

Male Anatomy Pt. 2

What are the accessory sex glands?

- Seminal vesicles (produce nutrient energy for sperm)
- Prostate (produce simple sugars)
- Cowpers (Bulbourethral) (secretions contribute to about 5% of the ejaculate, helps lubricate penile tissue)

*Ram does not have body of prostate *Boar has no ampulla and large Cowper's glands *Stallion has no disseminate prostate

What are the three sections of the penis?

- Base (root): attachment at the ischial arch
- Shaft: main proportion of the penis
- Glans Penis: heavily populated with sensory nerves

What two tissue layers is the penis made up of?

- Corpus Spongiosum: spongy erectile tissue surrounding the penile urethra
- Corpus Cavernosum: cavernous tissue surrounded by the tunica albuginea

What are the identifying qualities of a fibroelastic penis?

- Limited erectile tissue
- Contains a sigmoid flexure which allows the penis to be retracted inside the body until erection occurs
- Erection results in increased length of penis
- Bulls, Rams, Boars

What is the identifying quality of a musculovascular penis?

- Contains a lot of erectile tissue and little connective tissue
- Erection results in increased circumference
- Stallions, Humans, Dogs

What are the muscles associated with the penis?

- Bulbocavernosus: empties the extra-pelvic part of urethra
- Ischiocavernosus: paired muscles that compresses the crura and stops return of blood through veins
- Retractor Penis: paired muscle that maintains the sigmoid flexure in a fibroelastic penis

How does spermatozoa travel through the male reproductive tract?

Seminiferous tubules → rete tubules → mediastinum → efferent duct → caput epididymis → corpus epididymis → cauda epididymis → vas deferens → ampulla (except boar) → colliculus seminalis (where sperm mix with seminal plasma) → urethra

Spermatogenesis

What are the different phases that make up spermatogenesis and what occurs in each?

1. Proliferation Phase (generates A, I, B spermatogonia in the basal layer of the seminiferous tubules)
2. Meiosis Phase (Primary spermatocyte formed by mitotic division of B spermatogonia, secondary spermatocyte formed by first meiotic division, second meiotic division makes spermatids)
3. Differentiation Phase (morphological change in shape spherical cells → spermatozoon)
 - a. Golgi phase = acrosomic vesicle forms
 - b. Cap phase = acrosomic vesicle spreads
 - c. Acrosomal phase = elongation of the head
 - d. Maturation phase = final assembly

Compartments of the seminiferous tubules:

Basal	Mitosis, spermatogonia (A,I,B), primary spermatocytes
Adluminal	Meiosis, Spermatogenesis, primary spermatocytes, secondary spermatocytes, spermatids
Luminal	Spermiation (release of sperm into lumen of seminiferous tubules)

Which kind of sperm is the most sensitive to heat stress?

- Spermatids because they are going through the most morphological changes

What is the blood-testis barrier?

- When sertoli cells form tight junctions with other sertoli cells (FSH), sertoli cells govern the environment around primary spermatocytes
- Destruction of tight junctions causes impairment of meiosis