



COLLIER COUNTY PUBLIC SCHOOLS

# Human Growth and Development

Anatomy, Pregnancy and Childbirth

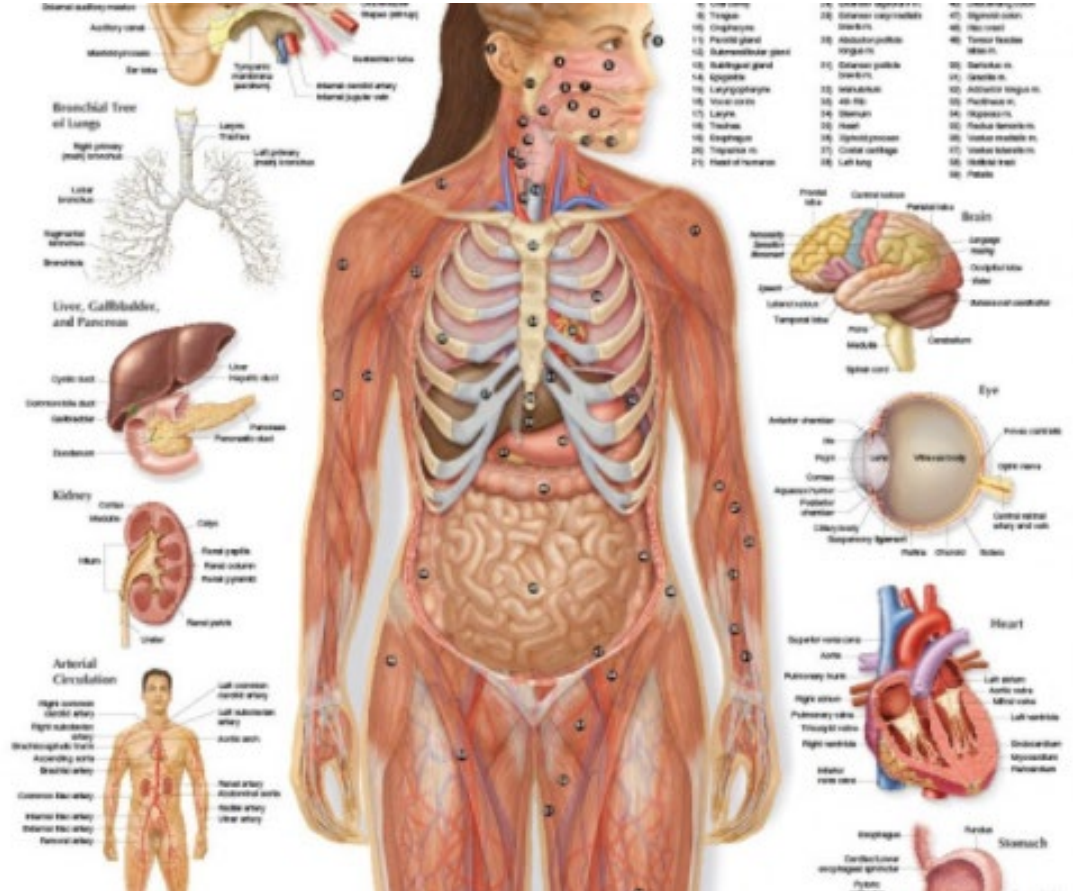
Lesson 1

Developed by Collier County Public Schools Teaching and Learning Department

*Clinically reviewed by: Dr. Karysse Trandem, DO, FACOOG Medical Director & OB/GYN Physician, Pregnancy Resource Centers of SWFL*

# Lesson 1 Learning Target

- Students will be able to identify human reproductive anatomy, organs, systems, and their functions, including pregnancy and childbirth, and the consequences of teenage pregnancy.
  - Scientific Focus: Heredity and environmental factors on growth and development



# Lesson 1 Performance Scale

## Performance Scale – Human Growth and Development (Grades 6–8)

### Level 4 – Beyond Desired Effect

- Demonstrate evidence of comprehending reproductive anatomy terminology and concepts related to pregnancy and childbirth, including consequences of teenage pregnancy.

### Level 3 – Target Goal

- Demonstrate ability to comprehend and use concepts for health promotion, disease prevention, interpersonal skills, and decision-making to reduce or avoid health risks related to Human Growth and Development.
- Explain human reproductive anatomy, organs, systems, and their functions, including pregnancy and childbirth.

### Level 2 – Foundational Level

- Explain consequences of teenage pregnancy.
- Explain stages of childbirth.
- Explain trimesters of pregnancy.
- Explain that fertilization is the initial phase of pregnancy.
- Explain the phases of the menstruation cycle.
- Explain some male and female reproductive system functions.
- Explain some appropriate male reproductive anatomy.
- Explain some appropriate female reproductive anatomy.
- Identify endocrine system functions.
- Identify endocrine system hormones.

### Level 1 – Beginning Cognitive and Physical

- Identify how heredity and environment play a role in growth and development.
- Recognize some body functions related to human growth and development.
- Recognize some reproductive anatomy and reproductive systems.
- Recognize some endocrine system glands, organs, and functions.

# Heredity and Environment

## Two main factors that impact our growth and development

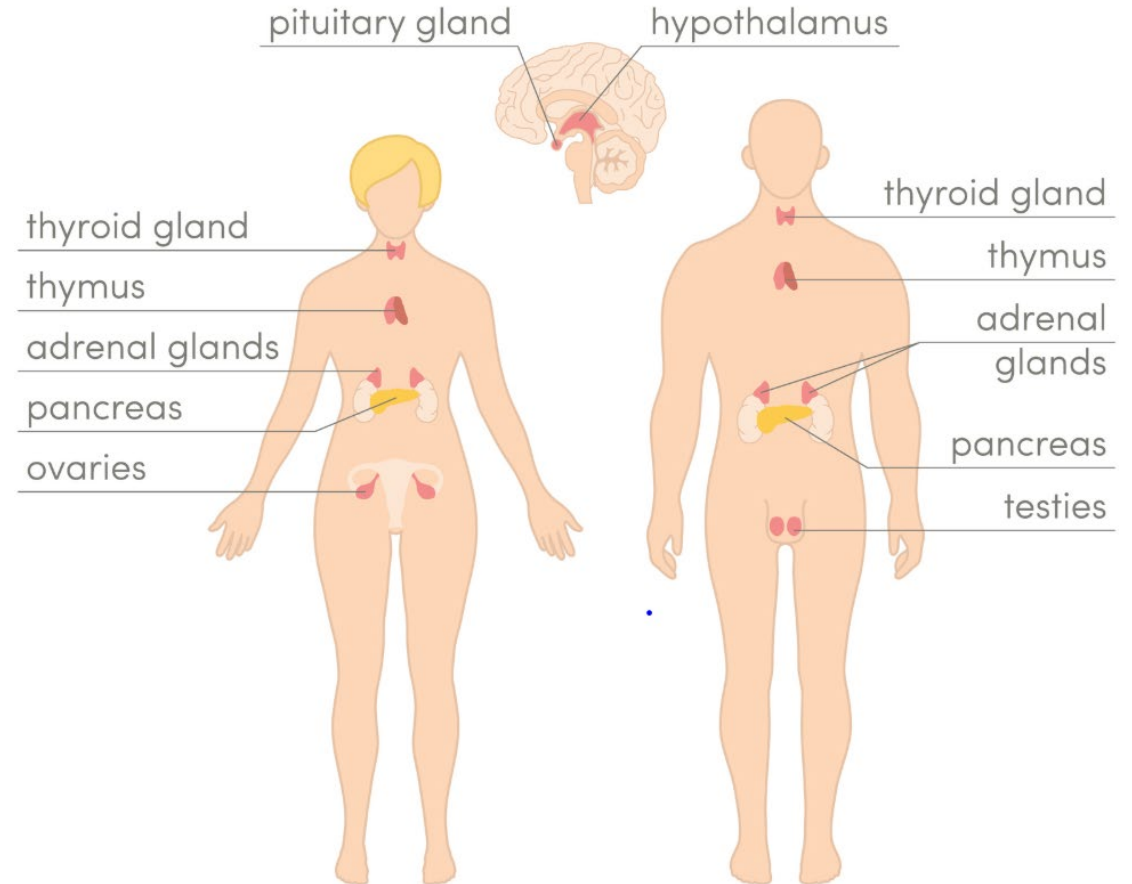
- **Heredity: includes the genetic traits passed from biological parents (chromosomes XX and XY)**
  - Our DNA plays a role in the onset of puberty and the vast changes that occur in the body.
- **Environment: includes all the factors of our lifestyle such as nutrition, sleep, pollution, stress, hygiene, and healthy or unhealthy behaviors.**
  - These are not independent of another; they can cause adaptations/mutations over time.

\*Both factors directly affect puberty and our growth and development.

# Endocrine System and Hormones

## The Endocrine System

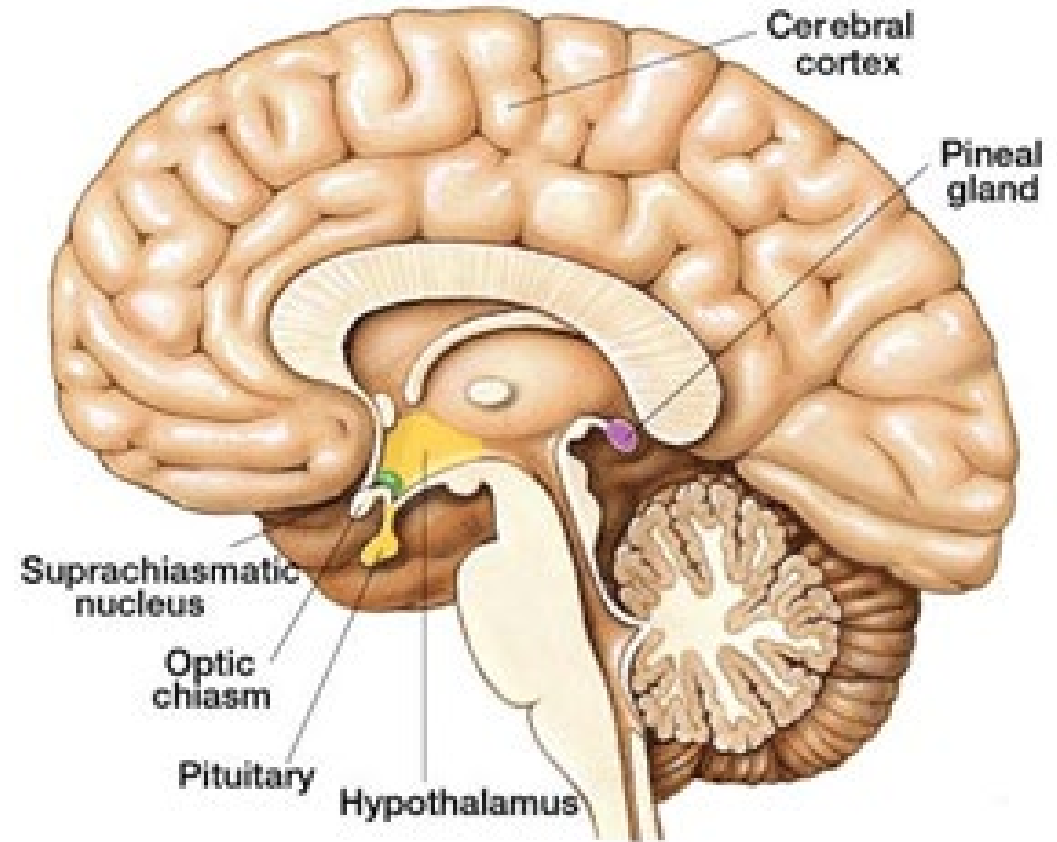
- The endocrine system is a network of glands in your body that make the hormones that help cells talk to each other. Hormones are responsible for almost every function in your body.
- If your endocrine system isn't working properly, you might have problems during puberty or with simply managing stress. This organ system is the control system for major responses such as flight, fight, freeze (adrenaline), metabolism (pancreas), and ability to reproduce (ovaries/testes).



# Endocrine System

## Glands and Functions

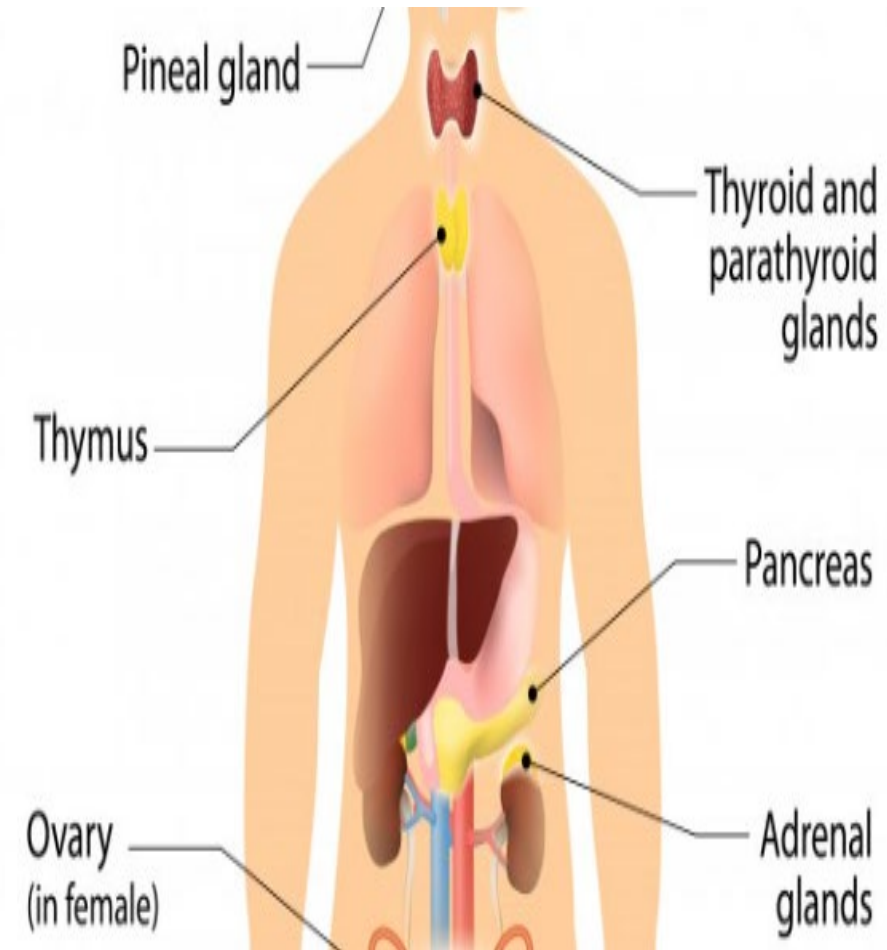
- **Hypothalamus:** This organ connects your endocrine system with your nervous system. Its main job is to tell your pituitary gland to start or stop making hormones.
- **Pituitary gland:** This is your endocrine system's master gland. It uses information it gets from your brain to tell other glands in your body what to do. It makes many important hormones, including the growth hormone; prolactin, which helps breastfeeding moms make milk; and luteinizing hormone, which manages estrogen in women and testosterone in men.
- **Ovaries (estrogen) and Testes (testosterone):** Included in both the Endocrine and Reproductive Systems since they produce hormones that assist in a variety of functions.
- **Pineal gland:** Makes a chemical called melatonin that helps your body get ready to go to sleep.



# Endocrine System

## Glands and Functions

- **Thyroid gland:** This gland makes thyroid hormone, which controls your metabolism. If this gland doesn't make enough (a condition called hypothyroidism), everything happens more slowly. Your heart rate might slow down, and you might gain weight. If it makes too much (hyperthyroidism), everything speeds up. Your heart might race, and you might lose weight without trying.
- **Parathyroid:** This is a set of four small glands behind your thyroid. They play a role in bone health. The glands control your levels of calcium and phosphorus.
- **Thymus:** This gland makes white blood cells called T-lymphocytes that fight infection and are crucial as a child's immune system develops. The thymus starts to shrink after puberty.
- **Adrenals:** Best known for making the "fight or flight" hormone adrenaline (also called epinephrine), these two glands also make hormones called corticosteroids. They affect your metabolism, among other things.
- **Pancreas:** This organ is part of both your digestive and endocrine systems. It makes digestive enzymes that break down food. It also makes the hormones insulin and glucagon. These ensure you have the right amount of sugar in your bloodstream and your cells. If you don't make insulin, which is the case for people with type 1 diabetes your blood sugar levels can get dangerously high. In type 2 diabetes, the pancreas usually makes some insulin but not enough.

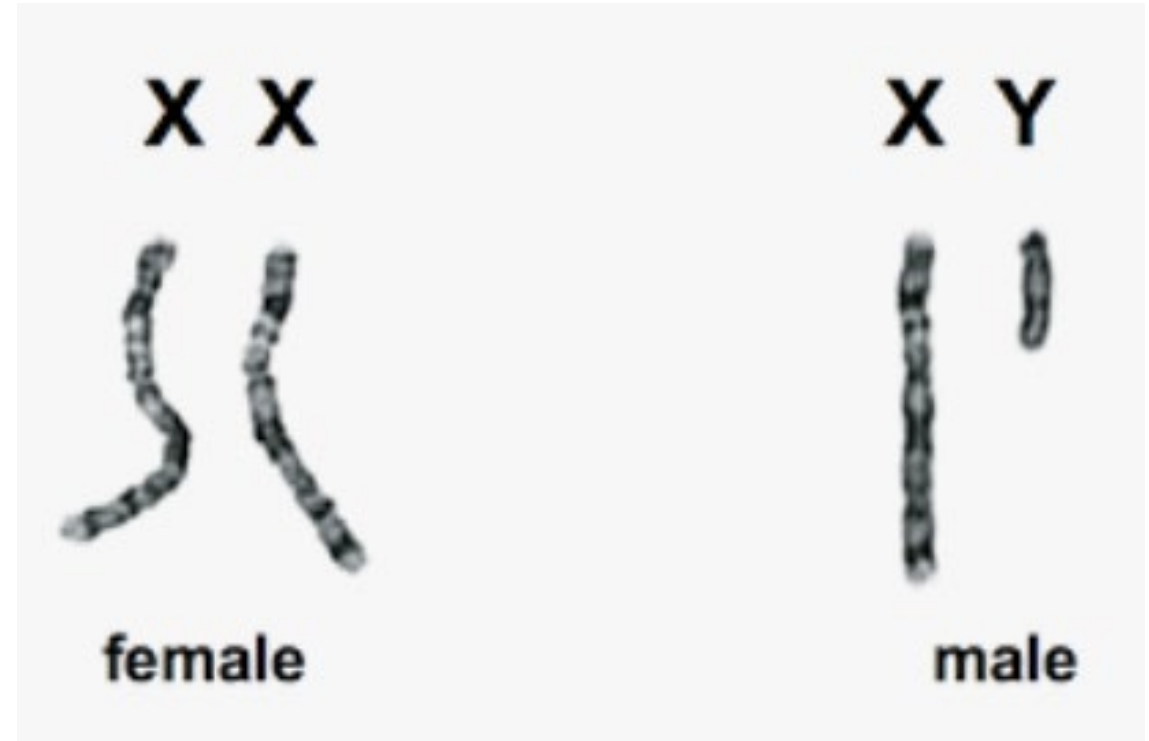


# Check for Understanding

- **Which gland is responsible for your metabolism? Why is this so important?**
  - ✓ Thyroid Gland
- **Which small gland is in control of most of the hormones released?**
  - ✓ Pituitary Gland
- **In 5 words or less, describe the purpose of the endocrine system**
  - ✓ Creates/Controls Glands and Hormones

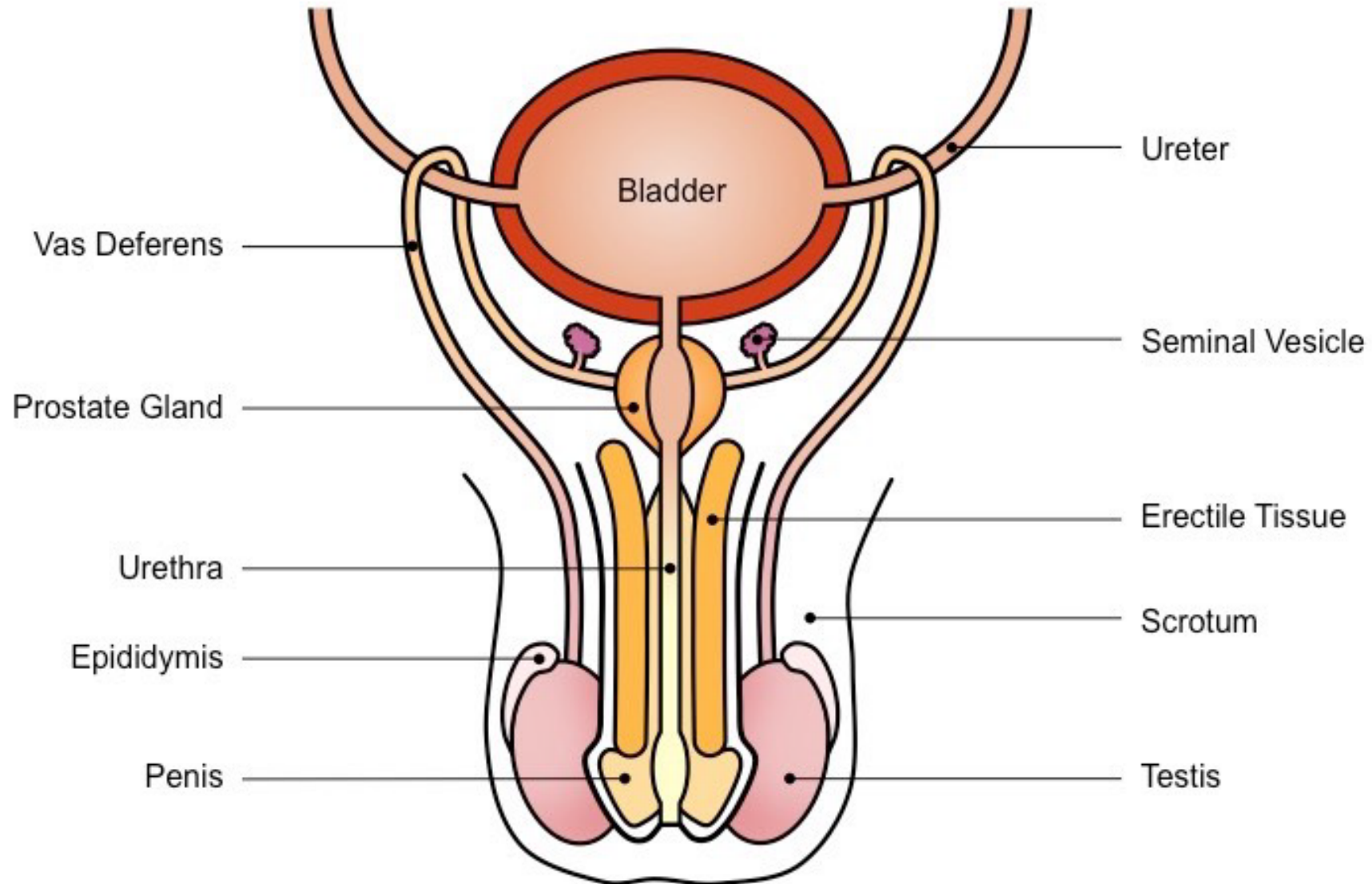
# Reproductive System

- A person's sex as male or female is indicated by the person's sex chromosomes, naturally occurring sex hormones, and internal and external genitalia at birth.
- Male and female reproductive roles are binary, stable, and unchangeable.



# Reproductive System

## Male Anatomy



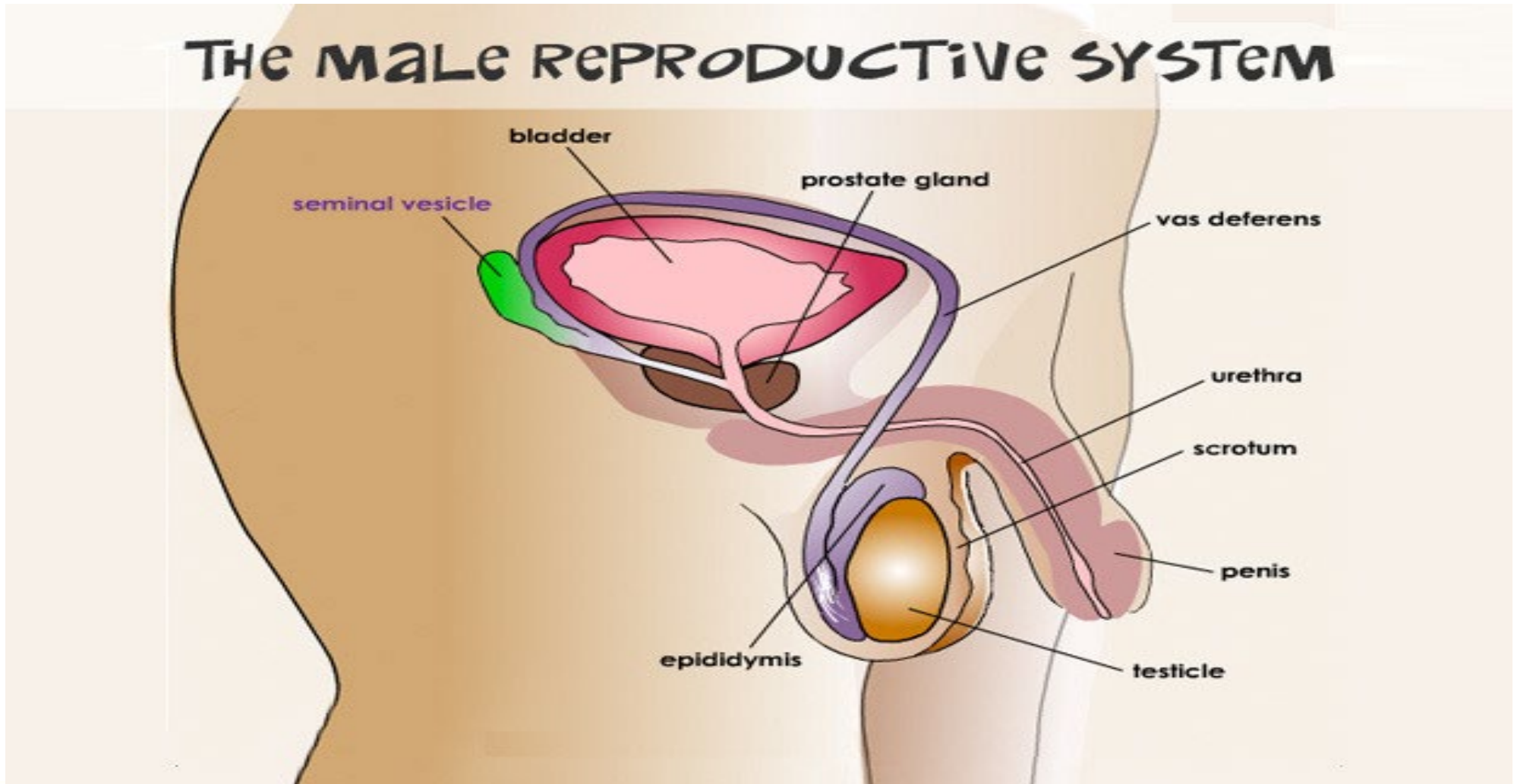
# Reproductive System

## Male Anatomy Reviewed

- **Penis:** the male sex organ used to pass urine and the passageway for the release of semen from the body
- **Scrotum:** the sac-like pouch that helps regulate temperature and protects the testes
- **Testes:** the two glands that produce testosterone and sperm. Male reproductive cells are called sperm cells located in the testicles
- **Seminal Vesicles:** the two small glands that add a fluid to semen to help sperm move
- **Vas Deferens:** two long tubes through which sperm passes from the testes to the urethra
- **Prostate Gland:** a gland that makes fluid that is added to sperm to help sperm stay alive
- **Cowper's Gland:** a gland that makes the final protective fluid for sperm for easier mobility (sometimes called Bulbourethral gland)
- **Urethra:** a narrow tube through which urine and semen pass out of the body

# Reproductive System

## Male Anatomy Continued



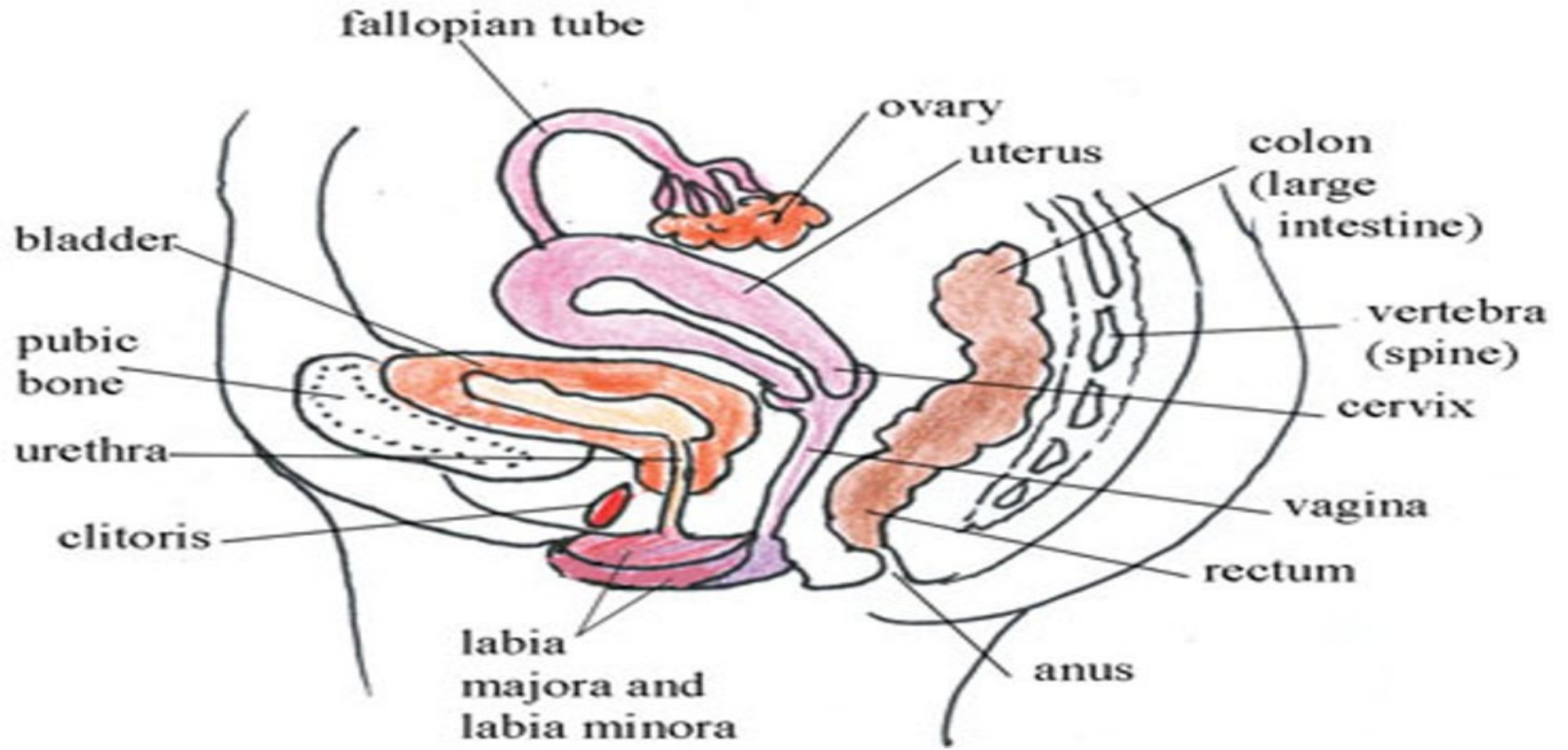
# Check for Understanding

Answer the questions below

- **Which Gland is responsible for the production of testosterone and sperm?**
  - ✓ Testes
- **Which glands produce the fluids that make up semen?**
  - ✓ Testes
  - ✓ Seminal Vesicles
  - ✓ Cowper's Gland
  - ✓ Prostrate Gland

# Reproductive System

## Female Anatomy



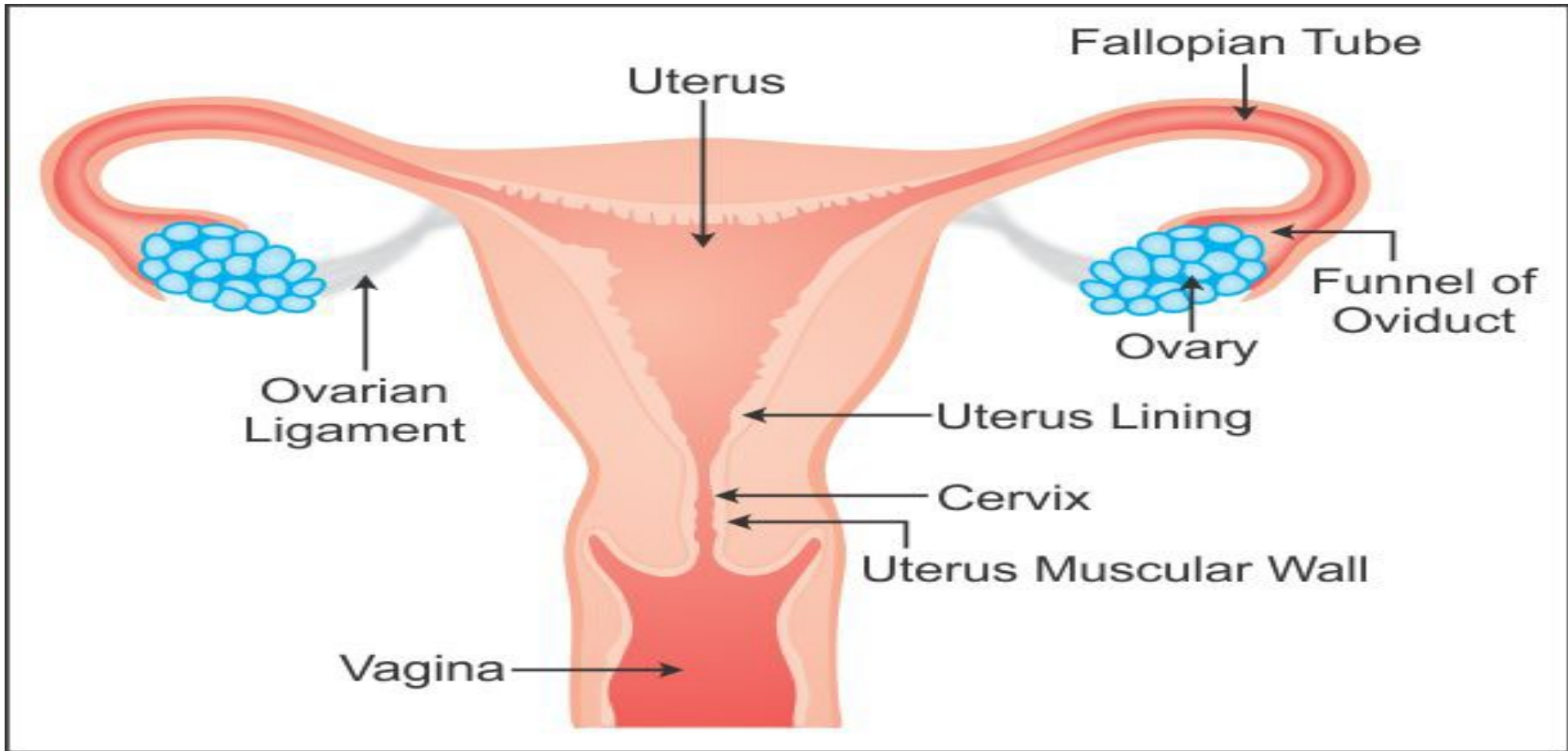
# Reproductive System

## Female Anatomy Reviewed

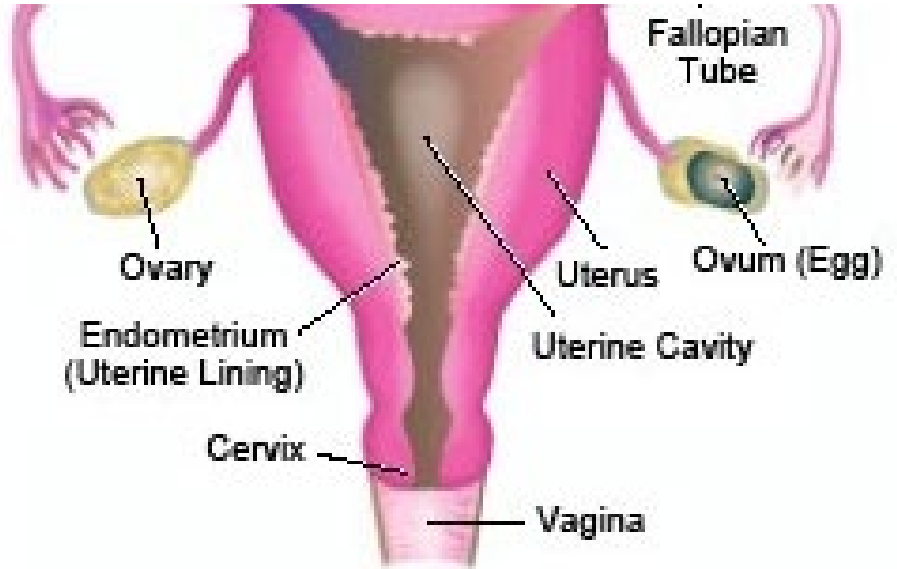
- **Ovaries** - female sex glands/organs - where eggs containing your DNA are stored and released
- **Fallopian Tubes** - the structure that allows egg(s) to travel from the ovaries to the uterus
- **Uterus** - the organ that houses a fertilized egg/fetus/baby during pregnancy and sheds it's lining during menstruation
- **Cervix** - the lower part of the uterus that allows the flow of menstrual blood and passage of a baby during labor
- **Vagina**- a muscular structure that allows menstrual blood to leave the body and allows baby to pass through during delivery
- **Ova** – the single egg released by the ovaries through the fallopian tubes (in typical healthy systems occurs monthly, alternating ovaries)

# Reproductive System

## Female Reproductive System



# Menstruation Cycle and Phases



# Menstruation Cycle and Phases

- **Menstrual Cycle:** occurs every 21-35 days and is a series of changes represented by 4 phases that include:
  - maturation of ovum/egg
  - release of egg(ovulation)
  - uterine lining preparation (thickening)
  - menstruation(shedding of lining)
- **Menstruation:** is the time when blood from uterine lining is shed from contractions in the uterine walls (cramps) and exits through the vagina
- Lasts typically 3-7 days (everyone is different)

# Check for Understanding

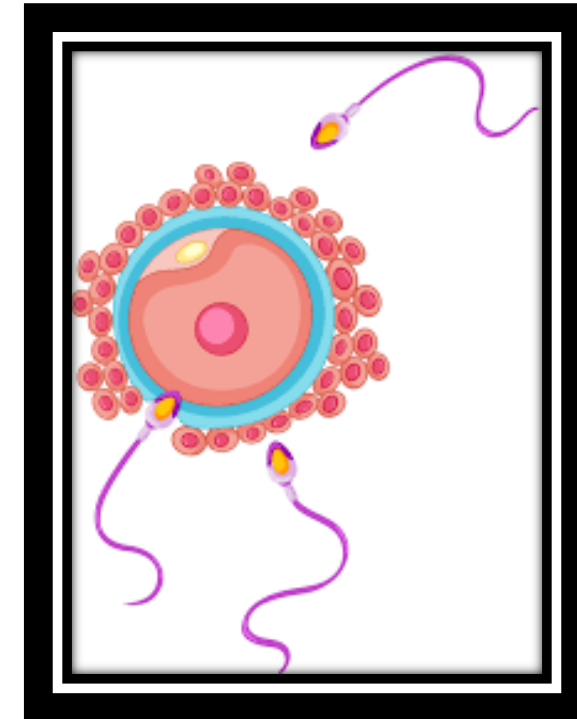
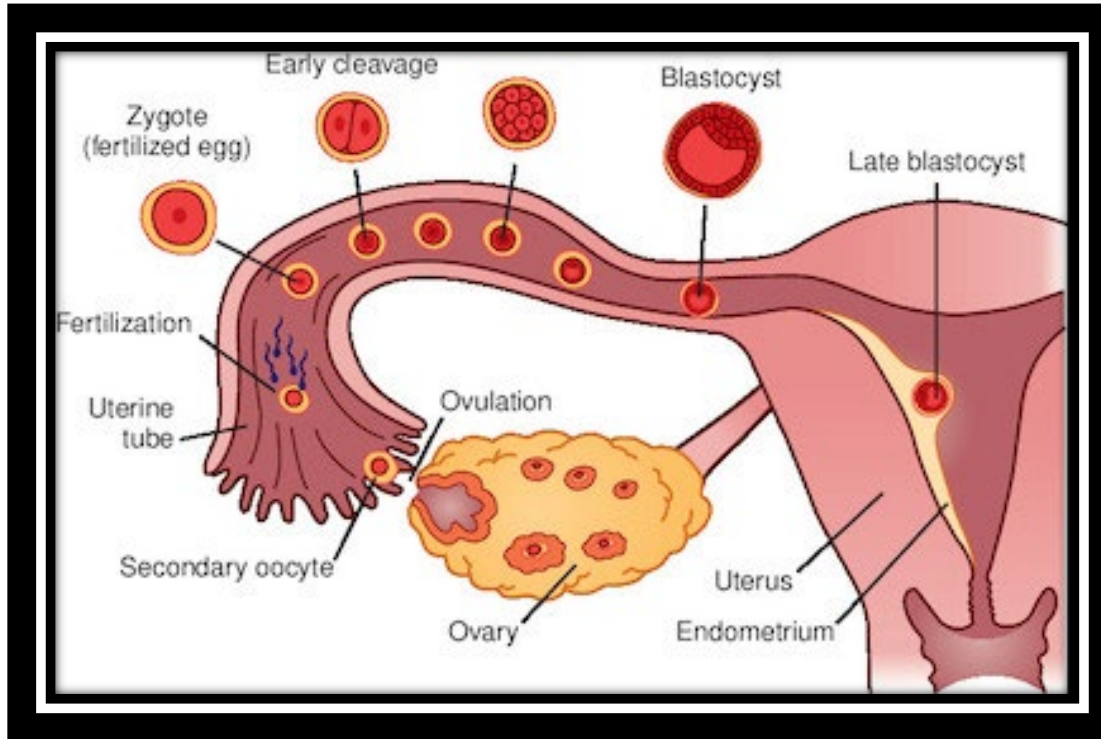
Answer the questions below

- Which gland/organ is responsible for the production of estrogen and ova?  
✓ Ovaries
- Which female organ sheds its lining through menstruation?  
✓ Uterus
- How many phases occur in the menstruation cycle?  
✓ 4

# Pregnancy

- Pregnancy and childbirth are other functions of the female reproductive system.
- The process begins with fertilization, where biological males impregnate biological females by fertilizing the female egg with male sperm and the female then gestates the offspring through pregnancy

# Fertilization



- The moment that a sperm enters an egg (ovum), the DNA genetic material of male's sperm and the female's egg are combined to form a new, unique genetic cell referred to as a zygote.

# Pregnancy Trimesters

- A pregnancy is divided into trimesters:
  - The first trimester is from week 1 to the end of week 12.
  - The second trimester is from week 13 to the end of week 26.
  - The third trimester is from week 27 to the end of pregnancy.

The 9 months of pregnancy are divided into **three stages**, or trimesters, each with distinct characteristics in terms of mother's experiences and fetal development.

### FIRST TRIMESTER

**Mom:** Rapid influx of hormones causes intense pregnancy symptoms

**Baby:** First heartbeat at 8 weeks; grows to 2.9" and 0.8 oz.

1 Month 2 Month 3 Month

### SECOND TRIMESTER

**Mom:** Most symptoms lessen; pregnancy starts to show

**Baby:** Gender reveal at 18 - 20 weeks; grows to 14" and 1.7 lbs.

4 Month 5 Month 6 Month

### THIRD TRIMESTER

**Mom:** Extra weight makes it harder to sleep and move

**Baby:** All organs finish maturing; grows to 20.3" and 8.1 lbs.

7 Month 8 Month 9 Month

# First Trimester

## 1-12 Weeks

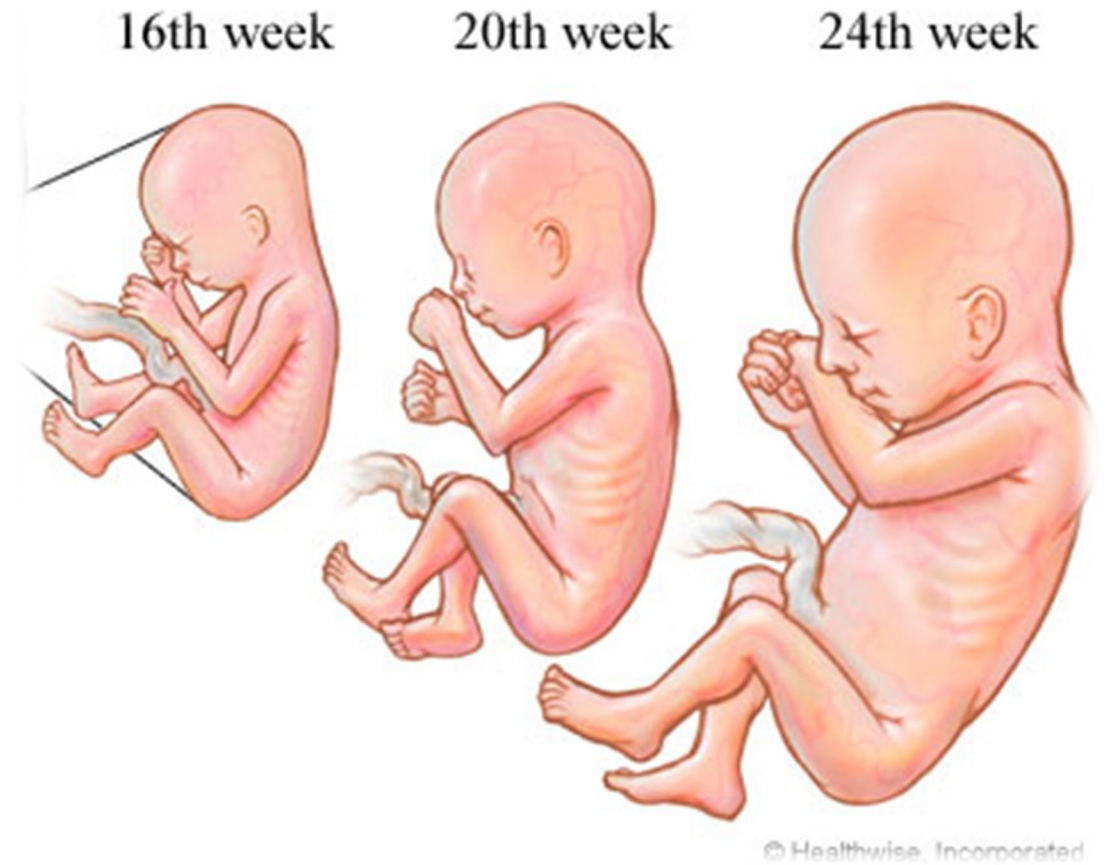
- The growing baby is described as a fetus starting at 9 weeks. At this point, the baby's heart, hands, feet, brain, genitalia, and other organs are present.



# Second Trimester

## 13-26 Weeks

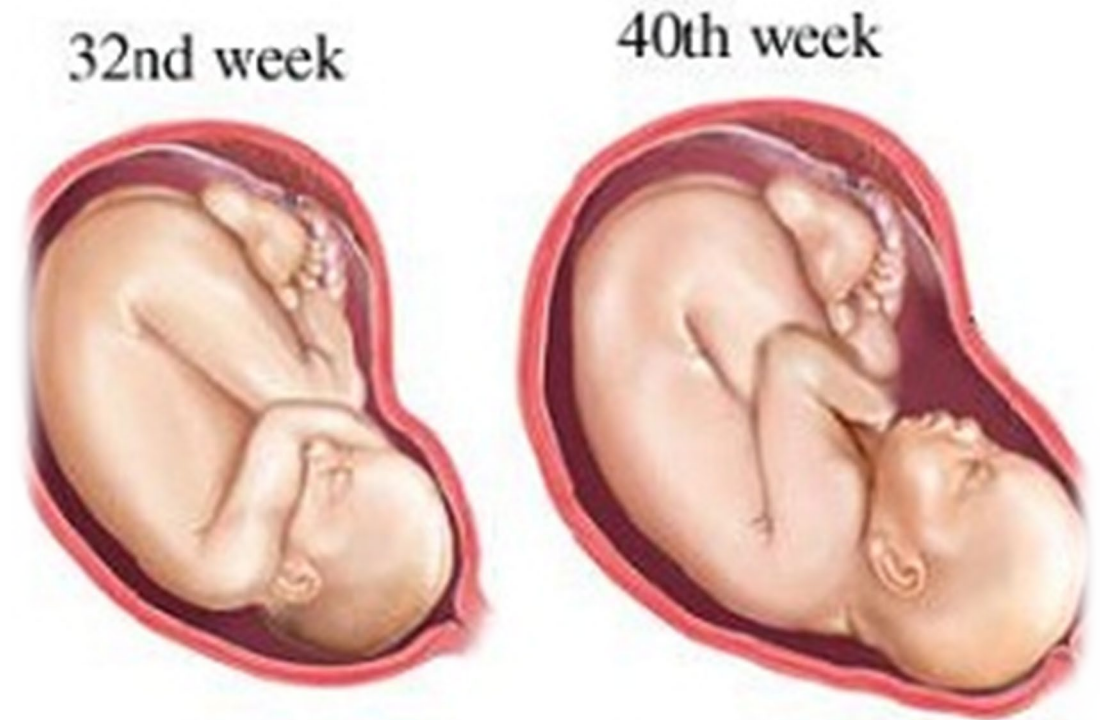
- The baby starts to hear, recognize voices, and swallow.
- Small hairs also become noticeable.



# Third Trimester

27-40 Weeks

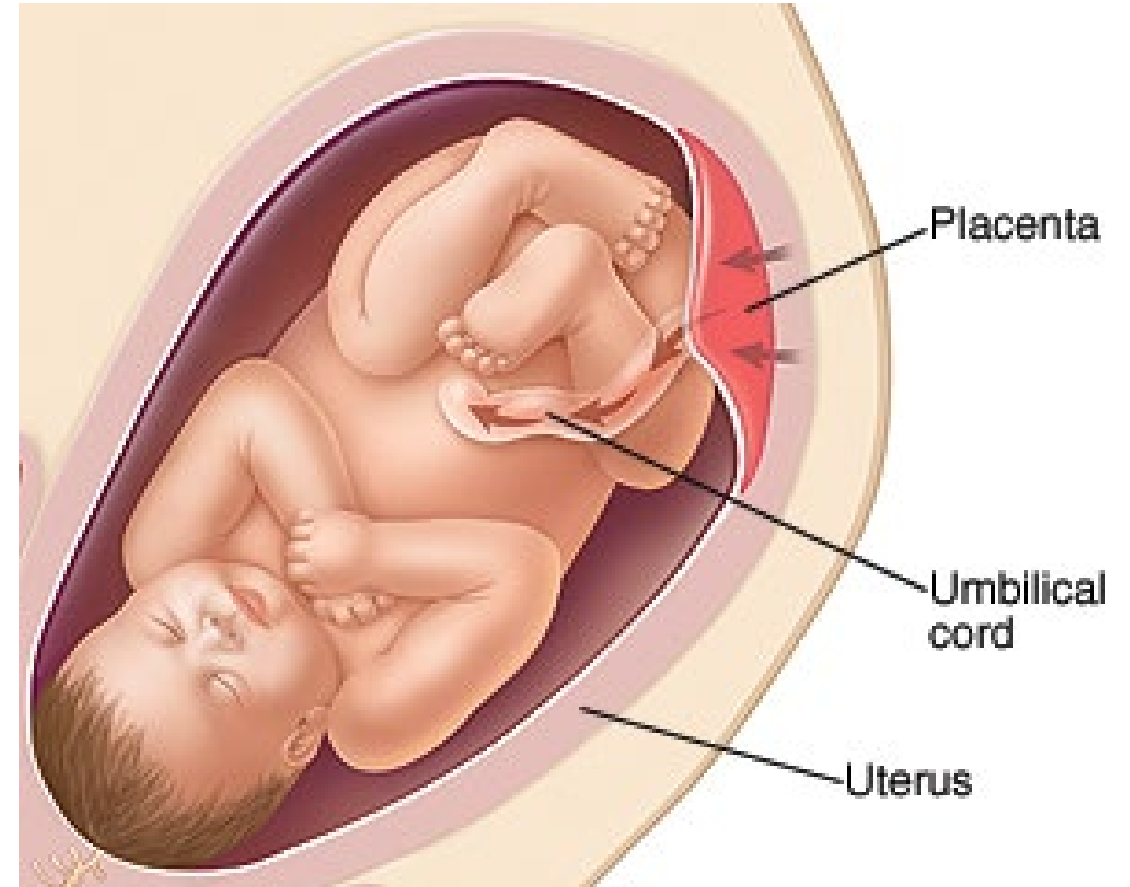
- The baby's lungs mature, and the baby begins to position itself head down.
- By the end of the third trimester, the baby weighs, on average, 6 to 9 pounds.



Third Trimester of Pregnancy

# Pregnancy Anatomy

- The umbilical cord connects to the baby's abdomen from the placenta, which in turn is connected to the mother's uterus.
- The placenta is responsible for producing pregnancy hormones and hosting important nutritional exchanges between the mother and the baby's blood supply.



# Genetic Disorders and Birth Defects

- Genetic disorders and birth defects are common, costly, and critical conditions that affect 1 in every 33 babies born in the United States each year.
- These abnormalities can often be found by testing the mom's blood or on an ultrasound before the baby is born.
- If any problem is found, a doctor can help the family prepare to care for their baby's needs. Doctors can also determine possible surgeries needed when they are born.
  - Examples below: Cleft palate, spina bifida



# Importance of Parental Care

- Prenatal care is the care a pregnant mother receives during the 9 months of her pregnancy.
- A healthcare provider can make sure that the mom and baby stay healthy throughout pregnancy and prepare for a healthy birth.

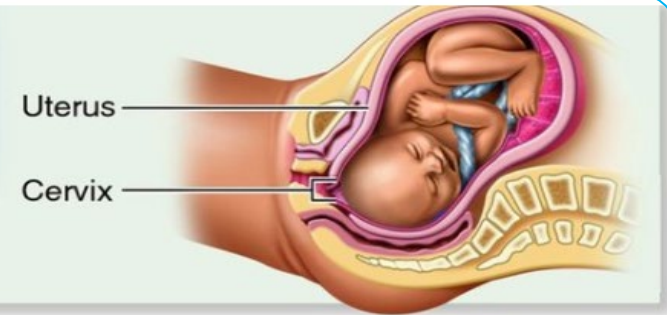


# Stages of Childbirth

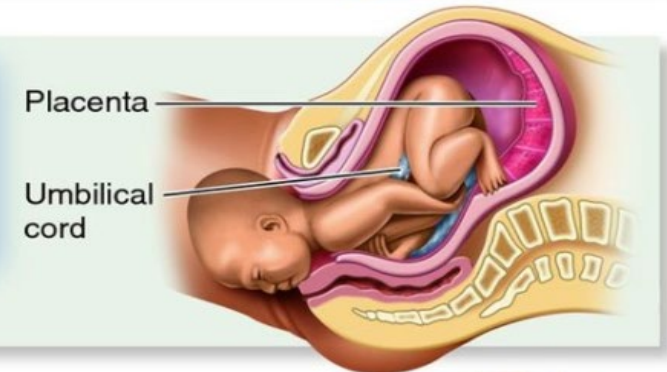
## 3 Stages

- **Stage 1:** Early labor and active labor can last from a few hours to over 24 hours. Contractions begin, cervix dilates, and baby moves into the birth canal (vagina).
- **Stage 2:** The baby is born after the mother pushes with contractions, lasts from a few minutes to a few hours.
- **Stage 3:** Delivery of the placenta, lasts 1-30 minutes, right after the delivery of the baby.

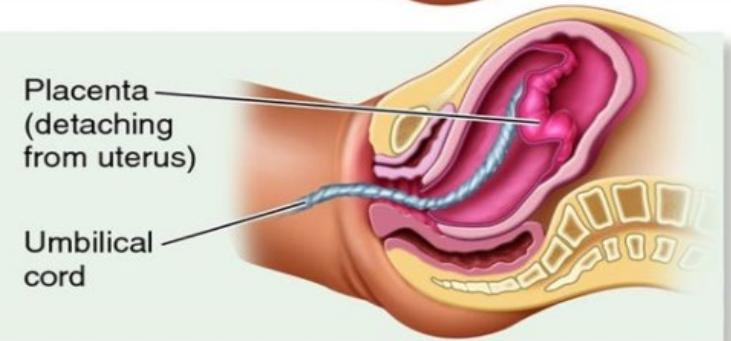
**Stage 1:**  
The cervix relaxes, causing it to dilate and thin out.



**Stage 2:**  
Uterine contractions increase in strength and the infant is delivered.



**Stage 3:**  
The placenta is expelled.



# Consequences of Teenage Pregnancy

- **Teen parents may have:**
  - Increased risk of medical problems in pregnancy
  - Higher rate of high school dropout
  - Lower rate of college entrance and graduation
  - Higher rate of breaking up with their partner
  - Higher rate of becoming a single parent
  - Increase in depression
  - Lower future income

# Check for Understanding

## Answer the Questions Below

- Explain the difference between pregnancy trimesters and the stages of birth.
- Discuss the social and emotional stressors/consequences of being a teen parent.

# Monitor Progress

## Evidence of Learning

- **Level 4 – Beyond Desired Effect**

[ ] I can demonstrate evidence of understanding reproductive anatomy terminology and concepts related to pregnancy and childbirth, including consequences of teenage pregnancy.

- **Level 3 – Target Goal**

[ ] I can demonstrate comprehension and use of concepts for health promotion, disease prevention, interpersonal skills, and decision-making to reduce or avoid health risks related to Human Growth and Development.

[ ] I can explain human reproductive anatomy, organs, systems, and their functions, including pregnancy and childbirth.

- **Level 2 – Foundational Level**

[ ] I can explain the consequences of teenage pregnancy.

[ ] I can explain the stages of childbirth.

[ ] I can explain the trimesters of pregnancy.

[ ] I can explain that fertilization is the initial phase of pregnancy.

[ ] I can explain the phases of the menstruation cycle.

[ ] I can explain some male and female reproductive system functions.

[ ] I can explain some appropriate male reproductive anatomy.

[ ] I can explain some appropriate female reproductive anatomy.

[ ] I can identify endocrine system functions.

[ ] I can identify endocrine system hormones.

- **Level 1 – Beginning Cognitive and Physical**

[ ] I can identify how heredity and environment play a role in growth and development.

[ ] I can recognize some body functions related to human growth and development.

[ ] I can recognize some reproductive anatomy and reproductive systems.

[ ] I can recognize some endocrine system glands, organs, and functions.

# Questions?

- Have unanswered questions?
- Please ask your teacher for a question slip.
- **Remember:** Only **appropriate language** and **questions** regarding Human Growth and Development will be passed along and then returned to you.





COLLIER COUNTY PUBLIC SCHOOLS

# Human Growth and Development

Lesson 2: Health Risks Associated with Human Growth and Development  
Preventing Sexually Transmitted Infections and Teenage Pregnancy

Clinically Reviewed By: Dr. Karysse Trandem, DO,  
FACOG  
Medical Director & Ob/Gyn Physician, Pregnancy  
Resource Centers of SWFL



# Lesson 2 Performance Scale

- **Level 4- Beyond Desired Effect**
  - Demonstrate evidence of both comprehending and using the skills needed as a responsible decision-maker regarding health behaviors and choices.
  - Demonstrate evidence of understanding reproductive health risks and prevention of disease.
- **Level 3- Target Goal**
  - Demonstrate ability to comprehend and use concepts for health promotion, disease prevention, interpersonal skills, and decision-making to reduce or avoid health risks related to Human Growth and Development.
  - Identify responsible interpersonal, decision-making, and disease prevention skills to reduce reproductive health risks.
- **Level 2- Foundational Level**
  - Understand that abstinence is the only 100% effective way to prevent pregnancy and sexually transmitted infections and diseases.
  - Understand how health behavior decision-making can either increase health risks or decrease them
  - Identify key highlights of disease and pregnancy prevention.
  - Identify differences in viral and bacterial STIs.
  - Identify benefits to delaying sexual activity.
  - Identify some expectations in friendships or relationships and ways to share them appropriately.
  - Identify personal core values.
  - Identify personal health skills.
  - Identify responsible ways to access valid and reliable health information
- **Level 1- Beginning Cognitive and Physical Level**
  - Recognize some family, friend, and relationship skills.
  - Recognize some self-esteem/self-worth personal values and beliefs.
  - Recognize some responsible health decisions.
  - Recognize some communication skills.

# Health Related Decision Making

## Two Key Factors

### ➤ Our Health Skills:

- Communication skills
- Responsible decision-making skills

*Example: If you don't communicate with your friend that you do not like how they put you down in front of the group, how will they know it upsets you?*

### Our Personal Values:

- Self-esteem
- Self-worth
- Family, friendship, and relationship skills

*Example: If you don't believe you are worthy of respect, you will likely accept people treating you badly.*

# Skills Check

- **Record two Health Behaviors that would promote strong communication and provide evidence of responsible decision making.**
- **Record two Core Personal Values that would promote strong self-esteem/self-worth and provide evidence of strong family or relationship skills.**

# How do you know?

- How do you know what each other expects of their friendships? Can you treat everyone the same?
- How do you know if someone shares something that it is valid information or if it came from a reliable source?
- How do you know each other's core personal values?



*What is one thing you can ask a friend to get to understand them better or help them better understand you and your personal values?*

# Prevention

## Abstinence

- **Abstinence is the only 100% effective way to preventing pregnancy and sexually transmitted infections.**
  - Abstinence and prevention includes **not coming in contact** with the genitals or fluids of another person.

# Benefits to Delaying Sexual Activity

## Prevention

Increased mental  
and emotional  
health

Decreased risk for  
unplanned out-of-  
wedlock pregnancy

Decreased risk of  
sexually transmitted  
infections, disease,  
or death

Increased rate of  
high school  
graduation

Increased rate of  
college graduation

Increased  
perception of self-  
worth

Longer-lasting  
relationships

Increase in overall  
opportunities and  
income

# Check for Understanding

**Pause here to check your understanding of the benefits of abstinence and to explain the skills and values needed for optimal growth and development.**

- 1. Name three benefits to staying abstinent.**
- 2. Explain how health skills and personal values are critical to your growth and development.**

# STIs/STDs

- **Sexually transmitted infections (STIs) are generally acquired by sexual contact. The organisms (bacteria, viruses, fungi or parasites) that may cause sexually transmitted diseases (STDs) may pass from person to person in blood, semen, vaginal, and other bodily fluids. STDs can be passed through the placenta during pregnancy and delivery.**

# 3 Types of STIs

## 3 Types of Infections

- **Bacterial Infection**

- Curable infection but makes you more susceptible to other infections and can cause permanent scarring which may prevent pregnancy.

- **Parasitic/Fungal Infection**

- Curable infections that include trichomoniasis, pubic lice, and scabies.

- **Viral Infection**

- Incurable infection that stays with you forever. These types of infections can lead to other immune illnesses and possibly death. Examples include Human Papilloma Virus (HPV), Human Immunodeficiency Virus/AIDS

***Personal prevention, valid and reliable health education, and regular healthcare are ways to avoid infection and disease***

# Bacterial Infections and Diseases

- **Syphilis**

- Chancre and rash



- **Gonorrhea**

- Discharge and sore



- **Chlamydia**

- Rash and discharge in eye and cervix



# Viral Infections and Diseases

- **HPV**

- Oral virus and papilloma



- **Genital Warts**

- Genital region and or representation



- **Genital Herpes**

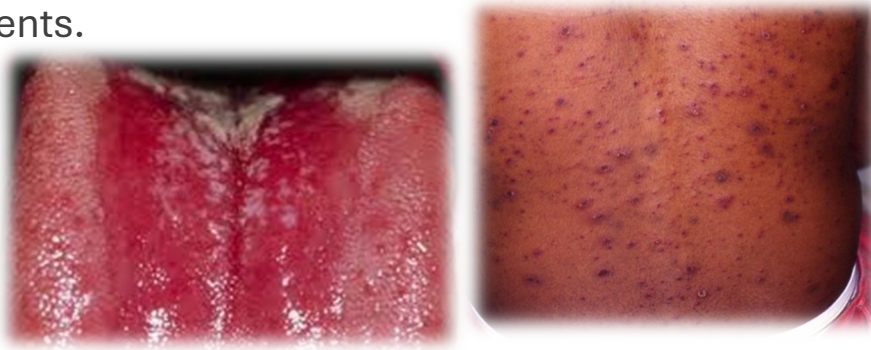
- Genital simplex 2
- Oral/eyes/nose simplex 1



# Viral STIs Continued

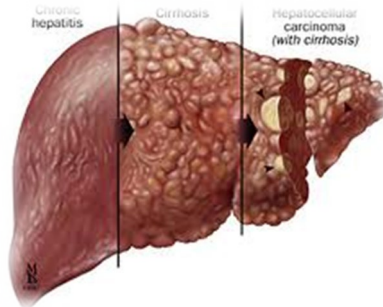
## • HIV/AIDS

- Skin lesions and thrush
- When HIV has damaged the immune system lowering white blood T cells below 200, it is more likely that some of the opportunistic diseases will cause death rather than the HIV/AIDS virus under current advanced treatments.



## • Hepatitis C

- Disease that destroys the liver



# Prevention Post It Notes

- 1. The only 100% way to prevent a STI or pregnancy is abstinence.**
- 2. Proper use of a condom can help to prevent many STIs, but condoms are not 100% effective**
- 3. It is possible to have more than one STI at a time, and people do not develop immunities if they have previously had a STI.**
- 4. STIs can be transmitted with or without symptoms.**

# Contraception Benefits and Consequences



**It's Your Future. You Can Protect It.**

**Always use a condom and another form of birth control.**

Girls and Guys, if you are sexually active, protect yourself and your partner from pregnancy, HIV, and other STDs. Even if you or your partner is using another type of birth control, agree to use a condom **EVERY TIME** you have sex, to reduce the risk to both of you for HIV and most other STDs. Birth control (such as the pill, patch, ring, implant, shot, or an IUD) provides highly effective pregnancy prevention, but it does not protect you from HIV and other STDs. Condoms can reduce the risk to both of you for most STDs, including HIV, as well as the risk for pregnancy. Be prepared.

**EVERY TIME** to reduce the risk of pregnancy, HIV, and other STDs

the pill  
patch  
ring  
implant  
shot  
or IUD

**Talk to your partner.** If you have sex, make sure you both agree to use a condom and a more effective type of birth control every time.

**Condoms need to be used the right way,** every time you have sex. So use both a condom AND a highly effective method of birth control every time you have sex.

**And remember,** when you get right down to it, the only sure way to prevent pregnancy, HIV, and other STDs is not to have sex.

[www.cdc.gov/teenpregnancy/Teens.html](http://www.cdc.gov/teenpregnancy/Teens.html)

Get involved, make your voice heard!  
[www.enageforouthards.gov](http://www.enageforouthards.gov)

Learn about talking to your partner.  
[www.talktoyourpartner.org](http://www.talktoyourpartner.org) [www.scshs.org](http://www.scshs.org) [www.daytres.org](http://www.daytres.org)

Learn to use condoms the right way, every time.  
[www.tylenable.com/ga/condoms/](http://www.tylenable.com/ga/condoms/)

Learn about all birth control methods.  
[www.daytres.org/birth-control-101](http://www.daytres.org/birth-control-101)

Find a Clinic [www.hhs.gov/opa](http://www.hhs.gov/opa)

Centers for Disease Control and Prevention  
National Center for Chronic Disease Prevention and Health Promotion

# Pregnancy Prevention Methods

- **Barrier Methods**
  - Blocks sperm from entering female's cervix
  - Examples: male condom, female condom, diaphragm, cervical, cap, sponge, spermicide
- **Hormone Methods**
  - Use of estrogen and progestin together or progestin only
  - Examples: birth control pill, skin patch (Ortho Evra), shot (Depo-Provera, intrauterine device (IUD))
- **Informational Methods**
  - Individuals must be very aware of their bodies/cycles
  - Examples: fertility awareness and withdrawal
- **Permanent Methods**
  - Adults who have finished having children
  - Examples: female sterilization(tubal ligation) and male sterilization (vasectomy)

# Sample Contraception Devices/Methods

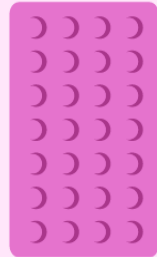
## Birth control methods



Condom



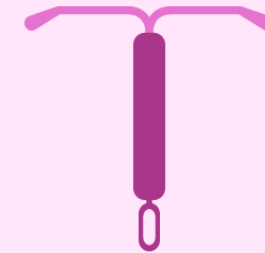
Female condom



Pill



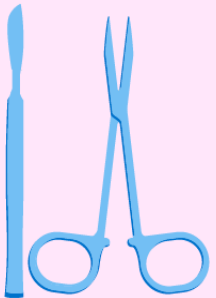
Hormonal ring



UID



Injection



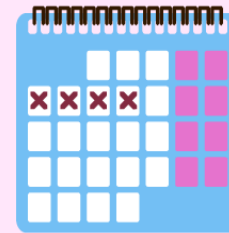
Surgical sterilization



Implant



Coitus interruptus



Calendar rhythm method



Patch



Diaphragm

# Check for Understanding

*\*Pause here to check your general understanding of STIs and birth control methods\**

- 1. What are three examples of STIs that could last your lifetime and can lead to death?**
- 2. What prevention method is 100% effective?**
- 3. Which contraceptive methods help prevent some STIs?**

# Monitor Progress

## Evidence of Learning

- **Level 4 – Beyond Desired Effect**
  - I can demonstrate evidence of both comprehending and using the skills needed as a responsible decision-maker regarding health behaviors and choices.
  - I can demonstrate evidence of understanding reproductive health risks and prevention of disease.
- **Level 3 – Target Goal**
  - I can demonstrate comprehension and use of concepts for health promotion, disease prevention, interpersonal skills, and decision-making to reduce or avoid health risks related to Human Growth and Development.
  - I can identify responsible interpersonal, decision-making, and disease prevention skills to reduce reproductive health risks.
- **Level 2 – Foundational Level**
  - I can understand that abstinence is the only 100% effective way to prevent pregnancy and sexually transmitted infections and diseases.
  - I can understand how health behavior decision-making can either increase health risks or decrease them.
  - I can identify key highlights of disease and pregnancy prevention.
  - I can identify differences in viral and bacterial STIs.
  - I can identify benefits to delaying sexual activity.
  - I can identify some expectations in friendships or relationships and ways to share them appropriately.
  - I can identify personal core values.
  - I can identify personal health skills.
  - I can identify responsible ways to access valid and reliable health information.
- **Level 1 – Beginning Cognitive and Physical**
  - I can recognize some family, friend, and relationship skills.
  - I can recognize some self-esteem/self-worth personal values and beliefs.
  - I can recognize some responsible health decisions.
  - I can recognize some communication skills.

# Questions

