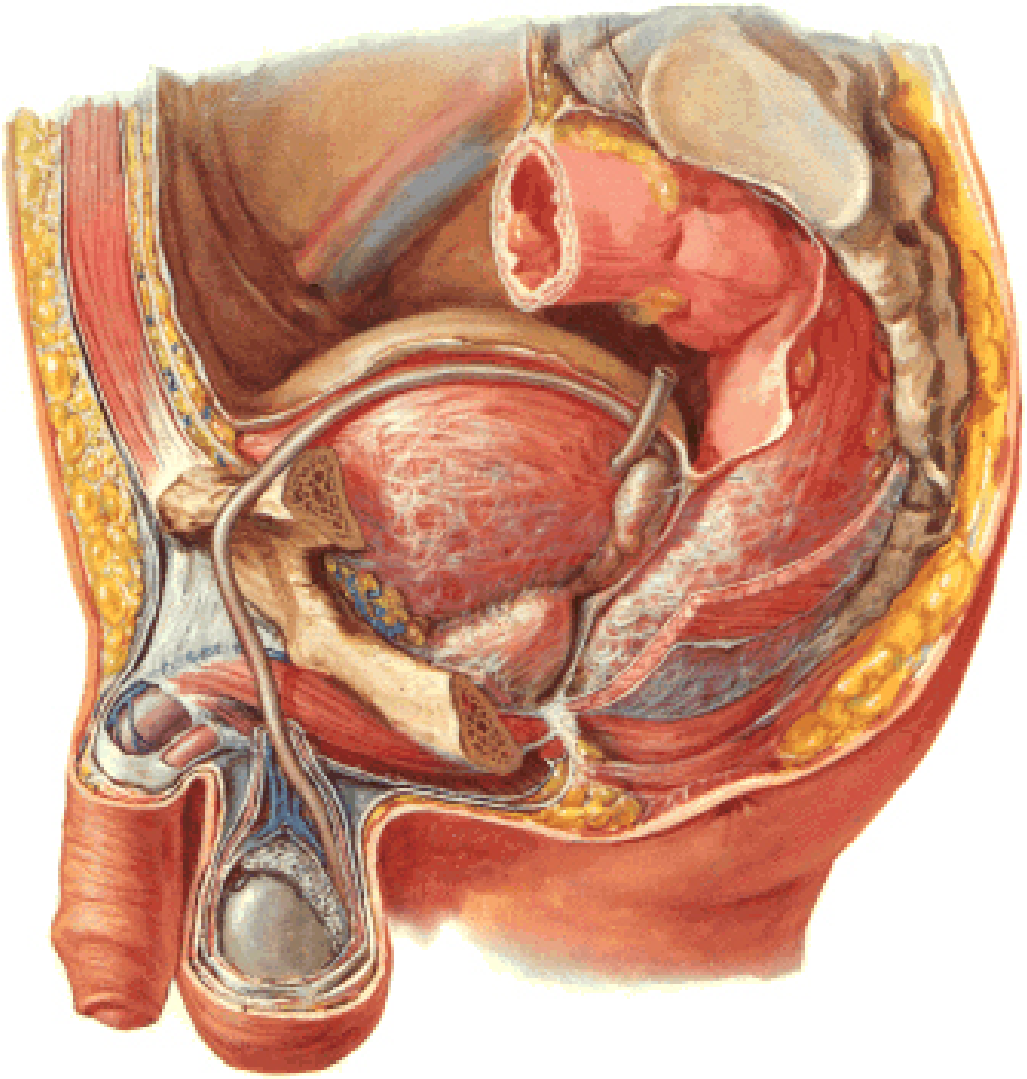
Paramedian Sagittal Section



Male Reproductive Organs

- Testes (paired Gonads)
- Penis
- Series of passageways
  - Epididymis
  - Ductus Deferens
  - Urethra
- Accessory Glands
  - Seminal vesicle
  - Prostate

Functions

- Paired Gonads (Testes) –

  Produce Spermatozoa (male germ cells) & Androgens (male sex hormones)

- Penis –

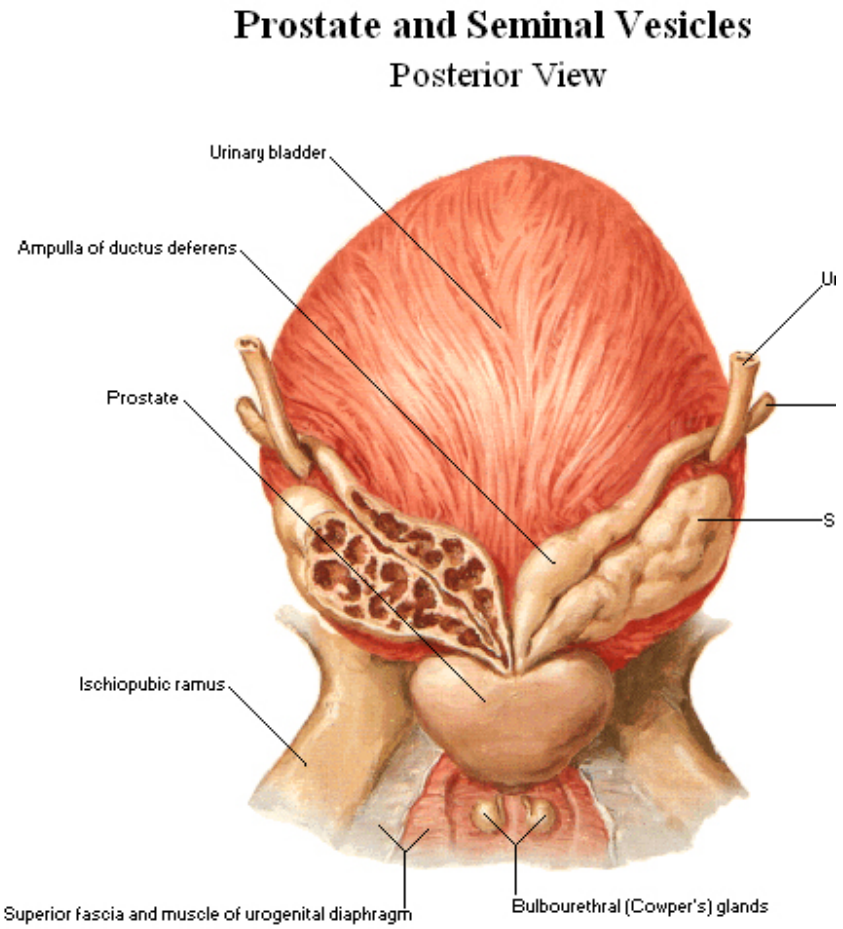
  Copulatory organ

- Series of passageways & ducts –

  To store the spermatozoa , ready for delivery to male copulatory organ

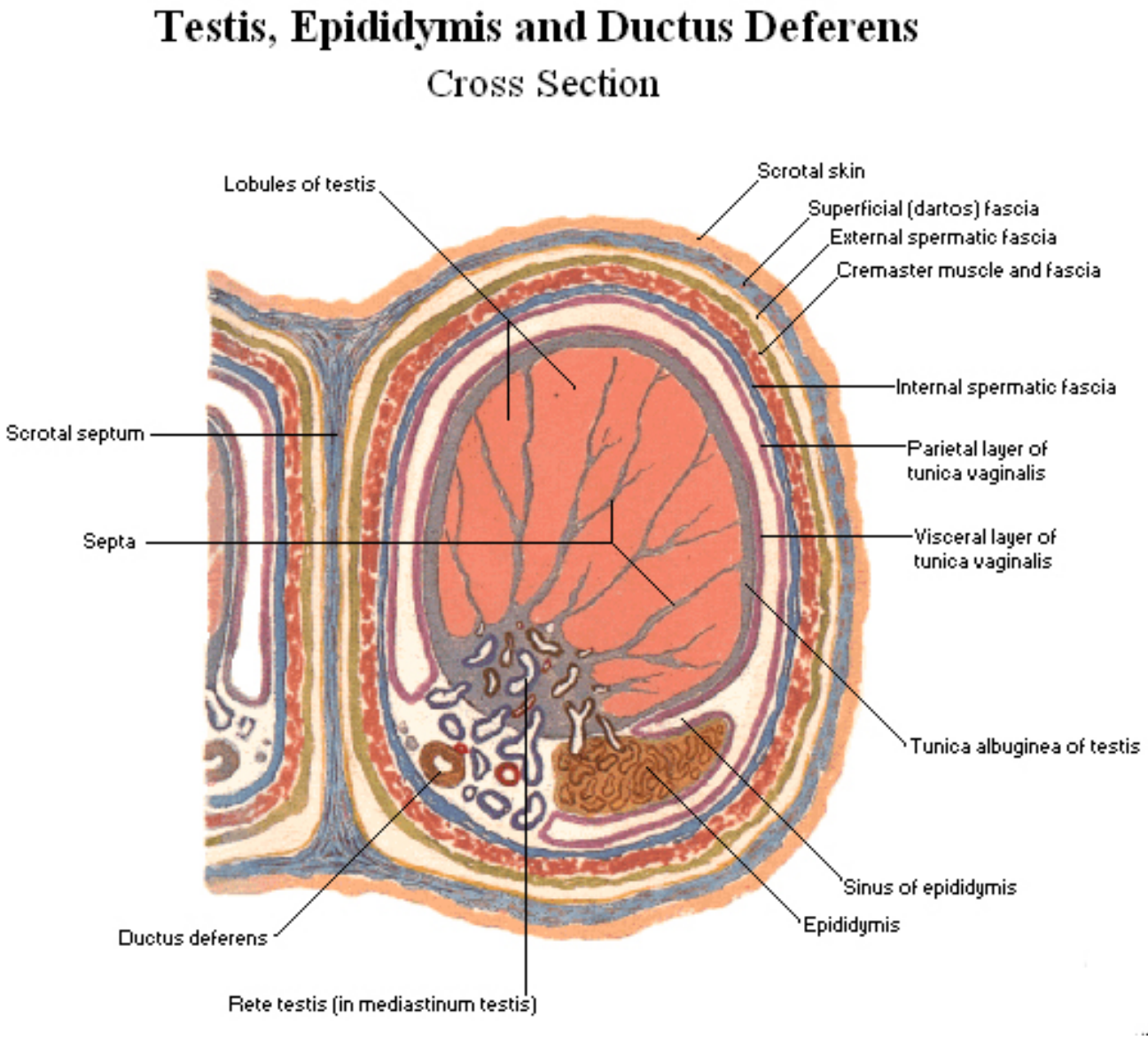
- Male accessory glands –

  provide fluid vehicle for carrying spermatozoa



Coverings

- Tunica Vaginalis
- Tunica Albuginea
- Tunica Vasculosa



Outermost Layer

- Tunica Albuginea
  (Dense connective tissue fibrous Memb.) –
  Consist of closely packed collagen Fibres with a few Elastic Fibres

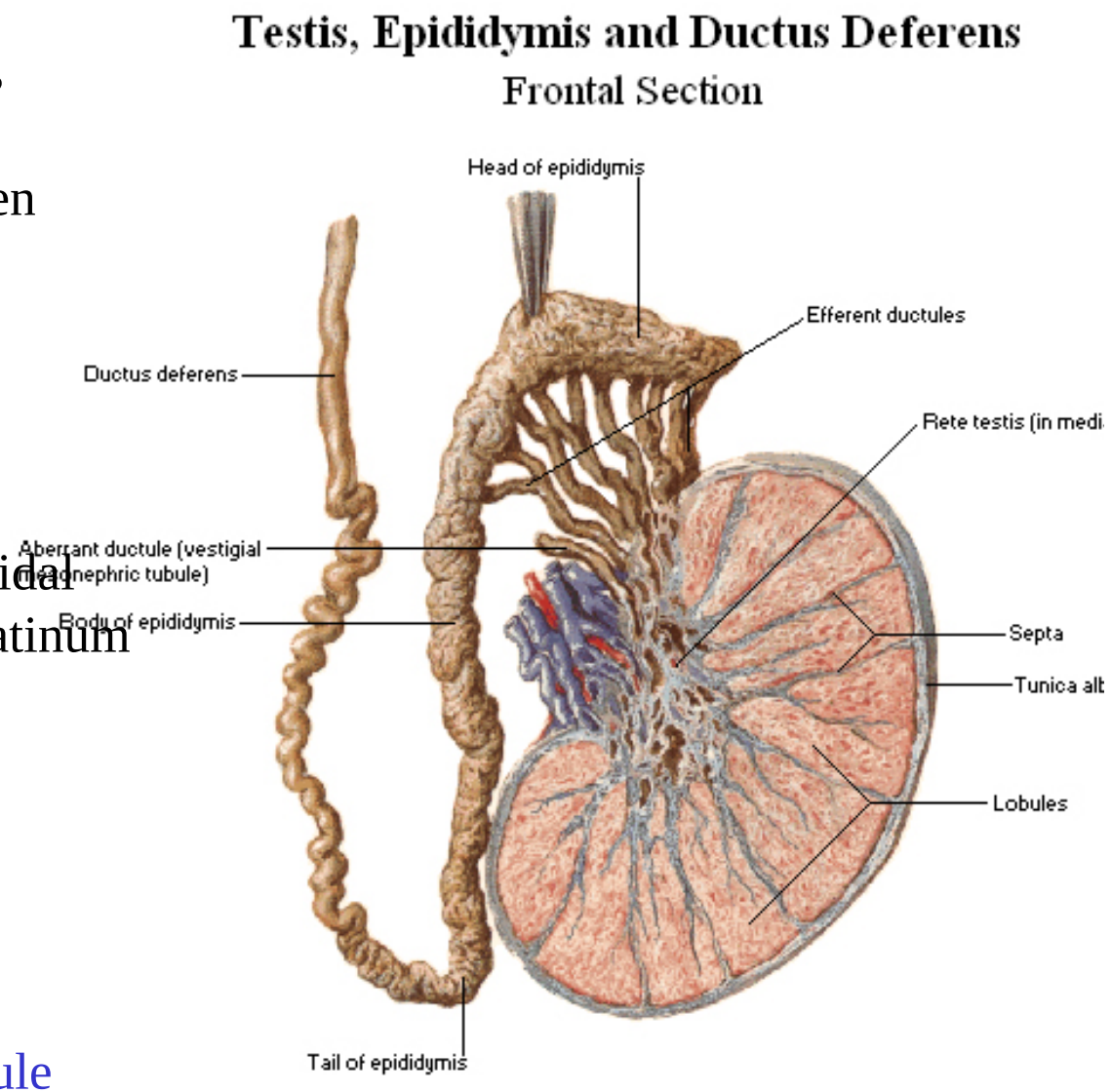
- form septa ,Project from Mediastinum Testis

- Divide incompletely into pyramidal lobules with apex towards Mediatinum

- Each Testis Approx-200 lobule

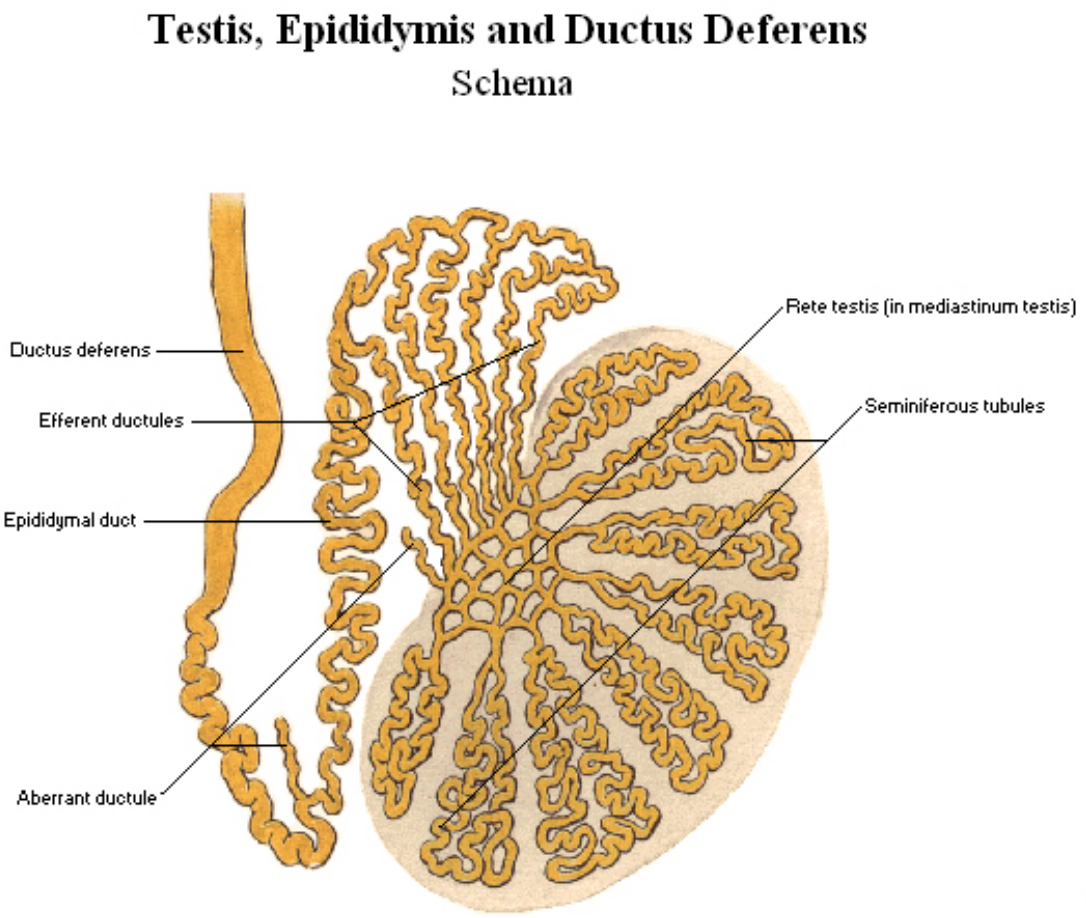
- Each lobule has Approx1-4 seminiferous Tubules

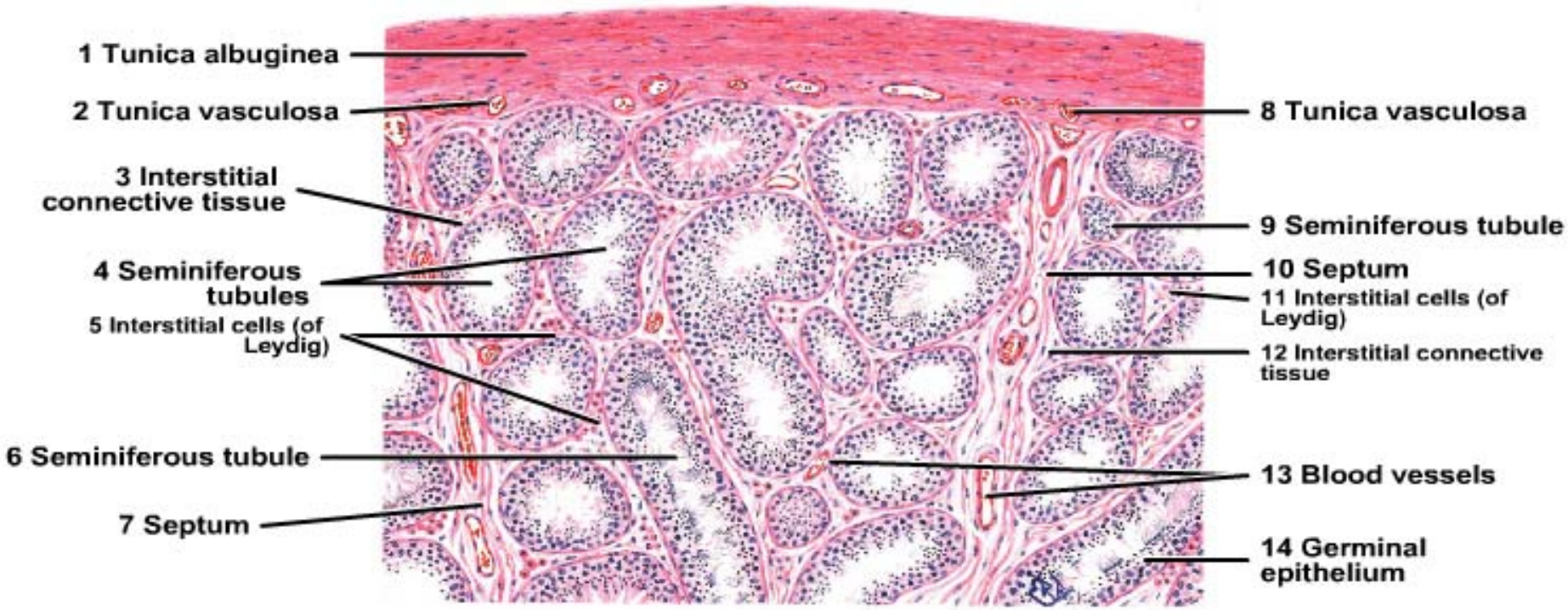
- Form loop to end in Straight tubule (20-30)



- Straight tubules end up unite to form network (Rete testis) which gives off 15-20 efferent ductules

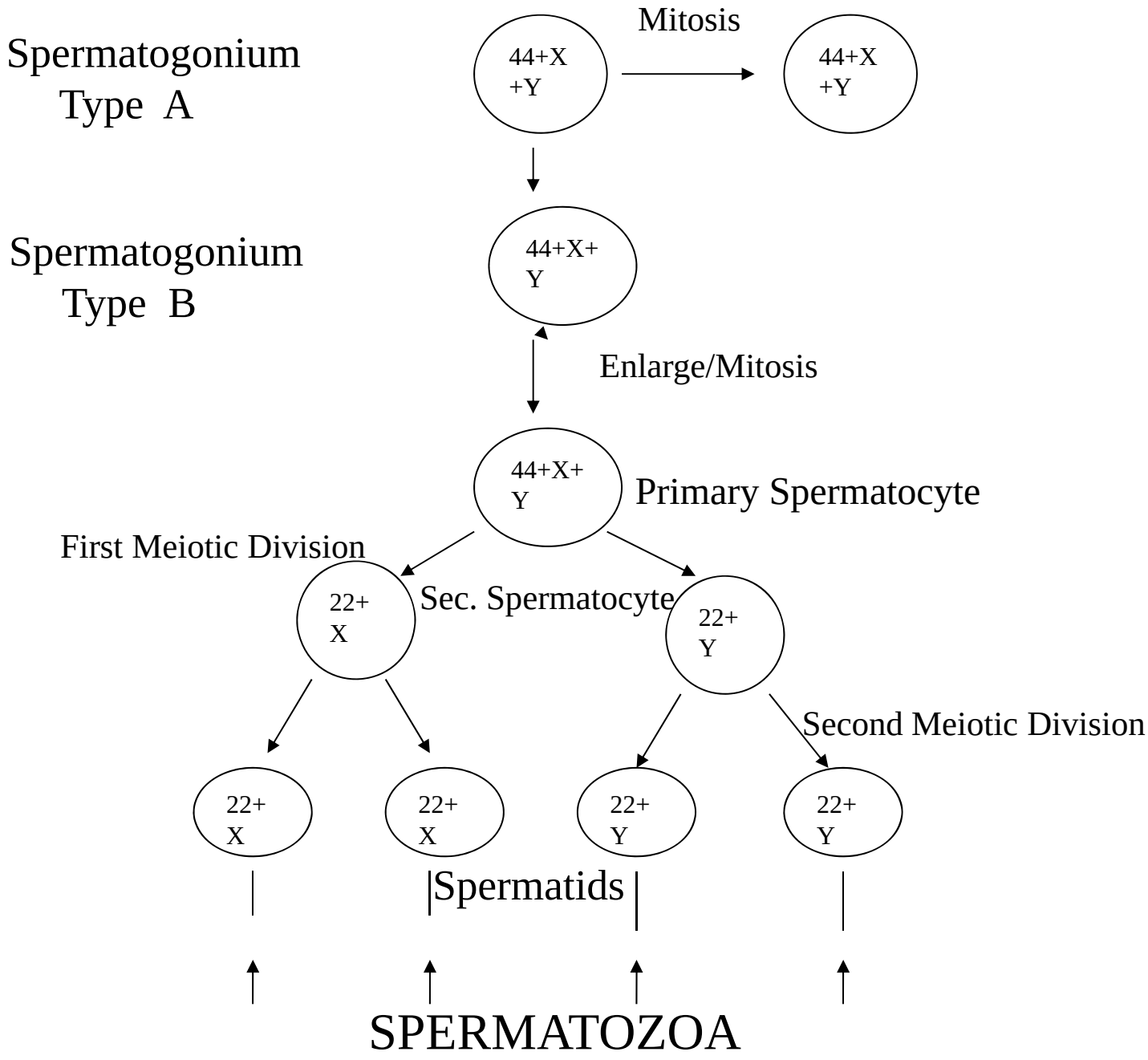
- Space between tubules filled up by Loose connective tissue (collagen fibres & fibroblasts,macrophases , mast cells), blood vessels, Lymphatics & Interstitial cells of Leydig

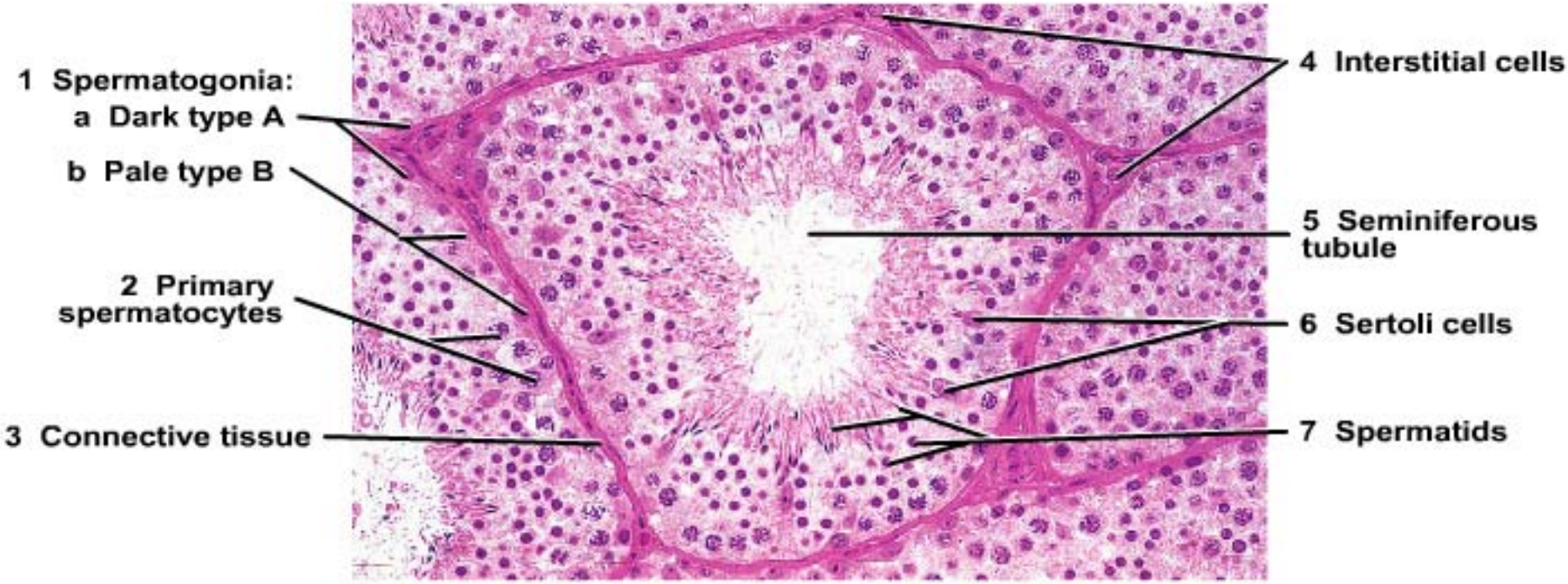


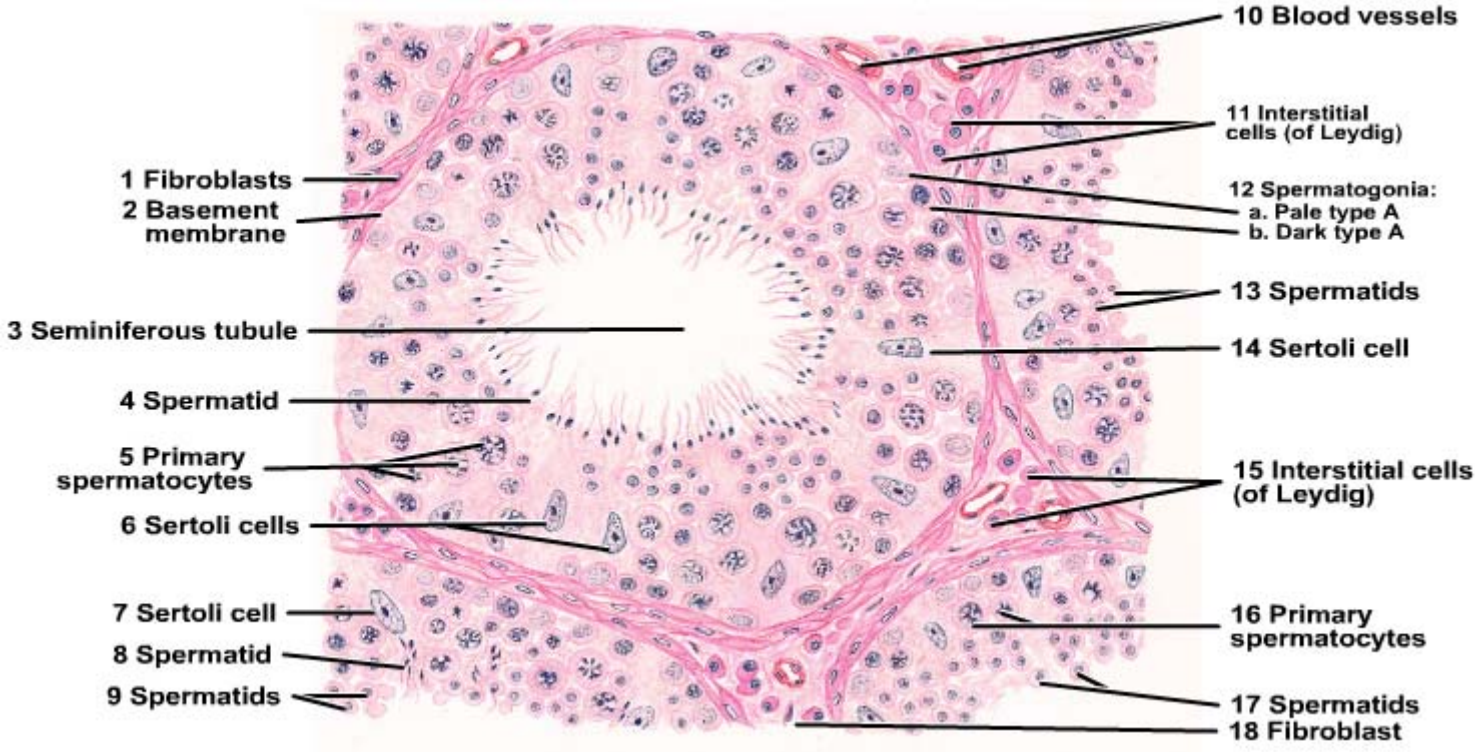

1 Tunica albuginea
2 Tunica vasculosa
3 Interstitial connective tissue
4 Seminiferous tubules
5 Interstitial cells (of Leydig)
6 Seminiferous tubule
7 Septum
8 Tunica vasculosa
9 Seminiferous tubule
10 Septum
11 Interstitial cells (of Leydig)
12 Interstitial connective tissue
13 Blood vessels
14 Germinal epithelium

Seminiferous Tubules

- Fill most of interior of Each Testes
- Two types of cells
- Germ cells (represent different stages of spermatogenesis)
  - ❖ Spermatogonia (Type A & type B)
  - ❖ Primary spermatocyte
  - ❖ Secondary spermatocyte
  - ❖ Spermatids
  - ❖ Spermatozoa
- Sustantacular cells (Sertoli)

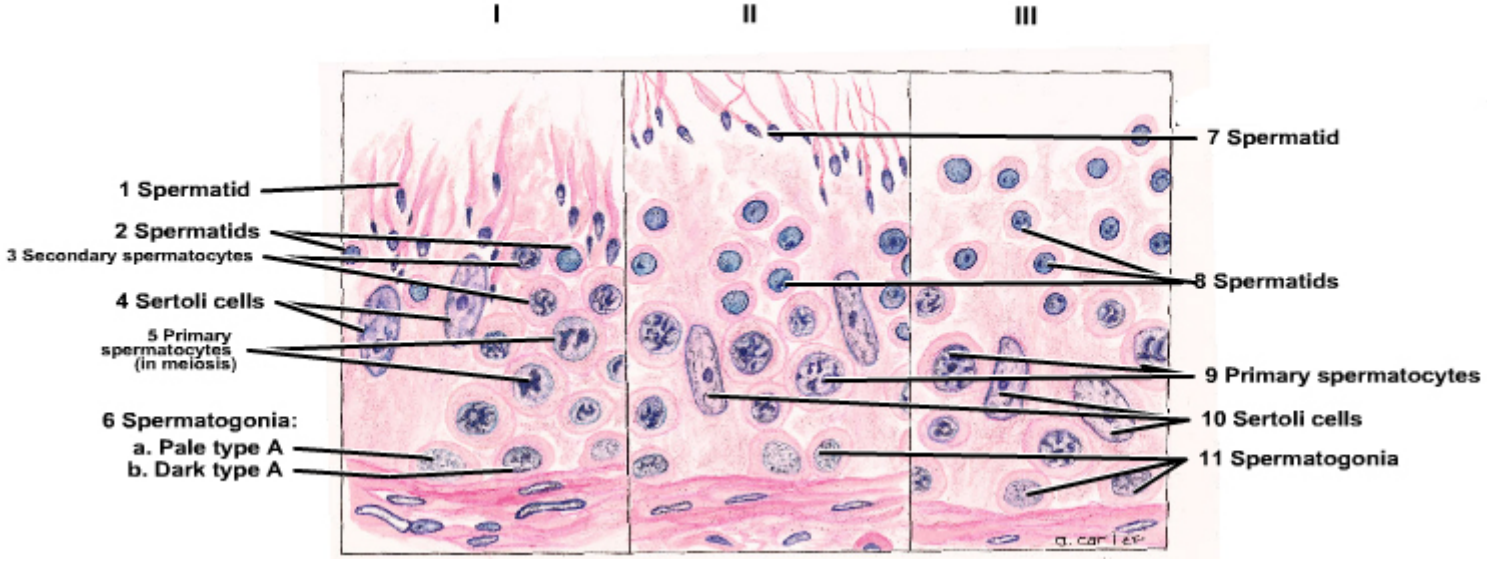

Spermatogonium
Type A
Mitosis
44+X
+Y
44+X
+Y
Spermatogonium
Type B
44+X+
Y
Enlarge/Mitosis
44+X+
Y
Primary Spermatocyte
First Meiotic Division
22+
X
Sec. Spermatocyte
22+
Y
Second Meiotic Division
22+
X
22+
X
22+
Y
22+
Y
Spermatids
SPERMATOZOA


1 Spermatogonia:
a Dark type A
b Pale type B
2 Primary spermatocytes
3 Connective tissue
4 Interstitial cells
5 Seminiferous tubule
6 Sertoli cells
7 Spermatids


1 Fibroblasts
2 Basement membrane
3 Seminiferous tubule
4 Spermatid
5 Primary spermatocytes
6 Sertoli cells
7 Sertoli cell
8 Spermatid
9 Spermatids
10 Blood vessels
11 Interstitial cells (of Leydig)
12 Spermatogonia:
a. Pale type A
b. Dark type A
13 Spermatids
14 Sertoli cell
15 Interstitial cells (of Leydig)
16 Primary spermatocytes
17 Spermatids
18 Fibroblast

Sertoli Cells

- Elongated to Ovoid tall irregular columnar cells resting over basement membrane to upto lumen of tubule
- Irregular indentations
- Large pale staining basal nucleus with prominent nucleolus


I
II
III
1 Spermatid
2 Spermatids
3 Secondary spermatocytes
4 Sertoli cells
5 Primary spermatocytes (in meiosis)
6 Spermatogonia:
a. Pale type A
b. Dark type A
7 Spermatid
8 Spermatids
9 Primary spermatocytes
10 Sertoli cells
11 Spermatogonia

Sertoli Cells

Functions

- Support &Supply nutrition to developing Germ cells
- Provide suitable environment for fostering differentiating germ cell progenitors
- Active translocation of interconnected differentiating germ cell progenitors towards lumen
- Active release of mature spermatozoa into lumen
- Phagocytic disposal of degenerating germ cells & cytoplasm left over following formation of spermatozoa
- Maintain necessary androgen concentration for adequate level of spermatogenesis
- Secrete testicular fluid
- Secrete ABP (Androgen Binding Protein)
- Maintain blood –testis permeability

- Interstitial (Leydig) Cells – small groups large round or polyhedral with Eccenteric nuclei & light stained cytoplasm - steroid secreting cells present in the connective tissue stroma between these epithelial tubules

Functions

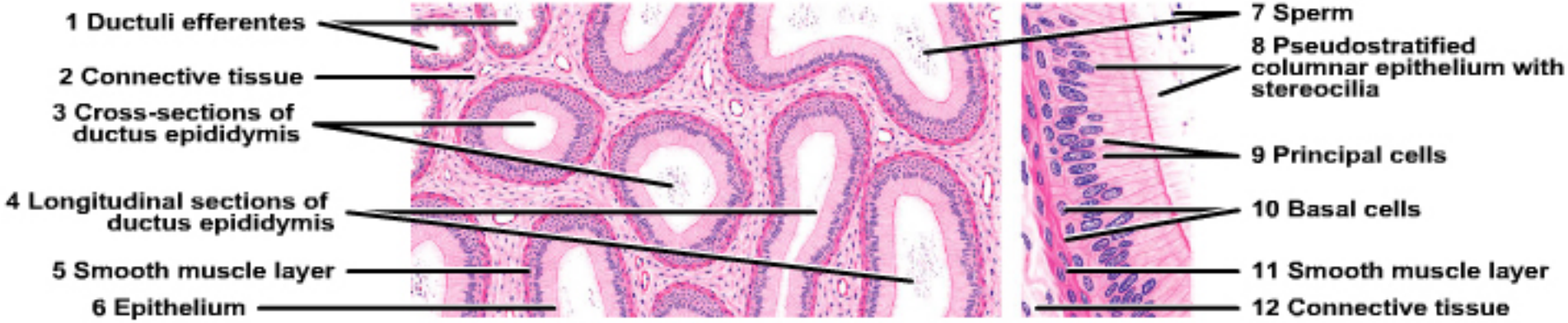
- In response to stimulation of LH (Luteinizing hormone) – From gonadotrophs of Ant. Pitutary - these cells produce Androgens – Chiefly Testosterone – responsible for

❖ Promoting formation of Spermatoza (Spermatogenesis)

❖ Development & secretory activity of androgen –responsive accessory glands

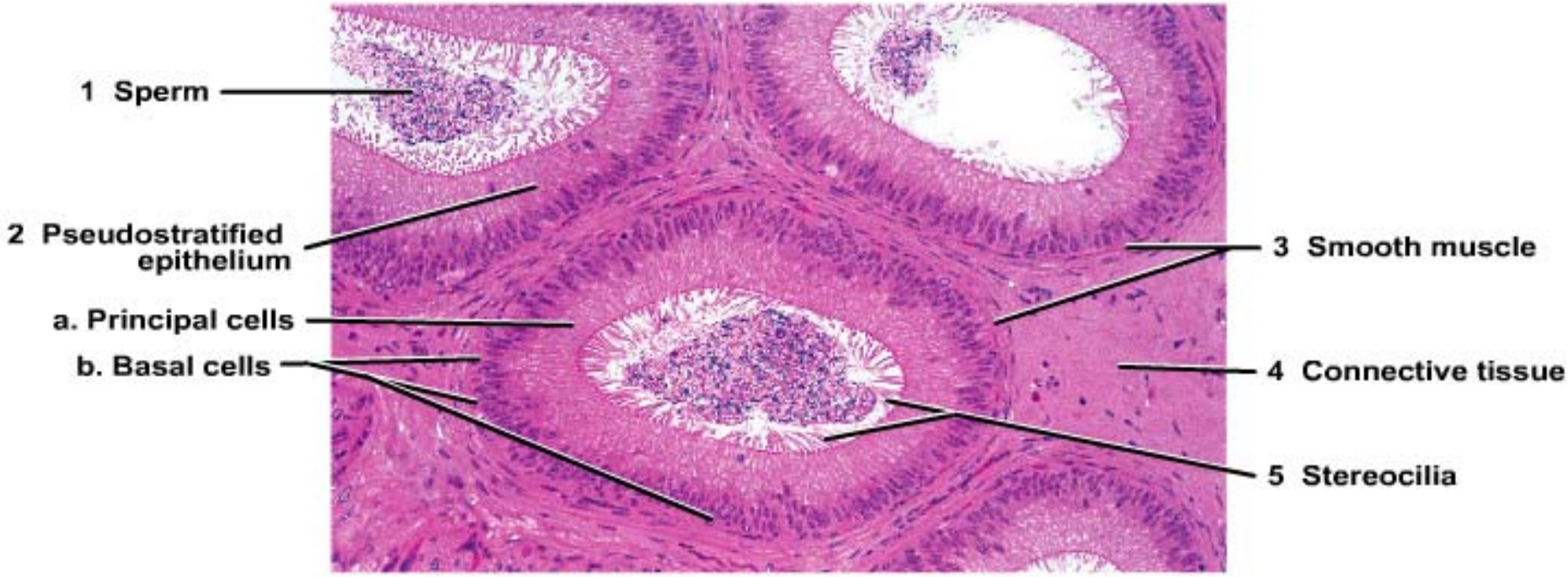
❖ Development of male secondary sexual characteristics

Epididymis



- Thick Smooth muscle coat
- Pseudstratified columnar epithelium
- with short basal cells & Tall columnar cells with stereocilia (non motile) at their luminal surface
- Clumps of spermatozoa present in lumen

Epididymis


1 Sperm
2 Pseudostratified epithelium
a. Principal cells
b. Basal cells
3 Smooth muscle
4 Connective tissue
5 Stereocilia

Seminal Vesicle

- Convulated tube
- Outer covering of connective tissue
- Intermediate muscular layer with outer longitudinal & inner circular muscles
- Inner mucosal lining of simple columnar or Pseudostraitified with goblet cells
- Lamina propria of loose connective tissue
- Mucosal lining thrown into folds that branch & Anastomose to form network

Seminal Vesicles