

Testis

Stroma

1- Tunica vaginalis

It is formed of **mesothelial cells**

2- Tunica albuginea

Dense irregular collagenous C.T.

3- Tunica vasculosa

It is formed of loose vascular C.T. lining tunica albuginea & speta from inside.

4- Septa

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

5- Interstitial tissue

- Loose vascular C.T. in between the seminiferous tubules.
- Contents:

- 1- Loose vascular C.T.
- 2- Interstitial cells of Leydig.

(The barrier separates the tissue fluid outside the seminiferous tubule from the spermatogenic cells inside the seminiferous tubule.

Isolation: and protection of the sensitive developing spermatogenic cells from any harmful substance in the blood stream.

Prevention of autoimmune reaction: prevents the passage of any autoantibodies against the developing gametes into the seminiferous tubule.

It isolates the adluminal compartment from connective tissue influences, thereby protecting the developing gametes from the immune system. Because spermatogenesis begins after puberty, the newly differentiating germ cells would be considered "foreign cells" by the immune system.)

Parenchyma

Exocrine part

The seminiferous tubules

which produce spermatozoa

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

- 1- Sertoli cells
- 2- Spermatogenic cells

1- Sertoli cells

- **Are columnar or pyramidal cells**
- **Nucleus: Basal, vesicular irregular with prominent nucleolus**
- Functions:
 - 1- **Support & Nutrition** of spermatogenic cells.
 - 2- **Phagocytosis** of cytoplasmic remnants of spermatogenesis.
 - 3- **Secretion:**

***Testicular fluid** (nutritive medium for transport of immotile spermatozoa)

***Androgen Binding Protein (ABP)**
(combines with testosterone and concentrate it inside the seminiferous tubules)

***Inhibin hormone** (inhibits FSH thus controlling rate of spermatogenesis)

4- **Formation of blood-testis barrier**

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

- It divides the seminiferous tubule into 2 compartments:

1- Basal compartment: contains spermatogonia.

2- Adluminal compartment: contains the other spermatogenic cells.

- Function:

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

2- Spermatogenic cells

- A series of cells lining the seminiferous tubules extending from the BM to the lumen.

- Include:

1. Spermatogonia.
2. 1ry spermatocytes.
3. 2ry spermatocytes.
4. Spermatids.
5. Spermatozoa.

Endocrine part

interstitial cells of Leydig

Are rounded or polygonal cells with central rounded nucleus.
Cytoplasm: **acidophilic & vacuolated.**
Function: Secrete testosterone.

	Epididymis (ductus epididymis)	Ductus deferens (vas deferens)	Seminal vesicles
Structure	1- Epithelium: Pseudostratified columnar epithelium with stereocilia. 2- Basal lamina. 3- Loose C.T. 4- Layer of circularly-arranged smooth muscle cells. - A single tubule; 4-6 m in length. - Highly convoluted to form a compact organ 7.5 cm long. - Divided into head, body & tail. - The tail gives rise to the vas deferens.	It is a muscular narrow tube with irregular lumen. 1- Mucosa: Pseudostratified columnar epithelium with stereocilia (immotile cilia) on a corium of loose C.T. 2- Musculosa (thick; 3 layers): Inner and outer longitudinal muscle layer and middle circular 3- Adventitia: loose C.T. Starting at the tail of the epididymis, enters the abdomen through the inguinal canal to join the duct of the seminal vesicle to form the ejaculatory duct. Length is about 30 cm	(1) Mucosa: -Is highly folded. -Epithelium: ∴ Pseudostratified columnar epithelium -Lamina propria of C.T. (2) Musculosa: - Inner circular layer. - Outer longitudinal layer. (3) Adventitia: C.T. They are two highly convoluted tubes.
Function	1- Storage & maturation of spermatozoa. 2- Propelling spermatozoa to the vas deferens	Propelling of spermatozoa by strong peristalsis.	Secretion of most of seminal fluid , rich in fructose & vit. C which are the main nutrients for spermatozoa.

Prostate

- **Stroma: fibromuscular capsule & trabeculae.**
- **Parenchyma:** 30-50 glands in 3 concentric groups around the prostatic urethra:
 - **Mucosal group: small.**
 - **Submucosal group: medium-sized.**
 - **Main group: Large, 70% of all glands.**
- **Acini and ducts are lined with simple Col. or Ps. Str. Col. E. according to activity of the glands.**
- **Prostatic concretions (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 the **seminal fluid**. Its secretion is rich in **acid phosphatase & proteolytic enzymes.**