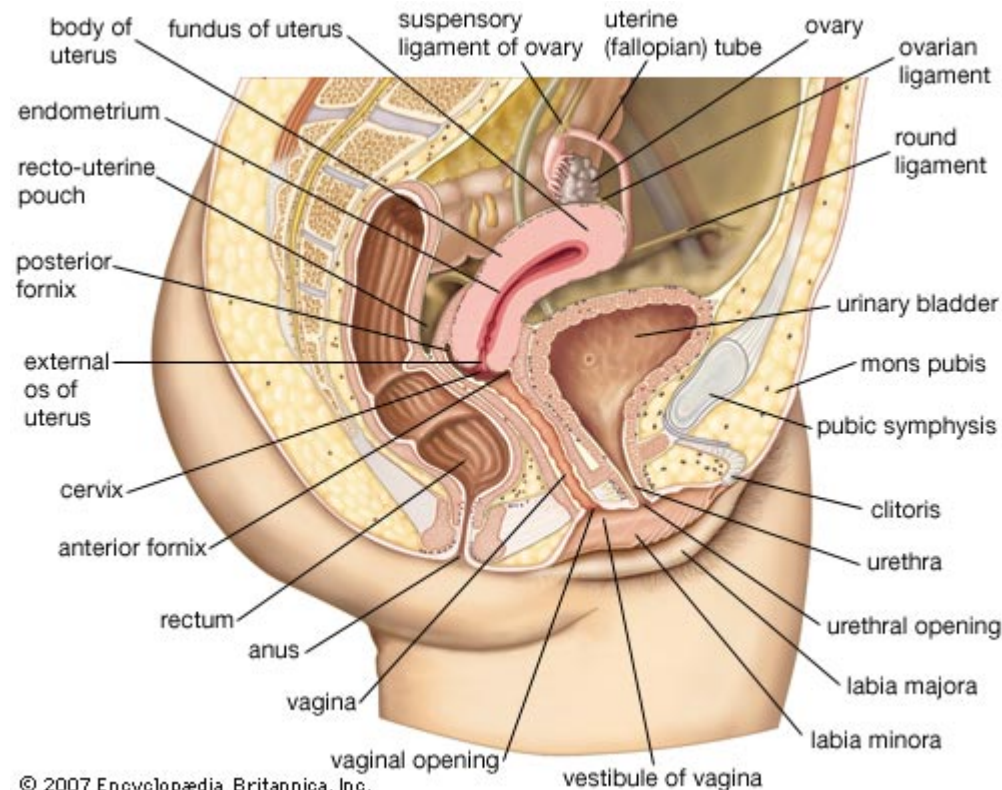


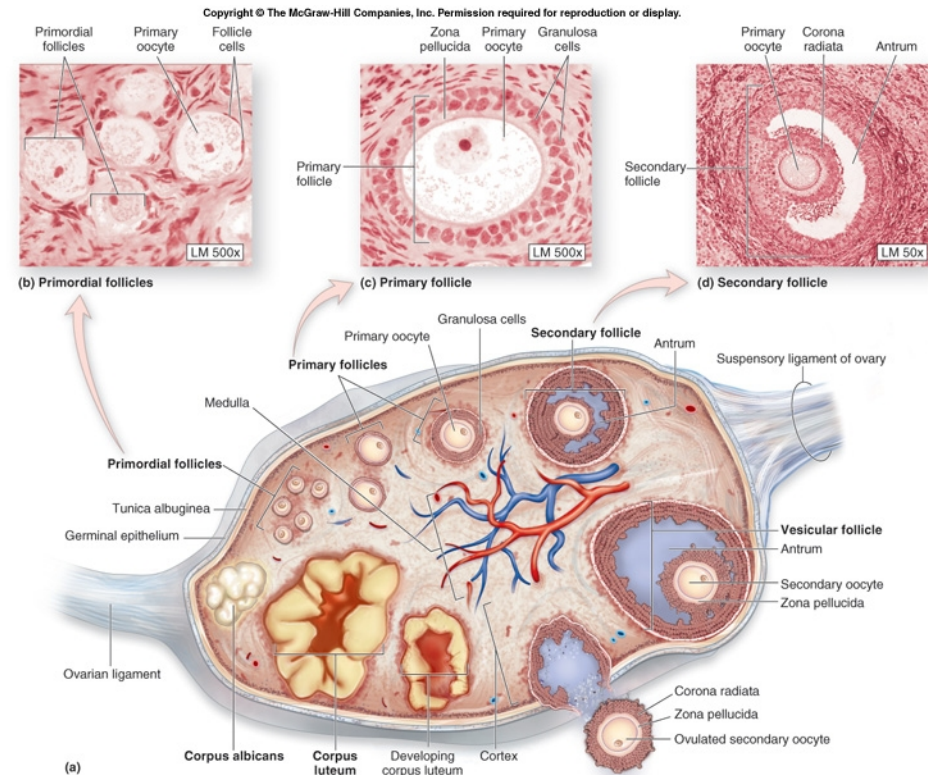
Female Reproductive System

- The female reproductive system consists of:
- Two ovaries, two oviducts (uterine tubes), uterus, vagina and external genitalia, and mammary glands.
- The functions of FRS are: formation of ovum, provide suitable environment for fertilization and implantation of the ovum by sperm, and accommodates and nourishes the embryo and fetus during pregnancy.



Ovary

- The ovary is an almond-shaped body (3cm long X 1.5cm wide X 1cm thick).
- The ovary is covered by simple epithelium, usually cuboidal in young female, called the germinal epithelium.
- Under the epithelium, there is a layer of dense CT called tunica albuginea.
- Each ovary is formed of cortex and medulla.
- The cortex contains ovarian follicles, corpora lutea and spindle-shaped stroma cells.
- The medulla contains vascular CT.



Ovary

Germinal Epithelium

Tunica Albuginea

Primary Follicles

Growing Follicle

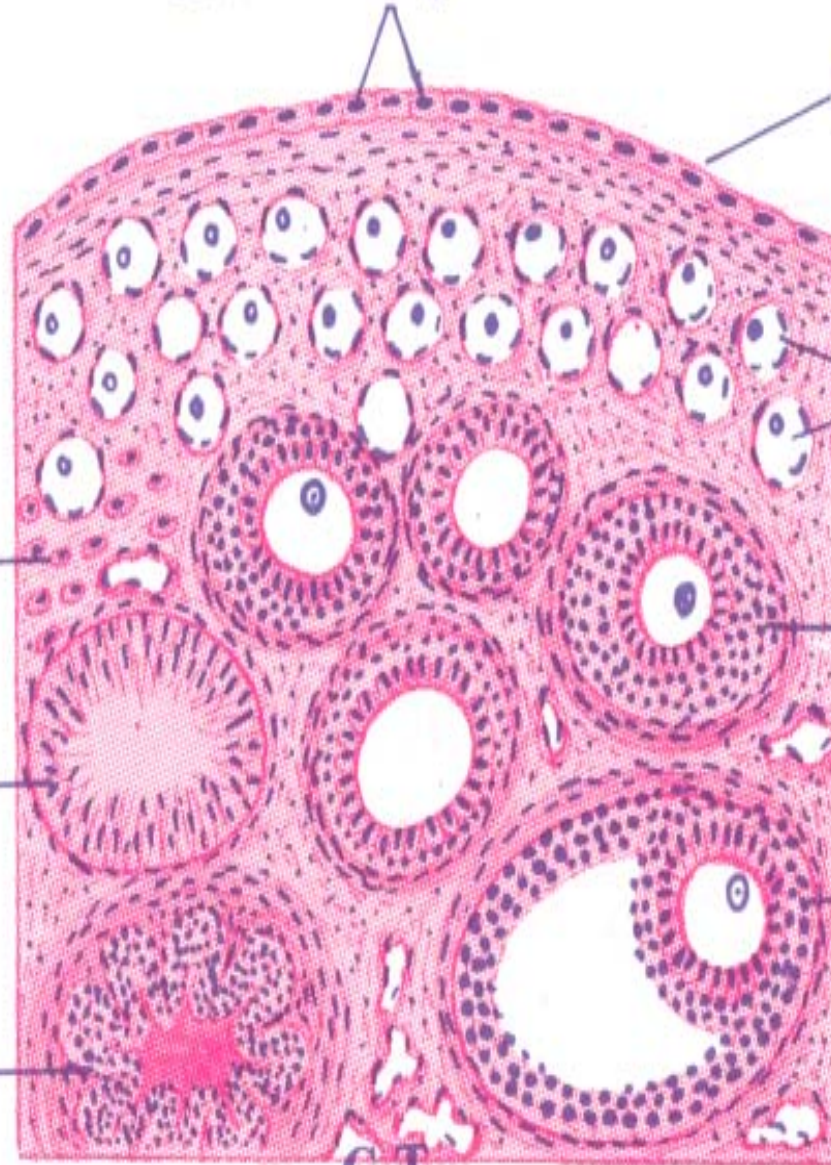
Graafian Follicle

Inter-follicular Tissue

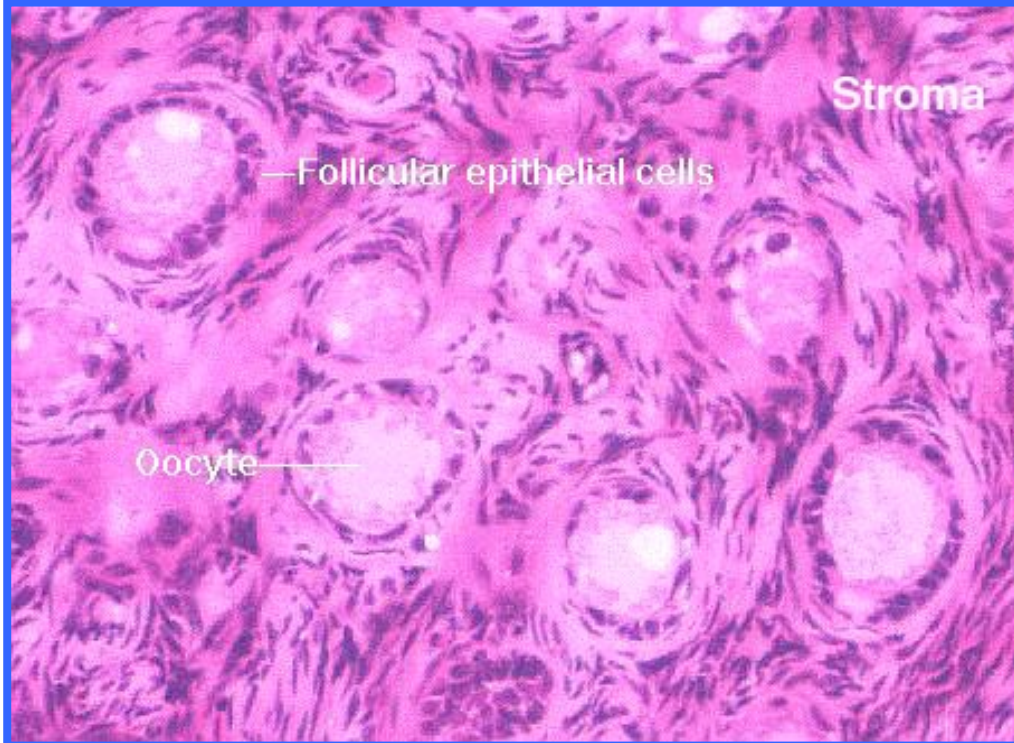
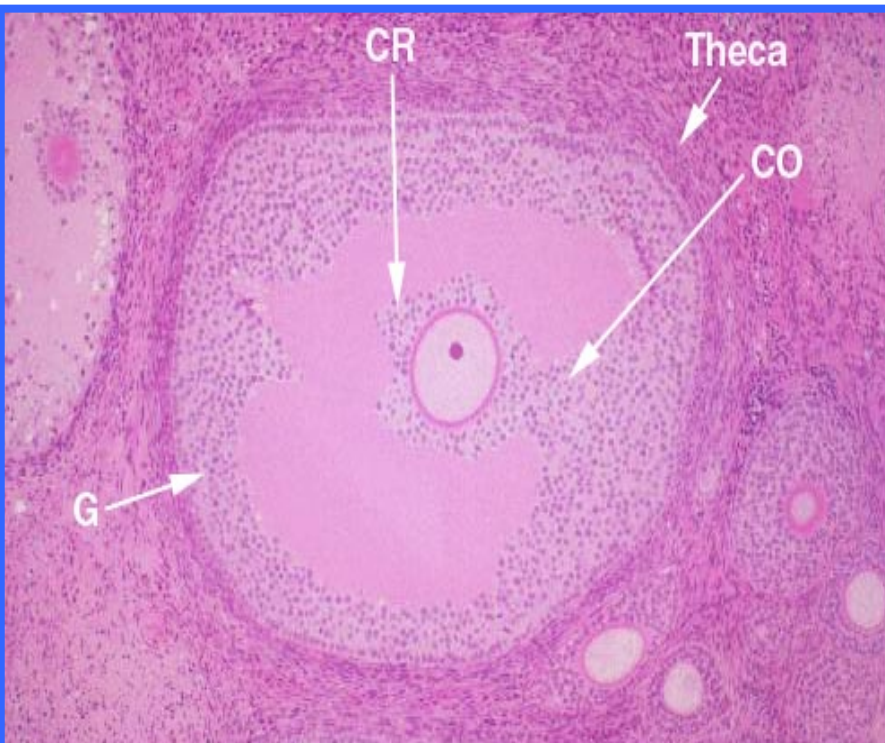
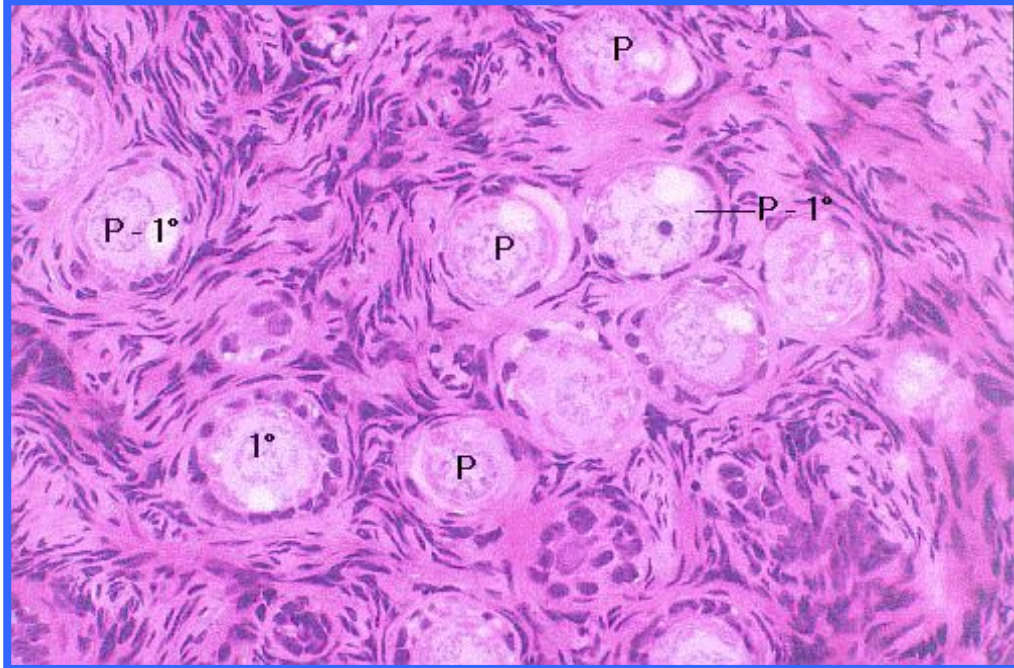
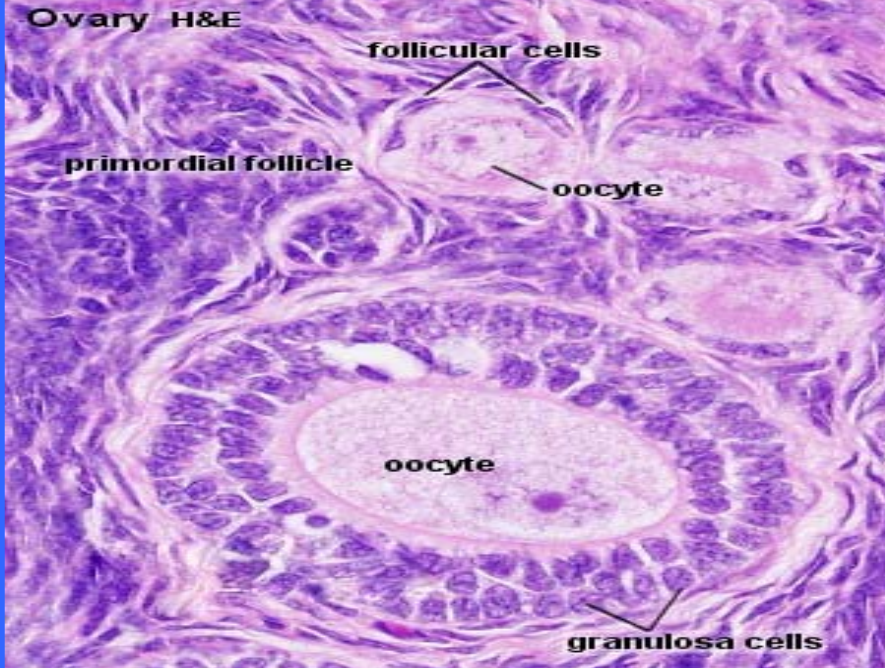
Atretic Follicle

Corpus Luteum

C.T.

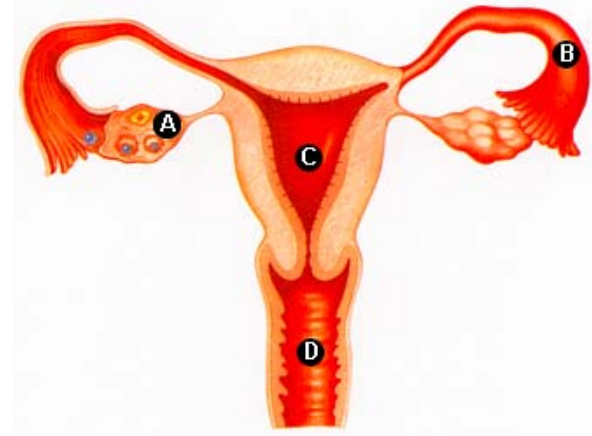


Ovary H&E

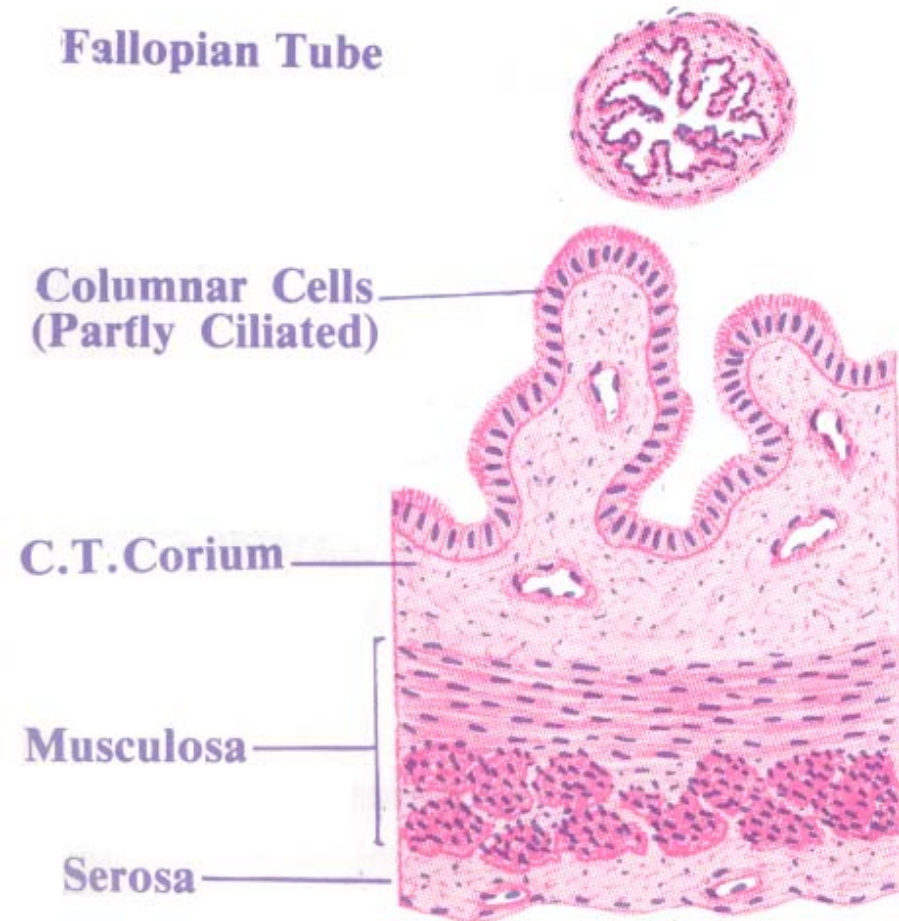


Oviduct

- Anatomically, the oviduct is subdivided into 4 segments: infundibulum, ampulla, isthmus, and intramural region.
- The wall of oviduct is formed of mucosa-submucosa, tunica muscularis, and serosa.
- The mucosa is highly folded with many primary longitudinal folds that are equipped with secondary and tertiary folds give the lumen of the ampulla the appearance of labyrinth of narrow clefts.
- The mucosa is formed of simple columnar epithelium partially secretory and partially ciliated.
- The lamina propria-submucosa is a loose CT richly vascularized.
- The tunica muscularis is formed of inner circular and outer longitudinal layers of smooth muscle.
- The serosa is formed of CT layer covered by mesothelium.
- In isthmus, the mucosal folds are lower, less branched and fewer in number than ampulla. The epithelium is less ciliated and more secretory.



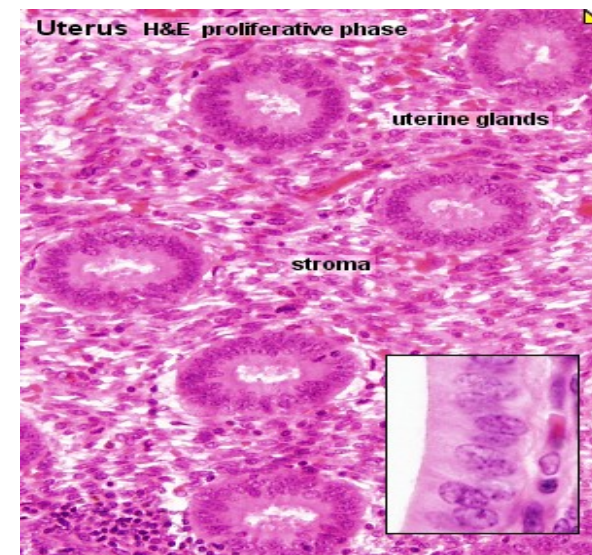
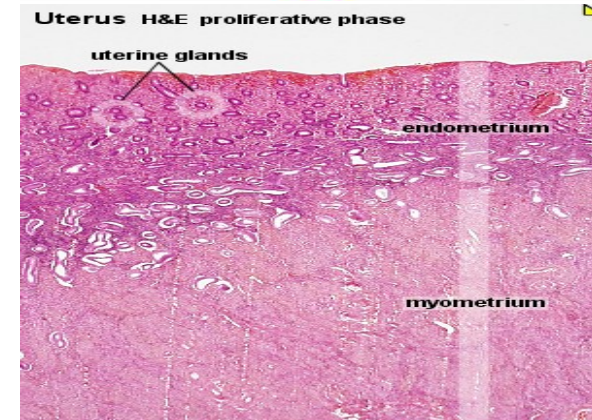
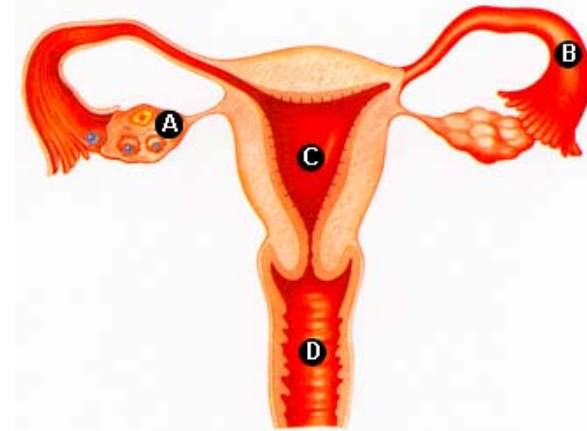
Fallopian Tube





Uterus

- The wall of the uterus is formed of endometrium, myometrium, and perimetrium.
- The endometrium is formed of simple columnar epithelium, partially ciliated and partially secretory, the lamina propria is a loose CT rich in fibroblasts, lymphocytes, phagocyte.
- It contains simple tubular glands (uterine glands). The endometrium is subdivided into functional and basal zones.
- The functional zone is the outer portion that is sloughed off during menstruation.
- The basal zone is the deep zone that is retained after menstruation and regenerates new epithelial cells and lamina propria (new functional zone).
- The myometrium is composed of bundles of smooth muscle separated by CT.
- The bundles form three layers; inner, middle, and outer layers that are not well defined.
- The perimetrium is formed of CT in some parts is lined with mesothelium.

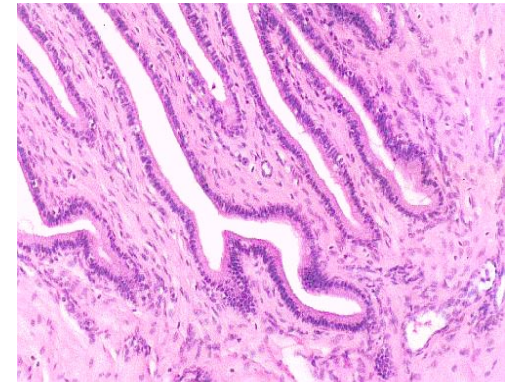


Cervix

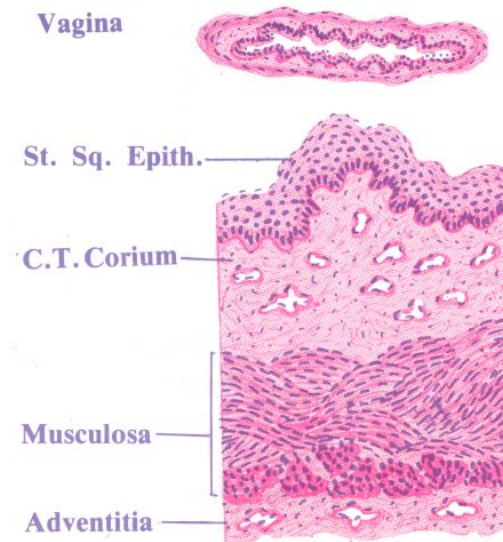
- The uterine cervix is the lower cylindrical part of the uterus.
- It encloses the cervical canal that opens into the vagina.
- It is composed of dense CT (85%) few smooth muscles. The canal is lined by simple columnar mucous-secreting epithelium.
- The underlying lamina propria contains cervical glands which are extensively branched.
- The surface facing the vagina is lined with stratified squamous keratinized epithelium.

Vagina

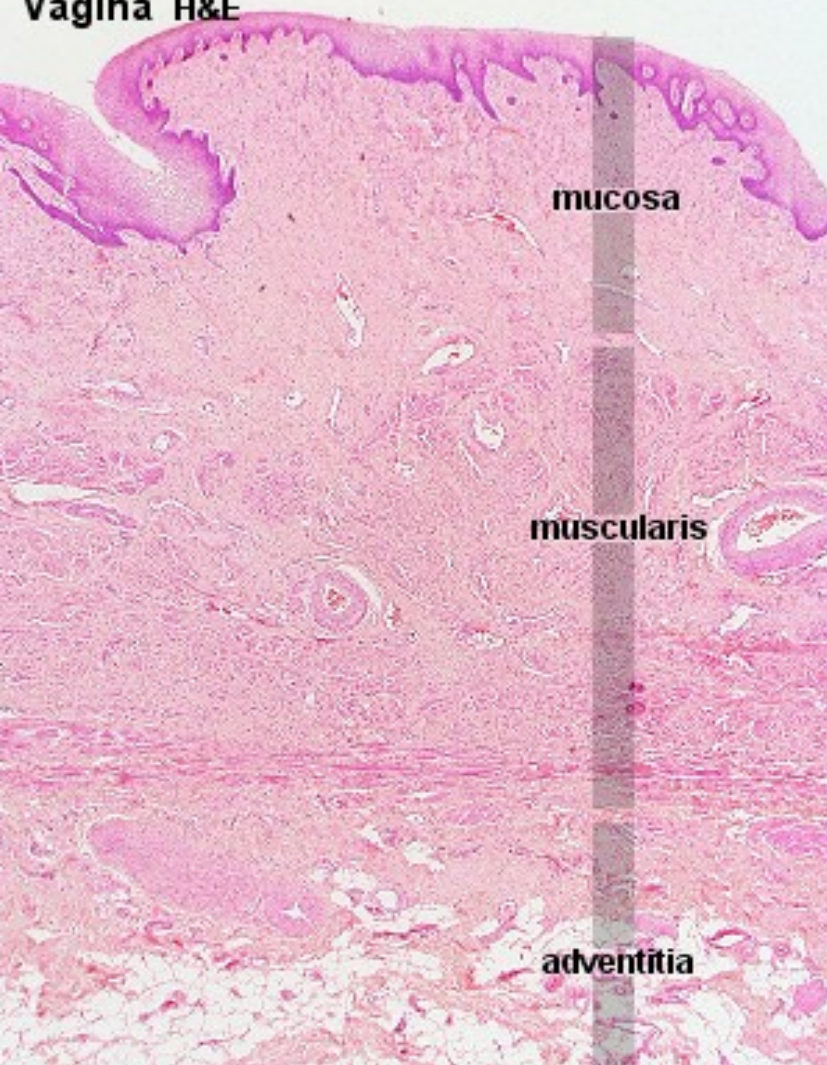
- The vagina is a fibromuscular canal consists of mucosa-submucosa, tunica muscularis and adventitia.
- The epithelium is stratified squamous non-keratinized rich in glycogen.
- The lamina propria has no glands and is rich in blood vessels and elastic fibers.
- The tunica muscularis is formed of inner circular and outer longitudinal bundles of smooth muscles.
- The adventitia is a dense CT layer.



Vagina



Vagina H&E



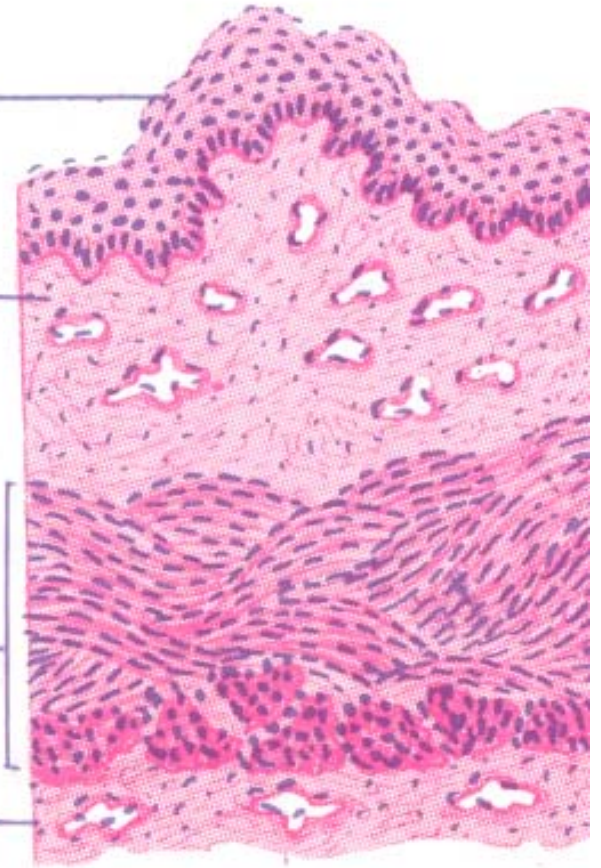
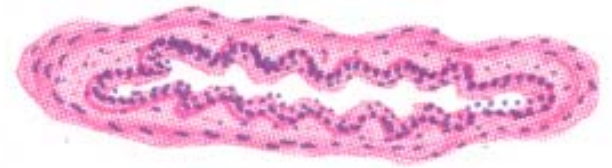
Vagina

St. Sq. Epith.

C.T. Corium

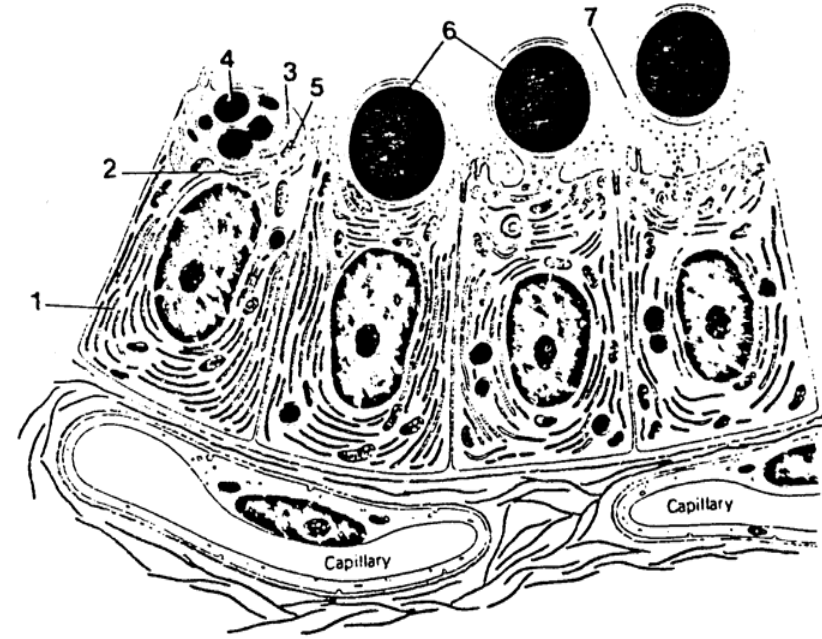
Musculosa

Adventitia



Mammary gland

- The mammary glands are compound tubulo-alveolar glands.
- According to physiological condition, the mammary glands are lactating or non-lactating.
- The lactating MG is covered externally by skin very rich in adipose tissue.
- The gland is formed of stroma and parenchyma.
- The stroma includes outer capsule, CT septa dividing the gland into 10-15 lobules, and intralobular CT.
- Actively lactating glands have much parenchyma and little stroma, the lobules are packed with secretory alveoli and separated by thin connective tissue septa.
- The secretory alveoli vary in appearance in different lobules of the mammary glands and are surrounded by reduced intralobular stroma.
- In the synthesizing stage, the alveoli appear to be lined with high columnar cells with the free end protruding into the lumen.
- In the exhaustion stage, the milk alveoli are lined with cuboidal epithelium.
- The ducts of the MG include intralobular ducts which are lined by simple cuboidal epithelium, interlobular ducts which are lined by stratified cuboidal epithelium.
- The terminal large ducts unite to form one lactiferous duct that dilates near the opening at the nipple to form the lactiferous sinus.



Mammary gland

- ✚ The non-lactating mammary gland is characterized by
- ✚ a well-developed intralobular and interlobular connective tissue stroma rich in fat cells.
- ✚ The parenchyma appears as isolated ducts and non-functional small alveoli.

