their children.

**n. magnetic resonance imaging** ABBR: NMRI. SEE: *magnetic resonance imaging*.

**n. medicine** SEE: *medicine, nuclear*.

**n. medicine scanning test** Any test that relies on the use of radioactive tracers to diagnose disease. Radioactive isotopes are either injected into the body or inhaled, the dose of radiation is min-



imal, and the substances used either lose their radioactivity in a short time or are excreted. Nuclear medicine scans may be used to diagnose tumors, biliary disease, gastrointestinal emptying or bleeding, coronary artery disease, valvular heart disease, red blood cell survival time, renal dysfunction, deep vein thrombosis, pulmonary embolus, thyroid function, osteomyelitis (or other infections), fractures, and cardiac ejection fraction. Isotopes of thallium, iodine, or other metals are used. In 2005, nearly 20 million nuclear medicine examinations were performed in the U.S. alone, most for obtaining images of the heart and coronary arteries.

**n. transfer** The removal of DNA from a cell for placement into an egg (e.g., during cloning).

**nuclear matrix protein 22** ABBR: NMP22. A tumor marker excreted in the urine of some patients with bladder cancer. NMP22 can be used to screen patients for the disease, esp. for disease recurrence after primary treatment.

**nuclear medicine technologist** A health care professional who prepares radioactive compounds for use in diagnostic imaging procedures; gives those compounds to patients (usually by injection); scans patients to determine how radiation is emitted from the body after injection and circulation of the compounds; and then processes and analyzes the images derived so that they can be used as diagnostic aids.

**nuclease** (nū'klē-ās) [L. *nucleus*, kernel, + *-ase*, enzyme] Any enzyme in animals or plants that facilitates hydrolysis of nuclein and nucleic acids.

**nucleate** (nū'klē-āt) [L. *nucleatus*, having a kernel] **1.** Having a nucleus. **2.** To form a nucleus.

**nucleic acid** (nū'klē'īk) Any one of a group of high-molecular-weight chemicals that carry the genetic information crucial to the replication of cells and the manufacturing of cellular proteins. They have a complex structure formed of sugars (pentoses), phosphoric acid, and nitrogen bases (purines and pyrimidines). Most important are ribonucleic acid (RNA) and deoxyribonucleic acid (DNA). **SEE: illus.**

**nucleic acid probe** A labelled single-strand of DNA used to detect complementary DNA in a laboratory specimen.

**nucleic acid test** ABBR: NAT. A test for the presence of specific genetic material in a laboratory specimen, e.g., a specific segment of viral DNA or RNA in a blood sample. NATs are used, e.g., to detect contamination of blood by hepatitis viruses and HIV during the initial period of infection, before viral antigens appear in the blood of infected patients.

**nuclein** (nū'klē-īn) [L. *nucleus*, a kernel]

The breakdown product of the nucleoproteins of chromosomes.

**nuclein base** Any of the bases formed from decomposition of nuclein, such as adenine, guanine, xanthine, and hypoxanthine.

**nucleo-** [L. *nucleus*, kernel] Pert. to a nucleus.

**nucleocapsid** (nū'klē-ō-kāp'sid) In a virus, the protein coat and the viral nucleic acid.

**nucleofugal** (nū'klē-ōf'ū-gāl) [" + *fugere*, to flee] Directed or moving away from a nucleus.

**nucleohistone** (nū'klē-ō-his'tōn, -tōn) [" + Gr. *histos*, tissue] A substance composed of nuclein and histone, found in sperm of various animals.

**nucleoid** (nū'klē-oyd) [" + Gr. *eidōs*, form, shape] Resembling a nucleus.

**nucleoliform** (nū'klē-ō'lī-form) [[L. *nucleolus*, a little kernel, + *forma*, shape] Like a nucleolus.

**nucleoloid** (nū'klē-ō-loyd) Similar to a nucleus.

**nucleonema** (nū'klē-ō'n'lo-nē'mā) [" + Gr. *nema*, thread] A fine network in the nucleolus of a cell.

**nucleolus** (nū'klē-ō-lūs) *pl. nucleoli* [L., little kernel] A spherical structure in the nucleus of a cell made of DNA, RNA, and protein. It is the site of synthesis of ribosomal RNA (rRNA); a cell may have more than one. Embryonic cells and those in malignancies actively synthesize rRNA; therefore, their nucleoli are larger than those of cells that do not require increased amounts of rRNA. **nucleolar** (nū'klē-ō-lār), *adj.*

**nucleomicrosome** (nū'klē-ō-mī'krō-sōm) [L. *nucleus*, kernel, + Gr. *mikros*, tiny, + *soma*, body] A granule of the chromatin of a cell nucleus.

**nucleon** (nū'klē-ōn) Any of the particles that collectively make up the nucleus of an atom.

**nucleopetal** (nū'klē-ōp'ē-tāl) [L. *nucleus*, kernel, + *petere*, to seek] Seeking or moving toward the nucleus.

**nucleophilic** (nū'klē-ō-fil'īk) [" + Gr. *philein*, to love] Having an attraction to nuclei.

**nucleoplasm** (nū'klē-ō-plāzm") [" + L.L. *plasma*, form, mold] The protoplasm of a cell nucleus. **nucleoplasmic**, *adj.*

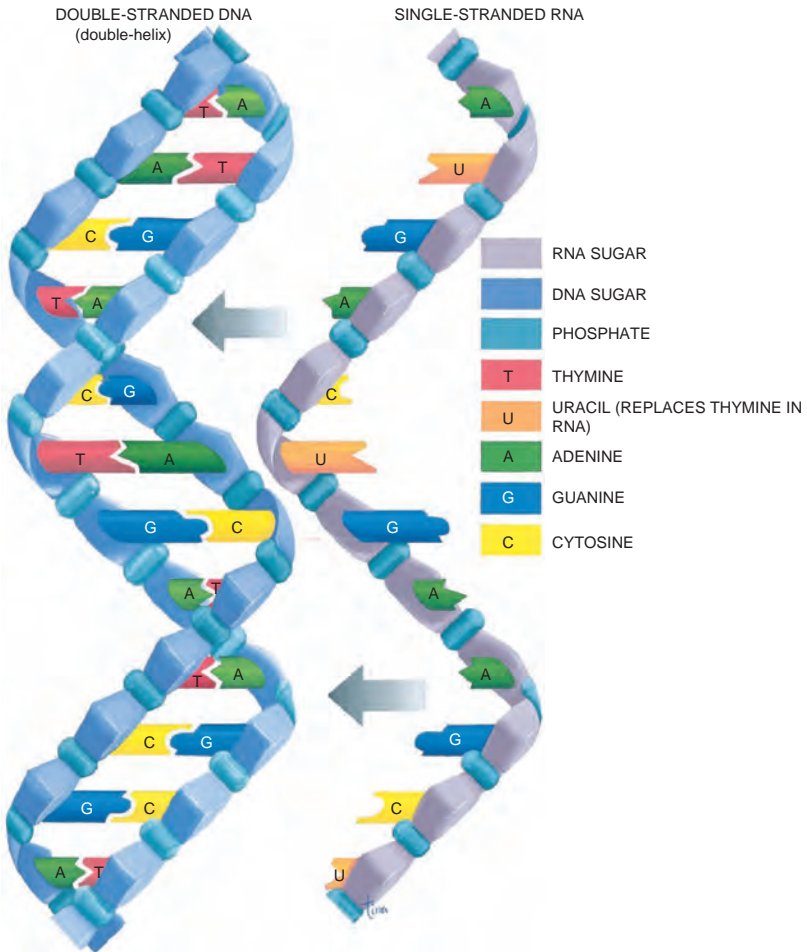
**nucleoprotein** (nū'klē-ō-prō'tē-īn) [" + Gr. *protos*, first] The combination of protein and nucleic acid (DNA or RNA).

**nucleoreticulum** (nū'klē-ō-rē-tīk'ū-lūm) [" + *reticulum*, network] Any mesh framework in a nucleus.

**nucleosidase** (nū'klē-ō-sī'dās) An enzyme that catalyzes the hydrolysis of nucleosides.

**nucleoside** (nū'klē-ō-sīd) A glycoside formed by the union of a purine or pyrimidine base with a sugar (pentose).

**nucleosome** (nū'klē-ō-sōm) The combi-

**NUCLEIC ACID**

DNA and RNA

nation of positively charged histone proteins and negatively charged DNA; the first step in the folding of DNA into chromatin.

**nucleospindle** (nū'klē-ō-spin'd'l) A spindle-shaped body occurring in karyokinesis.

**nucleotidase** (nū'klē-ōt'ī-dās) An enzyme (nucleophosphatase) that splits phosphoric acid from nucleotides, leaving a nucleoside.

**5'-nucleotidase** An enzyme present in the serum in abnormal amounts in diseases that affect the liver or obstruct the biliary tree.

**nucleotide** (nū'klē-ō-tīd) [L. *nucleus*, kernel] A compound formed of phosphoric acid, a pentose sugar, and a base (purine or pyrimidine), all of which con-

stitute the structural unit of nucleic acid. SYN: *mononucleotide*.

**nucleotide-binding oligomerization domain proteins** ABBR: NOD. A family of cytoplasmic proteins that recognize molecules associated with disease-causing bacteria and stimulate cells to secrete cytokines and costimulatory molecules. Inappropriate regulation of nucleotide-binding oligomerization domain proteins has been linked to the pathogenesis of Crohn's disease and other syndromes.

**nucleotidyl** (nū'klē-ō-tīd'īl) The residue of a nucleotide.

**nucleotidyltransferase** (nū'klē-ō-tīd'īl-trāns'fēr-ās) An enzyme that transfers nucleotidyls from nucleosides into dimer or polymer forms.

**nucleotoxin** (nū<sup>u</sup>klē-ō-tōk'sin) [n + Gr. *toxikon*, poison] A toxin acting upon or produced by cell nuclei.

**nucleus** (nū<sup>u</sup>klē-ūs) *pl.* **nuclei** [L., kernel] **1.** A central point about which matter is gathered, as in a calculus. **2.** The structure within a cell that contains the chromosomes. It is responsible for the cell's metabolism, growth, and reproduction. **3.** A group of neuron cell bodies, which form a mass of gray matter in the central nervous system, esp. the brain. **4.** In chemistry, the core of an atom, made of one or more protons and usually one or more neutrons. It has the positive charge and most of the mass of an atom.

**n. abducens** A gray nucleus, the origin of the abducens nerve, on the floor of the fourth ventricle, behind the trigeminal nucleus.

**n. accumbens** ABBR: NA. A collection of cells within the basal forebrain. It is often colloquially referred to as the pleasure (or "reward") center of the brain because most addictive drugs increase dopamine levels (and decrease serotonin levels) in the NA.

**ambiguous n.** The nucleus of the glossopharyngeal and vagus nerves in the medulla oblongata. It lies in the lateral half of the reticular formation.

**amygdaloid n.** A nucleus projecting into the inferior cornua of the lateral ventricle. It is part of the basal ganglia.

**angular n.** The superior vestibular nucleus. SEE: *vestibular n.*

**anterior n. of the thalamus** A nucleus located in the rostral part of the thalamus. It receives the fibers of the mammillothalamic tract.

**arcuate n.** **1.** The nucleus located on the basal aspect of the pyramid of the medulla. **2.** The posteromedial ventral nucleus of the hypothalamus.

**atomic n.** The heavy, positively charged, central part of an atom, which contains protons, neutrons, and most of the atomic mass.

**auditory n.** A group of neuron cell bodies where the auditory nerves arise.

**caudate n.** A comma-shaped mass of gray matter forming part of the corpus striatum. It is part of the basal ganglia.

**cerebellar n.** One of the nuclei of the cerebellum.

**cochlear nucleus** Either of two side-by-side nuclei on the outside of the inferior cerebellar peduncle in the brainstem that are innervated by axons of the spiral ganglion. They carry sound information to the central nervous system from the spiral organ (of Corti) in the internal ear.

**cuneate n.** A nucleus in the inferior portion of the medulla oblongata in which fibers of the fasciculus cuneatus terminate.

**Deiters' n.** The lateral vestibular nucleus. SEE: *vestibular n.*

**dentate n.** A large convoluted mass of gray matter in the lateral portion of the cerebellum. It is folded so as to enclose some of the central white matter and gives rise to the fibers of the superior cerebellar peduncle.

**diploid n.** A nucleus containing the normal double complement of chromosomes.

**dorsal cochlear n.** The nucleus in the medulla oblongata lying dorsal to the restiform body and receiving fibers from the cochlear nerve.

**dorsal motor n. of vagus** A column of cells in the medulla oblongata lying lateral to the hypoglossal nucleus. It receives visceral afferent fibers.

**dorsal n. of the spinal cord** A column of gray matter lying at the base of the dorsal horn of the gray matter and extending from the seventh cervical to the third lumbar segments. These cells give rise to fibers of the dorsal spinocerebellar tract. SYN: *Clarke's column.*

**Edinger-Westphal n.** A nucleus of the midbrain located dorsomedially to the oculomotor nucleus. It gives rise to the visceral efferent fibers terminating in the ciliary ganglion, the axons from which innervate the ciliary muscle and the sphincter iridis of the eye.

**emboliform n.** A nucleus of the cerebellum lying between the dentate and globose nuclei. It receives the axons of Purkinje cells and sends efferent fibers into the brachium conjunctivum.

**facial motor n.** A nucleus in the medulla oblongata in the floor of the fourth ventricle giving rise to efferent fibers of the facial nerve.

**fastigial n.** A nucleus in the medullary portion of the cerebellum that receives afferent fibers from the vestibular nerve and superior vestibular nucleus. The afferent fibers form the fasciculus uncinatus and the fastigio-bulbar tract.

**fertilization n.** A nucleus produced by the joining of the male and female nuclei in the fertilization of the ovum.

**free n.** A nucleus that is no longer surrounded by the other cellular components.

**germinal n.** A nucleus resulting from the union of male and female pronuclei.

**globose n.** A nucleus of the cerebellum located medial to the emboliform nucleus.

**gonad n.** Micronucleus (2).

**n. gracilis** A nucleus in the medulla oblongata in which fibers of the fasciculus gracilis terminate.

**habenular n.** A nucleus of the diencephalon located in the habenular trigone. It is an olfactory correlation center.

**haploid n.** A cell nucleus with half

the normal number of chromosomes, as in germ cells (ova and sperm) following the normal reduction divisions in gametogenesis.

**hypoglossal n.** An elongated mass of gray matter in the medulla oblongata in the floor of the fourth ventricle, giving rise to the motor fibers of the hypoglossal nerve.

**hypothalamic n.** One of the nuclei occurring in four groups found in the hypothalamus. Hypothalamic nuclei include the dorsomedial, intercalatus, lateral, mamillary (lateral and medial), paraventricular, posterior, supraoptic, tuberal, and ventromedial. The cells of these nuclei secrete oxytocin and anti-diuretic hormone. These hormones pass through the efferent fibers of the infundibular stalk to the posterior lobe of the pituitary gland, where they are stored until they are released.

**inferior olivary n.** A large convoluted mass of gray matter lying in the ventral part of the medulla oblongata and forming part of the reticular system. It gives rise to fibers of the olivocerebellar tract. SEE: *vestibular n.*

**interpeduncular n.** A nucleus of the midbrain near the superior border of the pons. It receives fibers of the habenulepeduncular tract.

**interstitial n. of Cajal** A nucleus in the superior portion of the midbrain. It receives fibers from the vestibular nuclei, basal ganglia, and occipital regions of the cerebral cortex. The efferent fibers pass to the ipsilateral and contralateral fasciculi and the interstitio-spinal tracts. It is involved in coordinate eye movements.

**lateral geniculate n.** The visual relay nucleus of the thalamus. It is actually a set of nuclei located on the bottom rear edges of the thalamus, lateral to the medial geniculate nucleus. Axons from the retinal ganglion cells of the retina reach the lateral geniculate via the optic nerve and optic tract and then synapse in topographic order. Axons from the lateral geniculate neurons run in the optic radiation and synapse in the primary visual cortex in the occipital hemisphere, again maintaining their topographic organization.

**lenticular n.** One of the nuclei forming part of the basal ganglia of the cerebrum, consisting of the globus pallidus and putamen. With the caudate nucleus, it forms the corpus striatum.

**n. lentis** The core or inner dense section of the crystalline lens.

**masticatory n.** Motor nucleus of the trigeminal nerve.

**medial geniculate n.** The auditory relay nucleus of the thalamus. It is on the back undersurface of the thalamus, above the cerebral peduncle. It receives auditory axons from the inferior collic-

ulus, and it sends axons to the auditory cortex (superior temporal gyrus of Heschel [area 41]) in which the neurons are organized according to pitch.

**mesencephalic tract n.** The only site of primary sensory neurons within the central nervous system; it carries proprioceptive impulses from the trigeminal nerve.

**mother n.** A nucleus that divides into two or more parts to form daughter nuclei.

**motor n.** A nucleus giving rise to the motor fibers of a nerve.

**motor n. of the trigeminal nerve** A nucleus in the medulla oblongata near the first margin of the superior part of the fourth ventricle. It gives rise to the motor fibers of the trigeminal nerve, which innervates the muscles of mastication, tensor tympani, tensor palatini, and the anterior digastric muscle. SYN: *masticatory n.*

**oculomotor n.** A nucleus in the central gray matter of the midbrain lying below the rostral end of the cerebral aqueduct.

**n. of origin** Any of the collection of nerve cells giving rise to the fibers of a nerve or nerve tract.

**paraventricular n.** A nucleus of the hypothalamus lying in the supraoptic portion. Its axons, along with those of the supraoptic nucleus, form the supraopticohypophyseal tract. The cells of this tract regulate water balance in the body, secreting vasopressin, the anti-diuretic hormone, which is stored in their axon terminals in the posterior lobe of the pituitary gland. Its cells also seem to stimulate the sensation of thirst. Finally, the supraoptic and paraventricular nuclei produce oxytocin, which causes uterine muscle contraction and milk secretion. SEE: *hypothalamic n.*

**pontine n.** One of several groups of nerve cells located in the pons. It transmits afferent fibers to the cerebral cortex; efferent fibers pass through the brachium pontis to the cerebellum.

**principal trigeminal sensory n.** The site of sensory neurons of the trigeminal nerve associated with discriminatory touch. It is located in the pons.

**n. pulposus** The center cushioning gelatinous mass lying within an intervertebral disk; the remnant of the notochord.

**red n.** A large, oval, pigmented mass in the upper portion of the midbrain extending upward into the subthalamus. It receives fibers from the cerebral cortex and cerebellum; the efferent fibers give rise to the rubrospinal tracts. SYN: *nucleus r.*

**reproductive n.** Micronucleus (2).

**reticular n.** A column of neurons in the spinal cord, brainstem, and thala-

mus affecting local reflex activity, muscle tone, and wakefulness.

**n. ruber** Red nucleus.

**segmentation n.** The nucleus of a zygote formed by fusion of the male and female pronuclei.

**sensory n.** The nucleus of termination of the afferent fibers of a peripheral nerve.

**sensory n. of the trigeminal nerve** A group of nuclei in the pons and medulla oblongata consisting of the spinal nucleus, which extends inferiorly into the spinal cord, the main nucleus, which lies dorsal and lateral to the motor nucleus, and the mesencephalic nucleus, which lies in the lateral wall of the fourth ventricle.

**sperm n.** The head of the spermatozoon.

**subthalamic n.** An elliptical mass of gray matter lying in the ventral thalamus above the cerebral peduncle and rostral to the substantia nigra. It receives fibers from the globus pallidus.

**superior olivary n.** A small nucleus located in the mid-lateral tegmental region of the pons. It receives fibers from the ventral cochlear nucleus.

**superior salivatory n.** An ill-defined nucleus in the pons lying dorsomedial to the facial nucleus. It gives rise to preganglionic parasympathetic fibers passing through the chorda tympani and lingual nerve to the submaxillary ganglion. Impulses regulate secretions of the submaxillary and sublingual glands.

**supraoptic n.** The nucleus of the hypothalamus lying above the rostral ends of the optic tracts and lateral to the optic chiasma. SEE: *hypothalamic n.*

**n. of termination** Any of the clusters of cells in the brain and medulla in which fibers of a nerve or nerve tract terminate.

**thalamic n.** Any of the nuclei of the thalamus, including a large number belonging to the anterior, intralaminar, lateral, and medial thalamic nuclei groups.

**thoracic n.** A column of large neurons in the posterior gray column of the spinal cord. These cells give rise to the dorsal spinocerebellar tract on the same side.

**trigeminal spinal n.** The site of sensory neurons of the trigeminal nerve associated with pain, temperature, and light touch. It is located in the pons and upper spinal tract.

**ventral cochlear n.** The nucleus in the medulla oblongata lying anterior and lateral to the restiform body and receiving fibers from the cochlear nerve.

**vesicular n.** A nucleus having a deeply staining membrane and a pale center.

**vestibular n.** Any of four nuclei in the

medulla oblongata in which fibers of the vestibular nerve terminate. These four nuclei are the medial (Schwalbe's), superior (angular), lateral (Deiters'), and inferior nuclei.

**vitelline n.** Nucleus formed by union of male and female pronuclei within the vitellus; a part of the cytoplasm of an ovum in which the initial process of accumulation of food supplies is probably located. SYN: *yolk n.*

**yolk n.** Vitelline nucleus.

**nuclide** (nū'klīd) An atomic nucleus identified by its atomic number, mass, and energy state.

**nude** [L. *nudus*, naked] **1.** Bare; naked; unclothed. **2.** An unclothed body.

**nude mouse** SEE: *mouse, nude.*

**nudism** **1.** In psychiatry, a morbid desire to remove clothing. **2.** The practice of living without clothing.

**Nuel's space** (nū'ēlz) [Jean-Pierre Nuel, Belg. physician, 1847–1920] The space in the organ of Corti between the outer pillar and the outer phalangeal cells (Deiters' cells).

**NUG** *necrotizing ulcerative gingivitis.*

**nuisance** Anything that causes inconvenience, annoyance, or disturbance of normal physiology.

**null cell** (nūl) SEE: *cell, null.*

**null hypothesis** The assumption that the observed difference between two groups of subjects in a research study results from chance and not from the intervention that is being studied.

**nulligravida** (nūl'i-grāv'i-dā) A woman who has never conceived a child.

**nullipara** (nūl-īp'ā-rā) [L. *nullus*, none, + *parere*, to bear] A woman who has never produced a viable offspring.

**nulliparity** (nūl'i-pār'i-tē) Condition of not having given birth to a child.

**nulliparous** (nūl-īp'ār-ūs) Never having borne a child.

**numb** (nūm) **1.** Insensible; lacking in feeling. **2.** Deadened or lacking in the power to move.

**numb chin syndrome** Loss of sensation in the area from the lower lip to the chin, caused by a lesion of the third division of the trigeminal nerve (fifth cranial nerve).

**number** [L. *numerus*, number] **1.** A total of units. **2.** A symbol graphically representing an arithmetical sum.

**atomic n.** The number of negatively charged electrons in an uncharged atom, or the number of protons in the nucleus. This number determines the position of elements in the periodic table of elements.

**Avogadro's n.** SEE: *Avogadro's number.*

**hardness n.** A number on a calibrated scale indicating the relative hardness as determined by a particular system of testing (e.g., Knoop, Mohs, Rockwell, Vickers hardness tests). A

steel ball or diamond point is applied with a known variable load for a determined period of time to produce an indent whose depth or diameter can be measured.

**mass n.** The mass of the atom of a specific isotope relative to the mass of hydrogen. In general, this number is equal to the total of the protons and neutrons in the atomic nucleus of that specific isotope.

**number needed to harm** The number of patients who would need to be exposed to a noxious agent or medical intervention in order that one might be harmed. This concept is important in the assessment of the relative hazard of medical interventions, the relative toxicities of poisons, or the relative value of certain experimental interventions. Generally, the smaller the value, the more dangerous the therapy or noxious agent.

**number needed to treat** The number of patients who must receive a specific therapy (or undergo a specific medical test) so that one of them will benefit. This concept is important in assessing the relative values and costs of interventions for specific illnesses. For example, to prevent one death from breast cancer, the number of patients who need annual mammography can be calculated. Similarly, the number of patients with cancer who will survive because of the use of a particular chemotherapy can be assessed. Generally, the smaller the number needed to treat, the greater the value of the intervention. This comparative information can be used to decide how to allocate resources, plan studies, or make recommendations to patients about their care.

**numbness** Lack of sensation in a part.

**numeral** (nū'mēr-əl) [L. *numerus*, number] **1.** Denoting or pert. to a number. **2.** A conventional symbol expressing a number.

**nummiform** (nūm'mi-form) [L. *nummus*, a coin, + *forma*, shape] **1.** Coin-shaped, said of some mucous sputum. **2.** Arranged like a stack of coins.

**nummular** (nūm'ū-lār) [L. *nummus*, coin] **1.** Coin-shaped. **2.** Stacked like coins, as in a rouleau of red blood cells.

**nunnation** (nūn-ā'shūn) [Heb. *nun*, letter N] The frequent and abnormal use of the "n" sound.

**Nuremberg Code** (nūr'ēm-bērg) A set of principles established after World War II to protect the rights of research participants (subjects).

**nurse** [L. *nutrix*, nurse] **1.** An individual who provides health care. The extent of participation varies from simple patient care tasks to the most expert professional techniques necessary in acute life-threatening situations. The ability of a nurse to make self-directed judgments and to act independently will de-

pend on his or her professional background, motivation, and opportunity for professional development. The health care team includes the technical nurse, who is technique-oriented, deals with commonly recurring nursing problems and knows standardized procedures and medically delegated techniques. Also included is the professional nurse, who is prepared to assume responsibility for the care of individuals and groups through a colleague relationship with a physician. The roles of nurses constantly change in response to the growth of biomedical knowledge, changes in patterns of demand for health services, and the evolution of professional relationships among nurses, physicians, and other health care professionals. **2.** To feed an infant at the breast. **3.** To perform the duties of caring for the sick. **4.** To care for a young child.

**advanced practice n.** A registered nurse with additional education, skill, and specialization in various fields of medicine. SEE: *n. anesthetist; clinical n. specialist; n. midwife; n. practitioner.*

**n. anesthetist** ABBR: CRNA. A registered nurse who administers anesthesia to patients in the operating room and delivery room. The knowledge and skill required to provide this service are attained through an organized program of study recognized by the American Association of Nurse Anesthetists.

**certified emergency n.** ABBR: CEN. A nurse who has passed the examination administered by the Board of Certification of Emergency Nursing. To maintain certification as a CEN, a nurse must recertify every 4 years; a formal examination is required every 8 years, and continuing education credits can be submitted as proof of professional competence during alternate 4-year cycles.

**charge n.** A nurse who is responsible for supervising the nursing staff on a hospital or nursing home unit. This nurse reports to the nurse manager.

**circulating nurse** A nurse who participates in surgeries (for example): taking a preoperative history; educating the patient about the upcoming operation; monitoring the patient's vital functions; assuring the sterility of instruments in use; and making certain that operating room equipment is both available for the procedure and functioning well.

**clinical n. specialist** ABBR: CNS. A nurse with particular competence in certain areas such as intensive care, cardiology, oncology, obstetrics, or psychiatry. A clinical nurse specialist holds a master's degree in nursing, preferably with emphasis in clinical nursing.

**n. clinician** A registered nurse with preparation in a specialized educational

program. At present this preparation may be in the context of a formal continuing education program, a baccalaureate nursing program, or an advanced-degree nursing program. The nurse clinician is capable of working independently in solving patient-care problems and is able to teach and work successfully with others on the medical care team. The term was first used by Frances Reiter, RN, MA, Dean, Graduate School of Nursing, New York Medical College.

**community health n.** A nurse who combines the principles and practices of nursing and public health to provide care to the people in a community rather than in an institution.

**dental n.** A dental auxiliary trained to provide oral hygiene instruction and dental health care to school children. Formerly, the term applied to dental hygienists, but now it refers to persons trained according to a program developed in New Zealand.

**epidemiologist n.** A registered nurse with special training and certification in the prevention of hospital-acquired infections in patients. SEE: *infection control n.*

**flight n.** A nurse who cares for patients being transported in an aircraft.

**general duty n.** A nurse not specializing in a particular field but available for any nursing duty.

**graduate n.** A nurse who is a graduate of a state-approved school of nursing but has not yet passed the National Council Licensure Examination.

**head n.** Outdated term for nurse manager.

**health n.** A community or visiting nurse whose duty is to give information on hygiene and prevention of disease. SEE: *community health n.*

**home health n.** A nurse who visits patients in their homes to provide skilled nursing services, such as assessment and patient and family teaching.

**infection control n.** A registered nurse employed by an agency to monitor the rate and causes of nosocomial infections and to promote measures to prevent such infections.

**licensed practical n.** ABBR: LPN. A graduate of a school of practical nursing who has passed the practical nursing state board examination and is licensed to administer care, usually working under the direction of a licensed physician or a registered nurse.

**licensed vocational n.** ABBR: LVN. Licensed practical n.

**n. manager** A nurse who has responsibility for a unit within a hospital, nursing home, or ambulatory care setting. The nurse manager supervises staff performance and patient care.

**n. midwife** A registered nurse who

has completed specialized theory and clinical courses in obstetrics and gynecology and is certified by the American College of Nurse-Midwives. The nurse midwife's scope of practice includes providing primary obstetrical, neonatal, and preventive gynecological care to essentially healthy women and their normal newborns, usually in collaboration with an obstetrician-gynecologist.

**n. practitioner** ABBR: NP. A licensed registered nurse who has had advanced preparation for practice that includes 9 to 24 months of supervised clinical experience in the diagnosis and treatment of illness. The NP concept was developed in 1965 by Henry Silver, MD, and Loretta Ford, RN. Most contemporary NP programs are at the master's degree level; graduates are prepared for primary care practice in family medicine, women's health, neonatology, pediatrics, school health, geriatrics, or mental health. Nurse practitioners may work in collaborative practice with physicians or independently in private practice or in nursing clinics. Depending upon state laws, NPs may be allowed to write prescriptions for medications. SEE: *n. clinician; n. midwife; nursing, advanced practice.*

**prescribing n.** A nurse who is allowed to prescribe drugs. Certain states in the U.S. permit nurses to prescribe only certain types and classes of drugs; most states require that prescribing nurses work with a supervising or collaborating physician; and approval for prescribing is granted only to nurse practitioners.

**private duty n.** A nurse who cares for a patient on a fee-for-service basis, usually in an institution. The nurse is not a staff member of the institution.

**psychiatric n. practitioner** A registered nurse with advanced preparation who combines medical and nursing skills in the care and treatment of psychiatric or mental health patients.

**public health n.** Community health nurse with primary responsibility for the health concerns of large groups of individuals within a community.

**registered n.** ABBR: RN. A nurse who has graduated from a state-approved school of nursing, has passed the professional nursing state board examination, and has been granted a license to practice within a given state.

**school n.** A nurse working in a school or college who is responsible for the health of children, adolescents, and young adults in school.

**scrub n.** An operating room nurse who directly assists the surgeon, primarily by passing instruments and supplies.

**special n.** Private duty nurse.

**specialist n.** Clinical nurse specialist.

**visiting n.** Community health nurse with primary responsibility for individual patients in their homes.

**wet n.** SEE: *wet nurse*.

**nurse's aide, nurse aide** ABBR: NA. An individual who assists nurses by performing the patient-care procedures that do not require special technical training, such as feeding and bathing patients.

**Nurse Reinvestment Act** Public law 107-205, a federal law enacted in 2002 that creates incentives to enter or remain in the nursing profession. It provides funding to recruit students, retain nurses in current assignments, train nurse educators, and ensure the competency of nurses who care for the elderly.

**nursery** A hospital department in which the newborn are cared for.

**day n.** Day care center.

**nurse supply estimate** The number of licensed, registered nurses in active full-time practice, plus half the number of licensed nurses who work part-time. The estimate includes all associate, baccalaureate, and graduate level nurses.

**nurse-to-patient ratio** The number of nurses assigned to care for a patient, esp. in a hospital. Low nurse-to-patient ratios have been associated with a decrease in the quality of hospital care and an increase in complications in care.

**nursing** 1. The care and nurturing of healthy and ill people, individually or in groups and communities. The American Nurses Association identifies four essential features of contemporary nursing practice: attention to the full range of human experiences and responses to health and illness without restriction to a problem-focused orientation; integration of objective data with knowledge gained from an understanding of the patient or group's subjective experience; application of scientific knowledge to the processes of diagnosis and treatment; and provision of a caring relationship that facilitates health and healing. SEE: *nurse*. 2. Breastfeeding.

**advanced practice n.** Primary medical care provided by nurses who have been prepared as practitioners and are competent to provide that level of care. These practitioners may act independently or under the supervision of a physician.

**barrier n.** The use of special gloves, masks, and gowns to prevent contact between sources of infection and medical personnel caring for critically ill patients. Situations in which one would use these precautions include care of the patient with tuberculosis, gas gangrene, fulminant sepsis, and other highly contagious conditions.

**director of n.** ABBR: DON, DN. The nursing manager or chief executive officer.

**PROFESSIONAL ORGANIZATION:** The National Association of Directors of Nursing—Long-term Care (NADONALTC) addresses the needs of directors of nursing and assistant directors of nursing, and provides educational conferences.

**forensic n.** A subspecialty of nursing in which nurses participate in sexual assault examinations and other legal affairs affecting mental, occupational, and public health.

**geriatric nursing** The branch of nursing concerned with the care of the aged, including promotion of healthy aging, as well as prevention, assessment, and management of physiological, pathological, psychological, economic, and sociological problems. SYN: *gerontological n.*

**gerontological n.** Geriatric nursing.

**holistic n.** The art and science of caring for and nurturing the whole person. SEE: *holism*.

**nursing assessment** The systematic collection of all data and information relevant to the care of patients, their problems, and needs. The initial step of the assessment consists of obtaining a careful and complete history from the patient. If this cannot be done because the mental or physical condition of the patient makes communication impossible, the nursing history is obtained from those who have information about the patient and the reason(s) for his or her need of medical and nursing care. Obtaining an accurate and comprehensive history requires skill in communicating with individuals who are ill, including those who are reluctant or unable to share important life experiences and medical data. The skilled nurse will be able to obtain the essential information despite resistance. Next in the assessment is the physical examination of the patient in order to determine how the disease has altered physical and mental status. To do this requires that the nurse be capable of performing visual and tactile inspection, palpation, percussion, and auscultation and have knowledge of what represents deviation from the norm and how disease and trauma alter the physical and mental condition of a patient. After these two steps have been completed, the nurse will be able to establish a nursing diagnosis. SEE: *evaluation; nursing process*.

**nursing assistant** ABBR: NA. An unlicensed nursing staff member who assists with basic patient care such as giving baths, checking vital signs, bedmaking, and positioning. Nursing assistants usually must complete a training course, including classroom instruction and clinical practice under supervision. Each state regulates nursing



assistant practice. Nursing assistants who meet specified federal standards are referred to as certified nursing assistants (CNAs).

**geriatric n.a.** ABBR: GNA. An unlicensed caregiver who provides basic care needs, such as bathing and feeding, to residents in nursing homes or other health care facilities. According to federal regulations, GNAs must successfully complete at least a prescribed training course and register in the state in which they are practicing. Geriatric nursing assistants are a specially trained class of certified nursing assistants. SEE: *nursing assistant*.

**nursing association, nursing organization** Any professional nursing group which clarifies, researches, educates and promotes the cause of nurses and nursing.

**nursing audit** A procedure to evaluate the quality of nursing care provided for a patient. Established criteria for care are the yardstick for the evaluation. SEE: *nursing process; problem-oriented medical record*.

**nursing-bottle syndrome** Baby bottle syndrome.

**nursing care plan** The statement of the goals and objectives of the nursing care provided for the patient and the activities or tasks required to accomplish the plan, including the criteria to be used to evaluate the effectiveness and appropriateness of the plan.

**nursing diagnosis** The patient problem identified by the nurse for nursing intervention by analysis of assessment findings in comparison with what is considered to be normal. Nurses, esp. those involved in patient care, are in virtually constant need to make decisions and diagnoses based on their clinical experience and judgment. In many instances, that process dictates a course of action for the nurse that is of vital importance to the patient. As the nursing profession evolves and develops, nursing diagnosis will be defined and specified in accordance with the specialized training and experience of nurses, particularly for nurse practitioners and clinical nurse specialists. SEE: *nursing process; planning*.

**nursing dose** 1. The number of nurses in the work force divided by the population of the community at large. 2. The number of nurses available for clinical duties, divided by the quantity of those duties.

**nursing goal** A specific expected outcome of nursing intervention as related to the established nursing diagnosis. A goal is stated in terms of a desired, measurable change in patient status or behavior. Nursing goals provide direction for selection of appropriate nursing interventions and evaluation of patient progress.

**nursing history** The first step of the assessment stage of the nursing process that leads to development of a nursing care plan. Valuable information can be obtained from this history, and reactions to previous hospitalization can be recorded and utilized in managing the patient's care during the current stay.

**nursing home** An extended-care facility for patients who need continued health care, usually after a hospital stay. Nursing homes provide 24-hr nursing supervision, rehabilitation services, activity and social services, a safe environment, careful attention to nutritional needs, and measures to prevent complications of decreased mobility. In addition, some nursing homes have specialty units for patients with dementia, chronic ventilator support, or head injuries. Some nursing homes provide subacute units for patients who are not as medically stable as patients in the typical nursing home setting.

Most nursing homes are licensed and certified to provide an intermediate or skilled level of care or both. Medicare reimbursement is available for patients receiving skilled care in a skilled nursing facility (approximately 40% of nursing home payments come from state Medicaid funding for intermediate nursing home care).

Patients who are admitted to nursing homes are called residents. In the U.S. about 1.5 million people reside in nursing homes. The nursing home should provide a homelike environment for each resident. Residents vary from 18 to over 100 years of age. Many facilities support residents who stay for several days or weeks to receive rehabilitation services (e.g., for orthopedic surgeries and strokes). Other residents may remain in the nursing home for the remainder of their lives.

**PATIENT CARE:** Vaccination of health care workers in nursing homes against communicable diseases (e.g., hepatitis, influenza) decreases infections among the residents.

**nursing informatics** The use of computer science, information science, and nursing science to manage, process, and analyze nursing data, information, and knowledge to support the practice of nursing and the delivery of patient care.

**nursing intervention** In the nursing process, the step after planning. This step involves all aspects of actual caring for the patient and requires full knowledge of the assessment and planning stages of the nursing process. The goals of nursing intervention are stated in the planning step of the nursing process. Included in this step are patient care in the areas of hygiene and mental and physical comfort, including assistance in feeding and elimination; controlling

the physical aspects of the patient's environment; and instructing the patient about the factors important to his or her care and what actions to take to facilitate recovery. After the patient's acute and immediate needs are met, he or she should be instructed concerning actions that could be taken to help prevent a recurrence of the condition. SEE: *nursing process; planning; problem-oriented medical record.*

**Nursing Minimum Data Set** ABBR: NMDS. A standardized set of data identifying essential, common, and core data elements collected in all settings for any patients/clients receiving nursing care. They include the three broad elements of: nursing care, patient or client demographics, and service.

**nursing model** A conceptual model that refers to abstract and general ideas about human beings, their environments and health, and nursing. SEE: *conceptual models of nursing.*

**nursing process** An orderly approach to administering nursing care so that the patient's needs are met comprehensively and effectively. The object of health care is to provide comprehensive care of patients. Nursing is dedicated to this concept and, from the holistic viewpoint, has formalized the processes that contribute to the prevention of illness and the restoration and maintenance of health. In so doing, the traditional approaches used in problem solving have been used. Therefore the nurse needs skills in the following five areas to provide comprehensive care of patients:

1. *assessment*: the systemic collection of all data relevant to the patients, their problems, and needs;

2. *problem identification*: the analysis and interpretation of the information obtained during assessment that establishes the nursing diagnosis;

3. *planning*: the determination of individualized patient-centered goals and the optimum course of action to solve the problem;

4. *intervention*: determination of expected patient-centered outcomes, objective methods of evaluating patient progress toward the contributory goals, and optimum courses of action to resolve the problems identified and achieve the desired results;

5. *evaluation*: assessment of the effectiveness of the plan in terms of measurable progress toward established nursing goals and altering the approach and goals as needed.

SEE: *evaluation; nursing assessment; nursing intervention; planning; problem-oriented medical record.*

**nursing protocol** A specific written procedure that prescribes nursing actions in a given situation. Health agencies and physicians establish protocols to en-

sure consistency and quality of care. A protocol may describe mandatory nursing assessments, behaviors, and documentation for establishing and maintaining invasive appliances; methods of administering specific drugs; special-care modalities for patients with certain disorders; other components of patient care; lines of authority; or channels of communication under particular circumstances.

**nursing research** A formal, systematic, and rigorous process of inquiry used by nurses to generate and test the concepts and propositions that constitute middle-range nursing theories, which are derived from or linked with a conceptual model of nursing. The theories include: *Grand*: Health belief model; Transactional model of stress and coping; Life process interactive person-environment model; Roy's adaptation model; Interacting systems conceptual framework. *Middle-Range*: Theory of self-care deficit; Theory of health promotion; Theory of self-regulation; Theory of uncertainty in illness; Theory of acute pain management; Theory of families, children, and chronic illness. *Practice*: Theory of interpersonal relations; Theory of representativeness heuristic; Theory of communicative action; Theory of clinical reasoning in nursing practice; Theory of end-of-life decision making.

**nursing standards** The criteria established by professional nursing organizations that describe peer expectations for safe, competent, ethical performance of professional responsibilities. Documents such as the American Nurses' Association Standards of Clinical Practice and Standards of Professional Performance describe general behaviors expected of all professional nurses. Criteria established by specialty nursing organizations, such as the Standards for the Nursing Care of Women and Newborns developed by the Association of Women's Health, Obstetric, and Neonatal Nurses, contain both universal and specialty-specific expectations. Standards are used to develop nursing curricula and job descriptions and to evaluate nursing effectiveness and accountability. SEE: *Code for Nurses; standard of care.*

**nursing student** An individual enrolled in a school of nursing.

**nursing supervisor** A nurse responsible for an individual practice area, reporting to the nursing director or vice president. This position is also commonly seen in nursing home settings, where it may be called *house supervisor*.

**nursing theorist, nurse theorist** An individual who develops theories regarding the purpose, meaning, structure, and functions of the profession and discipline of nursing. SEE: *nursing theory.*

**nursing theory** A theory that describes, explains, or predicts a phenomenon of interest to nurses and nursing educators.

**NURSYS** A centralized nationwide nursing databank that contains information about nursing licensure.

**nutatation** (nū-tā'shūn) [L. *nutare*, to nod]

1. Nodding, as of the head. SEE: *nodding*. 2. A complex movement of the sacrum.

**nutgall** (nūt'gawl) A growth on certain oak trees produced by insect eggs and larvae. Gallic and tannic acids are obtained from these growths.

**nutraceutical, nutraceutical** (nū-trā-sēū'tī-kūl) Any food component used for medicinal purposes. Examples include minerals, vitamins, amino acids, and hormones. Rules for the sale and promotion of these agents have been set forth in the Dietary Supplement Health and Education Act of 1994.

**nutrient** (nū'trē-ənt) [L. *nutriens*]

Foods or liquids that supply the body with the chemicals necessary for metabolism. Essential nutrients are those entities that the body either cannot synthesize or cannot synthesize quantities sufficient to meet needs. Nutrients can be subdivided into the macronutrients, consisting of protein, carbohydrate, and fat; the micronutrients, which include vitamins and minerals; and water.

**nutrigenomics** The use of knowledge of an individual's genetic makeup to devise a personally appropriate eating strategy. Also known as "personalized nutrition."

**nutriment** (nū'trī-mənt) [L. *nutrimentum*, nourishment] That which nourishes; nutritious substance; food.

**nutrition** (nū-trī'shūn) [L. *nutritio*, nourish] 1. All the processes involved in the taking in and utilization of food by which growth, repair, and maintenance of activities in the body as a whole or in any of its parts are accomplished. Enteral nutrition includes ordinary oral ingestion of food and food supplements or tube feeding via nasogastric, pharyngostomy, gastrostomy, and jejunostomy tubes. The body is able to store some nutrients (glycogen, calcium, iron) for times when food intake is insufficient. Vitamin C is an example of a nutrient that is not stored. SEE: *total parenteral n.* 2. The professional discipline that includes both the scientific study and the practical use of nutrients in health. **nutritional** (nū-trīsh'ūn-əl), *adj.*

**enteral n.** Nutrition provided through a tube placed into the stomach or small intestine. This may be accomplished through a nasogastric tube, a percutaneous gastrostomy tube, or a jejunostomy.

**n.: less than body requirements, imbalanced** Intake of nutrients insuffi-

cient to meet metabolic needs. SEE: *Nursing Diagnoses Appendix.*

**n.: more than body requirements, imbalanced** Intake of nutrients that exceed metabolic needs. SEE: *Nursing Diagnoses Appendix.*

**partial enteral n.** Supplemental tube feeding or oral feeding of foods that are rich in protein, calories, and other nutrients to patients receiving partial parenteral nutrition. SEE: *enteral n.*

**partial parenteral n.** ABBR: PPN. Intravenous administration of nutrients to patients whose nutritional requirements cannot be fully met via the enteral route. An amino acid-dextrose solution (usually 10%) and a lipid emulsion (10% to 20%) are delivered into a peripheral vein through a cannula or catheter.


**n.: risk for more than body requirements, imbalanced** At risk for an intake of nutrients that exceeds metabolic needs. SEE: *Nursing Diagnoses Appendix.*

**total enteral n.** Enteral tube feeding. **total parenteral n.** ABBR: TPN. The intravenous provision of dextrose, amino acids, emulsified fats, trace elements, vitamins, and minerals to patients who are unable to assimilate adequate nutrition by mouth. Patients with many illnesses become malnourished if they are unable to eat a balanced diet for more than a few weeks. Patients who have been hospitalized for a prolonged period, have had no oral intake for several days, or have a cachectic disorder should be assessed for the need for nutritional support. However, only a small percentage of these patients clearly benefit from parenteral nutritional support in clinical trials. Patients who benefit most from TPN are those at the extremes of nutritional risk (e.g., preterm or newborn infants who require surgery or the 5% of adult surgical candidates who are the most nutritionally deficient). Patients who may occasionally benefit from TPN include those with inflammatory bowel disease, radiation enteritis, bowel obstruction, and related intestinal diseases. In many other patients, the anticipated risks of malnutrition and starvation are exceeded by the potential risks of TPN, which include injury during central line placement, sepsis as a result of infectious contamination of intravenous lines, and metabolic complications (e.g., refeeding syndrome).

Patients requiring 7 to 10 days of nutritional support may benefit from the administration of parenteral nutrition through a peripheral venous catheter. This method limits the caloric intensity of TPN to about 2300 kcal/day (about 900 mOsm/kg) because more concentrated formulas cause peripheral vein

inflammation. With central TPN, patients have been occasionally supported for several months with limited overt complications. The superior vena cava tolerates feedings of up to 1900 mOsm/kg. Typically, central TPN includes individually tailored amounts of dextrose, amino acids, lipids, vitamins, trace elements, heparin, insulin, and other substances. In patients with specific diseases, some nutrients may be limited, for example, sodium (in congestive heart failure), protein content (in liver failure), and potassium (in renal failure).

**PATIENT CARE:** The procedure is explained to the patient, and a nutritional assessment is obtained. Intake and output are monitored and recorded. The nurse assists with catheter insertion and observes for adverse effects, documents procedure and initial fluid administration, and continues to monitor fluid intake. The catheter insertion site is inspected and redressed every 24 to 48 hr according to agency protocol; a strict aseptic technique is used for this procedure. The condition of the site and position of the catheter are documented, and the catheter is evaluated for leakage; if present, this should be reported to the physician. Electrolytes are monitored. Vitamin supplements are administered as prescribed. The patient is observed for edema and dehydration. If diarrhea or nausea occurs, the infusion rate is slowed. Urine sugar and acetone tests are performed every 6 hr, and blood sugar levels are monitored as prescribed. Daily weights are obtained. The solution should never be discontinued abruptly but tapered off with isotonic glucose administered for several hours. In the event of catheter blockage or accidental removal, the physician should be notified immediately. Patients should be encouraged to ambulate. Some patients recuperating from long illnesses are released from the hospital with self-administered TPN until they are able to resume eating. These patients need to be taught how to use TPN in the home.

 Although TPN is often necessary, in most instances the best way to nourish a patient is by mouth or enterally (by intestinal tube). Oral and enteral feedings preserve the integrity of the intestinal mucosa, maintain a normal pH in the stomach, prevent the entry of bacteria into the body through the walls of the gastrointestinal tract, and are less expensive than parenteral nutrition.

**nutrition, readiness for enhanced** A pattern of nutrient intake that is sufficient for meeting metabolic needs and can be

strengthened. SEE: *Nursing Diagnoses Appendix.*

**nutritional adequacy** The relationship between intake of nutrients and individual requirements.

**nutritional preemption** The reduction of risk factors for disease by consuming a healthy or personally tailored diet.

**nutritional support** The giving of nutrients either by intravenous infusion (parenterally) or by drip feeding through a tube placed in the upper gastrointestinal tract (enterally).

**nutritious** (nū-trīsh'ūs) [L. *nutritius*] Affording nourishment.

**nutritive** (nū'trī-tīv) **1.** Pert. to the process of assimilating food. **2.** Having the property of nourishing.

**nux vomica** (nüks vòm'ī-kā) The poisonous seed from an East Indian tree that contains several alkaloids, the principal ones being brucine and strychnine.

**NWB** Non-weight bearing.

**nyct-** SEE: *nycto-*.

**nyctal-, nyctalo-** Combining forms meaning *night*. SEE: *nycto-*.

**nyctalgalia** (nik-tāl'jē-ā) [" + *algos*, pain] Pain occurring at night.

**nyctalopia** (nik-tā-lō'pē-ā) [" + *alaos*, blind, + *ops*, eye] **1.** Inability to see well in a faint light or at night. This condition occurs in retinitis pigmentosa and choroidoretinitis; it may also be due to vitamin A deficiency. Smoking tobacco may impair the ability to see at night. Hypoxia associated with being above sea level in an aircraft will also decrease night vision. SYN: *night blindness*. **2.** Incorrectly used to indicate the ability to see better at night or in semi-darkness than by day.

**nyctamblyopia** (nik'tām-blē-ō'pē-ā) [Gr. *nyx*, night, + *amblyopia*, poor sight] Reduction or dimness of vision at night without visible eye changes.

**nycto-, nyct-** (nik'tō) [Gr. *nyx*, night] Combining form indicating *night, darkness*.

**nyctohemeral, nycthemerus** (nik'tō-hēm'er-āl, nik-thēm'ē-rūs) Relating to both day and night.

**nycturia** (nik-tū'rē-ā) [" + *ouron*, urine] Nocturia.

**nylon** (nī'lōn) A synthetic polymer that can be formed into fibers, lines, sutures, sheets, and fabrics. It is used in a variety of medical applications, including nonabsorbable sutures.

**nymph** (nīmf) [Gr. *nymphē*, a maiden] The immature stage of insect development in which wings and genitalia have not fully developed.

**nymphomania** (nīm'fō-mā'nē-ā) [" + *mania*, madness] A colloquial term for excessive sexual desire or promiscuous sexual behavior by a female.

**nymphomaniac** (nīm'fō-mā'nē-āk) [" + *mania*, madness] A colloquial term for

a female perceived to behave in an excessively sexual manner.

**nystagmic** (nīs-tāg'mīk) [Gr. *nystagmos*, to nod] Relating to or suffering from nystagmus.

**nystagmiform** (nīs-tāg'mī-form) [ʹ + L. *forma*, shape] Resembling nystagmus.

**nystagmograph** (nīs-tāg'mō-grāf) [ʹ + *graphein*, to write] An apparatus for recording the oscillations of the eyeball in nystagmus.

**nystagmoid** (nīs-tāg'moyd) [ʹ + *eidōs*, form, shape] Resembling nystagmus.

**nystagmus** (nīs-tāg'mūs) [Gr. *nystagmos*, to nod] Involuntary back-and-forth or cyclical movements of the eyes. The movements may be rotatory, horizontal, or vertical and often are most noticeable when the patient gazes at objects moving by rapidly or at fixed objects in the peripheral field of view.

ETIOLOGY: Lesions of the labyrinth, vestibular nerve, cerebellum, and brainstem commonly produce rhythmic eye movements. Drug intoxications (e.g., with alcohol or phenytoin) also may be responsible.

**aural n.** Nystagmus due to a disorder in the labyrinth of the ear. Eye movement is spasmodic.

**Cheyne's n.** Rhythmic nystagmus that resembles the rhythm of Cheyne-Stokes breathing.

**convergence n.** Slow abduction of eyes followed by rapid adduction.

**dissociated n.** Nystagmus in one eye that is not synchronized with that in the other eye.

**end-position n.** Nystagmus that occurs when eyes are turned to extreme positions. It may occur normally in debilitation or fatigue, or it may be due to pathology of the subcortical centers for conjugate gaze.

**fixation n.** Nystagmus that occurs only when the eyes gaze at an object.

**gaze-evoked n.** Nystagmus upon holding the eyes in an eccentric position. It is due to dysfunction of the brainstem, or it may be caused by drugs such as sedatives or anticonvulsants. The direction of the nystagmus may change when the individual is fatigued or returns fixation to the primary position. This is called *rebound nystagmus*.

**jerk n.** Rhythmic nystagmus.

**labyrinthine n.** Nystagmus due to disease of the labyrinthine vestibular apparatus.

**latent n.** Nystagmus that occurs only when one eye is covered.

**lateral n.** Horizontal movement of the eyes from side to side.

**miner's n.** Nystagmus occurring in those who work in comparative darkness for long periods.

**optokinetic n.** A rhythmic jerk nystagmus occurring when one is looking at constantly moving objects (e.g., viewing telephone poles from a moving car or train).

**pendular n.** Nystagmus characterized by movement that is approx. equal in both directions. It is usually seen in those who have bilateral congenital absence of central vision or who lost it prior to the age of 2 years.

**postrotatory n.** A form of vestibular nystagmus that occurs when the body is rotated and then the rotation is stopped. If, while sitting upright in a chair that can be swiveled, the body is rapidly rotated to the right, the nystagmus during rotation has its slow component to the left. When the rotation stops, the slow component is to the right. Stimulation of the semicircular canals causes this type of nystagmus, and it is a normal reaction.

**rebound n.** Gaze-evoked nystagmus.

**retraction n.** Nystagmus associated with the drawing of the eye backward into the orbit.

**rhythmic n.** Nystagmus in which the eyes move slowly in one direction and then are jerked back rapidly. SYN: *jerk n.*

**rotatory n.** Nystagmus in which eyes rotate about the visual axis.

**seesaw n.** Nystagmus in which the inturning eye moves up and the opposite eye moves down, and then both eyes move in the opposite direction.

**vertical n.** Involuntary up-and-down ocular movements.

**vestibular n.** Nystagmus caused by disease of the vestibular apparatus of the ear, or due to normal stimuli produced when the semicircular canals are tested by rotating the body. SEE: *postrotatory n.*

**voluntary n.** A rare type of pendular nystagmus in persons who have learned to oscillate their eyes rapidly, usually by extreme convergence.

**nystaxis** (nīs-tāk'sīs) [Gr.] Nystagmus.

**Nysten's law** (nē-stānz') [Pierre Hubert Nysten, Fr. pediatrician, 1774–1817] A law stating that rigor mortis begins with the muscles of mastication and progresses from the head down the body, affecting the legs and feet last.

**nyxis** (nik'sīs) [Gr.] Puncture or piercing. SYN: *paracentesis*.

**NZB mouse** SEE: *mouse, New Zealand black*.