

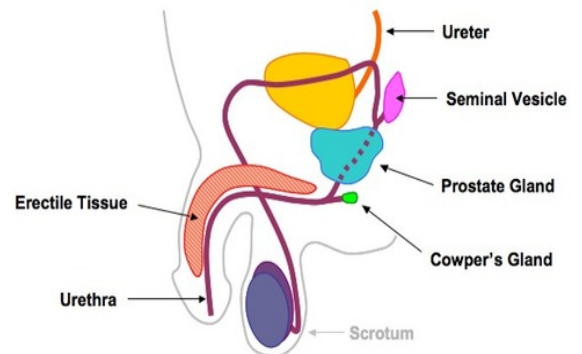
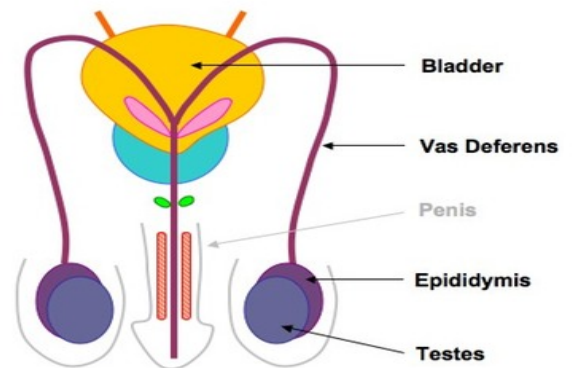


# Male Reproductive System

## Reproductive Block

At the end of this lecture, the student should be able to describe the microscopic structure of :

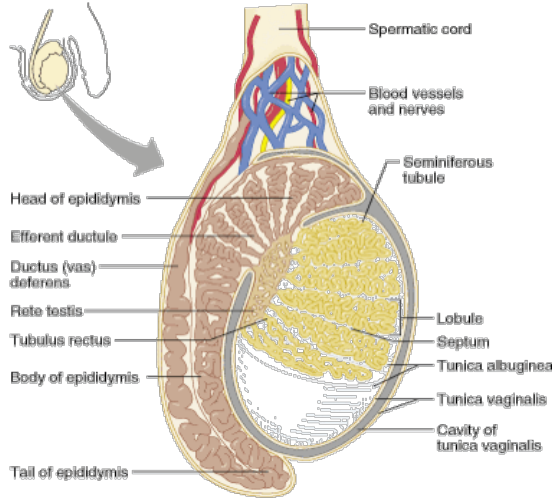
1. Testis and epididymis.
2. Vas deferens.
3. Seminal vesicles.
4. Prostate.



# Testis

Stroma

Parenchyma



## Tunica Vaginalis

Formed of Mesothelial Cells

## Tunica Albuginea

Dense Irregular Collagenous CT

## Tunica Vasculosa

Formed of loose vascular CT lining  
**Tunica Albuginea & Septa** from inside

## Septa

Dense irregular collagenous C.T.  
Divide the testis into about **250**  
intercommunicating compartments  
(**testicular lobules = lobuli testis**)

## Interstitial tissue

Loose vascular C.T. in between the seminiferous tubules.  
Contents:  
1- Loose vascular C.T.  
2- Interstitial cells of Leydig.

## Seminiferous Tubules

Exocrine part

## Interstitial cells of Leydig

Endocrine part

Are rounded or **polygonal** cells with central rounded nucleus.

**Cytoplasm** is acidophilic & vacuolated.

# Seminiferous Tubules

Each tubule is lined with a **stratified epithelium** and surrounded by a basement membrane called **seminiferous epithelium** which is formed of 2 types of cells:

## 1- Sertoli Cell

Structure

Are columnar or pyramidal cells.  
Nucleus: Basal, vesicular, irregular with prominent nucleolus.

Function

- ✓ Support & Nutrition of spermatogenic cells.
- ✓ Phagocytosis of cytoplasmic remnants of spermatogenesis.
- ✓ Secretion: Testicular fluid, androgen Binding Protein (ABP), Inhibin hormone.
- ✓ Formation of blood-testis barrier

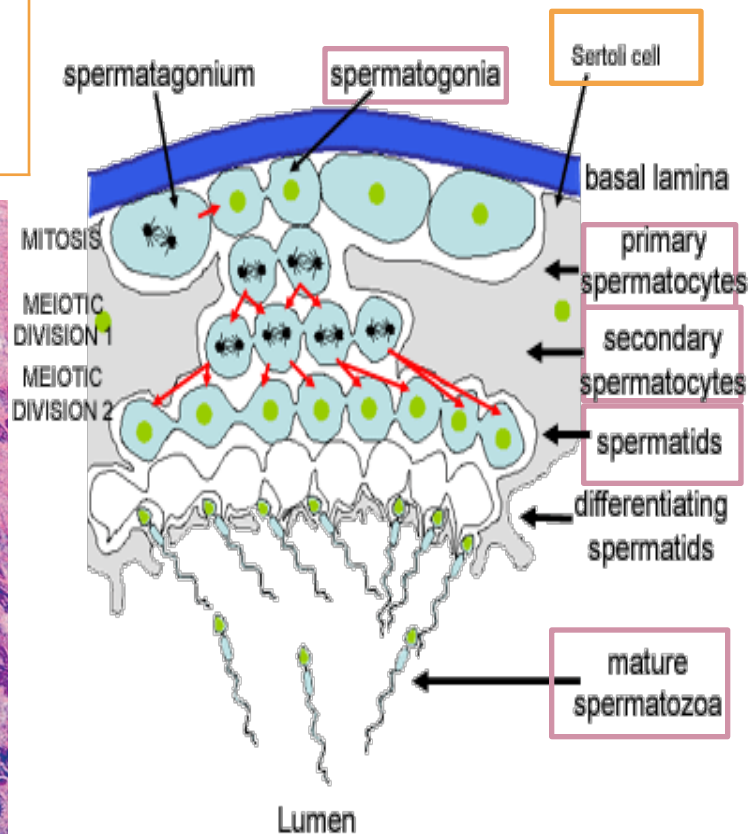
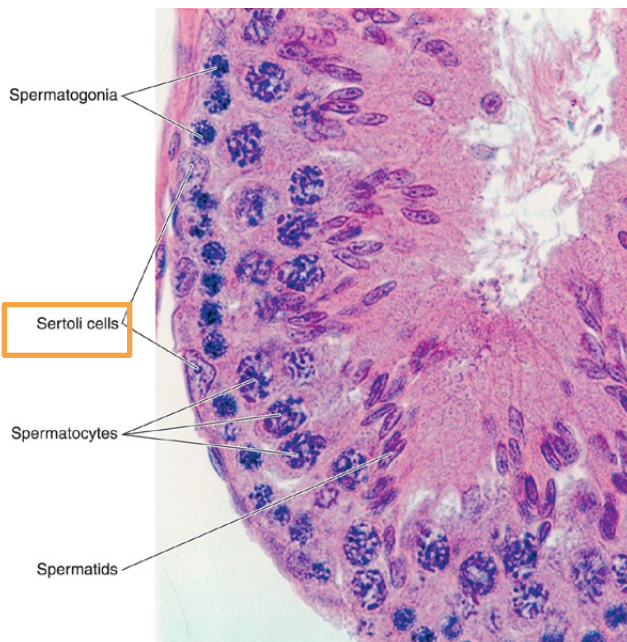
## 2- Spermatogenic Cells

Structure

A series of cells lining the seminiferous tubules extending from the basement membrane to the lumen

Include

- ✓ Spermatogonia
- ✓ Primary Spermatocytes
- ✓ Secondary Spermatocytes
- ✓ Spermatids
- ✓ Spermatozoa



# Blood-Testis Barrier

It is formed by the **tight junctions** between the basal parts of the lateral borders of adjacent **Sertoli cells**.

Divides the seminiferous tubule into 2 compartments:

## Basal Compartment

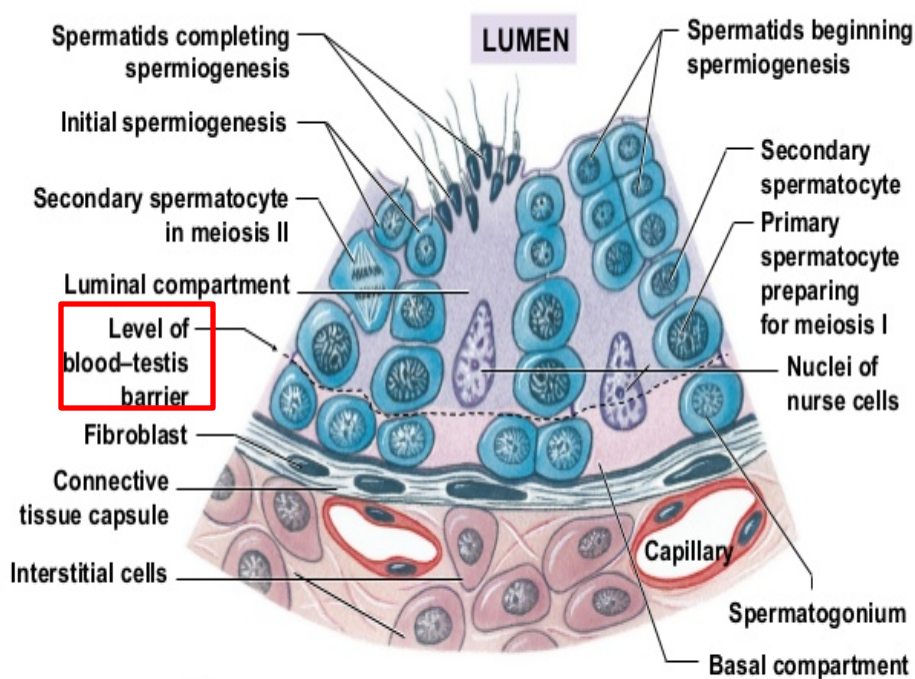
- contains spermatogonia.

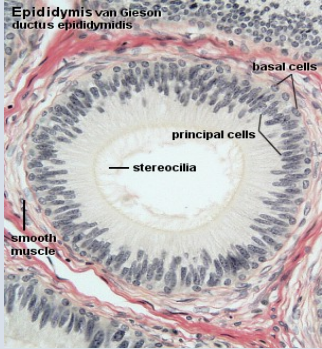
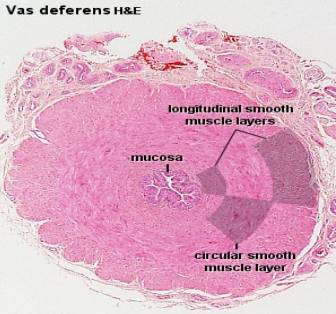
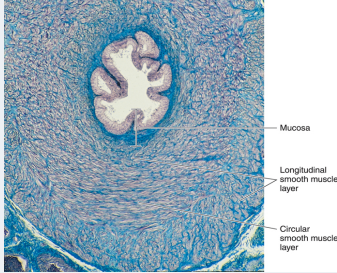
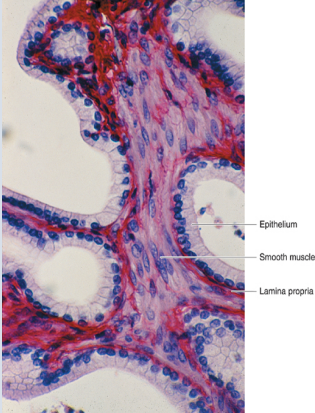
## Adluminal Compartment

- contains the other spermatogenic cells.

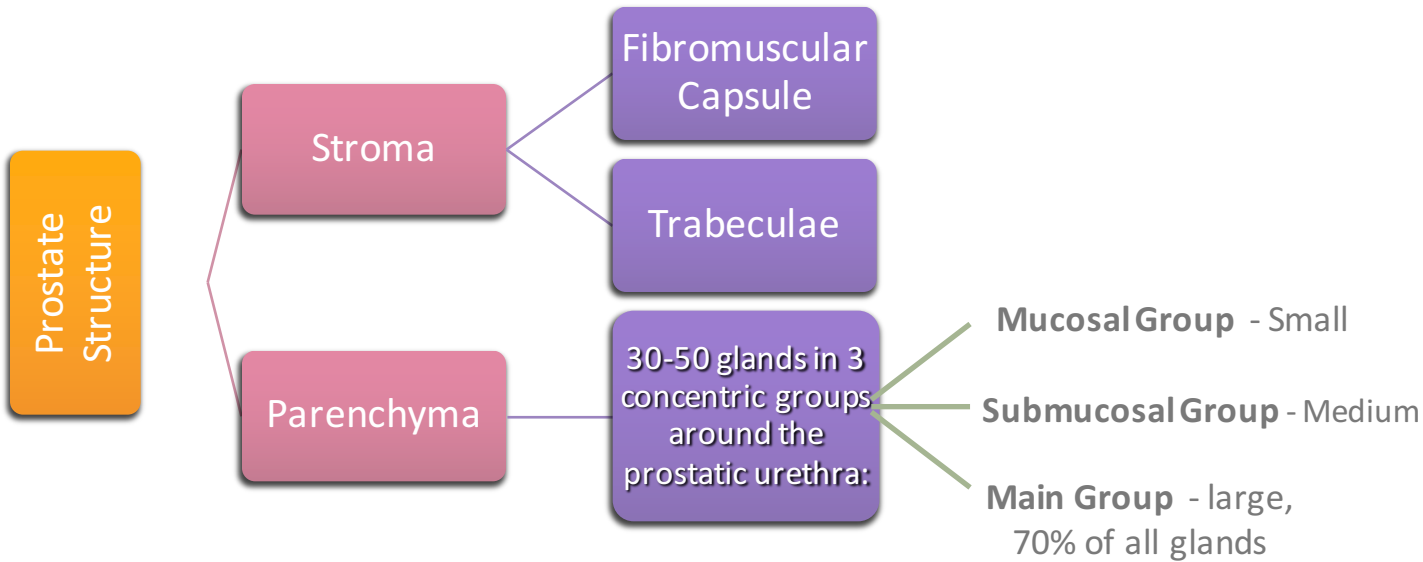
## Function

- ✓ It protects the **developing spermatogenic cells** from drugs and toxic materials.
- ✓ It prevents autoimmune infertility.



	Structure	Function	Light Microscope
Epididymis	<p>1- <b>Epithelium:</b> Pseudo-Stratified Columnar epithelium + <u>Sterocilia</u></p> <p>2- Basal Lamina</p> <p>3- Loose CT</p> <p>4- Layer of Circular smooth muscle cells</p>	<p>- <b>Storage &amp; Maturation</b> of Spermatozoa</p> <p>- Propelling Spermatozoa to Vas Deferens</p>	
Vas Deferens	<p>1- <b>Mucosa:</b> Pseudo Stratified Columnar epithelium + <u>Sterocilia</u> (immotile cilia) on a corium of loose C.T</p> <p>2-<b>Musculosa</b> (thick; 3 layers):</p> <ul style="list-style-type: none"> <li>-Inner longitudinal muscle</li> <li>-Middle circular</li> <li>-Outer longitudinal</li> </ul> <p>3-<b>Adventitia:</b> loose C.T.</p>	<p>- Propelling of spermatozoa by strong peristalsis</p>	 
Seminal Vesicles	<p>1- <b>Mucosa:</b> highly folded.</p> <ul style="list-style-type: none"> <li>- Pseudo Stratified Columnar Epithelium</li> <li>- Lamina propria of C.T.</li> </ul> <p>2- <b>Musculosa:</b></p> <ul style="list-style-type: none"> <li>-Inner circular layer</li> <li>-Outer longitudinal layer.</li> </ul> <p>3- <b>Adventitia:</b> C.T.</p>	<p>- <b>Secretion of most Seminal Fluid</b>, rich in <b>Fructose &amp; Vitamin C</b> which are main <u>nutrients</u> for Spermatozoa</p>	

# Prostate



## Lining

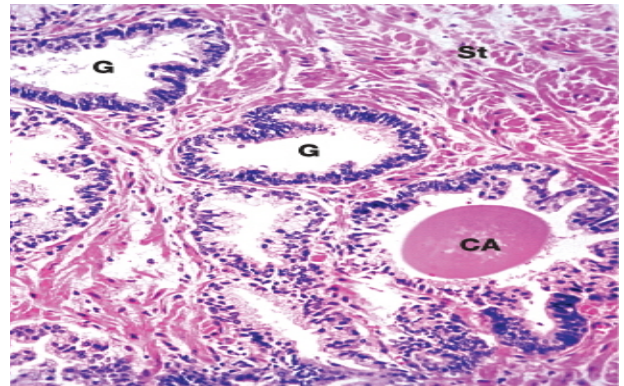
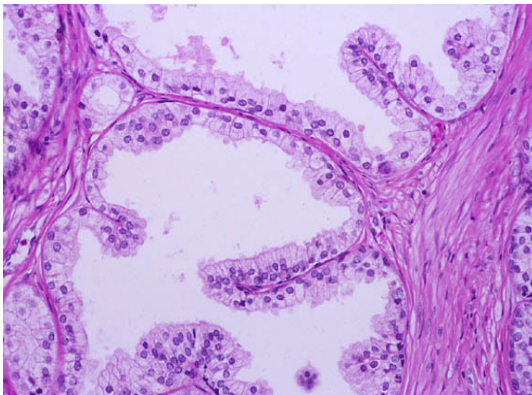
- Acini and cuts lined with simple columnar or Pseudo stratified Columnar Epithelium according to the activity of the gland

## Prostatic concentrations

- **(Corpora Amylacea)** Round or oval masses of Glycoprotein in the lumen of some glands
- Increase with advancement of age & become calcified

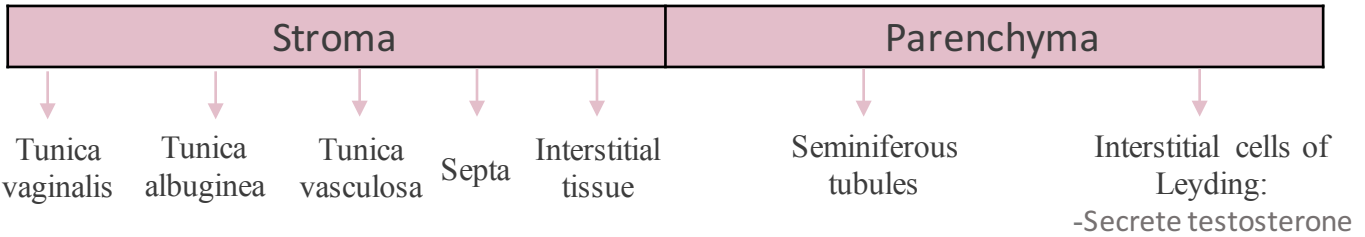
## Function

- Participates in the secretion of Seminal Fluid, its secretion is rich in Acid Phosphate & Proteolytic Enzymes



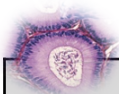
# Summary

## Testis



## Seminiferous Tubules

Sertoli Cell	Spermatogenic Cells
<p>Are columnar or pyramidal cells.</p> <p>Function:</p> <ol style="list-style-type: none"> <li>Support &amp; nutrition of spermatogenic cells</li> <li>Phagocytosis of cytoplasmic remnants of spermatogenesis</li> <li>Secretion:               <ol style="list-style-type: none"> <li>Testicular fluid</li> <li>ABP</li> <li>Inhibin hormone</li> </ol> </li> <li>Formation of blood-testis barrier</li> </ol>	<p>A series of cells lining the seminiferous tubules extending from the BM to lumen</p> <p>Include:</p> <ol style="list-style-type: none"> <li>Spermatogonia</li> <li>1ry spermatocytes</li> <li>2ry spermatocytes</li> <li>Spermatids</li> <li>Spermatozoa</li> </ol>



Epididymis

Functions:

- Storage & maturation of spermatozoa
- Propelling spermatozoa to the vas deferens

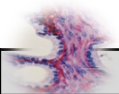


Vas Deferens

-it is a muscular narrow tube with irregular lumen

Function:

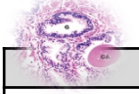
Propelling of spermatozoa by peristalsis



Seminal vesicles

Function:

Secretion of most of: seminal fluid, rich in fructose & vit.C. which are the main nutrients for spermatozoa



Prostate

Function:

-Participates in the secretion of seminal fluid  
-Its secretion is rich in acid phosphatase & proteolytic enzymes

# MCQs

- **Which one is the function of interstitial cells of leydig:**
- A. Produce spermatozoa
  - B. Secrete testosterone
  - C. Formation of blood-testis barrier
  - D. Storage & maturation of spermatozoa
- **Which one is not a content of testis stroma:**
- A. Tunica vaginalis
  - B. Tunica vasculosa
  - C. Seminiferous tubules
  - D. Interstitial tissue
- **Divide the testis into 250 intercommunicating compartments:**
- A. Septa
  - B. Interstitial tissue
  - C. Tunica albuginea
  - D. Tunica vaginalis

## Answers:

- 1) B
- 2) C
- 3) A



**Done By:**  
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Aya Al Dayel



Thank you for checking our  
work

For any correction, suggestion or any  
useful information do not hesitate to  
contact us: [Histology434@gmail.com](mailto:Histology434@gmail.com)