Male Reproductive System

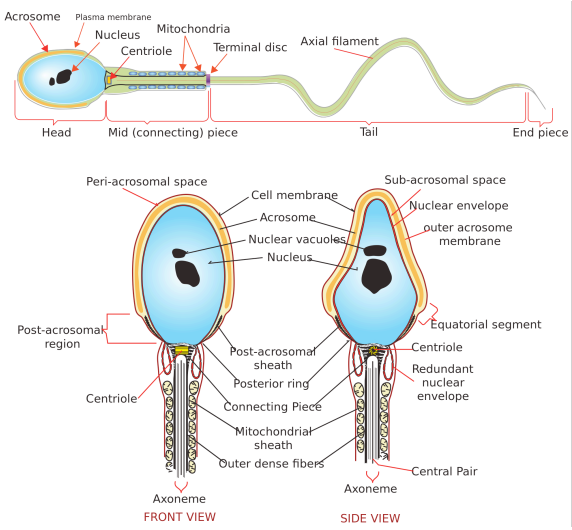
The primary sex organs are called the _____

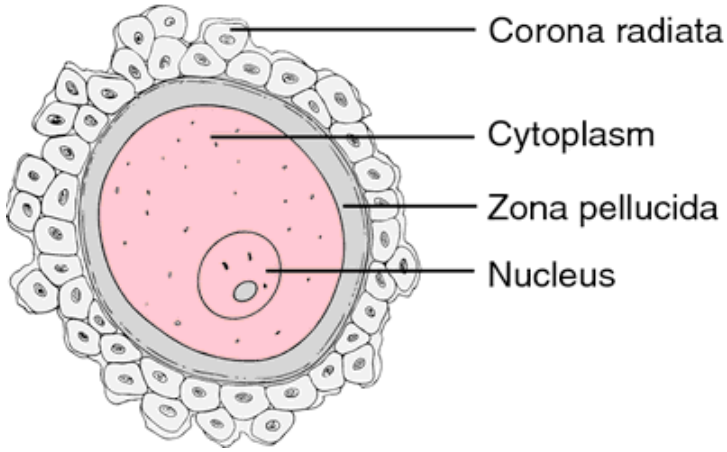
_____-Male gametes produced in the _____.

The hormone produced in called _____

_____-Female gametes produced in the _____.

The hormone produced in called _____





Describe fertilization.

List the parts of the male system.

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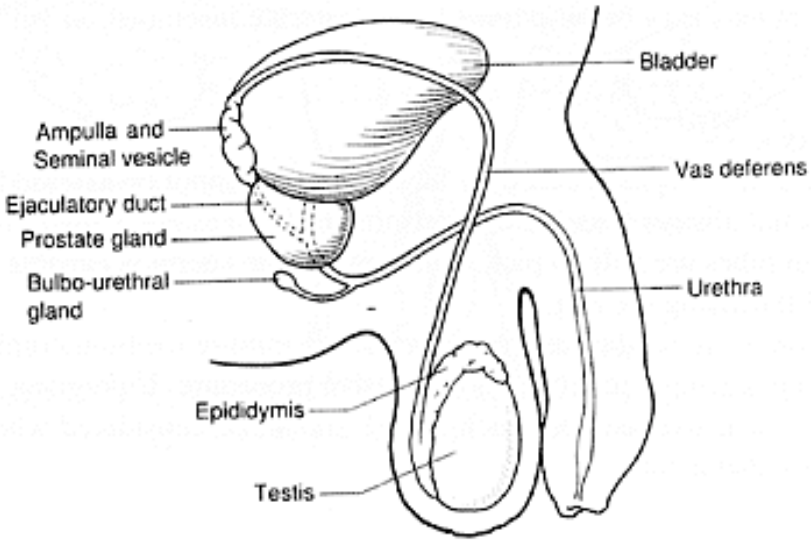
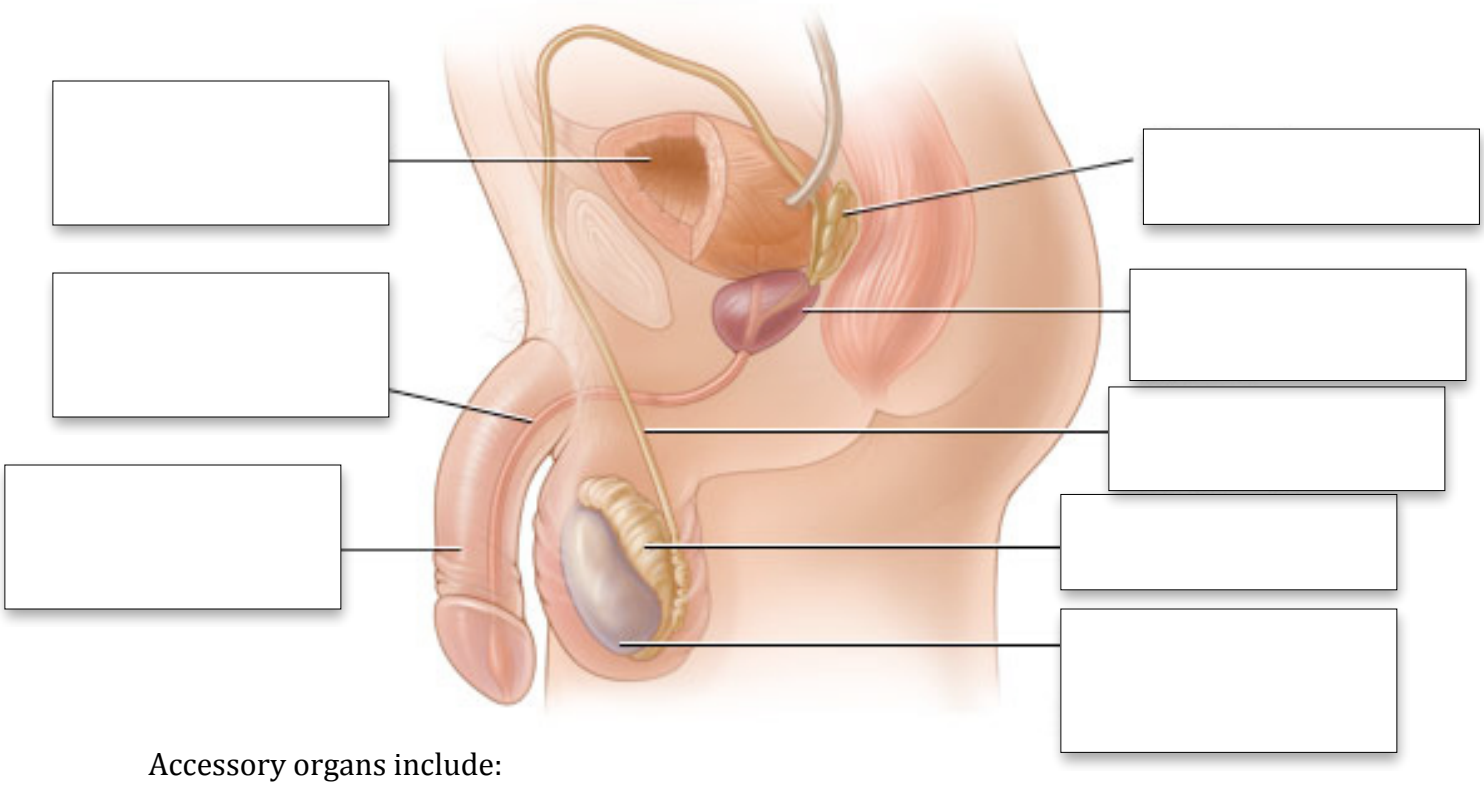
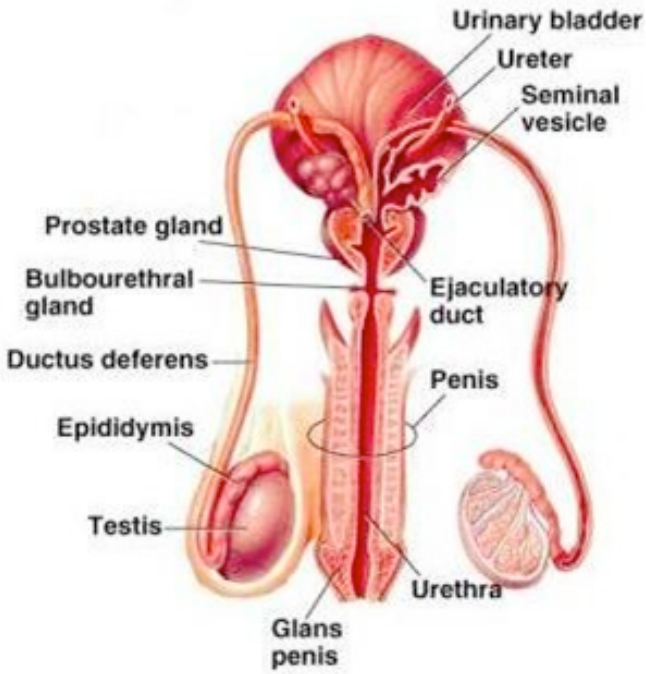


• Male Reproductive System



Accessory organs include:

-
-
-



The _____ and

_____ are external genitalia

Testes

What is the tunica albuginea?

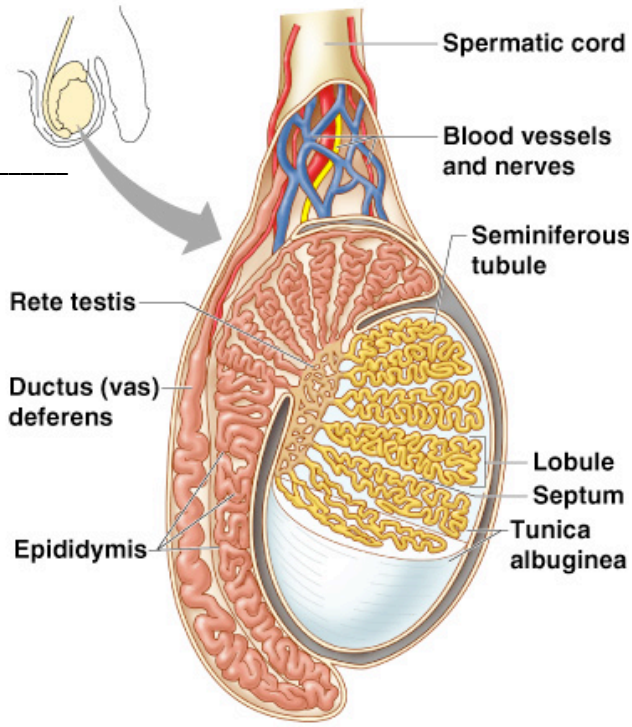
How many seminiferous tubules are found in each lobule?

The seminiferous tubules are tightly _____

that serve as _____

They empty into the _____

and then to the _____



Epididymis

_____ shaped and _____ tube found on the

_____ part of the testis and along the _____lateral side.

How long can it store sperm?

How is sperm expelled?

Ductus Deferens (Vas Deferens)

What is the function of the ductus deferens (vas deferens)?

Sperm moves by _____ in the vas deferens and with their

_____ once inside the uterus

The vas deferens ends in the _____ which unites with the urethra.

What is a vasectomy and how does it prevent pregnancy?

Urethra

The urethra extends from the base of the _____ to the

_____ and carries both _____ and _____.

The sperm enters from the _____.

Seminal Vesicles

Where are the seminal vesicles located and what do they produce?

What percent of the semen is this secretion?

Prostate Gland

Encircles the upper part of the _____

What is the function of the milky fluid secreted by the prostate?

-

Where does it enter the urethra?

Bulbourethral Gland

_____ sized gland inferior (below) to the _____

What are the three functions of the thick, clear mucous it secretes?

-
-

Where is the thick mucus secreted?

Semen

What is the function of the fructose in semen?

Why is semen an alkaline (basic) solution?

External Genitalia

Describe the scrotum.

Why is temperature about 3 degrees Celsius lower than the normal body temperature?

What is the function of the penis in the reproductive system?

What are the two regions of the penis?

_____ and the _____

Spermatogenesis

What is spermatogenesis?

What is the age range for the male to perform spermatogenesis?

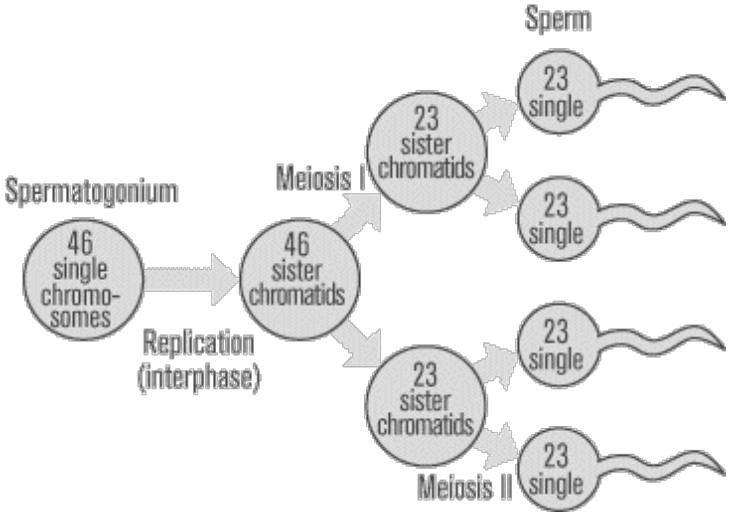
Where does it occur and what is produced?

When do spermatogeonia undergo rapid mitosis?

What is the purpose of follicle stimulating hormone (FSH)?

The primary spermatocytes undergo _____ and _____

spermatids are produced. What does that mean?



What are the three regions of a sperm cell?

_____, _____ and _____.

Which part contains the DNA and what protects it?

Approximately how long does spermatogenesis take? _____days

What is unique about the sperm cell?

What is the size of a sperm cell? _____ long _____wide

What are the functions of testosterone?

-
-
-

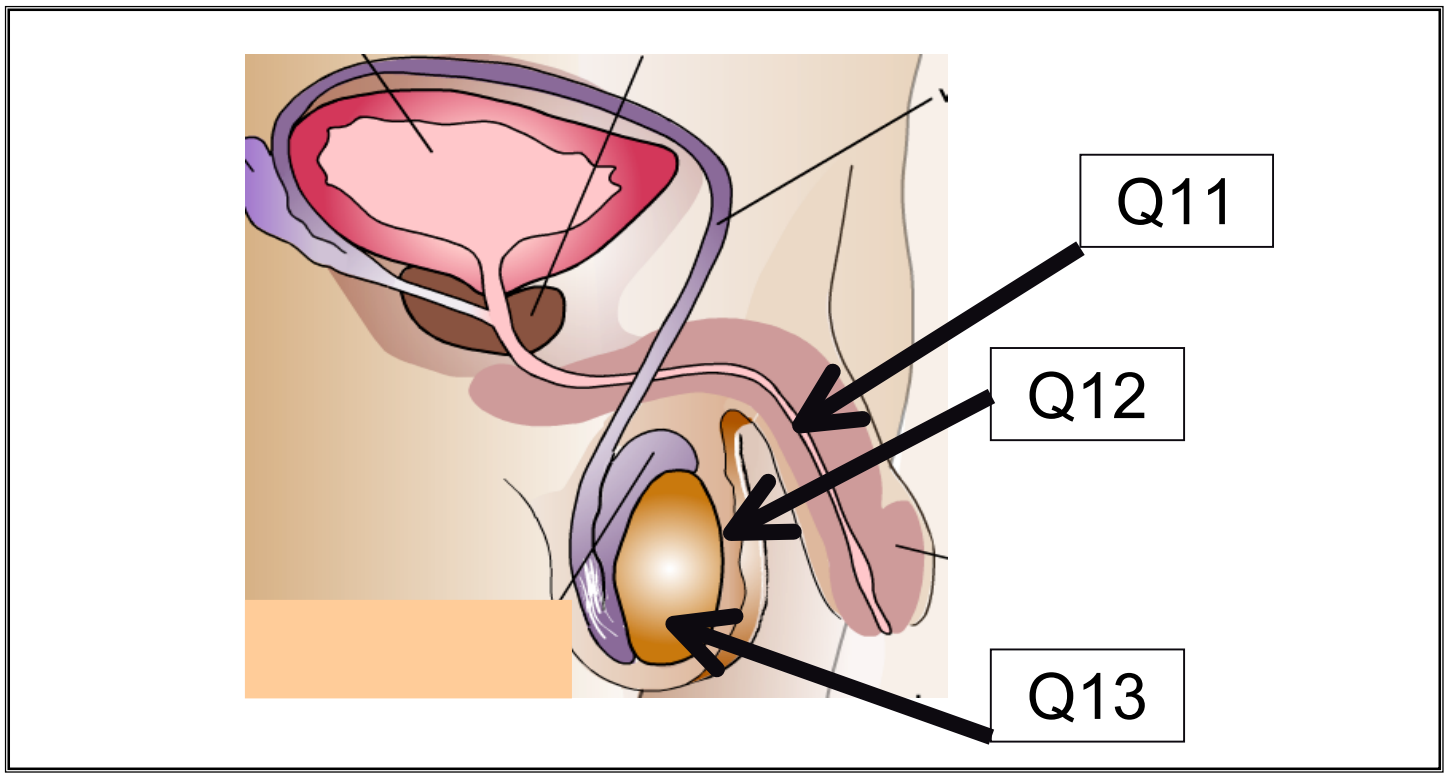
What are some secondary sex characteristics seen in males?

-
-
-
-

What happens to testosterone levels with age?

Male Reproductive System Review Questions

1. What structure regulates the temperature of the testes? _____
2. Where are sperm and sex hormones made? _____
3. What is the male sex hormone? _____
4. What are the functions of the penis? _____
5. How long is sperm stored in the epididymis? _____
6. What is the mixture of sperm cells and fluids? _____
7. What is the passageway for semen and urine? _____
8. Which is bigger, the sperm or the egg? _____
9. What is a vasectomy? _____
10. How many cells are produced by spermatogenesis? _____



11. _____ 12. _____ 13. _____

Female Reproductive System

List the major parts of the female reproductive system.

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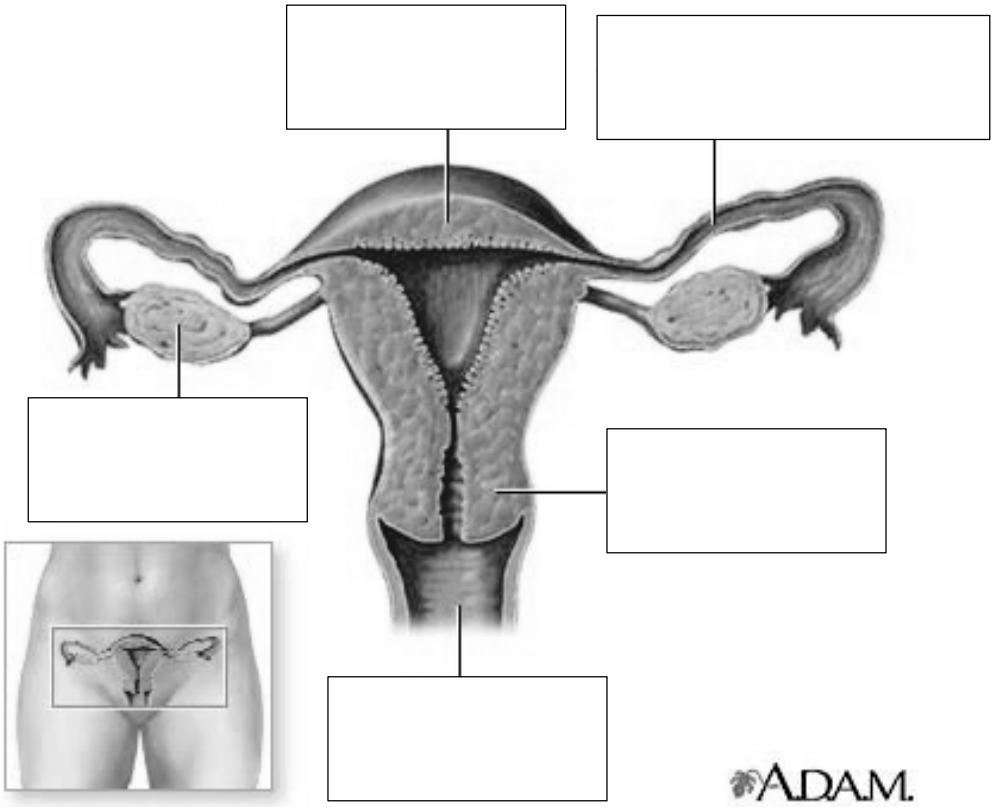
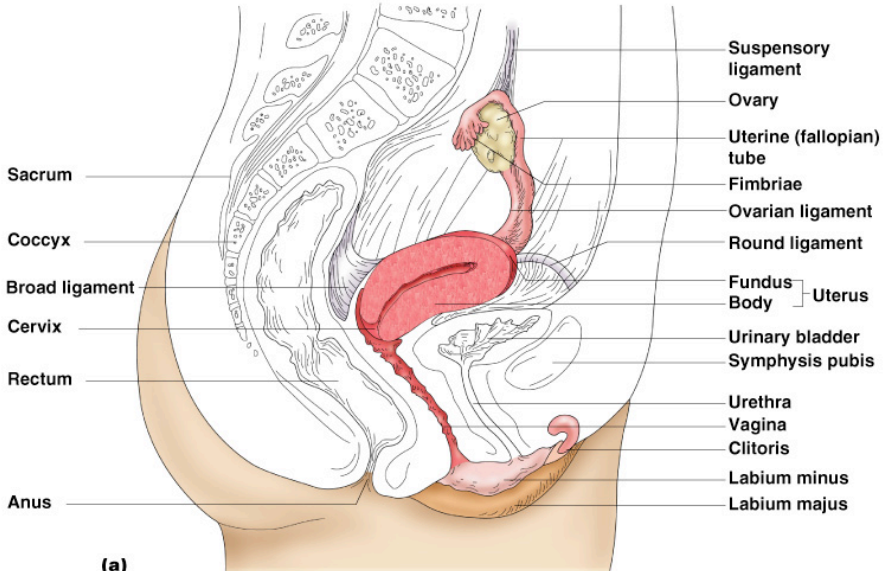
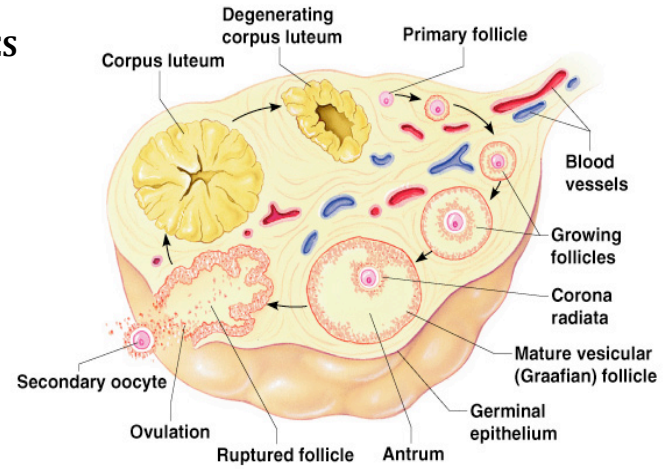




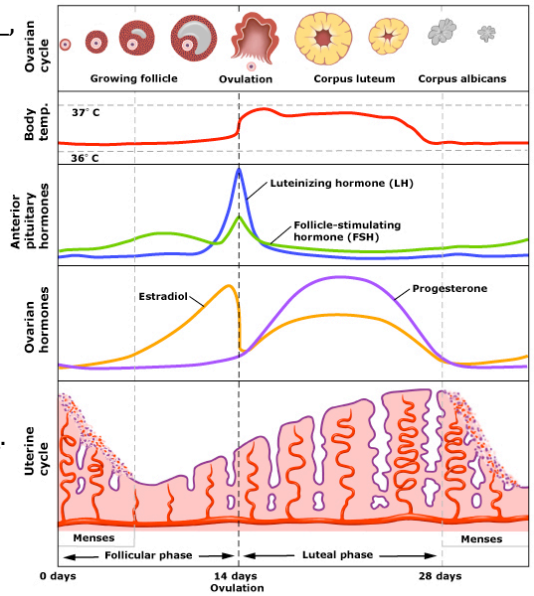
OVARIES



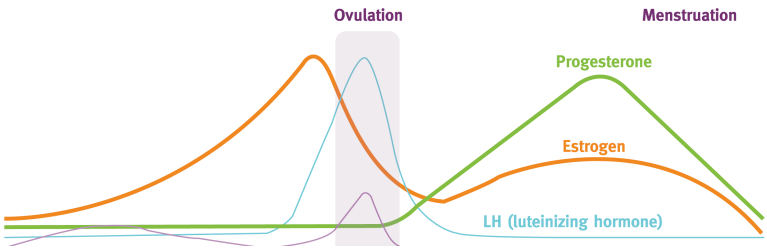
- Composed of _____ follicles
- (sac-like structures)
- Structure of an ovarian follicle

MENSTRUAL CYCLE

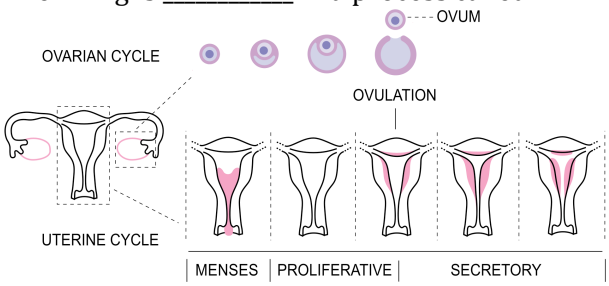
- Once a female reaches _____, she begins a reproductive cycle called the _____ cycle.
- The cycle of changes takes place in the ovary over a _____ day period.
- All of the reproductive cells a female will use in her life she has before she is _____.



- In addition to the maturation of a follicular cell, several _____ and _____ changes occur.
- _____ levels rise just before _____.
- _____ and _____ spike on day _____ when the egg is released (_____).



- After ovulation, _____ levels rise in preparation for potential implantation of the egg if it is _____.
- The _____ lining (_____)of the uterus thickens and becomes more vascular.
- If the egg is not fertilized, the inner uterine lining is _____ in a process called _____.



FOLLICULAR STAGES

- Primary follicle – contains an _____ oocyte
- Secondary follicle-mature egg cell that is ready to be _____.
- Ovulation – when the egg is mature the follicle ruptures

Occurs about every _____ days, but on the _____th

- The ruptured follicle is transformed into a _____.

What can be said about the eggs in a female's ovaries?

PRIMORDIAL FOLLICLE

- Primordial germ cells migrate into the developing gonads early in the development of the _____.
- Some of these enlarge and develop into larger cells called _____ and enter the first _____ division. This occurs between _____ and _____ months of gestation in the human embryo.

PRIMARY FOLLICLE

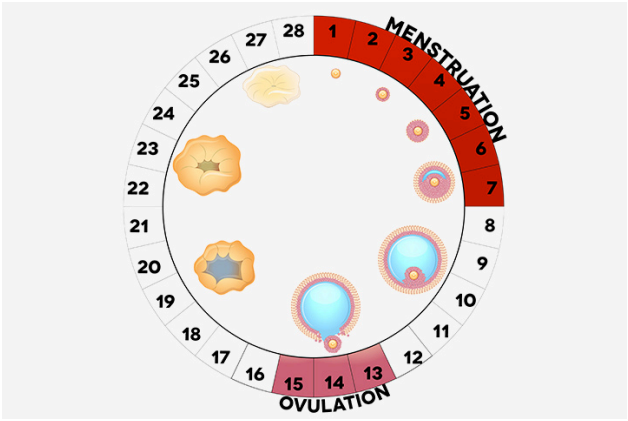
- These 'primary' oocytes become arrested in _____ of the first meiotic division until the female becomes sexually mature.

SEXUAL MATURITY

- At sexual maturity, a small number of primary oocytes (_____) mature each month and complete the fist meiotic division to become secondary oocytes under the influence of follicle stimulating hormone (_____).
- The oocytes synthesize a coat called the _____.
- They also accumulate _____, yolk, _____, lipid and the mRNA that will be used later on after fertilization to direct early development of the embryo.

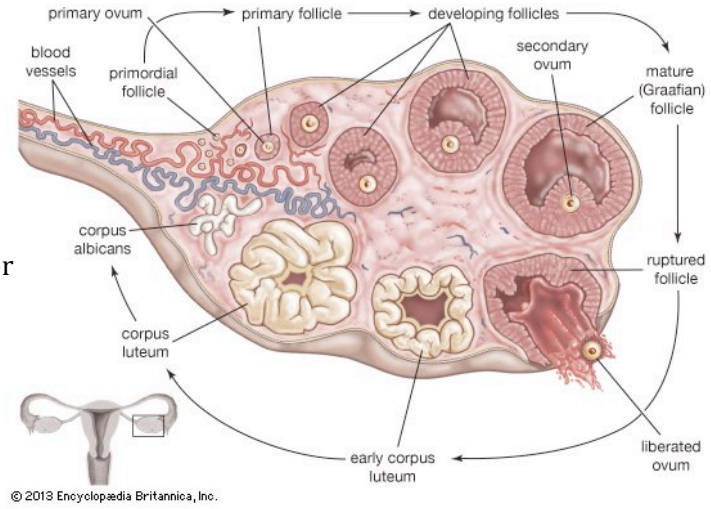
OVULATION

- This is the release of the _____ oocyte (mature ova or egg cell). This cell will contain the _____ number of chromosomes and will be released into the _____ and be ready to get fertilized if sperm cells are present.
- This occurs on the _____th day of the menstrual cycle, not the 14th day of the month.



CORPUS LUTEUM

- The corpus luteum is essential for establishing and maintaining _____ in females. The corpus luteum secretes _____, which is a steroid hormone responsible for the development and maintenance of the _____.

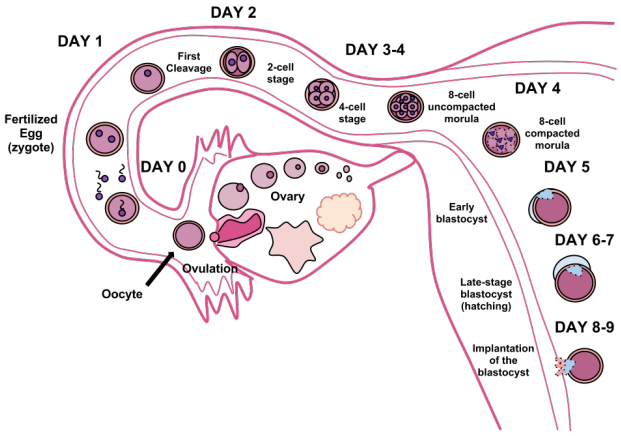


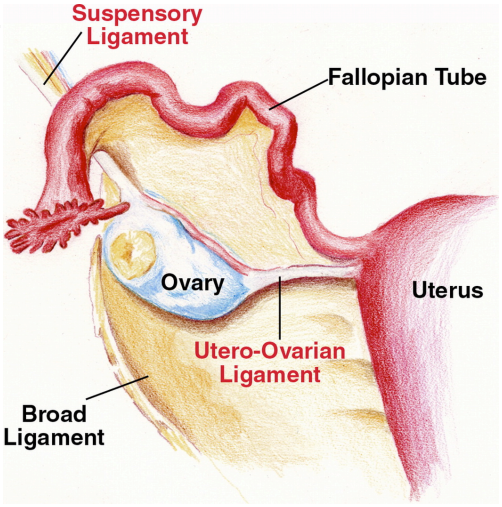
IF THE EGG IS NOT FERTILIZED

- If the egg is not fertilized, the corpus luteum stops secreting _____ and decays (after approximately _____ days in humans). It then degenerates into a corpus albicans, which is a mass of fibrous scar tissue.

IF THE EGG IS FERTILIZED

- If the egg is fertilized and _____ occurs, the cells of the blastocyst secrete the hormone human chorionic gonadotropin (hCG, or a similar hormone in other species) by day 9 post-fertilization.
- _____ is the hormone used in pregnancy tests.



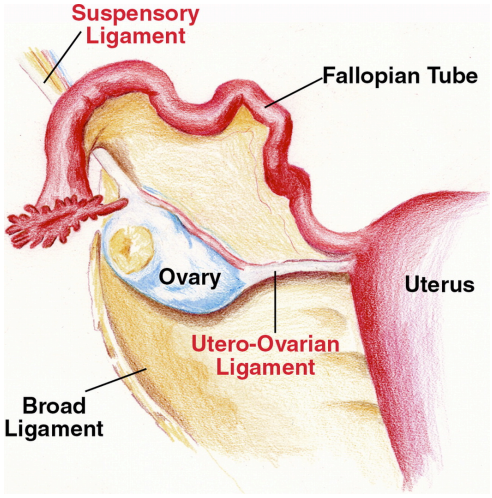


OVARIAN SUPPORT

- The ovarian ligament is composed of _____ and _____ tissue; it extends from the uterine extremity of the ovary to the lateral aspect of the uterus, just below the point where the uterine tube and uterus meet.

FALLOPIAN TUBES

- Receive the ovulated _____
- Provide a site for _____
- Attaches to the _____
- Does _____ physically attach to the ovary
- Supported by the _____ ligament



FUNCTIONS OF FALLOPIAN TUBES

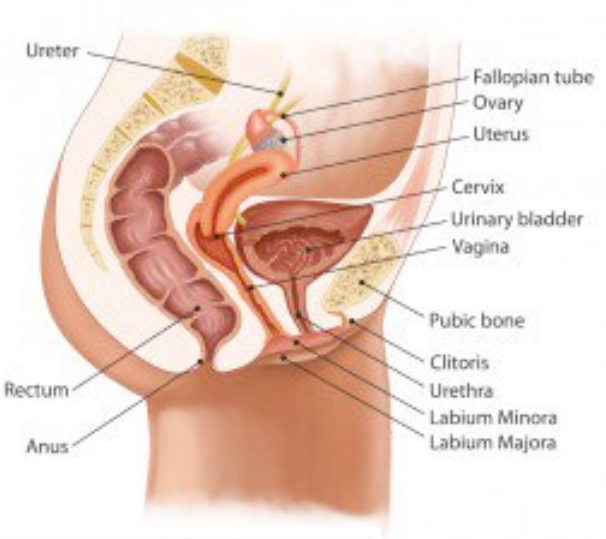
- _____ – finger-like projections at the distal end that receive the oocyte.
- Cilia inside the uterine tube slowly move the oocyte towards the uterus. (takes _____ days)
- Fertilization occurs inside the _____ tube.

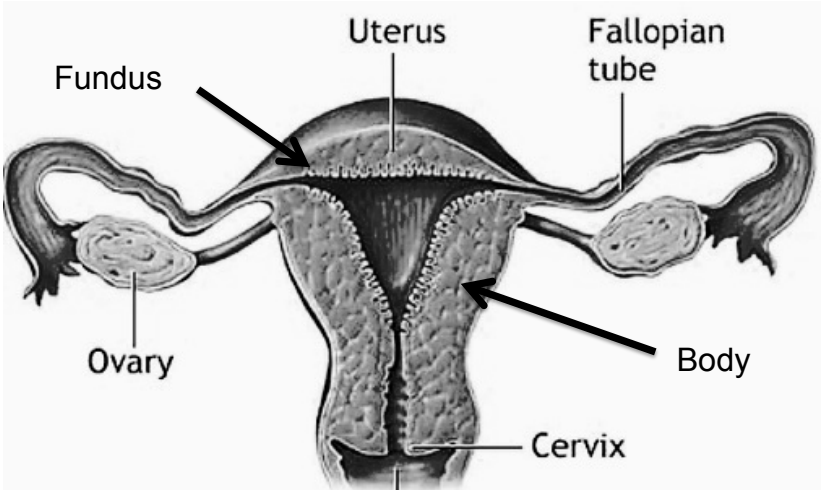
UTERUS

- Located _____ the urinary bladder
- Hollow _____ organ
- Functions of the uterus
_____ a fertilized egg
_____ the fertilized egg
_____ the fertilized egg

REGIONS OF THE UTERUS

- _____ – main portion
- _____ – area where uterine tube enters
- _____ – narrow outlet that protrudes into the vagina





WALLS OF THE UTERUS

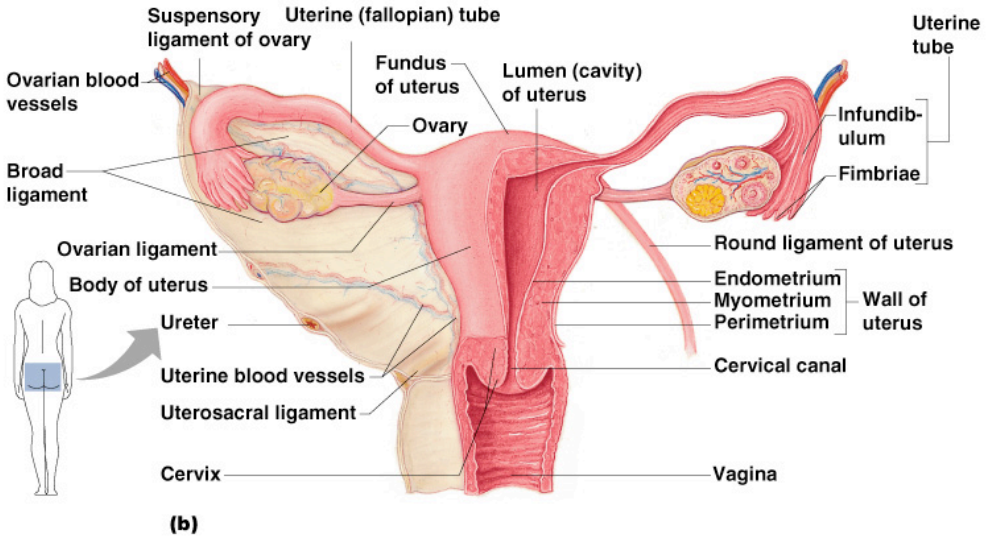
- Endometrium

_____ layer

Allows for implantation of a fertilized egg

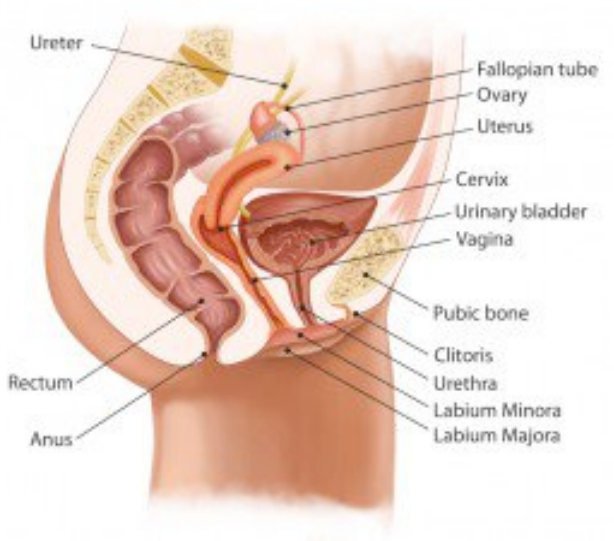
_____ off if no pregnancy occurs (menses)

- Myometrium – _____ layer of _____ muscle.

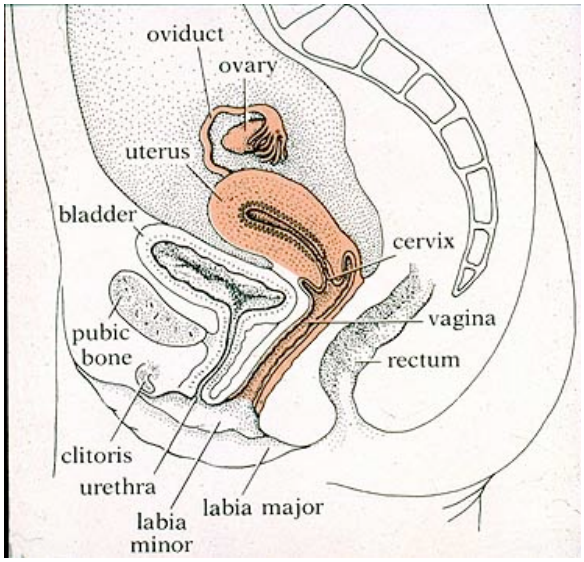


VAGINA

- Extends from _____ to exterior of body
- Behind _____ and in front of rectum
- Serves as the _____ canal
- Receives the penis during sexual intercourse
- _____ – partially closes the vagina until it is ruptured



EXTERNAL GENETALIA



- Mons pubis

Fatty area overlying the pubic symphysis

Covered with pubic hair after puberty

- Clitoris
- Labia – skin folds

Labia majora

Labia minora

OOGENESIS

- The total supply of eggs are present at _____
- Ability to release eggs begins at _____.
- Reproductive ability ends at _____.
- Oocytes are matured in developing ovarian follicles.
- The mature oocyte is about _____ µm in diameter.

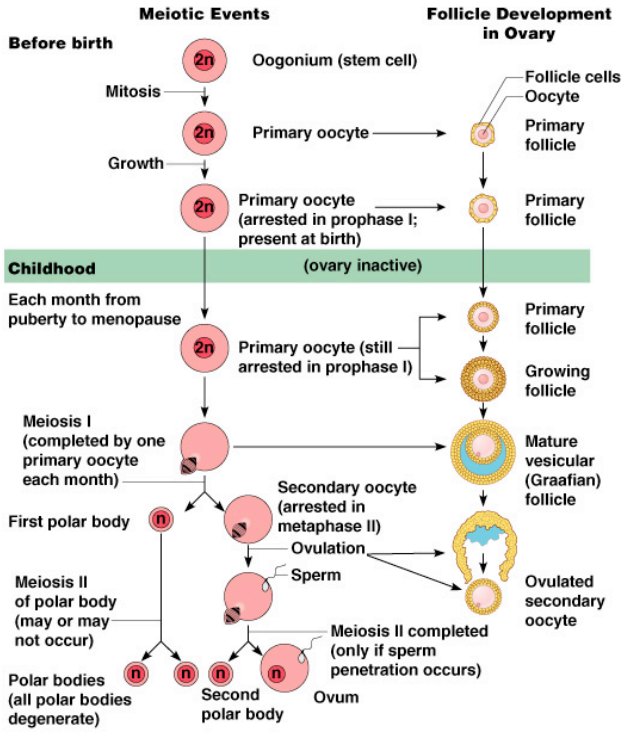
- Primary oocytes are _____ until puberty
- Follicle stimulating hormone (FSH) causes some primary follicles to mature

Meiosis starts inside maturing follicle

Produces a secondary oocyte and the _____ polar body

Meiosis is completed after ovulation only if sperm penetrates

_____ additional polar bodies are produced



THE BIRTHING PROCESS

Menstrual Cycle

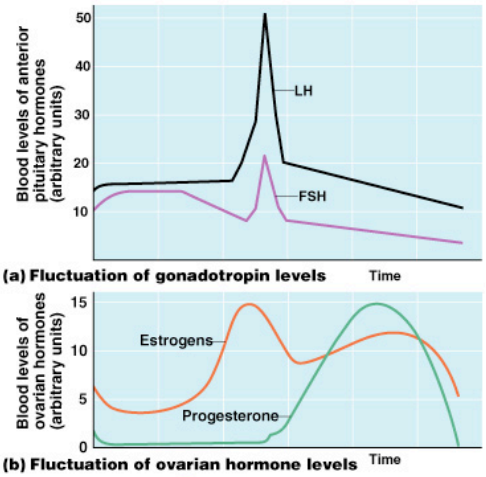
Which two hormones regulate the menstrual cycle? _____ and

_____

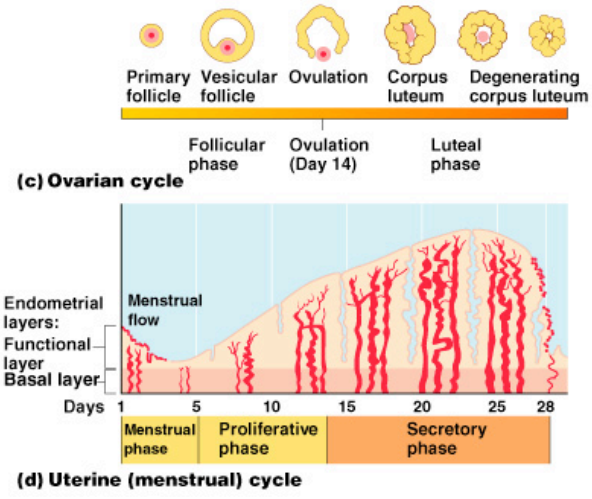
FSH controls the _____ of the menstrual cycle by stimulating the maturation of the _____ follicles. Many follicles mature during each cycle, but the one that reaches maturity first will release the egg. FSH stimulates the follicle cells to produce the hormone _____, which stimulates the preparation of the _____, needed for implantation in case the egg is fertilized.

High levels of estrogen trigger the LH surge causing the release of the _____ from the mature follicle. This process is called _____. LH stimulates the progesterone production from the _____, which supports the second half of the menstrual cycle. During this phase estrogen levels decrease while progesterone levels _____.

According to the chart, what happens to the LH and FSH levels as levels of estrogen increase?



According to the graph, when does ovulation occur?



What are the six secondary sex characteristics caused by estrogen in females?

-
-
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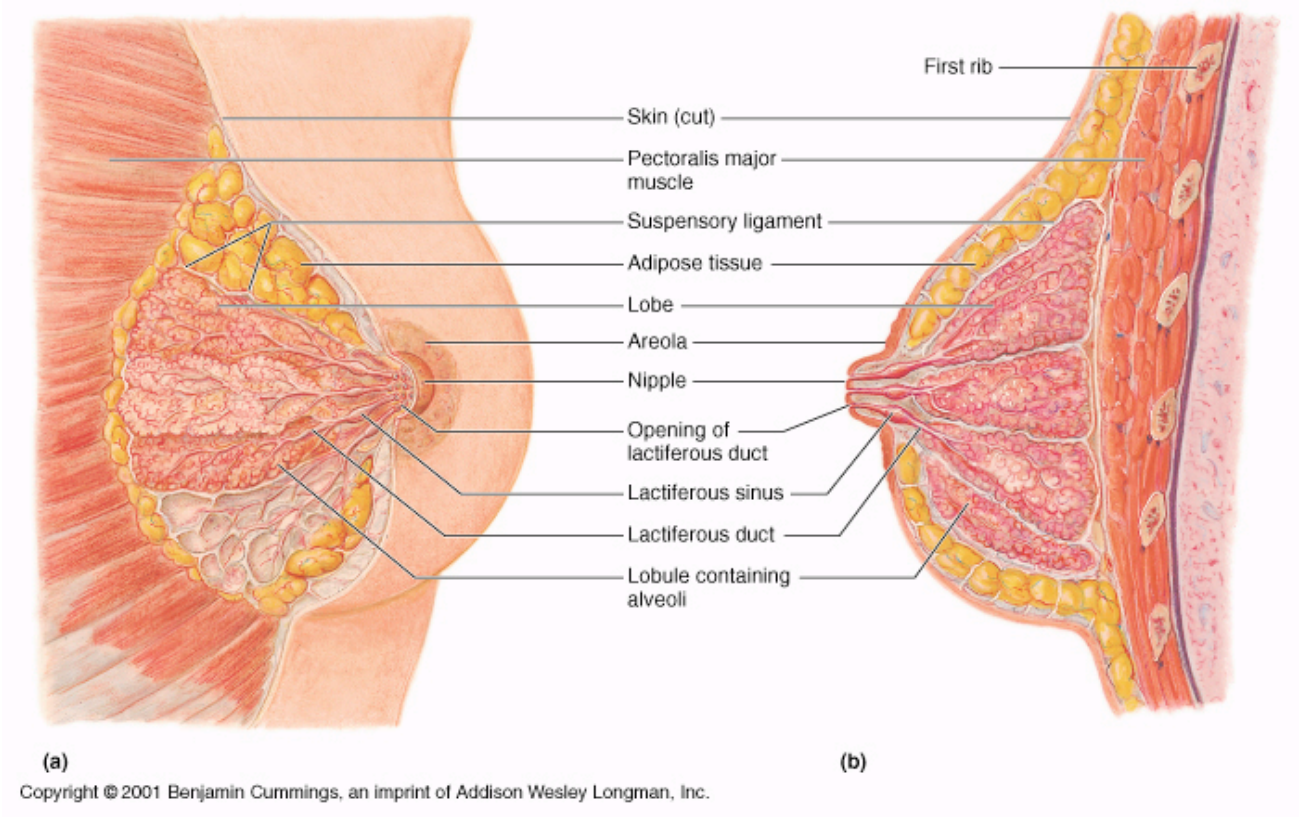
What produces progesterone and what is one of its functions?

What are mammary glands?

What is their function?

What causes them to increase in size?

What sex are the functional in?



Areola-

Nipple-

Lobes-

Alveolar Glands

Lactiferous Ducts-

What are the four stages of birth?

-
-
-
-

How long is the oocyte viable after ovulation? _____hrs

How long is sperm viable after ejaculation? _____-_____hrs

Where do the sperm cells have to travel for fertilization to occur?

What happens to the first sperm that comes in contact with the oocyte?

Will any other sperm cells be allowed to fertilize the egg? _____

When does fertilization occur?

The zygote is the first cell formed. What is it the result of?

How does the zygote increase the number of cells?

Where does fertilization take place and where will the zygote move on to?

BLASTOCYST

_____ circle of cells

Begins at about the _____ cell stage

Secretes human chorionic gonadotropin (_____) to produce the corpus luteum to continue producing hormones

Functional areas of the blastocyst

- Trophoblast – large _____ sphere
- Inner cell mass

Primary germ layers are eventually formed

- _____ – outside layer
- _____ – middle layer
- _____ – inside layer

The late blastocyst implants in the wall of the uterus (by day _____)

Ectoderm

- Nervous system
- Epidermis of the skin

Endoderm

- Mucosae
- Glands

Mesoderm

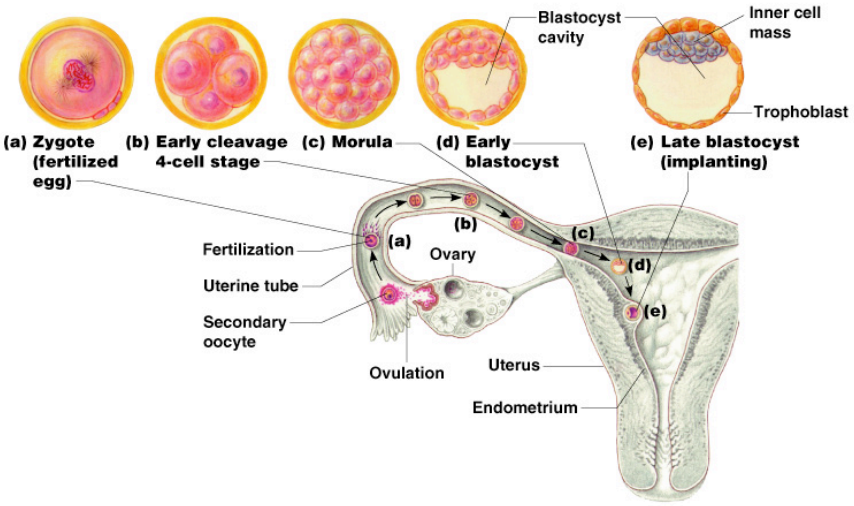
- Everything else

_____ (projections of the blastocyst) develop

Cooperate with cells of the uterus to form the _____

The embryo is surrounded by the _____ (a fluid filled sac)

An umbilical cord forms to attach the _____ to the _____

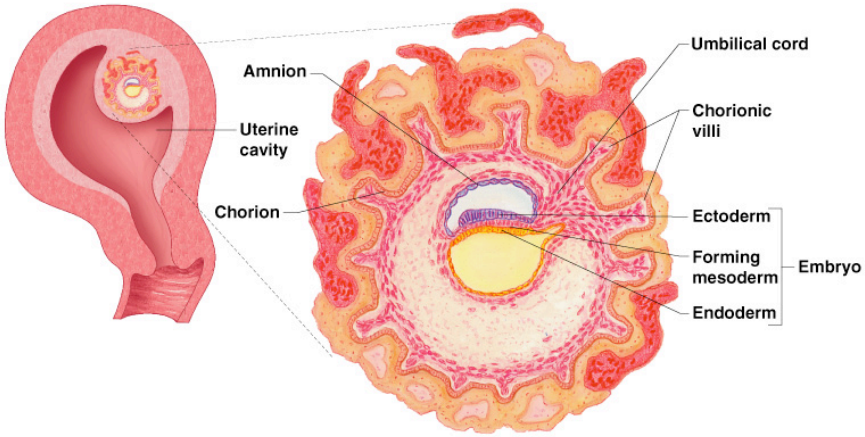


EMBRYO

The mass of cells is called an embryo until the _____ week.

How many cells is the zygote when it moves into the uterus? _____

Where does it get its nutrients?



What are the functions of the placenta?

-
-
-
-
    -
    -
    -

When are organs formed?

Here is where _____get specialized and there is a tremendous growth and change in _____.

Pregnancy-

Some anatomical changes include:

-
-
-

Some physiological changes include:

-
-
-

MORNING SICKNESS

Morning sickness often begins _____ weeks after conception and may continue until the _____ month of pregnancy. Some women have morning sickness during their entire pregnancy. This happens most often for women who are carrying more than 1 baby.
It is called morning sickness because the symptoms are more likely to occur early in the day, but they can occur at _____. For some women, morning sickness lasts all day. Most experts think changes in the woman's hormone levels during pregnancy cause it. Other factors that can make the nausea worse include a pregnant woman's enhanced sense of smell and gastric reflux.

Why do pregnant women urinate so often?

List two changes in the respiratory system.

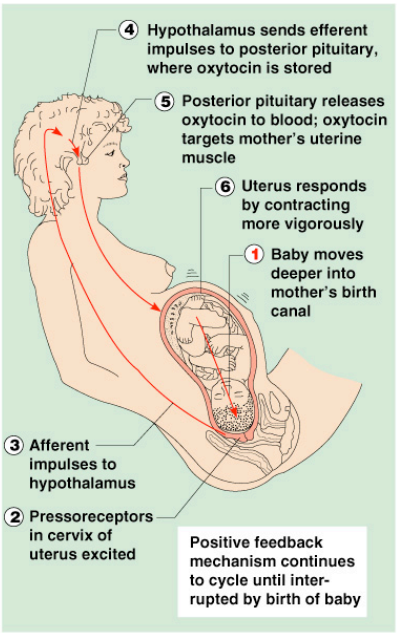
What are the four changes in the cardiovascular system?

-
-
-
-

Labor-

List the five events that initiate labor.

-
-
-
-
-



What happens in the dilation stage of labor?

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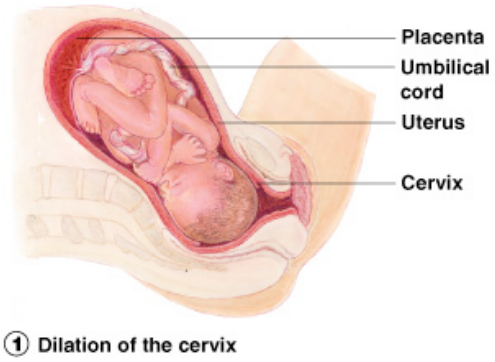


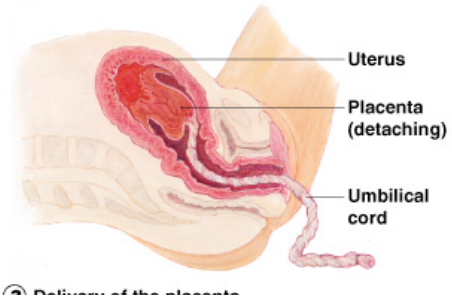
1 Dilation of the cervix

What happens in the expulsion phase?

-
-


2 Expulsion: delivery of the infant

What is the last stage?



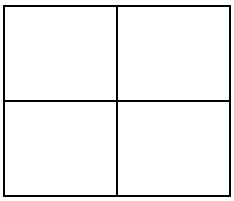
TWINS

List the three types of twins. _____ _____ and _____

Describe identical twins (monozygotic).

Describe fraternal twins (dizygotic).

Describe polar body twins.



What is the chromosome of a male? _____

What is the chromosome of a female? _____

When do the gonads begin to form?

When do the testes descend to the scrotum?

When does the reproductive system begin to function?

When does puberty begin?

At what age is a female at her peak reproductive ability?

Describe menopause.

Does this happen in men? If not, what does happen?