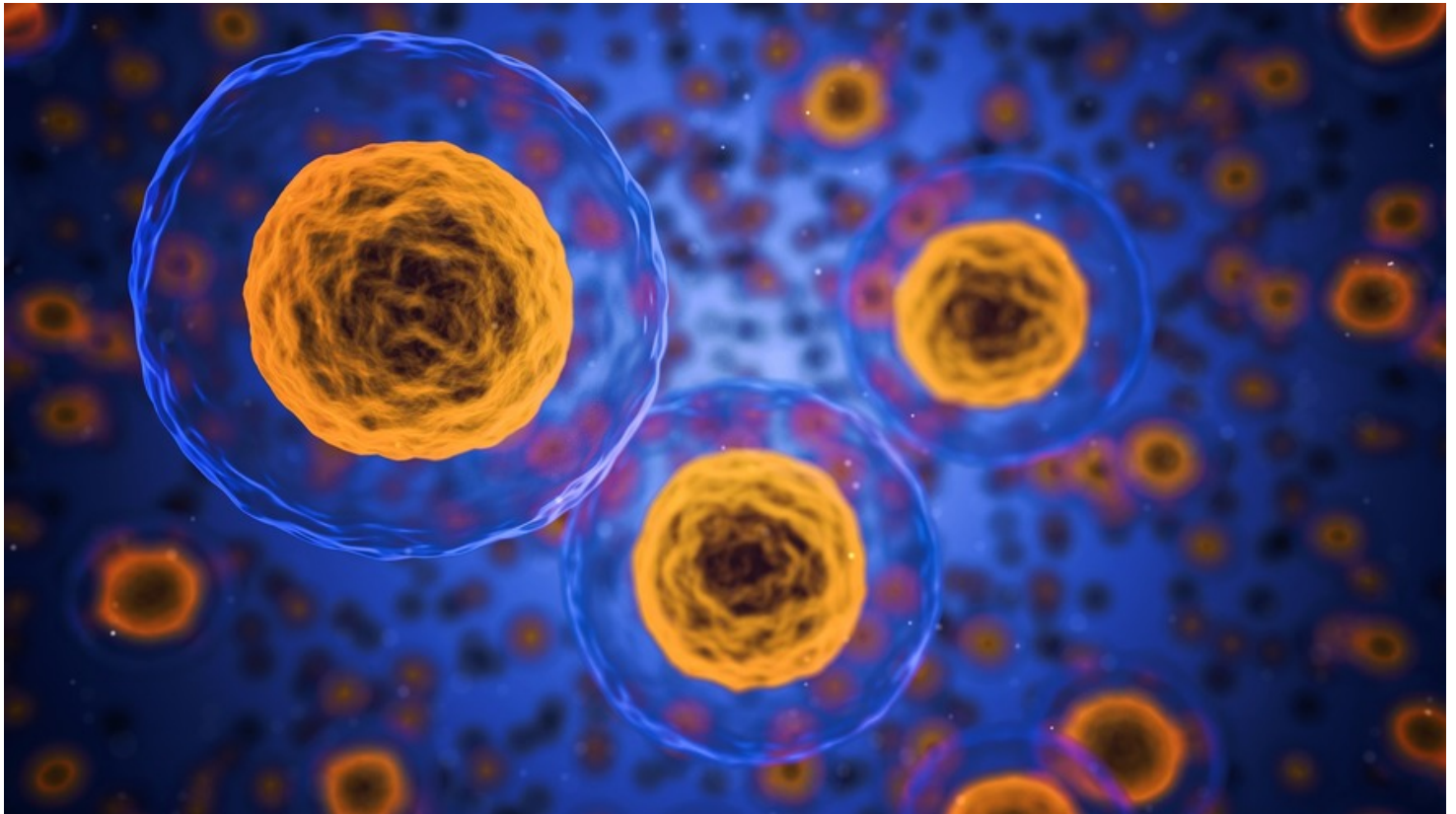


The facts about cells

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An image of cells. Photo from Pixabay.

Cells are the basic building blocks of life. All living things are made of cells.

Some life forms are made of a single cell. But humans have up to 100 trillion cells in their bodies!

There are hundreds of different types of cells. They give our bodies their shape, give us energy, let us have children and much more.

Here are 10 facts you may not know about cells.

1. Cells are very small.

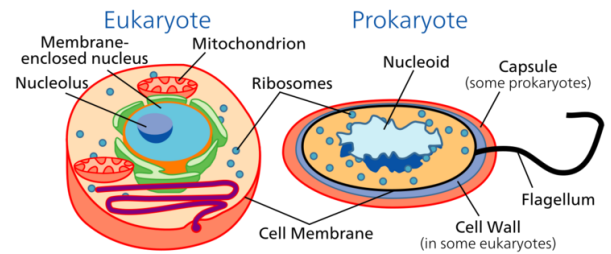
Cells come in many sizes. Most of them are too small to see with just your eyes. That is why scientists use microscopes. These are tools that can zoom in to see even the smallest cells.

2. There are two main types of cells.

Cells are either eukaryotic or prokaryotic. The middle of eukaryotic cells is called a nucleus. It has a cover around it called a membrane. Animals and plants have eukaryotic cells. This is why they

are called eukaryotes.

Prokaryotes are living beings that are made of just one cell. This cell is prokaryotic. Prokaryotic cells do not have a nucleus with a membrane. Instead, they have an open area called nucleoid.



3. Prokaryotes only have one cell.

Prokaryotes can live in very tough environments. They can survive in hot springs, swamps and wetlands. Some even live inside animals.

4. There are more bacteria in the body than human cells.

Some scientists have found that there are more bacteria in a person's body than human cells. Bacteria are a kind of prokaryote. Bacteria and our bodies are able to work together. For example, they help our stomachs break down food.

5. Cells contain DNA.

Every cell has DNA inside it. DNA tells our cells and bodies how to grow. It is passed on from parent to child. In eukaryotic cells, DNA is found in the nucleus. In prokaryotic cells, it is in the nucleoid.

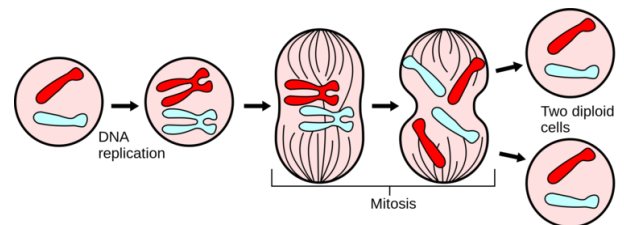
Chains of DNA form chromosomes. These tell the body how to grow and look. Human cells have 46 chromosomes.

6. Cells have organelles with certain roles.

Organelles are parts of a cell that have a certain role. For example, mitochondria are like a motor: they make energy. The endoplasmic reticulum is like a kitchen: it makes carbohydrates, like sugar, and fats. Lysosomes are like a bathroom: they help cells break down what they eat.

7. Cells have various ways of reproducing.

Cells can make copies of themselves. Most prokaryotic cells can split to create two new ones. This is called binary fission.



Eukaryotic cells are able to split too. For eukaryotic cells, this is called mitosis. Larger groups of cells, like animals, can make children. This happens when two different cells, called gametes, come together. Gametes are made in a series of steps called meiosis. This is what happens for human babies, for example.

8. Groups of cells form tissues.

Tissues are groups of cells. These cells are of the same type. Different tissues can also make organs. An organ is a part of the body with a certain role, like a heart or lung.

9. Cells have different lifespans.

Different cells live for different amounts of time. Some live for a day. Others live for up to a year. Brain cells can last for a person's life.

10. Cells can destroy themselves.

When something goes wrong in a cell, it can destroy itself. This is called apoptosis. It usually happens if a cell becomes damaged or infected. Apoptosis keeps one bad cell from hurting the rest of the body.

Quiz

1 Read the paragraph from the section "8. Groups of cells form tissues."

Tissues are groups of cells. These cells are of the same type. Different tissues can also make organs. An organ is a part of the body with a certain role, like a heart or lung.

What is the BEST definition of "tissues" based on the context clues?

- (A) a group of the same type of cells coming together to create something
- (B) an organism in a living thing that has organs, a heart or lungs
- (C) the part of a cell that allows it to split into two cells
- (D) different types of cells that work together

2 Read the paragraph from the section "2. There are two main types of cells."

Prokaryotes are living beings that are made of just one cell. This cell is prokaryotic. Prokaryotic cells do not have a nucleus with a membrane. Instead, they have an open area called nucleoid.

Fill in the blank.

A "prokaryote" is an _____.

- (A) one-celled organism with a nucleus
- (B) organism with many cells and no nucleus
- (C) one-celled organism without a nucleus
- (D) organism with many cells that has a nucleus and a membrane

3 Read the section "7. Cells have various ways of reproducing."

HOW does the image help you understand what happens during mitosis?

- (A) by showing the many ways cells can reproduce
- (B) by showing the two new cells that are created
- (C) by showing how binary fission and mitosis differ
- (D) by showing how cells are able to split in two

4 Read the section "2. There are two main types of cells."

What does the diagram in that section show about what prokaryotic and eukaryotic cells have in common?

- (A) Both have a nucleus enclosed in a membrane.
- (B) Both have ribosomes and a cell membrane.
- (C) Both have mitochondria and a capsule.
- (D) Both have a nucleoid in the center of the cell.