

All the cells in the human body

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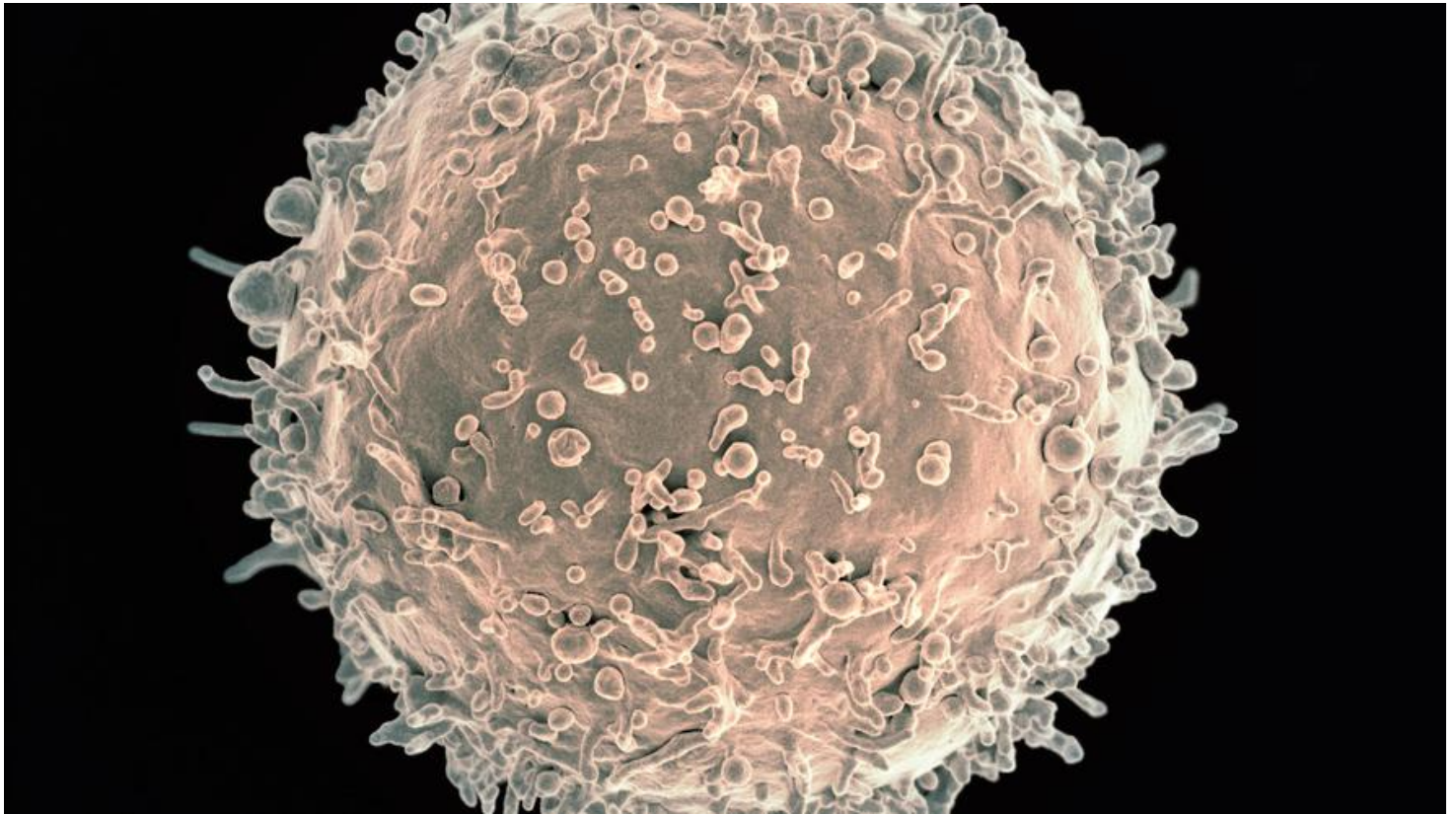


Image of a lymphocyte, a type of cell that makes antibodies. Antibodies act against harmful bacteria and viruses. Photo by: NIAID/Flickr.

Cells are the building blocks of life. Animals, people, plants and all living beings are made up of cells.

There are trillions of cells in the human body, and they come in different shapes and sizes. There are also hundreds of different types of body cells. Each one has a specific job it is built to do. Groups of cells of the same type make specific tissues.

Cells depend on each other to keep the body working. Here are some different types of cells in the human body.

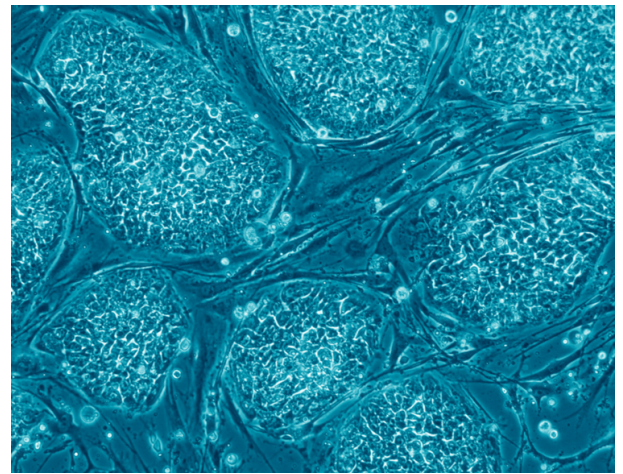
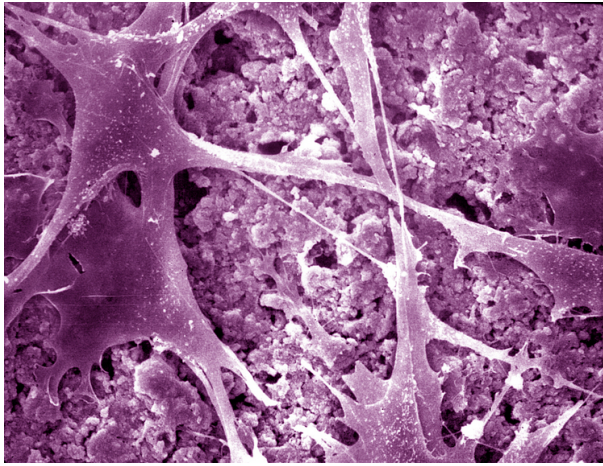
Stem Cells

Stem cells can become different kinds of cells. They are able to divide and make copies of themselves over and over. This way, they can take the place of cells that are missing.

Scientists are studying new ways to use stem cells. They are using these cells to heal organs, fix broken tissues and treat diseases.

Bone Cells

Bones are made of bone

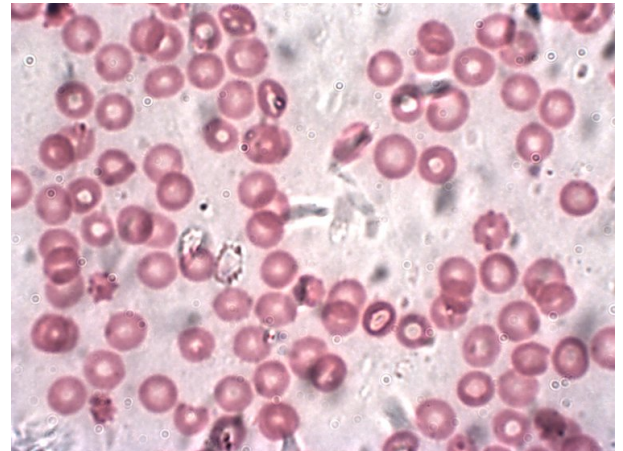


cells. There are three main types of bone cells in the body. Osteoclasts break down bone so it can be reused by the body. Osteoblasts make osteoid, which hardens to form bone. Osteoblasts later turn into osteocytes. These cells also help to form bone and keep it healthy.

Blood Cells

Cells of the blood are key to life. The three main types of cells in the blood are red blood cells, white blood cells and platelets. Red blood cells carry oxygen to other cells. White blood cells destroy bacteria, viruses and other organisms that can hurt the body.

Vessels are the tubes in the body that carry blood. When you cut your finger and it bleeds, a blood vessel has been broken. Platelets help to clot blood, making it hard. This keeps us from losing too much blood.

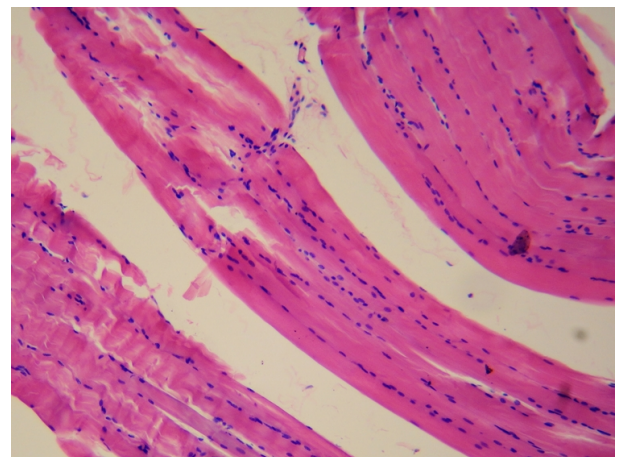


Muscle Cells

Muscles are made of muscle cells. Skeletal muscle tissue attaches to bones, allowing us to move as we please.

Cardiac muscle cells form the muscles in the heart. These cells help the heart with pumping blood. Cardiac muscles move without us telling them to move. That is why it's called an involuntary muscle.

Smooth muscle is another kind of involuntary muscle. It forms the walls of many organs, like kidneys and intestines.

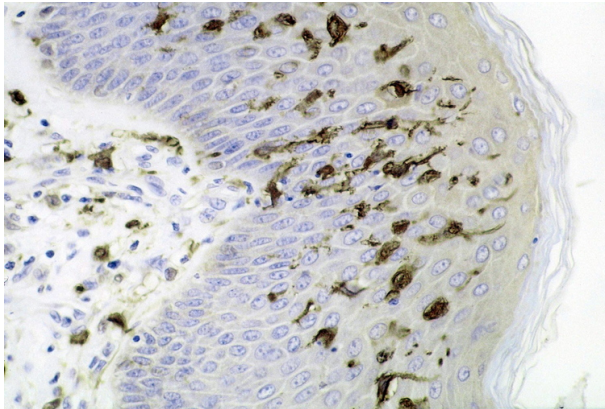


Fat Cells

Fat cells, or adipocytes, contain droplets of stored fat. These can be used when we need energy. When fat is being stored, fat cells swell and become round. When fat is being used, these cells shrink.

Skin Cells

The skin is made of many layers. The outer layer is called the epidermis and is made up of flat



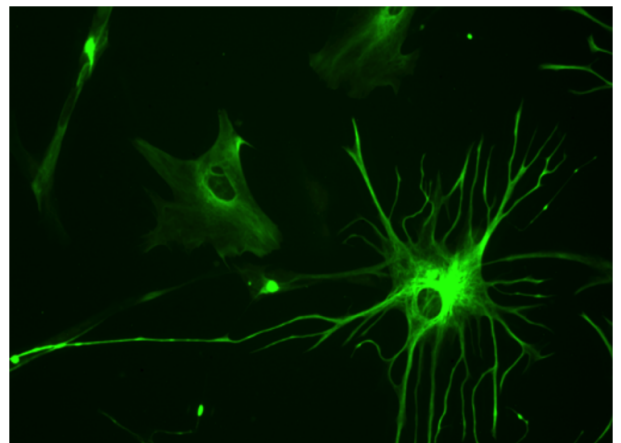
cells. These cells are closely packed together. The epidermis sits on another layer, called dermis.

The skin protects the parts inside the body from damage. It also blocks out germs, stores fat for energy and sweats if we're too dry.

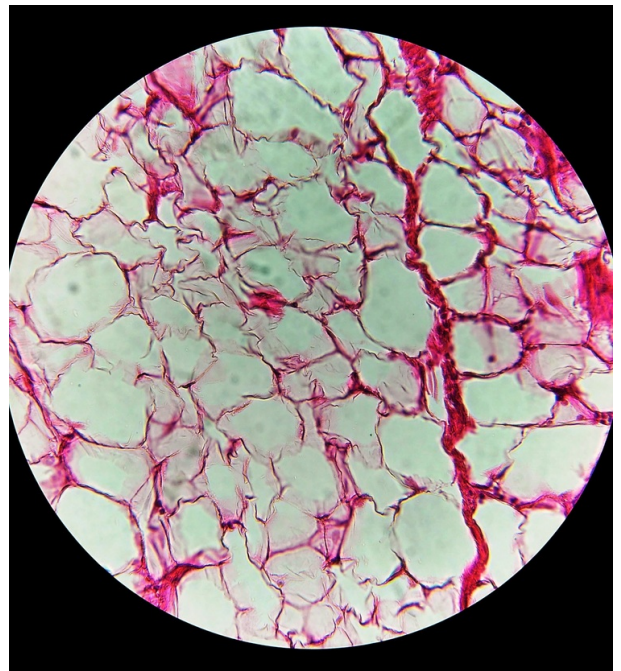
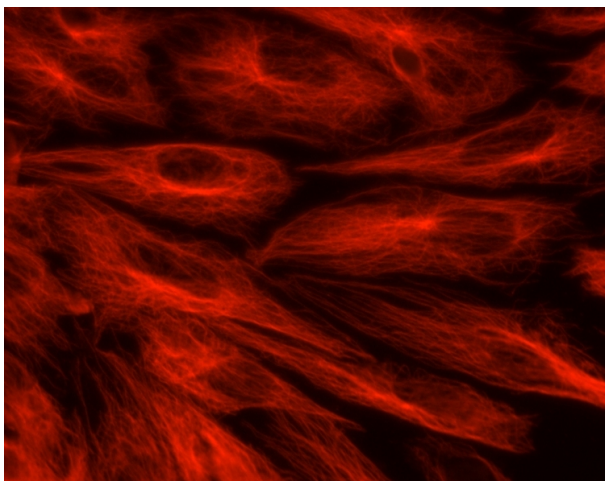
Nerve Cells

Nerve cells, or neurons, are the basic units of the nervous system. Nerves send messages between the the brain, the spinal cord and various organs.

A neuron has two major parts, a cell body and nerve processes. The cell's body contains the neuron's nucleus, or center. Nerve processes are like fingers that reach out to other neurons. They are called axons and dendrites.



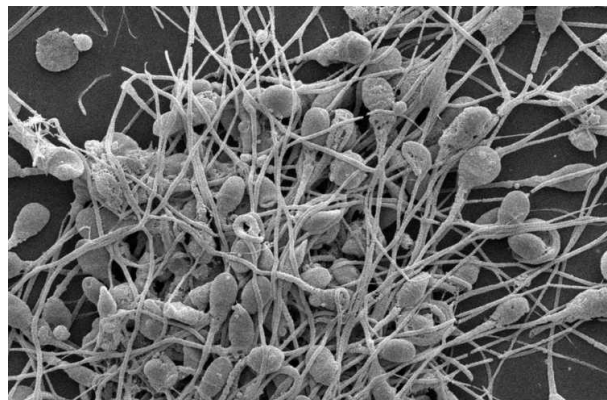
Endothelial Cells



Endothelial cells are on the inside of blood vessels and various organs. They can create new vessels and help control the flow of blood.

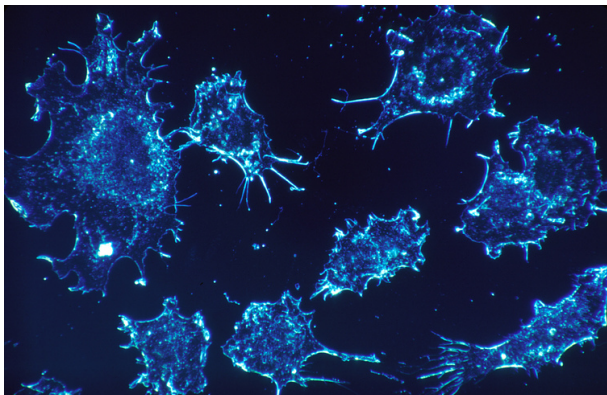
Sex Cells

Sex cells, or gametes, are reproductive cells. When two different sex cells come together, they form a new life. Male sex cells, or sperm, can move by using their long tails. Female sex cells, or ova, do not move and are larger than the sperm.



Cancer Cells

Cancer cells are cells that are



sick. Usually, cells make copies of themselves until they go through apoptosis. Apoptosis is the death of the cell. Cancer cells are able to skip apoptosis. They multiply fast and spread to other parts of the body.

Quiz

1 Read the section "Blood Cells."

Which selection from this section explains HOW blood cells protect the body from disease?

- (A) Cells of the blood are key to life. The three main types of cells in the blood are red blood cells, white blood cells and platelets.
- (B) Red blood cells carry oxygen to other cells. White blood cells destroy bacteria, viruses and other organisms that can hurt the body.
- (C) Vessels are the tubes in the body that carry blood. When you cut your finger and it bleeds, a blood vessel has been broken.
- (D) Platelets help to clot blood, making it hard. This keeps us from losing too much blood.

2 Read the paragraph from the section "Sex Cells."

Sex cells, or gametes, are reproductive cells. When two different sex cells come together, they form a new life. Male sex cells, or sperm, can move by using their long tails. Female sex cells, or ova, do not move and are larger than the sperm.

What conclusion can the reader make based on this paragraph?

- (A) Female sex cells move quickly because of their long tails.
- (B) Sperm are slower and much larger than ova.
- (C) A new life requires two different sex cells.
- (D) Gametes are the least common type of cell in the body.

3 Read the paragraph from the section "Skin Cells."

The skin is made of many layers. The outer layer is called the epidermis and is made up of flat cells. These cells are closely packed together. The epidermis sits on another layer, called dermis.

What does "epidermis" refer to?

- (A) The bottom layer of skin cells in the human body.
- (B) A layer of skin cells that lies below the dermis.
- (C) A layer of skin that is made of different-shaped cells.
- (D) The top layer of skin cells in the human body.

4 Read the paragraph from the section "Muscle Cells."

Cardiac muscle cells form the muscles in the heart. These cells help the heart with pumping blood. Cardiac muscles move without us telling them to move. That is why it's called an involuntary muscle.

Which word helps the reader understand the meaning of "cardiac"?

- (A) muscle
- (B) heart
- (C) pumping
- (D) involuntary