

# PROSTATE GLAND

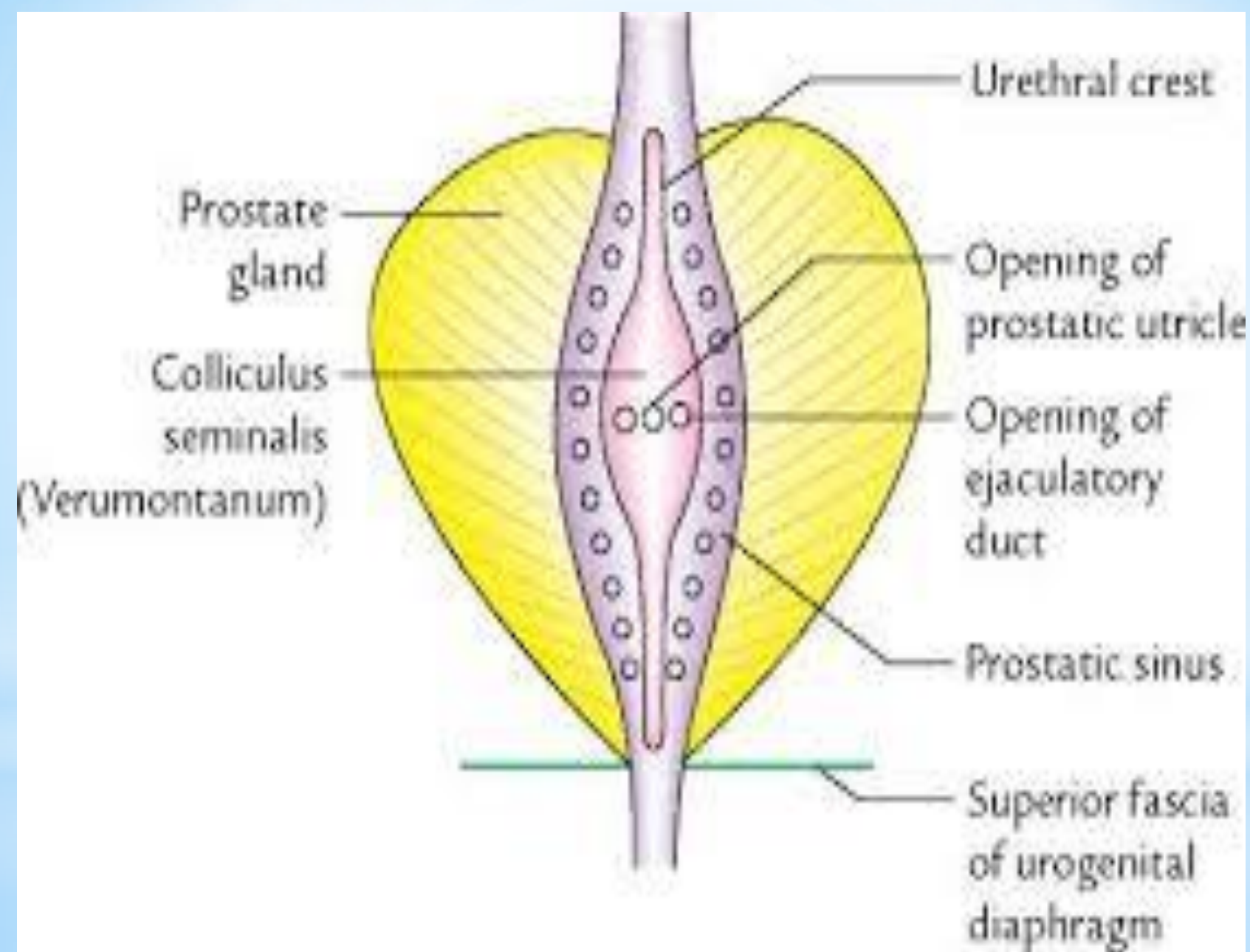
- The **prostate** is the largest accessory gland in the male reproductive system
- It secretes **proteolytic enzymes** into the semen, which act to break down clotting factors in the ejaculate.
- This allows the semen to remain in a fluid state, moving throughout the female reproductive tract for potential fertilization.

# \*FEATURES

- ❖ 4cm transversely at the base.
- ❖ Width 3cm vertically.
- ❖ Length 2cm anteroposteriorly.
- ❖ Weight: 8g.
- ❖ An apex.
- ❖ Base.
- ❖ 4surfaces: Anterior,Posterior,2 inferolateral.

## \*POSITION

- The prostate is inferiorly to the neck of the bladder and superiorly to the **external urethral sphincter**, with the levator ani muscle lying inferolaterally to the gland.
- The proteolytic enzymes leave the prostate via the **prostatic ducts**.
- These open into the prostatic portion of the urethra, through 10-12 openings at each side of the seminal colliculus secreting the enzymes into the semen immediately before ejaculation.



- The prostate is commonly described as being the size of a **walnut**.
- Roughly two-thirds of the prostate is glandular in structure and the remaining third is fibromuscular.
- The gland itself is surrounded by a thin fibrous capsule of the prostate. This is not a real capsule
- It rather resembles the thin connective tissue known as *adventitia* in the large blood vessels.

# LOBE

The prostate is divided into 5 anatomical lobes (posterior, inferolateral-2, median, and anterior) by the urethra and the ejaculatory ducts as they pass through the organ

The histological division of the prostate into **three zones**:

**\*Central zone** – surrounds the ejaculatory ducts, comprising approximately 25% of normal prostate volume.

➤ **Transitional zone** – located centrally and surrounds the urethra, comprising approximately 5-10% of normal prostate volume.

➤ The glands of the transitional zone are those that typically undergo benign hyperplasia (BPH)

➤ **Peripheral zone** – makes up the main body of the gland (approximately 65%) and is located posteriorly.

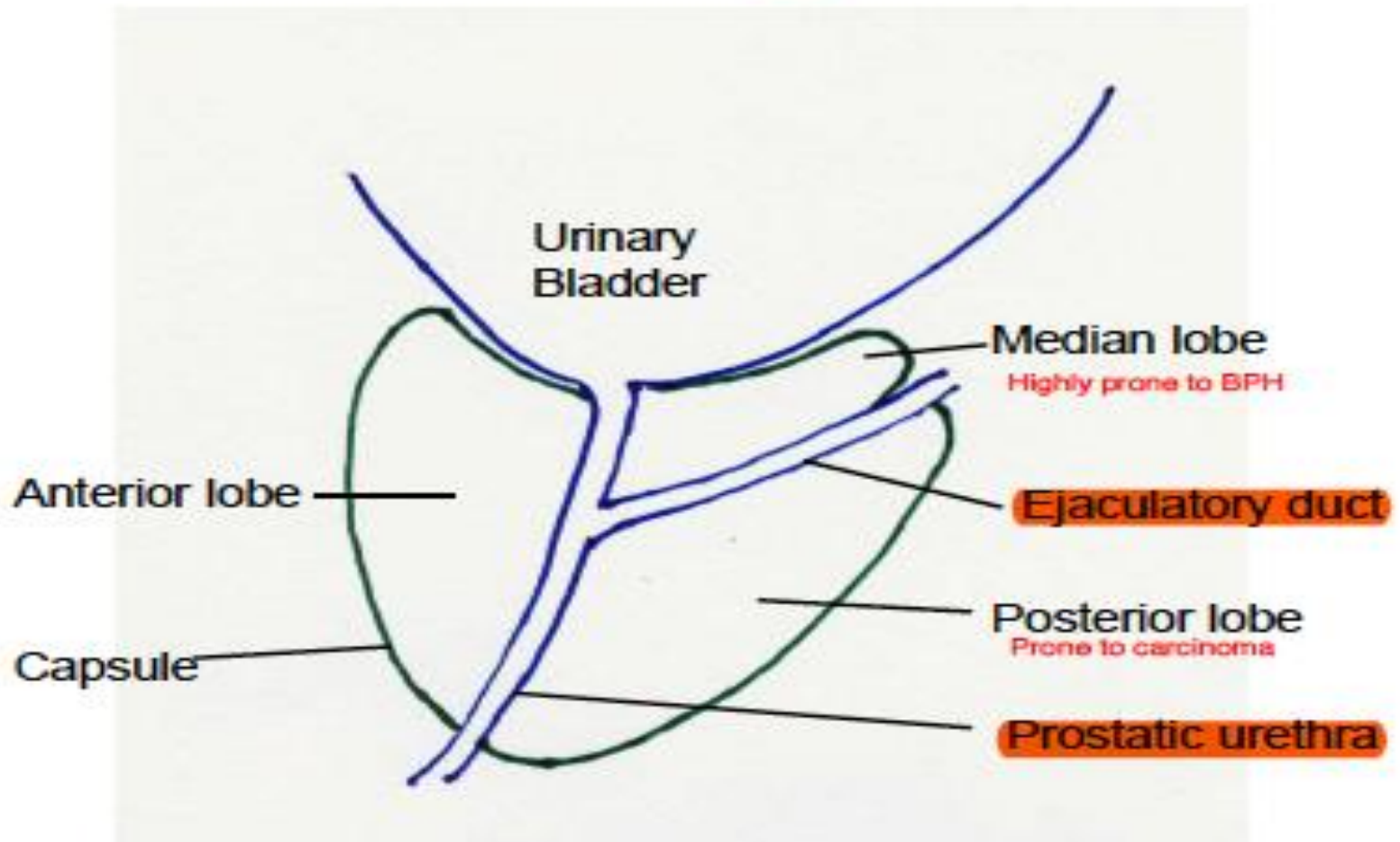
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➤ That also explains the high incidence of acute and chronic inflammation found in these compartments, a fact that may be linked to the high incidence of prostate carcinoma at the peripheral zone.

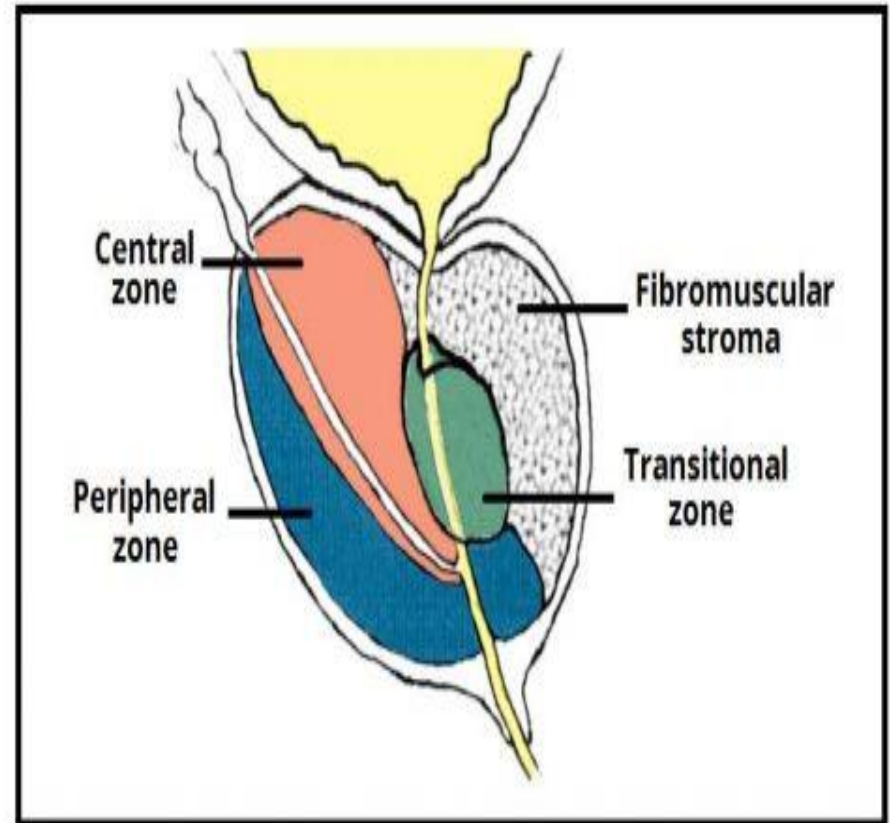
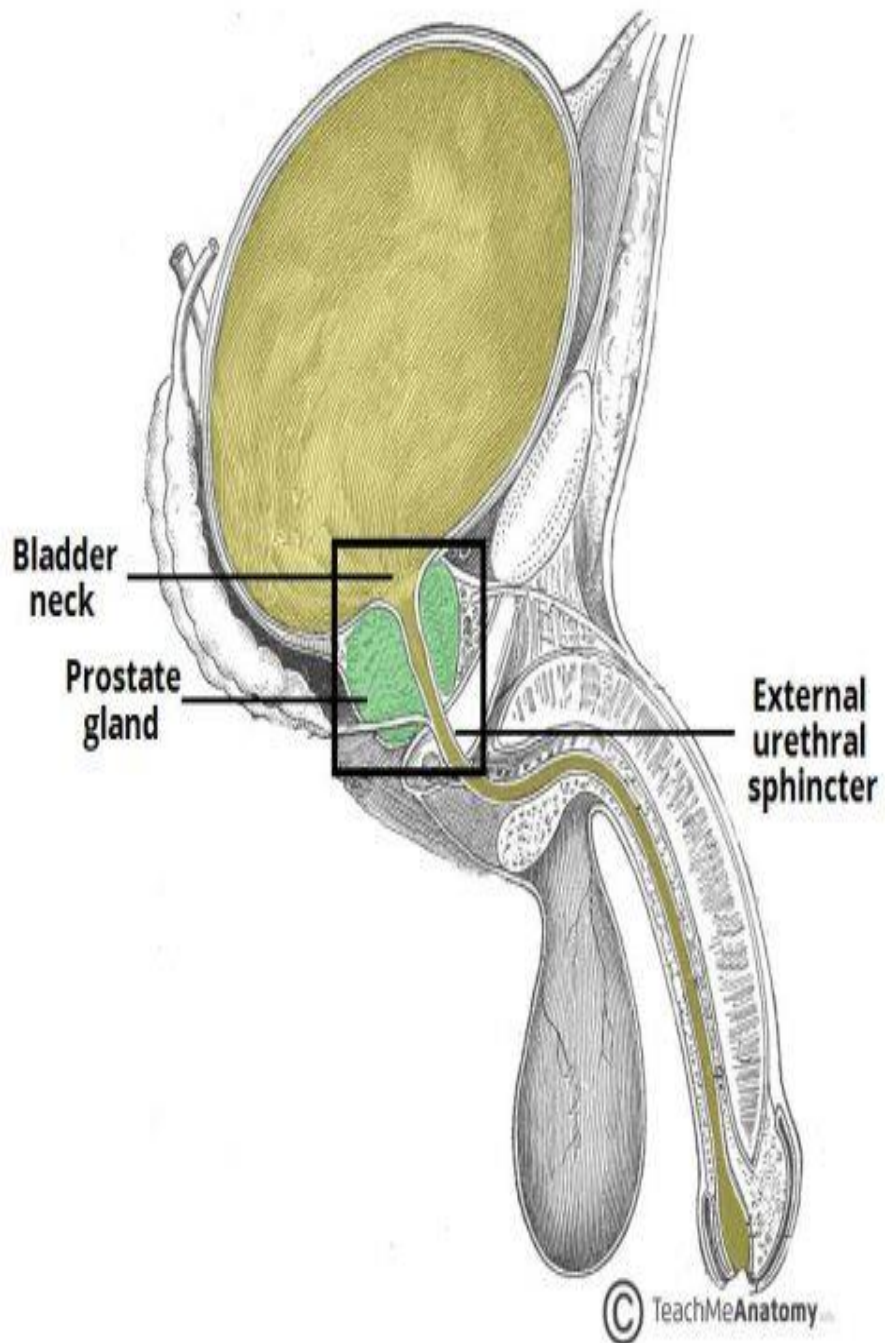


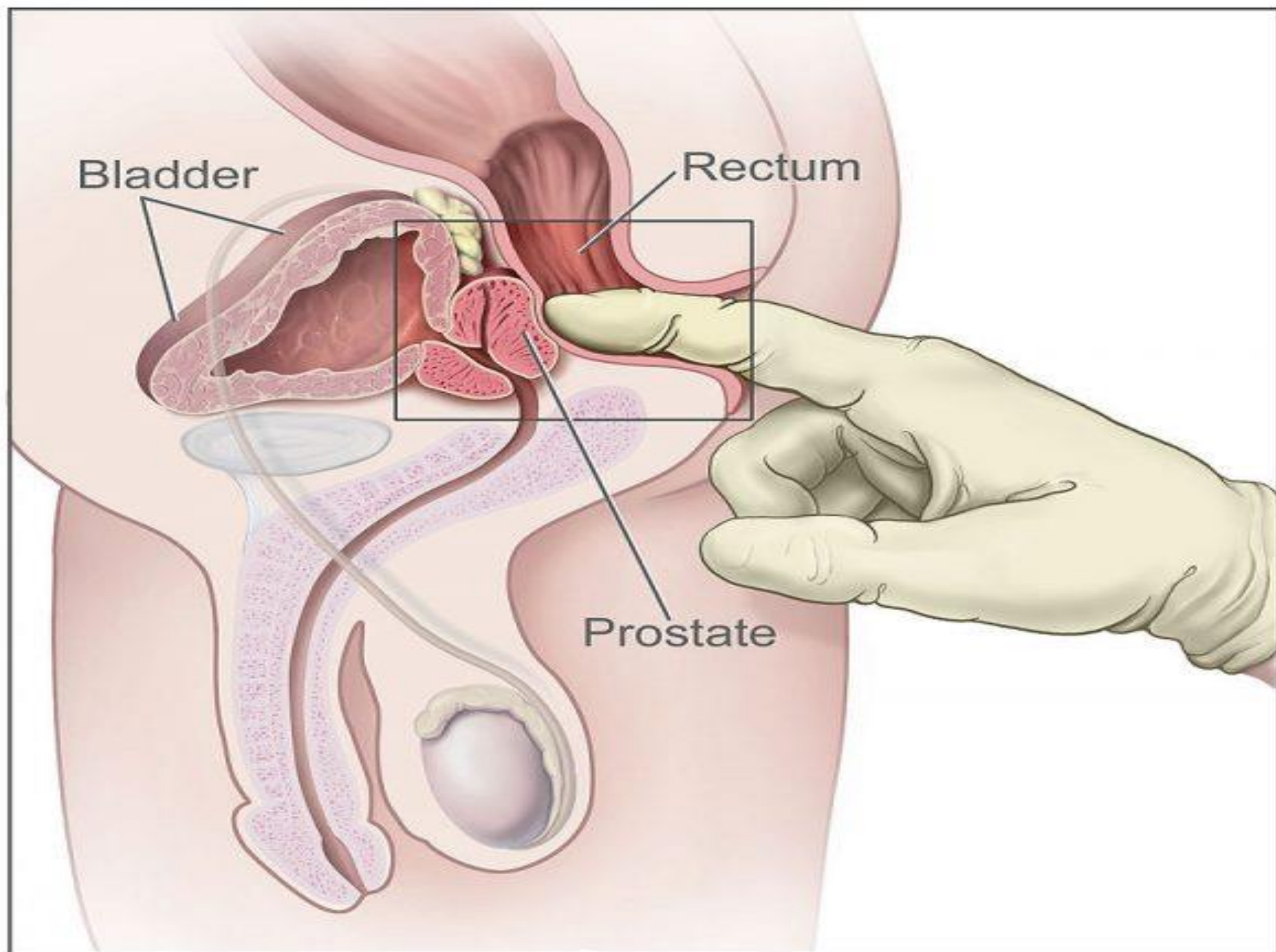
# LOBES OF PROSTATE

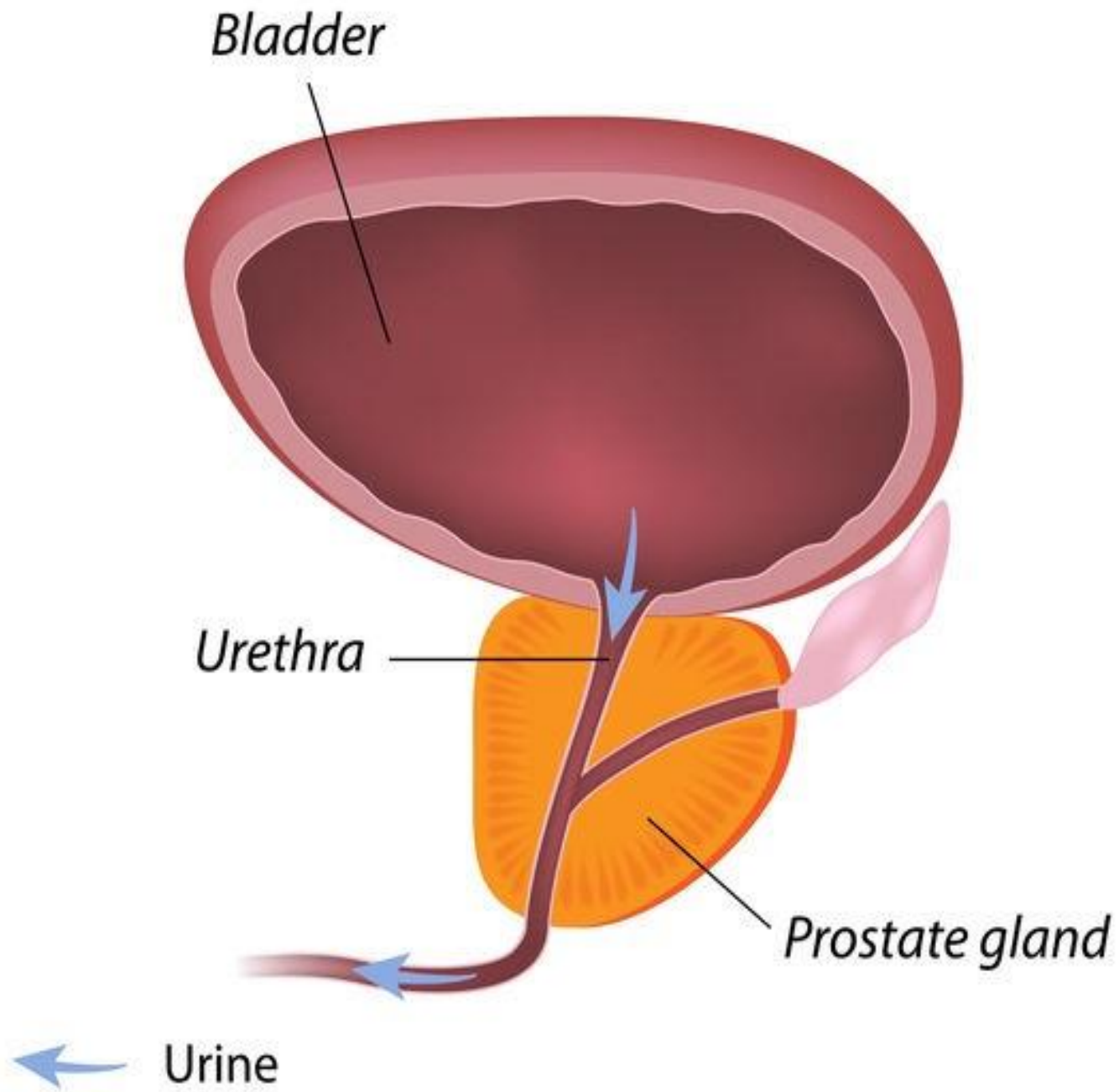
## Prostate gland





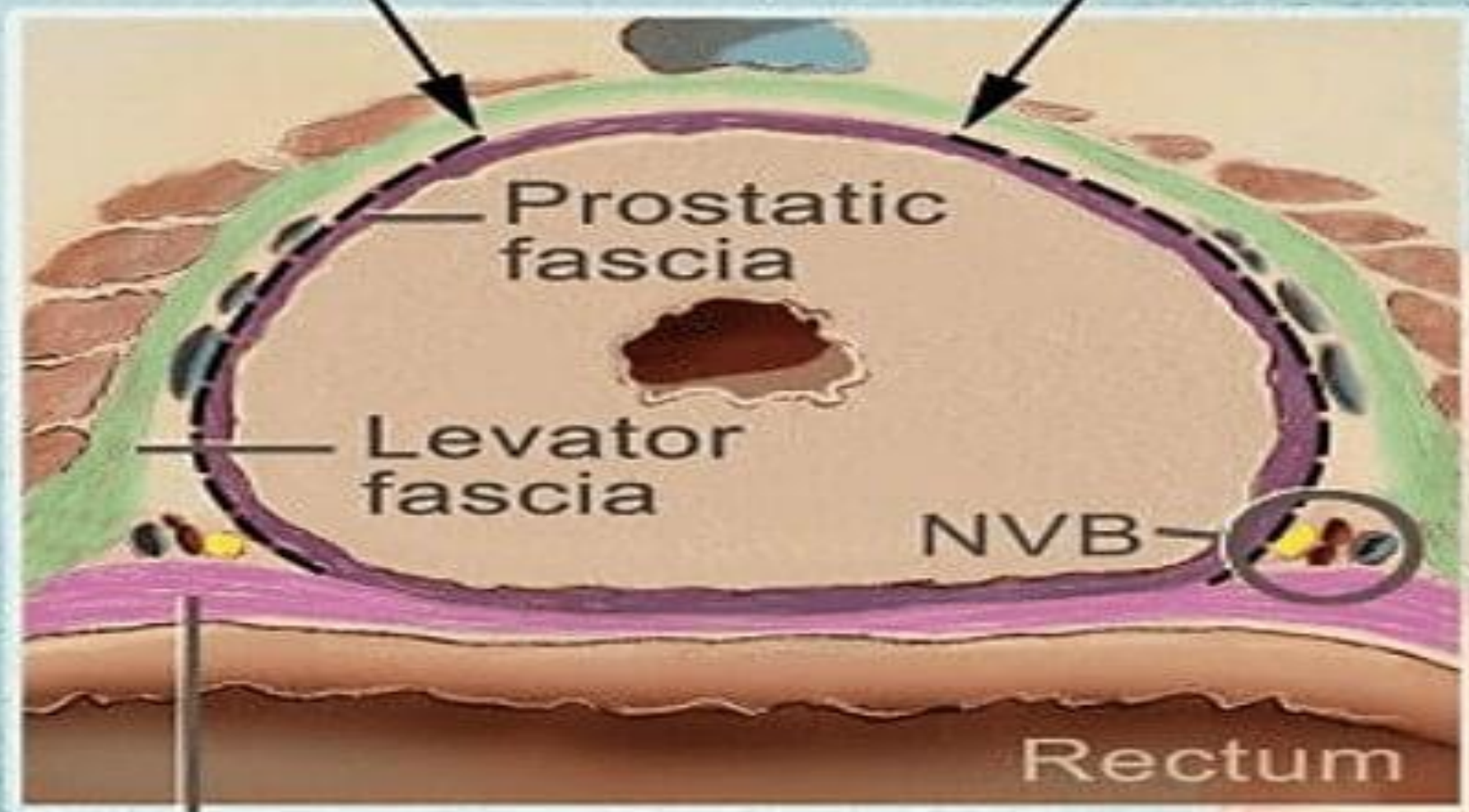








# Dissection planes



Denonvilliers' fascia

# **\*ZONES OF PROSTATE**

- **Outer larger zone(site of Carcinoma).**
- **Inner smaller zone(Benign Hypertrophy).**

# **\*STRUCTURES WITHIN THE PROSTATE**

- \*Prostatic urethra.
- \*Prostatic utricle.
- \*Ejaculatory duct.



# **\*CAPSULES AND LIGAMENTS OF PROSTATE**

- **True capsule.**
- **False capsule.**
- **Pair of medial puboprostatic ligaments.**
- **Pair of lateral puboprostatic ligaments.**

False capsule

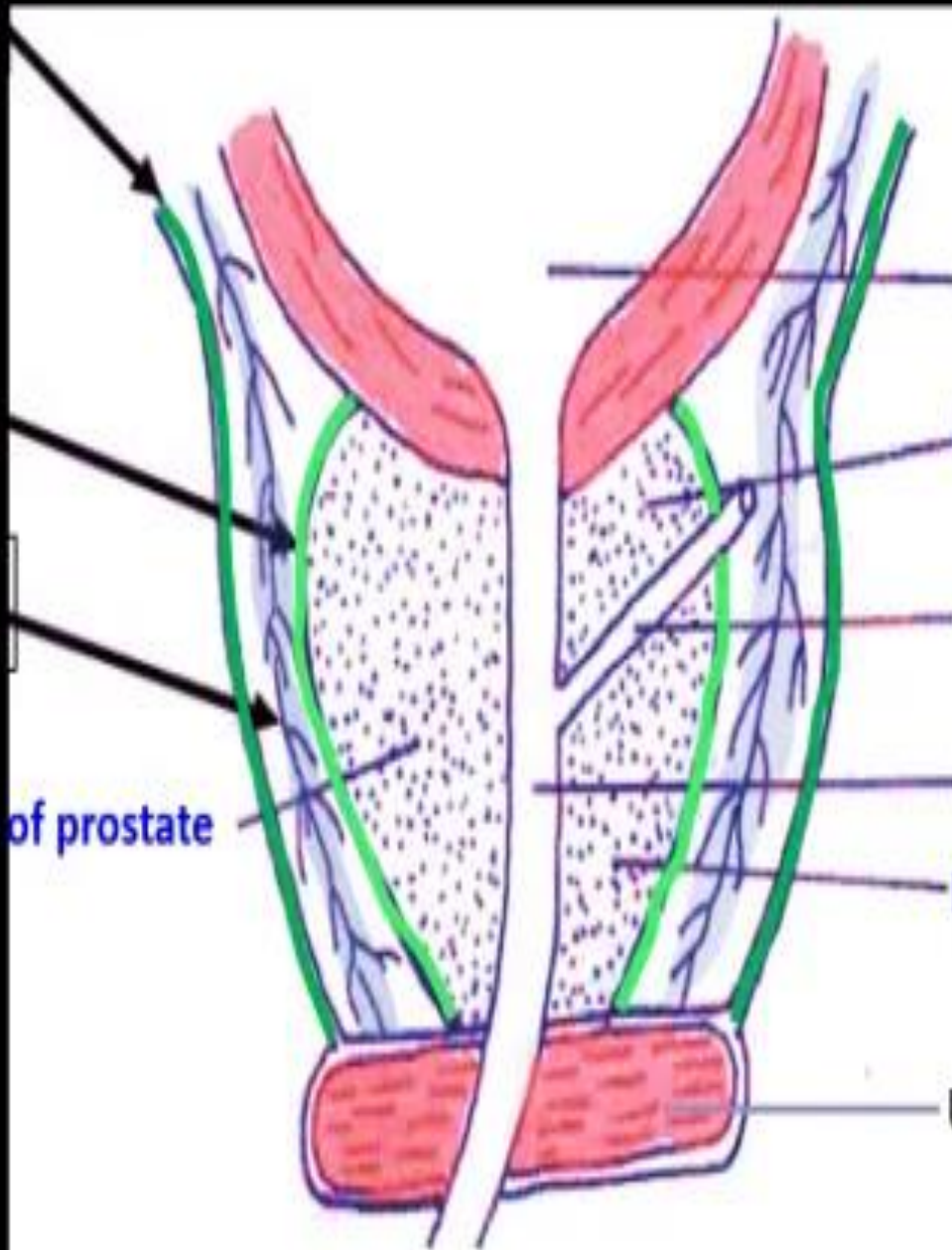
True capsule

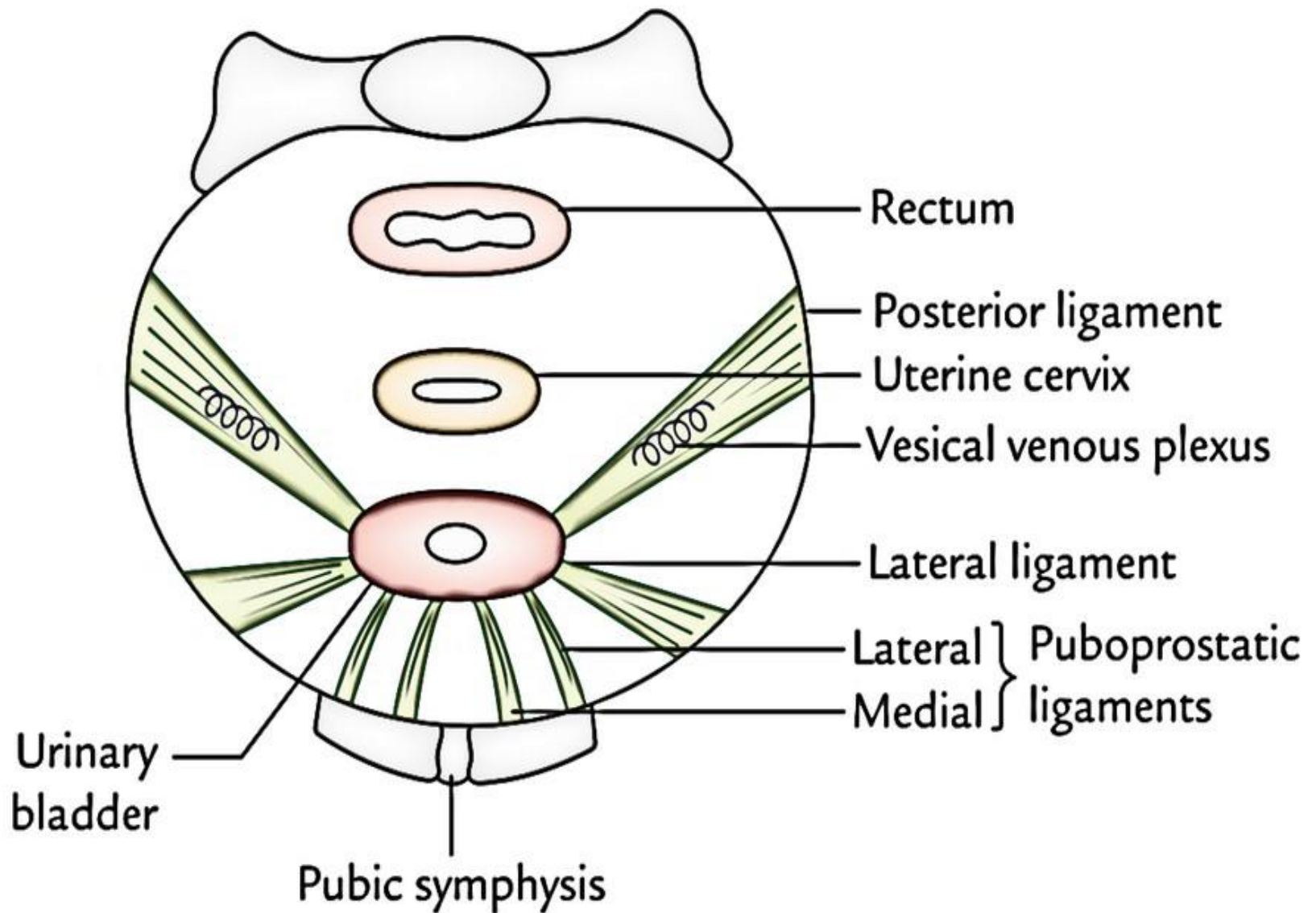
Venous Plexus

Anterior lobe of prostate

Median lobe of prostate

Posterior lobe of prostate





To the navel  
via the urachus

Pubovesical  
ligament

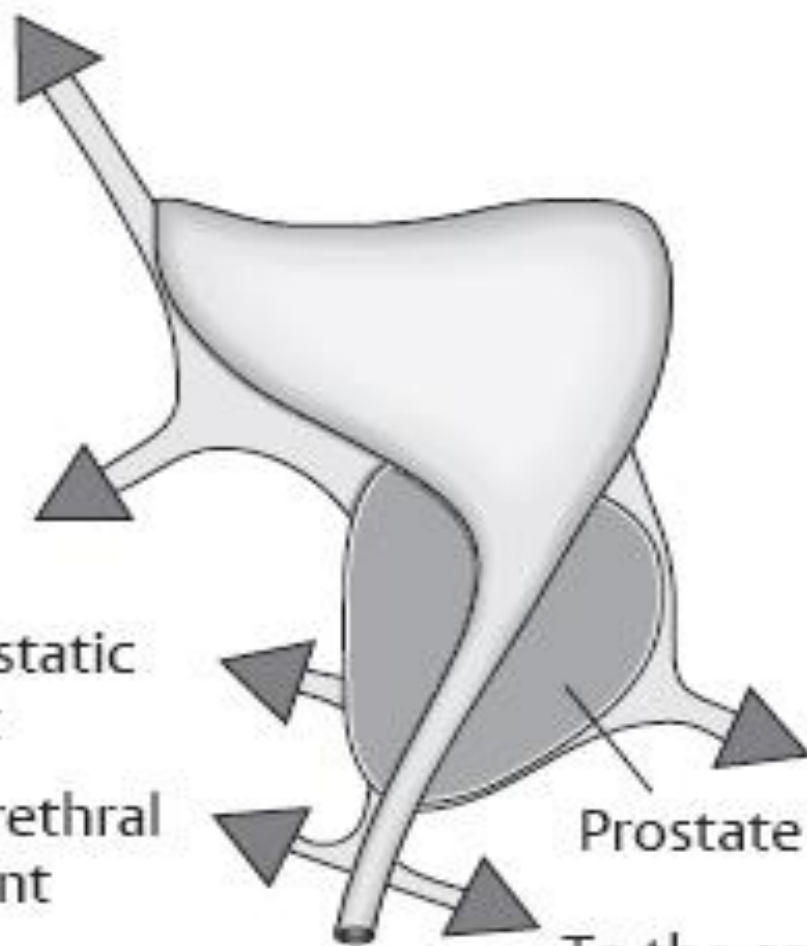
Puboprostatic  
ligament

Pubourethral  
ligament

Prostate

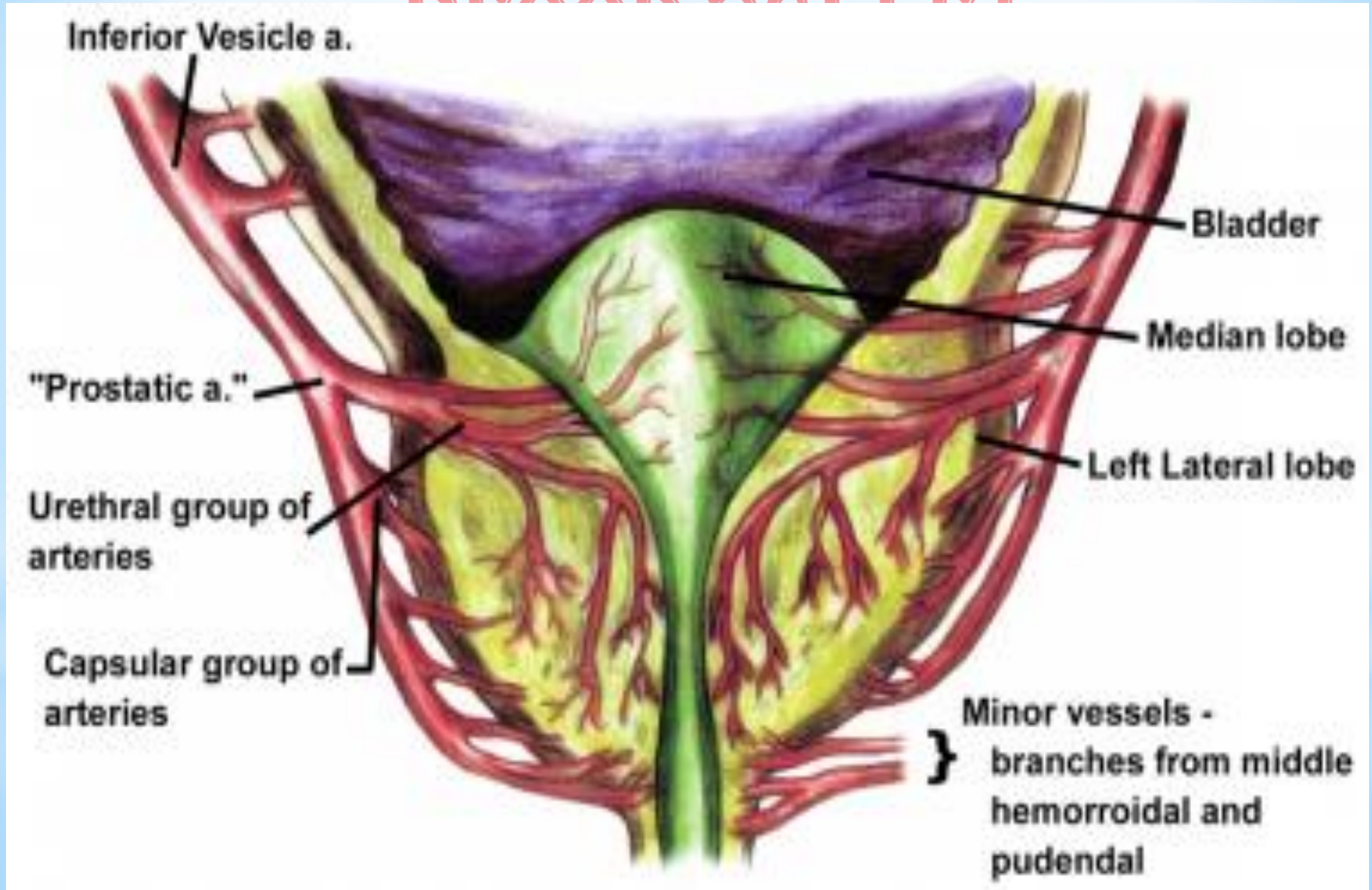
To the sacrum

To the connective tissue  
that runs between the pubis  
and the sacrum





# \*BLOOD SUPPLY



# VENOUS & LYMPHATIC DRAINAGE

- Drains in to vesical and internal iliac veins.
- Valveless communication exist between prostatic and vertebral venous plexuses through which prostatic carcinoma can spread to the vertebral column and to the skull.
- Drains chiefly into internal iliac and sacral nodes and partly into external iliac nodes.



# NERVE SUPPLY

- ✓ Prostatic plexus of nerves is derived from inferior hypogastric plexus.

# Clinical Relevance

## ✓ Prostate Specific Antigen

✓ The Prostate Specific Antigen (PSA) is an enzyme (serine protease) secreted by the prostatic epithelium that aids the liquification of the ejaculate by lysing seminal vesicle proteins. However the main clinical use of PSA is as a tumor marker specific for prostate carcinoma.

✓ Increased levels of serum PSA may suggest the presence of prostate cancer

## ✓ Prostatic Carcinoma

✓ Prostatic carcinoma represents the most commonly diagnosed cancer in men

✓ The malignant cells commonly originate from the peripheral zone, although carcinomas may arise (more rarely) from the central and transition zones too.

Thank  
you!