

Female Reproductive System

By

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# Course contents

- What is female reproductive system
- Internal and external organs
- Description of uterus, ovary,vagina and fallopian tube
- Congenital anomalies of uterus

# **FEMALE REPRODUCTIVE SYSTEM**

## **Female Reproductive organ:**

Female reproductive organs include external and internal genital organs.

## **Female external genital organs:**

- Mons pubis.
- Labia majora.
- Labia minora.
- Clitoris.
- Vestibule of the vagina.
- Vaginal orifice.
- Hymen
- Vestibular glands (Bartholin's glands).

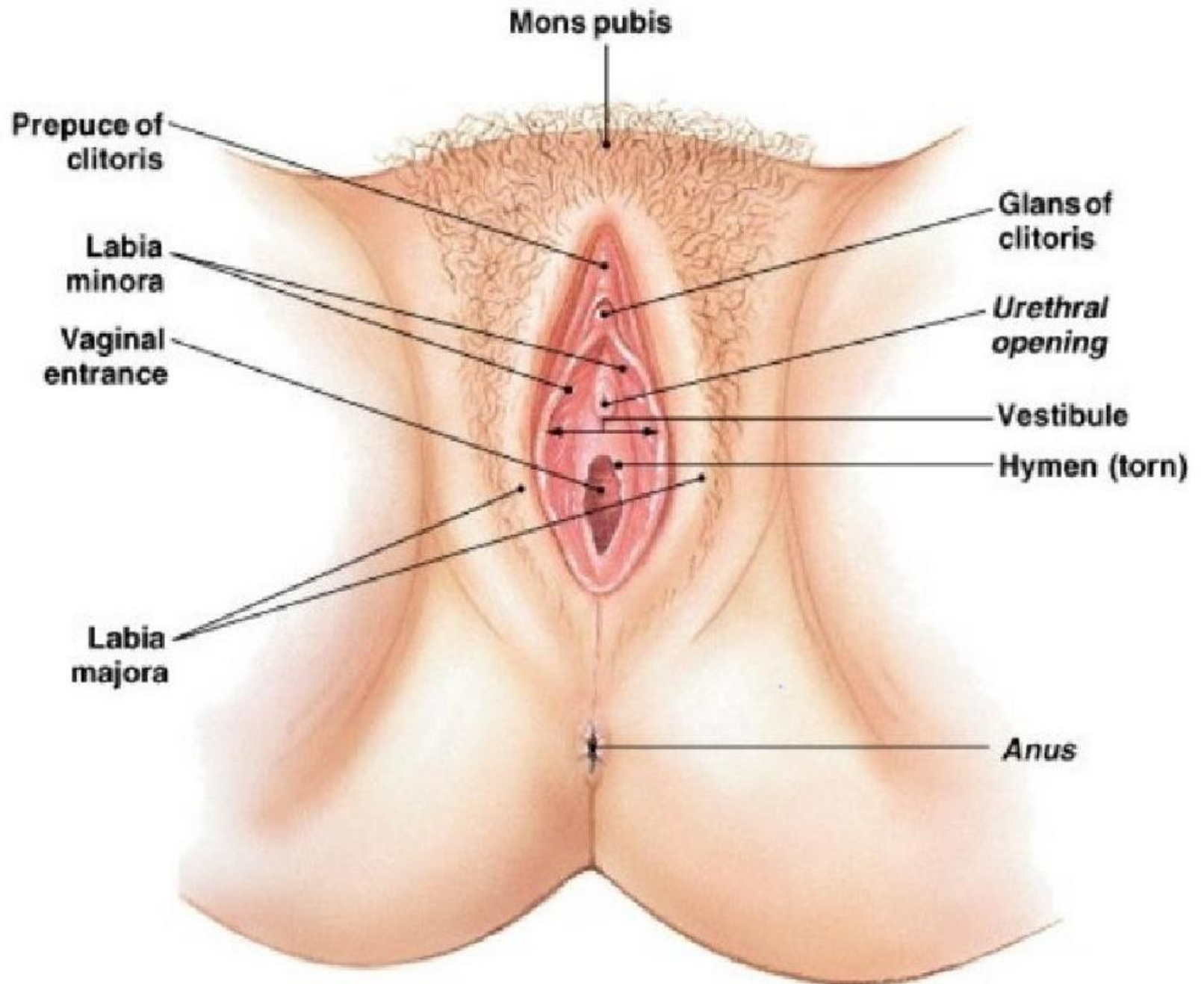
➤ **Internal genital organ:**

➤ A pair of ovaries.

➤ A pair of uterine tube/fallopian tube.

➤ Uterus.

➤ Vagina



# Vestibule.

- Is oval-shaped area formed between the labia minora, clitoris, and fourchette.
- Vestibule contains the external urethral meatus, vaginal orifice, and Bartholin's glands.

## **Uterus:**

The uterus is a thick walled muscular child bearing organ of female reproductive system, situated in the pelvis between the urinary bladder and rectum.

**Shape of uterus:** pyriform.

Size of uterus : About 7.5cm long , 5cm wide , and 2.5cm thick.

Weight: 30-60g.

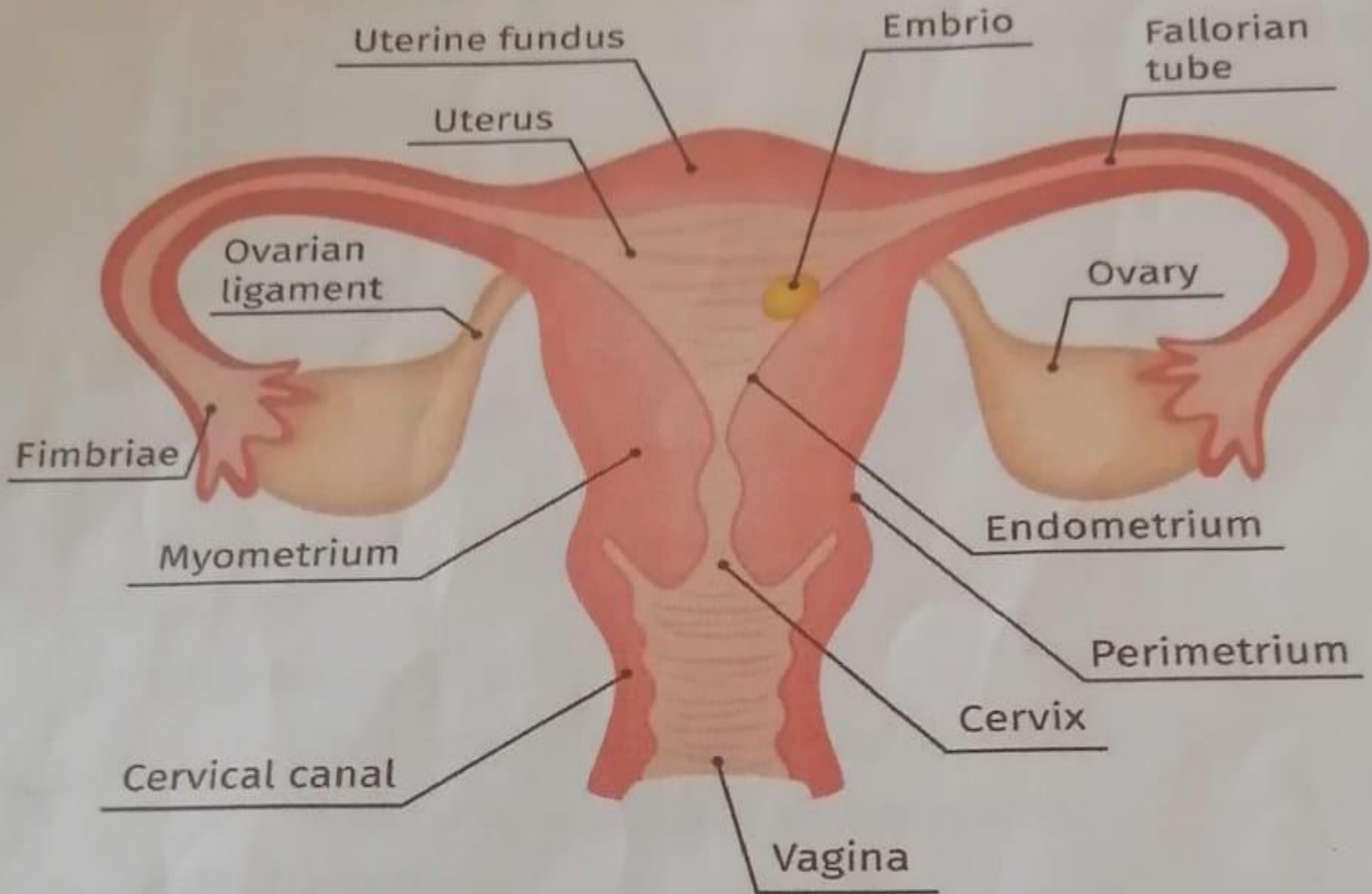
## **Location:**

In the pelvis between the urinary bladder and rectum.

The uterus is located within the pelvic region immediately behind and almost overlying the bladder, and in front of the sigmoid colon.



# FEMALE REPRODUCTIVE SYSTEM



**Position of the uterus:** Its normal position is anteverted (rotated forward and slightly antiflexed (flexed forward))

**Functions of uterus:**

- Menstruation
- Pregnancy
- Labor

❖ Blood supply:

Arterial supply-

- Uterine artery-branch of internal iliac artery.
- Ovarian artery- branch of abdominal aorta.

Venous drainage-

- Internal iliac vein.

## **Nerve supply of the uterus:**

Sympathetic nerve - produce uterine contraction and vasoconstriction

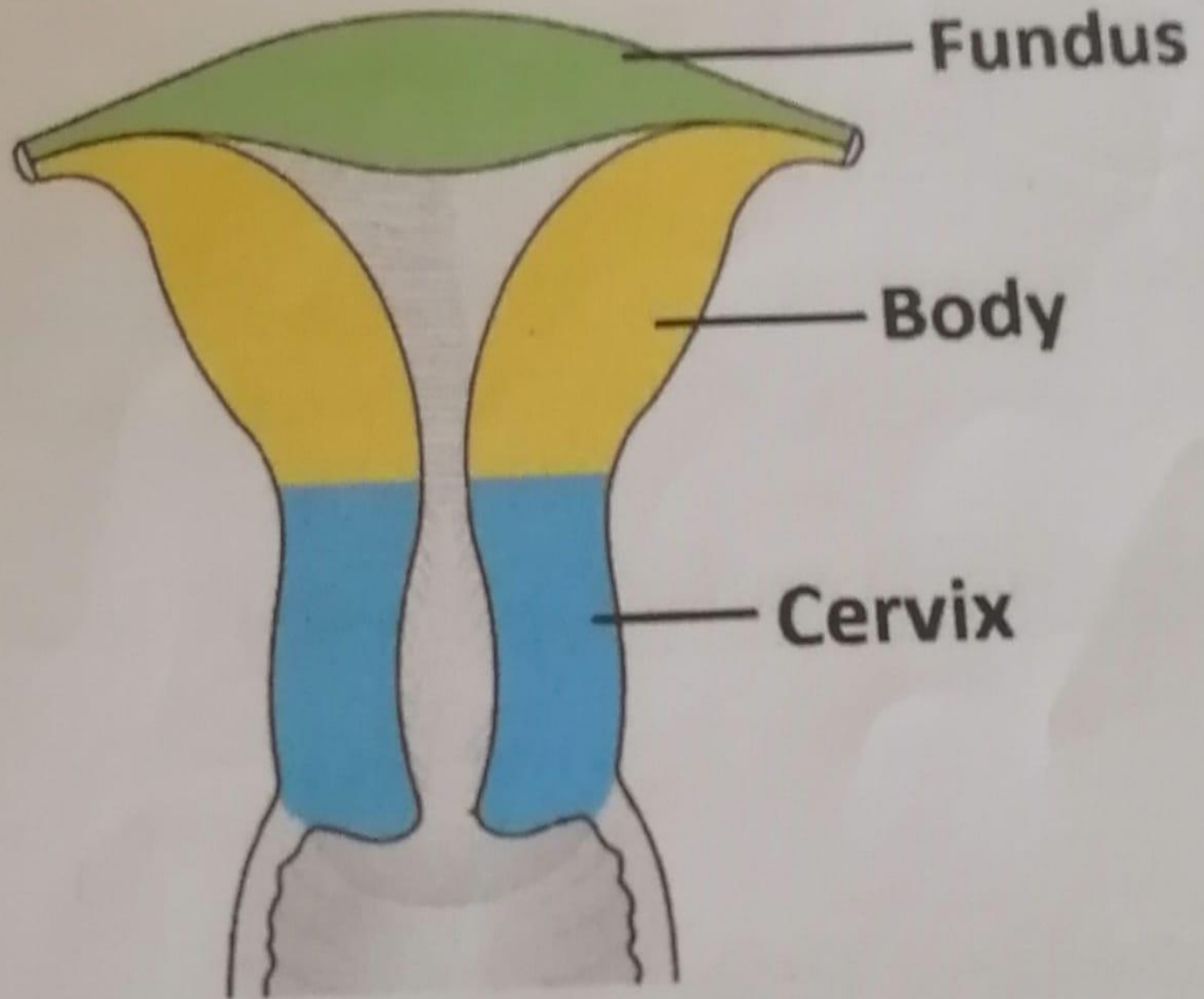
Parasympathetic nerve - produce uterine inhibition and vasodilatation

## **Communication of uterus:**

- Cervix
- Vagina
- Ovary
- Fallopian tube

## Parts of uterus:

1. Fundus
2. Body
3. Cervix



# **Supports of uterus:**

## **Upper Supports of Uterus**

Round ligament

Broad ligament

## **Middle**

Transverse ligament

Pubocervical ligament

Uterosacral ligament

## **Lower**

Urogenital diaphragm

Levator ani,

Perineal body

## **Congenital anomalies of uterus:**

Dedelpophys uterus - double uterus, double cervix, septate vagina.

Bicornis bicornis uterus- double uterus, double cervix, single vagina.

Bicornis unicollis uterus-double uterus ,single cervical canal.

Arcuate uterus-depressed fundus.

Subarcuate uterus.

Unicornuate uterus.

## **Structure/histology of uterus:**

**Perimetrium**-outer covering of peritoneum.

**Myometrium**-the thickest layer of tissue. It is a mass of smooth muscle fibres, areolar tissue, blood vessels and nerves.

**Endometrium**-the inner most mucous membrane, lined by columnar epithelium. The endometrium undergoes cyclic changes during menstrual cycle

## **Menstruation:**

The periodic shedding of blood , damaged tissue of endometrium and unfertilized ova per vagina is called menstruation.



# **Uterine Tubes (Fallopian Tubes)**

## **Definition:**

The uterine tube or fallopian tubes are a pair of tortuous ducts that convey ova from the ovaries to the uterus.

**Location:** these are situated in the upper margin of the broad ligament of uterus.

**Length :** about 10 cm.

**Lining epithelium:** lined by simple ciliated columnar epithelium.

## **Parts of uterine tube:**

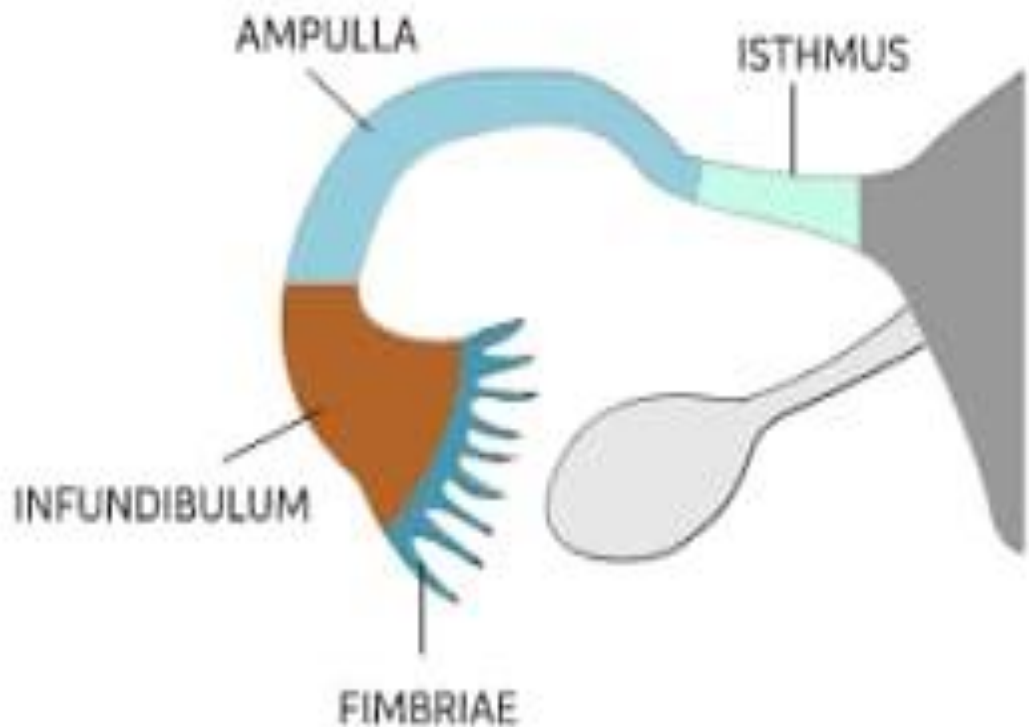
- ✓ The fimbria.
- ✓ Infundibulum.
- ✓ Ampulla.
- ✓ Isthmus.

## **Importance of uterine tube:**

- ✓ Transport sperm toward the egg.
- ✓ Passage of fertilized egg back to the uterus for implantation.

## Parts of uterine tube:

- ✓ The fimbria.
- ✓ Infundibulum.
- ✓ Ampulla.
- ✓ Isthmus.



## ✓ **Blood supply of uterine tube:**

### **Artery supply-**

✓ Medial 2/3 by uterine artery

✓ Laterall/3" by ovarian artery

**Venous drainage:** drain into the pampiniform plexus of the ovary and into the uterine vein

### **Histological structure of uterine tube:**

1.The outer serous coat.

2.The middle muscular cost.

3.The inner mucous membrane.

## **Function of uterine tube:**

1. Transport of sperm and ovum
2. Usual site of fertilization.
3. Secretion of mucous.
4. Helps in development, survival and transport of zygote.

## **Clinical importance of uterine tube:**

- a. Tubal pregnancy is a condition when fertilized ovum fails to migrate in the uterine cavity.
- b. When the tube is filled with bag of pus due to infection of the tube is called pyosalpinx
- c. Ligations of both tube are used in family planning.
- d. Patency of both tube is tested by hysteron-salpingography.

## **Fertilization:**

Fertilization is a process of fusion of male and female gametes to form a zygote.

**Site of fertilization:** Ampulla of the fallopian tube.

### **\*Where fertilization takes place and why?**

Answer: Fertilization takes place in ampullary part of the uterine tube as it is the widest part of the uterine tube and closest to the ovary.

## **Perineum:**

·The area between the anus and the scrotum or vulva

**Length of female urethra: 4cm**

# OVARY

## **Definition:**

The ovary is the female gonad, one pair of reproductive glands in women. The ovaries produce eggs(ova) and female hormones. The ovaries are the primary female sex organs, homologous of testes in male.

**Location:** each ovary lies in the ovarian fossa on the lateral pelvic wall.

**Shape:**Almond shaped

**Size:**2.5 to 3.5 cm long, 2cm wide, and 1 cm thick.



## **Mesovarium:**

The ovary is attached to the posterior aspect of the broad ligament by a fold of peritoneum, called the mesovarium.

## **External features:**

**Two pole:** superior or tubal pole. inferior or uterine pole.

**Two borders:** anterior or mesovarium and posterior or free border.

**Two surface:** lateral and medial.

## **Structure:**

- ✓ Inner medulla
- ✓ Outer cortex

**Ovulation** : is the release of an eggs from one of a woman's ovaries.

Ovulation is the release of eggs from the ovaries

- Time of ovalation: ovulation normally occurs midway through the menstrual cycle,that is,around the 14h day of a typical 28 day cycle.

## **Function of ovary:**

Gametogenic-production and release of ovum or egg

Endocrine-secretion of female sex hormone:estrogen and progesterone.

Blood supply of ovary:

Artery supply-the ovarian artery.

Venous drainage-the ovarian vein.

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# Vagina

- It is an elastic fibro-muscular tube and membranous tissue about 8 to 10 cm long.
- Lying between the bladder anteriorly and the rectum posteriorly.

- The vagina connects the uterus above with the vestibule below.
- The upper end is blind and called the vaginal vault.
- The vaginal lining has multiple folds, or **rugae** and muscle layer.
- These folds allow the vagina to stretch considerably during childbirth.

# Functions of the vagina

- To allow discharge of the menstrual flow.
- As the female organs of coitus.
- To allow passage of the fetus from the uterus.

# Relationship of the vagina

## ■ **Anterior-**

Bladder

Urethra

## ■ **Posterior-**

Pouch of douglas

Ampula of rectum

Perineal body

Anal canal

Lateral:

Ureter

Uterine artery

Levator ani

Urogenital diagram

**blood supply of the vagina:**

**artery supply :** vaginal artery branch of  
internal iliac artery

Vaginal branch of uterine artery

**Venous drainage** – internal iliac vein



## **Nerve supply**

Sympathetic- superior hypoglossal plexus

Parasympathetic- pelvic splenic nerve