Human Growth and Development

Anatomy, Pregnancy, and Childbirth

Lesson 1

Developed by Collier County Public Schools
Teaching and Learning Education Department

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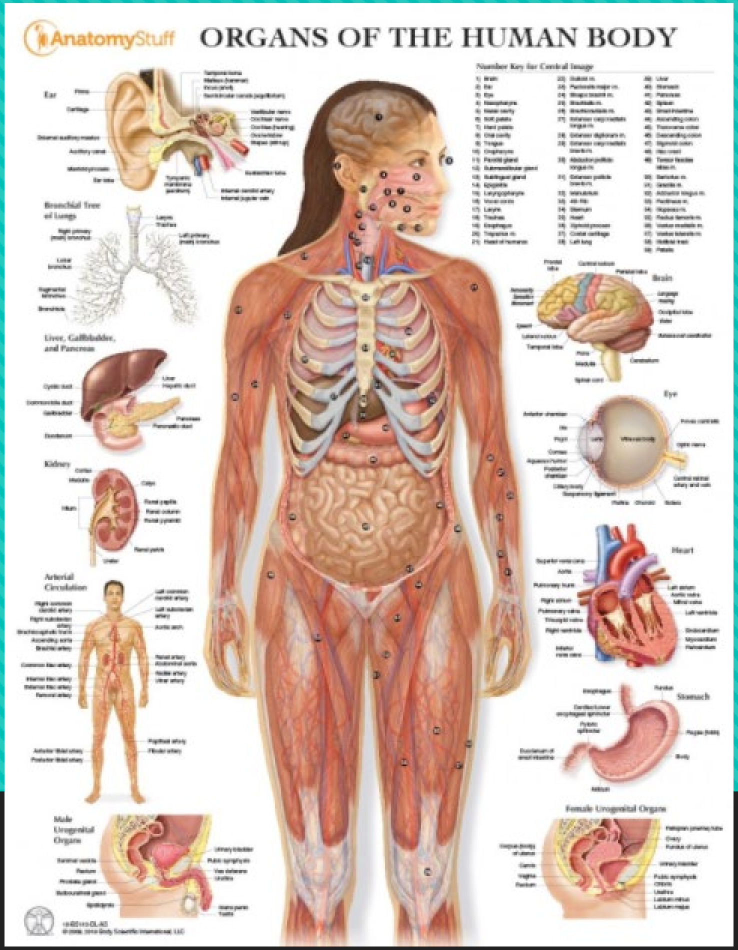
Lesson 1 Learning Target:

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

HEALTH SKILLS - PERFORMANCE SCALE – HGD Grades 6-8

Learning Goal Outcome from State Standards:
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.

Lesson 1 Learning Target:
Explain human reproductive anatomy, organs, systems and their functions, including pregnancy and childbirth.

Directions: Use the Performance Scale checklist below. **Start at Level 1**, check off those you can do and work on those you need more practice. Then, move up the levels as you build both knowledge and skill competency. Time and practice may be necessary to reach Target Mastery at level 3.

Level	Learning Target Tasks: I can: ✓
4 beyond desired effect	○ Demonstrate evidence of comprehending reproductive anatomy terminology and concepts related to pregnancy and childbirth, including consequences to teenage pregnancy
3 level of desired 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**
2 This is the **foundational** level tasks, practice of skills, cues, vocabulary needed to get to required goal.	○ Explain consequences of teenage pregnancy ○ Explain stages of childbirth ○ Explain trimesters of pregnancy ○ Explain fertilization is the initial phase of pregnancy ○ Explain menstruation cycle/phases ○ 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 and hormones
1 Beginning cognitive and physical	○ Identify how heredity and environment play a role on 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

START HERE CHECK OFF THOSE YOU CAN DO

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)

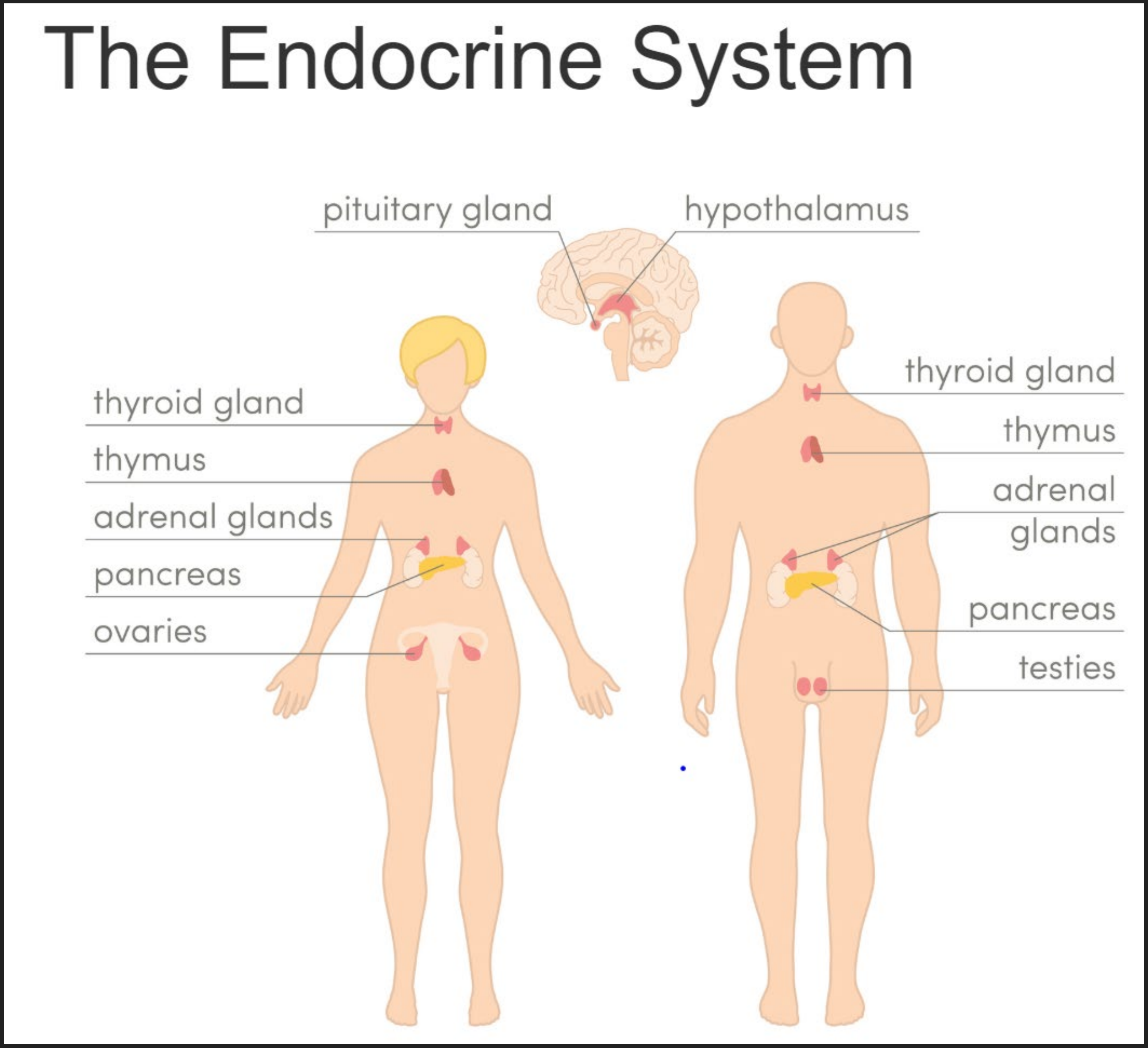
Our DNA plays a role in the onset of puberty and the vast changes that occur in the body.

Environment: includes all the factors of our lifestyle such as nutrition, sleep, pollution, stress, hygiene, and healthy/unhealthy behaviors.

These are not independent of one another; they can cause adaptations/mutations over time.

*BOTH FACTORS DIRECTLY AFFECT PUBERTY AND OUR GROWTH AND DEV

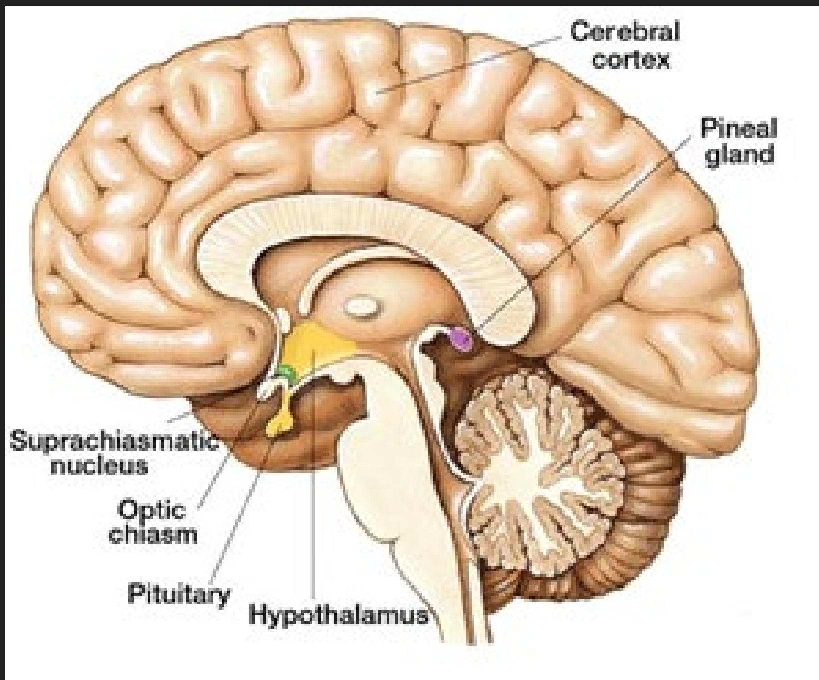
Endocrine System and Hormone



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).

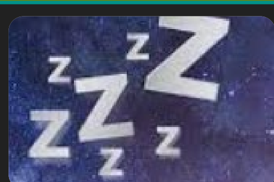
Endocrine System – glands and functions



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.

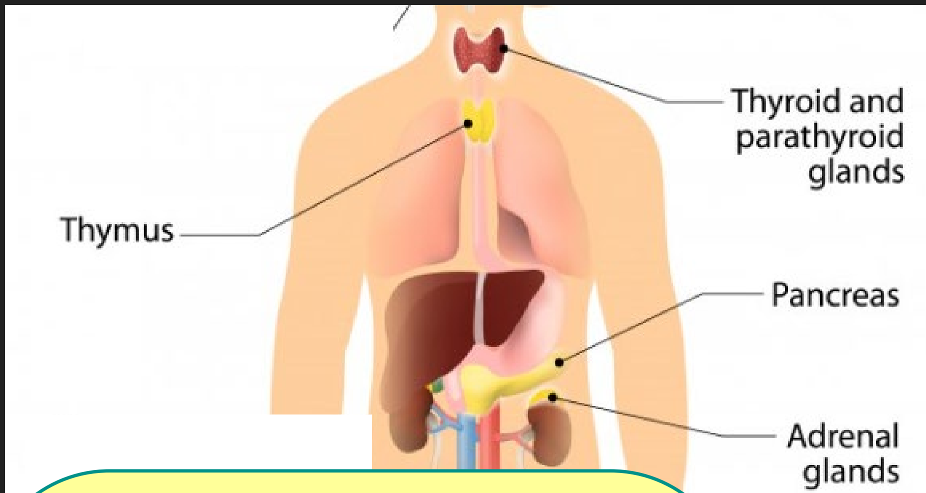
Pituitary gland: This is your endocrine system's master gland. It uses information it gets from your brain to tell other glands in your body what to do. makes many important hormones, including the growth hormone; prolactin, which helps breastfeeding moms make milk; and luteinizing hormone, which manages estrogen in women and testosterone in men.

Pineal gland: Makes a chemical called melatonin that helps your body get ready to go to sleep.



Ovaries (estrogen) and Testes (testosterone) are also includ in both the Endocrine and Reproductive Systems since the produce hormones that assist in a variety of functions.

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.

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.

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.

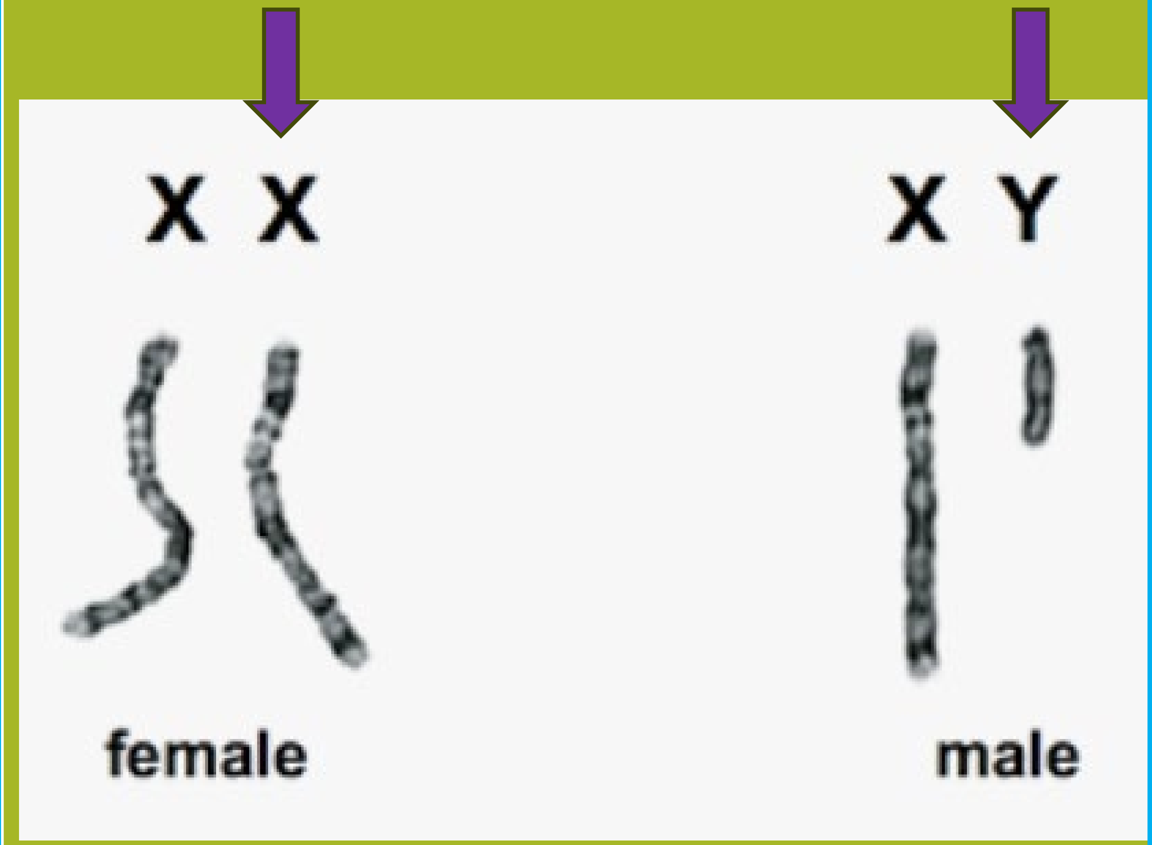
Thymus: This gland makes white blood cells called T-lymphocytes that fight infection and are crucial as a child's immune system develops. The thymus starts to shrink after puberty.

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.

CHECKING FOR UNDERSTANDING

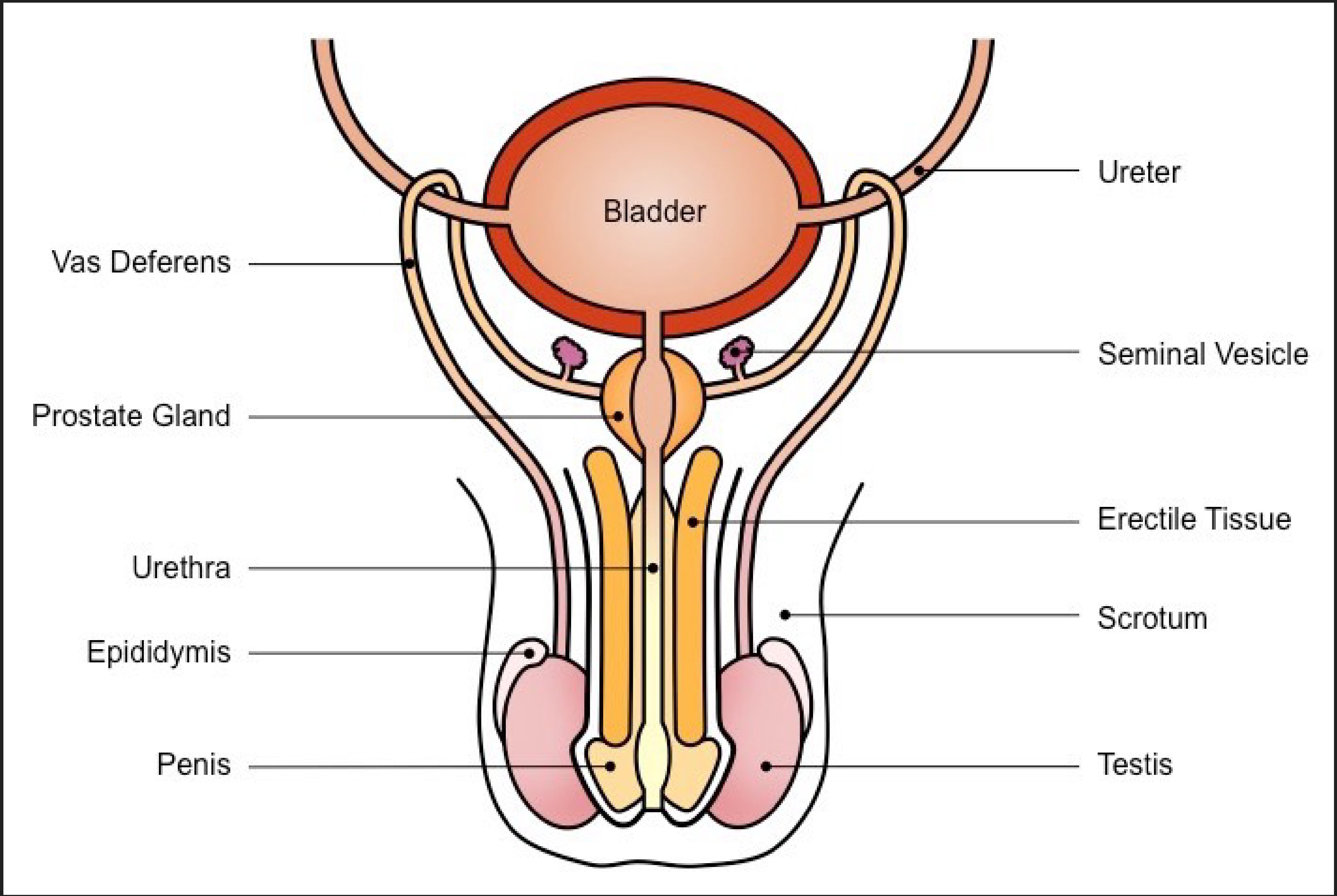
Pause here to check your general understanding of the endocrine system by answering the 3 questions to the right.

1. Which gland is responsible for your metabolism? Why is this so important?
2. Which small gland is in control of most of the hormones released?
3. In 5 words or less describe the purpose of endocrine system.



A person's sex as female or male 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.

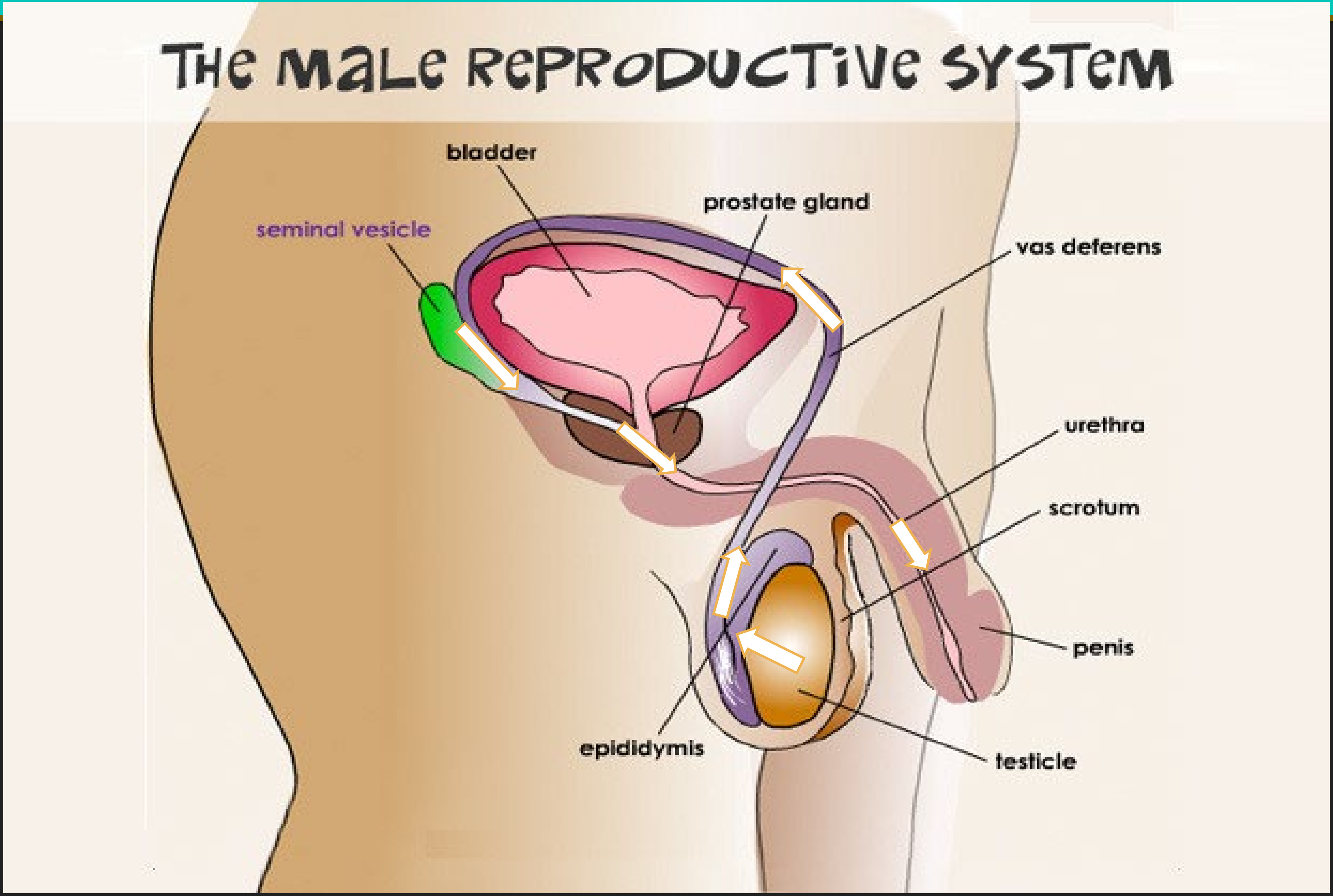
Reproductive System–male anatomy



Reproductive System– male anatomy reviewed

- PENIS: the male sex organ used to pass urine and the passageway the release of semen from the body
- SCROTUM: the sac-like pouch that helps regulates 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 t help sperm move
- VAS DEFERENS: two long tubes through which sperm passes from th testes to the urethra
- PROSTATE GLAND: a gland that makes fluid that is added to sperm t 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 o the body

Reproductive System- male anatomy continued

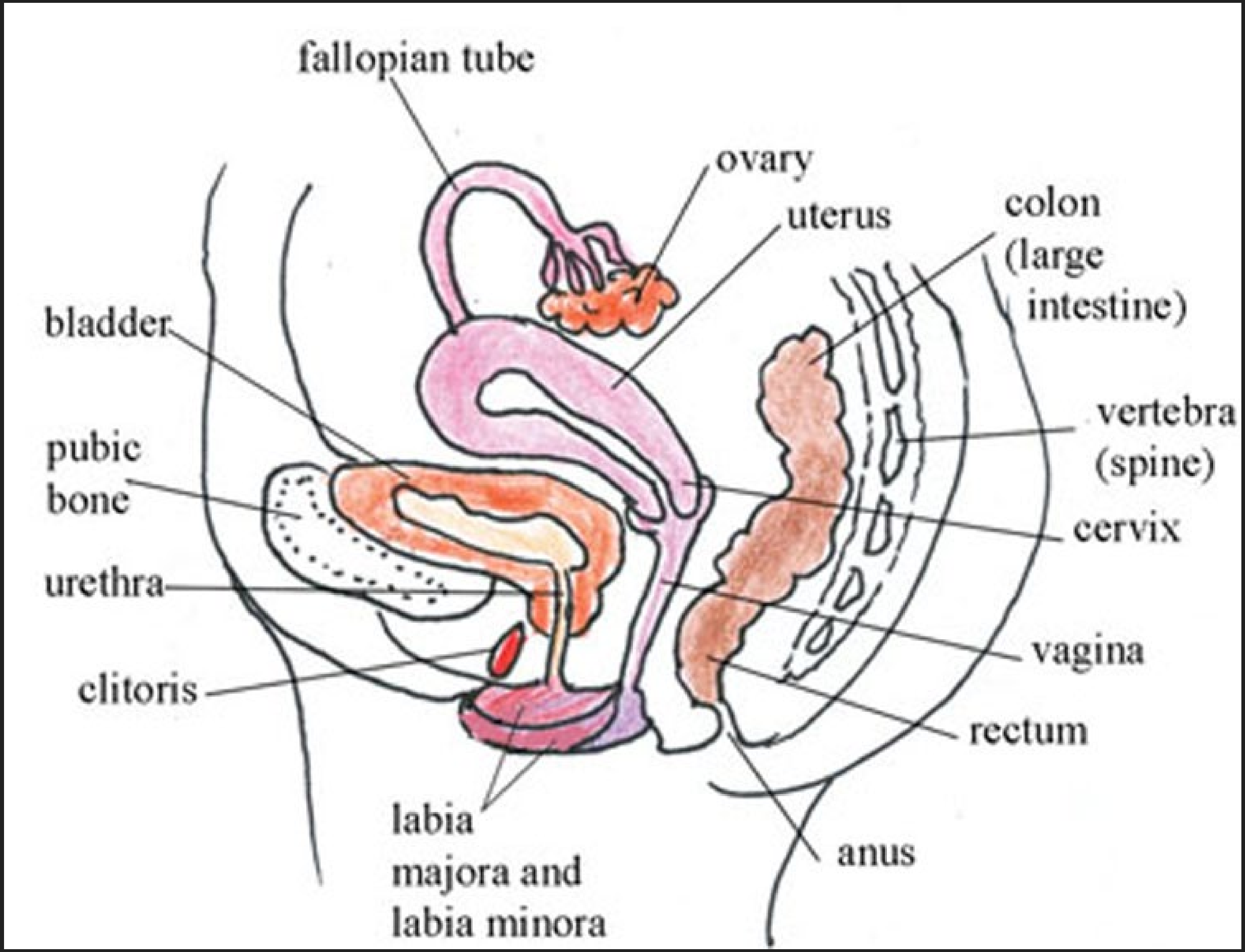


CHECKING FOR UNDERSTANDING

Pause here to check your general understanding of male reproductive system by answering the 2 questions.

4. Which gland is responsible for production of testosterone and sperm?
5. Which glands produce the fluids that make up semen? *HINT: there are 4

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

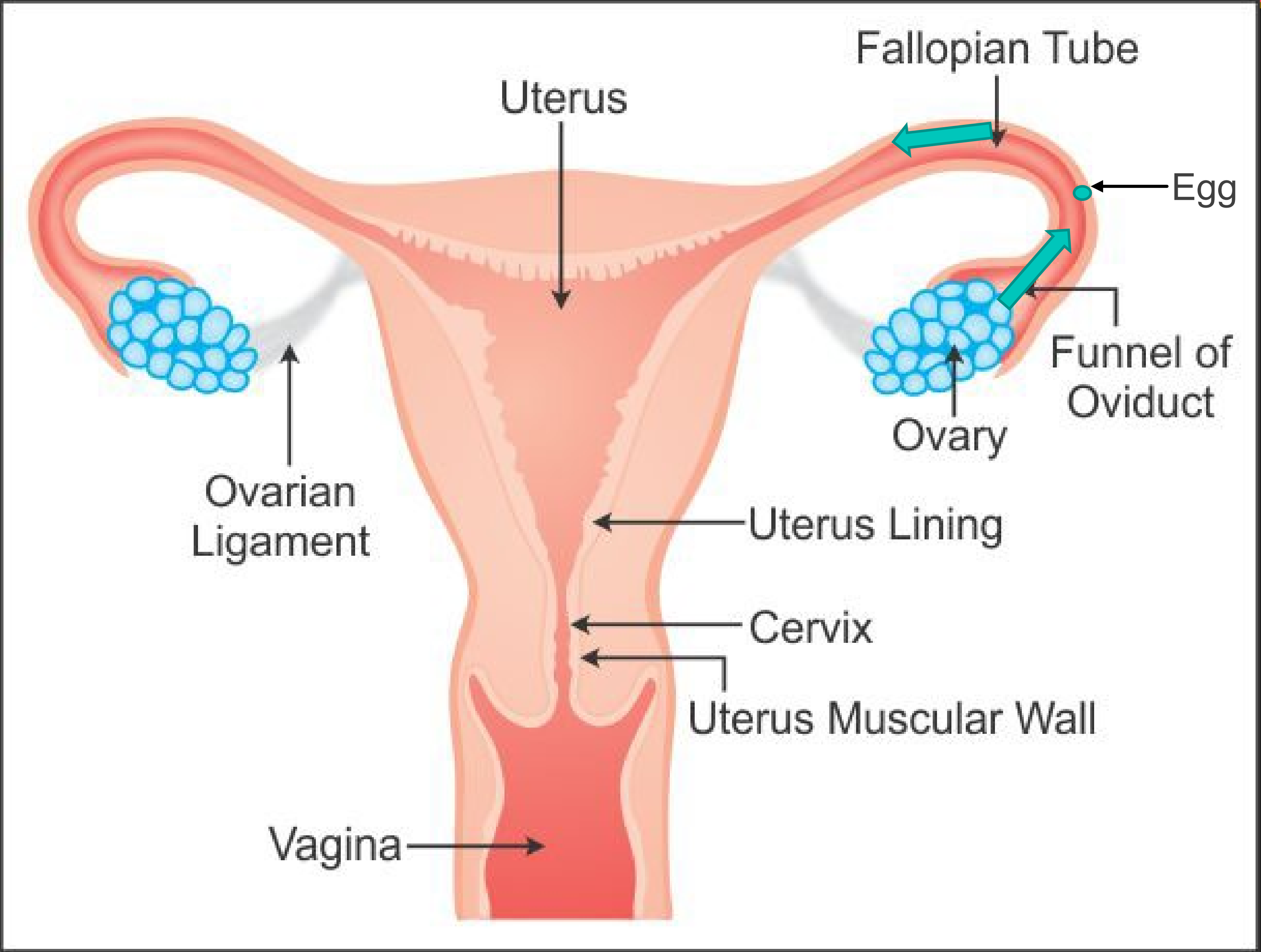
Uterus - the organ that houses a fertilized egg/fetus/baby during pregnancy and sheds it's lining during menstruation

Cervix- the lower part of the uterus that allows the flow of menstrual blood and passage of a baby during labor

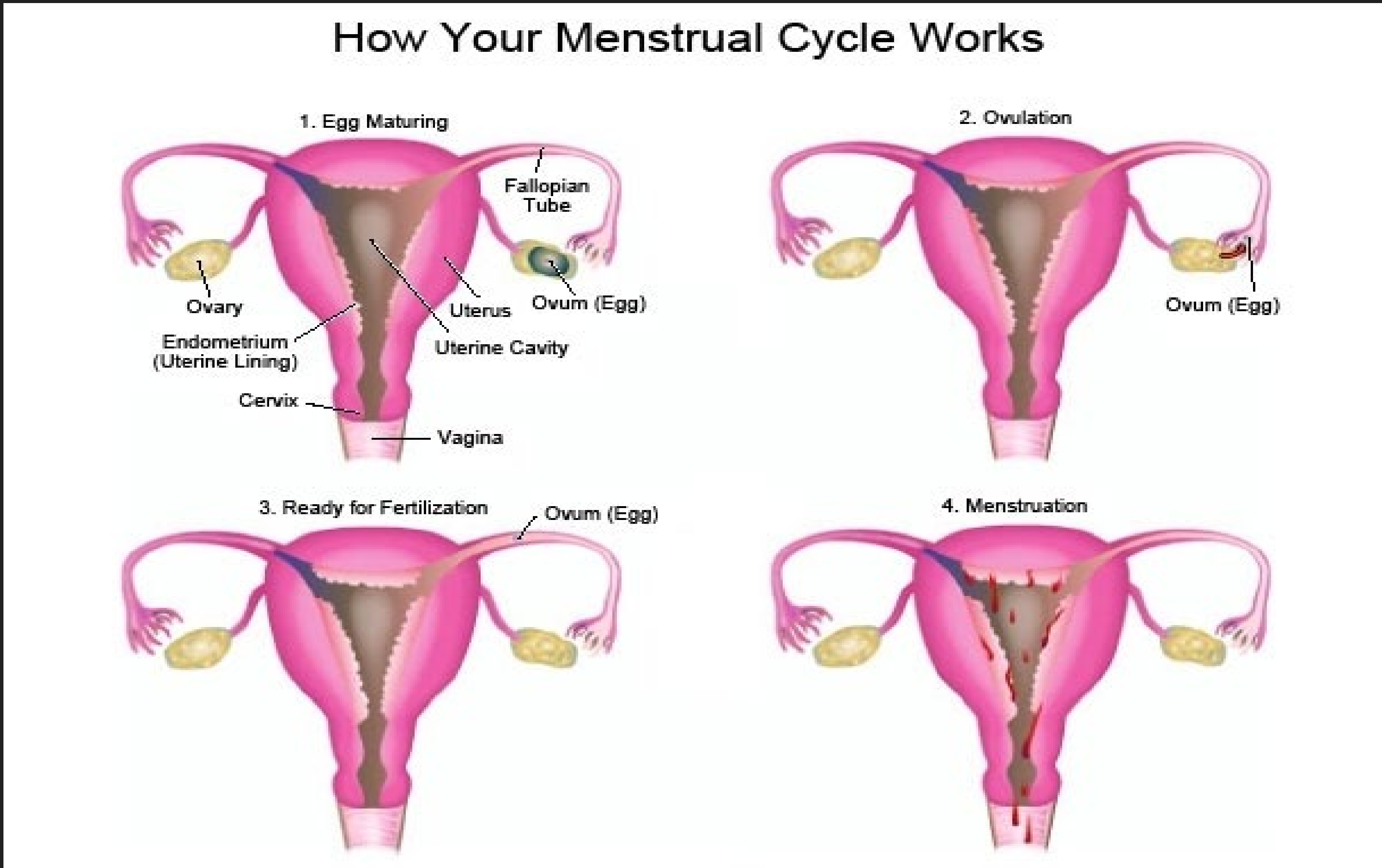
Vagina- a muscular structure that allows menstrual blood to leave the body and allows baby to pass through during delivery

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)

CHECKING FOR UNDERSTANDING

Pause here to check your general understanding of the female reproductive system by answering the 3 questions.

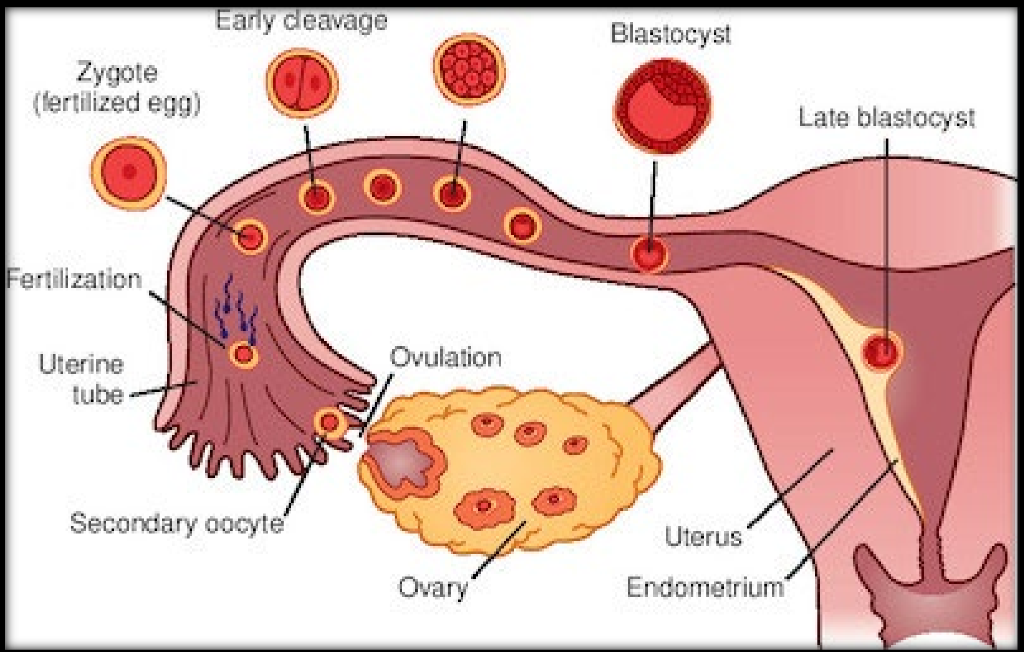
6. Which gland/organ is responsible for the production of estrogen and ova?
7. Which female organ sheds its lining through menstruation?
8. How many phases occur in the menstruation cycle?

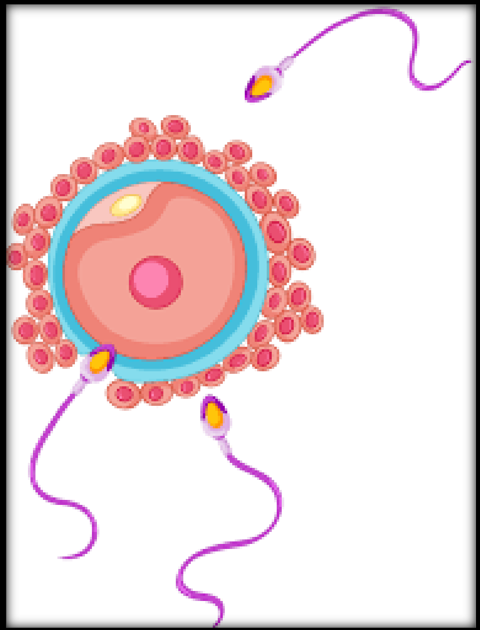
PREGNANCY

Pregnancy and childbirth are other functions of the female reproductive system.

This process begins with fertilization, whe biological males impregnate biological females by fertilizing the female egg with male sperm and the female then gestates offspring through pregnancy.

Fertilization



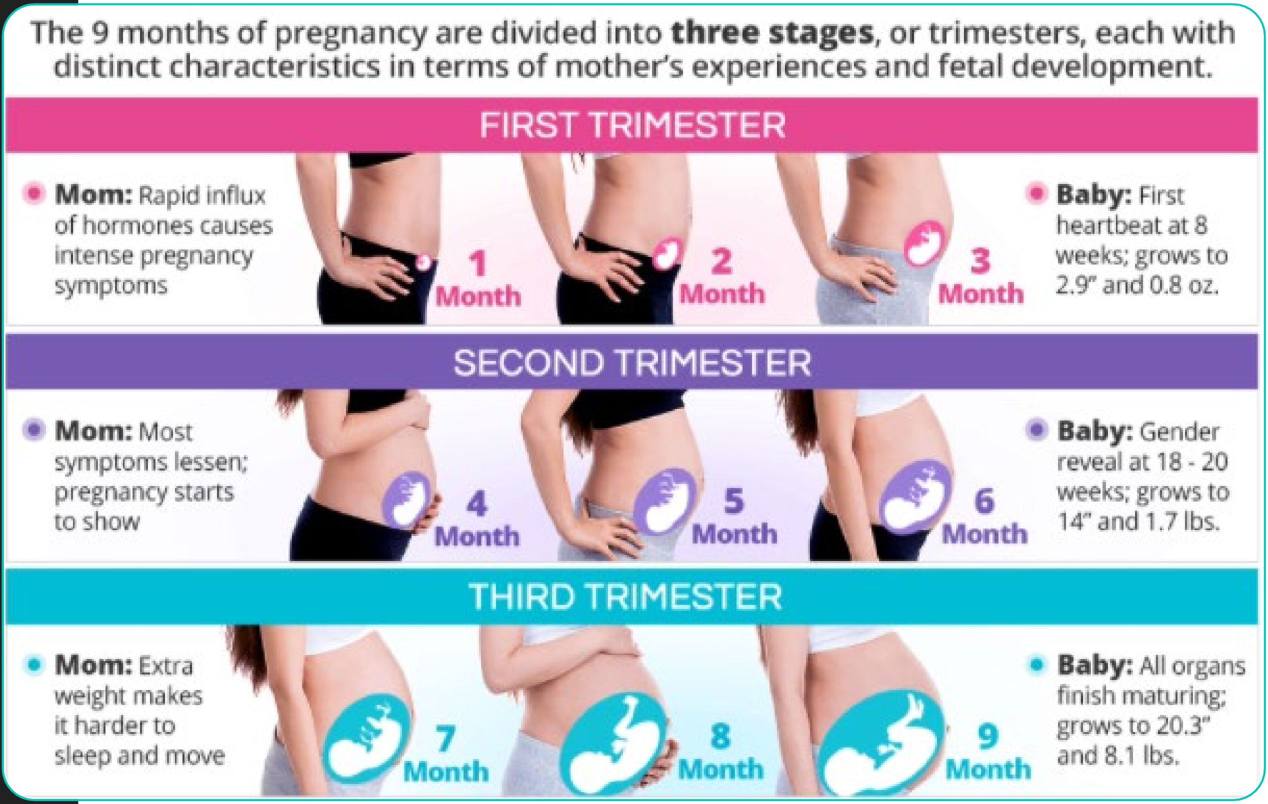


The moment that a sperm enters an egg (ovum) the DNA genetic material of male's sperm and the female's egg are combined to form a new, unique genetic cell referred to as a Zygote.

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 the **pregnancy**.

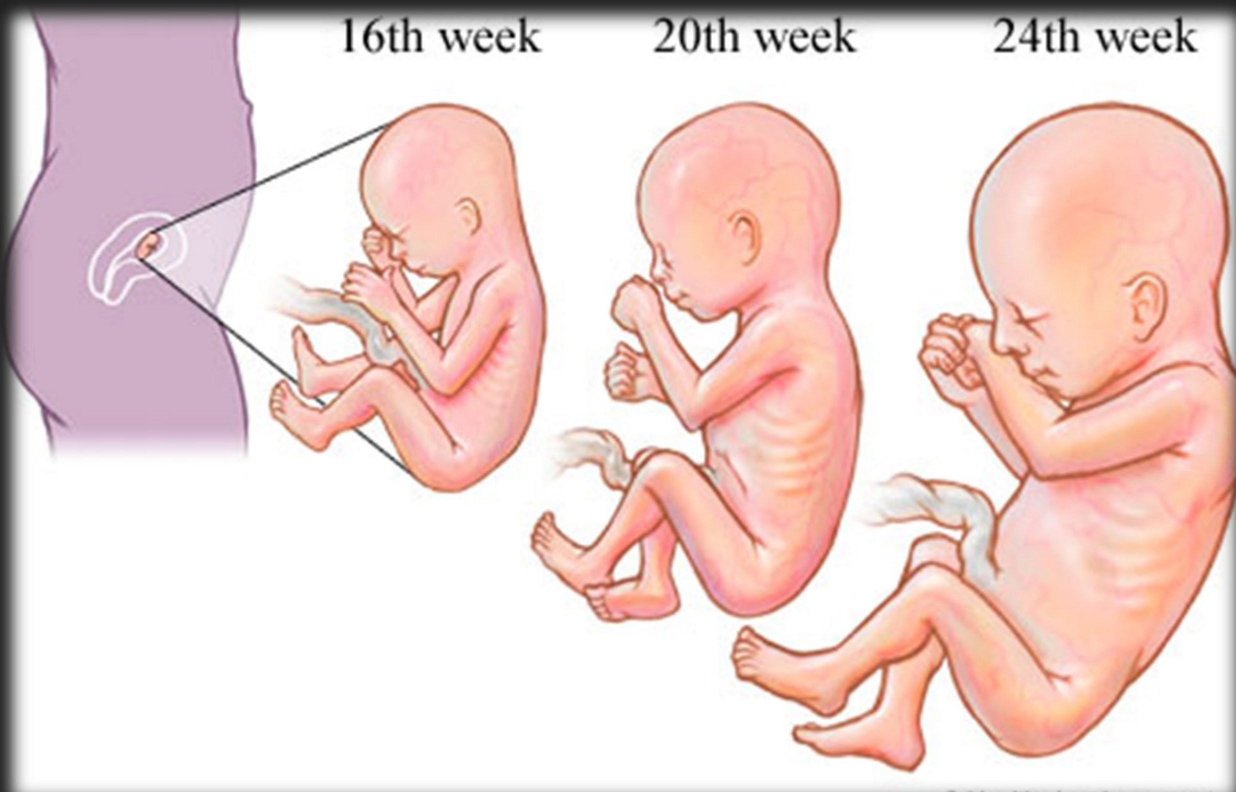


First Trimester: 1-12 weeks

The growing baby is described as a fetus starting at 9 weeks. At this point t he baby's heart, hands, feet, brain, genitalia, and other organs are present.

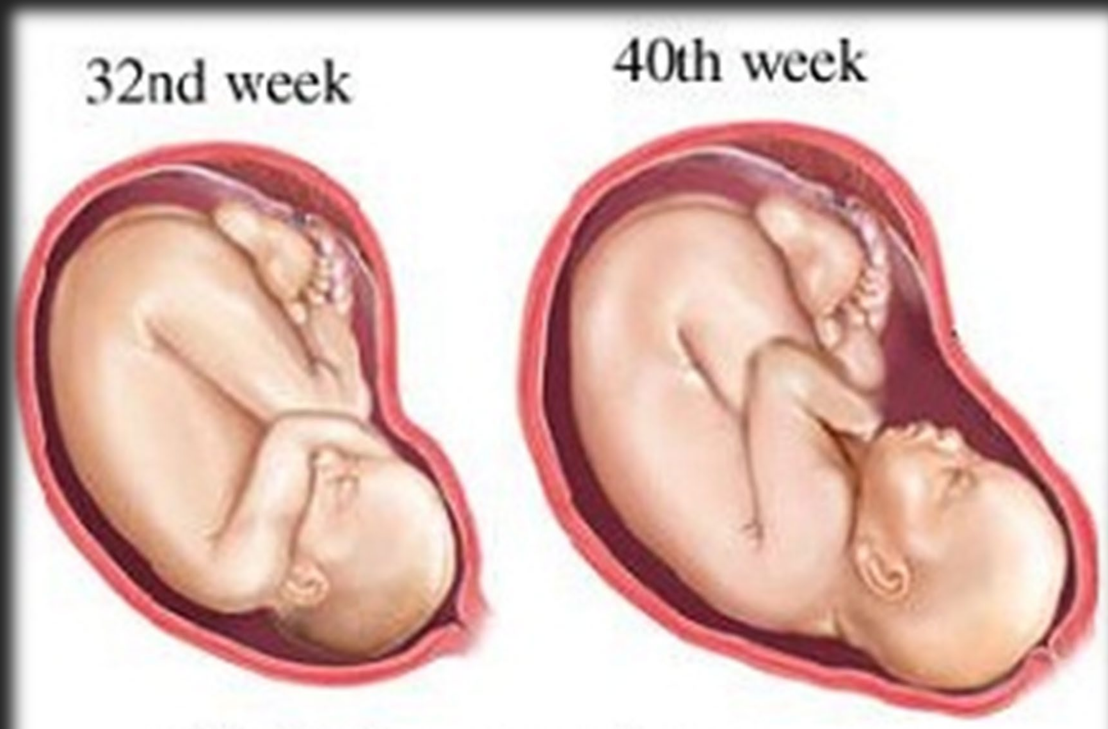
Second Trimester: 13-26 weeks

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



Third Trimester: 2740 weeks

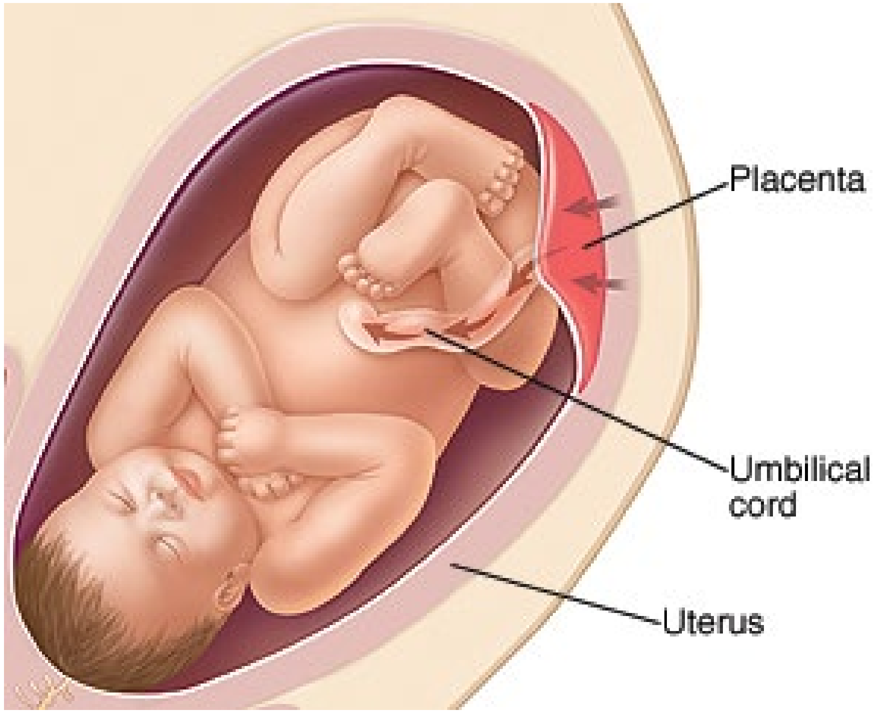
The baby’s lungs mature, and the baby begins to position itself head down. By the end of the third trimester, the baby weighs, on average, 6 to 9 pounds.



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 horm ones and hosting important nutritional exchanges between the mother and the baby's blood supply.



Genetic Disorders & 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.

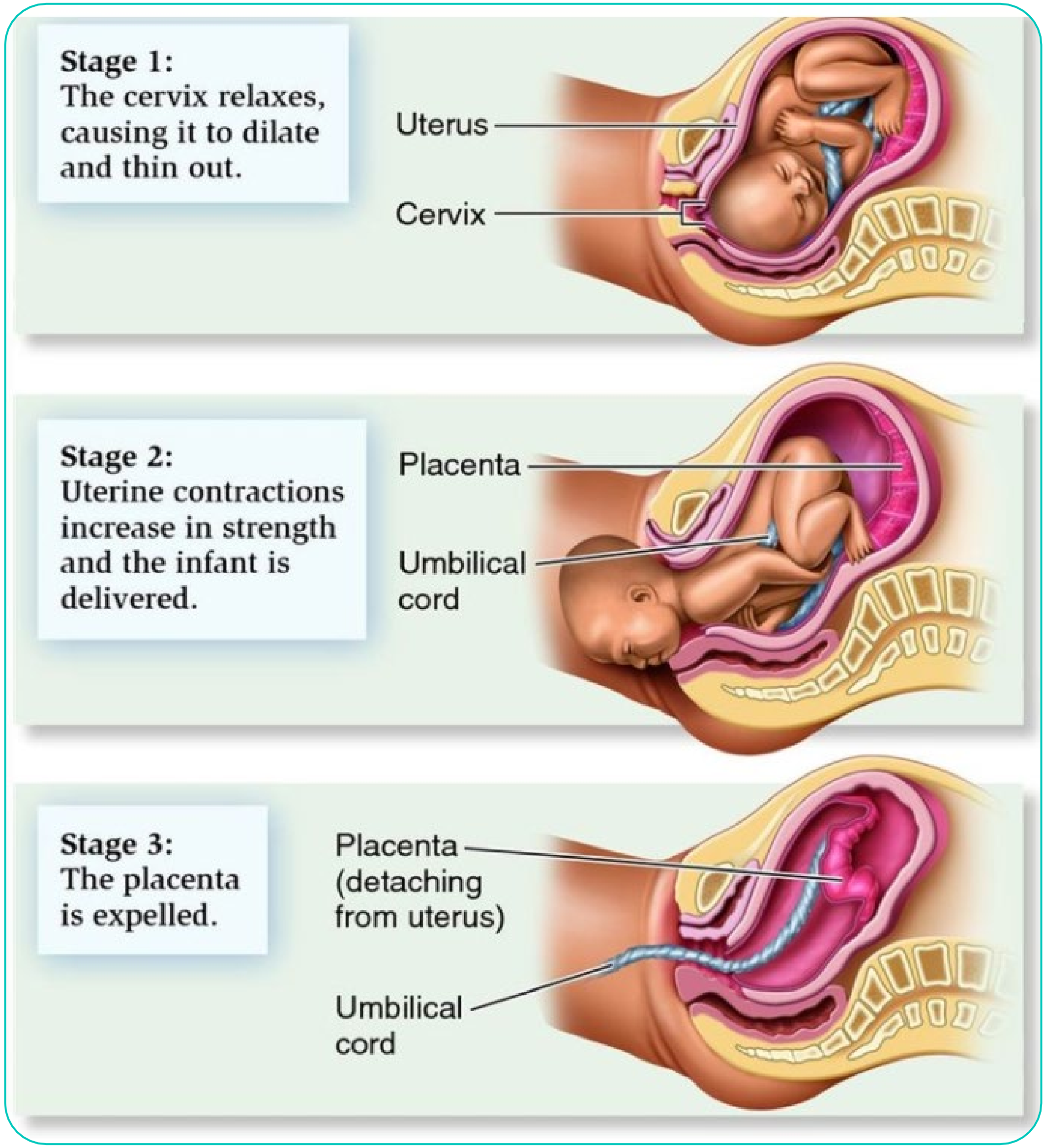
Examples below: Cleft palate, spina bifida

Importance of Prenatal 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

- **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.



Consequences of Teenage Pregnancy

Teen parents may have:

- an increased risk of medical problems in pregnancy
- a higher rate of high school dropout
- a lower rate of college entrance and graduation
- a higher rate of breaking up with their partner
- a higher rate of becoming a single parent
- an increase in depression
- and a lower future income

CHECKING FOR UNDERSTANDING

Pause here to check your general understanding by answering the 2 questio on the right.

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

Monitoring Progress– Evidence of Learning

HEALTH SKILLS - PERFORMANCE SCALE – HGD Grades 6-8

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1 Beginning cognitive and physical	○ Identify how heredity and environment play a role on 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

START HERE CHECK OFF THOSE YOU CAN DO

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.