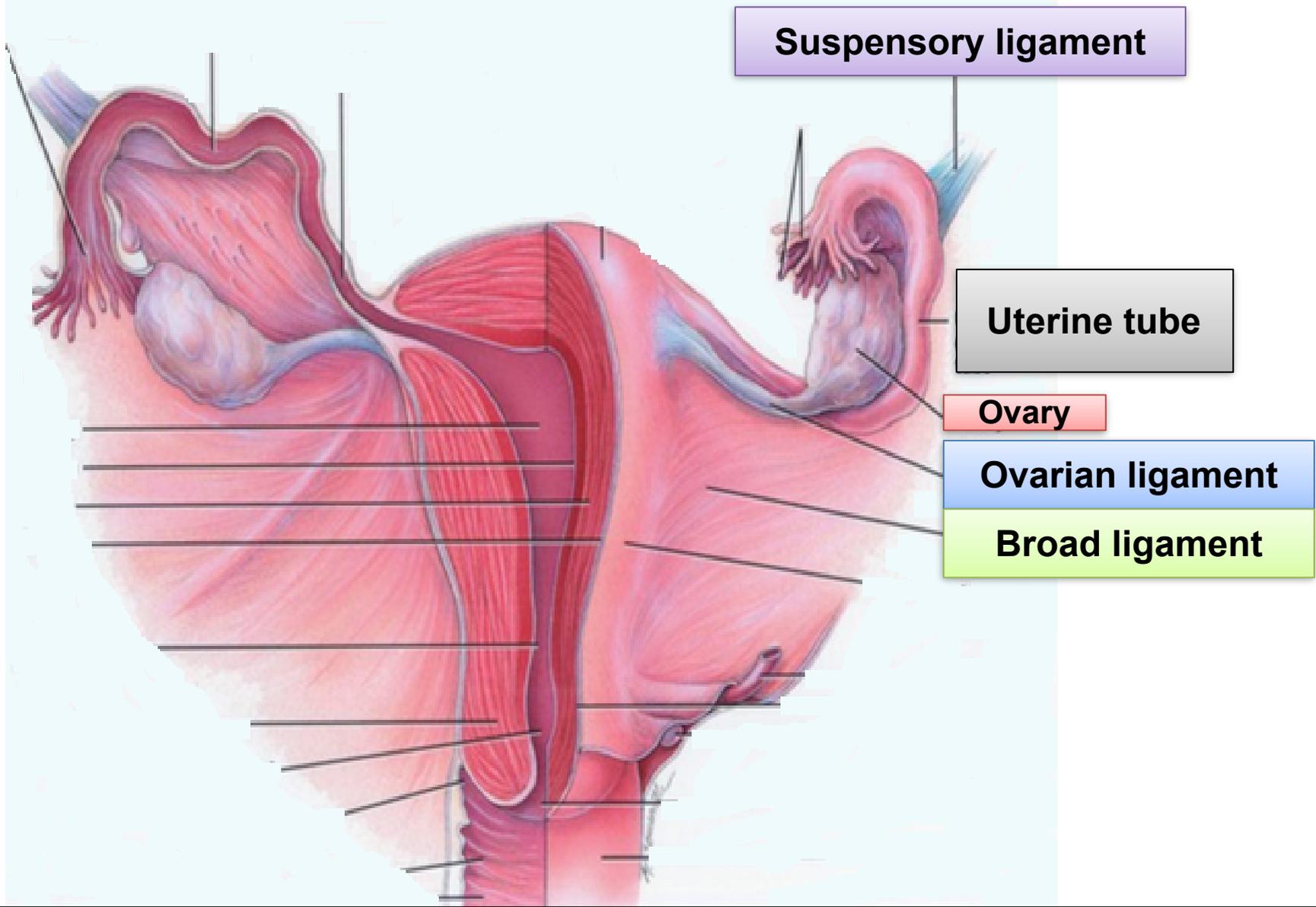


UGS Lecture – 8
)2021(

Ovaries

- The ovaries are homologous with testes in males.
- They are responsible for production of female germ cells (ova), and female sex hormones (estrogen and progesterone) in sexually mature female.
- They vary in size and shape according to age and stage of menstrual cycle.
- In young adult each ovary is a flattened ovoid, pinkish-grey in color, measuring about 4 cm long, 2 cm wide, and less than 1 cm thick.

- They are situated one on each side of uterus in a shallow depression (ovarian fossa) on lateral pelvic wall.
- This fossa is bounded anteriorly by obliterated umbilical ligament; posteriorly by ureter and internal iliac vessels; and superiorly by external iliac vessels.
- The ovary has a medial and a lateral surface, an anterior (mesovarian) and a posterior free borders, an upper (tubal) and lower (uterine) poles.



The Ovaries

- **The medial surface is in contact with coils of intestine and on right side frequently with vermiform appendix.**
- **The lateral surface is in contact with ovarian fossa.**
- **The anterior border contains the hilum of the organ.**
- **The mesovarium is a double-layered fold of peritoneum, which connect anterior border of ovary to broad ligament.**
- **Through this ligament vessels and nerves enter and leave ovary.**

- **The posterior border is directed toward the uterus. The uterine tube curves down over this border.**
- **The suspensory ligament connects tubal pole to lateral wall of pelvis.**
- **The ovarian ligament connects uterine pole of ovary to lateral margin of uterus.**
- **After menopause the ovary becomes shrunken and its surface is pitted with scars.**

Blood Supply of Ovary

- **Ovarian artery (branch of abdominal aorta) at level of L1 vertebra.**
- **The right ovarian vein drains into inferior vena cava; the left ovarian vein drains into left renal vein.**

Genital Tracts

A. Uterine Tubes (Fallopian Tubes, or Oviduct)

- One on each side, about 10 cm long situated in free upper border of broad ligament of uterus.
- They transmit ova from ovary to cavity of uterus.
- The tube ascends along upper part of anterior border of ovary to tubal pole, over which it arches; then it turns downwards along posterior border of ovary.
- The lateral end of each tube connects peritoneal cavity in region of ovary with cavity

It is divided into four parts:

a. Infundibulum: Is funnel-shaped lateral end, the circumference of which has several finger-like processes the fimbriae.

b. Ampula:

- Is the widest and longest portion, making about 2/3 of whole length of uterine tube.**
- In it fertilization of ova takes place.**

c. Isthmus: Is the narrow, thick-walled medial portion that joins uterus.

d. Intramural (Uterine) Part: Is the segment of the tube, which runs through uterine wall.

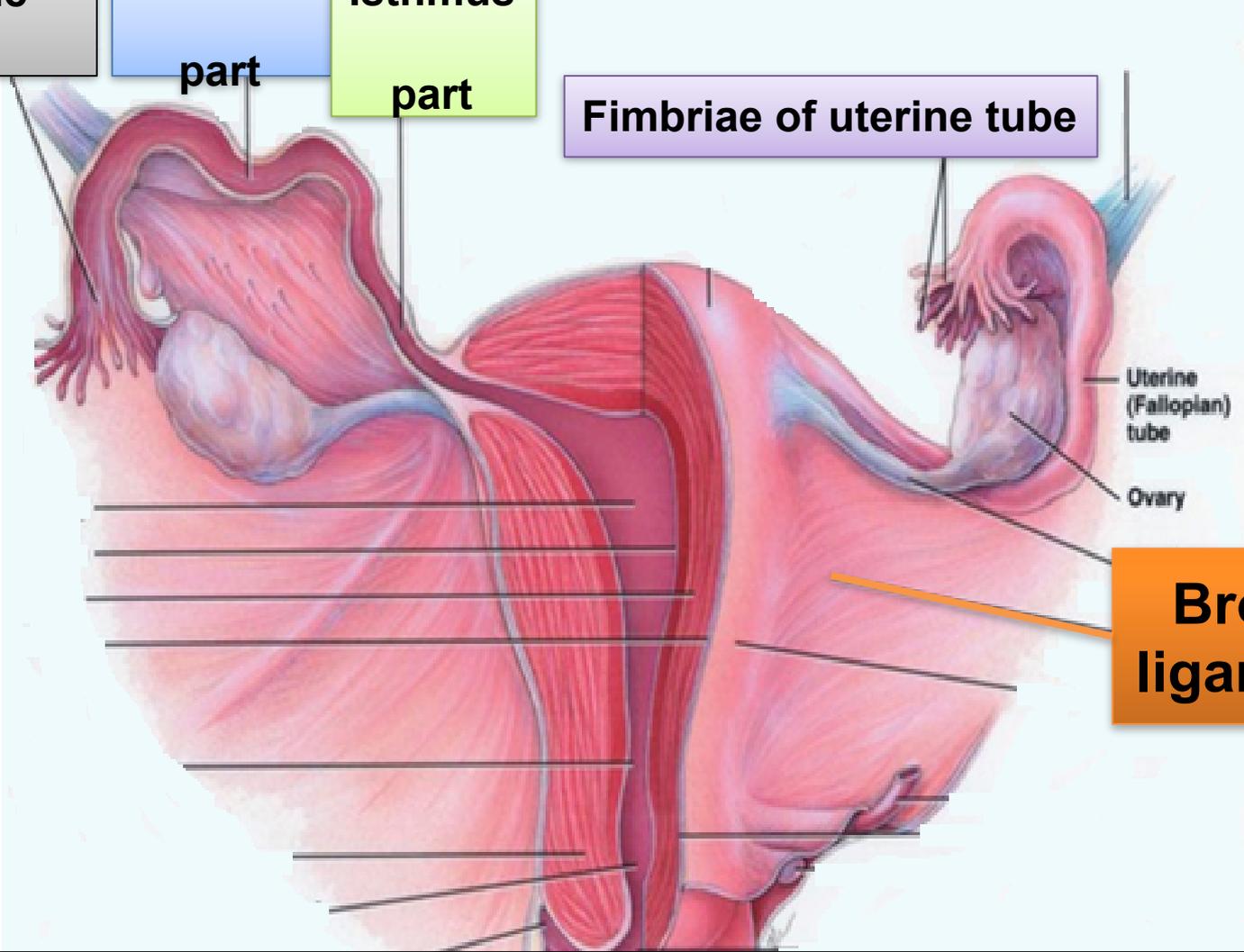
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Infundibulum
of uterine
tube

Ampulla
part

Isthmus
part

Fimbriae of uterine tube



Uterine
(Fallopian)
tube
Ovary

Broad
ligament

The Uterine (Fallopian) Tube

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Blood Supply of Uterine Tube

- **Ovarian artery (branch of descending abdominal aorta).**
- **Uterine arteries (branch of internal iliac artery).**
- **Veins correspond to arteries and drain into ovarian and uterine veins.**

B. Uterus

- Is a hollow, thick walled muscular organ serves as a site for reception, retention, and nutrition of fertilized ovum.**
- It is situated in pelvic cavity, between urinary bladder, anteriorly, and rectum, posteriorly.**
- In to its upper part, uterine tubes open, one on each side.**
- Its cavity communicates with that of vagina.**

The uterus is divisible into two parts:

a. Body:

Forms upper 2/3 of organ, includes fundus of uterus and isthmus.

The fundus is the dome-shaped part of body that lies above entrance of uterine tubes.

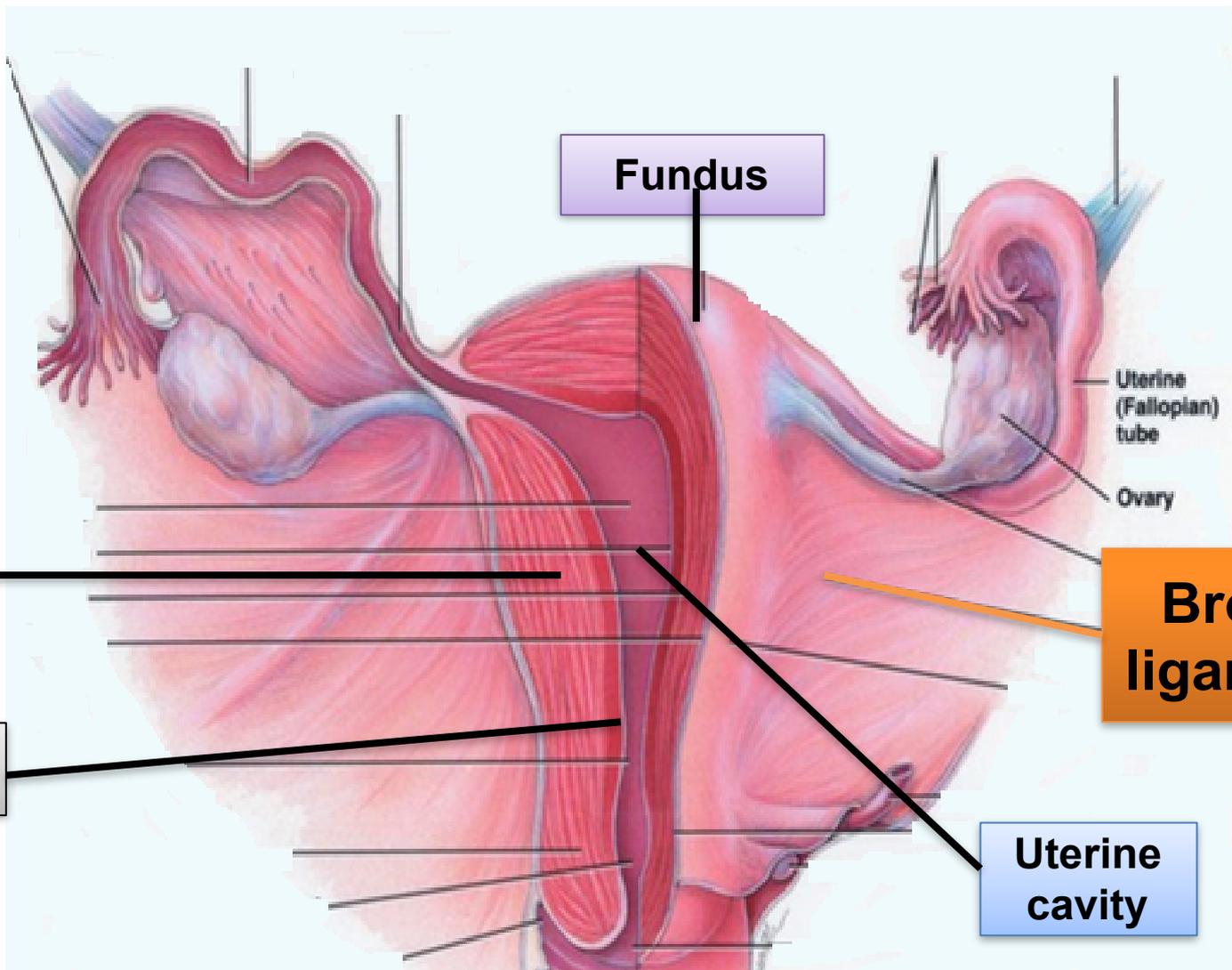
The isthmus is the lower constricted region of body (about 1 cm) just above cervix.

The uterine horns (L-cornua) are the superolateral regions where uterine tubes enter.

The body of the uterus lies between the two layers of broad ligament and is freely movable.

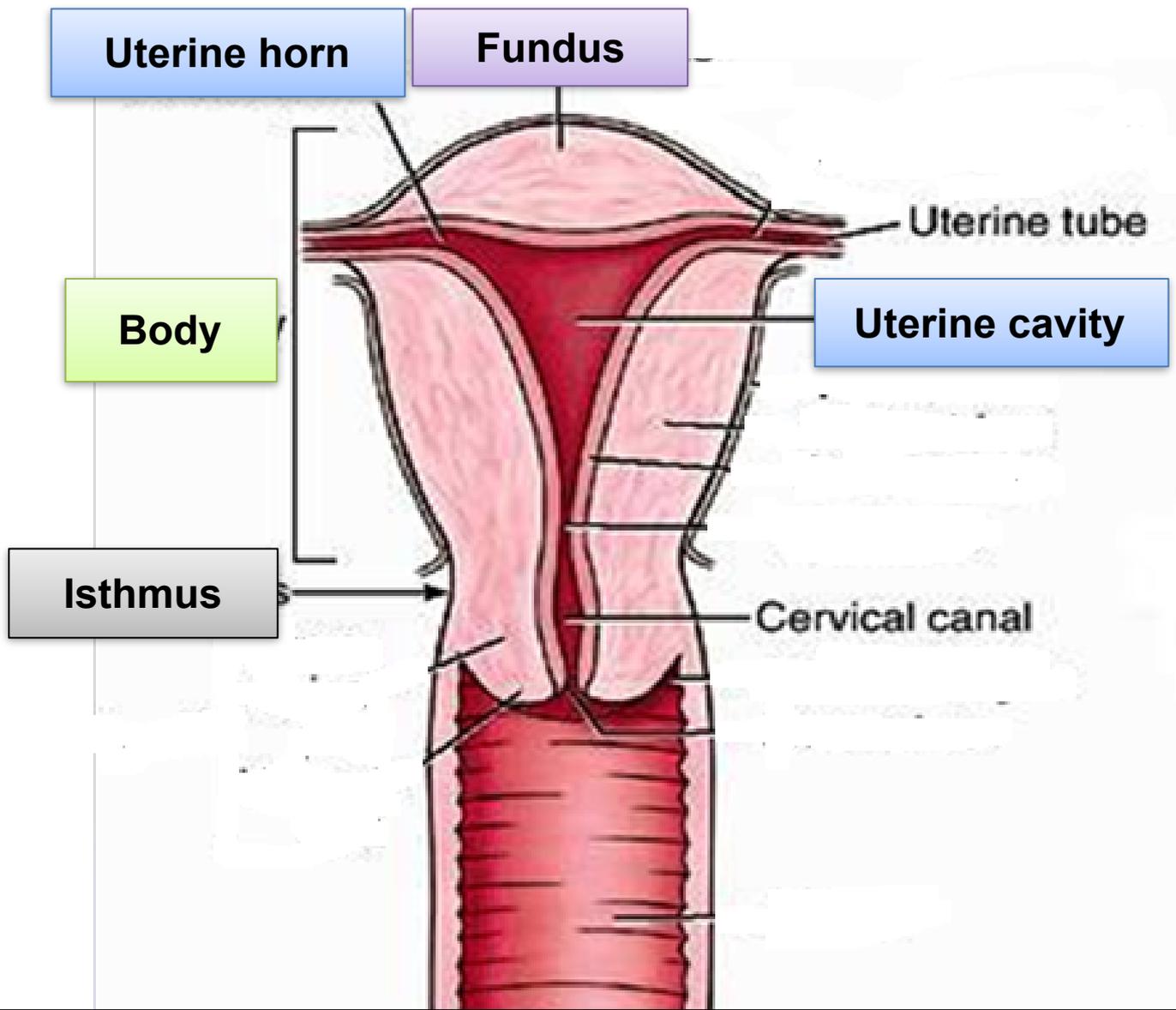
The cavity of body (uterine cavity) is triangular in coronal section.

It is continuous inferiorly with cervical canal.



The Uterus

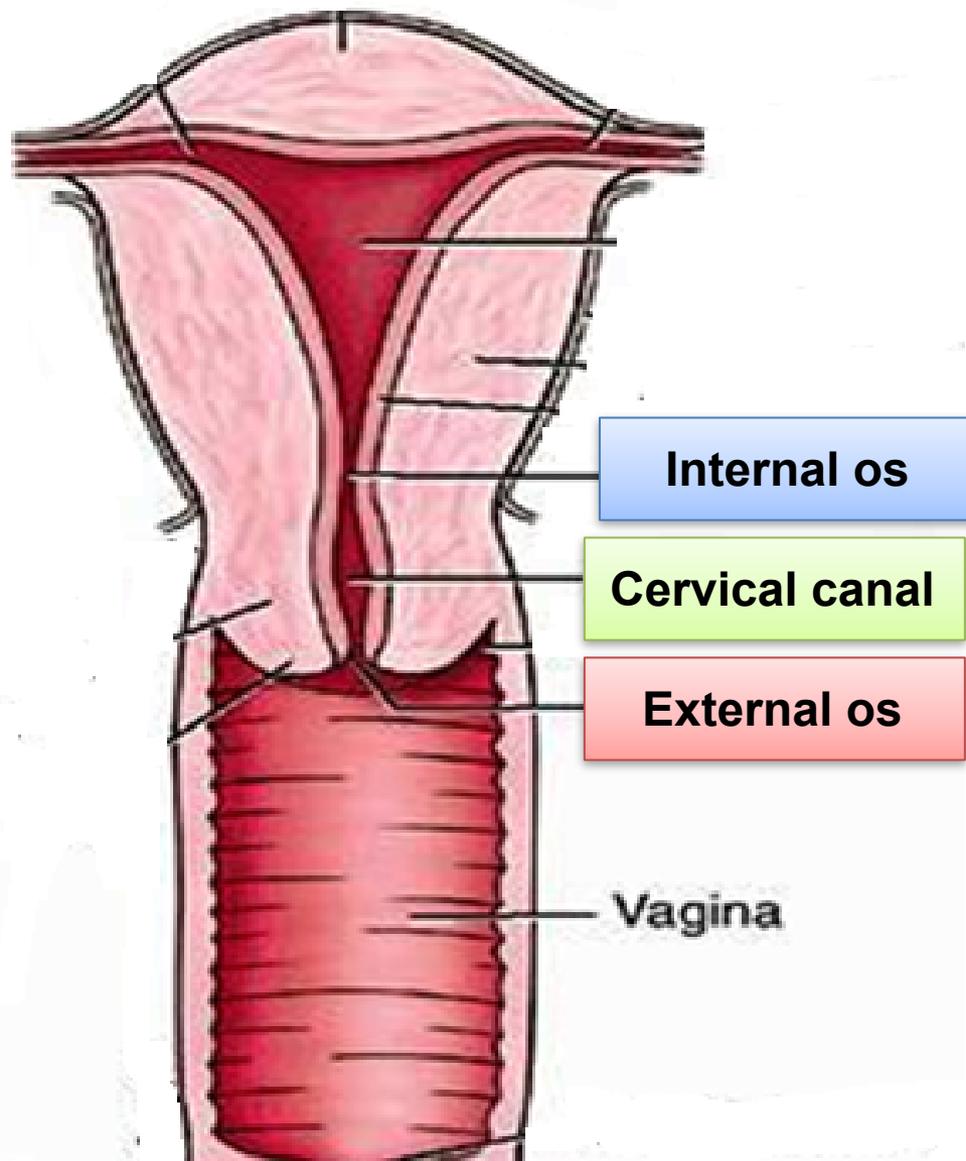
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The Uterus
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b. Cervix

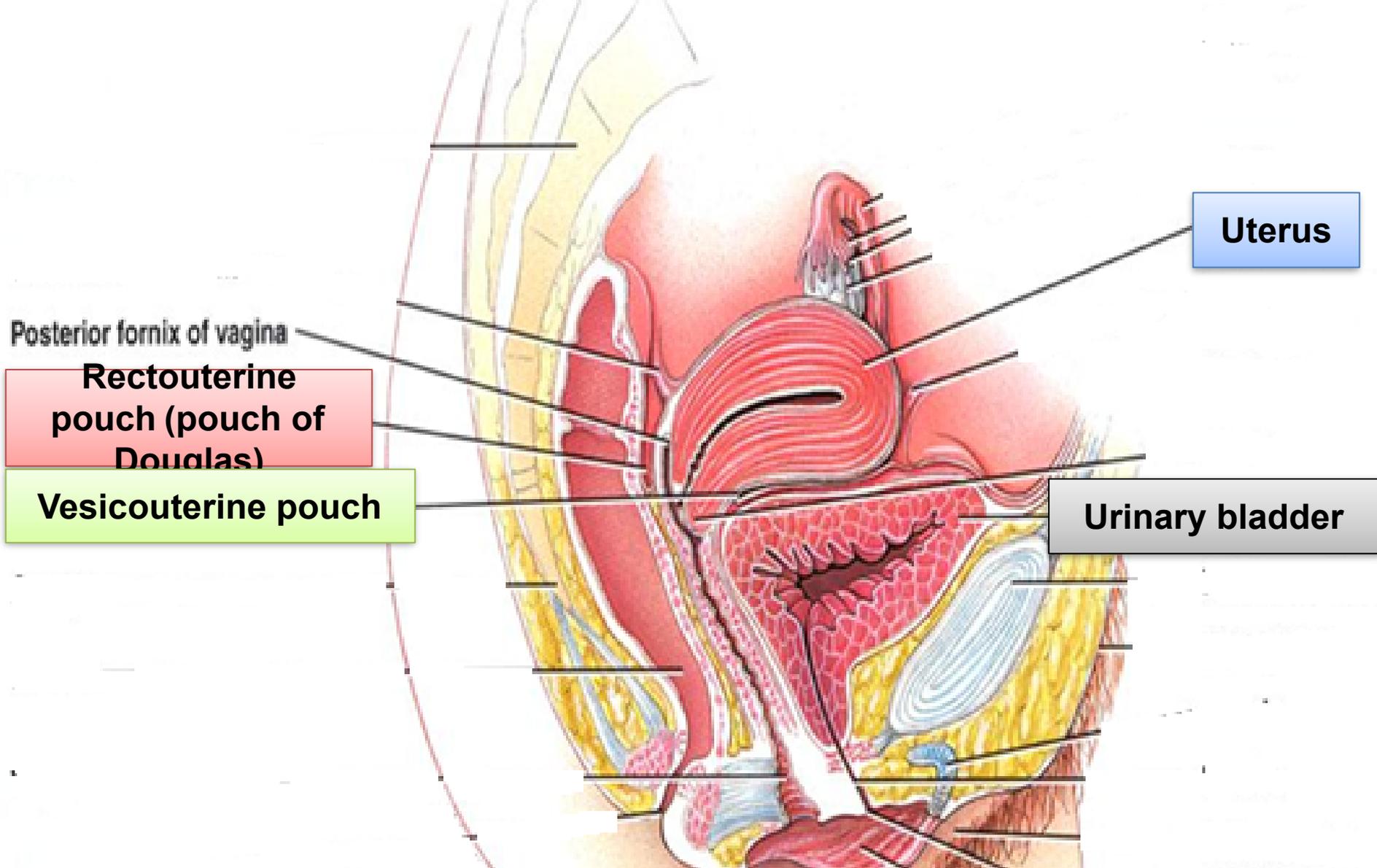
- It is the cylindrical, narrow inferior part of uterus that extends from internal os, above to external os, below.**
- It has a supravaginal part extends from isthmus to vagina and a vaginal part that protrudes into vagina and surrounds external os.**
- The supravaginal part lies between the bladder and rectum.**
- The cavity of cervix (cervical canal) is continuous through internal os with uterine cavity, and through external os with vaginal cavity.**



The Cervix

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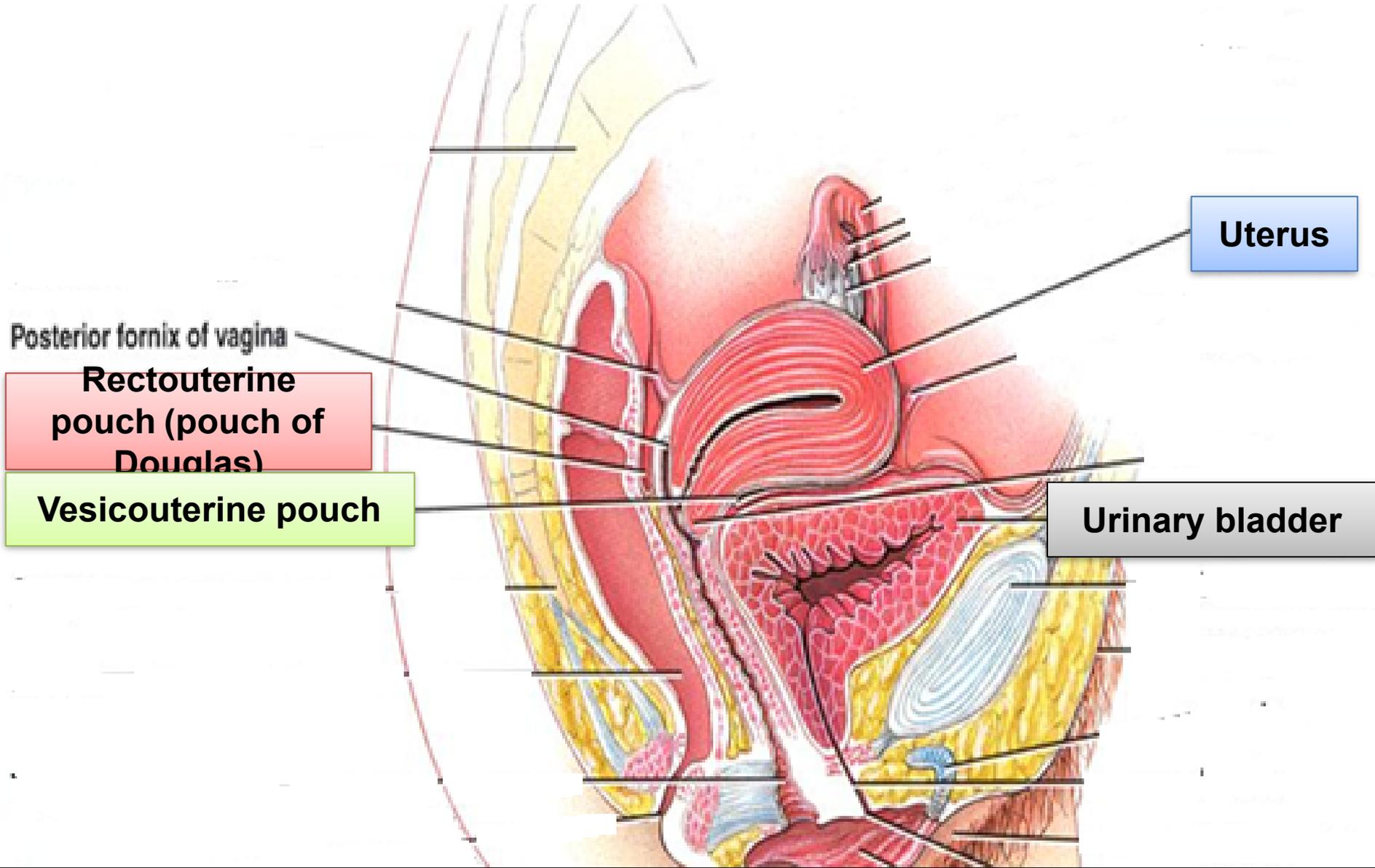
- **The peritoneum passes from anterior surface of rectum on to posterior surface of uterus, forming rectouterine pouch (pouch of Douglas), and then curves over fundus to reach anterior surface, where it descends as far as junction of body and cervix.**
- **Peritoneum is reflected then forwards on to superior surface of urinary bladder, forming a shallow recess, called vesicouterine pouch.**



The relation of peritoneum to uterus

Relations

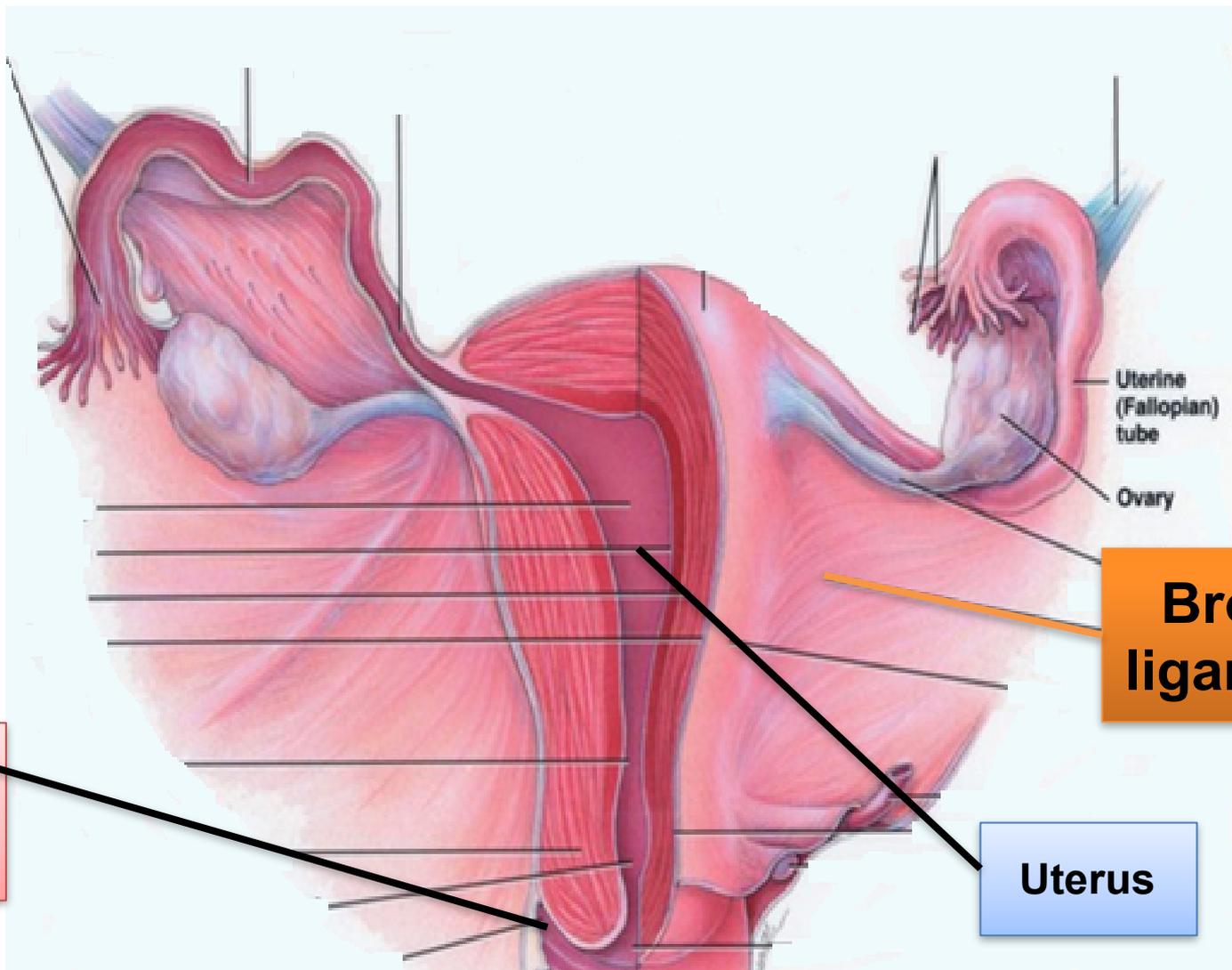
- Anteriorly, the body of uterus is separated from superior surface of bladder by peritoneum and vesicouterine pouch.
- The isthmus and cervix lie in direct contact with bladder without intervening peritoneum.
- This allows cervical cancer to invade urinary bladder.
- Posteriorly, the body of uterus and supravaginal part of cervix are separated from rectum by pouch of Douglas containing coils of sigmoid colon.



The anterior and posterior relations of uterus

- **Laterally, the uterus is related to broad ligament of uterus and uterine vessels.**
- **The vaginal cervix is related laterally to the lateral vaginal fornix.**

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The lateral relation of uterus

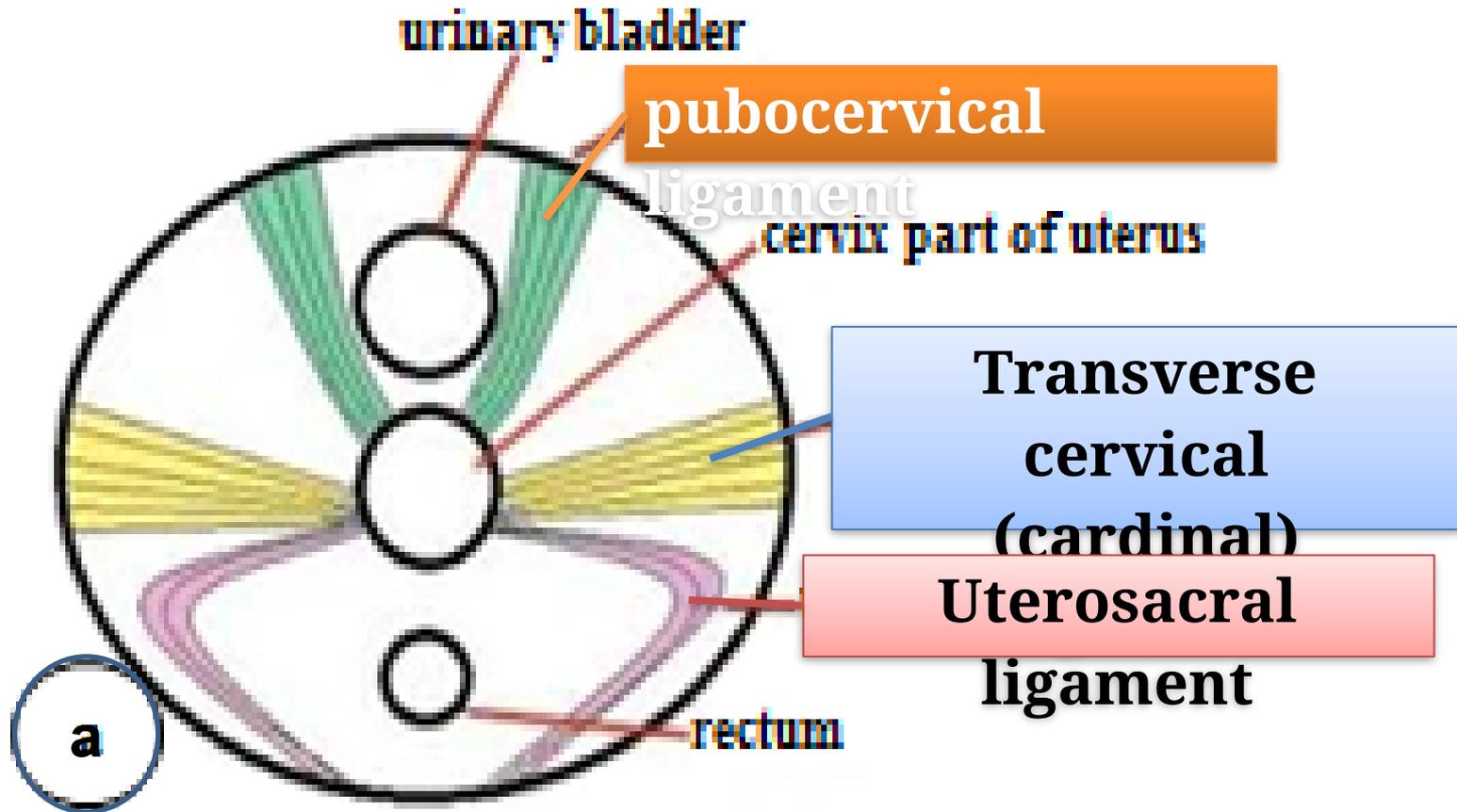
Supports of Uterus

- **The uterus is maintained in position mainly by the tone of pelvic diaphragm and fibromuscular (true) ligaments of uterus.**
- **These ligaments formed by condensation of pelvic fascia:**
 - (1) Pubocervical Ligaments: Connect cervix and upper part of vagina to pubic bones.**
 - (2) Sacrocervical Ligaments: Connect cervix and upper part of vagina to lower end of sacrum.**

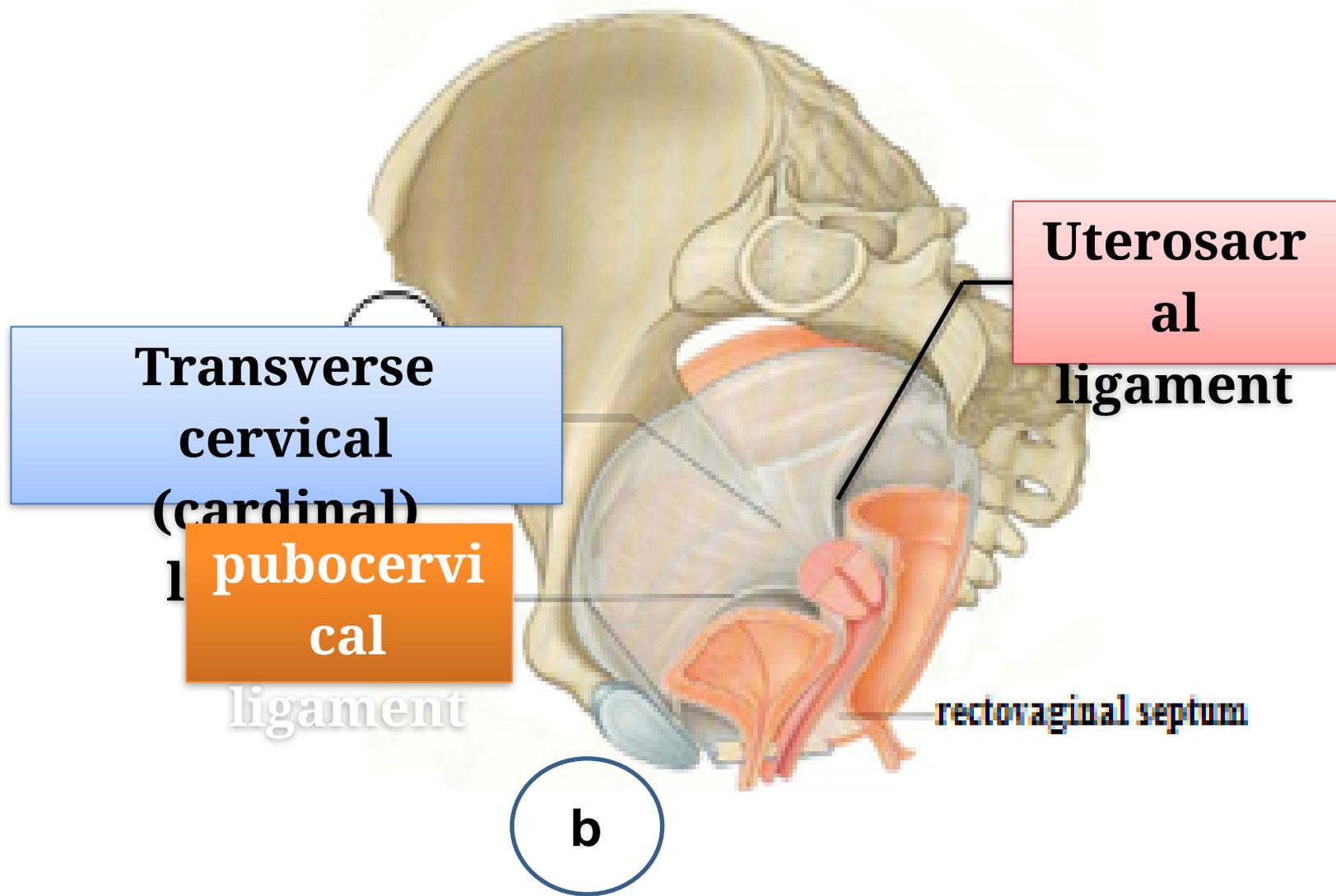
(3) Transverse Cervical (Cardinal) Ligaments:
Connect cervix and upper part of vagina to lateral walls of pelvis.

Round Ligaments of the Uterus

- The two round ligament of uterus, each extends from the front of uterus, immediately below entrance of uterine tube through deep inguinal ring and inguinal canal to subcutaneous tissue of labium majus.
- They play a part in maintaining uterus in an anteversion and anteflexion.

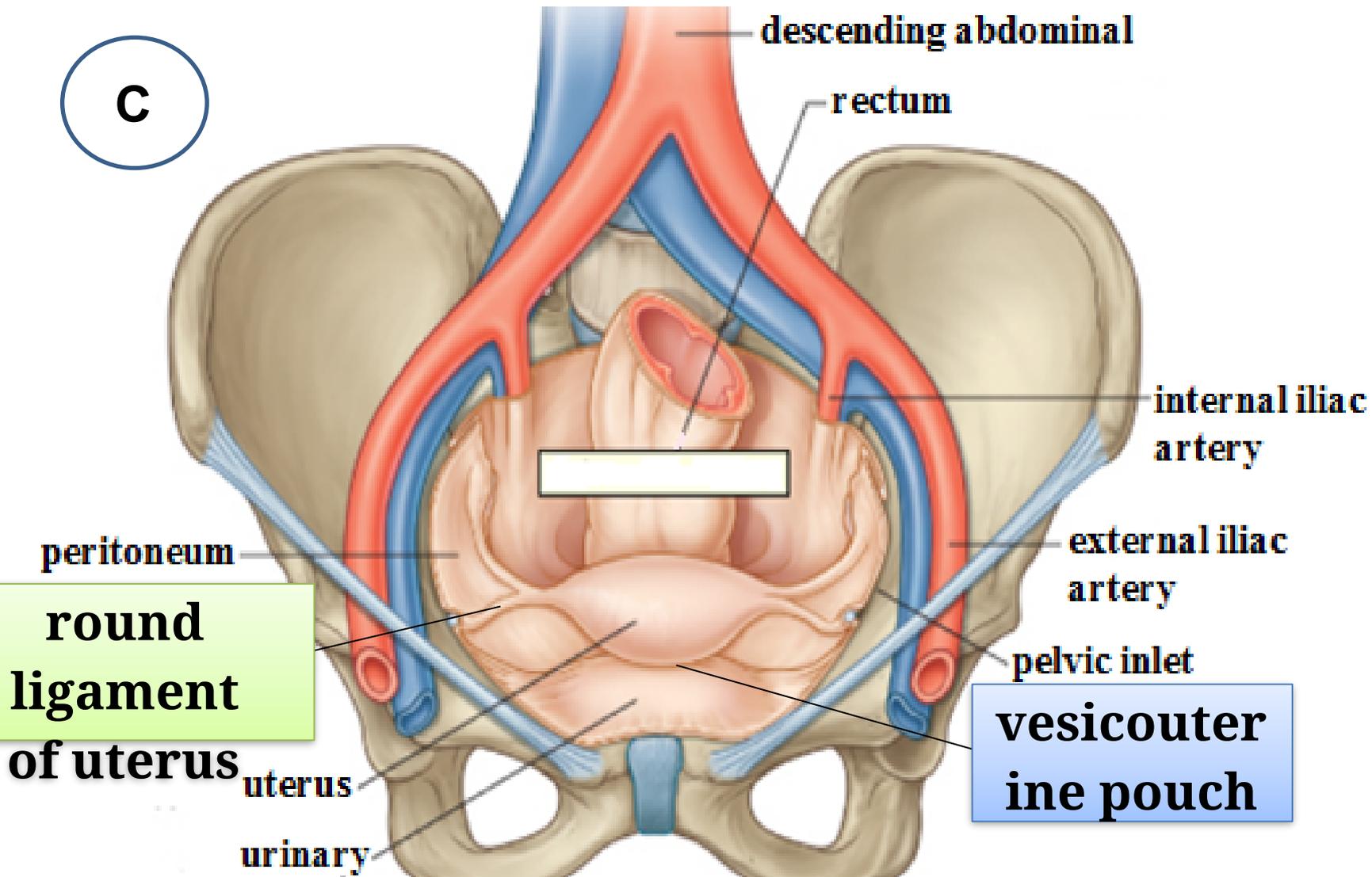


Diagrams show the ligaments that provide primary support to the uterus. 27



Diagrams show the ligaments that provide primary support to the uterus. 28

C



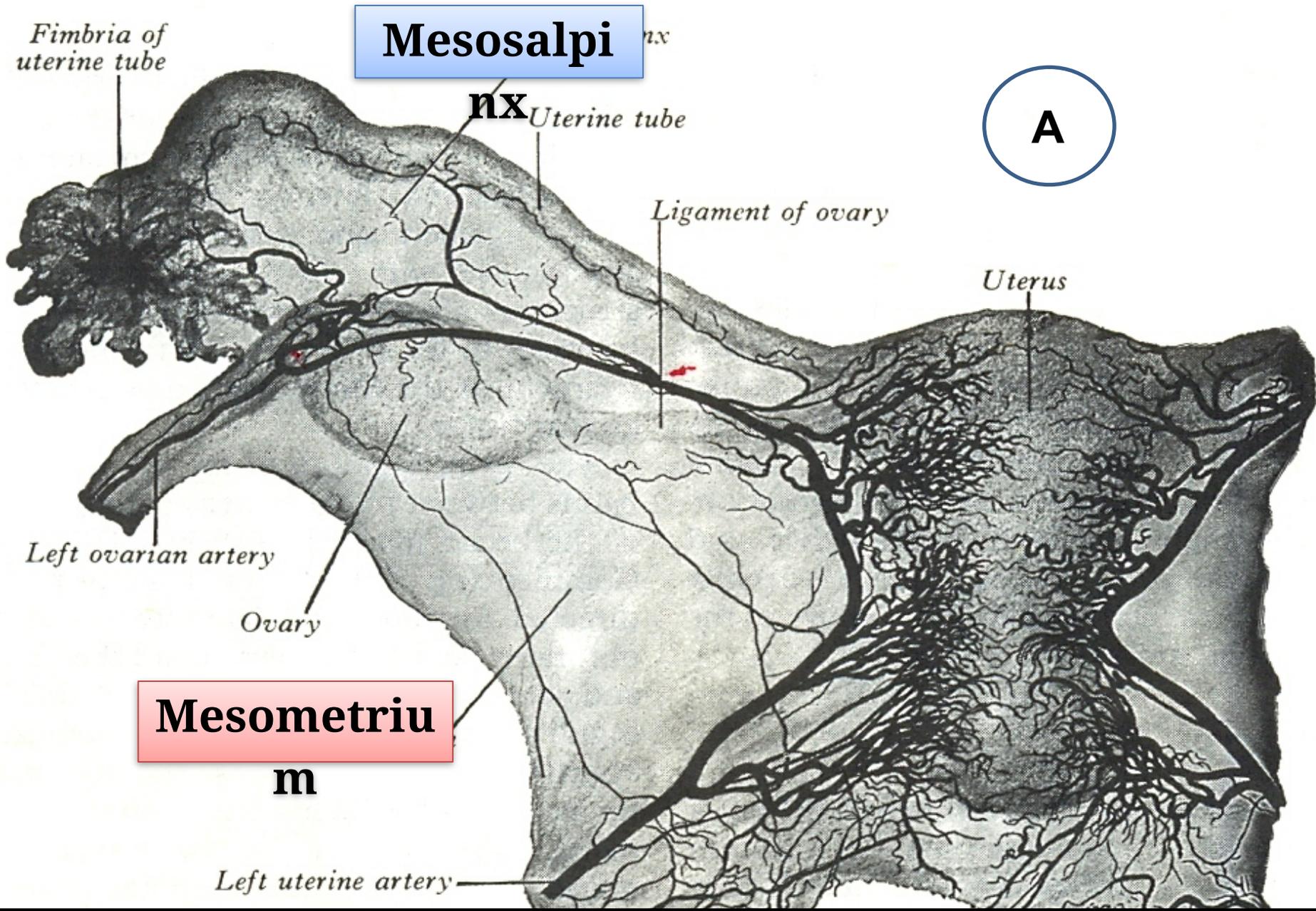
Diagrams show the round ligament of the uterus

Broad ligaments

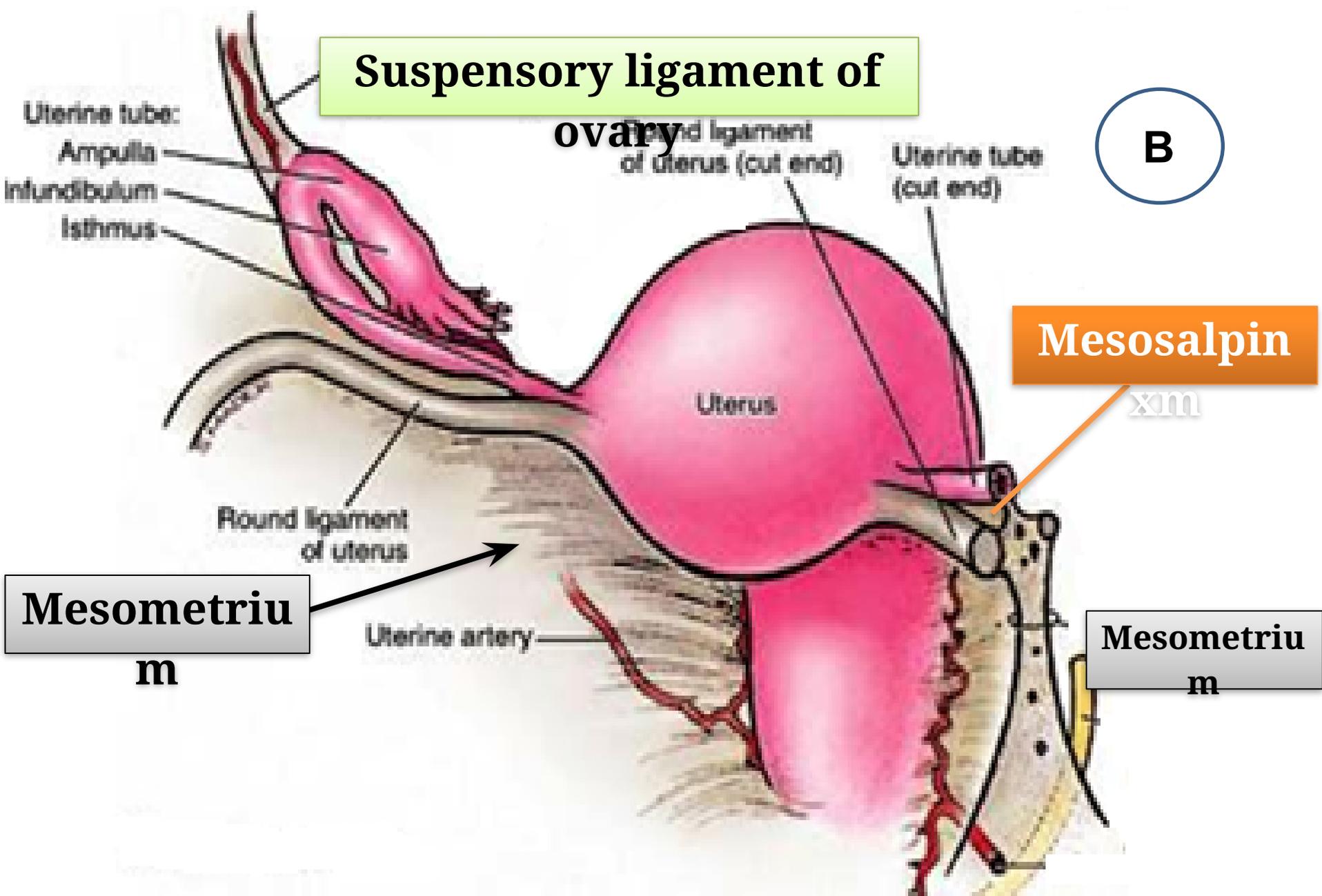
- **The peritoneum covers anterior and posterior surfaces of uterus.**
- **On each side, the two peritoneal layers are expanded laterally from lateral borders of uterus to lateral pelvic walls.**
- **Superiorly the two layers are continuous and form an upper free border.**
- **The uterine tube is contained in this free upper border.**

- **The ovary is attached to posterior layer of broad ligament by mesovarium.**
- **The part of broad ligament which extends from infundibulum of uterine tube and upper pole of ovary to lateral pelvic wall, called suspensory ligament, which contains ovarian blood and lymph vessels, and nerves in between its two layers.**
- **The part of broad ligament forming mesentery of uterine tube is called mesosalpinx.**

- **The major part of broad ligament serves as a mesentery for uterus is mesometrium, which lies inferior to mesosalpinx and mesovarium.**
- **At base of ligament, uterine artery crosses ureter.**



The Broad Ligament



The following structures lie between two layers of broad ligament:

- (1) Uterine tube.**
- (2) Round ligament of the ovary.**
- (3) Round ligament of the uterus.**
- (4) Uterine and ovarian blood and lymphatic vessels, and nerves.**
- (5) Epoophoron, which is the remains of mesonephros.**
- (6) The paraophoron, which is a mesonephric remnant.**

Position of the Uterus

- The long axis of uterus in most women is bent forwards on long axis of vagina.**
- This position is referred to as anteversion of uterus.**
- The long axis of uterus is bent forward at level of internal os.**
- This position is referred to as anteflexion of uterus.**

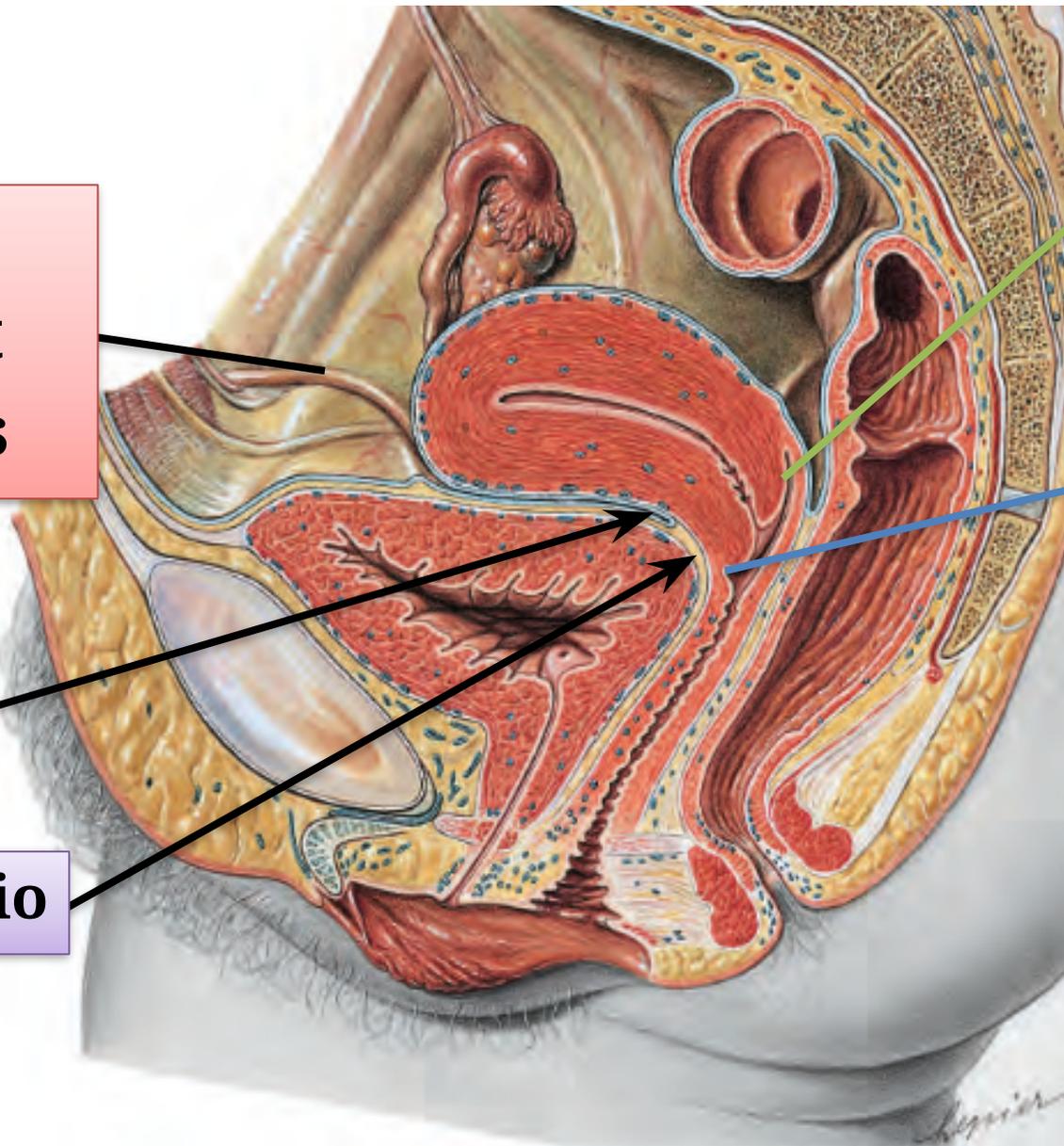
**Round
ligament
of uterus**

**Anteflexio
n**

**Anteversio
n**

**Posterior
vaginal
fornix**

**Anterior
vaginal
fornix**



Position of the Uterus

Blood Supply of the Uterus

(1) Uterine artery (branch of internal iliac artery), which forms main arterial supply.

(2) Uterine branch of ovarian artery which assists in supplying uterus.

The uterine vein follows the artery and ends into internal iliac vein.

Lymph Drainage of Uterus

Lymphatic vessels from:

(1) Fundus portion follow ovarian artery and drain into para-aortic lymph nodes at level of L1 vertebra.

(2) Body and cervix drain into internal and external iliac lymph nodes.

Few vessels, however follow round ligament of uterus via inguinal canal and drain into superficial inguinal nodes.