Male Genital Organs

Spermatic Cord, Scrotum, Testis, Epididymis Prostate, Vas Deferens, Seminal Vesicles & Ejaculatory Ducts

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Wednesday 14 May 2025

Spermatic Cord

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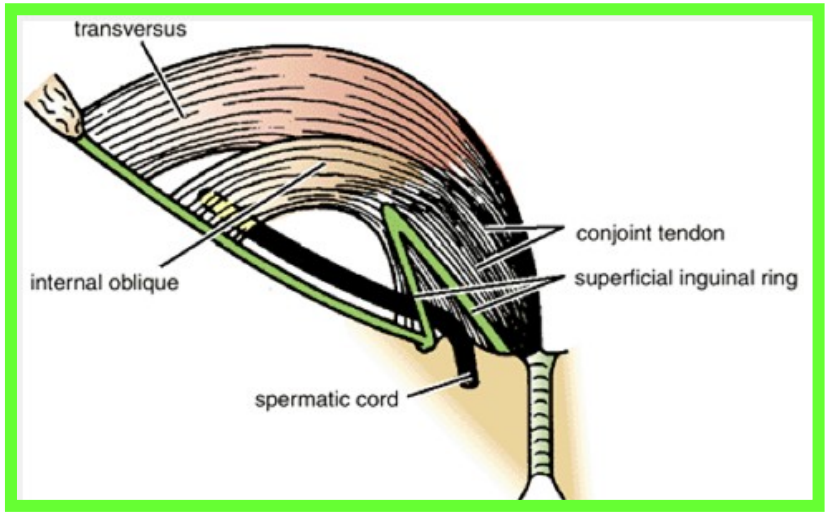
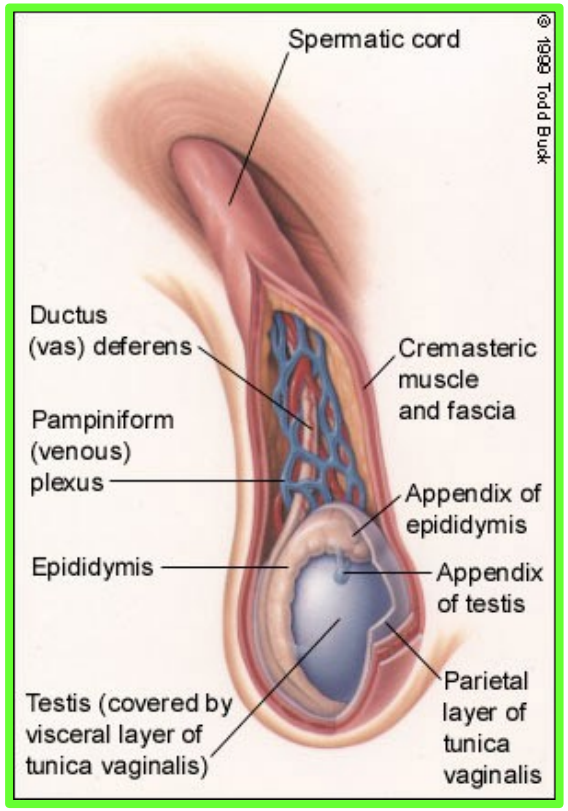


Is a collection of structures that pass through the inguinal canal to and from the testis. It begins at the deep inguinal ring lateral to the inferior epigastric artery and ends at the testis.

Structures of the Spermatic Cord

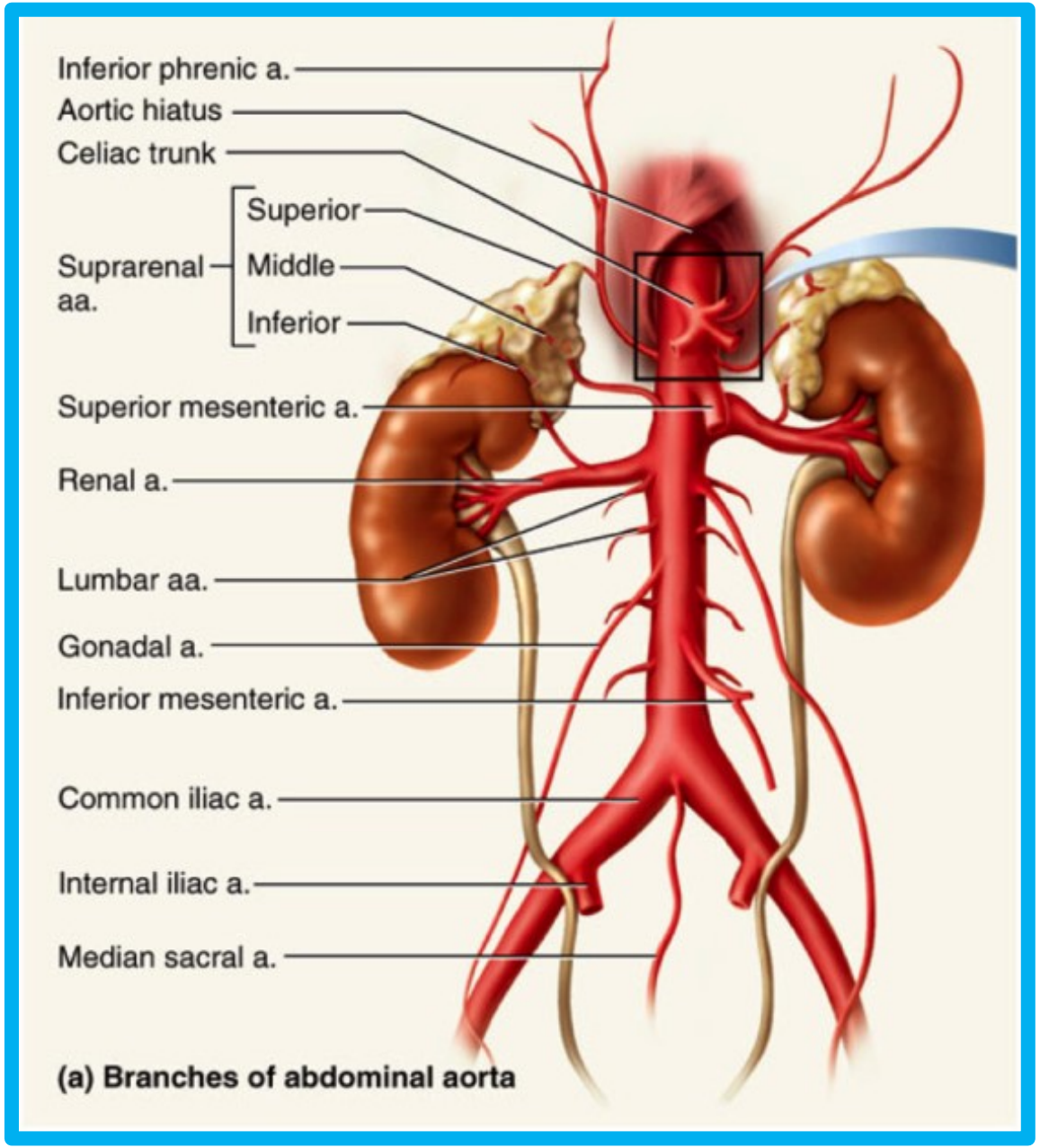
- Vas deferens
- Testicular artery
- Testicular veins (pampiniform plexus)
- Testicular lymph vessels
- Autonomic nerves
- Remains of the processus vaginalis
- Genital branch of the genitofemoral nerve, which supplies the cremasteric muscle



❖Testicular Artery

- A branch of the abdominal aorta (at the level of the second lumbar vertebra), the testicular artery is long and slender and descends on the posterior abdominal wall.

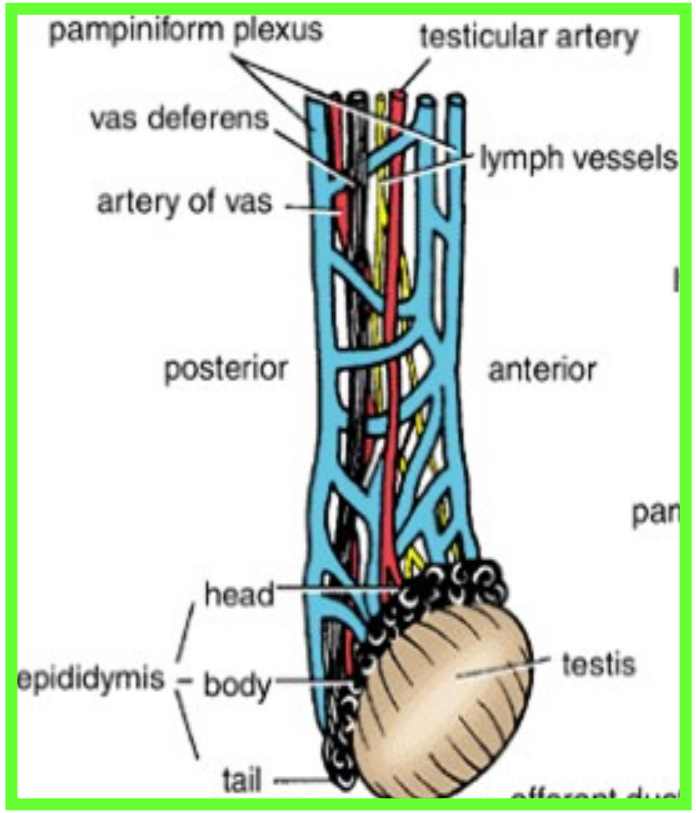
- It traverses the inguinal canal and supplies the testis and the epididymis

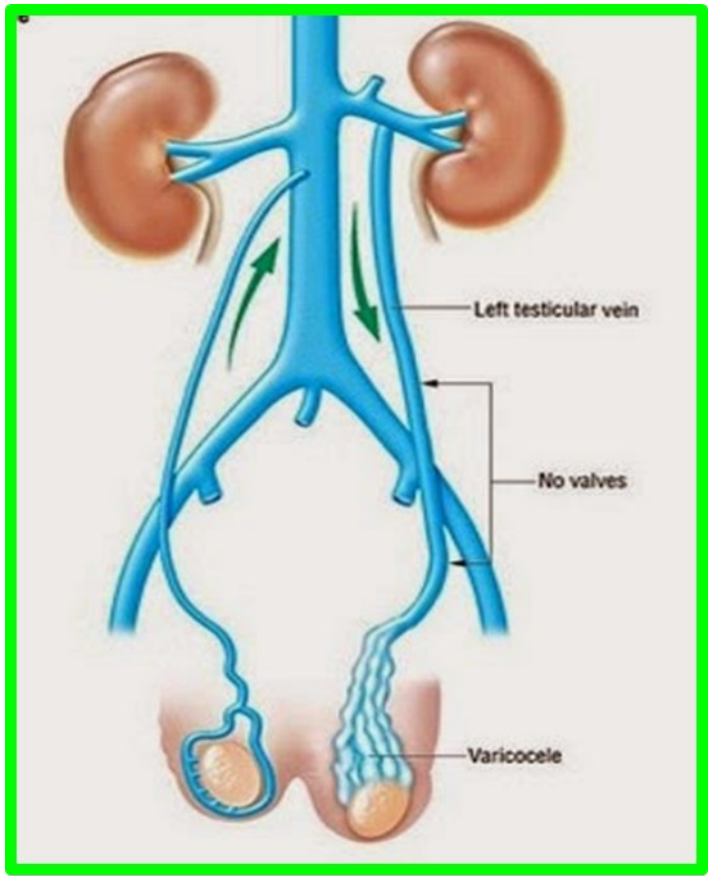


❖Testicular Veins

❑An extensive venous plexus, the pampiniform plexus, leaves the posterior border of the testis as the plexus ascends, it becomes reduced in size so that at about the level of the deep inguinal ring, a single testicular vein is formed.

❑This runs up on the posterior abdominal wall and drains into the left renal vein on the left side and into the inferior vena cava on the right side

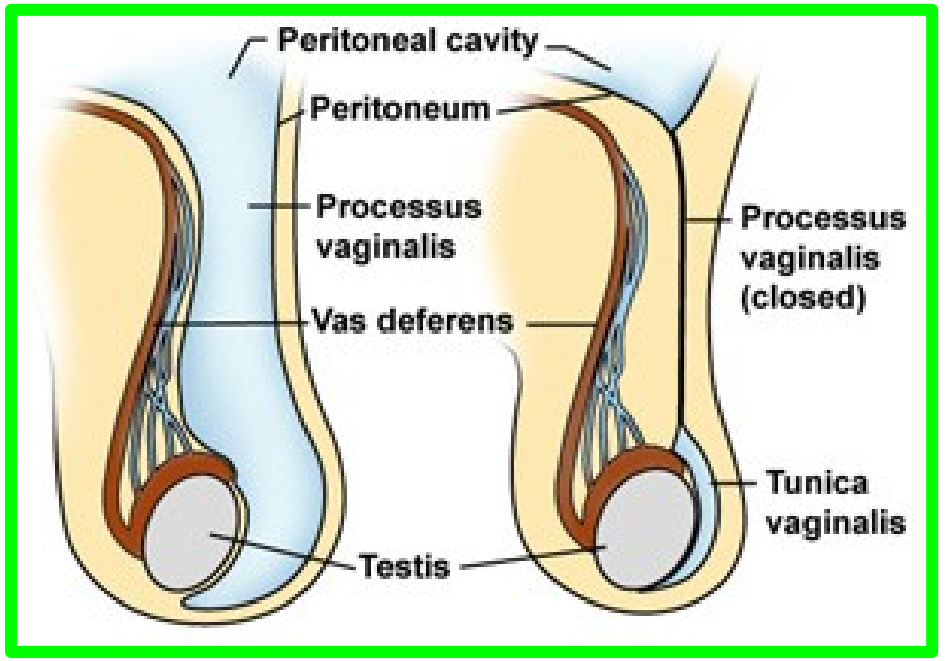


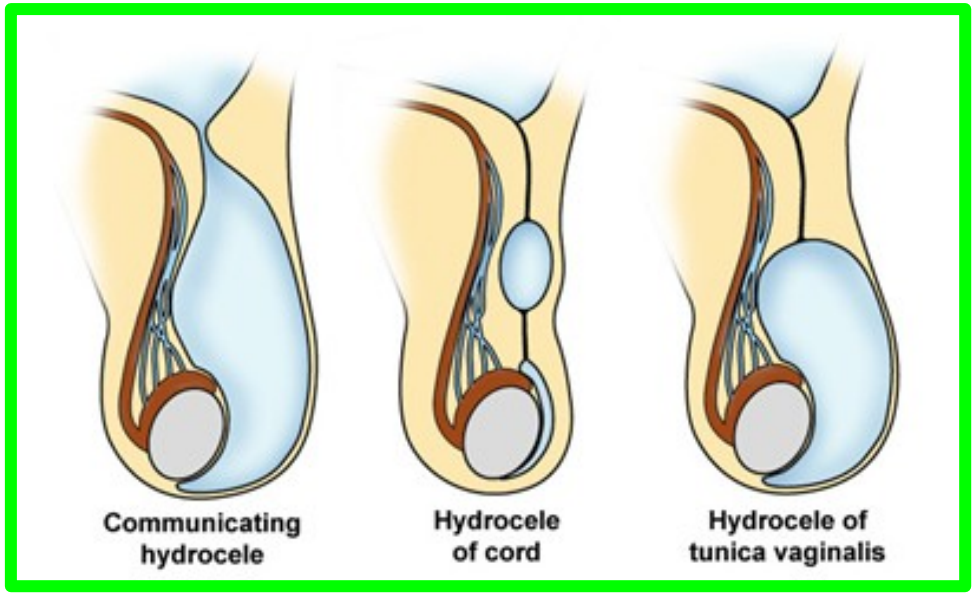


Varicocele ????

❖Processus Vaginalis

The remains of the processus Vaginalis are present within the cord





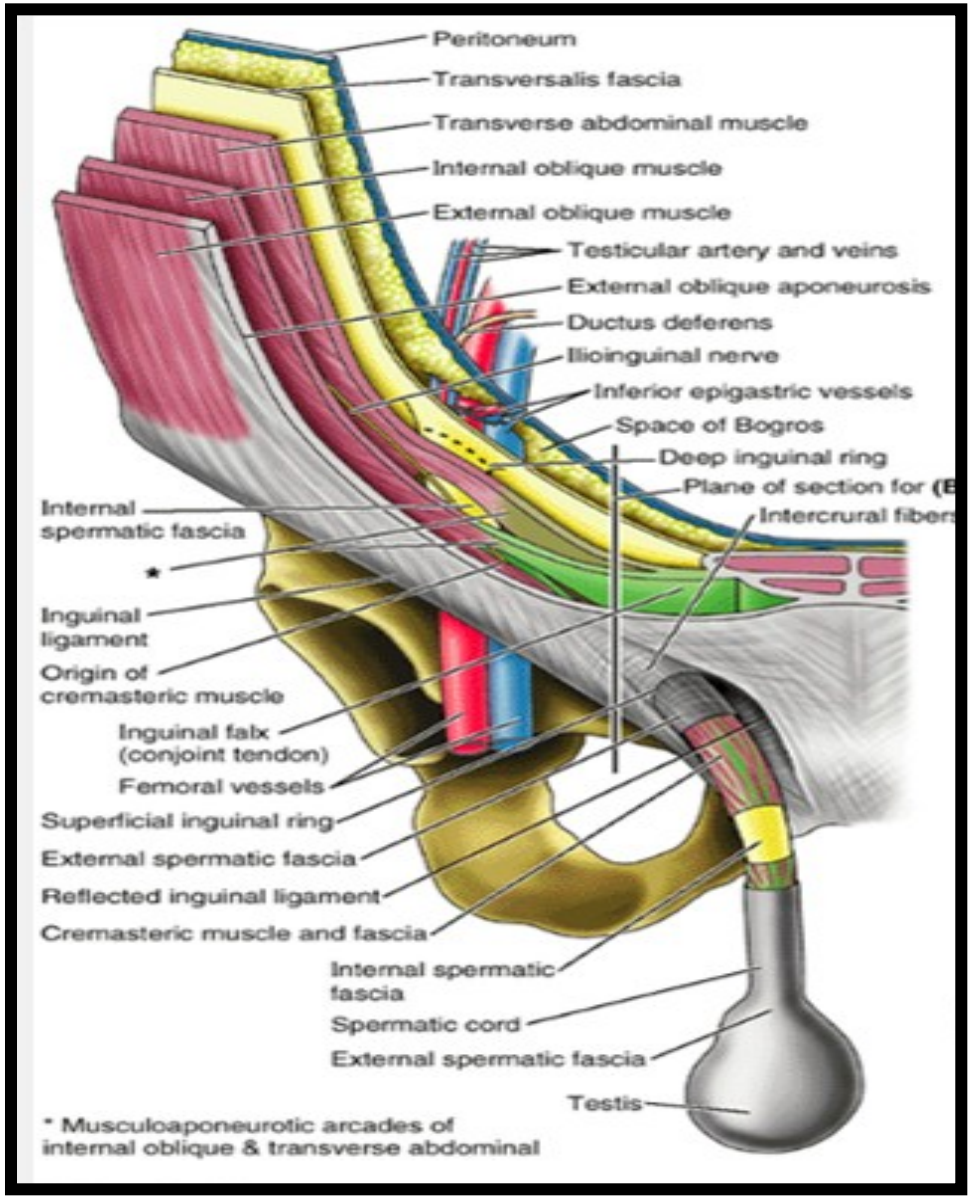
Hydrocele of Spermatic Cord and/or Testis ????

Coverings of the Spermatic Cord (the Spermatic Fasciae)

✓**External spermatic fascia** derived from the external oblique aponeurosis and attached to the margins of the **superficial inguinal ring**

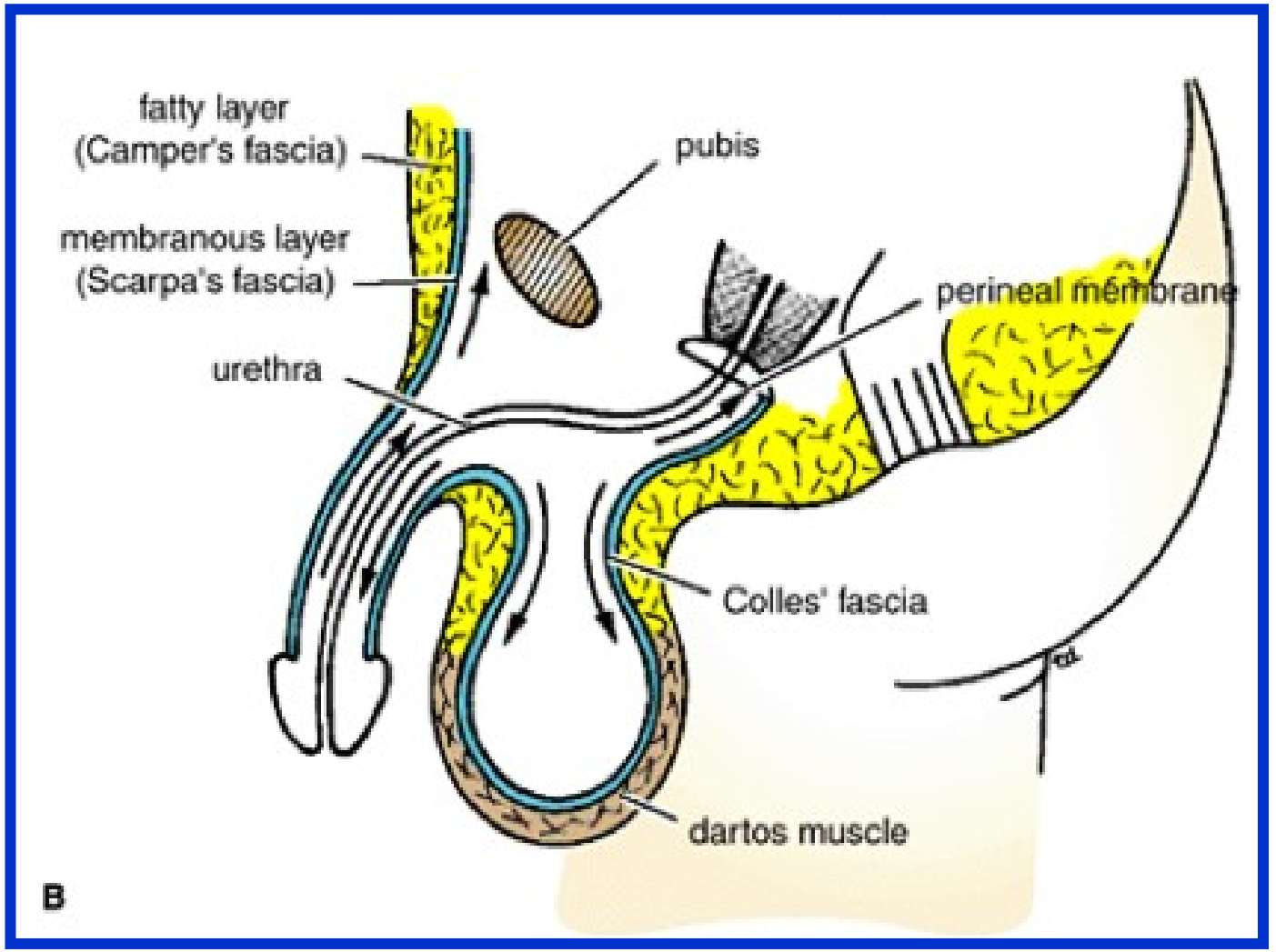
✓**Cremasteric fascia** derived from the internal oblique muscle

✓**Internal spermatic fascia** derived from the fascia transversalis and attached to the margins of the **deep inguinal ring**



Scrotum

The scrotum is an outpouching of the lower part of the anterior abdominal wall and contains the testes, the epididymides, and the lower ends of the spermatic cords .



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Scrotum

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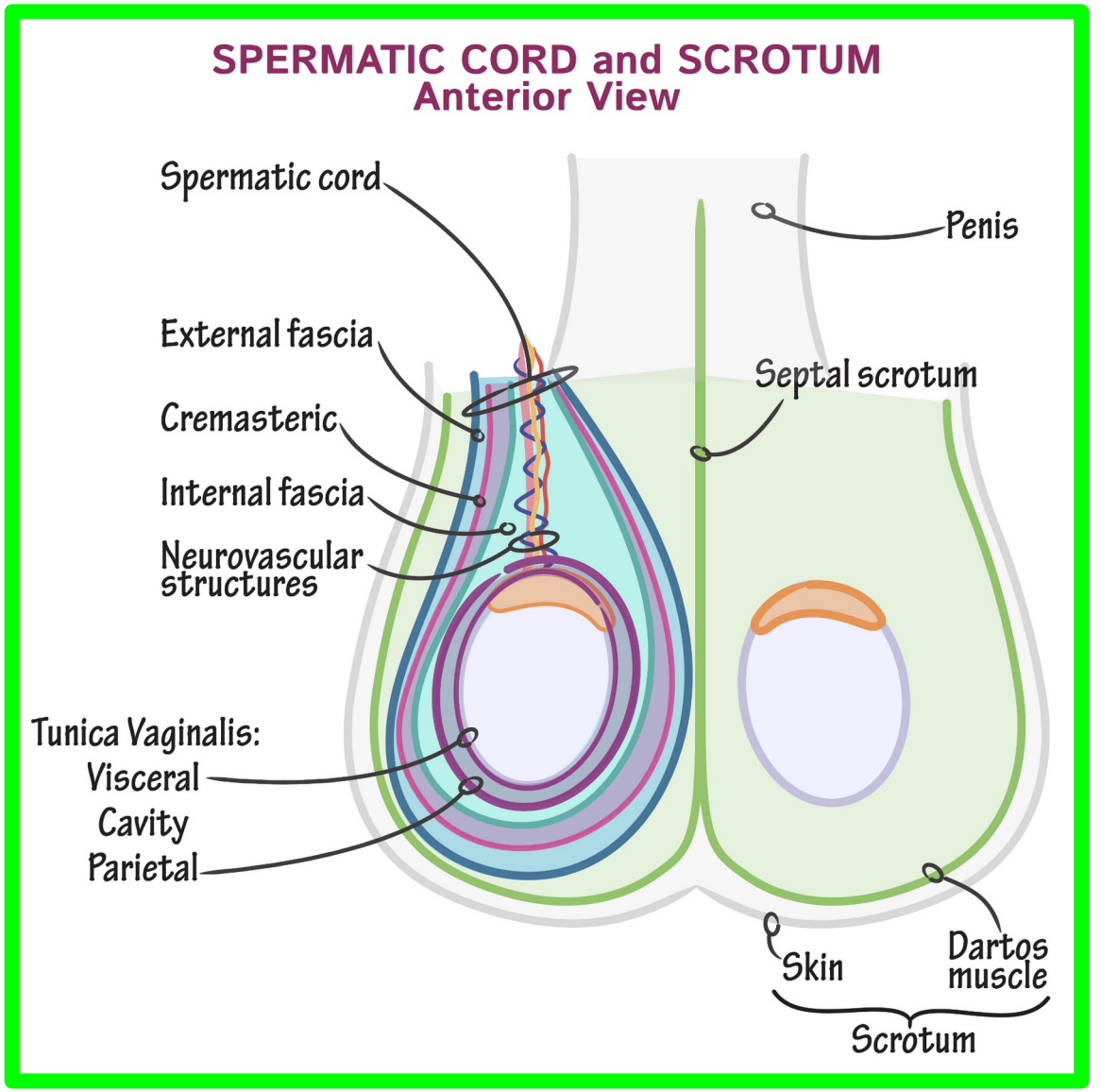
The wall of the scrotum has the following layers:

- Skin
- Superficial fascia;
  - ✓The dartos muscle, replaces the fatty (camper fascia), and
  - ✓The membranous layer (Scarpa's fascia) is now called Colles' fascia.

- External spermatic fascia derived from the external oblique

- Cremasteric fascia derived from the internal oblique

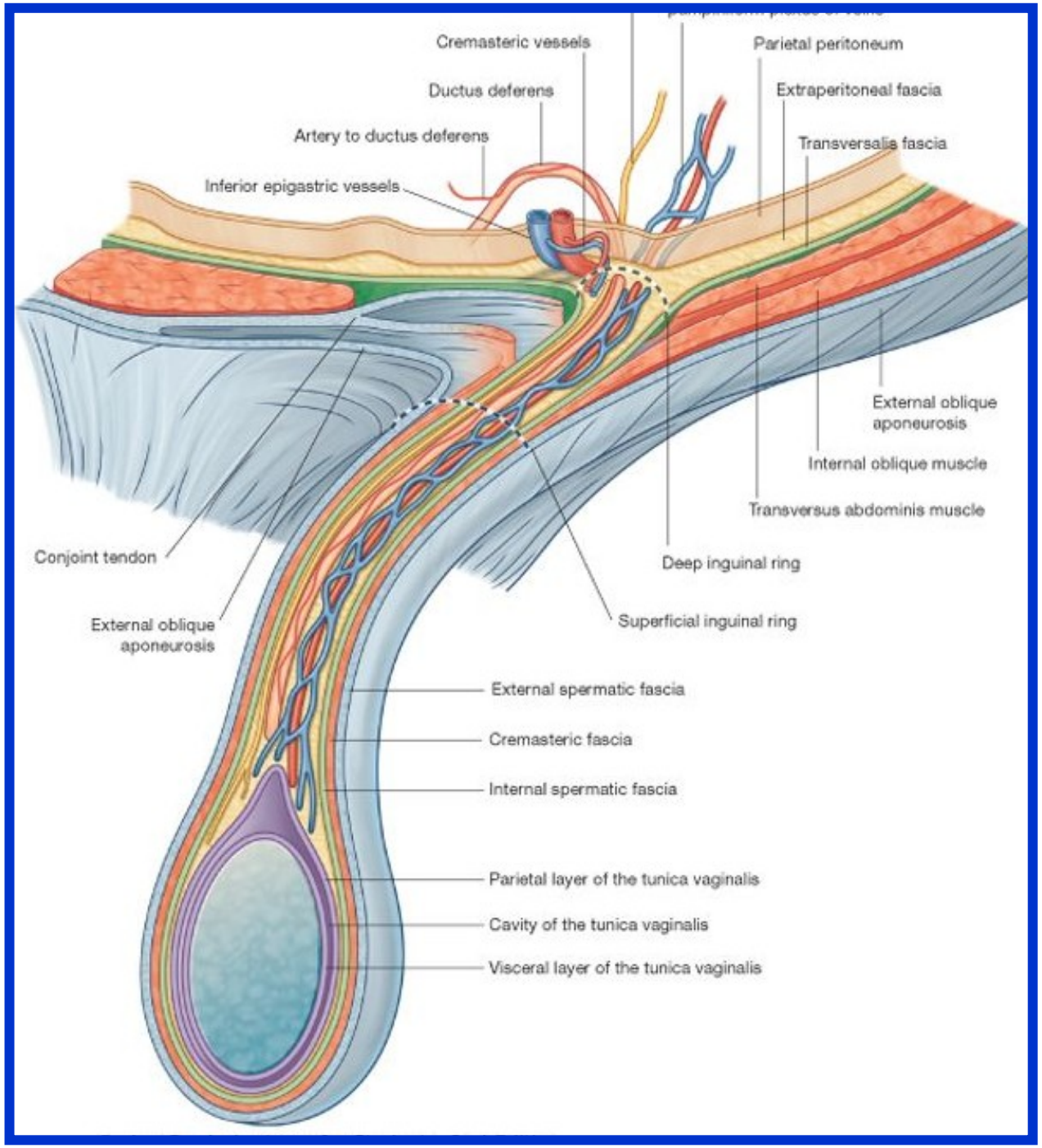


Scrotum

The wall of the scrotum:

- **Internal spermatic fascia** derived from the **fascia transversalis**

- **Tunica vaginalis**, which is a **closed sac** that covers the anterior, medial, and lateral surfaces of each testis



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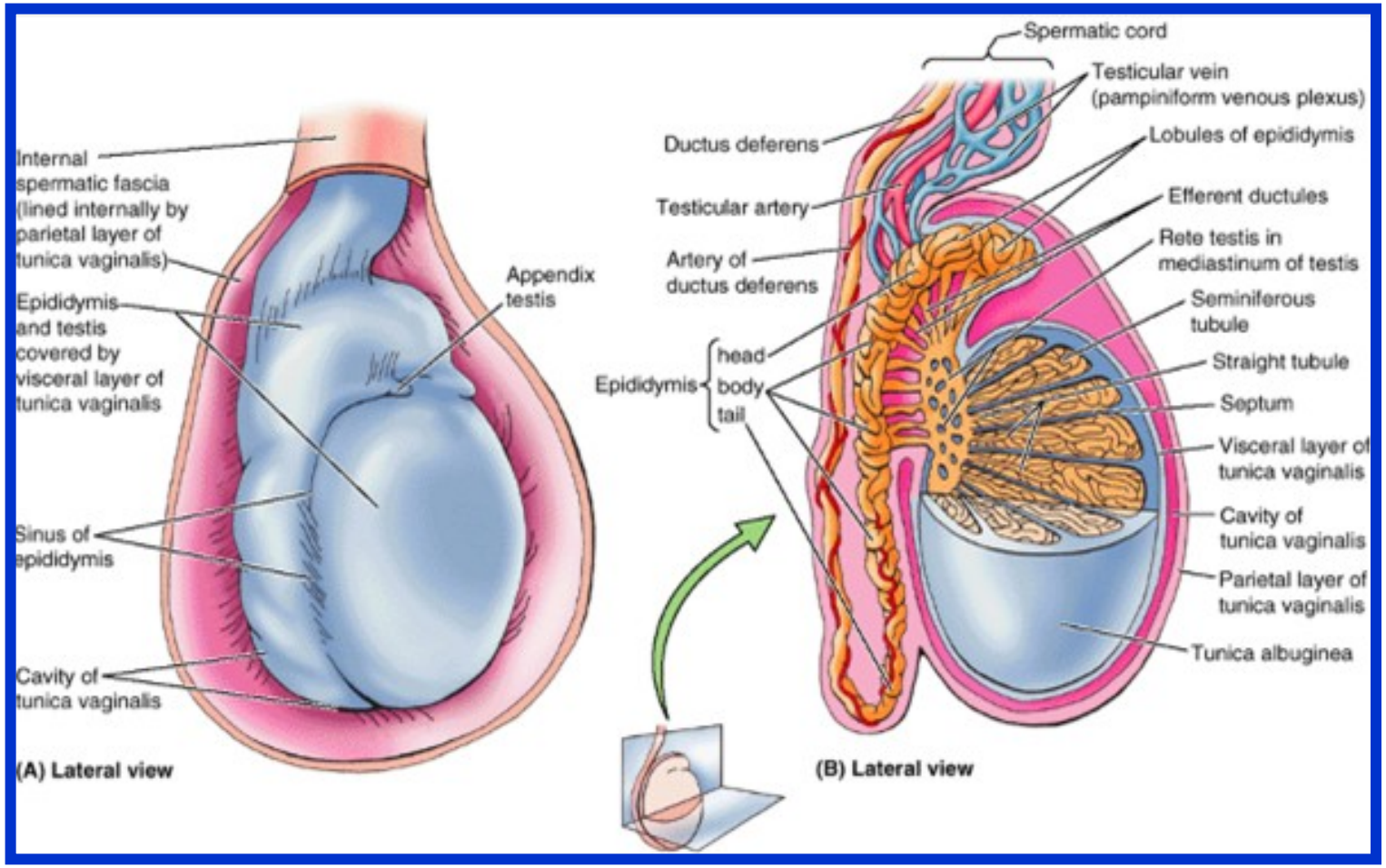
Testis

- The testis is a firm, mobile organ lying within the scrotum.
- The left testis usually lies at a lower level than the right.
- Each testis is surrounded by a tough fibrous capsule, the tunica albuginea



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Testis

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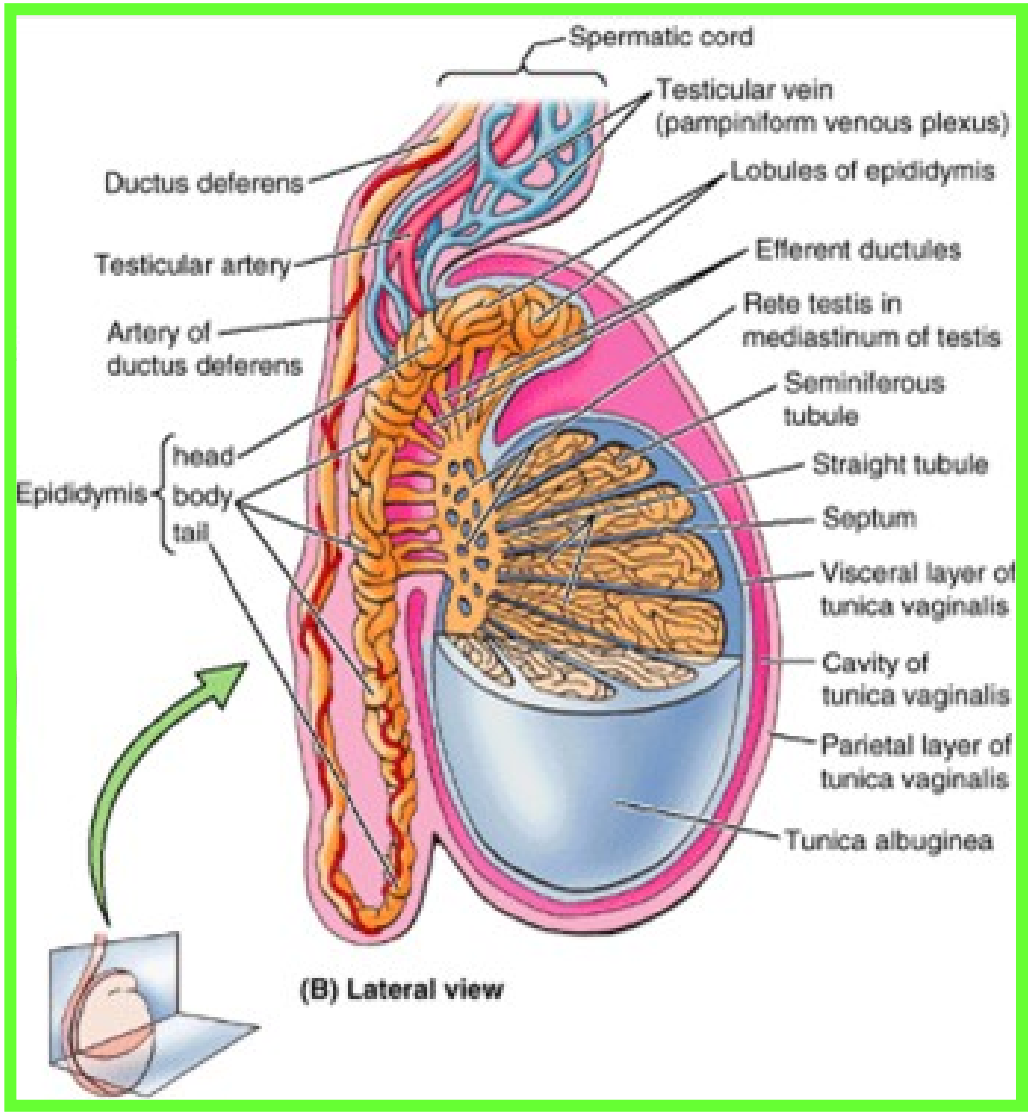
✓Extending from the inner surface of the capsule is a series of fibrous septa that divide the interior of the organ into lobules.

✓ Lying within each lobule are one to three coiled seminiferous tubules.

✓The tubules open into a network of channels called the rete testis.

✓Small efferent ductules connect the rete testis to the upper end of the epididymis

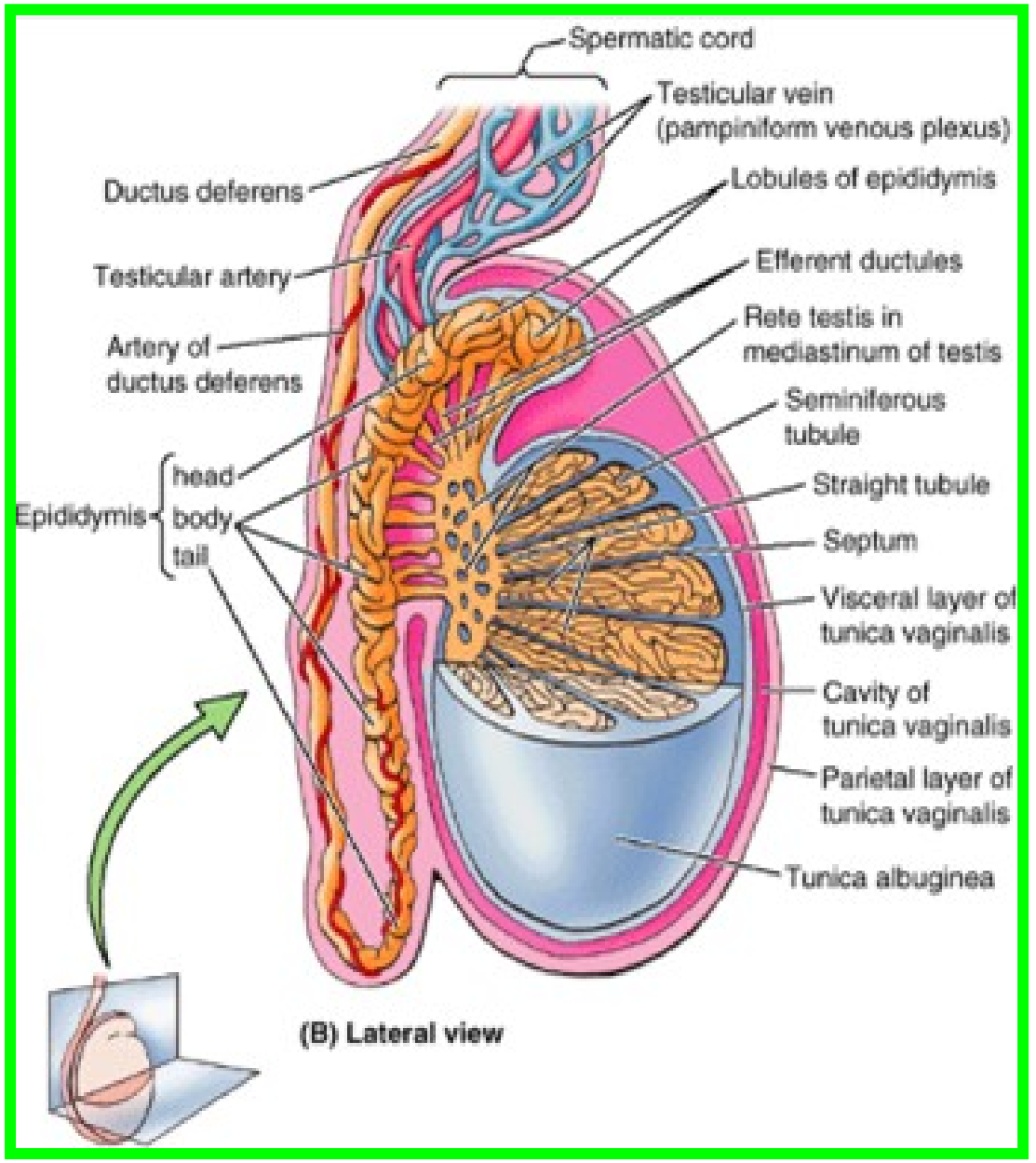


Epididymis

- The epididymis is a firm structure lying posterior to the testis, with the vas deferens lying on its medial side

- It has an expanded upper end, the head, a body, and a pointed tail inferiorly.

- Laterally, a distinct groove lies between the testis and the epididymis, which is lined with the inner visceral layer of the tunica vaginalis and is called the sinus of the epididymis .

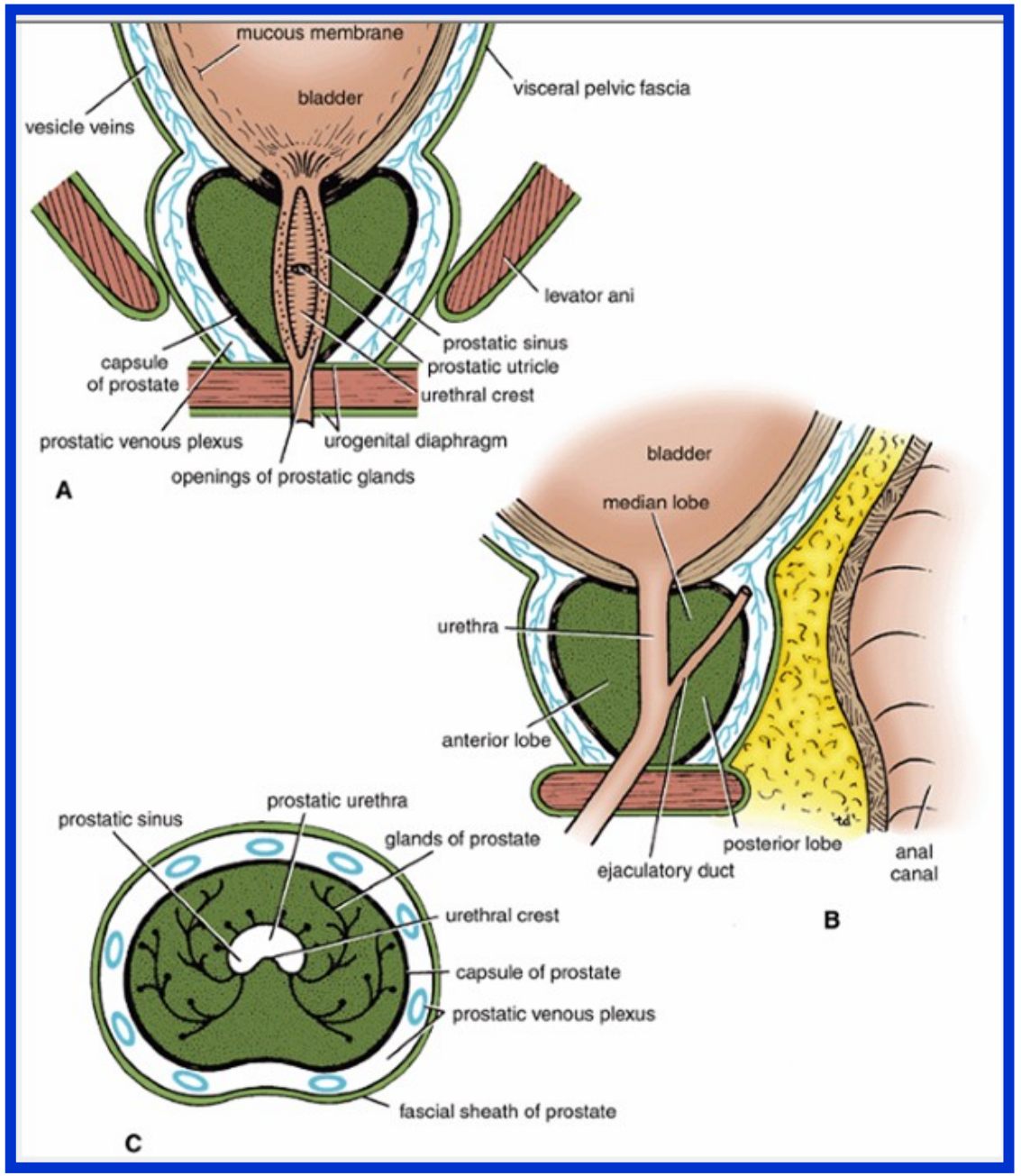


Male Genital Organs | Prostate

❖The prostate is a fibromuscular glandular organ that surrounds the prostatic urethra

❖The glandular part makes up approximately two thirds of the prostate; the other third is fibromuscular.

❖ It is about 1.25 in. (3 cm) long and lies between:
The neck of the bladder above and The Urogenital diaphragm below



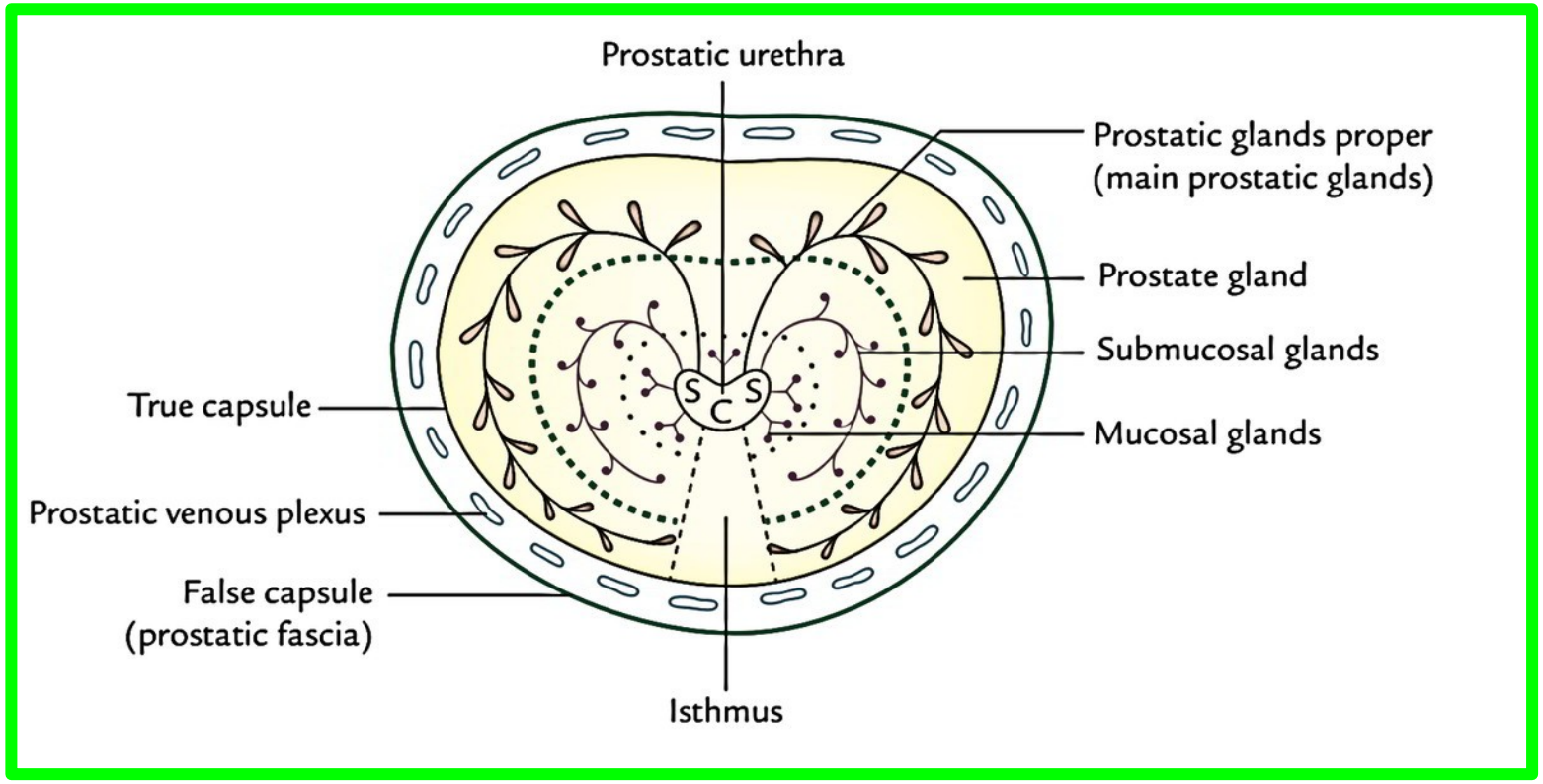
Prostate

** The prostatic capsule:

1- True capsule: thin fibrous sheath surrounds the gland.

2- False capsule: the visceral layer of pelvic fascia.(continuous anterolaterally with the puboprostatic ligaments, and dense posteriorly, continuous with the rectovesical septum).

- The prostatic venous plexus lies between both capsules.



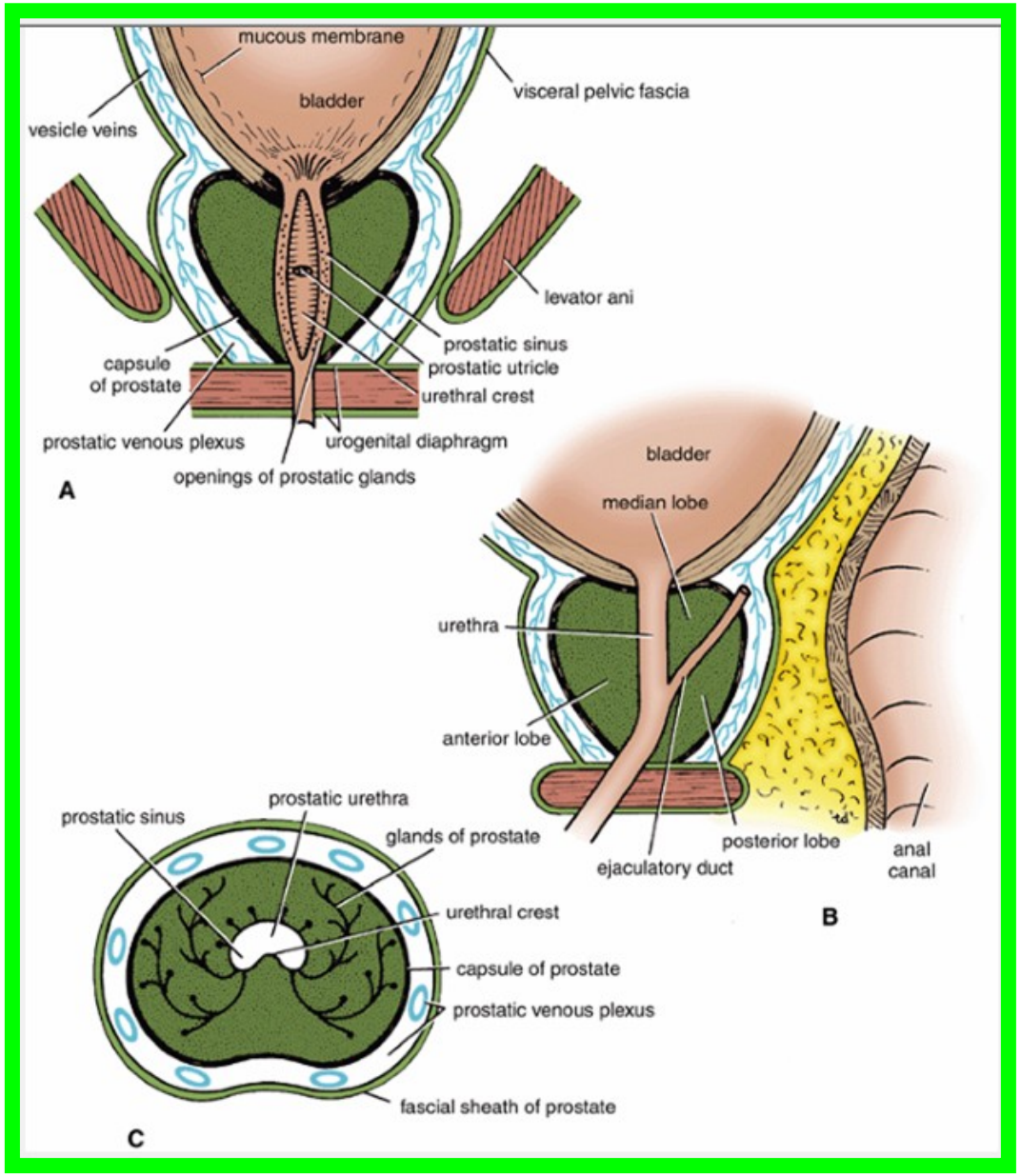
Prostate

❖The somewhat conical prostate has:

❖A base, which lies against the bladder neck above

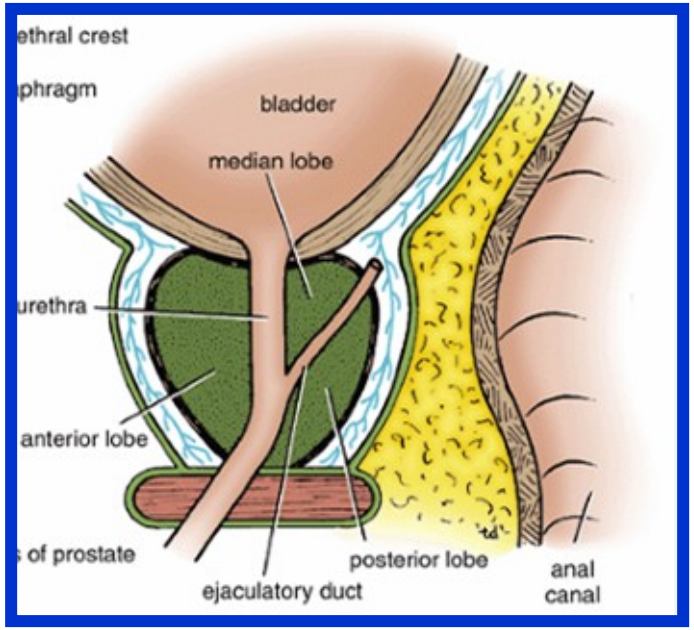
❖An apex, which lies against the urogenital diaphragm below.

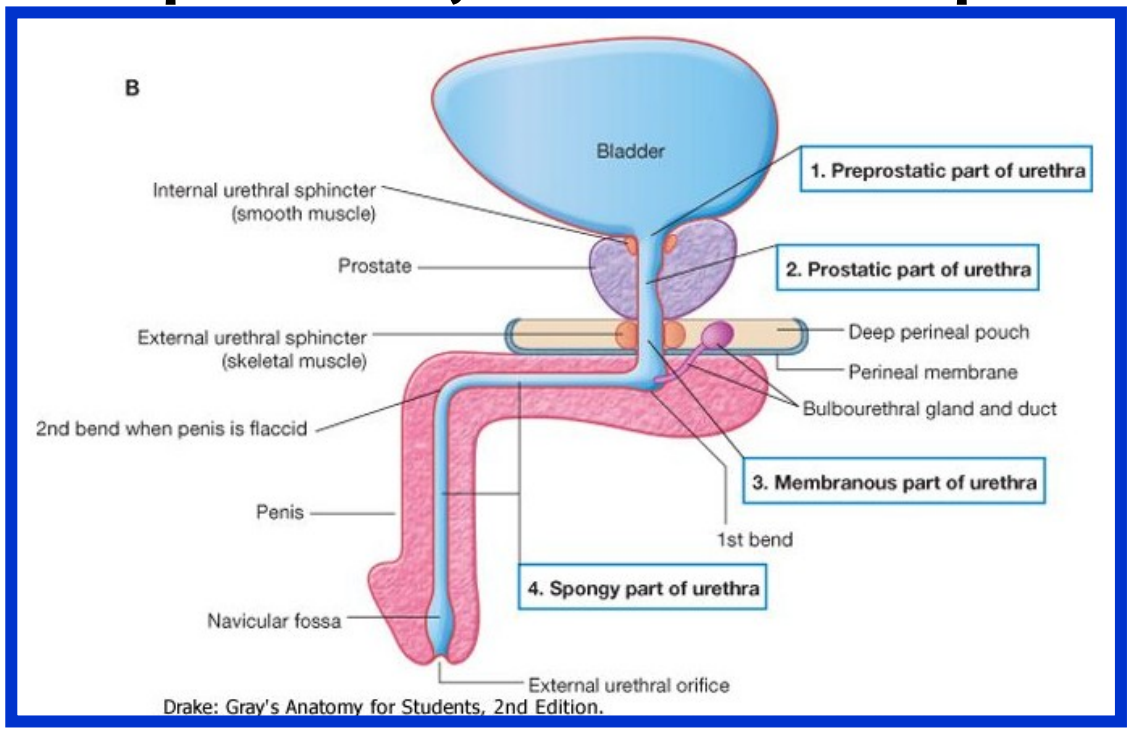
❑The two ejaculatory ducts pierce the upper part of the posterior surface of the prostate to open into the prostatic urethra at the lateral margins of the prostatic utricle.



Relations

- **Superiorly:** The base of the prostate is continuous with the neck of the bladder, the smooth muscle passing without interruption from one organ to the other.
- The urethra enters the center of the base of the prostate
- **Inferiorly:** The apex of the prostate lies on the upper surface of the urogenital diaphragm. The urethra leaves the prostate just above the apex on the anterior surface





Prostate

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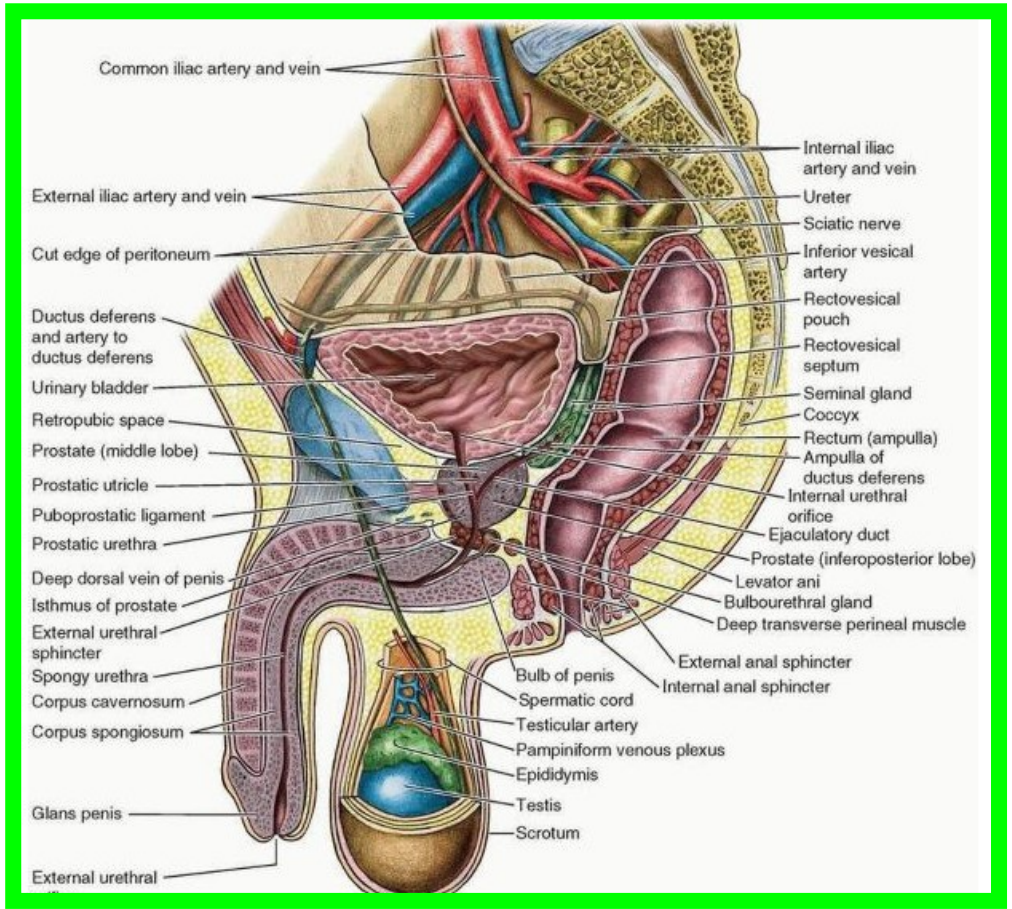
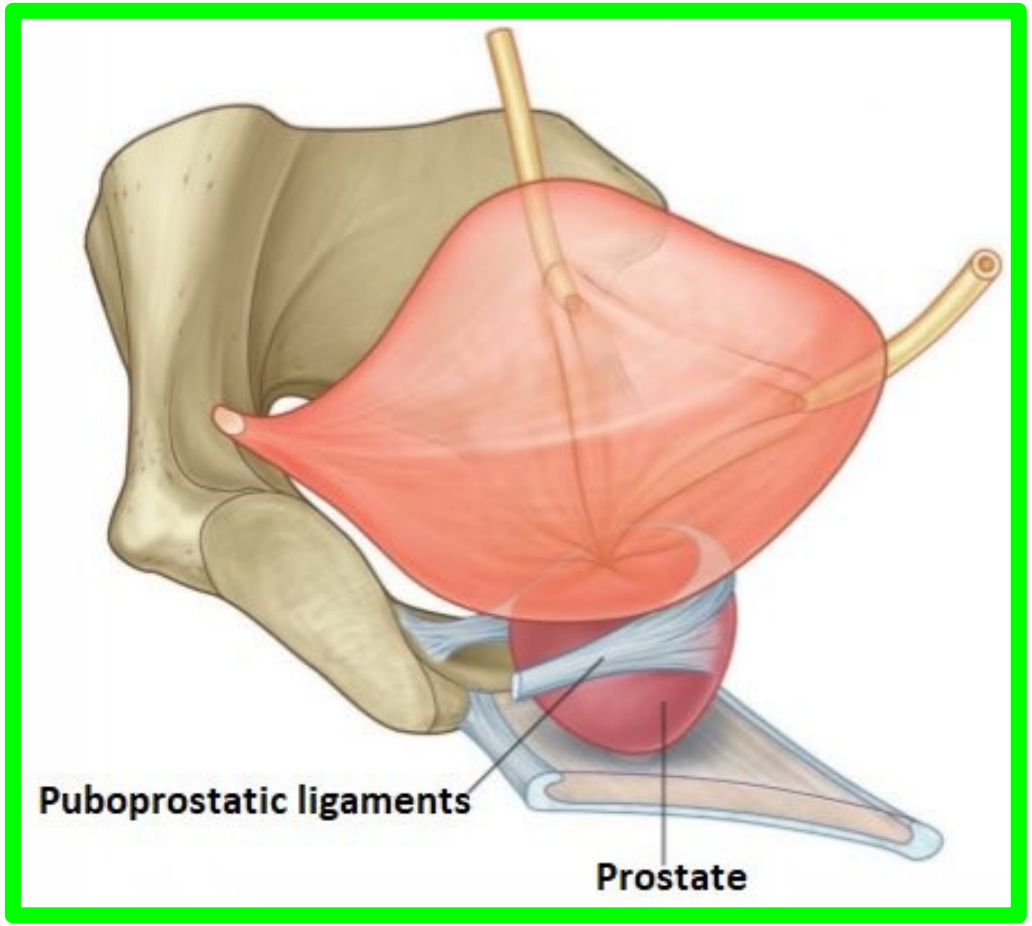
- **Anteriorly:** The prostate is related to the symphysis pubis, separated from it by the extraperitoneal fat in the retropubic space (cave of Retzius).
- The prostate is connected to the posterior aspect of the pubic bones by the fascial puboprostatic ligaments

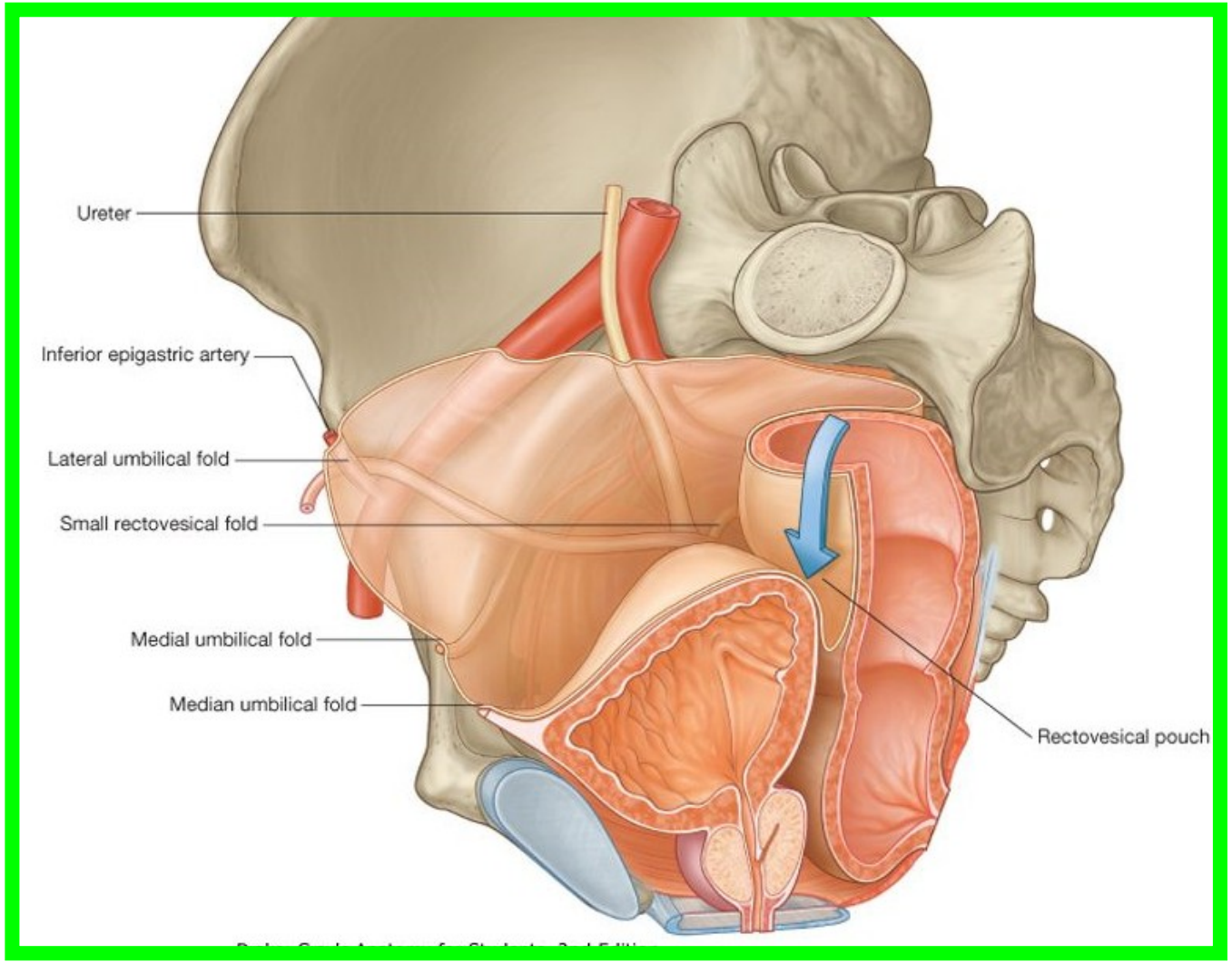




Prostate

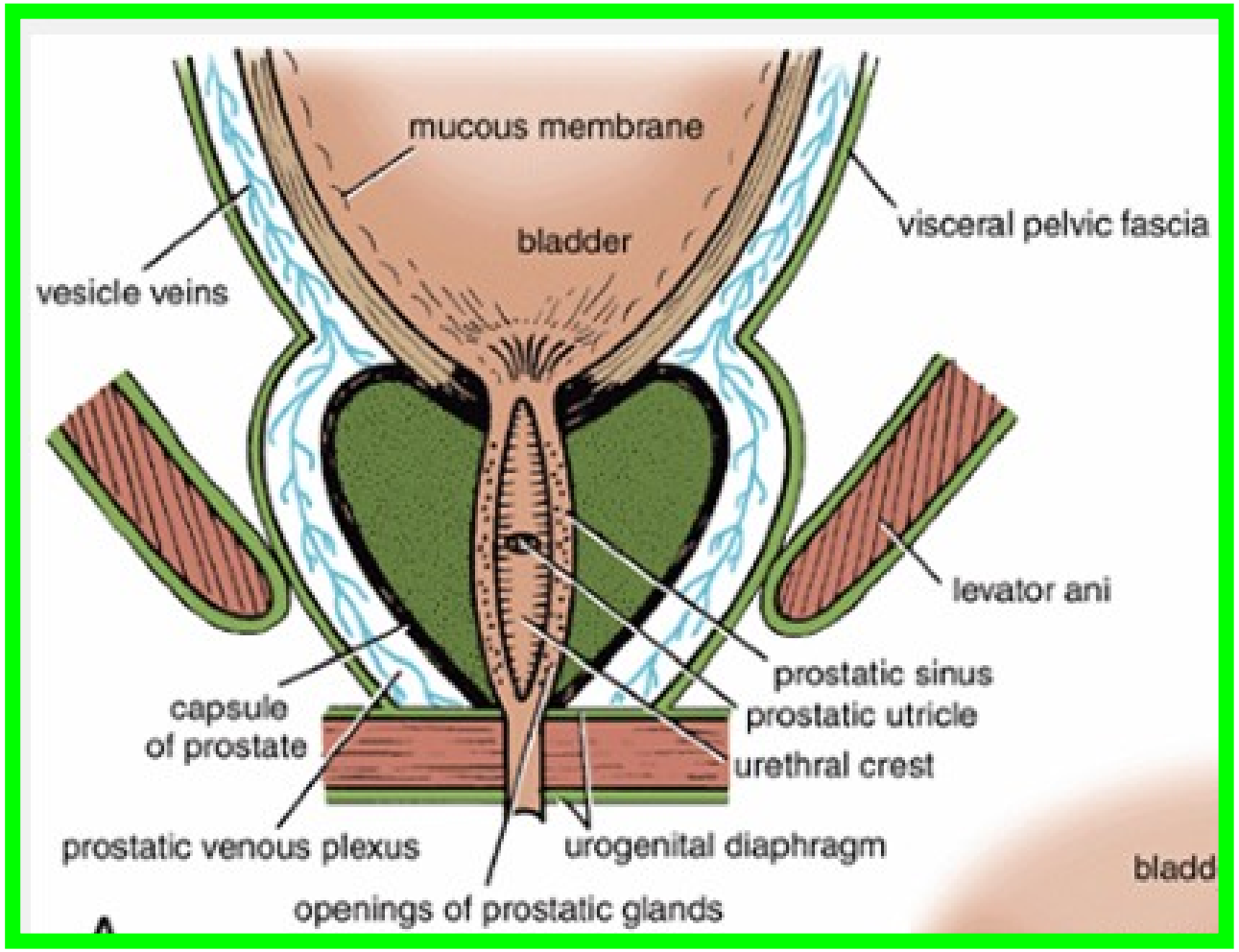
- **Posteriorly:** The prostate is closely related to the anterior surface of the rectal ampulla and is separated from it by the Rectovesical septum (fascia of Denonvilliers)

This septum is formed in fetal life by the fusion of the walls of the lower end of the Rectovesical pouch of peritoneum, which originally extended down to the perineal body



Prostate

- **Laterally:** The prostate is embraced by the anterior fibers of the **levator ani** as they run posteriorly from the pubis



Prostate

** Structures of the Prostate:

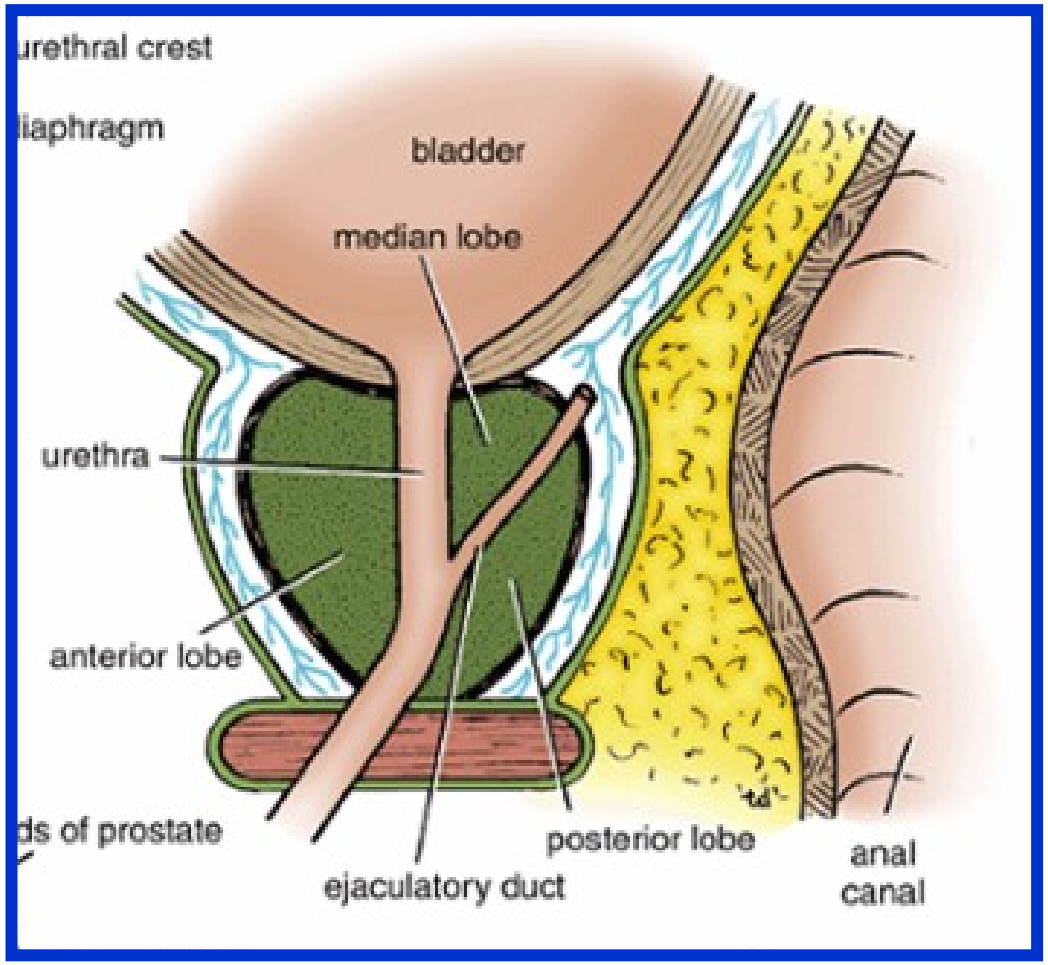
1- Glandular tissues are formed of glands. Their ducts open into the prostatic sinus.

2- Muscular tissue are arranged into 3 layers:

A. Peripheral, immediately beneath the fibrous capsule.

B. Central, around the urethra

C. Intermediate layer form meshes in which the glandular structure embedded.



Prostate

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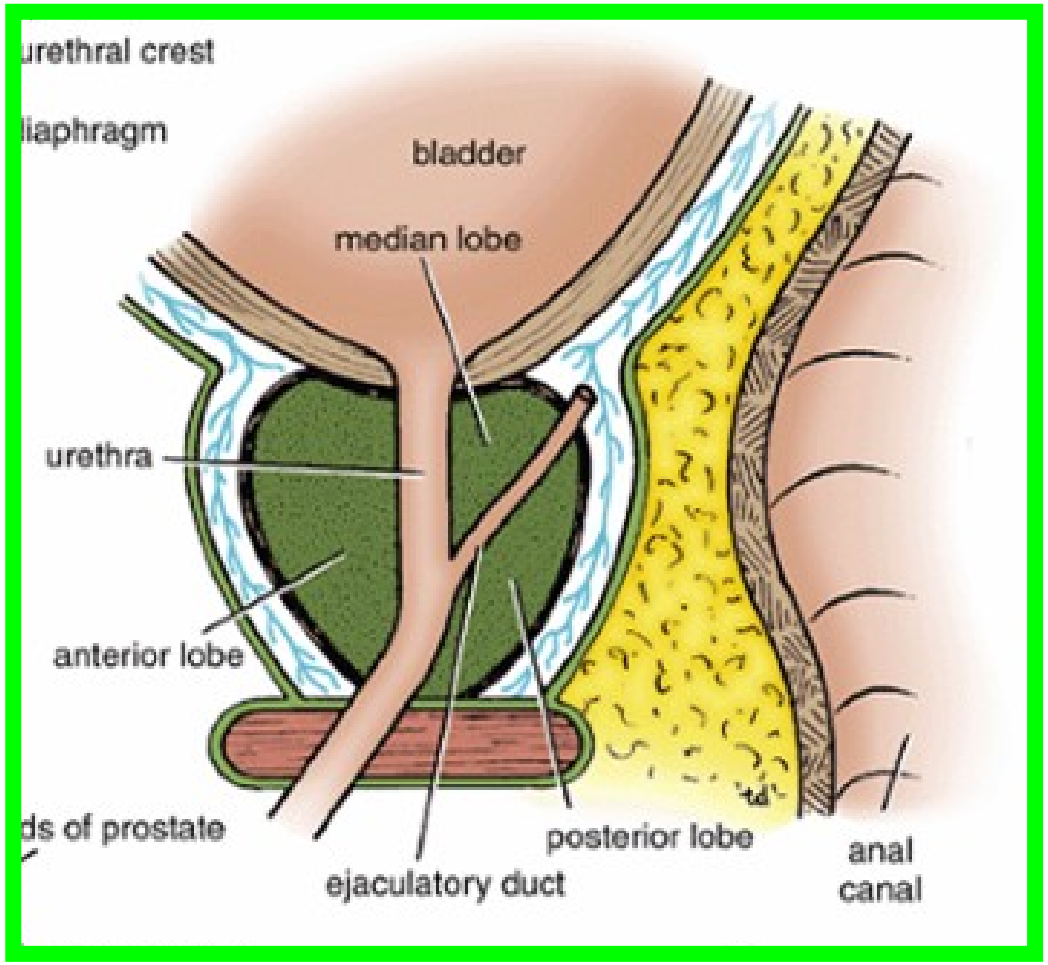
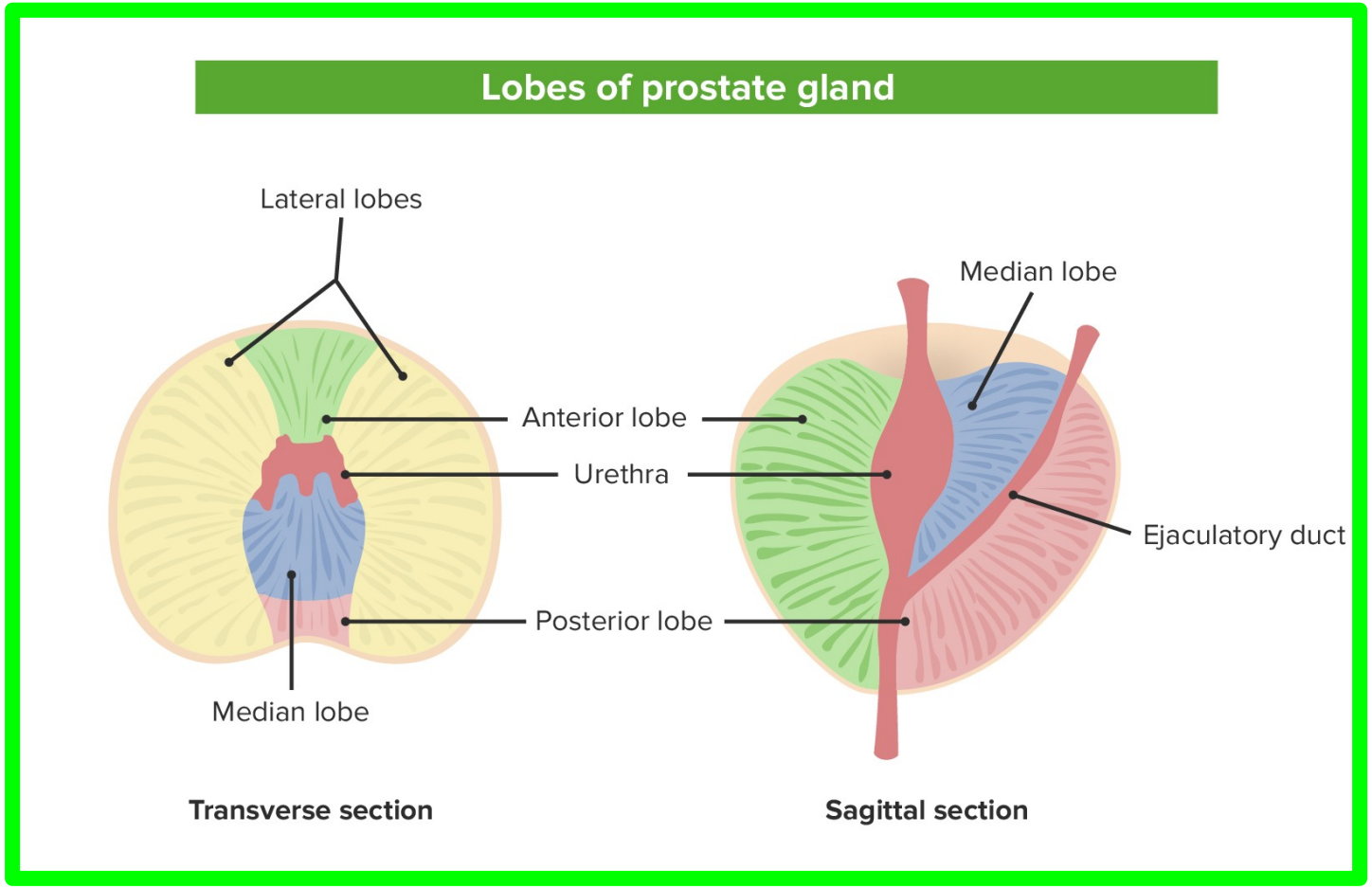
- The prostate is incompletely divided into five lobes.
- The anterior lobe lies in front of the urethra and is devoid of glandular tissue..

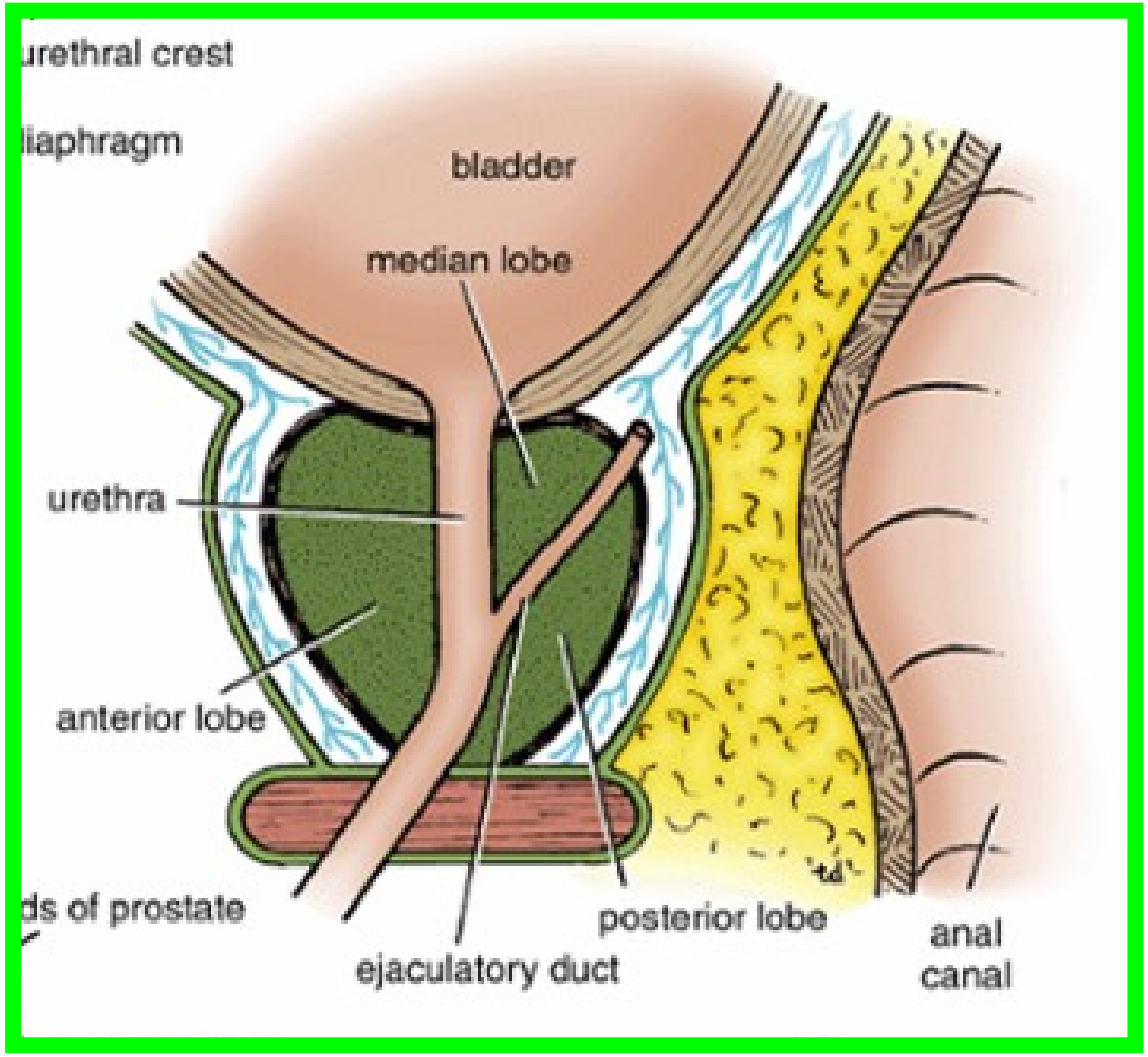




Prostate

❖**The median, or middle lobe** is the wedge of gland situated between **the urethra** and **the ejaculatory ducts**. Its upper surface is related to the trigone of the bladder; it is rich in glands.

❖**The posterior lobe** is situated behind **the urethra** and below the **ejaculatory ducts** and also contains glandular tissue. **(is readily palpable by digital rectal examination).**



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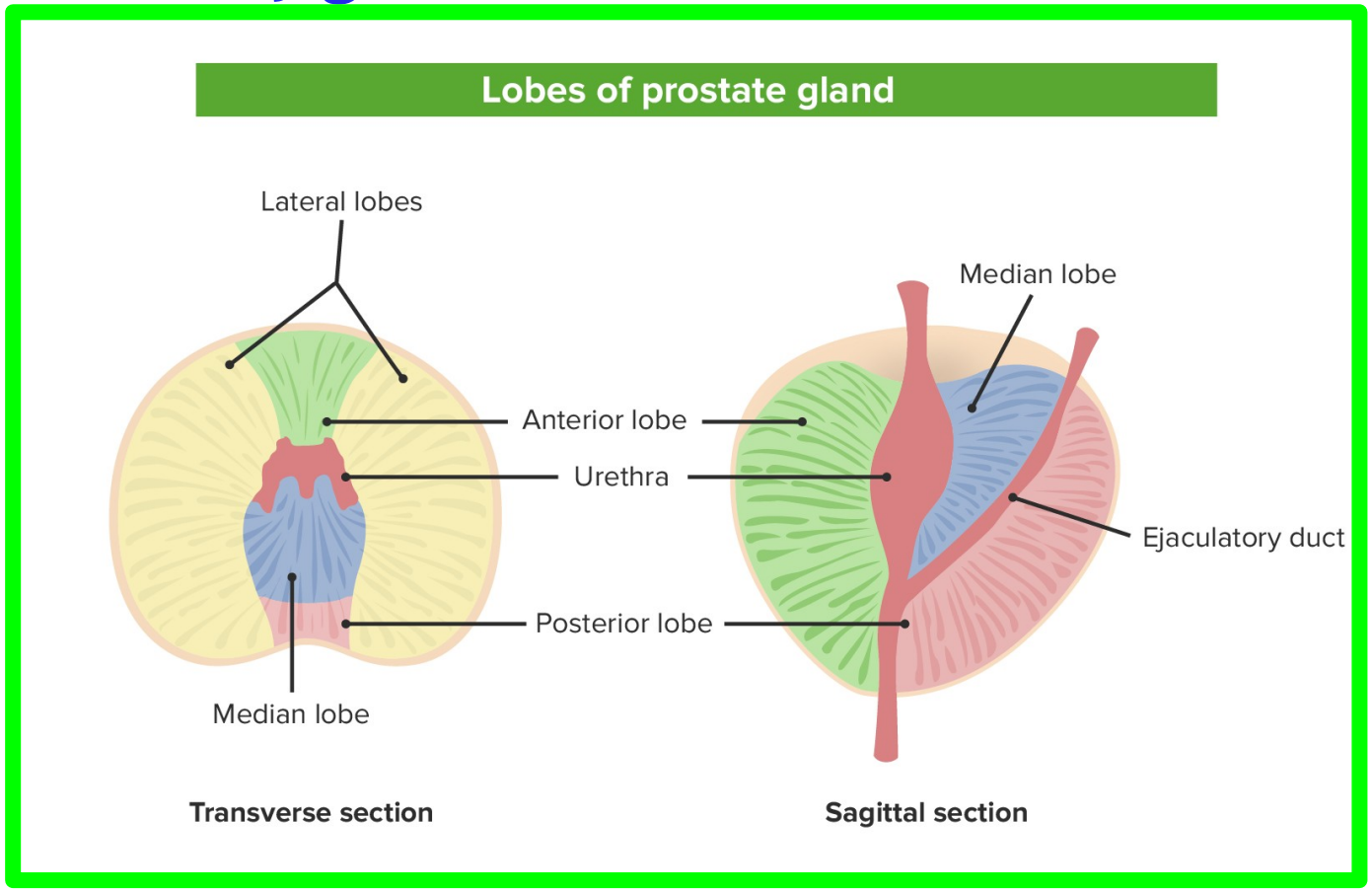
Prostate

- The right and left lateral lobes lie on either side of the urethra and are separated from one another by a shallow vertical groove on the posterior surface of the prostate.
- The lateral lobes contain many glands.



Male Genital Organs

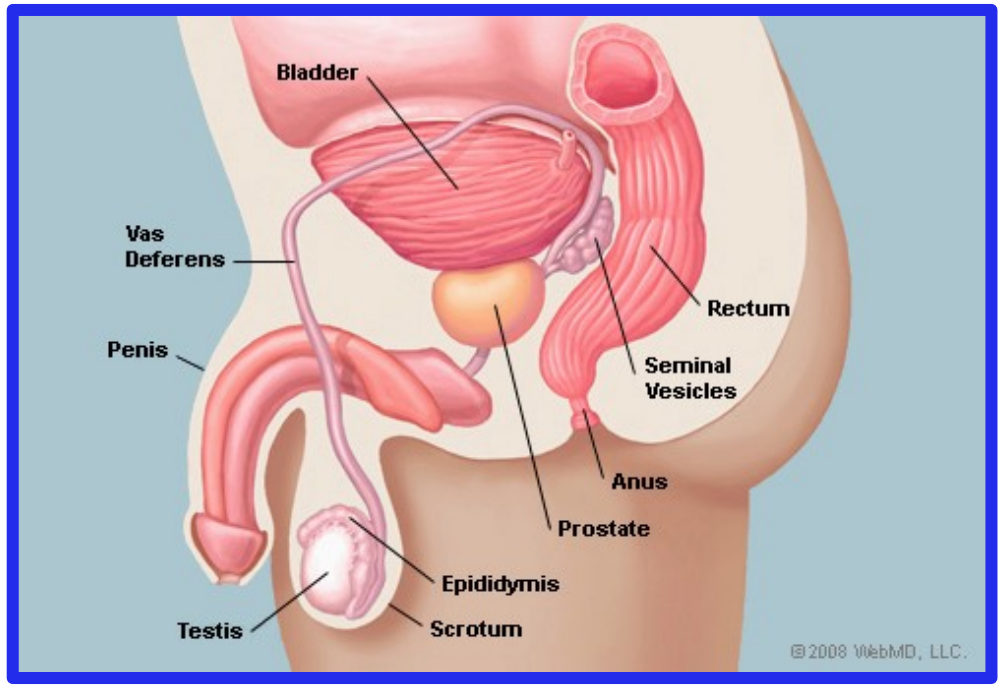
Function of the Prostate

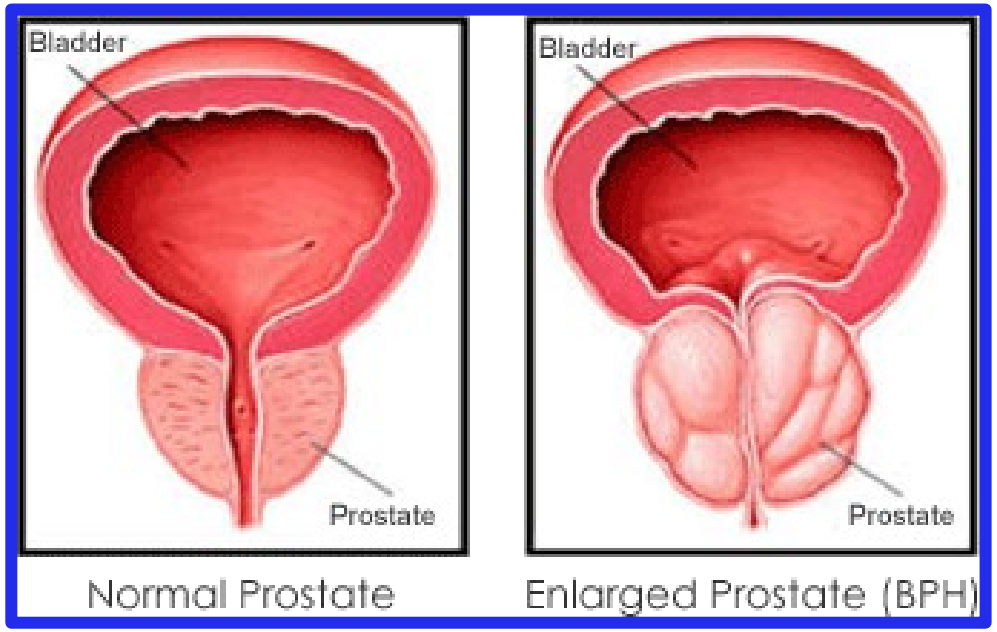
✓The prostate produces a thin, milky fluid containing citric acid and acid phosphatase that is added to the seminal fluid at the time of ejaculation.

✓The smooth muscle, which surrounds the glands, squeezes the secretion into the prostatic urethra.

✓The prostatic secretion is alkaline and helps neutralize the acidity in the vagina.

✓Prostatic fluid provides about 15–30% of the volume of semen.



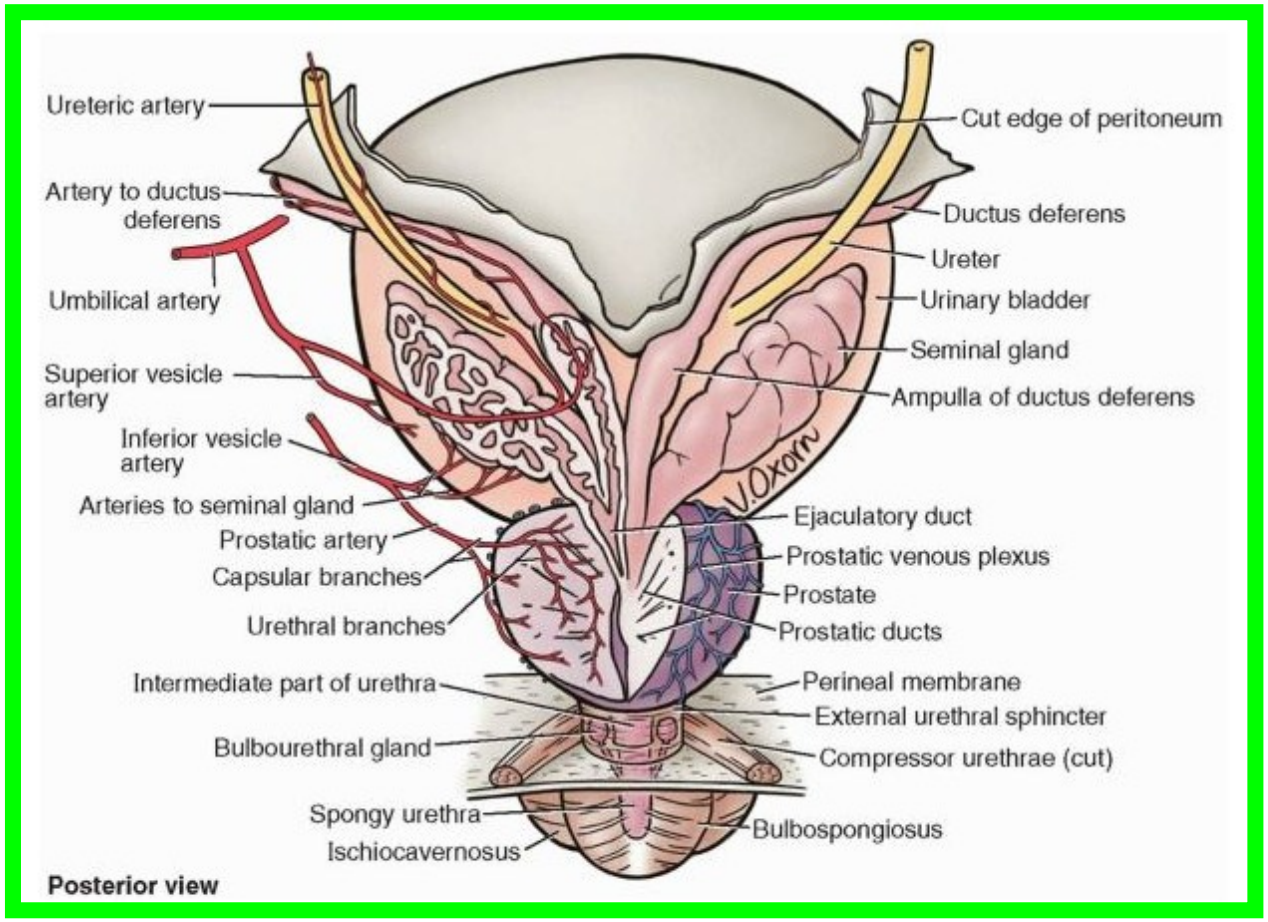


Prostate

** Arterial supply

The prostatic arteries are mainly branches of the internal iliac artery especially:

- ❖ **the inferior vesical arteries and also**
- ❖ **the internal pudendal**
- ❖ **the middle rectal arteries.**



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Prostate

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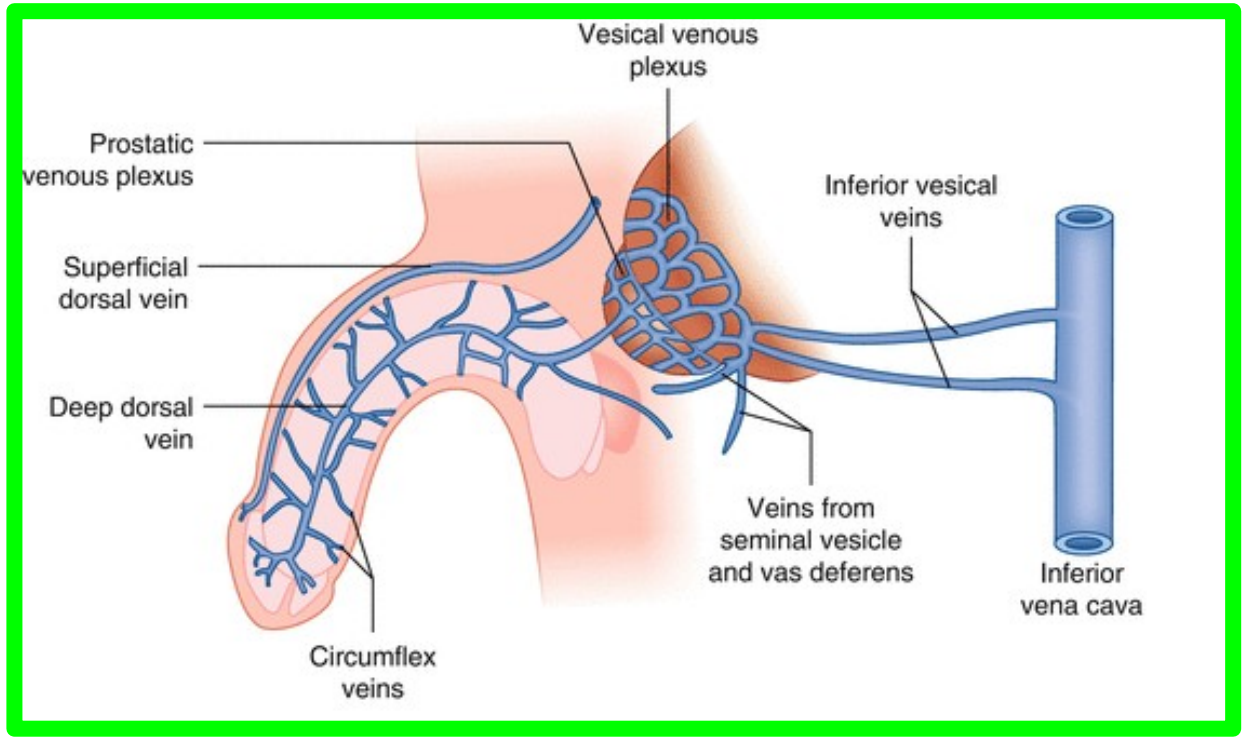
** Venous drainage: The veins form the prostatic venous plexus, between the fibrous capsule of the prostate and the prostatic sheath

The prostatic plexus receives the deep dorsal vein of the penis and numerous vesical veins and drains into the internal iliac veins.



❖The plexus is continuous superiorly with the vesical venous plexus and communicates posteriorly with the internal vertebral venous plexus

Prostate

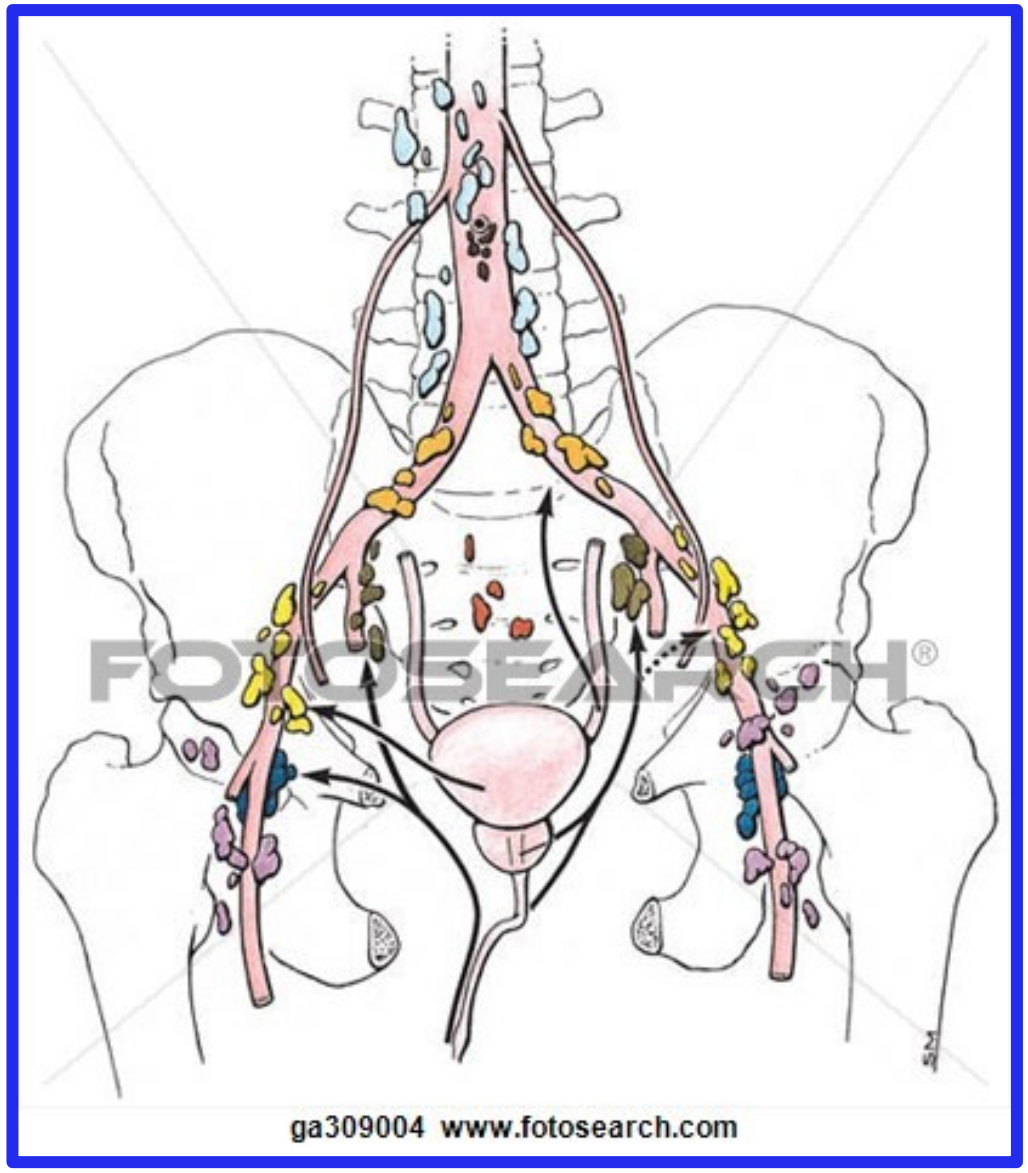
Lymph Drainage

Drain chiefly into the internal iliac nodes, but some pass to the sacral lymph nodes

Nerve Supply

Inferior hypogastric plexuses.

The sympathetic nerves stimulate the smooth muscle of the prostate during ejaculation



BULBO-URETHRAL GLANDS

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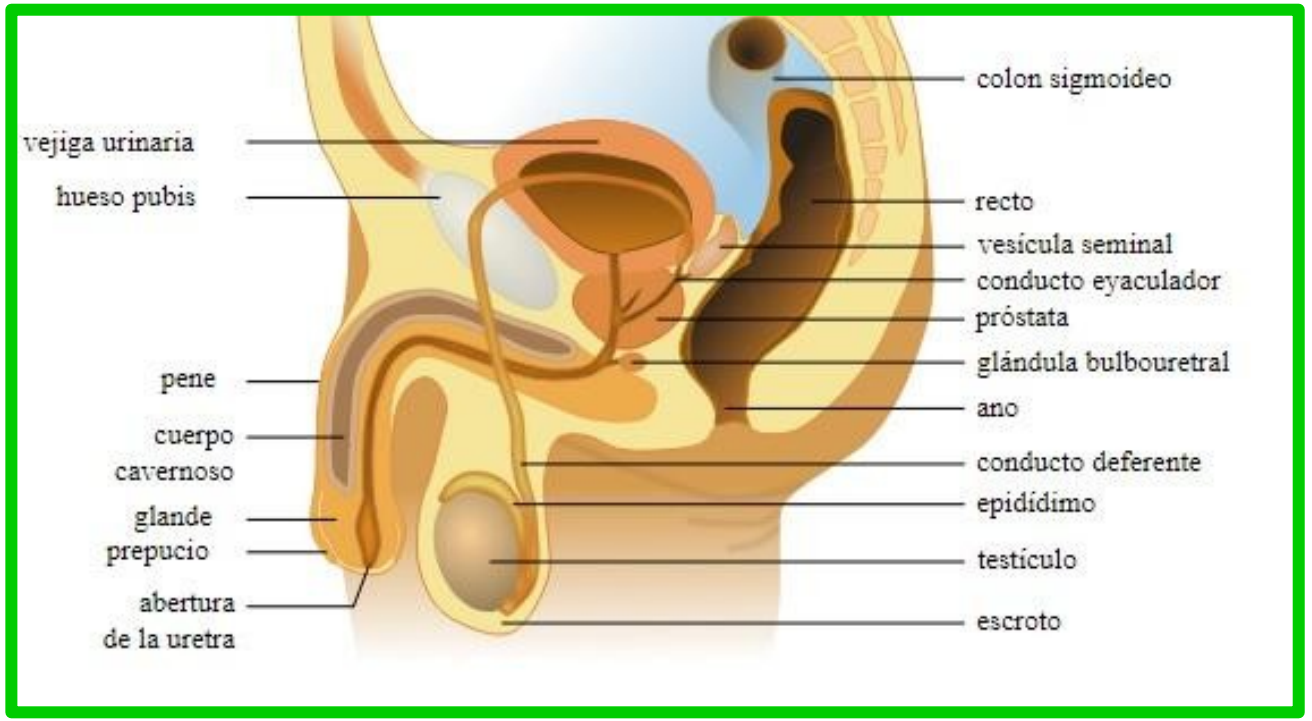
The two pea-size bulbo-urethral glands (Cowper glands) lie posterolateral to the Membranous part of the urethra, largely embedded within the external urethral sphincter.

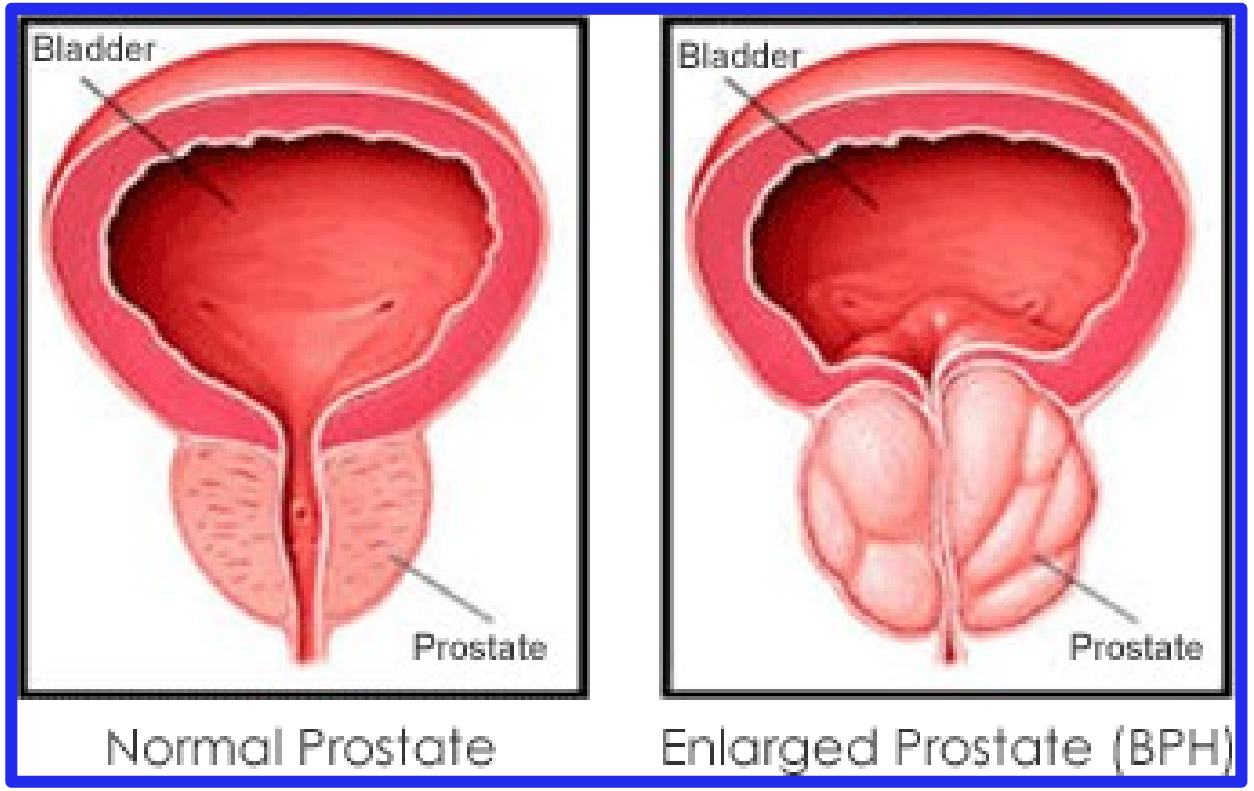
The ducts of the bulbo-urethral glands pass through the perineal membrane adjacent to the intermediate urethra and open through minute apertures into the proximal part of the spongy urethra in the bulb of the penis.



- Their mucus-like secretion enters the urethra during sexual arousal, contributing less than 1% of semen.

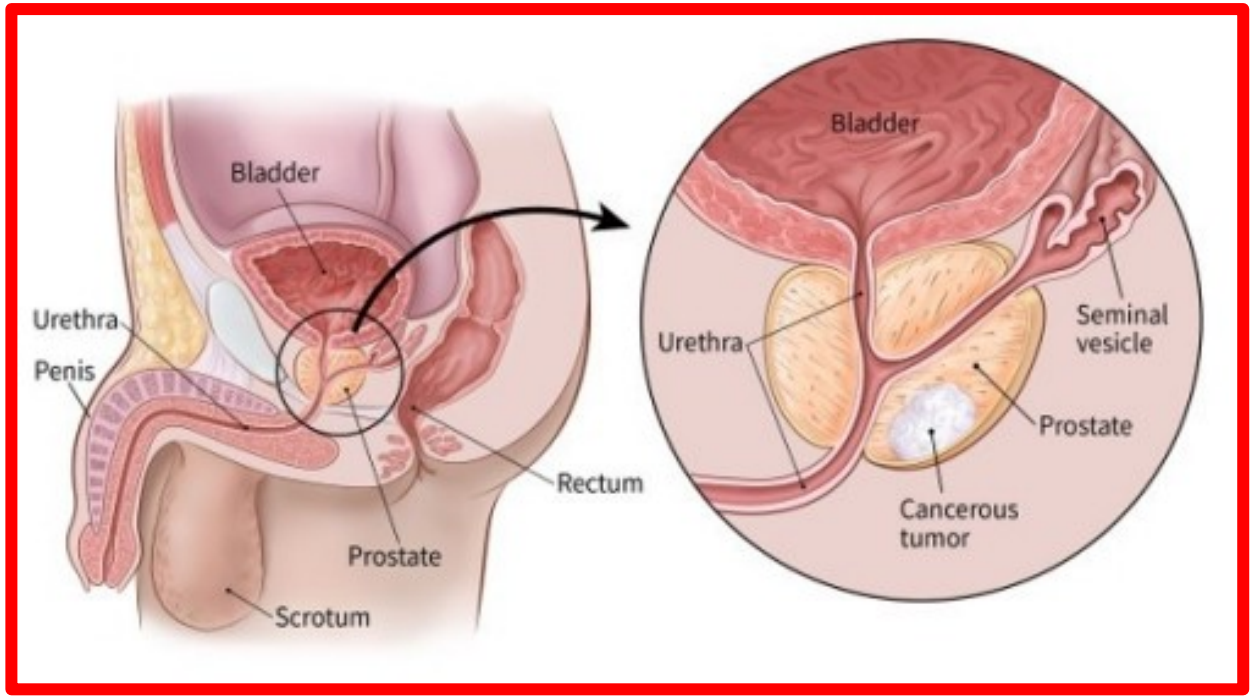
Prostatic Enlargement

The prostate is of medical interest because benign enlargement or benign hypertrophy of the prostate (BHP) is common after middle age.
An enlarged prostate projects into the urinary bladder and impedes urination by distorting the prostatic urethra. The median lobe usually enlarges the most and obstructs the internal urethral orifice.



Prostatic Cancer

❑Prostatic cancer is common in men older than 55 years of age. In most cases, the cancer develops in the posterolateral region. This may be palpated during a digital rectal examination . A malignant prostate feels hard and often irregular. In advanced stages, cancer cells metastasize (spread) to the iliac and sacral lymph nodes and later to distant nodes and bone. The prostatic plexus, closely associated with the prostatic sheath, gives passage to parasympathetic fibers, which give rise to the cavernous nerves that convey the fibers that cause penile erection



Prostatectomy

❑ A major concern regarding prostatectomy is that impotency may be a consequence.

❑All or part of the prostate, or just the hypertrophied part, is removed (transurethral resection of the prostate [TURP].

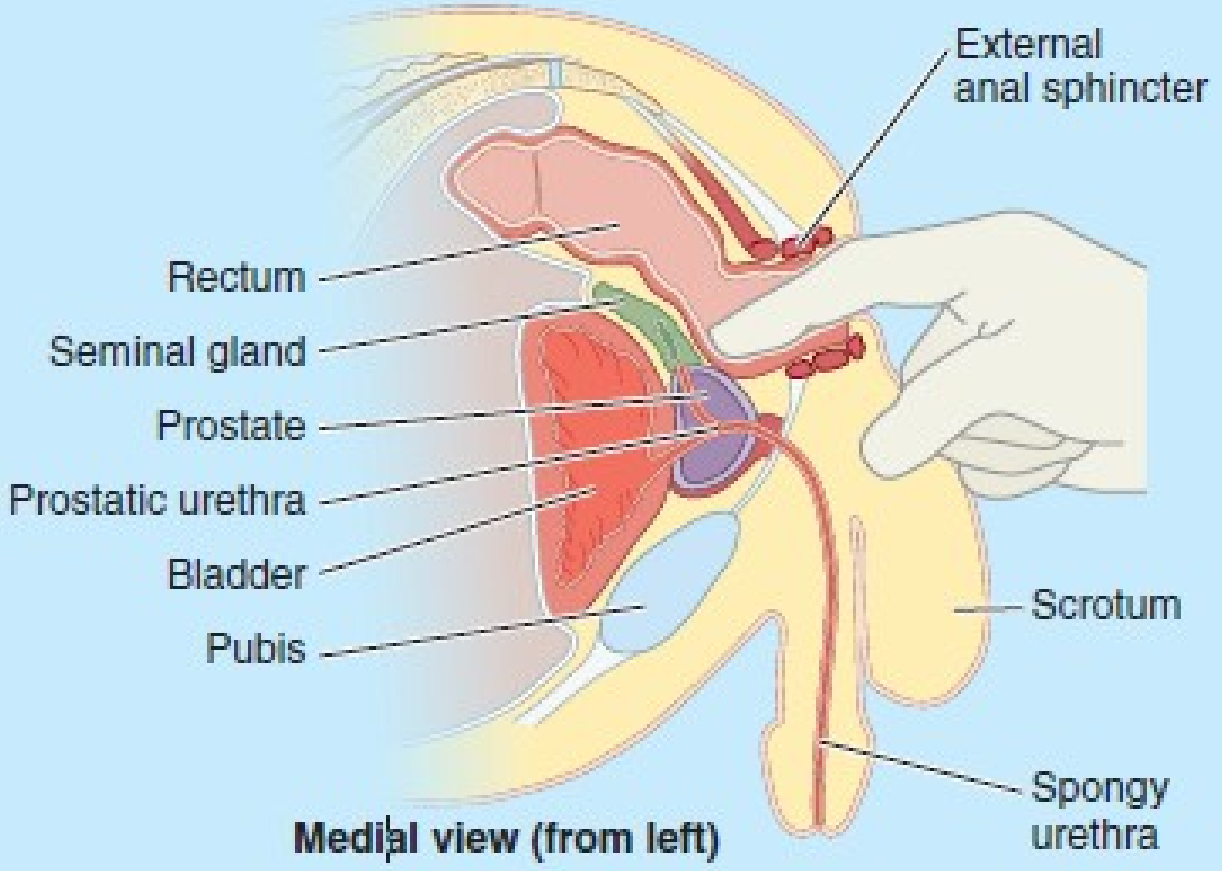


FIGURE B3.3. Palpation of prostate per rectum.

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Vas (Ductus) Deferens

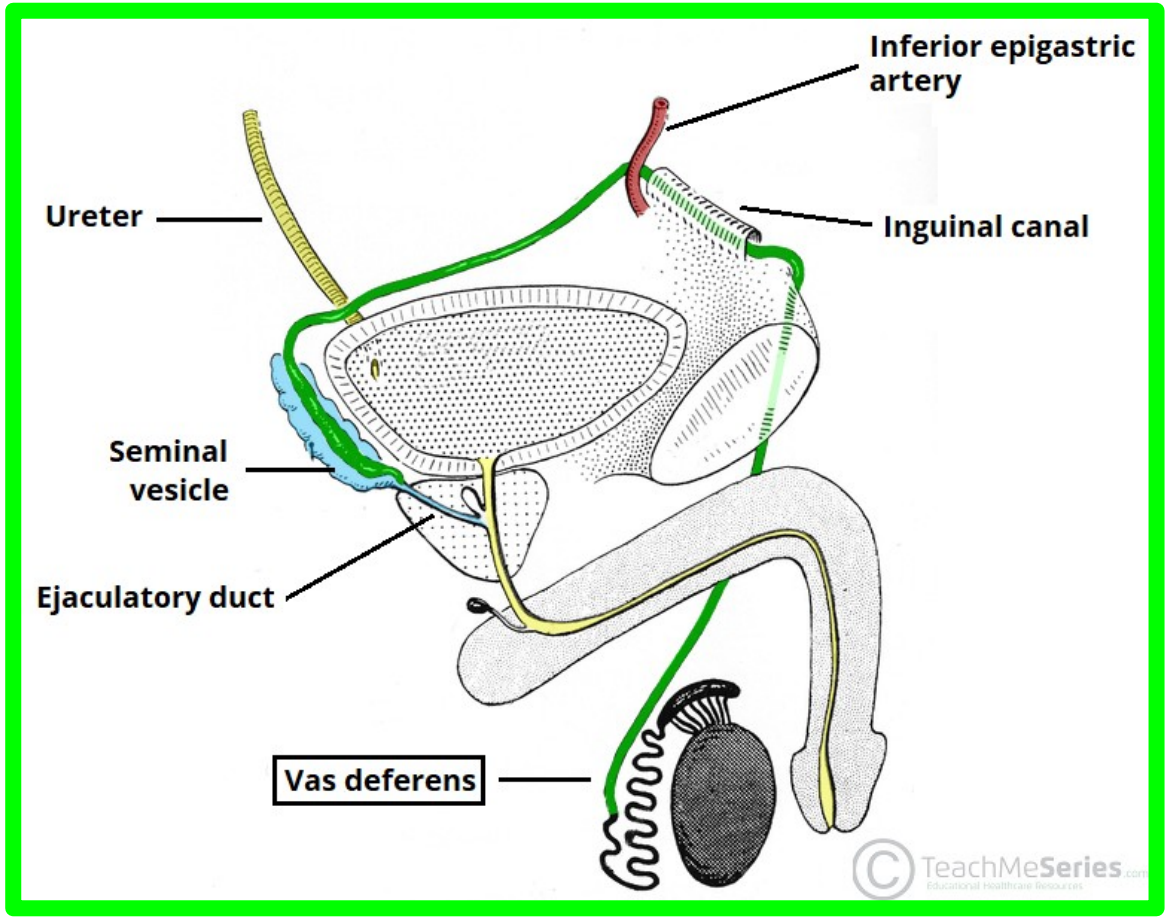
- ✓ It is a thick cord-like tube, about 45 cm long.
- ✓ It carries and stores the sperms.
- ✓ It begins from the tail of the epididymis.

** Course and relations:

1- Scrotal part: ascends on the back of the testis and medial to the epididymis.

2- Inguinal part: runs in the inguinal canal through the spermatic cord.

3- Pelvic part: curves around the inferior epigastric artery.



Vas (Ductus) Deferens

❖ Then, it descends downwards and backwards on the following structures;

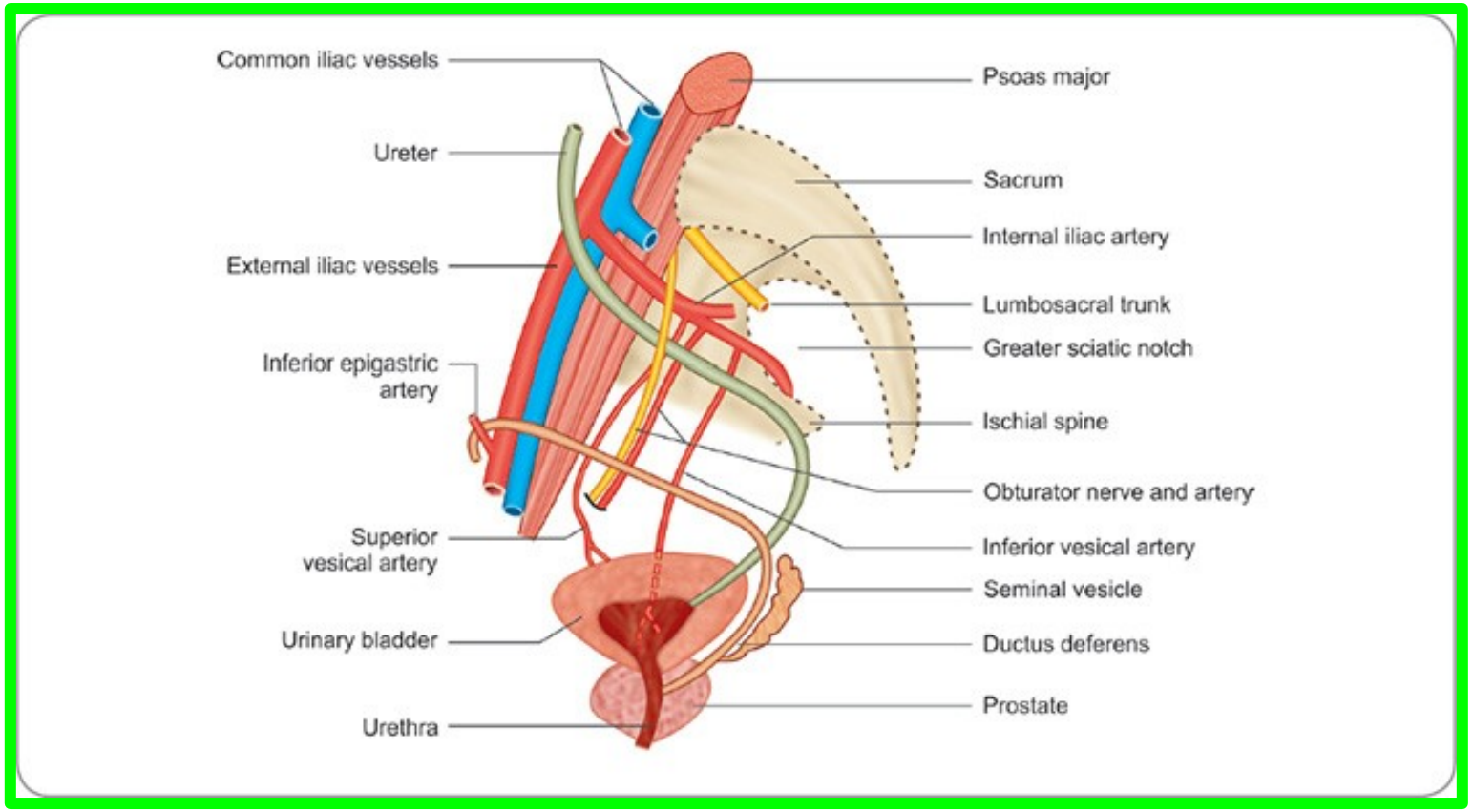
1- External iliac vessels.

2- Superior vesical (obliterated umbilical) artery

3- Obturator nerve.

4- Obturator vessels.

Then, It curves medially crossing above the ureter then behind the base of the urinary bladder.



Vas (Ductus) Deferens

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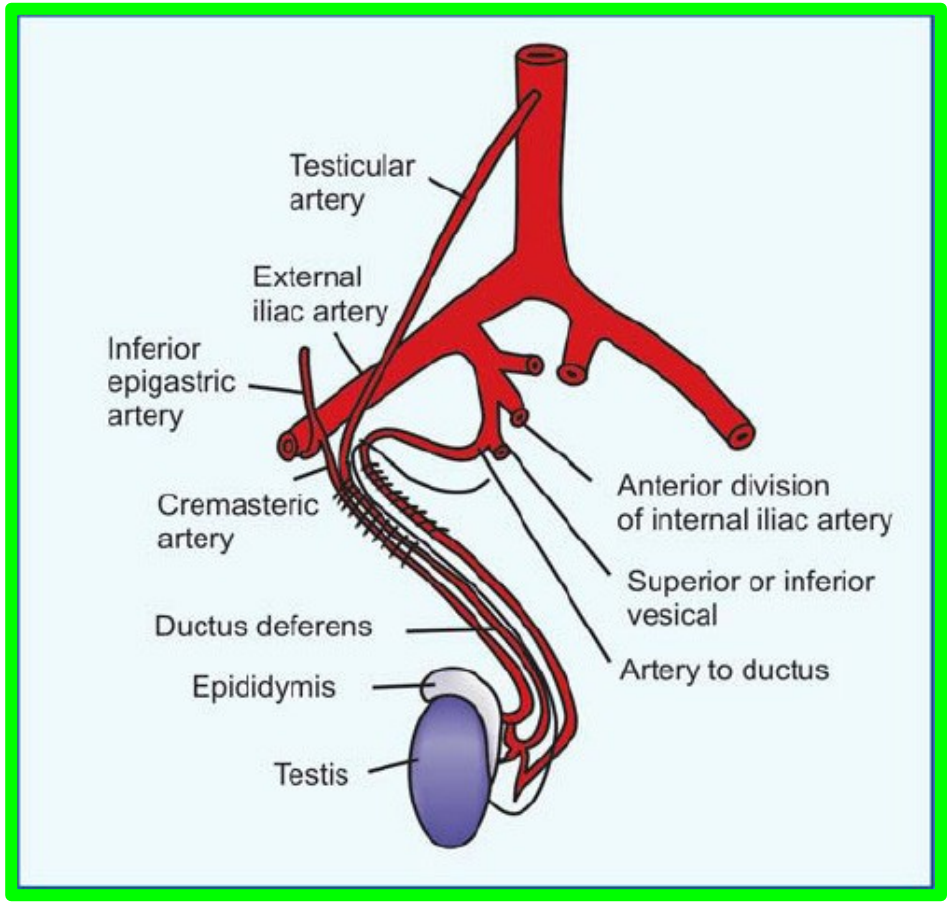
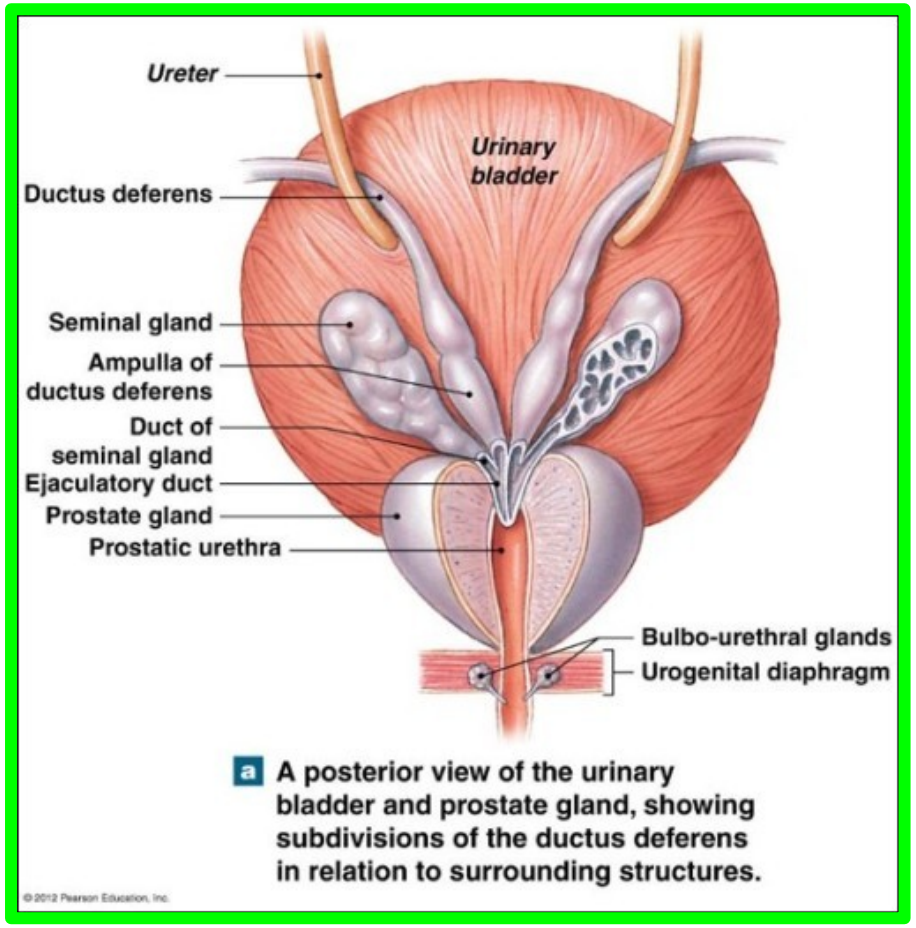
** **Termination:** it ends by forming the ampulla which join the seminal vesicle to form **the ejaculatory duct.**

** **Arterial supply:** artery of the vas deferens.



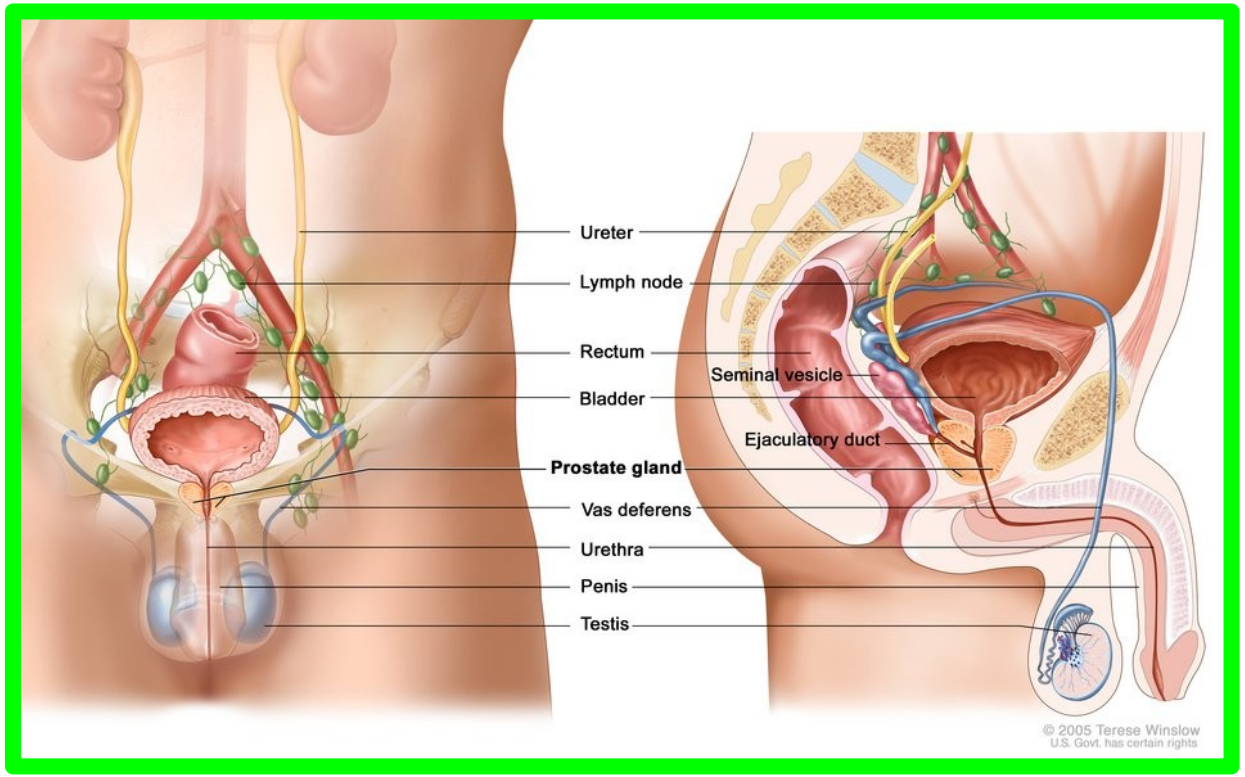


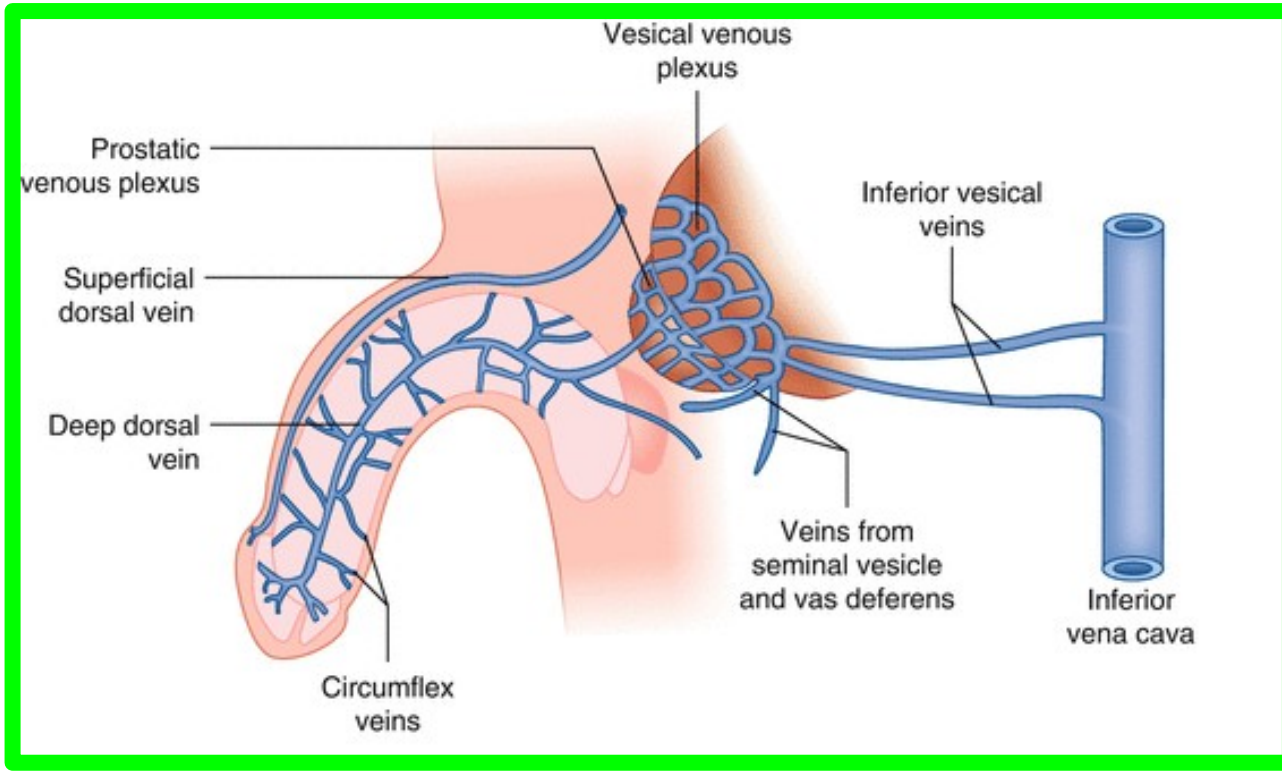
Vas (Ductus) Deferens

** Venous drainage: vesical plexus of veins.

** Nerve supply: vesical plexus of nerves.

** Lymphatic drainage: into the external iliac lymph nodes.





Seminal Vesicles

- One on each side
- It is a sacculated and coiled pouch which is nearly 5 cm in length.

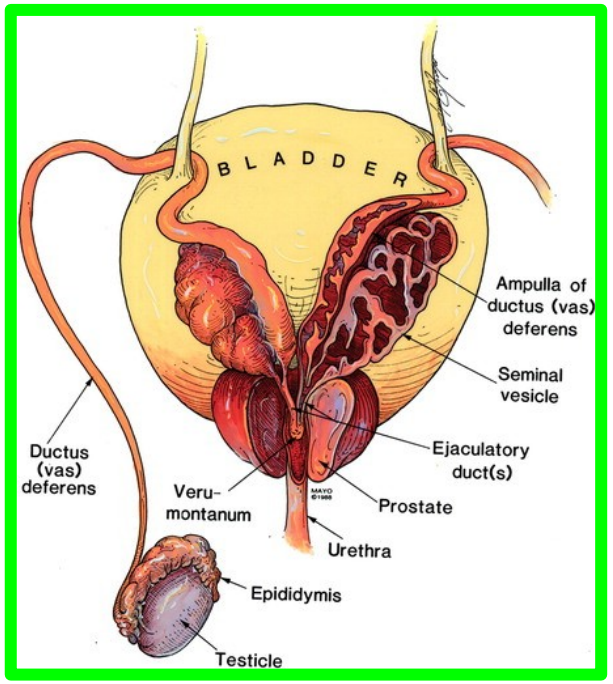
** Relations:

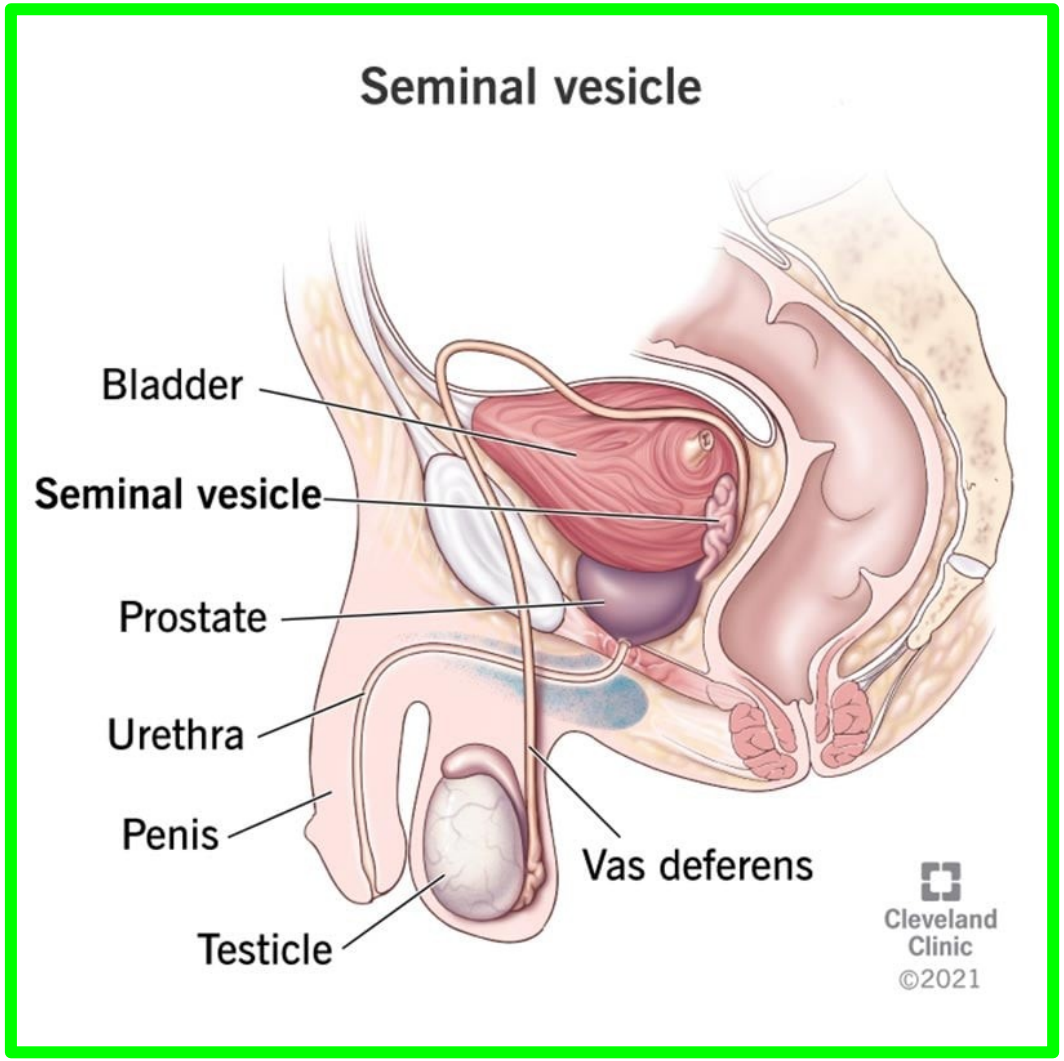
a- Anteriorly: base of the urinary bladder

b- Posteriorly: the rectum.

c- Medially: ampulla of the vas deferens.

d- Laterally: levator ani.





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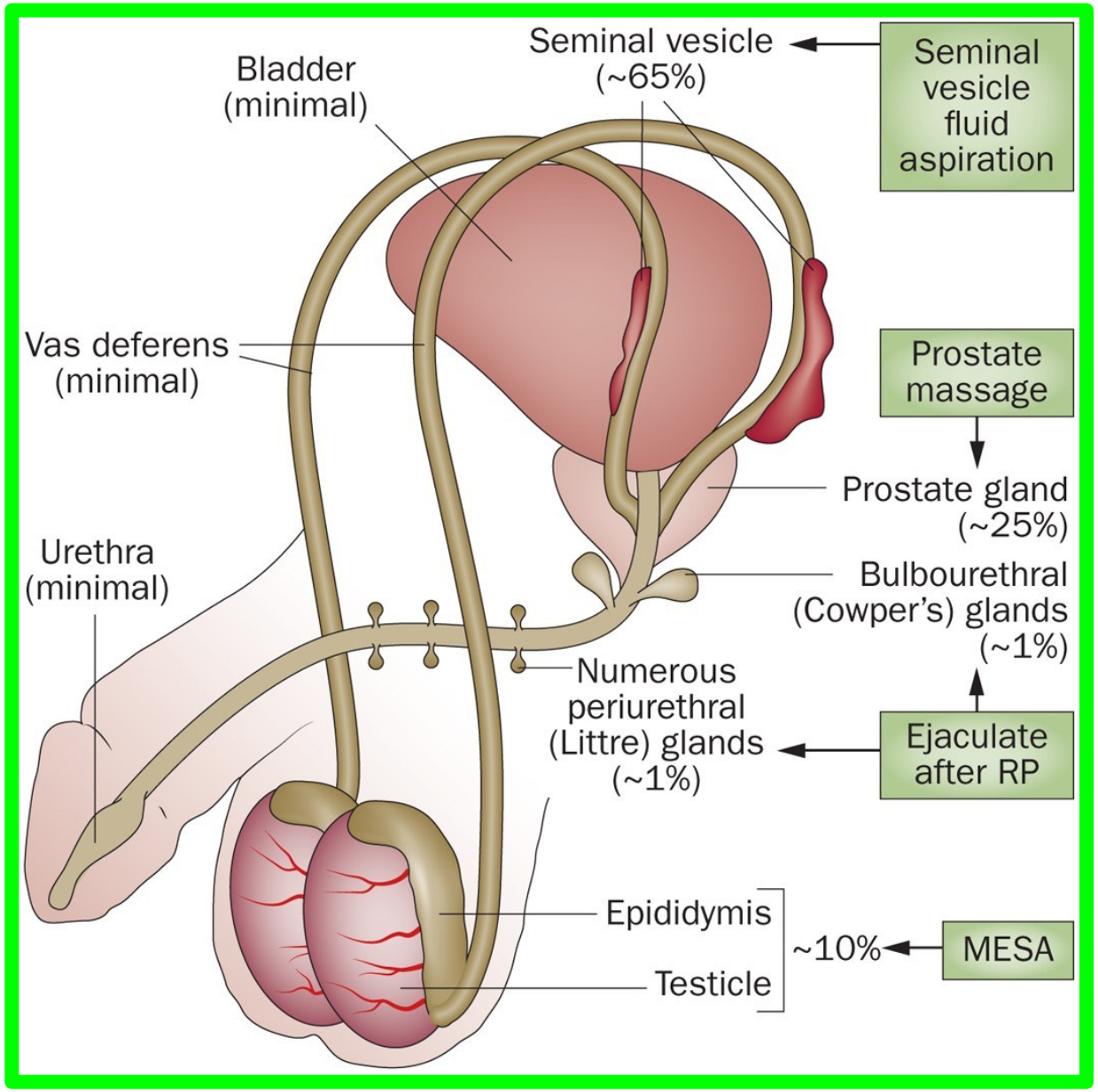
Seminal Vesicles

** **Ends:** It unites with ampullae of the vas deferens to form ejaculatory duct.

** **Function:** the seminal vesicles are glands which contract during ejaculation.

❖ Their secretions constitute the greater amount of the seminal fluid.



Seminal Vesicles

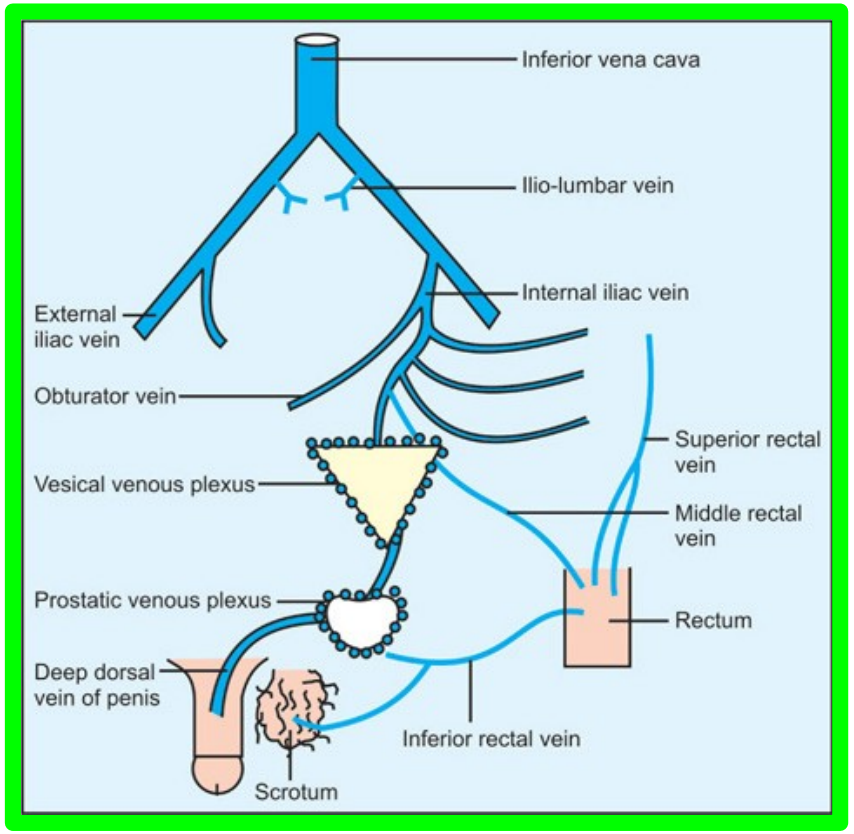
Dr. Aiman Qais Al-Maathidy

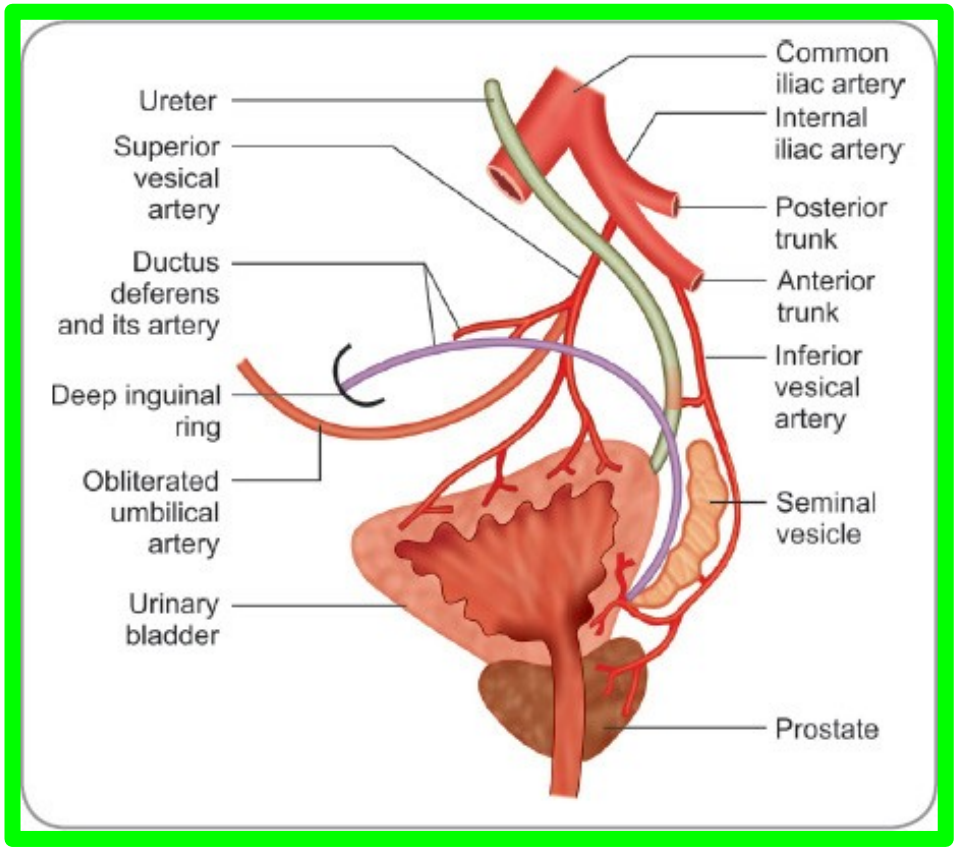
** Arterial supply: from the inferior vesical artery.

** Venous drainage: into the vesical venous plexuses.

** Nerve supply: the vesical plexus of nerves.

** Lymphatic drainage; into the internal and external iliac lymph nodes.

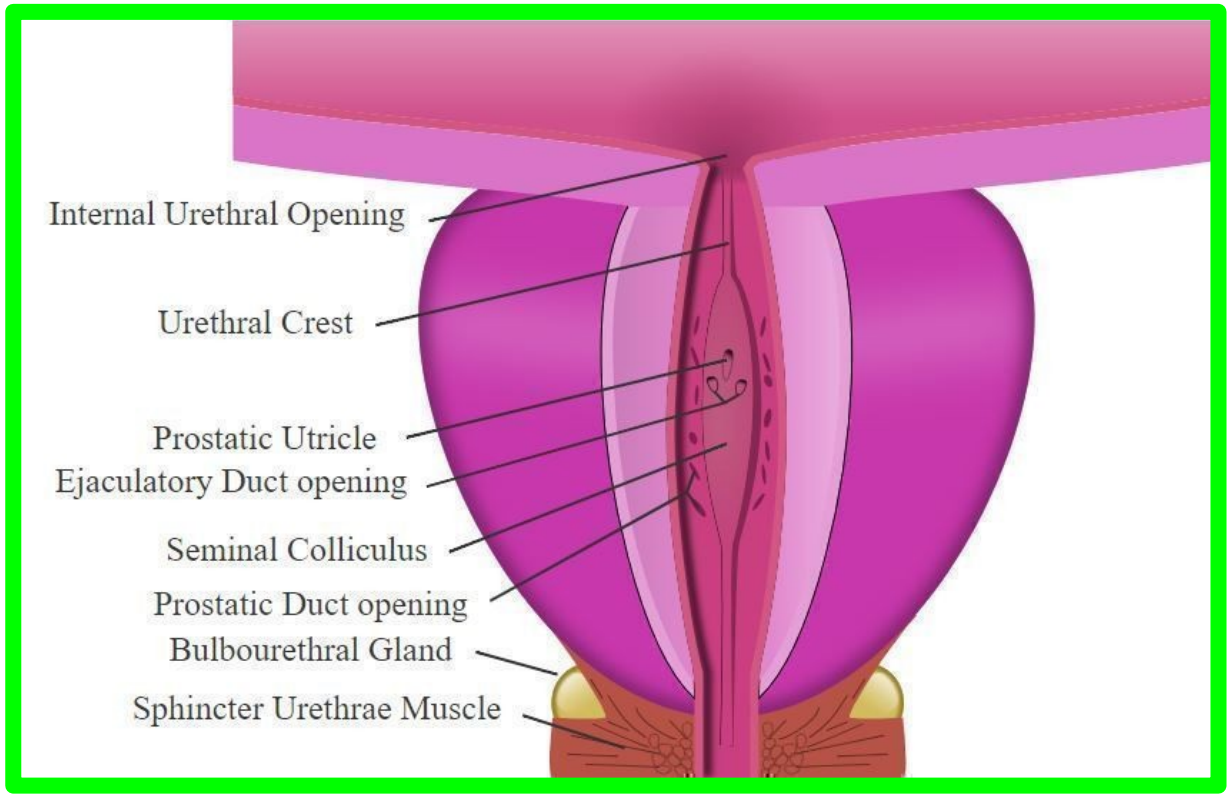


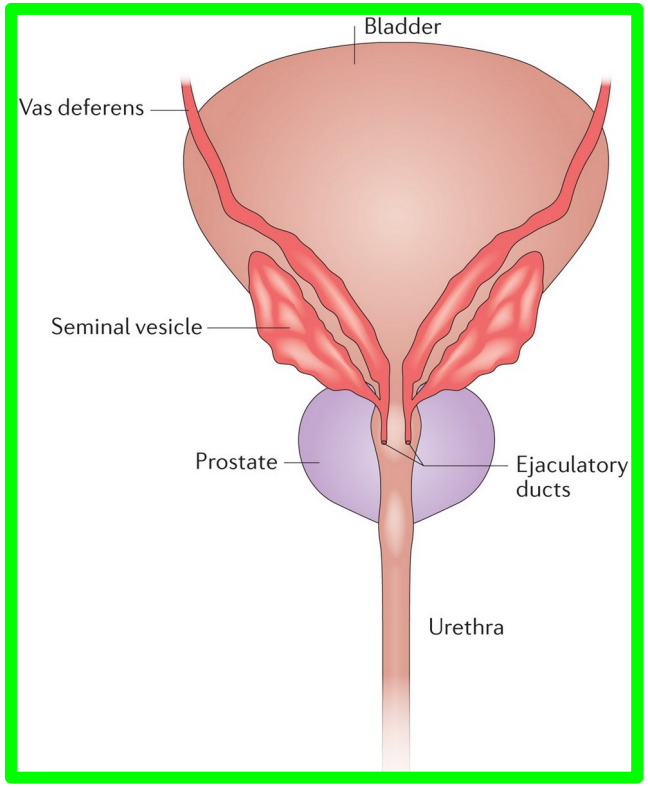


Ejaculatory Ducts

** **Formation;** it is formed by the union of the **ampulla of the vas deferens** with **the seminal vesicle** behind the neck of the urinary bladder.

- ❖ It is a very narrow duct, **2 cm long** which immediately passes through the base of the prostate gland.
- ❖ It opens into **the seminal colliculus** of **the prostatic urethra**.



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