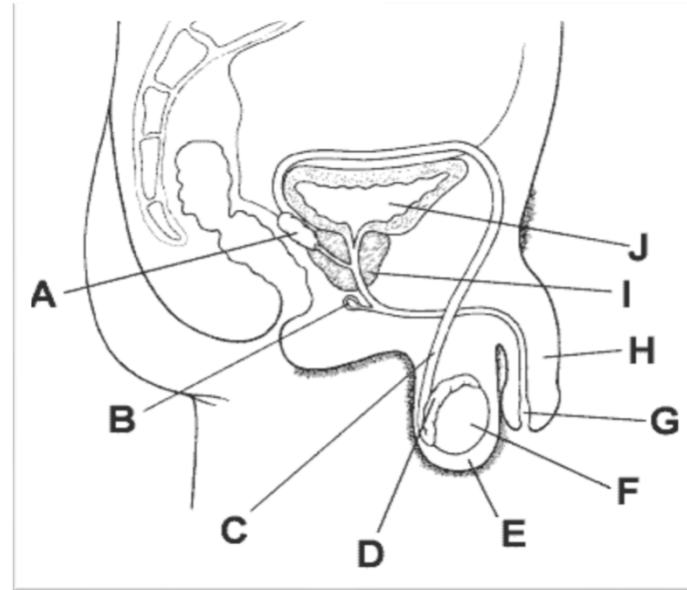
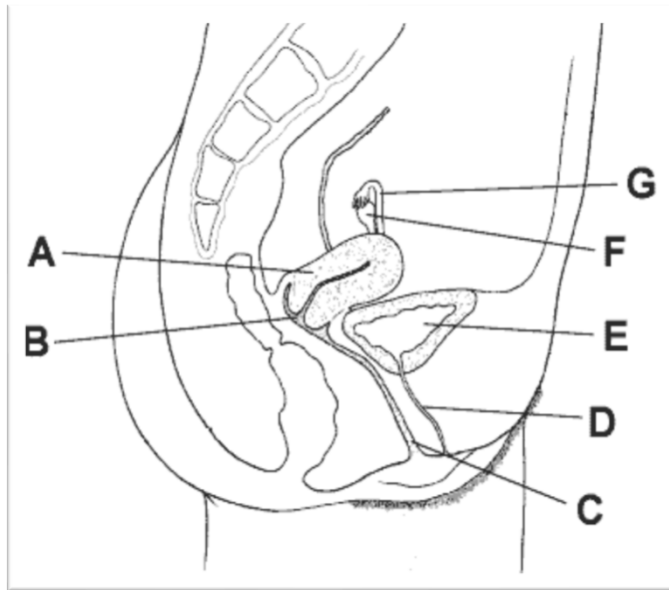


Human Reproduction

Male and Female Systems



OUTCOME QUESTION(S):

S1-1-09:

What parts make up the male and female sex systems and what is the function of each part?

Vocabulary & Concepts

Hormone

Testosterone

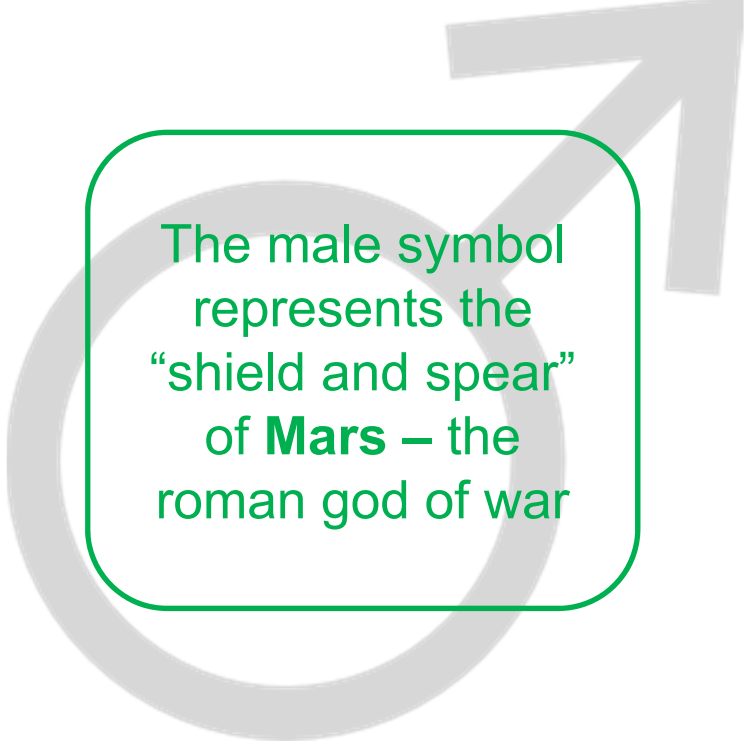
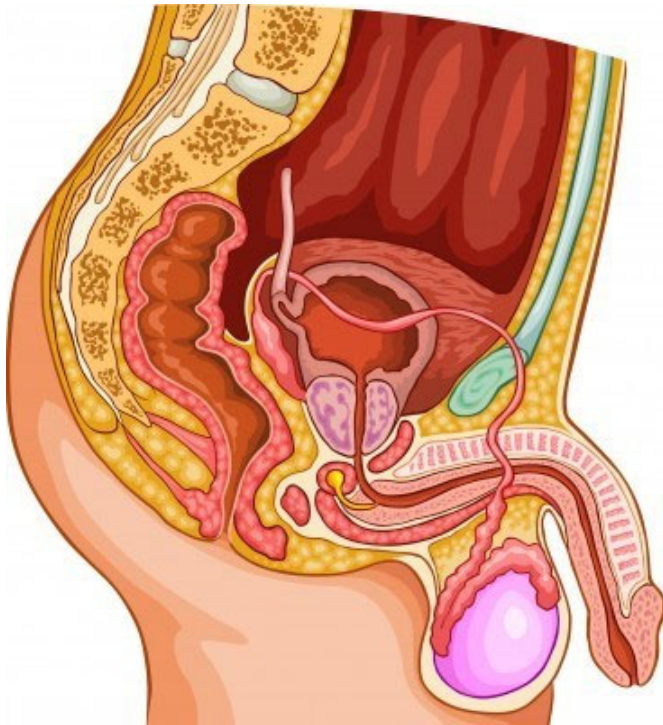
Estrogen

Progesterone

You need to know all the male and female components that make up the “system”

Male reproductive system *must both*:

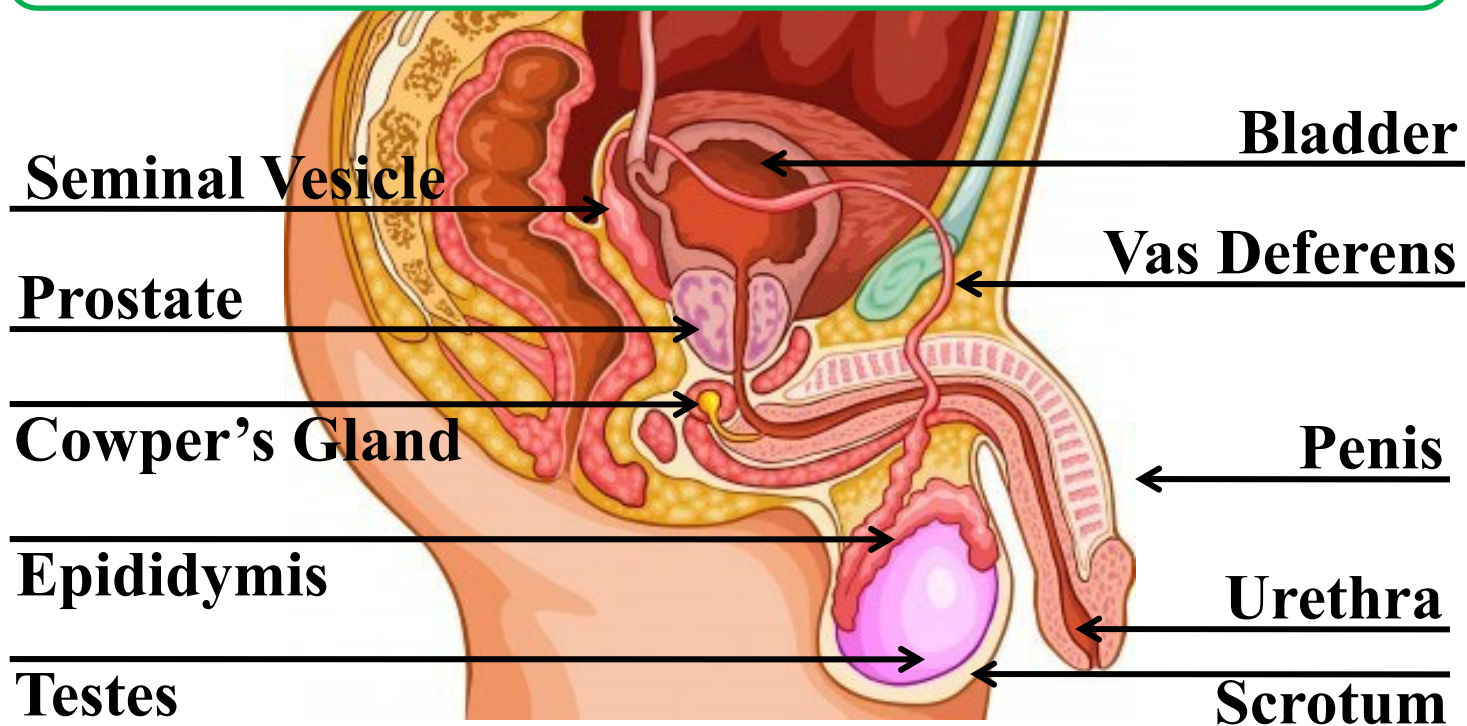
- Produce sperm → *male gamete*
- Pass sperm on to female – *sexual intercourse*



The male symbol represents the “shield and spear” of **Mars** – the roman god of war

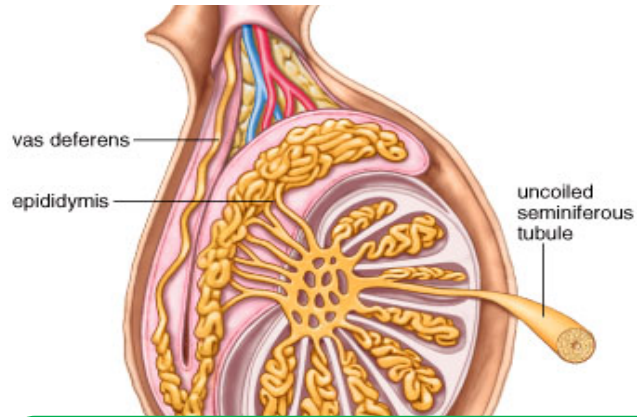
Male sex organs:

Don't try to memorize this picture – *you will see different pictures* – learn how everything connects and where it is

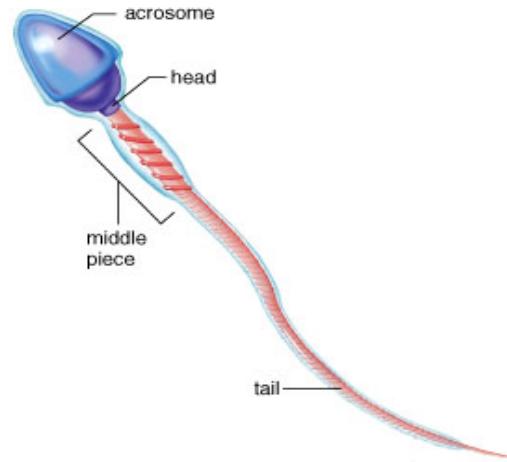


<u>Component</u>	<u>Function</u>
Scrotum	<ul style="list-style-type: none"> • Holds the testes externally (outside) <i>(providing a cooler environment for healthy sperm)</i>
Testes	<ul style="list-style-type: none"> • Site of sperm production - <i>seminiferous tubules</i> <i>(1000 sperm a heart beat)</i>
Epididymis	<ul style="list-style-type: none"> • Sperm storage place until ejaculation
Vas deferens	<ul style="list-style-type: none"> • Transports sperm <i>from epididymis to the urethra</i>
Urethra	<ul style="list-style-type: none"> • Transports sperm and urine <i>through the penis</i> <i>(joins the vas deferens under the prostate gland)</i>
Prostate gland / Seminal vesicle / Cowper's gland	<ul style="list-style-type: none"> • 3 glands together make semen <i>(contains nutrients and sugars for the sperm's "journey")</i>
Penis	<ul style="list-style-type: none"> • Delivers sperms and excretes urine

Male gamete:



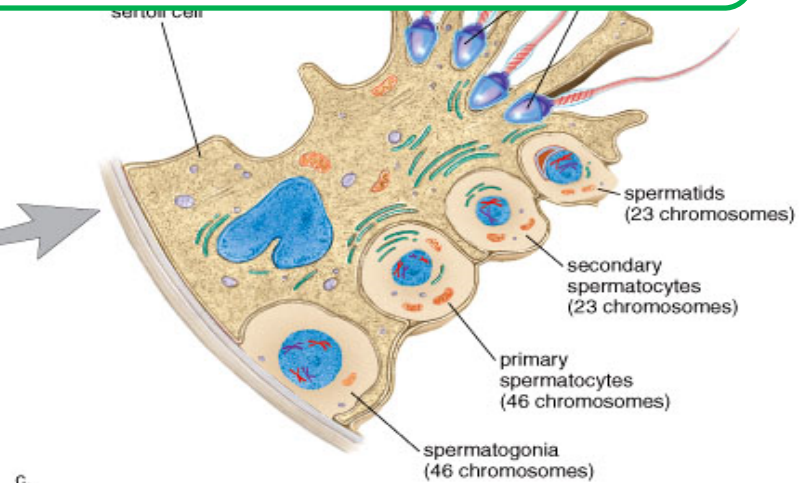
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Sex organs (and sperm production) remain non-functioning until kick-started by **hormones** during puberty



b.



c.

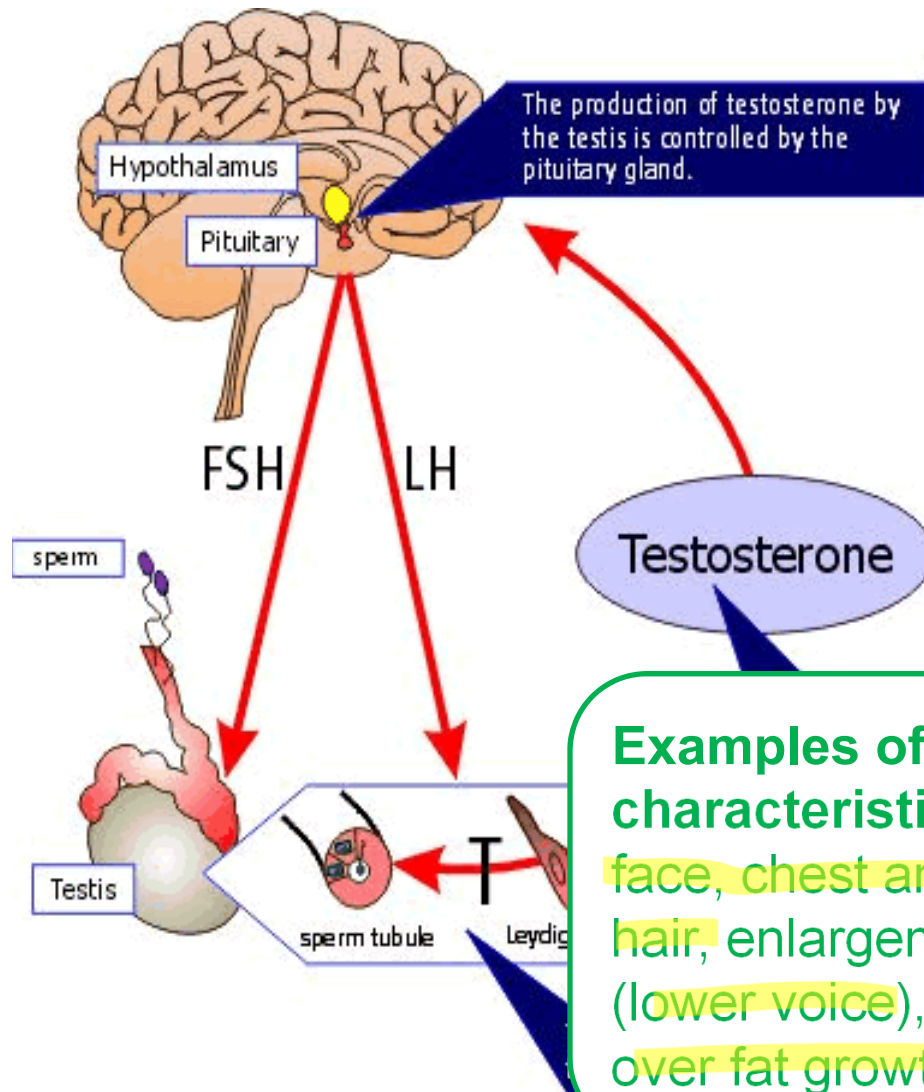
Hormone: chemical “messenger” that allows one body part to influence the behavior of another.

Hormones are released by “**glands**” – this system is called the ***Endocrine system***

Puberty and the Brain:

Pituitary gland in the *brain* releases **2** hormones *simultaneously* that instruct body to grow/mature:

- stimulates testes to produce *males sex hormone* **testosterone** which starts *production of sperm*



Testosterone is responsible for all male **“secondary sex characteristics”**

Examples of male secondary sex characteristics include: hair growth on face, chest and under armpits, pubic hair, enlargement of the Adam’s Apple (lower voice), increased muscle growth over fat growth.

Female reproductive system *must be able to:*

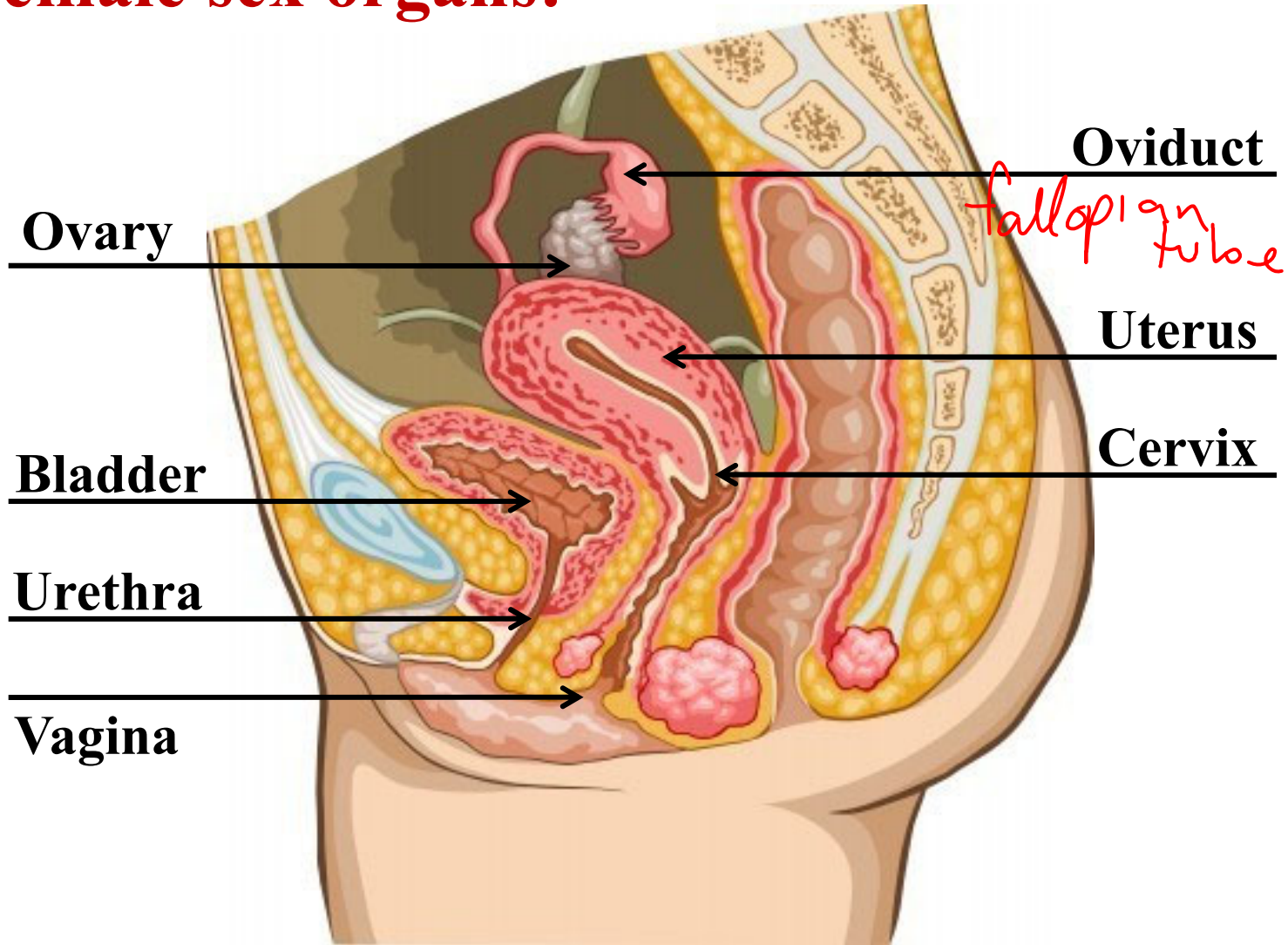
- Produce and release eggs
- Nourish and hold zygote until fully developed
- Give birth

Single cell
from sperm
and egg

The female symbol
represents the
“hand mirror” of
Venus– the roman
goddess of fertility



Female sex organs:



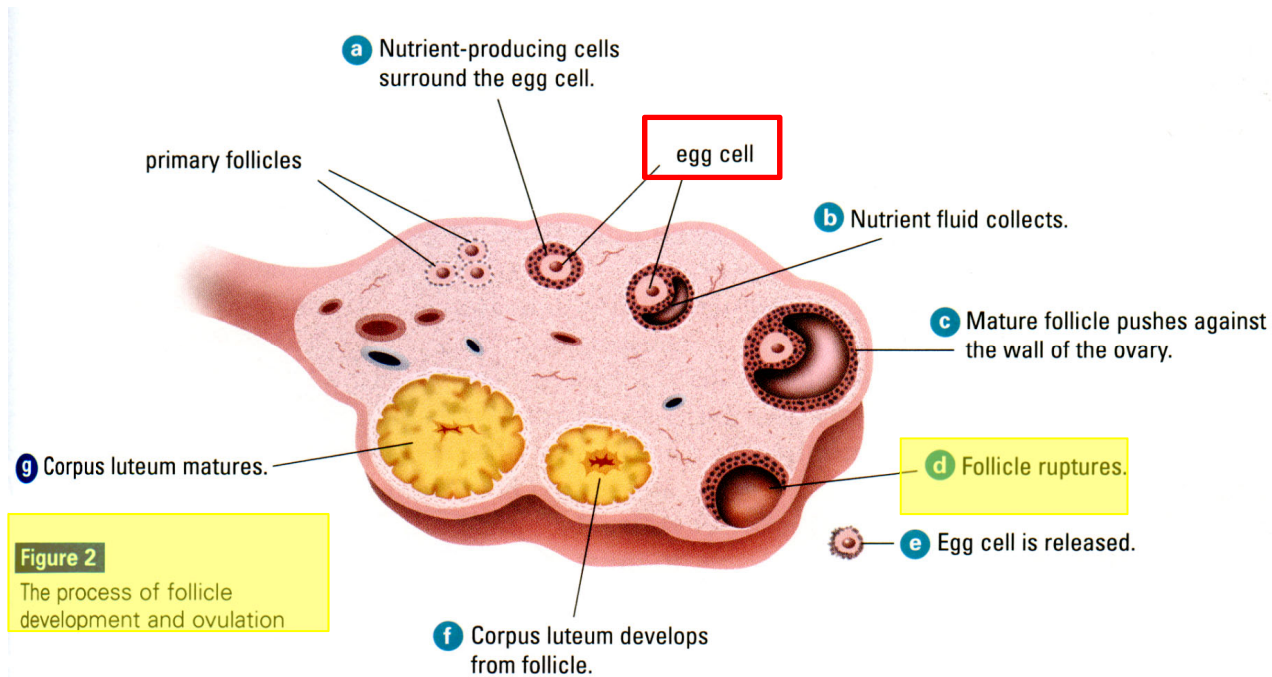
<u>Component</u>	<u>Function</u>
Ovaries	<ul style="list-style-type: none"> • <u>Holds follicle cells</u> which develop into eggs <i>(releases one egg a menstrual cycle – ovulation)</i>
Oviducts	<ul style="list-style-type: none"> • Transports egg to uterus – <u>site of fertilization</u> <i>(also called Fallopian tubes)</i>
Uterus	<ul style="list-style-type: none"> • Site of <u>implantation</u> of fertilized egg – zygote <i>(endometrium thickens/thins with menstrual cycle)</i>
Cervix	<ul style="list-style-type: none"> • Muscular <u>opening of the uterus</u> <i>(dilates to allow passage of menstrual blood/fetus)</i>
Vagina	<ul style="list-style-type: none"> • <u>Receives sperm</u> from the male • <u>Transports</u> mature fetus and menstrual fluid

Remember: females don't continue to make new eggs – at birth they have about 7 million, by puberty it is down to about 400,000

Female gamete:

- “*shell*” of egg - follicle - plays a large *role* in the menstrual cycle

This “shell” releases hormones before and after egg is released

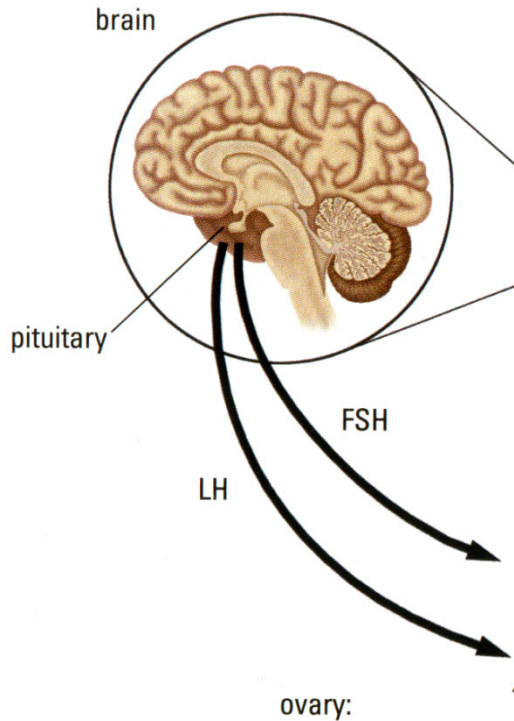


Puberty and the Brain:

Pituitary gland releases *2 hormones separately:*

1st - stimulates the development of follicles (eggs)
and begins the menstrual cycle
- follicles produce *hormone* estrogen

2nd - stimulates ovulation in *middle of cycle*
- ruptured follicle - produces *second*
hormone progesterone

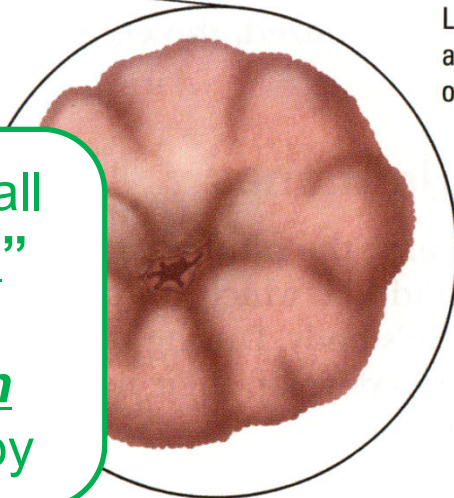


Examples of female secondary sex characteristics are: hair growth under armpits and legs, pubic hair, development of breasts, widening of hips, and increased body fat production.

crete

Estrogen alone is responsible for all “secondary sex characteristics”

Estrogen and Progesterone *both* work to prepare the uterus for baby



LH causes ovulation and the formation of the corpus luteum.

corpus luteum

CAN YOU ANSWER THESE QUESTIONS?

S1-1-09:

What parts make up the male and female sex systems and what is the function of each part?

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Testosterone

Estrogen

Progesterone

You need to know all the male and female components that make up the “system”