

The Reproductive Systems

1. Purpose of Sexual Reproduction
2. Origin of Reproductive Organs
 - A. Genital Tubercle
3. Male Reproductive Anatomy and Physiology
 - A. Testes
 - i. Development and Descent
 - a. Retroperitoneal
 - b. Initial Development
 - c. Descent
 - d. Inguinal Canal
 - ii. Location and Anatomical Considerations
 - a. Scrotum
 - b. Spermatic Cord
 - c. Cremaster Muscles
 - d. Dartos Muscle
 - e. Median Septum
 - f. Tunica Albuginea
 - g. Septa

- Lobules
- iii. Seminiferous Tubules
- a. Germinal Tissue
 - b. Spermatogenic Cells
 - c. Sustentacular Cells
 - Nourishment
 - Androgen-Binding Protein
 - Inhibin
 - Blood-Testis Barrier - (Study images online – see image bank search tool
 - * Tight Junctions
 - * Basal and Apical Compartments
 - * Function
 - d. Interstitial Endocrinocytes
 - Testosterone
- B. Sperm
- i. Anatomy
 - a. Head
 - Acrosome
 - b. Middle Piece
 - Mitochondria

- c. Tail: Flagellum
- d. Sperm Count
 - Normal
 - Infertility
 - Sterile
- e. Maturation

C. Accessory Ducts

- i. Epididymis
 - a. Functions
 - b. Anatomy
 - Head
 - Body
 - Tail
- ii. Ductus Deferens
- iii. Ejaculatory Duct
- iv. Urethra
 - a. Prostatic Portion
 - b. Membranous Portion
 - c. Penile (Spongy) Portion

D. Accessory Glands

- Semen
- i. Seminal Vesicles

A&P II Student Outline – The Reproductive Systems

- a. Location
- b. Functions
- c. Sympathetic Innervation
- ii. Prostate Gland
- iii. Bulbourethral Glands (Cowper's glands)
- E. Semen
- F. Penis
 - i. Urethra
 - ii. Erectile Tissue
 - a. Corpora Cavernosa
 - Venous Sinusoids
 - b. Corpus Spongiosum
 - c. Glans Penis
 - d. Prepuce (Foreskin)
 - Circumcision.
- G. Hormonal Regulation (*Pull out handout on “Male Hormonal Regulation”*)
 - i. Interstitial Endocrinocytes
 - a. Testosterone
 - FSH and LH

b. Inhibin

4. Female Reproductive Anatomy and Physiology

A. Review and Introduction to the System

B. Locations and Supportive Ligaments or organs

i. Broad Ligament

ii. Mesovarian

iii. Ovarian Ligament

iv. Suspensory Ligament

C. Ovaries

- Oogenesis

i. Cortex

a. Tunica Albuginea

b. Follicles

- Primordial Follicles

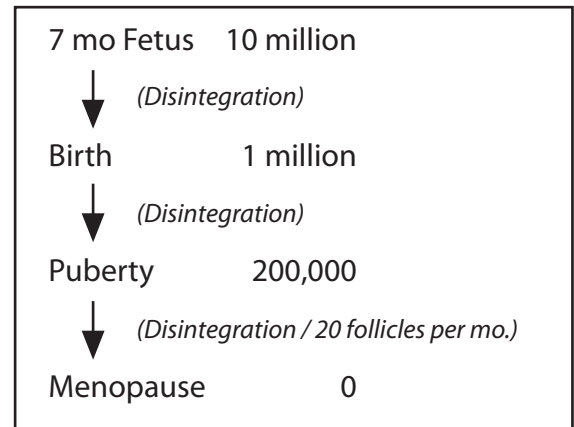
- * Primary Oocyte

- Ovarian Follicles

- Corpus Luteum

- Corpus Albicans

- * Relaxin



D. Ovulation

i. Uterine Tubes

a. Regions

- Infundibulum
- Ampulla
- Isthmus

b. Histology

- Serous Membrane
- Muscularis
- Mucous Membrane

E. Fimbriae

F. Uterus

i. Ligaments

a. Round Ligaments

b. Broad Ligaments

c. Fundus

d. Body

e. Cervix.

f. Isthmus

g. Cervical Canal

- h. Uterine Cavity

 - ii. Uterine Tissues
 - a. Serosal Layer
 - b. Myometrium
 - c. Endometrium
 - Tissue Layers:
 - * Stratum Functionalis
 - * Stratum Basalis
 - Hormone Regulation (See Handout)
 - * Estrogen
 - * Progesterone
5. Hormonal Regulation in the Nonpregnant Female (See Handout)
- A. Cycles
 - i. Menstrual Cycle
 - ii. Ovarian Cycle
 - B. Regulatory Hormones and Essential Functions
 - i. Gonadotropin-Releasing Hormone (GnRH)
 - a. Anterior Pituitary Gland

b. Stimulatory Effects on Production of Follicle Stimulating Hormone and Luteinizing Hormones

ii. Follicle-Stimulating Hormone (FSH)

a. Effect on ~20 Primordial Follicles

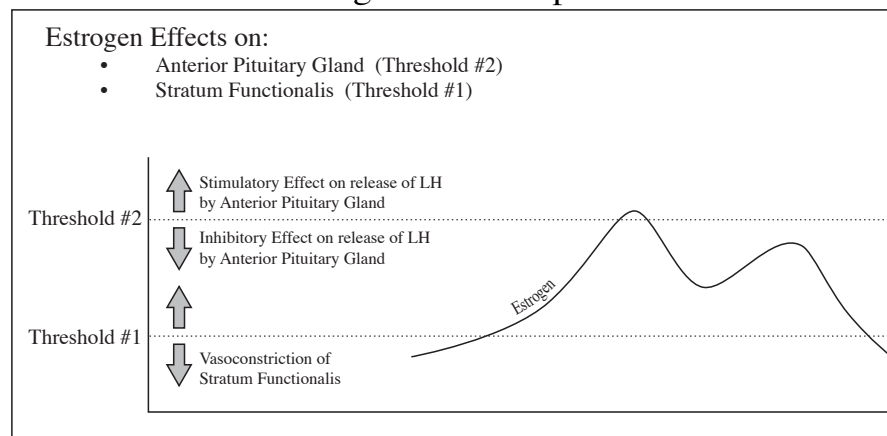
iii. Luteinizing Hormone (LH)

iv. Estrogen

a. Effects on Stratum Basalis

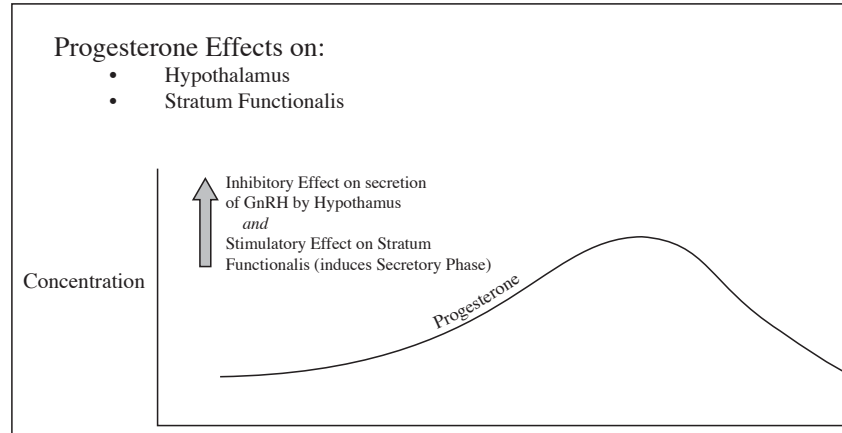
b. Effect on Anterior Pituitary Gland and Release of Luteinizing Hormone

• Luteinizing Hormone Spike



v. Progesterone

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C. Putting it all Together (Know this very well)

→ Cyclical Coordination and Associated Structures and Events

i. Primordial Follicles

a. Estrogen

- Effect on Stratum Basalis
- Effect on Anterior Pituitary Gland and Luteinizing Hormone

ii. Primary, Secondary Tertiary Follicle

- Antrum

iii. Ovulation

iv. Corpus Luteum

- Estrogen
- Progesterone

v. Corpus Albicans

vi. Menstruation

6. Hormonal Regulation in the Pregnant Female (See Handout)
 - A. Fertilization and Embryonic Development
 - B. Human Chorionic Gonadotropin
 - i. Hormonal Effects
 - C. Relaxin
 - D. Prolactin and Oxytocin
7. Accessory Structures
 - A. Vagina
 - B. External Genital Organs
 - i. Mons Pubis
 - ii. Labia Majora
 - iii. Labia Minora
 - iv. Clitoris
 - v. Vestibule
 - C. Perineum
 - i. Urogenital Region
 - ii. Anal Region
8. Mammary Glands
 - A. Suspensory Ligaments
 - B. Lactiferous Ducts

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- C. Lactiferous Sinus
- D. Areola
- E. Nipple
- F. Benefits of Breastfeeding
- G. Hormonal Regulation
 - i. Prolactin
 - ii. Oxytocin