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PELV

ZYME
INDEX

P

PELVIS, the bony basin at the bottom of the trunk which joins the lower spine and the thigh bones. The gaps in the two pelvic bones are closed with attached muscles and membranes. The pelvic cavity contains the sexual organs.

The female pelvis requires special examination in pregnancy to determine whether it is large enough for normal childbirth or so contracted that a Cesarean section is necessary. The measurements are taken by *pelvimetry*, using an

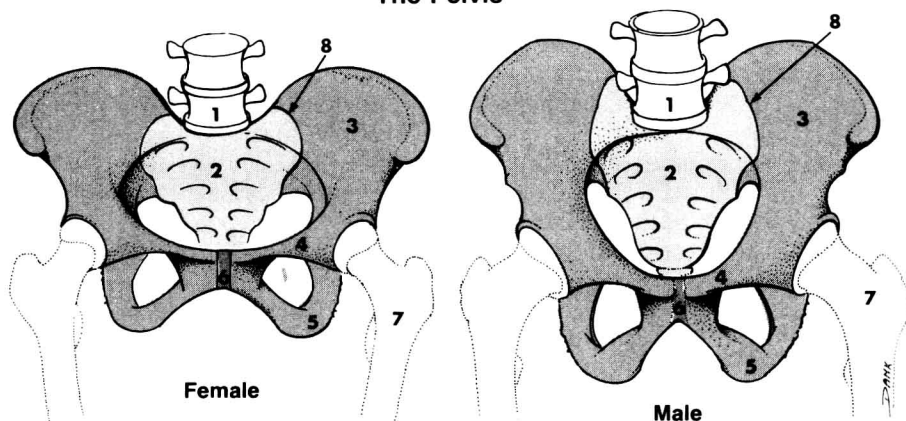
instrument shaped like calipers to measure the front-to-back and lateral diameters.

Pain in the back part of the female pelvis is usually attributable to uterine disorders. The cramps of *dysmenorrhea* (painful and difficult menstruation) are often relieved by rest in bed, hot drinks, and use of a heating pad. Severe pelvic pain does not respond to aspirin and may require a prescription analgesic. *See also* SKELETAL SYSTEM.

Pelvis—This important framework of the body includes the ilium, ischium and pubis sections of each hip bone, plus the sacrum and coccyx at the bottom of the spinal column. The ilium and sacrum are joined at the sacroiliac, a joint receiving great stress from the body's weight push-

ing down and the legs and pelvis pushing up. In addition to the sexual organs, the pelvic cavity contains the rectum and bladder. The acetabulum of each hip bone is the depression into which the thigh bones fit. This attaches the legs to the trunk and forms the hip joints.

The Pelvis



- | | |
|------------------------|---------------------|
| 1. 5th Lumbar Vertebra | 5. Ischium |
| 2. Sacrum | 6. Symphysis |
| 3. Ilium | 7. Femur |
| 4. Pubis | 8. Sacroiliac Joint |

PEMPHIGUS, a rare acute or chronic skin disease characterized by successive crops of large blisters, cause unknown. The complications are infection of the blisters and thickening and shedding of the surface cells (*acanthosis*).

Formerly almost all victims died of the disease. The drugs *cortisone* and *ACTH* have revolutionized the treatment of pemphigus. For treatment of infected blisters, *tetracycline*, a broad-spectrum antibiotic, is generally used. Most victims are bedridden and their skin must be protected from friction against rough sheets, sometimes by continuous immersion in a bath. Large blebs are punctured with a sterile needle and itching may be relieved by a *benzocaine* or *dibucaine* ointment. *See also* BLISTERS.

PENICILLIN, the first and still most widely used antibiotic, discovered by Sir Alexander Fleming through a laboratory accident. Its various forms are specific for the germs of blood poisoning, pneumonia, meningitis, infection of the heart lining, septic sore throat, boils, syphilis, gonorrhea, and other bacterial diseases. Penicillin is derived from a bread mold. *See also* ANTIBIOTICS; INFECTION.

PENIS, the male sexual and urinary organ that transports semen from the prostate and ejaculatory ducts to the vagina and ejects urine from the bladder through the urethral tube.

The penis is composed of three columns of erectile tissue which become hard and erect when filled with blood as occurs during sexual excitement. The two larger columns—which erect the penis for the sexual act—are called the *corpora cavernosa*; the smallest column—which surrounds the urethra—the *corpus spongiosum*. The conical cap at the end of the penis—the *glans*—is partitioned from the corpora cavernosa behind by a ring, and covered in front by the loose *foreskin* (*prepuce*). The operation of *circumci-*

sion (removal of the foreskin) is performed as a religious rite shortly after birth in some cultures and also for hygienic reasons.

There are two congenital malformations of the penis: *hypospadias*, in which the urinary opening is on the under side of the penis; and *epispadias*, in which it occurs on top. The penis is vulnerable to such venereal diseases as *gonorrhea*, the hard chancre of *syphilis*, and chancre; all are preventable by venereal prophylaxis, and all can be cured with antibiotics. *See also* CHORDEE; CIRCUMCISION; EJACULATORY SYSTEM; FORESKIN; IMPOTENCE; PRIAPISM; REPRODUCTIVE SYSTEM; URETHRA; URETHRITIS and **medigraphs** GONORRHEA; STERILITY; SYPHILIS; TRICHOMONAS; UNDESCENDED TESTICLES.

PEP PILLS, *amphetamines* used for artificial stimulation. Taken in excessive dosage, they produce excitement and an abnormal sense of well-being. *See also* **medigraph** AMPHETAMINE ABUSE.

PEPSIN, an enzyme secreted by the mucous membrane of the stomach which digests protein. *See also* DIGESTION.

PEPTIC ULCER, an ulcer of the *stomach* or *duodenum*. The duodenum is the first 10 inches (25.4 centimeters) of the small intestine. About one person in ten gets an ulcer of this sort. It is four times as frequent in men as in women, is likely to afflict someone between 20–40 and reaches its highest incidence in people between 45–55. The duodenum is involved ten times more often than the stomach.

Nervous tension—producing an excessive secretion of hydrochloric acid—is believed to be the most important cause of ulcers. Contributory causes include irregular eating habits, lack of rest, and excessive smoking and drinking. In addition, certain drugs, including aspirin, tend to precipitate a peptic ulcer.

The key symptom is intermittent gnaw-

ing pain in the upper abdomen after eating, lasting from one-half to several hours or until relieved by food or an antacid. Often, the pain strikes between midnight and 3 A.M. Associated symptoms include nausea, vomiting, loss of appetite, constipation, and anemia when the ulcer bleeds extensively.

The principal complication is bleeding, appearing as bloody or tarry stools. *Occult blood* in the stools—obscure blood that is not visible—can be found by a simple chemical test. Sometimes the amount of blood lost is sufficient to cause *anemia*. Other complications are perforation of the ulcer with shock and internal hemorrhage; obstruction from contraction of the walls surrounding the ulcer; jaundice due to obstruction of the bile ducts; and the postoperative *dumping syndrome*, in which food and liquid are evacuated rapidly into the small intestine, distending the bowel and causing nausea and abdominal distress 20–30 minutes after eating.

The most important part of treatment is rest and relaxation, including tranquilizers and sedatives when needed (but never reserpine). To diminish the acid secretion in the stomach, *belladonna* or its alkaloid *atropine* are commonly prescribed. The diet must exclude alcohol, spices, cabbage, lettuce, coffee, tea and other irritants. The *Sippy diet*, consisting of a milk-cream mixture every hour or two and before retiring, has been modified to include eggs, toast, cereal, crackers, strained fruits and vegetables and supplements of the recommended daily allowances of essential vitamins and minerals. An antacid provides immediate temporary relief of pain. Sodium bicarbonate acts fastest but its use is followed by an acid rebound. Other substances help protect the ulcer and surrounding area against the acid gastric juice. When such measures do not help, an operation called *gastroenterostomy* is performed, linking the stomach to a part of the small intestine

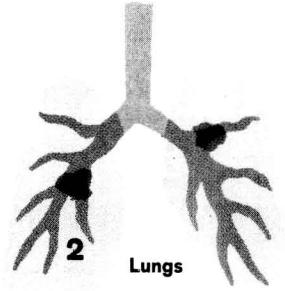
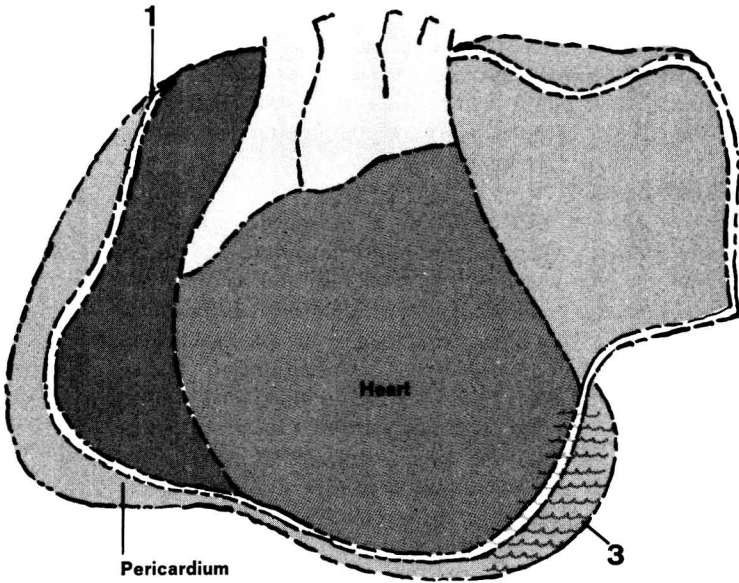
and thereby by-passing the ulcer area and allowing it to heal in the absence of the irritating hydrochloric acid. *See also* ABDOMINAL PAIN; ALUMINUM HYDROXIDE; DUMPING SYNDROME; DUODENUM; JEJUNAL ULCER; STOMACH; ULCERS *and* **mediographs** GASTRITIS; ULCERS OF THE DIGESTIVE TRACT.

PERCUSSION, a diagnostic procedure whereby the physician places a finger over a part of the chest wall or other organ and taps it sharply with a finger of the other hand, thereby producing a sound comparable to a light drumbeat. A resonant sound—over the lung, for example—indicates adequate or excessive air beneath the area; a dull or flat sound indicates an airless area. The liver and spleen areas may be outlined by their overlying flat note as compared with the resonance of the intestinal area which is inflated with gas. The size of the heart may be outlined by its flat-note area on percussion as contrasted with the resonant lungs. The physician learns by experience the degree of resonance and flatness which follows the customary percussion technique. *See also* DIAGNOSIS.

PERFORATED EARDRUM, usually the result of rupture or surgical incision to drain pus, following a middle ear infection. Before the advent of penicillin, perforations of the eardrum were common. They impair hearing in the affected ear and also disturb swimmers by permitting water to accumulate in the middle ear cavity, causing dizziness. *See also* EAR.

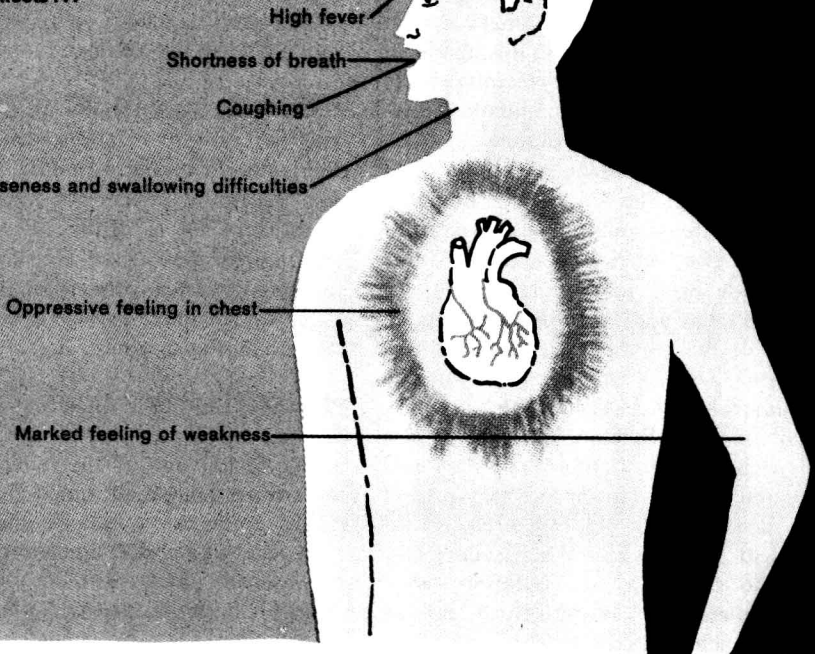
PERIARTERITIS NODOSA, a disease of the small and medium-sized arteries with inflammation of the outer coats of the arteries and small lumps and hemorrhagic areas. Its cause is unknown. It may occur at any age, tends to recur, and is frequently fatal when the affected arteries break down. *See also* POLYARTERITIS NODOSA.

Pericarditis



1. Inflammation of outside sac (pericardium) which encloses heart
2. Usually result of infection elsewhere in body—cold, flu, pneumonia, TB, rheumatic fever, etc.
3. Fluid may collect. Its pressure may impede normal heart movements

If Fluid Collects ...



PERICARDITIS

PERICARDITIS IS AN inflammation of the *pericardium*, the membranous sac in which the heart is enclosed. The pericardium is composed of two layers separated by a capillary space in which a thin film of lubricating fluid assists the heart in moving freely in relation to contiguous structures. The outermost pericardial layer is made up of fibrous tissue. Thus, inflammation may involve the accumulation of fluid, or it may be dry and fibrinous, leading to a hardening and scarring of tissue.

causes

Acute pericarditis is usually a result of bacterial infection elsewhere in the body, such as pneumonia, osteomyelitis, or lung abscess; of a specific heart disorder; or a circulatory disorder, such as coronary thrombosis. It may accompany a tumor or be the consequence of a chest wound. *Nonspecific pericarditis* is a primary infection by a virus. Either of these forms of the disease may be "wet" and characterized by fluid accumulation, or "dry" and fibrinous. In *chronic pericarditis*—which is usually *constrictive* and may follow acute pericarditis or be associated with tuberculosis—fibrous deposits and adhesions form to constrict the space surrounding the heart and interfere with its movement. The accumulation of fluid between the pericardial layers in other forms of the disease also impedes heart action.

symptoms

Although symptoms of acute pericarditis vary with the underlying cause, almost all cases involve chest pains and shortness of breath. Pain may also spread to the back, shoulders and abdomen. A persistent cough is not uncommon. In constrictive pericarditis, there is also swelling of the ankles, liver enlargement and bulging of the veins in the neck.

treatment

The treatment for acute pericarditis is directed at the underlying disorder. Since this is likely to be caused by bacteria, antibiotics are prescribed, together with aspirin to relieve pain and bed rest to ensure recovery of normal strength. Nonspecific pericarditis involving fluid accumulation may respond favorably to cortisone therapy, although in some cases, it is necessary to drain the fluid by a surgical procedure that punctures the chest wall with a needle. Treatment for constrictive pericarditis involves surgical removal of the surrounding scar tissue to reestablish free movement for the heart.

PERICARDIUM, the tough membranous sac surrounding the heart and large arteries and veins. It lies behind the breastbone, the cartilages of the 3rd–7th ribs on the left side, and occupies a large part of the *mediastinum* (space between the two lungs). See also **medigraph** PERICARDITIS.

PERICHONDritis, inflammation of the membrane which covers the surface of a *cartilage*.

PERINATAL MEDICINE, *perinatology*, the specialization concerned with care of the unborn and the newborn, from conception through the first four weeks of life—and as much as the first year and beyond, if necessary. Special emphasis centers on high-risk mothers-to-be, the critically ill or premature newborn, and the detection, treatment and possible prevention of birth defects.

Mothers considered at high risk are the poor and very young (as they are often malnourished), those who have had previous pregnancies end in spontaneous abortion or miscarriage, the drug addicted (in addition to the handicaps from their mothers' poor health, addicts' babies

are often born with the addiction and must undergo withdrawal in their first days of life), those with infectious diseases such as gonorrhea, and women whose families have a history of an inherited disease or abnormality.

Good nutrition is stressed in prenatal care so that the unborn child will receive the nourishment so crucial to physical and mental development during the nine months of gestation. Since low birth weight (less than five-and-a-half pounds) is the basic or contributing cause of half the infant deaths in the United States, inadequate or faulty diet during pregnancy—and even before conception—is one of the chief targets of perinatal medicine. Other important concerns include determining as early in pregnancy as possible the possibility of multiple birth, Rh factor incompatibility between the baby's and the mother's blood, the need for Cesarean delivery, or premature birth. A growing number of nurses certified as midwives are further aiding perinatal medicine's efforts to reach *all* pregnant

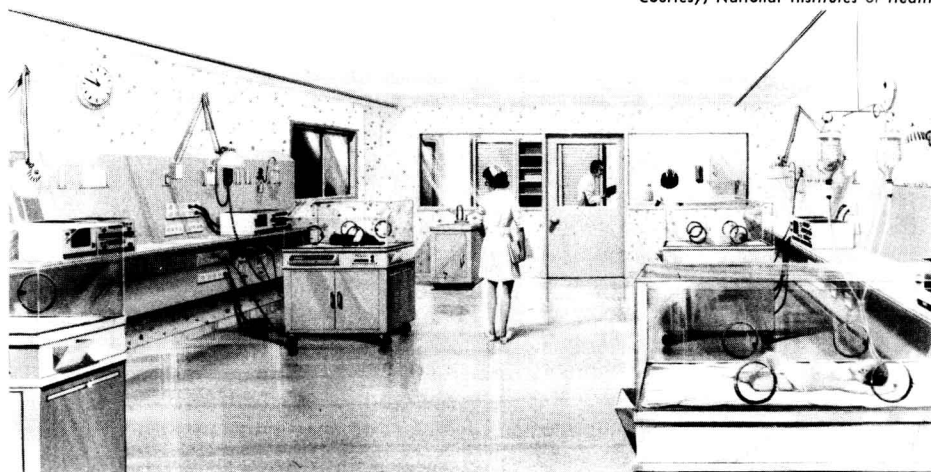
women with proper educational and medical services.

In addition to research and various forms of therapy, an important part of the fight to control birth defects is the program of genetic services and counseling, which seeks to provide and interpret information for prospective parents or pregnant women who risk having a child with some birth defect because of family history, evidence that one or both parents are carriers of an inheritable disease, or advanced maternal age. Prenatal diagnostic studies through x-ray, ultrasound, blood tests and amniocentesis (withdrawing a small amount of the amniotic fluid surrounding the fetus in the uterus for analysis) can now detect the presence (or assure the absence) of many defects, and at least a few disorders can be treated and corrected while the child is still in the womb. Where pregnancy has not yet occurred, tests can identify carriers of nearly 60 distinct metabolic defects enabling couples to make the choice not to have children if

Perinatal Medicine—Specialized care of high-risk newborn infants and research into their disorders is a major concern of perinatal medicine. This nursery is part of a center designed to offer maximum services in those areas. The room has

no windows, lighting is controlled in intensity, and air quality, temperature and humidity are carefully controlled. Each incubator is equipped to continuously monitor an infant's heart rate, body temperature and lung function.

Courtesy, National Institutes of Health





Courtesy, National Institutes of Health

Perinatal Medicine—A researcher observes a premature infant asleep on an oscillating waterbed. Waterbeds significantly reduce the temporary stop-breathing episodes common in premature babies. They were designed to compensate for the stimulation of floating in the uterus that an infant is deprived of by premature birth. Water in the bed is kept warm with a heater.



Courtesy, National Institutes of Health

Perinatal Medicine—Analysis of fetal cells in amniotic fluid can reveal the presence of many genetic disorders before birth. In a procedure called amniocentesis, a long needle penetrates the woman's abdomen and into the uterus. A small sample of the fluid surrounding the fetus is then withdrawn for testing. Amniocentesis is performed 12–14 weeks after conception.

there is a strong possibility that a seriously incapacitating or potentially fatal disease or abnormality might be passed on to a child. *See also* BIRTH DEFECT; GENETIC COUNSELING; PREGNANCY.

RESEARCH REPORT follows ASTHMA; HYPOTHERMIA; THALASSEMIA.

RESEARCH REPORT

○ HEPATITIS B IN THE NEWBORN PREVENTED BY ANTIBODY TREATMENT ○

- Antibody treatment within 2–6 days after birth of four infants whose mothers had hepatitis prevented the chronic infection of the newborn, according to physicians at the UNIVERSITY OF COLORADO MEDICAL CENTER. The infants who were treated with

- the specific human antibody to the hepatitis antigen revealed no sign of the disease antigen in tests conducted until they were 16 months old. ○
- The Denver doctors suggest that the reservoir of chronic hepatitis B virus infections would be reduced if pregnant women were tested at term so that the offspring of antigen-positive mothers could be given prompt prophylactic antibody treatment. NIH425 ○

PERINEPHRITIC ABSCESS, an abscess located in the tissues surrounding the kidney. *See also* KIDNEY.

PERINEUM, the part of the body located in the pelvic outlet which is bounded in front by the arch of the two pubic bones, behind by the coccyx, and at the sides by the two large bony prominences

surmounted by the buttocks. In the male, it is occupied by the root of the penis and the rectal opening; in the female, by the vaginal opening, the root of the *clitoris* (sensitive sexual organ), and the urinary and rectal openings.

In difficult childbirth, the perineal muscles and membranes are often torn and must be sewn up by the obstetrician. Such tears, unless repaired, may cause trouble later, particularly in subsequent child-births. *Perineal tears* can frequently be prevented by an operation before delivery of the child called *episiotomy*, in which the size of the vaginal opening is enlarged by surgical incisions, which heal faster than perineal tears. *See also* EPISIOTOMY.

PERIODIC DISEASE, one that recurs at more or less regular intervals. In *ter-tian malaria*, the paroxysms occur every other day; in *quartan malaria*, every third or fourth day.

PERIODIC SYNDROME, a set of char-acteristic symptoms recurring together at more or less regular intervals—for ex-ample, the symptoms of peptic ulcer such as the pain after meals.

PERIODONTAL DISEASE, a disorder affecting the tissues that surround the teeth, specifically the gums. *Gingivitis* and *pyorrhea* are the two most common afflictions. *See also* DENTISTRY; TEETH.

PERIPHERAL ARTERIOSCLEROSIS

THIS IS A CONDITION in which the nar-rowing of the walls of the arteries blocks the nourishing blood supply to the legs, thus impairing their function.

causes

Peripheral arteriosclerosis (also known as *arteriosclerosis obliterans*) is a degen-erative disorder that accompanies aging.

RESEARCH
REPORT

○

CONNECTION ESTABLISHED
BETWEEN INFLAMED GUMS
AND BONE LOSS

○

○

A better understanding of the proc-
esses that culminate in *periodontal*
disease and the resulting loss of teeth
is provided by new evidence that the
inflammation of gum tissue is directly
related to the destruction of bone
tissue. Scientists sponsored by the
NATIONAL INSTITUTE OF DENTAL RE-
SEARCH have shown that a substance
called *prostaglandin E* (PGE), one of
a family of fatty acids manufactured
in the tissues, occurs at high levels in
inflamed gums, and when cultured in
tissue, PGE can cause bone to disap-
pear or resorb.

○

○

Other related experiments indicate
that the activation of *complement* at
the surfaces of certain cells can
trigger PGE synthesis which then
destroys bone. Complement is a
family of proteins that act in series.
Activation, which is triggered by anti-
body-antigen complexes, results in
various immunological responses, in-
cluding the destruction of certain
cells.

○

○

When the researchers cultured rat
bones with complement inactivated
by heat or deficient in one compo-
nent, they found no increase in PGE
or in bone loss. Since this type of
bone loss differs from that which is
caused by hormone imbalance, these
recent findings may provide a new
approach to some types of arthritis
and other diseases of bone and con-
nective tissue.

○

NIH914

It is often related to diabetes, overweight and other factors that result in hardening of the arteries, such as fatty diet and insufficient exercise.

symptoms

Stiffness of the leg muscles, cramps in the calves (especially during the night) and discomfort caused by cold feet are among

Peripheral Arteriosclerosis (Arteriosclerosis Obliterans)



Affected leg turns pale when exposed to cold or when elevated.

If then allowed to hang down, turns (1) Blue, then (2) Red.



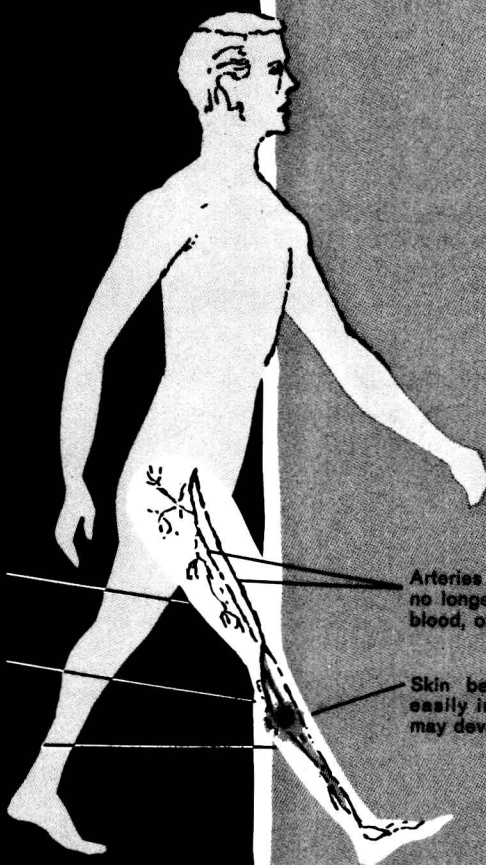
Affected leg is colder than other one.

Exercise causes pain in calf (claudication).

Shooting pains up and down leg sometimes occur at night.

Arteries to leg narrow—can no longer bring in sufficient blood, oxygen, food.

Skin becomes thin, shiny, easily infected. Gangrene may develop.



the common signs. If one leg is more affected than the other, it is likely to be paler and slightly bluish in skin tone than the healthier leg. The skin texture itself changes, becoming thin and shiny.

complications

Ulceration may result from even a minor wound or injury. Skin infections are harder to control; neuritis and accompanying pain may develop. If the condition becomes so acute that the blood supply to the tissues is too low, gangrene may occur, necessitating amputation.

treatment

Although there is no overall cure for the condition, there are several ways in which it can be relieved. Surgery can redirect blood supply to less obstructed blood vessels in the legs. Rest and relaxation combined with prescribed diet and exercise can sometimes prevent the arterial hardening from becoming acute. Properly fitted footwear is essential if further circulatory constriction is to be avoided. Feet should be protected from cold and damp, and any infection in the area must be brought to a doctor's attention without delay.

PERISTALSIS, the wormlike series of movements of the 23 feet of small intestine, beginning usually after a meal, which propels the liquefied food to the colon. Often, one is conscious of the peristaltic movement, which may produce a gurgling sound. When peristalsis is excessive, the colon becomes irritable; when it is deficient, *atonic constipation* may

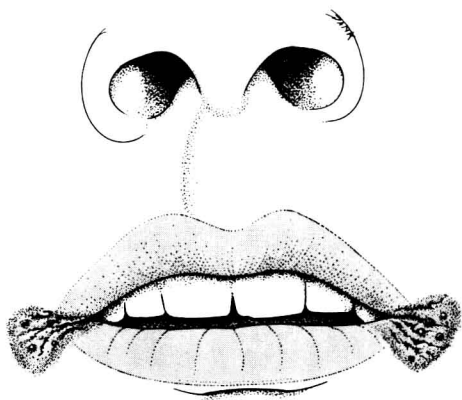
result. Peristalsis is promoted by raw vegetables, fruits and bulk laxatives and inhibited by certain drugs. *See also* DIGESTION.

PERITONEUM, the membrane which lines the abdominal walls and surrounds the contained organs. *See also* ABDOMEN; PERITONITIS.

PERITONITIS. *See* APPENDICITIS AND PERITONITIS.

PERLECHE, inflammation at the corners of the mouth with resulting *fissures*, common in children. It can be due to a deficiency of vitamin B₂ (*riboflavin*), often complicated by secondary infection with a fungus. The treatment is with therapeutic doses of vitamin B₂ and locally with a fungicide. *See also* CHEILOSI.

Perleche



Perleche—The sores caused by this disease are often invaded by fungus infections.

PERNICIOUS ANEMIA

PERNICIOUS ANEMIA is a form of anemia in which the stomach does not secrete the substances essential for the absorption of vitamin B₁₂, without which red blood cells fail to mature properly in

the bone marrow. The disease, which rarely occurs before the age of 35, appears to have a hereditary tendency. It is more common among persons of northern European origin who are blue-eyed

Pernicious Anemia

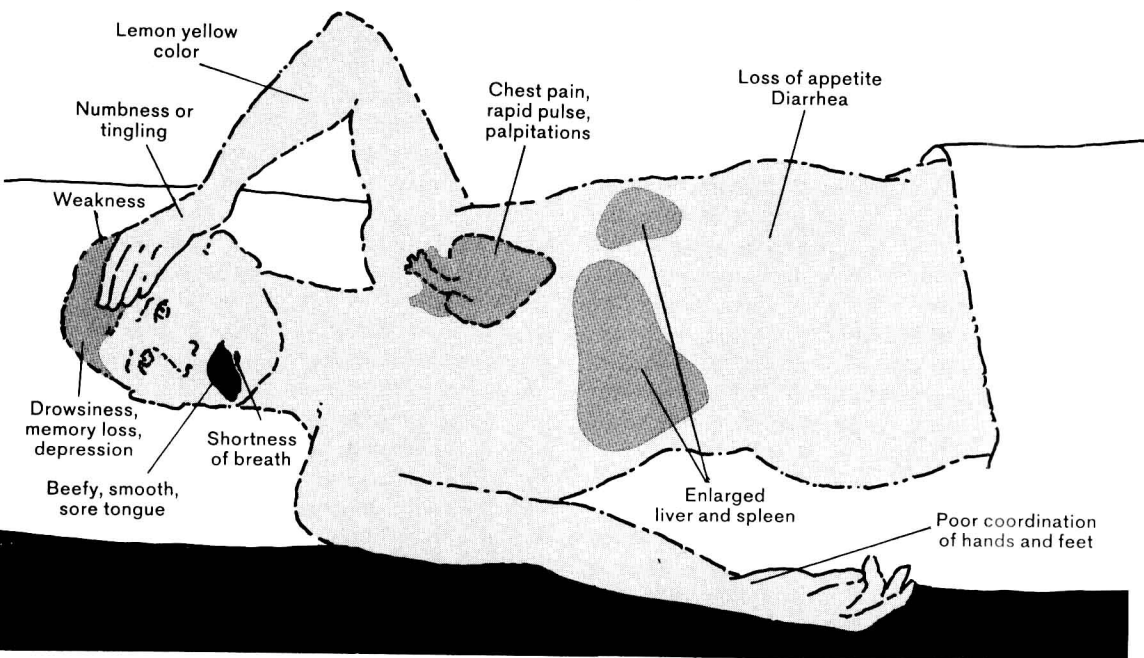
(Lack of red blood cells)

Disease most likely to occur among people who are middle aged, fair haired, blue eyed, prematurely gray

Normal person's stomach produces "intrinsic factor"—responsible for absorption of vitamin B12, which promotes formation of adequate supply of red blood cells

Pernicious anemia victim produces no "intrinsic factor"—and red blood cells inadequate in quantity or quality

Frequent Symptoms



and fair-haired than among a random selection of the population. Some cases are mild enough to be without symptoms (*asymptomatic*); others are fatal if untreated.

causes

The underlying cause of pernicious anemia is assumed to be a genetic disability of the autoimmune system involving faulty antigen-antibody response. The immediate cause is a failure of the stomach to secrete hydrochloric acid and the so-called *intrinsic factor* essential for the normal manufacture of red blood cells. Sometimes the deficiency disease results from extreme vegetarianism or from adherence to a diet completely lacking in vitamin B₁₂.

symptoms

Fatigue, breathlessness, palpitations and loss of appetite slowly become apparent. A typical indication of the disease is thickening and soreness of the tongue which becomes smooth, red and beefy-looking. The skin turns pale yellow. The victim becomes depressed, and memory loss combines with drowsiness to produce an effect of withdrawal from reality.

complications

If the disease is not diagnosed by blood tests and the deficiency goes uncorrected, complications occur which involve the nervous system. Vitamin B₁₂ is essential for the preservation of the *myelin sheath* that covers the nerve fibers, and when this sheathing deteriorates, the victim experiences various neurological disorders beginning with tingling in the extremities and leading to loss of the sensations of pain and touch.

treatment

Pernicious anemia was truly a pernicious (fatal) disease until the 1920's when it was discovered that symptoms were relieved by feeding victims large amounts

of liver and liver extract. Today, the disorder is simply and successfully treated by replacement doses of vitamin B₁₂ injected intramuscularly. After the more acute symptoms have been reduced by large doses, injections are usually administered once a month for the person's lifetime. No other medications, special diets, or restriction of activities are necessary for the person's well-being.

PERNIO. See CHILBLAINS.

PEROXIDE, hydrogen peroxide solution, local antiseptic for application to minor cuts, scratches and abrasions, also used in dilution as a hair bleach. Its usefulness depends on the release of oxygen, which destroys microbes. Diluted with an equal volume of water, it is employed as a gargle for minor sore throat. Diluted with one or more parts of water, it serves as a vaginal douche. See also ANTISEPTICS.

PERSONALITY, the totality of an individual's characteristics as they concern his relations with others. The personality is of special importance to psychiatrists. A warm outgoing personality indicates an *extrovert*, which in extreme degree may be a *manic* symptom. A cold overcautious personality indicates an *introvert*, which when excessive indicates a suspicious nature and may possibly be a *paranoid* symptom. A grandiose personality suggests an *inferiority complex*, compensated for by a tendency toward exaggerated self-esteem. A *dual personality* (the Dr. Jekyll-and-Mr. Hyde type) is an alternation between a truly kind personality and an evil attitude springing from the subconscious mind. An *aggressive personality* is manifested by temper tantrums and harsh words or threatening gestures; an *inadequate personality*, by lack of social and emotional adaptability, ineptitude, poor judgment, and lack of physical and emotional stamina; a *neurotic personality*, by an evasive manner in meeting

situations; and a *schizoid personality*, by a split mentality, seclusiveness, introversion, emotional indifference, and unsociable behavior. A person's true personality is largely manifested by his facial expressions in relation to the topic of conversation. *See also* BEHAVIOR; EMOTION; MENTAL HEALTH; NEUROSIS; PARANOIA; SCHIZOPHRENIA.

PERSPIRATION, *sweat*, composed of water (98–99 percent), salt, urea, and small amounts of other ingredients excreted from the body. The cooling effect of sweat evaporated on the skin helps regulate the body temperature. Perspiration is secreted by the sweat glands situated in the deepest of the several skin layers and reaching the surface through corkscrew-shaped ducts. The areas which sweat most profusely are the palms of the hands, the soles of the feet, and the armpits. The amount of water exuded in the sweat daily is about 1–1½ pints—more in hot weather and in the tropics. The chemical reaction is normally acid, alkaline when profuse.

Sensible perspiration can be seen and felt on the skin as wetness and small beads; *insensible perspiration* evaporates before it has time to show dampness. Profuse perspiration produces thirst due to loss of water and also fatigue and weakness due to loss of salt. Both must be replaced. Normally, perspiration is increased by nervous excitement and reduced by cold. During an exciting activity, such as watching a football game, the amount of sweat may increase as much as 50 percent. Sweating under intensive questioning was one of the signs used by witch doctors in detecting guilty natives, related to the cold sweat of fear. Sudden chilling of the body while sweating profusely—for example, as when suddenly exposed to the draft from an air conditioner without drying the skin beforehand—causes a sudden lowering of the body temperature.

Bromhidrosis (*bromidrosis*, B.O.) is a condition in which excessive perspiration has an offensive odor. Sweat itself has no odor, but it dissolves fats on the skin to form odorous acids. *Chromidrosis* is a rare disorder in which the sweat turns black, blue, green, red and yellow. Authorities believe it is caused by an infection with specific microorganisms. *Anhidrosis* is a condition in which sweating is absent or deficient.

Certain diseases cause excessive sweating. These include tuberculosis (which causes night sweats), malaria, rickets, hyperthyroidism, rheumatoid arthritis, rheumatic fever, migraine, and fevers in the stage when the temperature falls. Spicy foods, certain drugs and drug withdrawal induce perspiration, belladonna and atropine check it. Sweaty feet contribute to the growth of fungi and the development of athlete's foot.

The inconvenience of excessive sweating is best controlled by frequent washing and drying, application of deodorant antiperspirants, and medicated powders containing salicylic acid, undecylenic acid or zinc undecylenate, which also kill fungi. *See also* BODY ODOR; DEODORANTS AND ANTIPERSPIRANTS; EXCRETION; GLANDS; HYPERHIDROSIS; SKIN and **mediographs** AMPHETAMINE ABUSE; ENDOCARDITIS, SUBACUTE BACTERIAL; HEAT STROKE; HEROIN ABUSE; HODGKIN'S DISEASE; HYPERTHYROIDISM; HYPOGLYCEMIA; KIDNEY STONES; MALARIA; MENOPAUSE; MIGRAINE HEADACHES; NEUROCIRCULATORY ASTHENIA; PANCREATITIS; RHEUMATIC FEVER; RHEUMATOID ARTHRITIS; RICKETS; TUBERCULOSIS.

PERTUSSIS. *See* WHOOPING COUGH.

PES PLANUS, *flatfoot*, *fallen arch*, manifested by an outward pointing of the toes and a type of gait like that of a comedian in oldtime movies. It is more common in women, possibly because of their stylish but crippling shoes. People

whose occupations require them to stand long hours suffer most. After a bath, the imprint of the foot on the floor or rug is flat without the normal arch gap. Walking is uncomfortable and the pain may be reflected upward to the ankle, calf muscles, knee, hip and lower back. Arch support shoes and plastic or metal arch supporters relieve the discomfort. In severe cases, a podiatrist should be consulted. *See also* FEET.

PESSARY, an appliance of varied forms placed in the vagina to support a corrected uterine displacement or *prolapse* (the fall of the uterus toward the cervix) and for other purposes.

PESTICIDES, chemicals that kill pests, especially insects. One of the best known pesticides is DDT, which is highly effective but subject to restrictions because of its destructive effects on the environment. In the United States, the Environmental Protection Agency banned two widely used pesticides—*aldrin* and *dieldrin*—because of a potential cancer risk determined by experiments with rats and mice. Earlier, another U.S. agency, the Food and Drug Administration, found measurable amounts of dieldrin residue in most of their samples of dairy products, garden fruits, meat, fish and poultry. *See also* DDT; INSECT CONTROL.

PETECHIA, a small round red hemorrhagic spot on the skin which is not raised above the surface and does not disappear on pressure. Later it may turn blue or yellow. It is a sign of *purpura*, a hemorrhagic disease. *See also* PURPURA.

PETIT MAL, "little illness," a milder form of *epilepsy* without convulsions occurring mainly in children and characterized by brief blackouts of consciousness recurring daily. An electroencephalogram is used to diagnose it. *See also* **medigraph** EPILEPSY.

PETROLATUM, *hydrophilic petrolatum*, an ointment base and protectant.

PETROSITIS, inflammation of the *petrous portion of the temporal bone* (a pyramidal wedge at the base of the skull which contains the essential parts of the organ of hearing). *See also* EAR.

PEYOTE, a mind-altering drug distilled from a Mexican cactus, used by the natives to produce a state of exhilaration with feelings of ecstasy. *See also* **medigraph** Mescaline ABUSE.

PHAGOCYTE, a cell, such as a white blood cell, that engulfs and digests microbes, breakdown cells, and other foreign particles. The phagocytes have been called "the body's policemen" but are effective only in the presence of *opsonins*, antibodies that render the bacteria susceptible to *phagocytosis* (absorption by the white blood cells). Some phagocytes are fixed in their location; others are wanderers in the bloodstream. *See also* BLOOD.

PHALANGES, the 14 bones each of the fingers and toes, arranged in groups of three for each digit, except for the thumb and big toe, which contain only two phalanges. *See also* SKELETAL SYSTEM.

PHALLUS, in embryology, the primordial bud in the embryo from which the penis develops in the male and the clitoris in the female.

PHANTOM LIMB, sensation and sometimes pain felt in a limb that although amputated is felt to be a part of the body. Since sensation is perceived in the brain and relayed to various organs, irritation of the cut nerve end in an amputation stump is flashed as a message to the brain area which formerly served the nerve that is no longer present. The brain interprets this as a sensation or pain in that area, even though the limb is no longer at-

tached. Stories about phantom limbs were common in the Civil War and in World War I and often dramatized the horrors of war injuries.

PHARMACOLOGY, the study of the actions of drugs, both therapeutic and toxic. In modern medicine, therapy is based on the physiological properties of drugs, which are often determined by experiments on animals.

PHARYNGITIS. See PHARYNX.

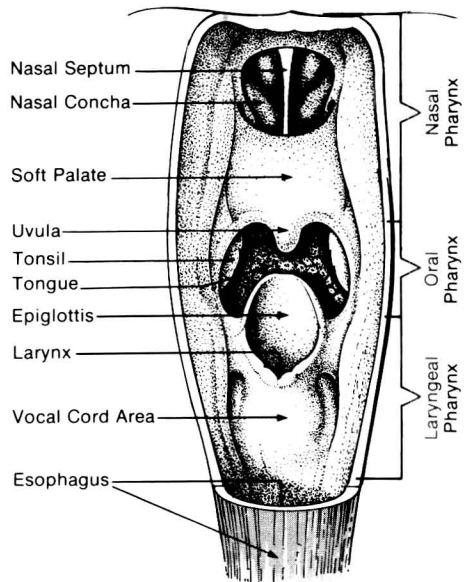
PHARYNX, the throat passage between the mouth and the gullet. It is a tube composed of muscle and membrane, about 5 inches (13 centimeters) long, larger from side to side, and acts as a sound resonator and passage for food.

The pharynx has three parts: *nasal*, *oral* and *laryngeal*. The nasal part lies behind the nose and communicates with the nasal cavities. It is the part involved in *postnasal drip* resulting from nasal catarrh. The oral part is equipped with muscles and its function is to swallow food that has been chewed. The laryngeal part is continuous with the gullet and guarded by the *epiglottis*, a cartilage which closes automatically while swallowing and opens while talking. The *uvula* is a tab of muscle covered by mucous membrane hanging down from the soft palate curtain.

Acute pharyngitis—minor sore throat—is generally a complication of a cold, the infection traveling from the nose. Usually, it goes away in a few days and the discomfort can be relieved by gargles. *Acute tonsillitis*—septic sore throat, in which the throat is sore and the crypts of the tonsils are apt to be filled with a puslike secretion—is usually accompanied by fever and may be the result of infection with a virulent streptococcus (dot-shaped germs arranged in chains). The best treatment for such infections is rest in bed, hot lemonade, a light diet,

The Pharynx

The Pharynx is viewed from the back



Pharynx—Air from the nose passes through the upper portion of the throat, the nasopharynx. The middle section, the oropharynx, receives food from the mouth and swallows it. In back of the larynx is the lower throat, the laryngopharynx.

aspirin if there is high fever, and penicillin or other antibiotics.

Chronic pharyngitis may be caused by smoking, inhalation of dust, or repeated attacks of cold, postnasal drip, or sinusitis. Its symptoms include a dry irritable throat and a hacking cough, usually without bringing up phlegm.

In *atrophic pharyngitis*—dry sore throat—thick crusts form in the throat and produce a foul odor. This condition is common in old age and as a complication of diabetes. If it spreads from the

throat to the larynx, hoarseness and cough develop as symptoms. Another throat infection is *trench mouth* (*Vincent's angina*), with development of ulcers in the mouth and throat. It is due to a mixed infection, with a rod-shaped and a spiral germ that live in the absence of oxygen. It is best treated by a mouthwash that can provide oxygen, such as hydrogen peroxide.

The throat is the portal of entry for many systemic infections, so pharyngitis should not be considered lightly. To avoid future trouble, a victim should consult a physician. *See also* ADENOIDS; THROAT; TONSILS and **medigraphs** DIPHTHERIA; FLU; GERMAN MEASLES; MONONUCLEOSIS, INFECTIOUS; SCARLET FEVER; TONSILLITIS; TRENCH MOUTH.

PHENOBARBITAL, a long-acting barbiturate usually employed as a sedative, sleep aid, and anticonvulsant to control epileptic seizures. In addition to phenobarbital itself, the United States Pharmacopeia lists *phenobarbital elixir* and *phenobarbital tablets*. When tolerance develops with continued use, the dosage must be increased to get the same effect. Phenobarbital is habit-forming and leads to a psychological dependence. It has valuable uses in medicine but it is also one of the leading causes of drug abuse, poisoning and suicide. In the United States, the Food and Drug Administration reported that the use of phenobarbital to control epilepsy in pregnant women may be the cause of various birth defects. *See also* ANTICONVULSIVE.

PHLEBITIS

PHLEBITIS IS INFLAMMATION of a vein, usually one of the superficially located veins of the lower leg. The condition is potentially more dangerous when it occurs in a more deeply situated blood vessel.

PHENOL. *See* CARBOLIC ACID.

PHENOLPHTHALEIN, a cathartic drug, the active ingredient of many advertised laxatives. It acts in about six hours to make the colon evacuate its stool, irritates the colon with continued use, and ultimately leads to aggravation of constipation. Phenolphthalein should be used only for occasional constipation and never when abdominal pain or vomiting suggests the possibility of appendicitis. *See also* CATHARTICS; CONSTIPATION.

PHENYLKETONURIA, *PKU*, a rare genetic metabolic disorder caused by a deficiency of liver *phenylalanine hydroxylase*, and characterized by elevation of the levels of *phenylalanine* (an *amino acid*) in the blood. It is frequently associated with *mental retardation*. Symptoms in infancy include irritability, convulsive seizures, vomiting, and sometimes eczema, dry skin, and a mousy smell (due to *phenylacetic acid* in the sweat and urine). The urine may also contain *phenylketones*.

Treatment is by controlling the levels of blood phenylalanine by reducing the amounts of phenylalanine in the diet through a reduction in the intake of protein. Since protein is still an essential dietary element, synthetic preparations are given; these contain proteins low in phenylalanine and also vitamins and minerals. The diet is supplemented by fruits, vegetables and low-protein cereals. *See also* BIRTH DEFECT; GENETIC COUNSELING; MENTAL RETARDATION.

causes

The basic cause of phlebitis is not clearly defined. Generally, the inflammation is associated with some other disorder, such as varicose veins, arteriosclerosis and obesity.