43.3B: Female Reproductive Anatomy

The female reproductive structures produce eggs, support a growing embryo, and provide a birth canal to the fetus.

Learning Objectives

• Diagram the structures of human female reproductive anatomy

Key Points

• The external anatomy of the female reproductive system is referred to as the vulva; it includes the labia minora, which protects the vagina and urethra, and the labia majora, which surrounds it.

• Internal female reproductive structures include ovaries, oviducts, the uterus, and the vagina.

• The eggs develop in structures called follicles, which are located on the surface of the ovaries; at maturity, one of the follicles will rupture and release the egg, which is captured by the fimbriae of the oviduct.

• If fertilization occurs, it generally does so in the oviduct; the fertilized egg then travels down the oviduct and enters the uterus, where it will implant in the lining of the uterus, known as the endometrium.

• If fertilization does not occur, the endometrium of the uterus will slough off at the end of the menstrual period and is shed through the vagina, which is also the opening through which the penis enters during intercourse and through which the baby will exit during birth.

Key Terms

• clitoris: a small sensitive elongated erectile organ at the anterior part of the vulva in female mammals, homologous with the penis
• **ovary**: a female reproductive organ, often paired, that produces ova and in mammals secretes the hormones estrogen and progesterone

• **vagina**: the passage leading from the opening of the vulva to the cervix of the uterus for copulation and childbirth in female mammals

• **uterus**: an organ of the female reproductive system in which the young are conceived and develop until birth; the womb

• **vulva**: the external female sexual organs, collectively

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**Female reproductive anatomy**

Female reproductive anatomy includes both external and internal structures. Among the external structures are the vulva, which consists of the mons pubis, clitoris, labia majora, labia minora, and the vestibular glands. The vulva is an area associated with the vestibule that includes the structures found in the inguinal (groin) area of women. The mons pubis is a round, fatty area that overlies the pubic symphysis. The clitoris is a structure with erectile tissue that contains a large number of sensory nerves and serves as a source of stimulation during intercourse. The labia majora are a pair of elongated folds of tissue that run posterior from the mons pubis and enclose the other components of the vulva. The labia majora derive from the same tissue that produces the scrotum in a male. The labia minora are thin folds of tissue centrally located within the labia majora. These labia protect the openings to the vagina and urethra. The mons pubis and the anterior portion of the labia majora become covered with hair during adolescence; the labia minora is hairless. The greater vestibular glands are found at the sides of the vaginal opening and provide lubrication during intercourse.

![Female reproductive anatomy diagram](https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book%3A_General_Biology_(Boundless)/43%3A_A...)

Figure \(\PageIndex{1}\): **Female reproductive anatomy**: The reproductive structures of the human female are shown. Several structures are on the outside of the body, such as the labia, vulva, and clitoris, while others, such as the ovaries and uterus, are internal.

Internal female reproductive structures include ovaries, oviducts, the uterus, and the vagina. An ovary consists of a medulla and cortex: the medulla contains nerves and blood vessels to supply the cortex with nutrients and remove waste. The outer layers of cells of the cortex are the functional parts of the ovaries. The cortex is made up of follicular cells that surround eggs. During the menstrual cycle, a batch of follicular cells develops, preparing the eggs for release. At ovulation, one follicle ruptures and one egg is released.

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Figure \(\PageIndex{1}\): Oocyte development: Oocytes develop in (a) follicles, located in the ovary. At the beginning of the menstrual cycle, the follicle matures. At ovulation, the follicle ruptures, releasing the egg. The follicle becomes a corpus luteum, which eventually degenerates. The (b) follicle in this light micrograph has an oocyte at its center.

The oviducts, or fallopian tubes, extend from the uterus in the lower abdominal cavity to the ovaries, but they are not in contact with the ovaries. The lateral ends of the oviducts flare out into a trumpet-like structure and have a fringe of finger-like projections called fimbriae. When an egg is released at ovulation, the fimbriae help the non-motile egg enter into the tube, the passage to the uterus. The walls of the oviducts are ciliated (covered in cilia) and are primarily smooth muscle. The cilia beat toward the middle, while the smooth muscle contracts in the same direction, moving the egg toward the uterus. Fertilization usually takes place within the oviducts. The embryo is moved toward the uterus for further development. It usually takes the egg or embryo a week to travel through the oviduct.

The uterus, a structure about the size of a woman’s fist, is lined with an endometrium that is rich in blood vessels and mucus glands. The uterus supports the developing embryo and fetus during gestation. The thickest portion of the wall of the uterus is made of smooth muscle. Contractions of the smooth muscle in the uterus aid in passing the baby through the vagina during labor. A portion of the lining of the uterus sloughs off during each menstrual period if an egg has not been fertilized; it builds up again in preparation for an implantation. Part of the uterus, called the cervix, protrudes into the top of the vagina, which functions as the birth canal.

The vagina is a muscular tube that serves several purposes. It allows menstrual flow to leave the body, is the receptacle for the penis during intercourse, and serves as the vessel for the delivery of offspring. It is lined by stratified squamous epithelial cells to protect the underlying tissue.