



MALE AND FEMALE REPRODUCTIVE STRUCTURES

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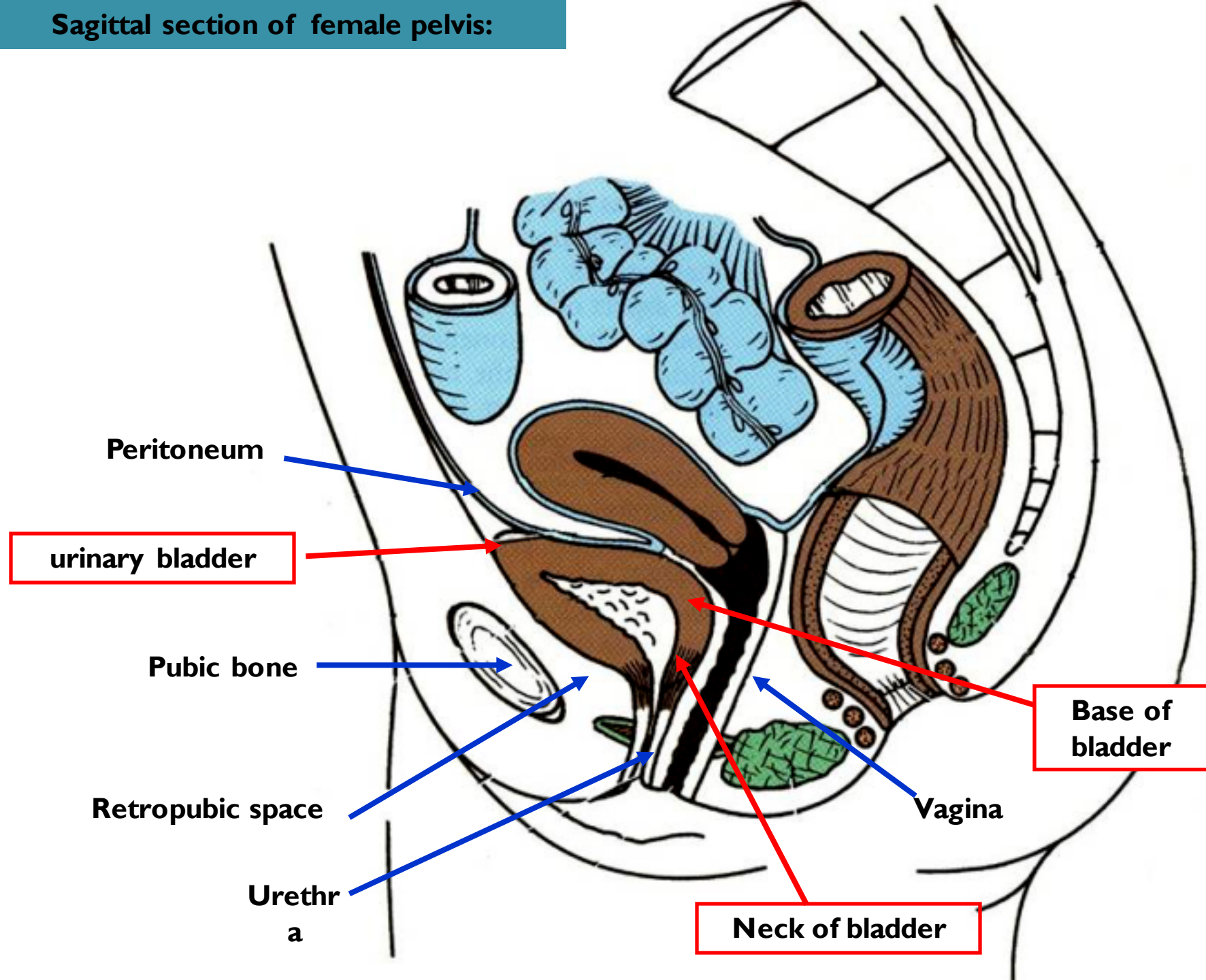
Forgarty Global Health fellow

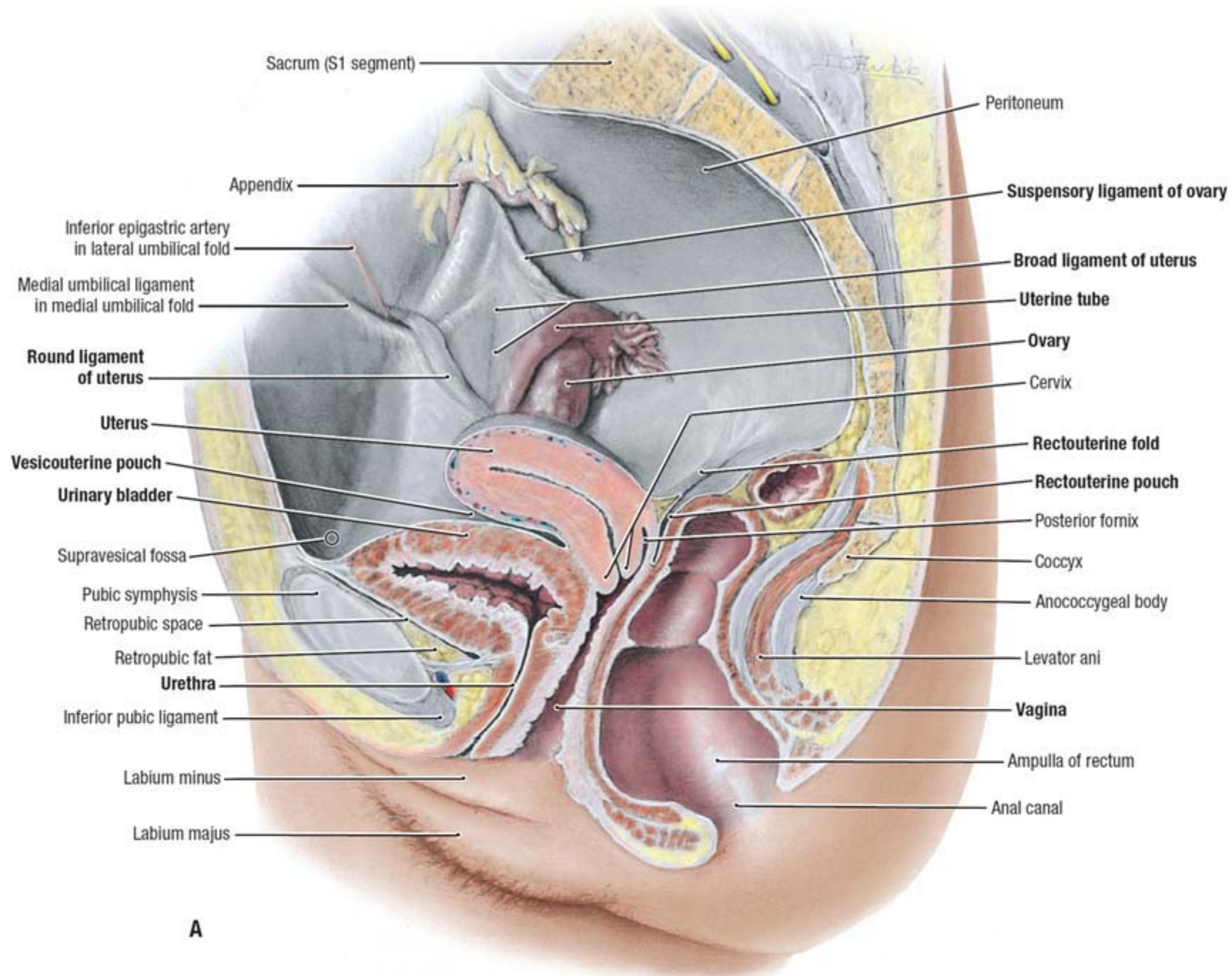
Human Anatomy and Translational Science Scholar



Female pelvis

Sagittal section of female pelvis:



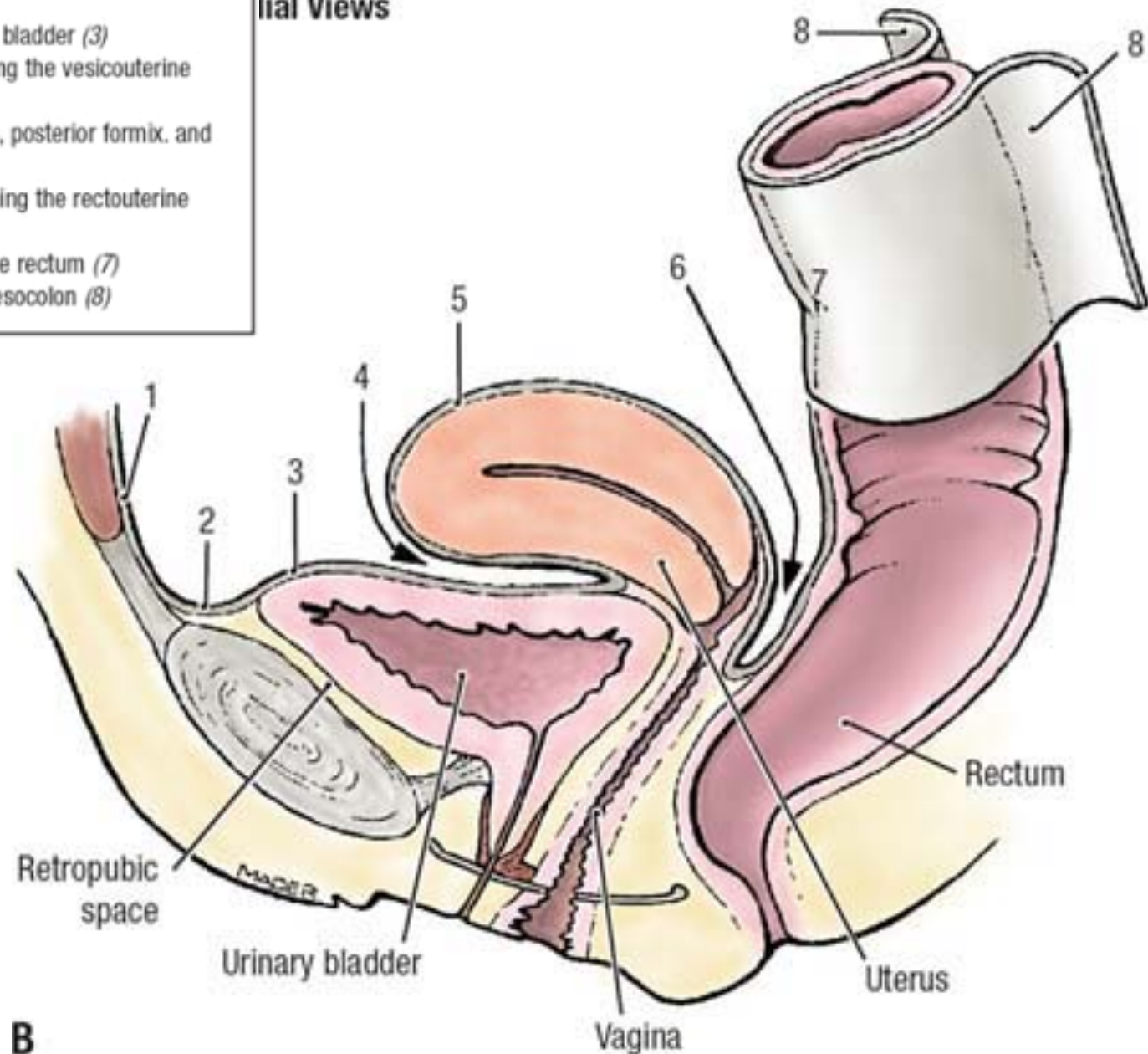


Female:

Peritoneum passes:

- From the anterior abdominal wall (1)
- Superior to the pubic bone (2)
- On the superior surface of the urinary bladder (3)
- From the bladder to the uterus, forming the vesicouterine pouch (4)
- On the fundus and body of the uterus, posterior fornix, and all of the vagina (5)
- Between the rectum and uterus, forming the rectouterine pouch (6)
- On the anterior and lateral sides of the rectum (7)
- Posteriorly to become the sigmoid mesocolon (8)

Coronal Views



B



- 1 M. psoas major
- 2 Ampulla recti
- 3 Uterus
- 4 Vesica urinaria
- 5 M. obturatorius internus
- 6 Promontorium
- 7 Colon sigmoideum
- 8 Tuba uterina
- 9 Caput ossis femoris
- 10 Urethra feminina
- 11 Vagina
- 12 Labium minus pudendi
- 13 Umbilicus
- 14 Duodenum
- 15 Pars ascendens duodeni
- 16 Radix mesenterii
- 17 Mesenterium
- 18 Excavatio unico-uterina
- 19 Vesica urinaria
- 20 Symphysis pubica
- 21 Fornix vaginae (pars ant.)
- 22 Clitoris
- 23 Labium minus pudendi
- 24 Labium majus pudendi
- 25 Carolus vertebralis et cauda eq
- 26 Discus intervertebralis
- 27 Corpus vertebrae lumbalis V
- 28 Promontorium
- 29 Mesocolon sigmoidei
- 30 Excavatio retro-uterina
- 31 Fornix vaginae (pars post.)
- 32 Cervix uteri
- 33 M. sphincter ani externus
- 34 Canalis analis
- 35 M. sphincter ani internus
- 36 Anus
- 37 Hystrum
- 38 Intestinum tenue
- 39 M. rectus abdominis

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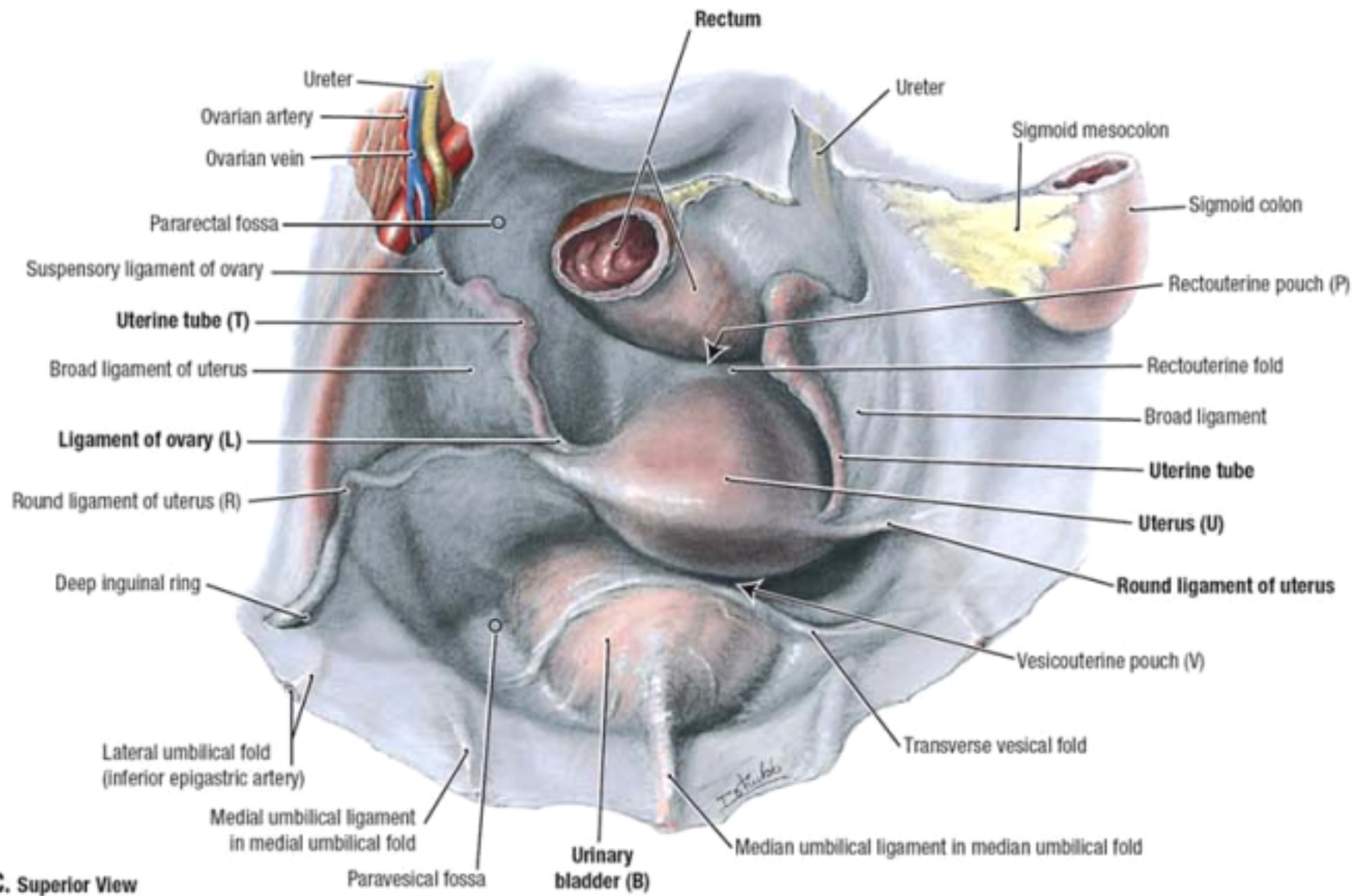
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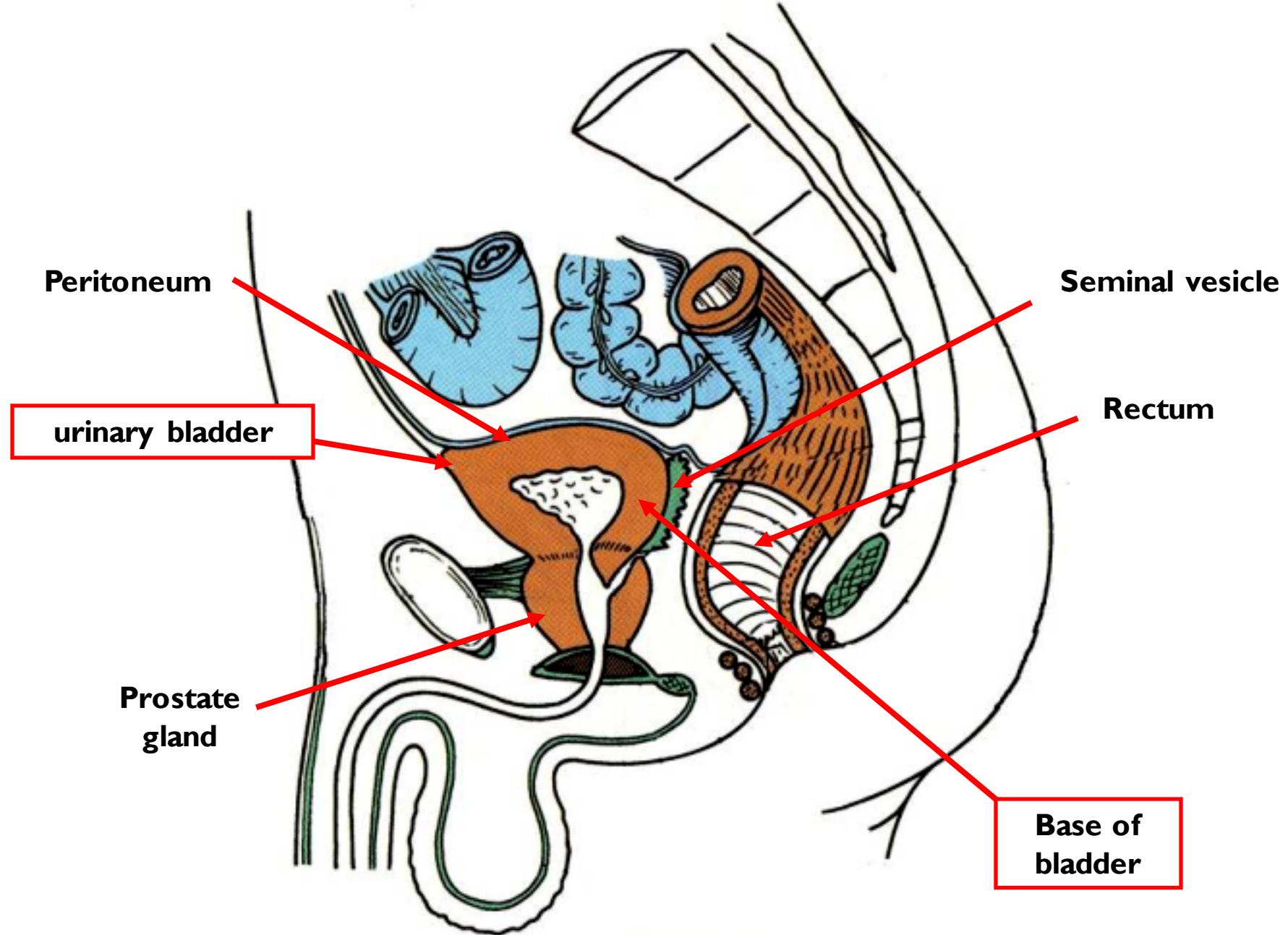


C. Superior View

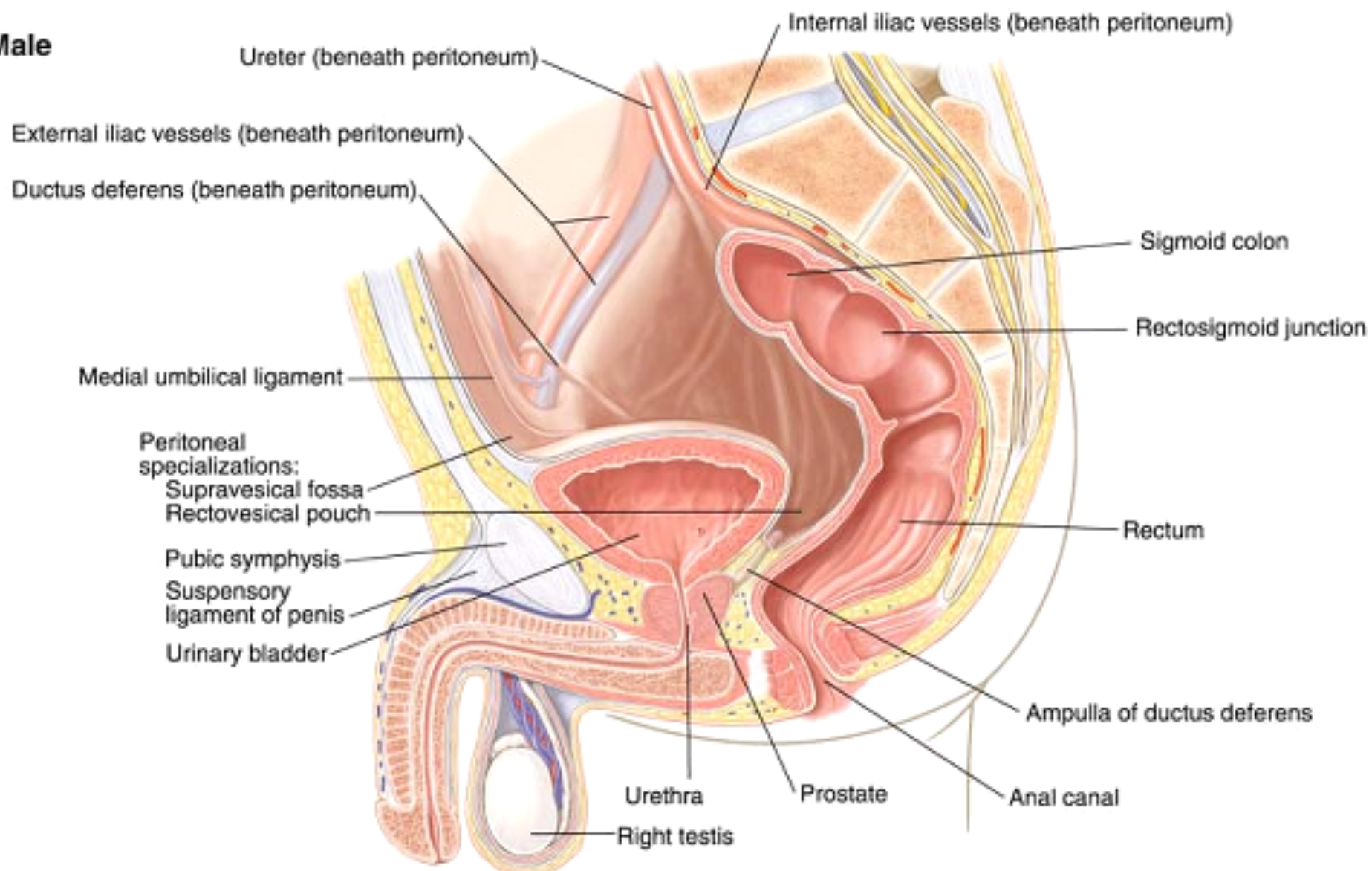


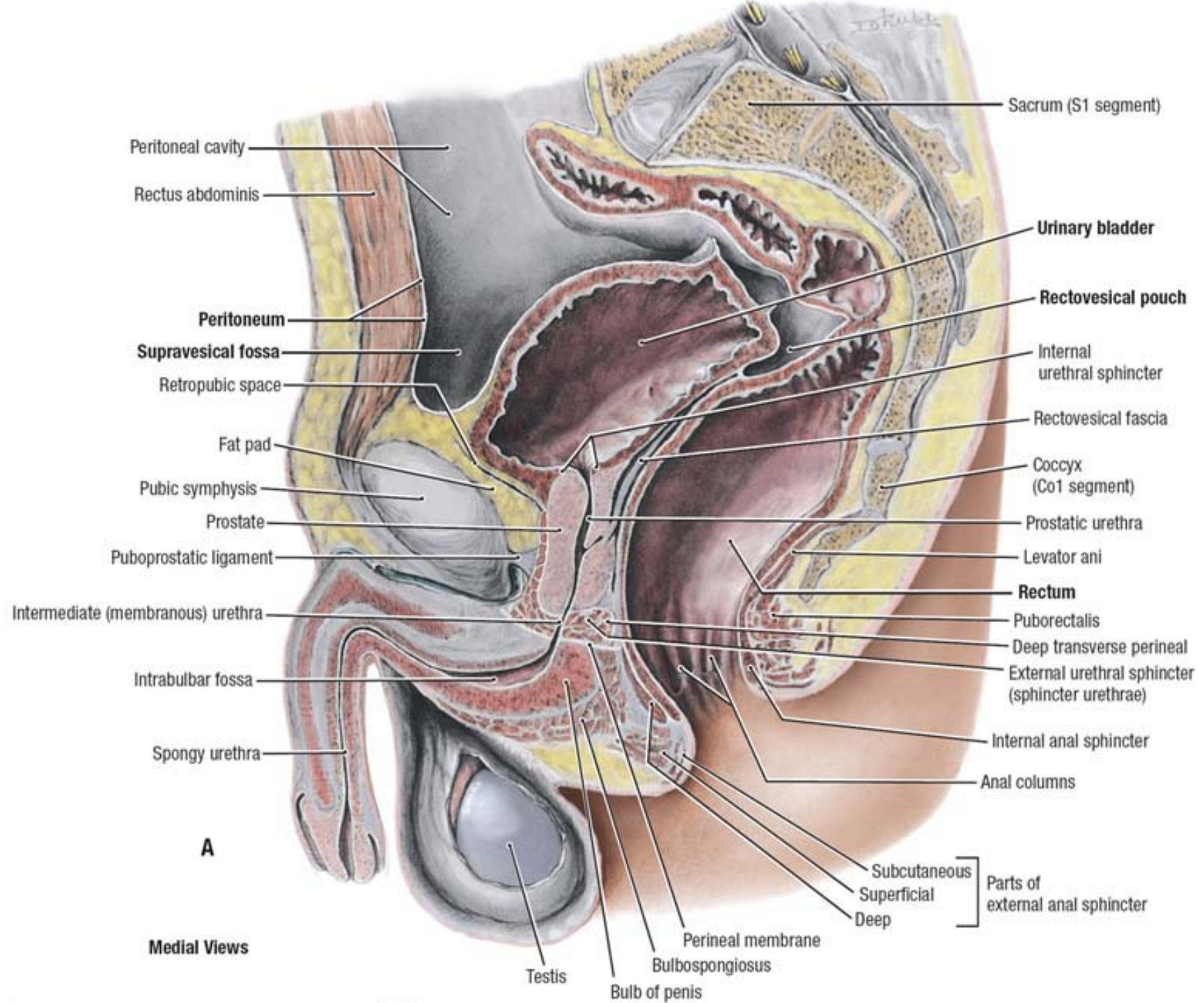
Male pelvis

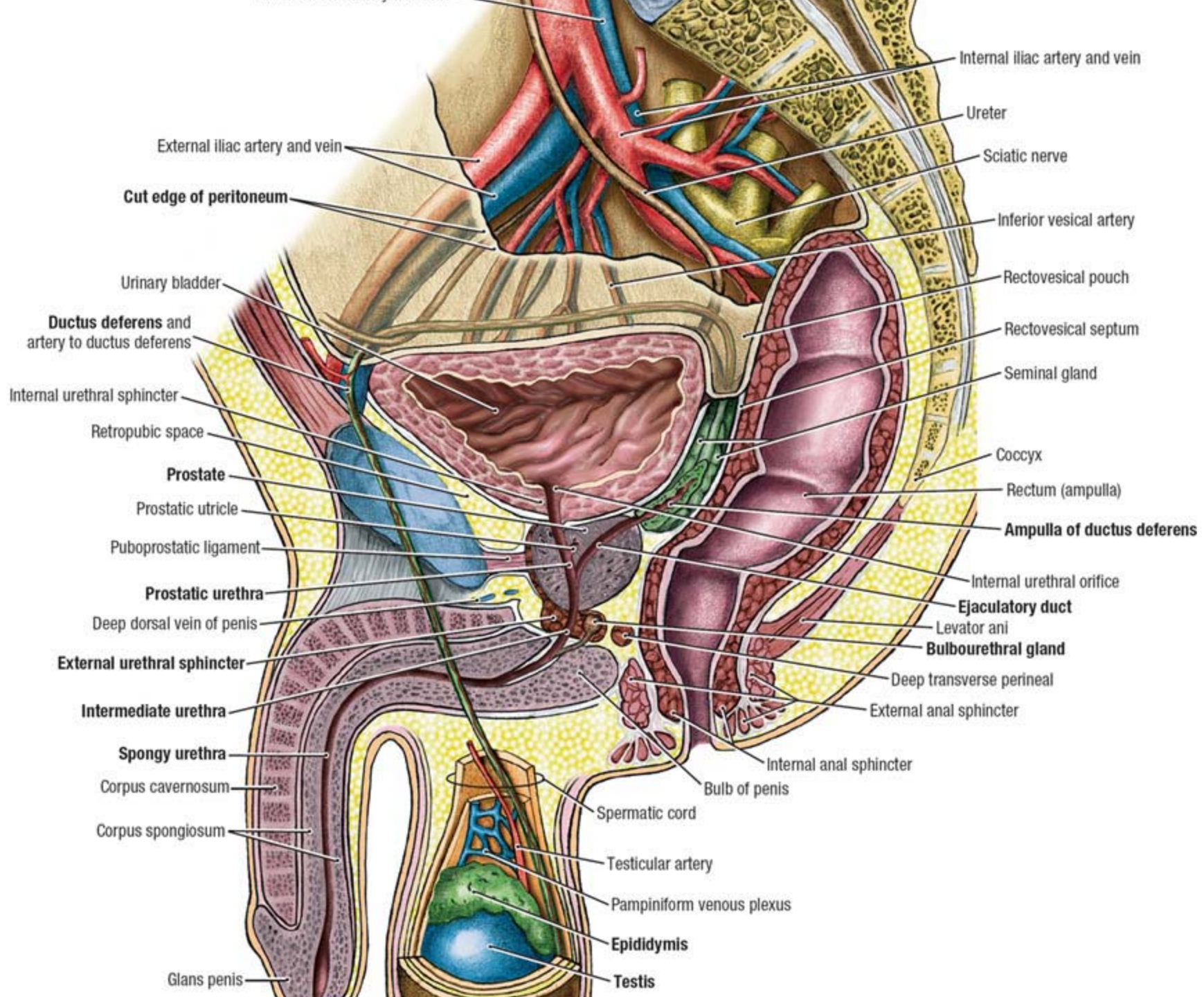
Sagittal section of male pelvis



B. Male



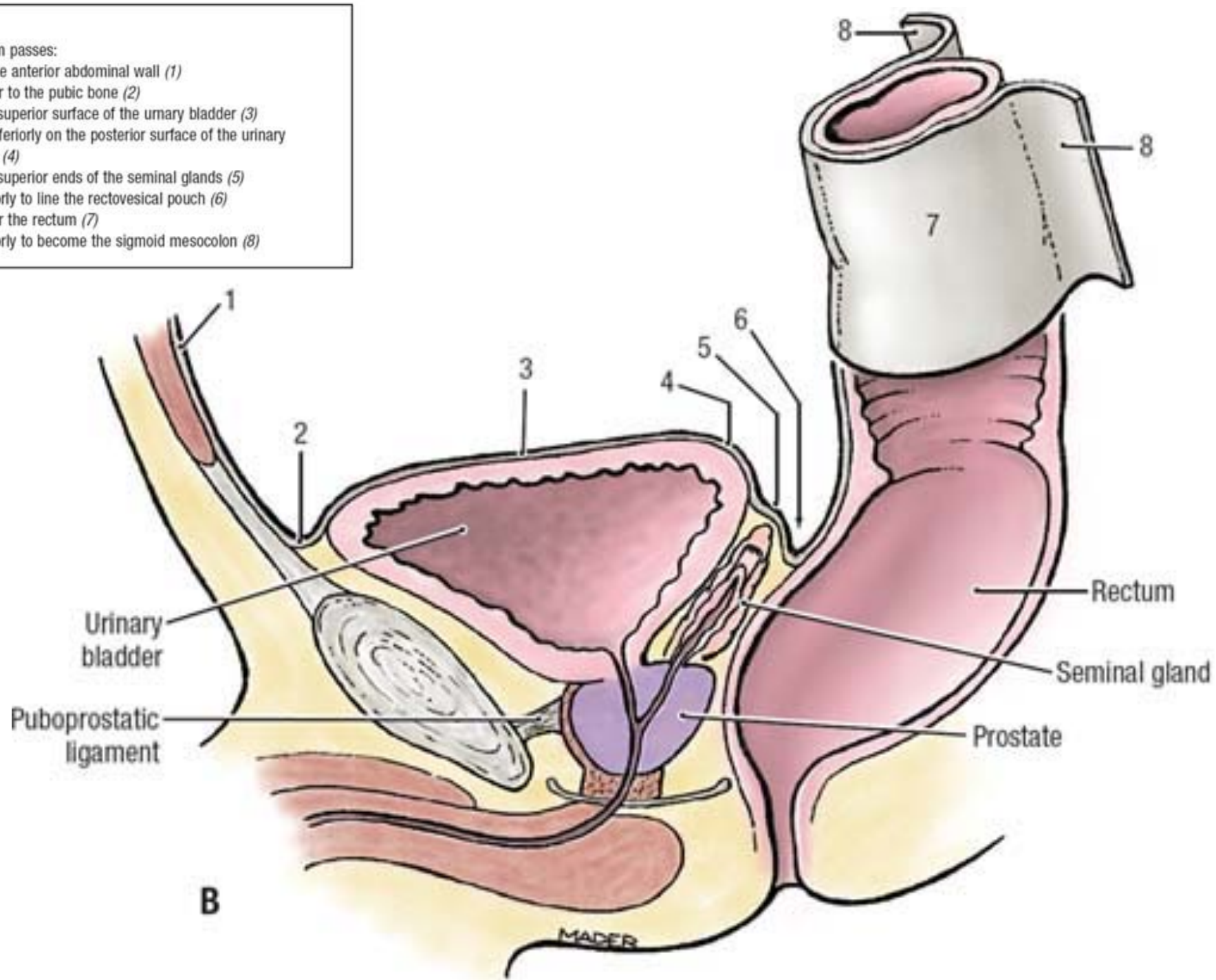




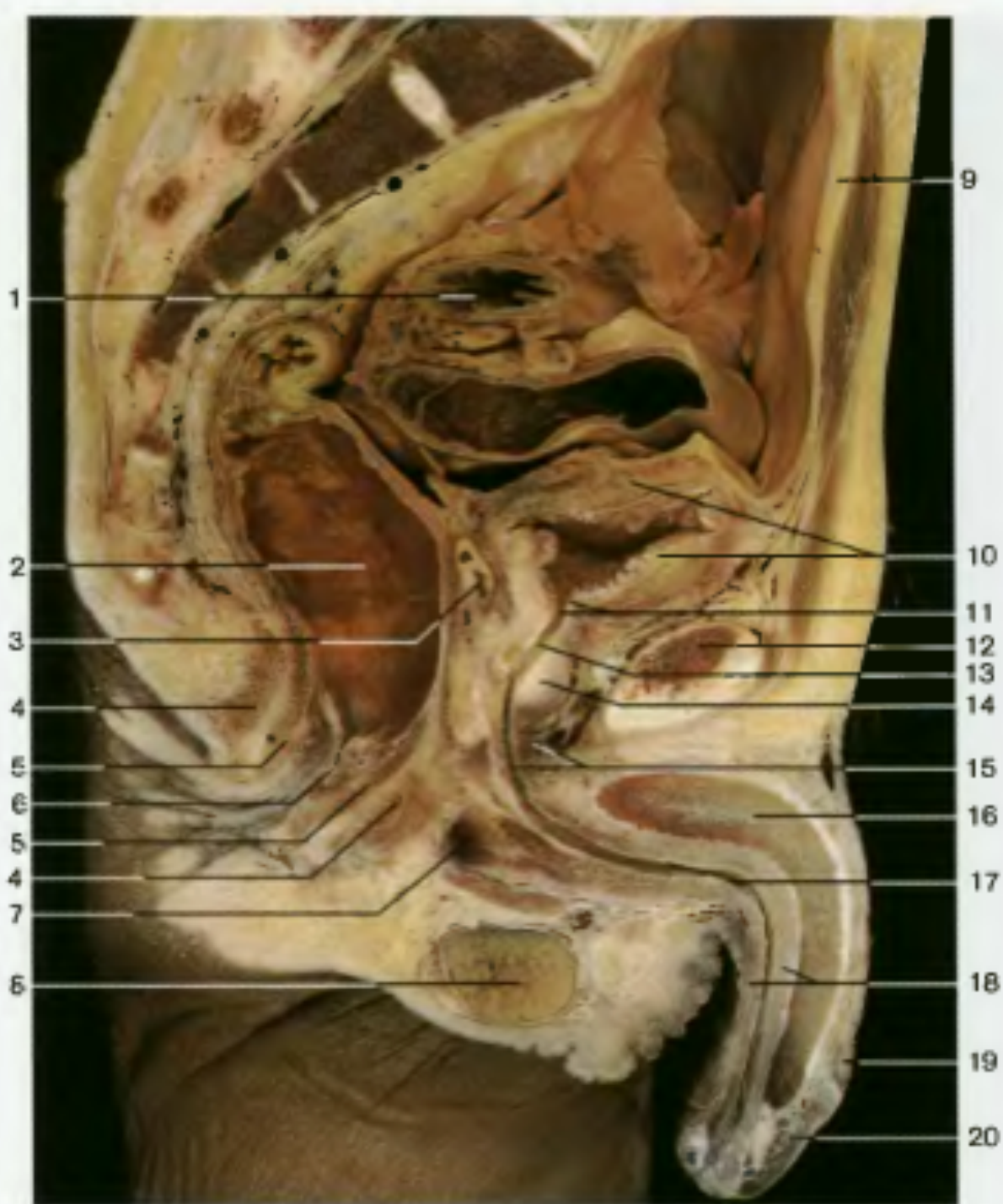
Male:

Peritoneum passes:

- From the anterior abdominal wall (1)
- Superior to the pubic bone (2)
- On the superior surface of the urinary bladder (3)
- 2 cm inferiorly on the posterior surface of the urinary bladder (4)
- On the superior ends of the seminal glands (5)
- Posteriorly to line the rectovesical pouch (6)
- To cover the rectum (7)
- Posteriorly to become the sigmoid mesocolon (8)



B



- 1 Colon sigmoideum
- 2 Ampulla recti
- 3 Ampulla ductus deferentis
- 4 M. sphincter ani ext.
- 5 M. sphincter ani int.
- 6 Canalis analis
- 7 Bulbus penis
- 8 Testis
- 9 Lig. umbilicale medianum
- 10 Vesica urinaria
- 11 Ostium urethrae internum et m. sphincter urethrae
- 12 Symphysis pubica
- 13 Pars prostatica urethrae
- 14 Prostata
- 15 Pars membranacea urethrae et m. sphincter urethrae
- 16 Corpus cavernosum penis
- 17 Pars spongiosa urethrae
- 18 Corpus spongiosum penis
- 19 Preputium penis
- 20 Glans penis
- 21 Ren
- 22 Pelvis renis
- 23 Ureter - pars abdominalis
- 24 Ureter - pars pelvica
- 25 Vesica seminalis
- 26 Ductus ejaculatorius
- 27 Gl. bulbourethralis
- 28 Ductus deferens
- 29 Epididymis
- 30 Umbilicus
- 31 Trigonus vesicae et ostium ureteris
- 32 Fossa navicularis urethrae
- 33 Ostium urethrae ext.
- 34 Testis

Muscles of the pelvic wall

- Two muscles, the obturator internus and the piriformis, contribute to the lateral walls of the pelvic cavity.
- These muscles originate in the pelvic cavity but attach peripherally to the femur.

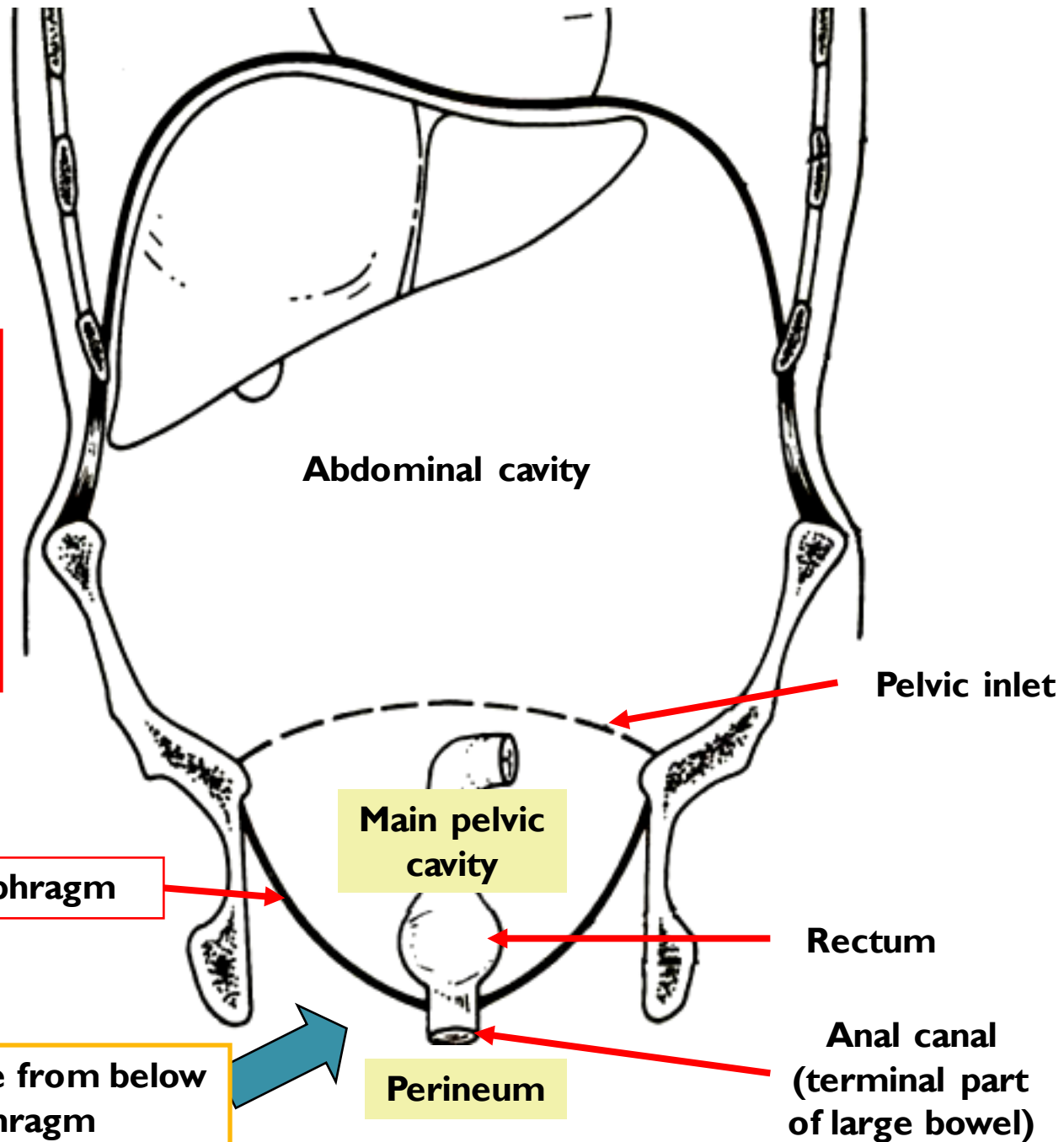
Pelvic floor

- The pelvic floor is formed by the pelvic diaphragm which is formed by the levator ani and the coccygeus muscles from both sides.
- The pelvic floor separates the pelvic cavity, above, from the perineum, below.

Pelvic diaphragm: coronal section

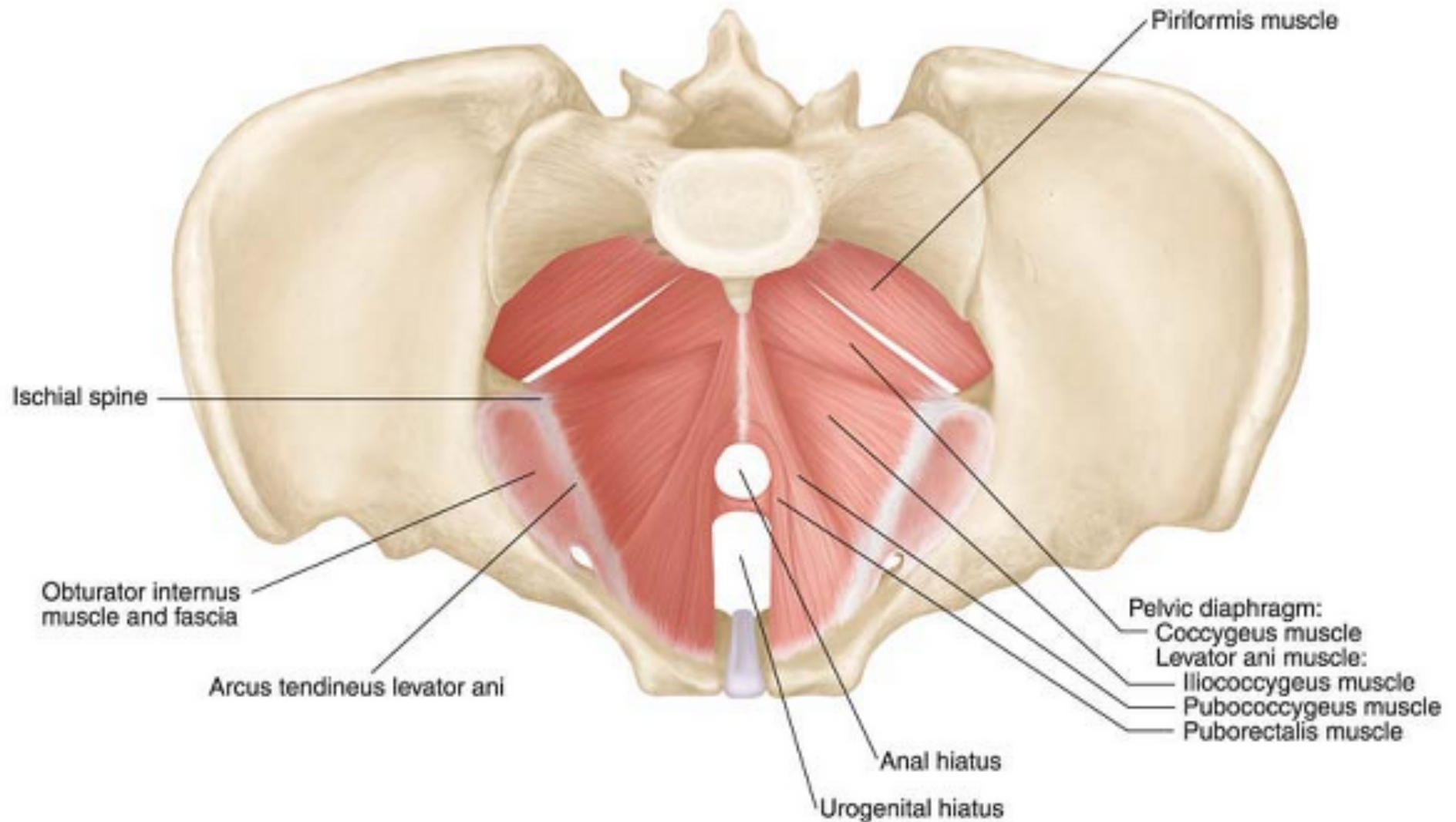
Pelvic diaphragm divides true pelvis:

1. Above pelvic diaphragm: Main pelvic cavity containing urinary bladder, rectum, etc.
2. Below pelvic diaphragm: Perineum containing external genitalia and outlets for GI and urogenital systems

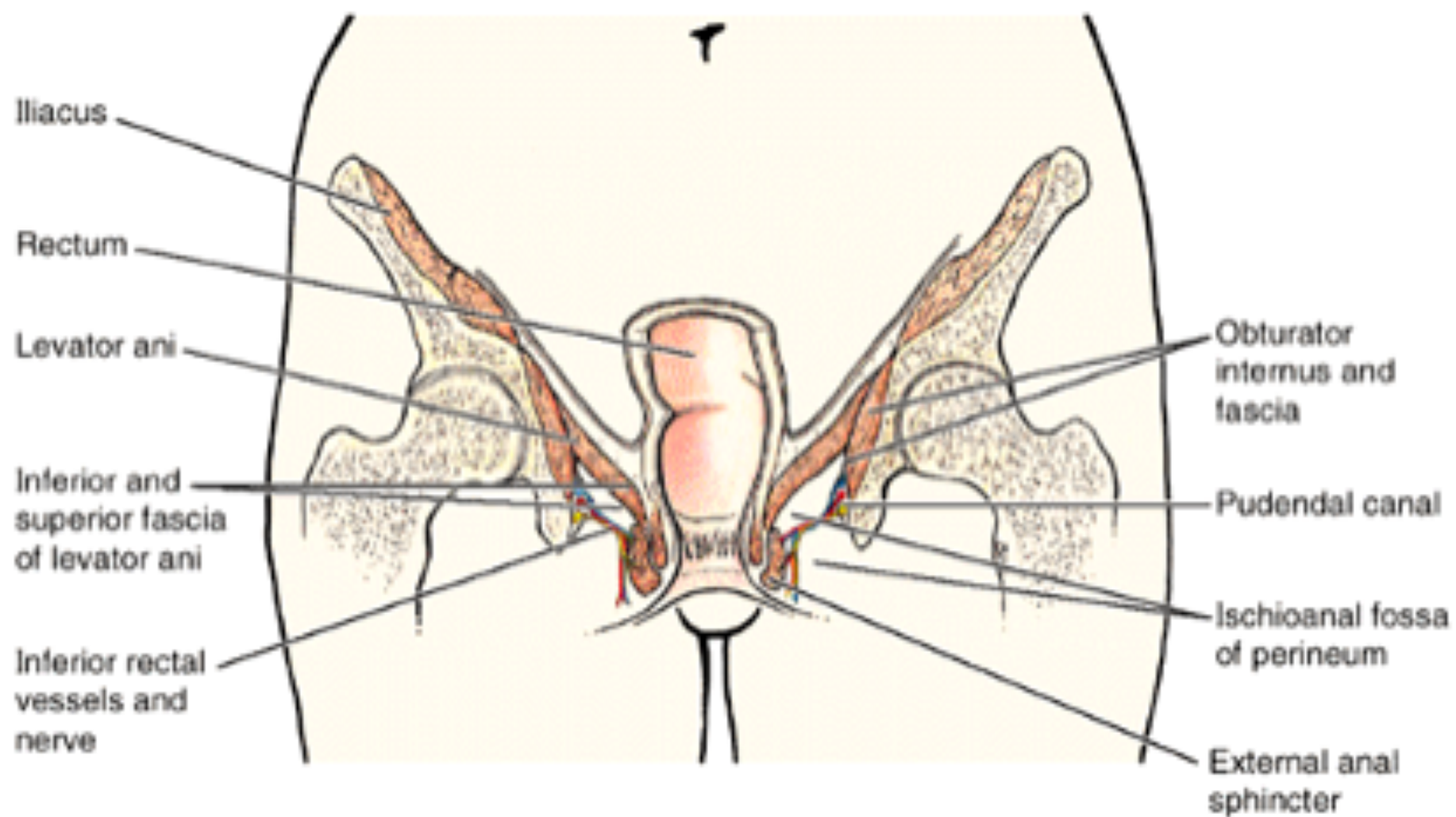


View on next slide from below
pelvic diaphragm

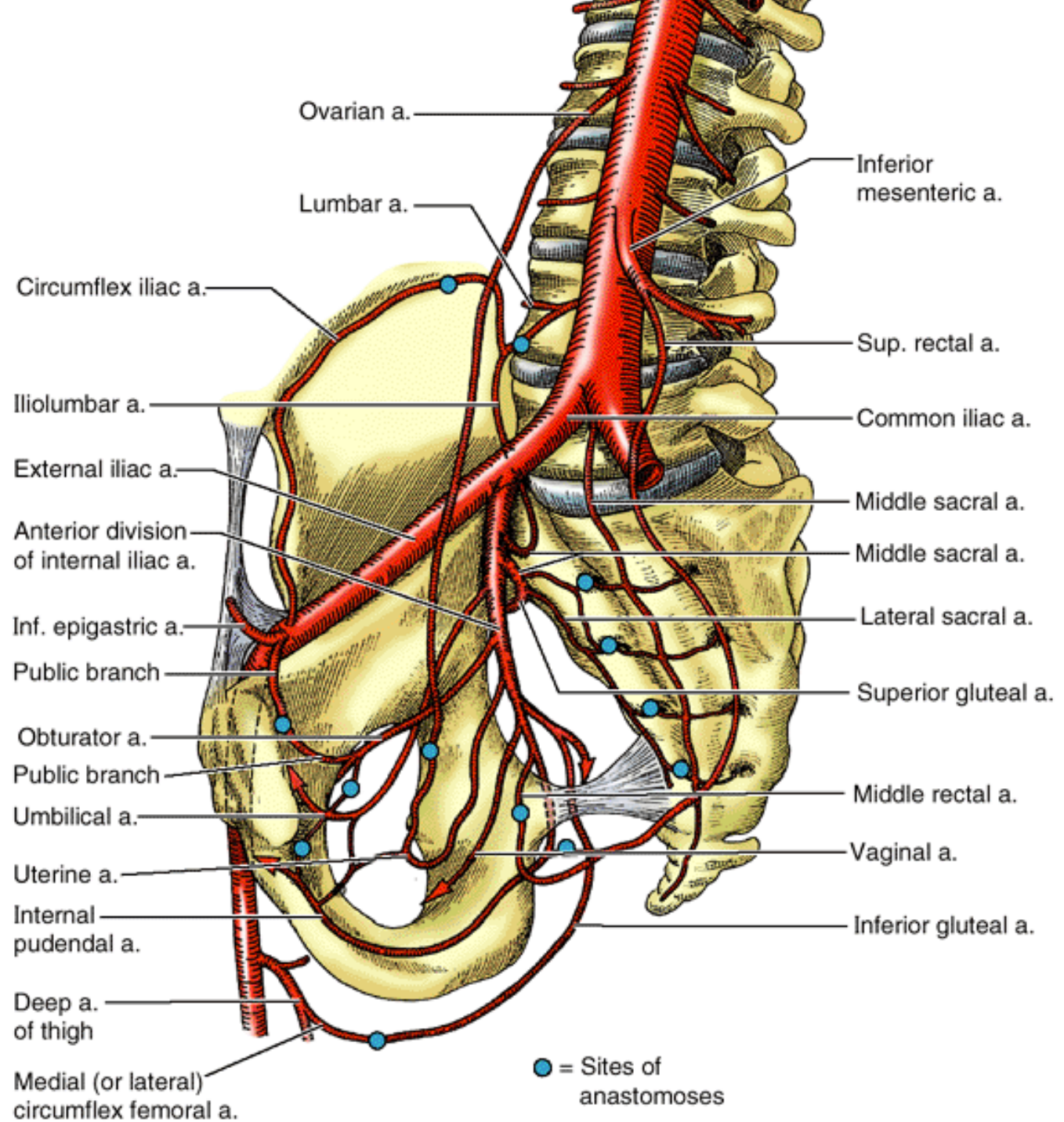
The pelvic diaphragm

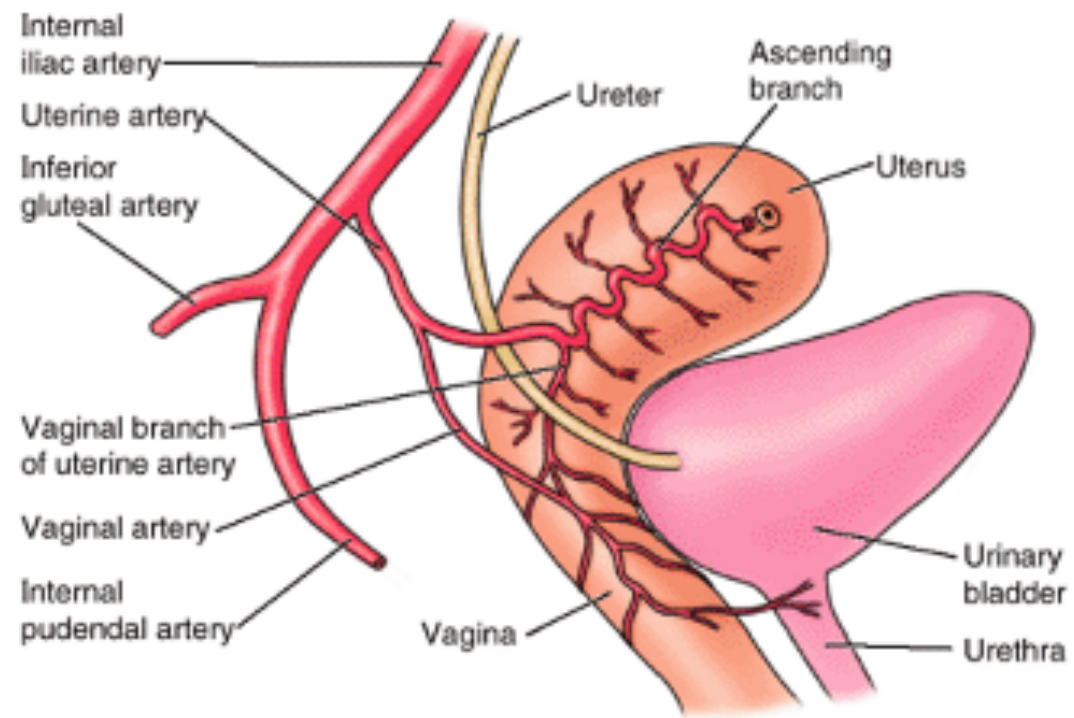


The pelvic diaphragm is the muscular part of the pelvic floor. Shaped like a bowl or funnel and attached superiorly to the pelvic walls, it consists of the levator ani and the coccygeus muscles

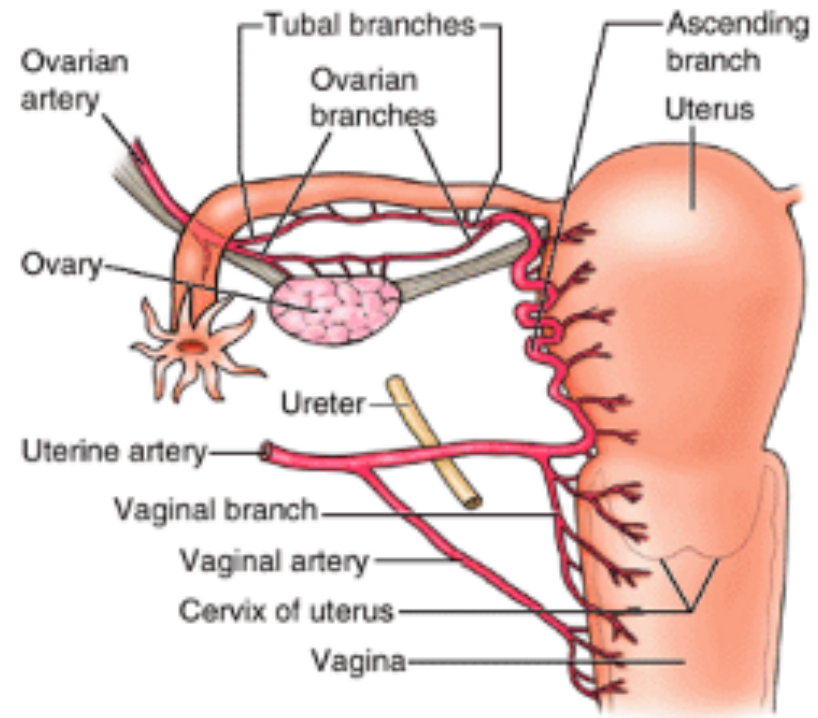


(B) Anterior view of schematic coronal section





(A) Lateral view

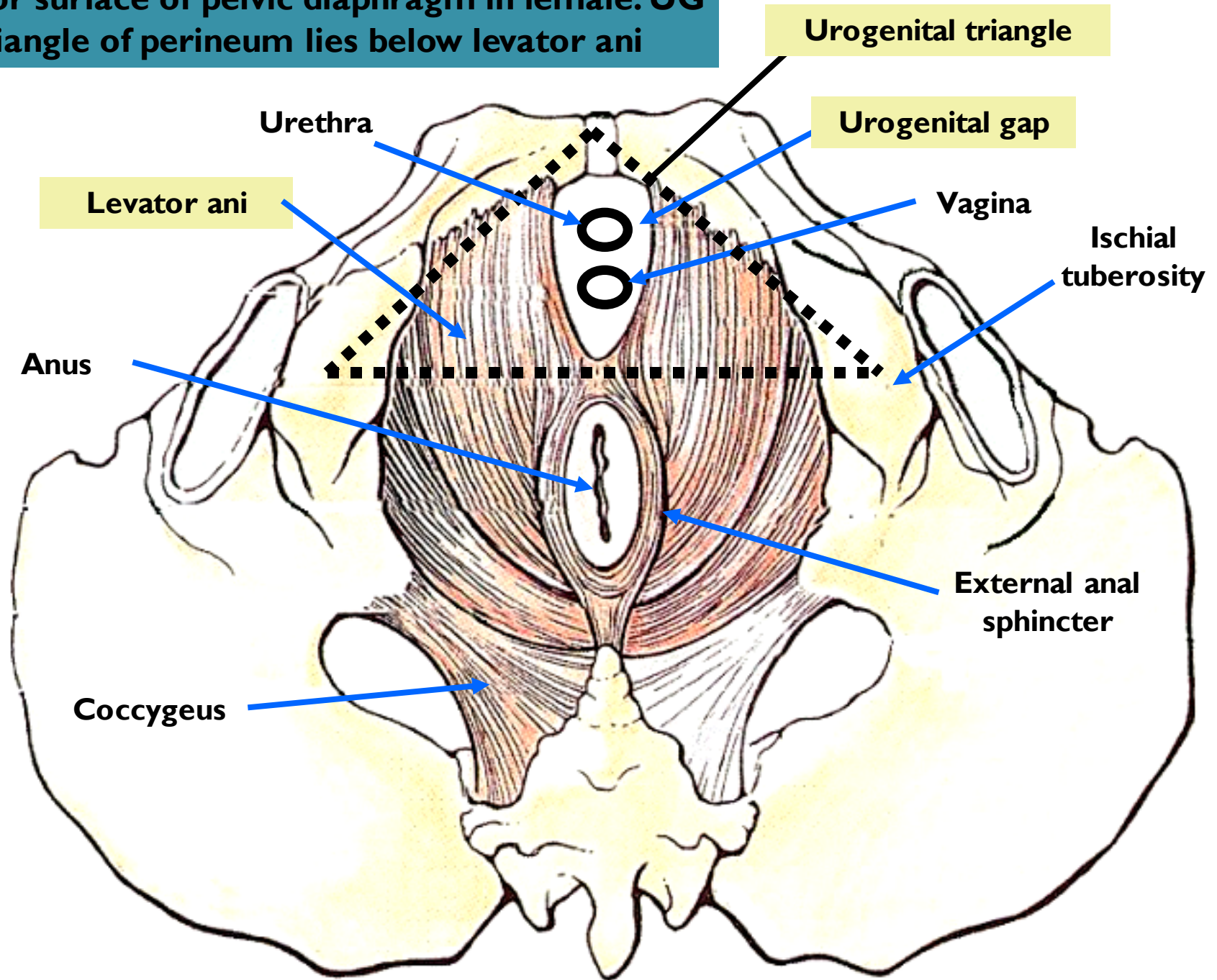


(B) Anterior view

Sacral plexus

- The sacral plexus on each side is formed by the anterior rami of S1 to S4, and the lumbosacral trunk (L4 and L5).
- The plexus is formed in relation to the anterior surface of the piriformis muscle, which is part of the posterolateral pelvic wall.
- Sacral contributions to the plexus pass out of the anterior sacral foramina and course laterally and inferiorly on the pelvic wall.
- The lumbosacral trunk, consisting of part of the anterior ramus of L4 and all of the anterior ramus of L5, courses vertically into the pelvic cavity from the abdomen by passing immediately anterior to the sacro-iliac joint.
- Gray rami communicantes from ganglia of the sympathetic trunk connect with each of the anterior rami and carry postganglionic sympathetic fibers destined for the periphery to the somatic nerves. In addition, special visceral nerves (**pelvic splanchnic nerves**) originating from S2 to S4 deliver preganglionic parasympathetic fibers to the pelvic part of the prevertebral plexus.
- Each anterior ramus has ventral and dorsal divisions that combine with similar divisions from other levels to form terminal nerves. The anterior ramus of S4 has only a ventral division.

Inferior surface of pelvic diaphragm in female: UG triangle of perineum lies below levator ani



Urogenital triangle

Urogenital gap

Levator ani

Urethra

Vagina

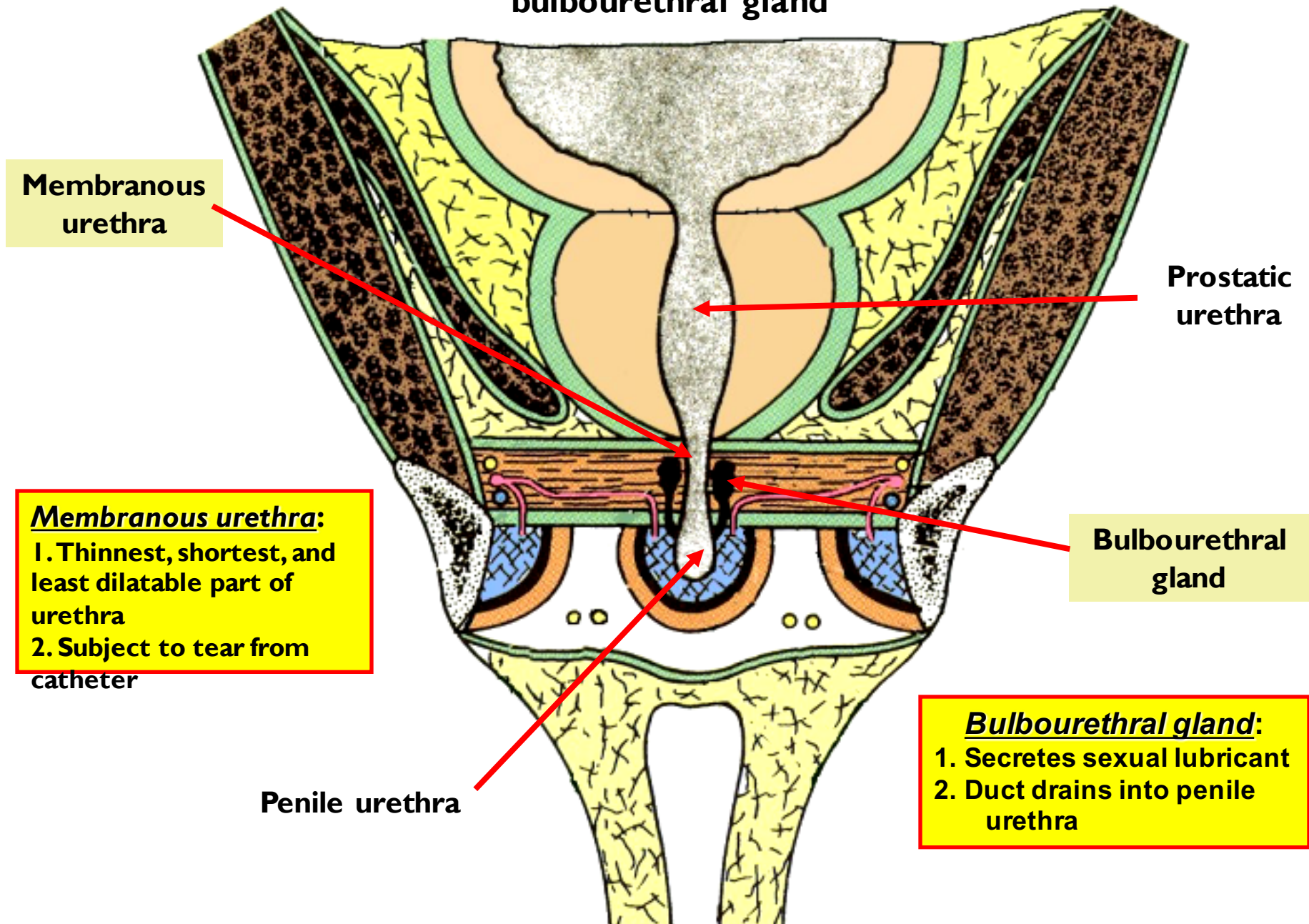
Ischial tuberosity

Anus

External anal sphincter

Coccygeus

Coronal section through male UG diaphragm: Membranous urethra and bulbourethral gland



Membranous urethra

Prostatic urethra

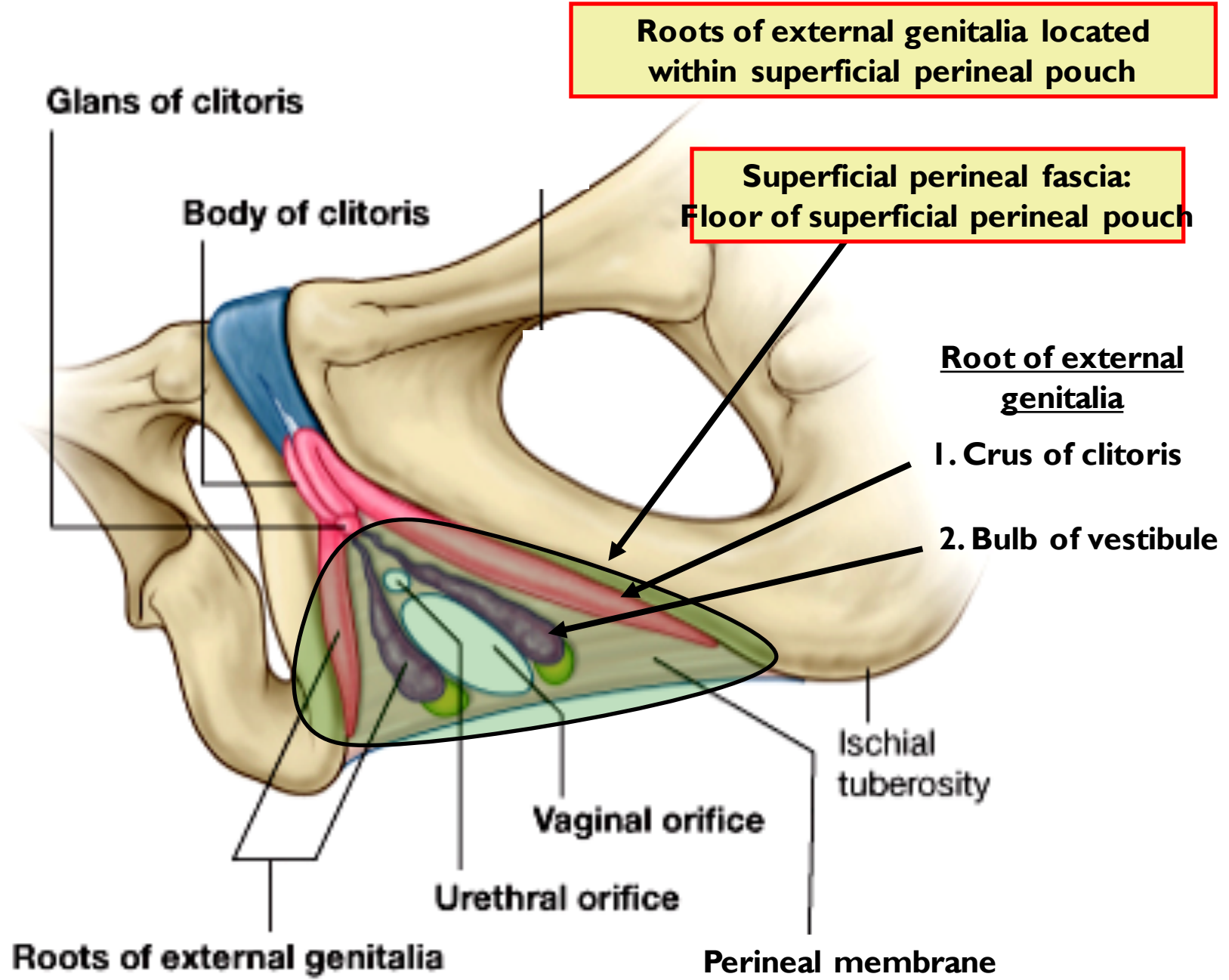
Membranous urethra:
1. Thinnest, shortest, and least dilatable part of urethra
2. Subject to tear from catheter

Bulbourethral gland

Penile urethra

Bulbourethral gland:
1. Secretes sexual lubricant
2. Duct drains into penile urethra

External genitalia of female



Contents of superficial perineal pouch:

1. Bulb of vestibule

2. Crus of clitoris

3. Greater vestibular gland

Perineal body

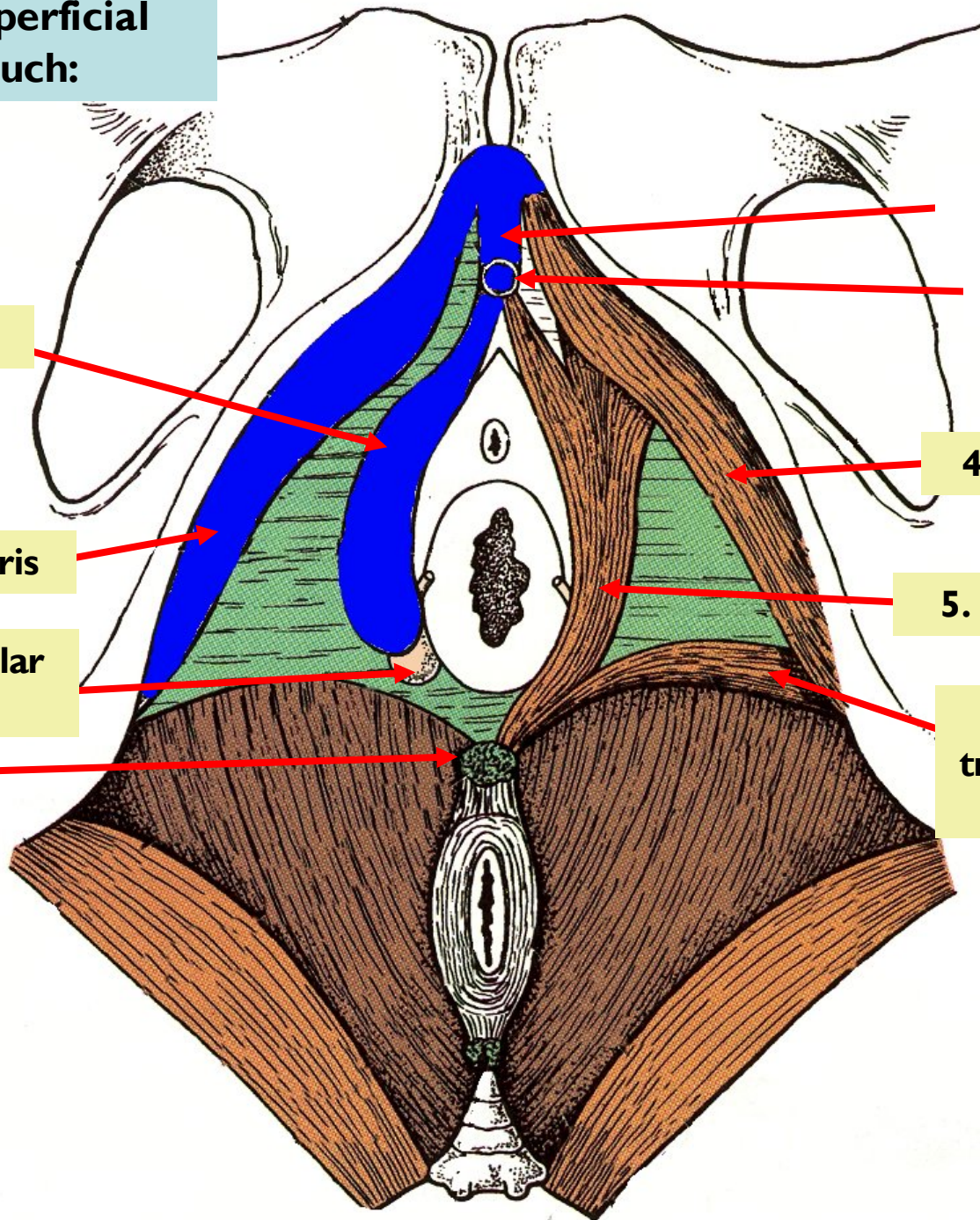
Body of clitoris

Glans of clitoris

4. Ischiocavernosus

5. Bulbospongiosus

6. Superficial transverse perineal muscle



Orifices of urogenital system

Orifice of greater vestibular gland

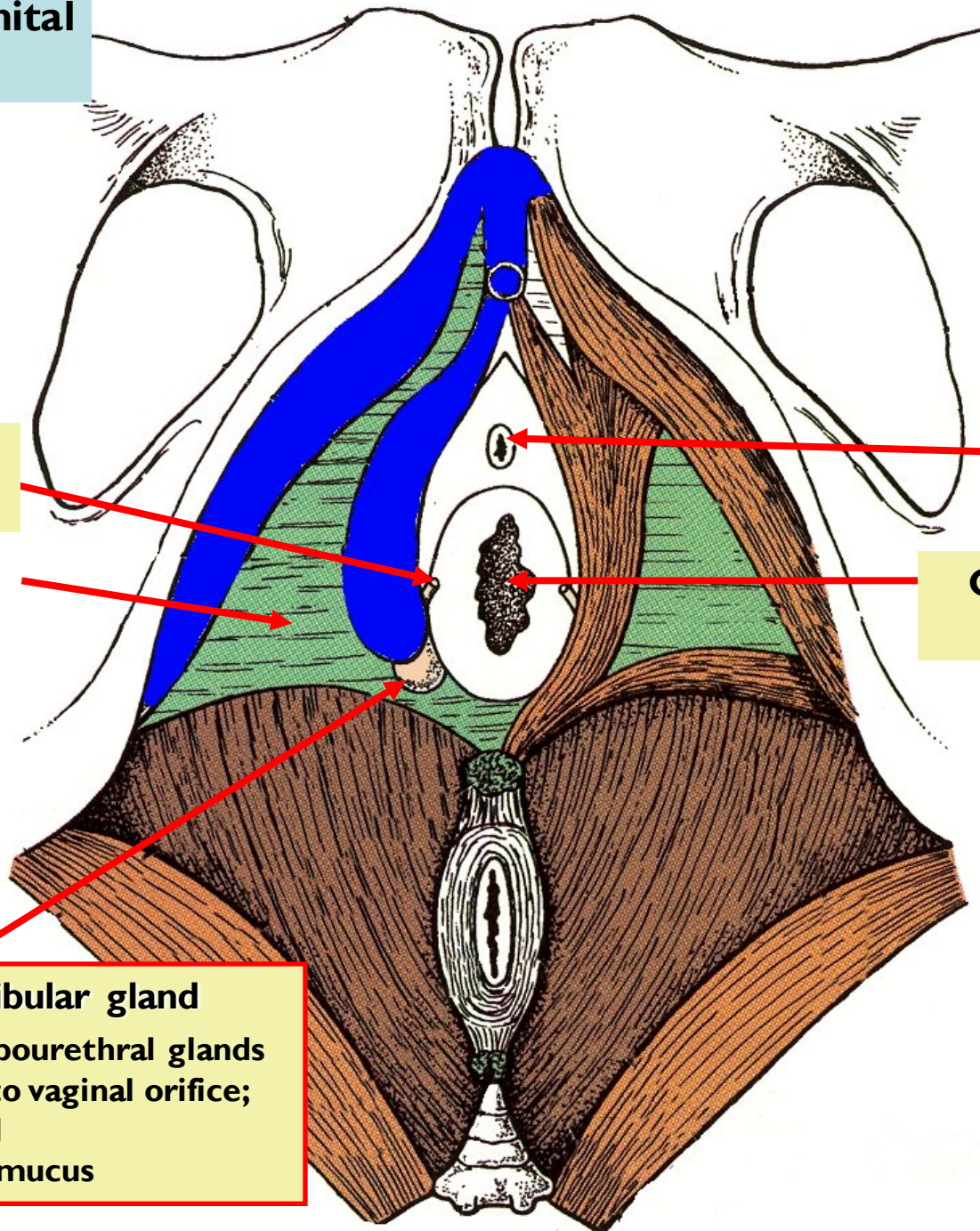
Perineal membrane

Orifice of urethra

Orifice of vagina

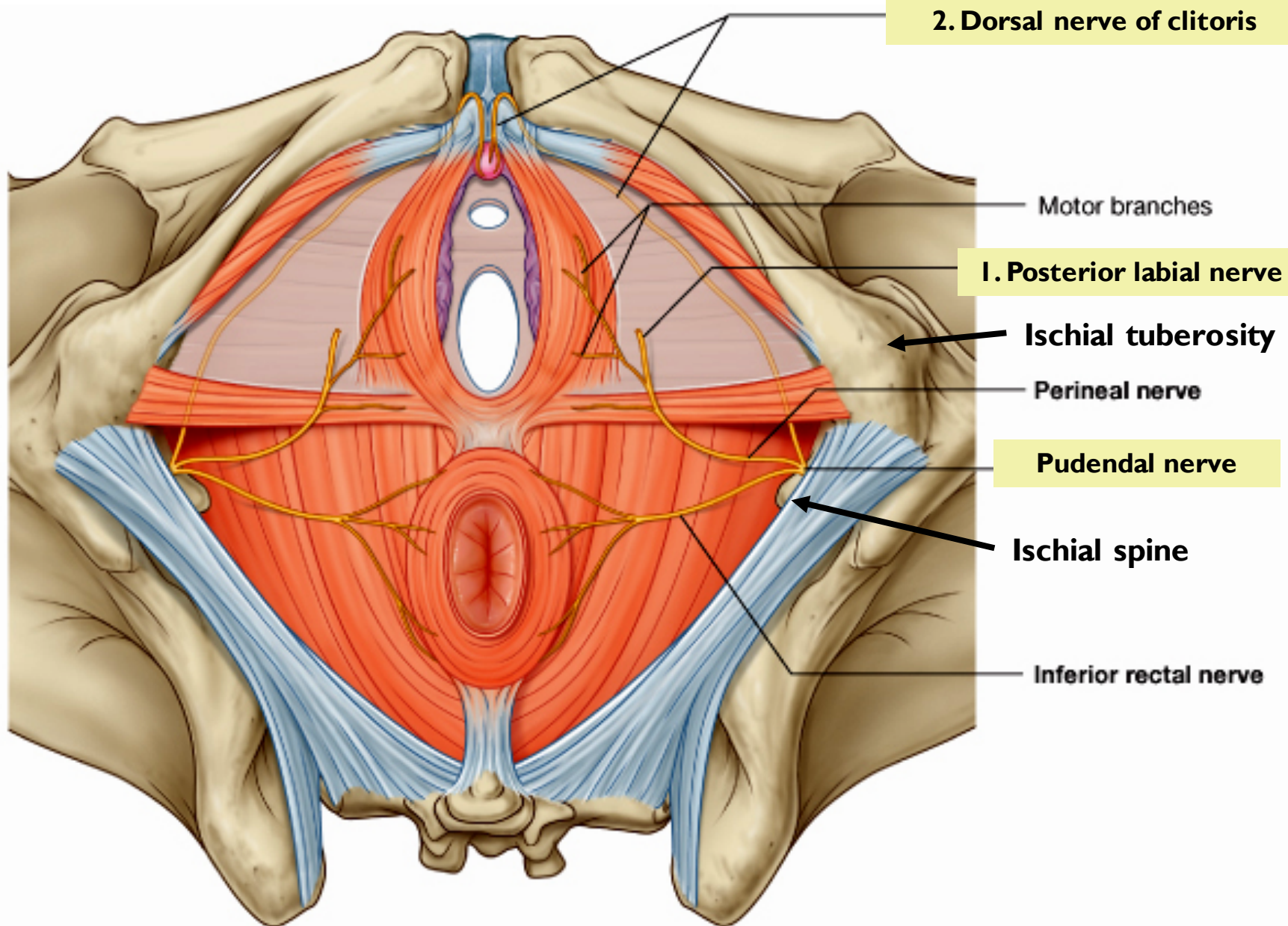
Greater vestibular gland

- Homologous to bulbourethral glands
- Duct opens lateral to vaginal orifice; duct can get clogged
- Secrete lubricating mucus



Sensory branches of pudendal nerve to female urogenital triangle

B



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- Revise
 - Male and female external genitalia