

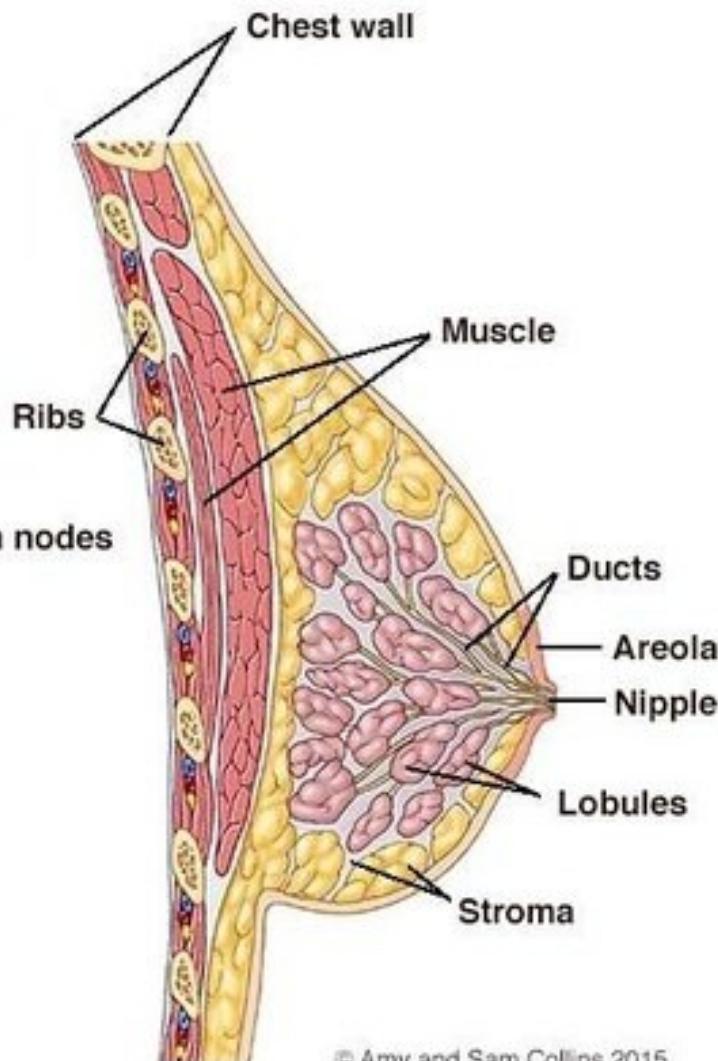
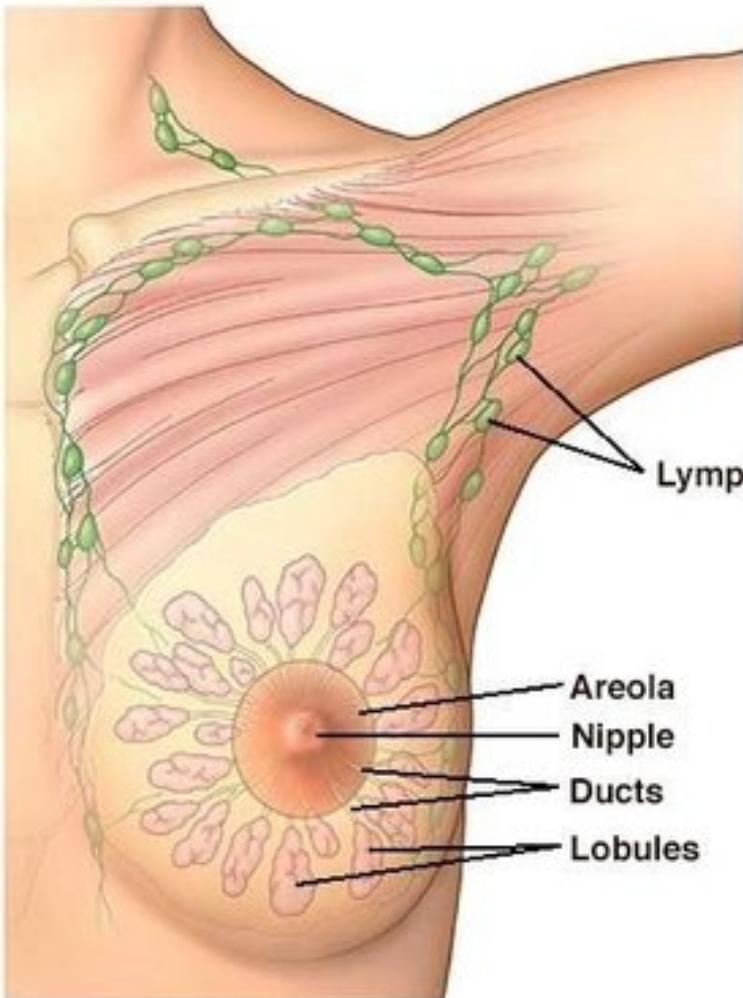
# **FEMALE REPRODUCTIVE SYSTEM**



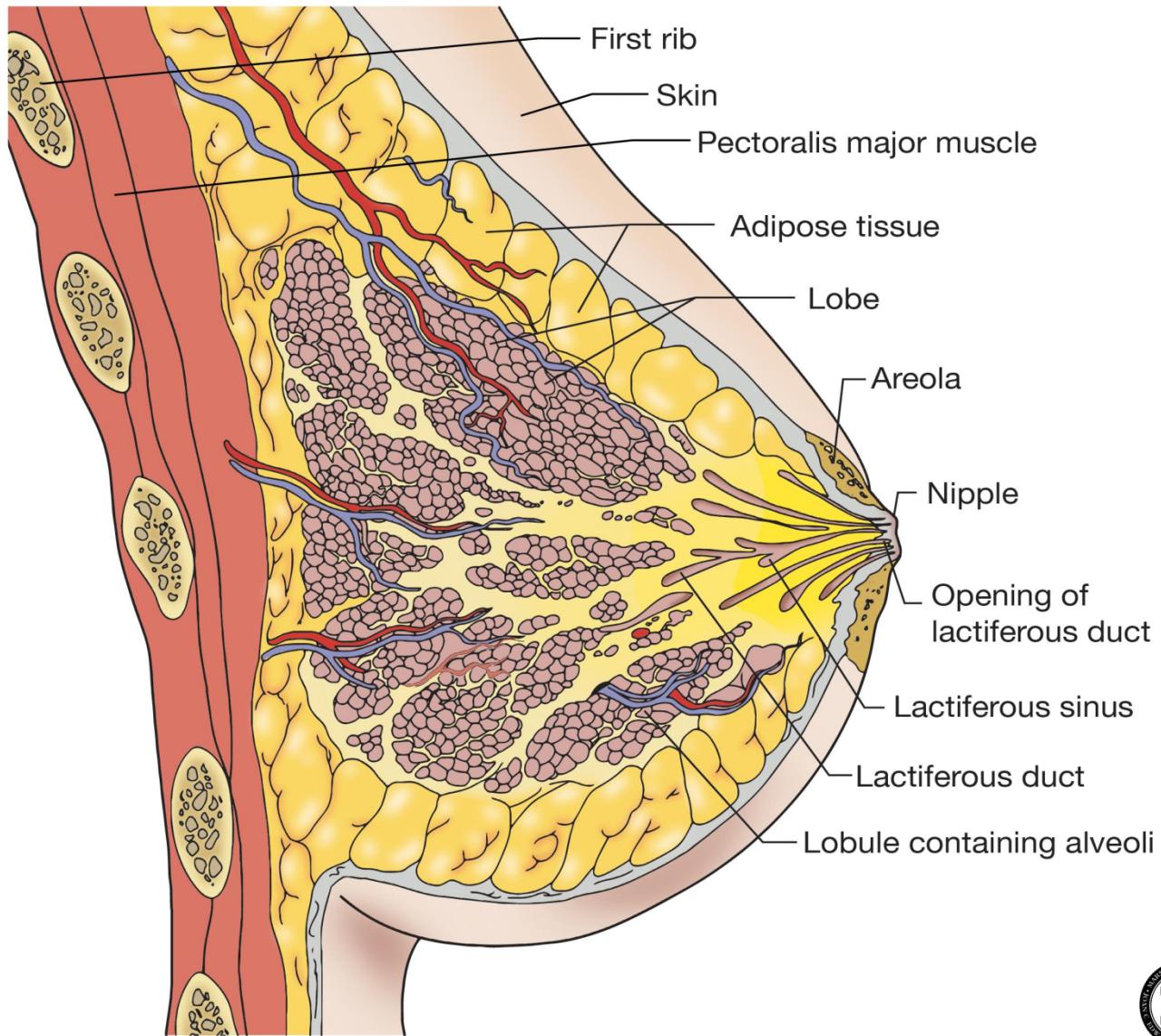
- **Gynecology** - The medical study of the structure of the female reproductive system, its associated conditions and diseases, and their treatment
- **Obstetrics** - concerned with the care of women during pregnancy, childbirth, and the 6-week period following delivery. Jointly, these areas are often referred to as OB/GYN
- **Gynecologist**
- **Obstetrician**
- **Genetics** - science that studies the transmission of traits that are biologically inherited.

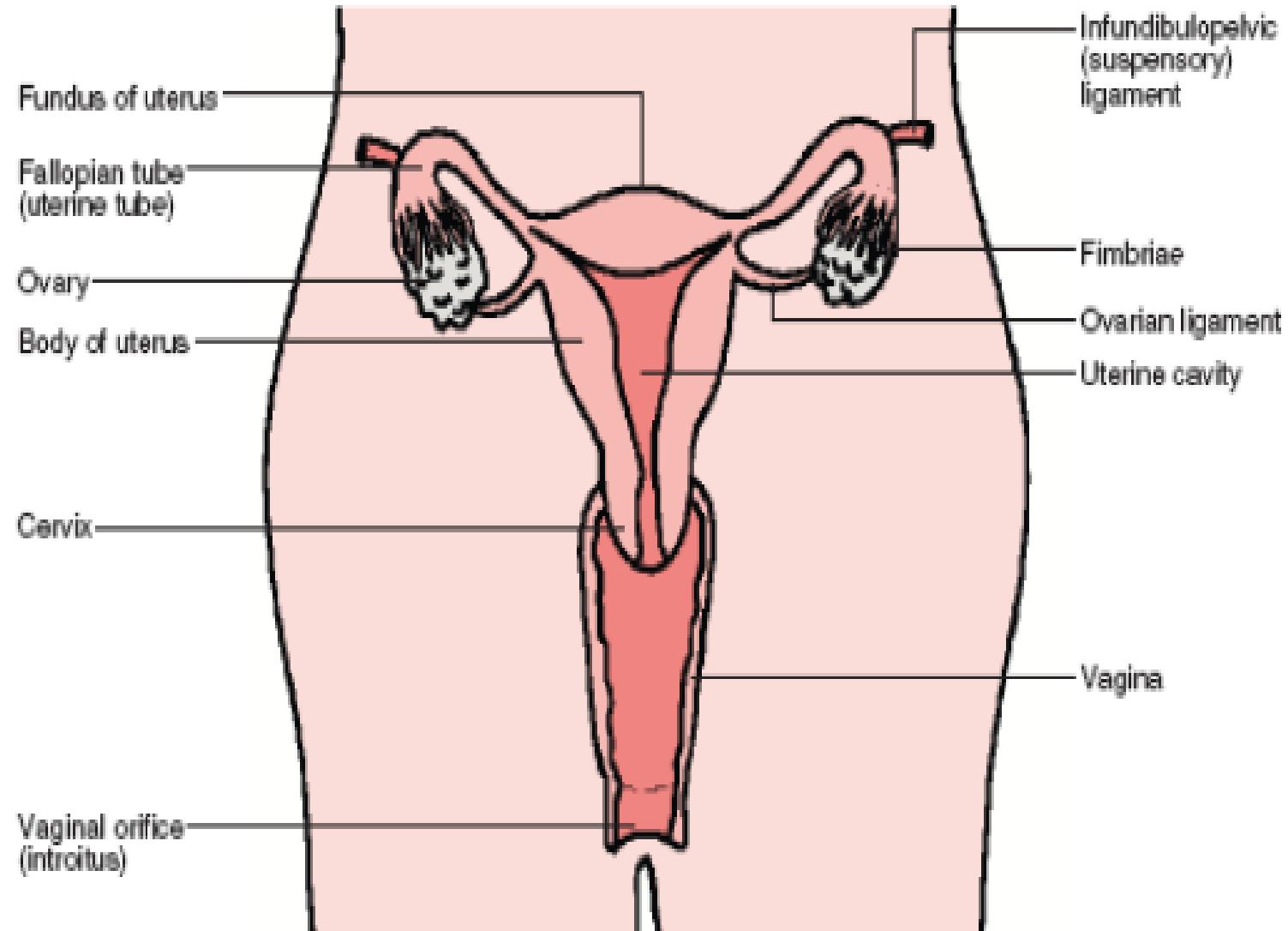
# STRUCTURE OF THE FEMALE REPRODUCTIVE SYSTEM

- Breasts, ovaries, fallopian tubes, uterus, and vagina
- **The Breasts (Accessory organ of reproduction)**
  - female breasts, or mammae
  - contain the **mammary glands** (modified sweat glands capable of secreting milk)
  - **Areola** - circular, pigmented - at the front center
  - **Nipple** - protrudes from the areola – called mamillary papilla
  - Has 15 to 20 separate glandular lobes- have a **lactiferous duct** - opens at the nipple
  - When **lactating** (producing milk), the ends of the ducts expand to form sacs called *alveoli*. The lobes are covered by adipose (fat) tissue, which gives the breast its form.

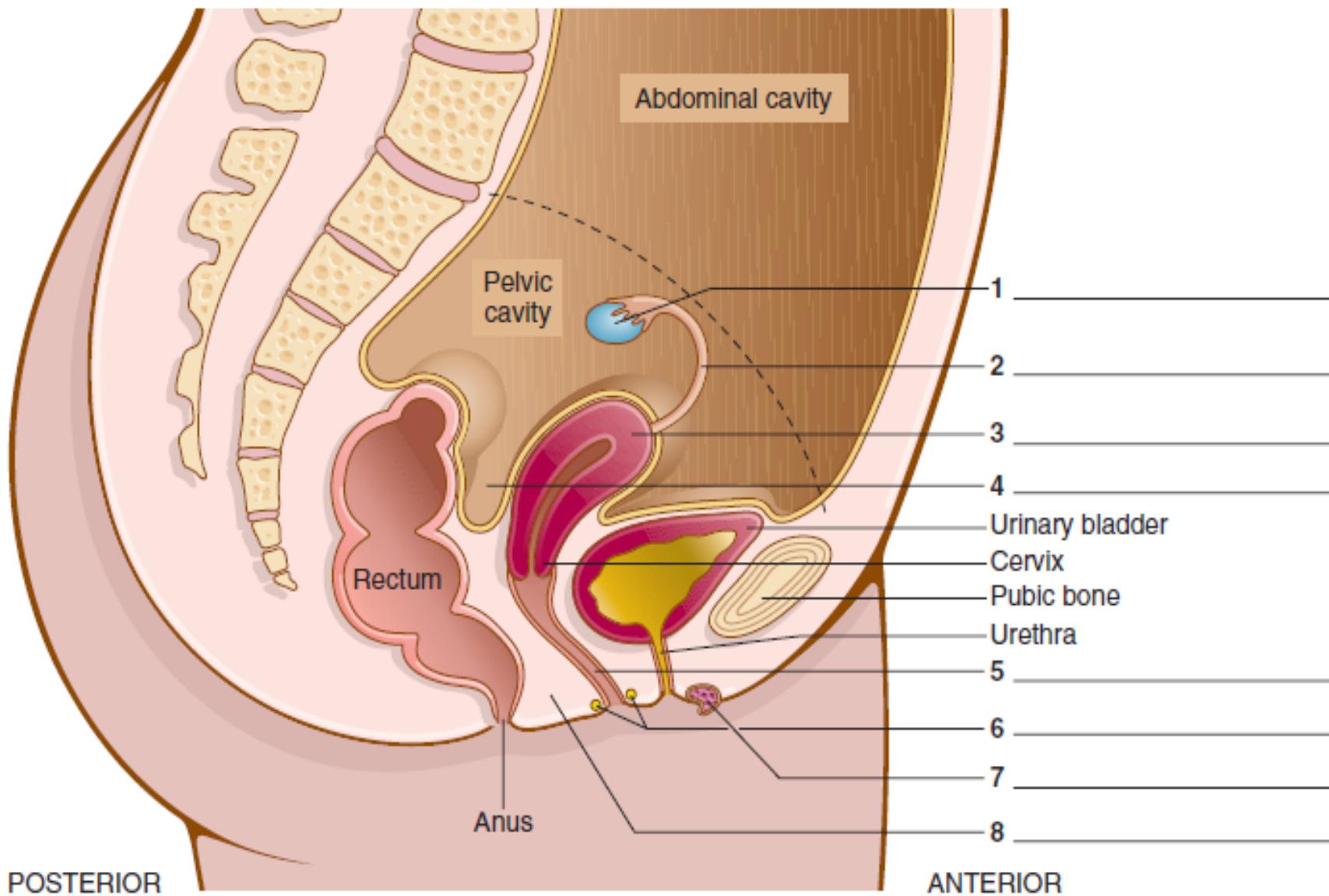


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**Figure 15-3** Female Reproductive System (Anterior View)

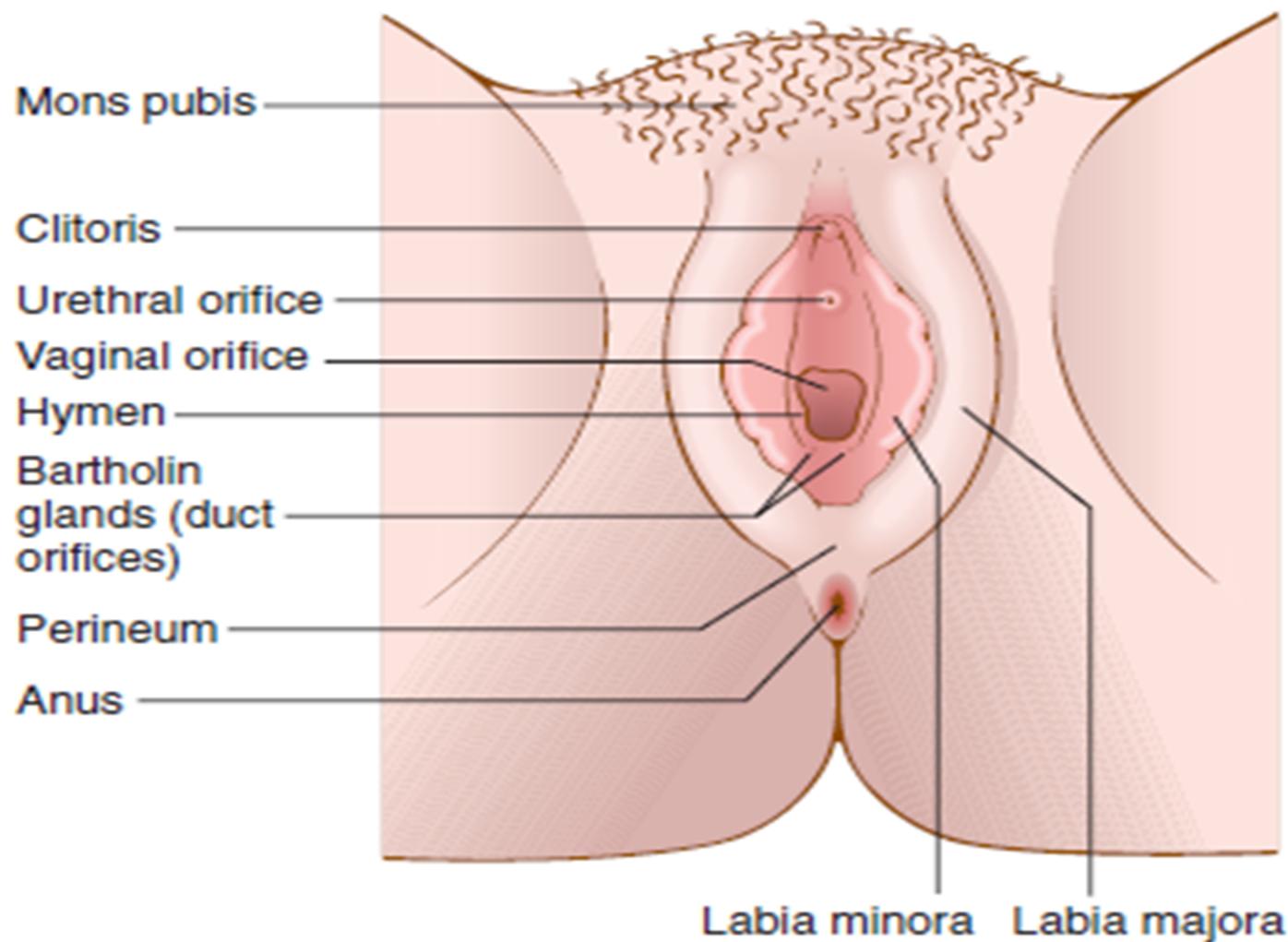


**FIGURE 8-1** Organs of the female reproductive system, lateral view.

- **The female reproductive system has both external and internal organs.**
- External structure is known as the **vulva** (or **pudendum**)
  - mons pubis,
  - labia majora
  - labia minora
  - clitoris
  - prepuce
  - Bartholin glands.

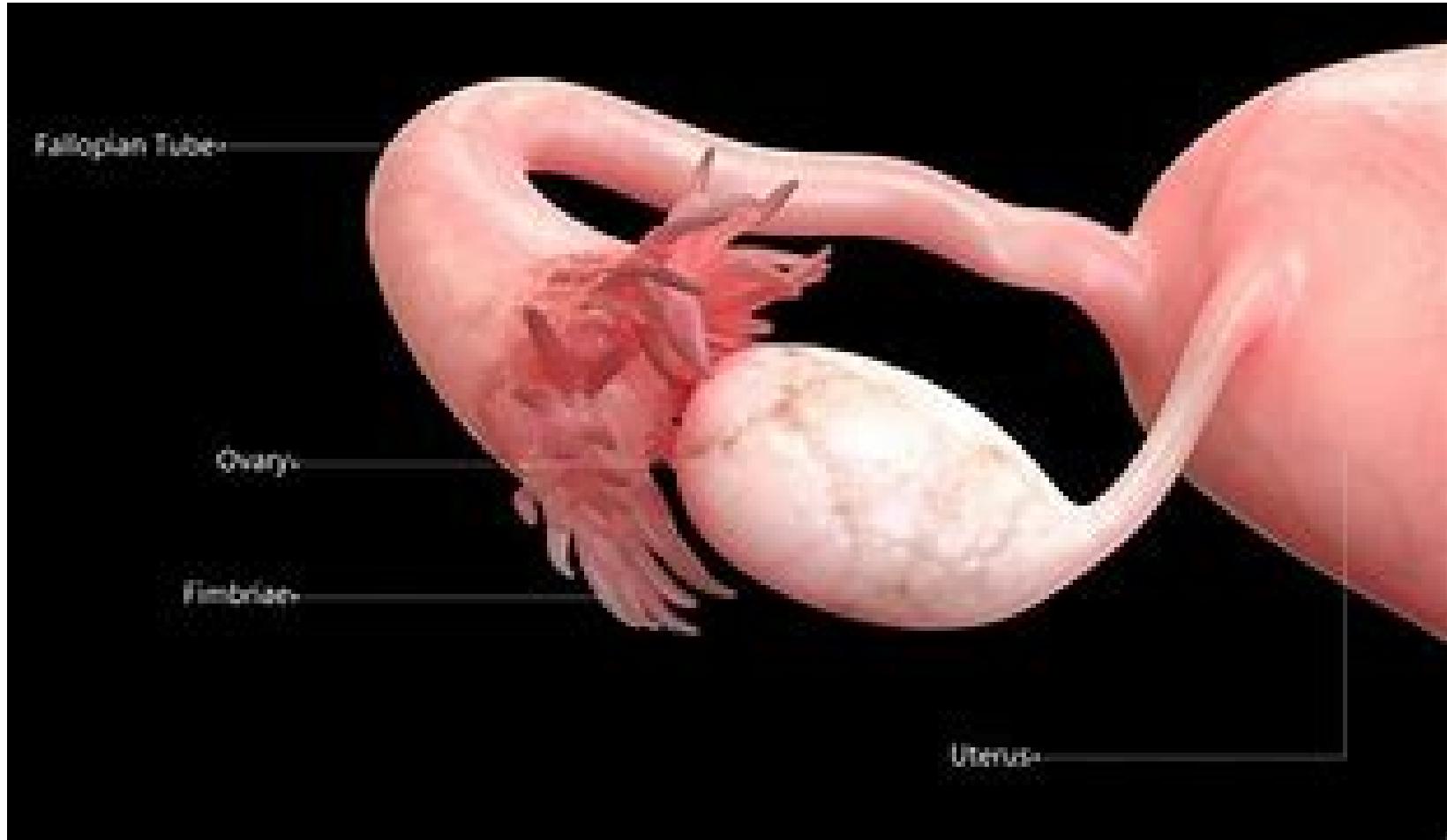
- The **mons pubis** is a fat pad covered with hair that lies over the pubic symphysis (the joint between the two pubic bones)
- The **vagina** is a tube that extends from the uterus to the vulva. Its external opening is called the **introitus**.
- The **labia majora**, two folds of fat tissue, form the lateral boundaries of the vulva.
- Within the labia majora, smaller lateral folds of reddish-pink tissue create the **labia minora**.
- Anteriorly, the labia form the prepuce that covers the clitoris like a hood.
- The **clitoris** contains sensitive erectile tissue and is similar to the penis in the male but smaller.

- **Bartholin glands** are on either side of the introitus and produce mucus to lubricate the vagina.
- The area between the vaginal opening and the anus is the **perineum**.
- The **hymen**, a thin membrane partially covering the entrance to the vagina, is broken apart during the first episode of intercourse.



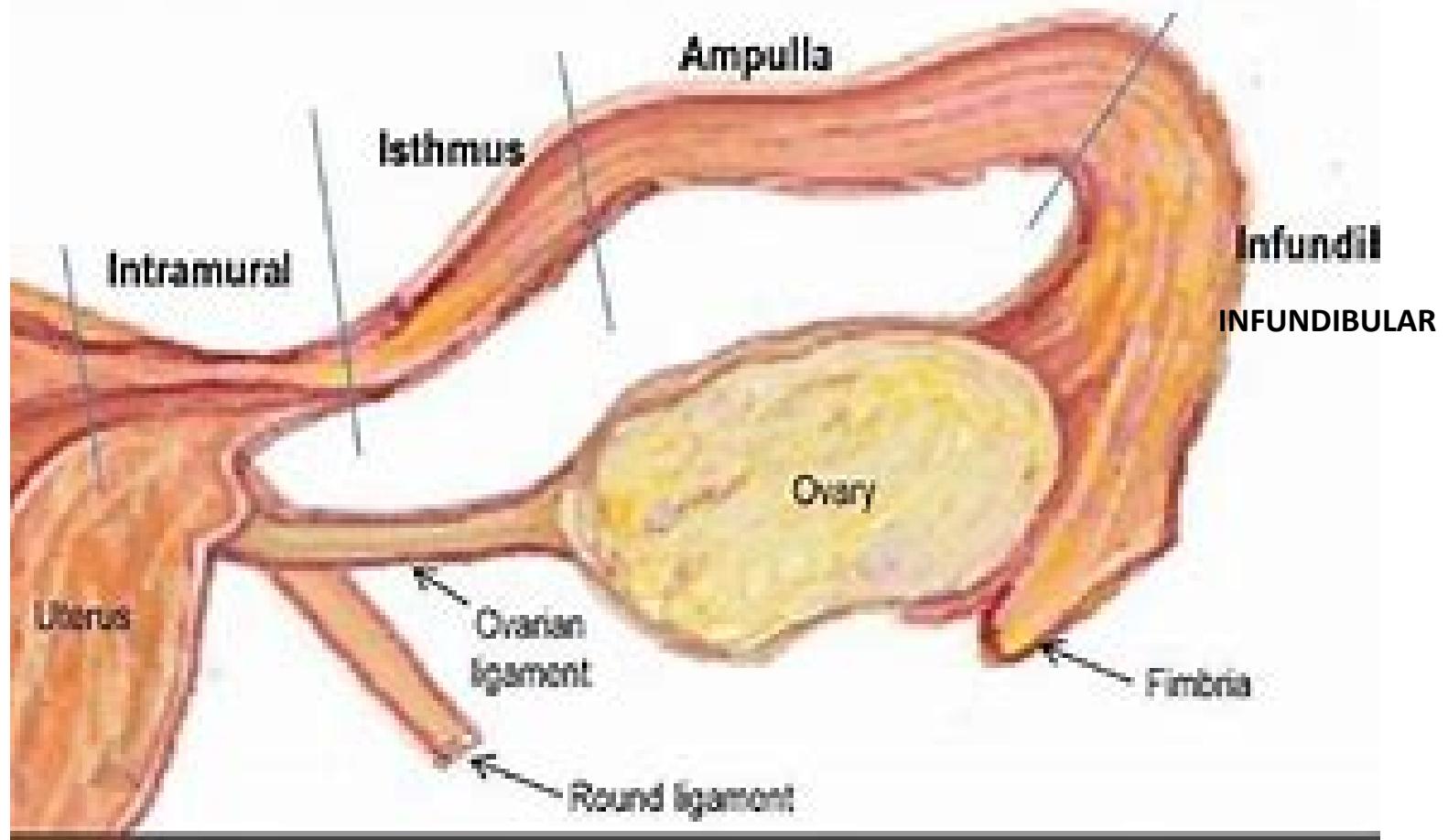
# INTERNAL ORGANS

- The internal organs include the **vagina, uterus, ovaries, and fallopian tubes**.
- The term **adnexa** is commonly used to refer to structures that are accessory to a main organ or structure.
- In gynecology, the **term adnexa** refers to those organs that are accessory to the uterus: **the ovaries, fallopian tubes, and supporting structures**.
- The ovaries are two almond shaped organs held in place by the broad ligaments that extend from each ovary to the posterosuperior wall of the uterus and by the suspensory (infundibulopelvic) ligaments that extend from each ovary to the lateral pelvic wall.



- **The ovarian ligament** attaches each ovary to the lateral wall of the uterus.
- During a woman's reproductive years, the ovaries release **ova (eggs)**, the female sex cells. They also secrete hormones, including **estrogen, progesterone, and testosterone**.

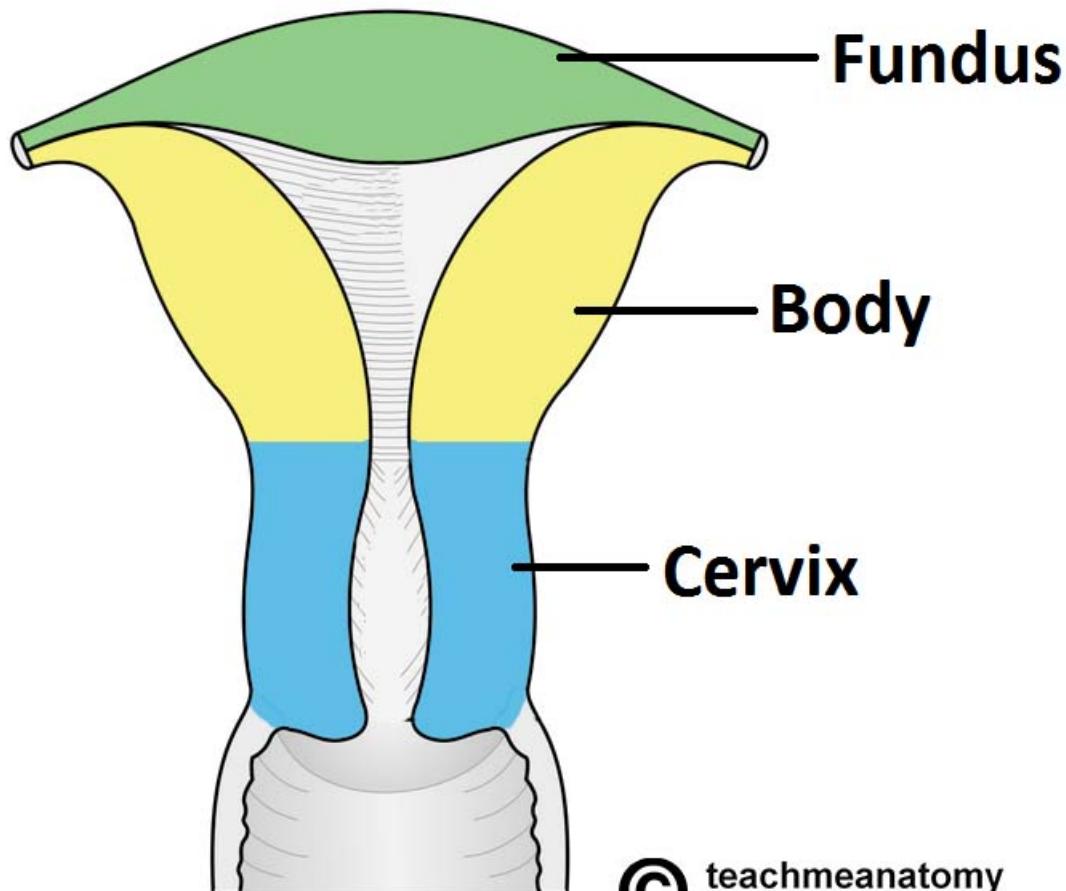
- **Two fallopian tubes** (also called **uterine tubes or oviducts**) extend from the area of the ovaries to the uterus.
- They transport the eggs from the ovaries to the uterus. The end of the fallopian tube near the ovary opens into the peritoneal cavity and is surrounded by fringe-like processes called **fimbriae**.
- The fimbriae **contain cilia** that sweep a released ovum into the fallopian tube and carry the ovum to **the uterus (or womb)**



# UTERUS

- The **uterus** is where a fetus grows until it is ready for birth.
- The uterus is comprised of three parts:
- **the fundus**, which is superior to the location where the fallopian tubes enter;
- **the body**, which makes up the main part; and
- **the cervix**, the narrower, cone-shaped part that leads to the vagina. The upper part of the vagina is attached around the outside of the cervix.

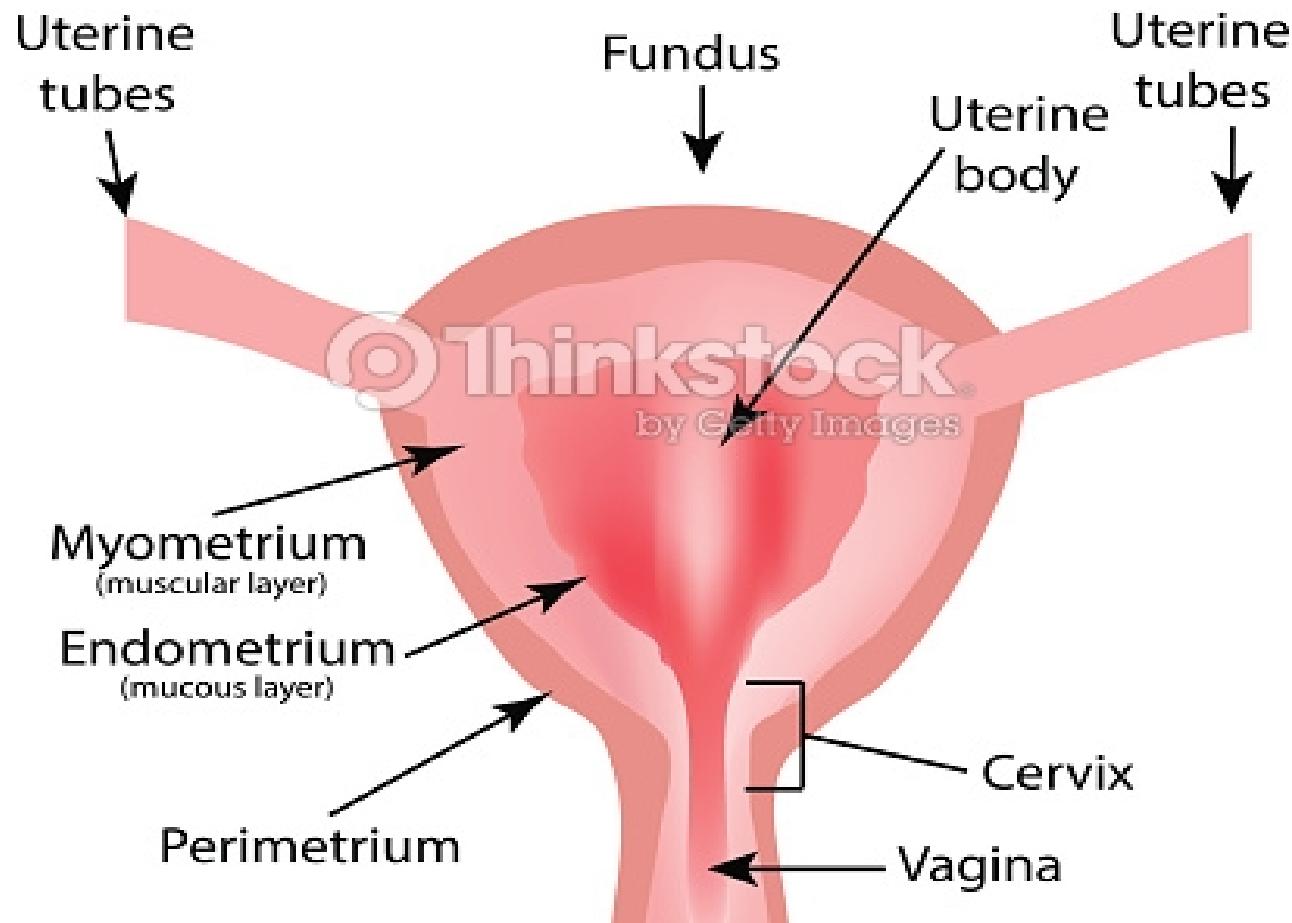
- The wall of the uterus has **three layers**:
- an external serous layer called the **perimetrium** that is made up of peritoneum,
- a middle muscular layer called the **myometrium**, and
- the inner layer called the **endometrium**.
- The endometrium is composed of epithelial cells; the superficial portion of the endometrium is shed during menstruation



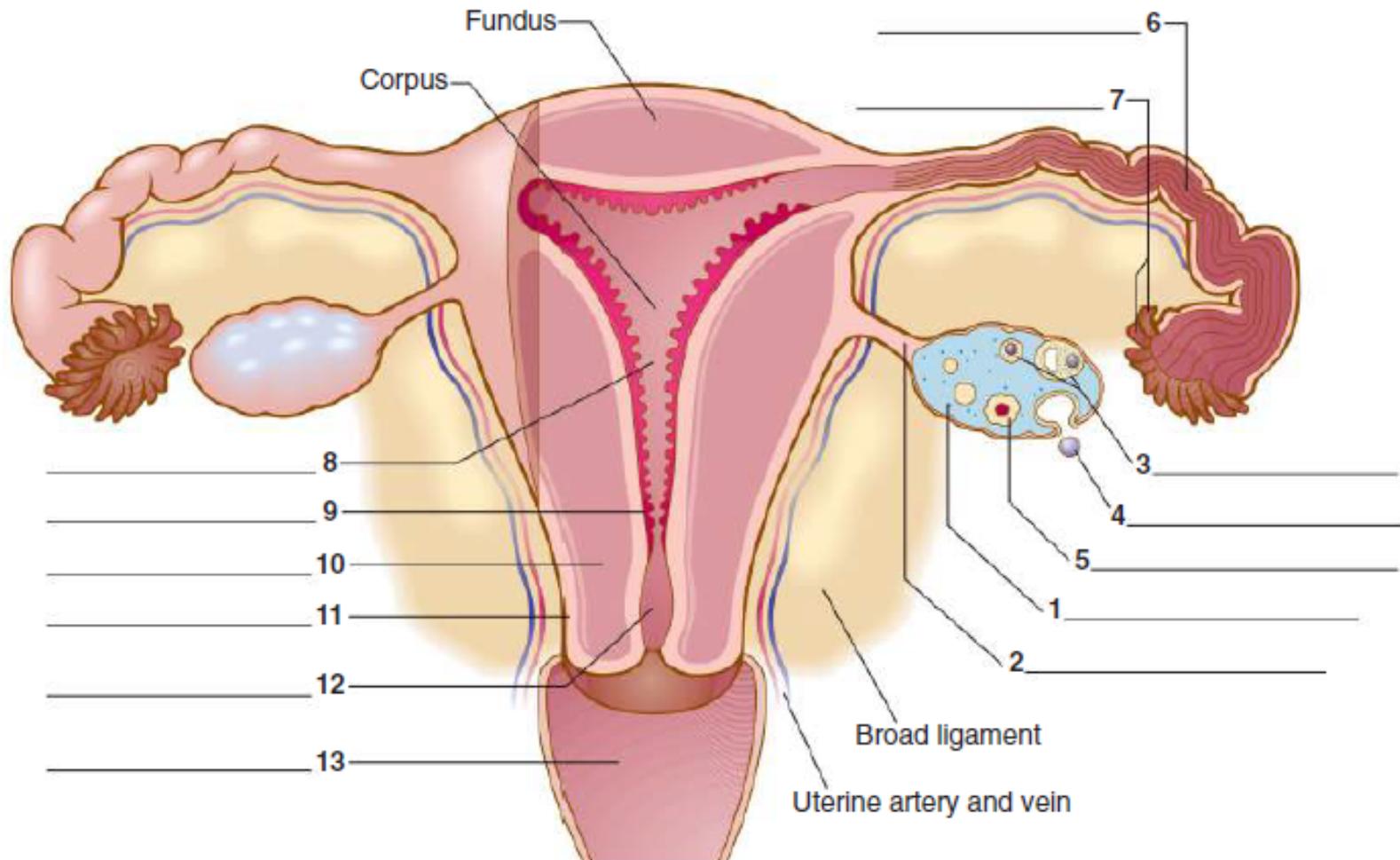
**teachmeanatomy**

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# The structure of the uterus



# LABEL THE PARTS



**FIGURE 8-3** Organs of the female reproductive system, anterior view.

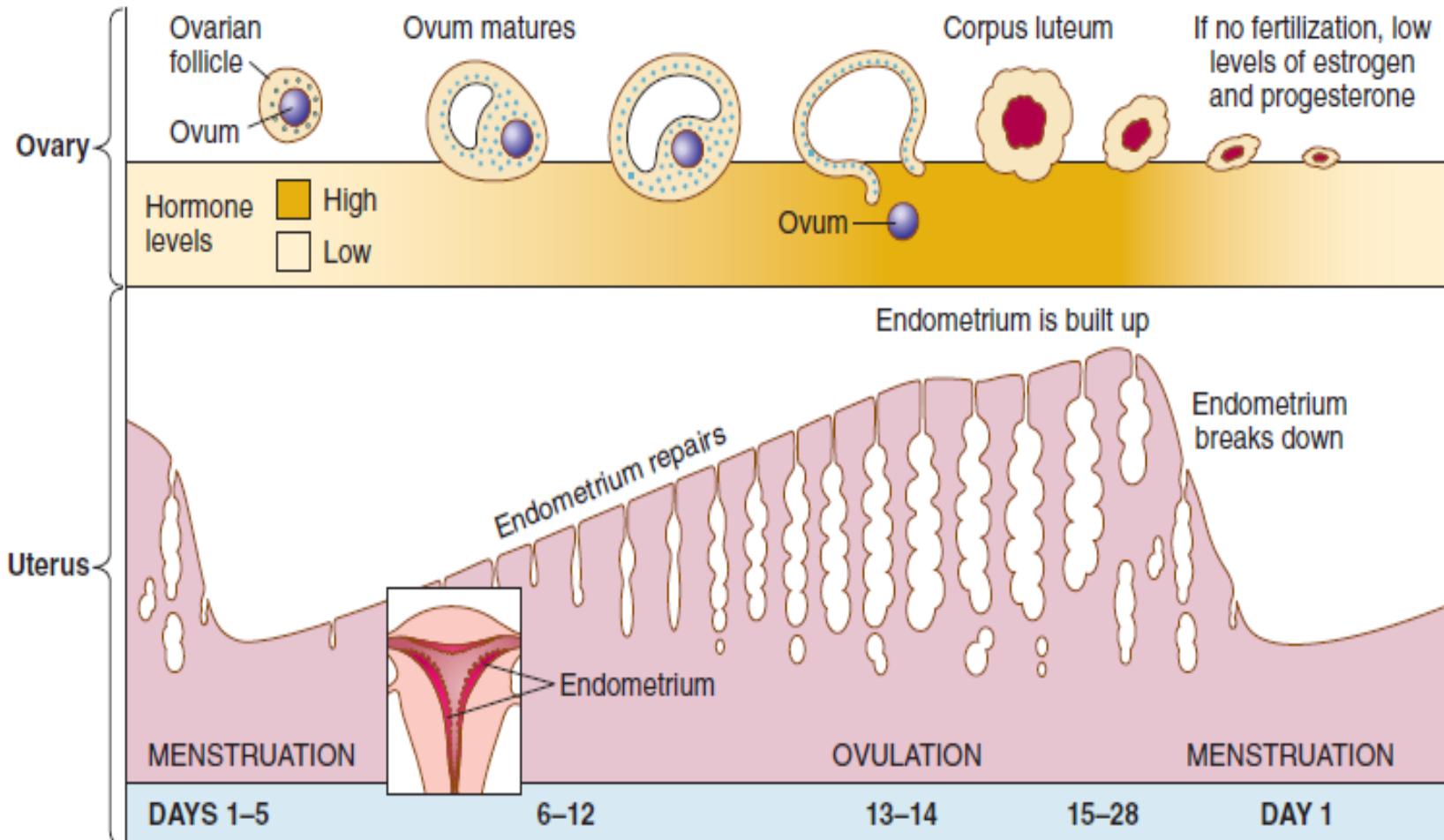
# PUBERTY

- **Primary sex characteristics** are those characteristics with which a child is born; in the case of a normal girl, they include a vagina, uterus, ovaries, etc.
- During **puberty**, **secondary sex characteristics** begin to develop
- The first sign of puberty in a girl is the gradual enlargement of the breasts, called **thelarche**, around ages 8 to 13 years. Pubic hair begins to develop around 8 to 14 years of age.
- Young women begin menstruating around 9 to 16 years.
- The first menstrual period is known as **menarche**.
- **Tanner staging** (also called **Tanner sex maturity rating**) is used to assess the sexual maturity of children.

# THE MENSTRUAL CYCLE

- The purpose of the **menstrual cycle** is to bring an ovum to maturity and release it from its follicle so that, if it is fertilized, pregnancy is a possibility.
- The levels of a number of hormones fluctuate during this cycle, including **estrogen, progesterone, follicle-stimulating hormone (FSH), and luteinizing hormone (LH)**.

# MENSTRUAL CYCLE



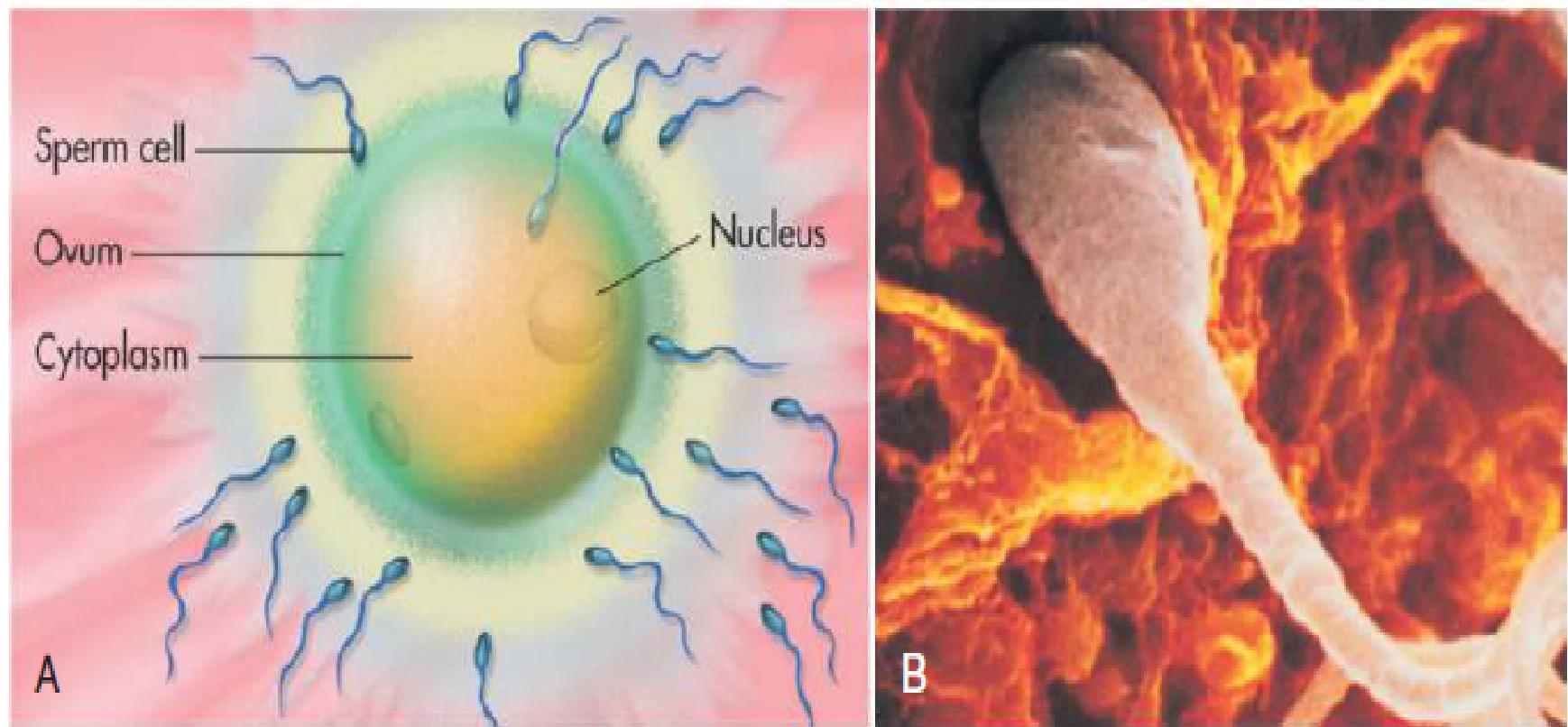
- lasts approximately 28 days
- three phases:
  - the follicular phase
  - the ovulatory phase
  - the luteal phase
- **Days 1 to 5 (menstrual period)** -Discharge of bloody fluid containing disintegrated endometrial cells, glandular secretions, and blood cells.
- **Days 6 to 12** - After bleeding ceases, the endometrium begins to repair itself. The maturing follicle in the ovary **releases estrogen**, which aids in the repair. The ovum grows in the follicle during this period.

- **Days 13 and 14 (ovulatory period)** –(LH) On about the 14th day of the cycle, the follicle ruptures and the egg leaves the ovary (ovulation), passing through the fallopian tube.
- **Days 15 to 28** - The empty follicle fills with a yellow material and becomes the corpus luteum (yellow body).
- The **corpus luteum** functions as an endocrine organ and **secretes the hormone progesterone** into the bloodstream. This hormone stimulates the building up of the lining of the uterus in anticipation of fertilization of the egg and pregnancy.
- If fertilization does *not* occur, the corpus luteum in the ovary stops producing progesterone and regresses.

- At this time, lowered levels of progesterone and estrogen probably are responsible for some women's symptoms of depression, breast tenderness, and irritability before menstruation. The combination of these symptoms is known as **premenstrual syndrome (PMS)**.
- After 2 days of decrease in hormones, the uterine endometrium breaks down, and the menstrual period begins
- Cycles vary in length, ranging from 21 to 42 days or longer

# PREGNANCY

- **Sexual reproduction** occurs when the ovum unites with the spermatozoon (sperm or male sex cell).
- When the nuclei of these two cells unite, the resulting cell contains the complete number of chromosomes-- half coming from the mother and half from the father.
- When the male ejaculates during sexual intercourse (**also called coitus**), sperm are released into the vagina. If a sperm reaches an ovum and fertilizes it, conception takes place and pregnancy begins.
- **Pregnancy (gestation)** is the condition of a woman from the time she conceives until she gives birth

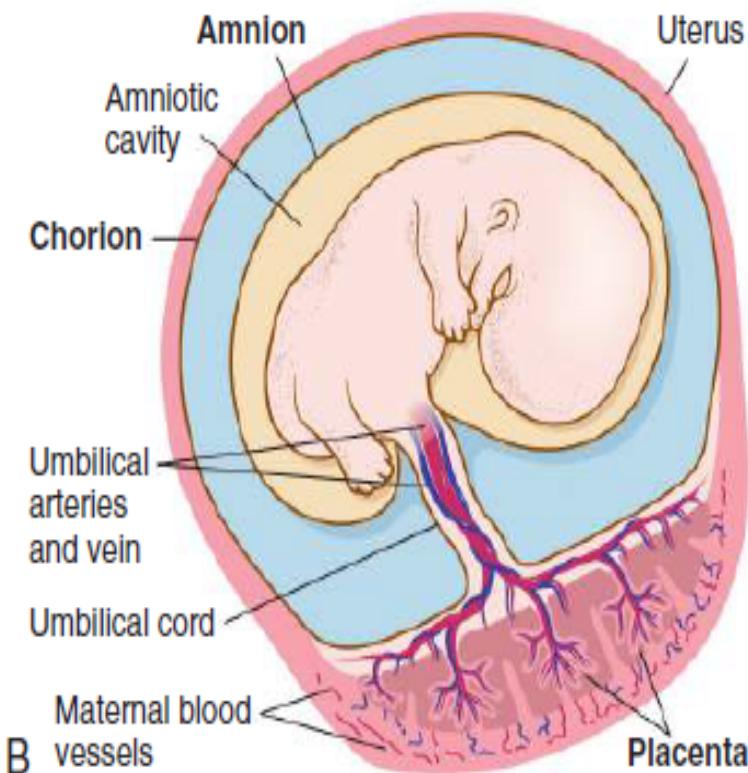
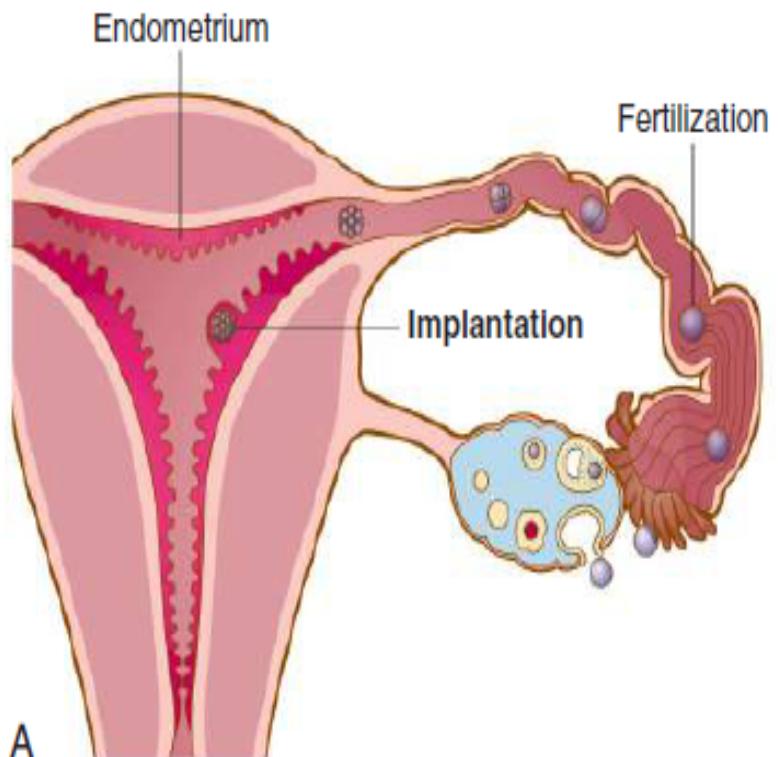


**FIGURE 8-4** Fertilization.

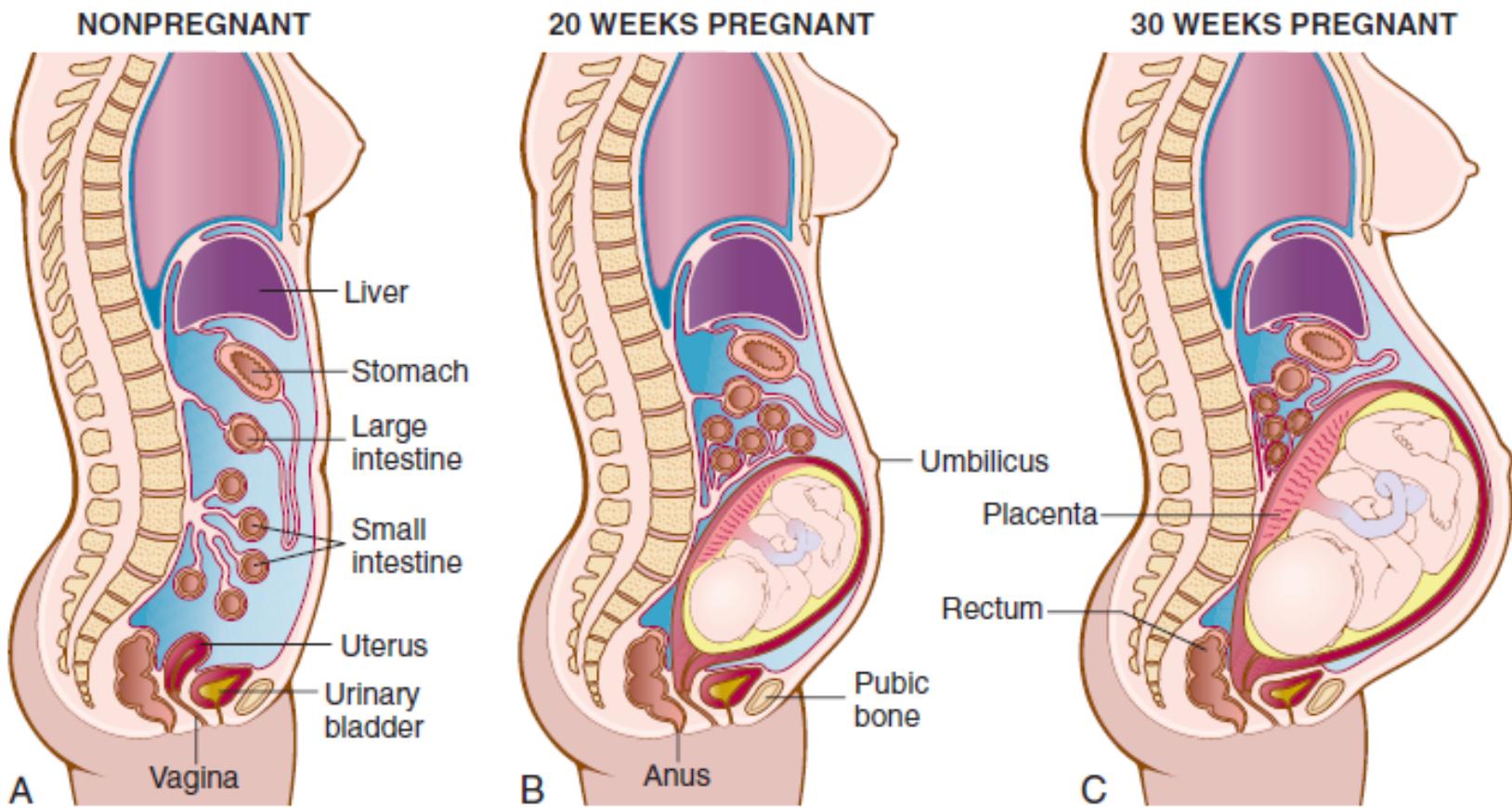
- Pregnancy lasts 38 to 42 weeks
- This time period is divided into three trimesters, each approximately 13 weeks in length.
- Healthcare workers typically use the date of the **last menstrual period (LMP)** to calculate the approximate date of **parturition** (childbirth).
- This date is called the **estimated date of confinement (EDC) / EDD**

- When pregnancy occurs, the uterus quickly increases in muscle mass and the peritoneal covering becomes enlarged.
- Secretions increase and the mucosa becomes thicker.
- **The placenta** also develops and becomes attached to the uterine wall.
- The placenta's job is **to prevent the embryonic and maternal blood supplies from mixing**, yet allow nutrients and waste products to be passed between the two circulatory systems via the umbilical cord.
- The embryo is encased in the **amniotic sac, filled with amniotic fluid**.

- The sac and fluid provide a cushion to protect it from being physically jarred.
- From the time of conception to approximately the end of the second month, the developing organism is called **an embryo**.
- After the beginning of the third month until birth, it is referred to as a **fetus**.
- Gestational ages are specified using the Ballard scale



**FIGURE 8-7** A, Implantation of the embryo in the endometrium. B, The placenta, chorion, and amnion membranes.



**FIGURE 8-8** The growing uterus changes the pelvic anatomy during pregnancy, as shown here in sagittal section: **A**, nonpregnant woman, **B**, 20 weeks pregnant, **C**, 30 weeks pregnant.

- After the first trimester, the woman may experience **Braxton Hicks contractions**, rhythmic contractions of the uterus that usually are not painful
- When it is time for the fetus to be expelled from the uterus, **labor** begins.
- There are three stages.
- The **first stage occurs** when uterine contractions begin and continues through the dilation of the cervix.
- The **second stage** begins with the complete dilation of the cervix and continues through the birth of the infant.
- During the **last stage**, the placenta and associated membranes are expelled

- The Bishop scoring system of labor is sometimes used to document the progression of labor
- The indicators used in this scoring system are the **amount of dilation of the cervix, effacement, current station of the fetus, consistency of the cervix, and cervical position.**
- **Station** is the current location of the presenting part of the fetus in the maternal pelvis.

# **cesarean section (C-section)**

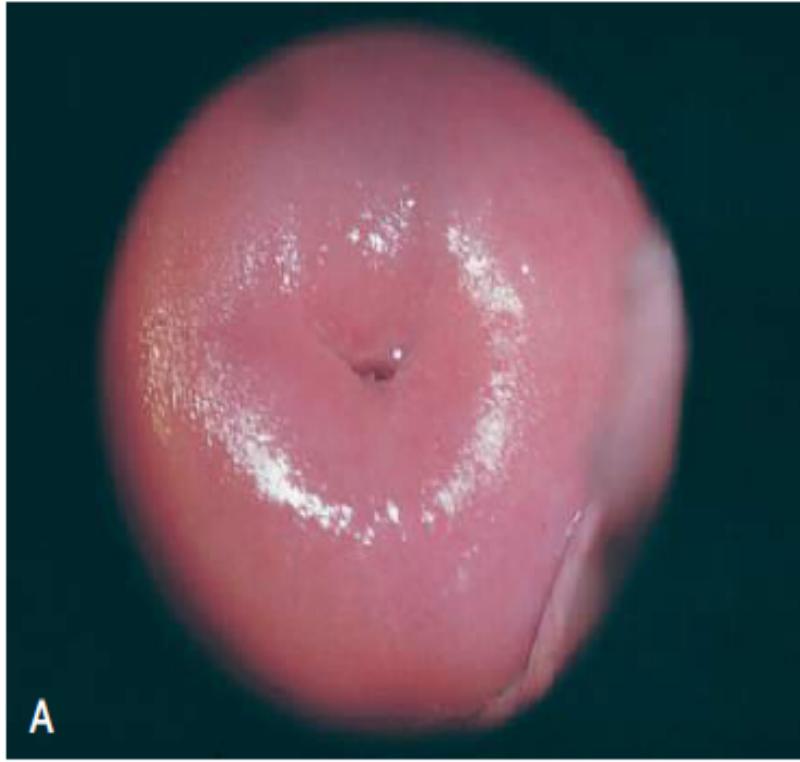
- In this procedure an incision is made through the abdominal wall, and a second incision is made into the uterus through which the infant is removed.
- **CPD (cephalopelvic disproportion) ?**
- **Episiotomy**, which is a clean, straight cut in perineum -may be easier to repair than a tear ( TO PREVENT TEAR DURING NORMAL DELIVERY)
- **Puerperium** period, the 6 weeks immediately following childbirth.

- An **abortion** occurs when an embryo or fetus is expelled from the uterus before it is viable.
- There are two types of abortions.
- Induced – with medical intervention
- A spontaneous abortion (or miscarriage) occurs without medical intervention.

- The following Latin terms are sometimes used (note that the term **gravid** **means pregnant**):
- Nulligravida - no pregnancies
- Primigravida - 1 pregnancy
- Secundigravida - 2 pregnancies
- Nullipara - no deliveries of viable offspring

# PATHOLOGY

Condition or Disease	Description
adenomyosis	A benign invasion of the endometrium into the myometrium (the muscular layer of the uterus). Rarely causes symptoms, but can be accompanied by menorrhagia and intermenstrual bleeding.
amenorrhea	Absence of menstruation.
bacterial vaginosis	Bacterial infection of the vagina, typically causing excessive and malodorous discharge, itching, and irritation.
breast cancer	A malignancy of the breast. The malignancy can be in the ducts and/or lobes and can spread to surrounding tissue.
breech presentation	During childbirth, the situation in which the infant's feet or buttocks present first. The head normally presents first.
candidal vaginitis	A vaginal inflammation due to a yeast infection caused by <i>Candida albicans</i> . Also called <i>candidiasis</i> or <i>candidosis</i> .
Cephalopelvic disproportion (CPD)	The situation during pregnancy in which the maternal pelvis is disproportionately small compared to the size of the fetal head.
cervical cancer	A malignancy of the cervix.
cervicitis	Inflammation of the cervix in which it appears red and bleeds easily (friable). A type of pelvic inflammatory disease.



A



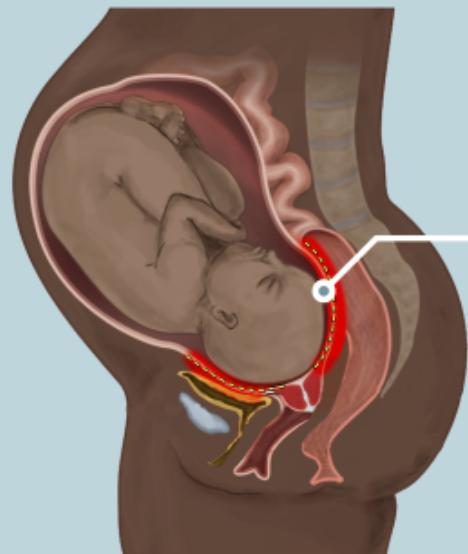
B

**FIGURE 8-15** Normal cervix (A) and cervix with cervical cancer (B) as seen via colposcopy.

- CIN ?

## CEPHALOPELVIC DISPROPORTION

CPD



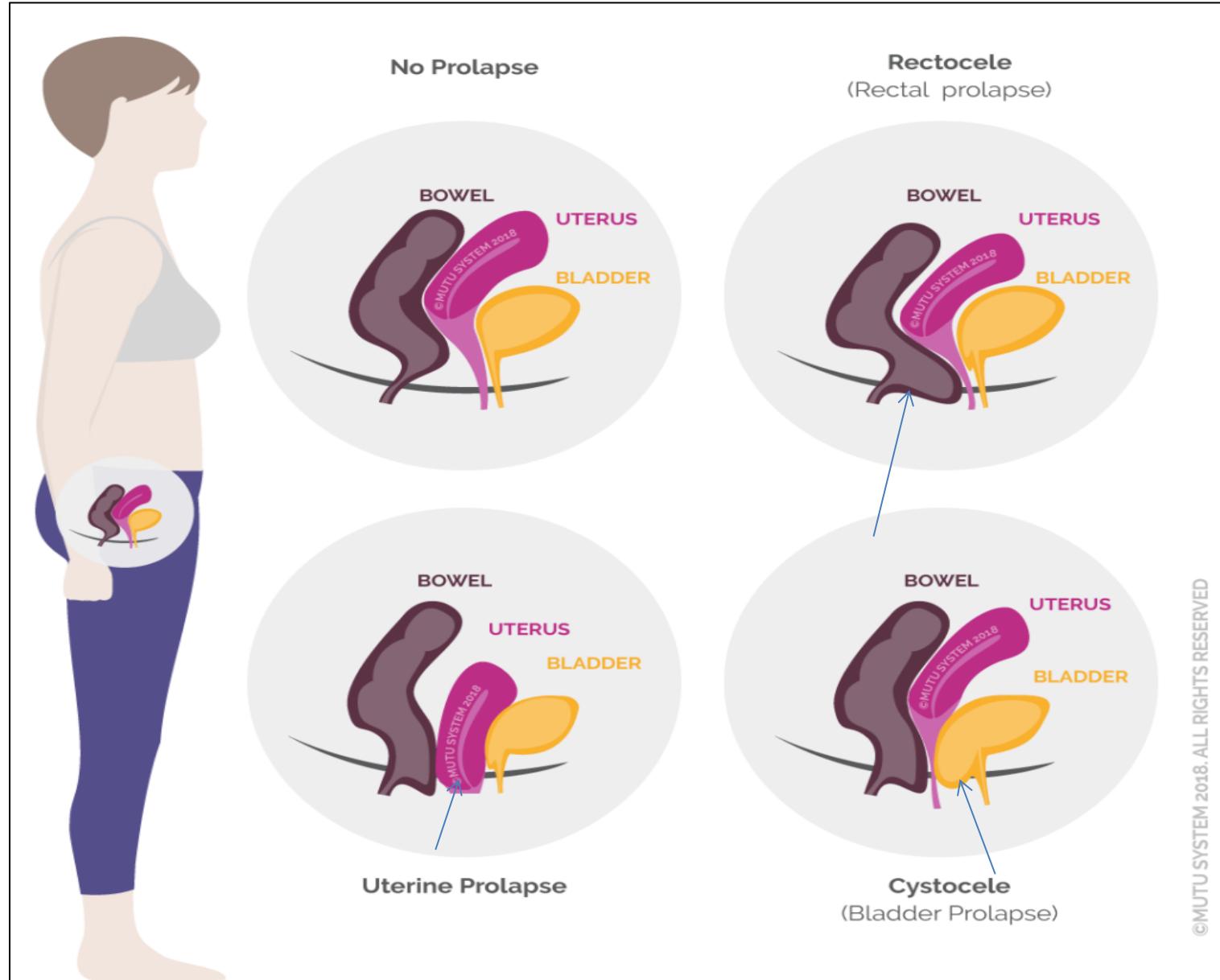
CPD is a pregnancy complication in which there is a size mismatch between the **mother's pelvis** and the **head of the baby**.

CPD can stall or completely halt vaginal delivery, making it dangerous or impossible; if an attempted vaginal delivery is unsuccessful, doctors should quickly move onto a C-section.



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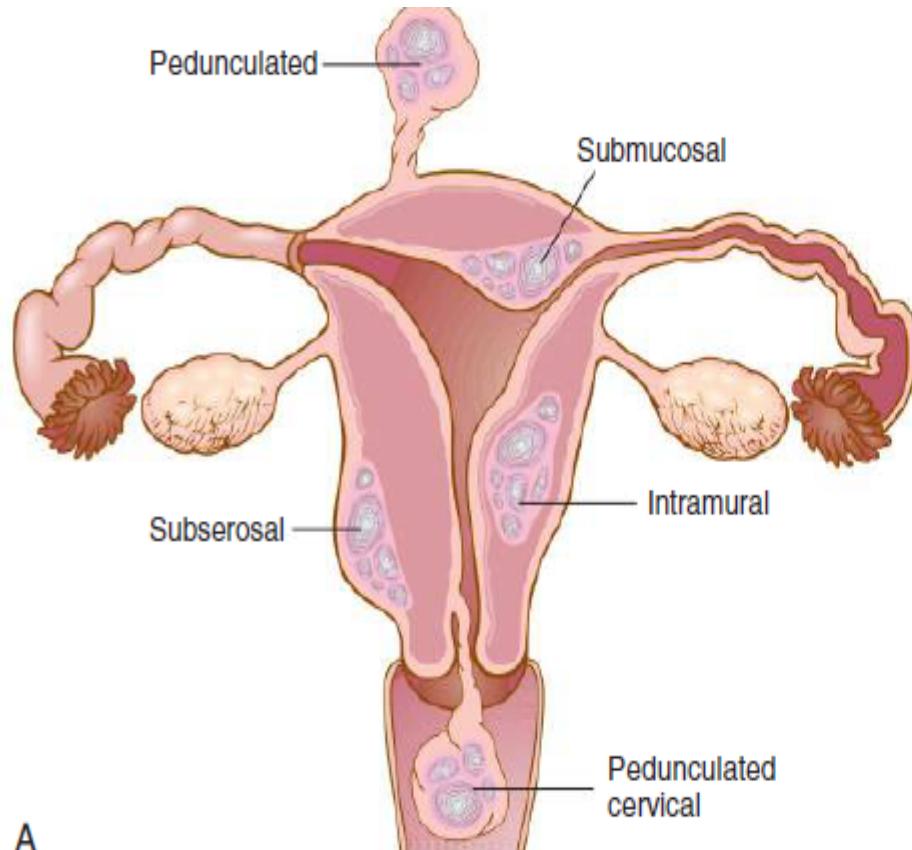
chancroid	A sexually transmitted disease caused by the bacterium <i>Haemophilus ducreyi</i> . Characterized by painful lesions (ulcers) at the site of infection. Also called <i>venereal ulcer</i> .
chlamydia	A sexually transmitted disease caused primarily by the bacterium <i>Chlamydia trachomatis</i> . Can cause inflammation of the genitals, eyes, pharynx, lungs, and other organs. Can also infect the newborn.
cystocele	A bulging of the urinary bladder, usually against the anterior vaginal wall.
dysgerminoma	A rare type of ovarian malignancy typically occurring in young females.
dysmenorrhea	Pain during menstruation, typically cramps or a constant ache in the lower abdomen and/or lower back. The cause may be unknown (primary dysmenorrhea), or it may be caused by conditions such as endometriosis



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dyspareunia	Pain during sexual intercourse or attempted sexual intercourse.
eclampsia	The occurrence of convulsions or coma in a patient with preeclampsia during pregnancy. May also occur following delivery ( <i>puerperal eclampsia</i> ).
ectopic pregnancy	The situation in which a fertilized ovum becomes implanted in some area other than the uterine cavity. The most common site is a fallopian tube. Can cause severe pelvic pain. The ectopic site commonly ruptures after the first missed menstrual period following conception. Can be lifethreatening to the mother.
endometrial cancer	A malignancy of the endometrium.
endometriosis	A nonmalignant condition in which aberrant endometrial tissue grows outside the uterus, especially occurs on the ovaries. Commonly forms cysts containing altered blood.
endometritis	Inflammation of the endometrium.

female orgasmic disorder	The absence or persistent delay of orgasm after normal excitement during sexual activity.
fibroadenoma	A benign tumor in the epithelium of a gland. Commonly occurs in breast tissue.
fibroid (uterine)	A benign tumor that originates in the smooth muscle of the uterus. Also called <i>fibromyoma</i> and <i>leiomyoma</i> .
gestational diabetes	The onset of diabetes during pregnancy.
gonorrhea	An infection of the epithelium of the cervix, rectum, urethra (urinary opening), pharynx, or eyes by the bacterium <i>Neisseria gonorrhoeae</i> . Primarily a sexually transmitted disease.
herpes simplex genital ulcers	A sexually transmitted disease caused by the herpes simplex virus (HSV) type 2, which may produce genital lesions.



A



B

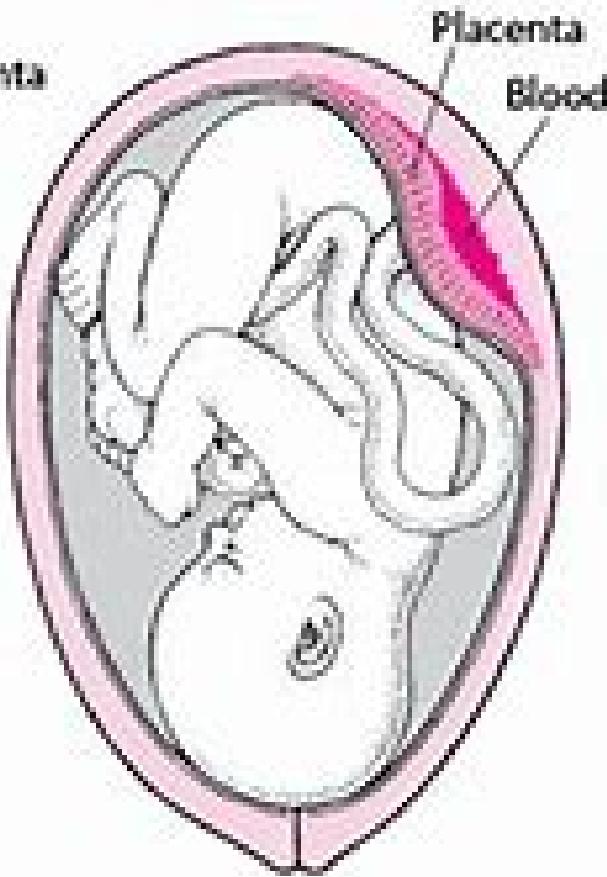
**FIGURE 8-16** A, Location of uterine fibroids (leiomyomas). Pedunculated growths protrude on stalks. A subserosal mass lies under the serosal (outermost) layer of the uterus. A submucosal leiomyoma grows under the mucosal (innermost) layer. Intramural (mural means wall) masses arise within the muscular uterine wall. B, Fibroids shown after hysterectomy.

human papillomavirus genital warts	A sexually transmitted disease caused by the human papillomavirus (HPV). Also called <i>genital warts</i> .
hyperemesis gravidarum	Extreme nausea and vomiting during pregnancy that can lead to dehydration.
infertility	The inability to conceive.
mastalgia	Pain in one or both breasts. Also called <i>mastodynia</i> .
menopause	Cessation of menses and end of a woman's reproductive capabilities. Attributed to decreased ovarian function and decline in estrogen production.
menorrhagia	Excessively long periods of menstruation and/or excessive amounts of menses.
metrorrhagia	Bleeding from the uterus that is nonmenstrual or between menstrual periods.

miscarriage	The spontaneous expulsion of the embryo or fetus from the uterus before it is viable. Also called <i>spontaneous abortion</i> .
mittelschmerz	Severe pain in the middle of the menstrual cycle due to ovulation.
oophoritis	Inflammation of the ovaries.
ovarian cancer	A malignancy in an ovary.
pediculosis pubis	Infestation of pubic (crab) lice in pubic hair.
pelvic inflammatory disease (PID)	Any infection of the upper reproductive tract of a female, including the ovaries, fallopian tubes, uterus, and cervix. Includes oophoritis, salpingitis, endometritis, and cervicitis.
placentae abruptio	The premature separation of the placenta from the uterine wall.



Normal Placenta

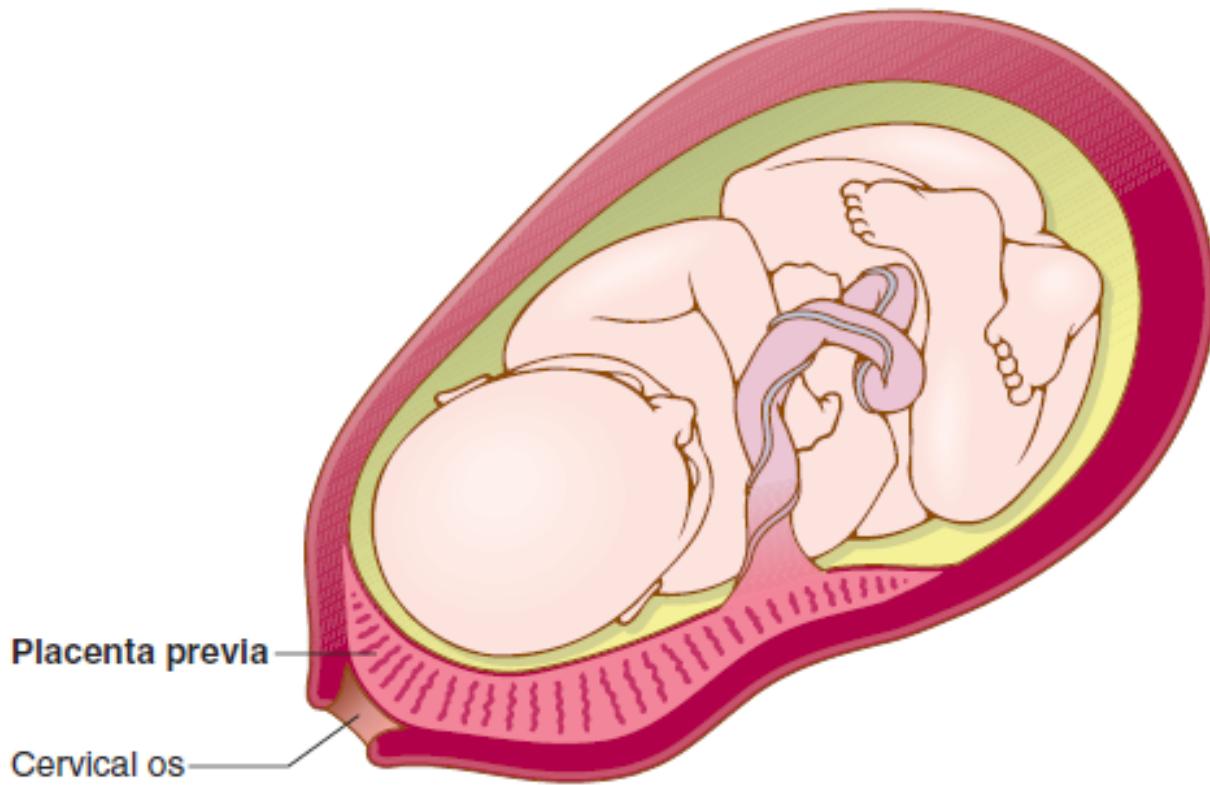


Placental Abruption



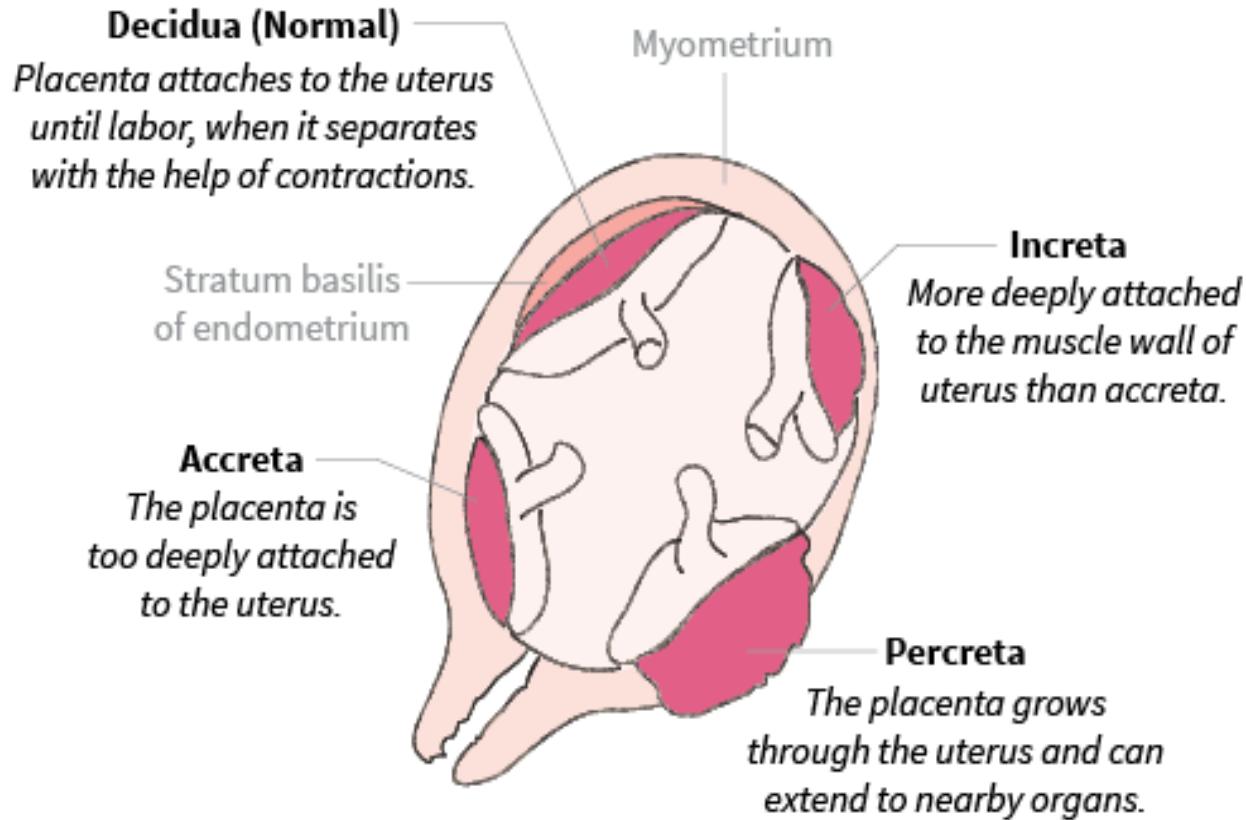
Placenta Previa

# PLACENTA PREVIA



**FIGURE 8-21** Placenta previa. Previa means before or in the front of. Three forms of this abnormal implantation of the placenta are: **placenta accreta** (on the wall but not in muscle), **placenta increta** (in uterine muscle), and **placenta percreta** (attaching to another organ).

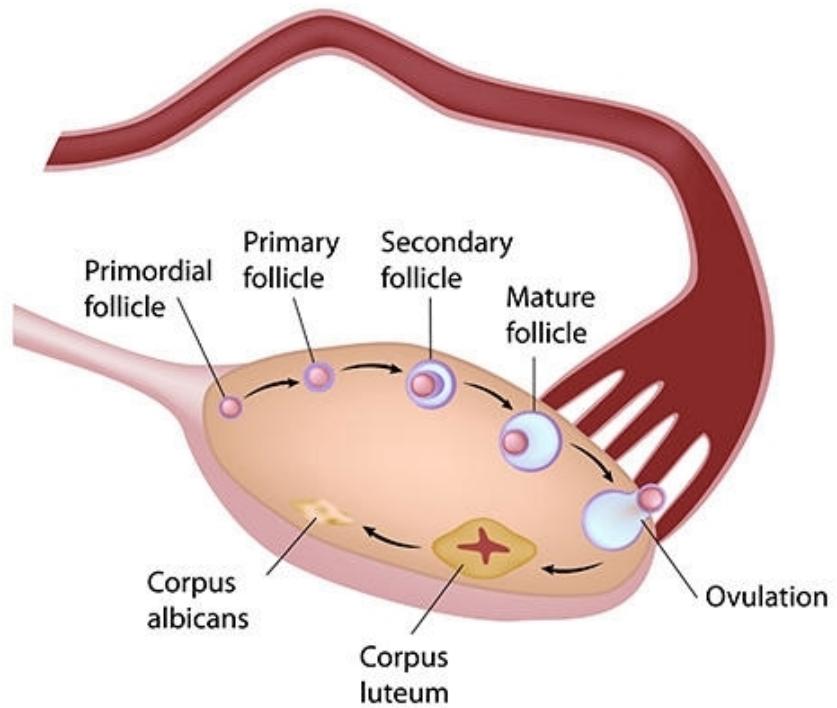
# TYPES OF ABNORMAL IMPLANTATION



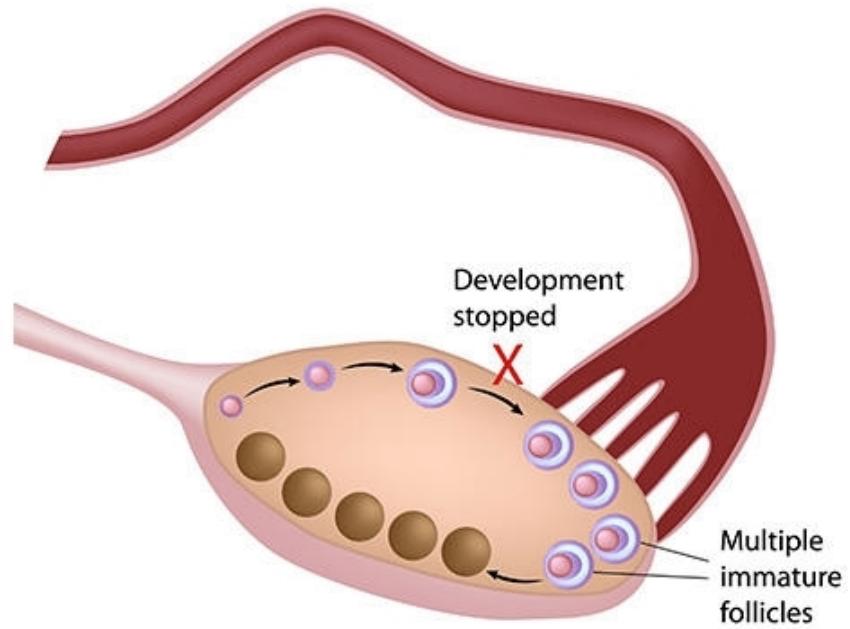
Source: March of Dimes

THE HUFFINGTON POST

polycystic ovary syndrome	A benign condition usually characterized by enlarged ovaries, benign ovarian cysts, irregular menses, hirsutism, and mild obesity. May cause amenorrhea. Also called <i>hyperandrogenic chronic anovulation</i> .
preeclampsia	The development of hypertension, edema, and proteinuria during pregnancy. Also called <i>toxemia</i> and <i>pregnancy-induced hypertension</i> .
premature ovarian failure	A variety of disorders in which women under 40 years of age have abnormal hormone levels, including a deficiency of estrogen. Also called <i>premature menopause</i> .
prolapse of the uterus	Descent of the uterus and cervix into the vagina due to weakened muscles in the pelvic floor.
pyosalpinx	Distension of the fallopian tubes caused by accumulation of pus. May indicate an ovarian or a tubal abscess.
rectocele	Bulging of the rectum against the posterior vaginal wall. Also called a <i>proctocele</i> .



**Normal Ovary**

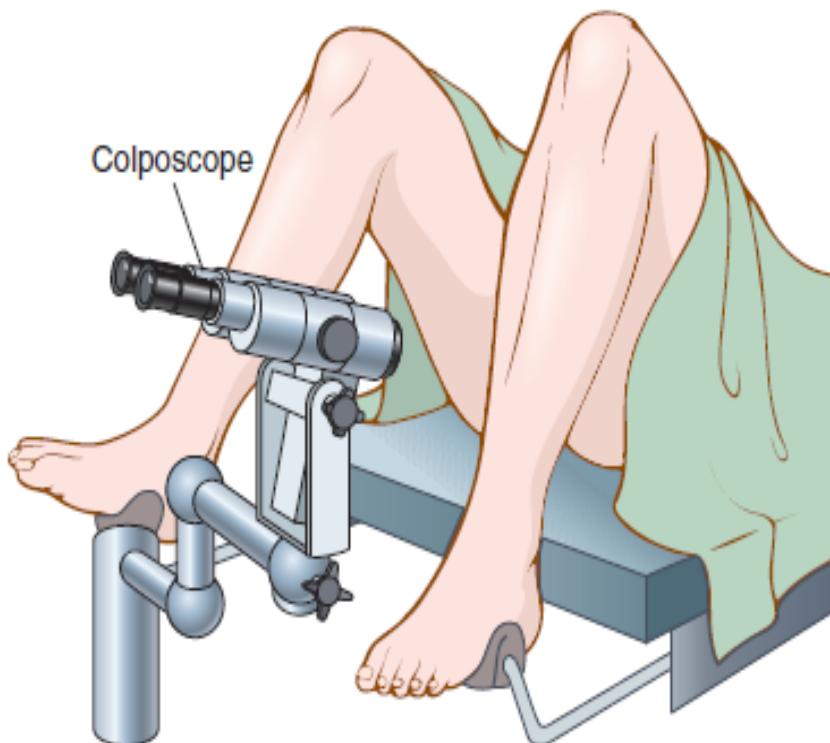


**Polycystic Ovary**

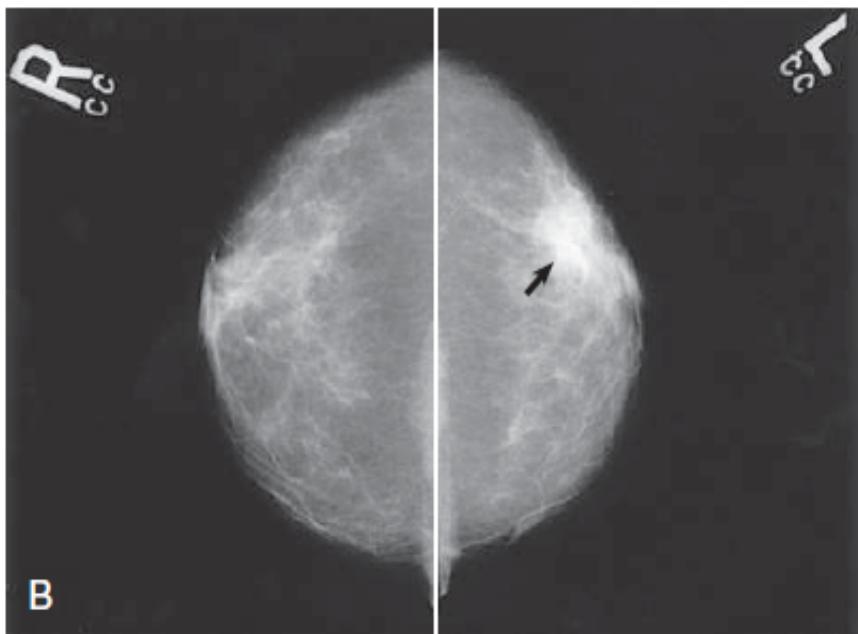
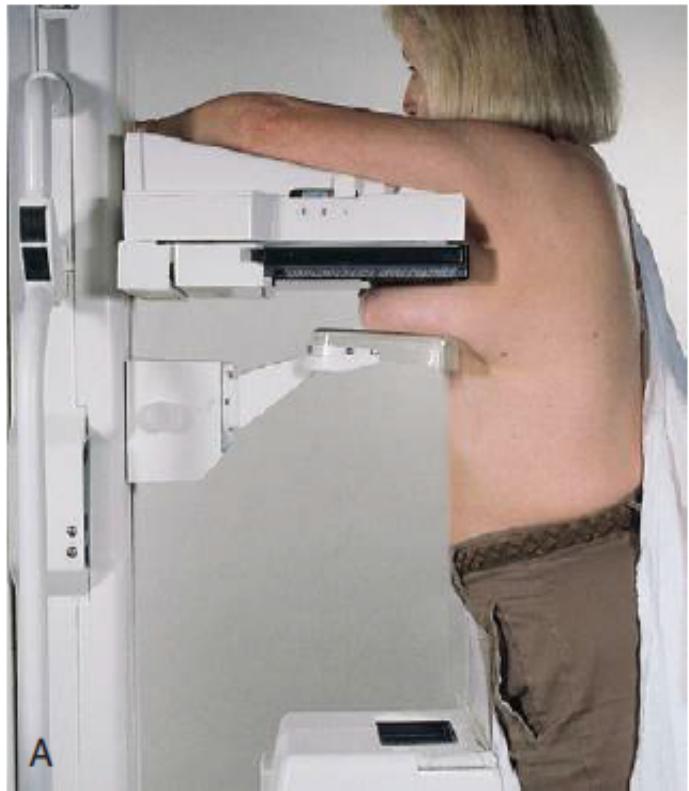
salpingitis	Inflammation of one or both fallopian tubes. A type of pelvic inflammatory disease.
sexually transmitted disease (STD)	Any contagious disease that is spread during sexual contact, primarily sexual intercourse. Examples include syphilis, gonorrhea, and chlamydia. Also called <i>venereal disease</i> .
syphilis	An infectious systemic disease caused by <i>Treponema pallidum</i> and most commonly transmitted by sexual intercourse. Can affect multiple organs and is characterized by distinct clinical stages.
toxic shock syndrome (TSS)	A condition caused by staphylococcal infection, most commonly in the vagina of a menstruating woman. Characterized by high fever, rash, vomiting, and diarrhea. Can lead to death.
trichomonas vaginitis	A sexually transmitted disease caused by the protozoan <i>Trichomonas vaginalis</i> . Also called <i>trichomoniasis</i> .
vaginal cancer	A malignancy in vaginal tissue.
vaginismus	An involuntary spasm or contraction of vaginal muscles preventing intercourse.
vaginitis	Any inflammation of the vagina. Commonly produces discharge.
vulvar cancer	A malignancy of the vulva, the external female genitals.

# DIAG TESTS AND PROCEDURES

Test	Description
amniocentesis	Amniotic fluid is aspirated from the amniotic sac. This fluid contains fetal cells. A hollow needle is inserted through the abdominal wall and into the uterus. A variety of tests may be performed on the fluid, including karyotyping to diagnose possible genetic defects.
bacterial culture	Samples of purulent tissue are sent to the laboratory and cultured in substances to promote growth. It may then be determined if bacteria are present, and if so, the type(s). This information is used to determine the course of treatment. In the case of bacterial vaginosis, distinct "clue cells" are present. Bacteria adhere to these "clue cells", obscuring their margins.
biopsy	A specimen of tissue is collected and examined microscopically to establish a diagnosis. Commonly used to diagnose malignant growths.
colposcopy	The vagina and cervix are examined endoscopically to locate any abnormalities, growths, bleeding, etc. Insertion is through the vagina. Tissue may be taken for biopsy and growths removed. Colposcopy is frequently performed when the results of a Pap smear are abnormal.



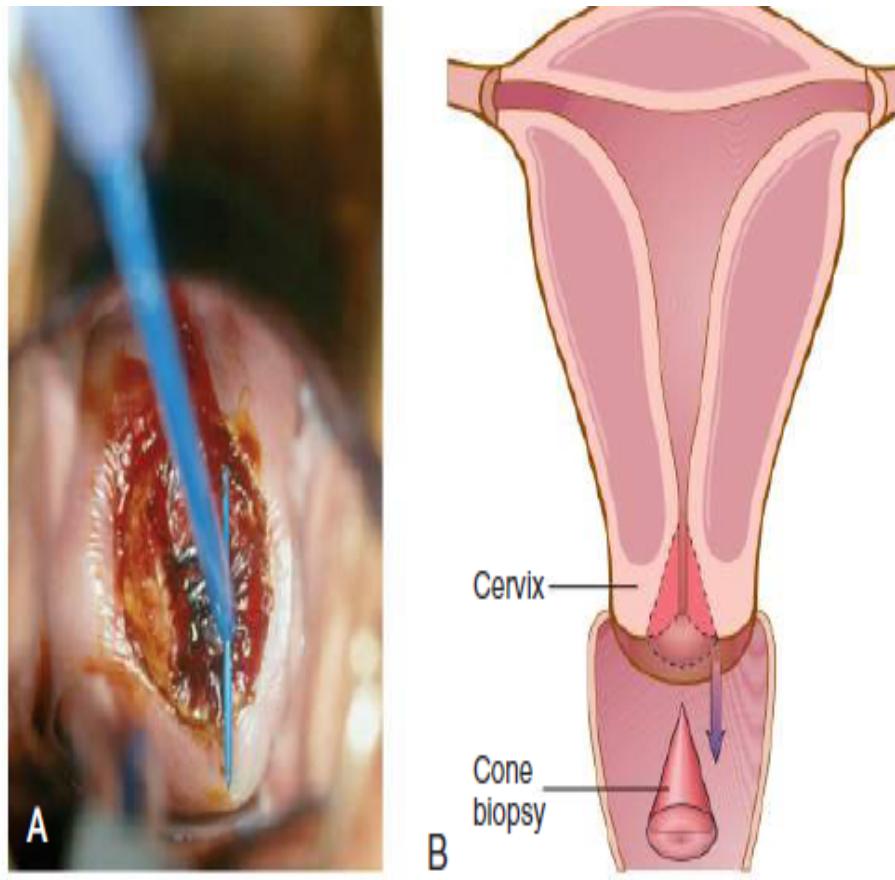
**FIGURE 8-25** Colposcopy is used to evaluate a patient with an abnormal Pap test. For this examination, the woman lies in the dorsal lithotomy position. This is the same position used to remove a urinary tract stone (lithotomy means incision to remove a stone).



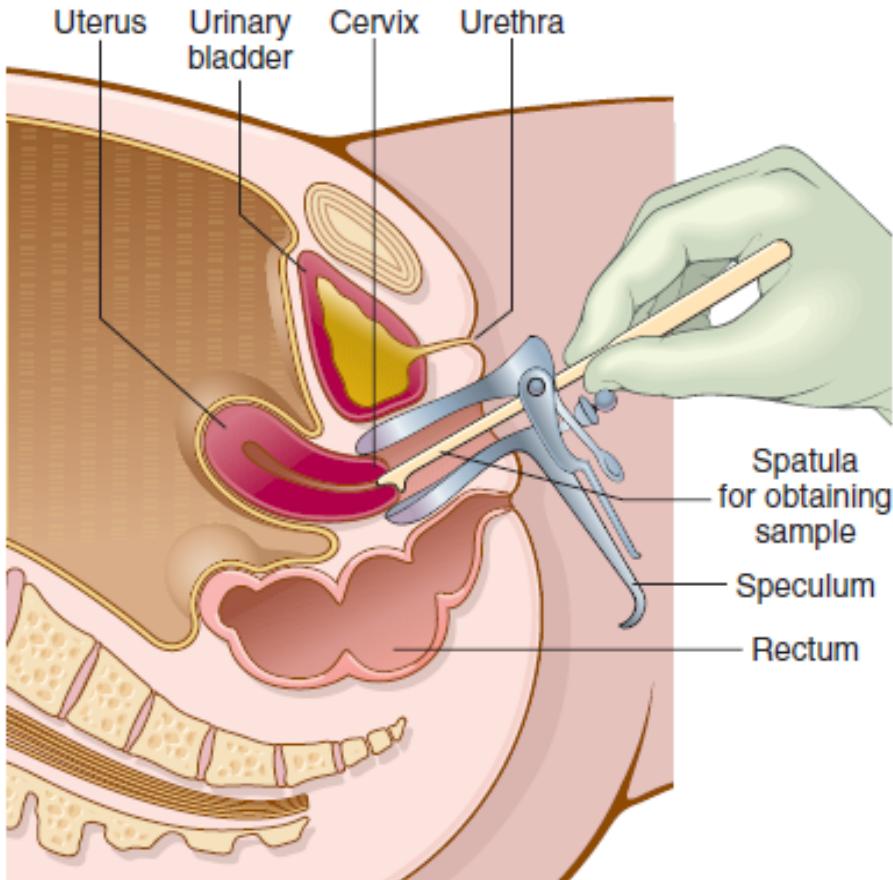
**FIGURE 8-24** **A, Mammography.** The machine compresses the breast and x-ray pictures (top to bottom and lateral) are taken. **B, Mammograms** from a 63-year-old woman. The right breast is normal, and the left breast contains a carcinoma.

cone biopsy	A cone-shaped piece of tissue is excised from the cervix and examined microscopically to establish a diagnosis. Commonly used to diagnose malignant growths. Cone biopsy provides a larger tissue sample than punch biopsy. Also called <i>conization biopsy</i> .
fetal monitoring	Fetal vital signs, including heart rate, are electronically recorded during labor.
follicle-stimulating hormone (FSH) test	The level of FSH in blood serum is measured. Useful in diagnosing ovarian abnormalities and menopause.
hysteroscopy	The uterus is examined endoscopically to locate any abnormalities. Insertion is through the vagina. Tissue may be taken for biopsy and growths removed. In cases of abnormal uterine bleeding, a laser may be used to stop or reduce the bleeding. Also called <i>uteroscopy</i> .

**FIGURE 8-26** A, Cervical loop electrocautery excision procedure (LEEP) for cone biopsy. B, Surgical removal of cone biopsy specimen. (A, Courtesy Dr. A. K. Goodman, Massachusetts General Hospital, Boston.)



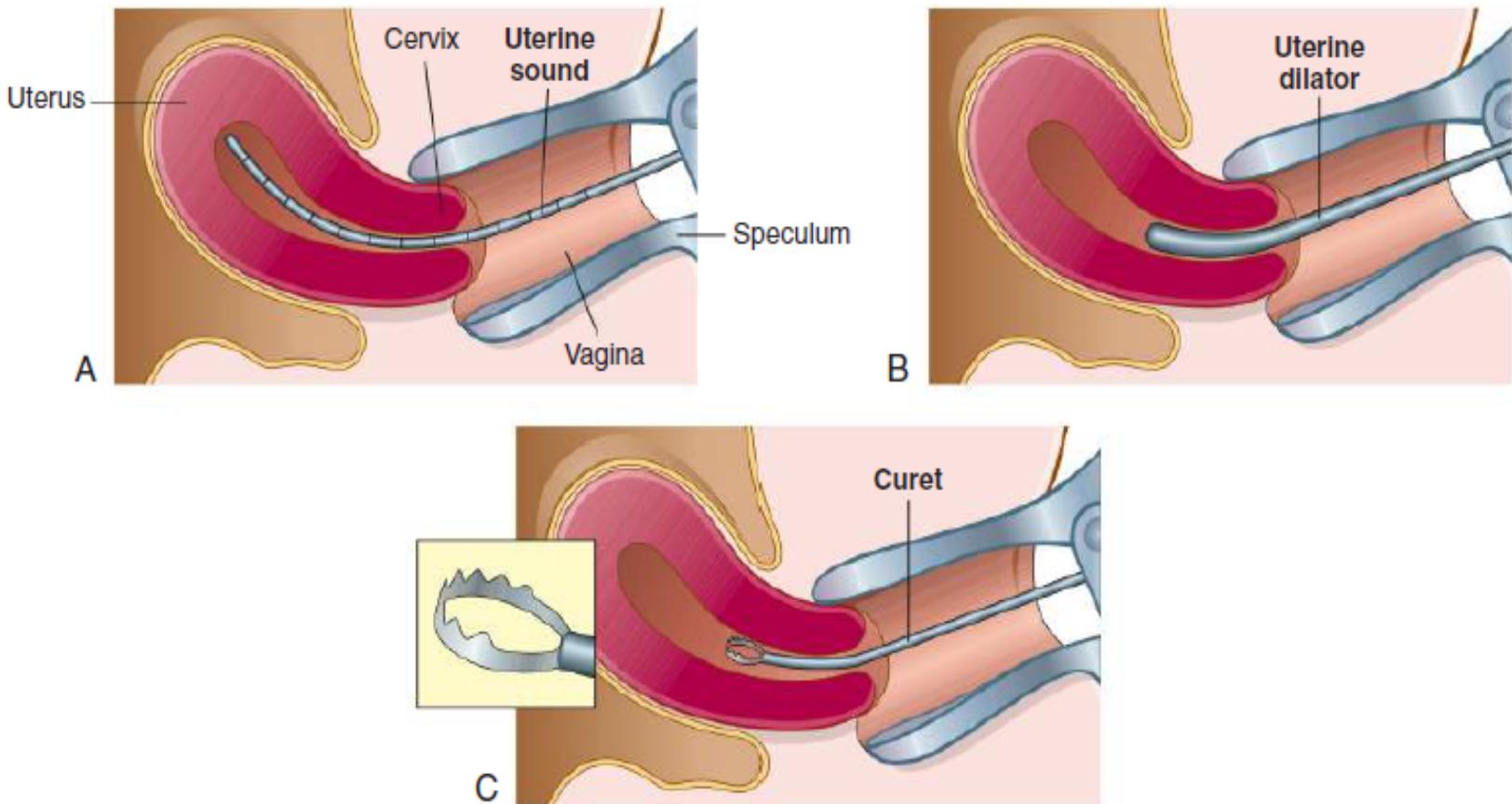
karyotyping	A graphic display of a cell's chromosomes is created showing their number, size, and arrangement.
laparoscopy	The peritoneal cavity is examined with a laparoscope to locate any abnormalities, growths, bleeding, etc. Insertion is through a small incision in the abdomen. Tissue can be taken for biopsy, and certain operative procedures can be performed. Also called <i>peritoneoscopy</i> .
mammography	Low-energy x-rays are used to detect tumors in the breasts. Highly accurate in differentiating between benign and malignant growths.
Pap (Papanicolaou) test	A smear of cervical cells is obtained and checked for precancerous, cancerous, or other abnormal cells. Results are reported on a 3-point scale (see discussion following this table). Also called a <i>Pap smear</i> .
pelvic CT (computed tomography)	A computer-generated reconstruction of the pelvic area is created from a series of x-ray images taken as cross-sections of the pelvis. These images (CT scans) are particularly useful in detecting soft tissue abnormalities such as tumors and lesions in the reproductive organs.



**FIGURE 8-23** Method of obtaining a sample for a Pap test. The test is 95% accurate in diagnosing early carcinoma of the cervix. It was invented by and named for a Greek physician, Georgios Papanikolaou.

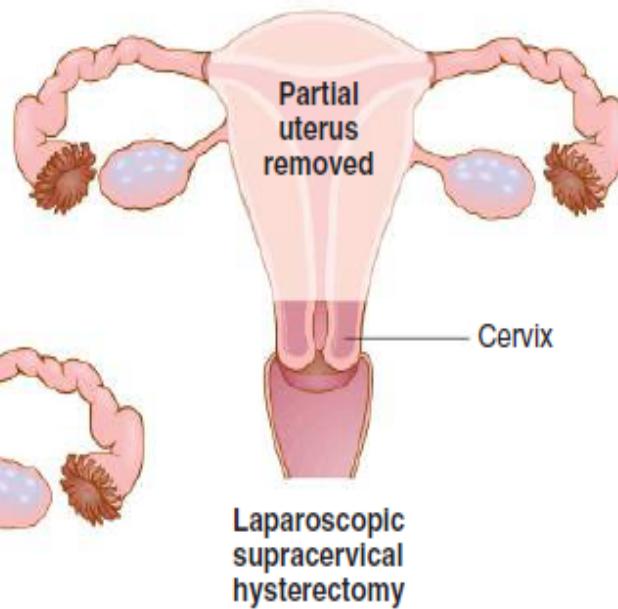
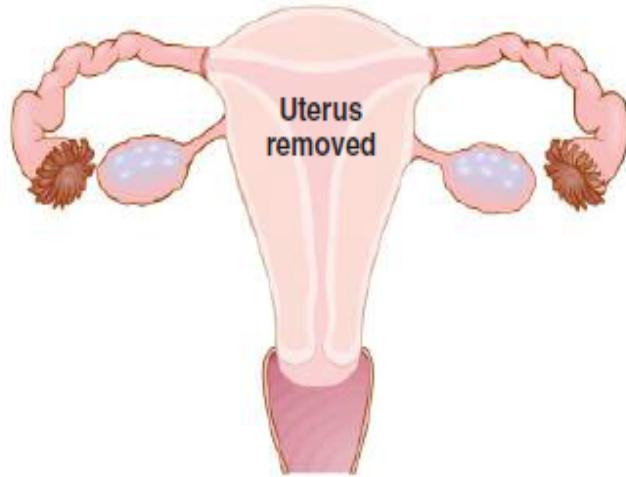
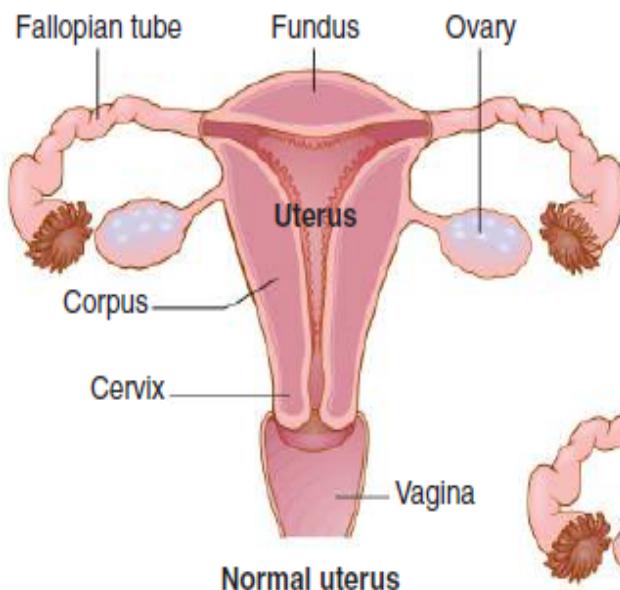
pelvic radiography	X-rays of the pelvic region are taken for diagnostic purposes.
pelvic ultrasonography	Ultrasound is used to examine the pelvic area. Used during pregnancy to check for fetal maturity, fetal and placental placement, and CPD. It can also help detect tumors and abscesses.
pregnancy testing	Blood or urine is tested for a high level of human chorionic gonadotropin (hCG), indicating pregnancy.

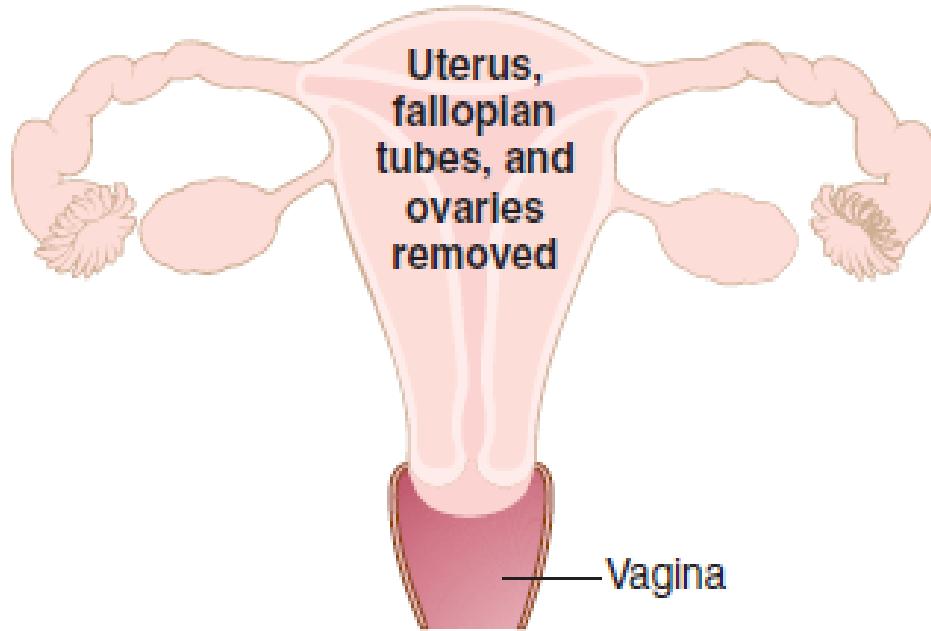
scrapings and KOH solution (fungal)	Scrapings from affected parts of the mucous membranes are placed in potassium hydroxide (KOH) and examined under the microscope to determine the presence of fungal infections. Used to diagnose conditions such as vaginal candidiasis.
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**FIGURE 8-27** Dilation and curettage (D&C) of the uterus. **A**, The uterine cavity is explored with a **uterine sound** (a slender instrument used to measure the depth of the uterus) to prevent perforation during dilation. **B**, **Uterine dilators** (Hanks or Hagar) in graduated sizes are used to gradually dilate the cervix. **C**, The uterus is gently curetted and specimens are collected.

# HYSTERECTOMY





## 12 Total hysterectomy with bilateral salpingo-oophorectomy.

## NEONATAL

The following terms describe conditions or symptoms that can affect the newborn. The Apgar score (Figure 8-22) is a system of scoring an infant's physical condition 1 and 5 minutes after birth. Heart rate, respiration, color, muscle tone, and response to stimuli each are rated 0, 1, or 2. The maximum total score is 10. Infants with Apgar scores below 7 require special immediate medical attention such as suctioning of the airways or oxygen to help breathing.

Down syndrome	Chromosomal abnormality (trisomy 21) results in mental retardation, retarded growth, a flat face with a short nose, low-set ears, and slanted eyes.
erythroblastosis fetalis	Hemolytic disease in the newborn (HDN) caused by a blood group (Rh factor) incompatibility between the mother and the fetus. See explanation in Chapter 4, page 119.
hyaline membrane disease	Acute lung disease commonly seen in the premature newborn. This condition, also called respiratory distress syndrome of the newborn (RDS), is caused by deficiency of surfactant, a protein necessary for proper lung function. Surfactant can be administered to the newborn to cure the condition. Hyaline refers to the shiny (hyaline means glassy) membrane that forms in the lung sacs.

SIGN	SCORE		
	0	1	2
Heart rate	Absent	Below 100	Over 100
Respiratory effort	Absent	Slow, Irregular	Good, crying
Muscle tone	Limp	Some flexion of extremities	Active motion
Response to catheter in nostril (tested after oropharynx is clear)	No response	Grimace	Cough or sneeze
Color	Blue, pale	Body pink, extremities blue	Completely pink

**FIGURE 8-22** Apgar scoring chart. This test is named for anesthesiologist Virginia Apgar (1909-1974), who devised it in 1953. Dr. Joseph Butterfield, in 1963, introduced an “APGAR” acronym as a mnemonic (memory device): Appearance (color), Pulse (heart rate), Grimace (response to catheter in nostril), Activity (muscle tone), and Respiration (respiratory effort).

# COMBINING FORMS

Form	Meaning	Example(s)
amni/o	amnion	amniotic, amniocentesis
cervic/o	cervix; neck (neck of the uterus)	cervical, cervicitis
colp/o	vagina	colposcopy
embry/o	embryo	embryogenesis
episi/o	vulva	episiotomy
fet/o	fetus	fetoscope
gen/o	producing; produced by	genome, oncogenes
gonad/o	sex glands	gonadotropin
gravid/o	pregnancy	gravidity, primigravida
gynec/o	woman; female	gynecology, gynecologist
hyster/o	uterus; womb (see also metri/o, uter/o)	hysterectomy
kary/o	nucleus	karyotyping
labi/o	lip	labia

<b>lact/o</b>	milk	lactiferous, lactation
<b>mamm/o</b>	breast (see also <i>mast/o</i> )	mammary
<b>mast/o</b>	breast (see also <i>mamm/o</i> )	mastitis, mastectomy, mastalgia
<b>men/o</b>	menses; menstruation	menarche, perimenopause
<b>metri/o</b>	uterus; womb (see also <i>hyster/o, uter/o</i> )	perimetrium, myometrium
<b>nat/i</b>	birth	natal
<b>obstetr/o</b>	midwife	obstetrics, obstetrician
<b>oophor/o</b>	egg (see also <i>ov/o, ovul/o</i> )	oophorectomy, oophoritis
<b>ov/o</b>	egg (see also <i>oophor/o, ovul/o</i> )	ova, oviduct
<b>ovari/o</b>	ovary	ovarian
<b>ovul/o</b>	egg (see also <i>oophor/o, ov/o</i> )	ovulatory, ovulation
<b>par/o</b>	bearing offspring	nullipara, postpartum
<b>pelv/o</b>	pelvic bone; hip	pelvic, cephalopelvic
<b>salping/o</b>	tube	pyosalpinx, salpingooophorectomy
<b>uter/o</b>	uterus; womb (see also <i>metri/o, hyster/o</i> )	uterine, intrauterine
<b>vagin/o</b>	vagina	vaginosis, vaginismus
<b>vener/o</b>	sexual intercourse	venereal
<b>vulv/o</b>	vulva	vulvar, vulvectomy

COMBINING FORM	MEANING	TERMINOLOGY	MEANING
amni/o	amnion	<u>amniocentesis</u> _____  <u>amniotic fluid</u> _____ <i>Produced by fetal membranes and the fetus.</i>	
bartholin/o	Bartholin gland	<u>bartholinitis</u> _____  <i>A Bartholin cyst is a fluid-filled sac caused by blockage of a duct from the Bartholin gland. If bacterial infection occurs, an abscess may form.</i>	
cervic/o	cervix, neck	<u>endocervicitis</u> _____	
chori/o, chorion/o	chorion	<u>chorionic</u> _____	
colp/o	vagina	<u>colposcopy</u> _____	
culd/o	cul-de-sac	<u>culdocentesis</u> _____  <i>A needle is placed through the posterior wall of the vagina and fluid is withdrawn for diagnostic purposes.</i>	
episi/o	vulva	<u>episiotomy</u> _____  <i>An incision through the skin of the perineum enlarges the vaginal orifice for delivery. The incision is repaired by perineorrhaphy.</i>	
galact/o	milk	<u>galactorrhea</u> _____  <i>Abnormal, persistent discharge of milk, commonly seen with pituitary gland tumors.</i>	

COMBINING FORM	MEANING	TERMINOLOGY	MEANING
gynec/o	woman, female	<u>gynecomastia</u> _____ <i>Enlargement of breasts in a male. It often occurs with puberty or aging, or the condition can be drug-related.</i>	
hyster/o	uterus, womb	<u>hysterectomy</u> _____ <i>Total abdominal hysterectomy (TAH) is removal of the entire uterus (including the cervix) through an abdominal incision (Figure 8-11). Vaginal hysterectomy (VH) is removal through the vagina. Laparoscopic supracervical hysterectomy (see Figure 8-11) is a partial hysterectomy that preserves the cervix.</i>	
		<u>hysteroscopy</u> _____ <i>A gynecologist uses an endoscope (passed through the vagina and cervix) to view the uterine cavity.</i>	
lact/o	milk	<u>lactation</u> _____ <i>The normal secretion of milk.</i>	
mamm/o	breast	<u>inframammary</u> _____ <i>Infra- means below.</i>	
		<u>mammoplasty</u> _____ <i>Includes reduction and augmentation (enlargement) operations.</i>	

COMBINING FORM	MEANING	TERMINOLOGY	MEANING
<b>mast/o</b>	breast	<u>mastitis</u> _____ <i>Usually caused by streptococcal or staphylococcal infection.</i>	
<b>men/o</b>	menses, menstruation	<u>mastectomy</u> _____ <i>Mastectomy procedures are discussed under carcinoma of the breast (see page 278).</i>	
<b>metr/o, metri/o</b>	uterus	<u>amenorrhea</u> _____ <i>Absence of menses for 6 months or for longer than three of the patient's normal menstrual cycles.</i>	
		<u>dysmenorrhea</u> _____	
		<u>oligomenorrhea</u> _____ <i>Infrequent menstrual periods or scanty menses.</i>	
		<u>menorrhagia</u> _____ <i>Abnormally heavy or long menstrual periods. Fibroids (see page 276) are a leading cause of menorrhagia.</i>	
		<u>metrorrhagia</u> _____ <i>Bleeding between menses. Possible causes of metrorrhagia include ectopic pregnancy, cervical polyps, and ovarian and uterine tumors.</i>	
		<u>menometrorrhagia</u> _____ <i>Excessive uterine bleeding during and between menstrual periods.</i>	

my/o, myom/o	muscle, muscle tumor	<u>myometrium</u> _____  <u>myomectomy</u> _____ <i>Removal of fibroids (myomas) from the uterus.</i>
nat/i	birth	<u>neonatal</u> _____
obstetr/o	pregnancy and childbirth	<u>obstetrics</u> _____ <i>From the Latin <i>obstetrix</i>, midwife.</i>
o/o	egg	<u>oogenesis</u> _____  <u>oocyte</u> _____ <i>Immature ovum.</i>
oophor/o	ovary	<u>oophorectomy</u> _____ <i>Oophor/o means to bear (phor/o) eggs (o/o). In a <i>bilateral oophorectomy</i>, both ovaries are removed.</i>
ov/o	egg	<u>ovum</u> _____ <i>Mature egg cell.</i>
ovari/o	ovary	<u>ovarian</u> _____
ovul/o	egg	<u>anovulatory</u> _____
perine/o	perineum	<u>perineorrhaphy</u> _____

COMBINING FORM	MEANING	TERMINOLOGY	MEANING
phor/o	to bear	<u>oophoritis</u> _____	
salping/o	fallopian tubes	<u>salpingectomy</u> _____	<i>Figure 8-12 shows a total hysterectomy with bilateral salpingo-oophorectomy (BSO).</i>
uter/o	uterus	<u>uterine prolapse</u> _____	
vagin/o	vagina	<u>vaginal orifice</u> _____ <i>An orifice is an opening.</i>	
		<u>vaginitis</u> _____ <i>Bacteria and yeasts (usually Candida) commonly cause this infection. Use of antibiotic therapy may cause loss of normal vaginal bacteria, resulting in an environment allowing yeast to grow.</i>	
vulv/o	vulva	<u>vulvovaginitis</u> _____ <u>vulvodynia</u> _____ <i>Chronic pain (with no identifiable cause) that affects the vulvar area (labia, clitoris, and vaginal opening).</i>	

## SUFFIXES

SUFFIX	MEANING	TERMINOLOGY	MEANING
-arche	beginning	men <u>arche</u>	
-cysis	pregnancy	pseudoc <u>yesis</u>	<p><i>Pseudo-</i> means false. No pregnancy exists, but physical changes such as weight gain and amenorrhea occur.</p>
-gravida	pregnant	primigravida	<p><i>A woman during her first pregnancy (primi- means first). Gravida also is used to designate a pregnant woman, often followed by a number to indicate the number of pregnancies (gravida 1, 2, 3).</i></p>

SUFFIX	MEANING	TERMINOLOGY	MEANING
-parous	bearing, bringing forth	<u>primiparous</u> _____ <i>An adjective describing a woman who has given birth to at least one child. Para also is used as a noun, often followed by a number to indicate the number of deliveries after the 20th week of gestation (para 1, para 2, para 3). When a woman arrives in the birthing facility, her gravidity and parity are important facts to include in the medical and surgical history. For example, G2P2 is medical shorthand for a woman who has had 2 pregnancies and 2 deliveries.</i>	
-rrhea	discharge	<u>leukorrhea</u> _____ <i>This vaginal discharge is normal or becomes more yellow (purulent or pus-containing) as a sign of infection.</i>	
-salpinx	fallopian (uterine) tube	<u>menorrhrea</u> _____ <u>pyosalpinx</u> _____	
-ticia	labor, birth	<u>dystocia</u> _____	

-version

act of turning

cephalic version

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*The fetus turns so that the head is the body part closest to the cervix (version can occur spontaneously or can be performed by the obstetrician). Fetal presentation is the manner in which the fetus appears to the examiner during delivery. A breech presentation is buttocks first, or feet first in a footling breech; a cephalic presentation is head first.*

## PREFIXES

PREFIX	MEANING	TERMINOLOGY	MEANING
dys-	painful	<u>dyspareunia</u> _____ <i>(dīs-pă-ROO-nē-ă.) Pareunia means sexual intercourse.</i>	
endo-	within	<u>endometritis</u> _____ <i>Usually caused by a bacterial infection.</i>	
in-	in	<u>involution</u> of the uterus _____ <i>Vol- means to roll. The uterus returns to its normal nonpregnant size.</i>	
intra-	within	<u>intrauterine device</u> _____ <i>Figure 8-13A shows an IUD.</i>	

PREFIX	MEANING	TERMINOLOGY	MEANING
multi-	many	<u>multipara</u> _____ <u>multigravida</u> _____ <i>A woman who has been pregnant more than once.</i>	
nulli-	no, not, none	<u>nulligravida</u> _____ <u>nullipara</u> _____ <i>Para 0. Figure 8-13B shows the cervix of a nulliparous woman and the cervix of a parous woman (who has had a vaginal delivery).</i>	
pre-	before	<u>prenatal</u> _____	
primi-	first	<u>primipara</u> _____	
retro-	backward	<u>retroversion</u> _____ <i>The uterus is abnormally tilted backward. This occurs in 30% of women.</i>	



## ABBREVIATIONS

AB	abortion	GYN	gynecology
AFP	alpha-fetoprotein—high levels in amniotic fluid of fetus or maternal serum indicate increased risk of neurologic birth defects in the infant.	hCG or HCG	human chorionic gonadotropin
<i>BRCA1</i> <i>BRCA2</i>	<u>breast cancer 1</u> and 2—genetic mutations associated with increased risk for breast cancer	HDN	hemolytic disease of the newborn
BSE	breast self-examination	HPV	human papillomavirus
CA-125	protein marker elevated in ovarian cancer (normal range of values is 0 to 35 U/mL)	HRT	hormone replacement therapy
		HSG	hysterosalpingography
		IUD	intrauterine device; contraceptive
		IVF	in vitro fertilization
		LEEP	loop electrocautery excision procedure
		LH	luteinizing hormone

C-section, CS	cesarean section	LMP	last menstrual period
CIN	cervical intraepithelial neoplasia	multip	multipara; multiparous
CIS	carcinoma in situ	OB	obstetrics
CVS	chorionic villus sampling	para 2-0-1-2	a woman's reproductive history: 2 full-term infants, 0 preterm, 1 abortion, and 2 living children
Cx	cervix	Pap test	test for cervical or vaginal cancer
D&C	dilation (dilatation) and curettage	PID	pelvic inflammatory disease
DCIS	ductal carcinoma in situ; a precancerous breast lesion that indicates a higher risk for invasive ductal breast cancer	PMS	premenstrual syndrome
		primip	primipara; primiparous

DUB	dysfunctional uterine bleeding	SLN biopsy or SNB	sentinel lymph node biopsy—blue dye or a radioisotope (or both) identifies the first lymph node draining the breast lymphatics
FHR	fetal heart rate		
FSH	follicle-stimulating hormone		
G	gravida (pregnant)	TAH-BSO	total abdominal hysterectomy with bilateral salpingo-oophorectomy
GnRH	gonadotropin-releasing hormone—secreted by the hypothalamus to stimulate release of FSH and LH from the pituitary gland	UAE VH	uterine artery embolization vaginal hysterectomy

# ABBREVIATIONS

Abbreviation	Meaning
AB, Ab	abortion
AI	artificial insemination
BTL	bilateral tubal ligation
CPD	cephalopelvic disproportion
D&C	dilation and curettage <i>or</i> dilatation and curettage
D&E	dilation and evacuation
DNA	deoxyribonucleic acid
DOB	date of birth
EDC	estimated date of confinement
EDD	expected date of delivery
FHR	fetal heart rate
FSH	follicle-stimulating hormone
FTND	full term normal delivery
GC, Gc	gonococcus
GYN	gynecology
HCG, hCG	human chorionic gonadotropin

HPV	human papillomavirus
HRT	hormone replacement therapy
HSV	herpes simplex virus
IUD	intrauterine device
IVF	in vitro fertilization
LH	luteinizing hormone
LMP	last menstrual period
NB	newborn
OB	obstetrics
OCPs	oral contraceptive pills
PAP	Papanicolaou
PID	pelvic inflammatory disease
PMS	premenstrual syndrome
RNA	ribonucleic acid

THANK  
you!

