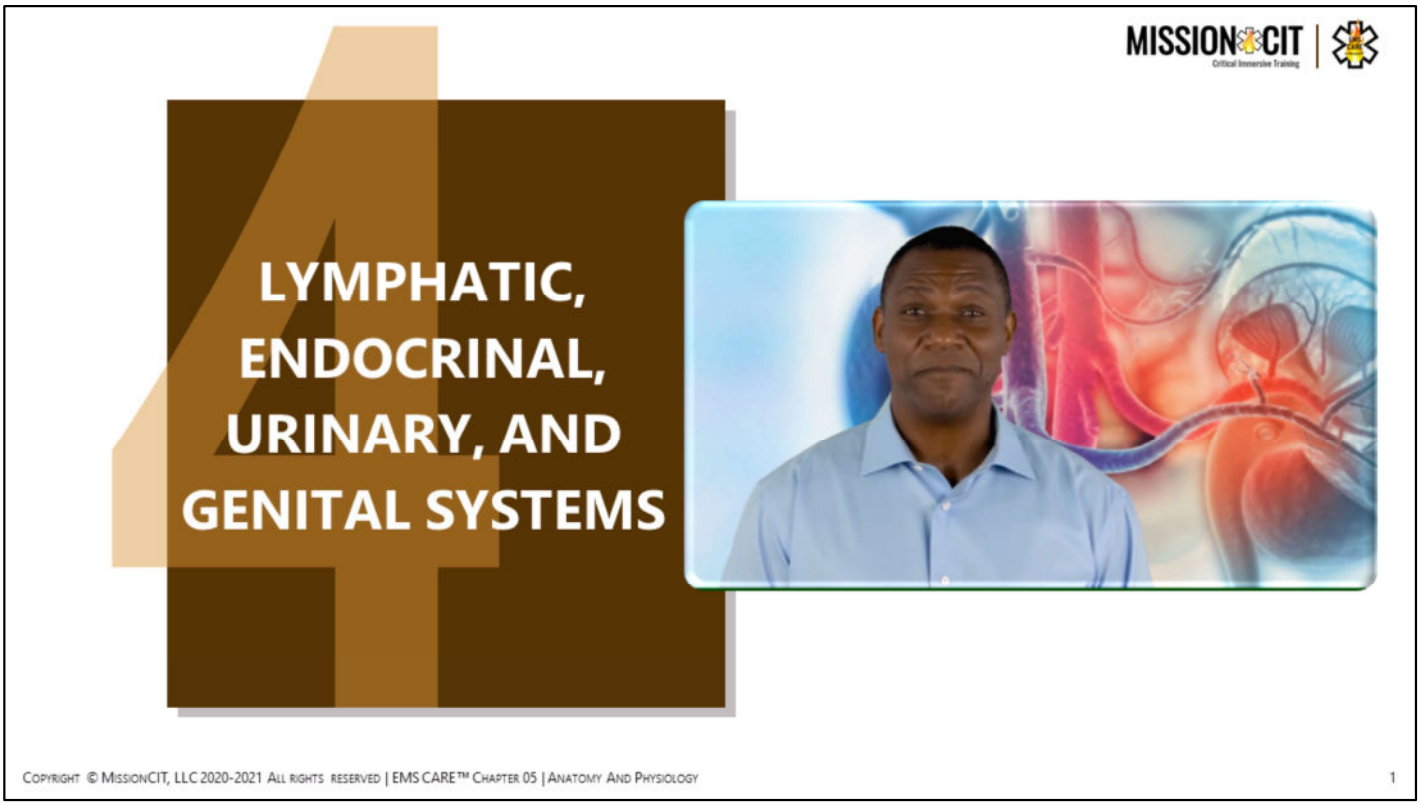
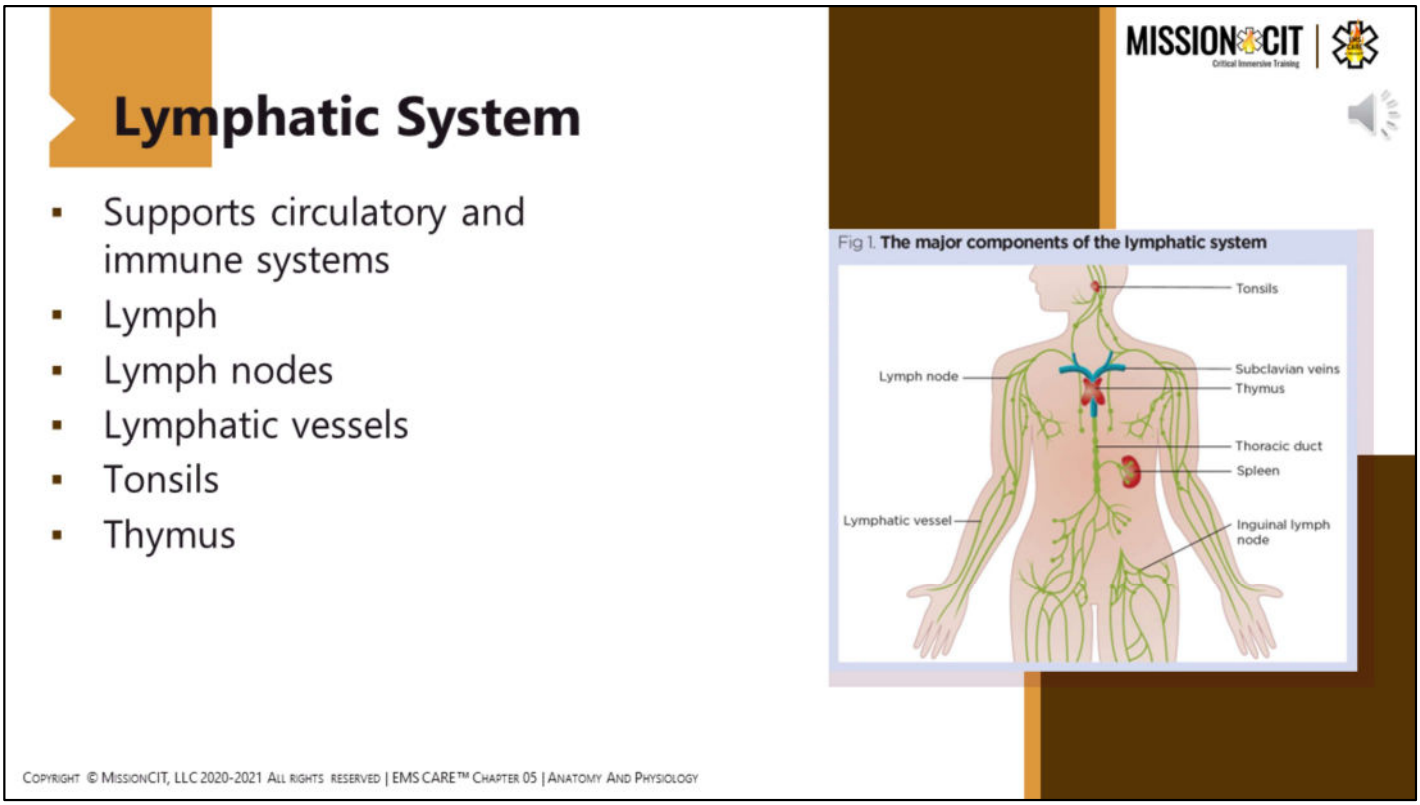


Thank you, Missah!

Welcome to the fourth lesson where we cover the remaining organ systems in the body such as the lymphatic, endocrinal, urinary, and genital systems.



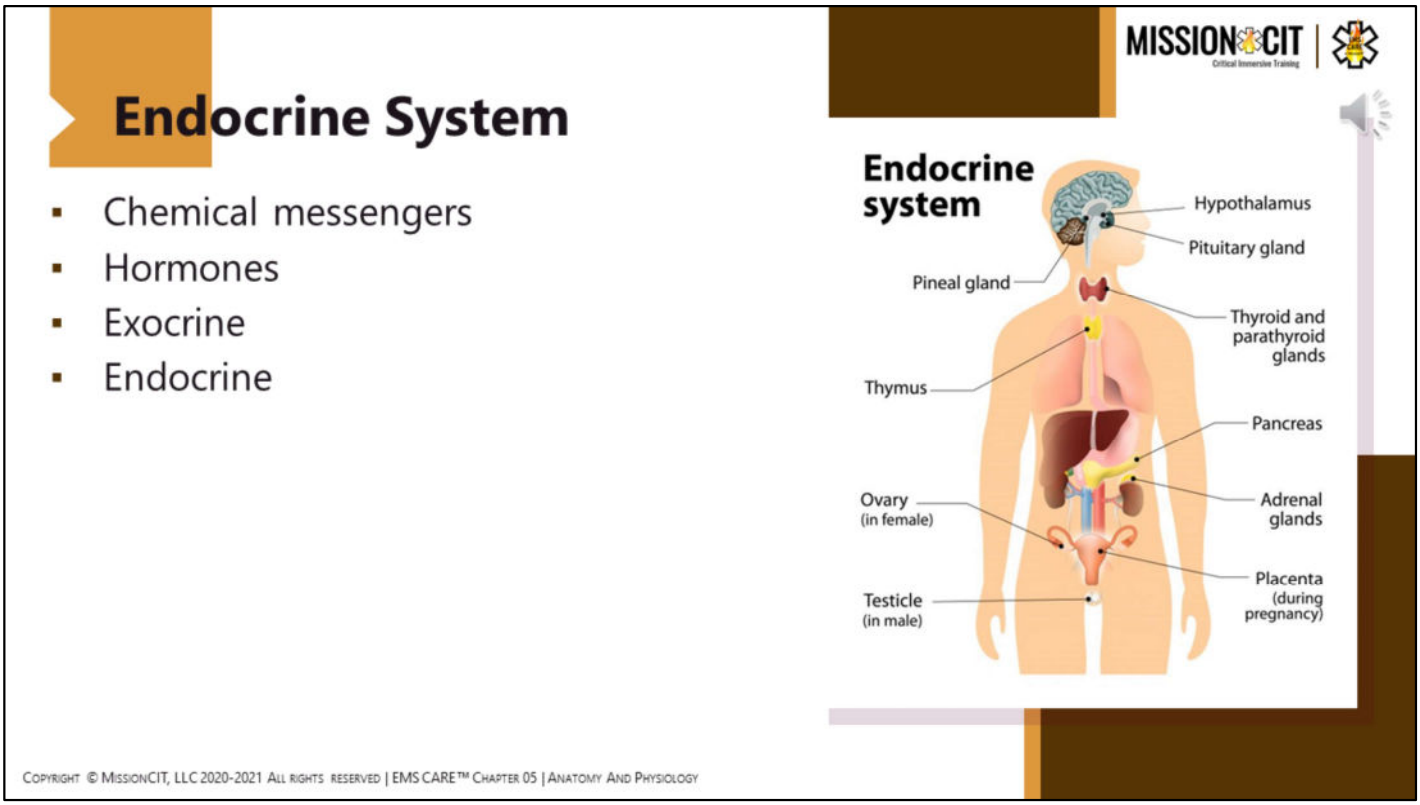
The lymphatic system supports the circulatory and immune systems. This system is responsible for the production of a substance called lymph, which is a thin and straw-colored fluid that carries nutrients and oxygen to cells and takes waste products away from them. It also helps the body to get rid of toxins and other harmful materials.

It consists of lymph, lymphatic vessels to carry them, and the lymphatic organs that include lymph nodes, tonsils, spleen, and thymus.

Lymph nodes are small bean-shaped structures that are usually less than 2.5 cm in length. They are widely distributed throughout the body along the lymphatic pathways where they filter the lymph before it is returned to the blood.

Tonsils are clusters of lymphatic tissue just under the mucous membranes that line the nose, mouth, and throat. They protect harmful substances and pathogens that may enter the body through the nose or mouth.

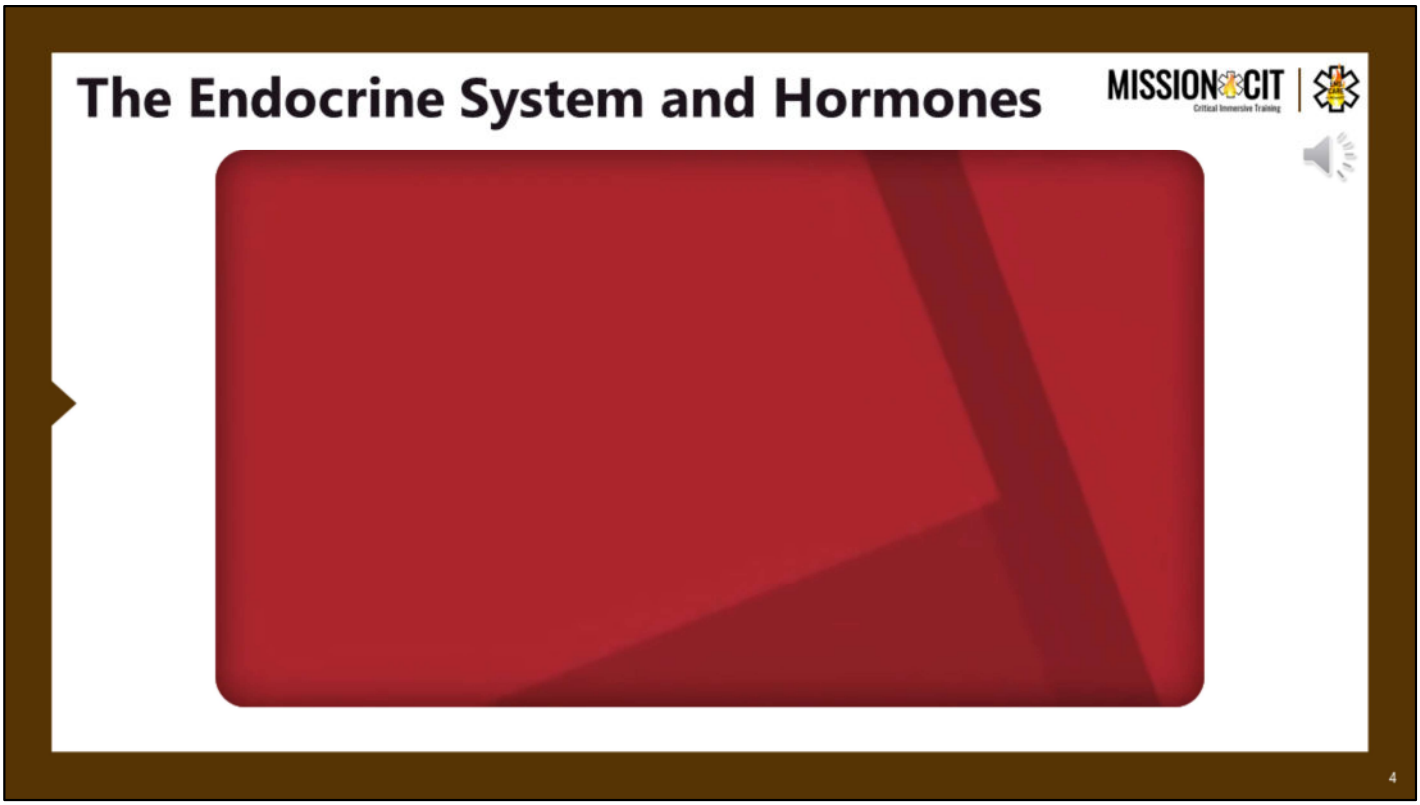
The thymus is a soft organ with two lobes that are located anterior to the ascending aorta and posterior to the sternum. The primary function of the thymus is the processing and maturation of special lymphocytes called T-lymphocytes or T-cells. While in the thymus, the lymphocytes do not respond to pathogens and foreign agents. After the lymphocytes have matured, they enter the blood and go to other lymphatic organs where they help provide defense against disease.



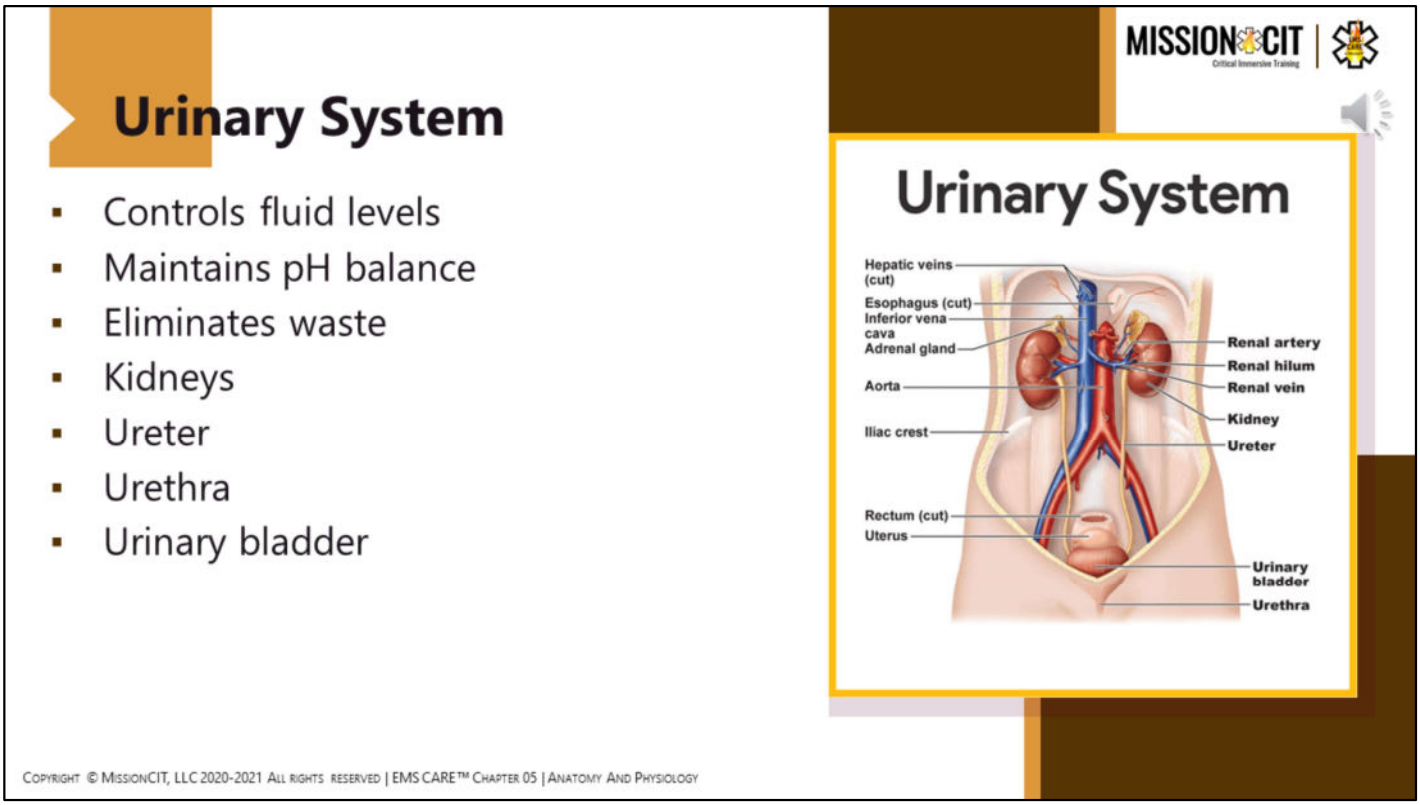
The endocrine system acts through chemical messengers called hormones that influence growth, development, and metabolic activities. This is a complex system that sends messages and controls the entire body. It integrates many body functions as well.

The hormones are released directly into the bloodstream, and each has a specific impact on an organ, tissue, or process. The brain is also a part of the endocrine system as it controls the timing and quantity of the release of these hormones. Any excess or deficient levels lead to diseases.

These hormones are held in glands that make up the endocrine system. There are two types of glands – the exocrine and endocrine. Exocrine glands have ducts that carry their secretory product to a surface. These glands include the sweat, sebaceous, and mammary glands and the glands that secrete digestive enzymes. The endocrine glands do not have ducts to carry their product to a surface. They are called ductless glands. They are released into the blood directly.



The endocrine system involves hormones, chemical messengers that affect various body functions. The hypothalamus, part of the brain, controls the pituitary gland, which itself releases hormones that control other organs in the endocrine system, such as the thyroid and adrenal glands. Growth hormone controls functions such as the body's growth. Thyroid hormone controls the rate of the body's metabolism (for example, its heart rate and how rapidly chemical reactions are processed. The pancreas produces insulin, which helps blood sugar enter cells; when there is too little insulin, diabetes develops. The adrenal glands, one on each kidney, make adrenaline (epinephrine), aldosterone, and cortisol, which help the body adapt to stress and maintain heart rate and blood pressure. The testes make testosterone, the male sex hormone, and sperm. The ovaries make estrogen, the female sex hormone, and contain eggs.



The urinary system controls the fluid levels in the body besides maintaining the pH balance. It also filters and eliminates waste from the body.

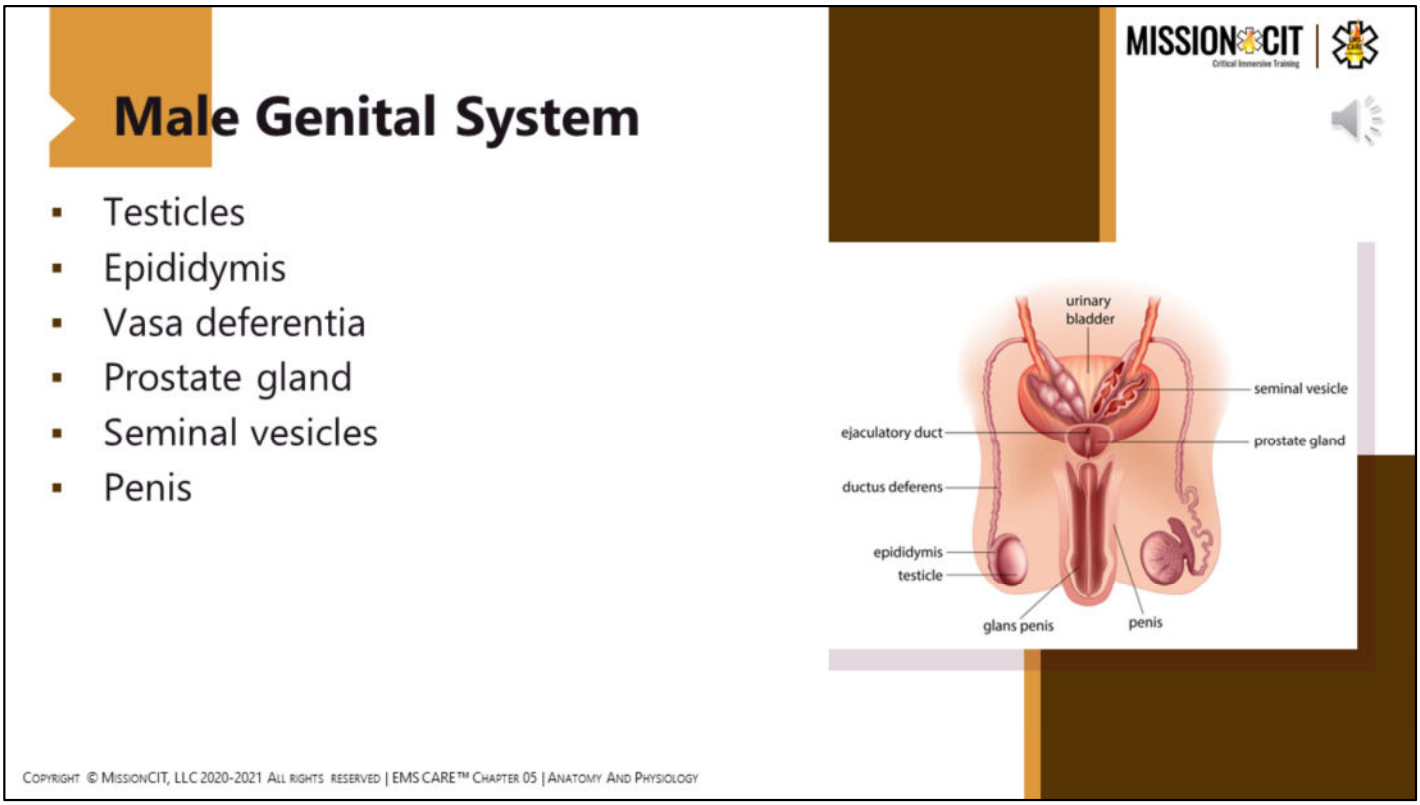
The urinary system consists of the kidneys, ureter, urethra, and urinary bladder.

The kidneys are the primary organs of the urinary system that filter the blood, remove the wastes, and excrete the wastes in the urine. They are the organs that perform the functions of the urinary system while the other components are accessory structures that help kidneys to perform their job.

Each ureter is a small tube, about 25 cm long, that carries urine from the renal pelvis to the urinary bladder.

The urinary bladder is a temporary storage reservoir for urine. The size and shape of the urinary bladder vary with the amount of urine it contains and with the pressure it receives from the surrounding organs.

Lastly, the final passageway for the flow of urine is the urethra, a thin-walled tube that conveys urine from the floor of the urinary bladder to the outside.

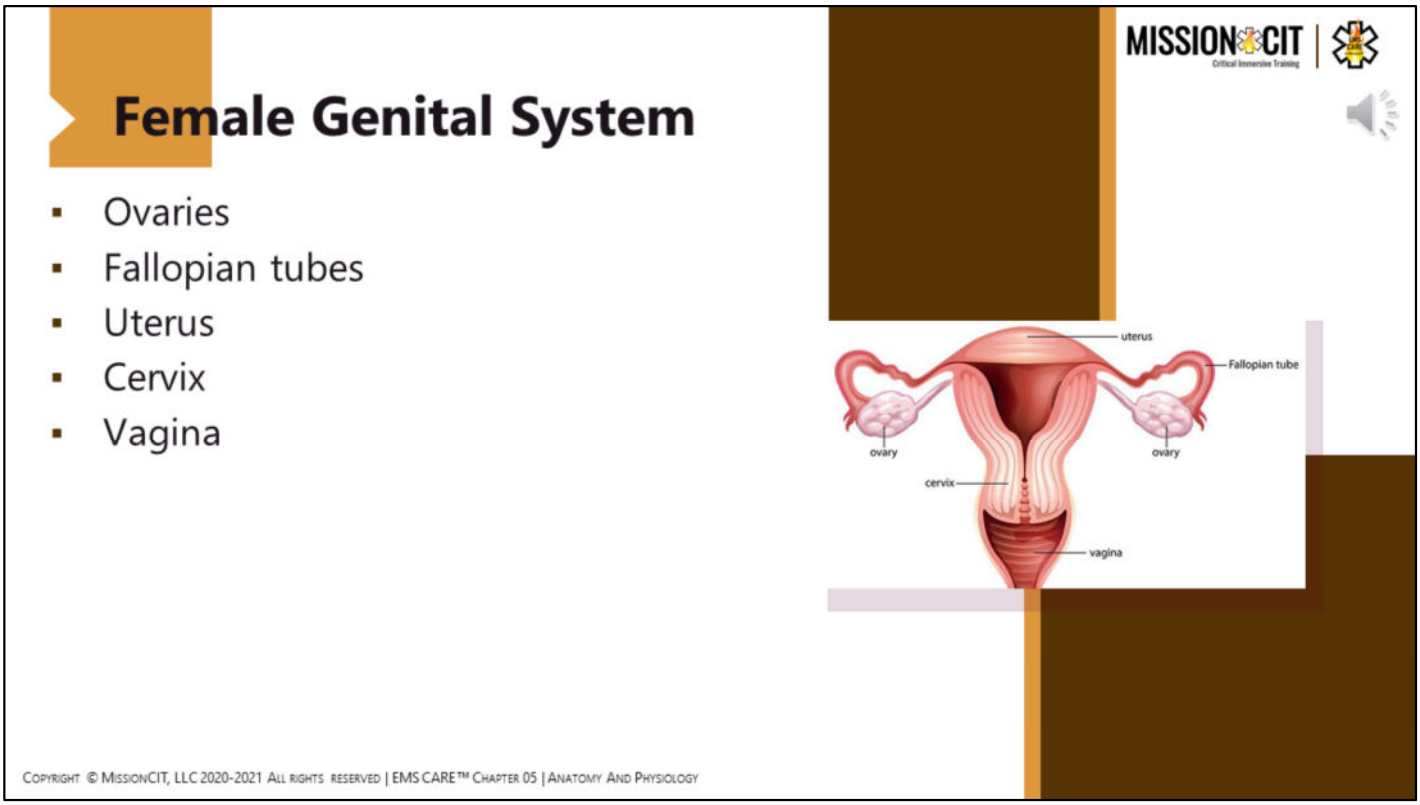


The male genital process controls the reproductive processes in males. It consists of

- Testicles
- Epididymis
- Vasa deferentia
- Prostate gland
- Seminal vesicles, and
- Penis

The testicles or the testes is the male sex gland that's located behind the penis in a pouch of skin called the scrotum while the epididymis is the convoluted duct behind the testicles through which the sperms pass to the vas deferens. Next, the vas deferentia are a pair of coiled tubes that transport sperm from the epididymis to the ejaculatory ducts in anticipation of ejaculation.

The prostate gland is located just below the bladder and its main role is to produce the fluid that nourishes and transports the sperms through the epididymis and the seminal vesicles are another gland that produces the constituent ingredients of semen. Finally, the penis is a cylindrical organ that is responsible for transferring sperm to the vagina.



The female reproductive system is a complex system that produces the egg, fertilizes it with the sperm, moves the egg to a different location, and sustains the growth and development of the fetus. Finally, it is also responsible for the movement of the fetus from the woman's body to the outside world.

It consists of ovaries, fallopian tubes, uterus, cervix, and the vagina.

The primary female reproductive organs, or gonads, are the two ovaries. Each ovary is a solid, ovoid structure about the size and shape of an almond and is responsible for producing an egg once a month.

Each ovary is attached to a tube and together there are two fallopian tubes. At the time of ovulation, the fimbriae increase their activity and create currents in the peritoneal fluid that help propel the oocyte into the Fallopian tube. Once inside the Fallopian tube, the oocyte is moved along by the rhythmic beating of cilia on the epithelial lining and by peristaltic action of the smooth muscle in the wall of the tube. The journey through the Fallopian tube takes about 7 days. Because the oocyte is fertile for only 24 to 48 hours, fertilization usually occurs in the Fallopian tube.

The uterus is a muscular organ that receives the fertilized oocyte and provides an appropriate environment for the developing fetus.

The vagina is a fibromuscular tube, about 10 cm long, that extends from the cervix of the uterus to the outside. It serves as a passageway for menstrual flow, receives the erect penis

during intercourse, and is the birth canal during childbirth.

Finally, the cervix is a cylinder-shaped neck of tissue that connects the vagina and uterus.

This brings us to the end of the anatomy and physiology of all the organ systems in the human body. In the next lesson, Missah will talk about the life support chain.