

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ  
مَنْ كَانَ عَدُوًّا لِلَّهِ فَجَاءَهُ بِبُرْهَانٍ  
مِنْ اللَّهِ فَكَفَرَ بِهِ كَذِبًا  
وَعَدُوًّا لِلرَّسُولِ فَسَاءَ  
مَنْ يَكْفُرْ بِالْبُرْهَانِ  
مِنْ اللَّهِ إِنَّهُ يَكْفُرُ  
بِالْحَقِّ وَالْحَقَّ كَذَبًا

# **ANATOMY OF THE FEMALE REPRODUCTIVE SYSTEM**

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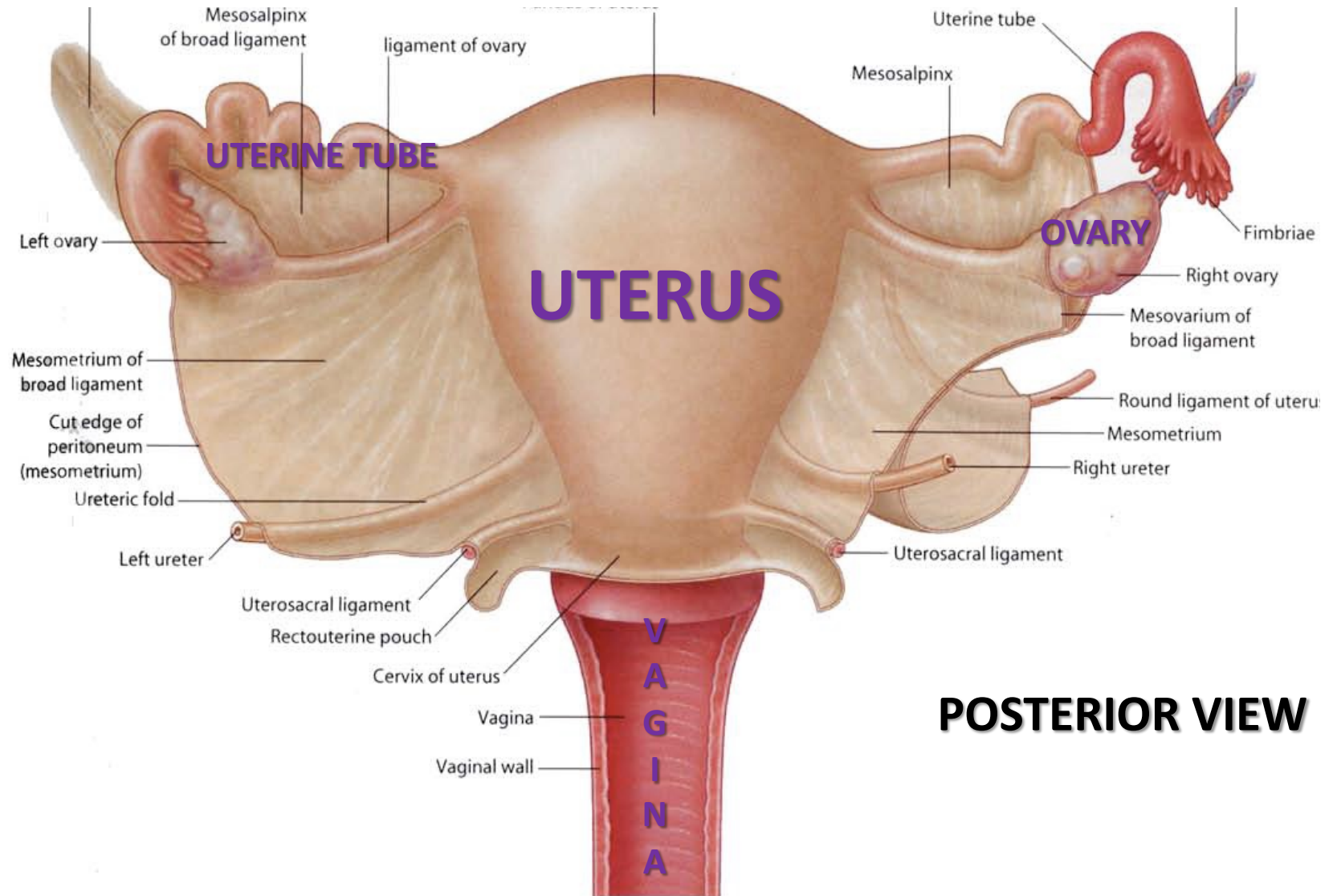
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# OBJECTIVES

**At the end of the lecture, students should:**

- *List the organs of female reproductive system.*
- *Describe the pelvic peritoneum in female.*
- *Describe the position and relations of the **ovaries**.*
- *List the parts of the **uterine tube**.*
- *Describe the anatomy of **uterus** regarding: subdivisions, cavity, relations, ligaments & main support.*
- *Describe the anatomy of **vagina** regarding: structure, extent, length & relations.*
- *Describe the **supply (arteries, veins, lymph, nerves)** of female reproductive system.*

# FEMALE REPRODUCTIVE SYSTEM

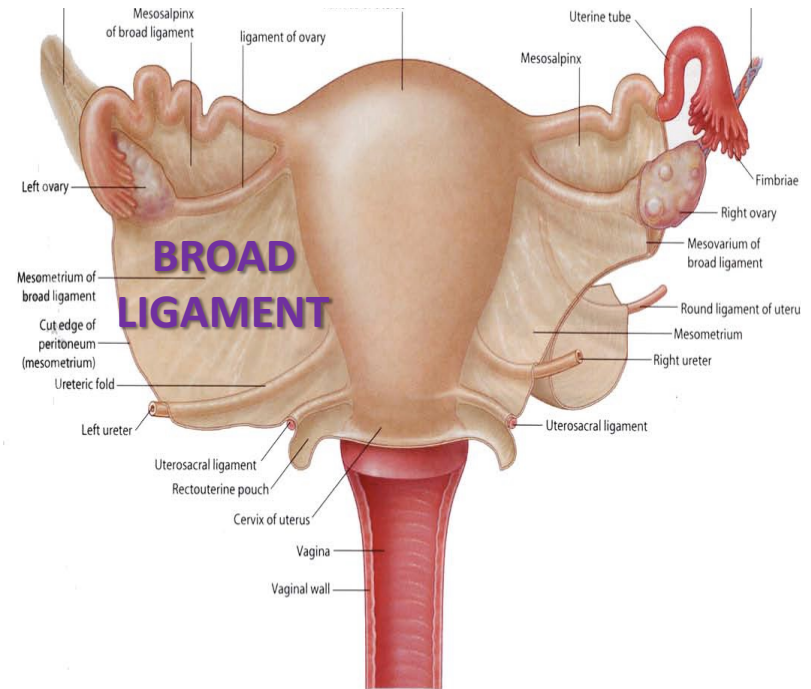
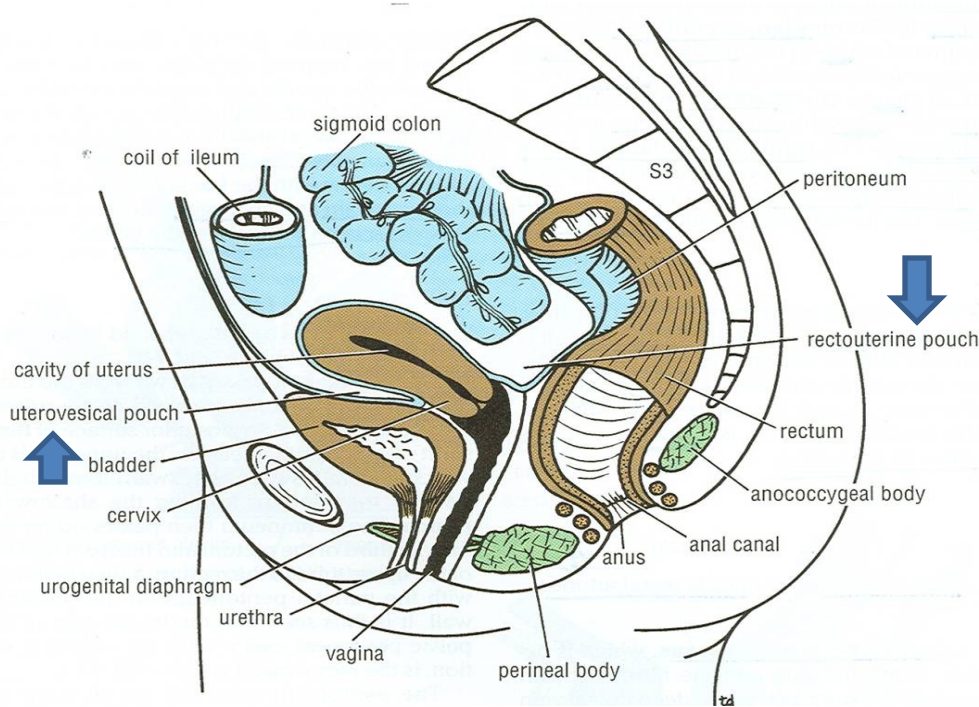


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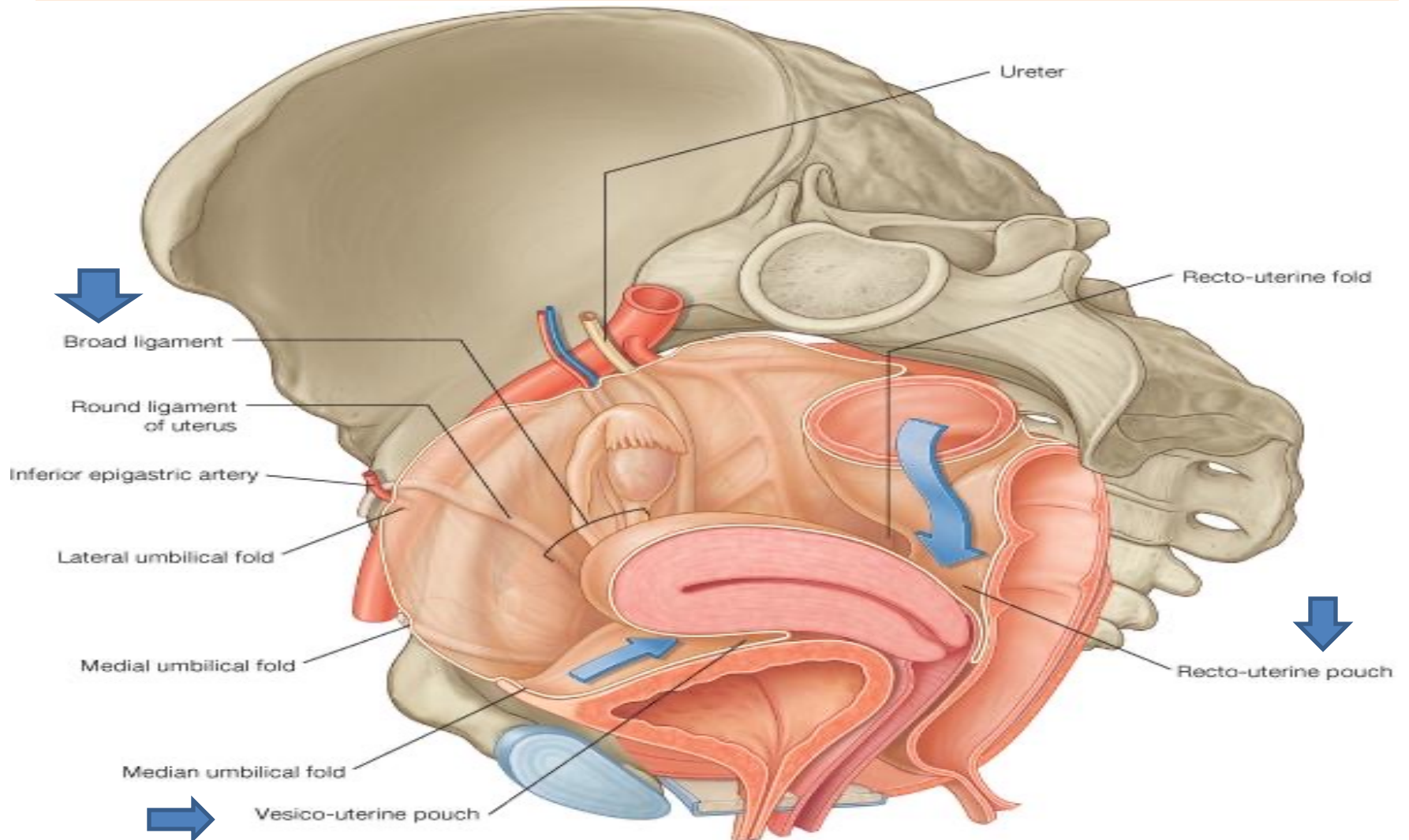
- *List the organs of female reproductive system.*
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# PELVIC PERITONEUM IN FEMALE



- ❑ **Rectouterine (Douglas) pouch:** Reflection of peritoneum from rectum to upper part of posterior surface of vagina
- ❑ **Uterovesical (vesicouterine) pouch:** Reflection of peritoneum from uterus to upper surface of urinary bladder
- ❑ **Broad ligament of uterus:** Extension of peritoneum from lateral wall of uterus to lateral wall of pelvis, encloses the uterine tubes

# PELVIC PERITONEUM IN FEMALE



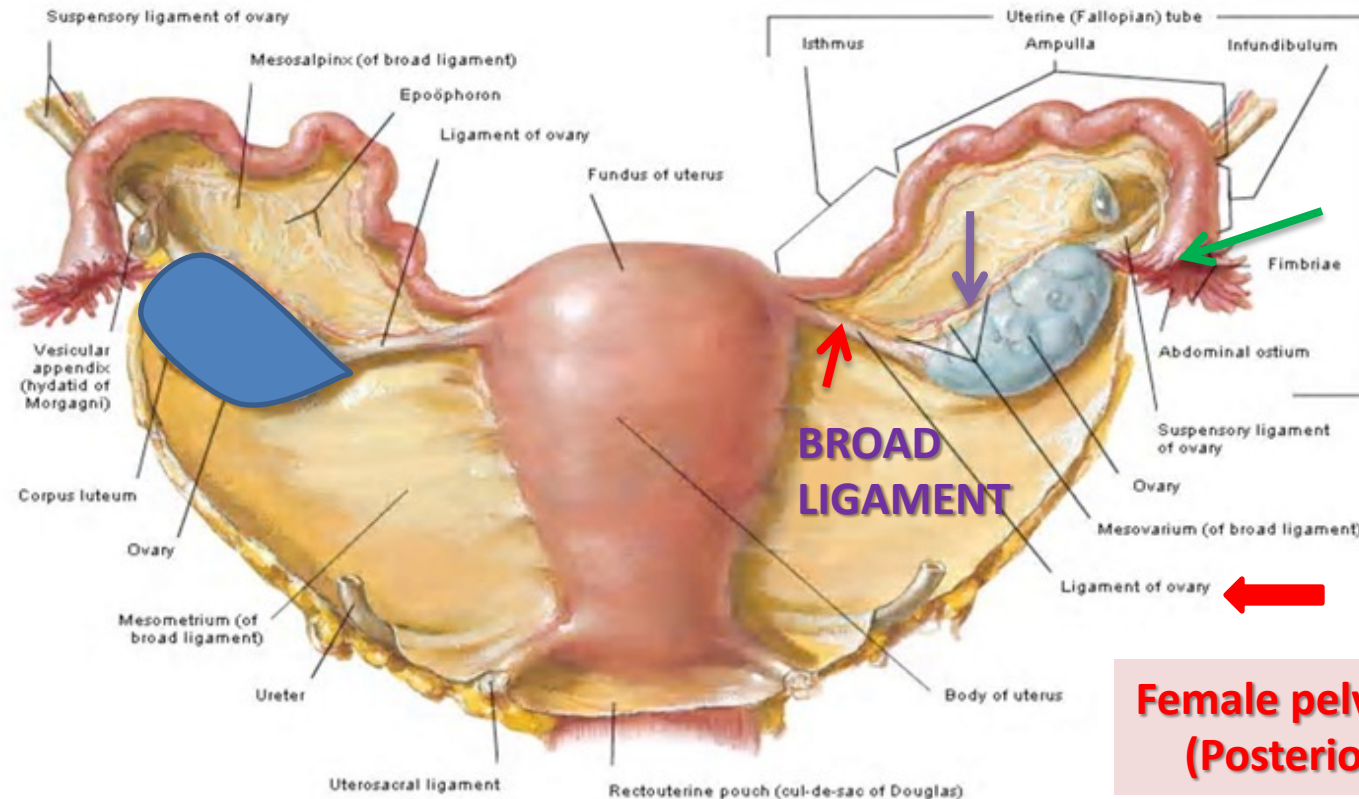
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# THE OVARIES



- ❑ It is an almond-shaped organ.
- ❑ It is attached to the back of the broad ligament by a peritoneal fold (mesovarium)
- ❑ Its medial end is attached to uterus by **ligament of ovary**.
- ❑ Its lateral end is related to the **fimbriae of the uterine tube**.

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# THE UTERINE (FALLOPIAN) TUBES

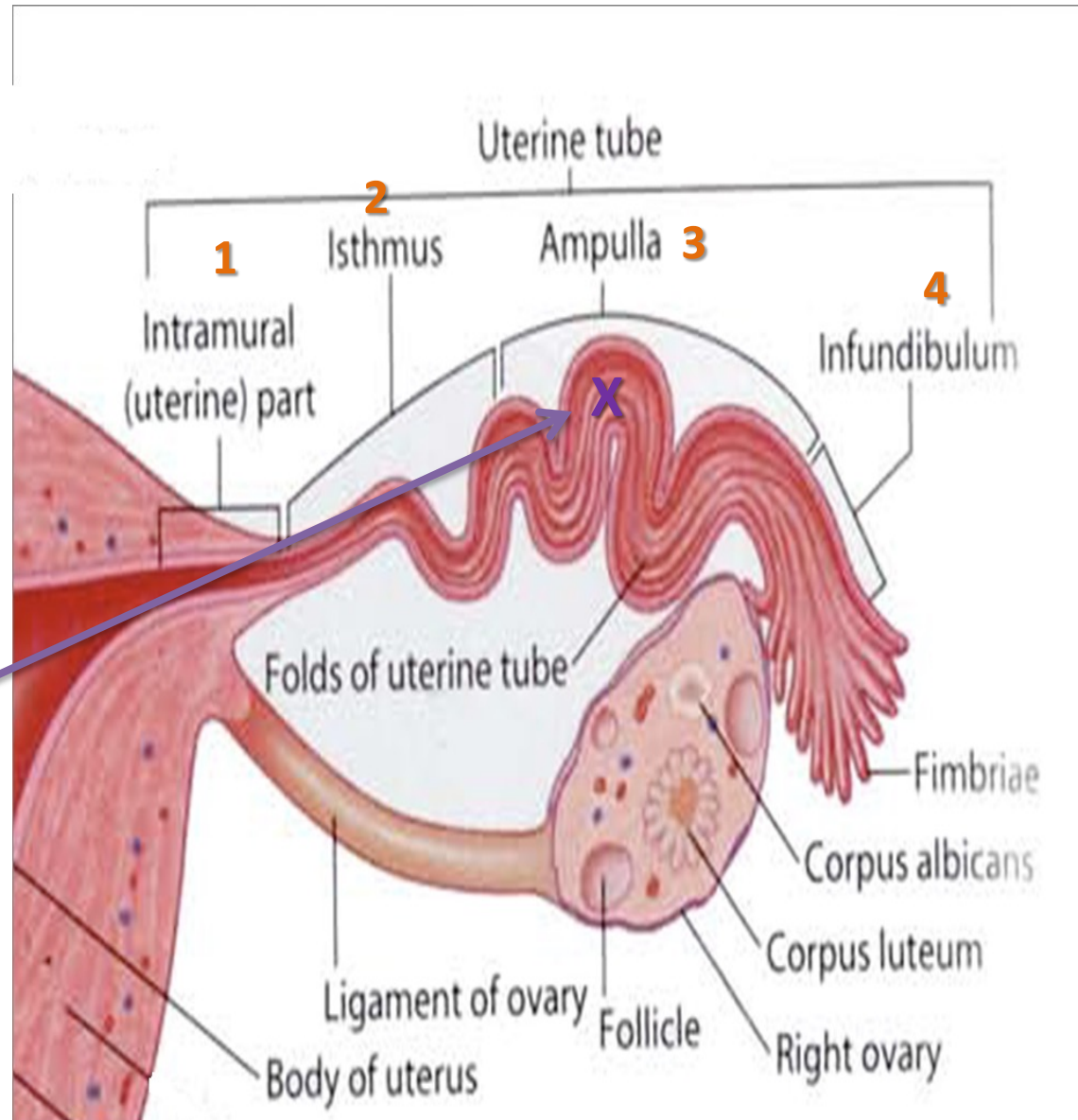
- It is 10 cm long.
- It is enclosed in the broad ligament of uterus.
- It is divided into:

**1) Intramural part:** opening into the uterine wall

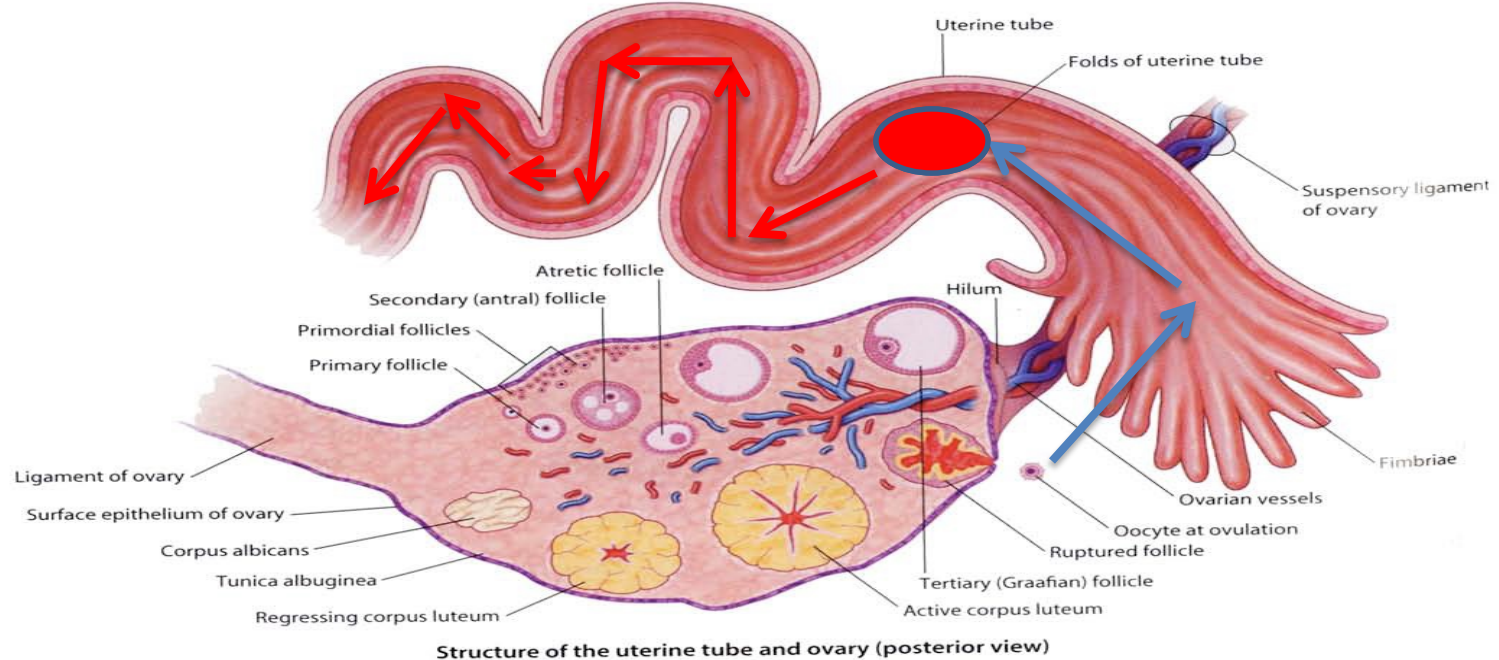
**2) Isthmus:** narrowest part

**3) Ampulla:** widest part (site of fertilization)

**4) Infundibulum:** funnel-shaped end, has finger-like processes (fimbriae), related to ovary



# FUNCTION OF:



## ❑ OVARIES: PRIMARY SEX ORGANS IN FEMALE

- 1) Production of female germ cells
- 2) Secretion of female sex hormones

## ❑ UTERINE TUBES:

- 1) Site of fertilization
- 2) Transport of fertilized ovum into the uterus

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# THE UTERUS

□ A hollow, pear-shaped muscular organ

□ Divided into:

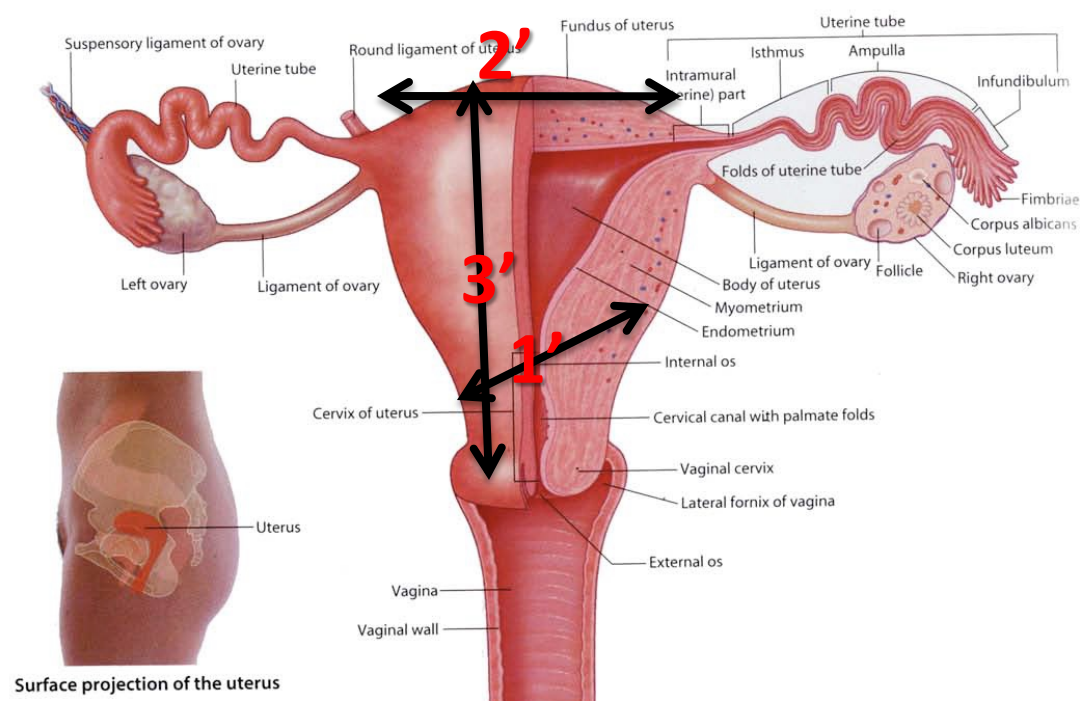
1. **Fundus:** no cavity

2. **Body:** cavity is triangular

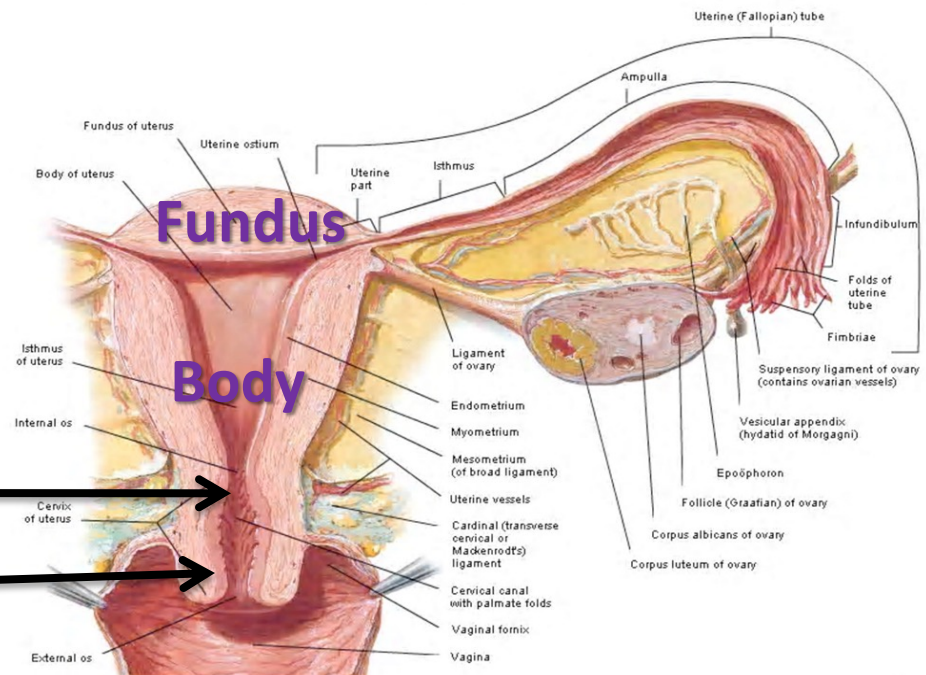
3. **Cervix:** cavity is fusiform, divided into:

\*Supravaginal part

\*Vaginal part



Surface projection of the uterus

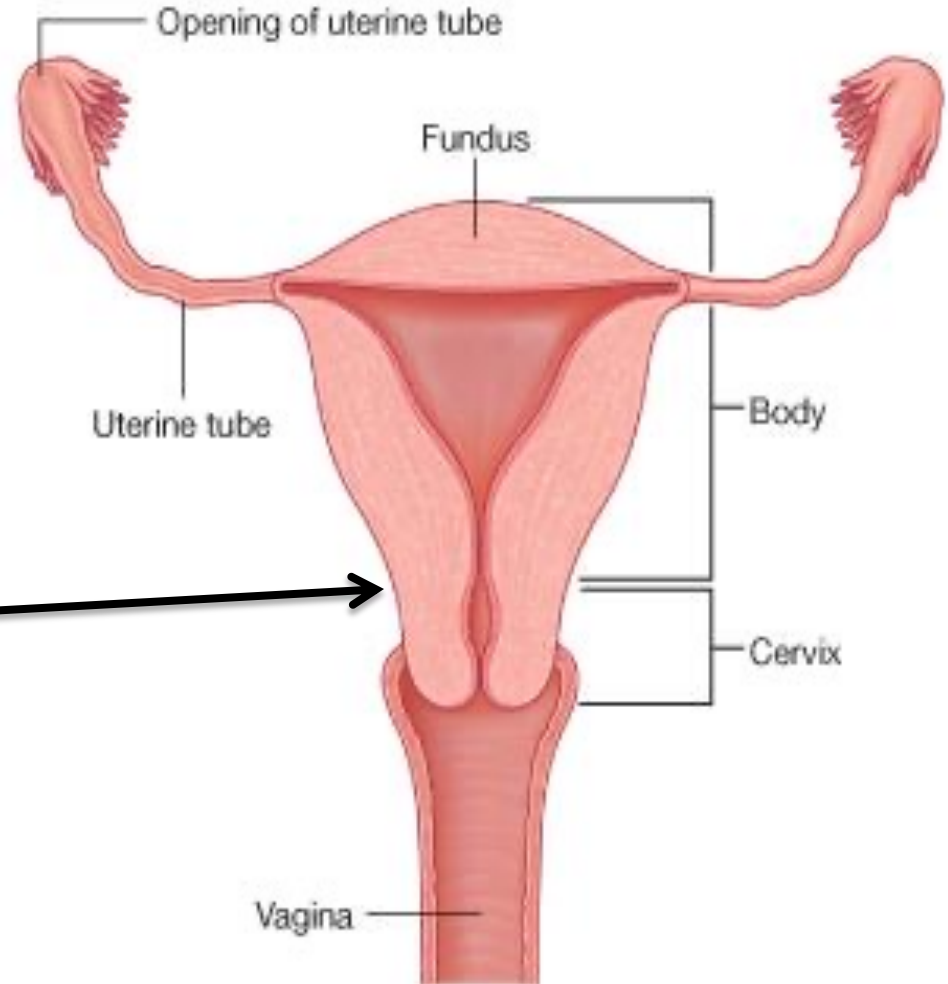


# THE UTERUS

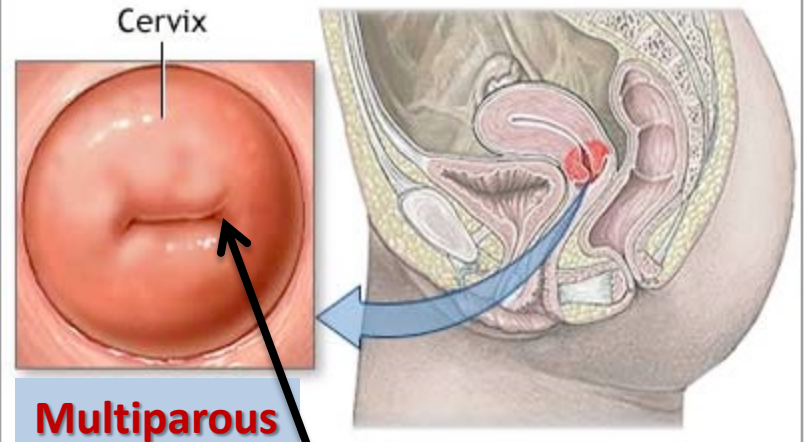
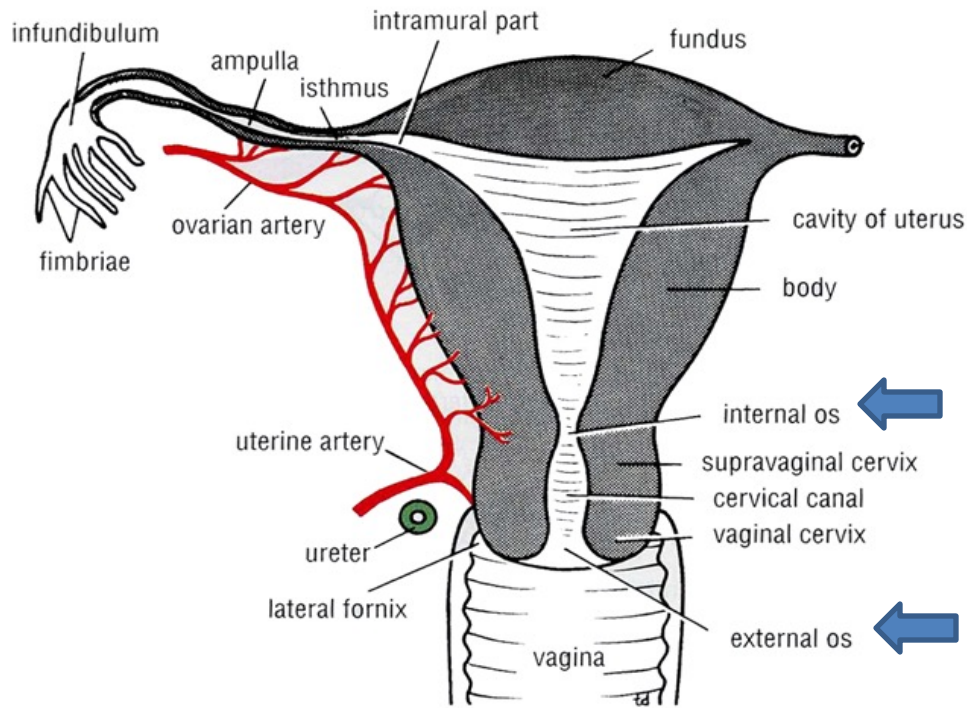
□ **FUNDUS:** The part of uterus above the level of uterine tubes

□ **BODY:** The part of uterus from the level of uterine tube to the level of the isthmus of uterus

□ **CERVIX:** The part of the uterus below the level of the isthmus of the uterus



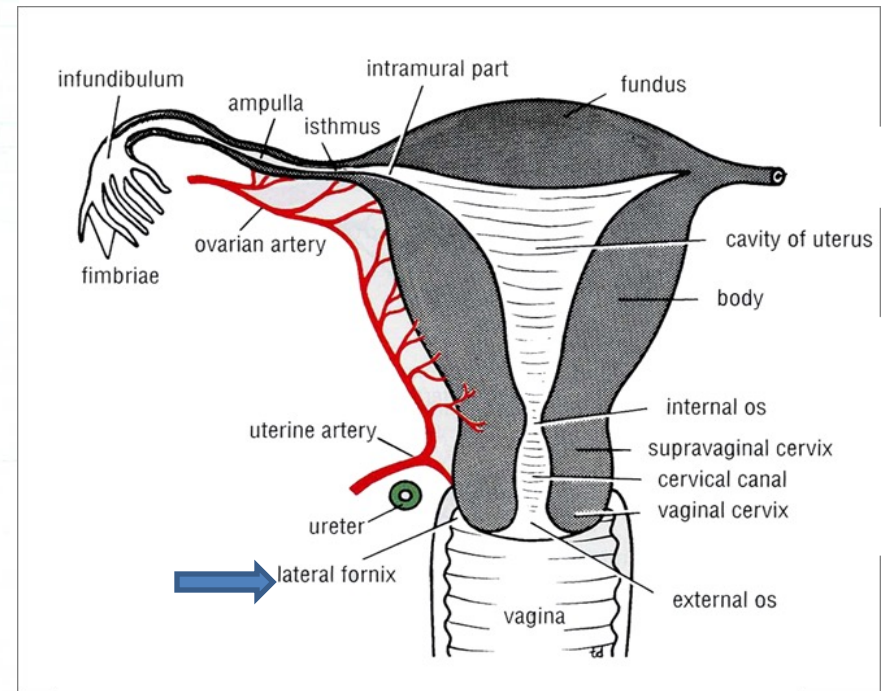
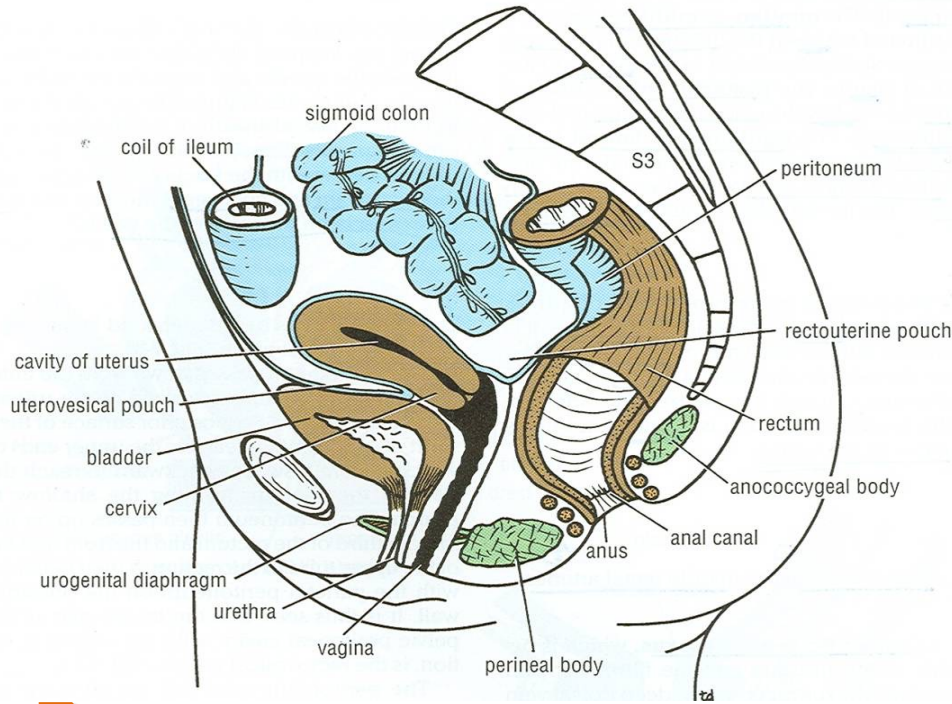
# THE CERVICAL CANAL



- ❑ **INTERNAL OS:** opening between cavity of body of uterus & cavity of cervix (cervical canal)
- ❑ **EXTERNAL OS:** opening between cervical canal & cavity of vagina
- ❑ **In a nulliparous woman:** external os appears circular.
- ❑ **In a multiparous woman:** external os appears as a transverse slit with an anterior & a posterior lip.



# RELATIONS OF UTERUS



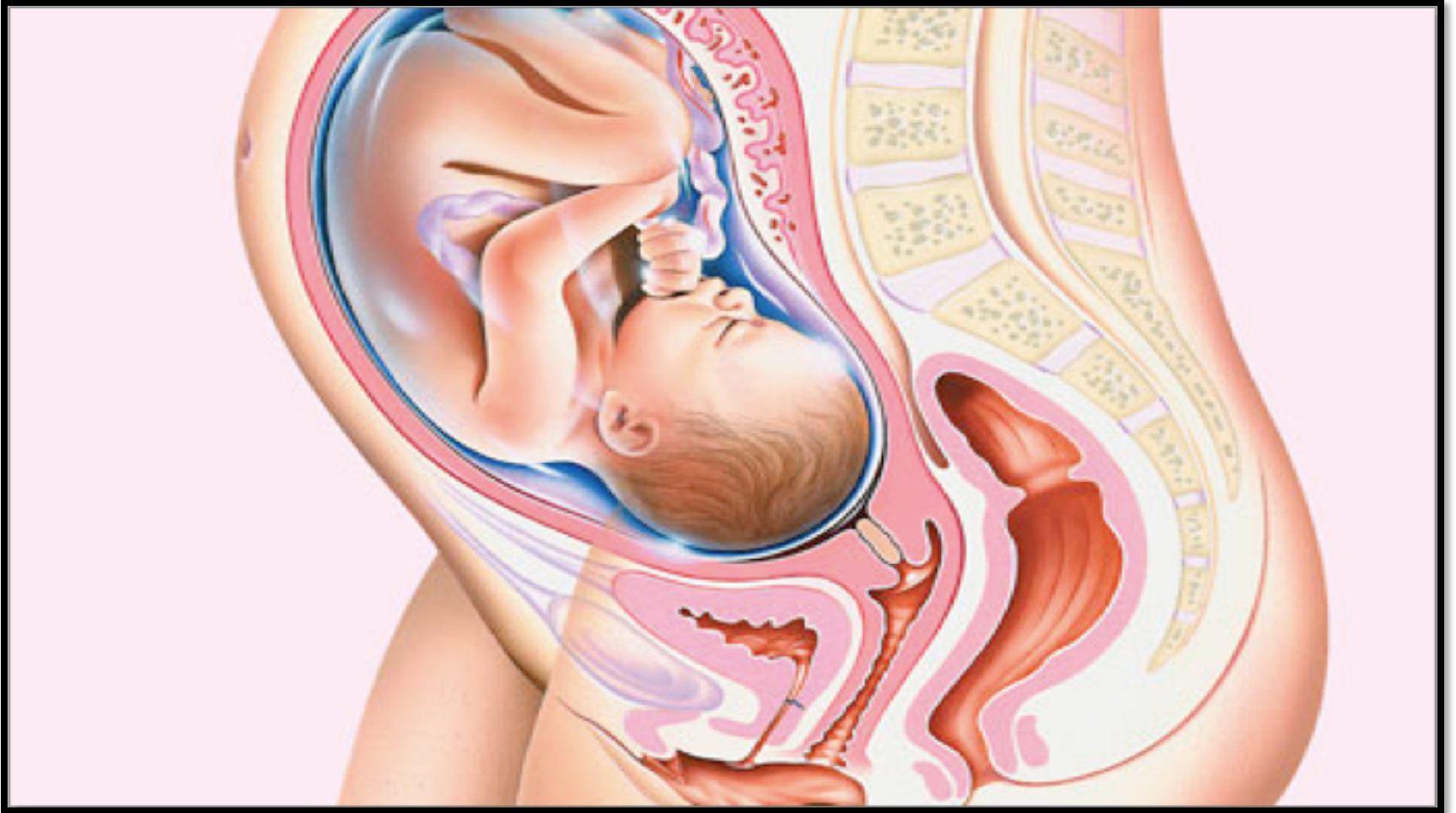
## ❑ **FUNDUS + BODY + SUPRAVAGINAL PART OF CERVIX:**

1. **Anterior:** superior surface of urinary bladder
2. **Posterior:** sigmoid colon
3. **Lateral:** uterine artery

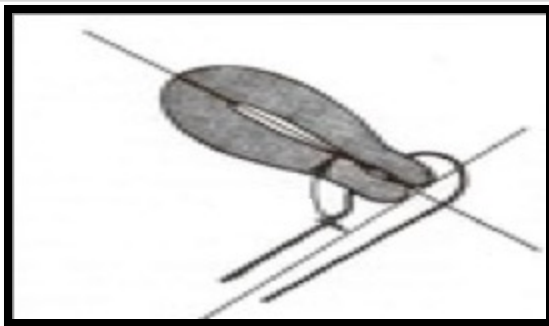
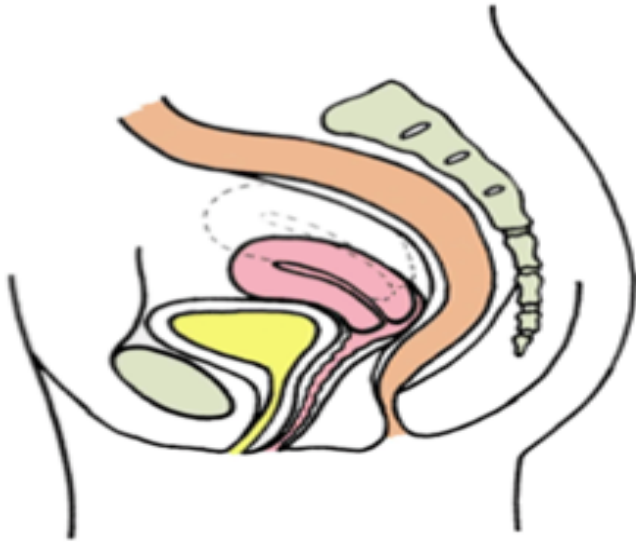
## ❑ **VAGINAL PART OF CERVIX:** surrounded by vaginal fornices

1. **Anterior:** anterior fornix of vagina
2. **Posterior:** posterior fornix of vagina
3. **Lateral:** lateral fornices of vagina

# **FUNCTION OF UTERUS**

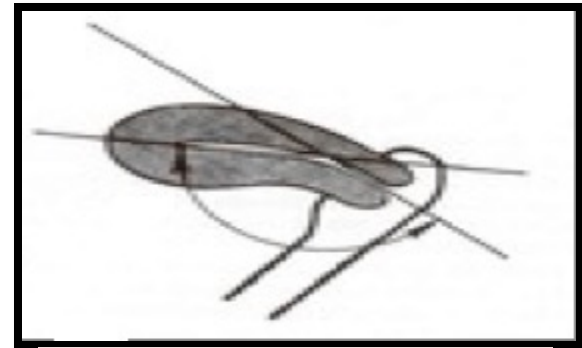
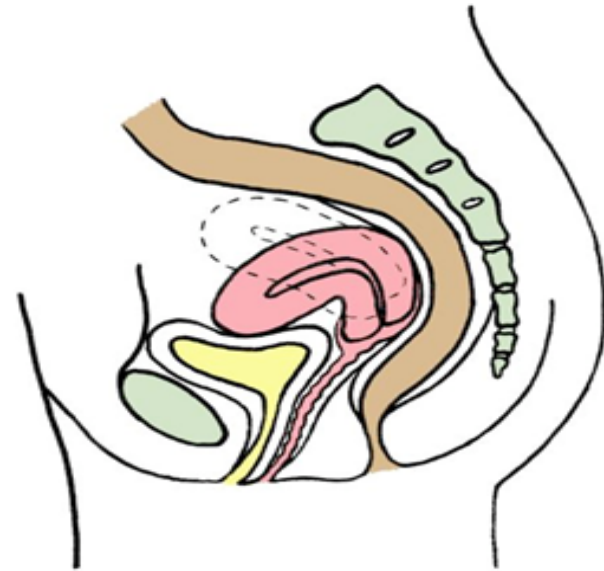


# POSITIONS OF UTERUS



**ANTEVERTED UTERUS**

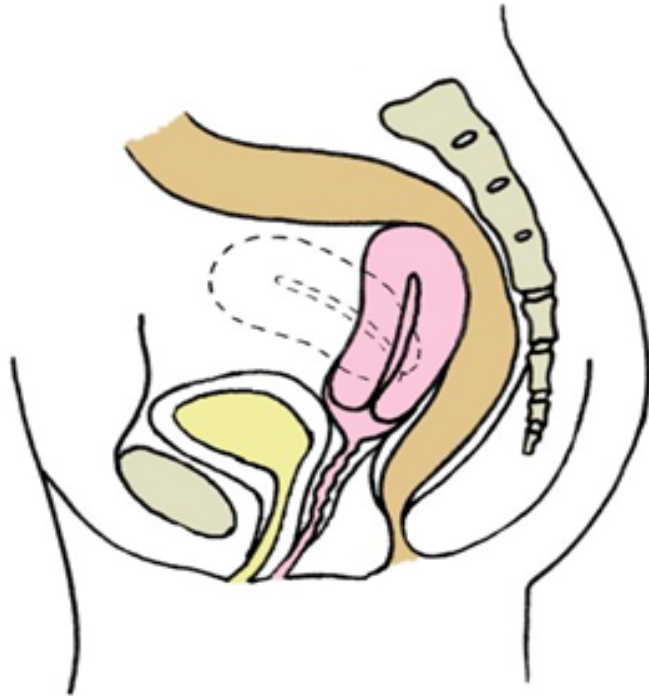
Long axis of whole uterus is bent forward on long axis of vagina



**ANTEFLEXED UTERUS**

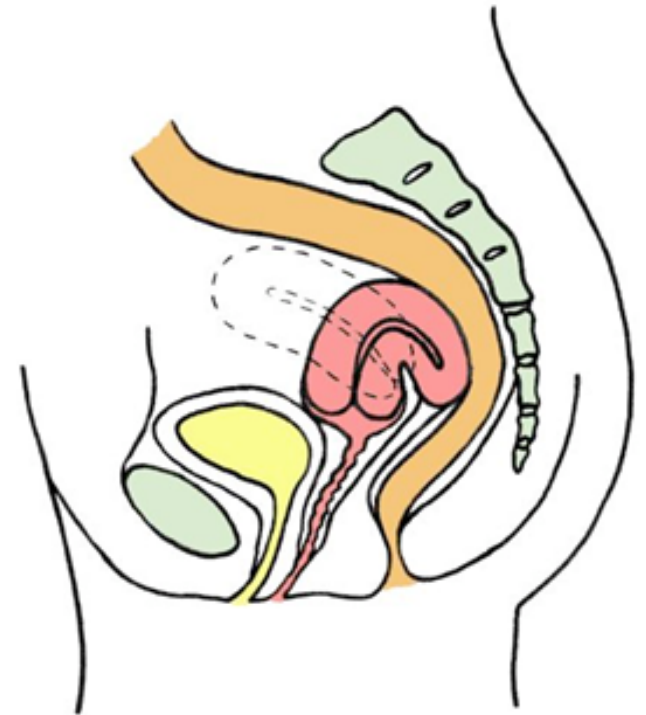
Long axis of body of uterus is bent forward on long axis of cervix

# POSITIONS OF UTERUS



## RETROVERTED UTERUS

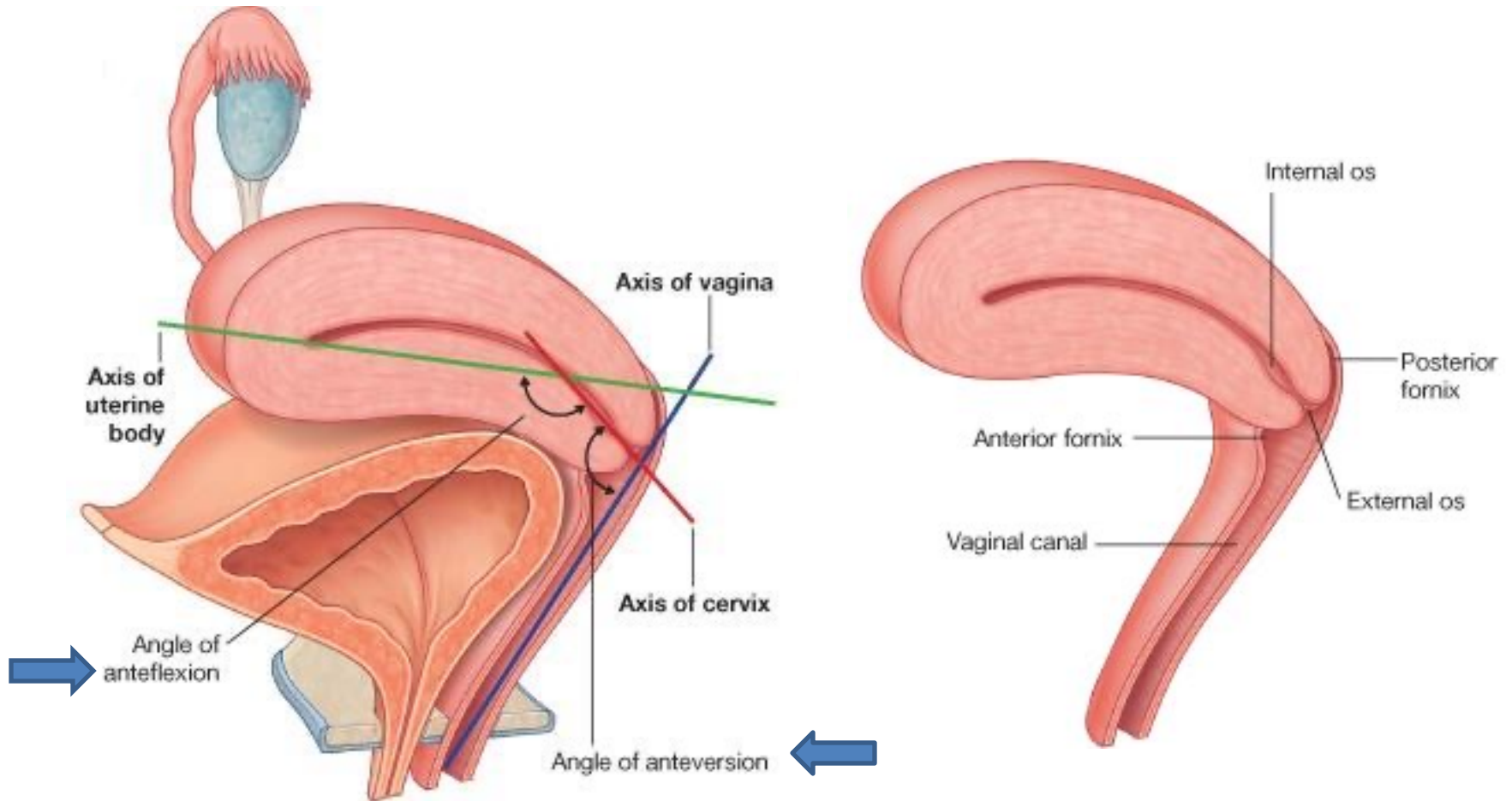
Fundus & body of uterus are bent **backward** on the vagina and lie in rectouterine pouch



## RETROFLEXED UTERUS

Long axis of body of uterus is bent **backward** on long axis of cervix

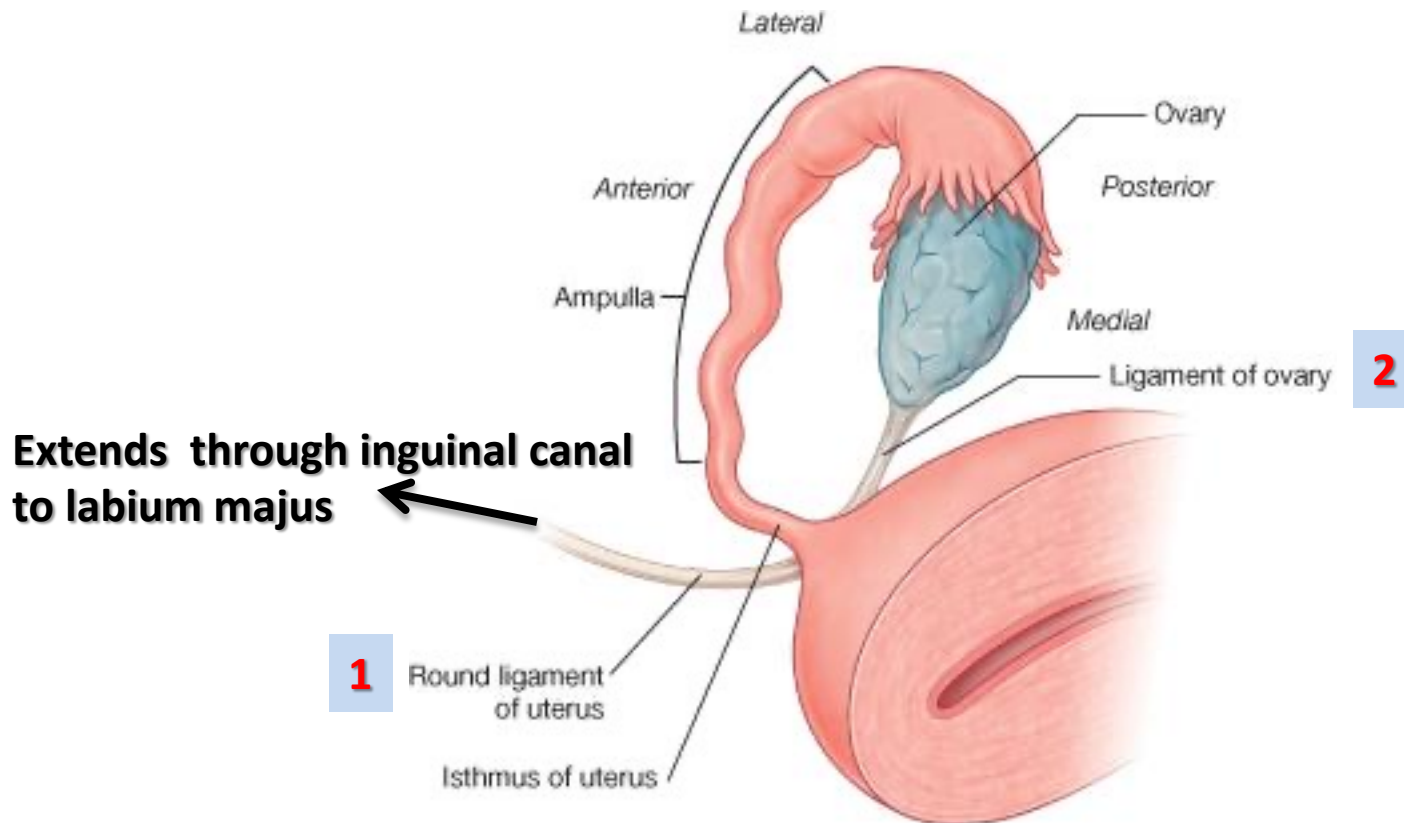
# USUAL POSITION OF UTERUS



**ANTEVERTED ANTEFLEXED UTERUS**

# LIGAMENTS OF UTERUS

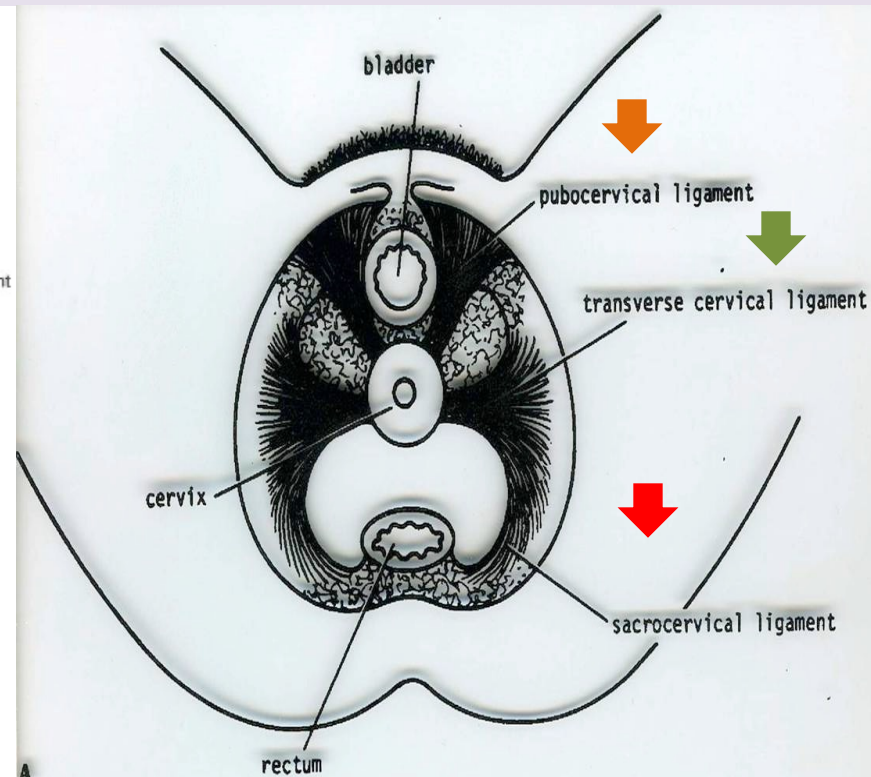
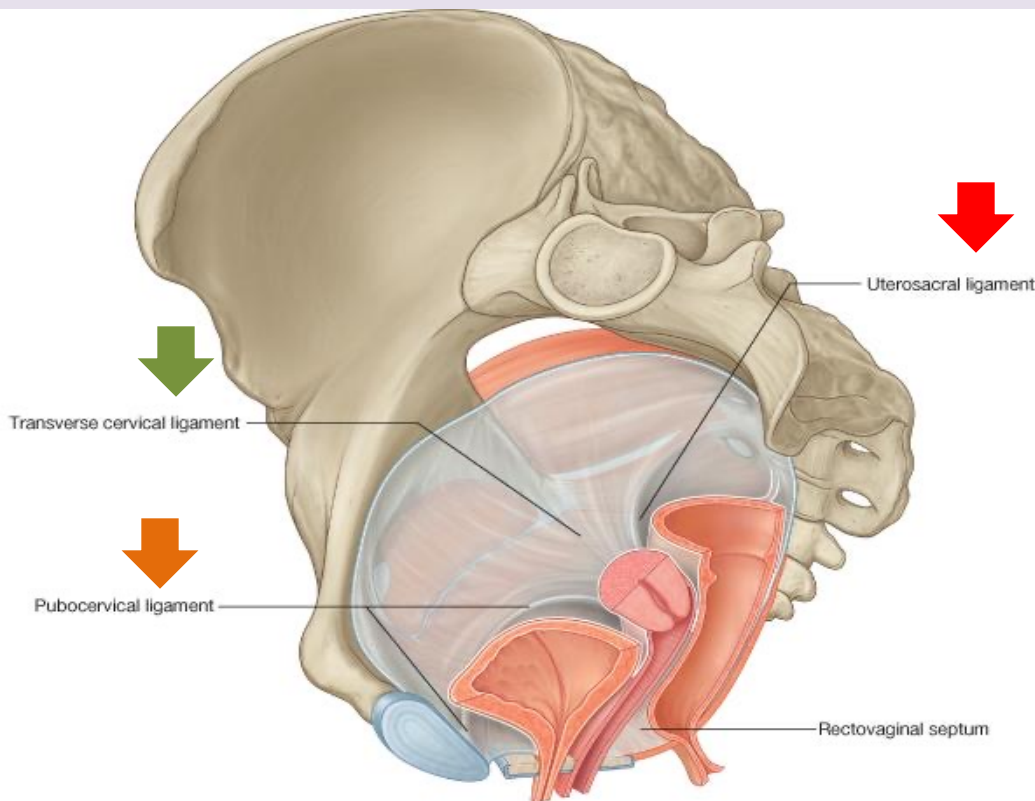
## 1) Ligaments at junction between fundus & body of uterus (At the level of uterine tube)



# LIGAMENTS OF UTERUS

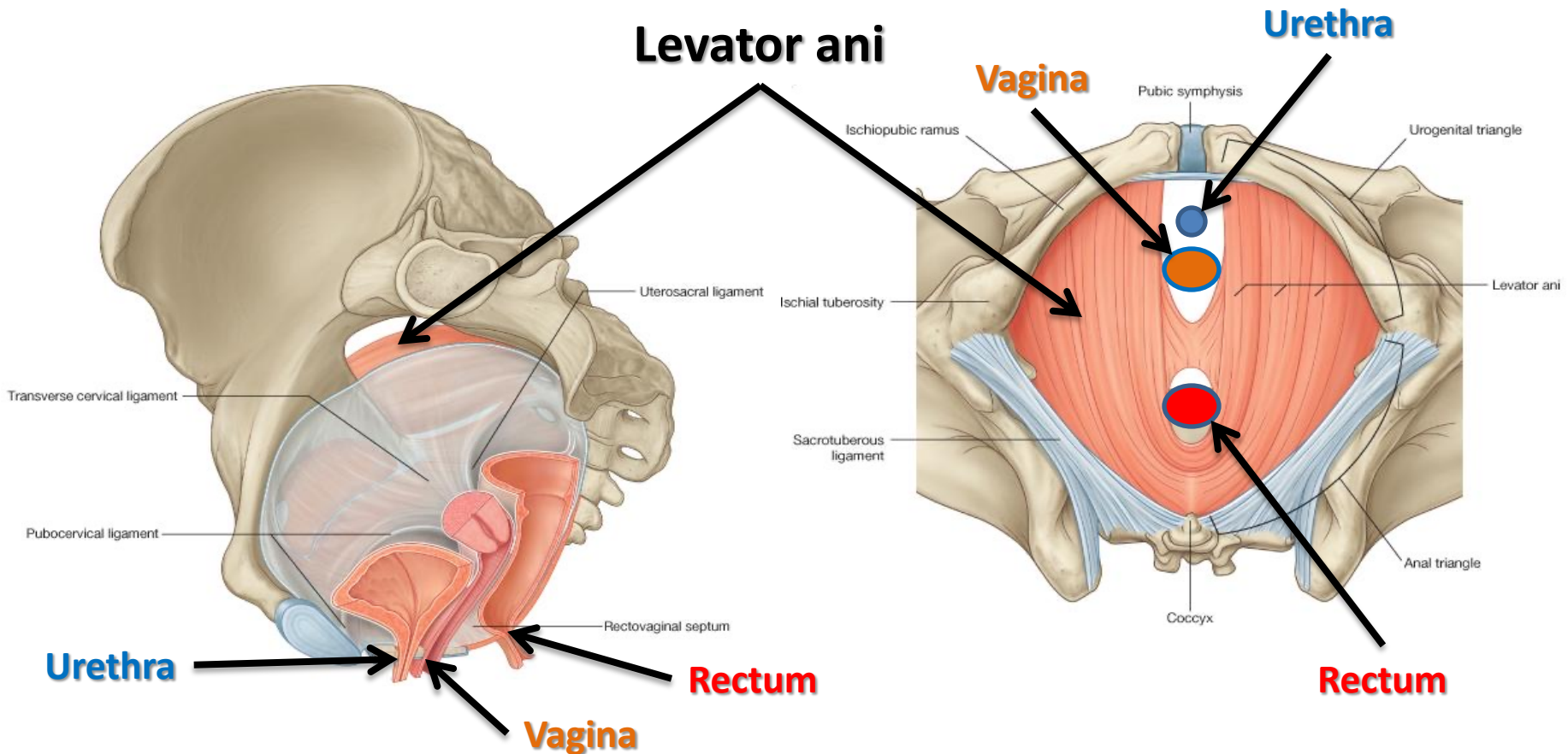
## 2) Ligaments of cervix

Extend from cervix to: anterior (**pubocervical**),  
lateral (**transverse cervical or cardinal**)  
posterior (**uterosacral or sacrocervical**)  
pelvic walls



# LEVATOR ANI MUSCLES

- ❑ FORM THE PELVIC FLOOR: separate pelvis from perineum
- ❑ FORM PELVIC DIAPHRAGM: traversed by urethra, vagina & rectum
- ❑ SUPPORT PELVIC ORGANS

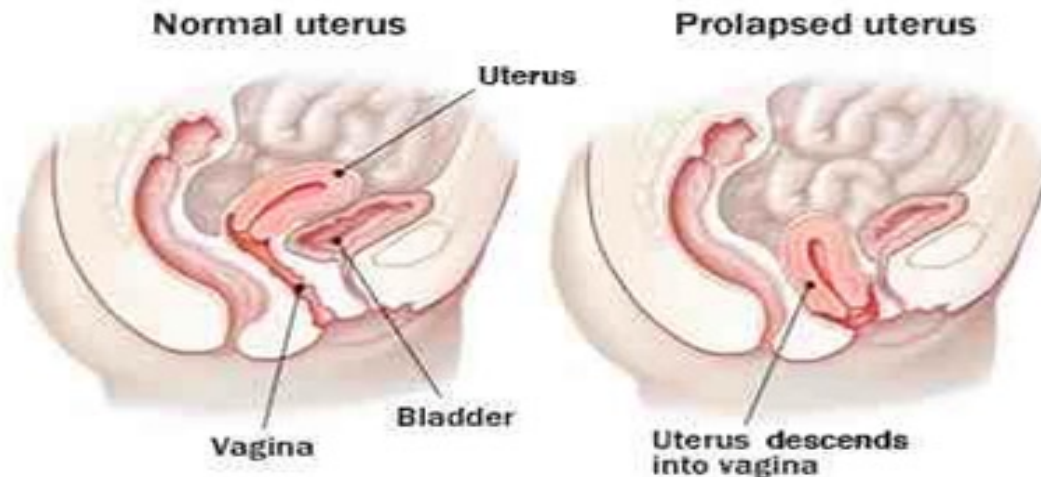




# SUPPORT OF UTERUS

- ❑ Round ligament of uterus (maintains anteverted anteflexed position)
- ❑ Ligaments of cervix (especially transverse cervical)
- ❑ Levator ani muscles

# UTERINE PROLAPSE

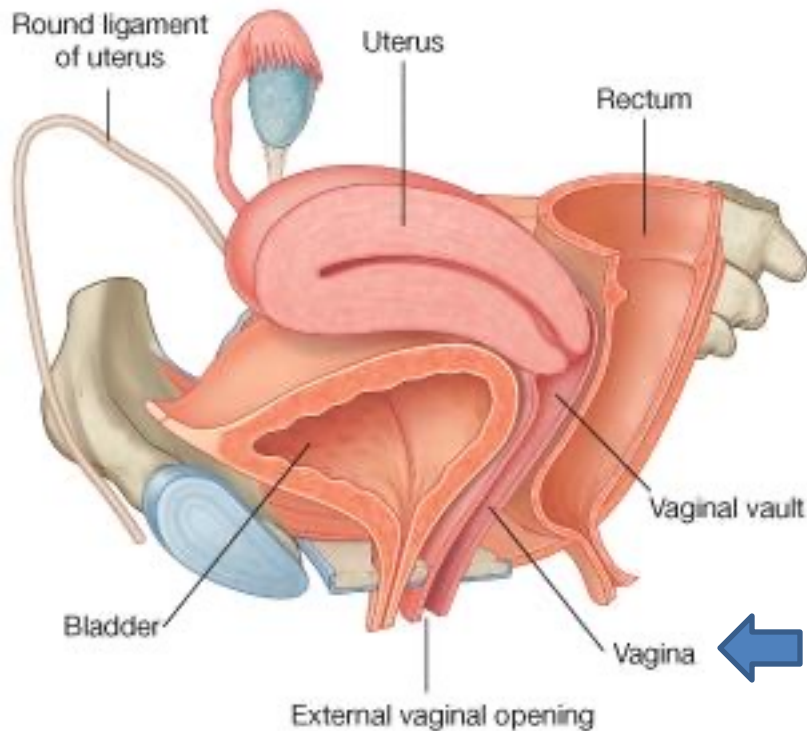


- ❑ Downward displacement of uterus due to damage of:
  1. Ligaments of uterus
  2. Levator ani muscles

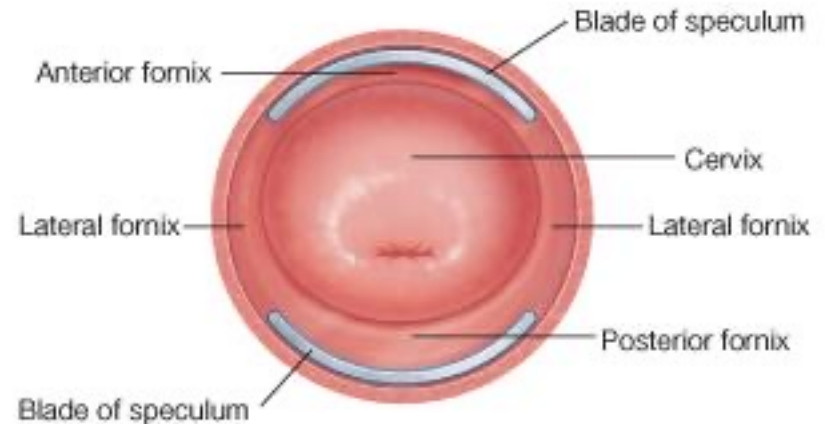
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# VAGINA



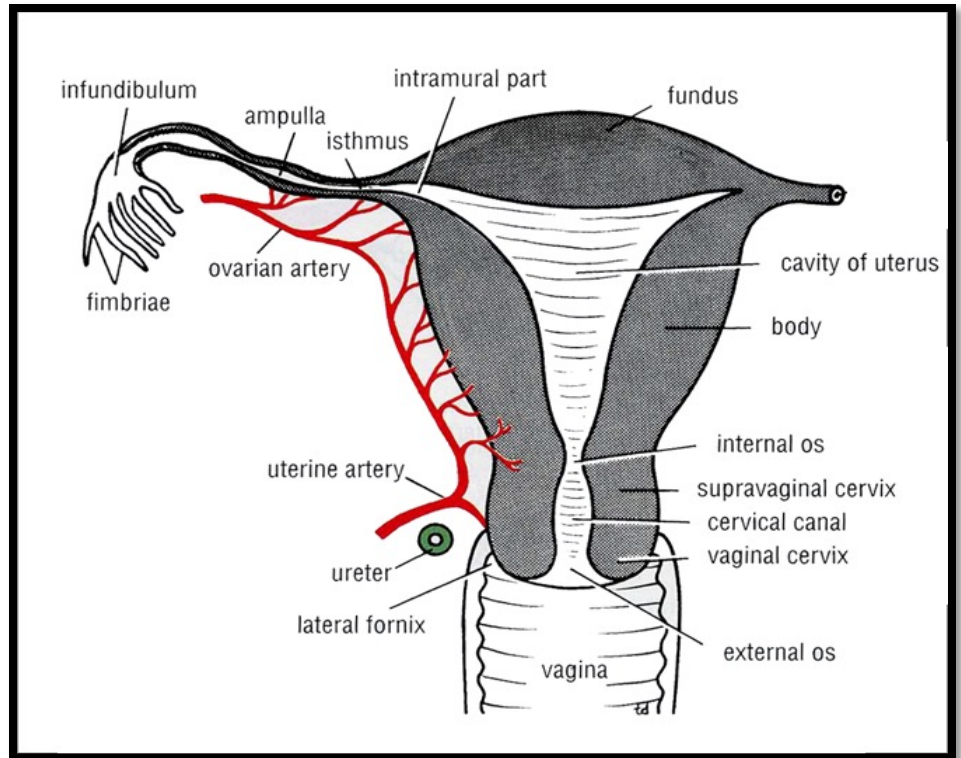
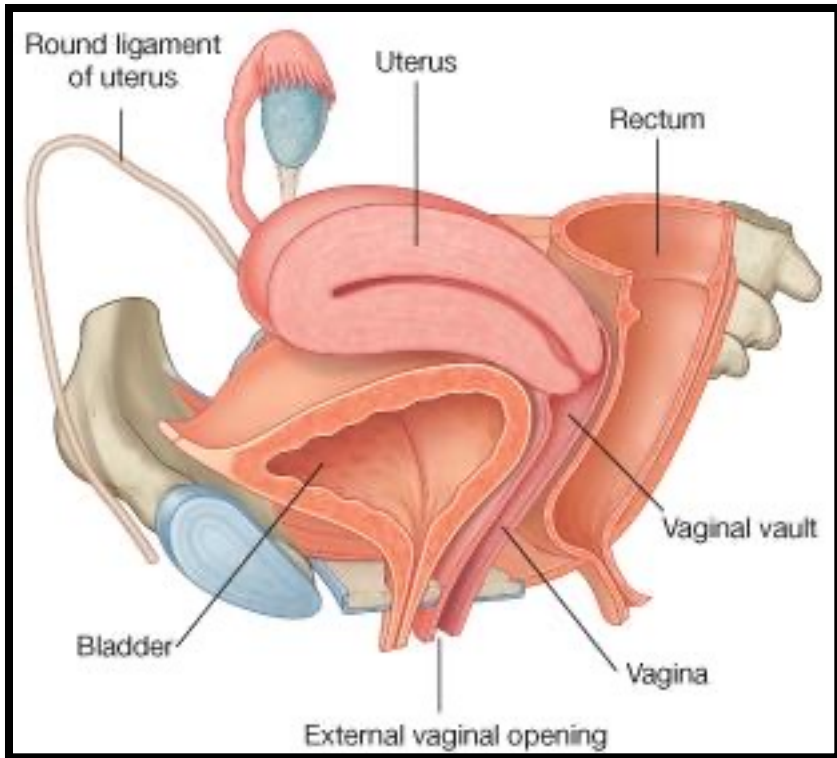
❑ **STRUCTURE:** Fibro-muscular tube

❑ **EXTENT:** From external os, along pelvis & perineum, to open in the vulva (female external genitalia), behind urethral opening

❑ **LENGTH:** Its anterior wall (7.5 cm) is shorter than its posterior wall (9 cm)

❑ **FUNCTION:** 1) Copulatory organ & 2) Birth canal

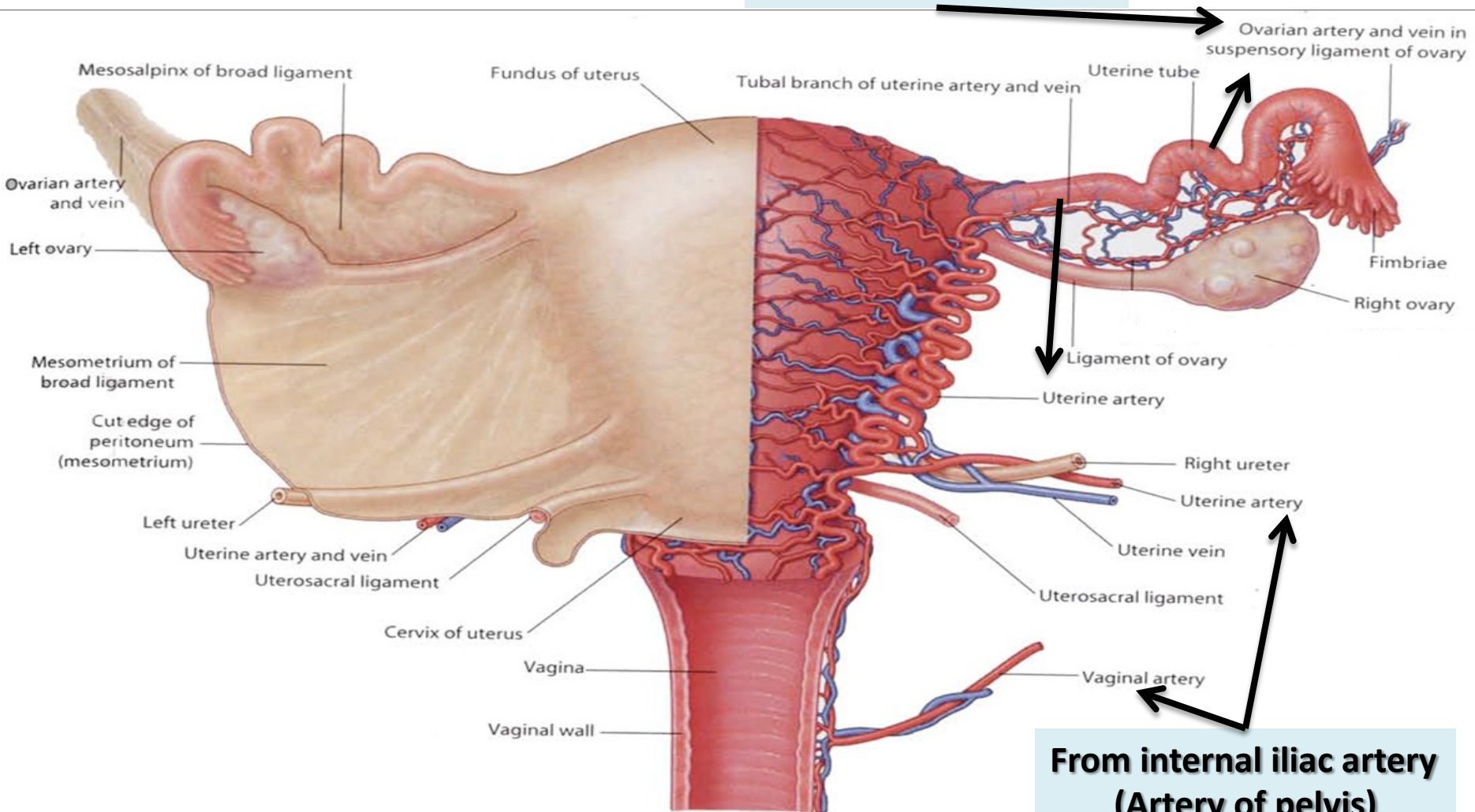
# RELATIONS OF VAGINA



- ❑ **ANTERIOR:** Urinary bladder (in pelvis) & urethra (in perineum)
- ❑ **POSTERIOR:** Rectum (in pelvis) & anal canal (in perineum)
- ❑ **LATERAL:** ureters (in pelvis)

# ARTERIAL SUPPLY

From abdominal aorta



From internal iliac artery  
(Artery of pelvis)

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| <b>ORGAN</b>             | <b>ARTERIES</b>  | <b>VEINS</b>   | <b>LYMPHATICS</b>  | <b>NERVES<br/>(AUTONOMIC)</b>   |
|--------------------------|--|--|--|---|
| <b>OVARIES</b>           | OVARIAN<br>(ABDOMINAL<br>AORTA)  | OVARIAN (TO<br>INFERIOR<br>VENA CAVA &<br>LEFT RENAL<br>VEIN)                  | TO<br>PARAAORTIC<br>LYMPH NODES<br>(IN<br>ABDOMEN)   | OVARIAN<br>PLEXUS (IN<br>ABDOMEN)   |
| <b>UTERINE<br/>TUBES</b> | <ul style="list-style-type: none"> <li>▪ OVARIAN</li> <li>▪ UTERINE</li> </ul> | <ul style="list-style-type: none"> <li>▪ OVARIAN</li> <li>▪ UTERINE</li> </ul> | <ul style="list-style-type: none"> <li>▪ PARAAORTIC</li> <li>▪ INTERNAL<br/>ILIAC</li> </ul> | <ul style="list-style-type: none"> <li>▪ OVARIAN</li> <li>▪ INFERIOR<br/>HYPOGASTRIC</li> </ul> |
| <b>UTERUS</b>            | UTERINE<br>(INTERNAL<br>ILIAC ARTERY<br>IN PELVIS)                             | UTERINE<br>PLEXUS (TO<br>INTERNAL<br>ILIAC VEIN)                               | TO INTERNAL<br>ILIAC LYMPH<br>NODES (IN<br>PELVIS)   | INFERIOR<br>HYPOGASTRIC<br>PLEXUS (IN<br>PELVIS)  |
| <b>VAGINA</b>            | VAGINAL<br>(INTERNAL<br>ILIAC ARTERY<br>IN PELVIS)                             | VAGINAL<br>PLEXUS (TO<br>INTERNAL<br>ILIAC VEIN)                               | TO INTERNAL<br>ILIAC LYMPH<br>NODES (IN<br>PELVIS)   | INFERIOR<br>HYPOGASTRIC<br>PLEXUS (IN<br>PELVIS)  |

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# QUESTION 1

**□ Regarding the female reproductive organs, which one of the following statement is correct?**

- 1. The ampulla is the most medial part of the uterine tube.**
- 2. The rectum is anterior to the vagina.**
- 3. The ovarian artery is a branch of the internal iliac artery of the pelvis.**
- 4. The uterine tube is enclosed in the broad ligament of the uterus.**



## QUESTION 2

**□ Which one of the following structures is related (or attached) to the lateral end of the ovary?**

- 1. Fimbriae of uterine tube**
- 2. Ampulla of uterine tube**
- 3. Ligament of ovary**
- 4. Round ligament of uterus**



# QUESTION 3

Which one of the following structures is anterior to the uterus?

1. Urinary bladder



2. Ureter

3. Sigmoid colon

4. Ovary

**Thank you!**

