

# Lab 11: Female Reproductive System

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## Female Reproductive System Histology:

### Slide 2-11-2 "Cat" Ovary

- **Ovary**
  - **Primordial Follicle**
    - extra small **Oocyte** surrounded by a single layer of "follicular" cells.
    - no zona pellucida is present.
  - **Primary Follicle**
    - small **Oocyte** surrounded by a 1 or more layers of "granulosa" cells.
    - thin **zona pellucida** is present.
    - no antrum is present
  - **Secondary Follicle**
    - medium **Oocyte** surrounded by a many layers of "granulosa" cells.
    - thick **zona pellucida** is present.
    - small **antrum** is present.
  - **Mature (Graafian) Follicle**
    - large **Oocyte** surrounded by a many layers of "granulosa" cells.
    - thick **zona pellucida** is present.
    - large **antrum** is present (filled with follicular fluid).
    - **corona radiata** is fully formed (these cells ovulate with oocyte).
    - also called Tertiary Follicles.
  - **Corpus Luteum**
    - remaining granulosa cells (after ovulation) will involute (collapse and curl inward) and form the corpus luteum.
    - makes the hormones **Progesterone** and **Estrogen**.

### Slide 2-11-4 Uterus

- **Endometrium**
  - simple columnar epithelium and the stroma upon which it sits.
  - the stroma varies in thickness due to hormonal influences.
- **Myometrium**
  - the smooth muscle wall of the uterus, which contracts during labor.

### Slide 2-11-5 Vagina

- **Vagina's epithelial lining**
  - non-keratinized stratified squamous epithelium.
- **Vaginal wall**
  - smooth muscle (inner circular fibers, outer longitudinal fibers).

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## Female Reproductive System Gross Anatomy:

- **Ovary**
  - **Ovarian Ligament**
    - connects the ovary to the uterus
  - **Suspensory Ligament**
    - connects the ovary, fimbriae & infundibulum to the pelvic body wall.
    - has the ovary artery, vein, and nerve running with it.

- **Fallopian Tube**
  - also known as the **Uterine Tube, Salpinges** (Salpinx is singular).
  - *the equivalent in non-mammalian vertebrates is the oviduct.*
  - carries the ovulated oocyte to the uterus.
  - is lined with **ciliated simple columnar** cells to propel the ovulated oocyte towards the uterus.
  - divided into 4 parts (listed from lateral to medial):
    - **Fimbriae** – the 1st part. Fringe-like lateral opening of the tube.
    - **Infundibulum** – the 2nd part. Funnel-shape.
    - **Ampulla** – the 3rd part. Longest part. Intermediate-size diameter of tube.
      - most oocytes are fertilized by the sperm in the ampulla region.
      - 80% of all ectopic pregnancies are in the ampulla region too.
    - **Isthmus** – the 4th part. Narrowest part of tube that connects to Uterus.

- **Uterus**
  - **Fundus of the Uterus** – can be felt & seen (“baby bump”) as a pregnant uterus enlarges.
  - **Round Ligament of the Uterus**
    - originates where the fallopian tubes meet the uterus.
    - connects the uterus to the deep inguinal ring (and the labia majora)
    - pain with stretching of it is common during pregnancy.
    - ligament keeps the uterus in an anteflexed (tilted-forward) position.
  - **Cervix**
    - has glands which secrete a lubricating mucous for intercourse.
    - **External Os of the Cervix**
      - location of the **transition zone** where the epithelium of the uterus and vagina meet.
      - **Pap (Papanicolaou) Smear** is a cancer screening test of cells here.

- **Vagina**
- **Labia Majora**
  - Labium Majus (singular)
  - analogous to the scrotal sac.
- **Labia Minora**
  - Labium Minus (singular)
  - analogous to the ventral (urethral) side of the penis.
  - the opening of the female urethra is between them.
- **Mons Pubis**
  - rounded mass of fatty tissue over the pubic symphysis.
  - in divides posteriorly to form the labia majus
  - fatty tissue is sensitive to estrogen and it becomes more prominent with puberty (and less prominent with menopause).
- **Clitoris**
  - erectile tissue
- **Greater Vestibular Glands**
  - also called **Bartholin’s Gland**.
  - homologous to the Bulbourethral Gland in males.
  - secretes a mucous to provide vaginal lubrication for intercourse.
- **Lesser Vestibular Glands**
  - also called **Skene’s Gland** or the “Female Prostate”.
  - homologous to the Prostate in males.
  - found on the anterior wall of the vagina just inferior to the urethra.
  - lubricated urethral opening to protect from UTIs.

- **Placenta**
  - a temporary organ connecting the fetus by the umbilical cord to the uterine wall.
- **Umbilical Cord**
  - 1 umbilical vein (oxygenated blood flows toward fetal heart).
  - 2 umbilical arteries (deoxygenated blood flows away from fetal heart).