Human Reproduction

Chapter 41

Human Reproductive System

- Male Reproductive System
- Female Reproductive System
- Contraceptives

Male Reproductive System

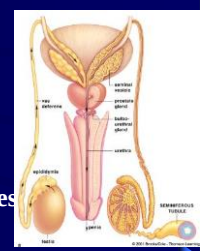
- Scrotum
- Testes
- Epididymus
- Vas Deferens
- Seminal Vesicles
- Prostate Gland
- Bulbourethral Gland
- Penis

Scrotum

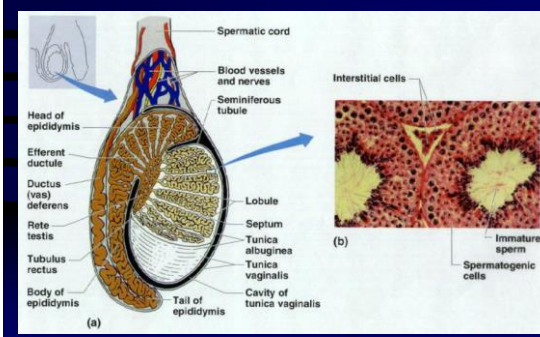
- Sac of smooth muscle tissue that houses testes away from the body
- Elasticity serves to regulate temperature
- Sperm develop at 94 – 95 degrees F

Testes

- Site of sperm production
- Meiosis occurs in coiled seminiferous tubules
- 100 – 150 million sperm produced each day
- Testosterone produced in Interstital cells between tubules stimulated by FSH
- Follicle Stimulating Hormone from pituitary gland
- Covered with pressure sensitive neurons

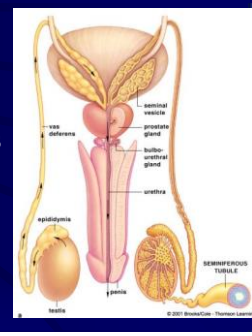


Male Reproductive System



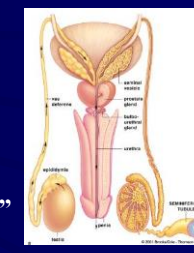
Epididymus

- **Sac on top of the testes that stores the sperm.**
- **Holds up to 10 – 14 days of sperm production.**

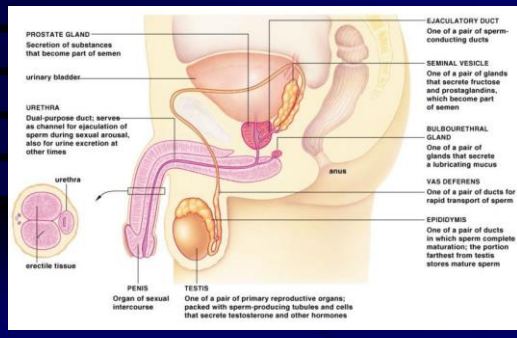


Vas Deferens

- **Sperm ducts leading from the epididymus to the prostate gland.**
- **Transfer sperm by smooth muscle contractions**
- **Tube severed for "vasectomy."**

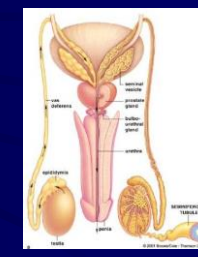


Male Reproductive System

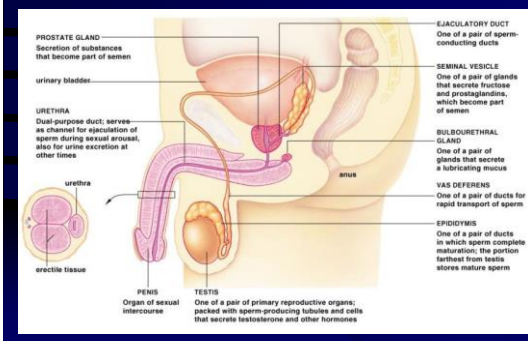


Seminal Vessicles

- **Gland that secretes fructose sugar into the semen to provide nutrients for the sperm.**
- **Prostaglandins that stimulate smooth muscle contraction are also released into semen.**

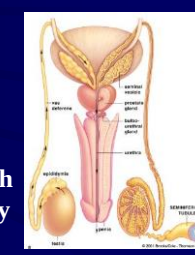


Male Reproductive System



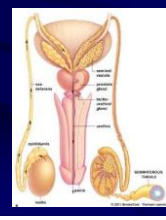
Prostate Gland

- **Gland that secretes bicarbonate ions into the semen to neutralize the acidic environment of the vagina.**
- **Propels the semen through the urethra of the penis by muscular contractions.**
- **Controls urination**

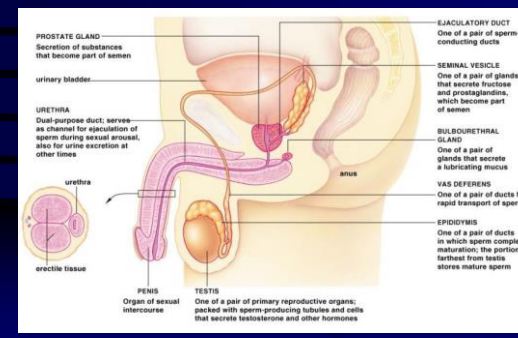


Bulbourethral Gland

- **Gland that secretes thick mucous into the urethra to neutralize the acids.**
- **The mucous lubricates the path for the semen.**

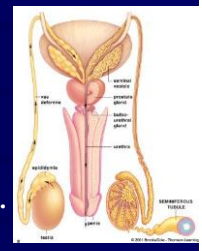


Male Reproductive System



Penis

- **External genitalia designed to deliver semen into the female vagina.**
- **Urethra is the tube in the penis through which the semen passes.**
- **Sides of penis contain large masses of erectile tissues that become filled with blood when stimulated.**



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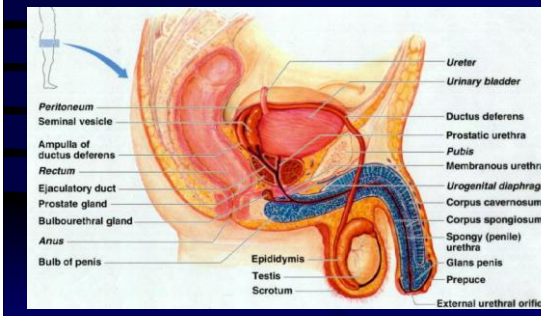

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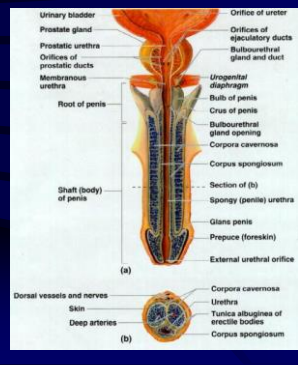
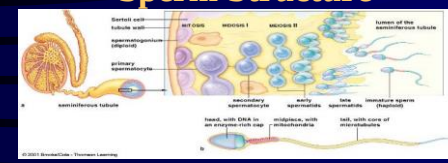


Sperm Structure

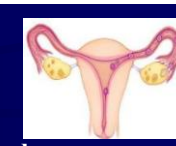


- **Head with DNA & Acrosome (penetration enzymes)**
- **Neck with cell body & attachment for fructose**
- **Tail of microtubule protein fibers (Flagellum)**
- **Female X sperm & Male Y sperm**

Female Reproductive System

- Ovaries
- Fallopian Tubes
- Uterus
- Cervix
- Vagina
- Labia
- Menstrual Cycle

Ovaries



- Site of egg production
- Pair of "golf ball sized" glands located in the lower abdomen.
- Meiosis occurs in follicle chambers
- One egg cell produced every 28 days
- Estrogen produced in follicle cells
- Progesterone produced in vacated follicle chamber called the Corpus Luteum

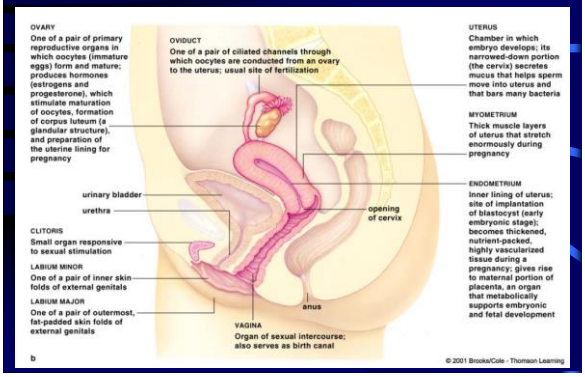
Oviducts – Fallopian Tubes

- Pair of 4" long ciliated tubes leading from the ovary to the uterus.
- Fingerlike ends called fimbriae.
- Usual site of fertilization
- Tubes severed in a tubal ligation.

Uterus

- A baseball sized organ located in the lower abdomen.
- Known as the "womb," it serves as the site of attachment for the placenta.
- Each month it grows a temporary lining called the endometrium.
- The endometrium provides nutrients for the fertilized egg until the placenta develops.
- If pregnancy does not occur, the endometrium is lost as menstrual flow.

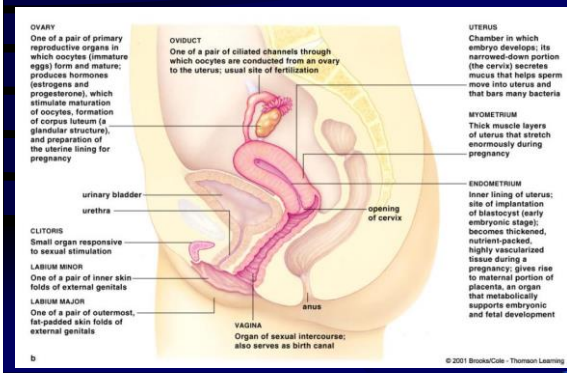
Female Reproductive System



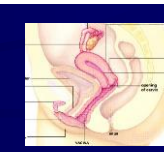
Cervix

- Opening in the base of the uterus leading to the vagina.
- Opening through which sperm must pass to fertilize the egg.
- Opening which must expand to the size of a softball in order to give birth.
- The process is called "labor."

Female Reproductive System

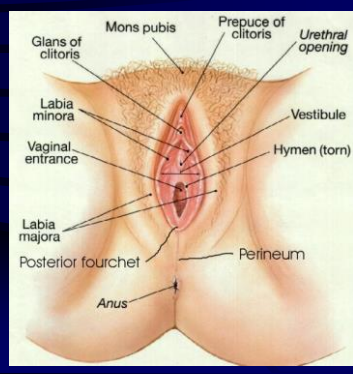


Vagina



- **Organ of sexual intercourse.**
- **Lined with mucous glands and acid secreting cells.**
- **Terminates at the cervix of the uterus.**
- **Protected on the outside by layers of tissues called labia.**
- **Stimulated by a small mass of erectile tissue densely packed with sensory neurons called the clitoris.**

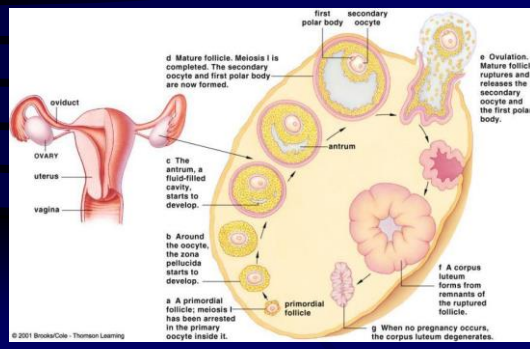
Female Reproductive System



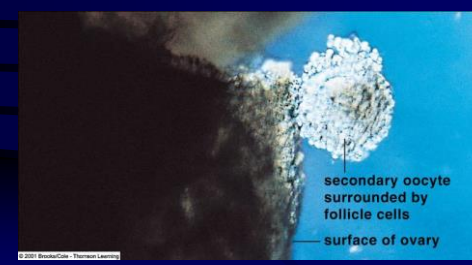
Menstrual Cycle

- **Hormones control the physiology of the female menstrual cycle:**
- **FSH - Follicle Stimulating Hormone is secreted from the pituitary gland.**
- **As the level of FSH rises in the blood, the ovary is stimulated to produce estrogen.**
- **As the level of estrogen rises, the pituitary stops secreting FSH and begins to secrete LH - Lutenizing Hormone. It is LH that stimulates ovulation.**

Female Reproductive System



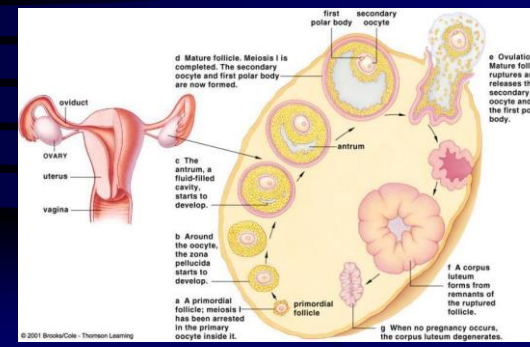
Egg released from ovary.



Menstrual Cycle

- **The follicle from which the egg was released becomes a temporary gland called the Corpus Luteum.**
- **The Corpus Luteum secretes a hormone called progesterone.**
- **Progesterone blocks glandular secretions of the pituitary and ovary to see if the egg gets fertilized.**

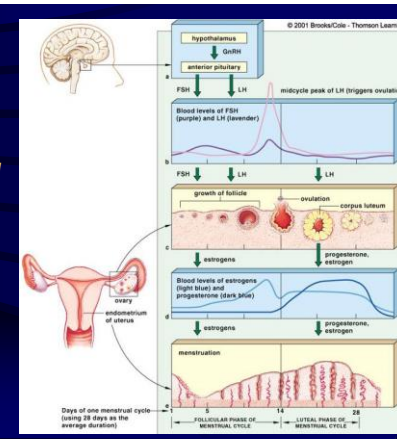
Female Reproductive System



Menstrual Cycle

- **If fertilization occurs, progesterone remains high in the blood for the length of the pregnancy.**
- **If fertilization does not occur, the progesterone is diluted out of the blood and the pituitary releases FSH, and the endometrium is released.**

Menstrual Cycle



Contraception

- ***Permanent:ew***
- **Male - Vasectomy**
- **Female - Tubal Ligation**
- ***Temporary*:**
- **Birth Control Pills and Injections**
- **Control hormone levels and prevent ovulation.**
- ***Devises*:**
- **IUD intra-uterine device**
- **Diaphragm**
- **Condoms – male and female**

The Beginning