

# Female Reproductive System

CHAPTER

12

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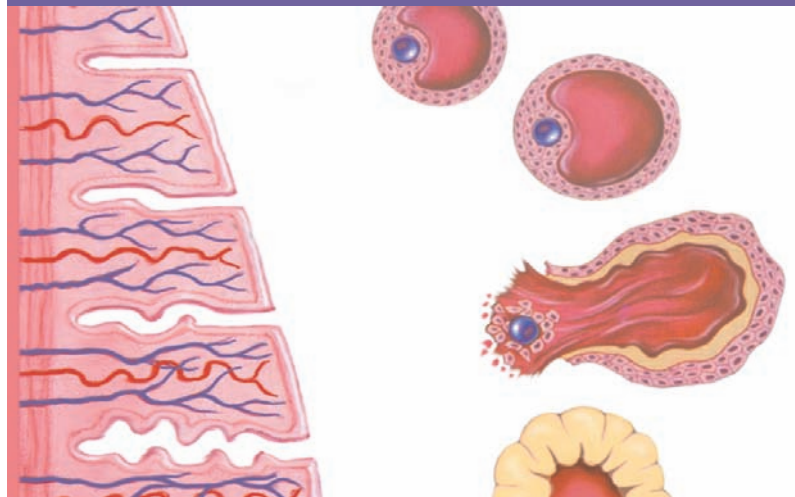
#### Medical Record Activities

SOAP note: Primary herpes I infection  
Preoperative consultation: Menometrorrhagia

## Objectives

Upon completion of this chapter, you will be able to:

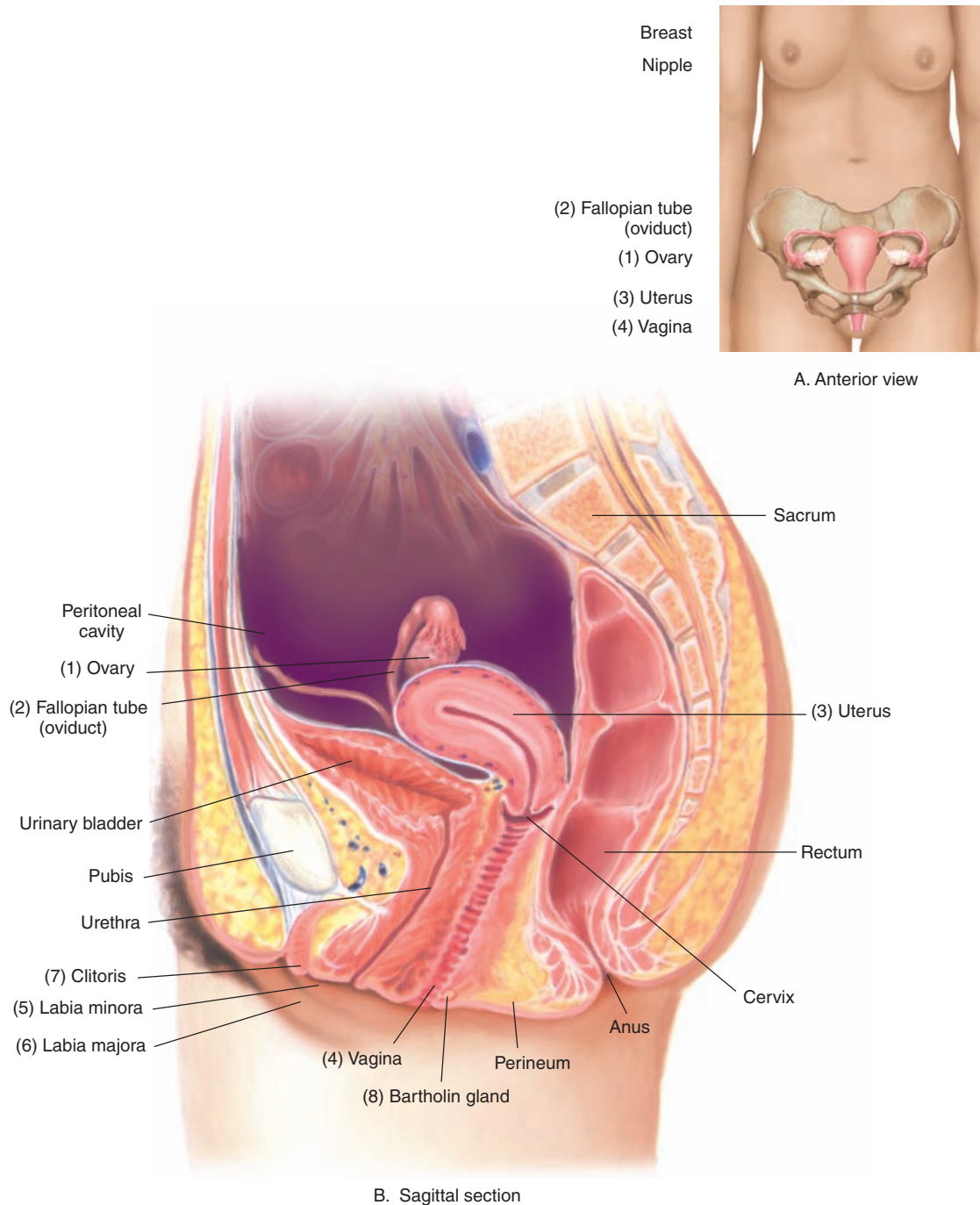
- Locate and describe the structures of the female reproductive system.
- Describe the functional relationship between the female reproductive system and other body systems.
- Recognize, pronounce, spell, and build words related to the female reproductive system.
- Describe pathological conditions, diagnostic and therapeutic procedures, and other terms related to the female reproductive system.
- Explain pharmacology related to the treatment of female reproductive disorders.
- Demonstrate your knowledge of this chapter by completing the learning and medical record activities.



## Anatomy and Physiology

The female reproductive system is composed of internal and external organs of reproduction. (See Figure 12–1.) The internal organs include the (1) **ovaries**, (2) **fallopian tubes**, (3) **uterus**, (4) **vagina**, and **external genitalia**. The external

genitalia are collectively known as the *vulva*. Included in these structures are the (5) **labia minora**, (6) **labia majora**, (7) **clitoris**, (8) **Bartholin glands**, and **mons pubis**, an elevation of adipose tissue covered by skin and coarse pubic hair that cushions the **pubis (pubic bone)**.



**Figure 12-1.** Female reproductive system. (A) Anterior view. (B) Sagittal section showing organs within the pelvic cavity.

## Anatomy and Physiology

This section introduces important female reproductive system terms and their definitions. Word analyses for selected terms are also provided.

Term	Definition
<b>external genitalia</b> jĕn-ĭ-TĀL-ĕ-ă	The sex, or reproductive, organs visible on the outside of the body; also called <i>genitals</i> <i>The external female genitalia, also known as the vulva. Male genitalia include the penis, scrotum, and testicles.</i>
<b>gestation</b> jĕs-TĀ-shŭn <i>gest:</i> pregnancy <i>-ation:</i> process (of)	Length of time from conception to birth <i>The human gestational period typically extends approximately 280 days from the last menstrual period. Gestation (pregnancy) of less than 36 weeks is regarded as premature.</i>
<b>lactation</b> lăk-TĀ-shŭn <i>lact:</i> milk <i>-ation:</i> process (of)	Production and release of milk by mammary glands
<b>orifice</b> OR-ĭ-fĭs	Mouth; entrance or outlet of any anatomical structure
<b>puerperium</b> pŭ-ĕr-PĒ-rĕ-ŭm	Time after childbirth that lasts approximately 6 weeks, during which the anatomical and physiological changes brought about by pregnancy resolve and a woman adjusts to the new or expanded responsibilities of motherhood and nonpregnant life
<b>Pronunciation Help</b>	Long Sound      ā—rate      ē—rebirth      ĭ—isle      ō—over      ŭ—unite Short Sound      ă—alone      ě—ever      ĭ—it      ō—not      ŭ—cut

## Female Reproductive Organs

The female reproductive organs include the ovaries, fallopian tubes, uterus, and vagina. They are designed to produce **ova** (female reproductive cells), transport the cells to the site of fertilization, provide a favorable environment for a developing fetus through pregnancy and childbirth, and produce female sex hormones. Hormones play an important role in the reproductive process, providing their influence at critical times during preconception, fertilization, and **gestation**. (See Figure 12–2.)

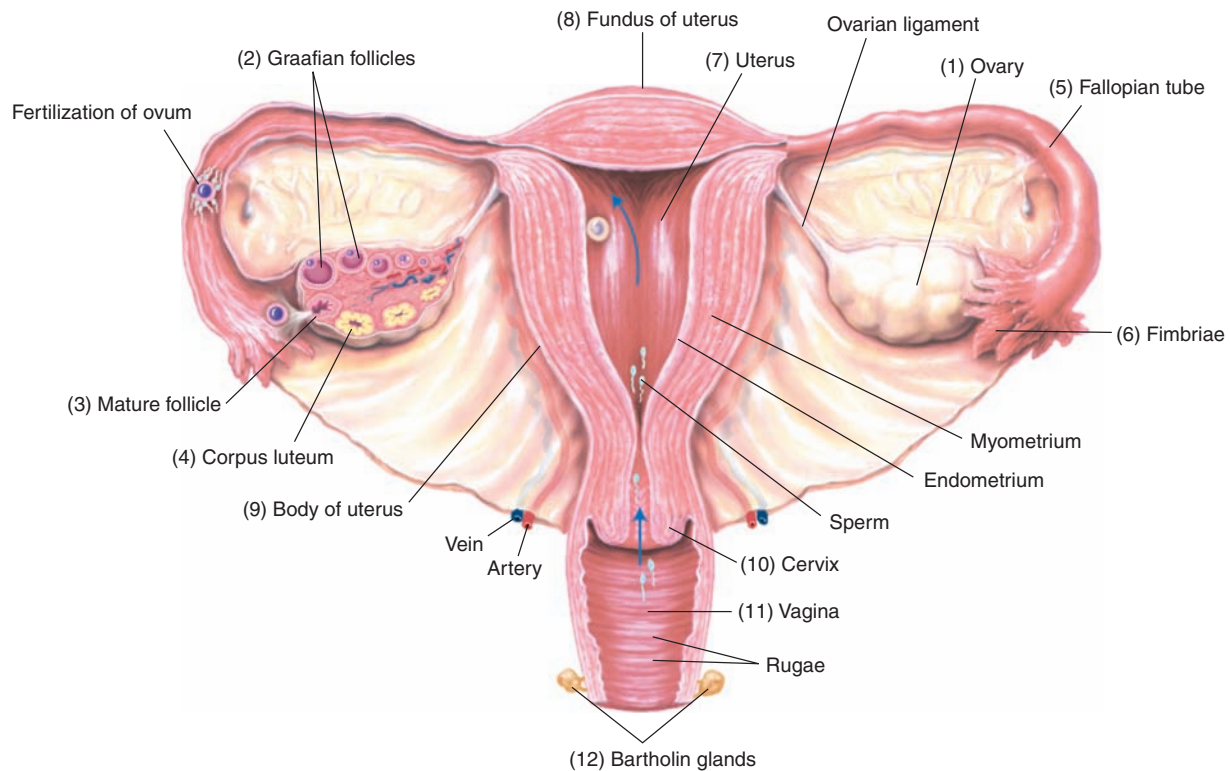
### Ovaries

The (1) **ovaries** are almond-shaped glands located in the pelvic cavity, one on each side of the uterus. Each ovary contains thousands of tiny, saclike structures called (2) **graafian follicles**, each containing an ovum. When an ovum ripens, the (3) **mature follicle** moves to the surface of the ovary, ruptures, and releases the ovum; a process called **ovulation**. After ovulation, the empty follicle is transformed

into a structure called the (4) **corpus luteum**, a small yellow mass that secretes estrogen and progesterone. The corpus luteum degenerates at the end of a non-fertile cycle. Estrogen and progesterone influence the menstrual cycle and menopause. They also prepare the uterus for implantation of the fertilized egg, help maintain pregnancy, promote growth of the placenta, and play an important role in development of secondary sex characteristics. (See Chapter 13, Endocrine System.)

### Fallopian Tubes

Two (5) **fallopian tubes (oviducts, uterine tubes)** extend laterally from superior angles of the uterus. The (6) **fimbriae** are fingerlike projections that create wavelike currents in fluid surrounding the ovary to move the ovum into the uterine tube. If the egg unites with a spermatozoon, the male reproductive cell, fertilization or conception takes place. If conception does not occur, the ovum disintegrates within 48 hours and is discharged through the vagina.



**Figure 12-2.** Anterior view of the female reproductive system. The developing follicles are shown in the sectioned left cavity.

## Uterus and Vagina

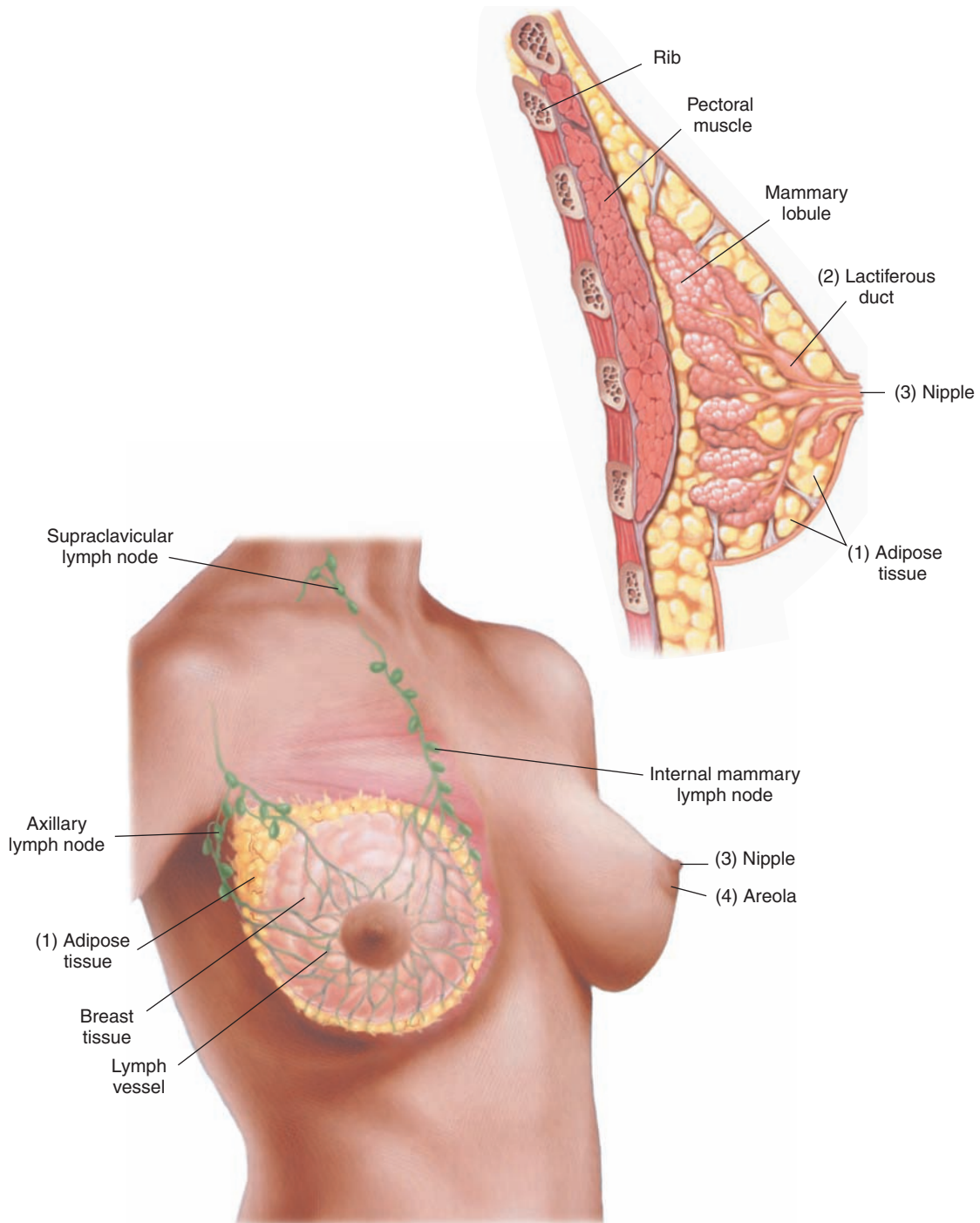
The (7) **uterus** contains and nourishes the embryo from the time the fertilized egg is implanted until the fetus is born. It is a muscular, hollow, inverted-pear-shaped structure located in the pelvic area between the bladder and rectum. The uterus is normally in a position of **anteflexion** (bent forward) and consists of three parts: the (8) **fundus**, the upper, rounded part; the (9) **body**, the central part; and the (10) **cervix**, also called the **neck of the uterus** or **cervix uteri**, the inferior constricted portion that opens into the vagina.

The (11) **vagina** is a muscular tube that extends from the cervix to the exterior of the body. Its lining consists of folds of mucous membrane that give the organ an elastic quality. During sexual excitement, the vaginal **orifice** is lubricated by secretions from (12) **Bartholin glands**. In addition to serving as the organ of sexual intercourse and receptor of semen, the vagina discharges menstrual flow. It also acts as a passageway for the delivery of the fetus. The **clitoris**, located anterior to the vaginal orifice, is composed of erectile tissue that is richly innervated with sensory endings. The clitoris is similar in structure to the penis in the

male, but is smaller and has no urethra. The area between the vaginal orifice and the anus is known as the **perineum**. During childbirth, this area may be surgically incised to enlarge the vaginal opening for delivery. If the incision is made, the procedure is called an **episiotomy**.

## Mammary Glands

Although mammary glands (breasts) are present in both sexes, they function only in females. (See Figure 12-3.) The breasts are not directly involved in reproduction but become important after delivery. Their biological role is to secrete milk for the nourishment of the newborn; a process called **lactation**. Breasts begin to develop during puberty as a result of periodic stimulation of the ovarian hormones estrogen and progesterone and are fully developed by age 16. Estrogen is responsible for the development of (1) **adipose tissue**, which enlarges the size of the breasts until they reach full maturity. Breast size is primarily determined by the amount of fat around the glandular tissue but is not indicative of functional ability. Each breast is composed of



**Figure 12-3.** Structure of mammary glands.

15 to 20 lobules of milk-producing glands that are drained by a (2) **lactiferous duct**, which opens on the tip of the raised (3) **nipple**. Circling the nipple is a border of slightly darker skin called the (4) **areola**. During pregnancy, the breasts enlarge and remain so until lactation ceases. At menopause, breast tissue begins to atrophy.

## Menstrual Cycle

**Menarche**, the initial menstrual period, occurs at puberty (about age 12) and continues approximately 40 years, except during pregnancy. The duration of the menstrual cycle is approximately 28 days, during which time several phases occur. (See Table 12–1.)

Table 12-1 Changes in the Menstrual Cycle

The menstrual cycle consists of a series of phases, during which the uterine endometrium changes as it responds to changing levels of ovarian hormones. These changes are outlined in the table below. In addition, see Figure 12–4 for a graphic representation of these changes.

Phase	Description
<b>Menstrual</b> Days 1 to 5	Uterine endometrium sloughs off because of hormonal stimulation; a process that is accompanied by bleeding. The detached tissue and blood are discharged through the vagina as menstrual flow.
<b>Ovulatory</b> Days 6 to 14	When menstruation ceases, the endometrium begins to thicken as new tissue is rebuilt. As estrogen level rises, several ova begin to mature in the graafian follicles with only one ovum reaching full maturity. At about the 14th day of the cycle, the graafian follicle ruptures, releasing the egg, a process called <i>ovulation</i> . The egg then leaves the ovary and travels down the fallopian tube toward the uterus.
<b>Postovulatory</b> Days 15 to 28	The empty graafian follicle fills with a yellow material and is now called the <i>corpus luteum</i> . Secretions of estrogen and progesterone by the corpus luteum stimulate the building of the endometrium in preparation for implantation of an embryo. If fertilization does not occur, the corpus luteum begins to degenerate as estrogen and progesterone levels decline.* With decreased hormone levels, the uterine lining begins to shed, the menstrual cycle starts over again, and the first day of menstruation starts.

\* Some women experience a loose grouping of symptoms called *premenstrual syndrome (PMS)*. These symptoms usually occur about 5 days after the decline in hormones and include nervous tension, irritability, headaches, breast tenderness, and a feeling of depression.

## Pregnancy

During pregnancy, the uterus changes its shape, size, and consistency. It increases greatly in size and muscle mass; houses the growing placenta, which nourishes the embryo-fetus; and expels the fetus after gestation. To prepare and serve as the birth canal at the end of pregnancy, the vaginal canal elongates as the uterus rises in the pelvis. The mucosa thickens, secretions increase, and vascularity and elasticity of the cervix and vagina become more pronounced.

The average pregnancy (**gestation**) lasts approximately 9 months and is followed by childbirth (**parturition**). Up to the third month of pregnancy, the product of conception is referred to as the *embryo*. From the third month to the time of birth, the unborn offspring is referred to as the *fetus*.

Pregnancy also causes enlargement of the breasts, sometimes to the point of pain. Many other changes occur throughout the body to accommodate the development and birth of the fetus. Toward the end of gestation, the myometrium begins to contract weakly at irregular intervals.

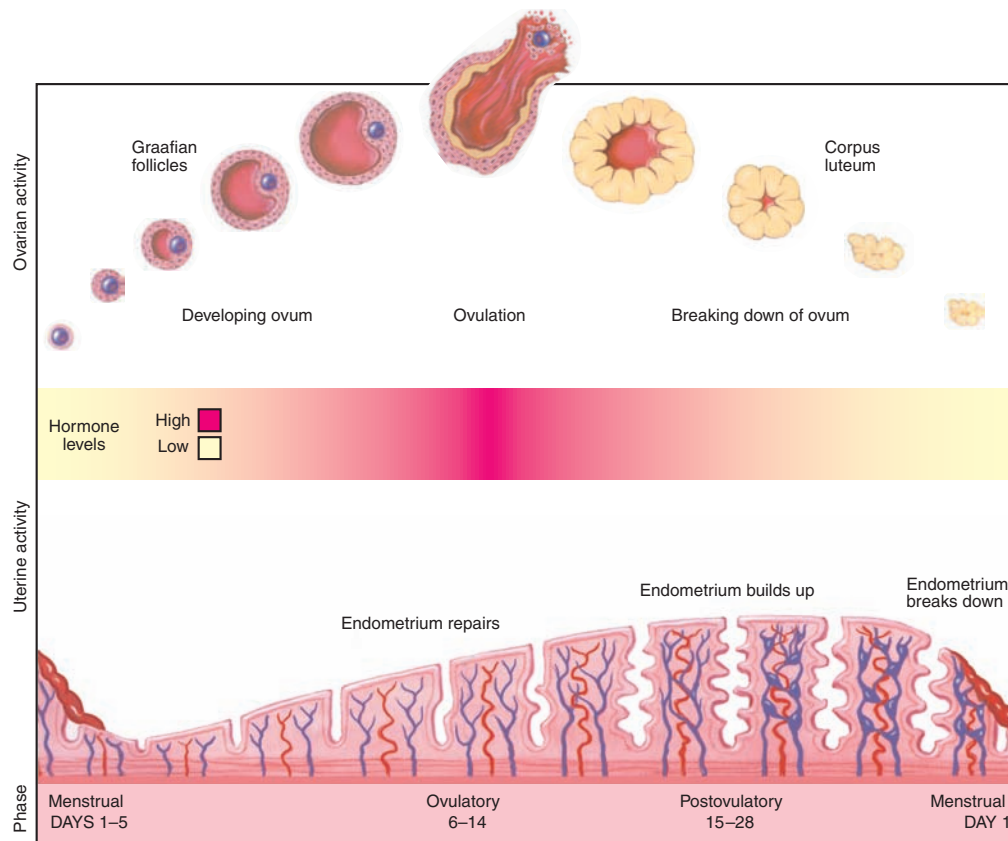
At this time, the full-term fetus is usually positioned head down within the uterus.

## Labor and Childbirth

Labor is the physiological process by which the fetus is expelled from the uterus. Labor occurs in three stages. The first is the **stage of dilation**, which begins with uterine contractions and terminates when there is complete dilation of the cervix (10 cm). The second is the **stage of expulsion**, the time from complete cervical dilation to birth of the baby. The last stage is the **placental stage**, or **afterbirth**. This stage begins shortly after childbirth when the uterine contractions discharge the placenta from the uterus. (See Figure 12–5.)

## Menopause

Menopause is cessation of ovarian activity and diminished hormone production that occurs at about age 50. Menopause is usually diagnosed if absence of menses (**amenorrhea**) has persisted for 1 year. The period in which symptoms of approaching



**Figure 12-4.** Menstrual cycle.

menopause occur is also known as *change of life* or the *climacteric*.

Many women experience hot flashes and vaginal drying and thinning (**vaginal atrophy**) as estrogen levels fall. Although **hormone replacement therapy (HRT)** has become more controversial, it is still used to treat vaginal atrophy and

porous bones (**osteoporosis**), and is believed to play a role in heart attack prevention. Restraint in prescribing estrogens for long periods in all menopausal women arises from concern that there is an increased risk that long-term usage will induce neoplastic changes in estrogen-sensitive aging tissue.

 *It is time to review anatomy by completing Learning Activities 12-1 and 12-2.*

## Pathology

Many female reproductive disorders are caused by infection, injury, or hormonal dysfunction. Although some disorders may be mild and correct themselves over time, others, such as those caused by infection, may require medical attention. Pain, itching, lesions, and discharge are signs and symptoms commonly associated with sexually transmitted diseases and must not be ignored. Other common problems of the female reproductive system are related to hormonal dysfunction that may cause menstrual disorders.

As a preventive measure, a pelvic examination should be performed regularly throughout life.

This diagnostic procedure helps identify many pelvic abnormalities and diseases. Cytological and bacteriological specimens are usually obtained at the time of examination.

**Gynecology** is the branch of medicine concerned with diseases of the female reproductive organs and the breast. **Obstetrics** is the branch of medicine that manages the health of a woman and her fetus during pregnancy, childbirth, and the **puerperium**. Because of the obvious overlap between gynecology and obstetrics, many practices include both specialties. The physician who simultaneously practices these specialties is called an **obstetrician/gynecologist**.



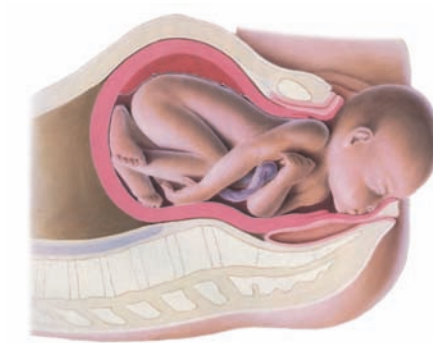
(1) Labor begins, membranes intact



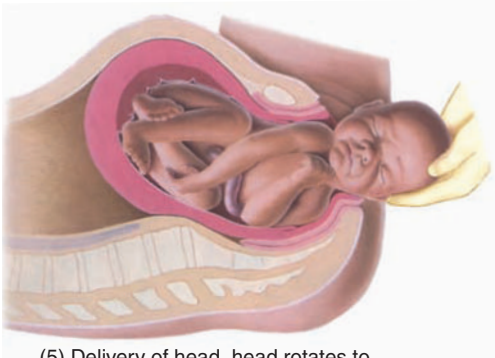
(2) Effacement of cervix, which is now partially dilated



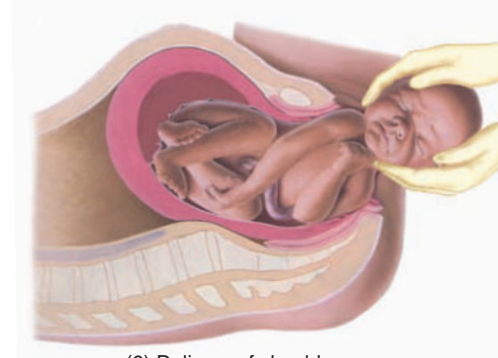
(3) When head reaches floor of pelvis, it rotates



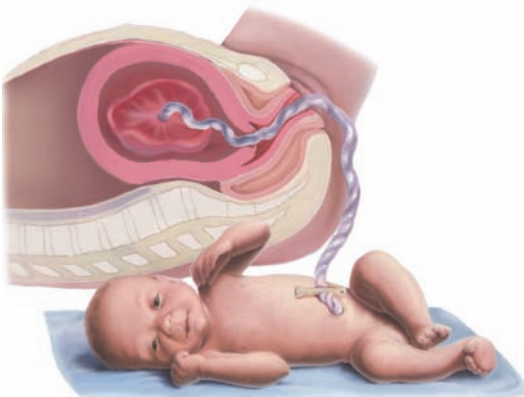
(4) Extension of the cervix allows head to pass through



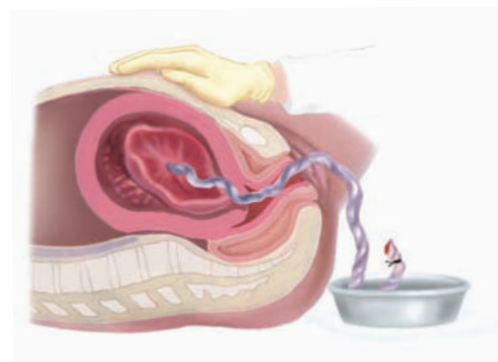
(5) Delivery of head, head rotates to realign itself with body



(6) Delivery of shoulders



(7) Delivery of infant is complete, uterus begins to contract



(8) Umbilical cord is cut, external massage to uterus continues to stimulate contractions, and placenta is delivered

**Figure 12-5.** Sequence of labor and childbirth.



## Connecting Body Systems—Female Reproductive System

*The main function of the female reproductive system is to provide structures that support fertilization and development of offspring. Should these structures be excised, childbearing would no longer be possible and the female production system would lose important functions. Other body systems, however, would continue to function normally. In other words, the female reproductive system depends on the other systems to support its functions, but only provides very limited support to the functions of other body systems. These limited functional relationships are summarized below.*



### Blood, lymph, and immune

- Female immune system has special mechanisms to inhibit its attack on sperm cells.
- Female reproductive tract secretes enzymes and acids that provide defense against entry of pathogens into the internal reproductive structures.



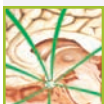
### Cardiovascular

- Estrogens lower blood cholesterol levels and promote cardiovascular health in premenopausal women.



### Digestive

- Estrogens have an effect on the metabolic rate.



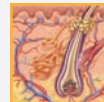
### Endocrine

- Estrogens produce hormones that provide a feedback mechanism which influences pituitary function.
- Estrogens assist in the production of human chorion gonadotropin hormone (HCG).



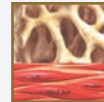
### Genitourinary

- The female reproductive system provides the ovum needed to make fertilization by sperm possible.



### Integumentary

- Female hormones affect growth and distribution of body hair.
- Female hormones influence the activity of sebaceous glands.
- Female hormones influence skin texture and fat distribution.



### Musculoskeletal

- Estrogen influences muscle development and size.
- Estrogen influences bone growth, maintenance, and closure of epiphyseal plates.



### Nervous

- Estrogen affects central nervous system development and sexual behavior.
- Estrogens provide antioxidants that have a neuroprotective function.



### Respiratory

- Sexual arousal and pregnancy produce changes in rate and depth of breathing.
- Estrogen is believed to provide a beneficial effect on alveoli of the lungs.

## Menstrual Disorders

Menstrual disorders are usually caused by hormonal dysfunction or pathological conditions of the uterus and may produce a variety of symptoms. Here are common disorder:

- Menstrual pain and tension (**dysmenorrhea**) may be the result of uterine contractions, pathological growths, or such chronic disorders as anemia, fatigue, diabetes, and tubercu-

losis. The female hormone estrogen is used to treat dysmenorrhea and also to regulate menstrual abnormalities.

- Irregular uterine bleeding between menstrual periods (**metrorrhagia**) or after menopause is usually symptomatic of disease, including benign or malignant uterine tumors. Consequently, early diagnosis and treatment are warranted. Metrorrhagia is probably the most significant form of menstrual disorder.

## Medical Word Elements

*This section introduces combining forms, suffixes, and prefixes related to the female reproductive system. Word analyses are also provided.*

Element	Meaning	Word Analysis
<b>Combining Forms</b>		
amni/o	amnion (amniotic sac)	<b>amni/o</b> /centesis (ām-nē-ō-sĕn-TĒ-sĭs): surgical puncture of the amniotic sac -centesis: surgical puncture <i>Amniocentesis is a transabdominal puncture performed under ultrasound guidance using a needle and syringe to remove amniotic fluid.</i>
cervic/o	neck; cervix uteri (neck of uterus)	<b>cervic</b> /itis (sĕr-vĭ-SĪ-tĭs): inflammation of the cervix -itis: inflammation
colp/o	vagina	<b>colp/o</b> /scopy (kŏl-PŌS-kŏ-pĕ): visual examination of the vagina -scopy: visual examination
vagin/o		<b>vagin/o</b> /cele (VĀJ-ĭn-ŏ-sĕl): vaginal hernia; also called <i>colpocèle</i> -cele: hernia, swelling
galact/o	milk	<b>galact/o</b> /poiesis (gă-lăk-tŏ-poy-Ē-sĭs): production of milk -poiesis: formation, production
lact/o		<b>lact/o</b> /gen (LĀK-tŏ-jĕn): forming or producing milk -gen: forming, producing, origin <i>Lactogen refers to any substance that stimulates milk production, such as a hormone.</i>
gynec/o	woman, female	<b>gynec/o</b> /logist (gĭ-nĕ-KŌL-ŏ-jĭst): physician specializing in treating disorders of the female reproductive system -logist: specialist in study of
hyster/o	uterus (womb)	<b>hyster</b> /ectomy (hĭs-tĕr-ĒK-tŏ-mĕ): excision of the uterus -ectomy: excision, removal
metri/o		endo/ <b>metri</b> /al (ĕn-dŏ-MĒ-trĕ-ăl): pertaining to the lining of the uterus endo-: in, within -al: pertaining to, relating to
uter/o		<b>uter/o</b> /vagin/al (ŭ-tĕr-ŏ-VĀJ-ĭ-năl): relating to the uterus and vagina <i>vagin/o</i> : vagina -al: pertaining to
mamm/o	breast	<b>mamm/o</b> /gram (MĀM-ŏ-grăm): radiograph of the breast -gram: record, writing
mast/o		<b>mast/o</b> /pexy (MĀS-tŏ-pĕks-ĕ): surgical fixation of the breast(s) -pexy: fixation (of an organ) <i>Mastopexy is reconstructive, cosmetic surgery performed to affix sagging breasts in a more elevated position, commonly improving their shape.</i>
men/o	menses, menstruation	<b>men/o</b> /rrhagia (mĕn-ŏ-RĀ-jĕ-ă): bursting forth of the menses -rrhagia: bursting forth (of) <i>Menorrhagia is an excessive amount of menstrual flow over a longer duration than normal.</i>

Medical Word Elements—cont'd		
Element	Meaning	Word Analysis
metr/o	uterus (womb); measure	<b>metr/o</b> /ptosis (mē-trō-TŌ-sīs): prolapse or downward displacement of the uterus <i>-ptosis</i> : prolapse, downward displacement
nat/o	birth	pre/ <b>nat</b> /al (prē-NĀ-tāl): pertaining to (time period) before birth <i>pre-</i> : before, in front <i>-al</i> : pertaining to
oophor/o	ovary	<b>oophor</b> /oma (ō-ōf-ō-RŌ-mā): ovarian tumor <i>-oma</i> : tumor
ovari/o		<b>ovari/o</b> /rrhexis (ō-vā-rē-ō-RĔK-sīs): rupture of an ovary <i>-rrhexis</i> : rupture
perine/o	perineum	<b>perine/o</b> /rrhaphy (pēr-ī-nē-OR-ā-fē): suture of the perineum <i>-rrhaphy</i> : suture <i>Perineorrhaphy</i> is used to repair an episiotomy or a laceration that occurs during delivery of the fetus.
salping/o	tube (usually fallopian or eustachian [auditory] tubes)	<b>salping/o</b> /plasty (sāl-PĪNG-gō-plās-tē): surgical repair of a fallopian tube <i>-plasty</i> : surgical repair
Suffixes		
-arche	beginning	men/ <b>arche</b> (mēn-ĀR-kē): beginning of menstruation <i>men</i> : menses, menstruation
-cyesis	pregnancy	pseudo/ <b>cyesis</b> (soo-dō-sī-Ē-sīs): false pregnancy <i>pseudo-</i> : false <i>Pseudocyesis</i> , also called false pregnancy, is a condition in which a woman develops bodily changes consistent with pregnancy when she is not pregnant.
-gravida	pregnant woman	multi/ <b>gravida</b> (mül-tī-GRĀV-ī-dā): woman who has been pregnant more than once <i>multi-</i> : many, much
-para	to bear (offspring)	nulli/ <b>para</b> (nül-ĪP-ā-rā): woman who has never produced a viable offspring <i>nulli-</i> : none
-salpinx	tube (usually fallopian or eustachian [auditory] tubes)	hem/o/ <b>salpinx</b> (hē-mō-SĀL-pĭnks): blood in a fallopian tube; also called <i>hematosalpinx</i> <i>hem/o</i> : blood Hemosalpinx refers to a collection of blood in a fallopian tube, commonly associated with a tubal pregnancy.
-tocia	childbirth, labor	dys/ <b>tocia</b> (dīs-TŌ-sē-ā): difficult childbirth <i>dys-</i> : bad; painful; difficult
-version	turning	retro/ <b>version</b> (rēt-rō-VĔR-shūn): tipping or turning back (of an organ) <i>retro-</i> : backward, behind <i>Retroversion of the uterus</i> occurs in one of every four otherwise healthy women. (continued)

Medical Word Elements—cont'd		
Element	Meaning	Word Analysis
<i>Prefixes</i>		
ante-	before, in front of	<b>ante</b> /version (än-tē-VĔR-zhŭn): tipping or turning forward of an organ -version: turning
dys-	bad; painful; difficult	<b>dys</b> /men/o/rrhea (dĭs-mĕn-ō-RĔ-ă): painful menstruation men/o: menses, menstruation -rrhea: discharge, flow
endo-	in, within	<b>endo</b> /metr/itis (ĕn-dō-mĕ-TRĪ-tĭs): inflammation of (tissue) within the uterus metr: uterus (womb); measure -itis: inflammation
multi-	many, much	<b>multi</b> /para (mŭl-TĪP-ă-ră): woman who has delivered more than one viable infant -para: to bear (offspring)
post-	after	<b>post</b> /nat/al (pōst-NĀ-tāl): occurring after birth nat: birth -al: pertaining to
primi-	first	<b>primi</b> /gravida (prĭ-mĭ-GRĀV-ĭ-dă): woman during her first pregnancy -gravida: pregnant woman



It is time to review medical word elements by completing Learning Activity 12–3. For audio pronunciations of the above-listed key terms, you can visit [www.davisplus.fadavis.com/gylys/systems](http://www.davisplus.fadavis.com/gylys/systems) to download this chapter's Listen and Learn! exercises or use the book's audio CD (if included).

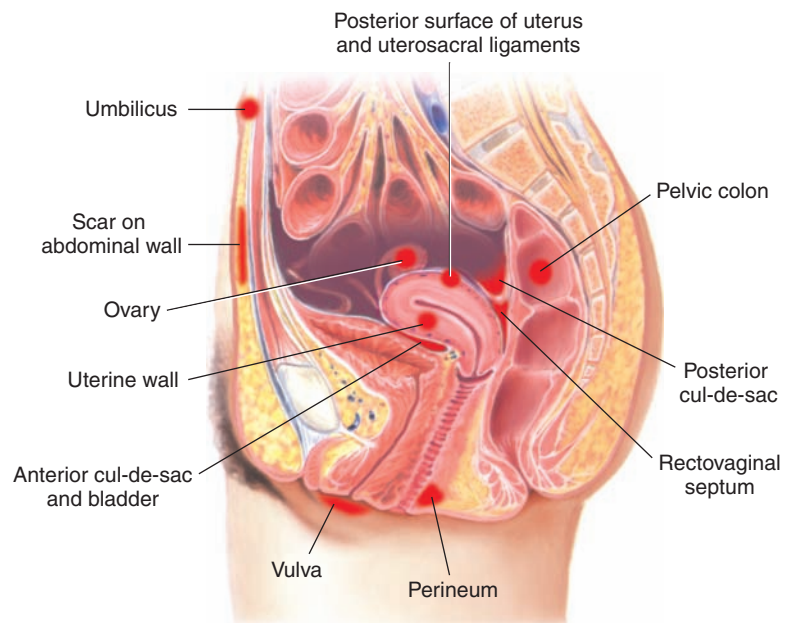
- Profuse or prolonged bleeding during regular menstruation (**menorrhagia** or **hypermenorrhea**) may, during early life, be caused by endocrine disturbances. However, in later life, it is usually due to inflammatory diseases, fibroids, tumors, or emotional disturbances.
- **Premenstrual syndrome (PMS)** is a disorder with signs and symptoms that range from complaints of headache and fatigue to mood changes, anxiety, depression, uncontrolled crying spells, and water retention. Signs and symptoms involving almost every organ have been attributed to PMS. This syndrome occurs several days before the onset of menstruation and ends when menses begins or a short time after and appears to be related to hormonal changes. The reason most individuals with PMS seek medical assistance is related to mood change. Simple changes in behavior, such as an increase in exercise and a reduction in caffeine, salt, and alcohol use, may be beneficial.

## Endometriosis

Endometriosis is the presence of functional endometrial tissue in areas outside the uterus. (See Figure 12–6.) The endometrial tissue develops into what are called **implants, lesions, or growths** and can cause pain, infertility, and other problems. The ectopic tissue is usually confined to the pelvic area but may appear anywhere in the abdominopelvic cavity. Like normal endometrial tissue, the ectopic endometrium responds to hormonal fluctuations of the menstrual cycle.

## Pelvic and Vaginal Infections

**Pelvic inflammatory disease (PID)** is a general term for inflammation of the uterus, fallopian tubes, ovaries, and adjacent pelvic structures and is usually caused by bacterial infection. The infection may be confined to a single organ or it may involve all the internal reproductive organs. The disease-producing organisms (**pathogens**) generally enter through the vagina during coitus, induced



**Figure 12-6.** Endometriosis.

abortion, childbirth, or the postpartum period. As an ascending infection, the pathogens spread from the vagina and cervix to the upper structures of the female reproductive tract. Two of the most common causes of PID are gonorrhea and chlamydial infection, which are sexually transmitted diseases (STDs). Unless treated promptly, PID may result in scarring of the narrow fallopian tubes and the ovaries, causing sterility. The widespread infection of the reproductive structures can also lead to fatal septicemia. Because regions of the uterine tubes have an internal diameter slightly larger than the width of a human hair, the scarring and closure of the tubes is one of the major causes of female infertility.

## Vaginitis

The vagina is generally resistant to infection because of the acidity of vaginal secretions. Occasionally, however, localized infections and inflammations occur from viruses, bacteria, or yeast. If confined to the vagina, these infections are called *vaginitis*. Although symptoms may be numerous and varied, the most common symptoms are genital itching, painful intercourse, and foul-smelling vaginal discharge. It is not uncommon for vaginitis to be accompanied by urethral inflammation (*urethritis*) because of the proximity of the urethra to the vagina. Two of the most common types of vaginitis are candidiasis and trichomoniasis.

Candidiasis, also called *moniliasis*, is caused by *Candida albicans*, a yeast that is present as part of the normal flora of the vagina. Steroid therapy, diabetes, or pregnancy may cause a change in the vaginal environment that disrupts the normal flora and promotes the overgrowth of this organism, resulting in a yeast (**fungal**) infection. The use of antibiotics may also disrupt the normal balance of microorganisms in the vagina by destroying “friendly bacteria,” thus allowing the overpopulation of yeast. Antifungal agents (**mycostatics**) that suppress the growth of fungi are used to treat this disease.

Trichomoniasis, caused by the protozoan *Trichomonas vaginalis*, is now known to be one of the most common causes of sexually transmitted lower genital tract infections. Trichomoniasis is discussed more fully in the sexually transmitted disease section below.

## Sexually Transmitted Disease

Sexually transmitted disease (STD), also called *venereal disease*, is any of several contagious diseases acquired as a result of sexual activity with an infected partner. As many as 20 different STDs have been identified, of which the newest and most serious is acquired immune deficiency syndrome (AIDS). (For a full description of AIDS, see Chapter 9, Blood, Lymph, and Immune Systems.) In the United States, the widespread occurrence of STDs is regarded as an epidemic. As

a group, STDs are the single most important cause of reproductive disorders. Until recently, gonorrhea and syphilis were the most common STDs. However, over the past few decades, chlamydia has become the most widespread STD. Viral diseases, such as genital herpes and genital warts, are also increasing in prevalence. The current STDs of medical concern include gonorrhea, syphilis, chlamydia, genital herpes, genital warts, and trichomoniasis.

### Gonorrhea

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae*. It involves the mucosal surface of the genitourinary tract and, possibly, the rectum and pharynx. This disease may be acquired through sexual intercourse and through orogenital and anogenital contact. Some women do not experience pain or manifest overt clinical symptoms (**asymptomatic**) until the disease has spread to the ovaries (**oophoritis**) and fallopian tubes (**salpingitis**), causing PID. The most common symptom of gonorrhea in women is a greenish yellow cervical discharge. The organism may infect the eyes of the newborn during vaginal delivery, which may result in blindness. As a precaution, silver nitrate is instilled in the eyes of newborns immediately after delivery as a preventive measure to ensure that this infection does not occur. The most common sign of gonorrhea in males is a discharge of pus from the penis. Other signs and symptoms include inflammation of the urethra (**urethritis**), which may cause painful urination (**dysuria**). If left untreated, the disease may infect the bladder (**cystitis**) and inflame the joints (**arthritis**). In addition, sterility may result from formation of scars that close the reproductive tubes of both sexes. Both sex partners must be treated because the infection can recur.

### Syphilis

Although less common than gonorrhea, syphilis is the more serious of the two diseases. It is caused by infection with the bacterium *Treponema pallidum*. If left untreated, syphilis may become a chronic, infectious, multisystemic disease. Syphilis is characterized by three distinct phases. In the first phase, a primary sore (**chancre**) develops at the point where the organism enters the body. The chancre is an ulcerated sore with hard edges that contains contagious organisms. The second phase produces a variety of symptoms that make diagnosis of the disease difficult. The third phase is the latent phase whereby the disease may remain dormant for years.

Although there may be no symptoms of the disease during this time, the patient is nevertheless infectious. Symptoms may include blindness, insanity, and eventual death. Treatment with antibiotic therapy is effective.

### Chlamydia

Chlamydia, caused by infection with the bacterium *Chlamydia trachomatis*, is the most prevalent and one of the most damaging STDs in the United States. In women, chlamydial infections are associated with mucopurulent discharge and inflammation of the cervix uteri (**cervicitis**) that may lead to PID. Chlamydia can be transmitted to the newborn baby during the birth process and cause a form of conjunctivitis or pneumonia. In men, chlamydial infections are associated with a whitish discharge from the penis that may lead to urethritis or epididymitis. Chlamydia in men, women, and babies can be successfully treated with antibiotics. However, many cases are asymptomatic, especially in women, and the disease commonly remains untreated until irreversible damage to the reproductive structures has occurred.

### Genital Herpes

Genital herpes causes red, blisterlike, painful lesions that closely resemble the common fever blister or cold sore that appears on the lips and around the mouth. Although both diseases are caused by the herpes simplex virus (HSV), genital herpes is associated with type 2 (HSV-2), and oral herpes is associated with type 1 (HSV-1). Regardless, both forms can cause oral and genital infections through oral-genital sexual activity. Fluid in the blisters is highly infectious and contains the active virus. However, this disease is associated with a phenomenon called **viral shedding**. During viral shedding, the virus is present on the skin of the infected patient, and can be transmitted to sexual partners, even when no lesions are present. Individuals with herpes infection may have only one episode or may have repeated attacks that usually lessen in severity over the years. The disease may be transmitted to a baby during the birth process and, although rare, may lead to death of the infant. In females, lesions appear in the vaginal area, buttocks, and thighs. In men, lesions appear on the glans, foreskin, or penile shaft.

### Genital Warts

Genital warts (**condylomas**) are caused by the human papillomavirus (HPV). Of the 100 identified types of HPV, only about 30 are spread

through sexual contact. The warts may be very small and almost unnoticeable or may be large and appear in clusters. In females, the lesions may be found on the vulva, in the vagina, or on the cervix. In males, the lesions commonly appear on the penis or around the rectum. Many warts disappear without treatment, but there is no way to determine which ones will resolve. When treatment is required, surgical excision or freezing the wart is the usual method. HPV infection has been found to increase the risk of certain cancers, including penile, vaginal, cervical, and anal cancer. The virus is linked to 80% of all cases of invasive cervical cancer. Thus, women who have been diagnosed with HPV infection are urged to have Papanicolaou (Pap) tests every 6 months after diagnosis. There is also a much greater incidence of miscarriages in individuals with HPV disease.

### Trichomoniasis

Trichomoniasis, caused by the protozoan *Trichomonas vaginalis*, affects males and females, but symptoms are more common in females. In women, it causes vaginitis, urethritis, and cystitis. Signs and symptoms include a frothy, yellow-green vaginal discharge with a strong odor. The infection may also cause discomfort during intercourse and urination. Irritation and itching in the female genital area and, in rare cases, lower abdominal pain can also occur. When symptoms are present in males, they include irritation inside the penis, mild discharge, or slight burning after urination or ejaculation. Treatment is generally very effective but reinfection is common if sexual partners are not treated simultaneously.

### Uterine Fibroids

About 30% to 40% of all women develop benign tumors called *fibroids* (also called *leiomyomas* or, more commonly, *myomas*). These benign tumors develop slowly between ages 25 and 40 and commonly enlarge in response to fluctuating endocrine stimulation after this period. Although some individuals are asymptomatic with these types of tumors, when present they include menorrhagia, backache, constipation, and urinary symptoms. In addition, such tumors commonly cause metrorrhagia and even sterility.

Treatment of uterine fibroid tumors depends on their size and location. If the patient plans to have children, treatment is as conservative as possible. As a rule, large tumors that produce symptoms,

such as pelvic pain and pressure accompanied by heavy menstrual periods (**menorrhagia**) or bleeding in between periods (**metrorrhagia**), should be removed. Usually, the uterus is removed (**hysterectomy**), but the ovaries are preserved. If the tumor is small, a myomectomy may be performed. However, when the tumor is producing excessive bleeding, the uterus and the tumor are excised.

## Oncology

The two most common forms of cancer (CA) involving the female reproductive system are breast cancer and cervical cancer.

### Breast Cancer

Breast cancer, also called *carcinoma of the breast*, is the most common malignancy of women in the United States. This disease appears to be associated with ovarian hormonal function. In addition, a diet high in fats appears to increase the incidence of breast cancer. Other contributing factors include a family history of the disease and, possibly, the use of hormone replacement therapy (HRT). Women who have not borne children (**nulliparous**) or those who have had an early onset of menstruation (**menarche**) or late onset of menopause are also more likely to develop breast cancer. Because this type of malignancy is highly responsive to treatment when detected early, women are urged to practice breast self-examination monthly and to receive periodic mammograms after age 40. Many breast malignancies are detected by the patient.

### Cervical Cancer

Cancer of the cervix most commonly affects women between ages 40 and 49. Statistics indicate that infection associated with sexual activity has some relationship to the incidence of cervical cancer. First coitus at a young age, large number of sex partners, infection with certain sexually transmitted viruses, and frequent intercourse with men whose previous partners had cervical cancer are all associated with increased risk of developing cervical cancer.

The Pap test, a cytological examination, can detect cervical cancer before the disease becomes clinically evident. Abnormal cervical cytology routinely calls for colposcopy, which can detect the presence and extent of preclinical lesions requiring biopsy and histological examination. Treatment of cervical cancer consists of surgery, radiation, and chemotherapy. If left untreated, the cancer will eventually metastasize and lead to death.

## Diagnostic, Symptomatic, and Related Terms

*This section introduces diagnostic, symptomatic, and related terms and their meanings. Word analyses for selected terms are also provided.*

Term	Definition
<b>Female Reproductive System</b>	
<b>adnexa</b> ăd-NĒK-să	Accessory parts of a structure <i>Adnexa uteri are the ovaries and fallopian tubes.</i>
<b>atresia</b> ă-TRĒ-zē-ă	Congenital absence or closure of a normal body opening, such as the vagina
<b>choriocarcinoma</b> kō-rē-ō-kār-sī-NŌ-mă <i>chori/o:</i> chorion <i>carcin:</i> cancer <i>-oma:</i> tumor	Malignant neoplasm of the uterus or at the site of an ectopic pregnancy <i>Although its actual cause is unknown, choriocarcinoma is a rare tumor that may occur after pregnancy or abortion.</i>
<b>contraceptive diaphragm</b> kōn-tră-SĒP-tiv DĪ-ă-frăm	Contraceptive device consisting of a hemisphere of thin rubber bonded to a flexible ring; inserted into the vagina together with spermicidal jelly or cream up to 2 hours before coitus so that spermatozoa cannot enter the uterus, thus preventing conception
<b>corpus luteum</b> KOR-pūs LŪ-tē-ŭm	Ovarian scar tissue that results from rupturing of a follicle during ovulation and becomes a small yellow body that produces progesterone after ovulation
<b>dyspareunia</b> dīs-pă-RŪ-nē-ă	Occurrence of pain during sexual intercourse
<b>endocervicitis</b> ĕn-dō-sĕr-vī-SĪ-tīs <i>endo-:</i> in, within <i>cervic:</i> neck; cervix uteri (neck of the uterus) <i>-itis:</i> inflammation	Inflammation of the mucous lining of the cervix uteri <i>Endocervicitis is usually chronic, commonly due to infection, and accompanied by cervical erosion.</i>
<b>fibroids</b> FĪ-broyds <i>fibr:</i> fiber, fibrous tissue <i>-oids:</i> resembling	Benign uterine tumors composed of muscle and fibrous tissue; also called <i>leiomyomas (myomas)</i> and <i>fibromyomata uteri</i> <i>Myomectomy or hysterectomy may be indicated if the fibroids grow too large, causing such symptoms as metrorrhagia, pelvic pain, and menorrhagia.</i>
<b>infertility</b> ĭn-fĕr-TĪL-ĭ-tē	Inability or diminished ability to produce offspring
<b>hormonal contraception</b> hor-MŌ-năl kōn-tră-SĒP-shŭn	Use of hormones to suppress ovulation and prevent conception
oral contraceptive pills OR-ăl kōn-tră-SĒP-tiv	Birth control pills containing estrogen and progesterone in varying proportions <i>When taken according to schedule, oral contraceptive pills (OCPs) are about 98% effective.</i>



**Diagnostic, Symptomatic, and Related Terms—cont'd**

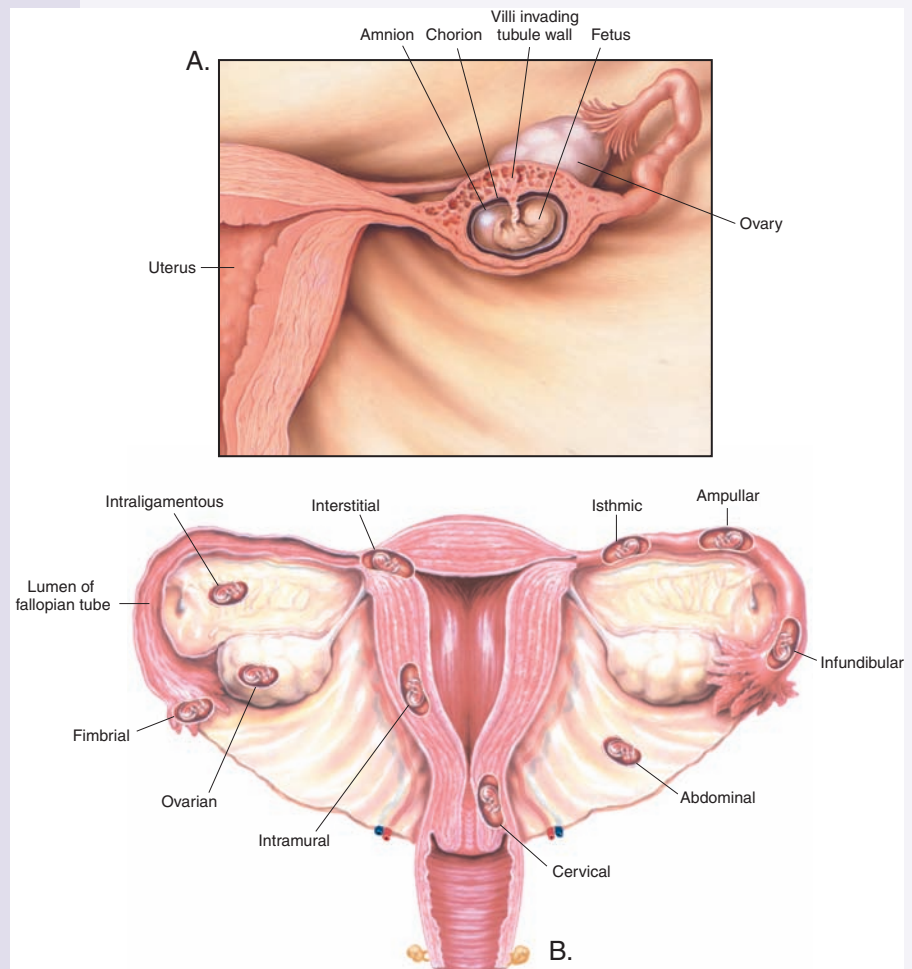
Term	Definition
<b>menarche</b> mĕn-ĀR-kĕ <i>men:</i> menses, menstruation <i>-arche:</i> beginning	Beginning of menstrual function
<b>oligomenorrhea</b> ōl-ī-gō-mĕn-ō-RE-ă <i>olig/o:</i> scanty <i>men/o:</i> menses, menstruation <i>-rrhea:</i> discharge, flow	Scanty or infrequent menstrual flow
<b>perineum</b> pĕr-ī-NĒ-ŭm	Region between the vulva and anus that constitutes the pelvic floor
<b>puberty</b> PŪ-bĕr-tĕ	Period during which secondary sex characteristics begin to develop and the capability of sexual reproduction is attained
<b>pyosalpinx</b> pī-ō-SĀL-pĭnks <i>py/o:</i> pus <i>-salpinx:</i> tube (usually fallopian or eustachian [auditory] tubes)	Pus in the fallopian tube
<b>retroversion</b> rĕt-rō-VĒR-shŭn <i>retro-:</i> backward, behind <i>-version:</i> turning	Turning or state of being turned back, especially an entire organ, such as the uterus, being tipped from its normal position
<b>sterility</b> stĕr-ĪL-ī-tĕ	Inability of the female to become pregnant or the male to impregnate the female
<b>vaginismus</b> vāj-ĭn-ĪZ-mŭs	Painful spasm of the vagina from contraction of its surrounding muscles
<b>viable</b> VĪ-ă-bl	Capable of sustaining life; denotes a fetus sufficiently developed to live outside of the uterus  <i>A viable infant is one who at birth weighs at least 500 g or is 24 weeks or more of gestational age. Because an infant is determined viable does not mean the baby is born alive.</i>
<b>Obstetrics</b>	
<b>abortion</b> ă-BOR-shŭn	Termination of pregnancy before the embryo or fetus is capable of surviving outside the uterus
<b>abruptio placentae</b> ă-BRŪP-shĕ-ō plă-SĔN-tĕ	Premature separation of a normally situated placenta

(continued)

Diagnostic, Symptomatic, and Related Terms—cont'd	
Term	Definition
<b>amnion</b> ĀM-nē-ōn	Membrane, continuous with and covering the fetal side of the placenta, that forms the outer surface of the umbilical cord  <i>The fetus is suspended in amniotic fluid.</i>
<b>breech presentation</b>	Common abnormality of delivery in which the fetal buttocks or feet present first rather than the head
<b>Down syndrome, trisomy 21</b> SĪN-drōm, TRĪ-sō-mē	Congenital condition characterized by physical malformations and some degree of mental retardation  <i>Trisomy 21 is the occurrence of three copies of chromosome 21 rather than two copies and occurs in about 1 of 700 live births. The terms Down syndrome and trisomy 21 are preferred to the term mongolism.</i>
<b>dystocia</b> dīs-TŌ-sē-ā <i>dys-</i> : bad; painful; difficult <i>-tocia</i> : childbirth, labor	Difficult labor, which may be produced by the large size of the fetus or the small size of the pelvic outlet
<b>eclampsia</b> ě-KLĀMP-sē-ā	Most serious form of toxemia during pregnancy <i>Signs of eclampsia include high blood pressure, edema, convulsions, renal dysfunction, proteinuria, and, in severe cases, coma.</i>
<b>ectopic pregnancy</b> ěk-TŌP-ĭk PRĒG-nān-sē	Pregnancy in which the fertilized ovum does not reach the uterine cavity but becomes implanted on any tissue other than the lining of the uterine cavity, such as a fallopian tube, an ovary, the abdomen, or even the cervix uteri  <i>Kinds of ectopic pregnancy include abdominal pregnancy, ovarian pregnancy, and tubal pregnancy. (See Figure 12-7.)</i>
<b>gravida</b> GRĀV-ĭ-dā	Pregnant woman  <i>The term gravida may be followed by numbers, indicating number of pregnancies, such as gravida 1, 2, 3, 4 or I, II, III, IV, and so forth.</i>
<b>multigravida</b> mŭl-tĭ-GRĀV-ĭ-dā <i>multi-</i> : many, much <i>-gravida</i> : pregnant woman	Woman who has been pregnant more than once
<b>multipara</b> mŭl-TĪP-ā-rā <i>multi-</i> : many, much <i>-para</i> : to bear (offspring)	Woman who has delivered more than one viable infant
<b>para</b> PĀR-ā	Woman who has given birth to one or more viable infants  <i>Para followed by a Roman numeral or preceded by a Latin prefix (primi-, quadri-, and so forth) designates the number of times a pregnancy has culminated in a single or multiple birth. For example, para I and primipara refer to a woman who has given birth for the first time. Para II refers to a woman who has given birth a second time. Whether the births were multiple (twins, triplets) is irrelevant.</i>

## Diagnostic, Symptomatic, and Related Terms—cont'd

Term	Definition
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**Figure 12-7.** Ectopic pregnancy (A) and sites of ectopic pregnancy (B).

**parturition**  
pär-tū-RĪSH-ŭn

Process of giving birth

**pelvimetry**  
pĕl-VĪM-ĕ-trĕ  
*pelvi*: pelvis  
*-metry*: act of measuring

Measurement of pelvic dimensions to determine whether the head of the fetus will be able to pass through the bony pelvis during the delivery process

*Measurement of the pelvis is usually determined by ultrasound during the early part of pregnancy. X-ray pelvimetry may be performed late in the pregnancy or during labor if more precise measurements are needed. The size of the pelvic outlet determines whether or not the baby is delivered vaginally or by cesarean section.*

**placenta previa**  
plă-SĒN-tă PRĒ-vĕ-ă

Condition in which the placenta is attached near the cervix and ruptures prematurely, with spotting as the early symptom

*Prevention of hemorrhage may necessitate a cesarean delivery.*

(Continued)

### Diagnostic, Symptomatic, and Related Terms—cont'd

Term	Definition
<b>primigravida</b> prī-mī-GRĀV-ī-dā <i>primi-</i> : first <i>-gravida</i> : pregnant woman	Woman pregnant for the first time
<b>primipara</b> prī-MĪP-ā-rā <i>primi-</i> : first <i>-para</i> : to bear (offspring)	Woman who has given birth to one viable infant, her first child, indicated by the notation <i>para I</i> on the patient's chart
<b>puerperium</b> pū-ēr-PĒ-rē-ūm	Period of 42 days after childbirth and expulsion of the placenta and membranes, during which the reproductive organs usually return to normal



*It is time to review pathological, diagnostic, symptomatic, and related terms by completing Learning Activity 12–4.*

### Diagnostic and Therapeutic Procedures

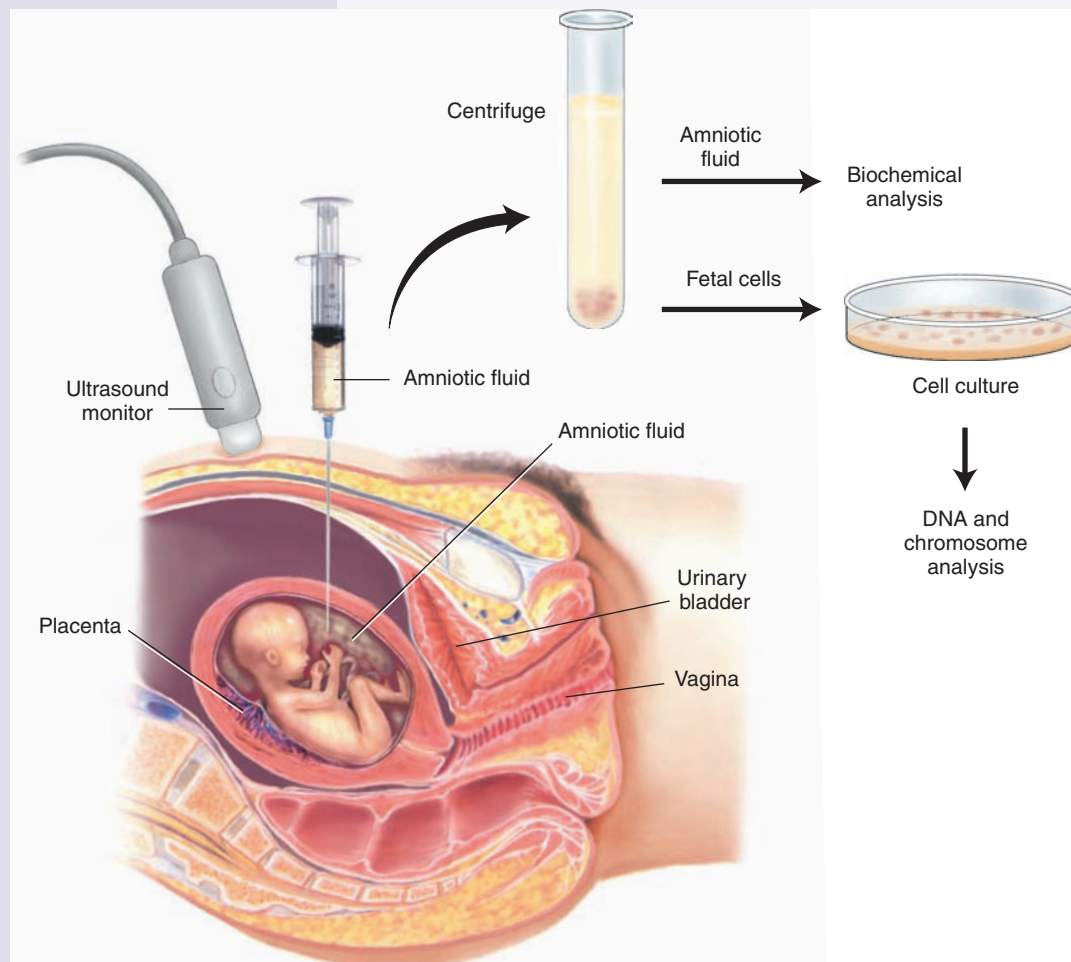
*This section introduces procedures used to diagnose and treat female reproductive disorders. Descriptions are provided as well as pronunciations and word analyses for selected terms.*

Procedure	Description
<b>Diagnostic Procedures</b>	
<b>Clinical</b>	
<b>amniocentesis</b> ām-nē-ō-sēn-TĒ-sīs <i>amni/o</i> : amnion (amniotic sac) <i>-centesis</i> : surgical puncture	Transabdominal puncture of the amniotic sac under ultrasound guidance using a needle and syringe to remove amniotic fluid (See Figure 12—8.)  <i>The sample obtained in amniocentesis is chemically and cytologically studied to detect genetic and biochemical disorders and fetal maturity. The procedure also enables transfusion of platelets or blood to the fetus and instillation of drugs for treating the fetus.</i>
<b>insufflation</b> ĭn-sū-FLĀ-shŭn	Delivery of pressurized air or gas into a cavity, chamber, or organ to allow visual examination, remove an obstruction, or apply medication  <i>Insufflation is performed to increase the distance between structures so the physician can see more clearly and better diagnose possible disorders.</i>
<b>tubal</b> TŪ-bāl	Test for patency of the uterine tubes made by transuterine insufflation with carbon dioxide; also called <i>Rubin test</i>
<b>Endoscopic</b>	
<b>colposcopy</b> kōl-PŌS-kō-pē <i>colp/o</i> : vagina <i>-scopy</i> : visual examination	Visual examination of the vagina and cervix with an optical magnifying instrument (colposcope)  <i>Colposcopy is used chiefly to identify areas of cervical dysplasia in women with abnormal Papanicolaou tests and as an aid in biopsy or excision procedures, including cautery, cryotherapy, and loop electrosurgical excision.</i>

## Diagnostic and Therapeutic Procedures—cont'd

### Procedure

### Description



**Figure 12-8.** Amniocentesis.

### laparoscopy

lăp-ăr-ŌS-kō-pē

*lapar/o:* abdomen

*-scopy:* visual examination

Visual examination of the abdominal cavity with a laparoscope through one or more small incisions in the abdominal wall, usually at the umbilicus (See Figure 12-9.)

*Laparoscopy has become a standard technique for many routine surgical procedures, including gynecological sterilization by fulguration of the oviducts and tubal ligation.*

### Laboratory

#### chorionic villus sampling (CVS)

kor-ē-ŌN-ĭk VĪL-ŭs SĂM-plĭng

Sampling of placental tissues for prenatal diagnosis of potential genetic defects

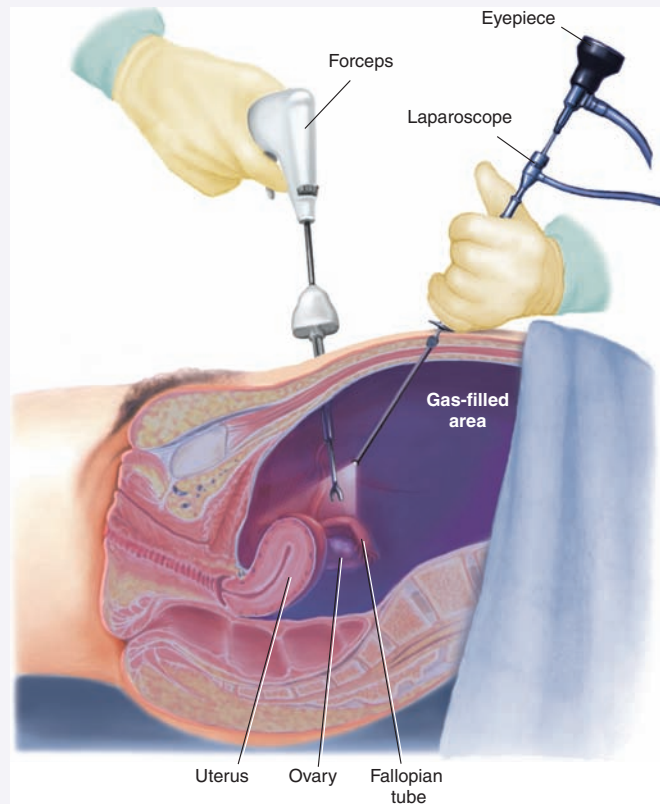
*In CVS, the sample is obtained through a catheter inserted into the uterus. The advantage of CVS over amniocentesis is that it can be undertaken in the first trimester of pregnancy.*

(continued)

## Diagnostic and Therapeutic Procedures—cont'd

### Procedure

### Description



**Figure 12-9.** Laparoscopy.

### endometrial biopsy

ĕn-dō-MĒ-trĕ-ăl BĪ-ŏp-sĕ

*endo-*: in, within

*metri*: uterus (womb); measure

*-al*: pertaining to, relating to

Removal of a sample of uterine endometrium for microscopic study

*Endometrial biopsy is commonly used in fertility assessment to confirm ovulation and as a diagnostic tool to determine the cause of dysfunctional and postmenopausal bleeding.*

### Papanicolaou (Pap) test

pā-pā-NĪ-kō-lā-oo

Cytological study used to detect abnormal cells sloughed from the cervix and vagina, usually obtained during routine pelvic examination

*A Pap test is commonly used to screen for and diagnose cervical cancer. It may also be used to evaluate cells from any organ, such as the pleura and peritoneum, to detect changes that indicate malignancy.*

### Radiographic

#### mammography

mām-ŌG-ră-fĕ

*mamm/o*: breast

*-graphy*: process of recording

Radiographic examination of the breast to screen for breast cancer

*Mammography is used to detect tumors, cysts, and microcalcifications and may help locate a malignant lesion.*

## Diagnostic and Therapeutic Procedures—cont'd

Procedure	Description
<p><b>hysterosalpingography</b> hīs-tēr-ō-sāl-pīn-GŌG-rā-fē <i>hyster/o</i>: uterus (womb) <i>salping/o</i>: tube (usually fallopian or eustachian [auditory] tube) <i>-graphy</i>: process of recording</p>	<p>Radiography of the uterus and uterine tubes (oviducts) following injection of a contrast medium</p> <p><i>Hysterosalpingography is used to determine pathology in the uterine cavity, evaluate tubal patency, and determine the cause of infertility.</i></p>
<p><b>ultrasonography (US)</b> ül-trā-sōn-ŌG-rā-fē <i>ultra-</i>: excess, beyond <i>son/o</i>: sound <i>-graphy</i>: process of recording</p>	<p>Process by which high-frequency sound waves (ultrasound) produce and display an image from reflected “echoes” on a monitor; also called <i>ultrasound</i>, <i>sonography</i>, and <i>echo</i></p>
<p>pelvic PĔL-vīk</p>	<p>US of the pelvic region used to evaluate abnormalities in the female reproductive system as well as the fetus in the obstetric patient</p>
<p>transvaginal trānz-VĀJ-ī-nāl <i>trans-</i>: through, across <i>vagin</i>: vagina <i>-al</i>: pertaining to</p>	<p>US of the pelvic area performed with a probe inserted into the vagina, which provides sharper images of pathological and normal structures within the pelvis</p>
<b>Therapeutic Procedures</b>	
<b>Surgical</b>	
<p><b>breast implant revision</b></p>	<p>Surgery designed to correct an unsuccessful procedure that has created a cosmetic problem or poses a health risk</p> <p><i>Breast implant revision is commonly performed to replace older silicone implants with new saline-filled implants.</i></p>
<p><b>cerclage</b> sĕr-KLĀZH</p>	<p>Suturing the cervix to prevent it from dilating prematurely during pregnancy, thus decreasing the chance of a spontaneous abortion. The sutures are removed prior to delivery</p> <p><i>Cerclage is sometimes referred to as a “purse-string” procedure.</i></p>
<p><b>cesarean birth</b> sē-SĀR-ē-ăn</p>	<p>Incision of the abdomen and uterus to remove the fetus; also called <i>C-section</i></p> <p><i>Cesarean birth is most commonly used in the event of cephalopelvic disproportion, presence of sexually transmitted disease, fetal distress, and breech presentation.</i></p>
<p><b>colpocleisis</b> kōl-pō-KLĪ-sīs <i>colp/o</i>: vagina <i>-cleisis</i>: closure</p>	<p>Surgical closure of the vaginal canal</p>
<p><b>conization</b> kōn-ī-ZĀ-shŭn</p>	<p>Excision of a cone-shaped piece of tissue, such as mucosa of the cervix, for histological examination</p>
<p><b>cordocentesis</b> kor-dō-sĕn-TĔ-sīs</p>	<p>Sampling of fetal blood drawn from the umbilical vein and performed under ultrasound guidance</p> <p><i>Cord blood is evaluated in the laboratory to identify hemolytic diseases or genetic abnormalities.</i></p>

(continued)

### Diagnostic and Therapeutic Procedures—cont'd

#### Procedure

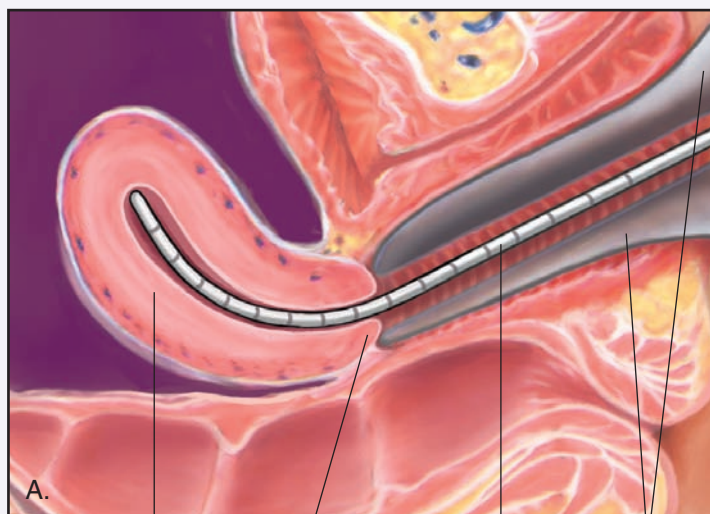
#### Description

**cryosurgery**  
krī-ō-SĒR-jēr-ē

Process of freezing tissue to destroy cells; also called *cryocautery*.  
*Cryosurgery is used for chronic cervical infections and erosions because offending organisms may be entrenched in cervical cells and glands. The process destroys these infected areas and, in the healing process, normal cells are replenished.*

**dilatation and curettage (D&C)**  
dīl-ă-TĀ-shŭn, kū-rĕ-TĀZH

Widening of the cervical canal with a dilator and scraping of the uterine endometrium with a curette.  
*D&C is used to obtain a sample for cytological examination of tissue, control abnormal uterine bleeding, and treat incomplete abortion. (See Figure 12-10.)*

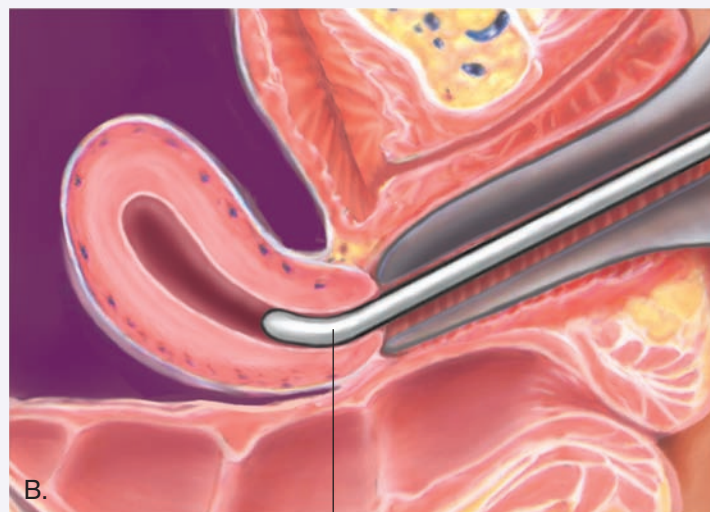


Uterus

Cervix

Uterine sound

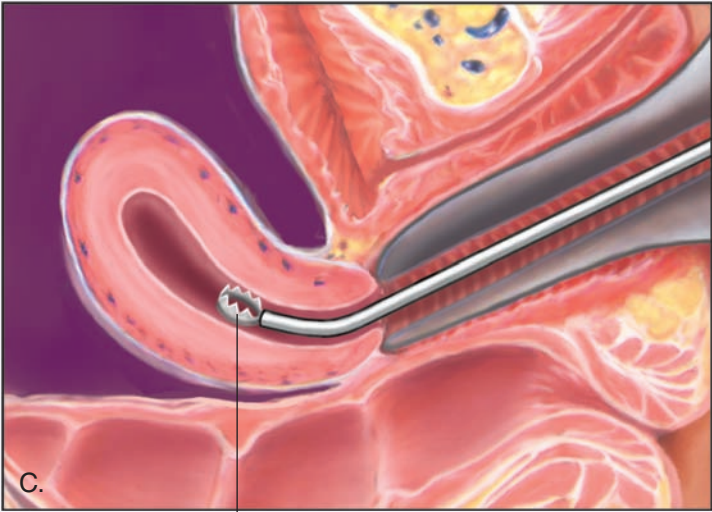
Speculum



Cervical dilator



## Diagnostic and Therapeutic Procedures—cont'd

Procedure	Description
	 <p data-bbox="883 856 1019 884">Serrated curet</p> <p data-bbox="652 913 1455 999"><b>Figure 12-10.</b> Dilatation and curettage. (A) Examination of the uterine cavity with a uterine sound. (B) Dilatation of the cervix with a series of cervical dilators. (C) Curettage (scraping) of the uterine lining with a serrated uterine curet.</p>
<p data-bbox="237 1045 399 1073"><b>episiorrhaphy</b></p> <p data-bbox="256 1079 435 1106">ě-pĭs-ē-OR-ā-fē</p> <p data-bbox="269 1113 402 1140"><i>episi/o:</i> vulva</p> <p data-bbox="269 1146 435 1173"><i>-rrhaphy:</i> suture</p>	<p data-bbox="652 1045 1122 1073">Repair of a lacerated vulva or an episiotomy</p>
<p data-bbox="237 1199 367 1226"><b>episiotomy</b></p> <p data-bbox="256 1232 448 1260">ě-pĭs-ē-ŌT-ō-mē</p> <p data-bbox="269 1266 402 1293"><i>episi/o:</i> vulva</p> <p data-bbox="269 1299 423 1327"><i>-tomy:</i> incision</p>	<p data-bbox="652 1199 1435 1260">Incision of the perineum from the vaginal orifice usually done to prevent tearing of the tissue and to facilitate childbirth</p>
<p data-bbox="237 1352 399 1379"><b>hysterectomy</b></p> <p data-bbox="256 1386 448 1413">hĭs-tēr-ĒK-tō-mē</p> <p data-bbox="269 1419 496 1446"><i>hyster:</i> uterus (womb)</p> <p data-bbox="269 1453 542 1480"><i>-ectomy:</i> excision, removal</p> <p data-bbox="253 1541 342 1568">subtotal</p> <p data-bbox="253 1598 305 1625">total</p> <p data-bbox="253 1686 553 1747">total plus bilateral salpingo-oophorectomy</p> <p data-bbox="269 1753 602 1814">bĭ-LĀT-ēr-āl sāl-pĭng-gō-ō-ŏf-ō-RĒK-tō-mē</p>	<p data-bbox="652 1352 1105 1379">Excision of the uterus (See Figure 12-11.)</p> <p data-bbox="652 1386 1455 1518"><i>Indications for hysterectomy include abnormalities of the uterus and cervix (cancer, severe dysfunctional bleeding, large or bleeding fibroid tumors, prolapse of the uterus, or severe endometriosis). The approach to excision may be abdominal or vaginal.</i></p> <p data-bbox="652 1541 1365 1568">Hysterectomy where the cervix, ovaries, and fallopian tubes remain</p> <p data-bbox="652 1598 1422 1659">Hysterectomy where the cervix is removed but the ovaries and fallopian tubes remain; also called <i>complete hysterectomy</i></p> <p data-bbox="652 1686 1414 1747">Total (complete) hysterectomy, including uterus, cervix, fallopian tubes, and ovaries</p>
<p data-bbox="237 1839 461 1866"><b>intrauterine device</b></p> <p data-bbox="253 1873 418 1900">ĭn-trā-Ū-tēr-ĭn</p>	<p data-bbox="652 1839 1446 1900">Plastic or metal object placed inside the uterus to prevent implantation of a fertilized egg in the uterine lining</p> <p data-bbox="1357 1900 1446 1927"><i>(continued)</i></p>

## Diagnostic and Therapeutic Procedures—cont'd

## Procedure

## Description

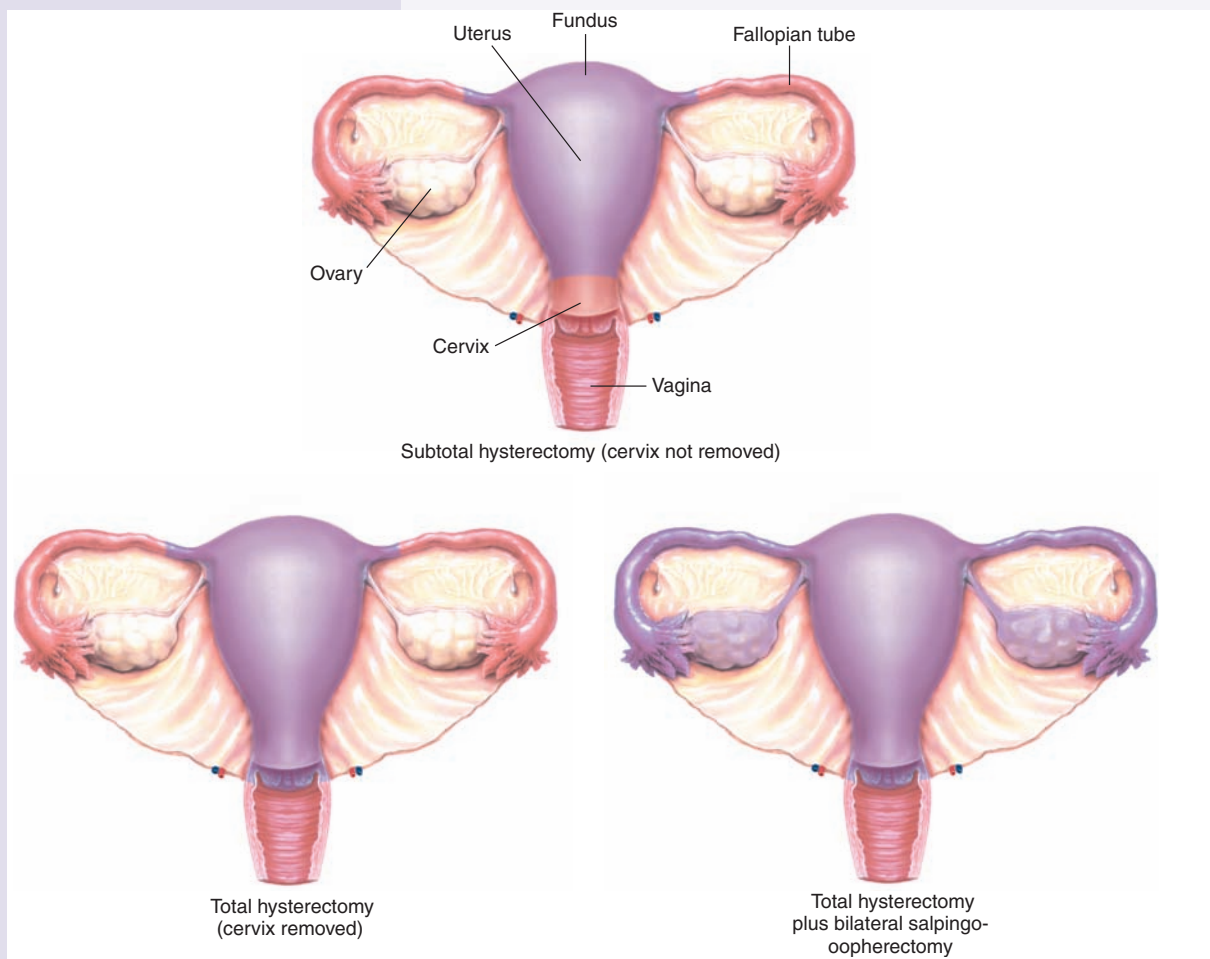


Figure 12-11. Hysterectomy.

**lumpectomy**  
lŭm-PĔK-tō-mē

Excision of a small primary breast tumor (a “lump”) and some of the normal tissue that surrounds it (See Figure 12-12A.)

*In lumpectomy, lymph nodes may also be removed because they are located within the breast tissue taken during surgery. Typically, the patient will undergo radiation therapy after lumpectomy.*

**mammoplasty**  
MĀM-ō-plās-tē  
*mamm/o*: breast  
*-plasty*: surgical repair

Surgical reconstruction of the breast(s) to change the size, shape, or position

augmentation

Breast enlargement to increase breast size or to replace one that has been surgically removed

*Augmentation is performed by inserting a breast prosthesis (filled with silicone gel or saline) beneath the skin or beneath the pectoralis major muscle.*

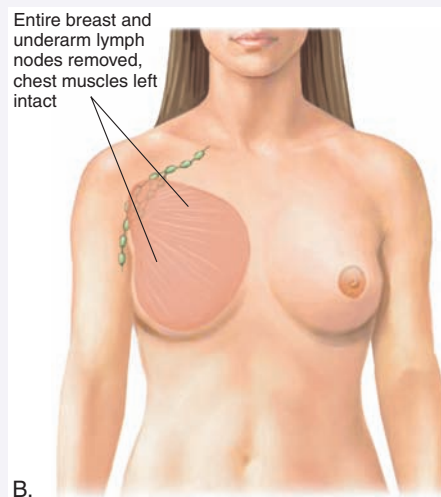
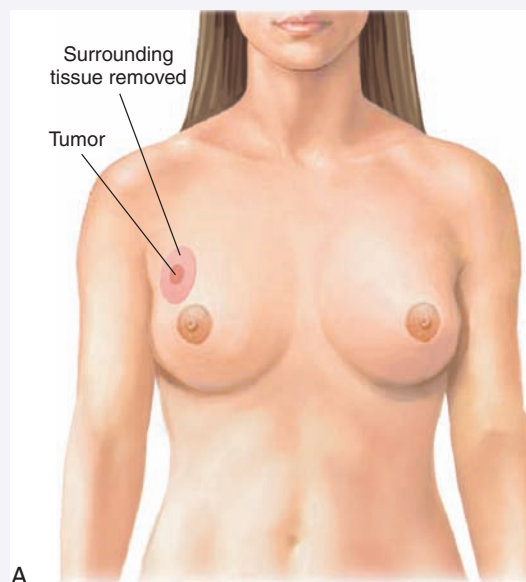
reduction

Breast reduction to reduce the size of a large, pendulous breast

*This procedure may be performed in conjunction with mastopexy, a surgery to uplift a sagging breast.*

## Diagnostic and Therapeutic Procedures—cont'd

Procedure	Description
<b>mastectomy</b> mās-TĔK-tō-mē <i>mast</i> : breast <i>-ectomy</i> : excision, removal	Excision of the entire breast
total (simple)	Excision of the entire breast, nipple, areola, and the involved overlying skin; also called <i>simple mastectomy</i> <i>In total mastectomy, lymph nodes are removed only if they are included in the breast tissue being removed.</i>
modified radical	Excision of the entire breast, including the lymph nodes in the underarm (axillary dissection) (See Figure 12–12B.) <i>Most women who have mastectomies today have modified radical mastectomies.</i>
radical	Excision of the entire breast, all underarm lymph nodes, and chest wall muscles under the breast

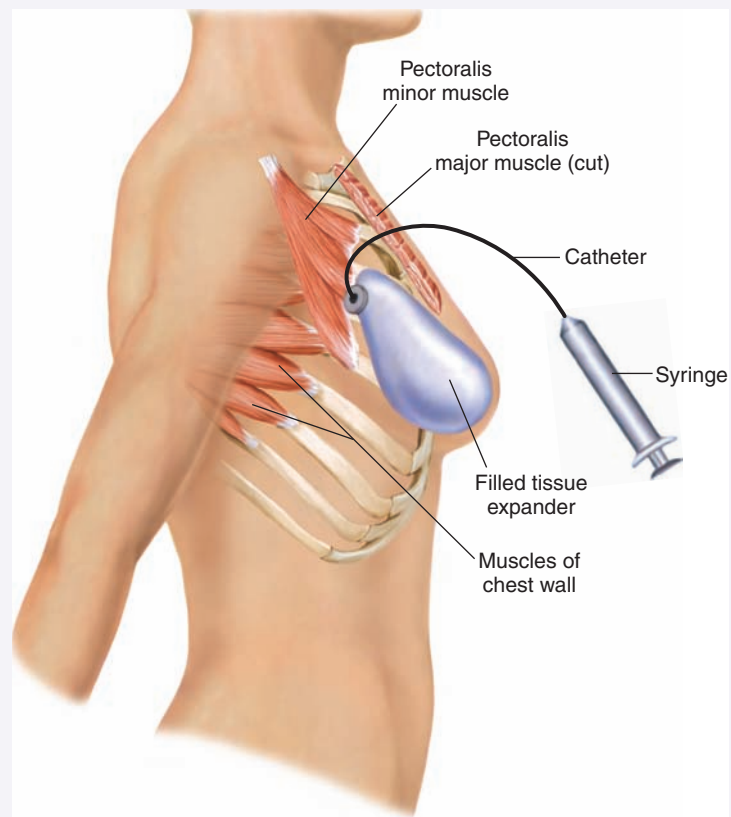


**Figure 12-12.** Lumpectomy and mastectomy. (A) Lumpectomy with primary tumor in red and surrounding tissue removed in pink. (B) Modified radical mastectomy.

(continued)

## Diagnostic and Therapeutic Procedures—cont'd

Procedure	Description
<b>myomectomy</b> mī-ō-MĒK-tō-mē <i>my/o:</i> muscle <i>-ectomy:</i> excision, removal	Excision of a myomatous tumor, generally uterine
<b>reconstructive breast surgery</b>  tissue (skin) expansion	Reconstruction of a breast that has been removed because of cancer or other disease  <i>Reconstruction is commonly possible immediately following mastectomy so the patient awakes from anesthesia with a breast mound already in place.</i>  Common breast reconstruction technique in which a balloon expander is inserted beneath the skin and chest muscle, saline solution is gradually injected to increase size, and the expander is then replaced with a more permanent implant (See Figure 12–13.)

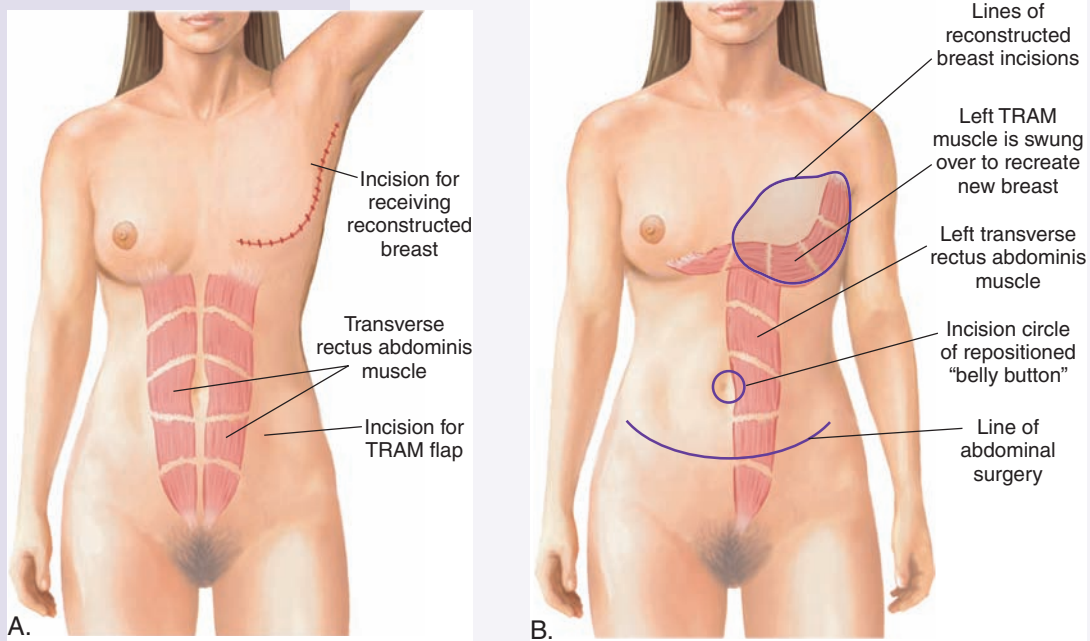


**Figure 12-13.** Tissue expander for breast reconstruction.

## Diagnostic and Therapeutic Procedures—cont'd

Procedure

Description



**Figure 12-14.** TRAM flap. (A) After mastectomy. (B) Process of TRAM reconstruction.

### transverse rectus abdominis muscle (TRAM) flap

Surgical creation of a skin flap using skin and fat from the lower half of the abdomen which is passed under the skin to the breast area. The abdominal tissue (flap) is shaped into a natural-looking breast and sutured into place (See Figure 12-4.)

*The TRAM flap procedure is a popular reconstruction option.*

### salpingo-oophorectomy

sāl-pīng-gō-ō-ōf-ō-RĔK-tō-mē  
*salping/o:* tube (usually fallopian or eustachian [auditory] tubes)

*oophor:* ovary

*-ectomy:* excision, removal

Excision of an ovary and fallopian tube

*A salpingo-oophorectomy is usually identified as right, left, or bilateral.*

### tubal ligation

TŪ-bāl lī-GĀ-shŭn

Procedure that ties (ligates) the fallopian tubes to prevent pregnancy

*Tubal ligation is a form of sterilization surgery that is usually performed during laparoscopy.*

## Pharmacology

Hormones perform a vital role in reproduction and sexual development of the female. Hormone replacement therapy (HRT) is the use of synthetic or natural estrogens or a combination of estrogen and progestin to replace the decline or lack of natural hormones, a condition that accompanies hysterectomy and menopause. (See Table 12–2.) Such symptoms as vaginal dryness, hot flashes, and fatigue are commonly relieved or lessened using HRT. The medical profession is currently rethinking the use of hormone replacement in menopause because of an apparent increased risk of some

disorders with extended use of the combination therapy. Use of estrogen alone for HRT is still in clinical trials but has not exhibited the strong contraindications of the combination form of HRT. Estrogen may be administered orally, transdermally, by injection, or as a topical cream (to treat vaginal symptoms only). Other hormones, including oxytocins and prostaglandins, are used for obstetrical applications. In addition, pharmacological agents are available for birth control and family planning. These include oral contraceptives, implants, morning-after pills (**abortifacients**), and spermicides.

Table 12-2 Drugs Used to Treat Obstetrical and Gynecological Disorders

Classification	Therapeutic Action	Generic and Trade Names
<b>antifungals</b>	Treat vaginal yeast infection by altering the yeast cell membrane or interfering with a metabolic process.  <i>Most antifungals used to treat yeast infections are applied topically as ointments, suppositories, or vaginal tablets.</i>	<b>miconazole</b> mī-KŌN-ă-zōl Monistat  <b>nystatin</b> NĪS-tă-tĭn Mycostatin, Nilstat
<b>estrogens</b>	Treat symptoms of menopause (hot flashes, vaginal dryness, fatigue) through hormone replacement therapy (HRT).  <i>Long-term use of estrogen has been linked with an increased risk of thrombophlebitis and breast and endometrial cancer.</i>	<b>conjugated estrogens</b> KŌN-jū-gă-tĕd ĔS-trō-jĕnz Cenestin, Premarin
<b>oral contraceptives</b>	Prevent ovulation.  <i>Oral contraceptives, or birth control pills, contain a combination of estrogen and progestin and are highly effective in preventing pregnancy if taken as directed.</i>	<b>desogestrel/ethinyl estradiol</b> dĕz-ō-JĔS-trăl/ĔTH-ĭ-nĭl ĕs-tră-DĪ-ōl Desogen, Ortho-Cept  <b>ethinyl estradiol/norgestrel</b> ĔTH-ĭ-nĭl ĕs-tră-DĪ-ōl/nor-JĔS-trĕl Lo/Ovral-28
<b>oxytocics</b>	Induce labor at term by increasing the strength and frequency of uterine contractions.  <i>Oxytocics are also used during the postpartum period to control bleeding after the expulsion of the placenta.</i>	<b>oxytocin</b> ōk-sĕ-TŌ-sĭn Pitocin
<b>prostaglandins</b>	Terminate pregnancy.  <i>Large doses of certain prostaglandins can cause the uterus to contract strongly enough to spontaneously abort a fetus.</i>	<b>dinoprostone</b> dĭ-nō-PRŌS-tōn Prostin E2, Cervidil  <b>mifepristone</b> mī-fĕ-PRĪS-tōn Mifeprex

Table 12-2 Drugs Used to Treat Obstetrical and Gynecological Disorders—cont'd

Classification	Therapeutic Action	Generic and Trade Names
<b>spermicides</b>	Chemically destroy sperm by creating a highly acidic environment in the uterus. <i>Spermicides are available in foam, jelly, gel, and suppositories. They are used within the female vagina for contraception. Spermicides have a higher failure rate than other methods of birth control.</i>	<b>nonoxynol 9, octoxynol 9</b> nŏn-ŎK-sĭ-nŏl, ŏk-TŎK-sĭ-nŏl Semicid, Koromex, Ortho-Gynol

## Abbreviations

*This section introduces female reproductive-related abbreviations and their meanings.*

Abbreviation	Meaning	Abbreviation	Meaning
<i>Gynecologic</i>			
<b>AB; Ab, ab</b>	antibody; abortion	<b>LH</b>	luteinizing hormone
<b>AI</b>	artificial insemination	<b>LMP</b>	last menstrual period
<b>BSE</b>	breast self-examination	<b>LSO</b>	left salpingo-oophorectomy
<b>CA</b>	cancer; chronological age; cardiac arrest	<b>OCPs</b>	oral contraceptive pills
<b>D&amp;C</b>	dilatation (dilation) and curettage	<b>Pap</b>	Papanicolaou (test)
<b>DUB</b>	dysfunctional uterine bleeding	<b>PID</b>	pelvic inflammatory disease
<b>FSH</b>	follicle-stimulating hormone	<b>PMP</b>	previous menstrual period
<b>G</b>	gravida (pregnant)	<b>PMS</b>	premenstrual syndrome
<b>GC</b>	gonococcus ( <i>Neisseria gonorrhoeae</i> )	<b>RSO</b>	right salpingo-oophorectomy
<b>GYN</b>	gynecology	<b>STD</b>	sexually transmitted disease
<b>HRT</b>	hormone replacement therapy	<b>TAH</b>	total abdominal hysterectomy
<b>HSG</b>	hysterosalpingography	<b>TRAM</b>	transverse rectus abdominis muscle
<b>HSV</b>	herpes simplex virus	<b>TVH</b>	total vaginal hysterectomy
<b>IUD</b>	intrauterine device	<b>VD</b>	venereal disease
<i>Fetal-Obstetrical</i>			
<b>CPD</b>	cephalopelvic disproportion	<b>CVS</b>	chorionic villus sampling
<b>CS, C-section</b>	cesarean section	<b>CWP</b>	childbirth without pain

(continued)

<b>Abbreviations—cont'd</b>			
<b>Abbreviation</b>	<b>Meaning</b>	<b>Abbreviation</b>	<b>Meaning</b>
<b>FECG, FEKG</b>	fetal electrocardiogram	<b>LBW</b>	low birth weight
<b>FHR</b>	fetal heart rate	<b>NB</b>	newborn
<b>FHT</b>	fetal heart tone	<b>OB</b>	obstetrics
<b>FTND</b>	full-term normal delivery	<b>para 1, 2, 3 and so on</b>	unipara, bipara, tripara (number of viable births)
<b>IUGR</b>	intrauterine growth rate; intrauterine growth retardation	<b>UC</b>	uterine contractions
<b>IVF-ET</b>	<i>in vitro</i> fertilization and embryo transfer		



*It is time to review procedures, pharmacology, and abbreviations by completing Learning Activity 12–5.*



## LEARNING ACTIVITIES

The activities that follow provide review of the female reproductive system terms introduced in this chapter. Complete each activity and review your answers to evaluate your understanding of the chapter.

### Learning Activity 12-1

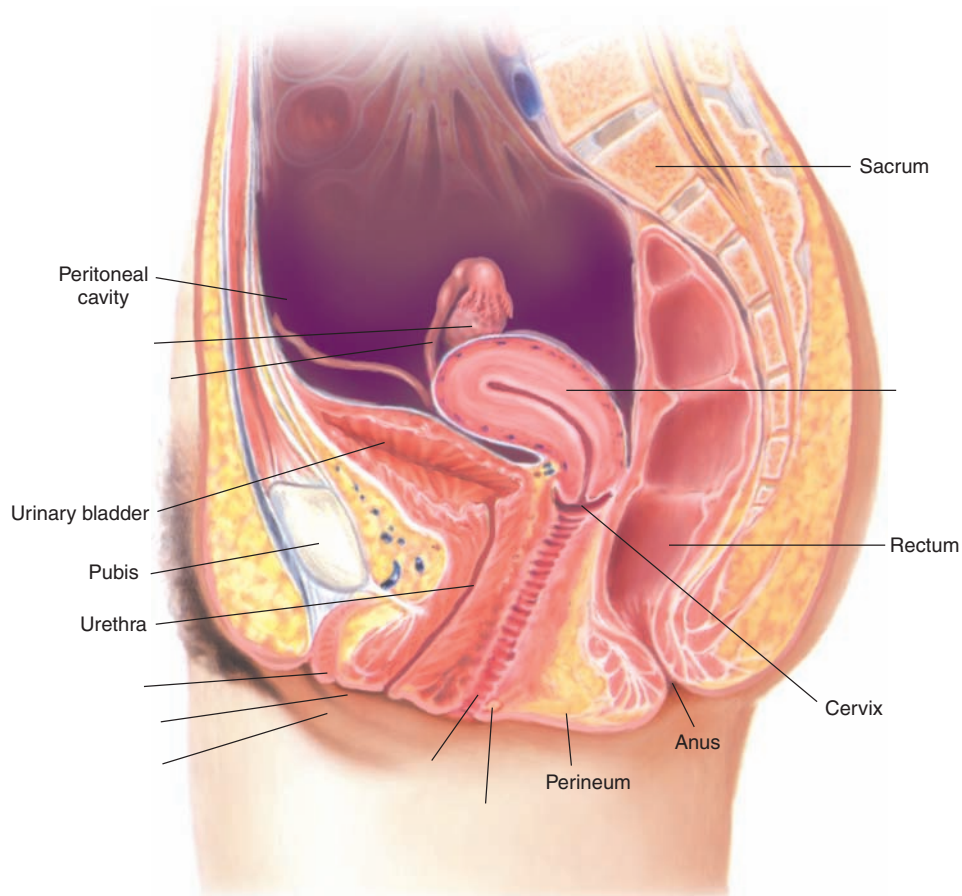
### Identifying Female Reproductive Structures (Lateral View)

Label the following illustration using the terms listed below.

Bartholin gland    labia majora    uterus

clitoris    labia minora    vagina

fallopian tube    ovary



Check your answers by referring to Figure 12-1 on page 350. Review material that you did not answer correctly.

## Learning Activity 12-2

## Identifying Female Reproductive Structures (Anterior View)

Label the following illustration using the terms listed below.

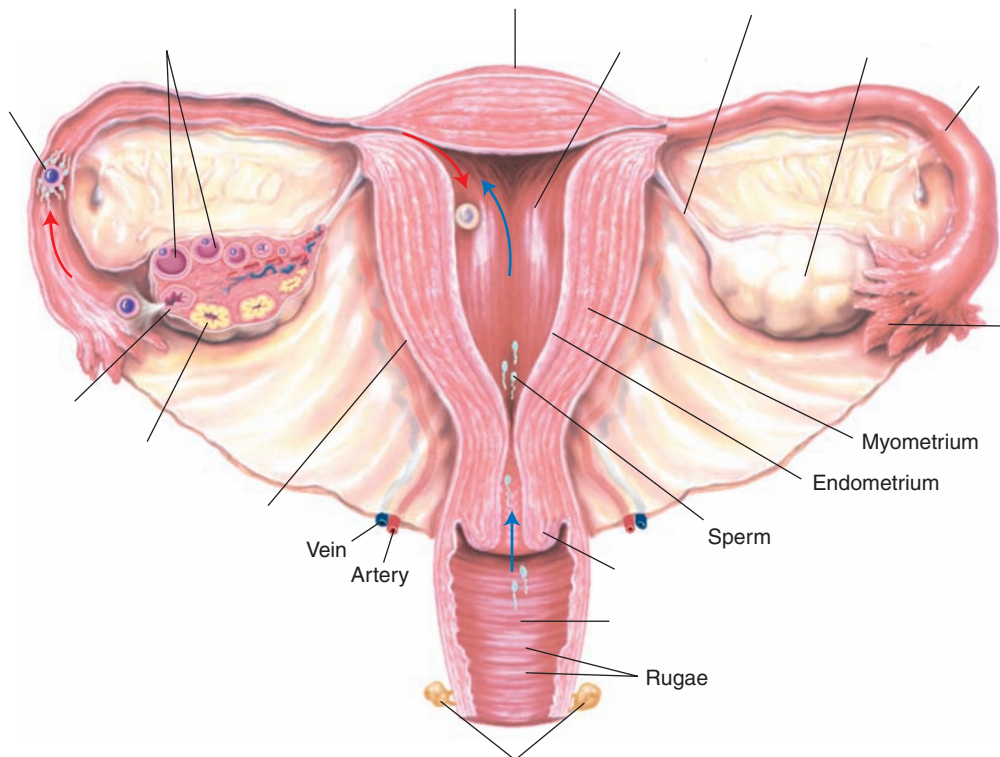
Bartholin glands      fertilization of ovum      ovarian ligament

body of the uterus      fimbriae      ovary

cervix      fundus of uterus      uterus

corpus luteum      graafian follicles      vagina

fallopian tube      mature follicle



Check your answers by referring to Figure 12–2 on page 352. Review material that you did not answer correctly.



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**Learning Activity 12-3****Building Medical Words**

---

Use *gynec/o* (woman, female) to build words that mean:

1. disease (specific to) women \_\_\_\_\_
2. physician who specializes in diseases of the female \_\_\_\_\_

Use *cervic/o* (neck; cervix uteri) to build words that mean:

3. inflammation of cervix uteri and vagina \_\_\_\_\_
4. pertaining to cervix uteri and bladder \_\_\_\_\_

Use *colp/o* (vagina) to build words that mean:

5. instrument used to examine the vagina \_\_\_\_\_
6. visual examination of the vagina \_\_\_\_\_

Use *vagin/o* (vagina) to build words that mean:

7. inflammation of the vagina \_\_\_\_\_
8. herniation of the vagina \_\_\_\_\_

Use *hyster/o* (uterus) to build words that mean:

9. myoma of uterus \_\_\_\_\_
10. disease of uterus \_\_\_\_\_
11. radiography of uterus and oviducts \_\_\_\_\_

Use *metr/o* (uterus) to build words that mean:

12. hemorrhage from uterus \_\_\_\_\_
13. inflammation around the uterus \_\_\_\_\_

Use *uter/o* (uterus) to build words that mean:

14. herniation of the uterus \_\_\_\_\_
15. relating to uterus and cervix \_\_\_\_\_
16. pertaining to uterus and bladder \_\_\_\_\_

Use *oophor/o* (ovary) to build words that mean:

17. inflammation of an ovary \_\_\_\_\_
18. inflammation of an ovary and oviduct \_\_\_\_\_

Use *salping/o* (fallopian tube) to build words that mean:

19. herniation of a fallopian tube \_\_\_\_\_
20. radiography of uterine tubes \_\_\_\_\_

Build surgical words that mean:

21. fixation of (a displaced) ovary \_\_\_\_\_

22. excision of uterus and ovaries \_\_\_\_\_

23. suturing the perineum \_\_\_\_\_

24. excision of uterus, oviducts, and ovaries \_\_\_\_\_

25. puncture of the amnion (amniotic sac) \_\_\_\_\_



*Check your answers in Appendix A. Review material that you did not answer correctly.*

**Correct Answers** \_\_\_\_\_  $\times 4 =$  \_\_\_\_\_ % Score

## Learning Activity 12-4

**Matching Pathological, Diagnostic, Symptomatic, and Related Terms**

Match the following terms with the definitions in the numbered list.

asymptomatic	congenital	gestation	oligomenorrhea	pruritus vulvae
atresia	Down syndrome	leiomyoma	parturition	pyosalpinx
candidiasis	dystocia	menarche	primigravida	retroversion
chancre	eclampsia	metrorrhagia	primipara	viable
condylomas				

1. \_\_\_\_\_ accumulation of pus in a uterine tube
2. \_\_\_\_\_ woman who has had one pregnancy that has resulted in a viable offspring
3. \_\_\_\_\_ pregnancy; 40 weeks in human beings
4. \_\_\_\_\_ primary syphilitic sore
5. \_\_\_\_\_ entire organ, such as the uterus, that is tipped backward from its normal position
6. \_\_\_\_\_ present at birth
7. \_\_\_\_\_ difficult labor or childbirth
8. \_\_\_\_\_ congenital absence of a normal body opening, such as the vagina
9. \_\_\_\_\_ trisomy 21
10. \_\_\_\_\_ intense itching of the external female genitalia
11. \_\_\_\_\_ without symptoms
12. \_\_\_\_\_ irregular uterine bleeding between menstrual periods
13. \_\_\_\_\_ beginning of menstrual function
14. \_\_\_\_\_ benign uterine tumor composed of muscle and fibrous tissue
15. \_\_\_\_\_ infrequent menstrual flow
16. \_\_\_\_\_ process of giving birth
17. \_\_\_\_\_ most serious form of toxemia during pregnancy
18. \_\_\_\_\_ capable of living outside the uterus
19. \_\_\_\_\_ genital warts
20. \_\_\_\_\_ woman during her first pregnancy



*Check your answers in Appendix A. Review material that you did not answer correctly.*

**Correct Answers** \_\_\_\_\_ × 5 = \_\_\_\_\_ % Score

## Learning Activity 12-5

## Matching Procedures, Pharmacology, and Abbreviations

Match the following terms with the definitions in the numbered list.

amniocentesis	cordocentesis	estrogens	lumpectomy	prostaglandins
antifungals	cryocautery	hysterosalpingography	OCPs	TAH
chorionic villus sampling	D&C	IUD	oxytocins	tubal ligation
colpocleisis	episiotomy	laparoscopy	Pap test	ultrasonography

1. \_\_\_\_\_ cytological study to detect cancer in cells that an organ has shed
2. \_\_\_\_\_ radiography of uterus and oviducts after injection of a contrast medium
3. \_\_\_\_\_ transabdominal puncture of the amniotic sac to remove amniotic fluid for biochemical and cytological study
4. \_\_\_\_\_ class of drugs used to treat vaginal yeast infections
5. \_\_\_\_\_ surgical closure of the vaginal canal
6. \_\_\_\_\_ procedure that widens the cervical canal with a dilator and scrapes the uterine endometrium with a curette
7. \_\_\_\_\_ excision of entire uterus, including the cervix, through an abdominal incision
8. \_\_\_\_\_ tying uterine tubes to prevent pregnancy
9. \_\_\_\_\_ birth control pills taken orally
10. \_\_\_\_\_ examination of the abdominal cavity using an endoscope
11. \_\_\_\_\_ incision of the perineum to facilitate childbirth
12. \_\_\_\_\_ noninvasive technique using echoes to produce images of internal structures in the body
13. \_\_\_\_\_ test to detect chromosomal abnormalities that can be done earlier than amniocentesis
14. \_\_\_\_\_ hormone replacement to reduce adverse symptoms of menopause
15. \_\_\_\_\_ agents used to induce labor and to rid the uterus of an unexpelled placenta or a fetus that has died
16. \_\_\_\_\_ freezing tissue to destroy cells
17. \_\_\_\_\_ birth control method in which an object is placed inside the uterus to prevent pregnancy
18. \_\_\_\_\_ sampling of fetal blood drawn from the umbilical vein
19. \_\_\_\_\_ excision of a small primary breast tumor
20. \_\_\_\_\_ agents used to terminate pregnancy



*Check your answers in Appendix A. Review any material that you did not answer correctly.*

**Correct Answers** \_\_\_\_\_ × 5 = \_\_\_\_\_ % Score

## MEDICAL RECORD ACTIVITIES

The two medical records included in the activities that follow use common clinical scenarios to show how medical terminology is used to document patient care. Complete the terminology and analysis sections for each activity to help you recognize and understand terms related to the female reproductive system.

### Medical Record Activity 12-1

#### SOAP Note: Primary Herpes 1 Infection

##### Terminology

Terms listed below come from *SOAP Note: Primary Herpes 1 Infection* that follows. Use a medical dictionary such as *Taber's Cyclopedic Medical Dictionary*, the appendices of this book, or other resources to define each term. Then review the pronunciations for each term and practice by reading the medical record aloud.

Term	Definition
adenopathy ăd-ě-NŌP-ă-thē	
chlamydia klă-MĪD-ē-ă	
GC screen	
herpes lesions HER-pēz LĒ-zhūnz	
introitus īn-TRŌ-ī-tūs	
labia LĀ-bē-ă	
LMP	
monilia mō-NĪL-ē-ăl	
OCPs	
pruritus proo-RĪ-tūs	
R/O	
vulvar VŪL-văr	
Wet prep WĒT PRĒP	



Listen and Learn Online! *will help you master the pronunciation of selected medical words from this medical record activity. Visit [www.davisplus.com/gyls/systems](http://www.davisplus.com/gyls/systems) to find instructions on completing the Listen and Learn Online! exercise for this section and to practice pronunciations.*

## SOAP NOTE: PRIMARY HERPES 1 INFECTION

### PROGRESS NOTES

O'Malley, Roberta

09/01/xx

- S: This 24-year-old patient started having some sore areas around the labia, both rt and lt side. She stated that the last few days she started having a brownish discharge. She has pruritus and pain of her vulvar area with adenopathy, p.m. fever, and blisters. Apparently, her partner had a cold sore and they had oral-genital sex. Patient has been using condoms since last seen in April. She has not missed any OCPs. LMP 5/15/xx.
- O: Patient has what looks like herpes lesions and ulcers all over vulva and introitus area. Rt labia appears as an ulcerlike lesion; it appears to be almost like an infected follicle. Speculum inserted, a brown discharge noted. GC screen, chlamydia screen, and genital culture obtained from that. Wet prep revealed monilial forms. Viral culture obtained from the ulcerlike lesion on the right labia.
- A: Primary herpes 1 infection; will rule out other infectious etiologies.
- P: Patient advised to return next week for consultation with Dr. Abdu.

*Joanna Masters, MD*  
Joanna Masters, MD

JM:st

### Analysis

Review the medical record *SOAP Note: Primary Herpes 1 Infection* to answer the following questions.

1. Did the patient have any discharge? If so, describe it.  
\_\_\_\_\_
2. What type of discomfort did the patient experience around the vulvar area?  
\_\_\_\_\_
3. Has the patient been taking her oral contraceptive pills regularly?  
\_\_\_\_\_
4. Where was the viral culture obtained?  
\_\_\_\_\_
5. Even though the patient's partner used a condom, how do you think the patient became infected with herpes?  
\_\_\_\_\_



## Medical Record Activity 12-2

**Preoperative Consultation: Menometrorrhagia**

## Terminology

Terms listed below come from *Preoperative Consultation: Menometrorrhagia* that follows. Use a medical dictionary such as *Taber's Cyclopedic Medical Dictionary*, the appendices of this book, or other resources to define each term. Then review the pronunciations for each term and practice by reading the medical record aloud.

Term	Definition
ablation ăb-LĀ-shŭn	
benign bē-NĪN	
cesarean section sē-SĀR-ē-ăn	
cholecystectomy kō-lē-sĭs-TĚK-tō-mē	
dysmenorrhea dĭs-mĕn-ō-RE-ă	
endometrial biopsy ĕn-dō-MĒ-trē-ăl BĪ-ŏp-sē	
fibroids FĪ-broyds	
gravida 2 GRĀV-i-dă	
hysterectomy hĭs-tĕr-ĔK-tō-mē	
laparoscopic lăp-ă-rō-SKŎP-ĭk	
mammogram MĀM-ō-grăm	
menometrorrhagia mĕn-ō-mĕt-rō-RA-jē-ă	
palliative PĀL-ē-ă-tĭv	
para I PĀR-ă	
postoperative pōst-ŎP-ĕr-ă-tĭv	

Term	Definition
Premarin PRĔM-ă-rĭn	
salpingo-oophorectomy săl-pĭng-gō-ō-ōf-ō-RĔK-tō-mĕ	
therapeutic abortion thĕr-ă-PŪ-tĭk ă-BOR-shŭn	
thyroid function test THĪ-royd FŪNG-shŭn	



Listen and Learn Online! *will help you master the pronunciation of selected medical words from this medical record activity. Visit [www.davisplus.com/gyls/systems](http://www.davisplus.com/gyls/systems) to find instructions on completing the Listen and Learn Online! exercise for this section and to practice pronunciations.*

## PREOPERATIVE CONSULTATION: MENOMETRORRHAGIA

Physician Center  
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### PREOPERATIVE CONSULTATION

July 2, 20xx  
Mazza, Rosemary

**CHIEF COMPLAINT:** Dysmenorrhea and night sweats

**HISTORY OF PRESENT ILLNESS:** Patient is a 43-year-old gravida 2, para 1 with multiple small uterine fibroids, irregular menses twice a month, family history of ovarian cancer, benign endometrial biopsy, normal Pap, normal mammogram, and normal thyroid function tests. Negative cervical cultures. She has completed childbearing and desires definitive treatment of endometrial ablation, hormonal regulation.

**SURGICAL HISTORY:** Cesarean section, therapeutic abortion, and cholecystectomy.

**ASSESSMENT:** This is a patient with menometrorrhagia who declines palliative treatment and desires definitive treatment in the form of a hysterectomy.

**PLAN:** The plan is to perform a laparoscopic-assisted vaginal hysterectomy, as the patient has essentially no uterine prolapse, and she desires her ovaries to be taken out. She desires to be started on Premarin in the postoperative period. She has been counseled concerning the risks of surgery, including injury to bowel or bladder, infection, and bleeding. She voices understanding and agrees to the plan to perform a laparoscopic-assisted vaginal hysterectomy and bilateral salpingo-oophorectomy.

*Julia Masters, MD*  
Julia Masters, MD

JM:st

## Analysis

Review the medical record *Preoperative consultation: Menometrorrhagia* to answer the following questions.

1. How many pregnancies did this patient have? How many viable infants did she deliver?

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2. What is a therapeutic abortion?

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3. Why did the physician propose to perform a hysterectomy?

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4. What is a vaginal hysterectomy?

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5. Does the surgeon plan to remove one or both ovaries and fallopian tubes?

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6. Why do you think the physician will use the laparoscope to perform the hysterectomy?

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