

# Human body

## Introduction

The human body is made up of many parts. Each part does a special job. All the parts work together to make the body run smoothly.

Like all things—living and nonliving—the human body is made up of chemical elements. The most common elements in the body are carbon, hydrogen, nitrogen, and oxygen. These elements join to form the chemicals that make up the cells of the body and help the body live and grow. The cell is the basic unit of all living things. Water makes up about 65 percent of the body.

Each of the body's cells can take in food, get rid of wastes, and grow. Most cells can also reproduce, or make new cells. The body has many kinds of cells, such as blood cells, muscle cells, and nerve cells. Each kind of cell has special features and jobs. Cells group together to form tissues. One or more types of tissues join to form organs. An organ is a structure that does a certain job in the body. The heart, for example, is an organ that pumps blood throughout the body. Groups of organs form organ systems. Each organ system carries out an important activity in the body. The body has 10 organ systems.



Human skeletal system



A sprinter bursts from the starting blocks

## The skin

The skin is the largest organ of the body. The skin does several important jobs. It protects the body from harmful things. These include germs, chemicals, and the harsh rays of the sun. It prevents the loss of water from the body's other tissues. The skin also helps keep the temperature of the body steady. Blood vessels in the skin grow larger to give off extra heat and shrink to keep heat in the body. Special glands in the skin produce a liquid called sweat that cools the body.

## The skeleton

The skeleton is made of bones. The skeleton of a grown-up person has about 200 bones. It forms a strong framework that supports the body. It also helps protect the body's organs. The skeleton works with the muscles to help the body move.

## The muscular system

The muscular << MUHS kyoo luhr >> system moves the body. The body has more than 600 muscles. Muscles move by contracting, or becoming shorter. Muscles attached to the bones move the arms, legs, fingers, and other parts of the skeleton. Another type of muscle is found in most of the organs inside the body. This type of muscle works automatically to make the organs, such as the stomach, work. The heart is made of a special type of muscle. When heart muscles relax, blood from the body enters the heart. The muscles quickly tighten up to squeeze the blood back out again. This action is called a heartbeat. The heart beats about 70 times each minute.



Human muscular system

## The digestive system

The digestive << duh JEHS tihv >> system is made up of various organs. It allows the body to digest, or use, food. Digestion begins in the mouth as food is chewed. After it is swallowed, the food passes through a tube called the esophagus << ee SOF uh guhs >> and enters the stomach. In the stomach, food is turned into a thick liquid. This liquid passes into the small intestine, where digestion is completed. Useful substances from the food pass into the blood through special cells in the walls of the small intestine.

Water, minerals, and wastes from the food pass into the large intestine. The large intestine sends most of the water and minerals into the blood. The wastes are then passed out of the body.

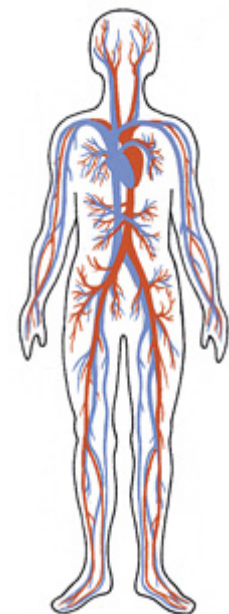
## The respiratory system

The respiratory system allows a person to breathe. Air is taken in through the nose. It passes through a tube called the windpipe to the lungs. In the lungs, a gas called oxygen is taken out of the air. Human beings cannot live without oxygen. The oxygen enters the bloodstream and is carried throughout the body. The lungs also remove carbon dioxide from the blood. Carbon dioxide is a gas that is produced by the body as a waste.

## The circulatory system

The circulatory << SEHR kyuh luh tohr ee >> system moves blood through the body. Blood travels through tubes called blood vessels. It carries food and oxygen to the cells and carries away carbon dioxide and other wastes. Blood is pumped throughout the body by the heart. Through the thin walls of the tiniest blood vessels, food and oxygen in the blood are exchanged for carbon dioxide and other wastes from the cells.

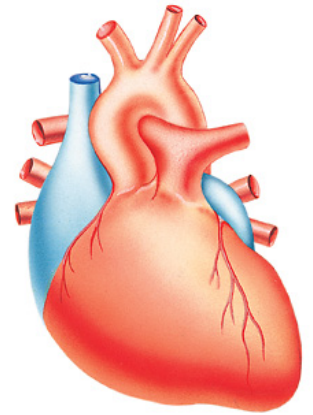
The heart pumps blood containing waste material into the lungs. There, the blood gets fresh oxygen from the air. It returns to the heart and is pumped once again to the body.



Human circulatory system

## The urinary system

The urinary << YOOR uh nehr ee >> system removes wastes from the blood and flushes them out of the body. The chief organs in this system are the two kidneys. Blood flows through the kidneys, and wastes are filtered out. This waste forms a yellowish fluid called urine. Urine passes to the bladder and leaves the body through a tube.



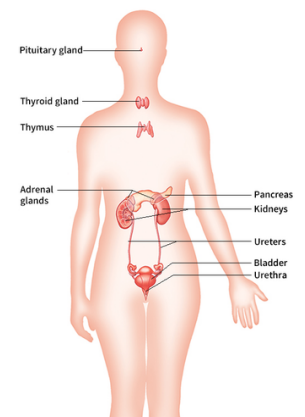
The heart pumps blood throughout the body

## The reproductive system

The reproductive system makes it possible for men and women to have children. Men have organs called testicles that produce cells called sperm. Women have organs called ovaries that produce egg cells. When sperm cells and egg cells join, a baby begins to grow. The baby develops inside a hollow organ in the woman's body called the uterus. After about nine months, the baby is born. It leaves the woman's body through a passage called the vagina << vuh JYN uh >> .

## The endocrine system

The endocrine << EHN doh krihn >> system consists of organs called glands. These glands produce special chemicals that control the body's activities. For example, they control growth, reproduction, and the use of food.

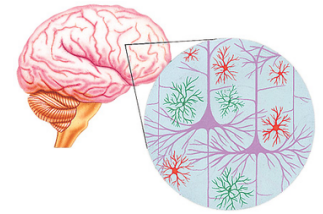


The human endocrine and urinary systems

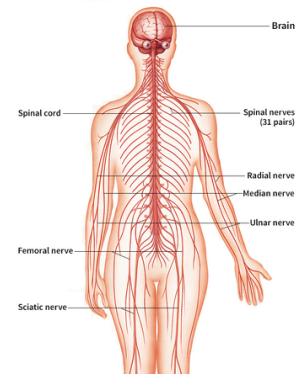
## The nervous system

The nervous system controls the activities of all the other body systems. The nervous system is made up of countless nerve cells. These nerve cells connect every part of the body with the brain and the spinal cord.

The brain and spinal cord get information from the sense organs, such as the eyes, ears, and skin. They sort through this information and send instructions that tell the body how to respond. A special part of the nervous system carries messages from the brain to the body's organs. This part of the nervous system controls such activities as heartbeat and digestion.



The brain and brain cells



The human nervous system

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