

# Table of Contents

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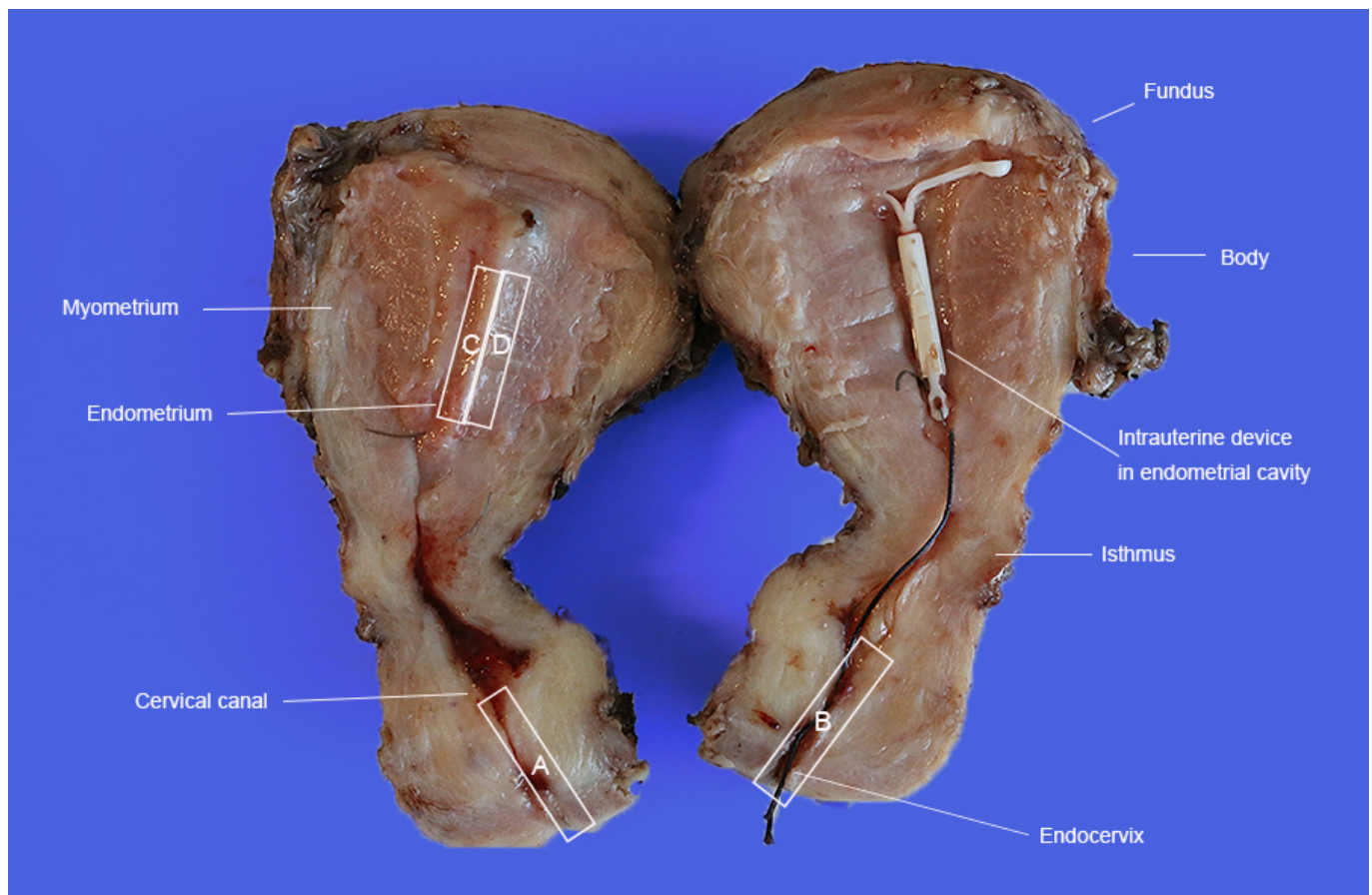
# UTERUS

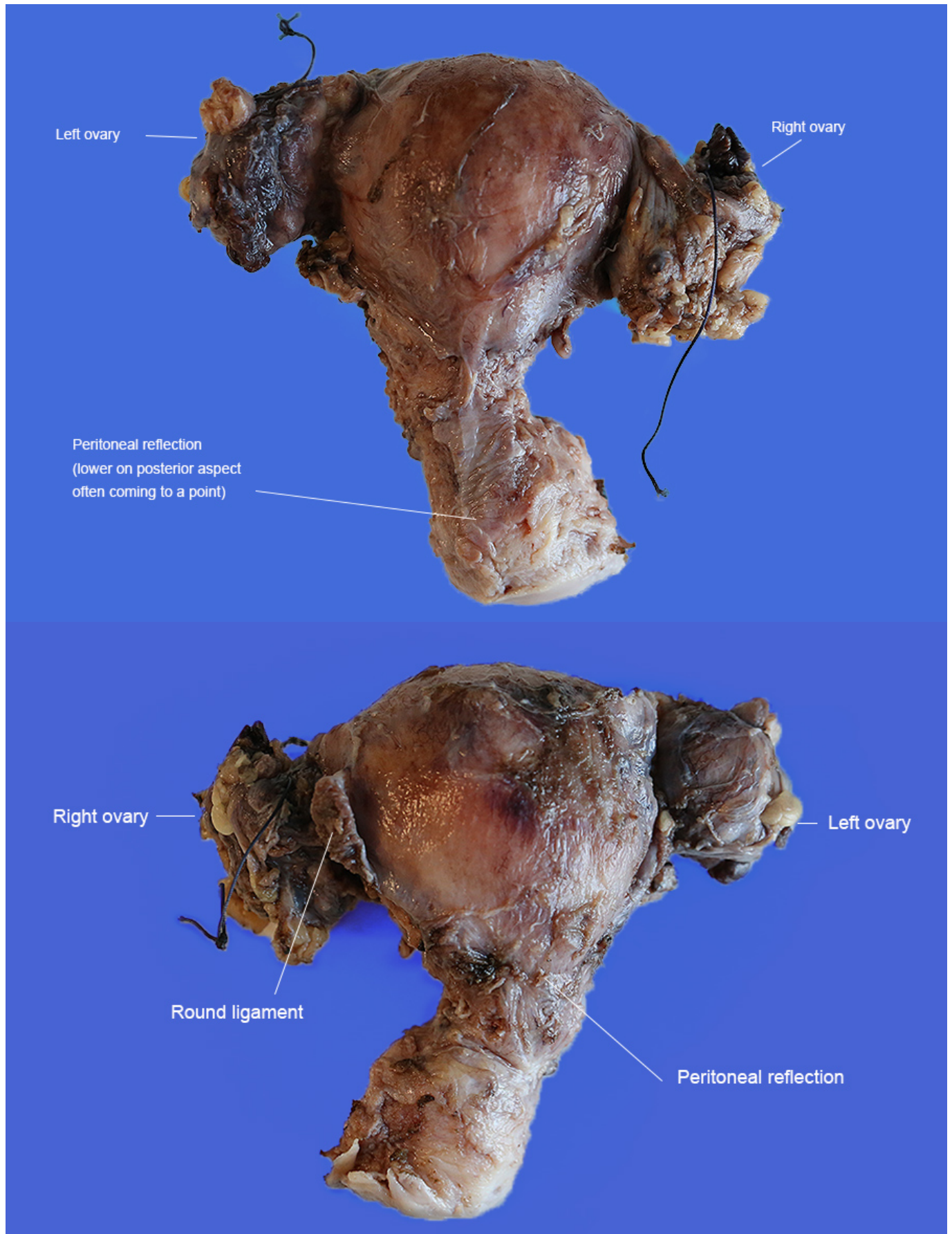
- Uterus
  - Synonym
    - Hysteria , **womb** ,
  - Definition
    - **Child** bearing organ in females
  - Situation
    - In **pelvis** between bladder and rectum
    - Palpated bimanually during a per vaginal examination
    - Protects and provides nutrition to a fertilized ovum
  - Size and shape
    - Pyriform
    - 7.5 cm long , 5 cm broad , 2.5 cm thick
    - Weighs 30- 40 grams
  - Position and angulation
    - 90 with long axis of vagina
    - Forward tilting of uterus relative to vagina
      - Anteversion
    - Backward tilting of uterus relative to vagina
      - Retroversion
    - Slightly flexed at level of internal os of cervix
      - Anteflexion
        - 125 degree
    - Long axis of uterus corresponds to
      - Axis of pelvic inlet
  - Parts
    - Upper expanded part - **body**
    - Upper 2/3
    - Lower cylindrical part - cervix
    - Lower 1/3
    - Junction of these two parts
      - Isthmus
      - Part of uterus above opening of fallopian tube
        - Fundus
      - Superolateral angle of **body** projects out
        - Cornua
    - Fundus
      - Convex like a dome
      - Covered with peritoneum
      - Directed forward when bladder is empty
      - Fertilized oocyte is usually
      - Implanted posterior wall of fundus
        - Or Upper part of **body** of uterus
    - Anterior / vesical surface
      - **Body** is flat
      - Related to urinary bladder
      - Covered with peritoneum
      - Forms

- Posterior or superior wall of uterovesical pouch
- Posterior / intestinal surface
  - Convex
  - Related to coils of terminal [ileum](#) and to sigmoid colon
  - Covered with peritoneum and forms anterior wall of rectouterine pouch
- Lateral border
  - Convex and rounded
  - Provides attachment to broad ligament of uterus
  - Connects to lateral pelvic wall
  - Uterine tube opens in to uterus
    - At upper end of this border
  - End of this border
    - Anteroinferior to tube
      - Gives attachment to round ligament of uterus
    - Posteroinferior to tube
      - Ligament of ovary
  - Uterine artery ascends along the lateral border of uterus between two layers of broad ligament
- Cavity of uterus
  - Sagittal section
    - It is a mere slit
    - Compressed anteroposterior
  - Coronal section
    - Triangular in shape
  - At Apex
    - Becomes continuous with canal of cervix
    - Junction called as internal os
- Cervix
  - Supravaginal part
- Relation
  - Anterior
    - Bladder
  - Posterior
    - Rectouterine pouch containing coils of [intestine](#) and rectum
  - Each side
    - [Ureter](#) and to uterine artery embedded in parametrium
- Vaginal part
  - Projects in to anterior wall of vagina
  - Space between it and vagina
    - Fornices
  - Communication
    - Externally by external os
      - Nulliparous women
        - Small and circular
      - Multiparous women
        - Bounded by anterior and posterior lips
- Cervical canal
  - Cavity of cervix.
    - Fusiform in shape
  - Internal os
    - Canal is flattened

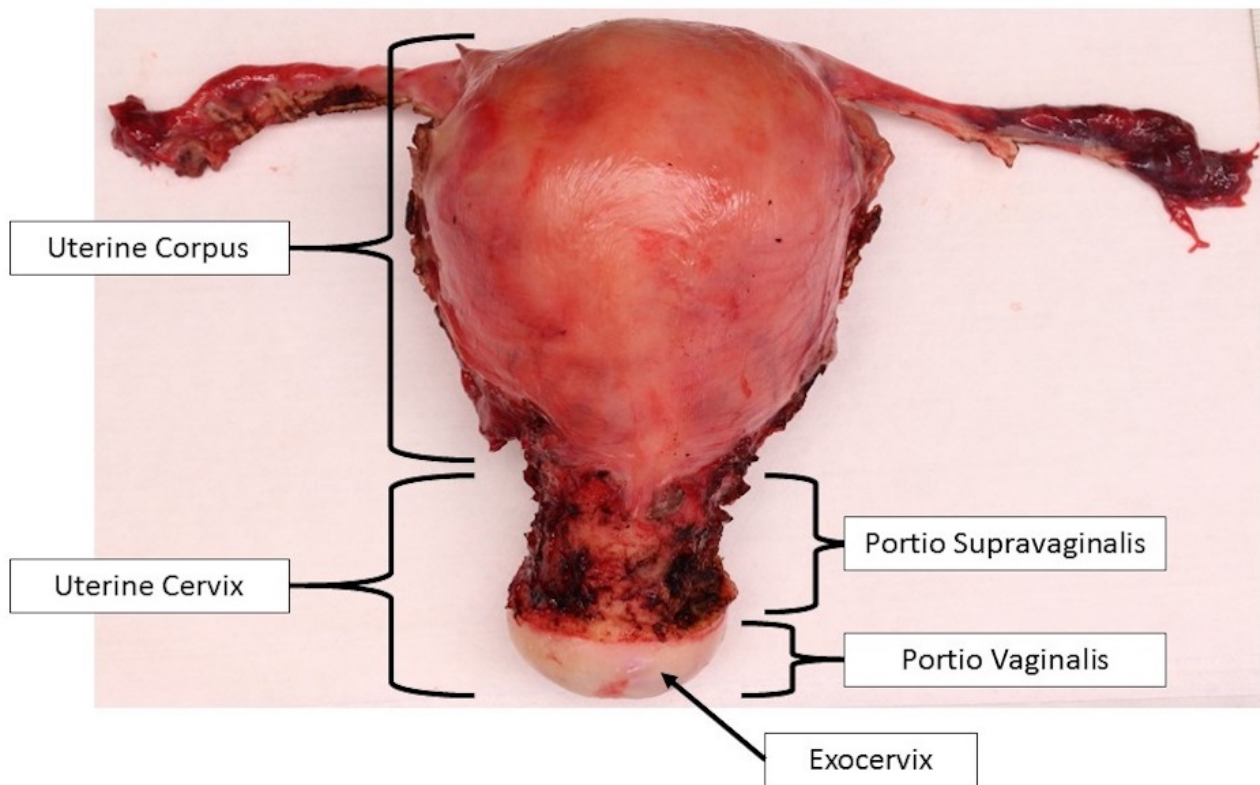
- Anterior wall
- Posterior wall
- Walls show
  - Mucous folds
    - Arbor vitae uteri
    - Folds interlock with each other to close the canal
- Ligaments of uterus
  - Peritoneal ligaments
    - Anterior ligament
    - Uterovesical fold of peritoneum
    - Posterior ligament
    - Rectovaginal fold forming rectovaginal pouch of peritoneum
    - Broad ligaments ( right and left )
      - Bladder to lateral pelvic wall
        - Surfaces
          - Anterior , posterior
        - Borders
          - Upper , lower , medial , lateral
          - Upper border is free
    - Mesoovarium
      - Attached to posterior later of braod ligament
    - Mesosalpinx
      - Suspensory ligament of ovary or infundibulopelvic ligament
    - Broad ligament consists of following structures
      - Uterine tube
    - Round ligament
    - Ligament of ovary
    - Uterine vessels
    - Ovarian vessels in infundibulopelvic ligament
    - Uterovaginal and ovarian **nerve** plexus
    - Epoophoron
    - Paraphooron
  - Fibromuscular ligaments
    - Round ligament of uterus
    - Transverse cervical ligament
    - Uterosacral ligament
  - Arterial supply
    - Uterine artery
    - Division of internal iliac artery
    - Partly by ovarian artery
  - Venous drainage
  - Lymphatic drainage
  - **Nerve** supply
  - Supports of uterus
  - Primary supports
    - Muscular or active supports
    - Pelvic diaphragm
    - Perineal **body**
    - Distal urethral sphincter mechanism
  - Fibromuscular or mechanical support
    - Uterine axis

- Pubocervical ligament
- Transverse cervical ligament of mackenrodt
- Uterosacral ligament
- Round ligament of uterus
- Secondary support
  - Broad ligament
  - Vesicouterine pouch and fold of peritoneum
  - Rectovaginal pouch or rectouterine pouch and fold of peritoneum
- Role of individual supports
  - Pelvic diaphragm
  - Perineal **body**
  - Urethral sphincter mechanism
  - Uterine axis
  - Pubocervical ligaments
  - Transverse cervical ligaments of mackenrodt
  - Uterosacral ligaments
  - Round ligament of uterus











## UTERUS - GENERAL

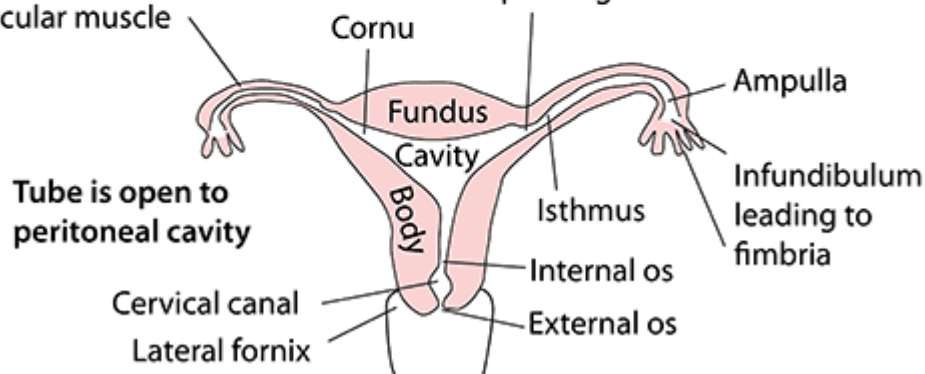
- Pear shaped
- Usually anteverted to 90 degrees & anteflexed to 170 degrees
- Has no submucosa
- Histology - Cervix: Tall columnar epithelium becoming squamous outside, alkaline mucus  
Rest of uterus: Endometrium with glands, arterioles, smooth whorls of muscle, columnar epithelium
- Nerves - Motor: Parasympathetic activate muscle  
Sympathetic relax muscle. Both from pelvic plexus  
Sensory: Parasympathetic for cervix  
Sympathetic for uterus
- Blood supply (see broad ligament)
- Venous drainage: Highly plexiform to vesical and rectal plexuses
- Relations: Anterior- vesicouterine pouch, posterior/superior bladder  
anterior fornix, small bowel  
Posterior- Pouch of Douglas, ileum, sigmoid  
Lateral- Uterine vessels, ureter, lateral fornix, broad ligament

Fallopian tube. 10cm long

Ciliated columnar epithelium

Outer longitudinal & inner circular muscle

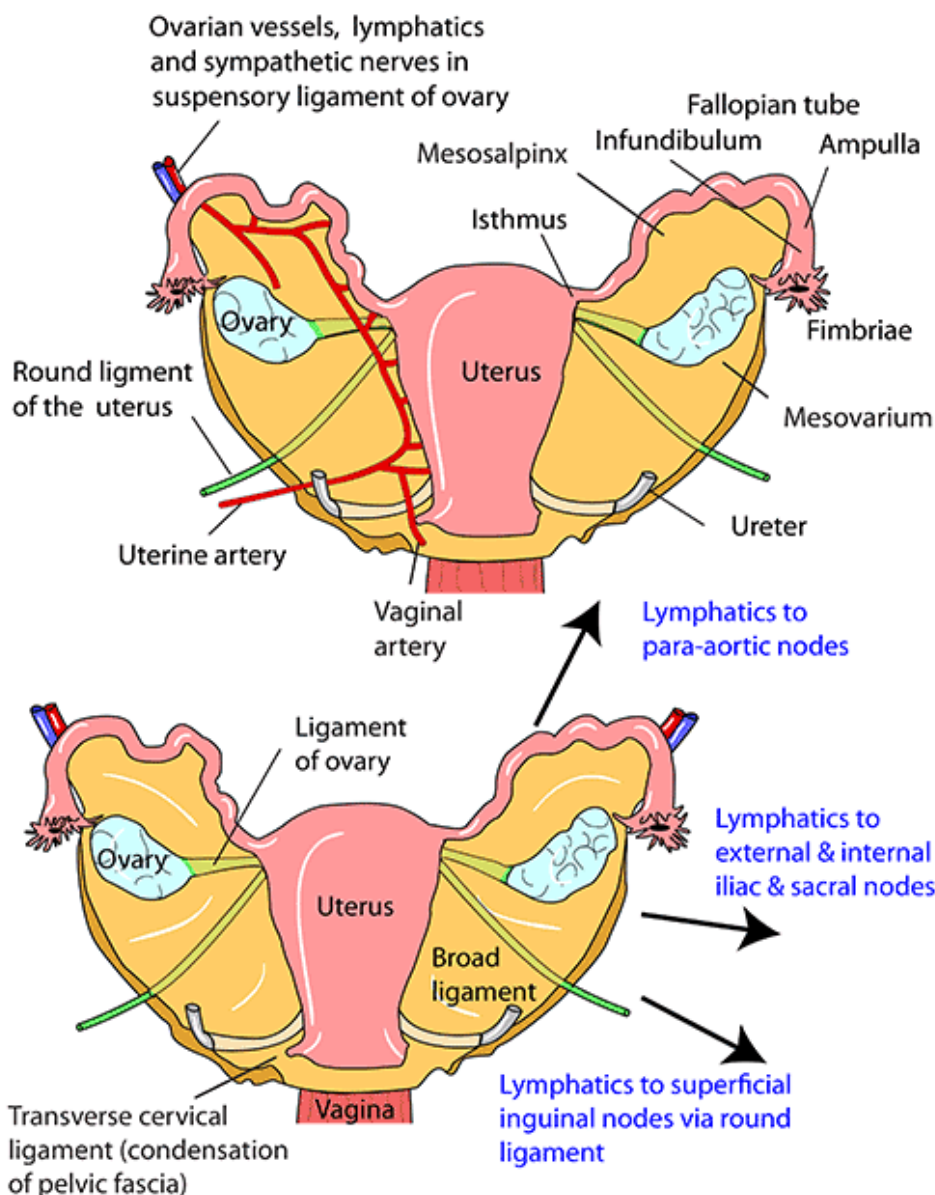
Uterine part of tube piercing uterine wall



## UTERUS - BROAD LIGAMENT

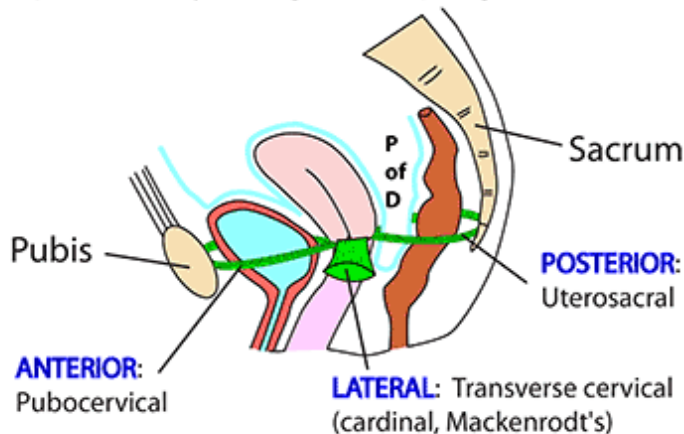
- Double layer of peritoneum draped over uterus and tubes. Distal ends of tubes stick out of posterior layer of it and lie free.
- Between two layers are arteries and veins, round ligament, ligament of ovary, lymphatics. The ovary is partially covered by a separate posterior fold of the broad ligament (mesovarium) but the surface of the ovary is devoid of peritoneum to allow exit of the ova.
- The tubes lie in the upper edge of the broad ligament (mesosalpinx).
- The ureters pass through the base of the broad ligament in close relationship to the uterine artery which lies in base of broad ligament, at level of os, to supply uterus, vagina and anastomoses with ovarian artery superior to ureter.
- Fallopian tube is 10cm long. Outer longitudinal & inner circular muscle and ciliated columnar lining.
- Round ligament of uterus passes to labium majus. Blood supply branch of ovarian & inferior epigastric arteries.
- **Sensory: General visceral afferents via pelvic plexus. In parasympathetics from cervix; in sympathetics for rest of uterus and tube. No parasympathetics to ovary**

### POSTERIOR ASPECT OF BROAD LIGAMENT



## UTERUS - SUPPORTS & DEVELOPMENT

- Suspensory ligament of ovary, round ligament & broad ligament are NOT supportive
- Ligaments:
  - LATERAL: Transverse cervical (cardinal, Mackenrodt's)
  - POSTERIOR: Uterosacral
  - ANTERIOR: Pubocervical
- Muscles: Pubovaginalis & puborectalis are part of levator ani, perineal body & urogenital diaphragm



These ligaments/Supports are condensations of fascia known as parametrium.

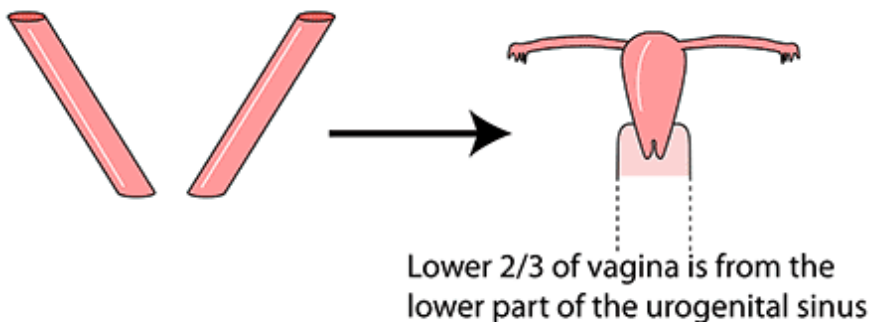
### PARAMESONEPHRIC DUCTS (female)

#### DEVELOPMENT

- Mullerian
- Appear lateral to mesonephric ducts

In female: Uterus, tubes, upper 1/3 vagina

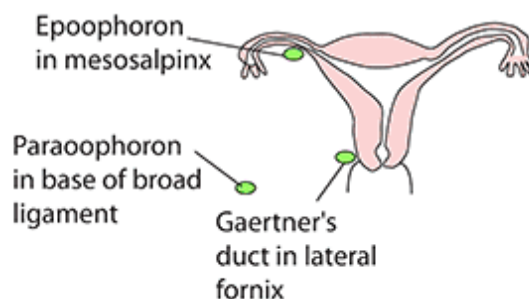
In male: Utricle, appendix testis. Ducts are destroyed by Mullerian Inhibiting Substance at 50 days



### MESONEPHRIC REMNANTS

Blind tubules

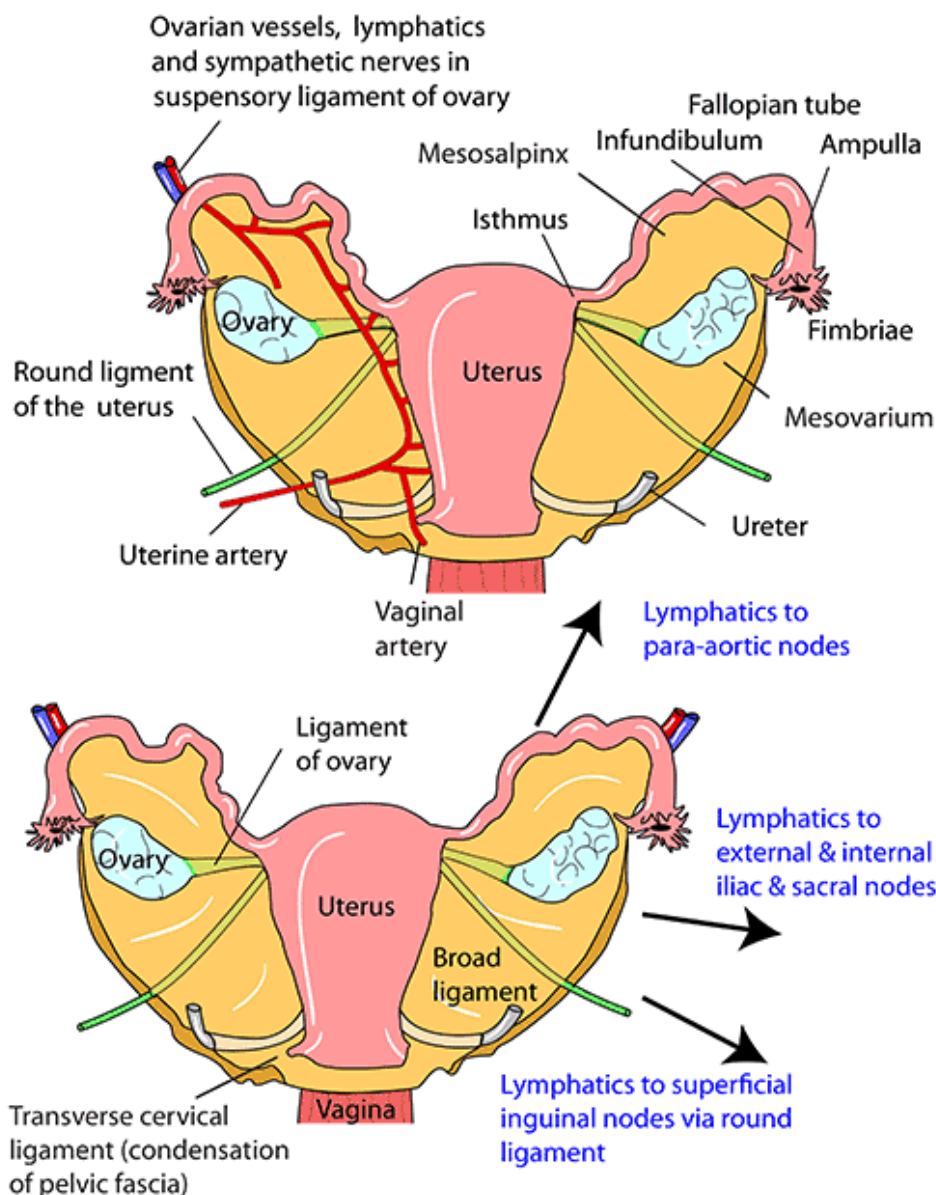
- Anomalies
- Bicornuate uterus
- Unicollis (+/- rudimentary horn)
- Cervical atresia
- Vaginal atresia



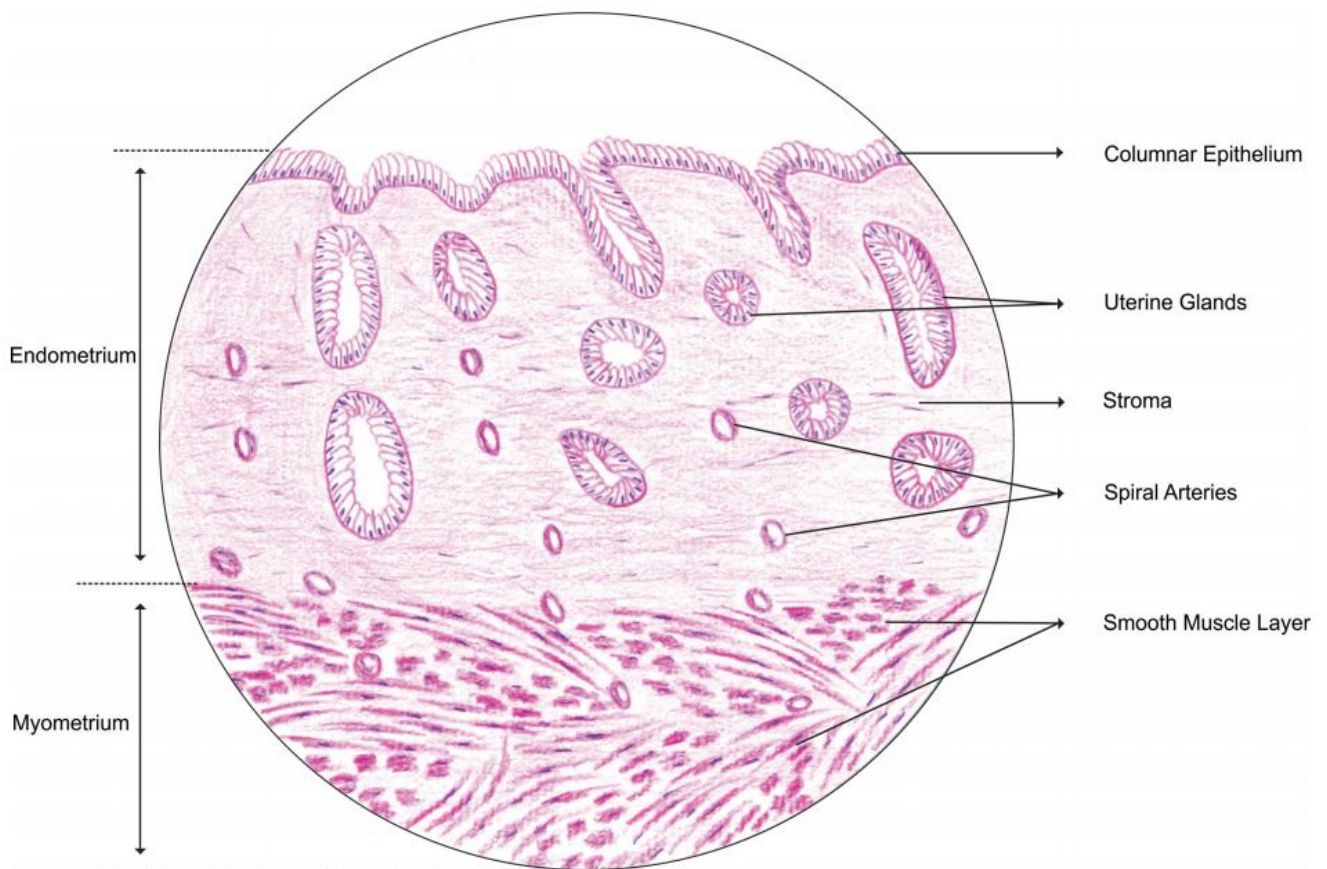
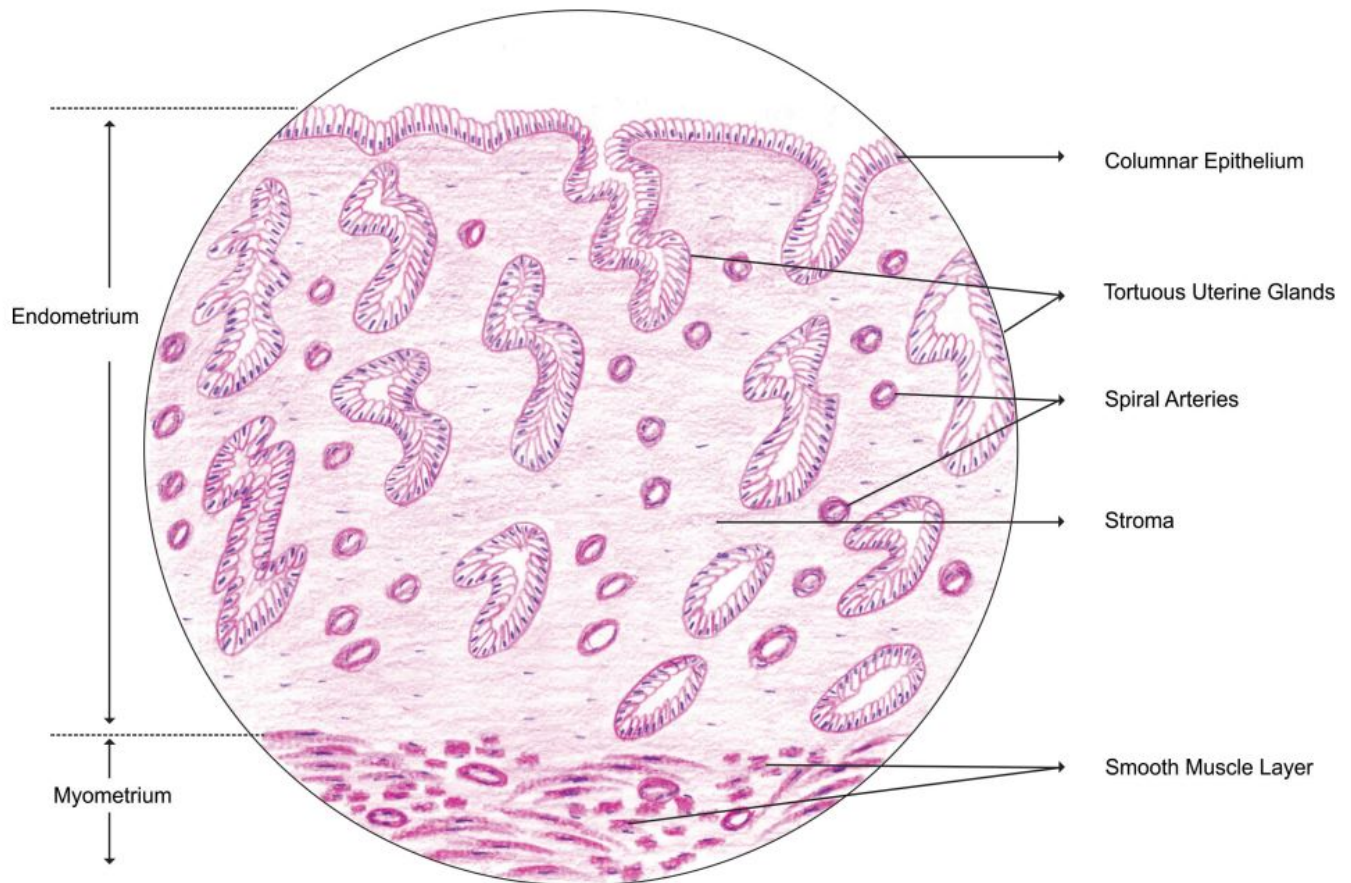
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