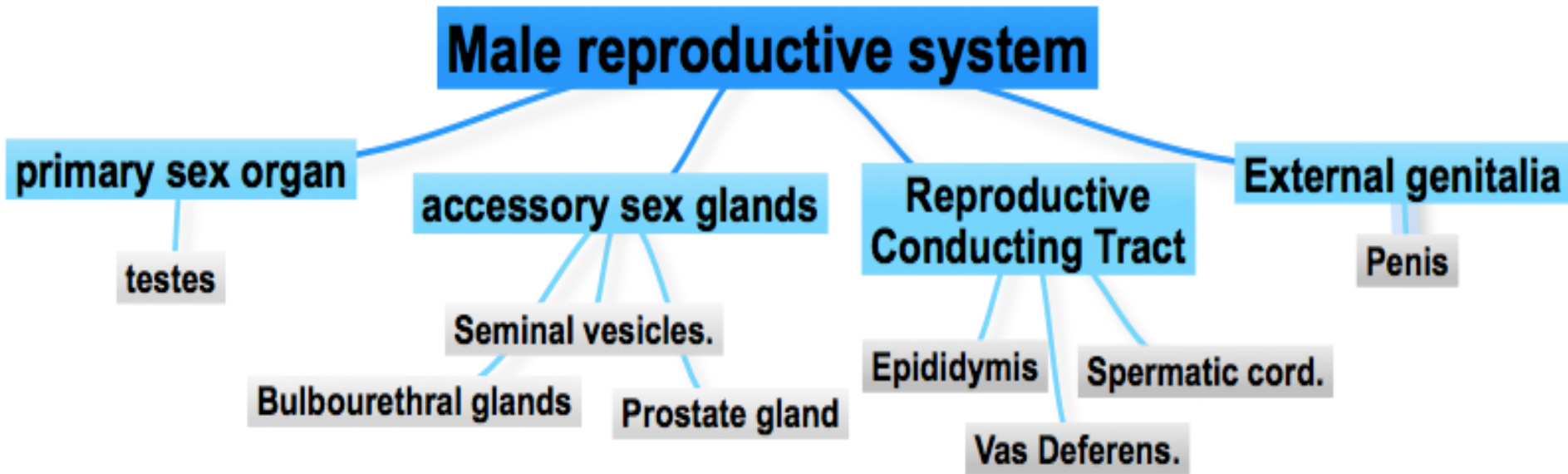




1 MALE REPRODUCTIVE SYSTEM

MIND MAP



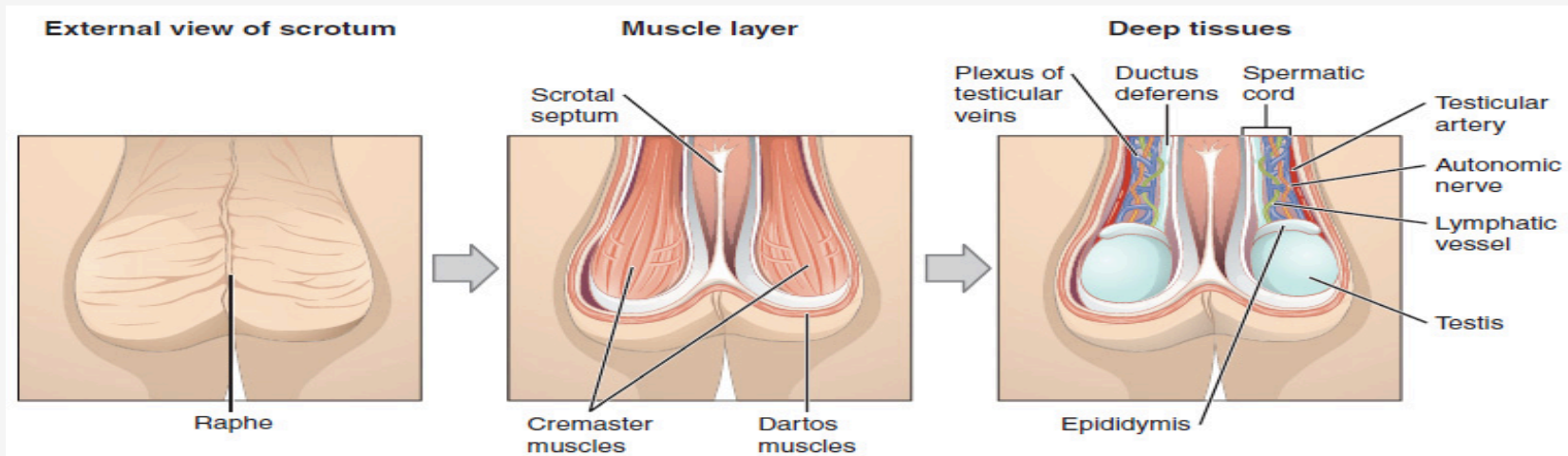
Male Reproductive Anatomy

[part I](#)
[part II](#)
[part III](#)

Scrotum & testes



Scrotum		Testis (testicle)
Features	<ul style="list-style-type: none"> • An out pouching of loose skin & superficial fascia. • The Dartos muscle lies within the superficial fascia. • & replaces Scarpa's fascia. • It has thin skin with sparse hairs and sweat glands. • The Left scrotum is lower than the right. 	<p>It is the primary sex organ. Paired almond-shaped gonads that suspended in the scrotum by the spermatic cord. Its volume is about 20-25 ml</p>
function	<p>Houses & Protects the testis It Regulates testicular temperature (no superficial fat)</p>	<p>Exocrine :Spermatogenesis. Endocrine :Hormone production (Androgens- testosterone).</p>



Coverings of the Testis

Tunica Vaginalis:

A **Peritoneal covering**, formed of parietal and visceral layers.

It surrounds **testis & epididymis**.

It allows **free movement of testis inside scrotum**.

Tunica albugenia

It is a **whitish fibrous capsule**

Internal Structure of Testis

Fibrous septae extend from the capsule, divide the testis into a (200-300) **lobules**

Each lobule contains, (1-3) **seminiferous tubules**

Seminiferous Tubules:

They are the **site of the spermatogenesis** & they form the **bulk of testicular tissue**.

Rete testis:

a **network of tubules**. It is the Site of **merging of the Seminiferous tubules**.

Blood Supply of Testis

Testicular artery: It is a direct branch from the abdominal aorta at **L 3**

Venous drainage : (**Pampiniform plexus of veins**)

a dozen veins which forms a network in the spermatic cord.

They become larger, converge as it approached the inguinal canal and form the **Testicular vein**.

Right Vein drains into **IVC**

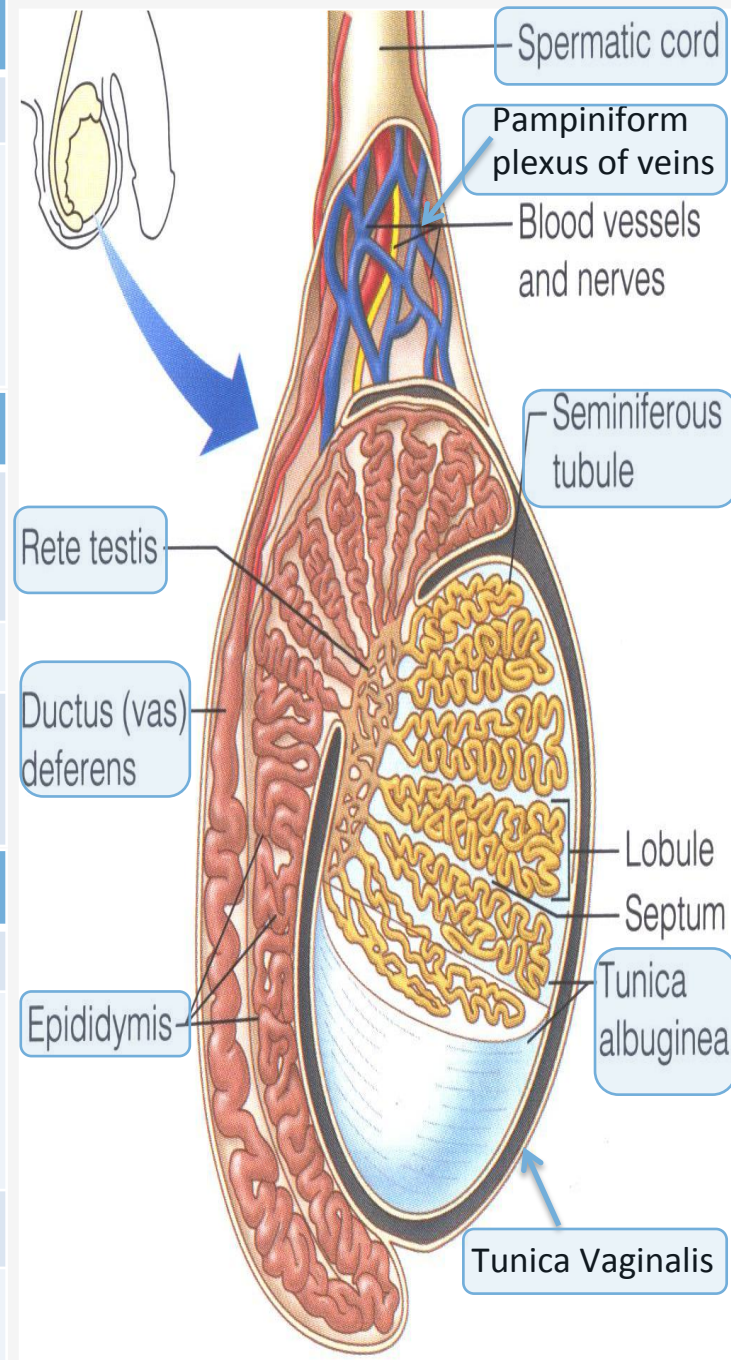
Left Vein drains into **Left Renal Vein**.

Testicular Lymphatics:

Lumbar (par aortic) nodes

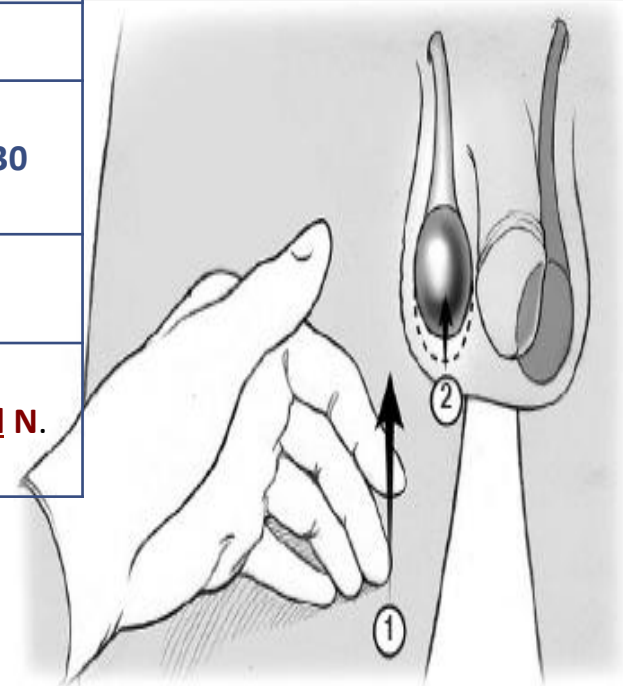
scrotum, penis, prepuce:

Superficial Inguinal nodes





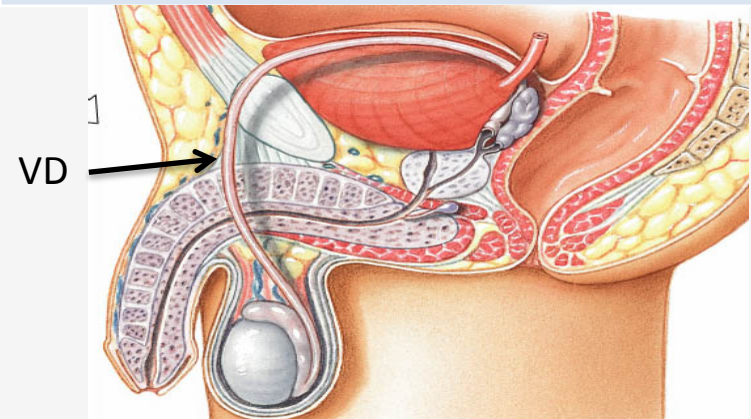
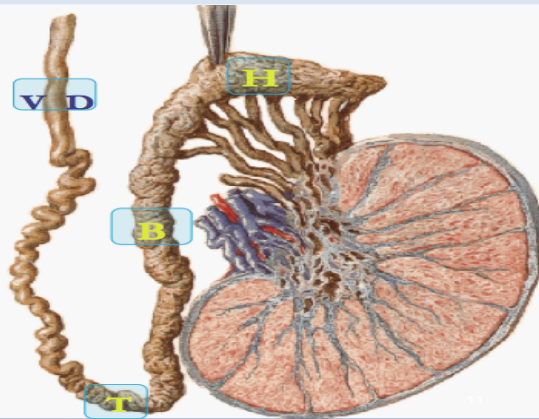
Cremasteric reflex	
Indication	Evaluation of testicular pain. (Testicular Torsion)
Technique	Examiner strokes or pinches upper medial thigh causes cremasteric muscle contraction Observe for rise of the Testicle on same side (normal)
Interpretation	Normal: It is present with Epididymitis
	If Cremasteric reflex absent (no Testicle rise): Testicular Torsion Also absent in 50% of boys under age 30 months
Efficacy	Test Sensitivity for Testicular Torsion: 99% Assumes age over 30 months
Nerve involved	<u>Genitofemoral nerve (GFN)</u>, (L1,2) Sensory(afferent): <u>femoral branch of (GFN) & Ilioinguinal N.</u> Motor(efferent): <u>genital branch of (GFN).</u>



The reflex is elicited by (1) stroking the ipsilateral inner thigh with a tongue depressor or gloved hand, resulting in (2) the elevation of the testicle through contraction of the cremasteric muscle.



	Epididymis	Vas Deferens(VD)
Features	<ul style="list-style-type: none"> • A Single coiled tubule 6 M long. • It is divided into: <ul style="list-style-type: none"> ❖ Head, <receives efferent ductules from testis.> ❖ Body ❖ Tail< continuous with Vas Deferens> 	<p>A Muscular tube 45 cm long.</p>
Location & Course	Located on the posterior & superior margins of the testis	<ul style="list-style-type: none"> • Passes through the inguinal canal • It crosses the ureter • Its terminal part is dilated to form the Ampulla of the vas • It joins the urethra in the prostate
Functions	<ol style="list-style-type: none"> 1. Secretes/absorbs the nourishing fluid. 2. Recycles damaged spermatozoa. 3. Stores spermatozoa Up to 2 weeks to allow for maturation. 	Carries sperms from the Epididymis to pelvic cavity.



Accessory(secondary) Glands



Seminal vesicle.

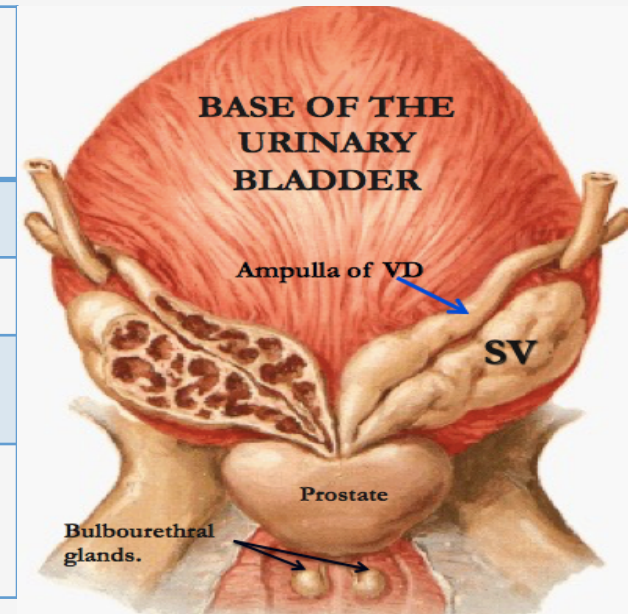
Prostate.

Bulbourethral glands

Functions of accessory glands(general function):

1. Secretion of seminal fluid
2. Nourishing, Activation & Protection of sperms

	Seminal vesicle.	Bulbourethral glands*
Feature	Paired elongated glands.	Small paired glands
Location	posterior & inferior to the urinary bladder	at the base of the penis It's secretion drains directly to the penis
function	Secrete (60% of Semen)	Secrete alkaline mucus for: Neutralization of urinary acids & Lubrication



*also known as **Cowper's glands**

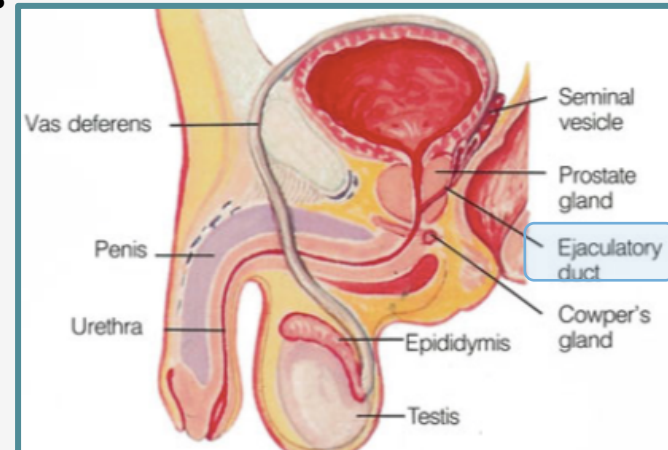
EJACULATORY DUCTS

vas deferens

duct of the seminal vesicle

2 ejaculatory ducts(1 inch)

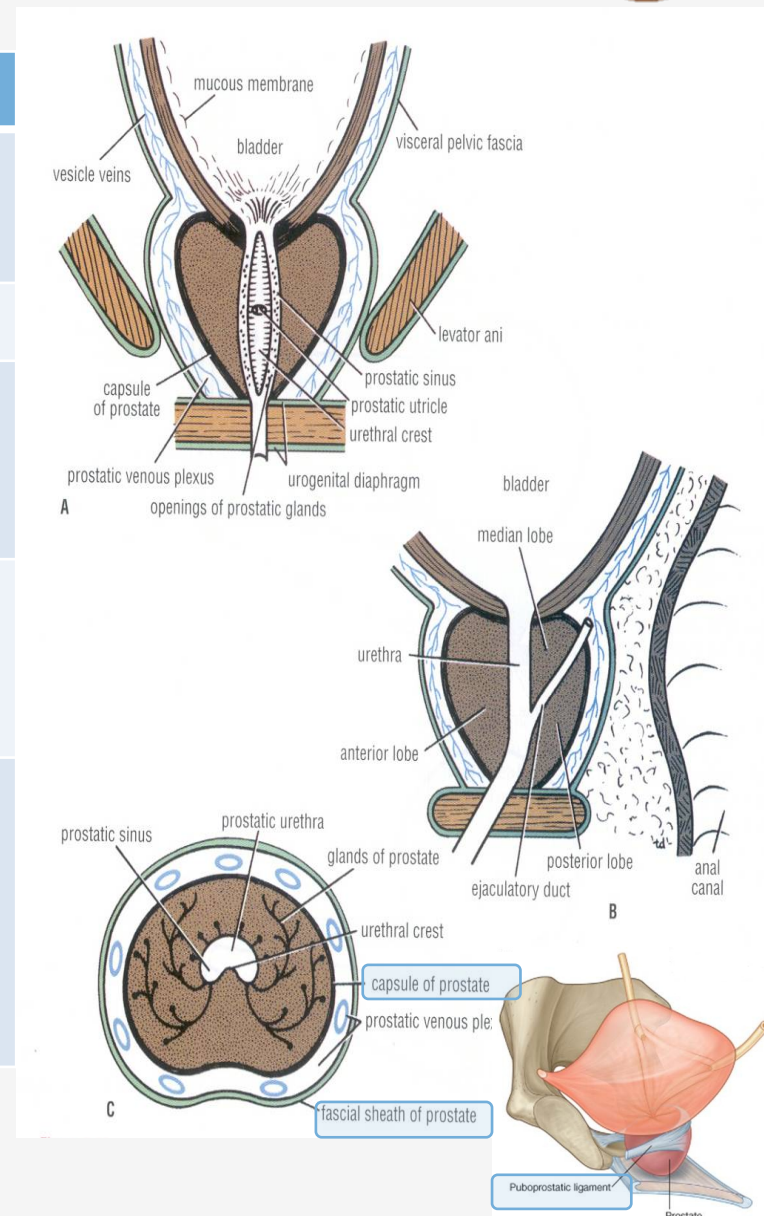
open & drain the seminal fluid into **the prostatic urethra**



Prostate gland



	Prostate gland
Feature	The Largest male accessory gland . Walnut* جوز عين الجمل* sized. Houses prostatic urethra
Location	at the neck of bladder
Shape	Conical, It has: Base (Superior): Attached to neck of urinary bladder Apex (Inferior): on Urogenital diaphragm. Four Surfaces: Posterior, Anterior, Right & Left.
Covering	Internally: it has a dense fibrous prostatic Capsule Externally: it is surrounded by a fibrous prostatic Sheath which is continuous with the puboprostatic ligaments (levator prostate).
Function	Secretes (20-30% of semen) It Secretes enzymes which has the following functions: <ul style="list-style-type: none"> ▪Aids in activating sperm motility ▪Mucus degradation ▪Antibiotic ▪Neutralizes Alkaline fluid of female reproductive tract

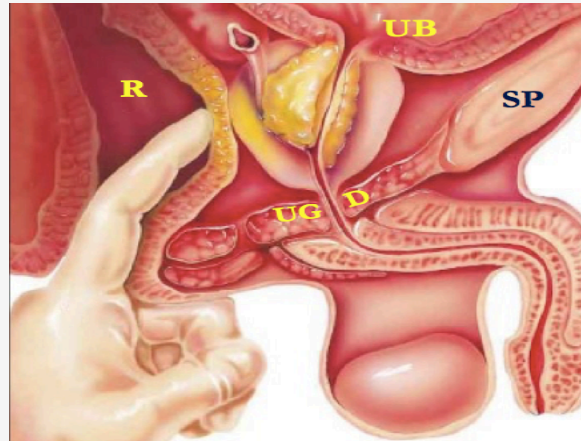


Relation of prostate gland



Superior: Neck of urinary bladder.

Posterior: Rectum R (important for PR Examination)



Anterior: Symphysis pubis (SP)

Inferior: Urogenital diaphragm, (UGD)

Lateral: Medial margins of levator ani muscles (levator prostate)

Lobes of prostate gland

Anatomically

Urologists & Sonographers

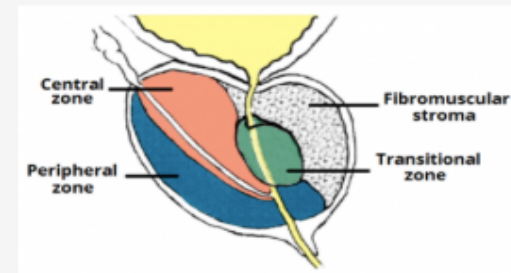
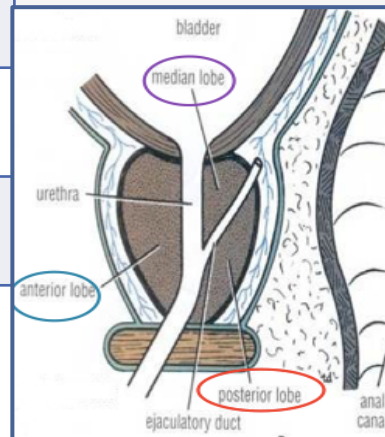
divided according to their relation to the urethra into (5) lobes

Anterior (Isthmus)	lies anterior to the urethra, it is fibromuscular .
posterior	posterior to the urethra and inferior to the ejaculatory ducts
Two Lateral	on each side of the urethra rich in glandular tissue .
Middle (Median)	between the urethra and ejaculatory ducts & closely related to neck of urinary bladder . rich in glandular tissue .

Peripheral zone

Central (Internal) zones

↓
represented by the **Middle lobe**



Blood supply of prostate gland

Arterial supply:

inferior vesical artery

Prostatic venous plexus:

-Lies between the **prostatic fibrous capsule and the prostatic sheath.**

-It is continuous

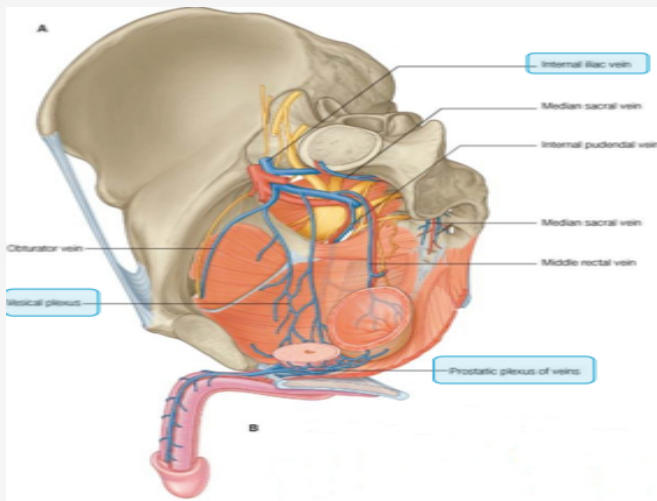
superiorly with the **vesical venous plexus**

-posteriorly to the **internal vertebral venous plexus**

It drains into the **internal iliac veins.**

Lymph drainage:

Internal iliac lymph nodes.



Prostatic Urethra

Structures seen on its posterior wall:

Urethral crest:

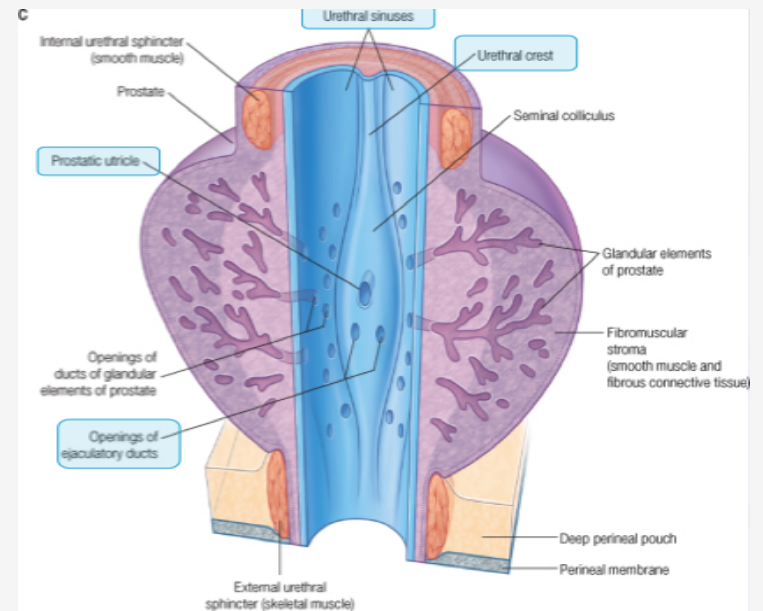
A longitudinal elevated ridge.

Prostatic sinus:

A groove on each side of the crest. The prostatic gland opens into the sinuses

Prostatic utricle

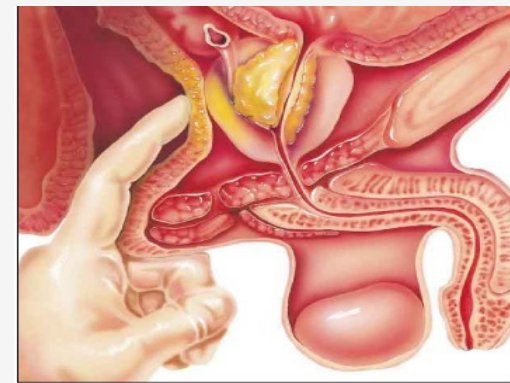
A depression on the summit of the urethral crest. The **ejaculatory ducts open on the sides of the utricle**



Hypertrophy of the Prostate



Hypertrophy of the Prostate	
Benign	Malignant
Common after middle age .	It is common after the age of 55
-An <u>enlarged prostate projects into the urinary bladder and distorts the prostatic urethra</u> .	The malignant prostate is felt hard & irregular during PR
-The middle lobe often <u>enlarges</u> the most and obstructs the internal urethral orifice , this leads to nocturia, dysuria and urgency.	The malignant cells metastasize through lymph and veins. <u>Lymphatic metastasis</u> to Internal iliac & Sacral lymph nodes, Later to distant nodes Venous metastasis to Bone & Brain through (<u>IVVP</u>) internal vertebral venous plexus



Penis



Excretory

Penile urethra transmits urine & sperm.

Copulatory

One Corpus Spongiosum

Two Corpora Cavernosa

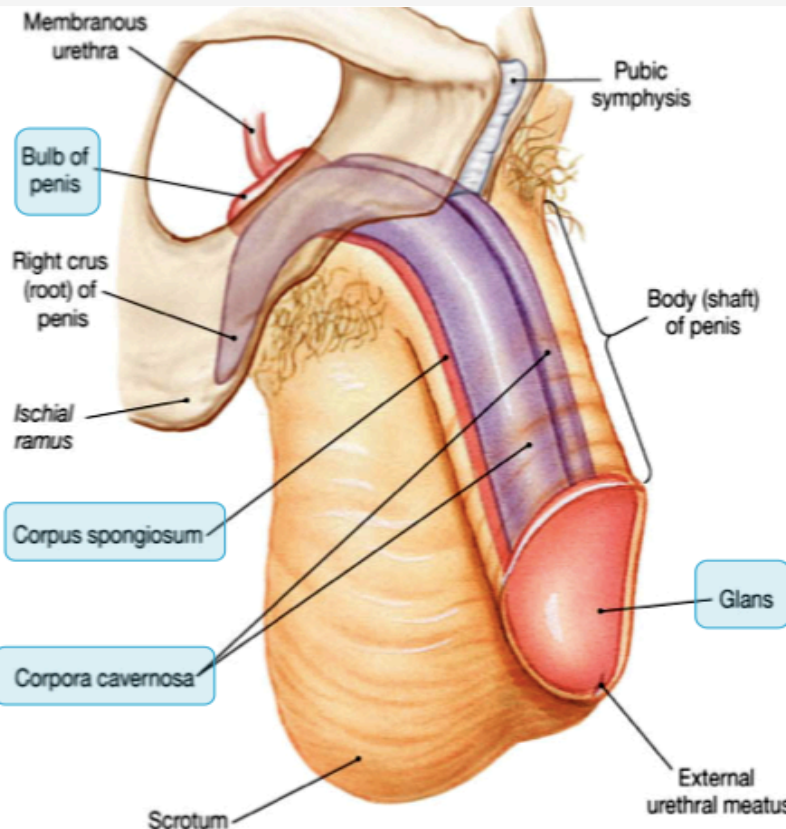
Corpora Cavernosa

Superior Paired Right & left

Primary erectile tissue

Posterior expansion form **Crura** (anchor" tissue) against pelvic bone

They **Provide the majority of rigidity & length of penis**



Corpus Spongiosum

The Inferior mass

Secondary erectile tissue

-Anterior expansion forms the **Glans***.
-Posterior expansion: forms **Bulb of penis**.

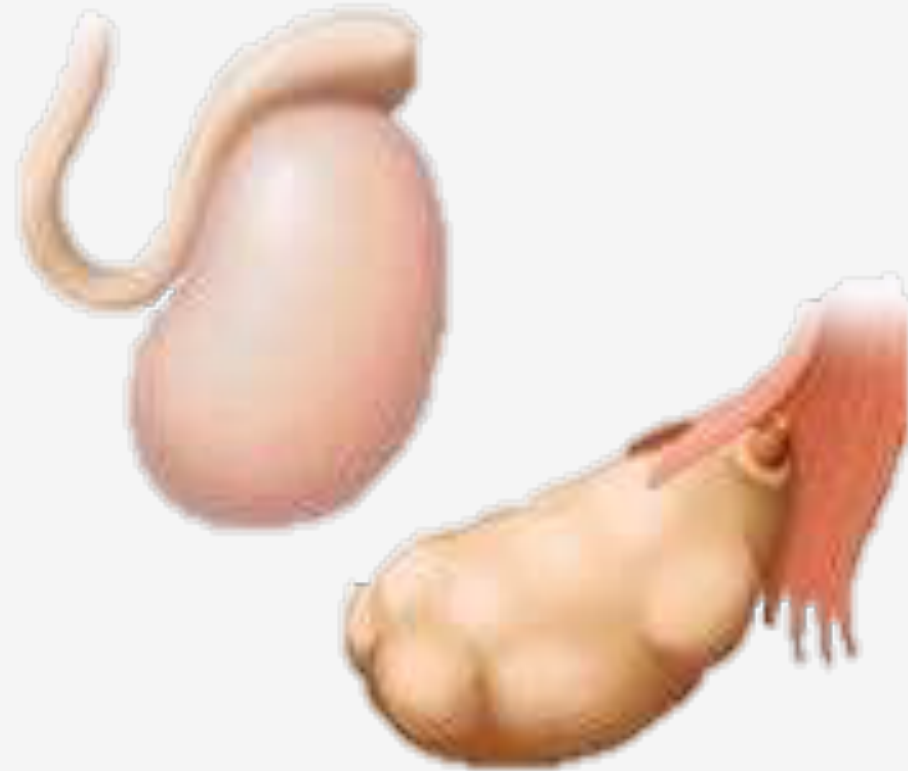
It is **Traversed by the Penile urethra**


***Prepuce**: Fold of skin covering glans (before circumcision الختان)



GOOD LUCK

DONE BY:
Anjod AlMuhareb



 anatomy433@gmail.com

 [@anatomy433](https://twitter.com/anatomy433)