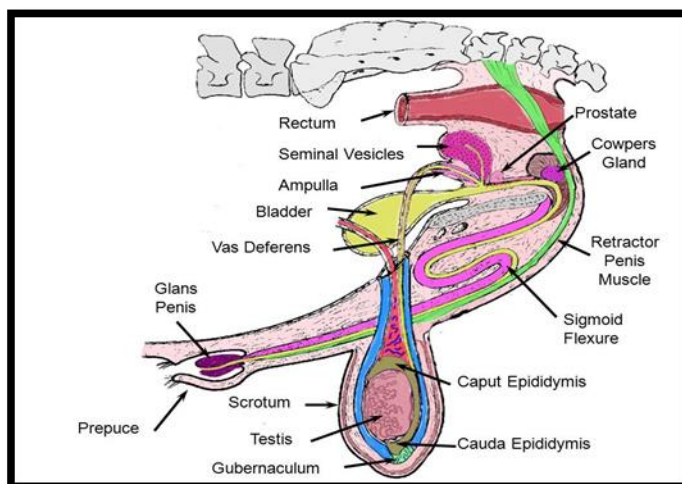


Functional Anatomy of Male Genital System

Accessory Genital Glands:

1) Vesicular Glands

- The vesicular glands are paired glands that are dorsocranial to the pelvic urethra.
- Do not store semen
- Open in the urethra through two separate openings.
- Responsible for secretion\produce large portion of ejaculate.
- Can be palpated clinically.
- In bull and ram seminal glands are lobulated, but in stallion they are elongated.
- **Function :**
 - Secretion of gland provide main medium & vehicle for spermatozoa .
 - Contain high conc of fructose which supply energy to the sperm .
 - Conc of citric acid , potassium & sodium play a role in maintaining the osmotic equilibrium of semen .



2) Prostate

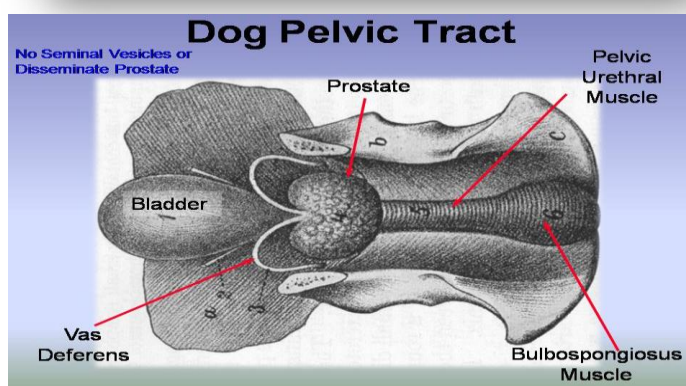
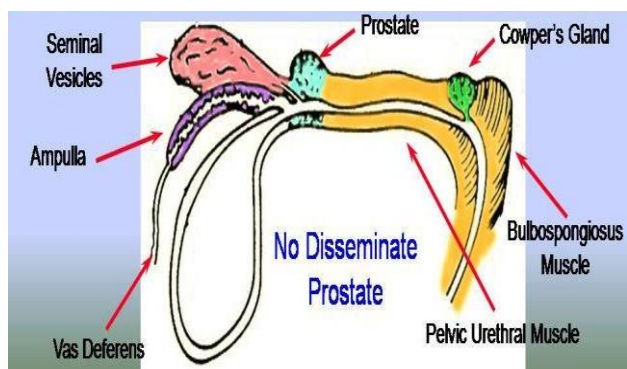
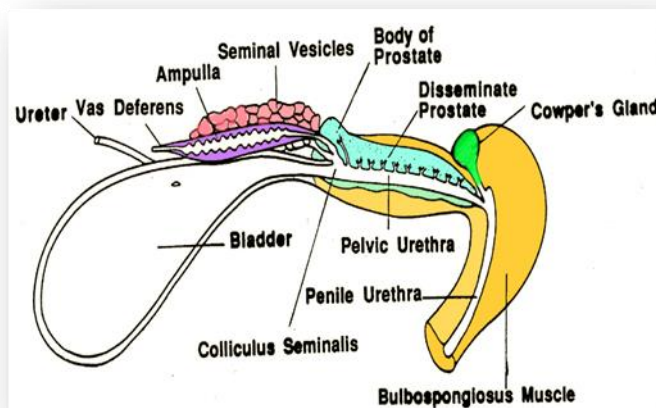
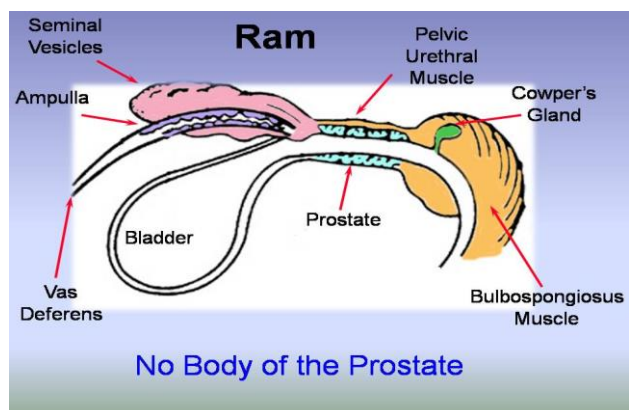
- Also named as urethral gland which cover dorsal part of pelvic urethra and completely enclosed by urethral muscle.
- Has two parts: Corpus (pars externa), and Disseminate(pars interna).
 - The first part (corpus) in which the prostate is outside of urethralis muscle and is visible as a heart-shaped (boar), or an H-shaped (stallion).
 - The second part: (Disseminate) in which glandular tissue distributed along the dorsal and lateral walls of pelvic urethra.
- Can be palpated clinically
- **Function :**
 - High mineral content play a role in buffering action of seminal plasma .
 - Secret clean pelvic urethra before ejaculation.

3) Bulbourethral(Coper's glands)

- It is paired of gland
- Cover pelvic urethra which lie close to ischial arch
- Under covered by bulbocavernous muscle .
- Can't be palpated

– **Function :**

- Viscid secretion may neutralize & clean extra pelvic urethra from toxic remnants of urine just before ejaculation.



Penis

The penis is composed of three parts: the root (where it attached ischial arch), the shaft (the main portion of penis), and the glans penis (specialized distal end).

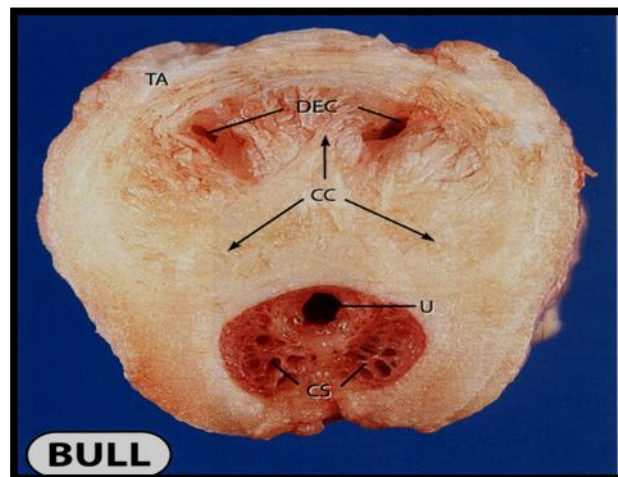
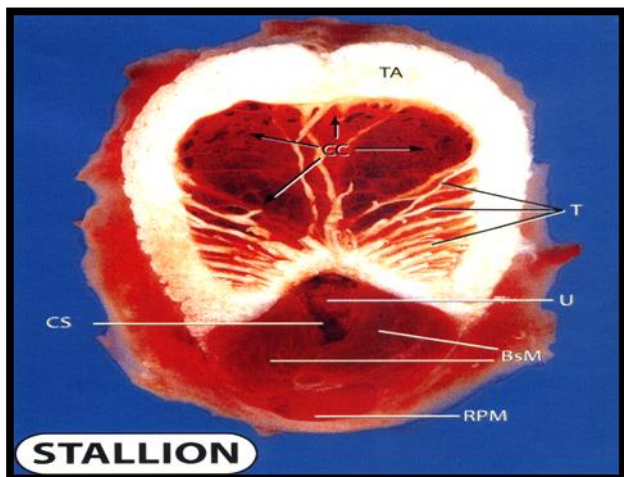
There are two types of penis:

Fibro-elastic type

- The *sigmoid flexure* is an anatomical structure that provides a means by which the penis is held inside the sheath except during time of service.
- Strong retractor muscles hold the penis in the "S" shaped configuration.
- Occasionally these muscles are too weak to function properly and a portion of the penis and sheath lining protrude at all times. This exposes the male to the danger of injury and this characteristic should be avoided when selecting a herd bull.

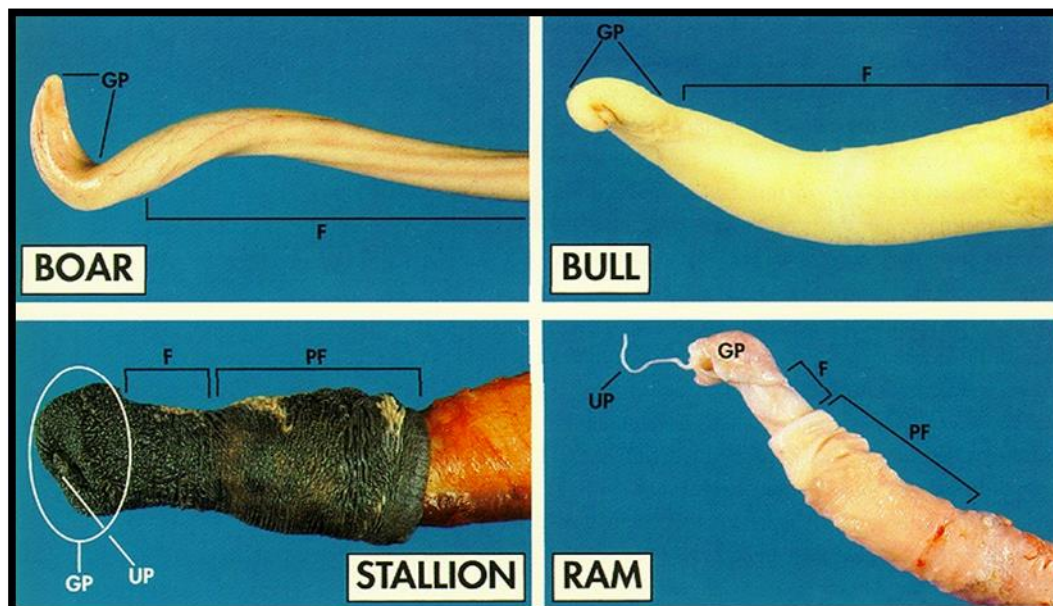
Musculo-cavernous type

- The *penis* is the organ of insemination. Spongy-type material within the penis is filled with blood during sexual arousal, resulting in erection of the organ.
- The end of the penis is the glans penis and is richly supplied nerves, which are stimulated during copulation to induce ejaculation.



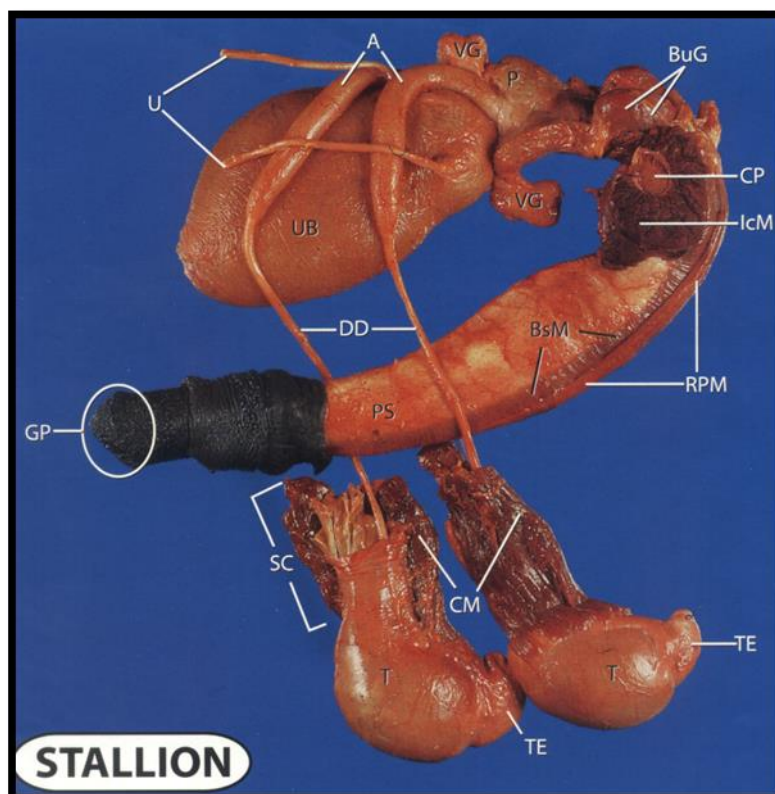
Glans penis:

The glans penis is heavily populated with sensory nerves, stimulation of glans penis is the primary factor initiating the mechanism of ejaculation.



Muscle associated with penis

- 1) **Retractor penis muscle :**
 - A pair of smooth muscle originates from ventral surface of 1st few caudal vertebrae.
- 2) **Ischiocavernosus m (IcM)**
 - Paired
 - Root of penis
- 3) **Urethralis**
 - Striated m
 - Surrounds pelvic urethra
- 4) **Bulbospongiosus (BsM)**
 - Overlaps root of penis
 - Empties extra pelvic urethra



Erection

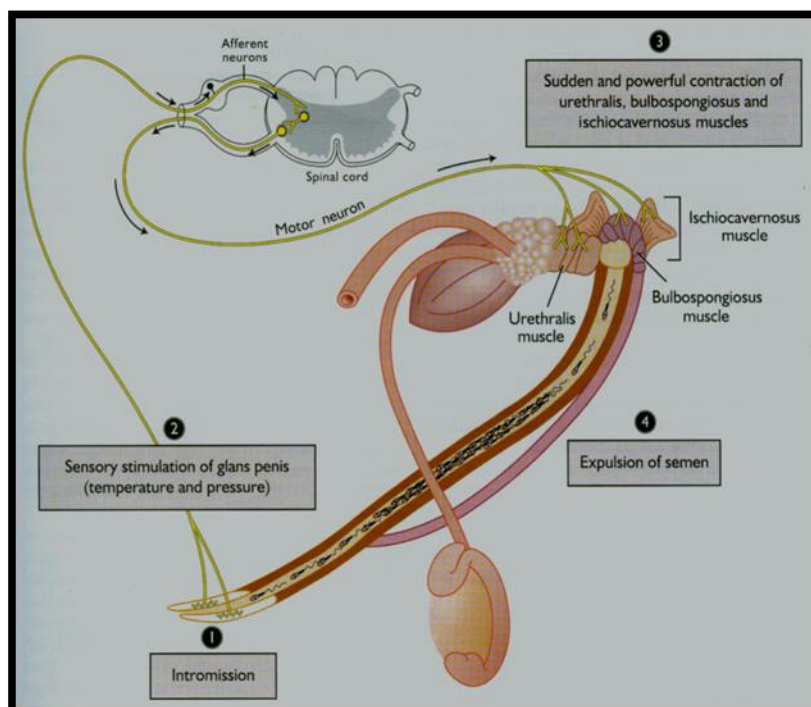
- ↑ arterial inflow
- Dilation corporal sinusoids
- ↓ venous outflow
- ↑ intra-penile pressure
- Relaxation of retractor penis m.

Emission

- Mixing of sperm and SP in pelvic urethra

Ejaculation

- Reflex expulsion of sperm and SP from male



Prepuce

- Penis of mammals is surrounded by skin only ventrally & laterally
- It is invagination of skin
- Preputial opening is a short distance behind navel.
- Preputial opening usually surrounded by long hairs.
- Prepuce offers protection to the free end of penis in non-erected state.
- The simplest form prepuce is single tube which opens to the exterior by the preputial ring of preputial orifice.
- In Stallion it is double form : the external prepuce open at preputial orifice while internal prepuce open within the cavity of external prepuce by an orifice which surrounded by preputial ring .
- In boars , stallion secretion of prepuce mixed with cast epithelial cells & bacteria (illsmilling odeur)know as “ Smegma”