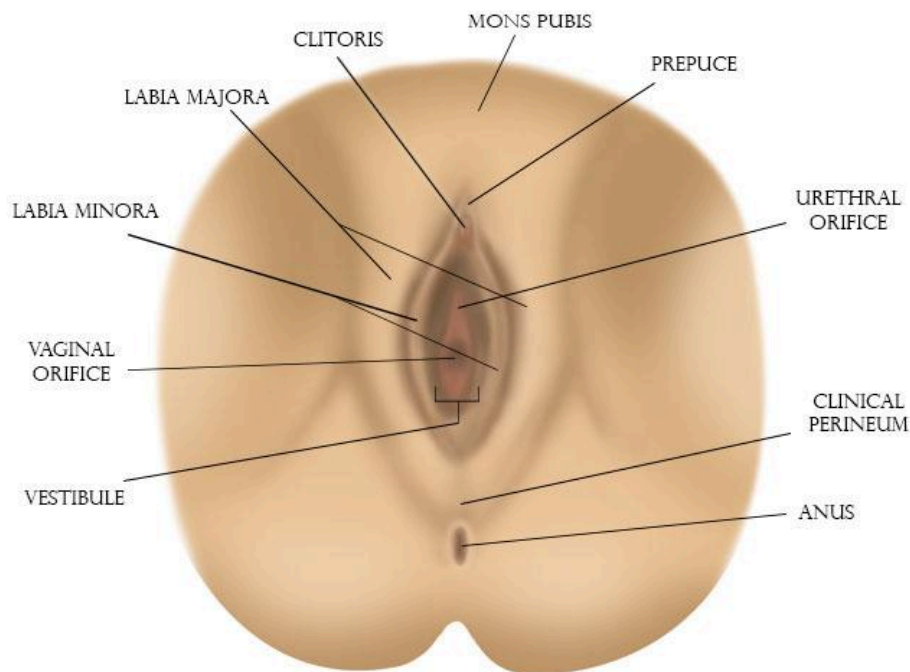


10.1.2

Anatomy of the Female Reproductive System



Female Reproductive System External Anatomy.

Image created by BYU-I biology department Fall 2014

External genitalia: The female **external genitalia** or **vulva** are depicted in the image above. The most conspicuous components of the external genitalia are the **labia majora**, the **labia minora** and the **mons pubis**. The labia majora consists of two large, rounded folds supported by adipose tissue. Anteriorly, the labia majora unite to form the mons pubis. These structures are covered with pubic hair in post pubertal women. Just inside of the labia majora are the smaller, labia minora. Between the labia minora is an area called the **vestibule** where the **urethral** and **vaginal orifices** can be found. The **clitoris** is located at the point where the labia minora connects anteriorly. The clitoris contains erectile tissue and becomes engorged with blood during sexual arousal. Other erectile tissues are found deep to the vestibule and when engorged, narrow the vaginal orifice increasing contact between the penis and the vagina.

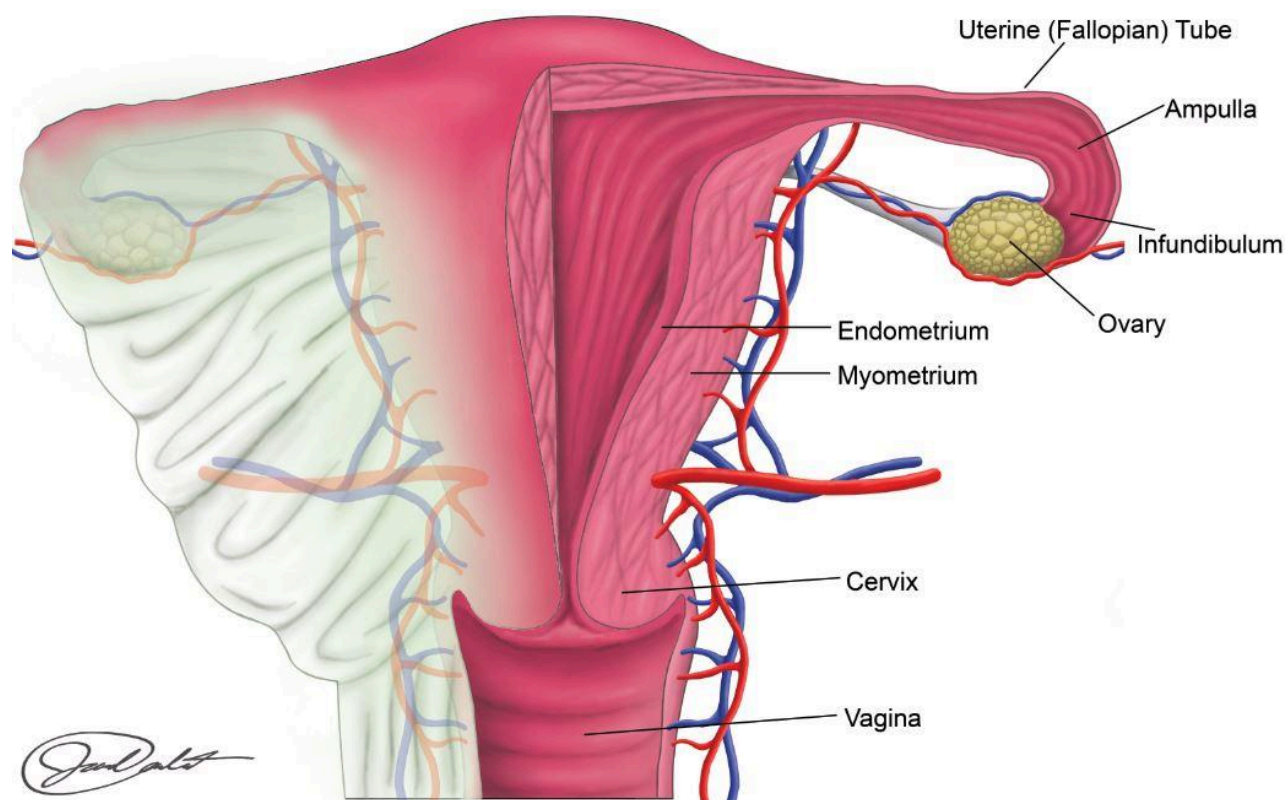


Image above created by Jared Cardinet at BYU-Idaho Winter 2015

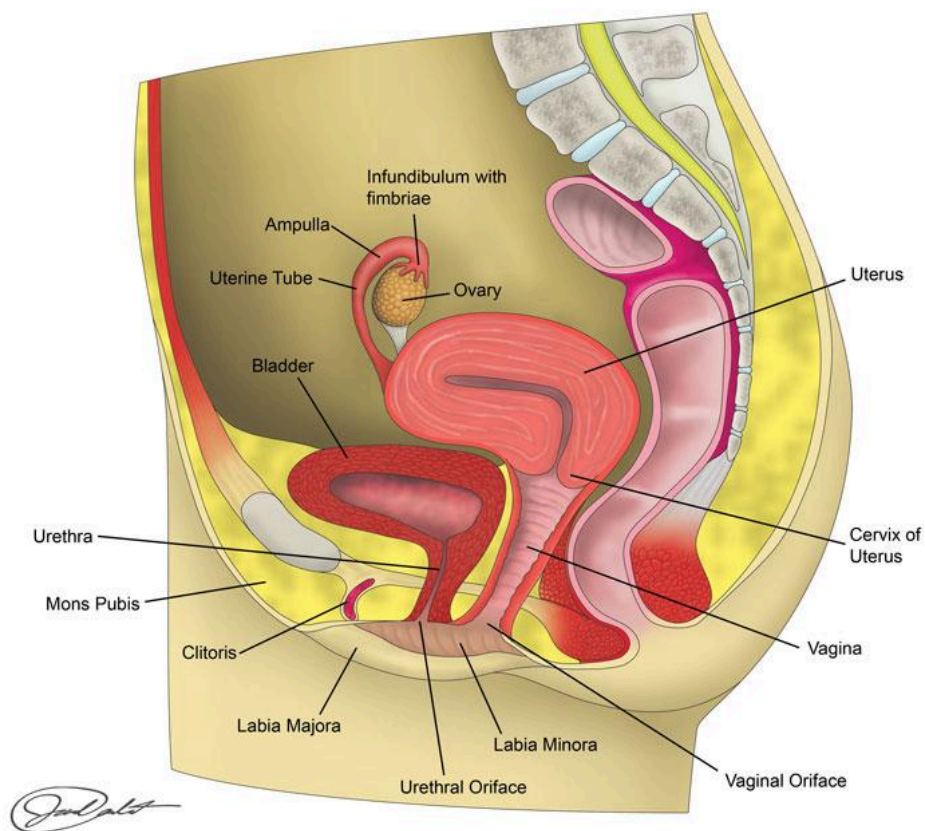


Image above created by Jared Cardinet at BYU-Idaho Winter 2015

Internal organs

The images above show the internal female reproductive organs. The first image is a frontal view and the second image is a sagittal view of these organs. The **vagina** extends from the cervix of the uterus to the vaginal orifice in the vestibule. It is approximately 10 cm long and has three functions: 1) it is the female organ of copulation and receives the male penis during intercourse; 2) it is the birth canal; and 3) it provides a channel for the monthly menstrual flow. The vagina ends at the **cervix of the uterus**. The cervix is the outlet of the uterus through which the fetus passes during the birth process. The **uterus** (also known as the womb) is a pear-shaped organ about 7.5 cm long, 5 cm wide and 3.0 cm thick. These dimensions apply to the non-pregnant uterus. During pregnancy, it will be much larger. As can be seen above, the uterus bends anteriorly and sits on top of the bladder. This position creates issues during pregnancy as it pushes down against the bladder and significantly reduces the volume of the bladder.

The walls of the uterus are divided into three layers. The first layer, starting from the inside, is the **endometrium**. This is an epithelial lining composed of simple columnar epithelium. The endometrium can be further divided into two layers - an outer, functional layer and an inner basal layer. The functional layer undergoes the changes associated with the menstrual cycle and it is this layer that is sloughed off during menstruation. The inner layer is composed of the stem cells that will proliferate to replace the functional layer as a new menstrual cycle begins. The changes that occur in the endometrium during the menstrual cycle will be described later. The bulk of the uterine wall, the **myometrium**, is a thick layer of smooth muscle. During labor the smooth muscle of the myometrium contracts rhythmically and is responsible for expelling the fetus from the uterus. The outermost layer, the **perimetrium**, covers the uterus and hence is a serous membrane.

Extending from the uterus to the ovaries are the **uterine** or **fallopian tubes**. These tubes are about 10 cm long and are lined with ciliated, simple columnar epithelium. They conduct the ovum from the ovary to the uterus. The beating of the cilia, as well as peristaltic-like contractions of the smooth muscle in the wall for the uterine tubes, move the ovum along towards the body of the uterus. The uterine tubes can be divided into several distinct regions. The **uterine portion** passes through the walls of the uterus. Next is the short, narrow **isthmus**. The isthmus then widens and becomes the **ampulla**, the longest and widest part of the uterine tubes (7 – 8 cm). The ampulla is where fertilization takes place. The distal end of each uterine tube is called the **infundibulum**. It is not physically attached to the ovary but is open ended and constantly moves over the surface of the ovary to "capture" the ovum upon ovulation. To aid in this function the edges of the infundibulum have long, finger-like extensions called **fimbriae** that partially surround the ovary.

The **ovaries** are the female gonads. They are 2 – 3.5 cm long. Within the ovaries two important processes occur, **folliculogenesis** and **oogenesis**. Folliculogenesis is the process of developing the ovarian follicle while oogenesis is development of the mature ova. As explained later, these two processes occur simultaneously and are intimately associated with each other. In addition, the ovaries produce the key female sex steroids, estrogen and progesterone. These hormones are produced by the cells of the ovarian follicle and later by the **corpus luteum**. Histologically the ovaries can be divided into two regions. The central part is called the **medulla**. Its primary purpose is to provide a path for the blood vessels and nerves to enter the ovary. The outer layer is called the **cortex**. It is in the cortex that the processes of folliculogenesis and oogenesis take place.



This content is provided to you freely by BYU-I Books.

Access it online or download it at

https://books.byui.edu/bio_265_anatomy_phy_II/1012___anatomy_of_th.