

## Female Reproductive System

Female reproductive system includes:

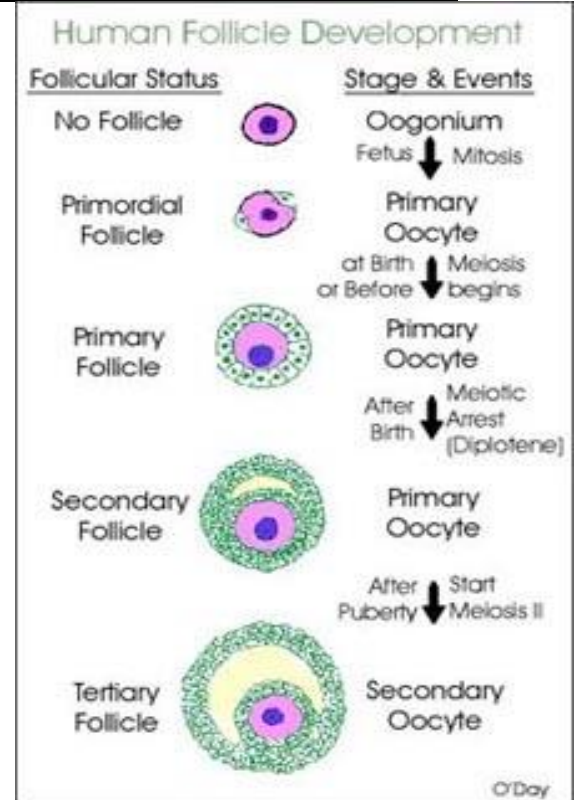
1. Ovaries
2. Oviduct
3. Uterus
4. cervix
5. Vagina

### Ovaries

- The **ovaries** are a pair of female gonads
- the ovarian follicles can be found in the cortex, and have highly vascular medulla.
- The outer layer is simple squamous mesothelium called the germinal epithelium and the second layer of cells called tunica albuginea.

### Functions of ovary

- Productions of eggs (ova)
- Production of hormones: Estrogen, Progesterone, Testosterone.



### Follicle Development

1. Primordial follicle: one layer of squamous-like follicle cells surrounds the oocyte
2. Primary follicle: two or more layers of cuboidal granulosa cells enclose the oocyte
3. Secondary follicle: has a fluid-filled space between granulosa cells that come together to form a central antrum.
4. Graafian follicle: secondary follicle at its most mature stage that bulges from the surface of the ovary
5. Corpus luteum: ruptured follicle after ovulation

### Corpus luteum "yellow body"

- After ovulation, the remains of the follicle are transformed into a structure called the **corpus luteum**.
- If a pregnancy occurs, it produces **progesterone** to maintain the wall of the uterus during the early period of development.

### Corpus albicans

- Without fertilization, the corpus luteum will begin to break down in about 2 weeks after ovulation. After a corpus luteum ceases to function it degrades into a fibrous scar that is eventually removed called **corpus albicans**.

### FALLOPIAN TUBE

- The fallopian tube is lined by a columnar epithelium, some with cilia and some with a secretory function called **peg cells**.
- Beneath this epithelium is a lamina propria and then a muscularis of inner circular and outer longitudinal layers.

- The structure of the fallopian tube is complex in cross-section, with many fingers of epithelial-covered lamina propria creating a maze-like appearance. There is a surrounding mesothelium.

### Uterus

it is made up of these layers:

#### 1. Endometrium

- Simple columnar epithelium
- Stroma of connective tissue and endometrial glands
  - a) Stratum functionalis: Shed during menstruation
  - b) Stratum basalis: Replaces stratum functionalis each month

2. **Myometrium:** 3 layers of smooth muscle (longitudinal, circular, longitudinal)

3. **Perimetrium:** Visceral peritoneum

### Uterine cycle (menstrual cycle)

- **Menstruation phase (menses) 1–4 days:** begins when fertilization and implantation fail to occur , decline in progesterone levels causes functional layer of endometrium to discharge resulting in vaginal bleeding called **menstruation**.
- **Proliferative phase: (follicular phase): 5–14 days:** coincides with the secretion of oestrogen from the maturing follicles in the ovary. Growth of the functional layer of endometrium.
- **Secretory phase: (luteal phase): 15–28 days:** coincides with the secretion of progesterone from the corpus luteum. Growth of endometrial glands, Increased thickening of the functional layer of endometrium with increased blood supply

### Cervix

Two parts; ectocervix is stratified squamous epithelium, and endocervix is simple columnar epithelium, branched glands of mucus-secreting cells located in the lamina propria.

### Vagina

- The vagina is a muscular tube lined by a stratified squamous mucosa containing abundant glycogen.
- There is no epithelial keratin layer, but the mucosa is protected by an acid layer.
- The lamina propria may contain blood vessels, but no glands.
- The lower end of the vagina has a surrounding skeletal muscle.

### Mammary Glands

Mammary glands are compound, tubulo-alveolar glands, composed of 15-20 lobes, separated by C.T. and Adipose tissue. Milk-secreting mammary glands alveoli open by lactiferous ducts at the nipple, Milk production and secretion is regulated by prolactin and oxytocin.