

UROGENITAL SYSTEM

THE PERINEUM

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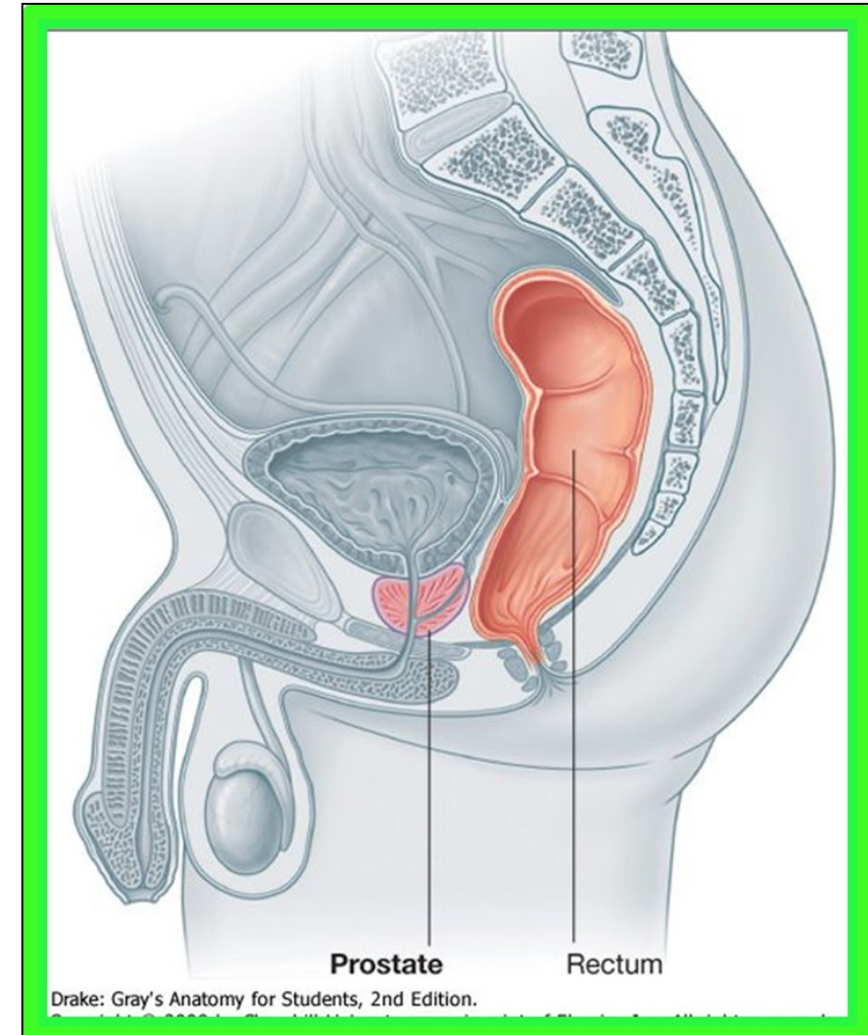
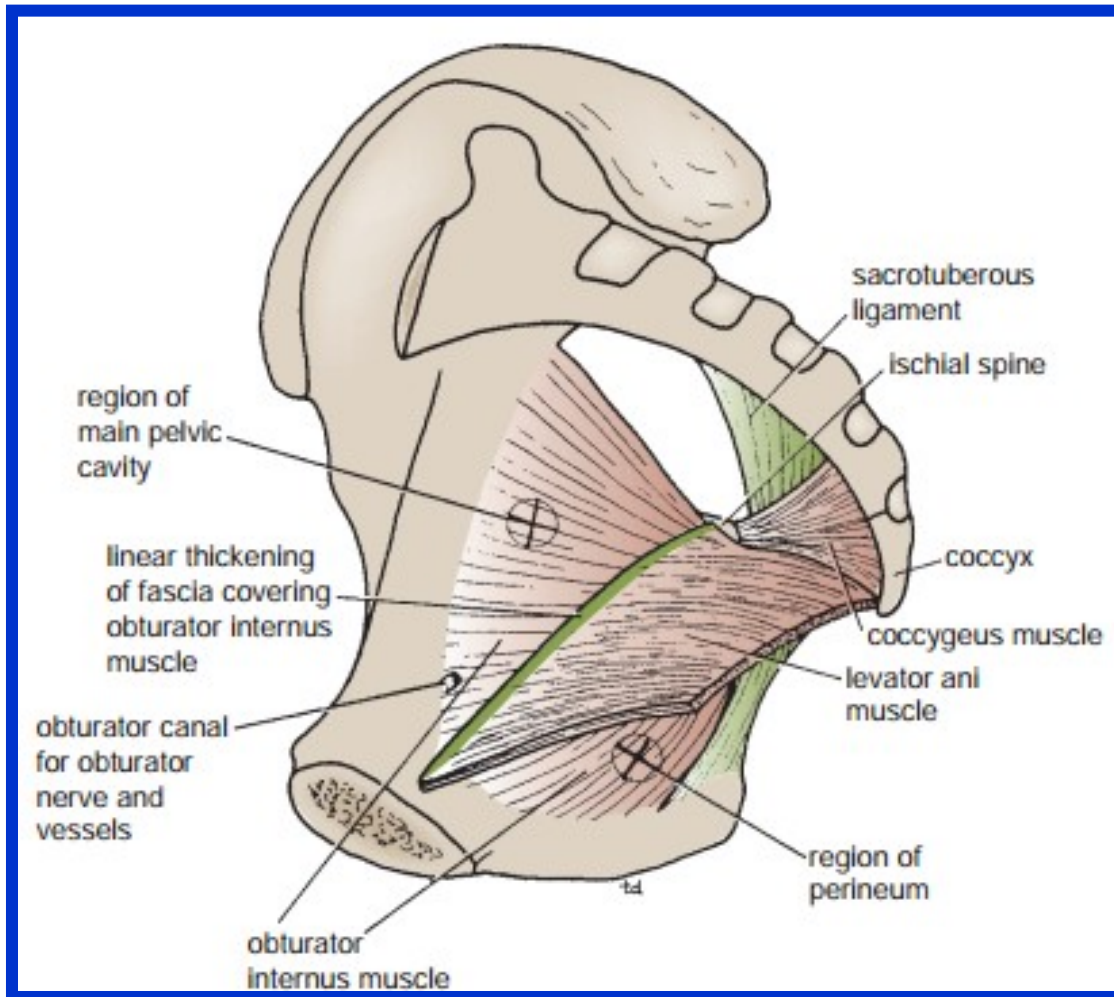
College of Medicine /University Of Mutah

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The Perineum

❖ The cavity of the pelvis is divided by **the pelvic diaphragm** into **the main pelvic cavity** above and **the perineum** below .



The Perineum

The perineum is diamond shaped and is bounded:

Anteriorly: The symphysis pubis

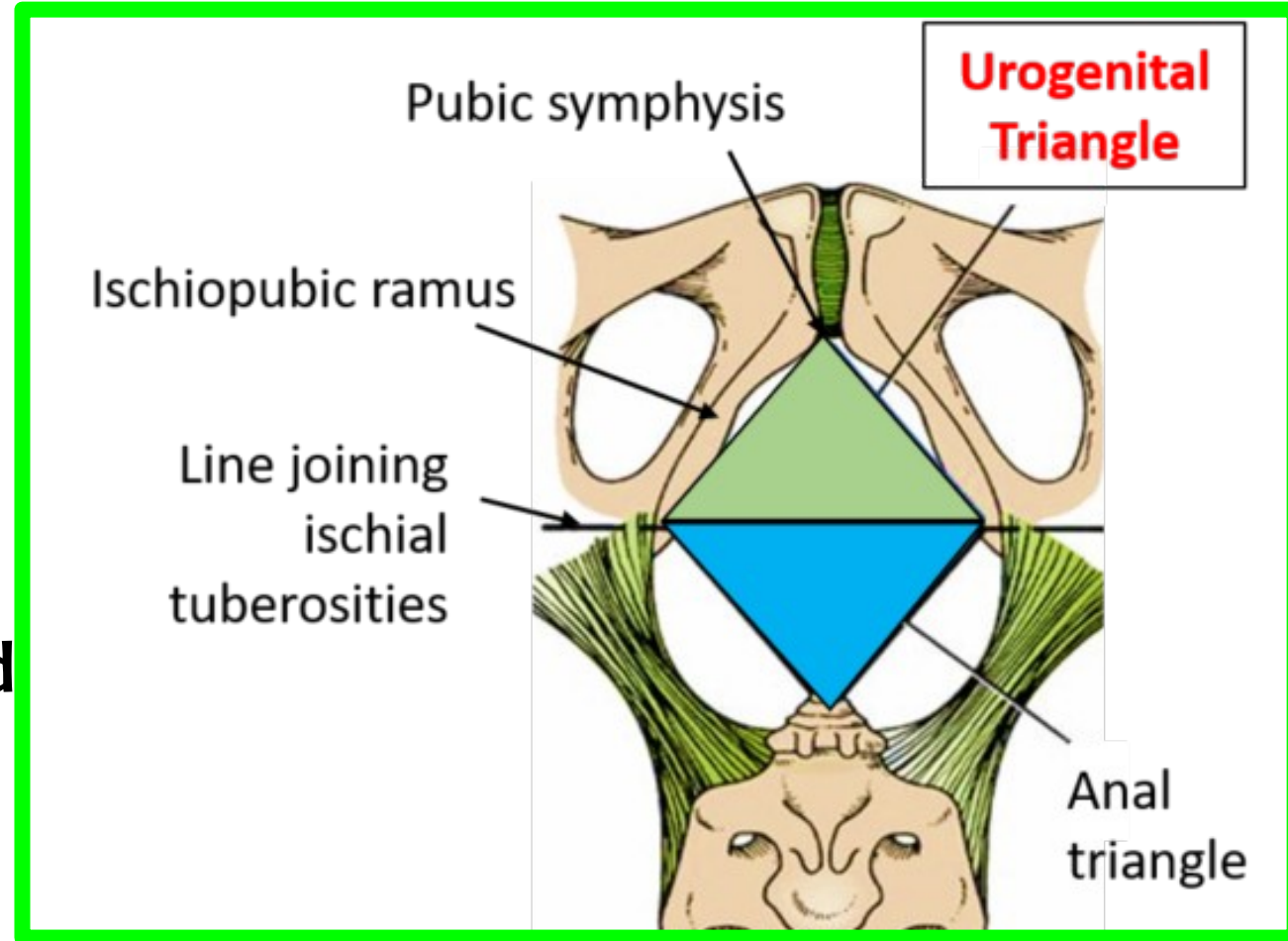
Posteriorly: the tip of the coccyx

Laterally: The ischial tuberosities

❖ **Diamond-shaped perineum** divided by a broken line into the:

❖ **Urogenital triangle**

❖ **Anal triangle.**



The Urogenital triangle is bounded in front by the pubic arch and laterally by the ischial tuberosities

Urogenital Triangle

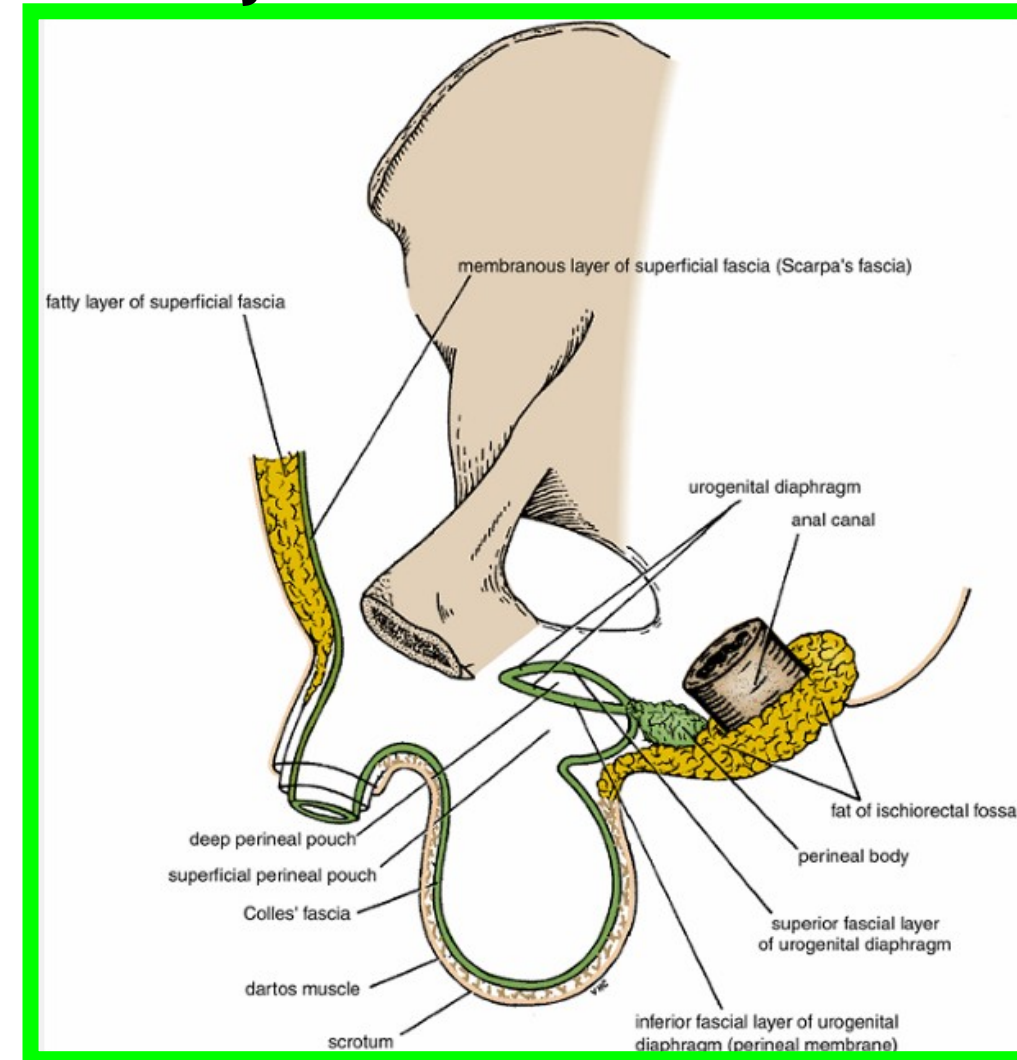
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Superficial Fascia

Can be divided into a fatty layer and a membranous layer.

- ❖ The fatty layer (fascia of Camper) is continuous with the fat of **the ischioanal fossa** and the superficial fascia of the thighs
- ❖ In the **scrotum**, the fat is replaced by smooth muscle **the dartos muscle**.
- ❖ The **dartos muscle** contracts in response to cold and **reduces the surface area of the scrotal skin**

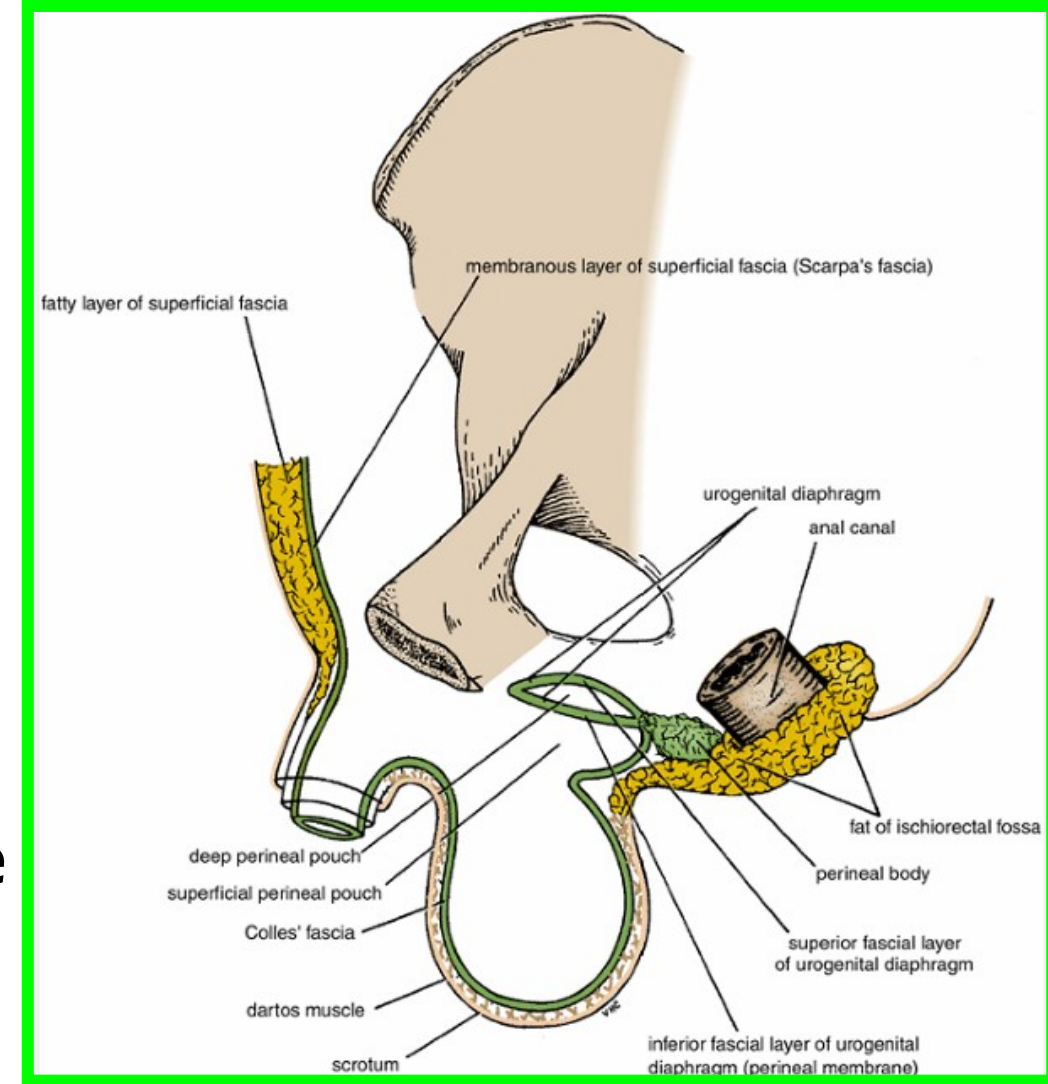


Urogenital Triangle

Superficial Fascia

❖ The membranous layer (Colles' fascia) is attached:

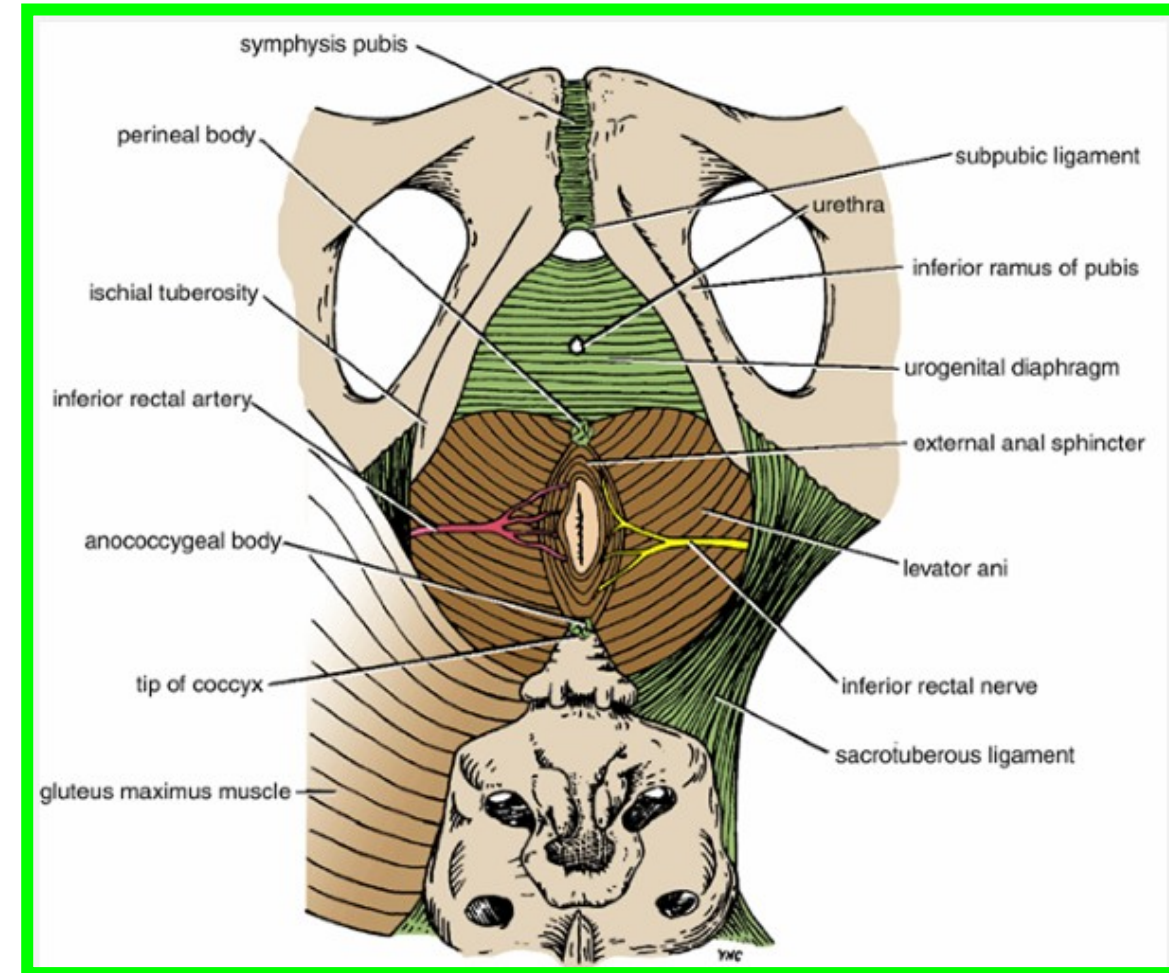
- ✓ **Posteriorly** to the posterior border of the urogenital diaphragm
- ✓ **Laterally** to the margins of the pubic arch
- ✓ **Anteriorly** it is continuous with the membranous layer of superficial fascia of the anterior abdominal wall (**Scarpa's fascia**).



- ✓ The fascia is continued over the **penis** (or clitoris) as a tubular sheath (**Buck's fascia**) and **Colle's Fascia** in **the scrotum**

Urogenital Diaphragm

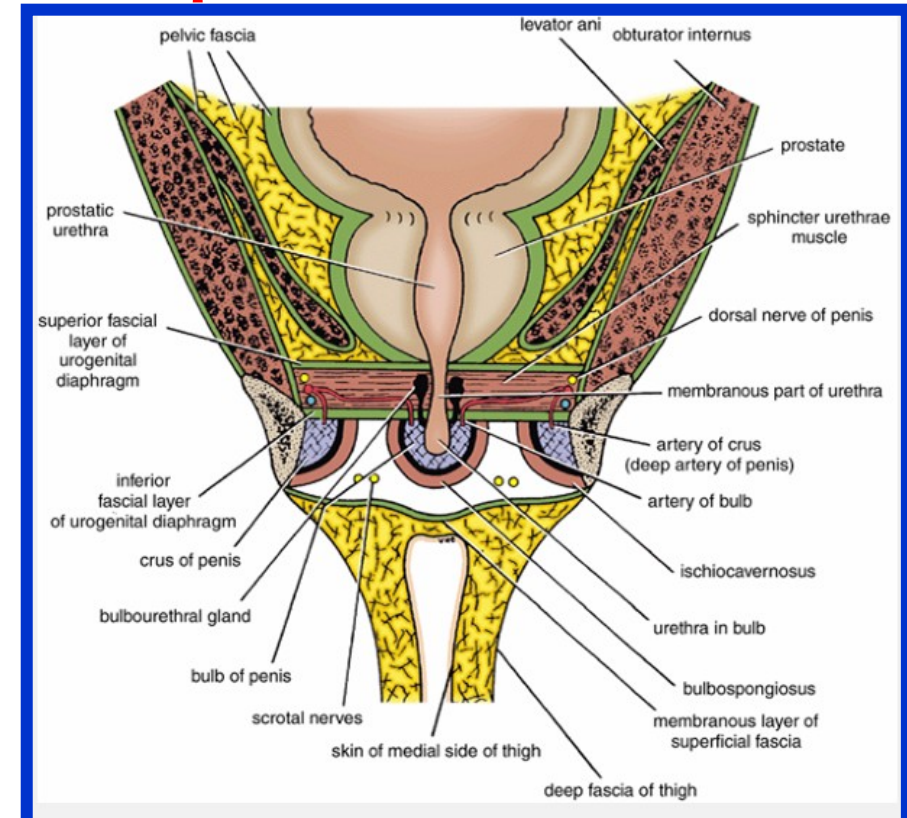
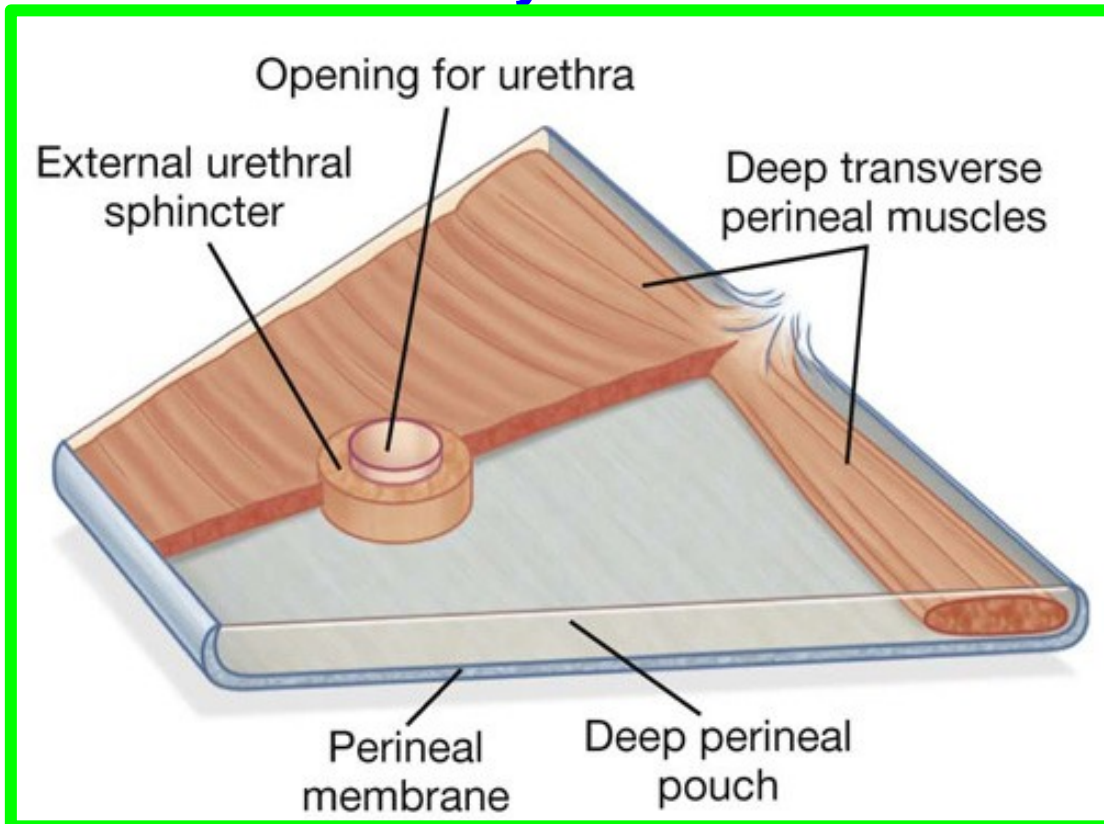
- ❑ Is a **triangular muscufascial diaphragm** situated in the anterior part of the perineum
- ❑ filling in the gap of the pubic arch



Urogenital Diaphragm

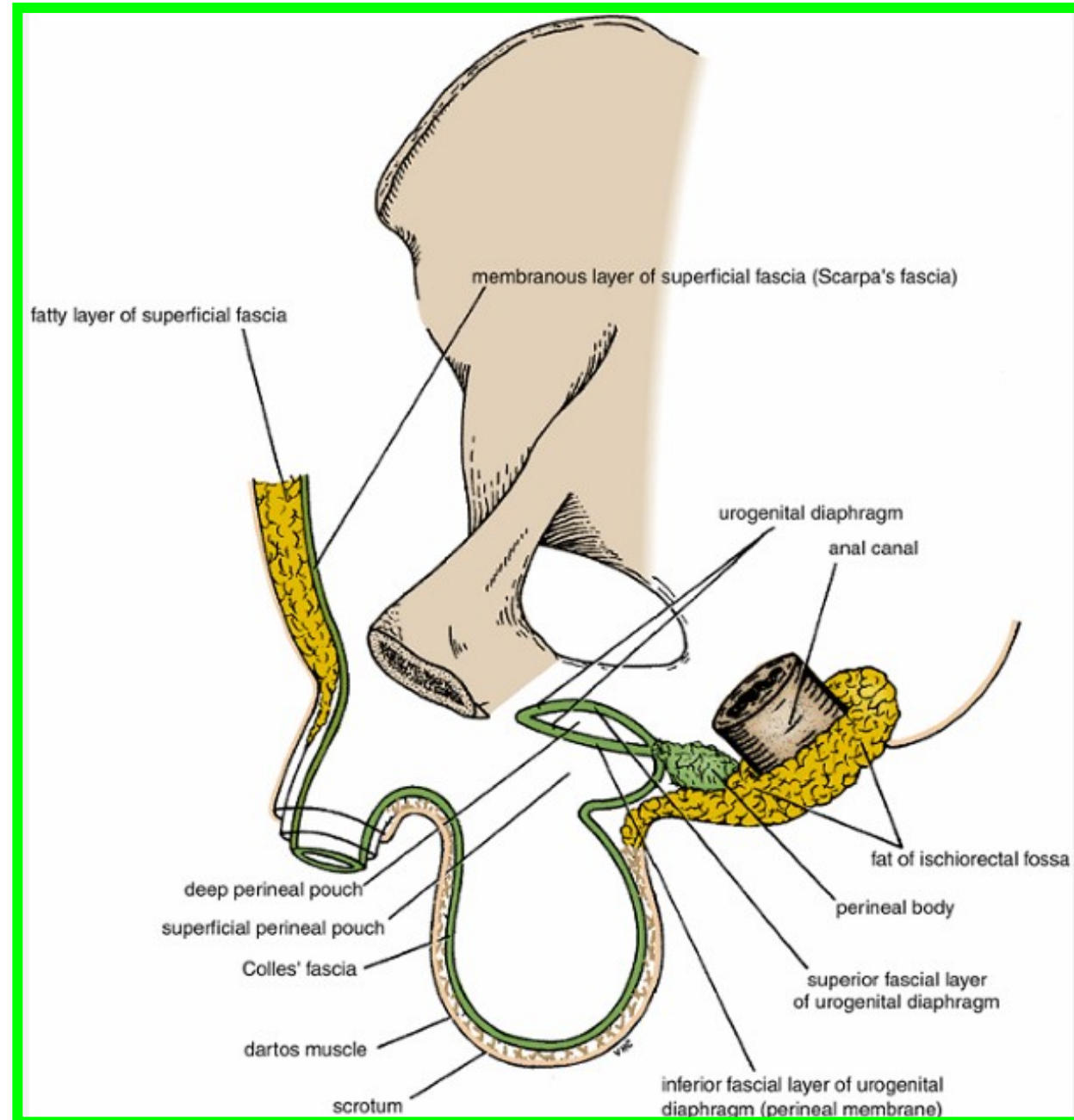
❖ It is formed by the sphincter urethrae and the deep transverse perineal muscles, which are enclosed between a superior and an inferior layer of fascia of the Urogenital diaphragm.

❖ The inferior layer of fascia is often referred to as the **perineal membrane**.



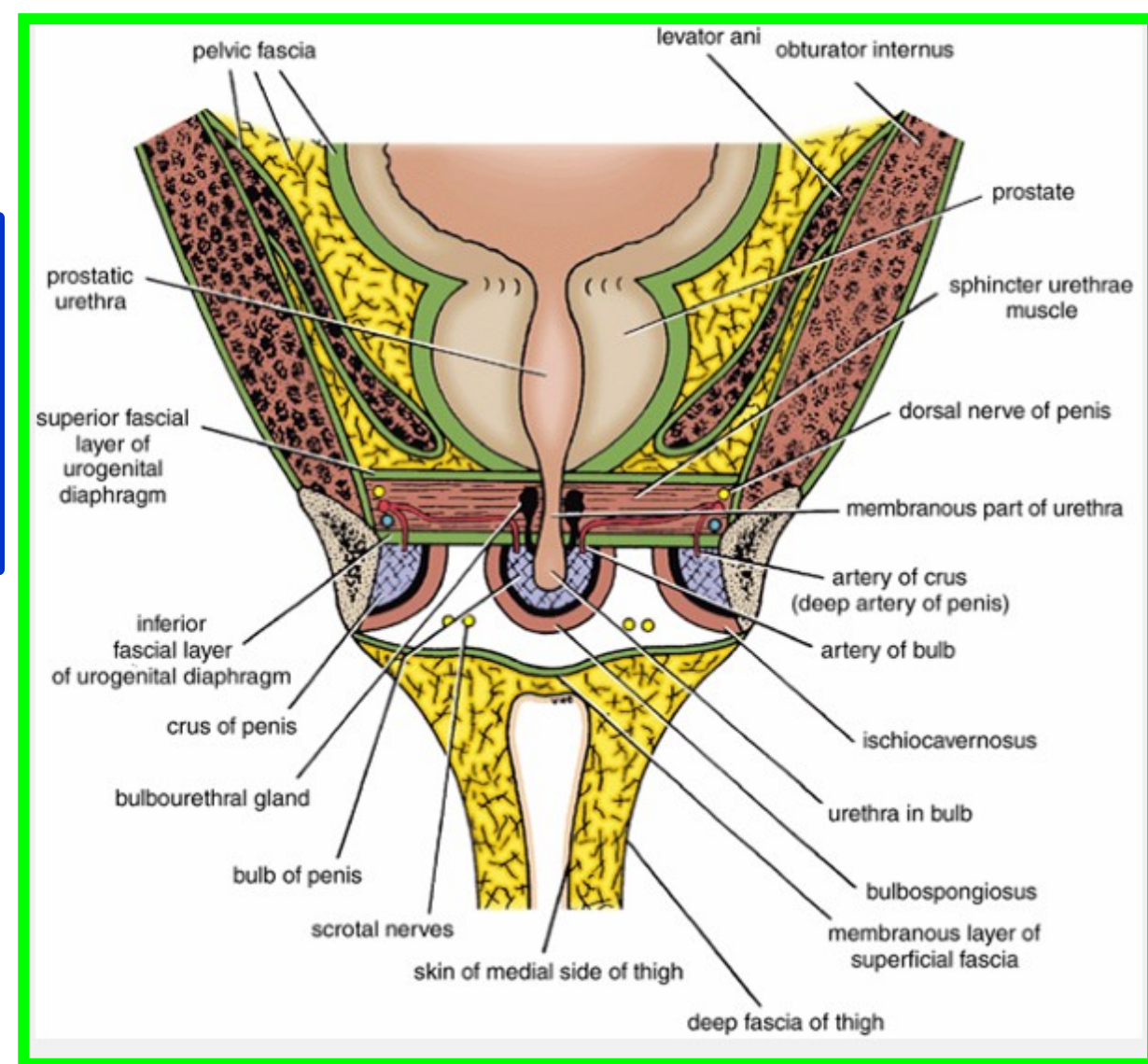
Urogenital Diaphragm

- ❑ **Anteriorly:** the **two layers of fascia fuse**, leaving a small gap beneath the symphysis pubis.
- ❑ **Posteriorly:** the two layers of fascia fuse with the **membranous layer of the superficial fascia** and the **perineal body**
- ❑ **Laterally,** the layers of fascia are attached to **the pubic arch**.



Urogenital Diaphragm

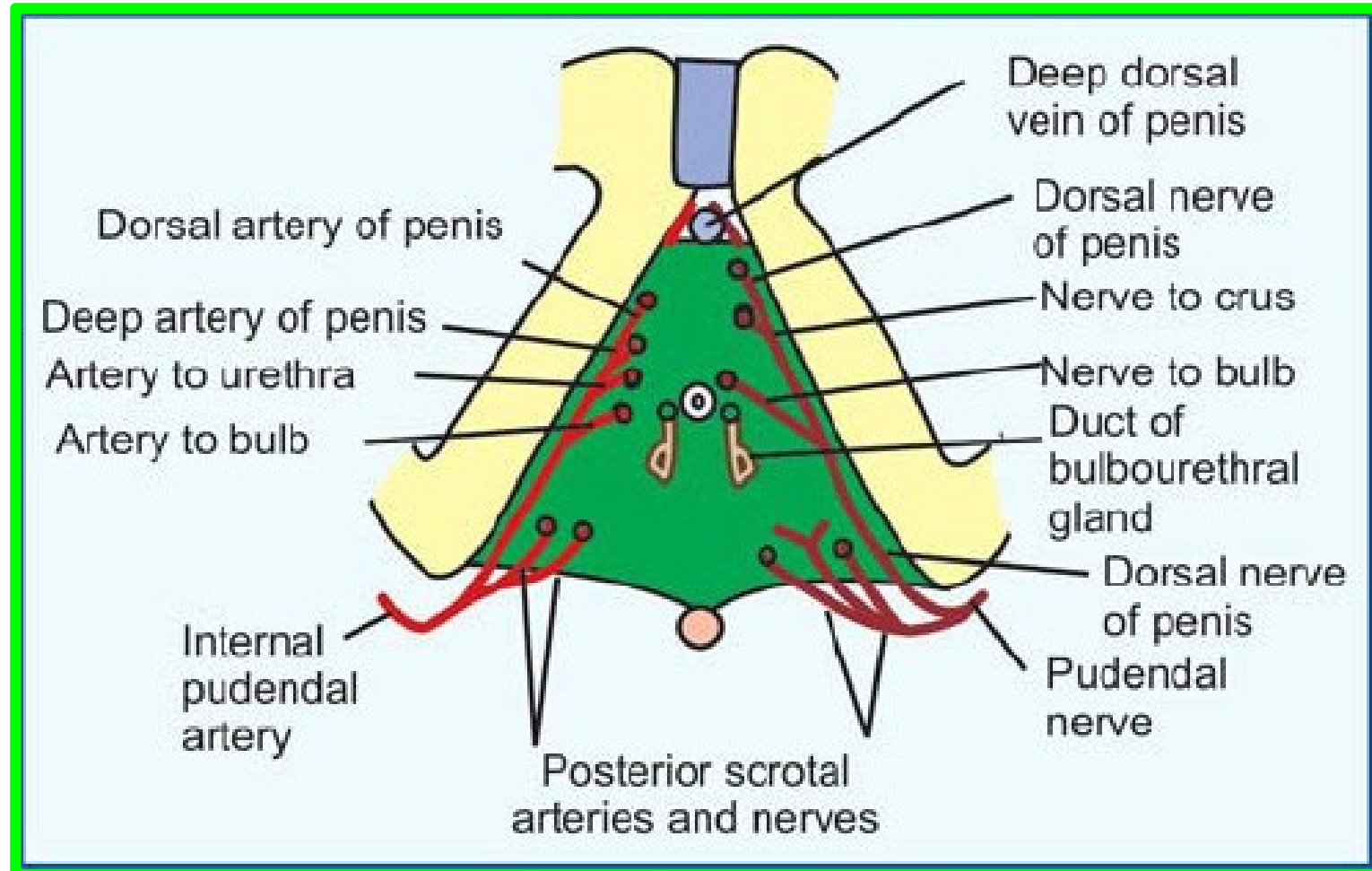
❖ The **closed space** that is contained between the superficial and deep layers of fascia is known as:
The deep perineal pouch.



**** The structures piercing the perineal membrane.**

In male

- 1- Membranous Urethra.
- 2- Ducts of the bulbo-urethral glands
- 3- **Artery of the urethra.**
- 4- **Artery of the bulb.**
- 5- **Deep artery of the penis.**
- 6- **Dorsal artery of the penis.**
- 7- **Dorsal nerve of the penis**



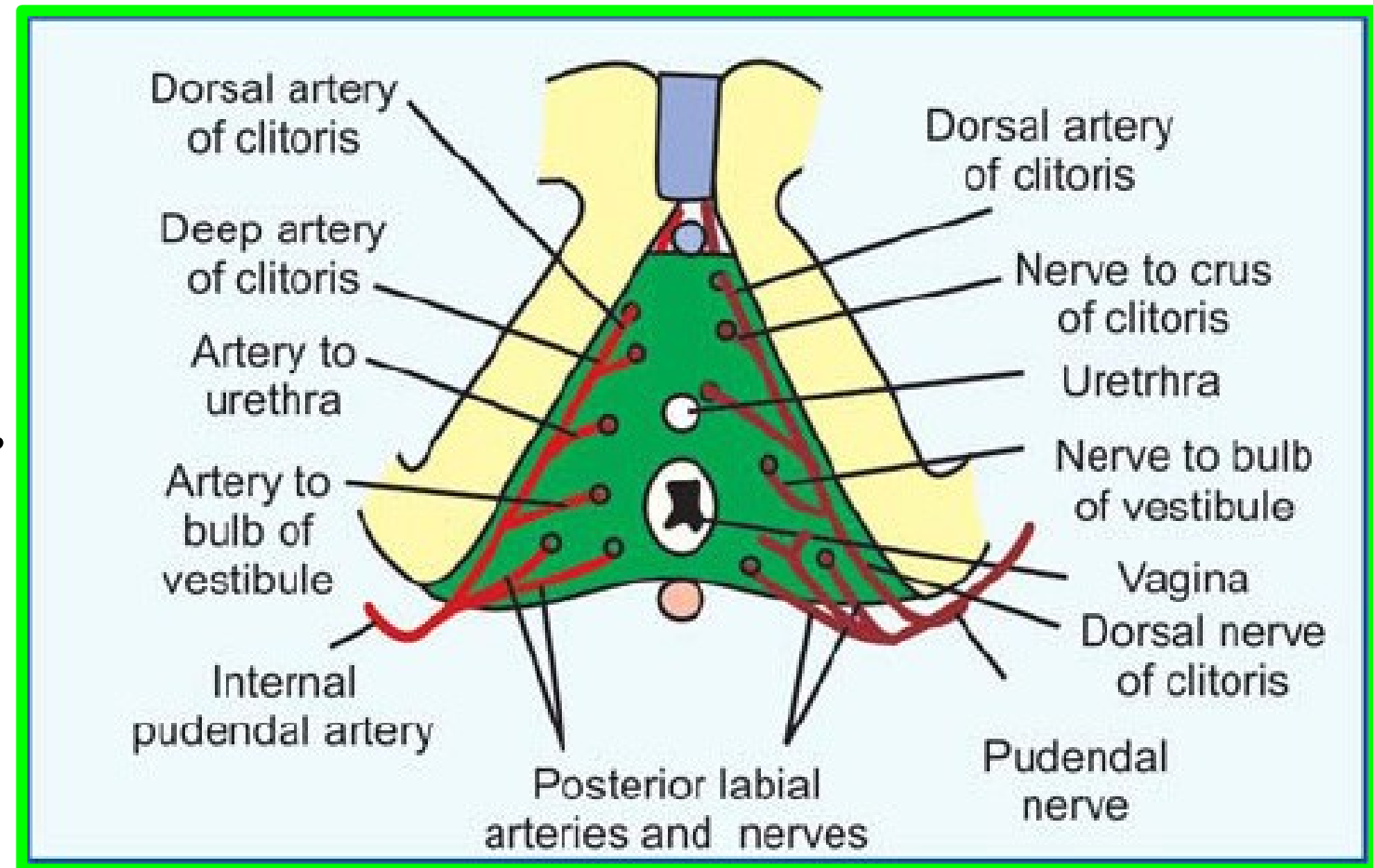
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**** The structures piercing the perineal membrane.**

In female

- 1- Urethra.
- 2- Vagina behind the urethra.
- 3- **Artery of the urethra.**
- 4- **Artery of the bulb.**
- 5- **Deep artery of the clitoris.**
- 6- **Dorsal artery of the clitoris.**
- 7- **Dorsal nerve of the clitoris.**



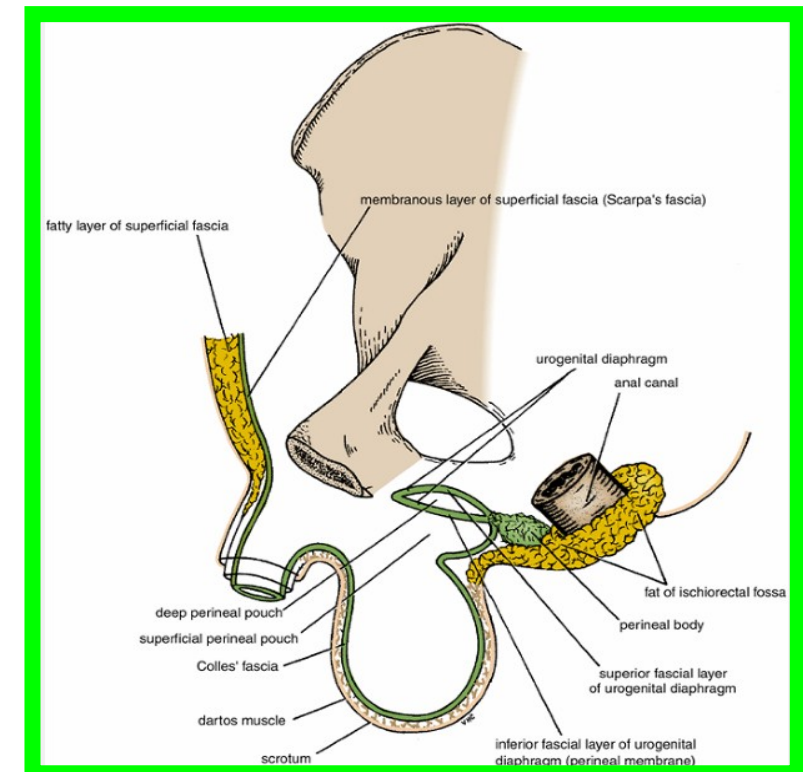
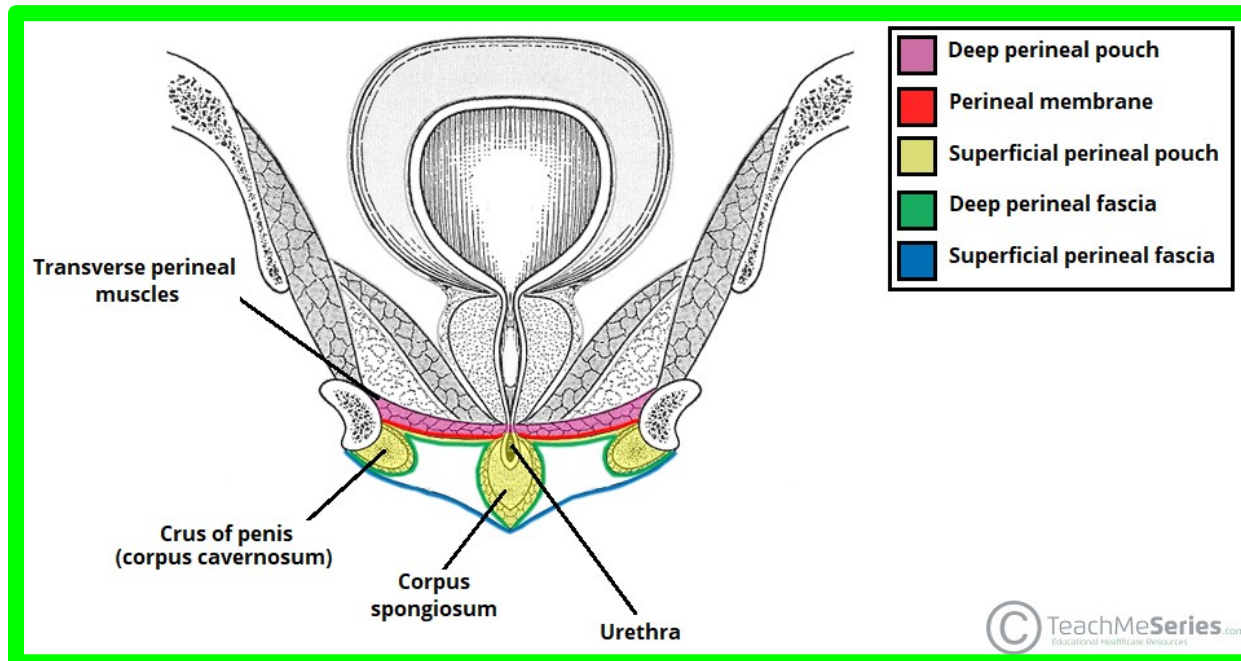
❑ Superficial Perineal Pouch

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** Boundaries

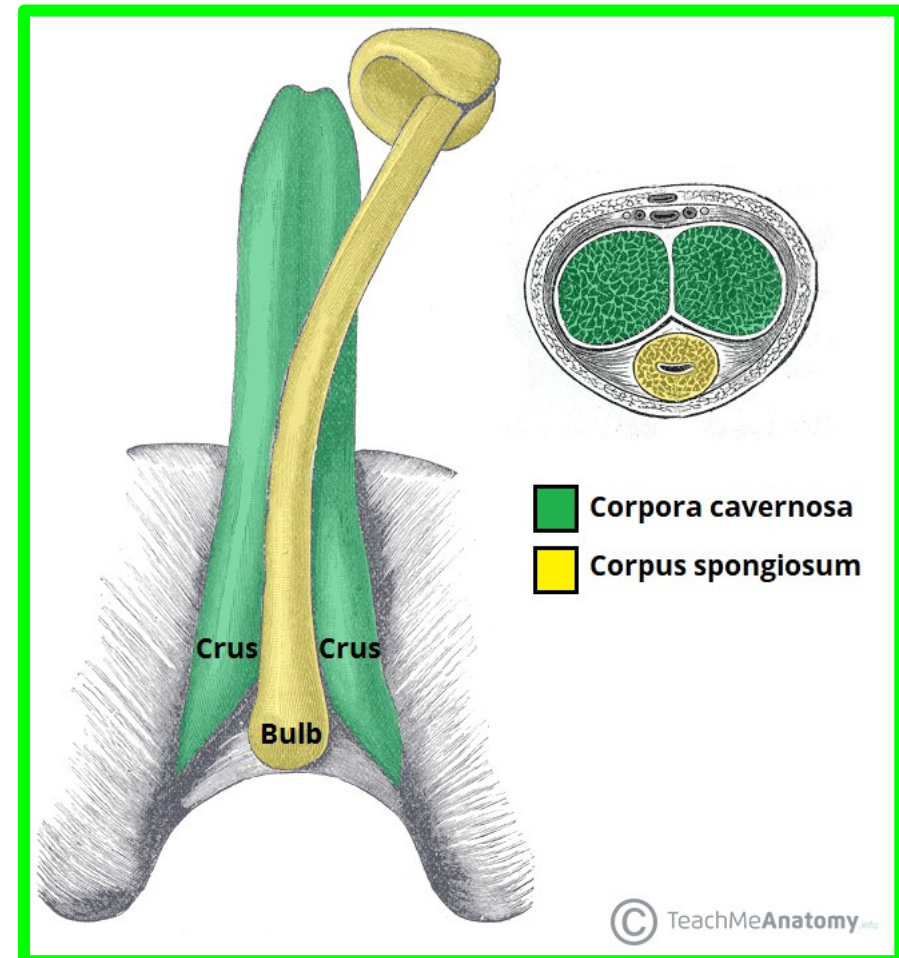
- 1- **Floor:** membranous layer of superficial fascia (**Colle's fascia**).
- 2- **Roof:** perineal membrane.
- 3- **On each side:** pubic arch.
- 4- **Posteriorly:** closed by the attachment of the roof and floor.
- 5- **Anteriorly:** opened.



• Contents of Superficial Perineal Pouch

A- Root of the penis

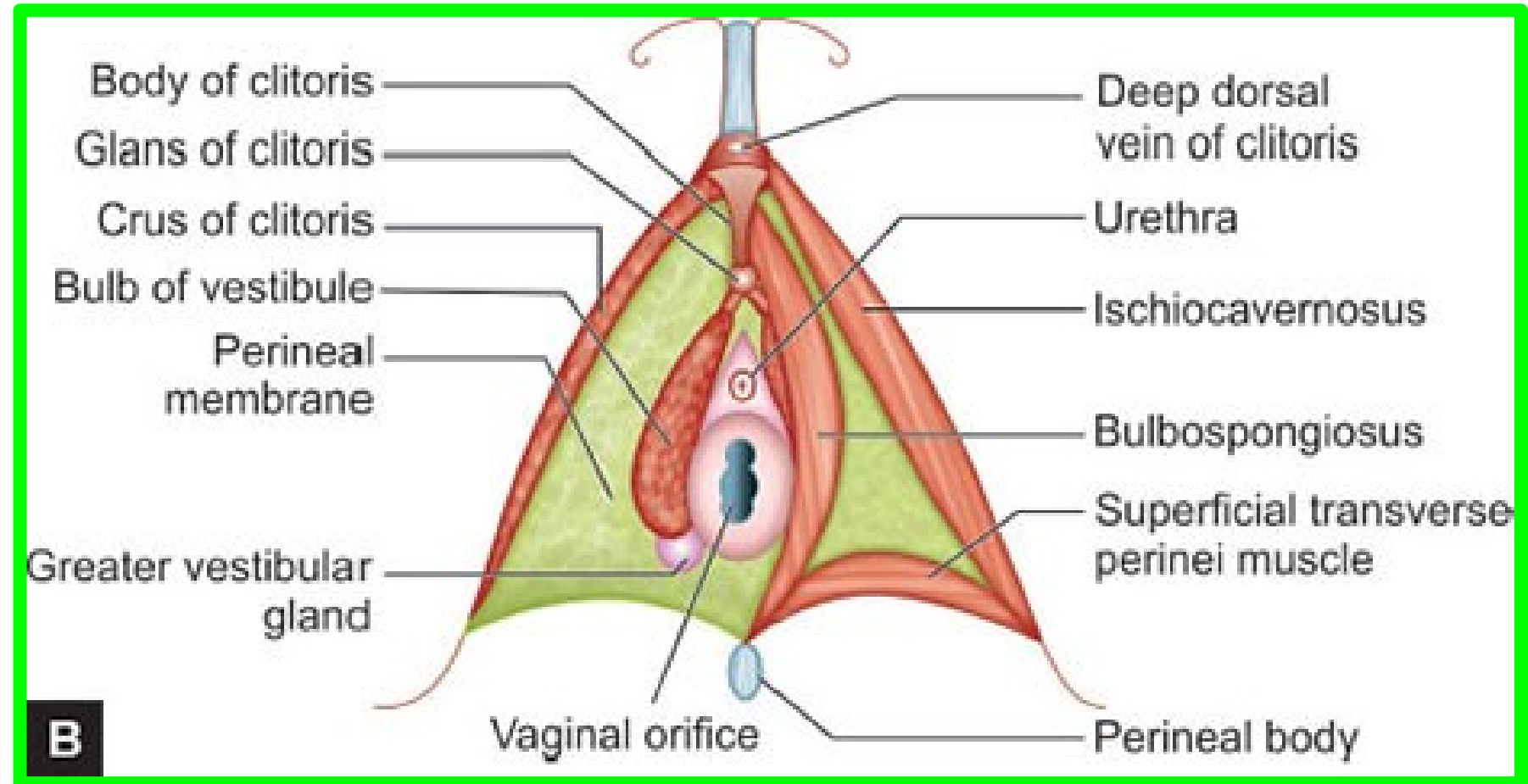
- 1- **Bulb of the penis:** is the posterior part of the corpus spongiosum.
- 2- **2 Crura of the penis:** is the posterior part of the corpora cavernosum.
- 3- **Penile urethra** inside the bulb of the penis.



• Contents of Superficial Perineal Pouch

N.B- In Female

- 1- Root of the clitoris.
- 2- Vestibule of the vagina and greater vestibular glands



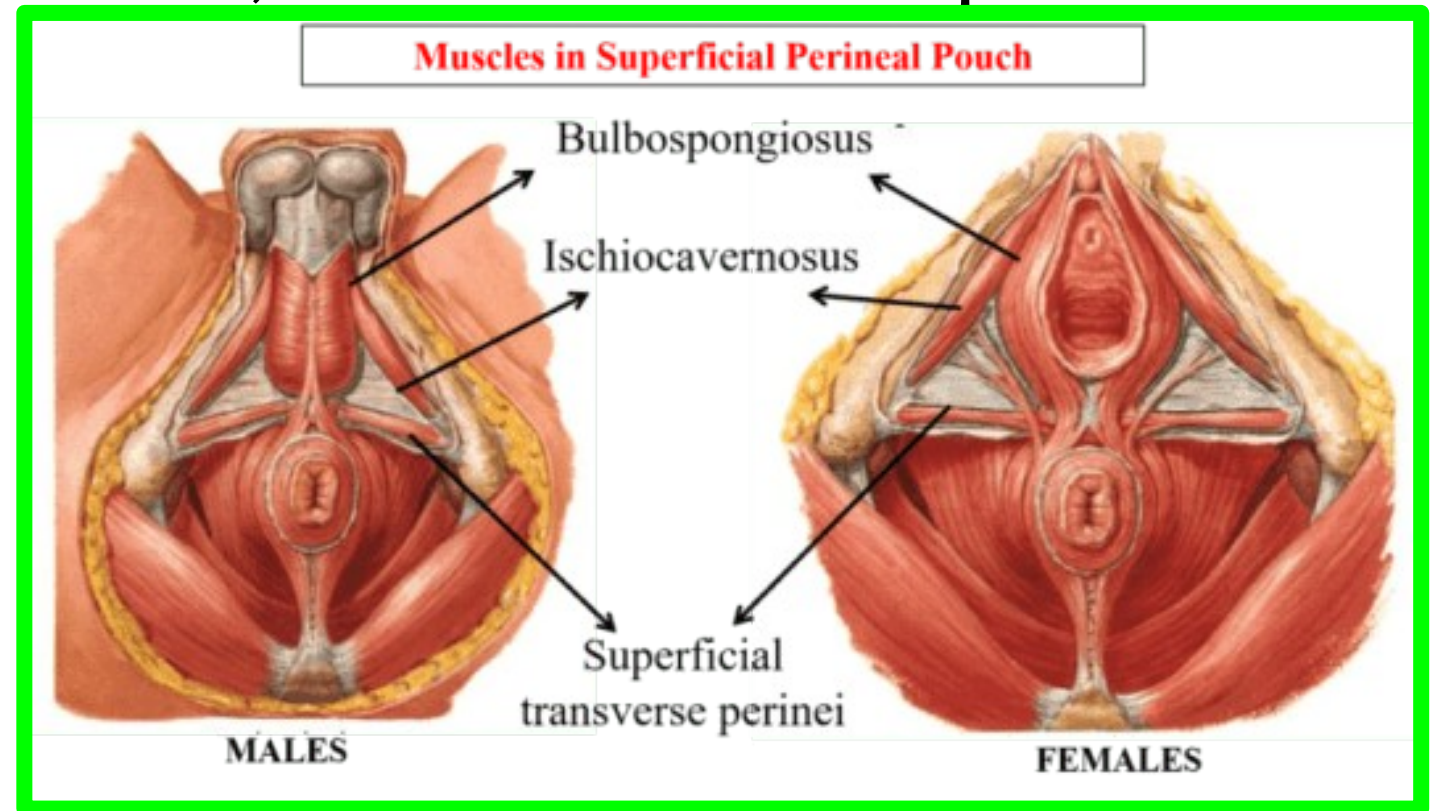
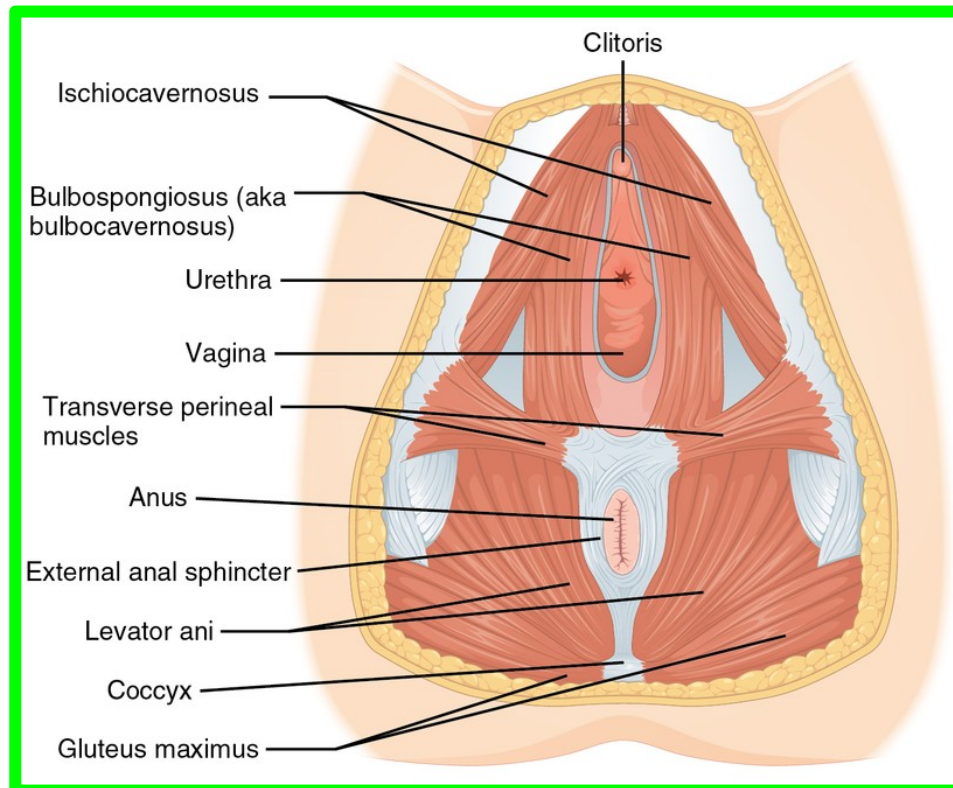
• Contents of Superficial Perineal Pouch

B- Superficial perineal muscles (right and left)

1- Superficial transversus perinei muscles. (** Action: fixation of the perineal body.)

2- Bulbospongiosus muscles. ** Action; Empty the urethra (contract at the end of micturition or ejaculation).

3- Ischiocavernosus muscles. ** Action, maintain erection of the penis and clitoris

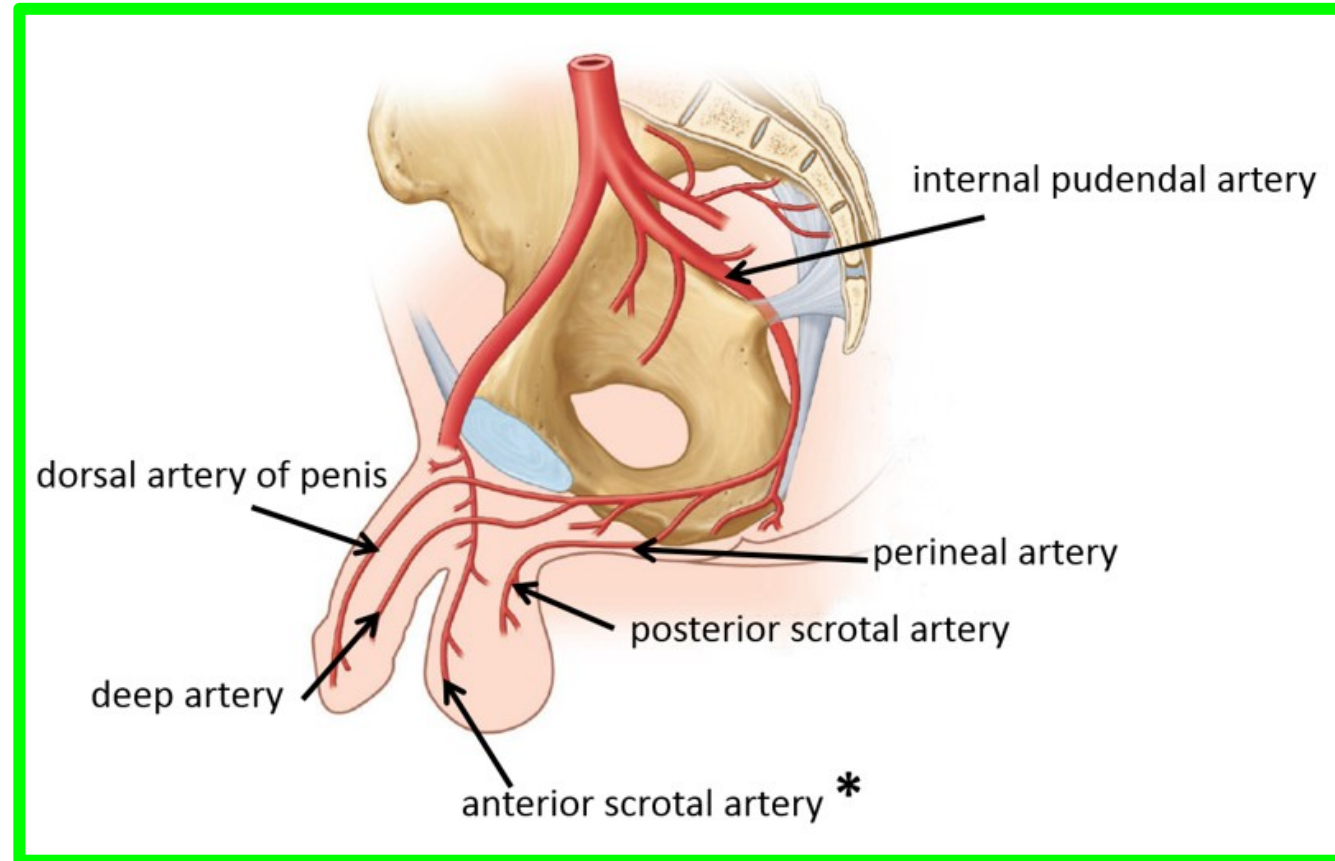


• Contents of Superficial Perineal Pouch

C. Blood Vessels (In male)

1- Posterior scrotal artery: from the perineal branch of the internal pudendal artery.

2- Deep artery of the penis (one of the two terminal branch of internal pudendal artery).



3- Dorsal artery of the penis (one of the two terminal branch of internal pudendal artery).

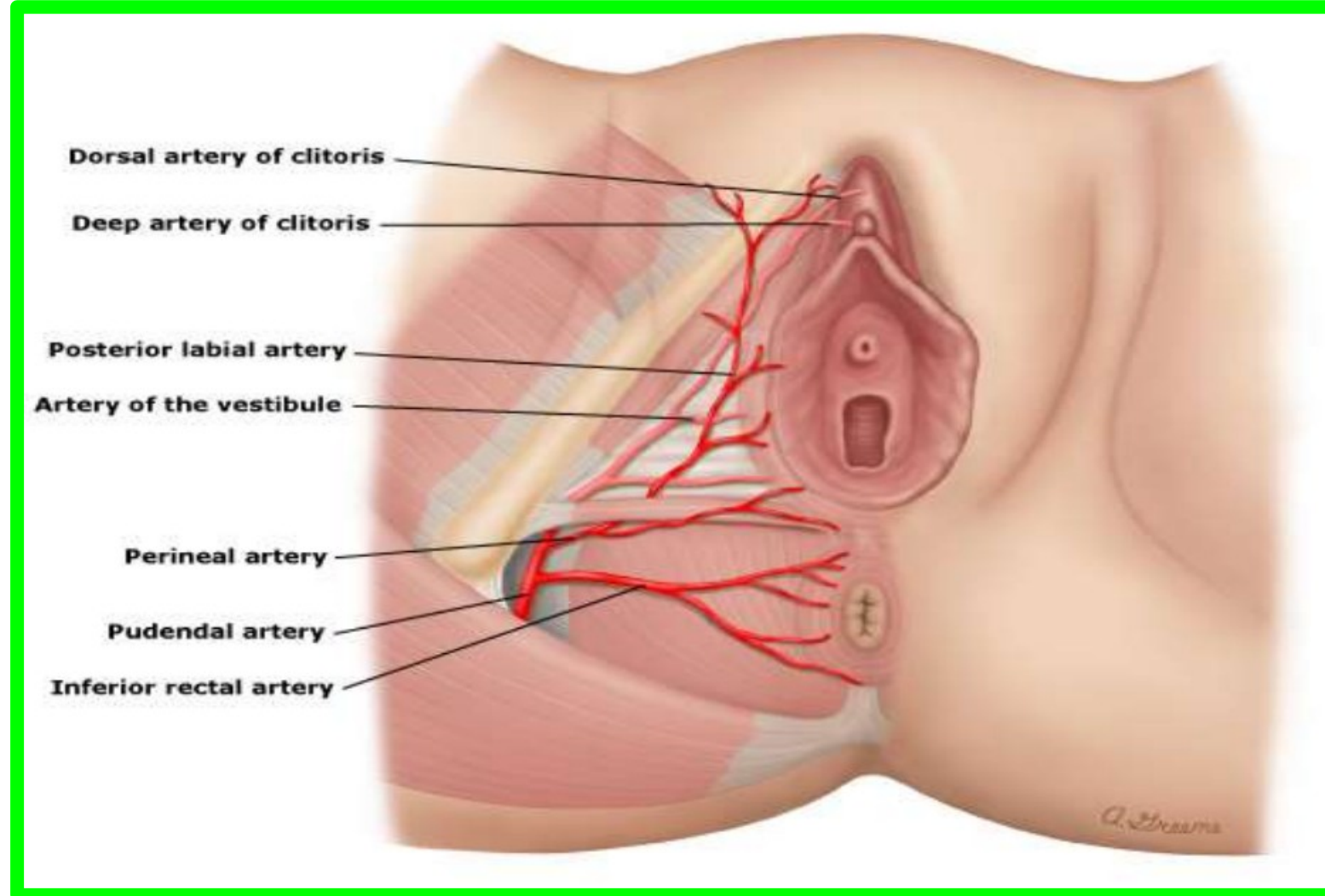
4- Artery of the bulb of the penis

• Contents of Superficial Perineal Pouch

C. Blood Vessels (In Female)

1- Posterior labial artery,
from the perineal branch of
the internal pudendal
artery.

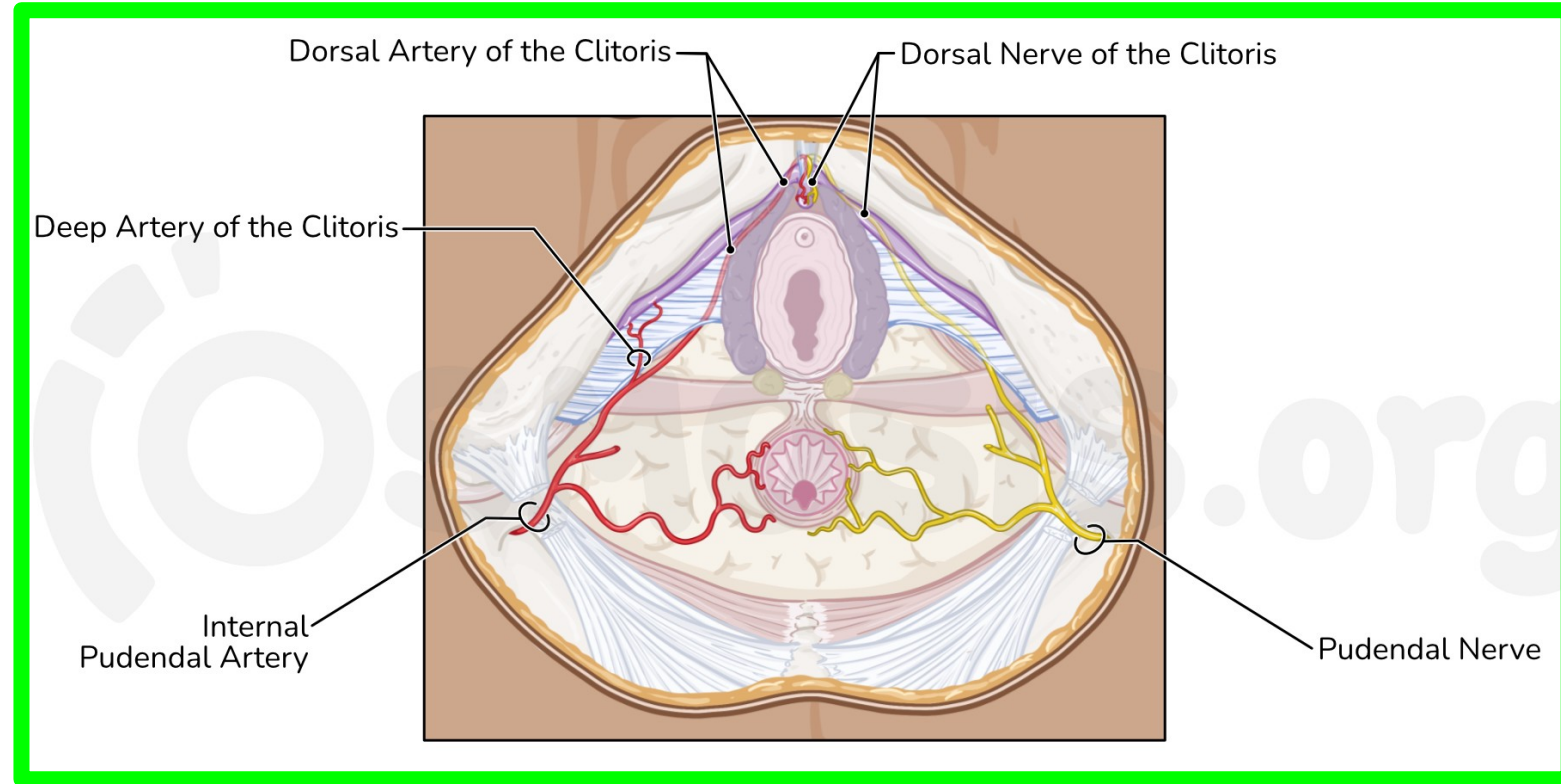
**2. Artery of the vestibule of
the vagina**



• Contents of Superficial Perineal Pouch

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C. Blood Vessels (In Female)



3- Deep artery of the clitoris (one of the two terminal branch of internal pudendal artery).

4- Dorsal artery of the clitoris (one of the two terminal branch of internal pudendal artery).

• Contents of Superficial Perineal Pouch

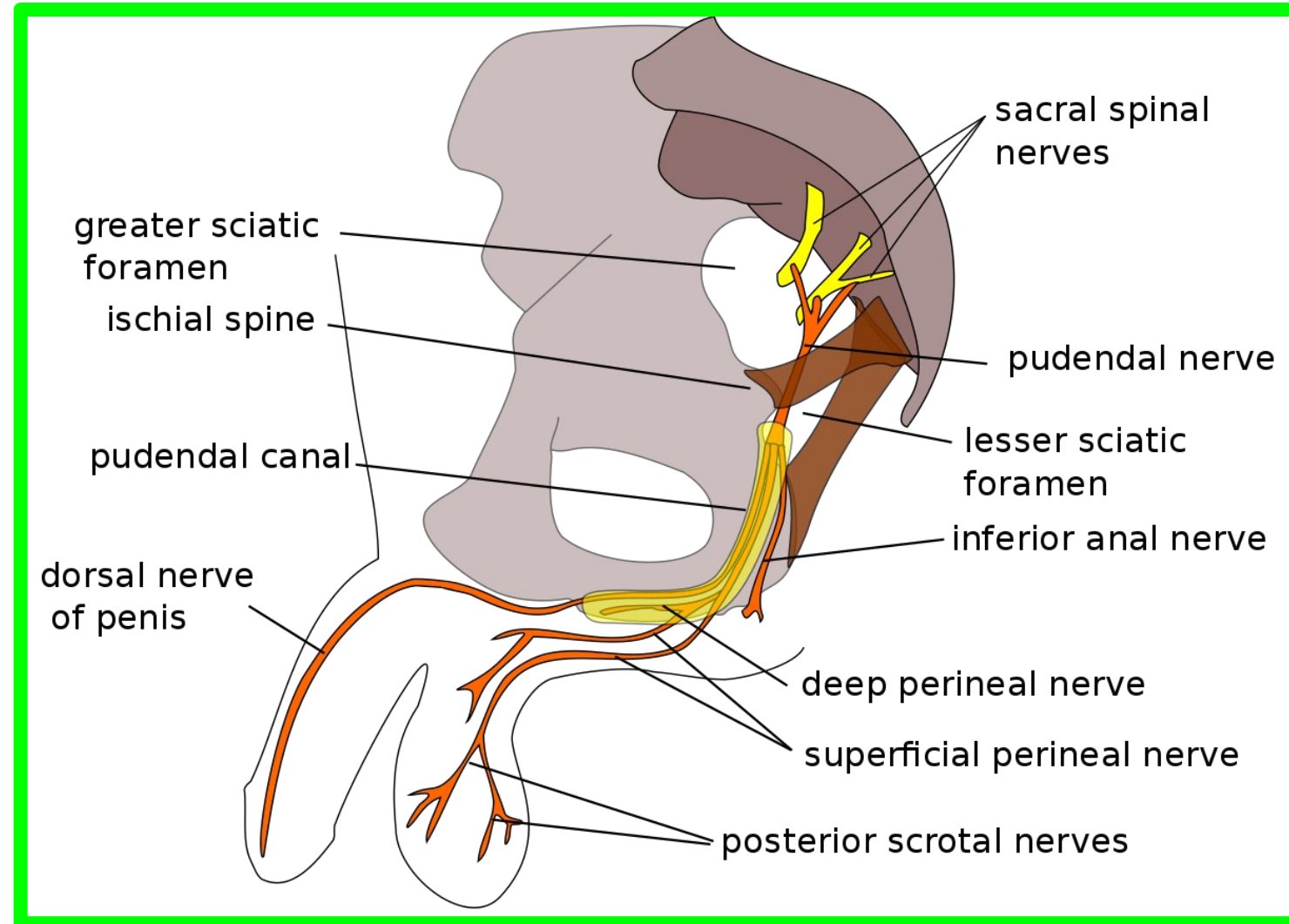
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D. Nerves (In Male)

1- Posterior scrotal nerve: arise from the perineal branch of **pudendal nerve** to the scrotum

2- Dorsal nerve of the penis : (one of the two terminal branch of **pudendal nerve**).



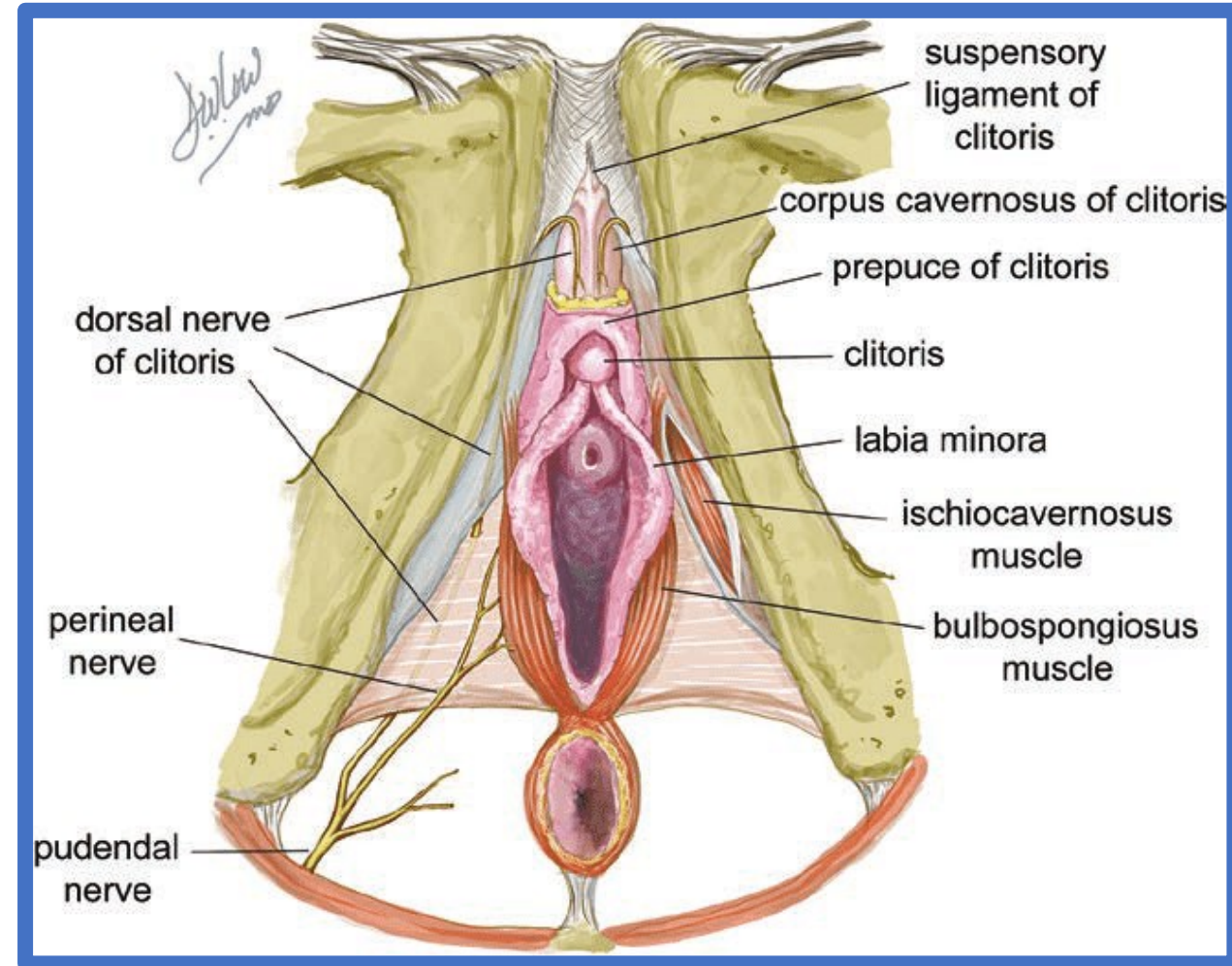
• Contents of Superficial Perineal Pouch

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D. Nerves (In Female)

1- Posterior labial nerve: arise from the perineal branch of **pudendal nerve** to the labia majora

2- Dorsal nerve of clitoris: (one of the two terminal branch of **pudendal nerve**).

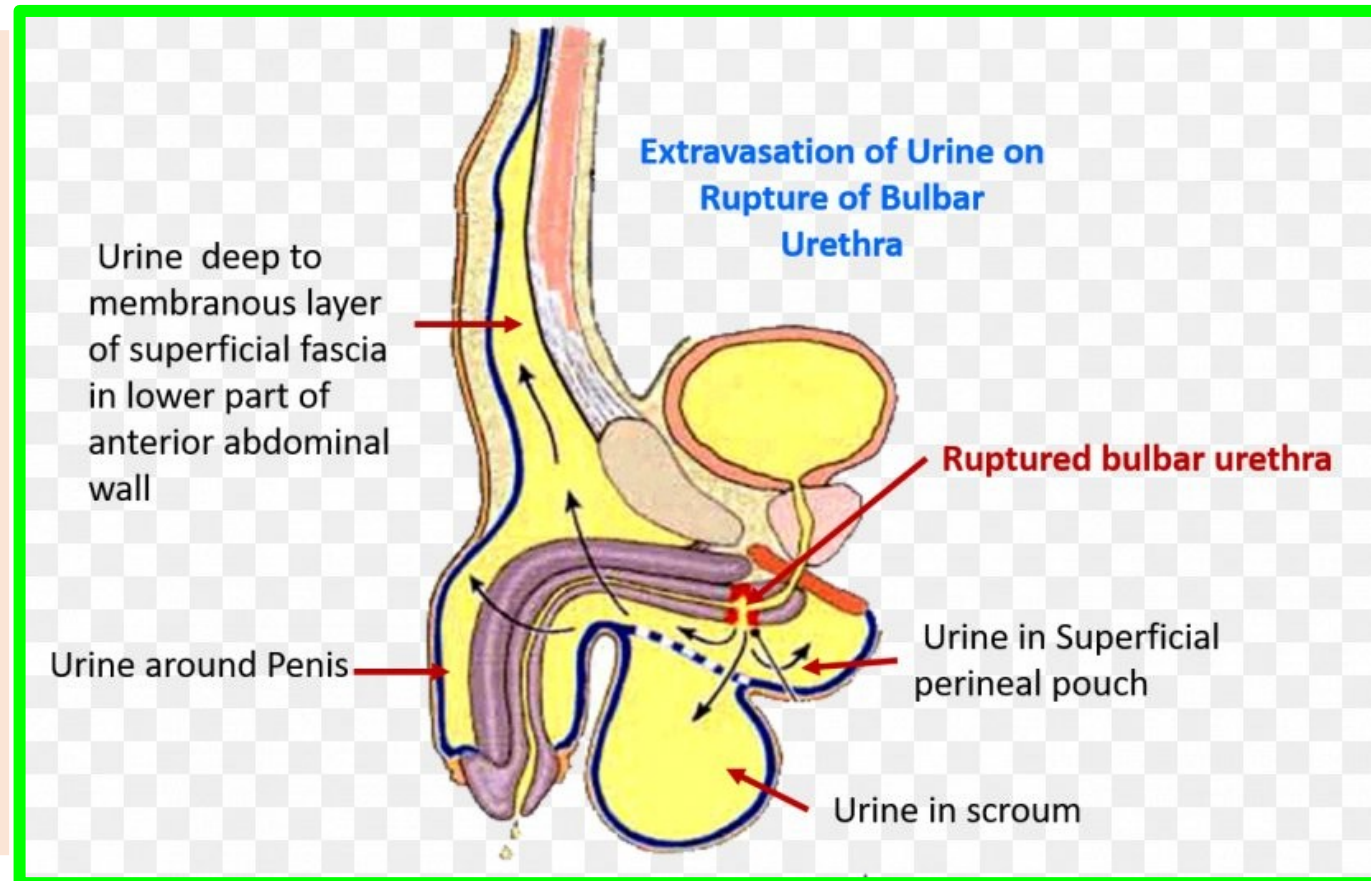


• Superficial Perineal Pouch

- ✓ **Superficial perineal pouch** is opened anteriorly where it is continuous with the space deep to the membranous layer of the superficial fascia of the anterior abdominal wall.

Rupture of the urethra leading to **extravasations of urine** into the superficial perineal pouch → to the anterior abdominal wall.

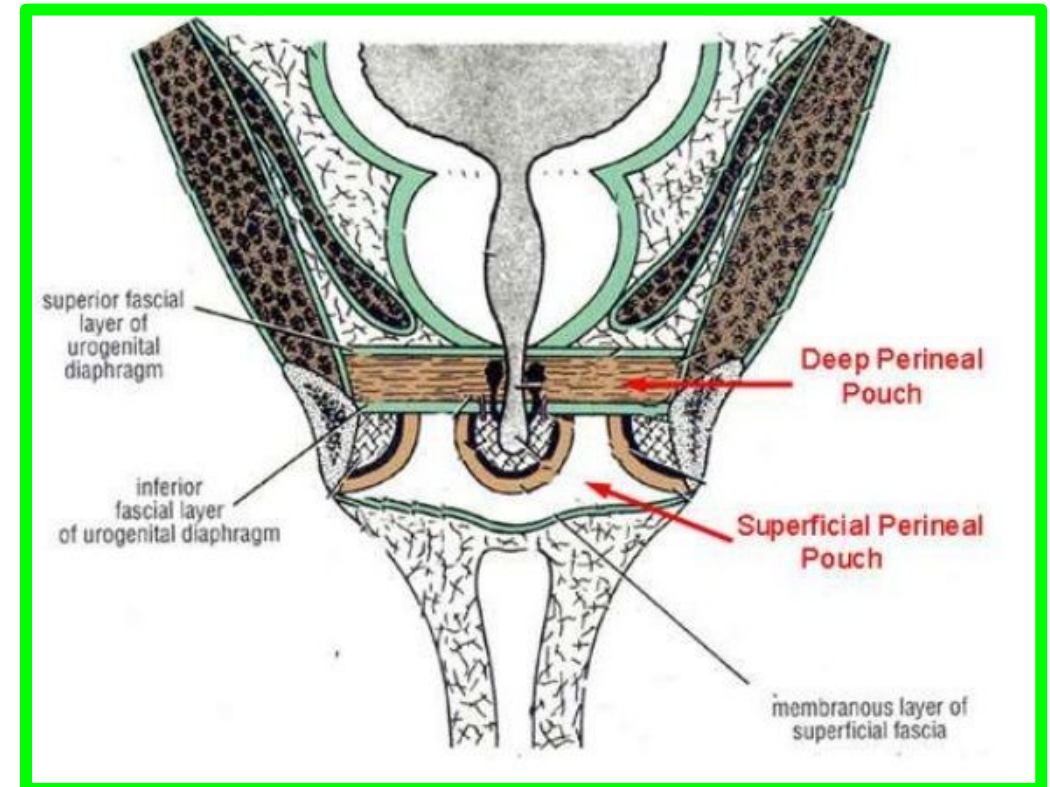
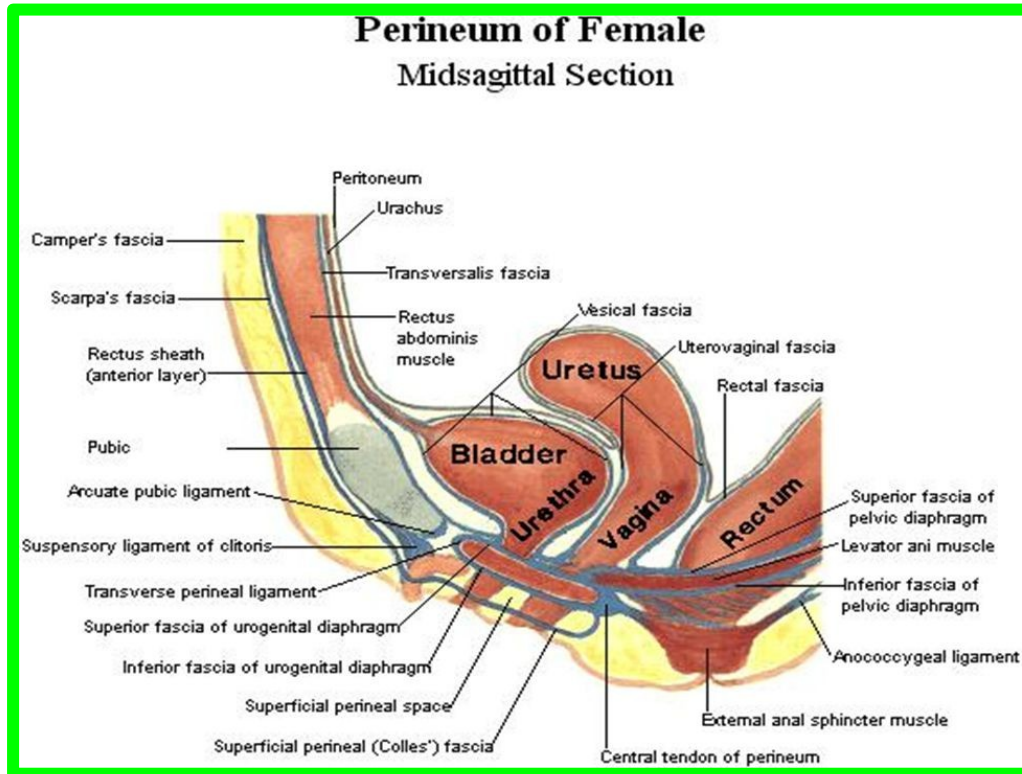
The urine also seeps to the front of the thigh till the fusion of membranous layer of superficial fascia with the deep fascia.



• Deep Perineal pouch

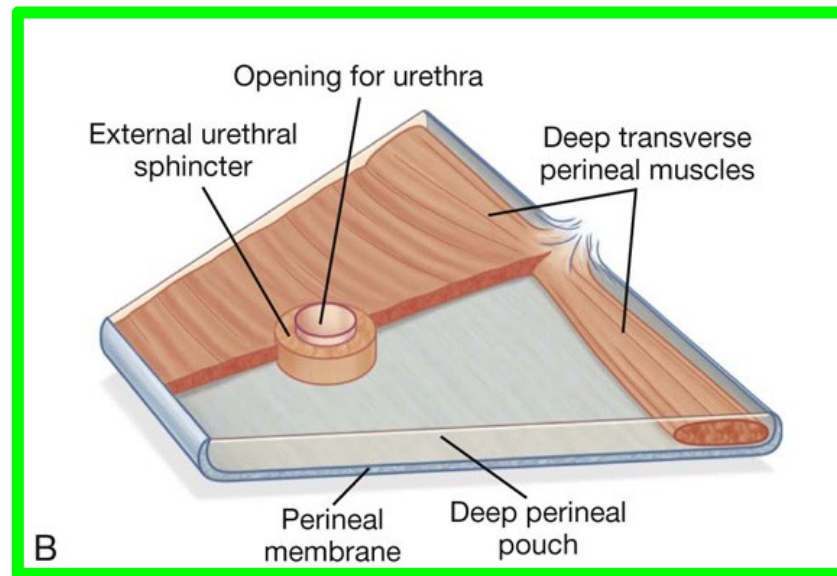
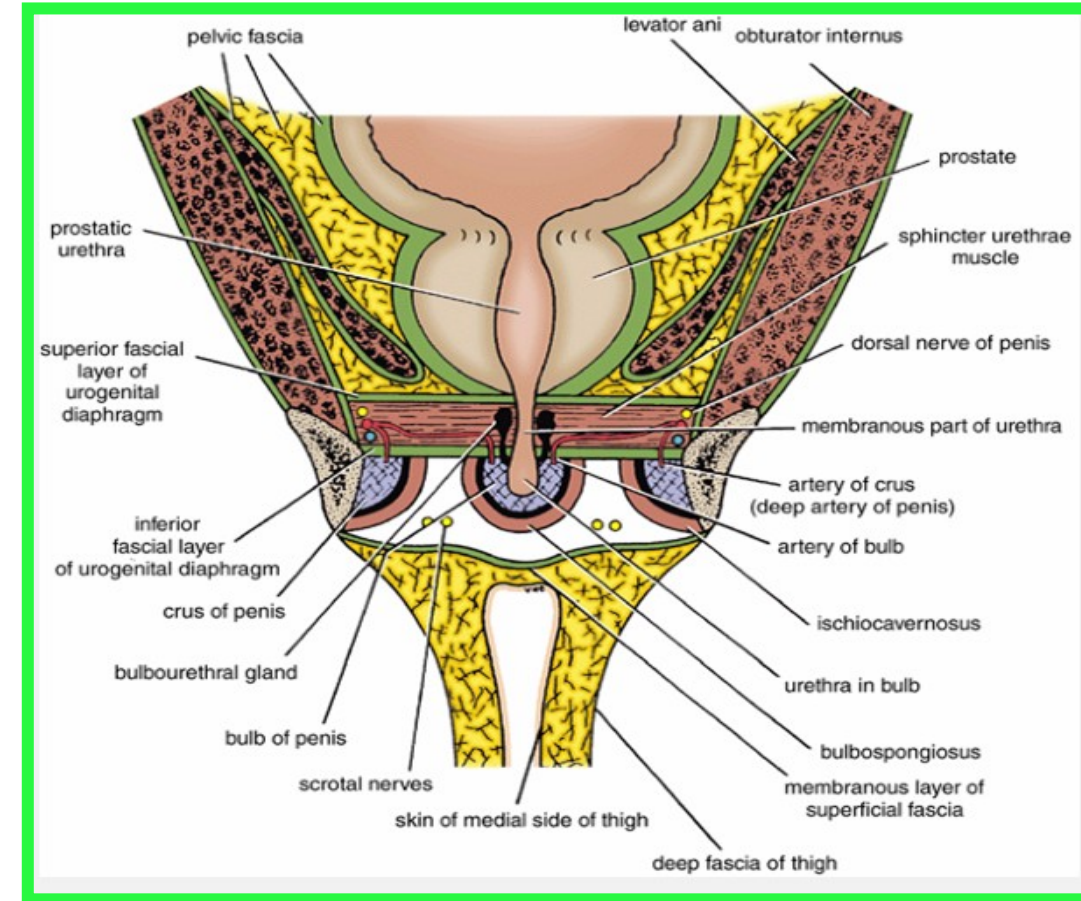
** Boundaries

- 1- **Roof:** superior fascia of the pelvic diaphragm.
- 2- **Floor:** perineal membrane (inferior fascia of the pelvic diaphragm).
- 3- **On each side:** pubic arch.
- 4- **Anteriorly and posteriorly:** closed by the fusion of the roof and floor.



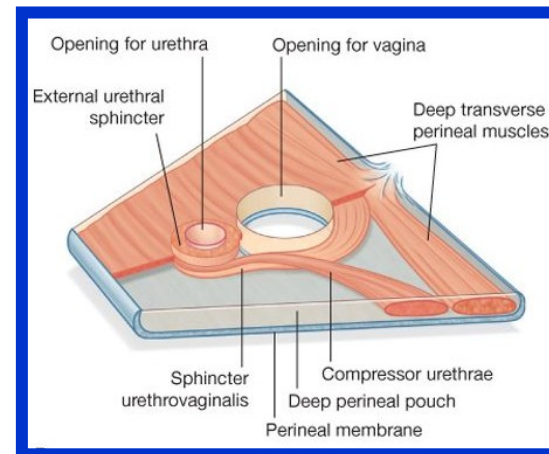
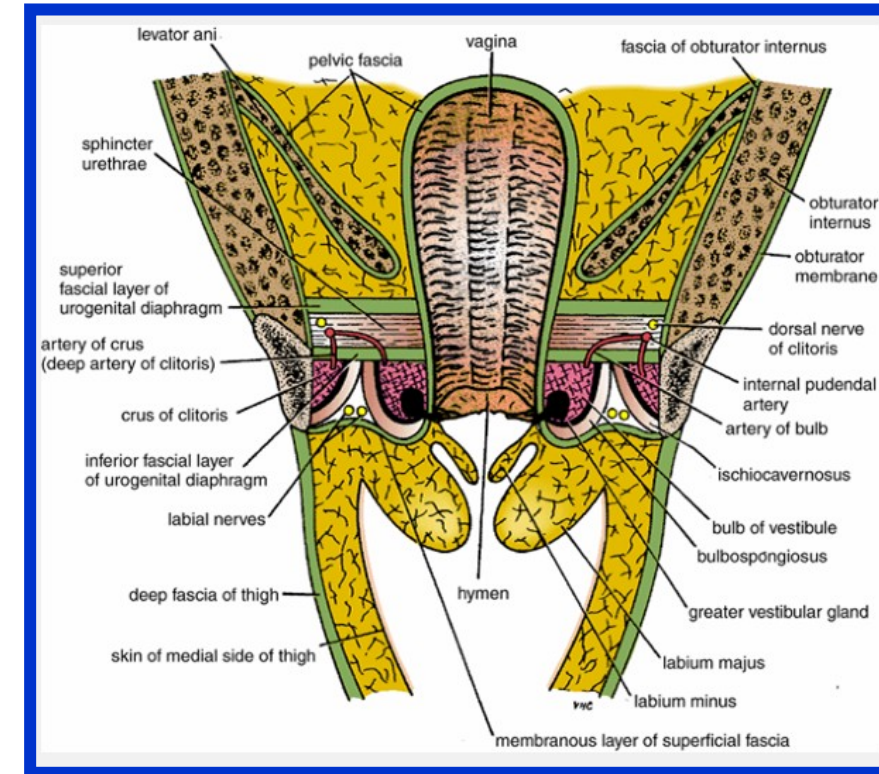
**** Contents of the deep perineal pouch in male**

- ❖ Membranous urethra
- ❖ The sphincter urethrae
- ❖ The bulbourethral glands
- ❖ The deep transverse perineal muscles
- ❖ The internal pudendal vessels and their branches
- ❖ The dorsal nerves of the penis



** Contents of the deep perineal pouch in female

- ❖ **Urethra:** In the median plane closely anterior to the vagina.
- ❖ **Vagina:** in the median plane.
- ❖ **The sphincter urethrae** which is pierced by the urethra and the vagina
- ❖ **The deep transverse perineal muscles**
- ❖ **The internal pudendal vessels and their branches; and**
- ❖ **The dorsal nerves of the clitoris.**



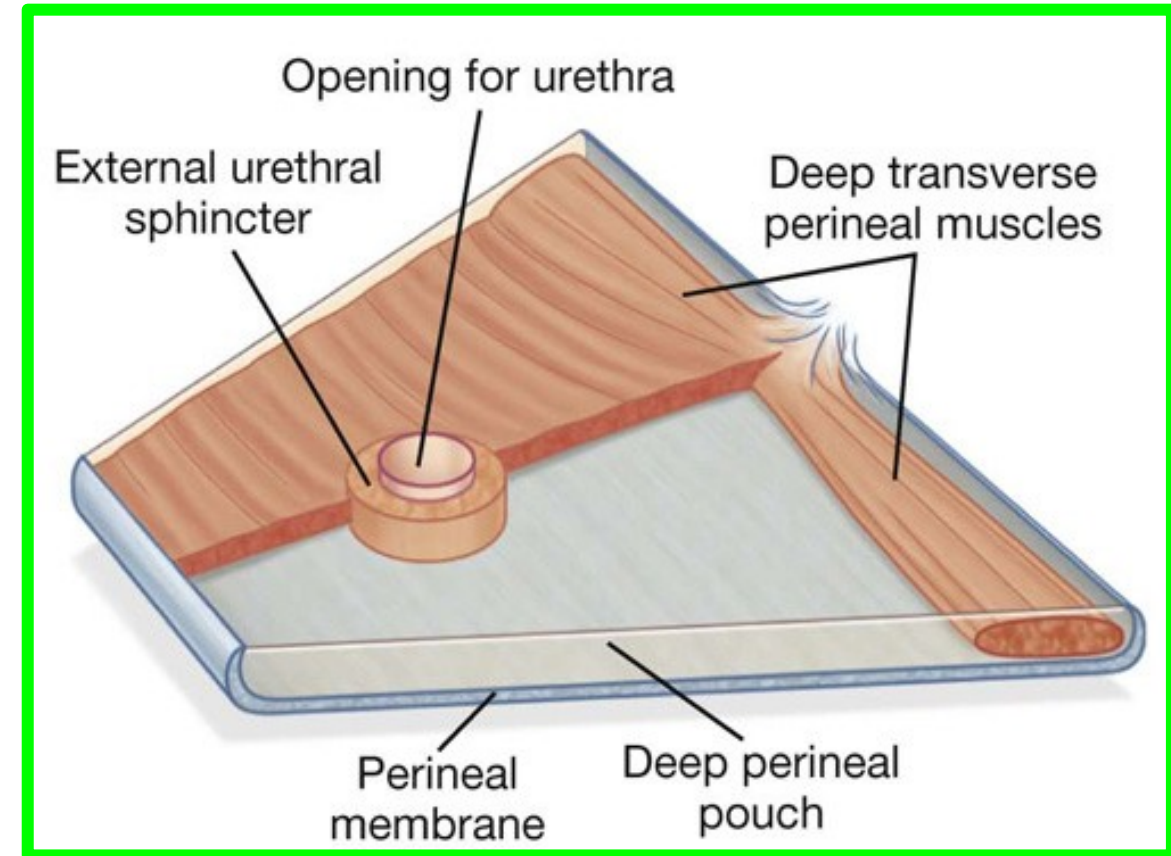
❖ Sphincter Urethrae Muscle

Surrounds the urethra in **the deep perineal pouch**. It arises from the pubic arch on the two sides and passes medially to encircle the urethra

Action

The muscle compresses the membranous part of the urethra and relaxes during **micturition**.

It is the means by which **micturition can be voluntarily stopped**



● Perineal Body

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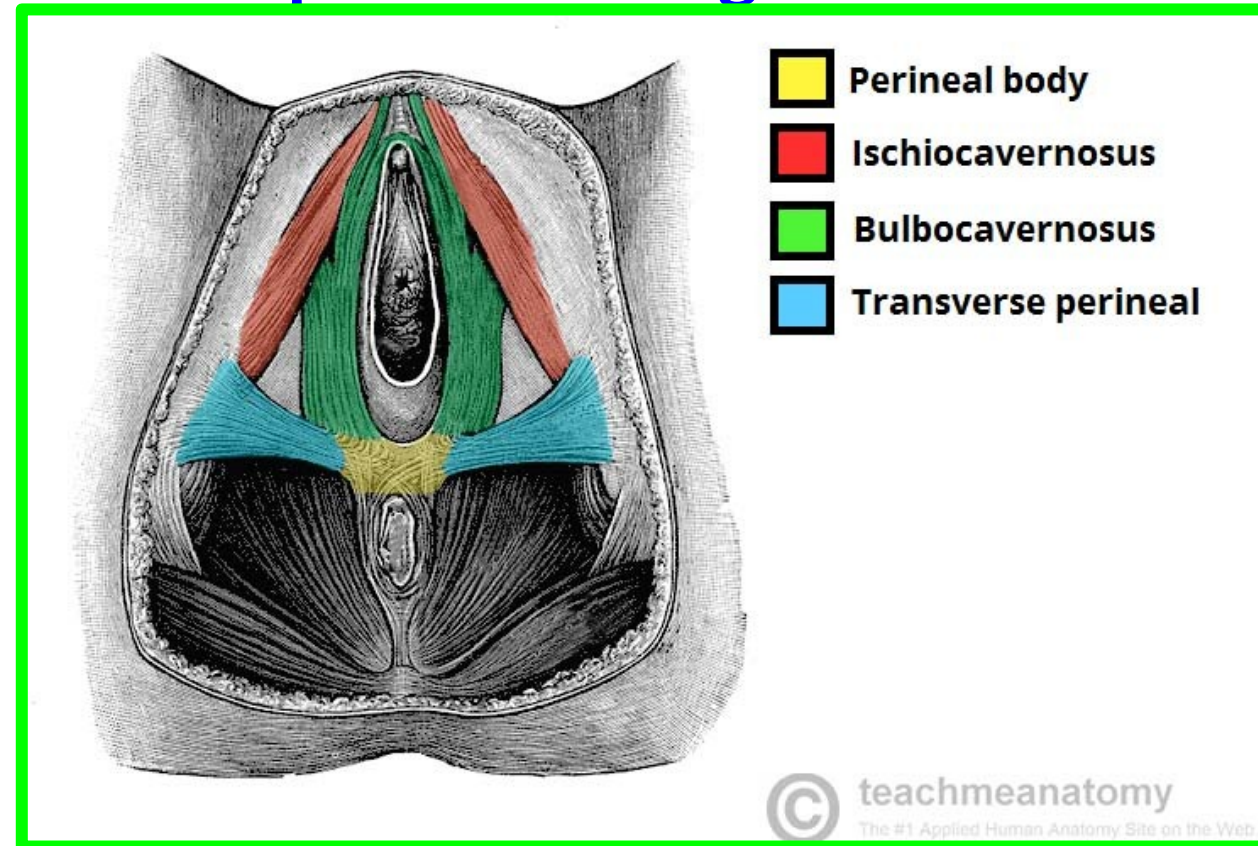
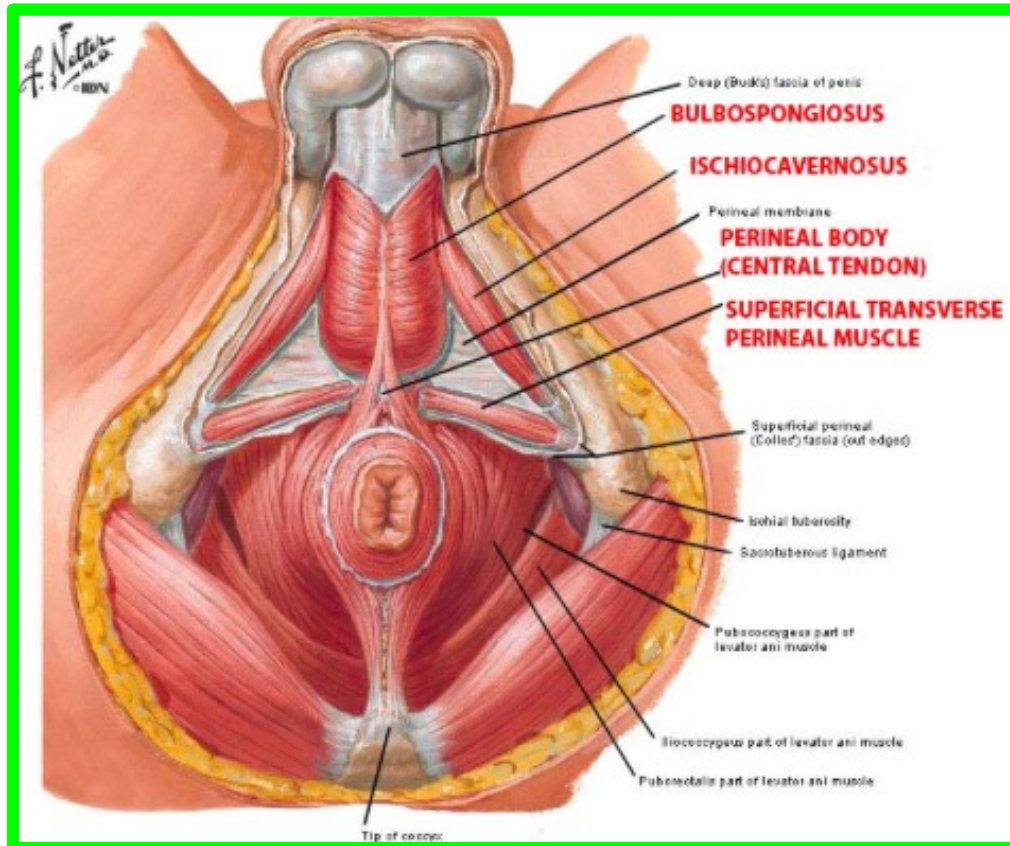
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- The perineal body is a median fibromuscular pyramidal mass.

**** Site:**

1) **In male:** between the **anal canal** and **bulb of the penis**.

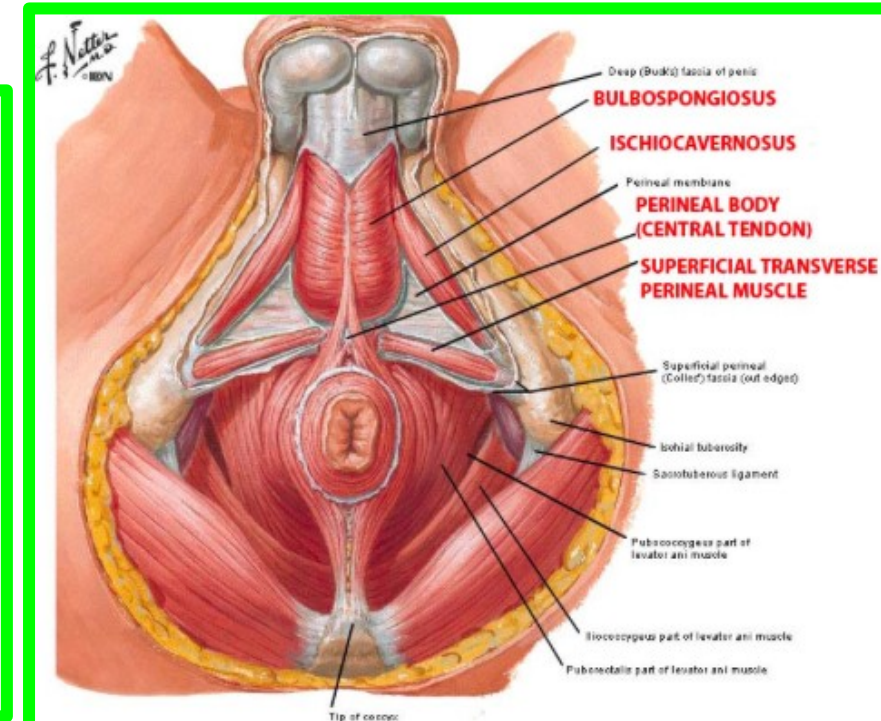
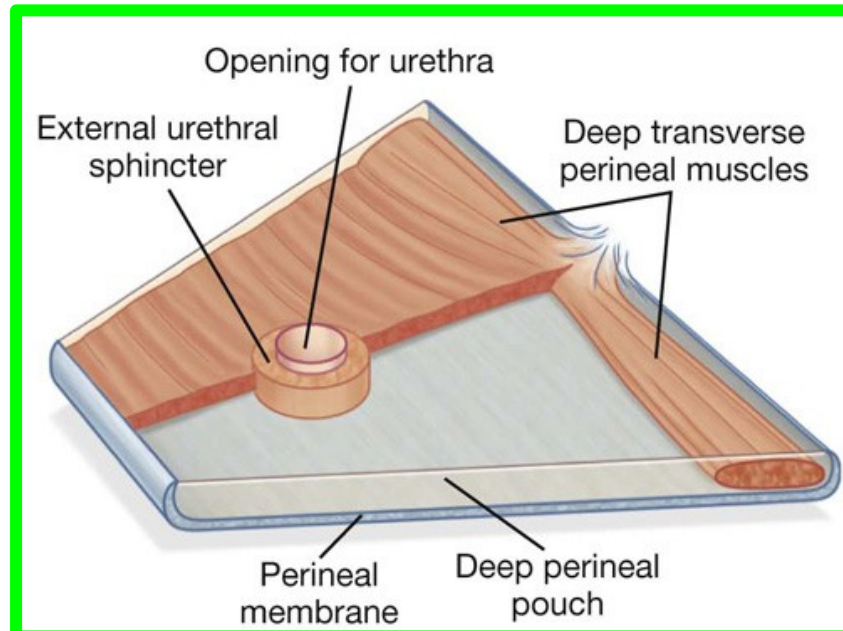
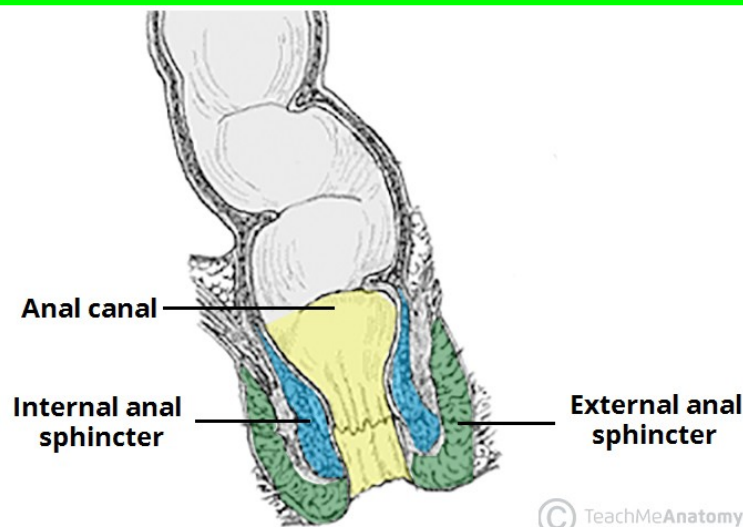
2) **In female:** between the **anal canal** and **lower part of the vagina**.



● Perineal Body

** Muscles attached to the perineal body:

- 1- External anal sphincter.
- 2- Sphincter of the urethra.
- 3- **Superficial transversus perinei muscles** (of both sides).
- 4- **Deep transversus perinei muscles** (of both sides).
- 5- Anterior parts of the levator ani (of both sides).
- 6- **Bulbospongiosus.**



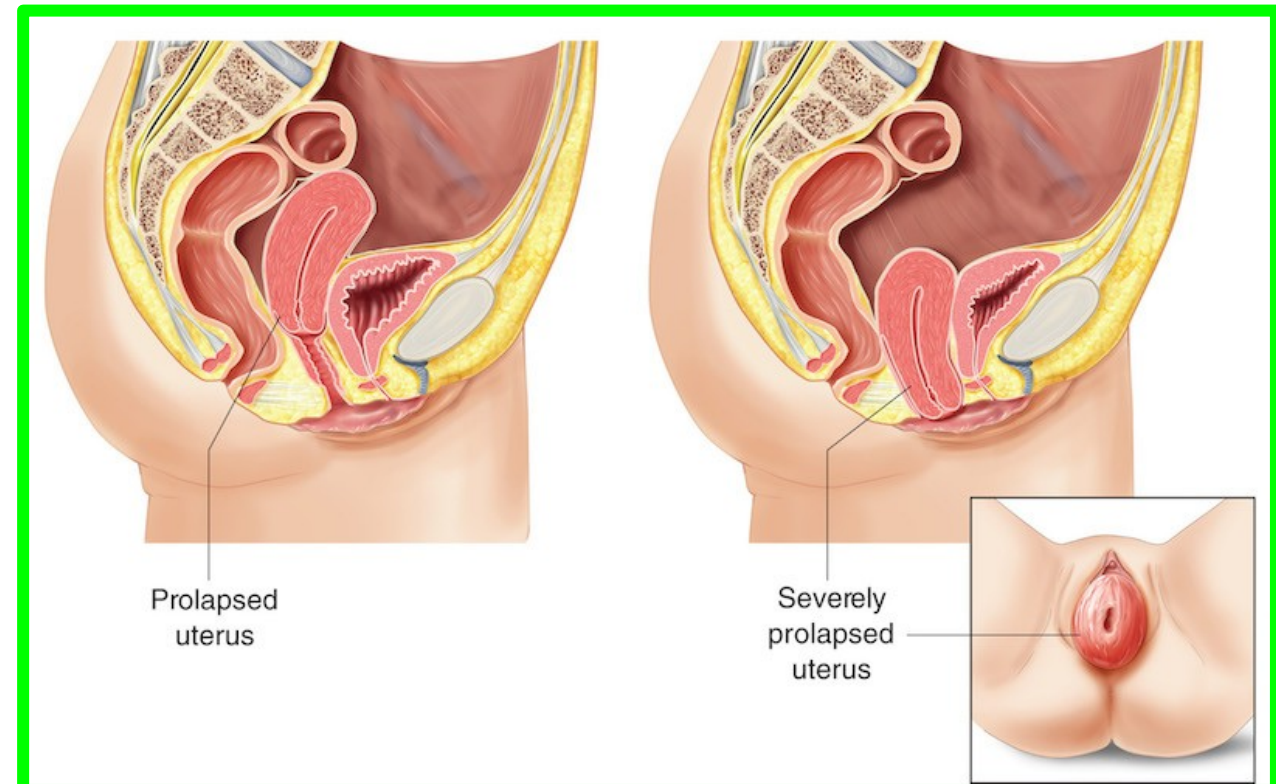
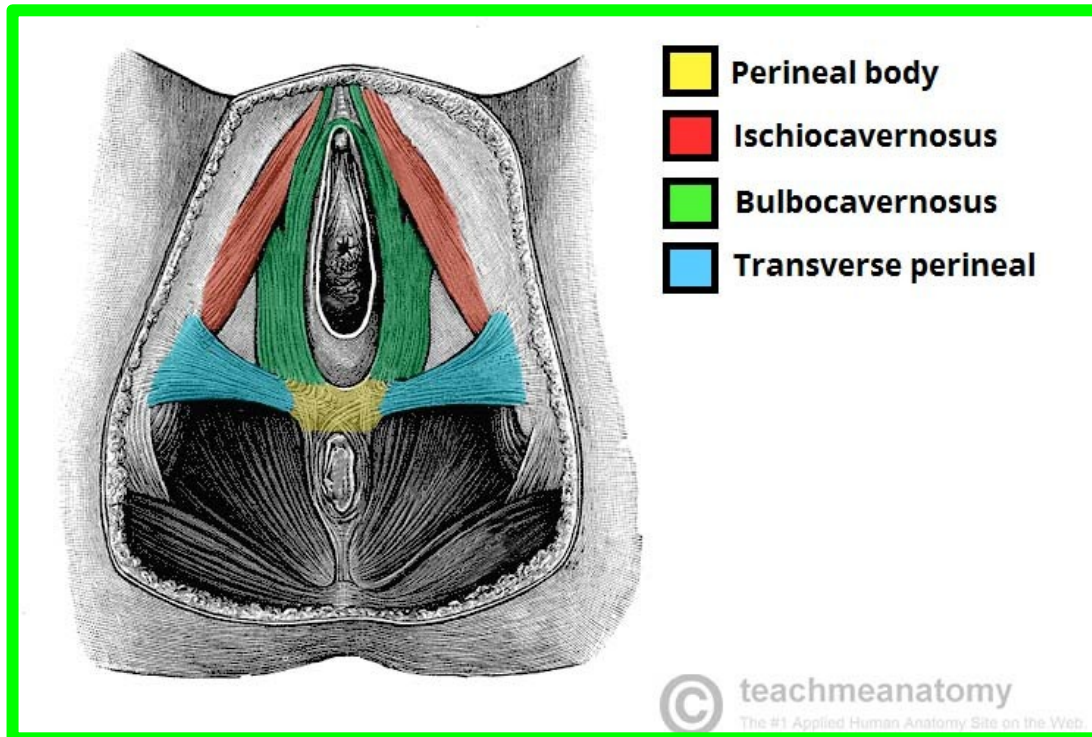
● Perineal Body

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** Applied anatomy:

- The perineal body is **essential to the integrity of the pelvic floor**.
- **Rupture of the perineal body** leads to widening of the gap between the anterior borders of the levator ani muscles. **This predisposes to the prolapse of the uterus.**



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