

# ***FEMALE GENITAL ORGANS***

## ***The Uterus***

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***Sunday 12 May 2024***

# The Uterus

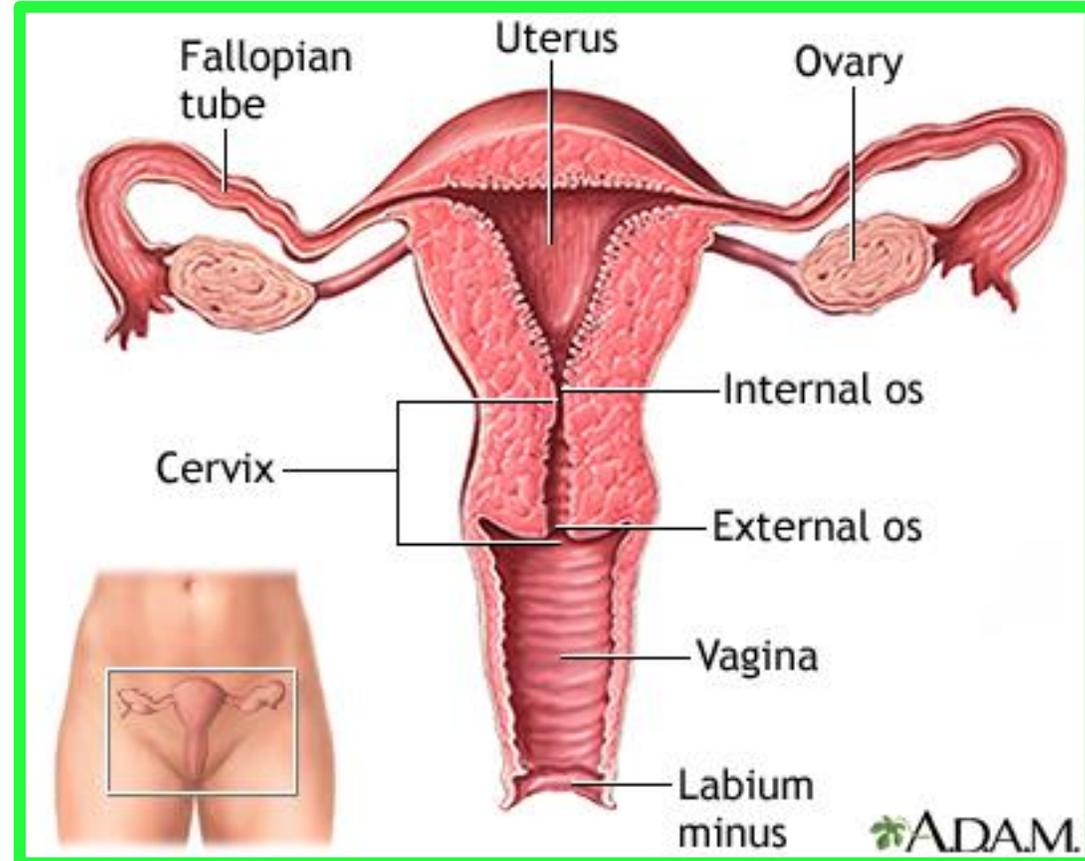
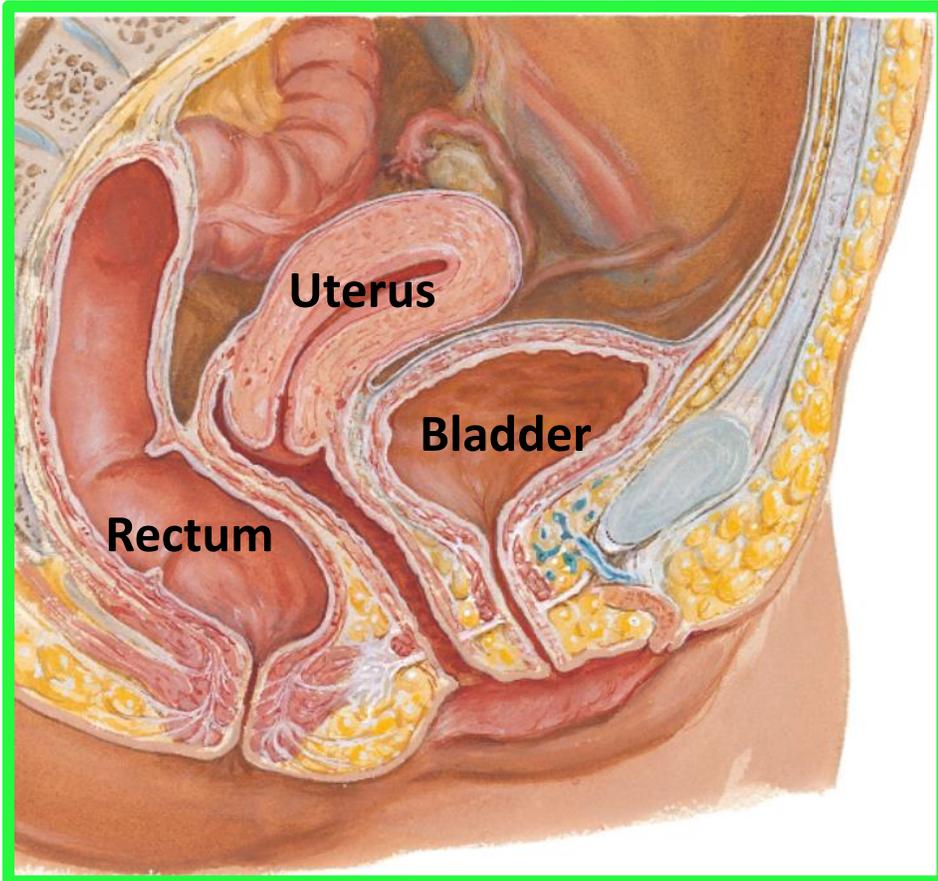
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The uterus is a hollow thick-walled muscular organ.

**\*\* Site:** It lies between the urinary bladder anteriorly and the rectum posteriorly.

**\*\* Dimensions:** (1 inch thickness) (2 inches breadth) (3 inches Length).



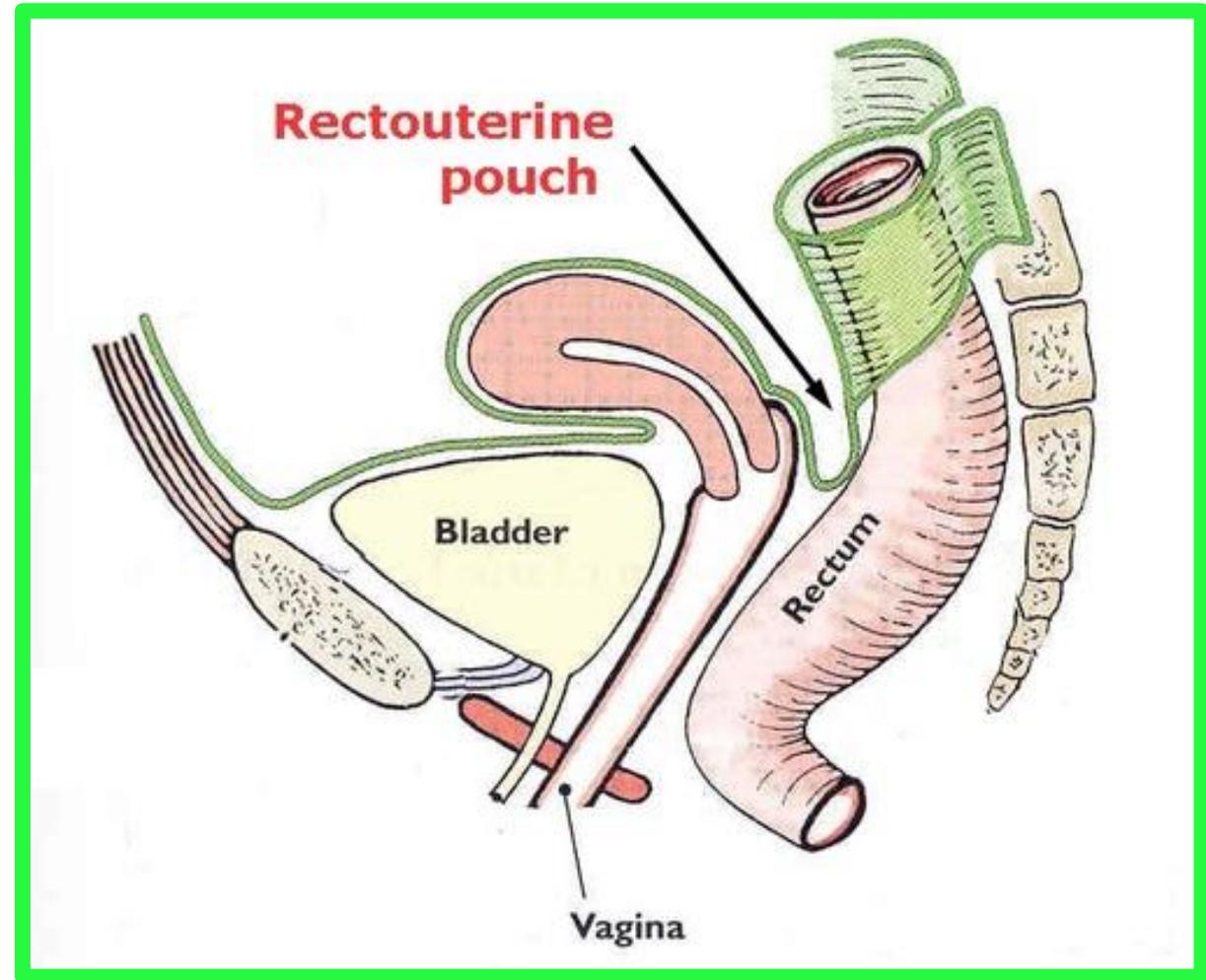
## \*\* Peritoneal covering:

1- **Fundus:** completely covered by peritoneum.

## 2- **Body:**

A. Anterior surface is covered by peritoneum.

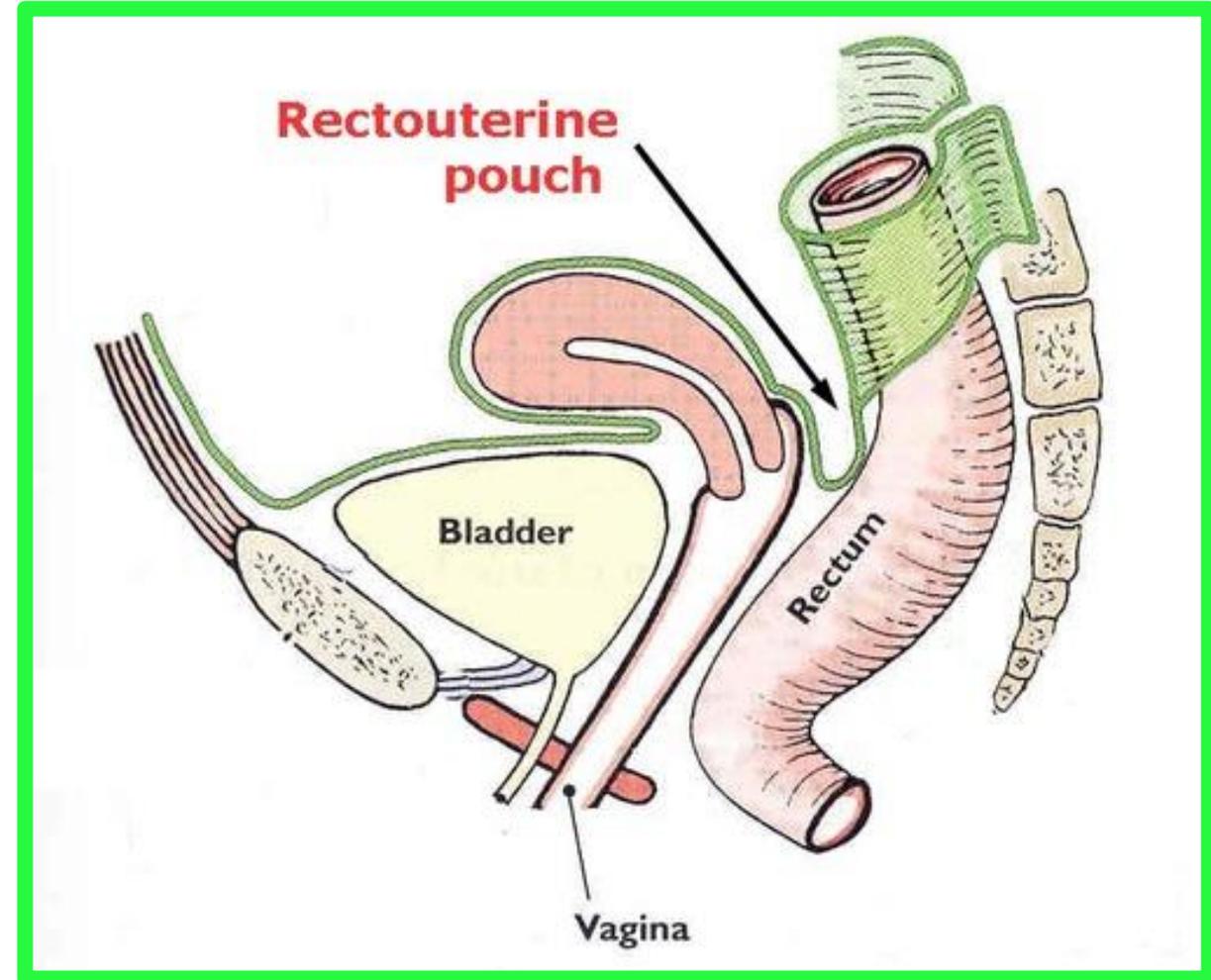
✓ It reflected at the junction of the body with the cervix to the superior surface of the urinary bladder, forming **utero-vesical pouch**.



# The Uterus

**B.** Posterior surface is covered by peritoneum of **the recto-vaginal (Douglas) pouch.**

**3- Cervix:** Anteriorly not covered by the peritoneum while posteriorly covered by the peritoneum of **the recto-vaginal (Douglas) pouch.**



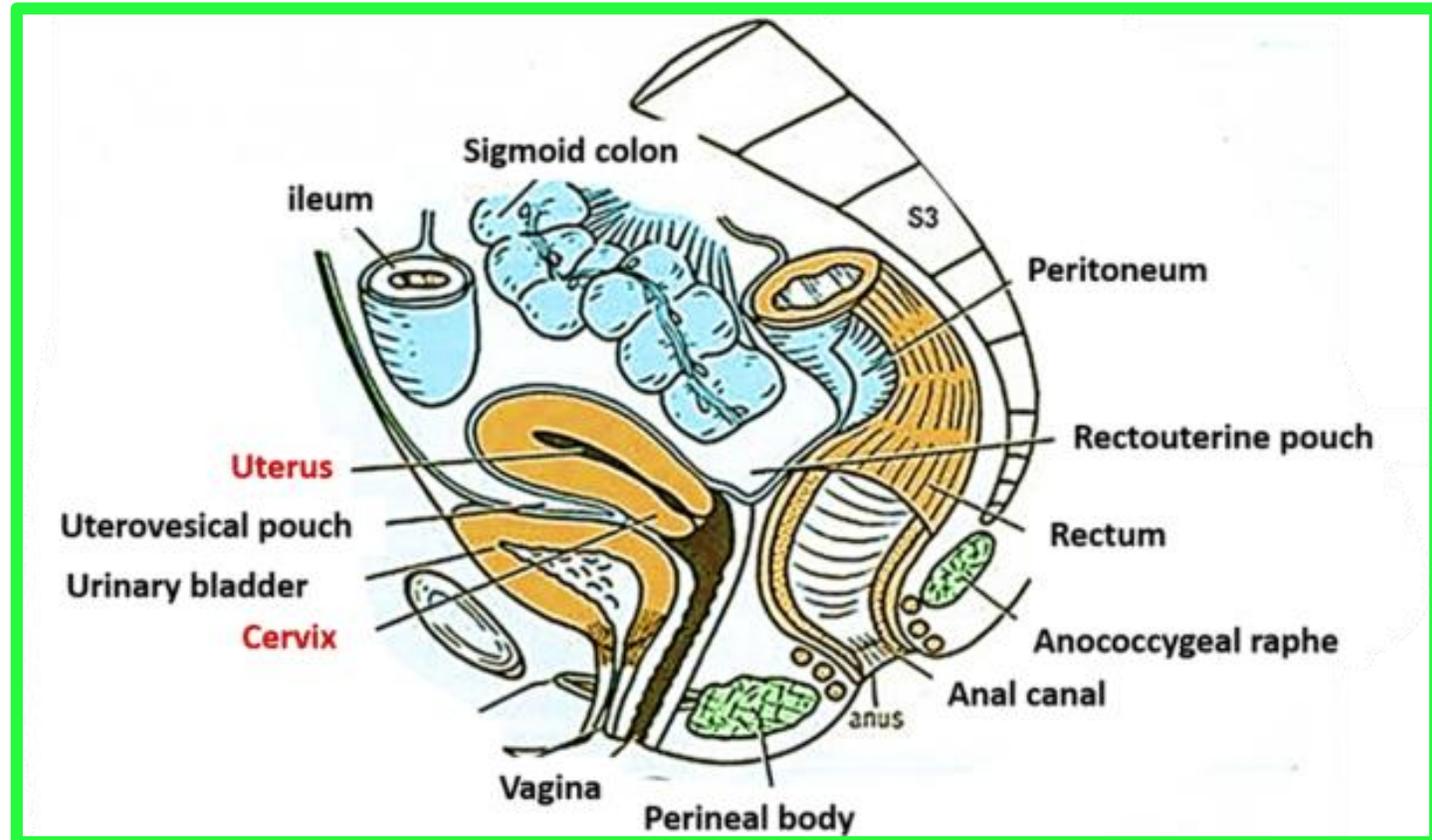
## \*\* Parts and relations

### 1- Fundus

- ❖ This is the free rounded end of the uterus. It is convex in all directions.
- ❖ It is related to coils of small intestine.

### 2- Body

- ❖ This is the middle part of the uterus.
- ❖ Its junction with the cervix is called **the isthmus** of the uterus.
- ❖ The body has **2 surfaces** (**anterior and posterior**) and **2 lateral borders**.

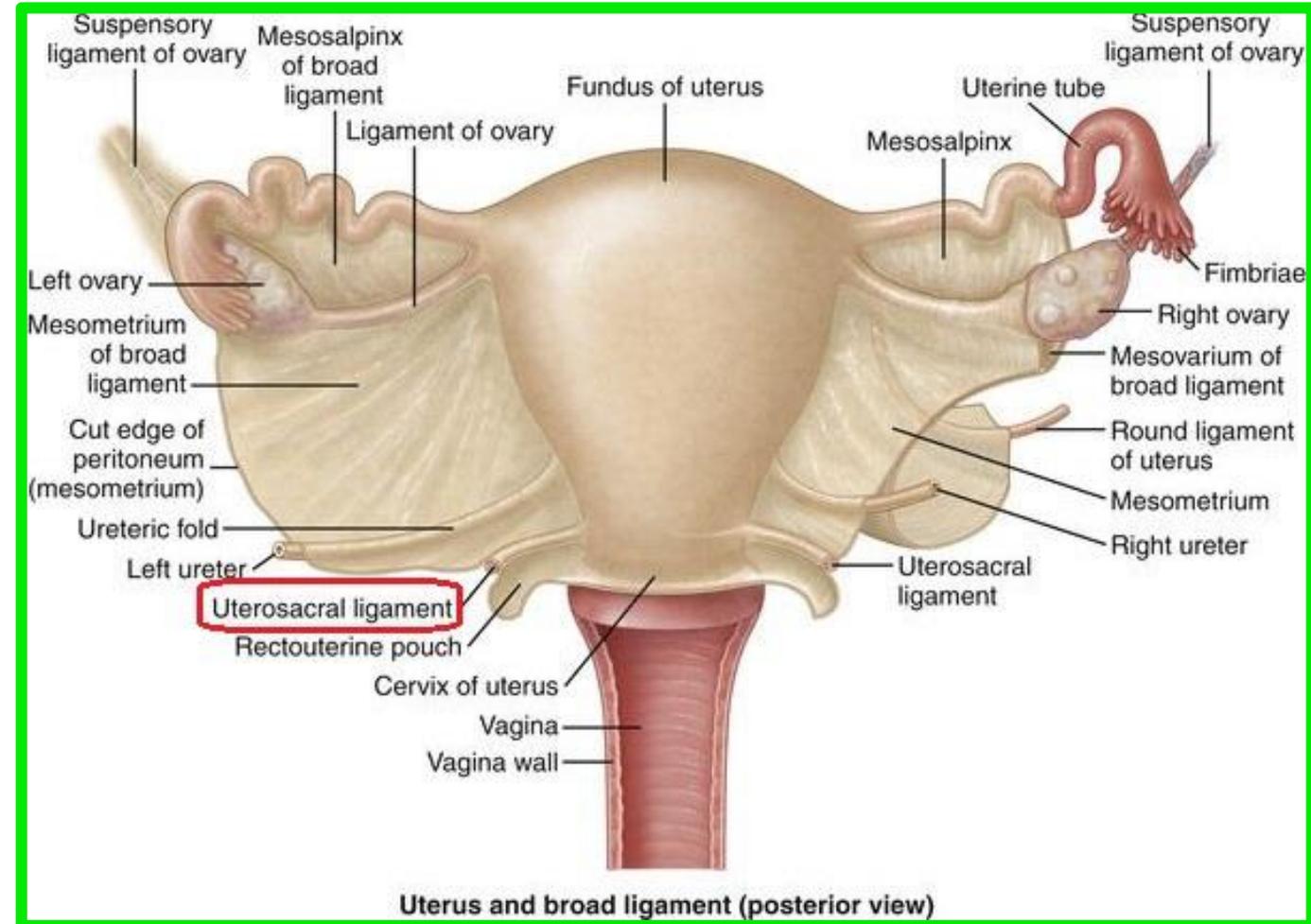


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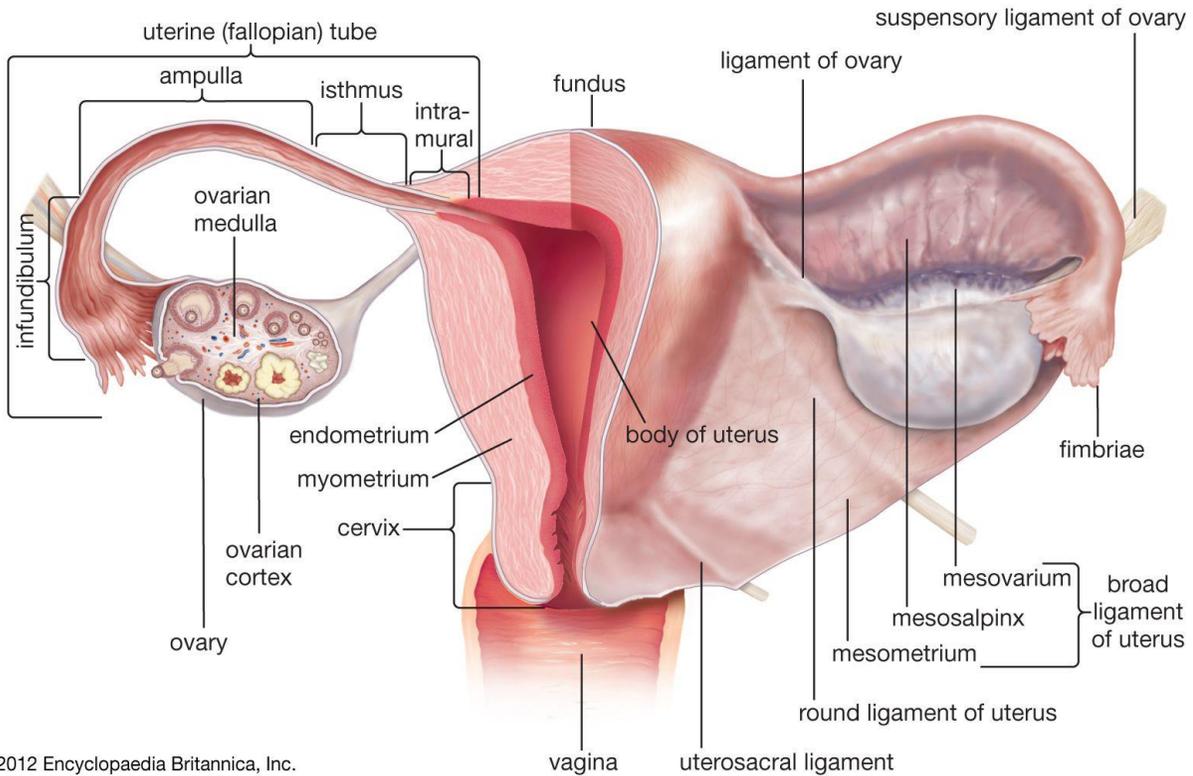
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- ❖ N.B;
- ❖ **The uterine (Fallopian) tubes** join the uterus at the junction of the fundus and body.
- ❖ **The ligament of the ovary** is attached just below and behind the uterine tube.
- ❖ **Round ligament of the uterus** attached just below and in front of the uterine tube

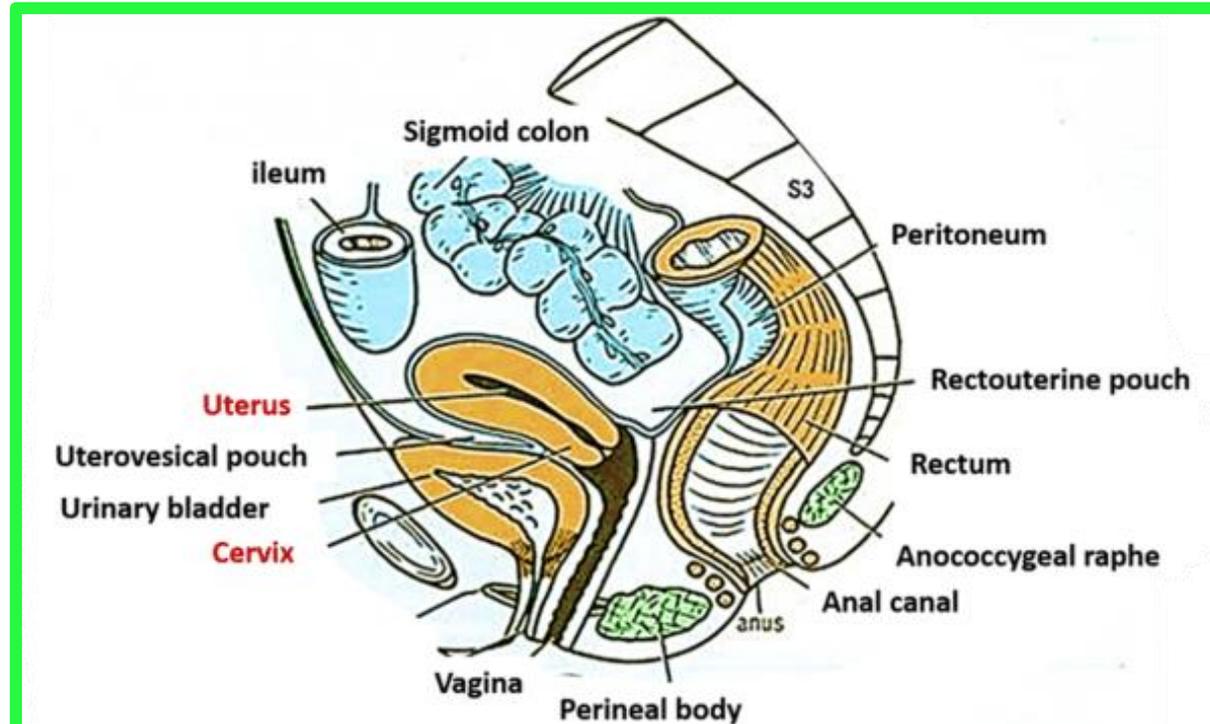


## \*\* Relations of the body:

- 1) **Anterior surface** related to the superior surface of the urinary bladder.
- 2) **Posterior surface**, related to the sigmoid colon and small intestine.
- 3) **Lateral borders**; give attachment to **the broad ligament of the uterus**.



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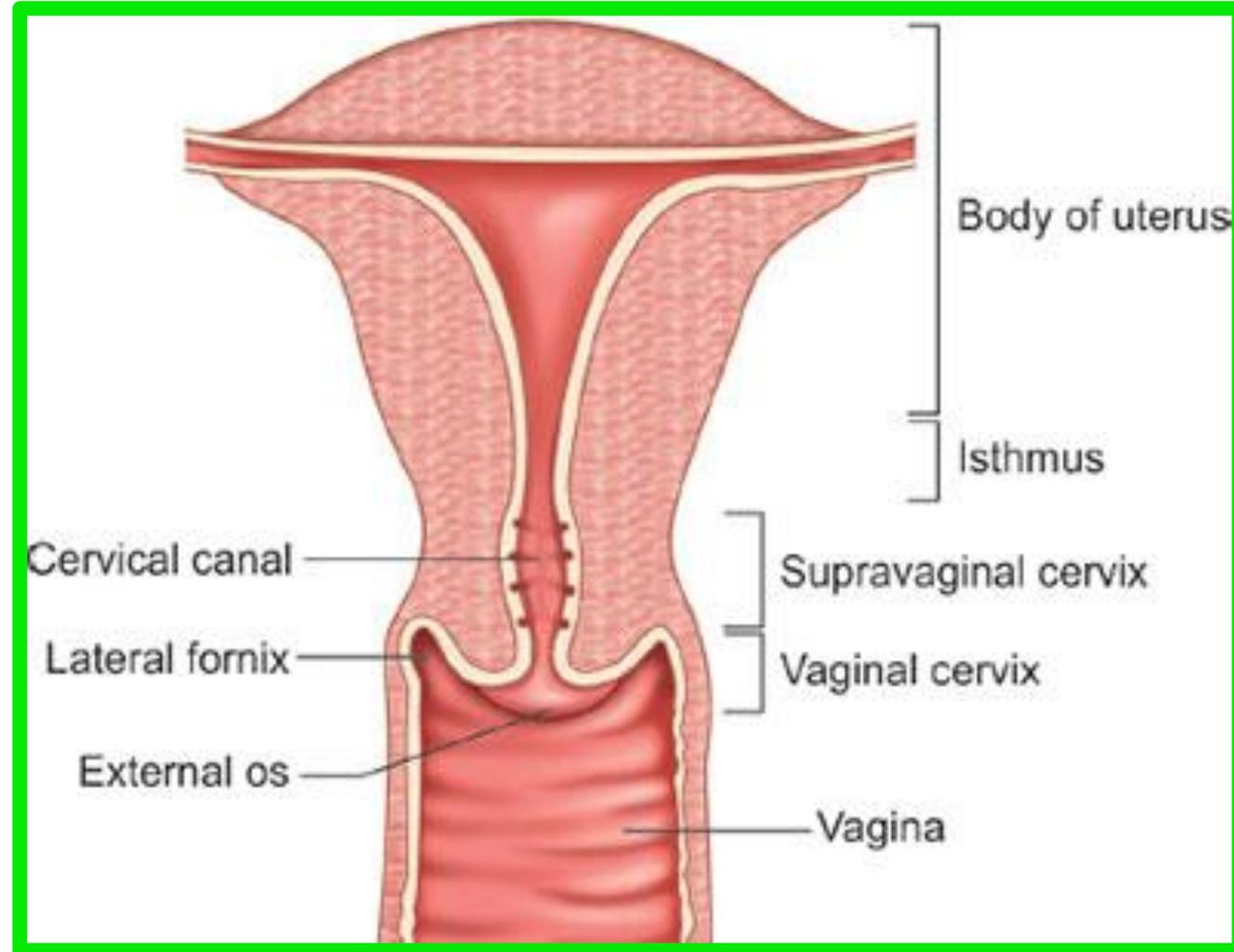


# The Uterus

## \*\* Parts and relations

### 3- Cervix:

- ❖ This is the lower part of the uterus.
- ❖ It projects through the upper part of the anterior wall of the vagina.
- ❖ It is divided into **supravaginal** and **vaginal portions**

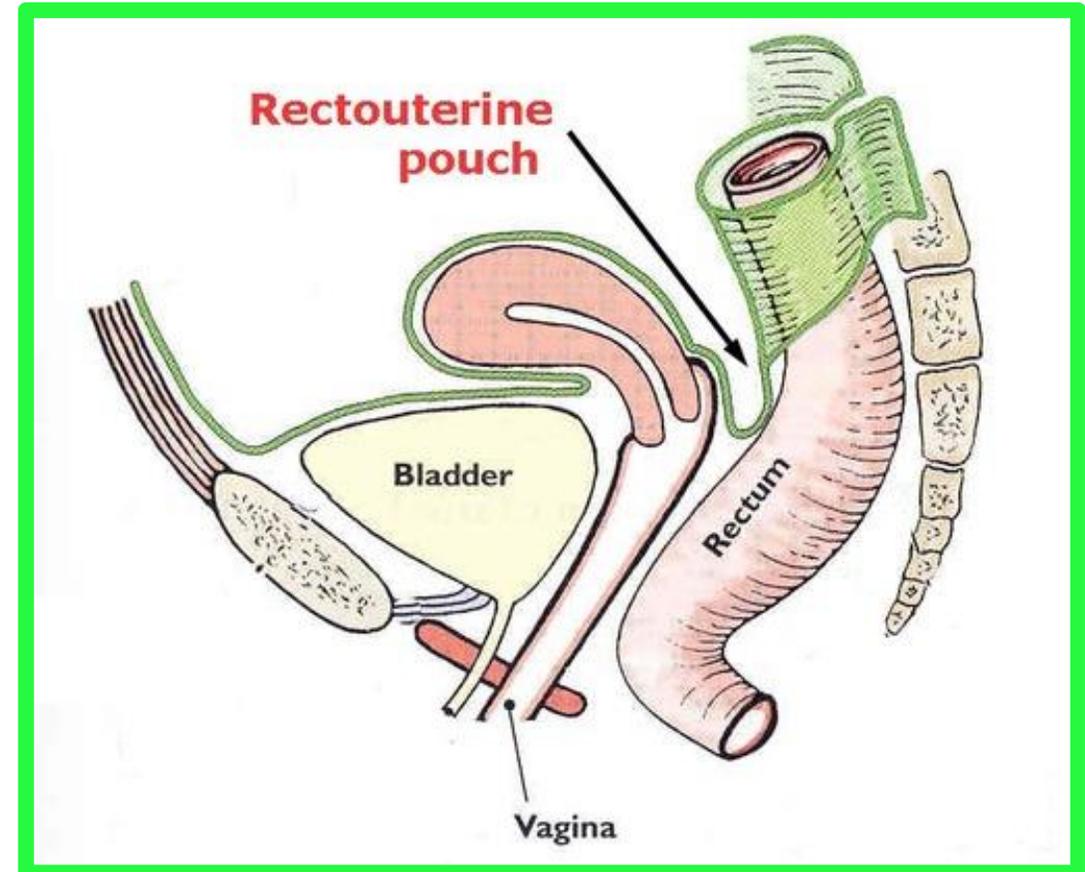
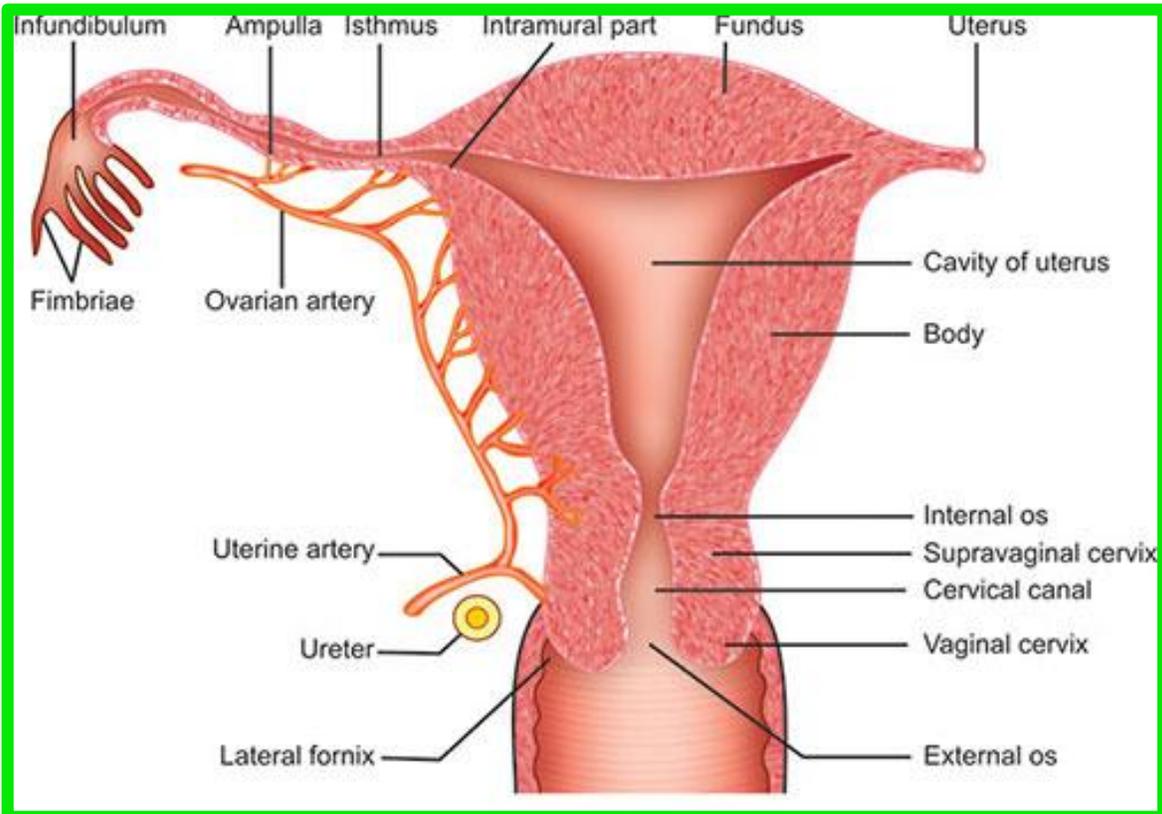


# The Uterus

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## a- The supravaginal part of the cervix:

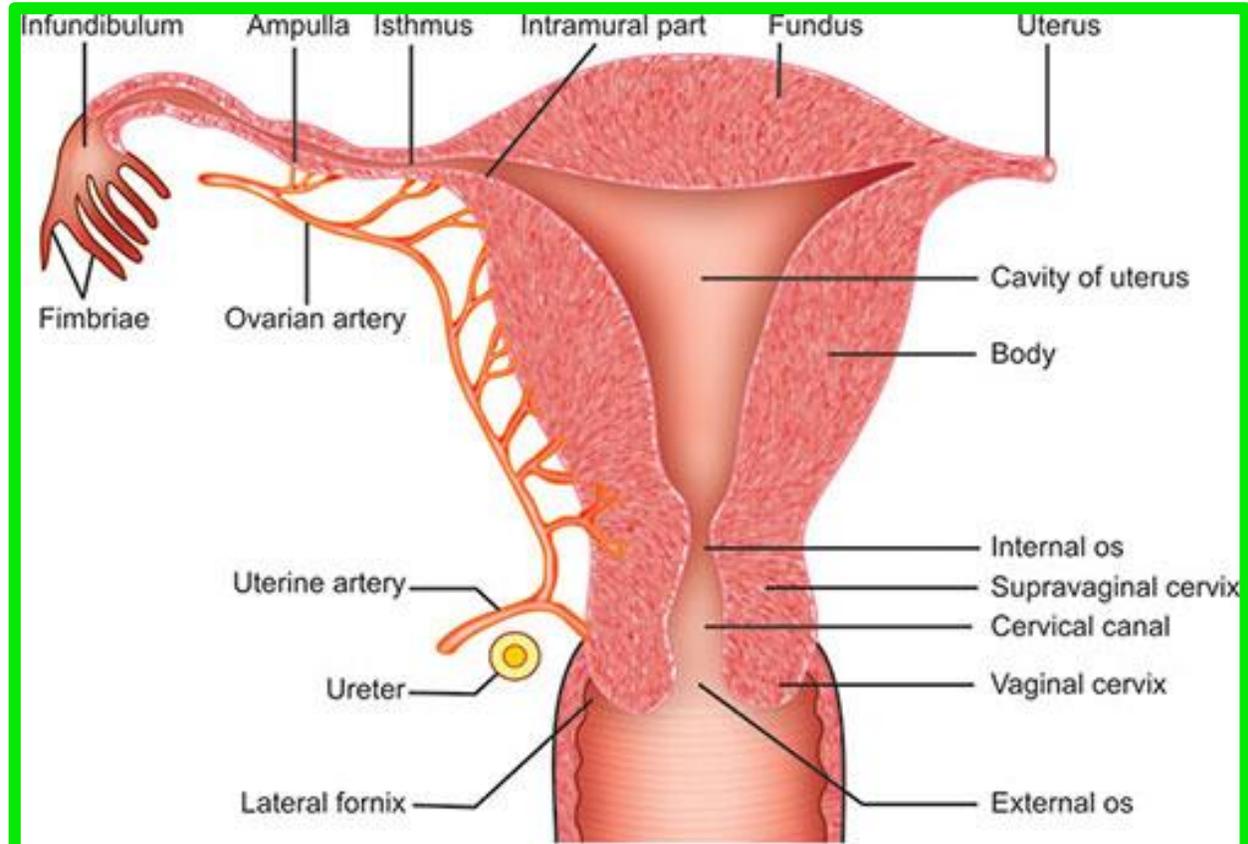
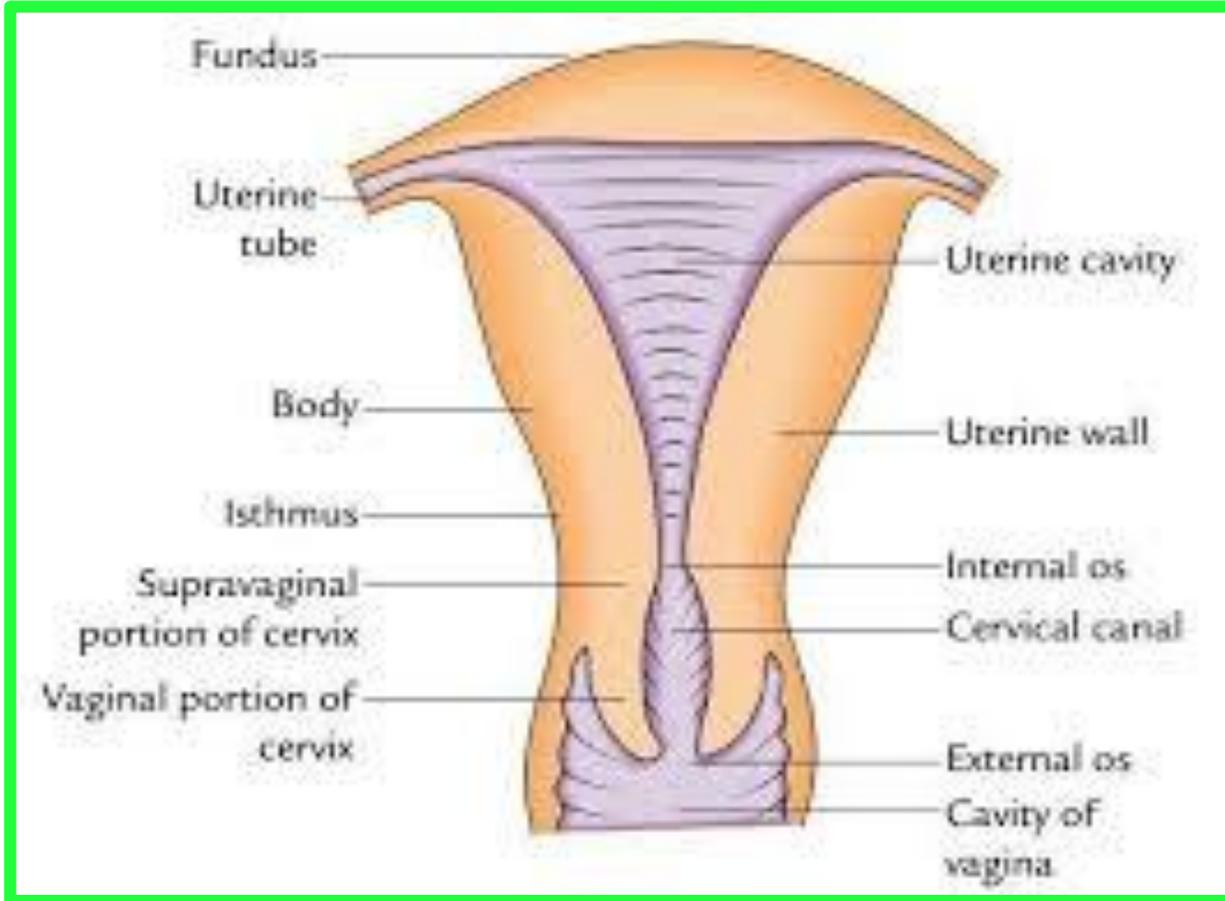
- ❖ **Anteriorly**, is related to the base of the urinary bladder.
- ❖ **Posteriorly**, is related to the rectum separate from it by small intestine.
- ❖ **Laterally**, it is related to: 1) **Uterine vessels.** 2) **Ureter.**



# The Uterus

**b- The vaginal portion of the cervix:**

- It is surrounded by **the vaginal Fornices**.



## \*\* Cavity of the uterus:

### 1- Cavity of the body :

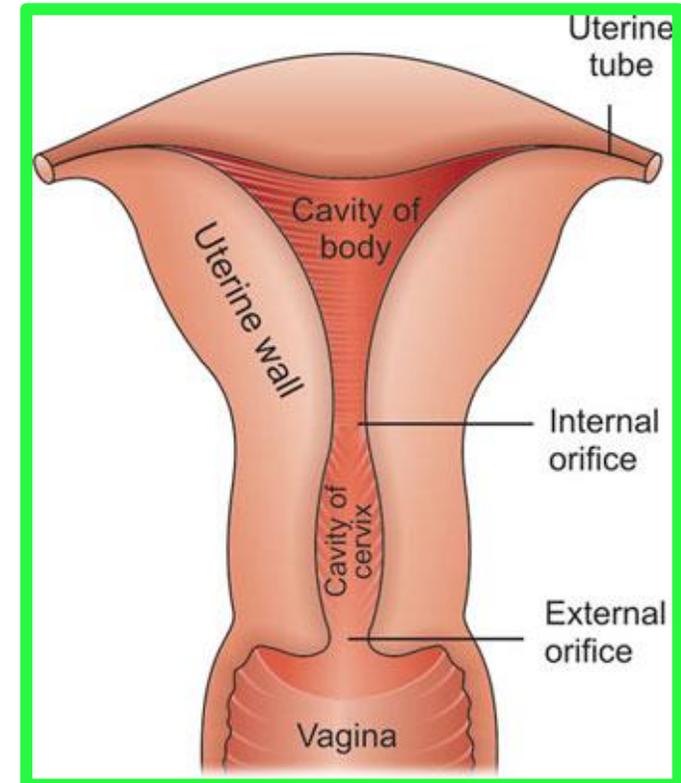
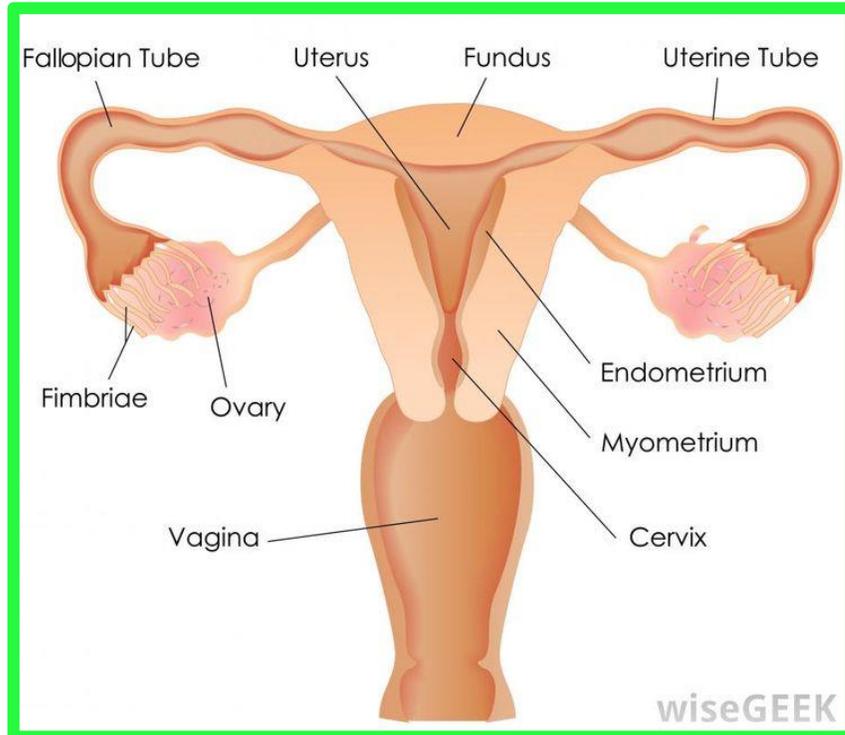
❖ It appears as a slit like in sagittal section but triangular in coronal sections.

### 2- Cavity of the cervix (cervical canal):

❖ It is a **fusiform canal** and communicates

**a-** Above with the cavity of the body through **the internal Os.**

**b-** Below with the vagina through **the external Os.**



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## **\*\* Anatomical Position of the uterus: (Anteflexed anteverted)**

**A- Anteflexed:** The body of the uterus is bent forwards on the cervix.

❖ The **long axis of the body** forms an angle about **170 degree** with the **long axis of the cervix**.

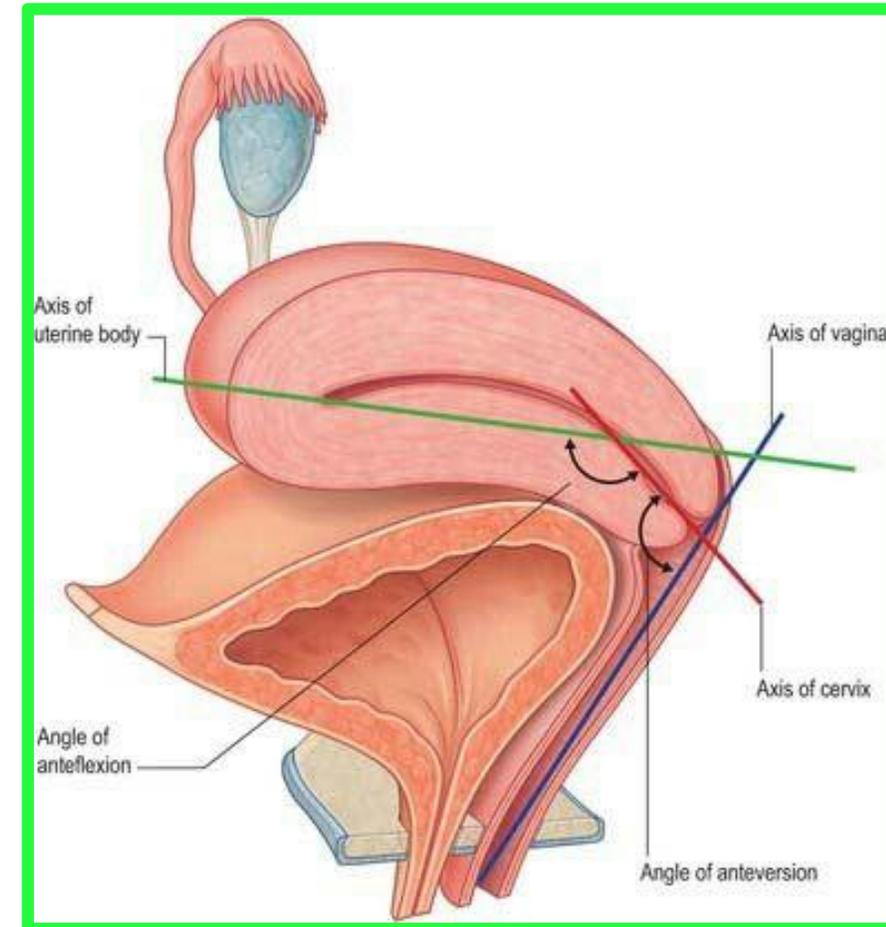
**B- Anteverted:** The cervix is bent forwards on the anterior wall of the vagina.

❖ The longitudinal axis makes an angle about **90 degree** with the long axis of the vagina.

**N.B;**

✓ An abnormal position of the uterus is called **retroflexed retroverted:**

✓ The body is bent back on the cervix and the whole uterus is bent back on the vagina.

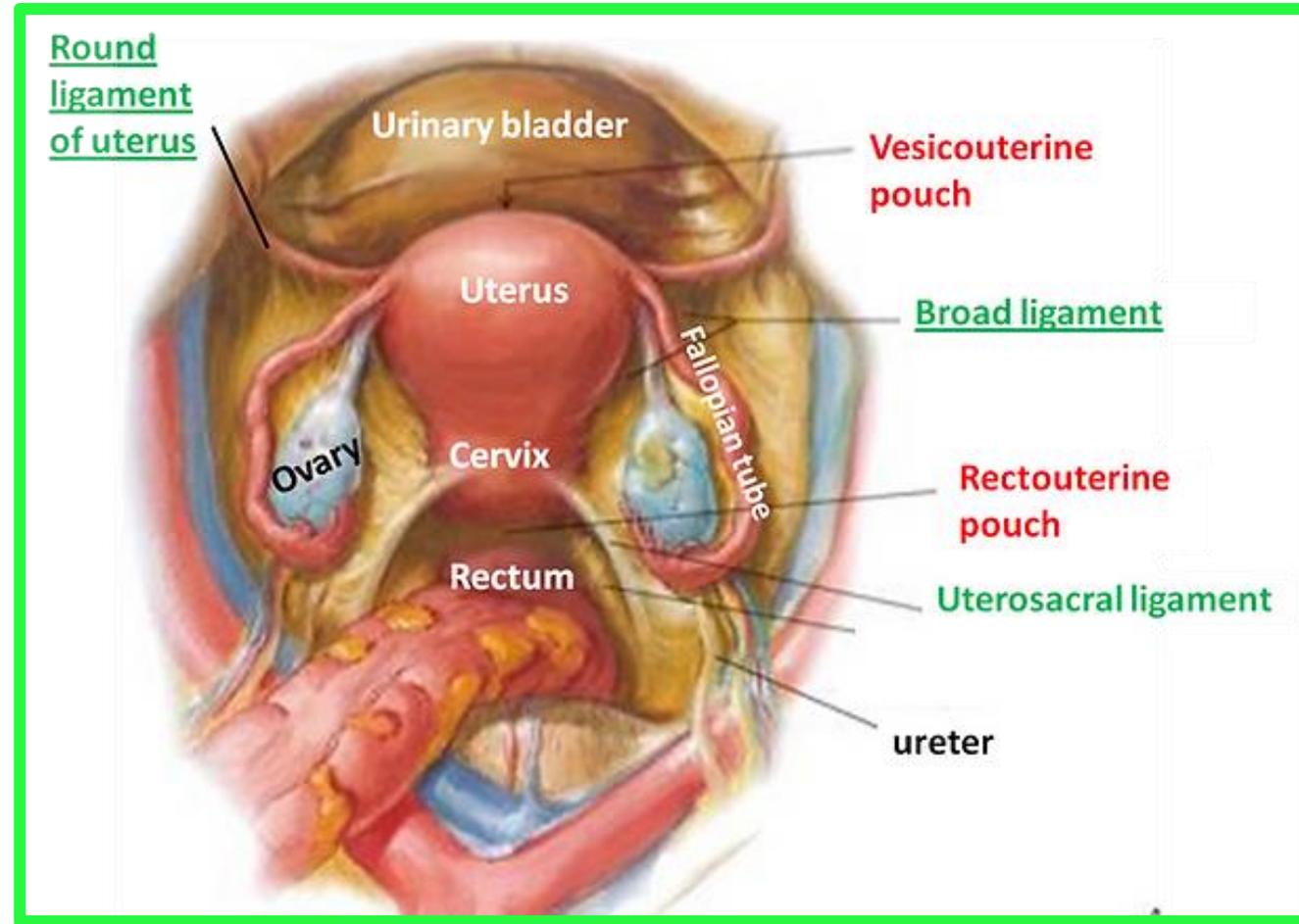
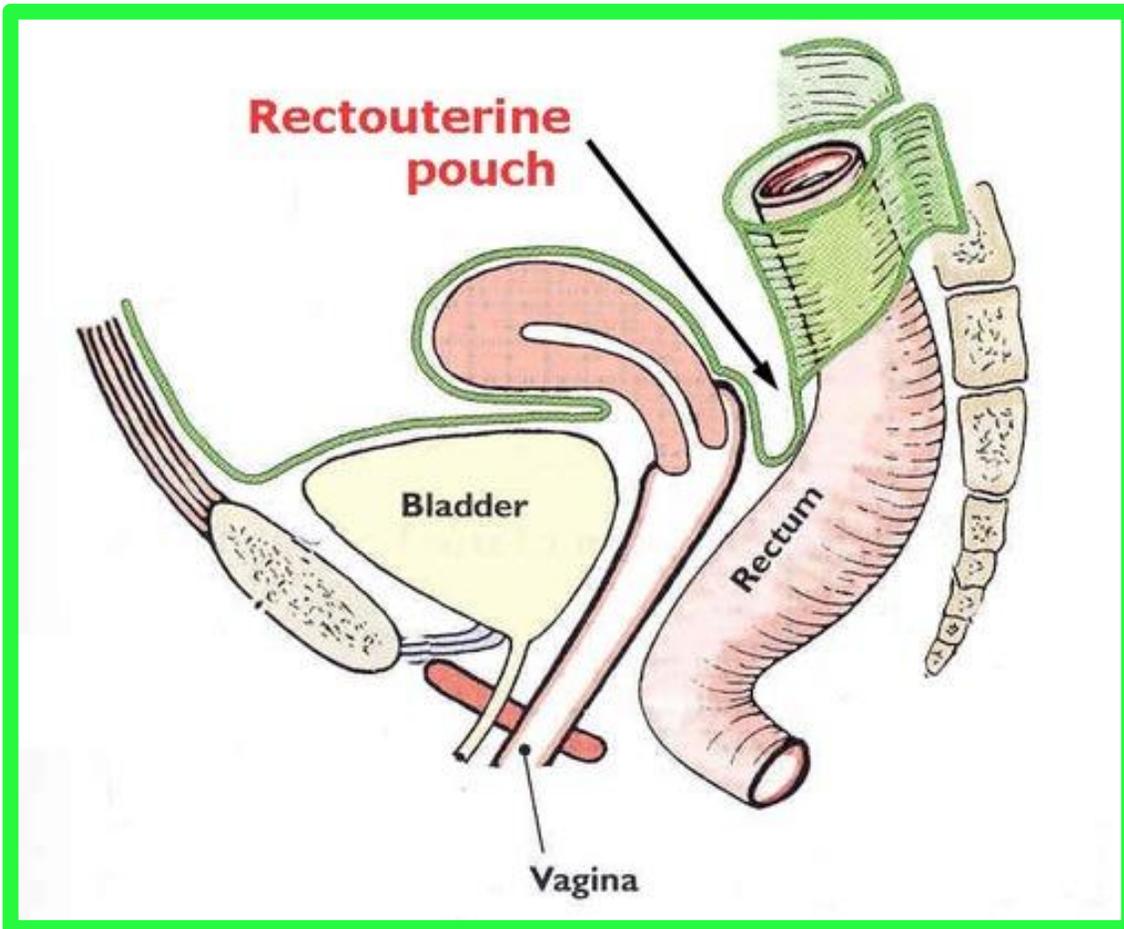


# • Ligaments of the uterus

## A- Peritoneal folds:

1- Anterior ligament is formed by uterovesical fold.

2- Posterior ligament is formed by rectovaginal fold.



# • Ligaments of the uterus:

## 3- Broad ligament of the uterus

➤ This is a wide fold of peritoneum which extends from the lateral borders of the uterus to the lateral wall of the pelvis on each side.

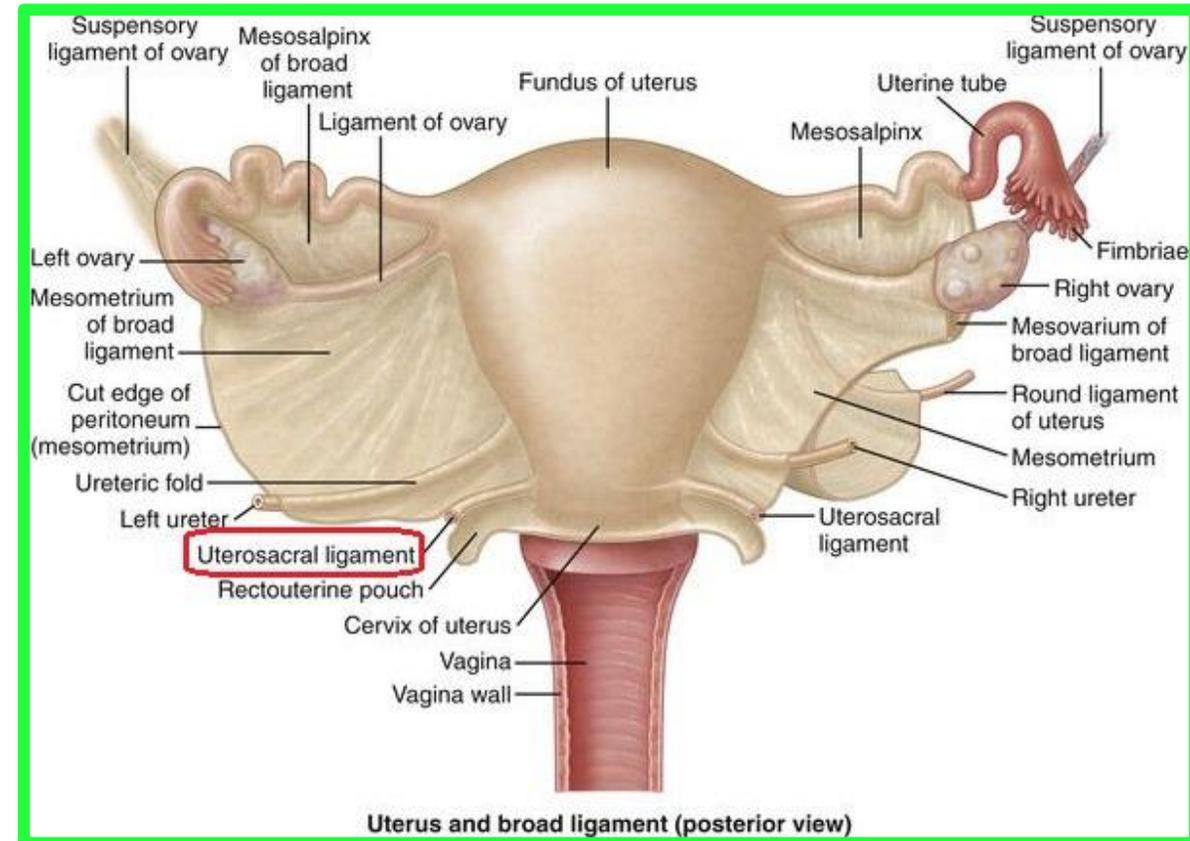
### \*\* Attachment (4 borders):

**A- Anterior border;** free containing uterine tube.

**B- Posterior border** (attached border), attached to the floor of the pelvis.

**C- Medial border** attached to the lateral border of the uterus.

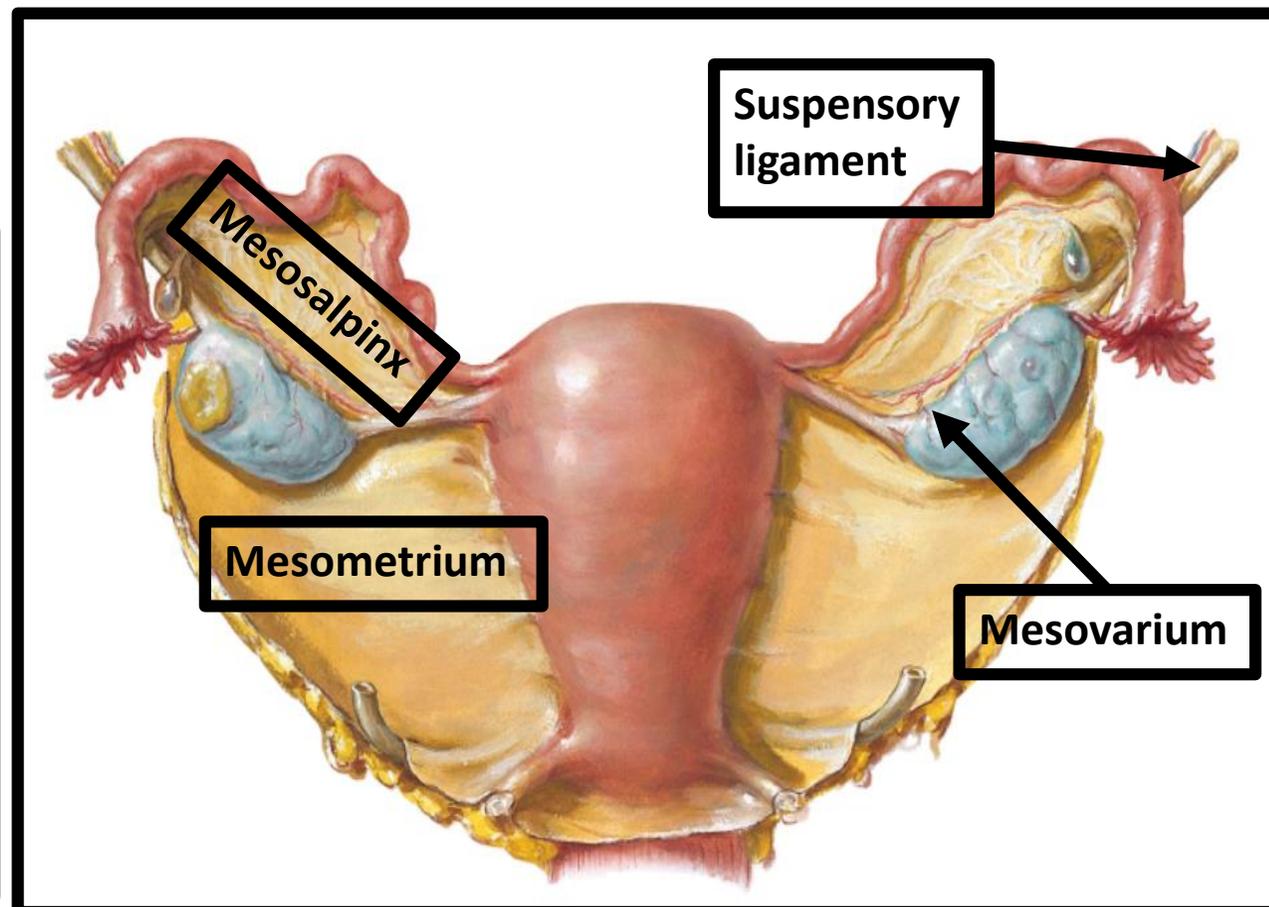
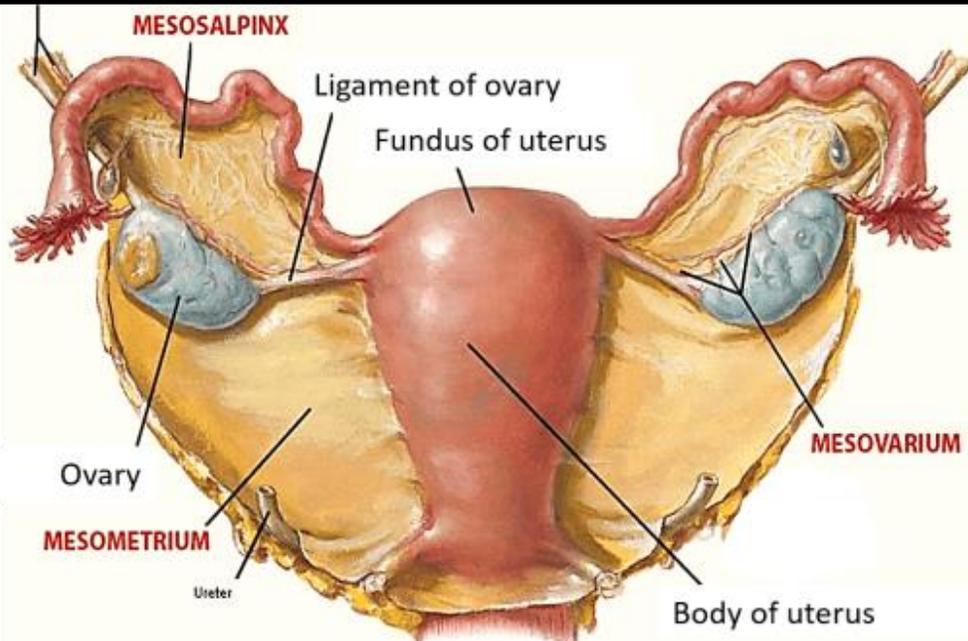
**D- Lateral border** attached to the lateral wall of the pelvis.



## \*\* Parts of the broad ligament:

- 1- **Mesovarium:** it is the part connecting the ovary to the ligament.
- 2- **Mesosalpinx:** is the part between the uterine tube, mesovarium and ligament of the ovary.

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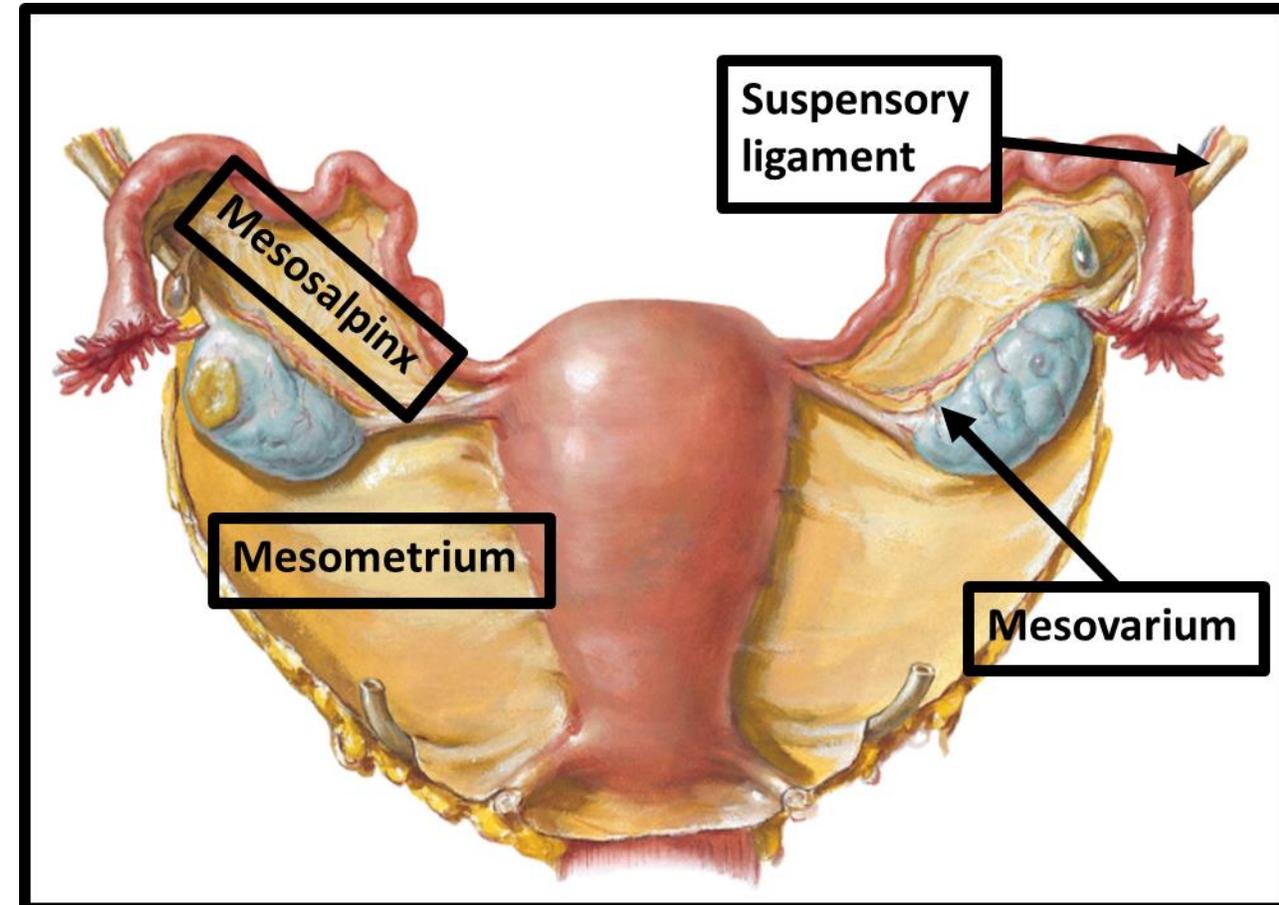


## \*\* Parts of the broad ligament:

### 3- Suspensory ligament of the ovary (Infundibulo-pelvic ligament):

❖ This is the lateral part which extends from the infundibulum of the uterine tube and mesovarium to the lateral wall of the pelvis.

### 4- Mesometrium: Is the remaining part of the ligament.



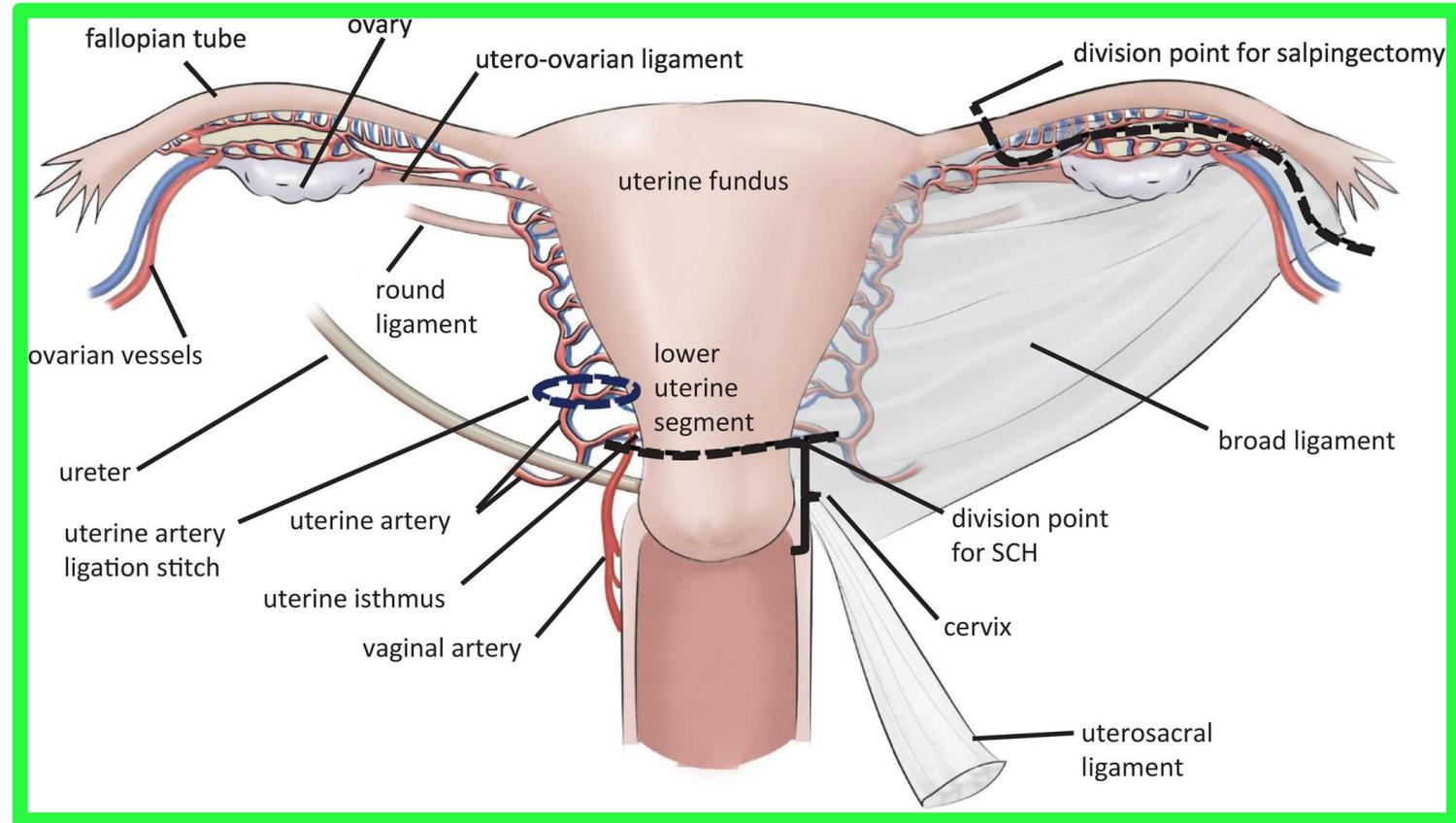
## **\*\* Contents of the broad ligament (between the 2 layers):**

**1- Uterine (Fallopian) tube:** it runs in the medial part of the free border.

**2- 2 vessels**

**1- The uterine artery :** runs along the lateral border of the uterus. It anastomosis with the ovarian artery.

**2- The ovarian artery :** passes through the suspensory ligament of the ovary. It anastomosis with the uterine artery.

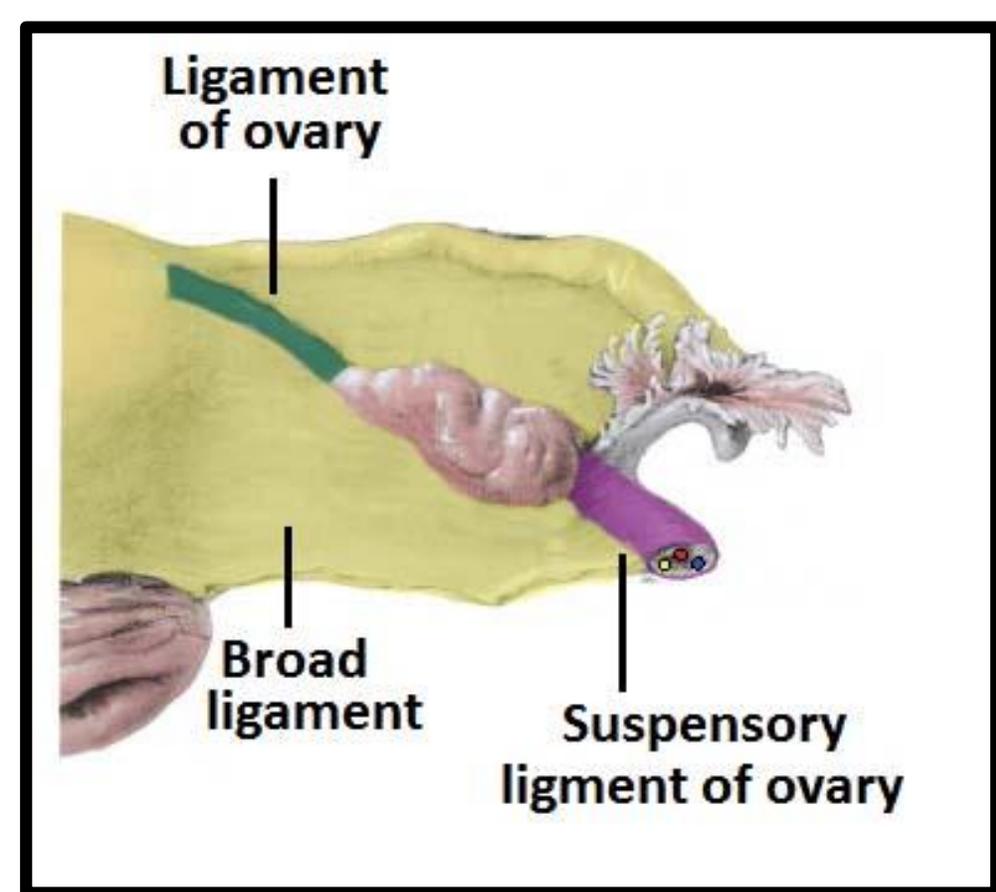


## \*\* Contents of the broad ligament (between the 2 layers):

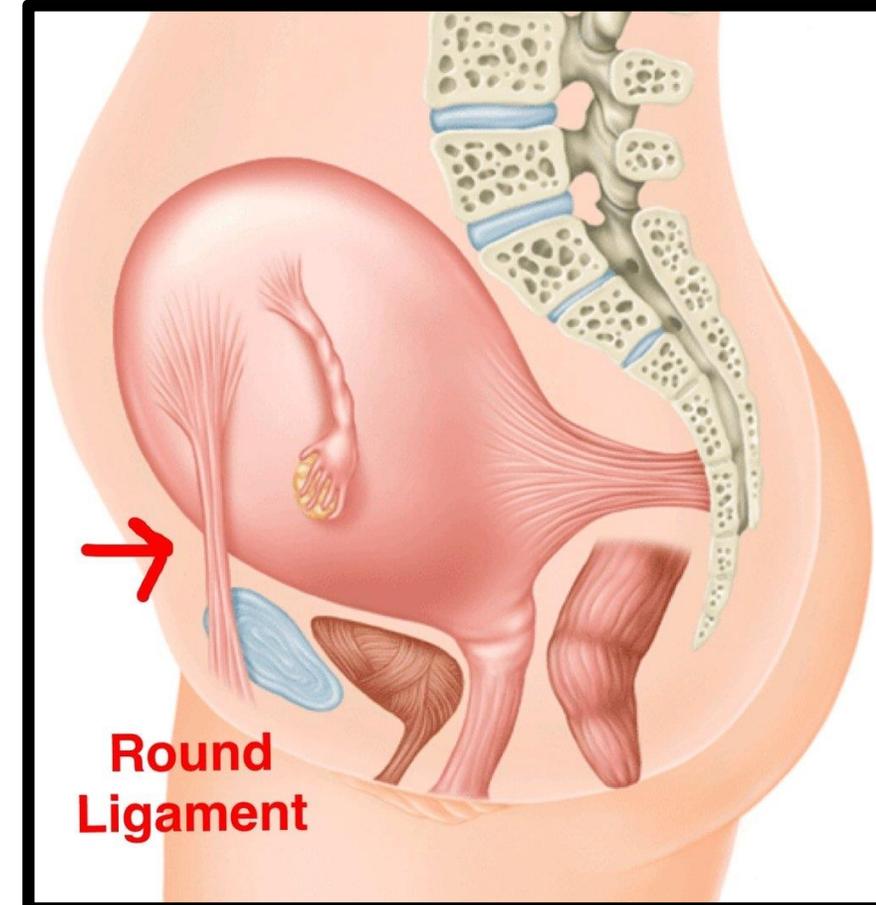
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### 3- 2 ligaments;

- 1- **Ligament of the Ovary** connects the uterine end of the ovary with the uterus.
- 2- **Round ligament of the uterus** connects the uterus with the labia majora of the vulva through the inguinal canal



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## **\*\* Contents of the broad ligament (between the 2 layers):**

**4- 2 embryonic remnants:**

**1- Epoophoron.**

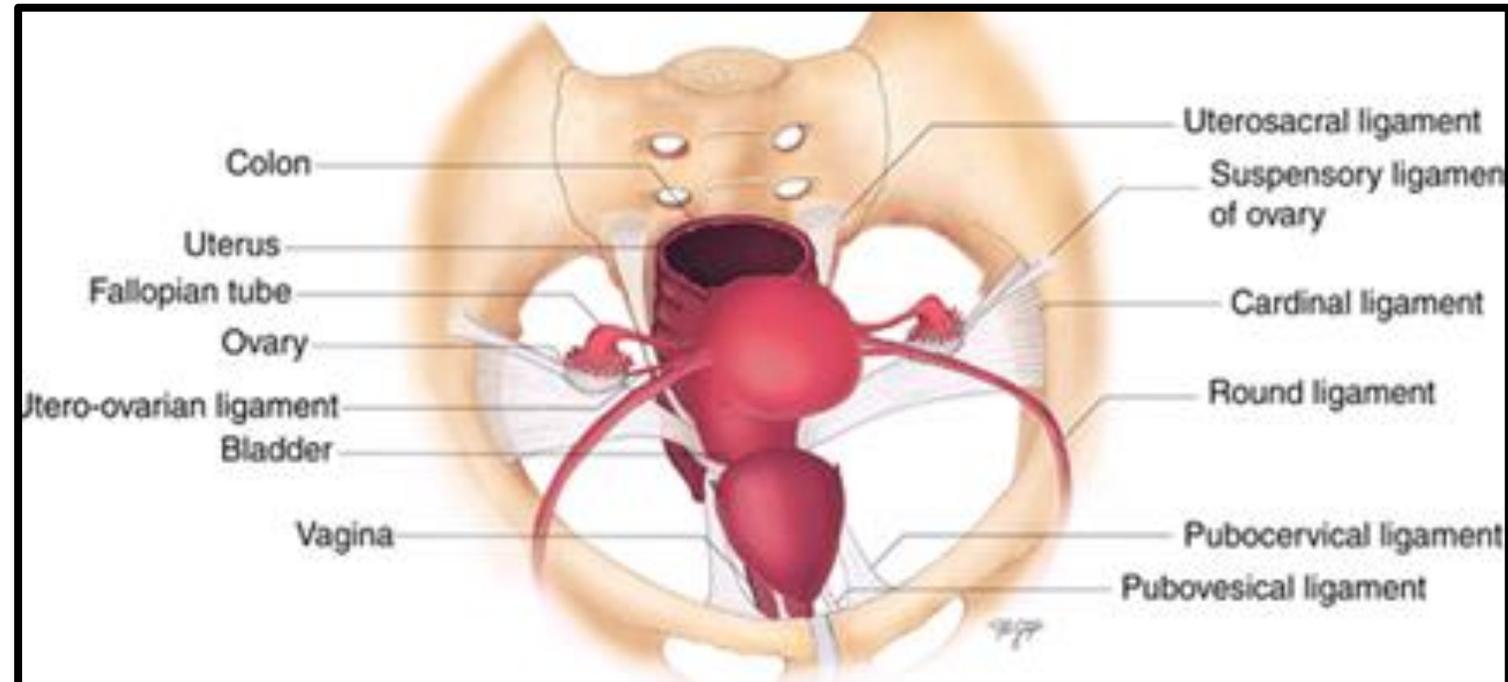
**2- Paroophoron.**

**5- Sympathetic and parasympathetic fibers.**

**6- Lymphatic vessels and lymph nodes.**

**7- Extraperitoneal connective tissue.**

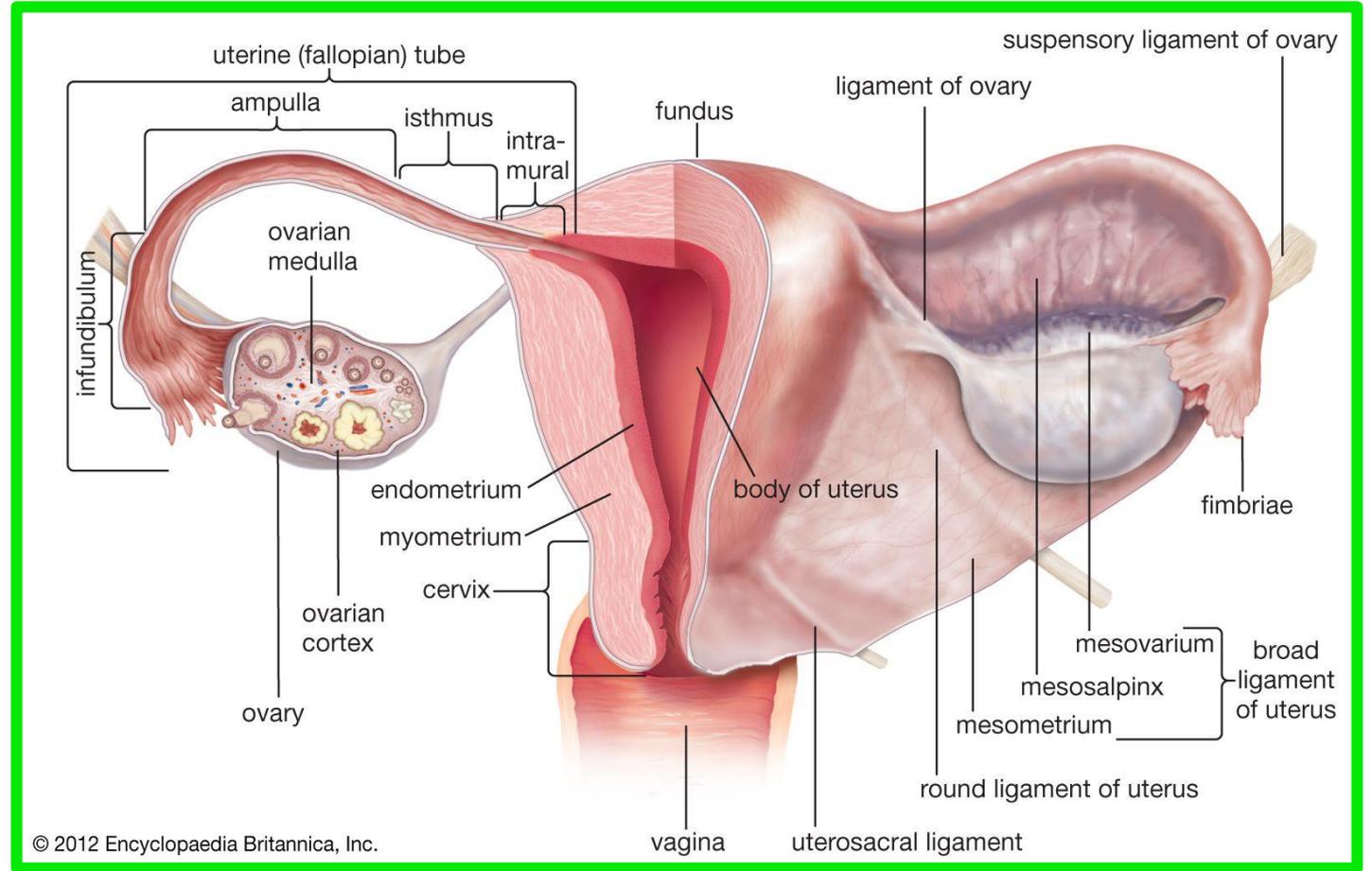
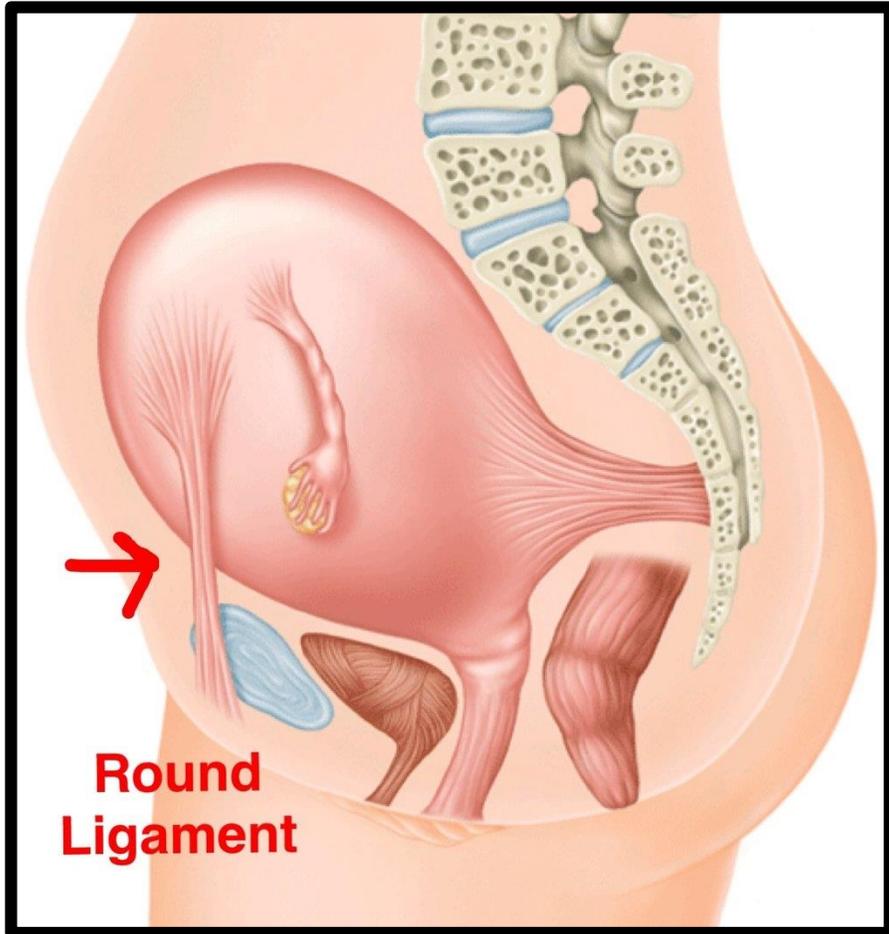
**8- Non-striated muscles**



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# Other ligaments:

- 1- Ligament of the ovary:
- 2- Round ligament of the uterus



## Other ligaments:

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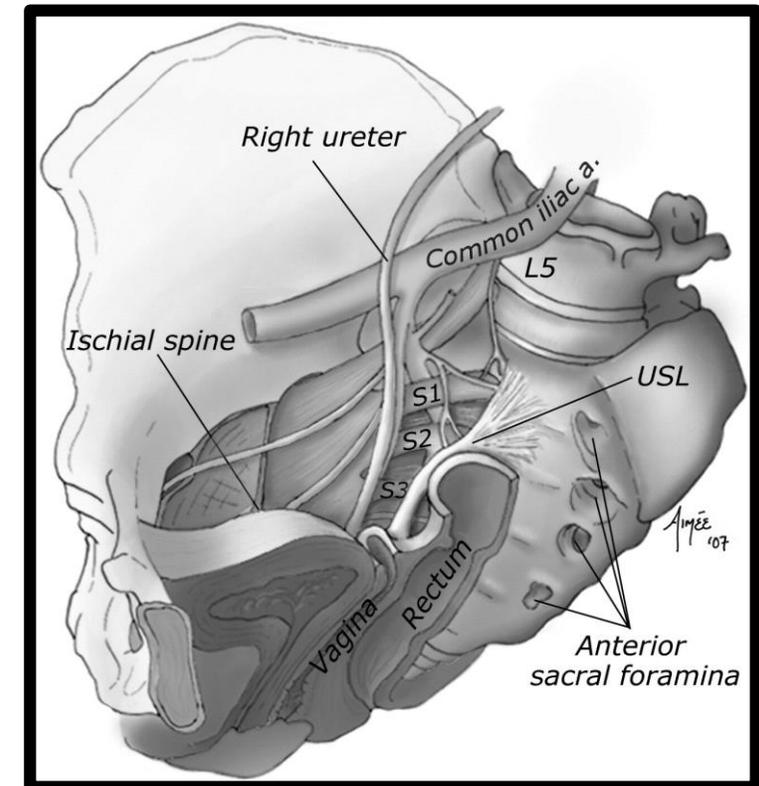
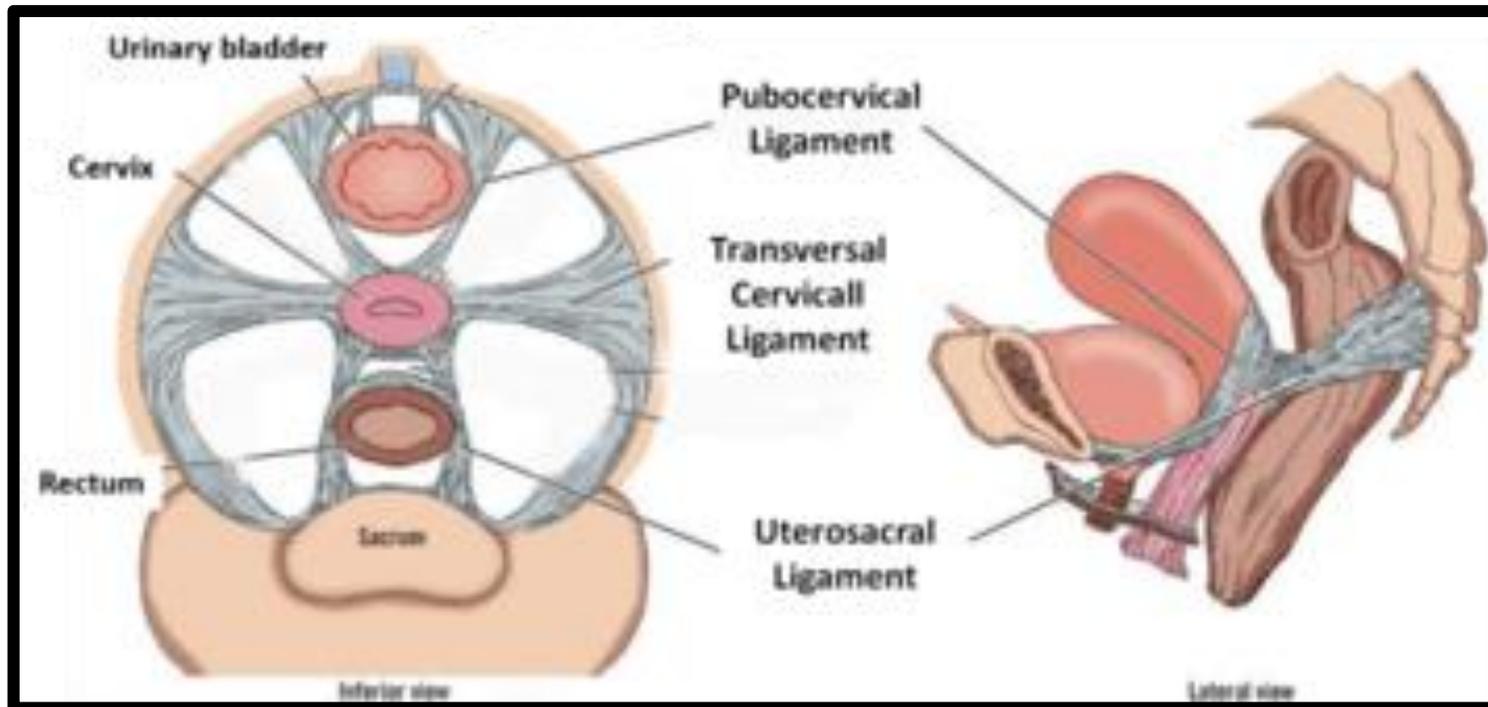
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### 3- Transverse cervical ligaments (Mackenrodt's ligament) (Laterally)

- ✓ These are important ligaments for maintaining the position of the uterus.
- ✓ They extend from the cervix of the uterus to the side wall of the pelvis.

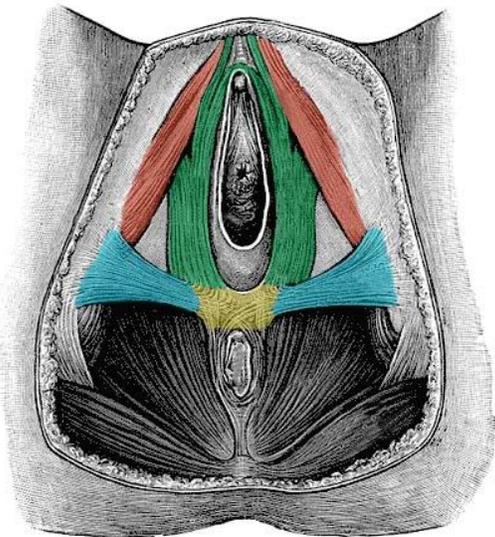
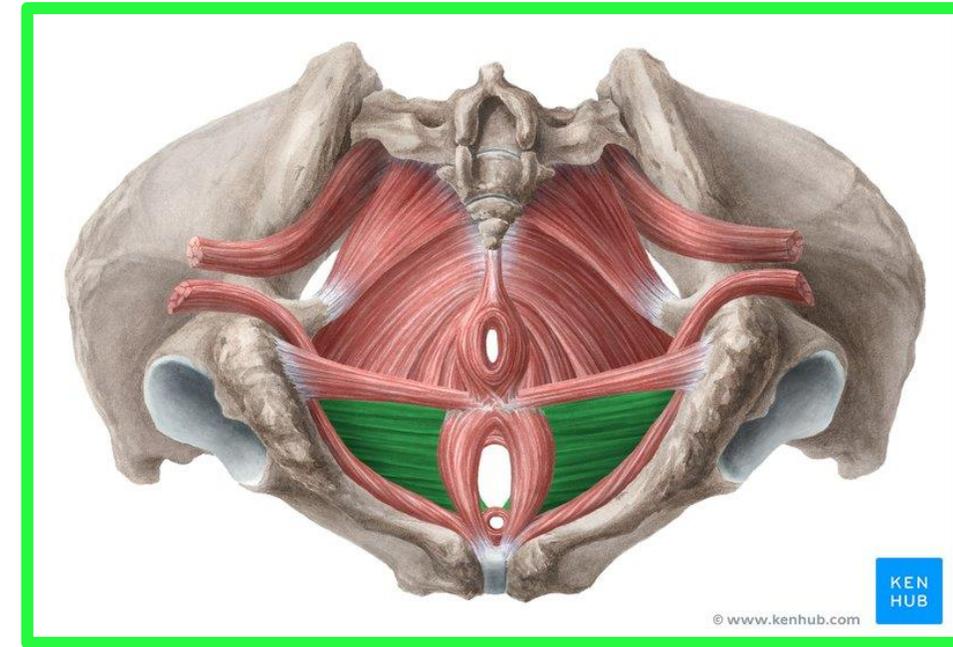
### 4- Uterosacral ligaments (posteriorly):

- ✓ They extend from the cervix of the uterus to the front of the sacrum on both sides of the rectum

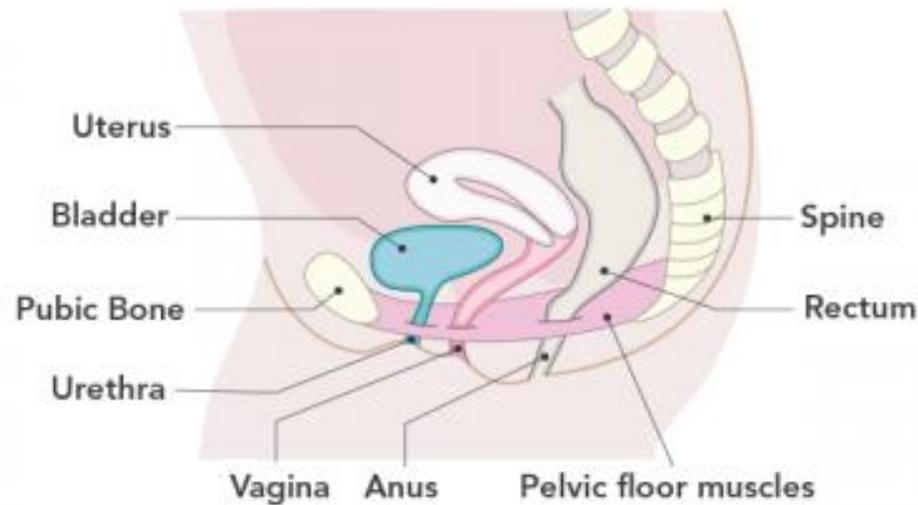


## \*\* Factors support the uterus

- 1- Ligaments of the uterus.
- 2- Plevic diaphragm (levator ani and coccygeus muscles).
- 3- Urogenital diaphragm.
- 4- Perineal body.
- 5- Position of the uterus.



- Perineal body
- Ischiocavernosus
- Bulbocavernosus
- Transverse perineal



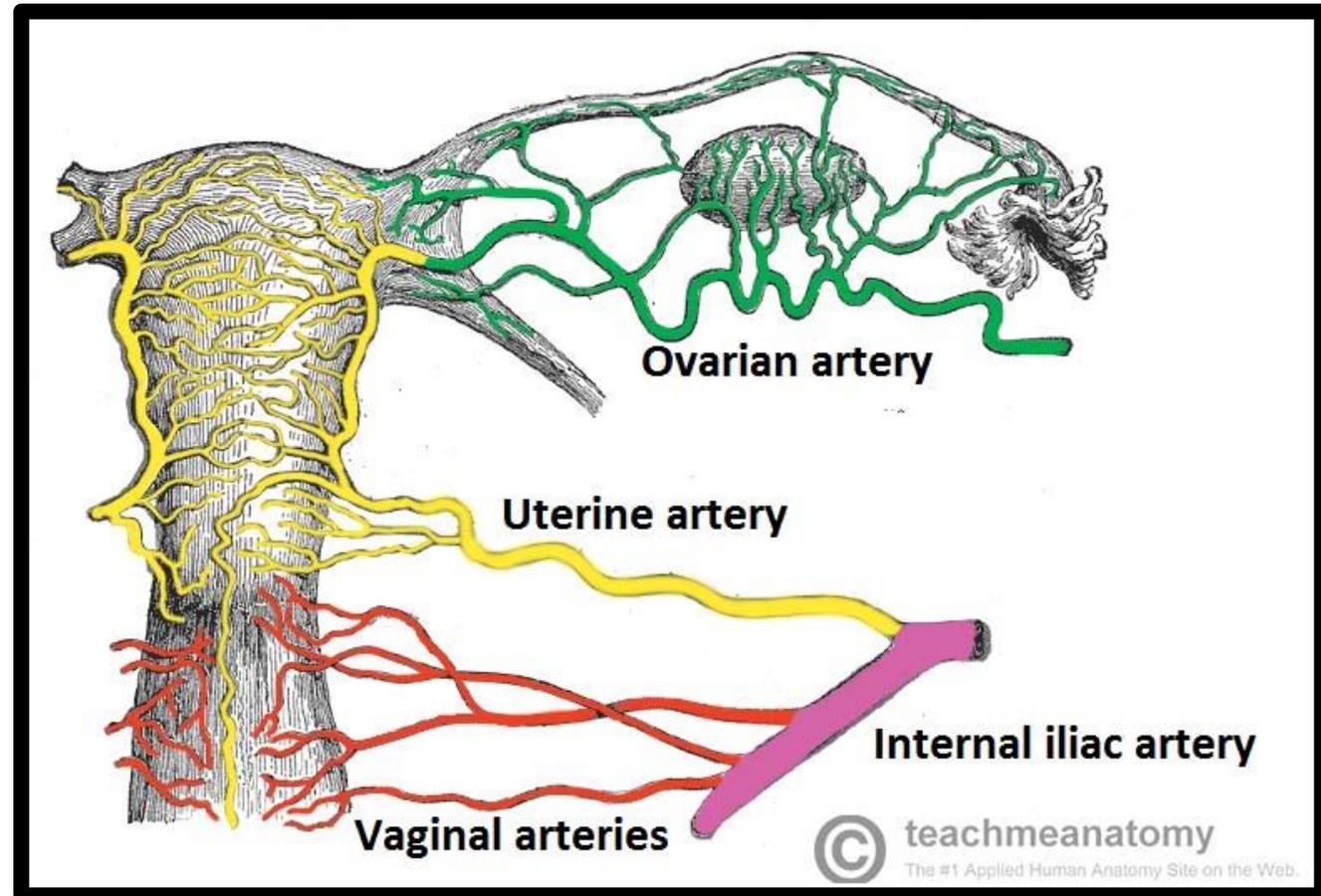
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## \*\* Arterial supply:

- 1- **The uterine artery:** from **anterior division of internal iliac artery**.
- ❖ It passes **in the root of the broad ligament** and then ascends along the lateral border of the uterus and turns laterally below the uterine tube to anastomosis with the ovarian artery. **It is a tortuous artery.**
- 2- **Vaginal artery.**

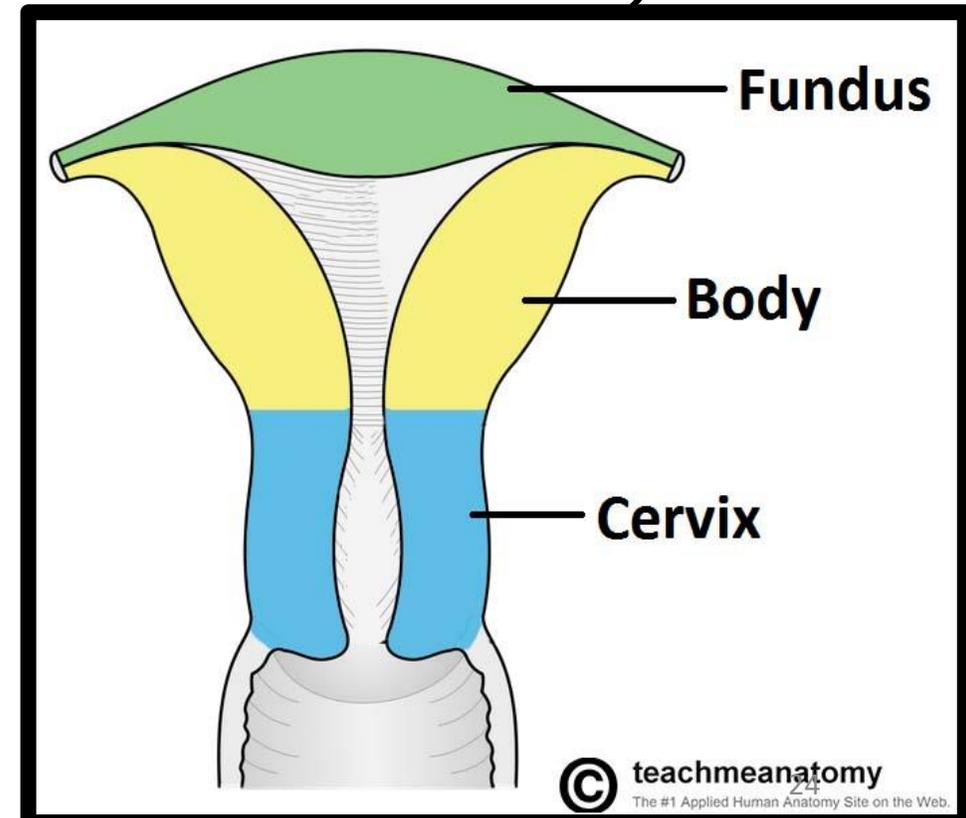
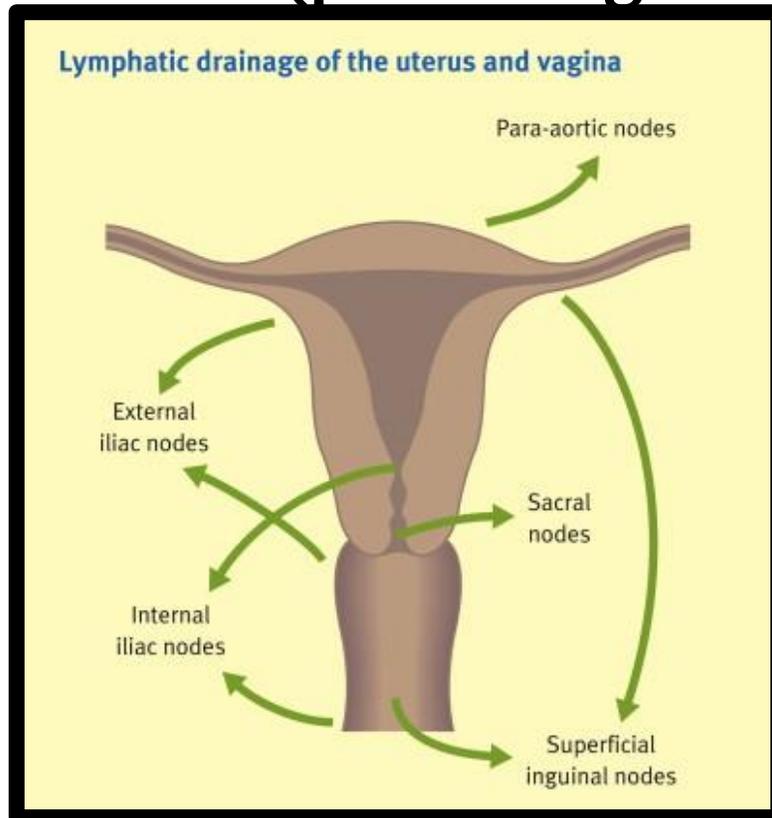
## \*\* Venous drainage:

- **Uterine venous plexus** → **uterine vein** which drains into **the internal iliac vein**.



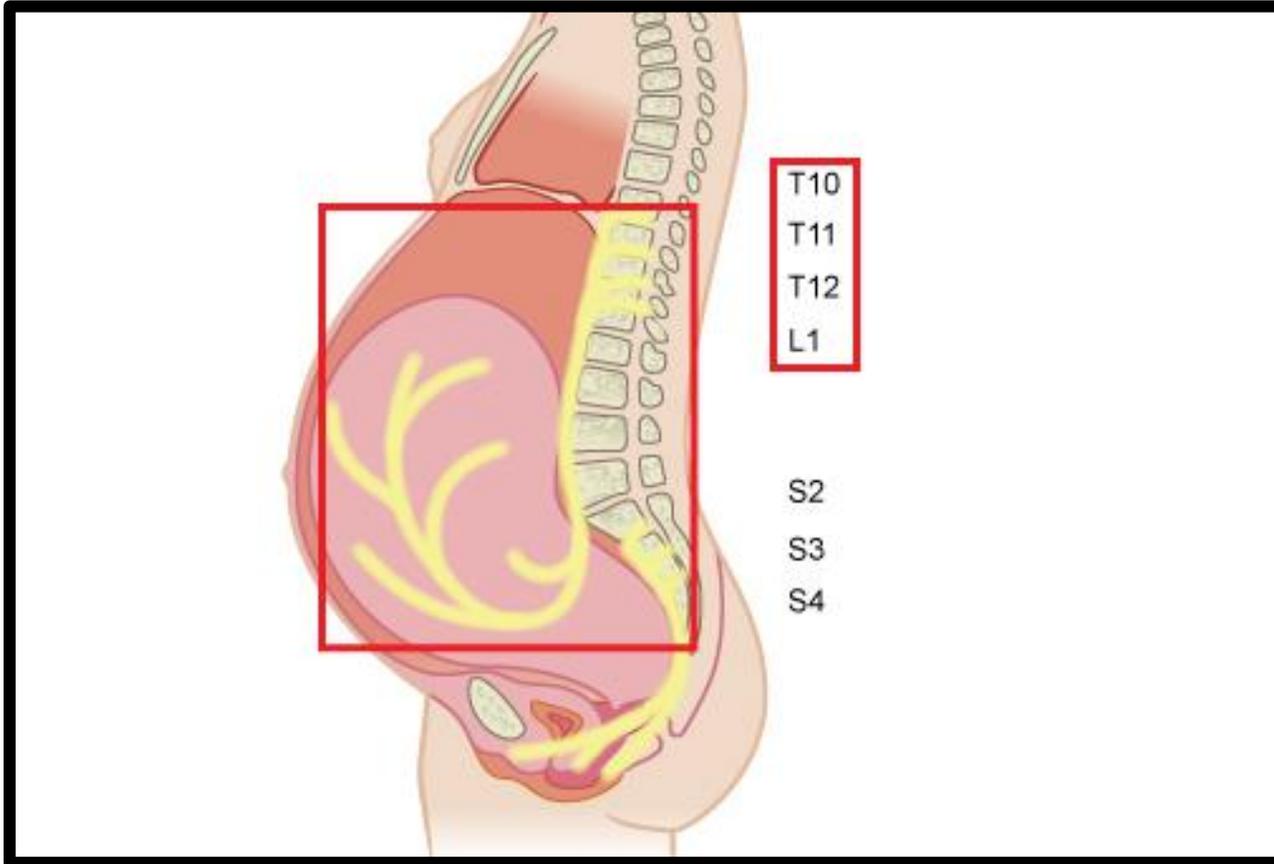
## \*\* Lymphatic drainage:

- 1- Upper part of the body and fundus to the pre and para-aortic lymph nodes.
- 2- Lower part of the body to the external iliac lymph nodes.
- 3- Cervix to the external and internal iliac lymph nodes.
- 4- The region close to the medial end of uterine tube to the superficial inguinal lymph nodes (pass along the round ligament of the uterus).



## \*\* Nerve supply

- Sympathetic from T10 - L1.
- Parasympathetic fibers, from S2, 3, 4.



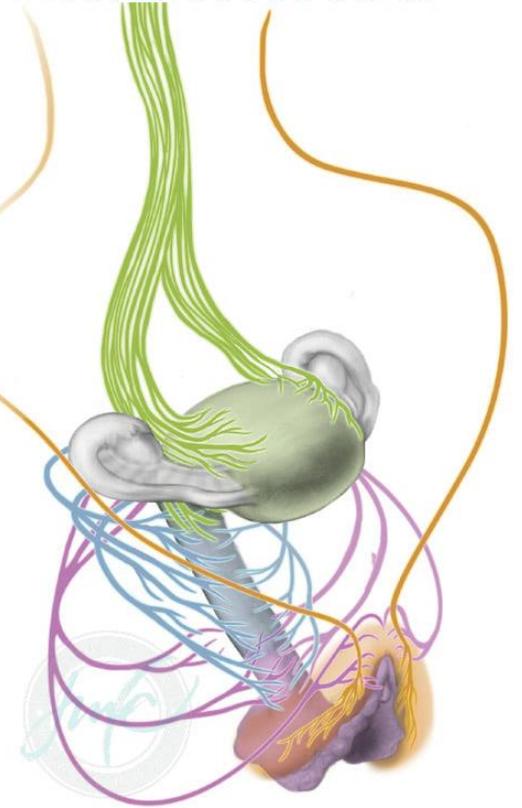
## UTERINE INNERVATION

The uterus, vagina and vulva are heavily innervated by different types of nerves.

The clitoris for example is made sensitive by afferent nerves of the pudendal system which receive sensory input via touch, temperature and pressure.

Upon the event of orgasm, efferent nerves transmit pleasuring muscle contractions to the pelvic floor muscles, vagina and uterus.

- Inferior hypogastric plexus
- Splanchnic system
- Pudendal system
- Ilioinguinal nerve to skin, mons pubis and labia majora



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