

## Chapter 11

### Reproductive System

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### Learning Objectives

1. Recognize or write the functions of the reproductive system.
2. Recognize or write the meanings of Chapter 11 word parts and use them to build and analyze terms.
3. Write terms for selected structures of the female reproductive system and their associated functions or match them with their descriptions.
4. Write the names of the diagnostic terms and pathologies related to the female reproductive system when given their descriptions or match terms with their meanings.
5. Match surgical and therapeutic interventions for the female reproductive system or write the names of the interventions when given their descriptions.

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### Learning Objectives, cont.

6. Write terms for selected structures of the male reproductive system and their associated functions or match them with their descriptions.
7. Write the names of the diagnostic terms and pathologies related to the male reproductive system when given their descriptions or match terms with their meanings.
8. Match surgical and therapeutic interventions for the male reproductive system or write the names of the interventions when given their descriptions.
9. Write terms for sexually transmitted diseases or match them with their causative agents.
10. Spell terms for the reproductive system and sexually transmitted diseases correctly.

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## Function First!

The major function of the reproductive system is to produce offspring.

gonads:

-secrete hormones

-produce reproductive cells:

➤ ovaries(female)-produce eggs (ova)

➤ testes(male)- produce sperm (spermatozoa)

- Reproductive organs, whether male or female, or internal or external, are called the genitals or genitalia.

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## Word Parts: Female

gynecology- study of diseases of the female reproductive system

- cervic/o                      cervix
- vagin/o, colp/o            vagina
- gynec/o                      female
- uter/o, hyster/o            uterus
- metr/o, metr/i              measurement or uterine tissue
- ovar/o, oophor/o          ovary
- salping/o                    uterine tube (fallopian tube)
- vulv/o                        vulvagyne/o      female

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## Reproductive System

- -cidal                        killing
- cyst/o, vesic/o            bladder, cyst, or sac
- genit/o                      genitals
- gonad/o                     genitals or reproduction
- men/o                        month
- -plasia                      development or formation
- rect/o                        rectum
- urethr/o                     urethra
- urin/o                        urine

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## Other Word Parts

- -cidal                        killing
- cyst/o, vesic/o            bladder
- genit/o                      genitals
- gonad/o                     genitals or reproduction
- men/o                        month
- -plasia                      development or formation
- rect/o                        rectum
- urethr/o                     urethra
- urin/o                        urine

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### External Structures (Fig 11-1 pg 263)

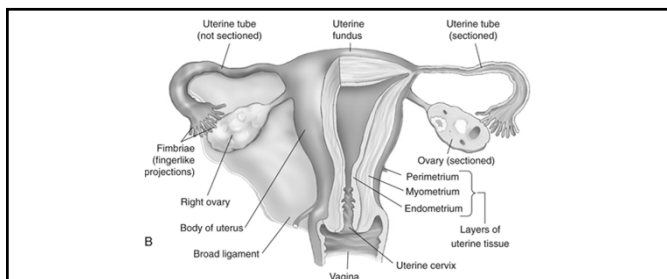
External genitalia are called vulva, which include:

- mons pubis
- labia majora-larger skin fold protecting the vaginal opening
- labia minora –smaller skin fold protecting the vaginal opening
- clitoris
- opening for glands

### Internal Genitalia

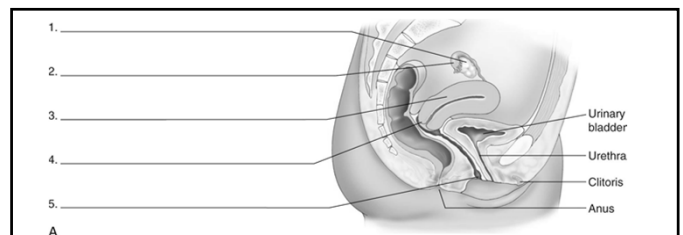
- ovaries (left and right)
- uterine tube or fallopian tube (left and right)
- uterus
- vagina
- special glands

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**Fig. 11-2B** Anterior view of the internal organs of the female reproductive system. The left ovary, the left uterine tube, and the left side of the uterus are sectioned to show their internal structure.  
ovary-produces ova and hormones  
uterine tubes (fallopian tubes)-transport ova to the uterus  
uterus-provides nourishment from the time the fertilized egg is implanted to the time of birth of fetus  
cervix uteri (cervix)- the lowermost cylindrical part of the uterus  
vagina- "the birth canal"

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**Fig. 11-2A** Female genitalia, midsagittal and anterior views.

- 1) ovary : produces ova and hormones.
- 2) uterine tube (fallopian tube): transport ova to the uterus
- 3) uterus: the muscular organ that prepares to receive and nurture the fertilized ovum.
- 4) cervix uteri: the lower and narrower part of the uterus.
- 5) vagina: the canal that connects the internal and external genitalia. It receives the sperm during intercourse

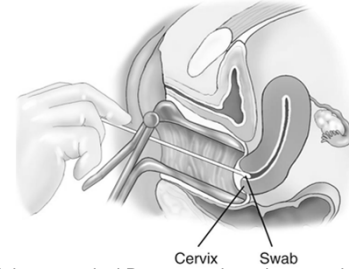
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### Layers of Uterine Tissue

- endometrium-innermost layer
- myometrium- middle layer of thick muscular tissue
- perimetrium- membrane that surrounds the uterus

- (endo-)=inside
- (my/o)= muscle
- (peri-) = around
- (metr/o)= uterine tissue, or measurement
- (-ium)=membrane

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**Fig. 11-3** Obtaining a cervical Pap smear by using a vaginal speculum.

- Specimens (scrapings) for cytology can be collected during the pelvic examination.
- The cells are then studied microscopically.
- Both Pap smears and biopsies are performed to detect cancer of the cervix using a vaginal speculum.
- Dysplasia is a change in shape, growth, and number of cells, a precancerous condition that can be detected by Pap smears.

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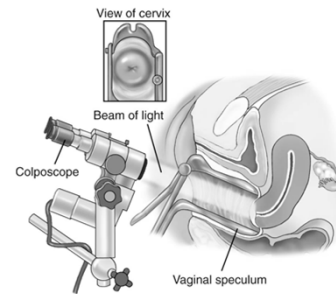
### Quick Quiz!

Another name for the *uterine tube* is

- A. vagina
- B. salpinx
- C. cervix uteri
- D. clitoris

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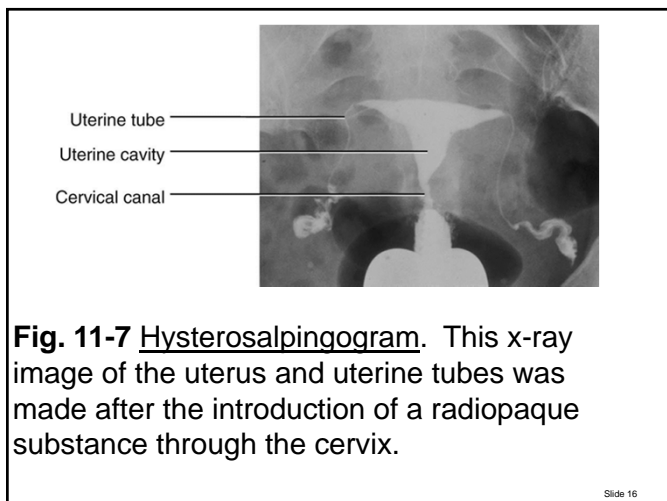
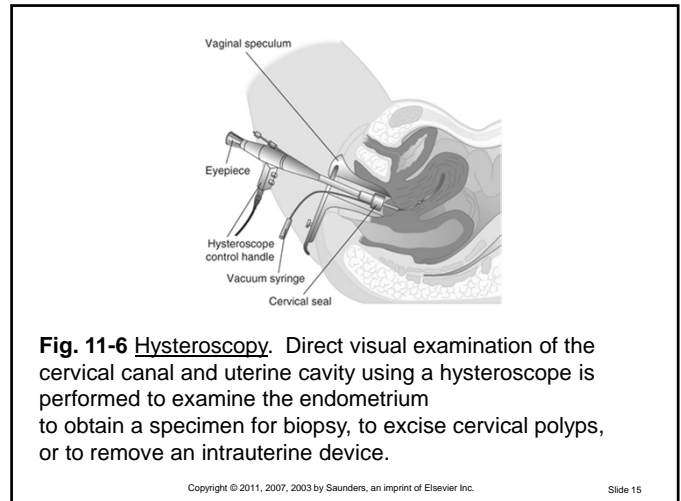
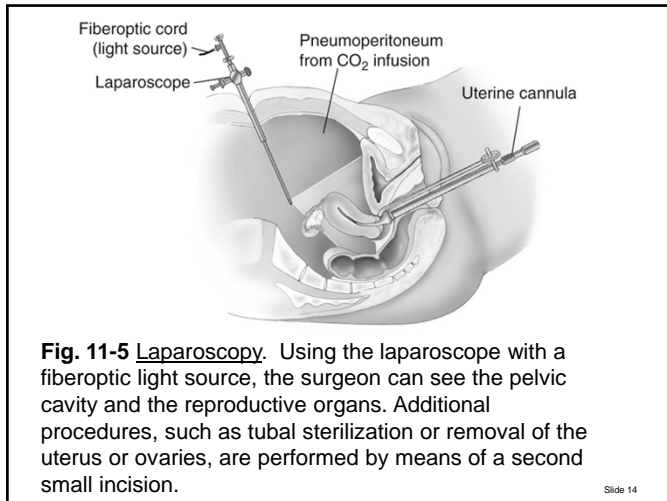
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**Fig. 11-4** Colposcopy. The vagina and cervix are examined with a colposcope.

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### Menstrual Irregularities

- **amenorrhea** (*a-*, without, + *men/o*, month, + *-rrhea*, discharge): absence of menstrual flow when it is normally expected.
- **dysmenorrhea** (*dys-*, difficult): painful menstruation.
- **menorrhagia** (*-rrhagia*, hemorrhage): excessive flow during menstruation.
- **metrorrhagia** (*metr/o*, uterine tissue): bleeding from the uterus at any time other than during the menstrual period. Metrorrhagia literally means hemorrhage from the uterus.

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## Diseases and Disorders

**cervical polyp:** a fibrous or mucous-stalked tumor of the cervical mucosa (lining) (polyp is a general term for tumors that bleed easily and are found on mucous membranes).

**colpitis** (*colp/o*, vagina, + *-itis*, inflammation): inflammation of the vagina; same as vaginitis.

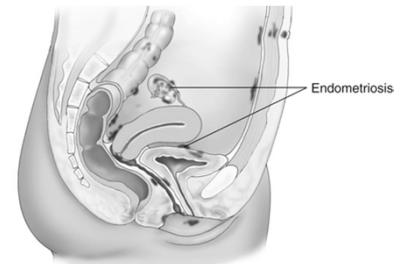
**cervicocolpitis:** inflammation of the vagina and cervix.

**endometriosis** (*endo-*, inside, + *metr/i*, uterine tissue, + *-osis*, condition): a condition where tissue resembling the endometrium is found abnormally in various locations in the pelvic cavity.

**endometritis:** inflammation of the endometrium.

\*\*\*\*\*be careful of spellings

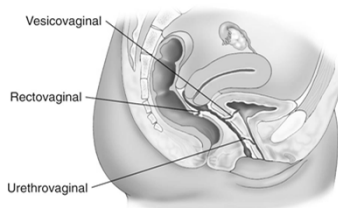
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**Fig. 11-8** Common sites of endometriosis. This abnormal location of endometrial tissue is often the ovaries and, less frequently, other pelvic structures.

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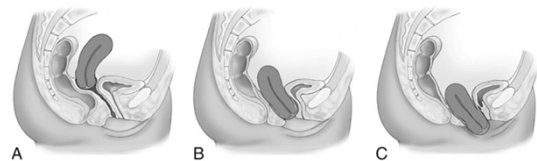
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**Fig. 11-9** Sites of vaginal fistulas.

**fistula:** an abnormal, tubelike passage between two internal organs, or between an internal organ and the body surface. Abnormal openings between the vagina and the bladder, rectum, and urethra are shown. These abnormal openings are called vesicovaginal fistula, rectovaginal fistula, and urethrovaginal fistula, respectively.

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**Fig. 11-10** Hysteroptosis. *hyster/o*, uterus, + *ptosis*, sagging):

Three stages of uterine prolapse.

**A**, Grade I: uterus bulges into the vagina but does not protrude through the entrance.

**B**, Grade II: cervix is visible within the vagina.

**C**, Grade III: body of the uterus and the cervix protrude through the vaginal orifice.

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## Diseases and Disorders, cont.

myoma- my/o=muscle, -oma=tumor

➤ common benign fibroid tumor of the uterine muscle.

pelvic inflammatory disease (PID)- infection that occurs when bacteria move from the vagina or cervix into the uterus, fallopian tubes, ovaries, or pelvis. It is commonly caused from STD's.

premenstrual syndrome (PMS) – symptoms such as nervous tension, edema, headache, painful breasts, sleep changes occurring a few days before the onset of menstruation

vulvitis – inflammation of the vulva

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## Diseases and Disorders, cont.

oophoritis – (oophor/o=ovary), (-itis= inflammation)

oophorosalingitis – (salping/o= uterine/fallopian tube)

salpingitis

salpingocele – (-cele=hernia)

cystocele –( cyst/o=bladder) herniation or protrusion of the urinary bladder through the wall of the vagina

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## Quick Quiz!

Metrorrhagia is

- A. absence of menstrual flow
- B. painful menstruation
- C. excessive flow during menstruation
- D. bleeding from the uterus at any time other than during the menstrual period

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## Surgical and Therapeutic Interventions

- contraception, contraceptive
- spermicide
- intrauterine device
- tubal ligation
- in vitro fertilization (IVF)
- hormone replacement therapy (HRT)

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Surgical Interventions, cont.

- laparotomy
- colpoplasty
- colporrhaphy, salpingorrhaphy
- hysterectomy, laparohysterectomy
- oophorectomy, salpingectomy,
- 
- oophoro-salpingectomy

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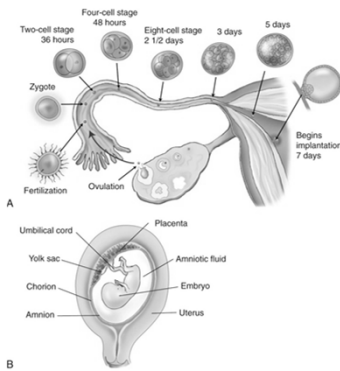
Surgical Interventions, cont.

- conization of the cervix – excision of a cone of tissue from the cervix, for biopsy or lesion removal
- dilation and curettage (D&C) a surgical procedure that expands the cervical opening (dilation or dilatation) so that the uterine wall can be scraped (curettage).
- endometrial ablation: destruction of a thin layer of the uterus to stop heavy menstrual bleeding.

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**Fig. 11-12** Fertilization, implantation, and growth of the embryo. **A**, Mature ovum is released in ovulation. The ovum is fertilized by a sperm, and the product of fertilization, the zygote, undergoes rapid cell division, finally implanting in the endometrium on approximately day 7. **B**, The placenta and extraembryonic membranes (amnion and chorion) form and surround the embryo, providing nourishment and protection. The human embryonic stage begins about 2 weeks after conception and lasts until about the end of week 8, after which time the fetal stage begins.



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Obstetric Word Parts

- amni/o                      amnio (the innermost fetal membrane)
- fet/o                         fetus (fetal=pertaining to the fetus)
- nat/i                         birth

human chorionic gonadotropin (HCG) - hormone that is produced within a few days after fertilization has occurred. Chorionic refers to one of the fetal membranes (chorion). Testing for this hormone in urine or blood can indicate whether a woman is pregnant. HCG can be detected long before other signs of pregnancy appear.

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### Pregnancy and Childbirth

- ultrasonography
- ectopic pregnancy
- labor
- vaginal delivery
- cesarean section

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### Pregnancy and Childbirth, cont.

- Obstetrics is the branch of medicine that specializes in the care of females during pregnancy and childbirth. The specialist is an obstetrician.
- par/o to bear offspring
- parturition- same as childbirth
- antepartum- before childbirth (ante-, before)
- postpartum- after childbirth (post-, after)
- gestation- another name for pregnancy

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### Pregnancy and Childbirth, cont.

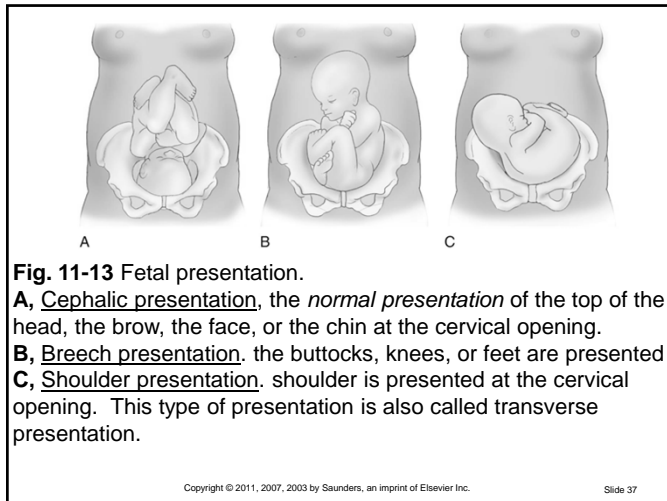
- para I, II, etc. # pregnancies resulting in *live births*
- -para a woman who has given birth
- unipara (uni-, one)
- secundipara (secundus is latin for second)
- tripara (tri-, three)
- nullipara a woman who has never given birth to a viable offspring (nulli-, none)

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### Pregnancy and Childbirth, cont.

- gravida pregnant woman
- Prefix + -gravida # pregnancies
- primigravida , gravida I = a woman who is pregnant for the first time (primi-, first)
- gravida II
- gravida III, etc.
- \*\*\*\*Note that *gravida* refers only to pregnancy, whereas *para* designates successful pregnancies resulting in live births. A woman could be *gravida III* but *para 0* (same as *nullipara*).

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### Obstetrical Terms

**abruptio placentae**- separation of the placenta from the uterine wall after 20 weeks or more or during labor, often resulting in severe hemorrhage

**amniocentesis** : puncture of the amniotic sac through the abdomen to remove amniotic fluid, which can be studied to detect genetic disorders or other abnormalities.

**chorionic villus sampling**: sampling of the placental tissue for prenatal diagnosis of potential genetic defects. It is performed earlier in pregnancy than amniocentesis.

**amniotomy(-tomy, incision)**: surgical rupture of the fetal membranes, performed to induce or expedite labor.

**episiotomy**: a surgical procedure in which an incision is made to enlarge the vaginal opening for delivery.

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### Obstetrical Terms, cont.

- **placenta previa**: the placenta is attached to the uterine wall close to or covering the cervix
- **hemolytic disease of the newborn (erythroblastosis fetalis)** is a blood disorder in a fetus or newborn infant. It may develop when a mother and her unborn baby have different blood types (called "incompatibility"). The mother produces substances called antibodies that attack the developing baby's red blood cells and causes anemia. It involves Rh factor and ABO blood groups.

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### Quick Quiz!

A woman who has given birth twice is

- para I
- para II
- gravida I
- gravida II

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## Breast Terms

mast/o, mamm/o= breast

mastalgia, mastodynia, mammalgia: painful breast.

- -algia & -dynia = pain

mastitis: inflammation of the breast (-itis=inflammation)

mastoptosis: sagging breast (-ptosis=sagging, prolapse)

mastopexy: surgical procedure to lift breast

(-pexy=surgical fixation)

mammoplasty: plastic surgery of the breast

(-plasty=surgical repair)

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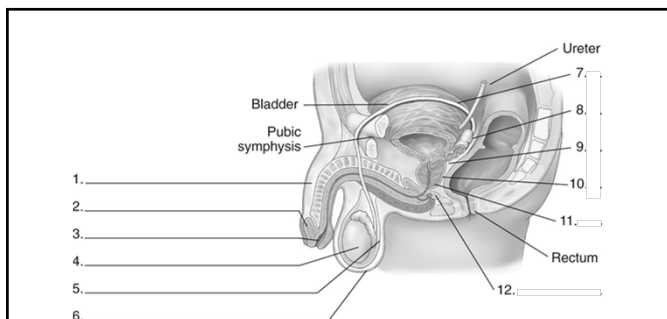
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## Male Reproductive System

- testes (testis, testicle) the male gonads, are responsible for production of both sperm and hormones.
- spermatozoa (spermatozoon)= sperm, the mature male sex cell
- testosterone –important hormone produced by the testes that induces and maintains male secondary sex characteristics.

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**Fig. 11-17** Structures of the male reproductive system.

Sperm are produced in the testes(4) and are transported up a tube called the vas deferens(7). From there sperm go to the urethra(11) and exit the body through the penis(1).

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## Word Parts: Male Reproductive System

- |                      |  |
|----------------------|--|
| • orchi/o, orchid/o  | testes                                 |
| • test/o, testicul/o | testes                                 |
| • pen/o              | penis                                  |
| • prostat/o          | prostate                               |
| • scrot/o            | scrotum, bag                           |
| • semin/o            | semen                                  |
| • spermat/o          | sperm                                  |
| • -cidal             | killing                                |
| • vas/o              | vessel or duct<br>(or ductus deferens) |

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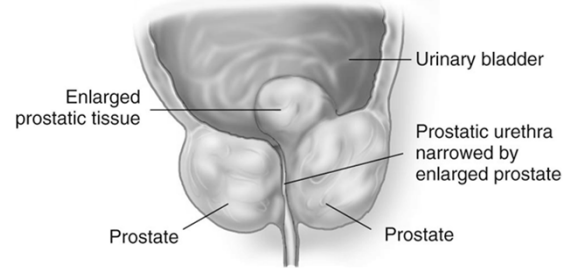
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### Word Parts: Male Reproductive System, cont.

- semin/o      semen
- spermat/o    sperm
- -cidal        killing
- vas/o         vessel or duct  
(sometimes ductus deferens)

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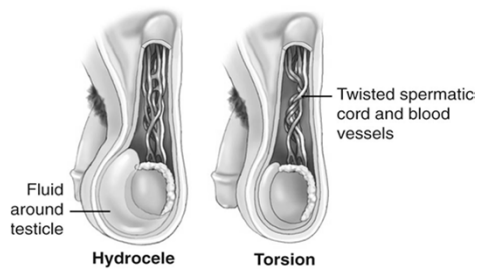
**Fig. 11-19 Benign prostatic hyperplasia. (BPH)**

As the prostate (shown in cross-section) enlarges, it extends upward into the bladder, and inward, obstructing the outflow of urine from the bladder.  
hyper-, increase + -plasia, formation

BPH is a nonmalignant, noninflammatory enlargement of the prostate.

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**Fig. 11-20 Hydrocele and testicular torsion.**

**Hydrocele** (*hydr/o*, water, + *-cele*, hernia): accumulation of serous fluid (resembling serum) in a bodily cavity, especially around the testicle

**Testicular torsion**: twisted spermatic cord and blood vessels which cuts off the blood supply to the testicle

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### Diseases and Disorders

**cryptorchidism**: undescended testicle.

- (*crypt/o*, hidden, + *orchid/o*, testis, + *-ism*, condition)

**prostatic carcinoma**: a slowly progressing cancer of the prostate

**prostatitis**: inflammation of the prostate  
(prostat/o=prostate) (-itis= inflammation)

**orchiditis, orchitis**: inflammation of a testis  
(orchid/o, orch/o=testes)

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## Surgical Terms

orchi/o, orchid/o=testes

orchidectomy, orchiectomy

(-ectomy=surgical removal)

orchidoplasty (-plasty=surgical repair)

orchiopexy (-pexy=surgical fixation)

orchiotomy (-tomy=surgical incision)

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## Surgical Terms, cont.

prostatectomy : removal of all or part of the prostate

transurethral prostatectomy (TURP) (*trans-*, across, + *urethr/o*, urethra): removal of part of the prostate gland through an incision in the urethral wall (abbreviated as TURP). It is also called transurethral resection, or TUR. Resection is a term that means partial excision of a structure.

transurethral microwave therapy(TUMT): treatment of BPH performed through the urethra *using microwave energy* to selectively raise the temperature and destroy prostatic tissue

transurethral needle ablation(TUNA): treatment of BPH performed through the urethra *using low-level radio frequency energy*. Ablation is a general term for excision or removal of a growth or any part of the body.

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- **Fig. 11-21 Vasectomy.** This surgical procedure is performed as a permanent method of contraception, although it sometimes can be surgically reversed by vasoplasty (vasovasostomy). In a vasectomy, a small incision is made in the scrotum, and a piece of the vas deferens is removed.

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## Quick Quiz!

Surgical removal of a testicle is

- orchidectomy
- orchidoplasty
- orchiopexy
- orchiotomy

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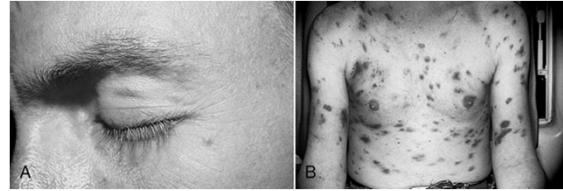
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## Sexually Transmitted Diseases (STDs)

- Gonorrhea
- Syphilis
- Chlamydia
- Chancroid-ulcer
- AIDS
- Herpes genitalis (genital herpes)
- Condyloma acuminatum (genital warts)
- Hepatitis B, C, and D
- Trichomoniasis
- Candidiasis (yeast infection)
- Pubic lice

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**Fig. 11-24** Kaposi sarcoma. - a malignant neoplasm that usually occurs in people with AIDS.

**A,** Early lesion of Kaposi sarcoma.

**B,** Advanced lesions of Kaposi sarcoma. Note widespread hemorrhagic plaques and nodules.

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## Quick Quiz!

*Kaposi sarcoma* usually occurs in people with

- A. chlamydial infection
- B. herpes genitalis
- C. AIDS
- D. syphilis

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