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length of the cycle begins with the first day of the current menstrual period and ends with the first day of the menstrual period for the following month. **Ovulation** (the release of the mature **ovum** from the **ovary**) occurs approximately 14 days prior to the beginning of menses.

The menstrual cycle is divided into four time intervals, or phases, which comprise the complete cycle. These four phases consist of the menstrual phase (days 1 to 4), the postmenstrual phase (days 5 to 12), the ovulatory phase (days 13 to 14), and the premenstrual phase (days 15 to 28). A more complete description of each phase follows.

Menstrual Phase

The menstrual phase consists of days 1 to 4. The menstrual flow occurs on day 1 and lasts for 3 to 4 days.

Postmenstrual Phase

The postmenstrual phase, also called the proliferative phase, consists of days 5 to 12. This is the interval between the menses and **ovulation**. As the **estrogen** level rises, several ova begin to mature in the **graafian follicles** (with usually only one **ovum** reaching full maturity).

Ovulatory Phase

The ovulatory phase consists of days 13 to 14.

This phase is known as **ovulation**. The graafian follicle ruptures, releasing the mature **ovum** into the pelvic cavity. The **ovum** is swept up into the **fallopian tubes** by the fimbriated ends of the tubes. **Ovulation** usually occurs on day 14 of a 28-day cycle.

Premenstrual Phase

The premenstrual phase, also known as the secretory phase, consists of days 15 to 28. This phase occurs between the ovulatory phase and the onset of the menstrual flow. Following the rupture of the graafian follicle and the release of the **ovum**, the empty graafian follicle fills with a yellow substance called **lutein**, which is high in **progesterone**, with some **estrogen**. Thus, the empty graafian follicle is transformed into the **corpus luteum**.

Functioning as an endocrine gland, the **corpus luteum** secretes high levels of **estrogen** and **progesterone**, preparing the uterine lining to receive a fertilized **ovum**. If **fertilization** does not occur, hormone levels decrease, the **corpus luteum** shrinks, and the uterine lining breaks down and sloughs off in the menstrual flow.

In some women, the drop in hormone levels creates a group of symptoms known as **premenstrual syndrome (PMS)**. Symptoms include irritability, fluid retention, tenderness of the breasts, and a general feeling of depression

VOCABULARY

The following vocabulary words are frequently used when discussing the female reproductive system.

Word	Definition
adnexa (add-NEK-sah)	Tissues or structures in the body that are next to or near another. As in the uterus , the adnexa consists of the fallopian tubes , ovaries , and ligaments of the uterus .
areola (ah-REE-oh-lah)	The darker pigmented, circular area surrounding the nipple of each breast; also known as the areola mammae or the areola papillaris . Plural: areolae (ah-REE-oh-lee)
Bartholin's glands (BAR-toh-linz glands)	Two small, mucus-secreting glands located on the posterior and lateral aspects of the entrance to the vagina .
cervix (SER-viks)	The part of the uterus that protrudes into the cavity of the vagina ; the neck of the uterus .
climacteric (kly-MAK-ter-ik)	The cessation of menstruation ; see menopause .
clitoris (KLIT-oh-ris)	The vaginal erectile tissue (structure) corresponding to the male penis.
coitus (KOH-ih-tus)	The sexual union of two people of the opposite sex in which the penis is introduced into the vagina ; also known as sexual intercourse or copulation.

<p>corpus luteum (KOR-pus LOO-tee-um)</p>	<p>yellowish mass that forms within the ruptured ovarian follicle after ovulation, containing high levels of progesterone and some estrogen. It functions as a temporary endocrine gland for the purpose of secreting estrogen and large amounts of progesterone, which will sustain pregnancy (should it occur) until the placenta forms. If pregnancy does not occur, the corpus luteum will degenerate approximately three days prior to the beginning of menstruation.</p>
<p>cul-de-sac (kull-dih-SAK)</p>	<p>pouch located between the uterus and rectum within the peritoneal cavity. This pouch is formed by one of the ligaments that serves as support to the uterus. Because it is the lowest part of the abdominal cavity, blood, pus, and other drainage collect in the cul-de-sac.</p>
<p>diaphragm (DYE-ah-fram)</p>	<p>A term used in gynecology to represent a form of contraception.</p>
<p>endometrium (en-doh-MEE-tree-um) endo- = within metri/o = uterus -um = noun ending</p>	<p>The inner lining of the uterus.</p>
<p>estrogen (ESS-troh-jen)</p>	<p>One of the female hormones that promotes the development of the female secondary sex characteristics.</p>
<p>fallopian tubes (fah-LOH-pee-an TOOBS)</p>	<p>One of a pair of tubes opening at one end into the uterus and at the other end into the peritoneal cavity, over the ovary.</p>
<p>fertilization (fer-til-eye-ZAY-</p>	<p>The union of a male sperm and a female ovum</p>

shun)	
fi mbriae (FIM-bree-ay)	The fringed end of the fallopian tube.
fourchette (foor-SHET)	A tense band of mucous membranes at the posterior rim of the vaginal opening: the point at which the labia minora connect.
fundus (FUN-dus)	The dome-shaped central, upper portion of the uterus between the points of insertion of the fallopian tubes
gamete	A mature sperm or ovum .
gonads (GOH-nads)	A gamete -producing gland such as an ovary or a testis.
graafian follicles (GRAF-ee-an FALL-ik-kls)	A mature, fully developed ovarian cyst containing the ripe ovum .
gynecologist (gigh-neh-KOL-oh-jist) gynec/o = woman -logist = one who specializes in the study of	A physician who specializes in the medical specialty that deals with diseases and disorders of the female reproductive system.
gynecology (gigh-neh-KOL-oh-jee) gynec/o = woman -logy = the study of	The branch of medicine that deals with the study of diseases and disorders of the female reproductive system.
hymen (HIGH-men)	A thin layer of elastic, connective tissue membrane that forms a border around the outer opening of the vagina and may partially cover the vaginal opening.

<p>labia majora (LAY-be e-ah mah-JOR-ah)</p>	<p>Two folds of skin containing fatty tissue and covered with hair that lie on either side of the vaginal opening, extending from the mons pubis to the perineum. The outer surface of the labia majora is covered by pubic hair; the inner surface is smooth and moist.</p>
<p>labia minora (LAY-bee-ah mih-NOR-ah)</p>	<p>Two folds of hairless skin located within the folds of the labia majora. The labia minora extend from the clitoris downward toward the perineum.</p>
<p>lumpectomy (lum-PEK-toh-mee)</p>	<p>Surgical removal of only the tumor and the immediate adjacent breast tissue; a method of treatment for breast cancer when detected in the early stage of the disease.</p>
<p>mammary glands (MAM-ah-ree glands) mamm/o = breast -ary = pertaining to</p>	<p>The female breasts.</p>
<p>mastectomy (mass-TEK-toh-mee) mast/o = breast -ectomy = surgical removal</p>	<p>Surgical removal of the breast as a treatment method for breast cancer; can be simple (breast only), modified radical (breast plus lymph nodes in axilla), or radical (breast, lymph nodes, and chest muscles on affected side).</p>
<p>mastitis (mass-TYE-tis) mast/o = breast -itis = inflammation</p>	<p>Inflammation of the breast.</p>

meatus (mee-AY-tus)	An opening or tunnel through any part of the body.
menarche (men-AR-kee) men/o = menstruation -arche = beginning	Onset of menstruation ; the first menstrual period.
menopause (MEN-oh-pawz) men/o = menstruation	The permanent cessation (stopping) of the menstrual cycles.
menorrhea (men-oh-REE-ah) men/o = menstruation -rrhea = discharge; flow	Menstrual flow; menstruation .
menses (MEN-seez)	Another name for menstruation or menstrual flow.
menstruation (men-stroo-AY-shun)	The periodic shedding of the lining of the nonpregnant uterus through a bloody discharge that passes through the vagina to the outside of the body. It occurs at monthly intervals and lasts for 3 to 5 days.
myometrium (my-oh-MEE-tree-um) my/o = muscle metri/o = uterus -um = noun ending	The muscular layer of the uterine wall.
orifice (OR-ih-fis)	The entrance or outlet of any body cavity; as in the vaginal orifice.

<p>ovary (OH-vah-ree) ov/o = egg -ary = pertaining to</p>	<p>One of a pair of female gonads responsible for producing mature ova (eggs) and releasing them at monthly intervals (ovulation); also responsible for producing the female hormones, estrogen and progesterone.</p>
<p>ovulation (ov-you-LAY-shun) ov/o = egg</p>	<p>The release of the mature ovum from the ovary, occurring approximately 14 days prior to the beginning of menses.</p>
<p>ovum (OH-vum) ov/o = egg -um = noun ending</p>	<p>ovum (OH-vum) ov/o = egg -um = noun ending</p>
<p>perineum (pair-ih-NEE-um)</p>	<p>The area between the vaginal orifice and the anus that consists of muscular and fibrous tissue and serves as support for the pelvic structures.</p>
<p>pregnancy (PREG-nan-see)</p>	<p>The period of intrauterine development of the fetus from conception through birth. The average pregnancy lasts approximately 40 weeks; also known as the gestational period.</p>
<p>premenstrual syndrome (pre-MEN-stroo-al SIN-drom)</p>	<p>A group of symptoms that include irritability, fluid retention, tenderness of the breasts, and a general feeling of depression occurring shortly before the onset of menstruation; also called PMS.</p>
<p>progesterone (proh-JESS-ter-own)</p>	<p>One of the female hormones secreted by the corpus luteum and the placenta. It is primarily responsible for the changes</p>

	that occur in the endometrium in anticipation of a fertilized ovum and for development of the maternal placenta after implantation of a fertilized ovum .
puberty (PEW-ber-tee)	The period of life at which the ability to reproduce begins; that is, in the female, it is the period when the female reproductive organs are fully developed.
sperm	A mature male germ cell; spermatozoon.
testes (TESS-teez)	The paired male gonads that produce sperm. They are suspended in the scrotal sac in the adult male.
uterus (YOO-ter-us)	The hollow, pear-shaped organ of the female reproductive system that houses the fertilized, implanted ovum as it develops throughout pregnancy ; also the source of the monthly menstrual flow from the nonpregnant uterus .
vagina (vah-JEYE-nah)	The muscular tube that connects the uterus with the vulva . It is approximately 3 inches long and rests between the bladder (anteriorly) and the rectum (posteriorly).
vulva (VULL-vah)	The external genitalia that consists of the mons pubis, labia majora , clitoris , labia minora , vestibule, urinary meatus, vaginal orifice, Bartholin's glands , and the perineum ; also known as the pudendum.

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Common Signs and Symptoms

The following is a list of complaints or concerns the female patient might express or describe. These signs or symptoms may be the only reason she wishes to be seen by the physician. These symptoms may be easily treated, or they may be signs of more serious conditions. Be sure to gather your data carefully when interviewing the patient.

As you study the following terms, write each definition and word a minimum of three times (use a separate sheet of paper), pronouncing the word aloud each time. You will notice that the word and the **basic definition** are written in a green shaded box if you choose to learn only the abbreviated form of the definition. A more detailed description follows most words. Once you have mastered each word to your satisfaction, check the box provided beside each word.

<p>amenorrhea (ah-men-oh-REE-ah) a- = without, not men/o = menstruation -rrhea = discharge, flow</p>	<p>Absence of menstrual flow.</p>
<p>dysmenorrhea (dis-men-oh-REE-ah) dys- = bad, difficult, painful, disordered men/o = menstruation -rrhea = discharge, flow</p>	<p>Painful menstrual flow.</p>
<p>menorrhagia (men-oh-RAY-jee-ah) men/o = menstruation -rrhagia = excessive flow or discharge</p>	<p>Abnormally long or very heavy menstrual periods.</p>
<p>metrorrhagia (met-roh-RAY-jee-ah) metr/o = uterus -rrhagia = excessive</p>	<p>Uterine bleeding at times other than the menstrual period.</p>

flow or discharge	
<p>oligomenorrhea (ol-ih-goh-men-oh-REE-ah) olig/o = few, little, scanty men/o = menstruation -rrhea = discharge, flow</p>	<p>Oligomenorrhea is abnormally light or infrequent menstruation.</p>

Family Planning

The term *family planning* encompasses choosing *when to have* children and choosing *when not to have* children. It involves various forms of contraception to prevent **pregnancy** as well as methods that will help the couple achieve **pregnancy**. This section discusses **contraception**: methods used to prevent **pregnancy**. Methods used to achieve **pregnancy** are discussed in Chapter ١٨.

Considering the fact that the female reproductive years span some ٣٠ or more years, the

female may actually be faced with making decisions about which form of birth control

she chooses to use for more than ۳۰ years. If it is her choice to bear a limited number of children (the national average is two), effective contraceptive methods are essential.

Most forms of contraception used by women can be terminated when **pregnancy** is desired and resumed after **pregnancy**.

The decision as to which form of contraception to use primarily rests with the female.

The advantages and disadvantages of each type should be considered as she selects the particular form that best suits her body, her health, and her lifestyle. The number of sex

partners she has will also affect the female's decision on birth control methods, particu-

larly because of acquired immunodeficiency syndrome (AIDS) and other sexually transmitted diseases. If contraception is a planned decision and not a spontaneous one, the

female may seek counsel from her physician as she determines her approach to family

planning. Literature on the various methods of contraception should be available through

her physician's office.

Forms of Contraception

Each form of contraception discussed in this chapter is defined as to how it is used,

followed by a listing of the advantages and disadvantages of its use.

Contraindications

(reasons for not using) are listed, when applicable. Although many of these

forms of
contraception are ۹۹ to ۱۰۰% effective in preventing **pregnancy** when used
correctly,
it must be remembered that they do not protect the female against sexually
transmitted
diseases. Women who are sexually active should also have their sexual partner(s) use
a
condom for added protection

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abstinence (AB-stih-nens)	Abstinence means to abstain from having vaginal intercourse.
oral contraceptives (ORAL con-trah-SEP-tivz)	Oral contraceptives, or birth control pills, contain synthetic forms of the estrogen and progesterone hormones and are taken by mouth.
intrauterine device (in-trah-YOO-ter-in) intra- = within uter/o = uterus	The intrauterine device is a small, plastic T-shaped object with strings attached to the leg of the T. It is inserted into the uterus, through the vagina, and remains in place in the uterus.
birth control patch	A thin, flexible square patch that continuously delivers hormones through the skin and into the bloodstream for a full seven days to prevent pregnancy. The birth control patch contains hormones similar to those in birth control pills but must be changed every seven days.
contraceptive ring	A flexible contraceptive ring (placed into the vagina) that slowly releases a low dose of hormones that prevent pregnancy.
barrier methods	Methods of birth control that place physical barriers between the cervix and the sperm so that the sperm cannot pass the

	cervix and enter the uterus, and, thus, the fallopian tubes.
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Permanent Methods of Birth Control

Permanent methods of birth control include surgical sterilization of either the female

(**tubal ligation**) or the male (**vasectomy**). After having children, many people choose

sterilization as a permanent means of birth control. Occasionally, they will decide to

have the procedure reversed, but this is much more complicated than the steriliza-

tion itself and is not always successful. When individuals are considering permanent

methods of birth control, they should weigh the pros and cons carefully. Even though

they may not wish to do so, men and women who have children at a young age should

consider the possibilities of divorce, remarriage, or even death of a spouse or a child

before deciding on permanent means of birth control

tubal ligation (TOO-bal lye-GAY-shun)	Tubal ligation is surgically cutting and tying the fallopian tubes to prevent passage of ova or sperm through the tubes, consequently
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	preventing pregnancy ; female sterilization. See Figure ١٧-٧.
micro-insert system	An alternative to tubal ligation that provides bilateral occlusion of the fallopian tubes by inserting a soft, flexible micro-insert into each fallopian tube.
vasectomy (vas-EK-toh-mee) vas/o = vessel, vas deferens -ectomy = surgical removal	Also known as a male sterilization, a vasectomy is surgically cutting and tying the vas deferens to prevent the passage of sperm, consequently preventing pregnancy . See Chapter ١٦ for more detailed information on a vasectomy.

Pathological Conditions

As you study the pathological conditions of the female reproductive system, note that

the **basic definition** is in a green shaded box (followed by a more detailed description

in regular print). The phonetic pronunciation is directly beneath each term, as well as a

breakdown of the component parts of the term where appropriate

carcinoma of the breast (car-sin-OH-mah) carcin/o = cancer	A malignant (cancerous) tumor of the breast tissue. The most common type (ductal carcinoma) originates in the mammary ducts. This tumor
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<p>-oma = tumor</p>	<p>has the ability to invade surrounding tissue if not detected early enough. Once the cancer cells penetrate the duct, they will metastasize (spread) through the surrounding breast tissue, eventually reaching the axillary lymph nodes. Through the lymph vessels, the cancer cells can spread to distant parts of the body.</p>
<p>cervical carcinoma (SER-vih-kal car-sin-OH-mah) cervic/o = cervix -al = pertaining to carcin/o = cancer -oma = tumor</p>	<p>A malignant tumor of the cervix. Cervical cancer is one of the most common malignancies of the female reproductive tract. Symptoms include an abnormal Pap smear and bleeding between menstrual periods, after sexual intercourse, or after menopause.</p>
<p>cervicitis (ser-vih-SIGH-tis) cervic/o = cervix -itis = inflammation</p>	<p>An acute or chronic inflammation of the uterine cervix.</p>
<p>cystocele (SIS-toh-seel) cyst/o = bladder, sac, or cyst -cele = swelling or herniation</p>	<p>Herniation or downward protrusion of the urinary bladder through the wall of the vagina. See Figure 14-A.</p>
<p>endometrial carcinoma (en-doh-MEE-tree-al car-sin-OH-mah) endo- = within metri/o = uterus -al = pertaining to</p>	<p>Malignant tumor of the inner lining of the uterus; also known as adenocarcinoma of the uterus.</p>

<p>carcin/o = cancer -oma = tumor</p>	
<p>endometriosis (en-doh-mee-tree-OH-sis) endo- = within metri/o = uterus -osis = condition</p>	<p>The presence and growth of endometrial tissue in areas outside the endometrium (lining of the uterus). See Figure 17-9.</p>
<p>fibrocystic breast disease (figh-broh-SIS-tik) fibr/o = fiber cyst/o = bladder, sac, or cyst -ic = pertaining to</p>	<p>The presence of single or multiple fluid-filled cysts that are palpable in the breasts.</p>
<p>fibroid tumor (FIGH-broyd tumor) fibr/o = fiber -oid = resembling</p>	<p>A benign, fibrous tumor of the uterus.</p>
<p>leiomyoma (ligh-oh-my-OH-mah) lei/o = smooth my/o = muscle -oma = tumor</p>	<p>A benign, smooth-muscle tumor of the uterus. Uterine leiomyomas are often mislabeled as fibroid tumors, when in fact they are not.</p>
<p>ovarian carcinoma (oh-VAIR-ree-an car-sin-OH-mah) ovari/o = ovary -an = characteristic of carcin/o = cancer -oma = tumor</p>	<p>A malignant tumor of the ovaries, most commonly occurring in women in their 50s. It is rarely detected in the early stage and is usually far advanced when diagnosed.</p>

<p>ovarian cysts (oh-VAIR-ree-an SISTS) ovari/o = ovary -an = characteristic of</p>	<p>Benign, globular sacs (cysts) that form on or near the ovaries. These cysts may be fluid filled or may contain semisolid material.</p>
<p>pelvic inflammatory disease (PID) (PELL-vik in-FLAM-mah-toh-ree dih-ZEEZ) salpingitis (sal-pin-JYE-tis) salping/o = eustachian tubes; also refers to fallopian tubes -itis = inflammation</p>	<p>Infection of the fallopian tubes; also known as salpingitis.</p>
<p>stress incontinence, urinary (STRESS in-CON-tin-ens, YOO-rih-nair-ee)</p>	<p>The inability to hold urine when the bladder is stressed by sneezing, coughing, laughing, or lifting.</p>
<p>vaginitis (vaj-in-EYE-tis) vagin/o = vagina -itis = inflammation</p>	<p>Inflammation of the vagina and the vulva.</p>

Diagnostic Techniques, Treatments, and Procedures

<p>aspiration biopsy (as-pih-RAY-shun BYE-op-see)</p>	<p>An invasive procedure in which a needle is inserted into an area of the body, such as the breast, to withdraw a tissue or fluid sample for microscopic examination and diagnosis.</p>
<p>breast self-examination</p>	<p>A procedure in which the woman examines her breasts and surrounding tissue for evidence of any changes that could indicate the possibility of malignancy.</p>
<p>colposcopy (kol-POSS-koh-pee) colp/o = vagina -scopy = process of viewing</p>	<p>Visual examination of the vagina and cervix with a colposcope.</p>
<p>cone biopsy (KOHN BY-op-see)</p>	<p>Surgical removal of a cone-shaped segment of the cervix for diagnosis or treatment; also known as a conization.</p>
<p>cryosurgery</p>	<p>The destruction of tissue by rapid freezing with</p>

<p>(cry-oh SER-jer-ee) cryo/o = cold</p>	<p>substances such as liquid nitrogen.</p>
<p>culdocentesis (kull-doh-sen-TEE-sis) culd/o = cul-de-sac -centesis = surgical puncture</p>	<p>The surgical puncture through the posterior wall of the vagina into The cul-de-sac to withdraw intraperitoneal fluid for examination.</p>
<p>dilatation and curettage (dye-LAY-shun and koo-reh-TAHZ)</p>	<p>Dilation or widening of the cervical canal with a dilator, followed by scraping of the uterine lining with a curet; also termed D&C. See Figure 17-12A.</p>
<p>endometrial biopsy (en-doh-MEE-tree-al BYE-op-see) endo- = within metri/o = uterus -al = pertaining to</p>	<p>Endometrial biopsy is an invasive test for obtaining a sample of endometrial tissue (with a small curet) for examination.</p>
<p>hysterosalpingography (hiss-ter-oh-sal-pin-GOG-rah-fee) hyster/o = uterus salping/o = eustachian tubes; also refers to fallopian tubes -graphy = process of recording</p>	<p>X-ray of the uterus and the fallopian tubes by injecting a contrast material into these structures.</p>
<p>laparoscopy (lap-ar-OS-koh-pee) lapar/o = abdominal wall -scopy = process of viewing</p>	<p>The process of viewing the abdominal cavity with a laparoscope (a thin-walled flexible tube with a telescopic lens and light).</p>

<p>loop electrosurgical excision procedure (LEEP)</p>	<p>A procedure used to remove abnormal cells from the surface of the cervix using a thin wire loop that acts like a scalpel. A painless electrical current passes through the loop as it cuts away a thin layer of surface cells from the cervix.</p>
<p>mammography (mam-OG-rah-fee) mamm/o = breasts -graphy = process of recording</p>	<p>The process of examining with X-ray the soft tissue of the breast to detect various benign and/or malignant growths before they can be felt. See Figure ١٧-١٤.</p>
<p>Papanicolaou (Pap) smear (pap-ah-NIK-oh-low smear)</p>	<p>A diagnostic test for cervical cancer; that is, a microscopic examination of (Pap test) cells scraped from within the cervix (endocervix), from around the cervix (ectocervix), and from the posterior part of the vagina (near the cervix) to test for cervical cancer; also called Pap test.</p>
<p>liquid-based Pap (LBP)</p>	<p>A process of collecting a tissue sample from the endocervix and the exocervix with a sampling device that is placed directly into a liquid fixative instead of being spread onto a glass slide. This process provides immediate fixation and improves specimen adequacy. The LBP has not completely replaced the traditional Pap smear but is an increasingly popular alternative to conventional cervical cytology smears.</p>
<p>pelvic ultrasound (PELL-vik ULL-trah-</p>	<p>A noninvasive procedure that uses high-frequency sound waves to</p>

<p>sound) pelv/i = pelvis -ic = pertaining to ultra- = beyond, excess</p>	<p>examine the abdomen and pelvis.</p>
<p>pelvimetry (pell-VIM-eh-tree) pelv/i = pelvis -metry = the process of measuring</p>	<p>The process of measuring the female pelvis, manually or by X-ray, to determine its adequacy for childbearing.</p>

COMMON ABBREVIATIONS

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CHAPTER

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

١. State the difference between presumptive and probable signs of pregnancy.
٢. Correctly spell and pronounce terms listed on the Written and Audio Terminology Review, using the phonetic pronunciations provided or the Audio CDs if available.
٣. Define at least ٢٠ abbreviations common to obstetrics.
٤. Define ١٠ physiological changes that occur in the female during pregnancy.
٥. List and define at least five diagnostic techniques used in treating obstetrical

patients.

٤. Demonstrate the ability to correctly construct words relating to the field of obstetrics by completing

the word element review exercise at the end of the chapter.

٥. List and define at least ١٠ complications of pregnancy.

٦. Differentiate between the signs and symptoms of impending labor and those of false and/or true labor.

Overview

Obstetrics is the field of medicine that deals with **pregnancy (prenatal)**, delivery of

the baby, and the first six weeks after delivery (the postpartum period). The physician

who specializes in the care of women during pregnancy, the delivery of the baby, and

the first six weeks following the delivery is known as an **obstetrician**.

Perinatology is a

subspecialty of **obstetrics**. Physicians specializing in this area are called **perinatologists**.

These doctors have had extensive training in the field of high-risk **obstetrics** and are

concerned with the care of the mother and **fetus** at higher than normal risk for compli-

cations. A perinatologist may also be described as a maternal-fetal medicine specialist.

Pregnancy signifies the **fertilization** of the **ovum** by the **sperm**: the creation of

another

human being. With this creation comes many changes, physiological as well as psycho-

logical. The physiological changes occur in a certain order as the **fetus** develops. Many

of the physiological changes are discussed later in this chapter.

The psychological changes will vary with individuals. For some, pregnancy is desired

and is perceived as one of the most exciting times of a woman's life. For others, preg-

nancy is not desired and may be the result of poor timing, ineffective birth control prac-

tices, or possibly rape. The psychological responses to pregnancy may vary from wonder

and excitement to anxiety or despair.

Pregnancy is calculated to last 9 calendar months, or 10 lunar months (40 weeks, or 280

days). For reference, it is divided into trimesters (three intervals of three months each).

Meeting the needs of the pregnant female is of utmost importance during this period

between **conception** and **labor**, known as the **gestational period**. The health care pro-

fessional in the obstetrician's office needs to be knowledgeable in all areas of obstetrical

care to assist in providing the safest possible care during pregnancy.

VOCABULARY

Word	Definition
<p>afterbirth</p>	<p>The placenta, the amnion, the chorion, some amniotic fluid, blood, and blood clots expelled from the uterus after childbirth.</p>
<p>amenorrhea (ah-men-oh-REE-ah) a- _ without men/o _ menstruation -rrhea _ flow, drainage</p>	<p>Absence of menstrual flow.</p>
<p>amnion (AM-nee-on) amni/o _ amnion</p>	<p>The inner of the two membrane layers that surround and contain the fetus and the amniotic fluid during pregnancy.</p>
<p>amniotic fluid (am-nee-OT-ik fl uid) amni/o _ amnion -tic _ pertaining to</p>	<p>A liquid produced by and contained within the fetal membranes during pregnancy. This fluid protects the fetus from trauma and temperature variations, helps to maintain fetal oxygen supply, and allows for freedom of movement by the fetus during pregnancy.</p>
<p>amniotic sac (am-nee-OT-ik sack) amni/o _ amnion -tic _ pertaining to</p>	<p>The double layered sac that contains the fetus and the amniotic fluid during pregnancy.</p>

areola (ah-REE-oh-lah)	The darker pigmented, circular area surrounding the nipple of each breast; also known as the areola mammae or the areola papillaris.
ballottement (bal-ot-MON)	A technique of using the examiner's finger to tap against the uterus , through the vagina , to cause the fetus to "bounce" within the amniotic fluid and feeling it rebound quickly.
Braxton Hicks contractions (BRACKS-ton HICKS con-TRAK-shuns)	Irregular, ineffective contractions of the uterus that occur throughout pregnancy.
cerclage (sair-KLAZH)	Suturing the cervix to keep it from dilating prematurely during the pregnancy. This procedure is sometimes referred to as a "purse string procedure." The sutures are removed near the end of the pregnancy.
cervix (SER-viks)	The part of the uterus that protrudes into the cavity of the vagina ; the neck of the uterus .
cesarean section (see-SAYR-ee-an section) Chadwick's sign	A surgical procedure in which the abdomen and uterus are incised and a baby is delivered transabdominally. Also called cesarean birth or cesarean delivery. The bluish-violet hue of the cervix and vagina after approximately the sixth week of pregnancy.
chloasma	Patches of tan or brown pigmentation associated

(kloh-AZ-mah)	with pregnancy, occurring mostly on the forehead, cheeks, and nose; also called the “mask of pregnancy.”
chorion (KOH-ree-on)	The outer of the two membrane layers that surround and contain the fetus and the amniotic fluid during pregnancy.
coitus (KOH-ih-tus)	Sexual intercourse; copulation .
colostrum (koh-LOSS-trum)	The thin, yellowish fluid secreted by the breasts during pregnancy and the first few days after birth, before lactation begins.
conception (con-SEP-shun)	The union of a male sperm and a female ovum ; also termed fertilization .
copulation (kop-yoo-LAY-shun)	Sexual intercourse; coitus .
corpus luteum (COR-pus LOO-tee-um)	A mass of yellowish tissue that forms within the ruptured ovarian follicle after ovulation . It functions as a temporary endocrine gland for the purpose of secreting estrogen and large amounts of progesterone , which will sustain pregnancy, should it occur, until the placenta forms. If pregnancy does not occur, the corpus luteum will degenerate approximately three days before the beginning of menstruation.

<p>culdocentesis (kull-doh-sen-TEE-sis) culd/o _ cul-de-sac -centesis _ surgical puncture</p>	<p>Needle aspiration, through the vagina, into the cul-de-sac area (area in the peritoneal cavity immediately behind the vagina) for the purpose of removing fl uid from the area for examination or diagnosis. Aspiration of unclotted blood from the cul-de-sac area may indicate bleeding from a ruptured fallopian tube. The aspiration of clear fl uid from the area would rule out a ruptured fallopian tube.</p>
<p>dilatation (of cervix) (dill-ah-TAY-shun)</p>	<p>The enlargement of the diameter of the cervix during labor. The calculation of the amount of dilatation is measured in centimeters (cm). When the cervix has dilated to 10 cm, it is said to be completely dilated. Also known as dilation.</p>
<p>Doppler</p>	<p>A technique used in ultrasound imaging to monitor the behavior of a moving structure such as flowing blood or a beating heart. Fetal heart monitors operate on the Doppler sound wave principle to determine the fetal heart rate. See Figure 18-1.</p>
<p>eclampsia (eh-KLAMP-see-ah)</p>	<p>The most severe form of hypertension during pregnancy, evidenced by seizures (convulsions).</p>
<p>edema (eh-DEE-mah)</p>	<p>Swelling, with water retention.</p>
<p>effacement (eh-FACE-ment)</p>	<p>Thinning of the cervix, which allows it to enlarge the diameter of its opening in preparation for childbirth. This occurs during the normal processes of labor.</p>

<p>ejaculation (eh-jak-yoo-LAY-shun)</p>	<p>The sudden emission of semen from the male urethra, usually occurring during sexual intercourse or masturbation.</p>
<p>embryo (EM-bree-oh)</p>	<p>The name given to the product of conception from the second through the eighth week of pregnancy (through the second month).</p>
<p>endometrium (en-doh-MEE-tree-um) endo- _ within metri/o _ uterine lining -um _ noun ending</p>	<p>The inner lining of the uterus.</p>
<p>episiotomy (eh-pis-ee-OT-oh-mee) episi/o _ vulva -tomy _ incision into</p>	<p>A surgical procedure in which an incision is made into the woman's perineum to enlarge the vaginal opening for delivery of the baby. This incision is usually made shortly before the baby's birth (second stage of labor) to prevent tearing of the perineum.</p>
<p>estrogen (ESS-troh-jen)</p>	<p>One of the female hormones that promotes the development of the female secondary sex characteristics.</p>
<p>fallopian tubes (fah-LOH-pee-an tubes)</p>	<p>A pair of tubes opening at one end into the uterus and at the other end into the peritoneal cavity, over the ovary.</p>
<p>fertilization (fer-til-ih-ZAY-shun)</p>	<p>The union of a male sperm and a female ovum; also termed conception.</p>
<p>fetoscope (FEET-oh-skohp)</p>	<p>A special stethoscope for hearing the fetal heartbeat through the</p>

<p>fet/o _ fetus -scope _ instrument for viewing</p>	<p>mother's abdomen.</p>
<p>fetus (FEE-tus) fet/o _ fetus -us _ noun ending</p>	<p>The name given to the developing baby from approximately the eighth week after conception until birth.</p>
<p>fi mbriae (FIM-bree-ay)</p>	<p>The fringed-like end of the fallopian tube.</p>
<p>fundus</p>	<p>Superior aspect of the uterus.</p>
<p>gamete (GAM-eet)</p>	<p>A mature sperm or ovum.</p>
<p>gastroesophageal refl ux (gas-troh-eh-soff -ah-JEE-al REE-fl ucks) gastr/o _ stomach esophag/o _ esophagus -eal _ pertaining to</p>	<p>A return, or reflux, of gastric juices into the esophagus, resulting in a burning sensation.</p>
<p>gestation (jess-TAY-shun)</p>	<p>The term of pregnancy, which equals approximately ۲۸۰ days from the onset of the last menstrual period. The period of intrauterine development of the fetus from conception through birth; also termed the gestational period.</p>
<p>gestational hypertension (jess-TAY-shun-al high-per-TEN-shun)</p>	<p>A complication of pregnancy in which the expectant mother develops high blood pressure after ۲۰ weeks' gestation, with no signs of proteinuria or edema.</p>

<p>glycogen (GLYE-koh-jen) glyc/o _ sugar</p>	<p>The form of sugar stored in body cells, primarily the liver.</p>
<p>gonads (GO-nads)</p>	<p>A gamete-producing gland such as an ovary or a testis.</p>
<p>Goodell's sign</p>	<p>The soft ening of the uterine cervix, a probable sign of pregnancy.</p>
<p>graafian follicles (GRAF-ee-an FALL-ih-klz)</p>	<p>A mature, fully developed ovarian cyst containing the ripe ovum.</p>
<p>gravida</p>	<p>A woman who is pregnant. She may be identified as gravida I if this is her first pregnancy, gravida II for a second pregnancy, and so on.</p>
<p>Hegar's sign (HAY-garz sign)</p>	<p>Soft ening of the lower segment of the uterus; a probable sign of pregnancy.</p>
<p>hyperpigmentation (high-per-pig-men-TAY-shun) hyper- _ excessive</p>	<p>An increase in the pigmentation of the skin.</p>
<p>hypertension (high-per-TEN-shun) hyper- _ excessive tens/o _ strain -ion _ action; process</p>	<p>High blood pressure; a common, often asymptomatic, disorder in which the blood persistently exceeds 140/90 mmHg.</p>
<p>hypotension (high-poh-TEN-shun) hypo- _ less than, low tens/o _ strain -ion _ action; process</p>	<p>Low blood pressure; an abnormal condition in which the blood pressure is not adequate for normal passage through the blood vessels or for normal oxygenation of the body cells.</p>

<p>hypovolemic shock (high-poh-voh-LEE-mik) hypo- _ under, below, beneath, less than normal</p>	<p>A state of extreme physical collapse and exhaustion due to massive blood loss; “less than normal” blood volume.</p>
<p>labor (LAY-bor)</p>	<p>The time and the processes that occur during birth, from the beginning of cervical dilatation to the delivery of the placenta.</p>
<p>lactation (lak-TAY-shun) lact/o _ milk</p>	<p>The production and secretion of milk from the female breasts as nourishment for the infant. Lactation can be referred to as a process or as a period of time during which the female is breastfeeding.</p>
<p>lactiferous ducts (lak-TIF-er-us ducts) lact/o _ milk</p>	<p>Channels or narrow tubular structures that carry milk from the lobes of each breast to the nipple.</p>
<p>laparoscopy (lap-ar-OS-koh-pee) lapar/o _ abdominal wall -scopy _ process of viewing</p>	<p>Visualization of the abdominal cavity with an instrument called a laparoscope through an incision into the abdominal wall.</p>
<p>leukorrhea (loo-koh-REE-ah) leuk/o _ white -rrhea _ discharge, flow</p>	<p>A white discharge from the vagina.</p>
<p>lightening</p>	<p>The settling of the fetal head into the pelvis,</p>

	occurring a few weeks prior to the onset of labor .
linea nigra (LIN-ee-ah NIG-rah)	A darkened vertical midline appearing on the abdomen of a pregnant woman, extending from the fundus to the symphysis pubis.
lithotomy position (lith-OT-oh-mee position)	A position in which the patient lies on her back, buttocks even with the end of the table, with her knees bent back toward her abdomen and the heel of each foot resting in an elevated foot rest at the end of the examination table. See Figure 18-9.
lordosis (lor-DOH-sis) lord/o _ bent -osis _ condition	A forward curvature of the spine, noticeable if the person is observed from the side. See Figure 18-10.
lunar month (LOON-ar)	Four weeks or 28 days; approximately the amount of time it takes the moon to revolve around the earth.
mammary glands (MAM-ah-ree glands) mamm/o _ breast -ary _ pertaining to	The female breasts.
mask of pregnancy	Patches of tan or brown pigmentation associated with pregnancy, occurring mostly on the forehead, cheeks, and nose; also known as chloasma .
multigravida	A woman who has been pregnant more than once.

<p>(mull-tih-GRAV-ih-dah) multi- _ many -gravida _ pregnancy</p>	
<p>multipara (mull-TIP-ah-rah) multi- _ many -para _ to bear</p>	<p>A woman who has given birth two or more times after 20 weeks' gestation.</p>
<p>Nagele's rule (NAY-geh-leez)</p>	<p>A formula that is used to calculate the date of birth: Subtract three months from the first day of the last normal menstrual period and add one year and seven days to that date to arrive at the estimated date of birth.</p>
<p>neonatology (nee-oh-nay-TALL-oh-jee) neo- _ new nat/o _ birth -logy _ the study of</p>	<p>The branch of medicine that specializes in the treatment and care of the diseases and disorders of the newborn through the first four weeks of life.</p>
<p>nullipara (null-IP-ah-rah) nulli- _ none -para _ to bear</p>	<p>A woman who has never completed a pregnancy beyond 20 weeks' gestation.</p>
<p>obstetrician (ob-steh-TRISH-an)</p>	<p>A physician who specializes in the care of women during pregnancy, the delivery of the baby, and the first six weeks following the delivery (known as the immediate postpartum period).</p>
<p>obstetrics (ob-STET-riks)</p>	<p>The field of medicine that deals with pregnancy, the delivery of the baby, and the first six weeks after delivery (the</p>

	immediate postpartum period).
<p>ovary (OH-vah-ree) ov/o _ ovum -ary _ pertaining to</p>	<p>One of a pair of female gonads responsible for producing mature ova (eggs) and releasing them at monthly intervals (ovulation); also responsible for producing the female hormones, estrogen and progesterone.</p>
<p>ovulation (ov-yoo-LAY-shun)</p>	<p>The release of the mature ovum from the ovary; occurs approximately 14 days prior to the beginning of menses.</p>
<p>ovum (OH-vum) ov/o _ egg -um _ noun ending</p>	<p>The female reproductive cell; female sex cell or egg.</p>
<p>para</p>	<p>A woman who has produced an infant regardless of whether the infant was alive or stillborn. This term applies to any pregnancies carried to more than 20 weeks' gestation. The term may be written para II, para III, and so on, to indicate the number of pregnancies lasting more than 20 weeks' gestation, regardless of the number of offspring produced by the pregnancy. A woman who has had only one pregnancy resulting in multiple births is still a para I.</p>
<p>parturition (par-too-RISH-un)</p>	<p>The act of giving birth.</p>
<p>perineum</p>	<p>The area between the vaginal orifice and the</p>

(pair-ih-NEE-um)	anus. It consists of muscular and fibrous tissue and serves as support for the pelvic structures.
placenta (plah-SEN-tah)	A highly vascular, disk-shaped organ that forms in the pregnant uterine wall for exchange of gases and nutrients between the mother and the fetus. The maternal side of the placenta attaches to the uterine wall, whereas the fetal side of the placenta gives rise to the umbilical cord (which connects directly to the baby). After the delivery of the baby, when the placenta is no longer needed, it separates from the uterine wall and passes to the outside of the body through the vagina (at which time it is called the afterbirth).
preeclampsia (pre-eh-KLAMP-see-ah)	A state during pregnancy in which the expectant mother develops high blood pressure, accompanied by proteinuria or edema, or both, after 20 weeks' gestation.
pregnancy (PREG-nan-see)	The period of intrauterine development of the fetus from conception through birth. The average pregnancy lasts approximately 40 weeks; also known as the gestational period.
prenatal (pre-NAY-tl) pre- _ before, in front -natal _ pertaining to birth	Pertaining to the period of time during pregnancy; that is, before the birth of the baby.
primigravida	A woman who is pregnant for the first time.

(prigh-mih-GRAV-ih-dah) primi- _ fi rst -gravida _ pregnancy	
primipara (prigh-MIP-ah-rah) primi- _ fi rst -para _ to bear	A woman who has given birth for the fi rst time, aft er a pregnancy of at least ٢٠ weeks' gestation.
progesterone (proh-JES-ter-on)	A female hormone secreted by the corpus luteum and the placenta. It is primarily responsible for the changes that occur in the endometrium in anticipation of a fertilized ovum and for development of the maternal placenta aft er implantation of a fertilized ovum. Also known as progestin.
proteinuria (proh-teen-YOO-ree-ah) -uria _ urine condition	The presence of protein (albumin) in the urine; also called albuminuria. This can be a sign of pregnancy-induced hypertension (PIH).
puberty (PEW-ber-tee)	The period of life at which the ability to reproduce begins; that is, in the female, it is the period when the female reproductive organs become fully developed and secondary sex characteristics appear.
pyrosis (pye-ROH-sis) pyr/o _ fi re, heat -osis _ condition	Heartburn; indigestion.
quickenig	The fi rst feeling of movement of the fetus felt by

(KWIK-en-ing)	the expectant mother; usually occurs at about ١٤ to ٢٠ weeks' gestation .
salpingectomy (sal-pin-JEK-toh-mee) salping/o _ eustachian tubes; also refers to fallopian tubes -ectomy _ surgical removal	Surgical removal of a fallopian tube.
sexual intercourse	The sexual union of two people of the opposite sex in which the penis is introduced into the vagina ; also known as copulation or coitus .
signs	Objective findings as perceived by an examiner, such as the measurement of a fever on the thermometer, the observation of a rash on the skin, or the observation of a bluish-violet color of the cervix .
sperm	A mature male germ cell; spermatozoon.
striae gravidarum (STRIGH-ay grav-ih-DAR-um)	Stretch marks that occur during pregnancy due to the great amount of stretching that occurs. They appear as slightly depressed, pinkish-purple streaks in the areas of greatest stretch (which are the abdomen, the breasts and the thighs).
supine hypotension (soo-PINE high-poh-TEN-shen)	Low blood pressure that occurs in a pregnant woman when she is lying on her back. It is caused by the pressure of the pregnant uterus on the vena cava; also known as supine hypotension

	syndrome or vena cava syndrome.
symptoms (SIM-toms)	A subjective indication of a disease or a change in condition as perceived by the patient; something experienced or felt by the patient.
tachycardia (tak-eh-CAR-dee-ah) tachy- _ rapid cardi/o _ heart -a _ noun ending	Rapid heartbeat, consistently over 100 beats per minute.
testes (TESS-teez)	The paired male gonads that produce sperm. They are suspended in the scrotal sac in the adult male.
transvaginal ultrasonography (trans-VAJ -in-al ull-trah-son-OG-rah-fee) trans- _ across, through vagin/o _ vagina -al _ pertaining to ultra- _ beyond son/o _ sound -graphy _ process of recording	An ultrasound image that is produced by inserting a transvaginal probe into the vagina . The probe is encased in a disposable cover and is coated with a gel for easy insertion. The gel also promotes conductivity. This procedure allows clear visualization of the uterus , gestational sac, and embryo in the early stages of pregnancy. It also allows the examiner to visualize deeper pelvic structures such as the ovaries and fallopian tubes .
trimester (TRY-mes-ter)	One of the three periods of approximately three months into which pregnancy is divided. The first trimester consists of weeks 1 to 12, the second trimester consists of weeks 13 to 27, and the third trimester

	consists of weeks ٢٨ to ٤٠.
<p>ultrasonography (ull-trah-son-OG-rah-fee)</p> <p>ultra- _ beyond son/o _ sound -graphy _ recording</p>	A noninvasive procedure that involves the use of reflected sound waves to detect the presence of the embryo or fetus .
<p>umbilical cord (um-BILL-ih-kal cord)</p>	A flexible structure connecting the umbilicus (navel) of the fetus with the placenta in the pregnant uterus . It serves as passage for the umbilical arteries and vein.
<p>uterus (YOO-ter-us)</p>	The hollow, pear-shaped organ of the female reproductive system that houses the fertilized, implanted ovum as it develops throughout pregnancy; also the source of the monthly menstrual flow from the nonpregnant uterus .
<p>vagina (vah-JIGH-nah)</p>	The muscular tube that connects the uterus with the vulva. It is approximately ٣ inches in length and rests between the bladder (anteriorly) and the rectum (posteriorly).
<p>varicose veins (VAIR-ih-kohs veins)</p>	Twisted, swollen veins that occur as a result of the blood pooling in the legs.
<p>waddling gait (WAH-dl-ing gait)</p>	A manner of walking in which the feet are wide apart and the walk resembles that of a duck.

Discomforts of Pregnancy

backache	Backache is common during the second and third trimester of pregnancy and is due to the body's adaptation to the stresses placed upon the back as the pregnancy progresses. Recommended treatment includes encouraging good posture, wearing comfortable shoes, getting adequate rest, and bending from the knees—not from the waist.
edema	Edema, or swelling, of the lower extremities is not uncommon in pregnancy (particularly as the pregnancy progresses). Recommended treatment includes elevating the feet and legs when sitting, lying down when resting, drinking plenty of water, and avoiding foods high in sodium. If the edema is present in the hands and face also, it should be reported immediately to the physician because this could be an indication of complications of pregnancy.
fatigue	Fatigue usually occurs during the first trimester of pregnancy, disappears during the second trimester, and returns toward the end of the

	<p>pregnancy. This is due to the body's adjustment to the stresses of pregnancy. Recommended treatment includes encouraging at least 8 to 10 hours of sleep per night and allowing for short naps during the day.</p>
heartburn	<p>Heartburn is also known as pyrosis (pyr/o = fever, fire + osis = condition). This discomfort occurs mainly in the last few weeks of pregnancy due to the pressure exerted on the esophagus by the enlarged, pregnant uterus. This pressure may also cause a return, or reflux, of gastric juices into the esophagus, resulting in a burning sensation, a condition known as gastroesophageal reflux. Recommended treatment includes avoiding greasy or spicy foods, drinking plenty of water, avoiding coffee, eating several small meals instead of three larger meals, sitting upright for an hour after eating, and lying with head and shoulders elevated.</p>
hemorrhoids	<p>Hemorrhoids are swollen veins of the rectum and anus that develop as a result of the increasing pressure on the area due to the progressing pregnancy. They usually disappear after delivery but can cause discomfort in the pregnant female. Recommended treatment includes drinking plenty of fluids to avoid constipation (which causes hemorrhoids to become more severe), soaking in warm-water baths, and applying topical anesthetic ointments.</p>

nausea	<p>Nausea usually occurs during the first trimester of pregnancy and is known as “morning sickness,” although it may occur during the morning, in the afternoon, or throughout the day. Recommended treatment includes eating dry toast or crackers, eating small frequent meals, eating something before taking prenatal vitamins, or drinking fluids between meals instead of with meals. Any prolonged nausea and vomiting should be reported to the physician immediately; that is, severe nausea that is preventing proper eating and hydration or severe vomiting that persists.</p>
varicose veins	<p>Varicose veins are twisted, swollen veins that occur as a result of the blood pooling in the legs due to the added weight (from the pregnancy) to the lower extremities of the body. Recommended treatment includes the use of support hosiery, encouraging the pregnant woman to avoid crossing her legs, regular exercise of walking to increase the blood flow to the legs, and elevation of the feet and legs when sitting.</p>

Complications of Pregnancy

abortion	Termination of a pregnancy before the fetus has
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(ah-BOR-shun)	reached a viable age; that is, an age at which the fetus could live outside of the uterine environment.
abruptio placenta (ah-BRUP-she-oh pla-SEN-tah)	The premature separation of a normally implanted placenta from the uterine wall after the pregnancy has passed ٢٠ weeks' gestation or during labor (the birthing process).
ectopic pregnancy (ek-TOP-ic PREG-nan-see) ecto- _ outside	Abnormal implantation of a fertilized ovum outside the uterine cavity; also called a tubal pregnancy.
gestational diabetes (jess-TAY-shun-al dye-ah-BEE-teez)	A disorder in which women who are not diabetic before pregnancy develop diabetes during the pregnancy; that is, they develop an inability to metabolize carbohydrates (glucose intolerance), with resultant hyperglycemia.
HELLP syndrome	The acronym HELLP stands for Hemolytic anemia, Elevated Liver enzymes, and Low Platelet count.
hydatidiform mole (high-dah-TID-ih-form mohl)	An abnormal condition that begins as a pregnancy and deviates from normal development very early. The diseased ovum deteriorates (not producing a fetus), and the chorionic villi of the placenta (small vessels protruding from the outer layer) change to a mass of cysts resembling a bunch of grapes.
hyperemesis	An abnormal condition of pregnancy characterized

<p>gravidarum (high-per-EM-eh-sis grav-ih-DAR-um) hyper- _ excessive -emesis _ to vomit gravid/o _ pregnancy</p>	<p>by severe vomiting that results in maternal dehydration and weight loss.</p>
<p>incompetent cervix (in-COMP-eh-tent SER-viks)</p>	<p>A condition in which the cervical os (opening) dilates before the fetus reaches term, without labor or uterine contractions; usually occurring during the second trimester of pregnancy and resulting in a spontaneous abortion of the fetus.</p>
<p>placenta previa (plah-SEN-tah PRE- vee-ah)</p>	<p>A condition of pregnancy in which the placenta is implanted in the lower part of the uterus and precedes the fetus during the birthing process.</p>
<p>pregnancy-induced hypertension</p>	<p>The development of hypertension (high blood pressure) during pregnancy in women who had normal blood pressure readings (normotensive) prior to pregnancy.</p>
<p>Rh incompatibility</p>	<p>An incompatibility between an Rh negative mother's blood with her Rh positive baby's blood, causing the mother's body to develop antibodies that will destroy the Rh positive blood.</p>

Signs and Symptoms of Labor

The material listed in this segment is an elementary discussion of the signs and symptoms of impending labor and comparison of true labor and false labor.

bloody show	A vaginal discharge that is a mixture of thick mucus and pink or dark brown blood. It may begin a few weeks prior to the onset of labor and occurs as a result of the softening, dilation, and effacement (thinning) of the cervix in preparation for childbirth. The bloody show will continue and will increase during labor as the cervix continues to dilate and efface.
Braxton Hicks contractions	Mild, irregular contractions that occur throughout pregnancy. As full term approaches, these contractions intensify and are sometimes mistaken for true labor.
increased vaginal discharge	When the baby settles into the pelvis prior to the onset of labor, the pressure of the baby's head in the area creates congestion of the vaginal mucosa, which results in an increase in clear, nonirritating vaginal

	secretions.
lightening	The expectant mother will notice that she can breathe easier because the descent of the baby relieves some of the pressure from her diaphragm. When lightening occurs, most expectant mothers will refer to it by saying that the baby has “dropped.” Lightening is more obvious in women who are having their first baby.
rupture of the amniotic sac	The rupture of the amniotic sac (membranes) may occur prior to the onset of labor, may occur during labor, or may not occur without assistance. Expectant mothers are usually advised to report to the hospital or birthing center for evaluation if the membranes rupture prior to the onset of labor. This is important because the amniotic sac serves as a barrier between the baby and the unsterile outside environment, and when broken the chance for infection is increased. Women often refer to the rupture of the amniotic sac by saying their “water broke,” because there may be a sudden gush of amniotic fluid as the membranes rupture.
sudden burst of energy	This occurs in some women shortly before the onset of labor. These women may suddenly have the energy to do major housecleaning duties—things they have not had the energy to do previously.

Diagnostic Techniques, Treatments,
and Procedures

<p>AFP screening</p>	<p>AFP (alpha-fetoprotein) is a serum screening test for birth defects such as spina bifida (defective closure of the vertebrae of the spinal column), Down syndrome (mental retardation and physical abnormalities), and trisomy 18 (severe mental retardation and severe birth defects).</p>
<p>amniocentesis (am-nee-oh-sen-TEE-sis) amni/o _ amnion -centesis _ surgical puncture</p>	<p>A surgical puncture of the amniotic sac for the purpose of removing amniotic fluid.</p>
<p>cesarean section (see-SAYR-ee-an section)</p>	<p>A surgical procedure in which the abdomen and uterus are incised and a baby is delivered transabdominally. Also known as cesarean delivery.</p>
<p>Chorionic villus sampling (koh-ree-ON-ik VILL-us sampling)</p>	<p>Chorionic villus sampling (CVS) is a prenatal diagnostic test performed in the first trimester of pregnancy to detect chromosomal abnormalities (such as Down syndrome) in an unborn child.</p>

contraction stress test	A stress test used to evaluate the ability of the fetus to tolerate the stress of labor and delivery (CST); also known as oxytocin challenge test.
fetal monitoring (electronic) (FEE-tal MON-ih-tor-ing)	The use of an electronic device to monitor the fetal heart rate and the maternal uterine contractions. This procedure can be done with external or internal devices.
first trimester screening	First trimester screening consists of a blood test (maternal serum sample) and an ultrasound to identify pregnancies at risk for birth defects such as Down syndrome and trisomy ١٨.
nipple stimulation test	A noninvasive technique that produces basically the same results as the contraction stress test by having the pregnant woman stimulate the nipples of her breasts by rubbing them between her fingers.
obstetrical ultrasound (ob-STET-rik-al ULL-trah-sound)	Ultrasound (also called ultrasonography) is a noninvasive procedure that uses high-frequency sound waves to examine internal structures of the body. In the field of obstetrics , ultrasonography is used to examine the internal structures and contents of the uterus . It can be used to detect very early pregnancy as well as the size and development of the fetus . It is also used to confirm complications of pregnancy such as placenta previa , breech presentation, and other abnormal positions of the fetus . Ultrasonography is also a valuable tool for

	diagnosis of multiple gestations.
pelvic ultrasound (PELL-vik ULL-trah-sound)	A noninvasive procedure that uses high-frequency sound waves to examine the pelvis.
pelvimetry (pell-VIM-eh-tree) pelv/i _ pelvis -metry _ the process of measuring	The process of measuring the female pelvis, manually or by X-ray, to determine its adequacy for childbearing.
pregnancy testing	Tests performed on maternal urine and/or blood to determine the presence of the hormone HCG (human chorionic gonadotropin). HCG is detected shortly after the first missed menstrual period.

COMMON ABBREVIATIONS

نسخه اولیه غیر قابل انتشار

نسخه اولیہ غیر قابل انتشار

Chapter ١٩

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

١. Identify and define at least ٢٠ pathological conditions common to children.
٢. List and define ١٠ communicable diseases seen in children.

٣. Correctly spell and pronounce terms listed on the Written and Audio Terminology Review, using the phonetic pronunciations provided or the Audio CDs if available.
٤. Define at least ٢٠ abbreviations common to the discussion of diseases and disorders of children.
٥. State the recommended immunization schedule for infants and children.
٦. Distinguish the differences between active and passive immunity

Overview

Pediatrics is the field of medicine concerned with the **development** and care of children, specializing in the treatment and prevention of the diseases and disorders peculiar to children. In this chapter, the term *child health* is synonymous with **pediatrics**.

The physician who specializes in **pediatrics** is known as a **pediatrician**. Some pediatric offices employ a **pediatric nurse practitioner (PNP)**, who is a registered nurse practitioner with advanced study and clinical practice in pediatric nursing. The pediatric

specialty concerned with the diseases and abnormalities of the newborn **infant** is

known as **neonatology**. The physician who specializes in **neonatology** is known as a **neonatologist**.

There are many subspecialties that deal with the care of children, such as pediatric oncology, pediatric cardiology, and child psychology. No matter what the specialty, the health professional who cares for children must possess a broad base of knowledge in the **growth** and development of children as well as a clear understanding of the illnesses and diseases peculiar to children. This knowledge will be applied when assisting in the care of both the healthy and the sick child.

An instrumental part of the prevention of disease and early detection of deviations from the norm in children is the **well-child** visit. During this visit, health professionals will assess the current health status of the child, the progression of growth and development, and the need for immunizations. The well-child visit also provides the opportunity for teaching the parents what to expect in the various stages of their child's growth and development. The physical examination, the immunizations, and the health teachings are all designed to promote optimal health for the child.

The field of **pediatrics** encompasses a wide range of terms that will be used by the health professional. This chapter covers terms and concepts that deal with the normal growth and development of the child, the well-child visit, immunizations, and diseases and disorders common to children.

Growth and Development Principles

The patterns of growth and development are directional and predictable, including the

following growth patterns.

cephalocaudal cephal/o = head caud/o = tail -al = pertaining to	Growth and development proceeds from head to toe (cephalocaudal). See Figure ۱۹-۴. In the infant, muscular control follows the spine downward. For example, infants will hold up their head before they sit.
proximodistal	Growth and development proceeds from the center

<p>proxim/o = near dist/o = away from -al = pertaining to</p>	<p>outward or from the midline to the periphery (proximodistal). See Figure ۱۹-۴. For example, the large muscles of the arms and legs are subject to voluntary control sooner than the fine muscles of the hands and feet.</p>
<p>general to specific</p>	<p>Activities move from being generalized toward being more focused (general to specific). For example, the child will use the whole hand before picking up a small object between the thumb and forefinger.</p>
<p>simple to complex</p>	<p>Language, for example, develops from simple to complex.</p>
<p>growth spurts</p>	<p>Occur throughout childhood, alternating with periods of slow growth.</p>

VOCABULARY

The following vocabulary words are frequently used when discussing child health.

<p>active acquired immunity (AK-tiv ah-KWIRD ih-MEW-nih-tee)</p>	<p>A form of long-term acquired immunity that protects the body against a new infection as the result of antibodies that develop naturally after an initial infection or artificially after a vaccination.</p>
<p>apical pulse (AY-pih-kal puhls)</p>	<p>The heart rate as heard with a stethoscope placed on the chest wall adjacent to the cardiac apex (top of the heart).</p>
<p>apnea</p>	<p>An absence of spontaneous respiration.</p>

(ap-NEE-ah) a- = without, not -pnea = breathing	
autism (AW-tizm) aut/o = self -ism = condition	A pervasive developmental disorder characterized by the individual being extremely withdrawn and absorbed with fantasy. The individual suffers from impaired communication/social interaction skills, and activities and interest are very limited. Autism was first classified as a type of schizophrenia.
axillary temperature (AK-sih-lair-ee TEMP-per-ah-toor) axill/o = armpit -ary = pertaining to	The body temperature as recorded by a thermometer placed in the armpit. The reading is generally 0.5 to 1.0 degree less than the oral temperature.
congenital	Present at birth.
crackles (CRACK-l'z)	A common abnormal respiratory sound heard on auscultation of the chest during inspiration, characterized by discontinuous bubbling noises.
cyanosis (sigh-ah-NOH-sis) cyan/o = blue -osis = condition	Bluish discoloration of the skin and mucous membranes caused by an excess of deoxygenated hemoglobin in the blood or a structural defect in the hemoglobin molecule.
deciduous teeth (dee-SID-yoo-us TEETH)	Baby teeth; the first set of teeth, also known as primary teeth.

dentition (den-TIH-shun)	The eruption of teeth. This occurs in a sequential pattern, with 20 primary teeth erupting between the ages of 6 to 30 months. See Figure 19-5.
development	An increase in function and complexity that results through learning, maturation, and growth.
febrile (FEE-brill)	Pertaining to or characterized by an elevated body temperature, such as a febrile reaction to an infectious agent.
friction rub (FRICK-shun rub)	A dry, grating sound heard with a stethoscope during auscultation.
growth	An increase in the whole or any of its parts physically.
grunting (GRUNT-ing)	Abnormal, short, audible, deep, hoarse sounds in exhalation that often accompany severe chest pain.
head circumference (HEAD sir-KUM-fer-ens)	The measurement around the greatest circumference of the head of an infant. This measurement is plotted according to normal growth and development patterns for the infant's head. Increased lags or surges in the increase of the head circumference may indicate serious problems.
hydrocephalus (high-droh-SEFF-ah-lus) hydr/o = water cephal/o = head -us = noun ending	A pathological condition characterized by an abnormal accumulation of cerebrospinal fluid, usually under increased pressure, within the cranial vault and subsequent dilatation of the ventricles; also called

	hydrocephaly. See Figure ١٩-٤.
immunity (ih-MEW-nih-tee)	The quality of being unsusceptible to or unaffected by a particular disease or condition.
immunization (im-mew-nih-ZAY-shun)	A process by which resistance to an infectious disease is induced or augmented.
infant (IN-fant)	A child who is in the earliest stage of extrauterine life, a time extending from the first month after birth to approximately ١٢ months of age, when the baby is able to assume an erect posture. Some extend the period to ٢٢ months of age.
length (recumbent) (LENGTH [ree-KUM-bent])	The measurement of the distance from the crown of the infant's head to the infant's heel while the infant is lying on the back with legs extended.
lumbar puncture (LUM-bar PUNK-choor)	The introduction of a hollow needle and stylet into the subarachnoid space of the lumbar portion of the spinal canal to obtain specimens of cerebrospinal fluid.
microcephalus (my-kroh-SEFF-ah-lus) micr/o = small cephal/o = head -us = noun ending	A congenital anomaly characterized by abnormal smallness of the head in relation to the rest of the body and by underdevelopment of the brain, resulting in some degree of mental retardation.
natural immunity	A usually innate and permanent form of immunity to

(natural ih-MEW-nih-tee)	a specific disease.
neonatologist (nee-oh-nay-TALL-oh-jist) neo- = new nat/o = birth -logist = one who specializes in the study of	A medical doctor who specializes in neonatology .
neonatology (nee-oh-nay-TALL-oh-jee) neo- = new nat/o = birth -logy = the study of	The medical specialty concerned with the diseases and abnormalities of the newborn infant.
nomogram nom/o = of or relating to usage -gram = a record	A graphic representation, by any of various systems, of a numeric relationship.
omphalitis (om-fal-EYE-tis) omphal/o = navel -itis = inflammation of	An inflammation of the umbilical stump, marked by redness, swelling, and purulent exudate in severe cases.
omphalocele (om-FAL-oh-seel) omphal/o = navel -cele = swelling or herniation	Congenital herniation of intra-abdominal viscera through a defect in the abdominal wall around the umbilicus.
omphalorrhea (om-fal-oh-REE-ah) omphal/o = navel -rrhea = discharge;	Drainage from the umbilicus (navel).

fl ow	
oral temperature or/o = mouth -al = pertaining to	The mean body temperature of a normal person as recorded by a clinical thermometer placed in the mouth.
passive acquired immunity (passive ih-MEW-nih-tee)	A form of acquired immunity resulting from antibodies that are transmitted naturally through the placenta to a fetus, through the colostrum to an infant, or artificially by injection of antiserum for treatment or as a prophylaxis (protection against disease).
pediatrician (pee-dee-ah-TRISH-an) pedi/a = child -iatrician = one who treats; a physician	A physician who specializes in pediatrics .
pediatric nurse practitioner (pee-dee-AT-rik NURSE prac-TIH-shin-er) pedi/a = child -iatric = medicine, the medical profession, or physician	A registered nurse with advanced study and clinical practice in pediatric nursing.
pediatrics (pee-dee-AT-riks) pedi/a = child -iatrics = medicine, the medical	Pertaining to preventive and primary health care and treatment of children and the study of childhood diseases.

profession, or physician	
primary teeth (PRYE-mar-ee TEETH)	Baby teeth; the first set of teeth, also known as deciduous teeth.
prodromal (pro-DROH-mal)	Pertaining to early signs or symptoms that mark the onset of a disease.
pyrexia (pie-REK-see-ah) pyr/o = fire, heat	Fever.
rectal temperature rect/o = rectum -al = pertaining to	Temperature as measured in the rectum.
recumbent	Lying down.
retractions (rih-TRAK-shun)	The displacement of tissues to expose a part or structure of the body. retractions may be seen around the ribs in a child or infant with respiratory distress.
stature (STAT-yoor)	Natural height of a person in an upright position.
stridor (STRIGH-dor)	An abnormal, high-pitched, musical sound caused by an obstruction in the trachea or larynx.
toxicoid (TOKS-oyd) tox/o = poisons -oid = resembling	A toxin that has been treated with chemicals or with heat to decrease its toxic effect but that retains its ability to cause the production of antibodies.
tympanic temperature	The body temperature as measured electronically at the tympanic

(tim-PAN-ik TEM-per-ah-chur) tympan/o = eardrum -ic = pertaining to	membrane.
vaccine (VAK-seen; vak- SEEN)	A suspension of attenuated or killed microorganisms administered intradermally, intramuscularly, orally, or subcutaneously to induce active immunity to infectious disease.
vertex (VER-teks)	The top of the head; crown.
well-child visit	Routine health visit in which health professionals assess the current health status of the child, the progression of growth and development, and the need for immunizations.
wheezing (HWEEZ-ing)	A breath sound, characterized by a high-pitched musical quality heard on both inspiration and expiration. Wheezes may be associated with asthma and chronic bronchitis as well as with other illnesses.

<p>chickenpox (varicella) (CHICK-en-pox)</p>	<p>A viral disease of sudden onset with slight fever, successive eruptions of macules, papules, and vesicles on the skin followed by crusting over of the lesions with a granular scab. Itching may be severe. (Macules are discolorations at normal skin level; papules are raised pimplelike skin blemishes; and vesicles are blisterlike.) See Figure 19-7.</p>
<p>diphtheria (diff-THEE-ree-ah)</p>	<p>Serious infectious disease affecting the nose, pharynx, or larynx, usually resulting in sore throat, dysphonia (difficult speaking or hoarseness), and fever. The disease is caused by the bacterium, <i>Corynebacterium diphtheriae</i>, which forms a white coating over the affected airways as it multiplies.</p>
<p>pertussis (whooping cough) (per-TUSS-is)</p>	<p>An acute, upper respiratory infectious disease caused by the <i>Bordetella pertussis</i> bacterium.</p>
<p>roseola infantum (roh-zee-OH-lah in-FAN-tum) rose/o = rose colored</p>	<p>A viral disease with a sudden onset of a high fever for three to four days, during which time the child may experience mild cold-like symptoms and slight irritability. Febrile seizures may occur.</p>
<p>rubella (German measles; 3-day measles) (roo-BELL-lah)</p>	<p>A mild febrile (fever-causing) infectious disease resembling both scarlet fever and measles but differing from these in its short course; characterized by a rash of both macules and papules that fades and</p>

	disappears in three days. See Figure ١٩-١١.
rubeola (“red measles,” ٧-day measles) (roo-bee-OH-lah)	Acute, highly communicable viral disease that begins as an upper respiratory disorder with fever, sore throat, cough, runny nose, sensitivity to light, and possible conjunctivitis. Typical red, blotchy rash appears four to five days after onset of symptoms, beginning behind the ears, on the forehead, or cheeks and progressing to extremities and trunk and lasting about five days. See Figure ١٩-١٢.
scarlet fever (scarlatina) (SCAR-let FEE-ver) (scar-lah-TEE-nah)	An acute, contagious disease characterized by sore throat, abrupt high fever, increased pulse, strawberry tongue (red and swollen), and punctiform (pointlike) bright red rash on the body. See Figure ١٩-١٣.

Pathological Conditions

As you study the pathological conditions seen in infants, toddlers, and children, note

that the basic definition is in a green shaded box followed by a more detailed description

in regular print. The phonetic pronunciation is directly beneath each term, as well as a breakdown

of the component parts of the term where applicable.

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<p>asthma (AZ-mah)</p>	<p>Paroxysmal dyspnea (severe attack of difficult breathing) accompanied By wheezing caused by a spasm of the bronchial tubes or by swelling of the mucous membrane.</p>
<p>autism (AW-tizm) aut/o = self -ism = condition</p>	<p>Autism is a pervasive developmental disorder characterized by the individual being extremely withdrawn and absorbed with fantasy. The individual suffers from impaired communication/social interaction skills, and activities and interests are very limited.</p>
<p>cleft lip and palate (CLEFT LIP and PAL-at)</p>	<p>Cleft lip is a congenital defect in which there is an open space between the nasal cavity and the lip due to failure of the soft tissue and bones in this area to fuse properly during embryologic development. See</p>

	<p>Figure ١٩-١٤A. With cleft palate, there is failure of the hard palate to fuse, resulting in a fissure (cracklike sore) in the middle of the palate.</p> <p>See Figure ١٩-١٤B.</p>
<p>clubfoot (talipes equinovarus) (TAL-ih-peeZ eh-kwin-oh-VAIR-us)</p>	<p>The medical term for clubfoot is talipes equinovarus. In this condition, the infant's foot is fixed in plantar flexion (turned downward) and deviates medially (turned inward), and the heel is in an elevated position. Therefore, the infant's foot cannot remain in normal position with the sole of the foot firmly on the floor. See Figure ١٩-١٥.</p>
<p>coarctation of the aorta (koh-ark-TAY-shun of the ay-OR-tah)</p>	<p>A congenital heart defect characterized by a localized narrowing of the aorta, which results in increased blood pressure in the upper extremities (area proximal to the defect) and decreased blood pressure in the lower extremities (area distal to the defect).</p>
<p>croup (CROOP)</p>	<p>A childhood disease characterized by a barking cough, stridor (high-pitched musical sound when breathing in), and laryngeal spasm.</p>
<p>cryptorchidism (kript-OR-kid-izm) crypt/o = hidden orchid/o = testicle -ism = condition</p>	<p>Condition of undescended testicle(s); the absence of one or both testicles from the scrotum.</p>

<p>Down syndrome (DOWN SIN-droh-m)</p>	<p>A congenital condition characterized by multiple defects and varying degrees of mental retardation. See Figure ١٩-١٤.</p>
<p>dwarfism (DWARF-ism)</p>	<p>Generalized growth retardation of the body due to the deficiency of the human growth hormone; also known as congenital hypopituitarism or hypopituitarism. See Figure ١٩-١٧.</p>
<p>epispadias (ep-ih-SPAY-dee-as) epi- = upon, over</p>	<p>A congenital defect (birth defect) in which the urethra opens on the upper side of the penis at some point near the glans.</p>
<p>erythroblastosis fetalis (eh-rith-roh-blee-sis fee-TAL-iss) erythr/o = red blast/o = embryonic stage of development -osis = condition</p>	<p>A form of hemolytic anemia that occurs in neonates due to a maternal–fetal blood group incompatibility involving the ABO grouping or the Rh factors. This is also known as hemolytic disease of the newborn (HDN).</p>
<p>esophageal atresia (ee-soff-ah-JEE-al ah-TREE-zee-ah) esophag/o = esophagus -eal = pertaining to</p>	<p>A congenital abnormality of the esophagus due to its ending before it reaches the stomach either as a blind pouch or as a fistula connected to the trachea.</p>
<p>gigantism (JYE-gan-tizm)</p>	<p>A proportional overgrowth of the body’s tissue due to the hypersecretion of the human growth hormone before puberty.</p>

<p>hyaline membrane disease (HIGH-ah-lighn MEM-brayn dih-ZEEZ)</p>	<p>Also known as respiratory distress syndrome of the premature infant (RDS), hyaline membrane disease is severe impairment of the function of respiration in the premature newborn. This condition is rarely present in a newborn of greater than ٣٧ weeks' gestation or in one weighing at least ٥ pounds.</p>
<p>hydrocele (HIGH-droh-seel) hydro- = water -cele = swelling or herniation</p>	<p>An accumulation of fluid in any saclike cavity or duct, particularly the scrotal sac or along the spermatic cord.</p>
<p>hydrocephalus (high-droh-SEFF-ah-lus) hydro- = water cephal/o = head -us = noun ending</p>	<p>An abnormal increase of cerebrospinal fluid (CSF) in the brain that causes the ventricles of the brain to dilate, resulting in an increased head circumference in the infant with open fontanel(s); congenital disorder. See Figure ١٩-١٨.</p>
<p>hypospadias (high-poh-SPAY-dee-as) hypo- = under, below, beneath, less than normal</p>	<p>A congenital defect in which the urethra opens on the underside of the penis instead of at the end.</p>
<p>intussusception (in-tuh-suh-SEP-shun)</p>	<p>Telescoping of a portion of proximal intestine into distal intestine (usually in the ileocecal region), causing an obstruction.</p>
<p>patent ductus arteriosus (PAY-tent DUK-tus)</p>	<p>An abnormal opening between the pulmonary artery and the aorta caused by failure of the fetal ductus arteriosus to</p>

ar-tee-ree-OH-suss)	close after birth. This defect is seen primarily in premature infants.
phimosis (fih-MOH-sis)	A tightness of the foreskin (prepuce) of the penis of the male infant that prevents it from being pulled back. The opening of the foreskin narrows due to the tightness and may cause some difficulty with urination.
Reye's syndrome syn- = together, joined -drome = that which runs together	A syndrome marked by severe edema of the brain and increased intracranial pressure, hypoglycemia, and fatty infiltration and dysfunction of the liver. Symptoms may follow an acute viral infection, occurring in children below the age of 18, often with fatal results. There are confirmed studies linking the onset of Reye's syndrome to aspirin administration during a viral illness.
shaken baby syndrome (SBS)	Shaken baby syndrome is a serious form of child abuse that describes a group of unique symptoms resulting from repetitive, violent shaking. The violent shaking (forward and backward shaking) produces acceleration-deceleration forces within the head of the child that can cause brain injury. This whiplash-type injury is not caused by playful bouncing of the child and is not an accidental injury.
spina bifida occulta (SPY-nah BIH-fih-	A congenital defect of the central nervous system in which the back

dah oh-KULL-tah)	portion of one or more vertebrae is not closed. A dimpling over the area may occur.
sudden infant death syndrome (SIDS)	The completely unexpected and unexplained death of an apparently well, or virtually well, infant. SIDS is also known as “crib death.”
Tay-Sachs disease (TAY-SACKS dih-ZEEZ)	A congenital disorder caused by altered lipid metabolism due to an enzyme deficiency.
tetralogy of Fallot (teh-TRALL-oh-jee of fal-OH) tetr/a = four -logy = the study of	A congenital heart anomaly that consists of four defects: pulmonary stenosis, interventricular septal defect, dextroposition (shifting to the right) of the aorta so that it receives blood from both ventricles, and hypertrophy of the right ventricle; named for the French physician, Etienne Fallot, who first described the condition.
transposition of the great vessels (trans-poh-SIH-shun)	A condition in which the two major arteries of the heart are reversed in position, resulting in two noncommunicating circulatory systems.
umbilical hernia (um-BILL-ih-kahl HER-nee-ah)	An outward protrusion of the intestine through a weakness in the abdominal wall around the umbilicus (navel, or “belly button”).

Diagnostic Techniques, Treatments,
and Procedures

circumcision (sir-kum-SIH-zhun)	A surgical procedure in which the foreskin (prepuce) of the penis is removed.
heel puncture	Heel puncture is a method of obtaining a blood sample from a newborn or premature infant by making a shallow puncture of the lateral or medial area of the plantar (sole of the foot) surface of the heel; also called a “heel stick.” See Figure ١٩-٢١.
pediatric urine collection (pee-dee-AT-rik)	A urine specimen may be requested as part of an infant’s physical examination to determine the presence of a pathologic condition.

COMMON ABBREVIATIONS

نسخه اولیہ غیر قابل انتشار

نسخه اولیه غیرقابل انتشار

نسخه اولیه غیرقابل انتشار

CHAPTER

٢٠

CHAPTER CONTENT

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

١. Identify at least ٢٠ diagnostic techniques/procedures relating to the specialty of radiology and diagnostic imaging.
٢. Correctly spell and pronounce terms listed on the Written and Audio

Terminology Review, using the phonetic pronunciations provided or the Audio CDs if available.

۳. Identify at least ۱۰ radiological positions and/or movements based on their descriptions.

۴. Demonstrate the ability to create at least ۱۰ medical terms related to the specialty of radiology and diagnostic imaging by completing the “Definition to Term” exercise at the end of the chapter.

۵. Identify at least ۲۰ abbreviations common to the specialty of radiology and diagnostic imaging.

نسخه اولیه غیر قابل انتشار

Overview

The specialty of **radiology** and diagnostic imaging evolved from an accidental discovery that occurred over 100 years ago. In 1895, Wilhelm Conrad Roentgen (a German physicist) was experimenting with electrical discharges in an evacuated glass tube called a Crookes' tube (cathode-ray tube). He accidentally discovered a new form of electromagnetic energy rays that could penetrate a person's hand and cause the outline of bones to be seen on a chemically coated fluorescent screen behind the hand. Not knowing what the rays were, Roentgen coined the term *X-ray* (*X* represented the unknown). Roentgen developed a photographic film to replace the fluorescent screen to make lasting pictures of the image. The X-ray is also known as the roentgen ray, so named after its discoverer. Roentgen received the first Nobel prize for physics in 1901 for his discovery of the X-ray. From this simple beginning, an entirely new world was opened to medicine.

X-rays are high-energy electromagnetic waves that travel in straight lines and have a shorter wavelength than visible light, enabling them to penetrate solid materials of varying densities. These invisible waves of radiant energy are capable of exposing a photo-

graphic plate (X-ray film) in much the same way light rays expose the film in a camera.

X-rays are used to visualize internal organs and structures of the body and provide a valuable means of verifying the presence of illness or disease. **Radiology** is the study of the diagnostic and therapeutic uses of **X-rays**. This branch of medicine is concerned with the use of **X-rays**, high-strength magnetic fields, high-frequency sound waves, and various radioactive compounds to diagnose and treat diseases. A **radiologist** is a medical doctor who specializes in **radiology**. A **radiologic technologist**, also known as a **radiographer**, is an allied health professional trained to use X-ray machines and other imaging equipment to produce images of the internal structures of the body. Most radiologic technologists are employed in hospital X-ray departments and work under the direction of a **radiologist** or other physicians

Radiology and Diagnostic Imaging Procedures and Techniques

angiocardiology (cardiac catheterization)	A specialized diagnostic procedure in which a catheter (a hollow,flexible tube) is introduced
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<p>(an-jee-oh-kar-dee-OG-rah-fee CAR-dee-ak kath-eh-ter-ih-ZAY-shun) angi/o = vessel cardi/o = heart -graphy = process of recording</p>	<p>into a large vein or artery, usually of an arm or a leg, and then threaded through the circulatory system to the heart.</p>
<p>angiography (an-jee-OG-rah-fee) angi/o = vessel -graphy = process of recording</p>	<p>A series of X-ray films allowing visualization of internal structures after the introduction of a radiopaque substance. See Figure ٢٠-١).</p>
<p>cerebral angiography (SER-eh-bral or seh-REE-bral an-jee-OG-rah-fee) cerebr/o = cerebrum -al = pertaining to angi/o = vessel -graphy = process of recording</p>	<p>The injection of a radiopaque contrast medium into an arterial blood vessel (carotid, femoral, or brachial) to make visualization of the cerebral vascular system via X-ray possible.</p>
<p>renal angiography (REE-nal an-jee-OG-rah-fee) ren/o = kidney -al = pertaining to angi/o = vessel -graphy = process of recording</p>	<p>X-ray visualization of the internal anatomy of the renal blood vessels after injection of a contrast medium.</p>
<p>arteriography (ar-tee-ree-OG-rah-fee) arteri/o = artery -graphy = process of recording</p>	<p>Arteriography is X-ray visualization of arteries following the introduction of a radiopaque contrast medium into the bloodstream through a specific vessel by way of a catheter.</p>
<p>arthrography (ar-THROG-rah-fee) arthr/o = joint</p>	<p>Arthrography is the process of taking X-rays of the inside of a joint after a contrast medium (substance that makes the inside of the joint</p>

-graphy = process of recording	visible) has been injected into the joint.
barium enema (BE) (lower GI series) (BAH-ree-um EN-eh-mah)	Infusion of a radiopaque contrast medium, barium sulfate, into the rectum. The contrast medium is retained in the lower intestinal tract while X-ray films are obtained of the lower GI tract.
barium swallow (upper GI series) (BAH-ree-um SWALL-oh)	Oral administration of a radiopaque contrast medium, barium sulfate, which flows into the esophagus as the person swallows. See Figure ۲۰-۲.
bronchography (brong-KOG-rah-fee) bronch/o = bronchus -graphy = process of recording	Bronchography is a bronchial examination via X-ray following the coating of the bronchi with a radiopaque substance.
cholangiography (intravenous) (IVC) (koh-lan-jee-OG-rah-fee) (in-trah-VEE-nus) chol/e = bile angi/o = vessel -graphy = process of recording	Visualizing and outlining of the major bile ducts following an intravenous injection of a contrast medium.
cholangiography (percutaneous transhepatic) (PTC, PTHC) (koh-lan-jee-OG-rah-fee) (per-kyoo-TAY-nee-us trans-heh-PAT-ik) chol/e = bile	An examination of the bile duct structure, using a needle to pass directly into an intrahepatic bile duct to inject a contrast medium. See Figure ۲۰-۳.

<p>angi/o = vessel -graphy = process of recording per- = through cutane/o = skin -ous = pertaining to trans- = across hepat/o = liver -ic = pertaining to</p>	
<p>cholangiopancreatography (endoscopic retrograde) (ERCP) (koh-lan-jee-oh-pan-kree-ah TOG-rah-fee) (en-doh-SKOP-ic RET-roh-grayd) chol/e = bile angi/o = vessel pancreat/o = pancreas -graphy = process of recording endo- = within scop/o = to view -ic = pertaining to retro- = backward, behind</p>	<p>A procedure that examines the size and filling of the pancreatic and biliary ducts through direct radiographic visualization with a fiberoptic endoscope. See Figure ۲۰-۴.</p>
<p>cholecystography (oral) (koh-lee-sis-TOG-rah-fee) chol/e = bile cyst/o = bladder, sac, or cyst -graphy = process of recording</p>	<p>Visualization of the gallbladder through X-ray following the oral ingestion of pills containing a radiopaque iodinated dye.</p>

<p>cineradiography (sin-eh-ray-dee-OG-rah-fee) cine- = pertaining to movement radi/o = radiation; also refers to radius -graphy = process of recording</p>	<p>Cineradiography is a diagnostic technique combining the techniques of fluoroscopy, radiography, and cinematography by filming the images that develop on a fluorescent screen with a movie camera.</p>
<p>computed axial tomography (CT, CAT) (kom-PEW-ted AK-see-al toh-MOG-rah-fee) tom/o = to cut -graphy = process of recording</p>	<p>A painless, noninvasive diagnostic X-ray procedure using ionizing radiation that produces a cross-sectional image of the body; also called computed tomography.</p>
<p>voiding cystourethrography (VOYD-ing sis-toh-yoo-reeTHROG-rah-fee) cyst/o = bladder, sac, or cyst urethr/o = urethra -graphy = process of recording</p>	<p>X-ray visualization of the bladder and urethra during the voiding process, after the bladder has been filled with a contrast material. The record produced is known as a cystourethrogram.</p>
<p>digital subtraction angiography (DSA) (DIJ-ih-tal sub-TRAK-shun an-jee-OG-rah-fee) angi/o = vessel -graphy = process of recording</p>	<p>X-ray images of blood vessels only, appearing without any background due to the use of a computerized digital video subtraction process.</p>

<p>echocardiography (ek-oh-kar-dee-OG-rah-fee) echo- = sound cardi/o = heart -graphy = process of recording</p>	<p>Echocardiography is a diagnostic procedure for studying the structure and motion of the heart. It is useful in evaluating structural and functional changes in a variety of heart disorders. See Figure ٢٠-٤.</p>
<p>fluoroscopy (floor-or-OSS-koh-pee) fluor/o = luminous -scopy = process of viewing</p>	<p>A radiological technique used to examine the function of an organ or a body part by using a fluoroscope.</p>
<p>hysterosalpingography (his-ter-oh-sal-ping-OG-rah-fee) hyster/o = uterus salping/o = fallopian tube -graphy = process of recording</p>	<p>Hysterosalpingography is an X-ray of the uterus and the fallopian tubes by injecting a contrast material into these structures.</p>
<p>lymphangiography (lim-fan-jee-OG-rah-fee) lymph/o = lymph angi/o = vessel -graphy = process of recording</p>	<p>An X-ray assessment of the lymphatic system following injection of a contrast medium into the lymph vessels in the hand or foot.</p>
<p>magnetic resonance imaging (MRI) (mag-NET-ik REZ-oh-nans IM-ij-ing)</p>	<p>A noninvasive scanning procedure that provides visualization of fluid, soft tissue, and bony structures by using electromagnetic energy. See Figure ٢٠-٧.</p>
<p>mammography (mam-OG-rah-fee) mamm/o = breasts</p>	<p>The process of taking X-rays of the soft tissue of the breast to detect various benign and/or malignant growths before they can be felt.</p>

<p>-graphy = process of recording</p>	
<p>myelography (my-eh-LOG-rah-fee) myel/o = spinal cord or bone marrow -graphy = process of recording</p>	<p>Introduction of contrast medium into the lumbar subarachnoid space through a lumbar puncture to visualize the spinal cord and vertebral canal through X-ray examination. See Figure ۲۰-۹.</p>
<p>positron emission tomography (PET) (POZ-ih-tron ee-MISH-un toh-MOG-rah-fee) tom/o = to cut -graphy = process of recording</p>	<p>Positron emission tomography (PET) scan is a noninvasive diagnostic imaging method that demonstrates the biological function of the body before anatomical changes take place. The scan produces computerized radiographic images of the body structures when radioactive substances (positrons) are administered to the patient (inhaled or injected) . See Figure ۲۰-۱۰.</p>
<p>pyelography (intravenous) (IVP) (pye-eh-LOG-rah-fee) (in-trah-VEE-nus) pyel/o = renal pelvis -graphy = process of intra- = within ven/o = vein -ous = pertaining to</p>	<p>Also known as intravenous pyelogram or excretory urogram, this radiographic procedure provides visualization of the entire urinary tract; that is, the kidneys, ureters, bladder, and urethra. See Figure ۲۰-۱۱.</p>
<p>radiation therapy (ray-dee-AY-shun THAIR-ah-pee)</p>	<p>The delivery of ionizing radiation to accomplish one or more of the following: ۱. Destruction of tumor cells ۲. Reduction of tumor size ۳. Decrease in pain</p>

	<p>¶. Relief of obstruction</p> <p>∆. To slow or stop the spread of cancer cells</p>
<p>radioactive iodine uptake (ray-dee-oh-AK-tiv EYE-oh-dine UP-tayk)</p>	<p>Radioactive iodine uptake is an examination that determines the position, size, shape, and physiological function of the thyroid gland through the use of radionuclear scanning.</p>
<p>scanning (bone, brain, liver, lungs)</p>	<p>Scanning is the process of recording the emission of radioactive waves using a gamma camera (scanner) after an intravenous injection of a radionuclide material into the particular part of the body being studied.</p>
<p>single-photon emission computed tomography (SPECT) (single-FOH-ton ee-MISH-un kom-PEW-ted toh-MOG-rah-fee) tom/o = to cut -graphy = process of recording</p>	<p>Single-photon emission computed tomography (SPECT) is a nuclear imaging procedure that shows how blood flows to tissues and organs.</p>
<p>small bowel follow-through</p>	<p>Oral administration of a radiopaque contrast medium, barium sulfate, which flows through the GI system. X-ray films are obtained at timed intervals to observe the progression of the barium through the small intestine. See Figure ٢٠-١٣.</p>
<p>tomography (toh-MOG-rah-fee) tom/o = to cut; section -graphy = process of recording</p>	<p>An X-ray technique used to construct a detailed cross section, at a predetermined depth, of a tissue structure.</p>
<p>ultrasonography (ull-trah-son-OG-rah-</p>	<p>Also called ultrasound; sonogram. This is a procedure in which sound waves are transmitted</p>

fee) ultra- = beyond, excess son/o = sound -graphy = process of recording	into the body structures as a small transducer is passed over the patient 's skin. See Figure ٢٠-١٤.
venography (vee-NOG-rah-fee) ven/o = vein -graphy = process of recording	Also called phlebography, venography is a technique used to prepare an X-ray image of veins that have been injected with a contrast medium that is radiopaque.
X-rays	The use of high-energy electromagnetic waves, passing through the body onto a photographic film, to produce a picture of the internal structures of the body for diagnosis and therapy. A chest X-ray is a visualization of the interior of the chest; critical in the complete evaluation of the cardiac and pulmonary systems. See Figure ٢٠-١٥.

VOCABULARY

The following vocabulary words are frequently used when discussing radiology and diagnostic imaging.

Word	Definition
abduction (ab-DUCK-shun) ab- = from, away from	Movement of a limb away from the body.
adduction	Movement of a limb toward the axis of the body.

(add-DUCK-shun) ad- = toward, increase	
anteroposterior (an-ter-oh-poss-TEER-ee-or) anter/o = front poster/o = back	From the front to the back of the body, commonly associated with the direction of the X-ray beam.
aortography (ay-or-TOG-rah-fee) aort/o = aorta -graphy = process of recording	A radiographic process in which the aorta and its branches are injected with any of various contrast media for visualization.
arthrography (ar-THROG-rah-fee) arthr/o = joint -graphy = process of recording	A method of radiographically visualizing the inside of a joint by injecting air or contrast medium.
axial (AK-see-al)	Pertaining to or situated on the axis of a structure or part of the body.
betatron (BAY-tah-tron)	A cyclic accelerator that produces high-energy electrons for radiotherapy treatments.
brachytherapy (brak-ee-THAIR-ah-pee)	The placement of radioactive sources in contact with or implanted into the tissues to be treated.
bronchography (brong-KOG-rah-fee) bronch/o = bronchus -graphy = process of recording	An X-ray examination of the bronchi after they have been coated with a radiopaque substance.
cineradiography (see-nee-ray-dee-OG-	The filming with a movie camera of the images that appear on a fluorescent screen, especially

<p>rah-fee) cine- = pertaining to movement radi/o = radiation; also refers to radius -graphy = process of recording</p>	<p>those images of body structures that have been injected with a nontoxic radiopaque medium for diagnostic purposes; also called cinefluorography.</p>
<p>computed tomography (CT) (computed tomography-rah-fee) tom/o = to cut; section -graphy = process of recording</p>	<p>An X-ray technique that produces a film representing a detailed cross section of tissue structure.</p>
<p>digital radiography (digital radiography-rah-fee) radi/o = radiation; also refers to radius -graphy = process of recording</p>	<p>Any method of X-ray image formation that uses a computer to store and manipulate data.</p>
<p>Doppler effect (Doppler effect)</p>	<p>The apparent change in frequency of sound or light waves emitted by a source as it moves away from or toward an observer.</p>
<p>eversion (eversion)</p>	<p>A turning outward or inside out, such as a turning of the foot outward at the ankle.</p>
<p>extension (extension)</p>	<p>A movement allowed by certain joints of the skeleton that increases the angle between two adjoining bones, such as extending the leg (which increases the angle between the femur and the tibia).</p>
<p>flexion</p>	<p>A movement allowed by certain joints of the</p>

(FLEK-shun)	skeleton that decreases the angle between two adjoining bones, such as bending the elbow (which decreases the angle between the humerus and the ulna).
fluorescence (fl oo-oh-RES-ens)	The emission of light of one wavelength (usually ultraviolet) when exposed to light of a different (usually shorter) wavelength; a property possessed by certain substances.
fluoroscopy (fl oo-or-OSS-koh-pee) fluor/o = luminous -scopy = process of viewing	A technique in radiology for visually examining a part of the body or the function of an organ, using a fluoroscope.
gamma camera (GAM-ah CAM-er-ah)	A device that uses the emission of light from a crystal struck by gamma rays to produce an image of the distribution of radioactive material in a body organ.
gamma rays (GAM-ah)	An electromagnetic radiation of short wavelength emitted by the nucleus of an atom during a nuclear reaction. Also called gamma radiation.
half-life	The time required for a radioactive substance to lose 50% of its activity through decay.
interstitial therapy (in-ter-STISH-al therapy)	Radiotherapy in which needles or wires that contain radioactive material are implanted directly into tumor areas.
inversion (in-VER-zhun)	An abnormal condition in which an organ is turned inside out, such as a uterine inversion; also refers to turning inward, as in inversion of the ankle.
ionization (eye-oh-nye-ZAY-)	The process in which a neutral atom or molecule gains or loses electrons and thus acquires a

shun)	negative or positive electric charge.
irradiation (ih-ray-dee-AY-shun)	Exposure to any form of radiant energy (such as heat, light, or X-ray).
lethal (LEE-thal)	Capable of causing death.
linear accelerator (LIN-ee-ar)	An apparatus for accelerating charged subatomic particles used in radiotherapy, physics research, and the production of radionuclides.
lymphangiography (lim-fan-jee-OG-rah-fee) lymph/o = lymph angi/o = vessel -graphy = process of recording	The X-ray examination of lymph glands and lymphatic vessels after an injection of contrast medium.
magnetic resonance imaging (MRI) (mag-NET-ik REZ-oh-nans IM-ij-ing)	Medical imaging that uses radio frequency signals as its source of energy.
myelography (my-eh-LOG-rah-fee) myel/o = bone marrow or spinal cord -graphy = process of recording	A radiographic process by which the spinal cord and the spinal subarachnoid space are viewed and photographed after the introduction of a contrast medium.
nuclear medicine (NOO-klee-ar medicine)	A medical discipline that uses radioactive isotopes in the diagnosis and treatment of disease.

orthovoltage (or-thoh-VOHL-tij)	The voltage range of 100 to 350 KeV supplied by some X-ray generators used for radiation therapy.
palliative (PAL-ee-ah-tiv)	To soothe or relieve.
piezoelectric (pie-EE-zoh-eh-lek-trik)	The generation of a voltage across a solid when a mechanical stress is applied.
positron emission tomography (PET) (POZ-ih-tron ee-MISH-un toh-MOG-rah-fee) tom/o = to cut; section -graphy = process of recording	A computerized radiographic technique that employs radioactive substances to examine the metabolic activity of various body structures.
posteroanterior (poss-ter-oh-an-TEER-ee-or) poster/o = back anter/o = front	The direction from back to front.
prone (PROHN)	Being in horizontal position when lying face down.
pyelography (pie-eh-LOG-rah-fee) pyel/o = renal pelvis -graphy = process of recording	A technique in radiology for examining the structures and evaluating the function of the urinary system.
rad (RAD)	Abbreviation for radiation absorbed dose; the basic unit of absorbed dose of ionizing radiation.

radiation therapy (ray-dee-AY-shun THAIR-ah-pee)	The treatment of neoplastic disease by using X-rays or gamma rays, usually from a cobalt source, to deter the growth of malignant cells by decreasing the rate of cell division or impairing DNA synthesis. Also called radiotherapy.
radioactivity (ray-dee-oh-ak-TIV-ih-tee)	The ability of a substance to emit rays or particles (alpha, beta, or gamma) from its nucleus.
radioactivity (ray-dee-oh-ak-TIV-ih-tee)	The ability of a substance to emit rays or particles (alpha, beta, or gamma) from its nucleus.
radiographer (ray-dee-OG-rah-fer) radi/o = radiation; also refers to radius graph/o = to record -er = one who	An allied health professional trained to use X-ray machines and other imaging equipment to produce images of the internal structures of the body; also known as a radiologic technologist.
radioimmunoassay (ray-dee-oh-im-yoo-nohASS-ay) radi/o = radiation; also refers to radius immun/o = immune, protection -assay = to evaluate	A technique in radiology used to determine the concentration of an antigen, antibody, or other protein in the serum.
radioisotope (ray-dee-oh-EYE-soh-tohp)	A radioactive isotope (of an element) used for therapeutic and diagnostic purposes.

<p>radiologist (ray-dee-ALL-oh-jist) radi/o = radiation; also refers to radius -logist = one who specializes in the study of</p>	<p>A physician who specializes in radiology.</p>
<p>radiology (ray-dee-ALL-oh-jee) radi/o = radiation; also refers to radius -logy = the study of</p>	<p>The study of the diagnostic and therapeutic uses of X-rays; also known as roentgenology.</p>
<p>radiolucent (ray-dee-oh-LOO-sent)</p>	<p>Pertaining to materials that allow X-rays to penetrate with a minimum of absorption.</p>
<p>radionuclide (radioisotope) (ray-dee-oh-NOO-kleed) (ray-dee-oh-EYE-soh-tohp)</p>	<p>An isotope (or nuclide) that undergoes radioactive decay.</p>
<p>radiopaque (ray-dee-oh-PAYK)</p>	<p>Not permitting the passage of X-rays or other radiant energy.</p>
<p>radiopharmaceutical (ray-dee-oh-farm-ahSOO-tih-kal) radi/o = radiation; also refers to radius pharmac/o = drugs, medicine</p>	<p>A drug that contains radioactive atoms.</p>

recumbent (rih-KUM-bent)	Lying down or leaning backward.
roentgenology (rent-jen-ALL-oh-jee)	See radiology.
scanning	A technique for carefully studying an area, organ, or system of the body by recording and displaying an image of the area.
single-photon emission computed tomography (SPECT) (single-FOH-ton ee- MISH-un kom-PEW-ted toh- MOG	A variation of computerized tomography (CT) scanning in which gamma camera detectors rotate around the patient's body, collecting data. The data are summarized into a three-dimensional representation.
supine (soo-PIGHN)	Lying horizontally on the back.
teletherapy (tell-eh-THAIR-ah- pee) tel/e = distance -therapy = treatment	Radiation therapy administered by a machine positioned at some distance from the patient.
tomography (toh-MOG-rah-fee) tom/o = to cut; section -graphy = process of recording	An X-ray technique that produces a film representing a detailed cross section of tissue structure at a predetermined depth.
transducer (trans-DOO-sir)	A handheld device that sends and receives a sound-wave signal.
ultrasound (ULL-trah-sound) ultra- = beyond	Sound waves at the very high frequency of more than ۲۰,۰۰۰ kHz (vibrations per second).

uptake (UP-tayk)	The drawing up or absorption of a substance.
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نسخه اوليه غير قابل التشار

CHAPTER

۲۱

CHAPTER CONTENT

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

١. Identify and define ١٥ pathological conditions and five treatment methods associated with oncology.
٢. Identify at least ١٠ diagnostic techniques used in diagnosis and treatment of oncological disorders.
٣. Correctly spell and pronounce terms listed on the Written and Audio Terminology Review, using the phonetic pronunciations provided or the Audio CDs if available.
٤. Identify at least ١٠ abbreviations common to oncology.
٥. List and define six surgical procedures used in the diagnosis or cure of malignant tumors.
٦. List and define three tumor responses to radiation therapy.

Overview

When we hear that **cancer** causes more deaths in children between the ages of ٣

and

more than any other disease, it is a jolting reminder that **cancer** can strike at any age.

It is

estimated that one of every three Americans alive today will develop **cancer** during his

or her lifetime. **Cancer** is now the second leading cause of death in the United States.

The term **cancer** does not refer to only one disease. It actually refers to a group of dis-

eases, consisting of more than 200 types. Although **cancer** can originate in almost any

body organ, the most common site for **cancer** in women is the breast and the most

common site for **cancer** in men is the prostate gland. The prognosis, or outlook, for a

patient diagnosed with **cancer** will depend on many factors, which include (but are not

limited to) the type of **cancer**, the stage of the disease, the patient's age and general state

of health, and the response to treatment.

The medical specialty concerned with the study of malignancy is known as **oncology**.

The physician who specializes in the study and treatment of neoplastic diseases, particularly cancer, is known as an **oncologist**.

This chapter concentrates on a discussion of many of the terms associated with the study

of **cancer**, the characteristics of **benign** and **malignant** tumors, predisposing factors

that influence one's susceptibility to developing **cancer**, some of the more common types

of **cancer**, and the diagnostic techniques and procedures associated with the

treatment

of **cancer**. It is not designed to provide an in-depth study of **cancer**.

Many pathological conditions in this chapter have already been discussed in previous

body system chapters. This should reinforce the concept that **cancer** can affect almost

any body system.

VOCABULARY

The following vocabulary words are frequently used when discussing the study of **cancer** (oncology).

Word	Definition
adjuvant (AD-joo-vant)	A substance, especially a drug, added to a prescription to assist in the action of the main ingredient.
adjuvant therapy	Treatment of a disease with a substance, especially a drug, that enhances the main ingredient. For example, chemotherapy may be used as adjuvant therapy to radiation .
anaplasia	A change in the structure and orientation of cells

(an-ah-PLAY-zee-ah) ana- = not, without -plasia = formation, growth	characterized by a loss of specialization and reversion to a more primitive form.
antimetabolite (an-tih-meh-TAB-oh- light)	A class of antineoplastic drugs used to treat cancer. These drugs are most effective against rapidly growing tumors.
antineoplastic (an-tih-nee-oh- PLASS-tik) anti- = against neo- = new plas/o = formation, development -tic = pertaining to	Of or pertaining to a substance, procedure, or measure that prevents the proliferation of malignant cells.
benign (bee-NINE)	Noncancerous and therefore not an immediate threat, even though treatment eventually may be required for health or cosmetic reasons; not life threatening.
cancer	A neoplasm characterized by the uncontrolled growth of anaplastic cells that tend to invade surrounding tissue and to metastasize to distant body sites.
carcinogen (kar-SIN-oh-jen) carcin/o = cancer -gen = that which generates	A substance or agent that causes the development or increases the incidence of cancer.
carcinoma (kar-sih-NOH-mah) carcin/o = cancer	A malignant neoplasm.

-oma = tumor	
carcinoma in situ (CIS) (kar-sih-NOH-mah in-SIT-oo) carcin/o = cancer -oma = tumor	A premalignant neoplasm that has not invaded the basement membrane but shows cytologic characteristics of cancer.
chemotherapy (kee-moh-THAIR-ah-pee) chem/o = pertaining to a chemical, drug -therapy = treatment	The use of chemical agents to destroy cancer cells on a selective basis.
cytotoxic (sigh-toh-TOKS-ik) cy/o = cell tox/o = poisons -ic = pertaining to	Pertaining to being destructive to cells.
dedifferentiation (dee-diff -er-en-she-AY-shun)	See anaplasia.
deoxyribonucleic acid (DNA) (dee-ock-see-rye-boh-nooKLEE-ic ASS-id)	A large nucleic acid molecule found principally in the chromosomes of the nucleus of a cell that is the carrier of genetic information.
differentiation (diff -er-en-she-AY-shun)	A process in development in which unspecialized cells or tissues are systemically modified and altered to achieve specific and characteristic physical forms, physiologic functions, and chemical properties.

<p>encapsulated (en-CAP-soo-LAY- ted)</p>	<p>Enclosed in fibrous or membranous sheaths.</p>
<p>fractionation (frak-shun-AY-shun)</p>	<p>In radiology, the division of the total dose of radiation into small doses administered at intervals in an effort to minimize tissue damage.</p>
<p>hyperplasia (high-per-PLAY-zee- ah) hyper- = excessive -plasia = formation, growth</p>	<p>An increase in the number of cells of a body part (“excessive formation”).</p>
<p>infiltrative (in-fi ll-TRAY-tiv)</p>	<p>Possessing the ability to invade or penetrate adjacent tissue.</p>
<p>invasive (in-VAY-siv)</p>	<p>Characterized by a tendency to spread, infiltrate, and intrude.</p>
<p>ionizing radiation (EYE-oh-nigh-zing ray-dee-AY-shun)</p>	<p>High-energy X-rays that can kill cells or retard their growth.</p>
<p>linear accelerator (LIN-ee-ar ak-SELL- er-ay-tor)</p>	<p>An apparatus for accelerating charged subatomic particles used in radiotherapy, physics research, and the production of radionuclides.</p>
<p>lumpectomy (lum-PEK-toh mee)</p>	<p>Surgical removal of only the tumor and the immediate adjacent breast tissue; a method of treatment for breast cancer when detected in the early stage of the disease.</p>

malignant (mah-LIG-nant)	Tending to become worse and cause death.
metastasis (meh-TASS-tah-sis) meta- = beyond, after -stasis = stopping; controlling	The process by which tumor cells spread to distant parts of the body.
mitosis (my-TOH-sis)	A type of cell division that results in the formation of two genetically identical daughter cells.
mixed-tissue tumor (mixed-tissue TOO-mor)	A growth of more than one type of neoplastic tissue.
modality (moh-DAL-ih-tee)	A method of application (i.e., a treatment method).
morbidity (mor-BID-ih-tee)	An illness or an abnormal condition or quality.
mutation (mew-TAY-shun)	A change or transformation in a gene.
neoplasm (NEE-oh-plazm) neo- = new -plasm = living substance	Any abnormal growth of new tissue, benign or malignant .
oncogene (ONG-koh-jeen) onc/o = swelling, mass, or tumor	A gene in a virus that can cause a cell to become malignant .

-gene = that which generates	
<p>oncogenesis (ong-koh-JEN-eh-sis) onc/o = swelling, mass, or tumor -genesis = production of, formation of</p>	The formation of a tumor.
<p>oncologist (ong-KOL-oh-jist) onc/o = swelling, mass, tumor -logist = one who specializes in the study of</p>	The physician who specializes in the study and treatment of neoplastic diseases, particularly cancer.
<p>oncology (ong-KOL-oh-jee) onc/o = swelling, mass, tumor -logy = the study of</p>	The medical specialty concerned with the study of malignancy.
<p>papillary (PAP-ih-lar-ee)</p>	Of or pertaining to a papilla (nipplelike projection).
<p>papilloma (pap-ih-LOH-mah) papill/o = resembling a nipple -oma = tumor</p>	A benign epithelial neoplasm characterized by a branching or lobular tumor.
<p>pedunculated (peh-DUN-kyoo-</p>	Pertaining to a structure with a stalk.

LAY-ted)	
protocol (PROH-toh-kall)	A written plan or description of the steps to be taken in a particular situation, such as conducting research.
radiation (ray-dee-AY-shun)	The emission of energy, rays, or waves.
radiocurable tumor (ray-dee-oh-KYOOR-oh-b'l TOO-mor)	Pertaining to the susceptibility of tumor cells to destruction by ionizing radiation .
radioresistant tumor (ray-dee-oh-ree-SIS-tant TOO-mor)	A tumor that resists the effects of radiation .
radioresponsive tumor (ray-dee-oh-ree-SPON-siv TOO-mor)	A tumor that reacts favorably to radiation .
radiosensitive tumor (ray-dee-oh-SEN-sih-tiv TOO-mor)	A tumor capable of being changed by or reacting to radioactive emissions such as X-rays, alpha particles, or gamma rays.
radiotherapy (ray-dee-oh-THAIR-ah-pee)	The treatment of disease by using X-rays or gamma rays.
relapse (ree-LAPS)	To exhibit again the symptoms of a disease from which a patient appears to have recovered.
remission (rih-MISH-un)	The partial or complete disappearance of the symptoms of a chronic or

	malignant disease.
ribonucleic acid (RNA) (rye-boh-new-KLEE-ik ASS-id)	A nucleic acid found in both the nucleus and cytoplasm of cells that transmits genetic instructions from the nucleus to the cytoplasm.
sarcoma (sar-KOM-ah) sarc/o = flesh -oma = tumor	A malignant neoplasm of the connective and supportive tissues of the body, usually first presenting as a painless swelling.
scirrhous (SKIR-us) scirrh/o = hard -ous = pertaining to	Pertaining to a carcinoma with a hard structure.
sessile (SESS'1)	Attached by a base rather than by a stalk or a peduncle.
staging (STAJ-ing)	The determination of distinct phases or periods in the course of a disease.
stem cell (STEM SELL)	A formative cell; a cell whose daughter cells may give rise to other cell types.
tumor (TOO-mor)	A new growth of tissue characterized by progressive, uncontrolled proliferation (growth) of cells. The tumor may be localized or invasive , benign or malignant .
verrucous (ver-ROO-kus)	Rough; warty.

Specific Types of Cancers

<p>basal cell carcinoma (BAY-sal-sell kar-sih-NOH-mah) carcin/o = cancer -oma = tumor</p>	<p>A malignant epithelial cell tumor that begins as a slightly elevated nodule with a depression or ulceration in the center that becomes more obvious as the tumor grows. As the depression enlarges, the tissue breaks down, crusts, and bleeds. See Figure ۲۱-۲.</p>
<p>breast cancer (carcinoma of the breast) (kar-sih-NOH-mah of the breast) carcin/o = cancer -oma = tumor</p>	<p>A malignant tumor of the breast tissue. The most common type, ductal the breast) carcinoma, originates in the mammary ducts.</p>
<p>bronchogenic carcinoma (brong-koh-JEN-ik kar-sih-NOH-mah) bronch/o = bronchus -genic = producing</p>	<p>A malignant lung tumor that originates in the bronchi; lung cancer.</p>

<p>carcin/o = cancer -oma = tumor</p>	
<p>cervical carcinoma (SER-vih-kal kar-sih-NOH-mah) cervic/o = cervix -al = pertaining to carcin/o = cancer -oma = tumor</p>	<p>A malignant tumor of the cervix.</p>
<p>colorectal cancer (koh-loh-REH-tal CAN-ser) col/o = colon rect/o = rectum -al = pertaining to</p>	<p>The presence of a malignant neoplasm in the large intestine.</p>
<p>endometrial carcinoma (en-doh-MEE-tree-al kar-sih-NOH-mah) endo- = within metri/o = uterus -al = pertaining to carcin/o = cancer -oma = tumor</p>	<p>Malignant tumor of the inner lining of the uterus; also known as adenocarcinoma of the uterus.</p>
<p>lymphoma (LIM-foh-mah) lymph/o = lymph -oma = tumor</p>	<p>Lymphoma is a lymphoid tissue neoplasm that is typically malignant, beginning with a painless enlarged lymph node(s) and progressing to anemia, weakness, fever, and weight loss. For information on Burkitt's lymphoma, Hodgkin's disease, and non-Hodgkin's lymphoma, see Chapter 9.</p>

<p>Kaposi's sarcoma (KAP-oh-seez sar-KOH-mah) sarc/o = flesh -oma = tumor</p>	<p>Rare malignant lesions that begin as soft, purple-brown nodules or plaques on the feet and gradually spread throughout the skin. See Figure ۲۱-۵.</p>
<p>malignant melanoma (mah-LIG-nant mell-ah-NOH-mah) melan/o = black, dark -oma = tumor</p>	<p>Malignant skin tumor originating from melanocytes in preexisting nevi (moles), freckles, or skin with pigment; darkly pigmented cancerous tumor. See Figure ۲۱-۶.</p>
<p>neuroblastoma (noo-roh-blass-TOH-mah) neur/o = nerve blast/o = embryonic stage of development -oma = tumor</p>	<p>A highly malignant tumor of the sympathetic nervous system. Neuroblastoma most commonly occurs in the adrenal medulla, with early metastasis spreading widely to the liver, lungs, lymph nodes, and bone.</p>
<p>oral leukoplakia (OR-al loo-koh-PLAY-kee-ah) or/o = mouth -al = pertaining to leuk/o = white</p>	<p>Oral leukoplakia is a precancerous lesion occurring anywhere in the mouth.</p>
<p>ovarian carcinoma (oh-VAIR-ree-an kar-sih-NOH-mah) ovari/o = ovary -an = characteristic of carcin/o = cancer -oma = tumor</p>	<p>A malignant tumor of the ovaries, most commonly occurring in women in their ۵۰s.</p>
<p>pancreatic cancer (pan-kree-AT-ik CAN-ser) pancreat/o =</p>	<p>A life-threatening primary malignant neoplasm typically found in the head of the pancreas.</p>

pancreas -ic = pertaining to	
prostatic cancer (carcinoma of the prostate) (kar-sih-NOH-mah of the PROSS-tayt) carcin/o = cancer -oma = tumor prostat/o = prostate gland -e = noun ending	Malignant growth within the prostate gland, creating pressure on the upper part of the urethra. It is the most frequently diagnosed cancer in men.
renal cell carcinoma (REE-nal SELL kar-sih-NOH-mah) ren/o = kidney -al = pertaining to carcin/o = cancer -oma = tumor	A malignant tumor of the kidney, occurring in adulthood.
squamous cell carcinoma (SKWAY-mus SELL kar-sih-NOH-mah) carcin/o = cancer -oma = tumor	A malignancy of the squamous cells of epithelial tissue, which is a much faster growing cancer than basal cell carcinoma and has a greater potential for metastasis if not treated. See Figure ۲۱-۷.
testicular cancer (carcinoma of the testes) (kar-sih-NOH-mah of the TESS-teez) carcin/o = tumor -oma = tumor	A malignant tumor of the testicle that appears as a painless lump in the testicle.
thyroid cancer	Malignant tumor of the thyroid gland that leads to

<p>(cancer of the thyroid gland) (CAN-sir of the THIGH-royd gland)</p>	<p>dysfunction of the gland and thus inadequate or excessive secretion of the thyroid hormone.</p>
<p>tumors, intracranial (TOO-mors, in-trah-KRAY-nee-al) intra- = within crani/o = cranium, skull -al = pertaining to</p>	<p>Intracranial tumors occur in any structural region of the brain and may be malignant or benign. They are classified as primary or secondary and are named according to the tissue from which they originate.</p>
<p>tumors, metastatic intracranial (TOO-mors, met-ah-STAT-ik in-trah-KRAY-nee-al) intra- = within crani/o = cranium, skull -al = pertaining to meta- = beyond, after -static = stopping or controlling</p>	<p>Tumors occurring as a result of metastasis from a primary site such as the lung or breast.</p>
<p>tumors, primary intracranial (TOO-mors, primary in-trah-KRAYnee-al) intra- = within crani/o = cranium, skull -al = pertaining to</p>	<p>Tumors that arise from gliomas (malignant glial cells that are a support for nerve tissue) or from the meninges are known as primary intracranial tumors.</p>

Wilms' tumor (VILMZ TOO-mor)	A malignant tumor of the kidney occurring predominately in childhood
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Treatment Techniques and Procedures

<p>chemotherapy (kee-moh-THAIR-ah-pee) chem/o = pertaining to a chemical, drug -therapy = treatment</p>	<p>The use of cytotoxic drugs and chemicals to achieve a cure, decrease tumor size, provide relief of pain, or slow metastasis.</p>
<p>immunotherapy (im-yoo-noh-THAIR-ah-pee) immun/o = immune, protection -therapy = treatment</p>	<p>Agents that are capable of changing the relationship between a tumor and the host are known as biologic response modifiers (BRMs). These agents are used to strengthen the individual's immune responses.</p>

<p>Mohs surgery</p>	<p>Mohs surgery is an advanced treatment procedure for skin cancer. The cancerous tumor is removed in stages, the tissue is examined for evidence of cancer, and additional tissue is removed until negative boundaries are confirmed. This process allows the surgeon to excise the tumor, remove layers of tissue, and examine the fresh tissue immediately. Only tissue containing cancer is removed and the healthy tissue is kept intact.</p>
<p>radiation therapy (ray-dee-AY-shun THAIR-ah-pee)</p>	<p>The use of ionizing radiation to interrupt cellular growth. The goal of radiation therapy is to reach maximum tumor control with minimum normal tissue damage.</p>
<p>surgery (SIR-jer-ee)</p>	<p>In more than 90% of all cancers, surgery is used for diagnosing and staging. In more than 60% of all cancers, surgery is the primary treatment. When feasible, the primary tumor is excised in its entirety.</p>

COMMON ABBREVIATIONS

نسخه اولیه غیر قابل انتشار

CHAPTER

۲۲

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

١. Identify the laws and governing agencies that enforce the safe manufacture, distribution, and use of foods, drugs, and cosmetics.
٢. List five drug schedules used for categorizing controlled substances as identified in this chapter.
٣. List four drug references identified in this chapter.
٤. Identify four sources of drugs, giving examples for each source, as identified in this chapter.
٥. Identify five names given to drugs to identify their chemical formula, their manufacturer's original name, or the name under which they are sold.
٦. Identify at least ١٠ drug actions/interactions that occur within the body.
٧. Identify ١٠ forms of administration of medications.
٨. Identify at least ١٢ classifications of drugs identified in this chapter.
٩. Correctly spell and pronounce terms listed on the Written and Audio Terminology Review, using the phonetic pronunciations provided or the Audio CDs if available.
١٠. Identify at least ٣٠ abbreviations related to pharmacology

Overview

Health care professionals must know the basics of **pharmacology** and understand the interactions of drugs within the body. A knowledge of the sources, forms, routes of administration, classifications, indications, range of dosages, desired effects, and side effects of drugs is essential. In addition, health care professionals must know the laws regulating the distribution and use of medications. A concentrated study of **pharmacology** will provide the background necessary for understanding the need for safe administration of medications as prescribed by the physician and for acquiring a strong sense of responsibility concerning administering medications.

Pharmacology is the field of medicine that specializes in the study of drugs, including their sources, appearance, chemistry, actions, and uses. A **drug** is any substance that when taken into the body may modify one or more of its functions.

Pharmacodynamics

is the study of how drugs interact in the human body. A **pharmacist** is one who is licensed to prepare and dispense drugs. A **pharmacy** is a place where drugs are dispensed. **Chemotherapy** is the treatment with drugs that have a specific and deadly

effect on disease-causing microorganisms (originally used in the treatment of infectious diseases). **Chemotherapy** now includes the treatment of mental illness and cancer with drugs. **Toxicology** is the study of poisons, their detection, and their effects and establishing antidotes (substances that oppose the action of poisons) and methods of treatment for conditions they produce.

There are many terms related to **pharmacology**. Health care professionals may use these terms on a day-to-day basis when involved in administering medications, instructing patients in the use of medications, charting the administration of medications, or transcribing information regarding medications in the patient's chart. This chapter is devoted to the study of terms that relate to the field of **pharmacology**. Where appropriate throughout the chapter, word elements are identified and defined.

VOCABULARY

Word	Definition
adverse reaction	The body's reaction to a drug in an unexpected way that may endanger a patient's health and safety.
anaphylactic shock (an-ah-fi h-LAK-tic)	A life-threatening, hypersensitive reaction to food or drugs. The

SHOCK)	patient experiences acute respiratory distress; hypotension ; edema; tachycardia; cool, pale skin; cyanosis ; and possibly convulsions shortly after administration of the medication.
bacteriostatic bacteri/o = bacteria static = stopping or controlling	Stopping or controlling the growth of bacteria.
brand name	The name under which the drug is sold by a specific manufacturer. This name is owned by the manufacturer, and no other company may use that name. Each brand name carries a registered trademark symbol. Also known as trade name.
buccal medication (BUCK-al med-ih-KAY-shun) bucc/o = cheek -al = pertaining to	Medication placed in the mouth next to the cheek, where it is absorbed into the mucous membrane lining of the mouth.
chemical name	The chemical name for a drug is the description of the chemical structure of the drug. It is listed in the Hospital Formulary along with the chemical formula diagram.
chemotherapy (kee-moh-THAIR-ah-pee) chem/o = pertaining to a chemical, drug -therapy = treatment	The treatment of diseases by using drugs that have a specific deadly effect on disease-causing microorganisms. These drugs are used in the treatment of certain infections and cancer.

contraindication (kon-trah-in-dih-KAY-shun)	Any special symptom or circumstance that indicates that the use of a particular drug or procedure is dangerous, not advised, or has not been proven safe for administration.
controlled substances	Drugs that have a potential for abuse. These drugs are placed into five categories, ranging from Schedule I drugs (which are the most dangerous and most likely to be abused) to Schedule V drugs, which are the least dangerous and least likely to be abused; also known as schedule drugs.
Controlled Substances Act	The federal law concerned with the manufacture, distribution, and dispensing of controlled substances. These drugs have the potential of being abused and of causing physical or psychological dependence.
cumulation (KYOO-mew-lay-shun)	Cumulation means that a drug level begins to accumulate in the body with repeated doses because the drug is not completely excreted from the body before another dose is administered.
desired effect	The effect that was intended; that is, if the drug lowered the blood pressure as was intended, the desired effect was achieved.
drug	Any substance that when taken into the body may modify one or more of its functions.
drug action	Drug action describes how a drug produces

	changes within the body.
drug effect	Drug effect describes the change that takes place in the body as a result of the drug action.
Drug Enforcement Administration	The government agency responsible for administering and enforcing the Controlled Substances Act.
Drug Facts and Comparisons	A reference book for health care professionals that provides information on drugs according to their therapeutic classifications. This reference compares the various drugs within each category with other products.
first dose	Initial dose.
first-dose effect	An undesired effect of a medication that occurs within 30 to 90 minutes after administration of the first dose.
Food and Drug Administration	The government agency responsible for administering and enforcing the Food, Drug, and Cosmetic Act within the United States.
Food, Drug, and Cosmetic Act	A law that regulates the quality, purity, potency, effectiveness, safety, labeling, and packaging of food, drug, and cosmetic products.
generic name (jeh-NAIR-ik)	The name established when the drug is first manufactured. This name is protected for use by only the original manufacturer for a period of

	17 years. After that time, the name of the drug becomes public property and can be used by any manufacturer.
Hospital Formulary (FORM-yoo-lair-ee)	A reference book that lists all of the drugs commonly stocked in the hospital pharmacy . This book provides information about the characteristics of drugs and their clinical usage.
hypotension (high-poh-TEN-shun) hypo- = under, below, beneath, less than normal tens/o = strain -ion = action; process	Low blood pressure; less than normal blood pressure.
idiosyncrasy (id-ee-oh-SIN-krah-see)	An unusual, inappropriate response to a drug or to the usual effective dose of a drug. This reaction can be life threatening.
inhalation medication (in-hah-LAY-shun)	Medication is sprayed or breathed into the nose, throat, and lungs. It is absorbed into the mucous membrane lining of the nose and throat and by the alveoli of the lungs.
initial dose	The first dose of a medication.
initial dose intradermal medication (in-trah-DER-mal) intra- = within derm/o = skin -al = pertaining to	Medication inserted just beneath the epidermis, using a syringe and needle.
intramuscular	Medication injected directly into the muscle.

<p>medication (in-trah-MUSS-kyoo-lar) intra- = within muscul/o = muscle -ar = pertaining to</p>	
<p>intravenous medication (in-trah-VEE-nus) intra- = within ven/o = vein -ous = pertaining to</p>	<p>Medication injected directly into the vein, entering the bloodstream immediately.</p>
<p>local effect</p>	<p>A response (to a medication) confined to a specific part of the body.</p>
<p>maintenance dose</p>	<p>The dose of a medication that will keep the concentration of the medication in the bloodstream at the desired level.</p>
<p>official name</p>	<p>Generic name.</p>
<p>over the counter (OTC)</p>	<p>Medication available without a prescription.</p>
<p>package insert</p>	<p>An information leaflet placed inside the container or package of prescription drugs. The FDA requires that the drug generic name, indications, contraindications, adverse effects, dosage, and route of administration be described in the leaflet.</p>
<p>parenteral medication (par-EN-ter-al)</p>	<p>Any route of administration not involving the gastrointestinal tract, e.g., topical, inhalation, or injection.</p>
<p>pharmacist</p>	<p>One who is licensed to prepare and dispense</p>

(FAR-mah-sist) pharmac/o = drugs, medicine -ist = practitioner	drugs.
pharmacodynamics (far-mah-koh-dye- NAM-iks)	The study of how drugs interact in the human body.
pharmacology (far-mah-KALL-oh- jee) pharmac/o = drugs, medicine -logy = the study of	The field of medicine that specializes in the study of drugs, including their sources, appearance, chemistry, actions, and uses.
pharmacy (FAR-mah-see)	A place for preparing or dispensing drugs.
Physicians' Desk Reference	A reference book that provides the same information found in package inserts that accompany each container of medication: description of drug, actions, indications and usage (why medication is prescribed), contraindications, warnings, precautions, adverse reactions, overdose and dosage and administration.
potency (POH-ten-see)	Strength.
potentiation (poh-ten-she-AY- shun)	The effect that occurs when two drugs administered together produce a more powerful response than the sum of their individual effects.
rectal medication (REK-tal) rect/o = rectum -al = pertaining to	Medication inserted into the rectum and slowly absorbed into the mucous membrane lining of the rectum. It is in the form of a

	suppository, which melts as the body temperature warms it, or a retention enema.
route of administration	The method of introducing a medication into the body.
side effect	An additional effect on the body by a drug that was not part of the goal for that medication. Nausea is a common side effect of many drugs.
standards	Rules that have been established to control the strength, quality, and purity of medications prepared by various manufacturers.
subcutaneous medication (sub-kyoo-TAY-nee-us) sub- = under, below cutane/o = skin -ous = pertaining to	Medication injected into the subcutaneous layer, or fatty tissue, of the skin.
sublingual medication (sub-LING-gwal) sub- = under, below lingu/o = tongue -al = pertaining to	Medication placed under the tongue, where it dissolves in the patient's saliva and is quickly absorbed through the mucous membrane lining of the mouth.
systemic effect (sis-TEM-ik effect)	A generalized response to a drug by the body. The drug has a widespread influence on the body because it is absorbed into the bloodstream.
tachycardia (tak-ee-KAR-dee-ah)	Rapid heartbeat, over 100 beats per minute.

<p>tachy- = rapid cardi/o = heart -ia = noun ending</p>	
<p>therapeutic dose (thair-ah-PEW-tik)</p>	<p>The dose of a medication that achieves the desired effect.</p>
<p>tolerance (TALL-er-ans)</p>	<p>The body's decreased response to the effect of a drug after repeated dosages.</p>
<p>topical medication (TOP-ih-kal)</p>	<p>Medication applied directly to the skin or mucous membrane for a local effect to the area.</p>
<p>toxicology (tocks-ih-KALL-oh-jee) toxic/o = poisons -logy = the study of</p>	<p>The study of poisons, their detection, and their effects and establishing antidotes and methods of treatment for conditions they produce and prevention of poisoning.</p>
<p>trade name</p>	<p>Brand name copyrighted by a pharmaceutical company.</p>
<p>United States Pharmacopeia (far-mah-koh-PEE-ah)</p>	<p>An authorized publication of the United States Pharmacopeial Convention that contains formulas and information that provide a standard for preparation and dispensation of drugs. Recognized by the U.S. government as the official listing of standardized drugs.</p>
<p>vaginal medication (VAJ -in-al) vagin/o = vagina -al = pertaining to</p>	<p>Medication inserted into the vagina; may be in the form of a suppository, cream, foam, or tablet.</p>

Drug Actions/Interactions

<p>cumulation (kyoo-mew-LAY-shun)</p>	<p>Cumulation occurs when a drug is not completely excreted from the body before another dose is given.</p>
<p>idiosyncrasy (id-ee-oh-SIN-krah-see)</p>	<p>An idiosyncrasy is an unusual, inappropriate response to a drug or to the usual effective dose of a drug.</p>
<p>potentiation (poh-ten-she-AY-shun)</p>	<p>Potentiation occurs when two drugs administered together produce a more powerful response than the sum of their individual effects.</p>
<p>tolerance (TALL-er-ans)</p>	<p>Tolerance is decreased response to the effect of a drug after repeated dosages.</p>

Routes of Administration for Medications

<p>oral (OR-al) or/o = mouth -al = pertaining to</p>	<p>An oral medication is one that is given by mouth and swallowed.</p>
<p>sublingual (sub-LING-gwal) sub- = under, below lingu/o = tongue -al = pertaining to</p>	<p>A sublingual medication is one that is placed under the tongue.</p>

<p>buccal (BUCK-al) bucc/o = cheek -al = pertaining to</p>	<p>A buccal medication is one that is placed in the mouth next to the cheek. It is in tablet form.</p>
<p>inhalation (in-hah-LAY-shun)</p>	<p>Medications administered by inhalation are those that are sprayed or inhaled into the nose, throat, and lungs. See Figure ٢٢-٤.</p>
<p>rectal (REK-tal) rect/o = rectum -al = pertaining to</p>	<p>Rectal medications are those inserted into the rectum and slowly absorbed into the mucous membrane lining of the rectum.</p>
<p>vaginal (VAJ -in-al) vagin/o = vagina -al = pertaining to</p>	<p>Vaginal medications are those inserted into the vagina.</p>
<p>topical (TOP-in-kal)</p>	<p>A topical medication is one applied directly to the skin or mucous membrane for a local effect to the area.</p>
<p>transdermal (tranz-DER-mal) trans- = across derm/o = skin -al = pertaining to</p>	<p>A method of applying a drug to unbroken skin. The drug is absorbed continuously and produces a systemic effect.</p>
<p>parenteral (par-EN-ter-al) par- = apart from enter/o = intestine -al = pertaining to</p>	<p>Any route of administration not involving the gastrointestinal tract, e.g., topical, inhalation or injection.</p>
<p>intradermal</p>	<p>A small amount of medication is injected just</p>

(in-trah-DER-mal) intra- = within derm/o = skin -al = pertaining to	beneath the epidermis.
intramuscular (in-trah-MUSS-kyoo-lar) intra- = within muscul/o = muscle -ar = pertaining to	The medication is injected directly into large muscles.
intravenous (in-trah-VEE-nus) intra- = within ven/o = vein -ous = pertaining to	The medication is injected directly into the vein, entering the bloodstream immediately.
subcutaneous (sub-kyoo-TAY-nee-us) sub- = under, below cutane/o = skin -ous = pertaining to	The medication is injected into the subcutaneous layer, or fatty tissue, of the skin.

COMMON CHARTING ABBREVIATIONS

CHAPTER

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

١. Correctly spell and pronounce terms listed on the Written and Audio Terminology Review, using the phonetic pronunciations provided or the Audio CDs if available.
٢. List and define ١٠ defense mechanisms studied in this chapter.
٣. List and define at least five phobias studied in this chapter.
٤. List and define at least ٢٠ mental disorders discussed in this chapter.
٥. Identify at least ١٠ abbreviations common to mental health.
٦. Identify ١٠ treatments, therapies, and tests used in the practice of mental health.

Overview

Physical symptoms have been first and foremost in the previous chapters of this textbook as we have discussed the various pathological conditions of each body system. We now turn from the physical to the study of psychological symptoms that often affect the physical condition of the patient. A general discussion of defense

mechanisms, phobias, **mental** disorders, and therapeutic treatments is included in this chapter. The topics of discussion are alphabetized under each category heading.

Mental health is a relative state of mind in which the person who is healthy is able to cope with and adjust to the recurrent stresses of everyday living in an acceptable way.

Mental disorders are disturbances of emotional stability as manifested in maladaptive behavior and impaired functioning. This may be caused by genetic, physical, chemical, biological, psychological, or social and cultural factors. A **mental** disorder may be referred to as **mental** illness, emotional illness, or psychiatric disorder.

Many of us use **defense mechanisms** on a normal day-to-day basis when dealing with areas of conflict in our lives. It is when the defense mechanisms become a way of dealing with life that they may be indicative of the need for psychological or psychiatric help.

Psychology is the study of behavior and the processes of the mind, especially as they relate to the individual's social and physical environment. A **psychologist** is a professional who specializes in the study of the structure and function of the brain and related **mental** processes. A **psychologist** is not a physician but one who earns either a master's or doctoral degree in some area of **psychology**. A **clinical psychologist** provides testing and counseling services to patients with **mental** and emotional

disorders.

Psychiatry is the branch of medicine that deals with the causes, treatment, and prevention of **mental**, emotional, and behavioral disorders. A **psychiatrist** is a medical doctor who specializes in diagnosing, preventing, and treating **mental** disorders—an educational process that involves several additional years beyond medical school.

Psychiatrists may specialize in various areas of practice in the field of **psychiatry**. If a **psychiatrist** chooses to specialize in **psychoanalysis**, he or she would be known as a **psychoanalyst** and would complete additional special training in psychotherapeutic techniques. **Psychoanalysis** involves the use of **free association**, dream interpretation, and the analysis of defense mechanisms. The **psychoanalyst** applies the techniques of psychoanalytic theory to help the patient become aware of repressed emotional conflicts and seeks ways to help the individual to bring the conflicts to a conscious level so that they can be resolved.

compensation (kom-pen-SAY-shun)	Compensation is an effort to overcome, or make up for, real or imagined
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	inadequacies.
denial (dee-NYE-al)	Denial is a refusal to admit or acknowledge the reality of something, thus avoiding emotional conflict or anxiety .
displacement (dis-PLACE-ment)	Displacement is the process of transferring a feeling or emotion from the original idea or object to a substitute idea or object.
introjection (in-troh-JEK-shun)	An ego defense mechanism whereby an individual unconsciously identifies with another person or with some object. The individual assumes the supposed feelings and/or characteristics of the other personality or object.
projection (proh-JEK-shun)	Projection is the act of transferring one's own unacceptable thoughts or feelings to someone else.
rationalization (rash-un-al-ih-ZAY-shun)	Rationalization is attempting to make excuses or invent logical reasons to justify unacceptable feelings or behaviors.
regression (rih-GRESH-un)	Rationalization is attempting to make excuses or invent logical reasons to justify unacceptable feelings or behaviors.
regression (rih-GRESH-un)	Regression is a response to stress in which the individual reverts to an earlier level of development and the comfort measures associated with that level of functioning.

repression (rih-PRESH-un)	Repression is an involuntary blocking of unpleasant feelings and experiences from one's conscious mind.
sublimation (sub-lih-MAY-shun)	Rechanneling or redirecting one's unacceptable impulses and drives into constructive activities.
suppression (suh-PRESH-un)	Suppression is the voluntary blocking of unpleasant feelings and experiences from one's mind.

VOCABULARY

The following vocabulary words are frequently used when discussing **mental** health.

Word	Definition
affect (AFF-fekt)	Observable evidence of a person's feelings or emotions.

amnesia (am-NEE-zee-ah)	Loss of memory caused by severe emotional trauma, brain injury, substance abuse, or reaction to medications or toxins.
amphetamines (am-FET-ah-meenz)	A group of nervous system stimulants that produce alertness and a feeling of well-being (euphoria).
anorexia (an-oh-REK-see-ah) an- = without -orexia = appetite	Lack of or loss of appetite, resulting in the inability to eat.
anorexia nervosa (an-oh-REK-see-ah ner-VOH-suh)	A disorder (seen primarily in adolescent girls) characterized by an emotional disturbance concerning body image; prolonged refusal to eat followed by extreme weight loss; amenorrhea; and a lingering, abnormal fear of becoming obese.
anxiety (ang-ZY-eh-tee)	A state of mind in which the individual feels increased tension, apprehension, a painfully increased sense of helplessness, a feeling of uncertainty, fear, jitteriness, and worry. Observable signs of anxiety include (but are not limited to) restlessness, poor eye contact, glancing about, facial tension, dilated pupils, increased perspiration, and a constant focus on self.
anxiety disorders	Disorders characterized by chronic worry.
apathy	Absence or suppression of observable emotion,

(AP-ah-thee)	feeling, concern, or passion.
autism (AW-tizm) aut/o = self -ism = condition	A pervasive developmental disorder characterized by the individual being extremely withdrawn and absorbed with fantasy. The individual suffers from impaired communication/social interaction skills, and activities and interests are very limited. Autism was first classified as a type of schizophrenia. (Autism is discussed in Chapter ١٩.)
behavior therapy	A form of psychotherapy that seeks to modify observable maladjusted patterns of behavior by substituting new responses to given stimuli.
bulimia nervosa (boo-LIM-ee-ah)	An uncontrolled craving for food, often resulting in eating binges, followed by vomiting to eliminate the food from the stomach. The individual may then feel depressed, go through a period of selfdeprivation followed by another eating binge, and the cycle continues.
cannabis (CAN-ah-bis)	A mind-altering drug derived from the flowering top of hemp plants; also called marijuana . This drug is classified as a controlled substance, Schedule I drug.
cataplexy (CAT-ah-pleks-ee)	A sudden loss of muscle tone in which the individual's head may drop, the jaw may sag, the knees become weakened, and the individual may

	collapse or fall to the ground; may accompany a narcolepsy attack (sudden, uncontrollable attack of sleep).
compensation (kom-pen-SAY-shun)	An effort to overcome, or make up for, real or imagined inadequacies.
compulsions (kom-PUHL-shuns)	Irresistible, repetitive, irrational impulses to perform an act. These behavior patterns are intended to reduce anxiety , not provide pleasure or gratification.
conversion disorder (kon-VER-zhun)	A disorder in which the individual represses anxiety experienced by emotional conflicts by converting the anxious feelings into physical symptoms that have no organic basis but are perceived to be real by the individual. The individual may experience symptoms such as paralysis, pain, loss of sensation, or some other form of dysfunction of the nervous system; also called conversion hysteria.
cyclothymic disorder (sigh-cloh-THIGH-mic)	A chronic (of long duration) mood disorder characterized by numerous periods of mood swings from depression to happiness. The period of mood disturbance is at least two years.
defense mechanism	An unconscious, intrapsychic (within one's mind) reaction that offers protection to the self from a stressful situation.
delirium (dee-LEER-ee-um)	A state of frenzied excitement or wild enthusiasm.
delirium tremens (DTs)	An acute and sometimes fatal psychotic reaction caused by cessation of

(dee-LEER-ee-um TREE-menz)	excessive intake of alcoholic beverages over a long period of time.
delusion (dee-LOO-zhun)	A persistent, abnormal belief or perception held firmly by a person despite evidence to the contrary. Two forms of delusions are delusions of persecution (in which the person thinks others are following him, spying on him, or trying to torment him) and delusions of grandeur, in which the person has a false sense of possessing wealth or power.
dementia (dee-MEN-shee-ah)	A progressive, organic mental disorder characterized by chronic personality disintegration, confusion, disorientation, stupor, deterioration of intellectual capacity and function, and impairment of control of memory, judgment, and impulses.
denial	A refusal to admit or acknowledge the reality of something, thus avoiding emotional conflict or anxiety .
depression	A mood disturbance characterized by exaggerated feelings of sadness, discouragement, and hopelessness that are inappropriate and out of proportion with reality; may be relative to some personal loss or tragedy.
displacement (dis-PLACE-ment)	The process of transferring a feeling or emotion from the original idea or object to a substitute idea or object.

dissociation (dis-soh-shee-AY-shun)	An unconscious defense mechanism by which an idea, thought, emotion, or other mental process is separated from the consciousness and thereby loses emotional significance.
drug therapy	The use of psychotropic drugs to treat mental disorders.
dysphoria (dis-FOH-ree-ah) dys- = bad, difficult, painful, disordered -phoria = emotional state	A disorder of affect (mood) characterized by depression and anguish.
electroconvulsive therapy (ECT)	The process of passing an electrical current through the brain to create a brief seizure in the brain.
euphoria (yoo-FOR-ee-ah) eu- = well, easily, good, normal -phoria = emotional state	A sense of well-being or elation.
exhibitionism	A sexual disorder involving the exposure of one's genitals to a stranger.
factitious disorders	Disorders that are characterized by physical or psychological symptoms that are intentionally produced or feigned to assume the sick role.
family therapy	A form of psychotherapy that focuses the treatment on the process between family members that supports and

	sustains symptoms.
fetishism, transvestic	A sexual disorder in which the focus of the fetish involves crossdressing.
free association	The spontaneous, consciously unrestricted association of ideas, feelings, or mental images.
frotteurism	A sexual disorder in which the person gains sexual stimulation or excitement by rubbing against a nonconsenting person.
group therapy	The application of psychotherapeutic techniques within a small group of people who experience similar difficulties.
hallucination (hah-loo-sih-NAY-shun)	A subjective (existing in the mind) perception of something that does not exist in the external environment. Hallucinations may be visual, olfactory (smell), gustatory, (taste), tactile (touch), or auditory (hearing).
hallucinogens (hah-LOO-sih-noh-jens)	Substances that cause excitation of the central nervous system, characterized by symptoms such as hallucinations, mood changes, anxiety, increased pulse and blood pressure, and dilation of the pupils.
hypnosis	A passive, trancelike state of existence that resembles normal sleep, during which perception and memory are altered, resulting in increased

	responsiveness to suggestion.
hypochondriasis (high-poh-kon-DRY-ah-sis)	A chronic, abnormal concern about the health of the body, characterized by extreme anxiety , depression , and an unrealistic interpretation of real or imagined physical symptoms as indications of a serious illness or disease despite rational medical evidence that no disorder is present. A person affected by hypochondriasis is referred to as a hypochondriac.
hypomania (high-poh-MAY-nee-ah) hypo- = under, below, beneath, less than normal -mania = madness	A mild degree of mania characterized by optimism, excitability, energetic and productive behavior, marked hyperactivity and talkativeness, heightened sexual interest, quickness to anger, irritability, and a decreased need for sleep.
intoxication (in-toks-ih-KAY-shun)	A state of being characterized by impaired judgment, slurred speech, loss of coordination, irritability, and mood changes; may be due to drugs, including alcohol.
introjection	An ego defense mechanism whereby an individual unconsciously identifies with another person or with some object, assuming the supposed feelings and/or characteristics of the other personality or object.
lithium (LITH-ee-um)	A drug that is particularly useful in treating the manic phase of bipolar

	disorders (manic-depressive disorders).
major depressive disorder	A disorder characterized by one or more episodes of depressed mood that lasts at least two weeks and is accompanied by at least four additional symptoms of depression .
malingering (mah-LING-er-ing)	A willful and deliberate faking of symptoms of a disease or injury to gain some consciously desired end.
mania (MAY-nee-ah)	“Madness”; an unstable emotional state characterized by symptoms such as extreme excitement, hyperactivity, overtalkativeness, agitation, flight of ideas, fleeting attention, and sometimes violent, destructive, and self-destructive behavior.
mood disorders	An affective state characterized by any of a variety of periods of depression or depression elation.
mutism (mew-tizm)	The inability to speak because of a physical defect or emotional problem.
neurosis (noo-ROH-sis) neur/o = nerve -osis = condition	A psychological or behavioral disorder in which anxiety is the primary characteristic; thought to be related to unresolved conflicts.
obsession (ob-SESS-shun)	A persistent thought or idea with which the mind is continually and involuntarily preoccupied.
panic attack	An episode of acute anxiety during which the individual may

	<p>experience intense feelings of uneasiness or fright accompanied by dyspnea, dizziness, sweating, trembling, and palpitations of the heart.</p> <p>Panic attacks, which occur unexpectedly, may last a few minutes and may return.</p>
panic disorder	A disorder characterized by recurrent panic attacks that come on unexpectedly.
paranoia (pair-ah-NOY-ah)	A mental disorder characterized by an elaborate, overly suspicious system of thinking, with delusions of persecution and grandeur usually centered on one major theme (such as a financial matter, a job situation, an unfaithful spouse, or other problem).
paraphilia (pair-ah-FILL-ee-ah) para- = near, beside, beyond, two like parts -philia = attraction to	Sexual perversion or deviation; a condition in which the sexual instinct is expressed in ways that are socially prohibited, unacceptable, or biologically undesirable.
pedophilia ped/o = child -philia = attraction to	A sexual disorder in which the individual is sexually aroused and engages in sexual activity with children (generally age 13 or younger).
personality disorders	Any of a large group of mental disorders characterized by rigid, inflexible, and maladaptive behavior patterns that impair a person's ability to function in society by severely limiting adaptive potential.

<p>phobia (FOH-bee-ah)</p>	<p>An anxiety disorder characterized by an obsessive, irrational, and intense fear of a specific object, of an activity, or of a physical situation. Phobias are usually characterized by symptoms such as faintness, fatigue, palpitations, perspiration, nausea, tremor, and panic.</p>
<p>play therapy</p>	<p>A form of psychotherapy in which a child plays in a protected and structured environment with games and toys provided by a therapist.</p>
<p>projection (proh-JEK-shun)</p>	<p>The act of transferring one's own unacceptable thoughts or feelings to someone else.</p>
<p>psychiatrist (sigh-KIGH-ah-trist) psych/o = mind, soul -iatrist = one who treats; a physician</p>	<p>A physician who specializes in the diagnosis, prevention, and treatment of mental disorders.</p>
<p>psychiatry (sigh-KIGH-ah-tree) psych/o = mind, soul -iatry = medical treatment, medical profession</p>	<p>The branch of medicine that deals with the causes, treatment, and prevention of mental, emotional, and behavioral disorders.</p>
<p>psychoanalysis (sigh-koh-an-NAL-ih-sis)</p>	<p>A form of psychotherapy that uses free association, dream interpretation, and analysis of defense mechanisms to help the patient become aware of repressed emotional conflicts.</p>

psychoanalyst (sigh-koh-AN-ah-list)	A psychotherapist, usually a psychiatrist , who has had special training in psychoanalysis and who applies the techniques of psychoanalytic theory.
psychoanalyst (sigh-koh-AN-ah-list)	A psychotherapist, usually a psychiatrist , who has had special training in psychoanalysis and who applies the techniques of psychoanalytic theory.
psychodrama (sigh-koh-DRAM-ah)	A form of group psychotherapy in which people act out their emotional problems through unrehearsed dramatizations; also called role-playing therapy.
psychologist (sigh-KALL-oh-jist) psych/o = mind, soul -logist = one who specializes in the study of	A person who specializes in the study of the structure and function of the brain and related mental processes of animals and humans. A clinical psychologist has a graduate degree with specialized training in providing testing and counseling to patients with mental and emotional disorders.
psychology (sigh-KALL-oh-jee) psych/o = mind, soul -logy = the study of	The study of behavior and the processes of the mind, especially as it relates to the individual's social and physical environment.
psychosis (sigh-KOH-sis) psych/o = mind, soul	Any major mental disorder of organic or emotional origin characterized by a loss of contact with reality.

-osis = condition	
<p>psychosomatic (sigh-koh-soh-MAT-ik)</p> <p>psych/o = mind, soul somat/o = body -ic = pertaining to</p>	<p>Pertaining to the expression of an emotional conflict through physical symptoms.</p>
<p>psychotherapy (sigh-koh-THAIR-ah-pee)</p> <p>psych/o = mind, soul -therapy = treatment</p>	<p>Any of a large number of related methods of treating mental and emotional disorders by using psychological techniques instead of physical means of treatment.</p>
<p>psychotropic (sigh-koh-TROH-pik)</p>	<p>Any substance capable of affecting the mind, emotions and behavior; drugs used in the treatment of mental illness.</p>
<p>purging (PERJ-ing)</p>	<p>The means of ridding the body of what has been consumed; that is, the individual may induce vomiting or use laxatives to rid the body of food that has just been eaten.</p>
<p>rationalization (rash-un-al-ih-ZAY-shun)</p>	<p>Attempting to make excuses or invent logical reasons to justify unacceptable feelings or behaviors; most commonly used defense mechanism.</p>
<p>regression (rih-GRESH-un)</p>	<p>A response to stress in which the individual reverts to an earlier level of development and the comfort measures associated with that level of functioning.</p>
<p>repression (rih-PRESH-un)</p>	<p>An involuntary blocking of unpleasant feelings and experiences from</p>

	one's conscious mind.
<p>schizophrenia (skiz-oh-FREN-ee-ah) schiz/o = split phren/o = mind; also refers to the diaphragm -ia = condition</p>	<p>Any of a large group of psychotic disorders characterized by gross distortion of reality, disturbances of language and communication, withdrawal from social interaction, and the disorganization and fragmentation of thought, perception, and emotional reaction.</p>
<p>sedative</p>	<p>An agent that decreases functional activity and has a calming effect on the body.</p>
<p>senile dementia (SEE-nyl dee-MEN-shee-ah)</p>	<p>An organic mental disorder of the aged, resulting from the generalized atrophy (wasting) of the brain with no evidence of cerebrovascular disease. This condition is characterized by loss of memory, impaired judgment, decreased moral and ethical values, inability to think abstractly, and periods of confusion and irritability. These symptoms may range from mild to severe.</p>
<p>sexual sadism/sexual masochism</p>	<p>A sexual disorder that involves the act (real, not simulated) of being humiliated, beaten, bound, or otherwise made to suffer; or the act of inflicting psychological or physical suffering on the victim.</p>
<p>somatoform disorders (soh-MAT-oh-form)</p>	<p>Any group of neurotic disorders characterized by symptoms suggesting physical illness or disease for which there are no demonstrable organic</p>

	causes or physiologic dysfunctions.
sublimation (sub-lih-MAY-shun)	Rechanneling or redirecting one's unacceptable impulses and drives into constructive activities.
suppression (suh-PRESH-un)	The voluntary blocking of unpleasant feelings and experiences from one's mind.
tolerance	The ability to endure unusually large doses of a drug without apparent adverse effects and, with continued use of the drug, to require increased dosages to produce the same effect.

Cognitive Disorders

amnesia disorders (am-NEE-zee-ah)	Amnesia disorders, or amnesic disorders, are characterized by short-term and long-term memory deficits.
delirium A (dee-LEER-ee-um)	A delirium is a state of frenzied excitement. It occurs rapidly and is characterized by difficulty maintaining and shifting attention
dementia (dee-MEN-shee-ah)	Dementia is a progressive, organic mental disorder characterized by chronic personality disintegration, confusion, disorientation, stupor, deterioration of intellectual capacity and function, and impairment of control of memory, judgment, and impulses.
schizophrenia	Any of a large group of psychotic disorders characterized by gross

<p>(skiz-oh-FREN-ee-ah) schiz/o = split phren/o = mind; also refers to the diaphragm -ia = condition</p>	<p>distortion of reality, disturbances of language and communication, withdrawal from social interaction, and the disorganization and fragmentation of thought, perception, and emotional reaction. See Figure ٢٣-١.</p>
<p>paranoid schizophrenia (PAIR-ah-noyd skiz-oh-FREN-ee-ah) schiz/o = split phren/o = mind; also refers to the diaphragm -ia = condition</p>	<p>Paranoid schizophrenia is a condition characterized by the individual being overly suspicious of others and having hallucinations and delusions.</p>
<p>bipolar disorders (manic-depressive) (by-POHL-ar)</p>	<p>A psychological disorder characterized by episodes of mania and depression, alternations between the two, or a mixture of the two moods simultaneously.</p>
<p>cyclothymic disorder (sigh-cloh-THIGH-mic)</p>	<p>A chronic mood disorder characterized by numerous periods of mood swings from depression to happiness. The period of mood disturbance is at least two years in duration.</p>
<p>major depressive disorder</p>	<p>A disorder characterized by one or more episodes of depressed mood that last at least two weeks and are accompanied by at least five additional symptoms of depression.</p>
<p>generalized anxiety disorder</p>	<p>A disorder characterized by chronic, unrealistic, and excessive anxiety and worry. The symptoms have usually existed for at least six months</p>

	or more and have no relation to any specific causes.
panic disorder	Panic disorder is characterized by recurrent panic attacks that come on unexpectedly, followed by at least one month of persistent concern about having another panic attack .
phobic disorder (FOH-bik)	An anxiety disorder characterized by an obsessive, irrational, and intense fear of a specific object, of an activity, or of a physical situation; also called phobia disorder.
obsessive-compulsive disorder (ob-SESS-iv kom-PUHL-siv)	A disorder characterized by recurrent obsessions or compulsions that are severe enough to be time consuming (they take more than one hour a day) or to cause obvious distress or a notable handicap.
posttraumatic stress disorder (post-trah-MAT-ik)	A disorder in which the individual experiences characteristic symptoms following exposure to an extremely traumatic event. The individual reacts with horror, extreme fright, or helplessness to the event.
conversion disorder	A disorder in which the individual represses anxiety experienced by emotional conflicts by converting the anxious feelings into physical symptoms that have no organic basis but are perceived to be real by the individual.
hypochondriasis (high-poh-kon-DRY-	A chronic, abnormal concern about the health of the body, characterized

ah-sis)	by extreme anxiety , depression , and an unrealistic interpretation of real or imagined physical symptoms as indications of a serious illness or disease despite rational medical evidence that no disorder is present.
Munchausen syndrome (by proxy) (mun-CHOW-zen SIN-drom)	A somewhat rare form of child abuse in which a parent of a child falsifies an illness in a child by fabricating or creating the symptoms and then seeks frequent medical attention for the child.
narcolepsy (NAR-koh-lep-see) narc/o = sleep -lepsy = seizure, attack	A sleep disorder characterized by a repeated, uncontrollable desire to sleep—often several times a day. The sleep attacks must occur daily over a period of at least three months to establish the diagnosis of narcolepsy .
pain disorder	A psychological disorder in which the patient experiences pain in the absence of physiologic findings.
dissociative amnesia (formerly: psychogenic amnesia) (diss-SOH-see-ah-tiv am-NEE-zee-ah)	Dissociative amnesia is a disorder in which the individual is unable to recall important personal information, usually of a traumatic or stressful nature. The loss of memory is more than simple forgetting.
dissociative identity disorder (formerly: multiple personality disorder)	A disorder in which there is the presence of two or more distinct personalities within one individual. At some point in time, each

	personality takes complete control of the person's behavior.
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Treatments and Therapies

behavior therapy	A form of psychotherapy that seeks to modify observable, maladjusted patterns of behavior by substituting new responses to given stimuli; also called behavior modification.
drug therapy	The use of psychotropic drugs to treat mental disorders . Psychotropic drugs are those prescribed for their effects in relieving symptoms of anxiety, depression, or other mental disorders (such as schizophrenia).
electroconvulsive therapy (ECT) (ee-lek-troh-kon-VULL-siv)	The process of passing an electrical current through the brain to create a brief seizure in the brain, much like a spontaneous seizure from some forms of epilepsy; also called shock therapy.
family therapy	A form of psychotherapy that focuses the treatment on the process between family members that supports and sustains symptoms. It is a group therapy with family members composing the group.
group therapy	The application of psychotherapeutic techniques

	within a small group of people who experience similar difficulties; also known as encounter groups.
hypnosis (hip-NOH-sis)	A passive, trancelike state of existence that resembles normal sleep during which perception and memory are altered, resulting in increased responsiveness to suggestion.
play therapy	A form of psychotherapy in which a child plays in a protected and structured environment with games and toys provided by a therapist who observes the behavior, affect, and conversation of the child to gain insight into thoughts, feelings, and fantasies.
psychoanalysis (sigh-koh-ah-NAL-ih-sis)	A form of psychotherapy that analyzes the individual's unconscious thought, using free association , questioning, probing, and analyzing.
psychoeducation	Psychoeducation refers to education offered to individuals who live with a psychological disturbance. It involves teaching people about their illness, how to treat it, and how to recognize signs of relapse so they can seek treatment before the condition worsens or returns.

COMMON ABBREVIATIONS

CHAPTER

۲۴

CHAPTER CONTENT

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OBJECTIVES

Upon completing this chapter and the review exercises at the end of the chapter, the learner should be able to:

۱. Identify and define ۱۰ pathological conditions related to gerontology.
۲. Identify at least five diagnostic techniques and procedures used in diagnosis and treatment of disorders of older adults.
۳. Correctly spell at least ۲۰ medical terms that relate to gerontology.

۴. Identify at least ۱۰ medical terms related to gerontology based on their descriptions.
۵. Create at least ۱۰ medical terms related to gerontology and identify the appropriate combining form(s) for each term.
۶. Identify at least ۱۰ abbreviations related to gerontology.
۷. Identify and define ۱۰ word elements related to gerontology.

نسخه اولیه غیر قابل انتشار

Overview

“Come grow old with me, the best is yet to be.” Is it? “Life begins at ۴۰.” Does it? The

poetic statements regarding **aging** are sometimes quite different from reality.

Abraham

Lincoln once said, “And in the end, it’s not the years in your life that count. It’s the life

in your years.” People age in different ways and at different rates. For those who enjoy

good health and a clear mind, the years beyond the age of 60 can be most productive

and rewarding. For others, who do not enjoy good health, the scenario is quite different.

Longevity (living a long life) can be influenced by many factors such as heredity,

improved medical treatments, and lifestyle. The term *young-old* is used to describe an

individual between the ages of 65 and 74 years of age. The term *middle-old* is used to

describe an individual between the ages of 75 and 84 years of age. The term *old-old* is

used to describe an individual 85 years of age and older. In the United States, the fastest

growing age group is individuals over the age of 85. The health care professional must

have an understanding of the normal changes that occur with aging—versus changes or

signs that indicate a disease process—to provide the best care possible for the patient.

Aging, or **senescence**, is the process of growing old. This process can be positive in that

the individual possesses desirable traits such as increased wisdom and experience.

On

the other hand, the aging process can have negative traits—such as decreased capacity to

remember things, poorer vision, and a less steady gait (way of walking). The study of all

aspects of the aging process—including the clinical, psychological, economic, and socio-logical issues encountered by older persons and the consequences for both the individual and society—is known as **gerontology**. The branch of medicine that deals with the physiological characteristics of aging and the diagnosis and treatment of diseases affecting the aged is known as **geriatrics**. A **geriatrician** is a physician who has specialized postgraduate education and experience in the medical care of the older person. A **geriatric nurse practitioner** is a registered nurse with additional education obtained through a master's degree program that prepares the nurse to deliver primary health care to older adults. **Gerontic nursing** is the nursing care of older adults, a compromise between caring for older adults who are ill (geriatric nursing) and a more holistic view of the nursing care of older adults (gerontological nursing). A **gerontologist** is one who specializes in the study of **gerontology**.

This chapter is devoted to discussion of some of the changes and conditions that occur in the older adult. Many of the pathological conditions in this chapter have already been discussed in previous body system chapters. They are presented again in this chapter as they relate to older adults and are presented by body systems

VOCABULARY

The following vocabulary words are frequently used when discussing the diseases and disorders of older adults.

Word	Definition
acrochordon (ak-roh-KOR-don)	Skin tag; a benign growth that hangs from a short stalk, commonly occurring on the neck, eyelids, axilla, or groin.

aging	The process of growing old.
alopecia (al-oh-PEE-she-ah)	Partial or complete loss of hair. Alopecia may result from normal aging, a reaction to a medication such as anticancer medications, an endocrine disorder, or a skin disease.
anastomosis (ah-nas-toh-MOH-sis)	A surgical joining of two ducts, blood vessels, or bowel segments to allow flow from one to the other. Anastomosis of blood vessels may be performed to bypass an occluded area and restore normal blood flow to the area.
anorexia (an-oh-REK-see-ah) an- = without -orexia = appetite	Lack or loss of appetite, resulting in the inability to eat. Anorexia is seen in individuals who are depressed, with the onset of fever and illness, with stomach disorders, or as a result of excessive intake of alcohol or drugs.
ascites (ah-SIGH-teez)	An abnormal intraperitoneal (within the peritoneal cavity) accumulation of a fluid containing large amounts of protein and electrolytes.
atherosclerosis (ath-er-oh-scleh-ROH-sis) ather/o = fatty scler/o = hard -osis = condition	A form of arteriosclerosis (hardening of the arteries) characterized by fatty deposit buildup within the inner layers of the walls of larger arteries.
atrophic (aye-TROH-fi k)	Characterized by a wasting of tissues, usually associated with general

<p>a- = without troph/o = development -ic = pertaining to</p>	malnutrition or a specific disease state.
<p>atrophy (AT-roh-fee) a- = without troph/o = development -y = noun ending</p>	Wasting or decrease in size or physiological activity of a part of the body; literally, "without development."
<p>biomicroscopy (BYE-oh-mye-kros-koh-pee) bi/o = life micr/o = small -scopy = process of viewing</p>	Ophthalmic examination of the eye by use of a slit lamp and a magnifying lens; also known as a slit-lamp exam.
<p>bruit (brew-EE) plural: bruits (brew-EEZ)</p>	An abnormal sound or murmur heard when listening to a carotid artery, organ, or gland with a stethoscope (e.g., during auscultation).
<p>bunionectomy (bun-yun-ECK-toh-mee) -ectomy = surgical removal</p>	Surgical removal of a bunion; removing the bony overgrowth and the bursa.
<p>claudication (klaw-dih-KAY-shun)</p>	Cramplike pains in the calves of the legs caused by poor circulation to the muscles of the legs; commonly associated with atherosclerosis .
<p>crepitation (crep-ih-TAY-shun)</p>	Clicking or crackling sounds heard upon joint movement.

<p>cryosurgery (cry-oh-SER-jer-ee) cry/o = cold</p>	<p>A noninvasive treatment for nonmelanoma skin cancer by using liquid nitrogen, which freezes the tissue. It is also used to remove benign skin tumors and growths such as warts.</p>
<p>curettage (koo-reh-TAZH)</p>	<p>The process of scraping material from the wall of a cavity or other surface for the purpose of removing abnormal tissue or unwanted material.</p>
<p>dyskinesia (dis-kih-NEE-see-ah) dys- = bad, difficult, painful, disordered -kinesia = movement</p>	<p>An impairment of the ability to execute voluntary movements.</p>
<p>ectropion (ek-TROH-pee-on)</p>	<p>Eversion (turning outward) of the edge of the eyelid.</p>
<p>edema (eh-DEE-ma)</p>	<p>The abnormal accumulation of fluid in interstitial spaces of tissues.</p>
<p>electrodesiccation (ee-lek-troh-des-ih-KAY-shun) electr/o = electrical; electricity</p>	<p>A technique using an electrical spark to burn and destroy tissue; used primarily for the removal of surface lesions.</p>
<p>entropion (en-TROH-pee-on)</p>	<p>Inversion (turning inward) of the edge of the eyelid.</p>
<p>geriatrician (jer-ee-ah-TRIH-shun)</p>	<p>A physician who has specialized postgraduate education and experience in the medical care of the older person.</p>
<p>geriatric nurse practitioner (jer-ee-AT-rik)</p>	<p>A registered nurse with additional education obtained through a master's degree program that prepares the nurse</p>

	to deliver primary health care to older adults.
geriatrics (jer-ee-AT-riks)	The branch of medicine that deals with the physiological characteristics of aging and the diagnosis and treatment of diseases affecting the aged.
gerontics (jer-ON-tiks) geront/o = old age -ics = pertaining to	Pertaining to old age.
gerontologist (jer-on-TAHL-oh-jist) geront/o = old age -logist = one who specializes in the study of	One who specializes in the study of gerontology.
gerontology (jer-on-TAHL-oh-jee) geront/o = old age -logy = the study of	The study of all aspects of the aging process, including the clinical, psychological, economic, and sociologic issues encountered by older persons and their consequences for both the individual and society.
gerontophobia (jer-on-toh-FOH-bee-ah) geront/o = old age -phobia = abnormal fear	An abnormal fear of growing old; fear of aging and of old people.
geropsychiatry	The study and treatment of psychiatric aspects of aging and mental

	disorders of older adults.
glucagon (GLOO-kah-gon)	A hormone produced by the alpha cells of the pancreas that stimulates the liver to convert glycogen into glucose when the blood sugar level is dangerously low.
glycosuria (glye-kohs-YOO-ree-ah) glyc/o = sugar, sweet -uria = urine condition	The presence of sugar in the urine.
hyperglycemia (high-per-glye-SEE-mee-ah) hyper- = excessive glyc/o = sugar, sweet -emia = blood condition	Elevated blood sugar level.
hypopigmentation (high-poh-pig-min-TAY-shun) hypo- = under, below, beneath, less than normal	Unusual lack of skin color.
ischemia (iss-KEY-mee-ah) -emia = blood condition	Decreased supply of oxygenated blood to a body part or organ.
ketones (KEE-tohnz)	Substances that increase in the blood as a result of incomplete fat metabolism. Fats are broken down for energy when the body is unable to use carbohydrates for energy, and the result is

	a buildup of ketone bodies in the blood and the urine.
kyphosis (ki-FOH-sis)	An abnormal outward curvature of a portion of the spine, commonly known as humpback or hunchback.
lichenification (lye-ken-ih-fi h-KAY-shun)	Thickening and hardening of the skin.
malabsorption (mal-ab-SORP-shun)	Impaired absorption of nutrients into the bloodstream from the gastrointestinal tract.
middle-old	A term used to describe an individual between the ages of ٧٥ and ٨٢ years.
myopia (my-OH-pee-ah) my/o = muscle -opia = visual condition	A refractive error in which the lens of the eye cannot focus on an image accurately, resulting in impaired distant vision that is blurred due to the light rays being focused in front of the retina because the eyeball is longer than normal; nearsightedness.
nocturia (nok-TOO-ree-ah) noct/o = night -uria = urine condition	Urination at night.
old-old	A term used to describe an individual ٨٥ years of age and older. The fastest number of older adults is in the old-old age group.
pitting edema	Swelling, usually of the skin of the extremities,

(pitting ee-DEE-mah)	that when pressed firmly with a finger will maintain the dent produced by the finger.
presbycusis (prez-bee-KOO-sis) presby/o = old age	Loss of hearing due to the natural aging process.
Loss of hearing due to the natural aging process.	Loss of accommodation for near vision; poor vision due to the natural aging process.
senescence (seh-NESS-ens)	The process of growing old.
senile lentiginos (SEE-nyle lin-TIH-jeh-nez)	Age spots; brown macules found on areas of the skin that are frequently exposed to the sun such as the face, neck, or back of the hands of many older people. The singular form of the word is lentigo.
stent	A rod or threadlike device (mesh tube) for supporting tubular structures during surgical anastomosis or for holding arteries open during angioplasty.
turgor (TURH-gor)	A reflection of the skin's elasticity. Turgor can be checked by lightly pinching the skin of the forearm between the examiner's thumb and forefinger and releasing it. The time it takes for the skin to return to its normal position is the measure of skin turgor, with the normal return time being approximately three seconds.

<p>urinary incontinence (YOO-rih-nair-ee in-CON-tin-ens) urin/o = urine -ary = pertaining to</p>	<p>Inability to control urination; the inability to retain urine in the bladder.</p>
<p>young-old</p>	<p>A term used to describe an individual between the ages of ٦٥ and ٧٤ years.</p>

Pathological Conditions and Changes in the Older Adult

<p>acrochordon (ak-roh-KOR-don)</p>	<p>A benign growth that hangs from a short stalk, commonly occurring on the neck, eyelids, axilla, or groin of an older person.</p>
<p>actinic keratosis (ak-TIN-ic kair-ah-TOH-sis) kerat/o = hard -osis = condition</p>	<p>Actinic keratosis is identified by raised areas that appear scaly and may bleed at the edges. An area of inflammation around the border of the lesion may be noted.</p>
<p>carcinoma, basal cell (car-sih-NOH-mah, BAY-sal sell) carcin/o = cancer -oma = tumor</p>	<p>A malignant epithelial cell tumor that begins as a slightly elevated nodule with a depression or ulceration in the center that becomes more obvious as the tumor grows. As the depression</p>

	enlarges, the tissue breaks down, crusts, and bleeds. See Figure ٢٤-٢.
carcinoma, squamous cell (car-sih-NOH-mah, SKWAY-mus sell) carcin/o = cancer -oma = tumor	A malignancy of the squamous, or scalelike, cells of the epithelial tissue. Squamous cell carcinoma is a much faster growing cancer than basal cell carcinoma and has a greater potential for metastasis if not treated. See Figure ٢٤-٣.
eczema	Eczema is an acute or chronic inflammatory skin condition characterized by erythema, papules, vesicles, pustules, scales, crusts, or scabs; accompanied by intense itching.
psoriasis	Psoriasis is a common, noninfectious, chronic disorder of the skin manifested by silvery white scales over round, raised, reddened plaques, producing pruritus.
seborrheic keratosis (seb-oh-REE-ik kair-ah-TOH-sis) kerat/o = hard -osis = condition	Seborrheic keratosis appears as a brown or waxy yellow wartlike lesion(s), Δ to ٢٠ mm in diameter, loosely attached to the skin surface.
fracture of the hip	A break in the continuity of the bone involving the upper third of the femur.
osteomalacia (oss-tee-oh-mah-	Osteomalacia is a disease in which the bones become abnormally soft

<p>LAY-she-ah) oste/o = bone -malacia = softening</p>	<p>due to a deficiency of calcium and phosphorus in the blood (which is necessary for bone mineralization). This disease results in fractures and noticeable deformities of the weight-bearing bones. This disease is the adult equivalent of rickets.</p>
<p>osteoporosis (oss-tee-oh-poh-ROW-sis) oste/o = bone -porosis = porous, lessening in density</p>	<p>Osteoporosis literally means porous bones; that is, bones that were once strong become fragile due to loss of bone density.</p>
<p>Paget's disease (PAJ-ets dih-ZEEZ) osteitis deformans (oss-tee-EYE-tis de-FOR-manz) oste/o = bone -itis = inflammation</p>	<p>A nonmetabolic disease of the bone, characterized by excessive bone destruction (breakdown of bone tissue by the osteoclasts) and unorganized bone formation by the osteoblasts. The bone is weak and prone to fractures. After symptoms are present, the diseased bone takes on a characteristic mosaic pattern that can be detected with X-ray or bone scan; also known as osteitis deformans.</p>
<p>ankylosing spondylitis (ang-kih-LOH-sing spon-dil-EYE-tis) ankyl/o = stiff spondyl/o = spine -itis = inflammation</p>	<p>Ankylosing spondylitis is a type of arthritis that affects the vertebral column and causes deformities of the spine; also known as Marietrümpell disease and as rheumatoid spondylitis.</p>
<p>bunion (hallux valgus)</p>	<p>An abnormal enlargement of the joint at the base of the great toe.</p>

(BUN-yun) (HAL-uks VAL-gus)	See Figure ٢٤-٧.
gout (GOWT)	<p>Gout is a metabolic disease in which uric acid crystals are deposited in joints or other tissues. It is characterized by inflammation of the first metatarsal joint of the great toe. Although the great toe is the most common site for gout, it can occur in other parts of the foot and body.</p> <p>Men between the ages of ٤٠ and ٦٠ are more commonly affected by gout than women. Gout usually appears in women in the postmenopausal period.</p>
<p>osteoarthritis (oss-tee-oh-ar-THRY-tis) oste/o = bone arthr/o = joint -itis = inflammation</p>	<p>Osteoarthritis is also known as degenerative joint disease. It is the most common form of arthritis, having universal prevalence in those age ٨٠ and over. It results from wear and tear on the joints, especially weightbearing joints such as the hips and knees.</p>
restless legs syndrome (RLS)	<p>A condition of the legs involving annoying sensations of uneasiness, tiredness, itching, or tingling of the leg muscles while resting. The individual feels an overwhelming desire to get up and move around due to the jerking sensation and painful twitching of the muscles. It is sometimes referred to as Ekbom's syndrome, after the doctor who first recognized it.</p>
Alzheimer's disease (ALTS-high-merz)	A progressive, degenerative disease that affects the cortex of the brain

dih-ZEEZ)	and results in deterioration of a person's intellectual functioning. Alzheimer's disease (AD) is progressive and extremely debilitating. It begins with minor memory loss and progresses to complete loss of mental, emotional, and physical functioning, frequently occurring in persons over 65 years of age.
cerebrovascular accident (CVA) (Seh-ree-broh-VASS-kyoo-lar AK-sih-dent)	Neurological deficit(s) resulting from a decrease in blood (ischemia) to a specific localized area in the brain; also called "stroke" or "brain attack."
Parkinson's disease (PARK-in-sons dih-ZEEZ)	A degenerative, slowly progressive, deterioration of nerves in the brain stem's motor system, characterized by a gradual onset of symptoms (such as a stooped posture with the body flexed forward; a bowed head; a shuffling gait; pill-rolling gestures; an expressionless, masklike facial appearance; muffled speech; and swallowing difficulty).
shingles (herpes zoster) (HER-peeZ ZOS-ter)	An acute viral infection seen mainly in adults, characterized by inflammation of the underlying spinal or cranial nerve pathway, producing painful vesicular eruptions on the skin following along these nerve pathways.
purpura (PER-pew-rah)	Collection of blood beneath the skin in the form of pinpoint hemorrhages appearing as red-purple skin

	discolorations.
<p>fol arteriosclerosis (ar-tee-ree-oh-skla-ir-ROH-sis) arteri/o = artery scler/o = hard -osis = condition</p>	<p>An arterial condition in which there is thickening, hardening, and loss of elasticity of the walls of the arteries, resulting in decreased blood supply, especially to the lower extremities and cerebrum; also called hardening of the arteries.</p>
<p>congestive heart failure (CHF) (Kon-JESS-tiv heart failure)</p>	<p>Condition characterized by weakness, breathlessness, and abdominal discomfort. Edema in the lower portions of the body results from the flow of the blood through the vessels being slowed (venous stasis) and the outflow of blood from the left side of the heart being reduced. The pumping ability of the heart is progressively impaired to the point that it no longer meets bodily needs; also known as cardiac failure. Congestive heart failure is the single most frequent cause of hospitalization for those individuals 65 years of age and older.</p>
<p>coronary artery disease (CAD) (KOR-ah-nair-ree-AR-ter-ee dih-ZEEZ) coron/o = heart -ary = pertaining to arter/o = artery -y = noun ending</p>	<p>Narrowing of the coronary arteries to the extent that adequate blood supply to the myocardium is prevented.</p>
<p>emphysema (em-fih-SEE-mah)</p>	<p>A chronic pulmonary disease characterized by increase beyond the normal in the size of air spaces distal to the terminal bronchiole, either from dilatation of the alveoli or from destruction of their walls. See</p>

	Figure ٢٤-٩.
influenza (in-floo-IN-zah)	A highly contagious viral infection of the respiratory tract transmitted by airborne droplet infection; also known as the flu. Influenza can occur in isolated cases or can be epidemic. The incubation period is usually one to three days after exposure. Older adults may be more prone to developing bacterial influenza, as are those individuals who have chronic pulmonary disease.
pneumonia	An acute inflammation of the lungs caused mainly by inhaled pneumococci of the <i>Streptococcus pneumoniae</i> species. It may also be caused by other bacteria as well as by viruses.
pulmonary edema (PULL-mon-air-ree eh-DEE-mah) pulmon/o = lung -ary = pertaining to	Swelling of the lungs caused by an abnormal accumulation of fluid in the lungs, in either the alveoli or the interstitial spaces.
pulmonary heart disease (cor pulmonale) (PULL-mon-air-ree heart dih-ZEEZ) (COR-pull-mon-ALL-ee) pulmon/o = lung -ary = pertaining to	Hypertrophy of the right ventricle of the heart (with or without failure) resulting from disorders of the lungs, pulmonary vessels, or chest wall; heart failure resulting from disorders of the lungs; pulmonary disease.
achalasia (ack-al-LAY-zee-ah)	Decreased mobility of the lower two-thirds of the esophagus along with constriction of the lower esophageal sphincter (LES), making it difficult for food and liquids to move down the esophagus.

colorectal cancer (koh-lo-REK-tal CAN-sir)	The presence of a malignant neoplasm in the large intestine.
constipation (KON-stih-PAY-shun)	A state in which the individual's pattern of bowel elimination is characterized by a decrease in the frequency of bowel movements and the passage of hard, dry stools. The individual experiences difficult defecation.
diverticular disease (dye-ver-TIK-yoo-lar dih-ZEEZ)	An expression used to characterize both diverticulosis and diverticulitis. Diverticulosis describes the noninflamed outpouchings or herniations through the muscular layer of the intestine, typically the sigmoid colon. Inflammation of the outpouchings called diverticulum is referred to as diverticulitis.
diabetes mellitus (dye-ah-BEE-teez MELL-ih-tus)	A disorder of the pancreas in which the beta cells of the islets of Langerhans of the pancreas fail to produce an adequate amount of insulin, resulting in the body's inability to appropriately metabolize carbohydrates, fats, and proteins.
cataract (KAT-ah-rakt)	The lens in the eye becomes progressively cloudy, losing its normal transparency and thus altering the perception of images due to the interference of light transmission to the retina.
deafness,	Hearing loss caused by the inability of nerve

<p>sensorineural (sen-soh-ree-NOO-ral) neur/o = nerve -al = pertaining to</p>	<p>stimuli to be delivered to the brain from the inner ear due to damage to the auditory nerve or the cochlea.</p>
<p>diabetic retinopathy (dye-ah-BET-ik reh-tin-OP-ah-thee) retin/o = retina -pathy = disease</p>	<p>Occurs as a consequence of an 1- to 10-year duration of diabetes mellitus in which the capillaries of the retina experience scarring due to the following:</p>
<p>ectropion (ek-TROH-pee-on)</p>	<p>“Turning out” or eversion of the eyelash margins (especially the lower eyelid) from the eyeball, leading to exposure of the eyelid and eyeball surface and lining. See Figure ٢٤-١١.</p>
<p>entropion (en-TROH-pee-on)</p>	<p>“Turning in” of the eyelash margins (especially the lower margins), resulting in the sensation similar to that of a foreign body in the eye (redness, tearing, burning, and itching). See Figure ٢٤-١٢.</p>
<p>glaucoma (glau-KOH-mah)</p>	<p>Ocular disorders identified as a group due to the increase in intraocular pressure. This increase in intraocular pressure may be primary or secondary, acute or chronic, and described as open or closed angle.</p>
<p>macular degeneration (MAK-yoo-lar dee-jin-er-RAY-shun)</p>	<p>Progressive deterioration of the retinal cells in the macula due to aging. Known as senile or age-related macular degeneration (ARMD), this condition is a common and progressive cause of visual</p>

	deficiency and permanent reading impairment in the adult over ٤٥ years of age.
<p>presbyopia (prez-bee-OH-pee-ah) presby/o = old age -opia = visual condition</p>	A refractive error occurring after the age of ٤٠, when the lens of the eye(s) cannot focus on an image accurately due to its decreasing elasticity.
<p>urinary incontinence (YOO-rih-nair-ee in-CON-tin-ens) urin/o = urine -ary = pertaining to</p>	The inability to retain urine in the bladder; the loss of urine from the bladder due to loss of sphincter control. This involuntary loss of urine is severe enough to cause social or hygienic problems.
<p>dementia (dee-MEN-she-ah)</p>	A progressive, organic mental disorder characterized by chronic personality disintegration, confusion, disorientation, stupor, deterioration of intellectual capacity and function, and impairment of control of memory, judgment, and impulses.
<p>depression (dee-PRESS-shun)</p>	A mood disturbance characterized by exaggerated feelings of sadness, discouragement, and hopelessness that are inappropriate and out of proportion to reality; may be relative to some personal loss or tragedy.

Diagnostic Techniques, Treatments, and Procedures

barium enema (lower GI series) (BEAR-ee-um EN-eh-mah)	Infusion of a radiopaque contrast medium, barium sulfate, into the rectum and held in place in the lower intestinal tract while X-ray films are obtained of the lower GI tract.
barium swallow (upper GI series) (BEAR-ee-um swallow)	Oral administration of a radiopaque contrast medium, barium sulfate, which flows into the esophagus as the person swallows.
colonoscopy (koh-lon-OSS-koh-pee) colon/o = colon -scopy = the process of viewing	The direct visualization of the lining of the large intestine by using a fiberoptic colonoscope.
coronary artery bypass graft (CABG) surgery (KOR-ah-nair-ree AR-ter-ee BYE-pass graft SIR-jer-ree)	A surgical procedure (designed to increase the blood flow to the myocardial muscle) that involves bypass grafts to the coronary arteries that reroute the blood flow around the occluded area of the coronary artery. See Figure ٢٤-١٣.
directional coronary atherectomy (dih-REK-shun-al KOR-ah-nair-ree ath-er-REK-toh-mee)	A procedure that uses a catheter (AtheroCath), which has a small mechanically driven cutter that shaves the plaque and stores it in a collection chamber. See Figure ٢٤-١٤.
dual-energy X-ray absorptiometry (DEXA)	This newer technique is also a noninvasive procedure that measures bone density. In the dual-energy X-ray absorptiometry (DEXA) procedure, an X-ray machine generates the energy

	photons that pass through the bones. A computer evaluates the amount of radiation absorbed by the bones, and the findings are interpreted by a physician.
extracapsular cataract extraction (ECCE) (eks-trah-KAP-syoo-lar KAT-ah-rakt eks- TRAK-shun)	Extracapsular cataract extraction is the surgical removal of the anterior segment of the lens capsule and the lens, allowing for the insertion of an intraocular lens implant .
hearing aids	Devices that amplify sound to provide more precise perception and interpretation of words communicated to the individual with a hearing deficit.
internal fixation devices	The treatment of choice for a fractured hip is usually surgery. Devices such as screws, pins, wires, and nails may be used to internally maintain the bone alignment while healing takes place. These internal fixation devices are more commonly used with fractures of the femur and fractures of joints. See Figure ٢٤-١٦.
intraocular lens implant (in-trah-OCK-yoo-lar LENZ IM-plant) intra- = within ocul/o = eye -ar = pertaining to	An intraocular lens implant is the surgical process of cataract extraction and the insertion of an artificial lens into the patient's eye. This restores visual acuity and provides improved depth perception, light refraction, and binocular vision.
percutaneous	A nonsurgical procedure in which a catheter,

<p>transluminal coronary angioplasty (PTCA) (per-kyoo-TAY-nee-us trans-LOOM-ih-nal KOR-ah-nair-ree AN-jee-oh-plass-tee)</p>	<p>equipped with a small inflatable balloon on the end, is inserted into the femoral artery and is threaded up the aorta (under X-ray visualization) into the narrowed coronary artery.</p>
<p>retinal photocoagulation (RET-in-al foh-toh-coh-ag-yoo-LAY-shun) retin/o = retina -al = pertaining to phot/o = light</p>	<p>Retinal photocoagulation is a surgical procedure that uses an argon laser to treat conditions such as glaucoma, retinal detachment, and diabetic retinopathy.</p>
<p>serum glucose tests</p>	<p>Measures the amount of glucose in the blood at the time the sample was drawn.</p>
<p>suprapubic prostatectomy (soo-prah-PEW-bik pross-tah-TEK-toh-mee) supra- = above pub/o = pubis -ic = pertaining to prostat/o = prostate gland -ectomy = surgical removal of</p>	<p>The surgical removal of the prostate gland by making an incision into the abdominal wall just above the pubis.</p>
<p>transurethral resection of the prostate (TURP)</p>	<p>The surgical removal of the prostate gland by inserting a resectoscope (an instrument used to remove tissue from the</p>

(trans-you-REE-thral REE-sek-shun of the PROSS-tayt) trans- = across urethr/o = urethra -al = pertaining to	body) through the urethra and into the bladder to remove small pieces of tissue from the prostate gland.
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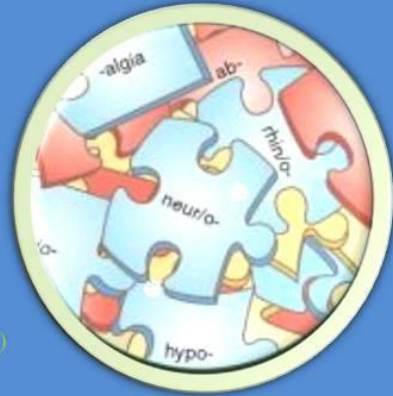
COMMON ABBREVIATIONS

نسخه اولیه غیر قابل انتشار

Medical Terminology



cardialgia
(car-dee-AL-jee-ah)



Cardi / *o* / *my* / *o* / *-pathy*
↑ ↑ ↑ ↑ ↑
root + vowel + root + vowel + suffix

lumbar vertebrae

lumb / o = joins, lower back

-ar = pertaining to