4.06 Understand the functions and disorders of the reproductive system
Understand the functions and disorders of the female reproductive system
Essential questions

- What are the functions of the female reproductive system?
- What are some common disorders of the female reproductive system?
- How do you relate the body’s hormone control to the female reproductive system?
- How do you relate the body’s use of nutrients to the female reproductive system?
Functions of the female reproductive system

- **Ovary**
  - Produce ova
  - Produce the female sex hormones, **estrogen** and **progesterone**

How many chromosomes are in an oocyte? 46!

Did you know a female will produce all of the oocytes she will ever have five months before she is born?
Functions of the female reproductive system

- **Fallopian tubes (oviducts)**
  - Lined with mucous membrane, smooth muscle and ciliated projections called fimbriae.
  - Ova are propelled down the oviducts to the uterus.
Functions of the female reproductive system

- **Uterus**
  - Functions as a holding tank for unborn fetus.
  - Contains 3 layers: perimetrium, myometrium, and endometrium.
Functions of the female reproductive system

- **Cervix**
  - Allows flow of menstrual blood through the opening
  - Directs sperm to the uterus

**What instrument is used to observe the cervix?**
Functions of the female reproductive system

- **Vagina**
  - Receives the penis during intercourse
  - Allows passage of menstrual fluid from the uterus
  - Birth canal; allows movement of the baby from the uterus
Functions of the female reproductive system

- **External genitalia**
  - Provide protection for the internal female reproductive organs
Functions of the female reproductive system

- **Mammary glands** (breasts)
  - Main function: produce milk for infants
Functions of the female reproductive system

Menstrual Cycle
- Usually 28 days
- Four stages
  - Follicle stage
  - Ovulation stage
  - Corpus luteum stage
  - Menstruation stage

What is the first menstrual cycle called?
Functions of the female reproductive system

- **Follicle stage**
  - Usually lasts about 10 days
  - Follicle-stimulating (FSH) hormone is released by the pituitary
  - FSH stimulates the follicle and ovum to mature
  - Resulting in the release of estrogen and preparation of the uterine lining
Functions of the female reproductive system

- **Ovulation stage**
  - The pituitary stops producing FSH and starts producing luteinizing hormone (LH)
  - At day 14 in the menstrual cycle, the follicle ruptures and the ovum is released
Functions of the female reproductive system

- **Corpus luteum stage**
  - Secretes progesterone and continues to do so if the egg is fertilized, preventing further ovulation and maintaining the uterine lining
  - Lasts about 14 days

Which hormone is secreted by the implanted fertilized egg?

[Diagram of the ovarian cycle showing FSH, Estradiol, LH surge, and Luteal Phase]
Functions of the female reproductive system

- **Menstruation stage**
  - Final stage if fertilization of the ova has not taken place
  - The corpus luteum diminishes progesterone production
  - The uterine lining is broken down and discharged over the course of 3 to 6 days
4.06 Understand the functions and disorders of the reproductive system
Disorders of the female reproductive system

Breast cancer

- The leading cause of death in woman between the ages of 32 and 52

- Treatment
  - Chemotherapy
  - Radiation therapy
  - Partial or full mastectomy
  - Lumpectomy

- Life saving measures
  - Monthly breast exams
  - Mammogram
  - Ultrasound
Disorders of the female reproductive system

Self breast exam

1. Using a mirror, inspect your breasts with your arms at your sides.
2. Look for any changes in contour, swelling, dimpling of skin, or appearance of the nipple.
3. Using the pads of your fingers, press firmly on your breast, checking the entire breast and armpit area.
4. There are three patterns you can use to examine your breast: the circular, the up-and-down, and the wedge patterns.
5. Gently squeeze the nipple of each breast and report any discharge to your doctor immediately.
6. Examine both breasts lying down. To examine the right breast, place a pillow under your right shoulder and place your right hand behind your head. Using the pads of your fingers, press firmly, checking the entire breast and armpit area.

4.06 Understand the functions and disorders of the reproductive system
Disorders of the female reproductive system

- **Cervical Cancer**

  - What is a major cause of cervical cancer?
  
  - How is it communicated?
  
  - Why do some women get cervical cancer but not all?

**What are the benefits of receiving the HPV vaccine?**
Disorders of the female reproductive system

Endometriosis

- Discuss endometriosis.
- What are some symptoms?
- What are some side effects?
- How is it treated?
Disorders of the female reproductive system

Mastitis

- What is mastitis?
- What causes it?
- How is it contracted?
- How is it treated?
Disorders of the female reproductive system

Pelvic inflammatory disease (PID)

- Define PID.
- What are risk factors?
- What are some complications of PID?
- How is PID treated?
Disorders of the female reproductive system

Polycystic ovarian syndrome

- Define this disorder.
- What is the primary cause?
- There are many symptoms. What are the classic symptoms?
- How is it treated?
Disorders of the female reproductive system

Toxic shock syndrome

- Define toxic shock syndrome.
- What causes it?
- How is it treated?
Disorders of the female reproductive system

Vaginal yeast infection

- What is the cause?
- How can it be prevented?
- How is it treated?

Not a sexually transmitted illness. However, sexual partners may be infected and need to be treated to prevent re-infection.
Relevance of nutrients to the female reproductive system

- The female reproductive system plays a vital role in homeostasis
  - Help regulate hormonal balance and fetal development during pregnancy

Did you know???

- **Vitamin D** - prevents osteoporosis
- **Iron** - helps hemoglobin deliver oxygen
- **Magnesium** - helps prevent heart disease, diabetes, and colon cancer
Understand the functions and disorders of the male reproductive system
Essential questions

- What is the function of the male reproductive system?
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Functions of the male reproductive system

Hormone production

What is the male sex hormone?

What does it do?
Function of the male reproductive system

Define reproduction
Functions of the male reproductive system:

Discuss the functions of these structures:

Testes
  - Seminiferous tubules
  - Epididymis
Functions of the male reproductive system

Sperm

- What is the function of the sperm?
- How many sperm does the average male have?
- How is this different from the female reproductive system?
Functions of the male reproductive system:

Discuss the functions of these structures:

- **Vas Deferens**
- **Ejaculatory duct**

What is their relevance to health and reproduction?
Functions of the male reproductive system:

**Seminal vesicles**

What is the function of the seminal vesicles?

What would happen if this was not working?
Functions of the male reproductive system:

**Urethra**

How does the urethra serve the reproductive system?

Connects with what structure of the urinary system?
Functions of the male reproductive system:

**Prostate gland**

What is the function of the secretion produced by the prostate gland?

What would happen if it hypertrophied?
Functions of the male reproductive system:

Bulbourethral glands
Also called Cowper’s gland

What is the function of the secretion produced by the bulbourethral glands?

How is it important to reproduction?
Functions of the male reproductive system:

What is the reproductive function of the penis?
Disorders of the male reproductive system and their treatments

Cryptorchidism

- How will have this condition?
- What are the risks if left untreated?
- What is the treatment?

4.06 Understand the functions and disorders of the reproductive system
Disorders of the male reproductive system and their treatments

**Epididymitis**

- What are the most common causes of epididymitis?
- What are some risk factors that predispose someone to this condition?
Disorders of the male reproductive system and their treatments

**Erectile Dysfunction**

Also known as **impotence**

Failure of the penis to become rigid enough for intercourse to occur.

- **Common causes:**
  - Acute
  - Chronic

**How is it treated?**
Disorders of the male reproductive system and their treatments

**Benign prostatic hypertrophy (BPH)**

- What are the usual symptoms?
- How is most likely to develop BPH?
- How is it treated?
- Is it cancer?
Disorders of the male reproductive system and their treatments

Prostate cancer

- What age group is most susceptible to prostate cancer?
- How is it treated?
- What are the reproductive side effects to treatment?
Disorders of the male reproductive system and their treatments

Testicular cancer

- What are the risk factors for developing testicular cancer?
- What are the most likely symptoms?
Disorders of the male reproductive system and their treatments

Testicular self-examination

- Testicular self-examination is an examination of the testicles. The testicles (also called the testes) are the male reproductive organs that produce sperm and the hormone testosterone. They are located in the scrotum under the penis.

- Perform this test during or after a shower. This way, the scrotal skin is warm and relaxed. It's best to do the test while standing.
Disorders of the male reproductive system and their treatments

Testicular self-examination

- 1. Gently feel your scrotal sac to locate a testicle.
- 2. Hold the testicle with one hand while firmly but gently rolling the fingers of the other hand over the testicle to examine the entire surface.
- 3. Repeat the procedure with the other testicle.

You may perform a testicular self-exam every month if you have any of the following risk factors:
- Family history of testicular cancer
- Past testicular tumor
- Undescended testicle
- You are a teenager or young adult
Reproductive process: conception

4.06 Understand the functions and disorders of the reproductive system
Reproductive process

Conception
- when the sperm and the egg unite
- pregnancy occurs

4.06 Understand the functions and disorders of the reproductive system
Discuss the process of conception.
Functions of the female reproductive system

Pregnancy

- Define pregnancy
- What is the human gestational period?
- Terms to remember:
  - Embryo
    - 1-8 weeks
  - Fetus
    - 9-40 weeks
  - Newborn
    - At birth

4.06 Understand the functions and disorders of the reproductive system
Reproductive process: fetal development

- 6-8 weeks
- 12-14 weeks
- 17-19 weeks
- 5-6 months

4.06 Understand the functions and disorders of the reproductive system
Functions of the female reproductive system

Labor

- **Dilation stage**
  - The uterine smooth muscle begins to contract
  - Contraction move the fetus down the uterus and cause the cervix to dilate
  - The cervix is completely dilated at 10 centimeters
Functions of the female reproductive system

- **Placental stage**
  - The last stage of labor
  - Also known as afterbirth
  - Delivered due to final uterine contractions

![Placental stage diagram](image)
Functions of the female reproductive system

- **Expulsion stage**
  - The baby is actually delivered
    - Natural
    - Cesarean

What is an episiotomy? Why might it be necessary?
Disorders of the female reproductive system

Ectopic pregnancy

- What does ectopic mean?
- What are some symptoms of ectopic pregnancy?
- What is the most common treatment option?
- What are the risk factors?
Postpartum depression

- New mothers often feel restless, anxious, fatigued and worthless
- Some new moms worry they will hurt themselves or their babies
- Unlike the "baby blues," postpartum depression does not go away quickly
- What causes this condition?
Disorders of the female reproductive system

Infertility

- Unable to become pregnant after a year of trying
- If a woman keeps having spontaneous abortions, it is also called infertility

ZIFT, In Vitro, GIFT
Disorders of the male reproductive system

Infertility

- Failure for pregnancy to occur after one year of trying to conceive

- Discuss the causes of infertility in the male.

- What are some treatment options?
Reproductive process: Female contraception

**Abstinence**

**Sterilization**
- Tubal ligation

**Barrier methods**
- Female condom
- Spermicides
- Diaphragm
- Cervical cap
- Contraceptive sponge

**Hormonal Methods**
- Birth Control Pills
- Depo-Provera
- Lunelle
- NuvaRing/Vaginal Ring
- Ortho Evra Patch/Birth Control Patch
- Intrauterine Device (IUD)
Reproductive process: male contraception

Abstinence

Vasectomy
- Vasectomy
- Permanent

Condoms

Compare the benefits and concerns with each form of male contraception.
Sexually transmitted infections

- Chlamydia
- Genital warts
- Gonorrhea
- Herpes
- HIV
- Syphilis
- Trichomonas
Essential questions

- What are the functions of the female reproductive system?
- What are some common disorders of the female reproductive system?
- What is the function of the male reproductive system?
- What are some common disorders of the male reproductive system?
- How do the male and female reproductive system work together?
- How do you relate the body’s hormone control to the male and female reproductive systems?