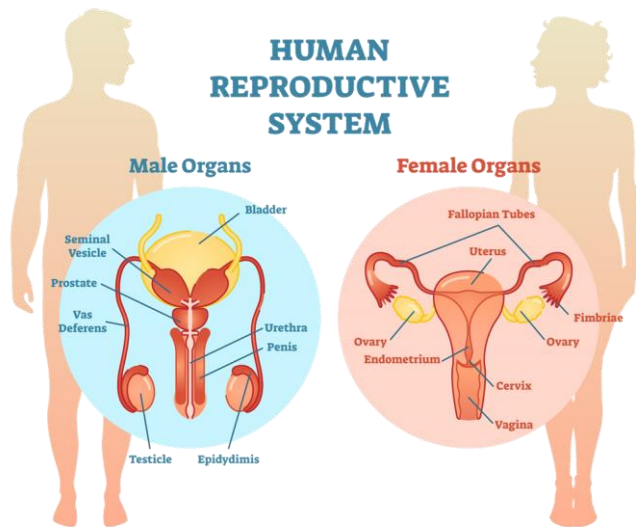


# Human Body - Part 2

## Section 5: The Endocrine & Reproductive System



The **endocrine system** produces chemical messengers called **hormones**. These hormones control many of the body's daily activities and regulate long-term changes in the body, such as growth and development. Hormones are chemical products that are produced and released directly into the bloodstream. Therefore, they can only interact with **target cells** or those that recognize the hormone's chemical structure. Endocrine glands

include the hypothalamus, pituitary, thyroid, parathyroid, adrenal, thymus, and pancreas. It also consists of the ovaries in females and the testes in males.

Of all the organs in the body system, the male and female reproductive systems differ the most. The reproductive process is vital for the continuation of life. The **male reproductive system** has two main functions: to produce **sperm** and release testosterone into the body. The two main organs are the testes and the penis. The **testes**, found in the **scrotum**, produce sperm cells. **Semen** is a mixture of sperm and fluids that leave the body through the **penis**. Testosterone is the primary sex hormone found in males and is necessary for a male's reproductive organs to develop.

The two main functions of the **female reproductive system** are to produce and release **eggs** and release the hormone called estrogen. The female reproductive glands, called **ovaries**, are found in the abdomen and are the body's structure that produces eggs. Each ovary is located near a **fallopian tube**, also called the oviduct, that carries eggs down to the **uterus**, a muscular organ that protects and nourishes a developing fetus. An unfertilized egg leaves the uterus through the cervix and into the vagina. **Ovulation** occurs when a mature egg is released from the ovary and into the fallopian tube. The ultimate result of the reproductive process is the formation and union of an egg and sperm, a fetus's development, and an infant's birth.

Often the sign of female maturity is the beginning of menstruation. **Menstruation** bleeding is the breakdown and shedding of unfertilized eggs and the uterus lining. The **menstrual cycle** is a monthly cycle of changes that occur only in the female reproductive system.

# Human Body - Part 2

## Section 5: The Endocrine & Reproductive System

Fetal development occurs across three trimesters, each marked by distinct stages of growth. In the first trimester, spanning from weeks 1–12, the embryo's foundational development takes place. During this time, crucial organ systems begin to form, including the heart, brain, and spinal cord, and the sex of the fetus can be determined. The second trimester, weeks 13–28, is marked by rapid growth. If it's a boy, the testicles move into the scrotum. If it's a girl, a lifetime supply of eggs have formed in the ovaries. Skin begins to form, eyes start to open, and the fetus is capable of sucking its thumb and responding to external stimuli. In the final trimester, weeks 29–40, the focus shifts to continued growth and preparation for birth. The fetus' organs are prepared to function independently, and it assumes the head-down position.

### Review:

1. What are hormones?
2. What are the two main functions of the female reproductive system?
3. How often does the menstrual cycle occur?