

Female Perineum

General features

Diamond-shaped area whose boundaries are those of the pelvic outlet and lie between :

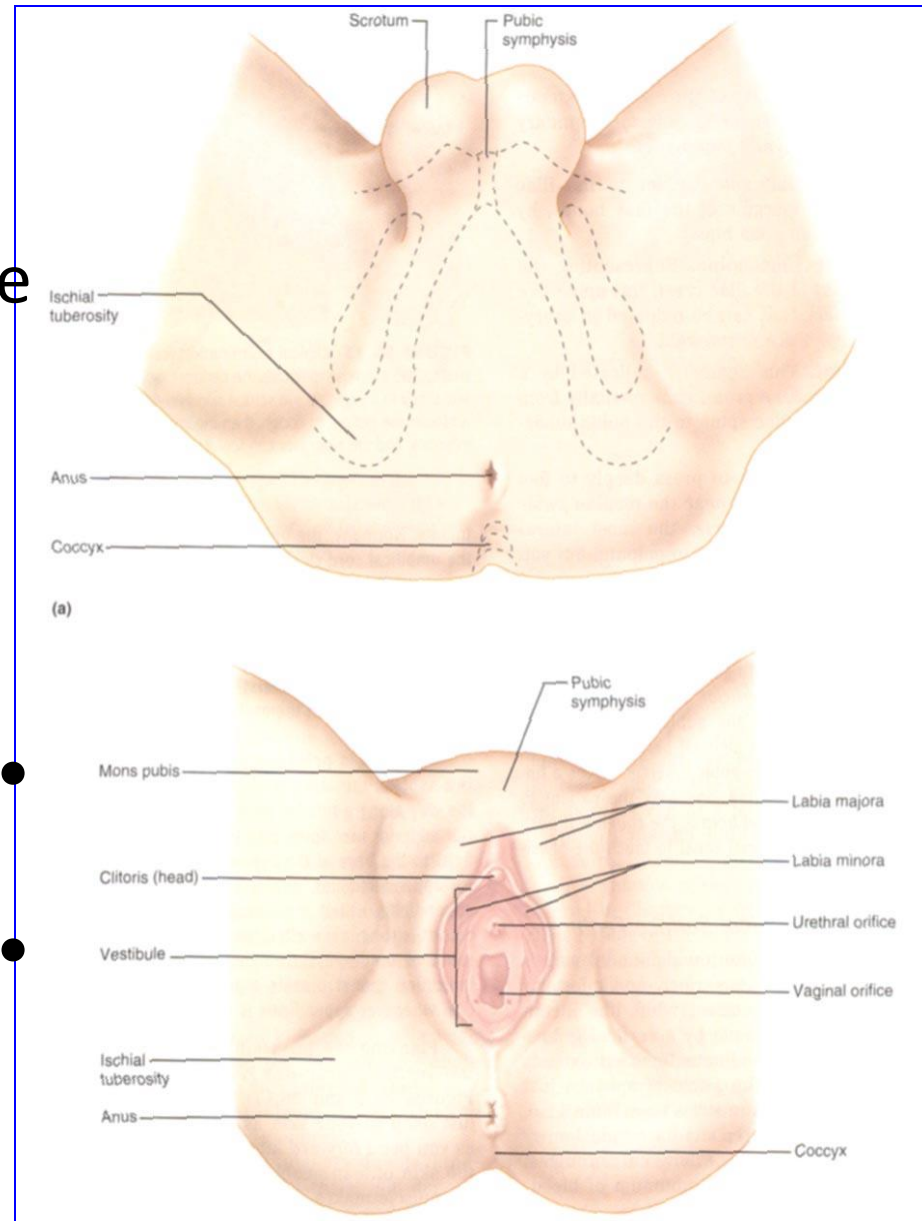
- Pubic symphysis (anteriorly) –
- Coccyx (posteriorly) –
- Ischial tuberosities (laterally) –

Male contain ●

- Scrotum, root of penis, anus –

Female contain ●

- External genitalia, anus –

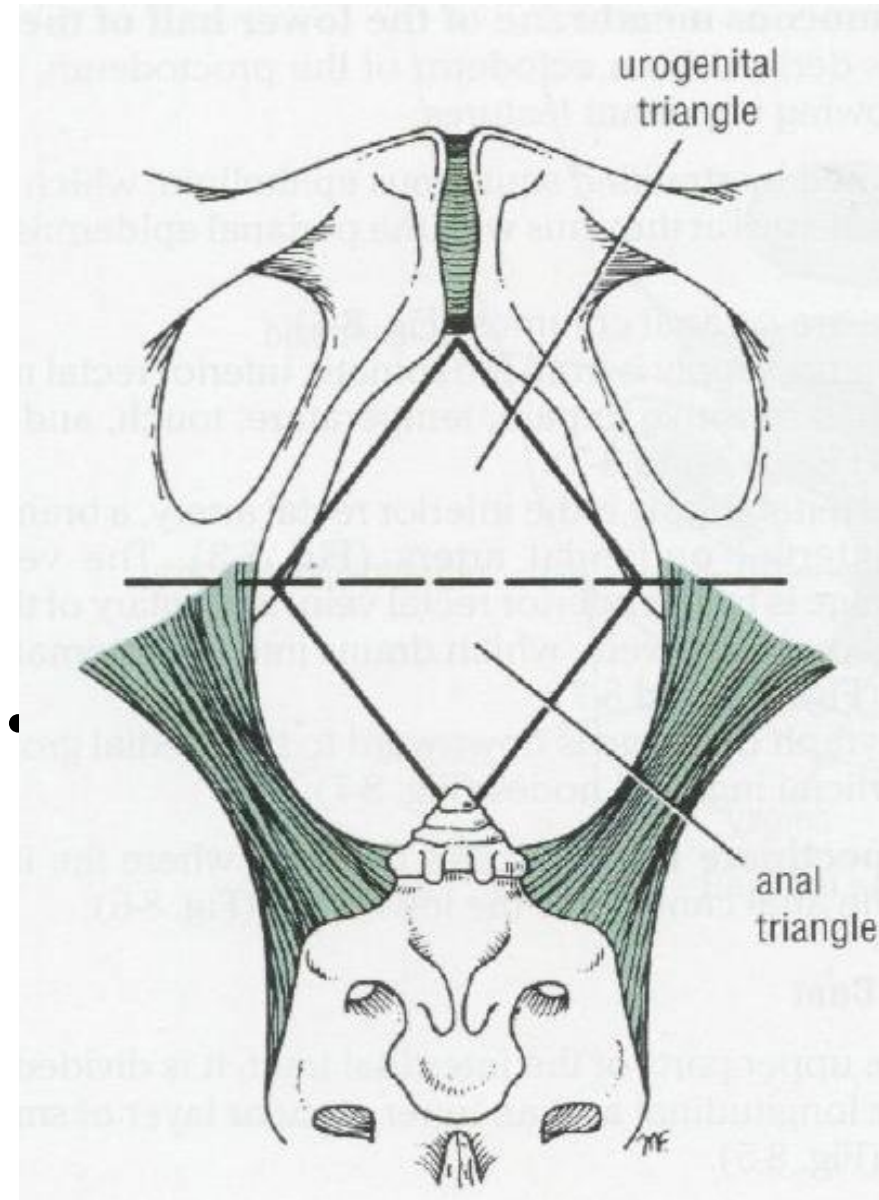


Two triangles

An imaginary line drawn between the two ischial tuberosities and passing immediately anterior to anus divides perineum into anterior and posterior triangles.

Anal region (posterior triangle)

similar in both sexes ,it is contains the termination of anal canal in the median plane and an ischiorectal fossa on each side.

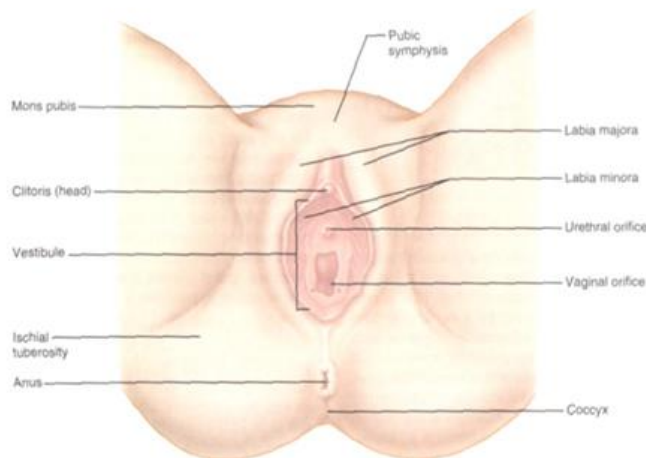
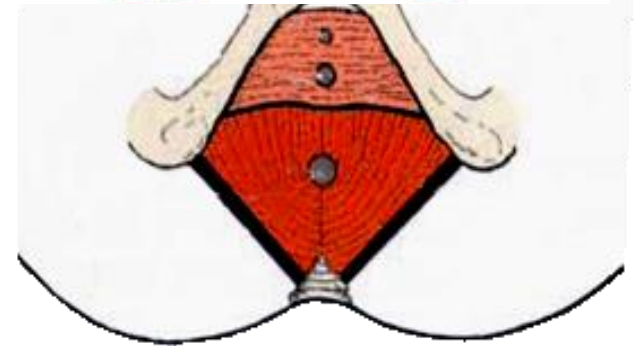
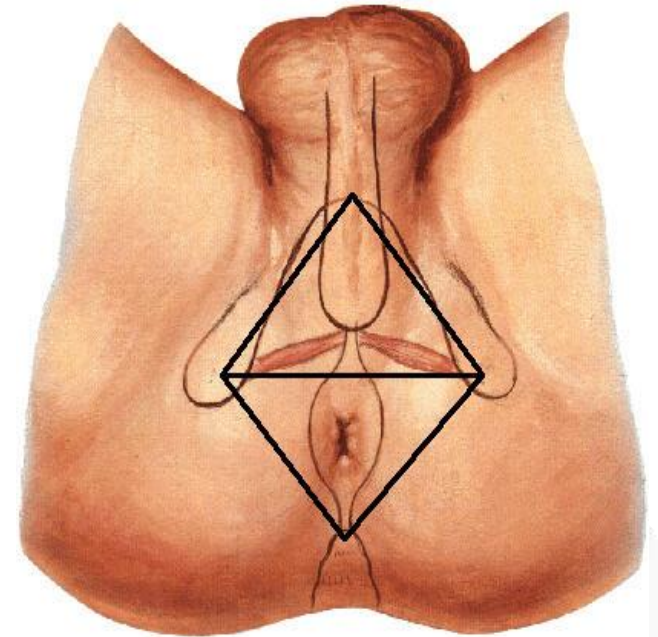


Urogenital region (anterior triangle)

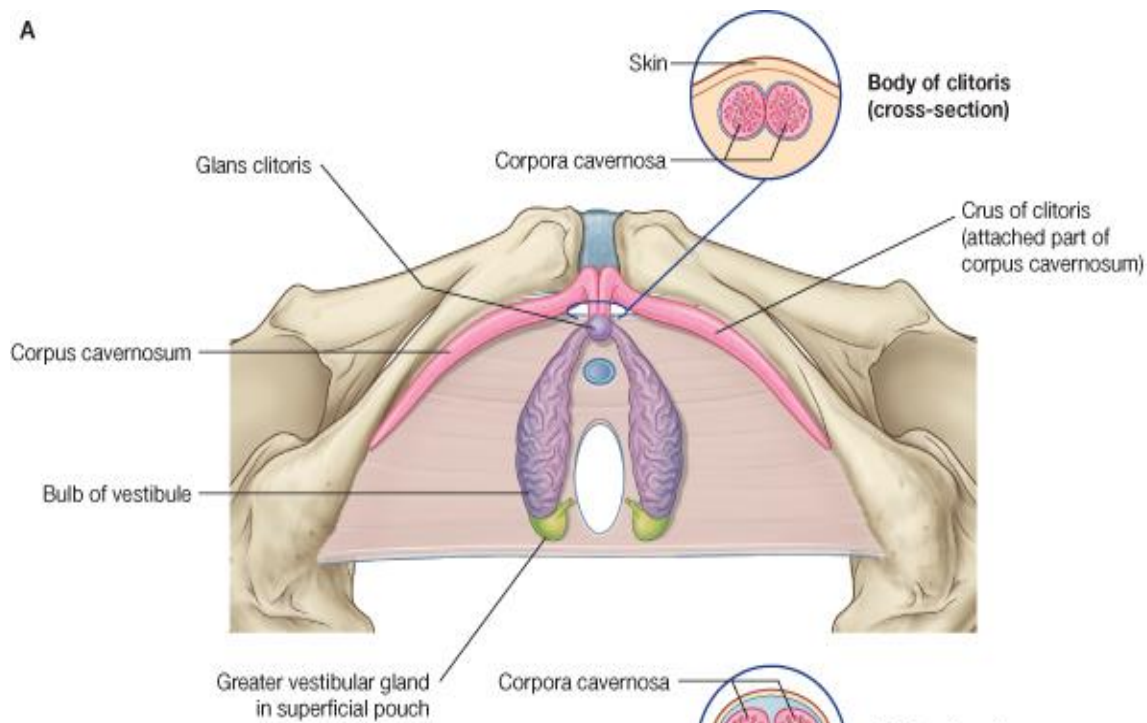
It contain in:

Males: Urethra enclosed by root of penis and partly hidden anteriorly by scrotum.

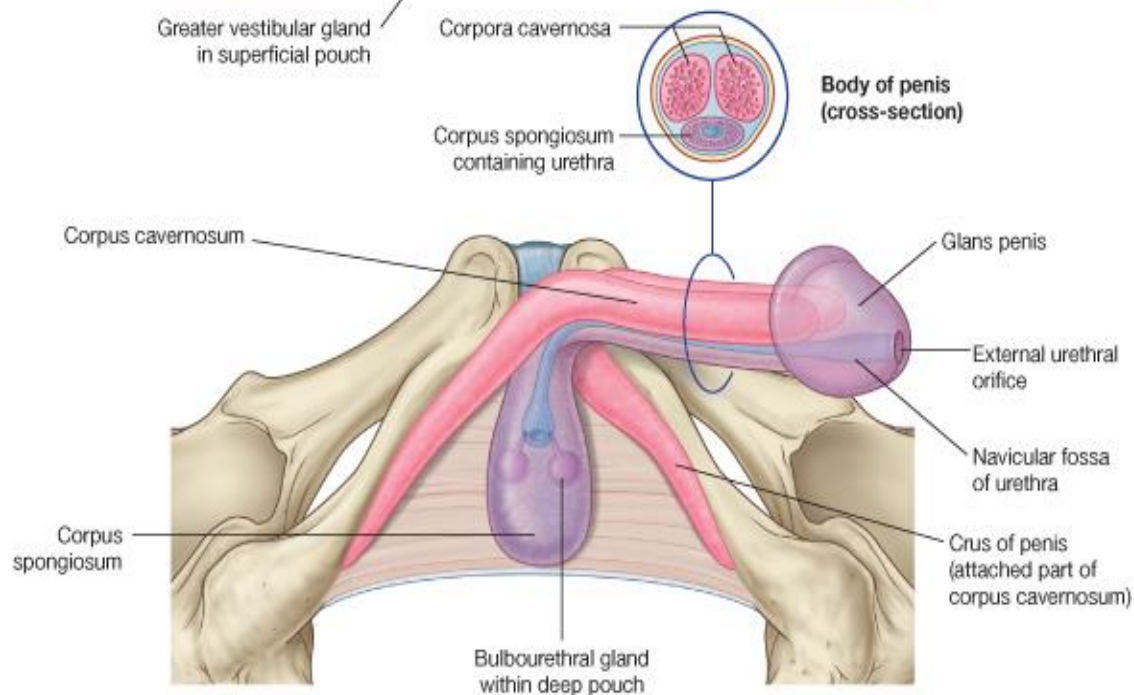
Females: the female external genital organs.



A

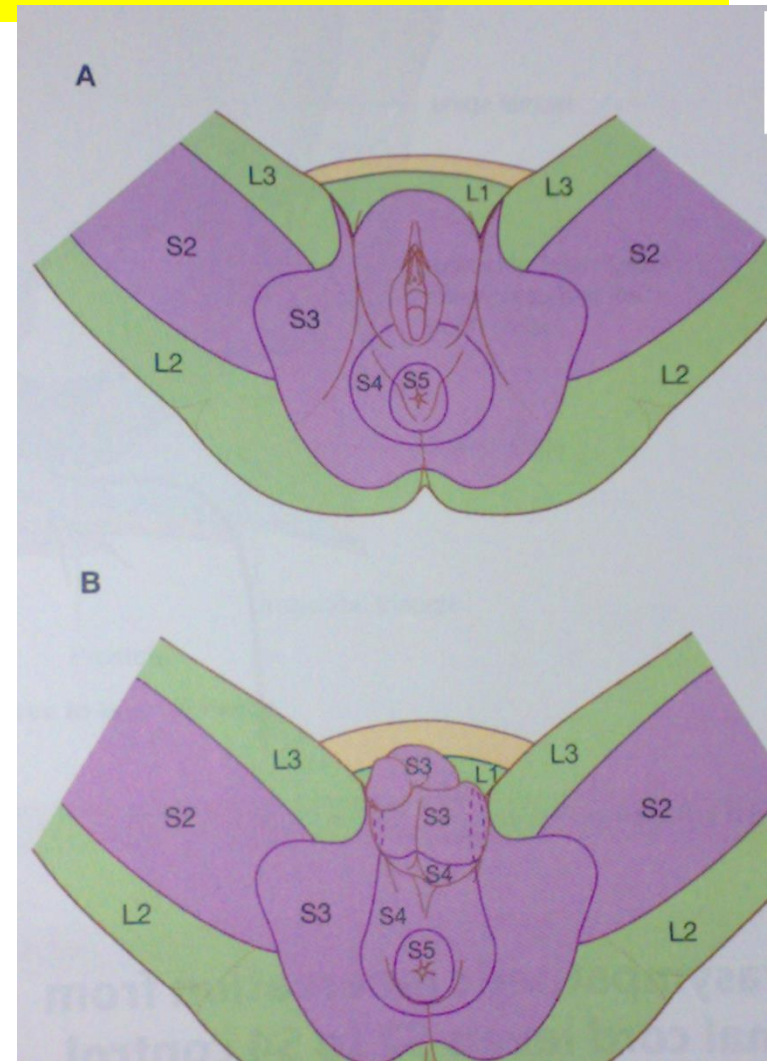


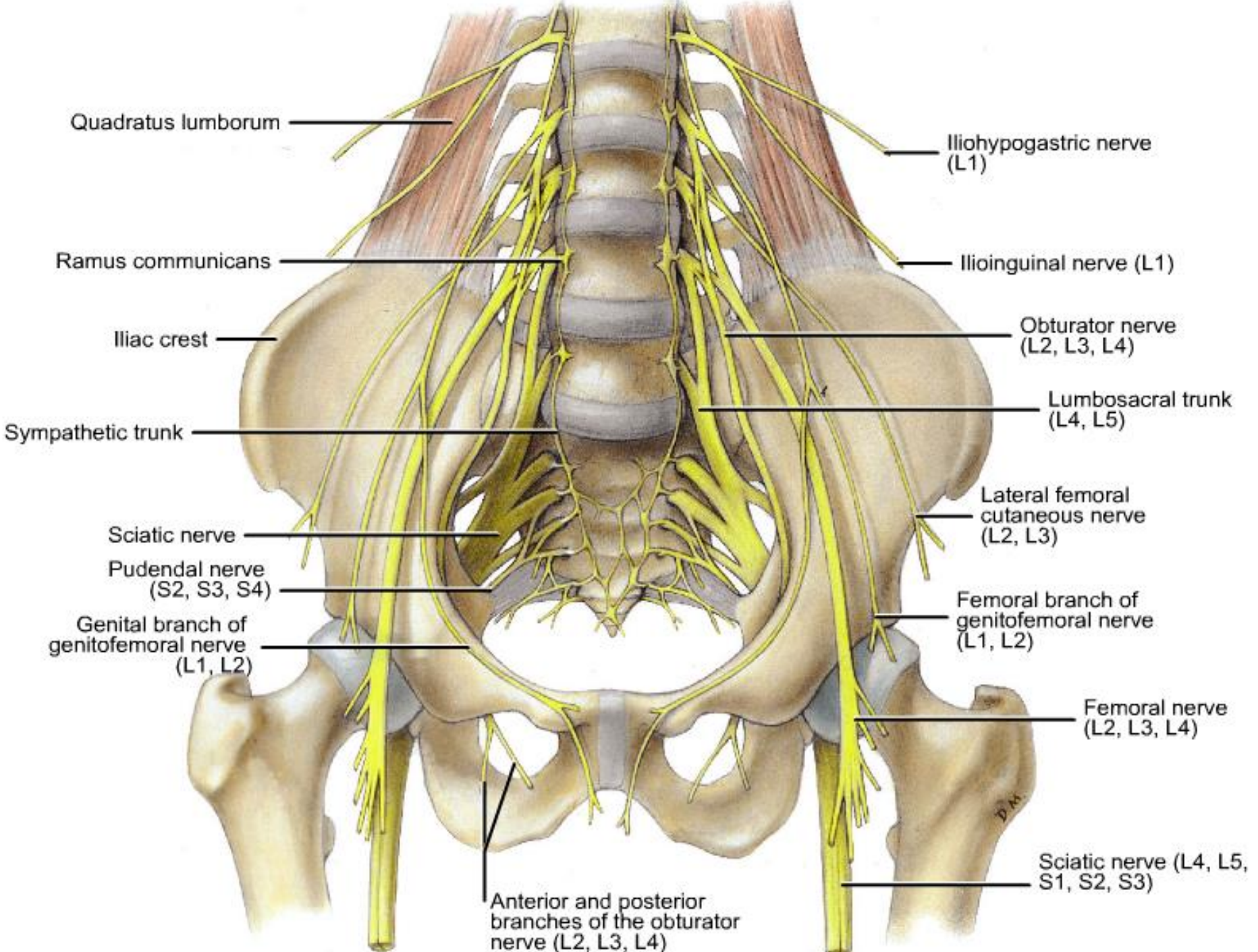
B



Superficial Perineal innervations

Dermatomes (nerves) of the perineum in both sex are from spinal cord **S3 - S5** , except for the anterior region, which innervated by spinal cord level **L1** by nerves associated with the abdominal wall.





Quadratus lumborum

Iliohypogastric nerve (L1)

Ramus communicans

Ilioinguinal nerve (L1)

Iliac crest

Obturator nerve (L2, L3, L4)

Sympathetic trunk

Lumbosacral trunk (L4, L5)

Sciatic nerve

Lateral femoral cutaneous nerve (L2, L3)

Pudendal nerve (S2, S3, S4)

Femoral branch of genitofemoral nerve (L1, L2)

Genital branch of genitofemoral nerve (L1, L2)

Femoral nerve (L2, L3, L4)

Sciatic nerve (L4, L5, S1, S2, S3)

Anterior and posterior branches of the obturator nerve (L2, L3, L4)

Anal region(Triangle)

Cutaneous innervations: *Inferior rectal nerve (S2,3,4)* • supplies the skin around the anus and over the ischiorectal fossa, and the *perineal branch of fourth sacral nerve* supplies skin posterior to anus.

Superficial fascia: •

It contains a large amount of fat which fills the ischiorectal fossa.

Deep fascia: •

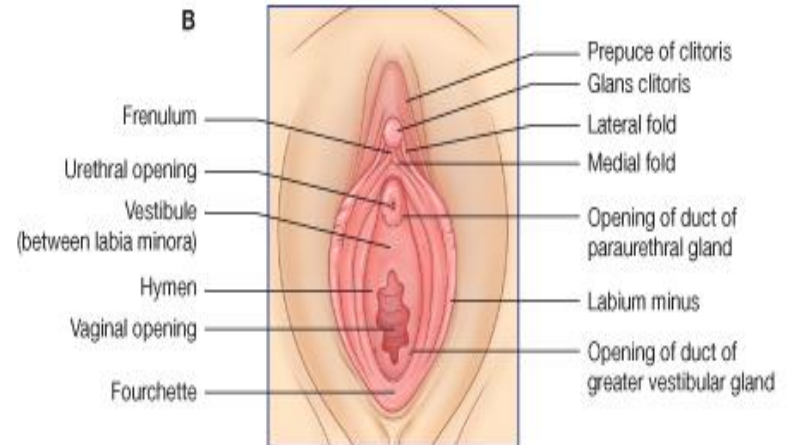
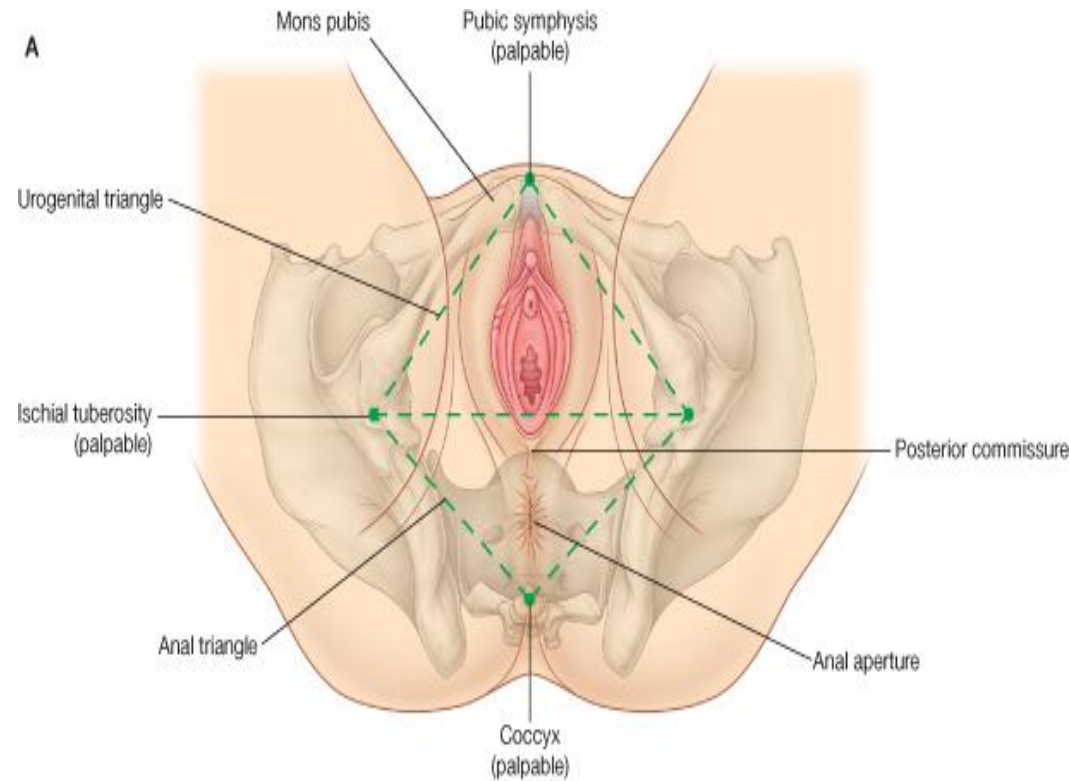
It is formed by the inferior fascia of pelvic diaphragm and the fascia covering obturator internus below the attachment of levator ani.

External female genitalia

**Vestibule of
vagina:**

Open into it:

- **Urethral orifice**
 - **Greater vestibular glands of bartholin**
 - **Paraurethral glands of skene**
 - **Vagina**
- Introitus**
(المدخل)



Vestibule of vagina:

Urethral orifice○

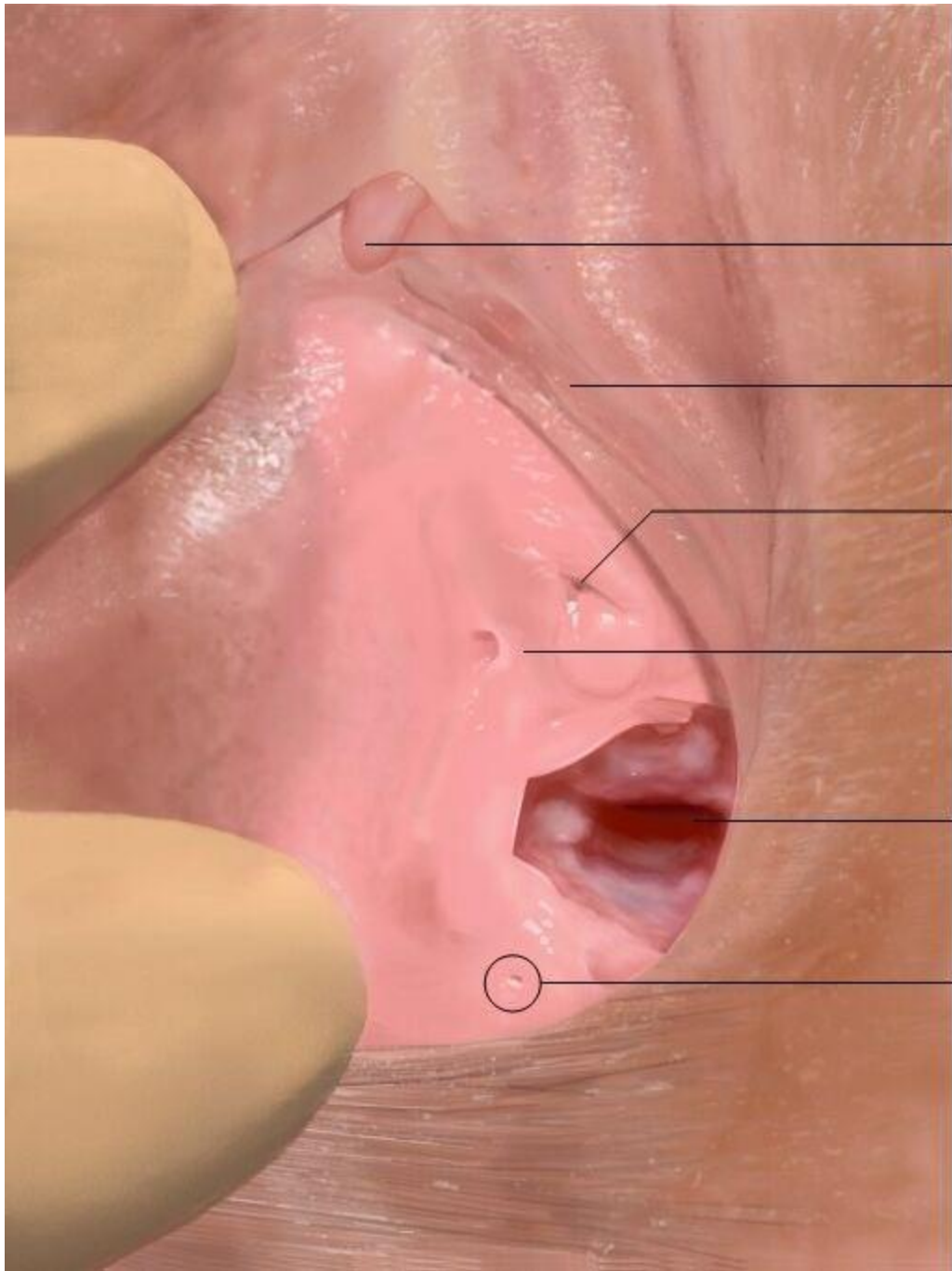
Greater vestibular glands of ○
bartholin

Paraurethal glands of skene○

Vaginal introitus○

Paraurethral glands of skene

The Skene's glands (also known as lesser vestibular or paraurethral glands) are located in the general area of the vulva, **on the anterior wall of the vagina around the lower end of the urethra**. The Skene's glands are homologous with the prostate gland in males, containing numerous microanatomical structures in common with the prostate gland, such as secretory cells. **Skene's glands are not, however, explicit prostate glands themselves.** The two Skene's ducts lead from the Skene's glands to sites on the surface of the vulva, to the left and right of the urethral opening,



Clitoris

Labia minora

Urethra

Skene's glands

Vagina

Bartholin's glands

Clinical significance

Disorders of or related to the Skene's gland • include:

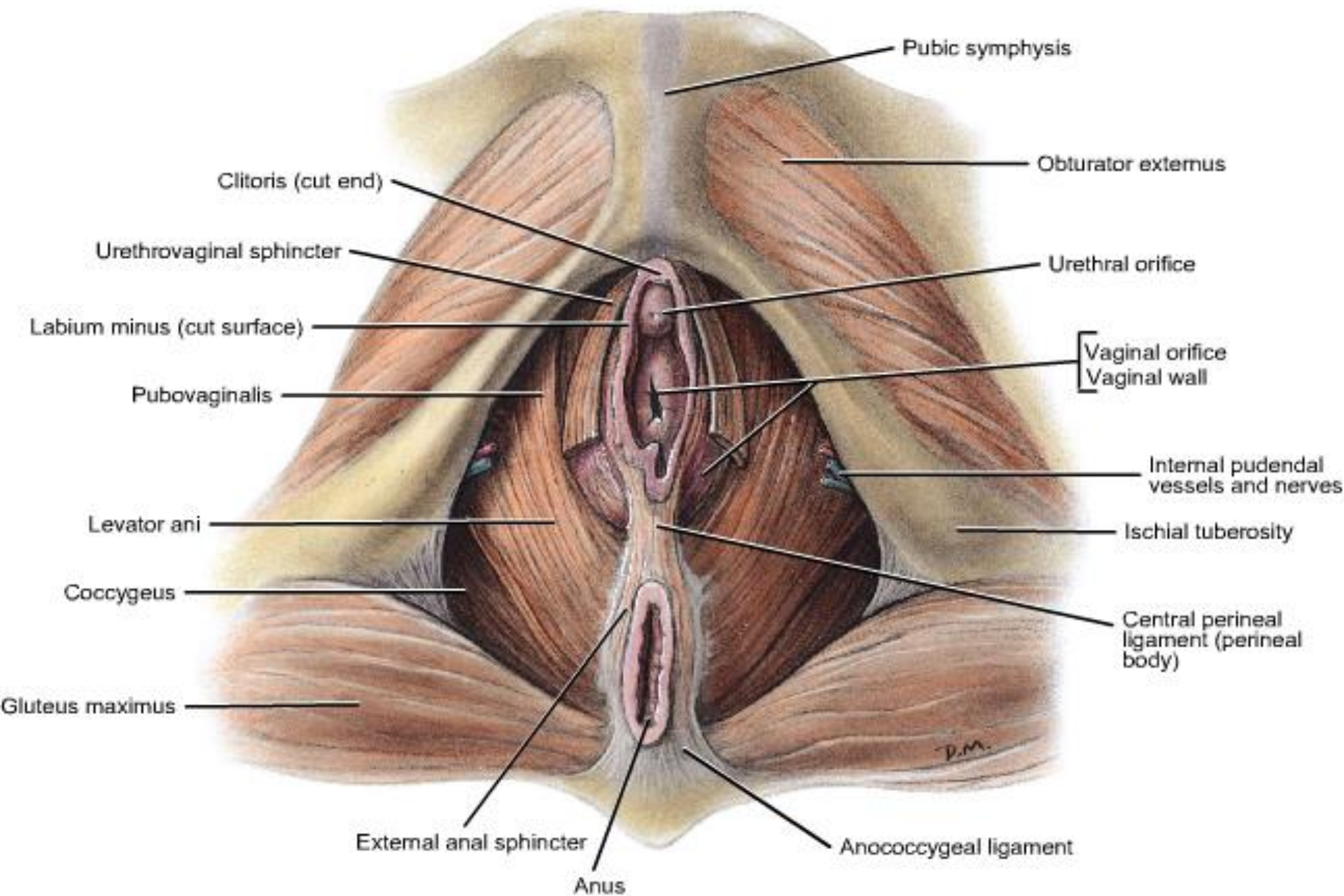
- Infection (skenitis)
- Skene's duct cyst
- Trichomoniasis: The Skene glands (along with other structures) act as a reservoir for *Trichomonas vaginalis*. This is why topical treatments are not as effective as oral medication.

The Bartholin's glands (Greater vestibular glands) are two pea sized compound alveolar glands located slightly posterior and to the left and right of the opening of the vagina. **They secrete mucus to lubricate the vagina and are homologous to bulbourethral glands in males.** However, while Bartholin's glands are located in the **superficial perineal pouch in females,** bulbourethral glands are located in the **deep perineal pouch** in males. Their duct length is 1.5 to 2.0 cm and they open into navicul

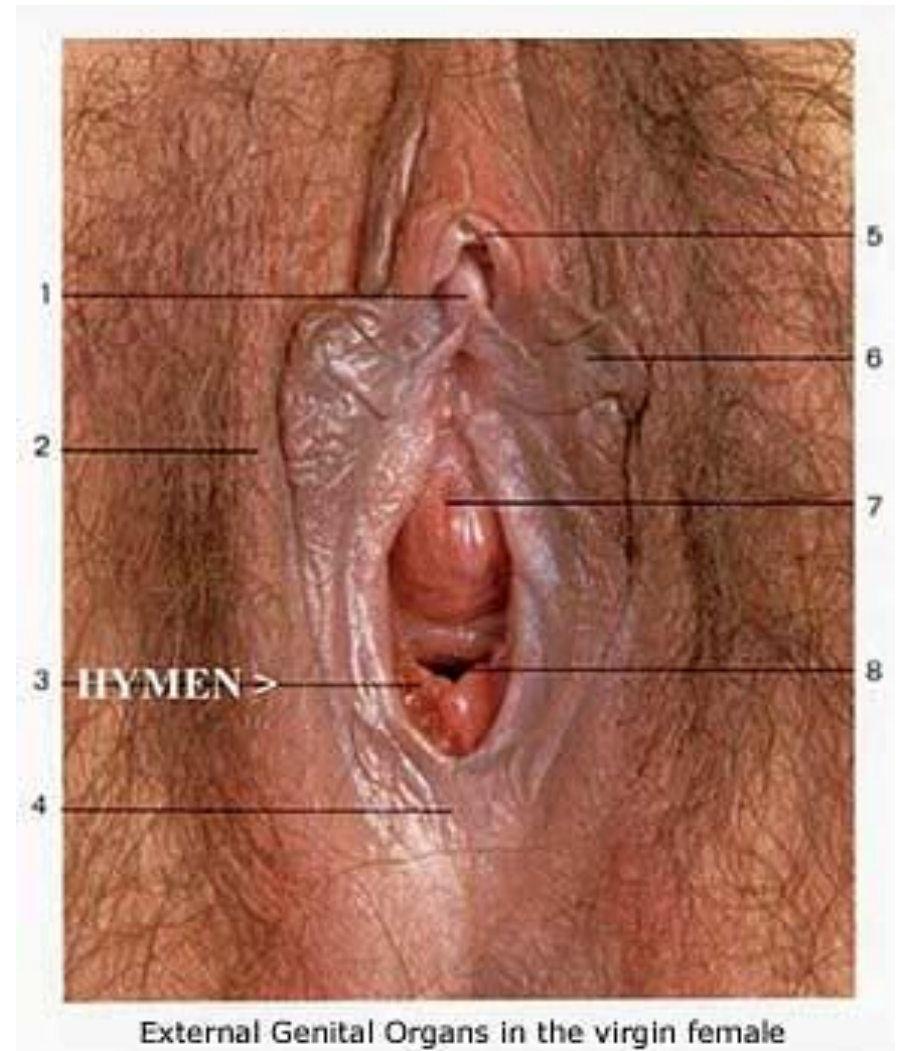
Function

Bartholin's glands (**greater vestibular g.**) secrete • mucus to provide vaginal lubrication during sexual arousal. The fluid may slightly moisten the labial opening of the vagina, serving to make contact with this sensitive area more comfortable.

It is possible for the Bartholin's glands to • become blocked and inflamed resulting in pain. This is known as Bartholinitis or a Bartholin's cyst. A Bartholin's cyst in turn can become infected and form an abscess.



- 1 clitoris
- 2 Labia majora
- 3 Hymen
- 4 Fourchette
- 5 Prepuce of clitoris
- 6 labia minora
- 7 Urethral meatus
- 8 Vaginal opening



Pubic symphysis

Superficial dorsal vein

Dorsal artery and nerve of clitoris

Crus of clitoris

Urethral orifice

Vaginal orifice

Vaginal wall

Levator ani

Anus

Clitoris

Bulbospongiosus

Bulb of vestibule

Branches of internal pudendal vessels

Perineal membrane

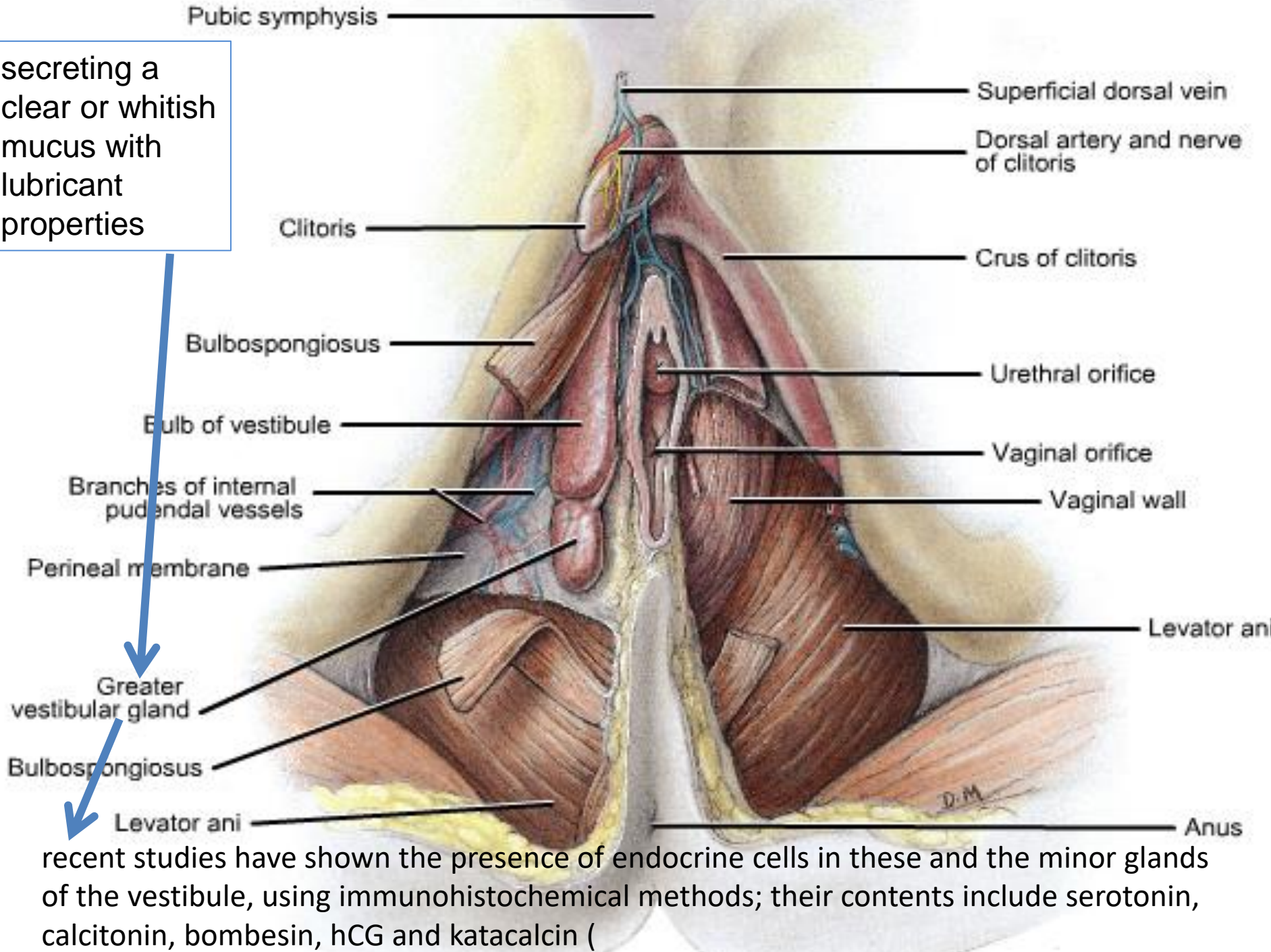
Greater vestibular gland

Bulbospongiosus

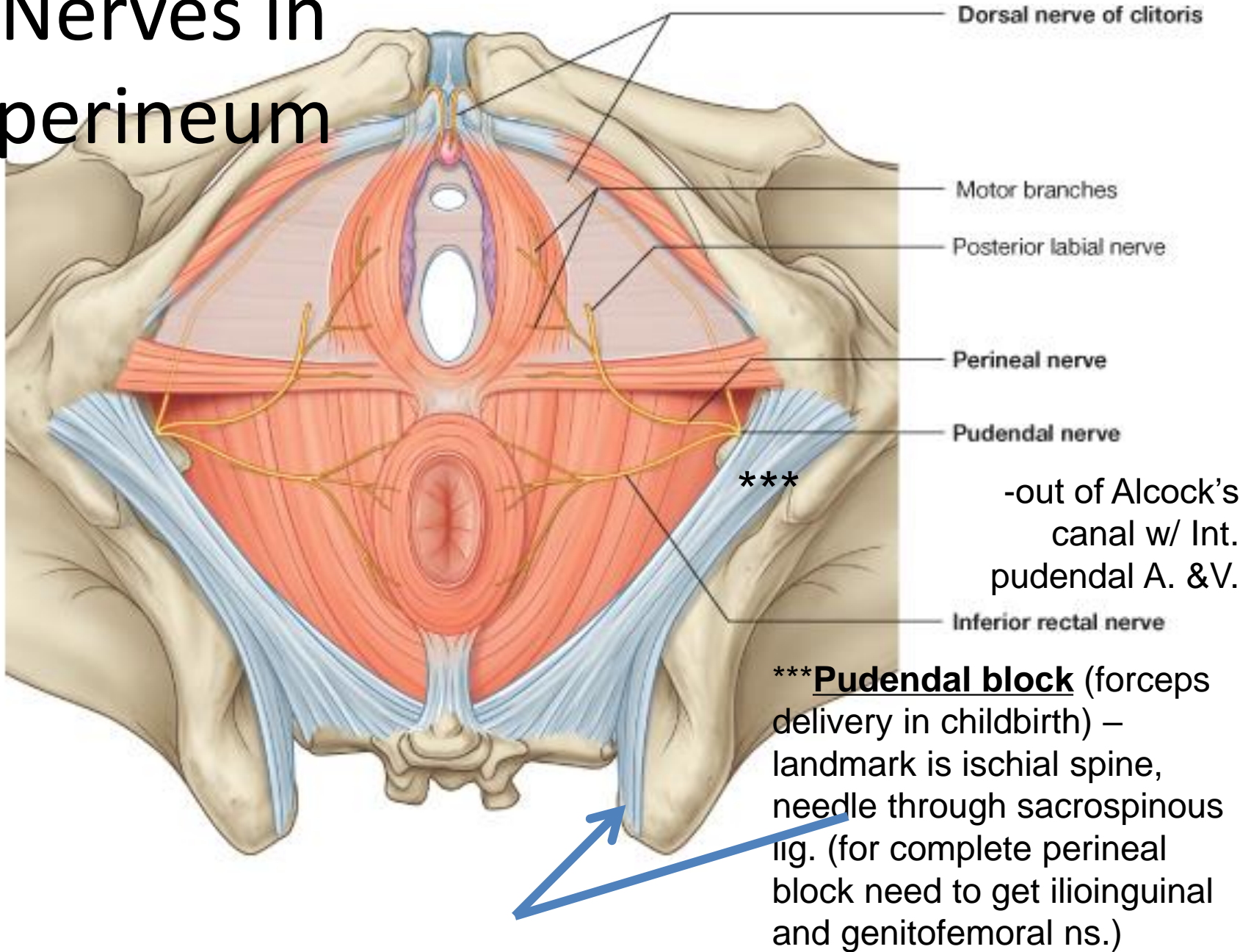
Levator ani

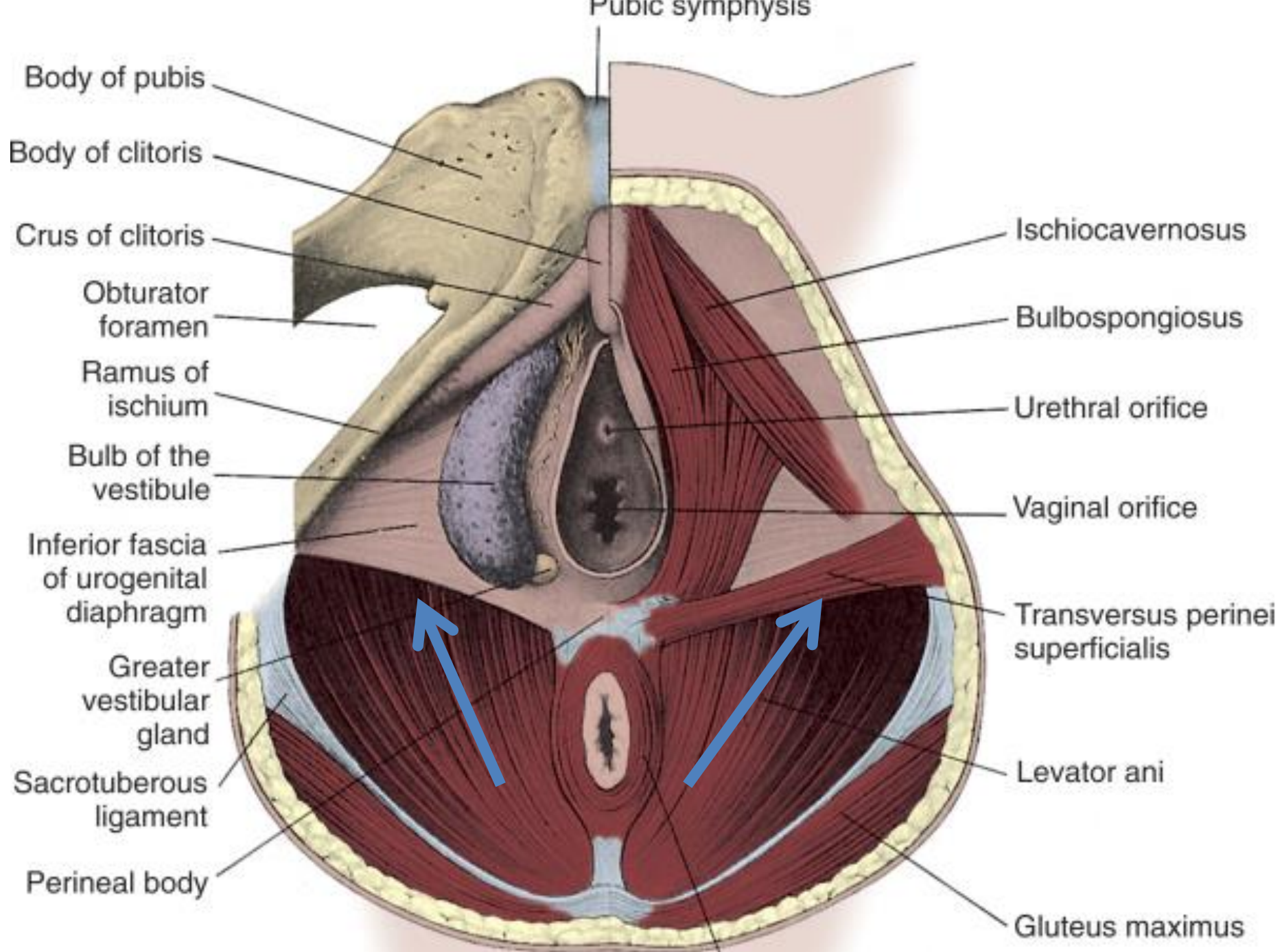
secreting a clear or whitish mucus with lubricant properties

recent studies have shown the presence of endocrine cells in these and the minor glands of the vestibule, using immunohistochemical methods; their contents include serotonin, calcitonin, bombesin, hCG and katacalcin (



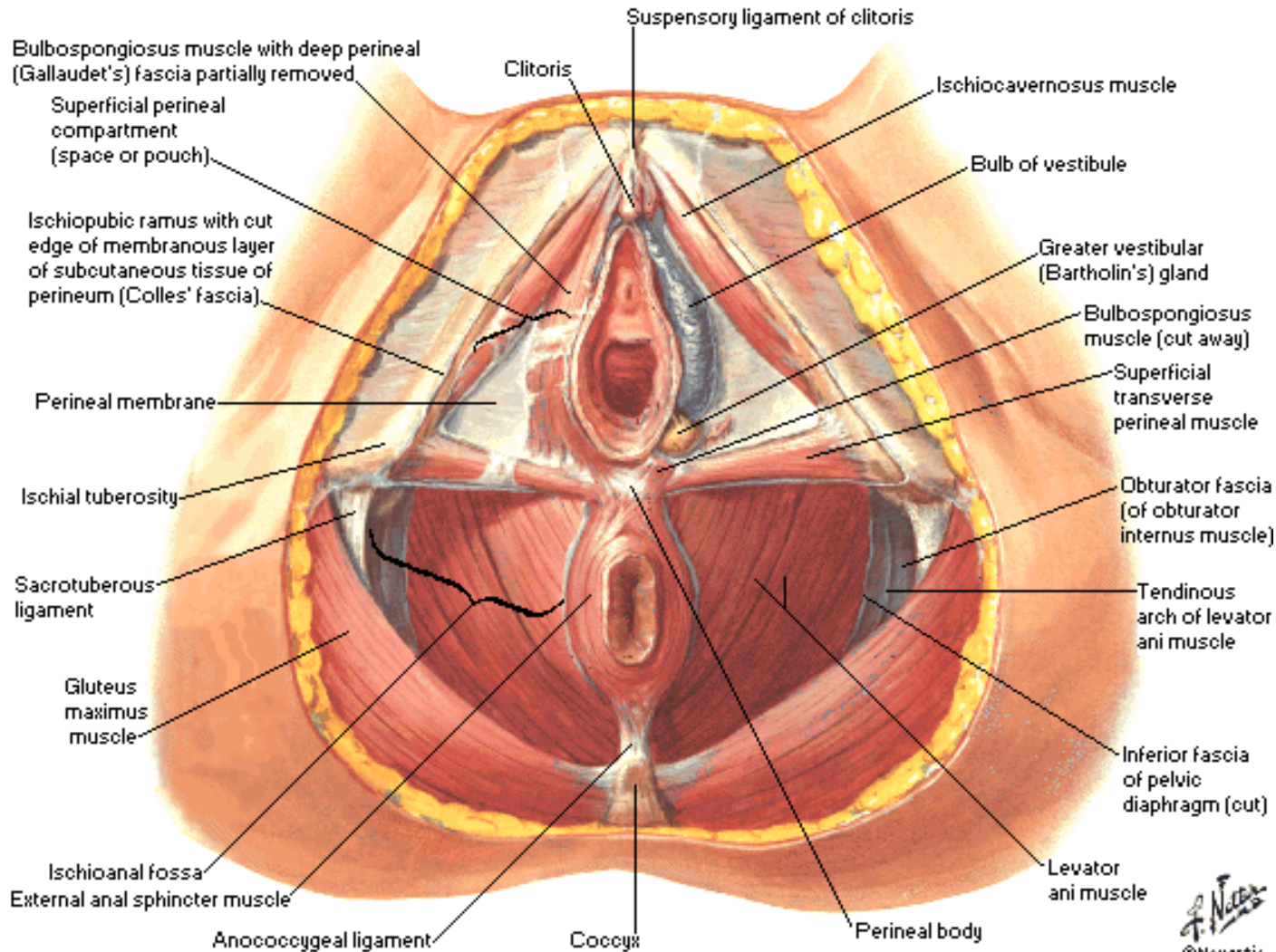
B Nerves in perineum





Muscles - Female

Perineum and Urogenital Diaphragm of Female



The membranous layer of the superficial •
fascia of the perineum (**Colles' fascia**) is
the deeper layer (membranous layer) of
the superficial perineal **fascia**. It is thin,
aponeurotic in structure, and of
considerable strength, serving to bind
down the muscles of the root of the
penis. **Colles' fascia** emerges from the
perineal membrane, which divides the
base of the penis from the prostate

Cooper fascia - one of the • coverings of the spermatic cord, formed of delicate connective tissue and of muscular fibers derived from the internal oblique muscle (cremaster muscle).

The anterior abdominal wall has seven layers •
(from superficial to deep):

skin .1

subcutaneous fat (Camper's fascia)

superficial (Scarpa's) fascia .1

muscles (including aponeuroses forming rectus .2
sheath)

fascia transversalis .3

extraperitoneal (preperitoneal) fat .4

parietal peritoneum .5

Scarpa's fascia is deep to the skin and •
subcutaneous fat in the lower part of the wall and
is fused with Colle's fascia in the perineum.

Internal (deep) ring

External (superficial) ring

Dartos

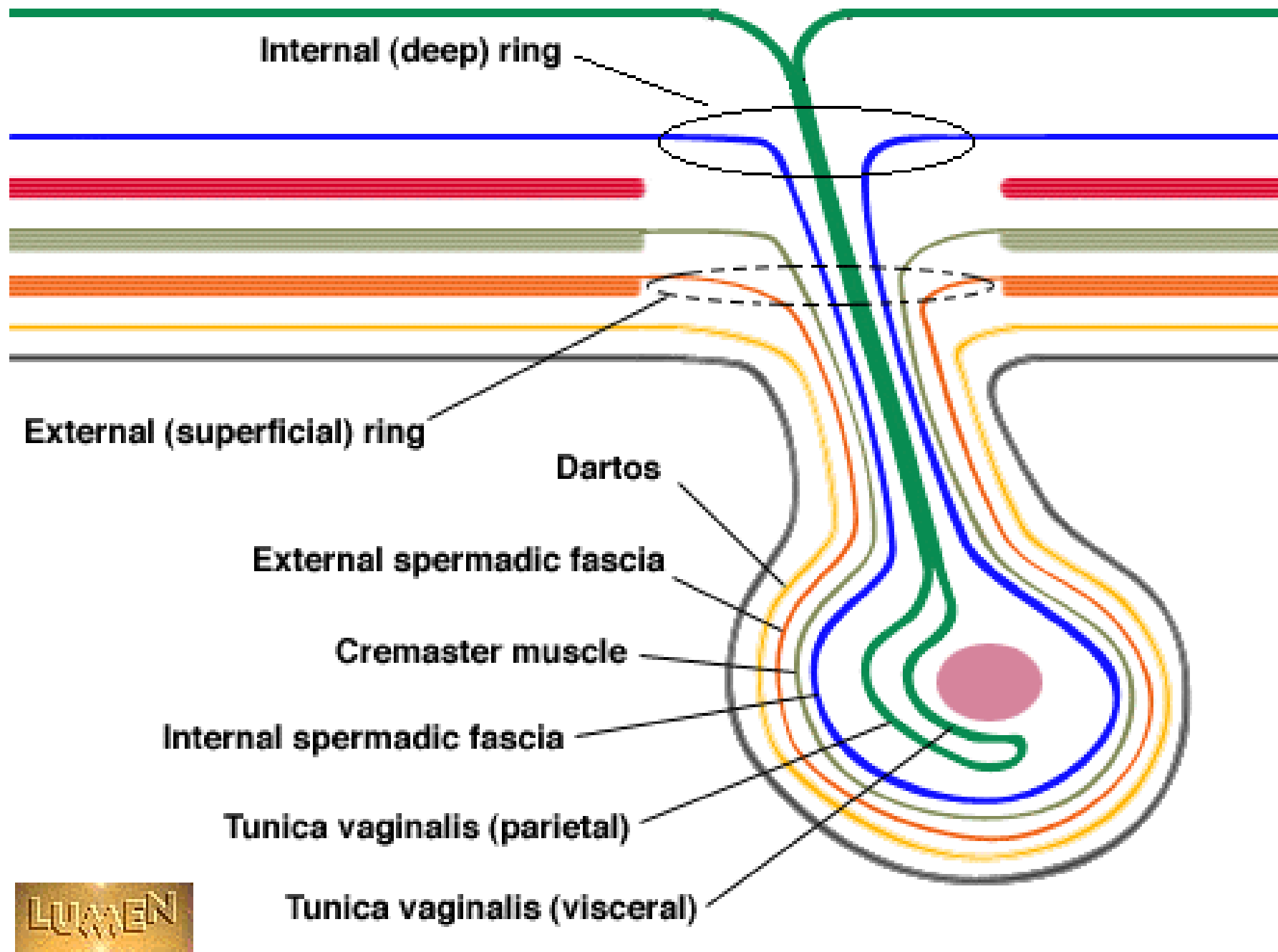
External spermatic fascia

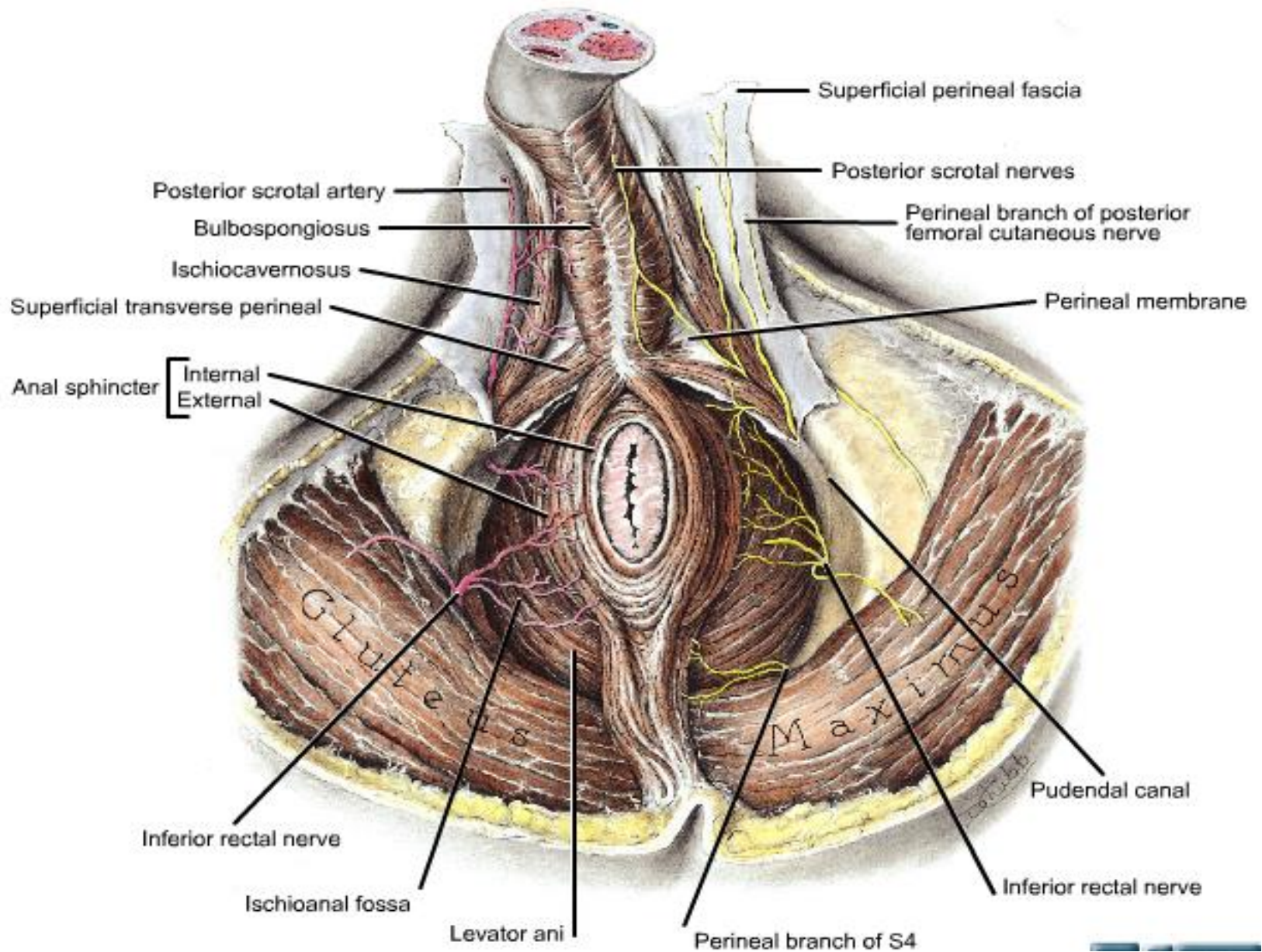
Cremaster muscle

Internal spermatic fascia

Tunica vaginalis (parietal)

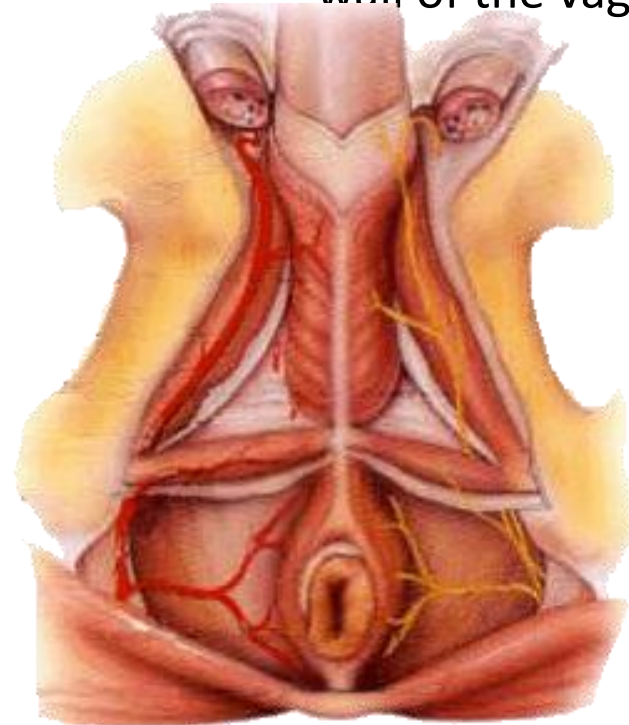
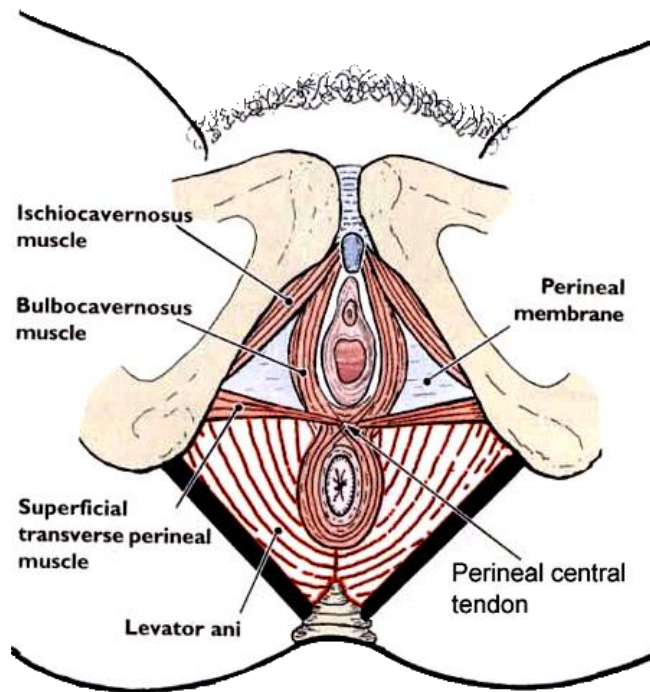
Tunica vaginalis (visceral)



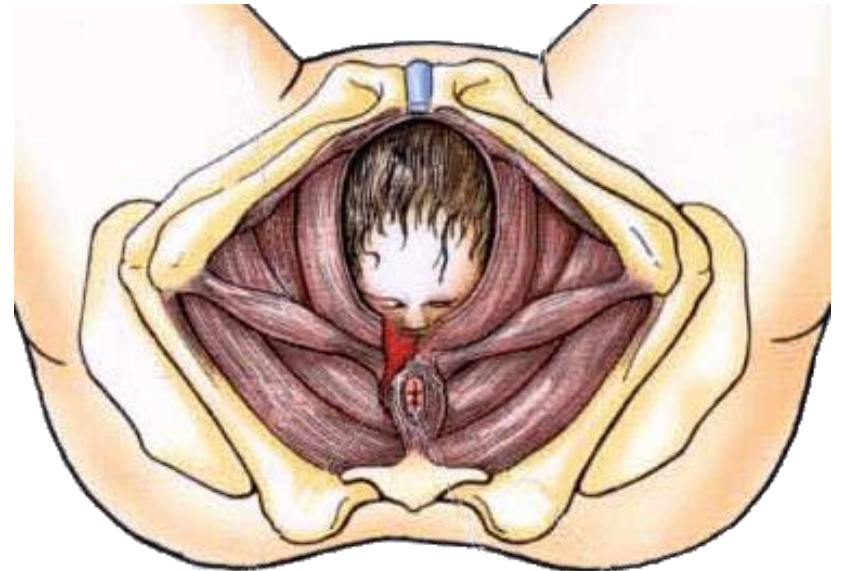
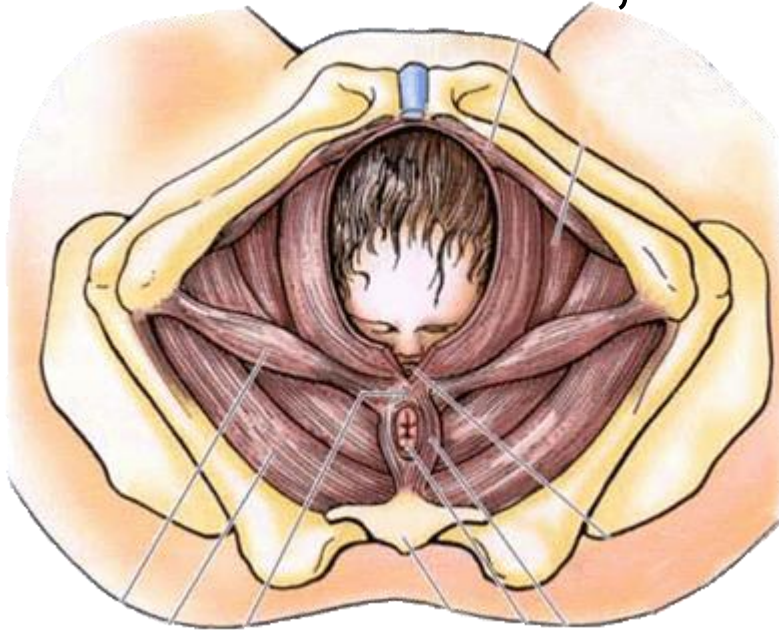


Perineal central tendon (perineal body)

- Wedge-shaped fibromuscular mass
- In female, between anal canal and lower end of vagina,
- In male, between anal canal and root of penis
- It is larger in the female than in the male and give support to the posterior wall of the vagina



Perineal body is very important in females for the support of pelvic organs. Its involvement in perineal tear during delivery may result in prolapse of urinary bladder, uterus, ovaries and even rectum.



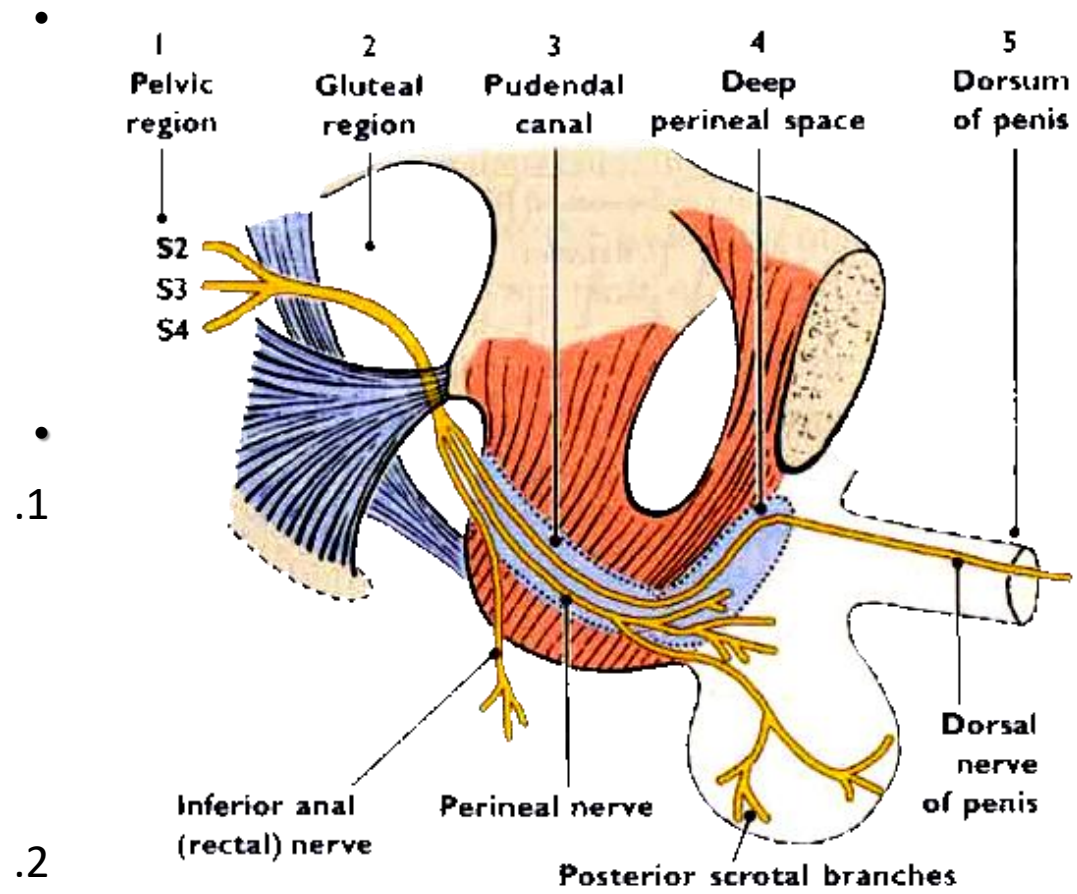
Pudendal canal

It is also called Alcock's canal, It is a fascial tunnel in the lateral wall of ischiorectal fossa, just above the sacrotuberous ligament. The canal extends from the lesser sciatic notch to the posterior border of perineal membrane.

Contents:

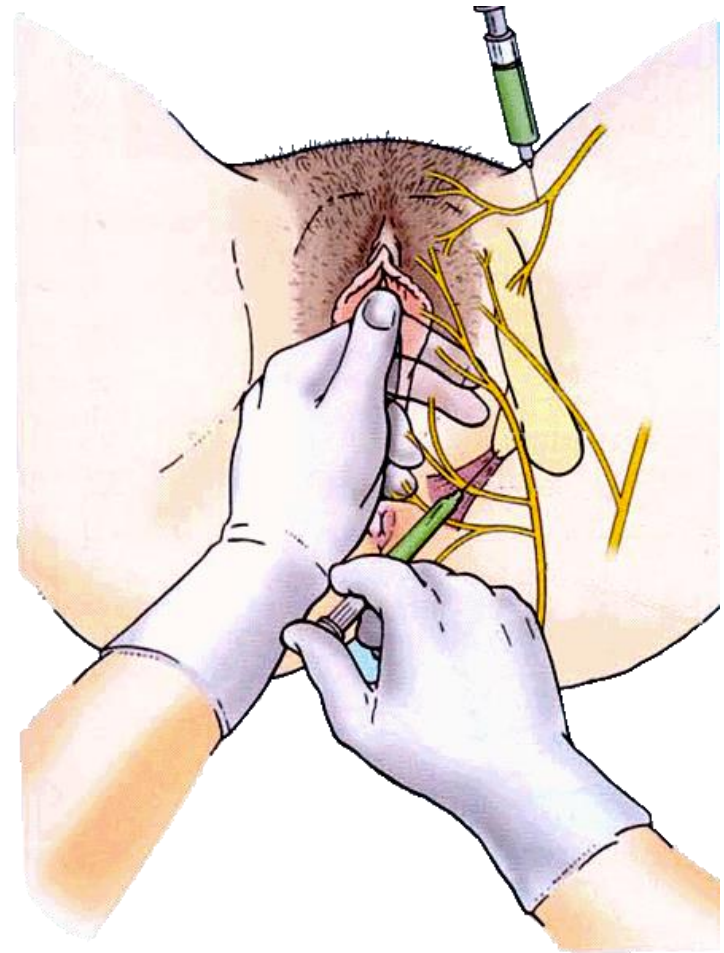
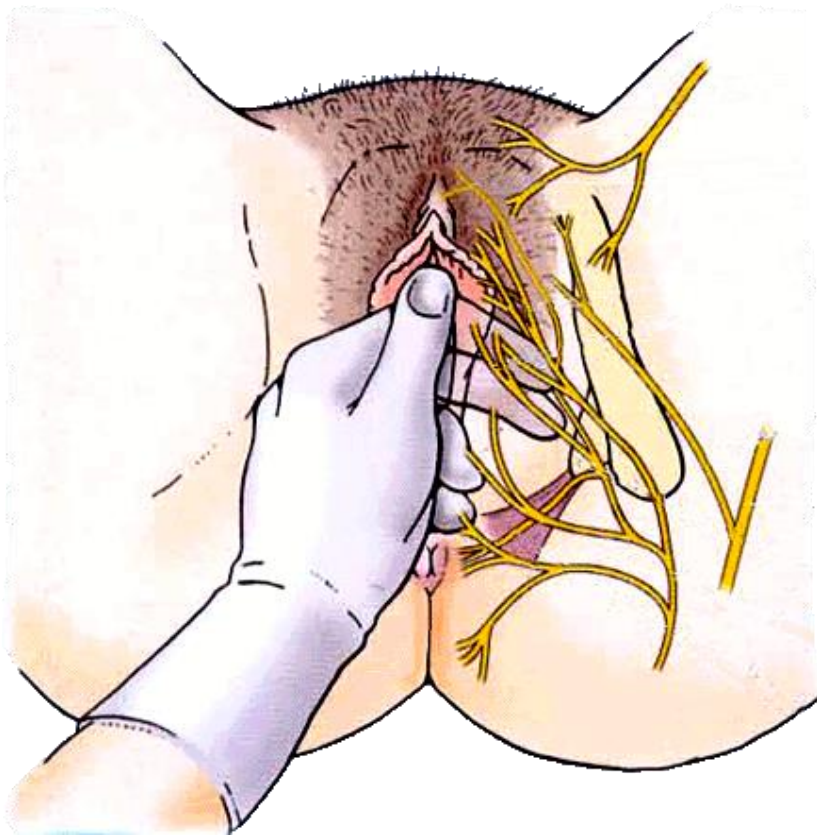
Pudendal nerve (S2,3,4) in the posterior part of the canal, pudendal nerve gives off the inferior rectal nerve and then soon divides into a larger perineal nerve and a smaller dorsal nerve of penis.

Internal pudendal vessels.



-
-
- .1
- .2

Pudendal nerve block



Urogenital region

Cutaneous innervations: •

1. **Dorsal nerve of penis** (or of clitoris) supplies skin of the penis (clitoris) except at its root.
2. **Ilioinguinal and genital branch of genitofemoral nerve.** Supply the skin of the ant 1/3 of scrotum (labia majora) and root of the penis.
3. **Perineal branch of posterior cutaneous nerve of thigh** , supplies skin of the lateral part of urogenital region and lateral part of the post 2/3 of scrotum (labia majora).