KEY Male Reproductive Anatomy Pt. 1

1. What are the 3 functions of the male?
   - Produce and maintain supply of sperm
   - Detect females in Estrus (standing heat)
   - Inseminate the female and fertilize the female gamete (oocyte)

2. What are the 6 basic components of the male reproductive tract?
   - Scrotum
   - Testes
   - Excurrent duct system
   - Spermatic cord
   - Accessory sex glands
   - Penis

3. Why are the testes housed outside of the body?
   In order for spermatogenesis to occur, temperature must be 4-6 degrees less than body temperature

4. Scrotum Layers:

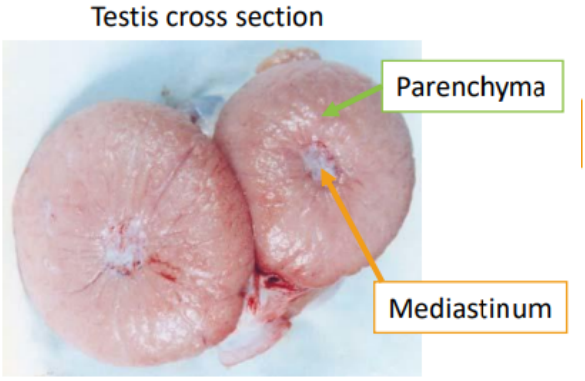
Layer	Definition
Scrotal Skin	Heavily populated with sweat glands
Tunica Dartos	Mesh-like smooth muscle layer just beneath scrotal skin, can sustain contractions
Scrotal Fascia	Fatty and membranous layer
Parietal Vaginal Tunic	First peritoneum layer taken into the scrotum

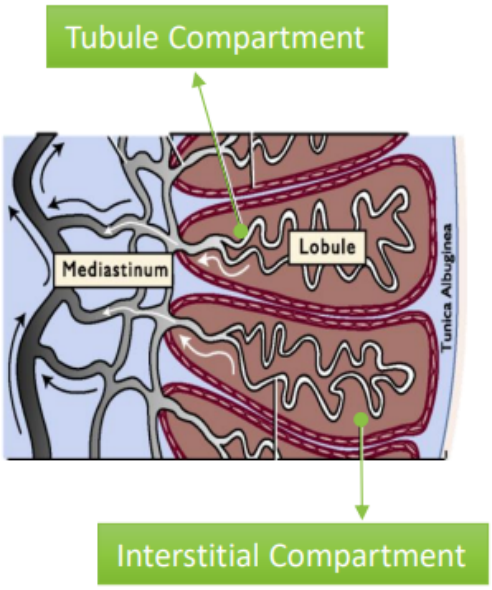
5. What are some of the ways that thermoregulation occurs?
   - Sweat glands and hair on the scrotal skin
   - Tunica Dartos Muscle (sustained contractions) = change in testis location, change in scrotal surface area
   - Cremaster Muscle (cannot sustain contractions) = “fight or flight” muscle
     - Hot temp - relaxes
     - Cool temp - contracts
   - Panpiniform Plexus = A single artery surrounded by a network of veins
     - Counter current heat exchange causing the cooling of arterial blood supply

6. Structures of the Testis:

Structure	Definition
Testicular Capsule	Consists of the visceral vaginal tunic and tunica albuginea
Parenchyma	Seminiferous tubules and interstitial tissue
Mediastinum	Connective tissue core houses rete testis
Rete tubules	Tubules within the mediastinum that transports sperm to the efferent ducts

7. The Parenchyma is composed of two parts, what are they and what do they contain?
   - Interstitial Compartment
     - Leydig Cells (testosterone), capillaries, lymphatic vessels, and connective tissues
   - Tubule Compartment
     - Seminiferous tubules (highly convoluted tubules network)
     - Sertoli Cells (provide support to developing germ cells and form blood-testes barrier)





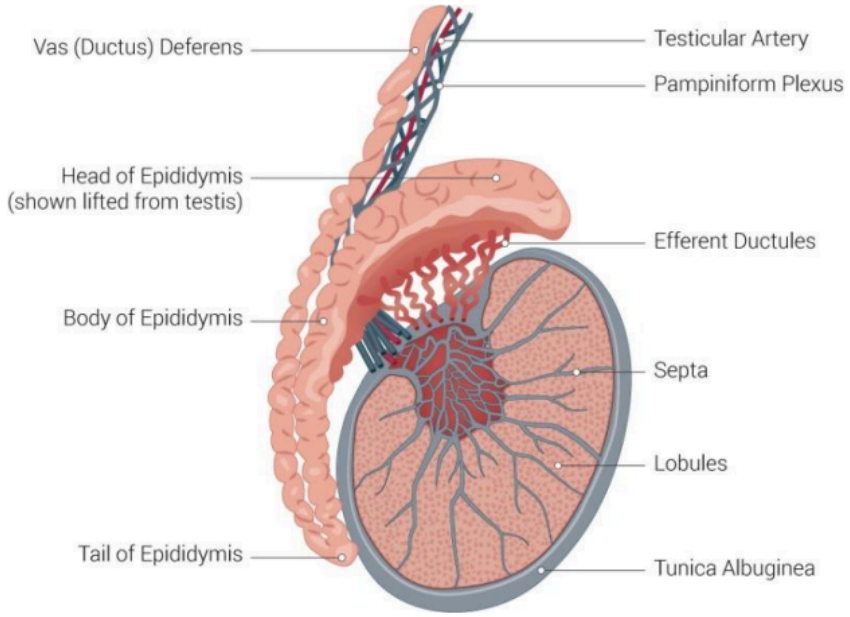
8. What are the functions of the testes?
   - Produce sperm (spermatogenesis)
   - Transport sperm out of the testes
   - Produce testosterone (leydig cells)

   *testosterone has a negative feedback on LH and FSH

9. What is Cryptorchidism and what are the different types?
   Cryptorchidism – failure of the testes to descend into Scrotum
   - Bilateral - sterile (no spermatogenesis), Testosterone is produced
   - Unilateral - Fertile (reduced sperm production), Testosterone is produced

10. Parts of the Excurrent Ducts

Efferent ducts	Transports newly formed spermatozoa and rete fluid into the Epididymis
Epididymis	Provides an environment for final maturation of spermatozoa, serves as storage
Ductus deferens (Vas deferens)	Connects the Cauda Epididymis to the Ampulla and transports sperm to the pelvic Urethra



11. Parts of the Epididymis:

Caput (Head)	Epididymal fluid facilitates MOVEMENT
Corpus (Body)	Spermatozoa undergo MORPHOLOGICAL CHANGES, expression of forward motility, acquire fertility (ability to bind to oocyte)
Cauda (Tail)	Spermatozoa METABOLIC ACTIVITY DECREASED, are eligible for ejaculation, normal motility, high fertility

12. What are the 4 functions of the Epididymis?
    - Transport sperm from the caput to the cauda
    - Concentration of Sperm (sperm are less active when concentrated)
    - Maturation of Sperm in the Caput to Corpus region
    - Storage of sperm in the Cauda

13. Where is sperm stored?
    Cauda Epididymis

14. Where does sperm mature?
    Caput and Corpus Epididymis