General

XX - Female

XY - Male

Embryos identical until 7 weeks, sex is determined after that point when hormones are are present or absent.

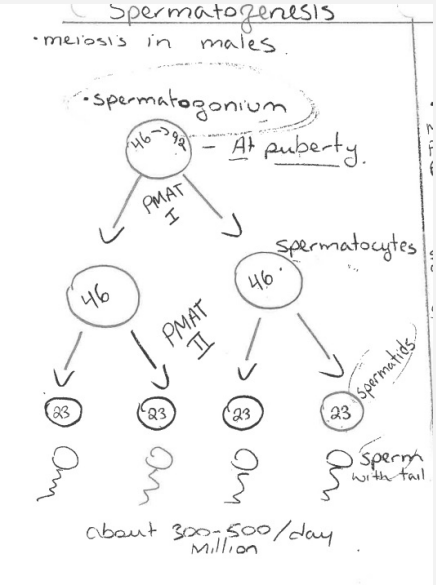
Male anatomy terms 2

- Semen passes through the ejaculatory duct on it's way to the urethra.
- Seminal Vesicles: Produce a mucus energy rich fluid that contains fructose.
- Prostate gland and Cowper's gland: Secrete an alkaline fluid to neutralize the acid fro urine.
- Semen: The combination of sperm and fluid. Movement is controlled by parasympathetic and sympathetic nervous system.
- Urethra: A duct the carries semen through the penis. It also serves as a passage for urine.

Hormones

Hormone	Function in male reproductive system	Function in female reproductive system
gonadotropin releasing hormone (GnRH)	stimulates the release of FSH and LH from the anterior pituitary	stimulates the release of FSH and LH from the anterior pituitary
follicle stimulating hormone (FSH)	stimulates the development of the sex organs and gamete production	stimulates the development of the sex organs and gamete production
luteinizing hormone (LH)	stimulates the production of testosterone	triggers ovulation, and (with FSH) stimulates estrogen production
estrogen	minor	stimulates the development of the female reproductive tract and secondary sex characteristics
progesterone	minor	causes uterine thickening
testosterone	stimulates the development of the male reproductive tract and secondary sex characteristics	minor
inhibin	inhibit FSH production	inhibit FSH production

Spermatogenisis



Male anatomy terms 1

- Testes: The two male gonads.
- Scrotum: Body of skin holding the testes. Regulates temperature of the testes. Sperm production is most successful at 35°C.
- Seminiferous Tubules: Site of sperm production.
- Sertoli Cells: Found within the seminiferous tubules and provide nourishment for developing sperm.
- Epididymis: Located near the testes and is a place in which sperm mature into motile cells.
- Ductus Deferens: Storage place for mature sperm. It leads to the penis via the ejaculatory duct.

Male anatomy

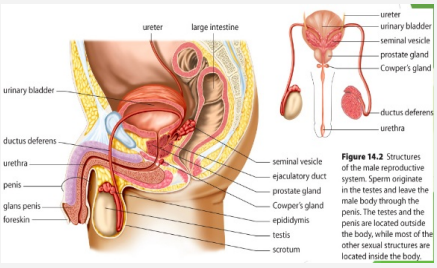


Figure 14.2 Structures of the male reproductive system. Sperm originate in the testes and leave the male body through the penis. The testes and the penis are located outside the body, while most of the other sexual structures are located inside the body.

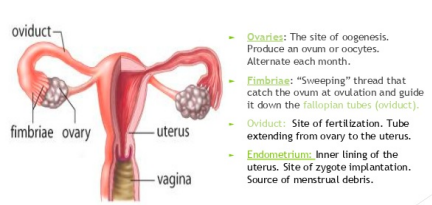
Male hormones

Y chromosome carries 'testis-determining factor', (TDF), which triggers male sex hormones called androgens.

Androgens stimulates production of male sex organs in fetus.

Testes develop first in abdominal cavity, then descend toward scrotum and finish at birth.

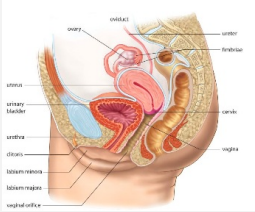
Female anatomy terms 2



Female anatomy terms 1

- Uterus: A muscular organ that holds and nourishes a developing fetus.
- Endometrium: Lining of the uterus that supplies the developing fetus with nutrients. This is also the source of menstruation debris.
- Cervix: Narrow opening at the base of the uterus.
- Vagina: Entrance for penis to deposit semen.
- Vulva: External portion of the vagina consisting of the *labia majora* and the *labia minora*.
- Glans Clitoris: site of arousal during intercourse.

Female anatomy



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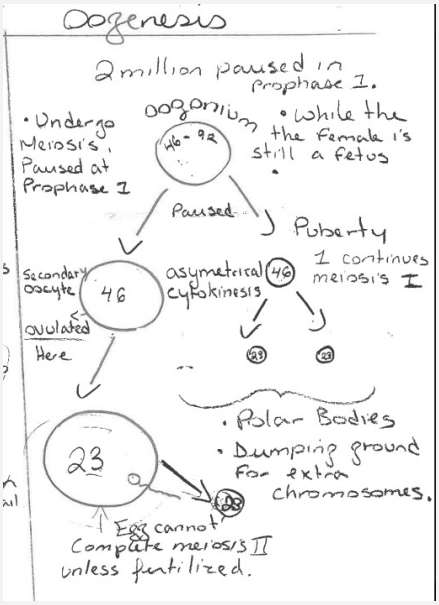
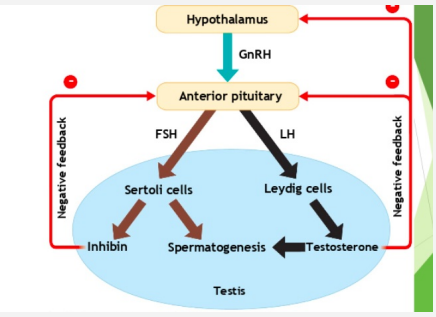
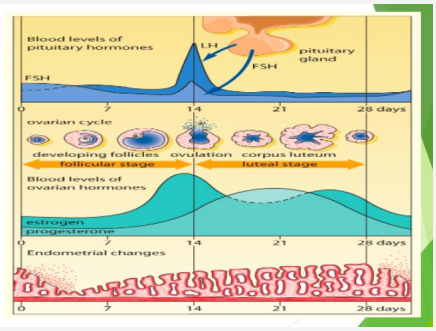
Oogenisis



Spermatogenisis Diagram



Ovarian Cycle Hormones



Ovarian Cycle

1. Follicle (small bag) develops
2. Ovum released
3. Corpus Luteum (yellow body) left behind
4. Corpus Luteum produces progesterone
5. Corpus Luteum disintegrates and produces a corpus albicans.

On a diagram, yellow round bodies appear, and as the cycle progresses they get smaller. Corpus albicans is the smallest.

Female Hormone Regulation

Menstrual cycle regulates hormones and releases an ovum at optimal time.

Cycle lasts about 28 days and includes two events, ovarian cycle and uterine cycle.

Human Chorionic Gonadotropin (hCG)

Maintains the corpus luteum.	Remains at high levels for two months then decreases by four months.
Corpus luteum is maintained for the duration of the pregnancy.	Placenta secretes estrogen and progesterone for the remainder of pregnancy.

Female Hormone Pathway

Anterior Pituitary -> Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH)
LH:
Target: Ovary
Effect: Causes ovulation
After ovulation, corpus luteum develops and secrets progesterone (endometrium thickening and maintaining) and Estrogen (endometrium thickening + secondary sex characteristics)
FSH:
Target: Ovary/Follicle
Effect: Stimulate follicle cells to develop
Follicle cells secrete estrogen (endometrium thickening, secondary sex characteristics).

Male hormone pathway

Luteinizing hormone	Follicle Stimulating Hormone
Target: Leydig cell, interstitial cell	**Target**: Sertoli Cells
Effect: Testosterone (secondary sex characteristics, suppert spermatgenesis)	**Effect**: Spermatogensis
	**Effect*: Inhibin (inhibits FSH production)

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