

SKELETAL SYSTEM

Like the frame of a house, the skeleton forms the internal structure of the body. It resists the pull of gravity and protects vital organs, while over 100 joints provide it with remarkable mobility. All bones store important mineral salts; in addition, red bone marrow in the flat and long bones creates 2.5 million new red blood cells each second.

MUSCULAR SYSTEM

The muscular system is the engine that drives the body. By connecting across the joints of the skeleton, muscles create levers that, when they contract, move the bones. Other types of muscles move food through the digestive tract, blood through the blood vessels and keep the heart beating every second of your life. Like any good engine, the muscular system also produces heat, which helps maintain body temperature.

NERVOUS SYSTEM

Faster than the world's most powerful computer, the nervous system transmits information through nerve cells at speeds above 270 miles per hour. As the main organ of the nervous system, the brain determines the appropriate response to thousands of pieces of information each second, while also maintaining all vital body functions as well as processing thoughts and emotions.

RESPIRATORY SYSTEM

The surface area of the lungs is great enough that, if spread out, it would cover half a football field. The body requires a constant supply of oxygen for life. The respiratory system provides oxygen by drawing air into the lungs and supplying oxygen to the bloodstream through the diffusion of gasses. While oxygen passes into the bloodstream, carbon dioxide – a waste product made by every cell in the body – passes into the lungs and is exhaled at the end of each breath.

DIGESTIVE SYSTEM

One of the world's most efficient dis-assembly lines, the digestive system uses a combination of mechanical and chemical processes to break down the food we eat and convert it into nutrients that the body can use for food.

EXCRETORY SYSTEM

Most waste is removed from the blood as it passes through the kidneys. Inside the kidneys are tiny filters that remove waste, water, glucose, and minerals from the blood. The water, glucose, and minerals are returned to the blood, leaving behind only the wastes. The liver is another organ that filters harmful substances out of the blood. Before nutrient-rich blood moves through the body, the liver removes extra sugar. Excess sugar that is not needed by the body is changed to glycogen, a carbohydrate, and stored.

The complex filtration within the kidneys requires over 100 miles of blood vessels. Through a process of continual and complex filtration, the urinary system collects metabolic waste products from the blood and removes them from the body while maintaining the proper balance of water and electrolytes in the blood.

ENDOCRINE SYSTEM

This system produces hormones and releases them into the blood. Hormones control the body's growth its use of energy, and its ability to reproduce. Adrenaline is a hormone released into the body in times of danger. Other hormones control the levels of sugar or calcium in the blood.

REPRODUCTIVE SYSTEM

While every other cell in the body has 46 chromosomes, the female sex cell, the egg, and the male sex cell, the sperm, have only 23. Only when the egg and sperm combine is a new cell created that is capable of developing into a human.

CIRCULATORY SYSTEM

Crisscrossing the body in a fine weave, the blood vessels of the circulatory system hold the body together. They transport everything the cell needs to maintain life. The circulatory system carries oxygen and nutrients throughout the body, as well as powerful guardian cells that seek out and destroy any virus or bacteria.