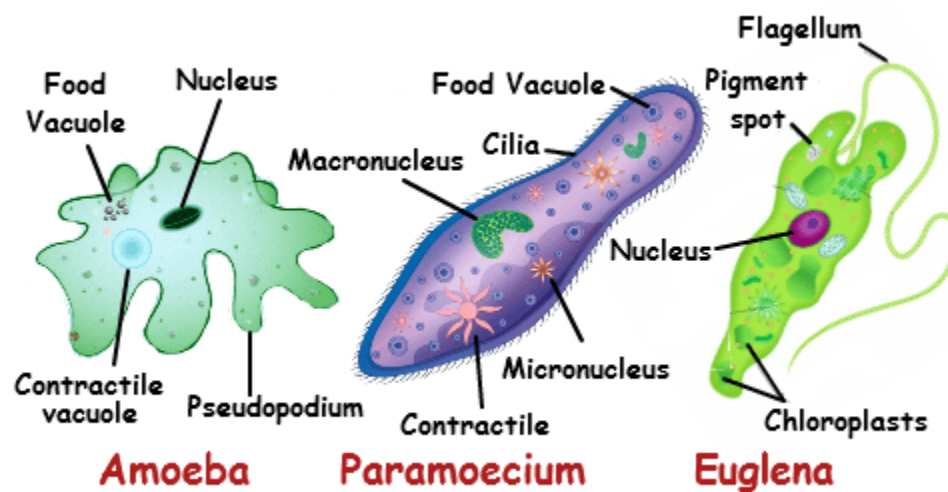


Unicellular Organisms

Unicellular organisms are known as single-celled organisms. They are made up of a single cell. Organisms like the amoeba, Paramecium are single-celled organisms, they are the oldest forms of life, they existed about 3.8 billion years ago. Bacteria, archaea, protozoa, unicellular algae and unicellular fungi are the main groups of unicellular organisms. The single-cell regulates all the activity of the organism. Unicellular organisms are small and are mostly invisible to the naked eye.

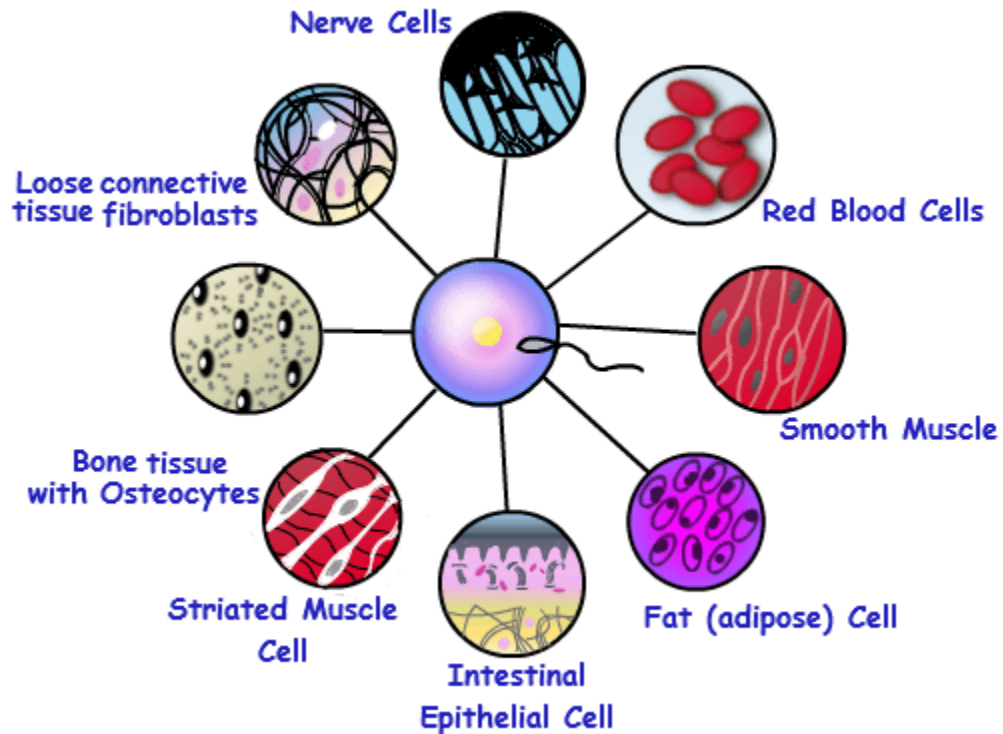
There are two general categories of unicellular organisms: prokaryotic and eukaryotic organisms. Prokaryotic unicellular organisms are protists and some fungi. Some of these unicellular prokaryotes live in colonies. They live together and all the cells of the colony are the same. All the processes of life are carried out in each cell in order for the cell to survive. Simplest multicellular organisms are made of cells that are dependent on each other for their survival. Most of the multicellular organisms are microscopic and are known as microscopic organisms.

Unicellular organisms vary in size. The smallest organism is a bacterium, which is only 300 nanometers and can range up to 20 cm. These organisms usually possess cilia, flagella or pseudopodia that help them in locomotion. They have simple bodies with basic features. Reproduction is both by asexual and sexual means. Nutrition is usually by the process of phagocytosis, where the food particle is engulfed and stored in vacuoles present in the organism.



Multicellular Organisms

Organisms that consist of more than one cell are known as multicellular organisms. Multicellular organisms are made up of more than one cell. These cells identify and attach to each other to form a multicellular organism. Most of the multicellular organisms are visible to the naked eye. Organisms like plants, animals and some algae arise from a single cell and they grow up into a multi-celled organism. Both prokaryotes and eukaryotes show multicellularity. True multicellular organisms regenerate a whole organism from germ cells.



Examples of Unicellular Organisms

Unicellular organisms are of two types Unicellular prokaryotic organisms and unicellular eukaryotic organisms

Unicellular prokaryotic organisms - they are unicellular in nature and they do not have membrane bound nucleus and membrane bound cellular organelles. These organisms are usually bacteria and cyanobacteria. Example: E.coli, Salmonella, Nostoc, etc.

Unicellular eukaryotic organisms - these organisms are unicellular and are eukaryotes. They have membrane bound true nucleus and other membrane bound organelles. These are mainly free living or aquatic parasites like the protozoans, some fungi and algae or some protists.

Examples of Multicellular Organisms

Multicellular organisms are of two types: Multicellular prokaryotes and multicellular eukaryotes.

Multicellular prokaryotes are mostly multicellular bacterial species like myxobacteria. Some cyanobacteria like Chara, Spirogyra, etc. are also multicellular prokaryotes. Sometimes these bacteria are considered as colonial instead of multicellular.

Multicellular eukaryotes - Most of the eukaryotic organisms are multicellular. These organisms have a well-developed body structure and they have specific organs to perform specific functions. Most plants and animals are multicellular.

Differences Between Unicellular and Multicellular Organisms

1:

Unicellular Organisms	Multicellular Organisms
Body of the organism is made up of a single cell.	The body of multicellular organism is made up of numerous cells.
Body organization is simple.	Organization is complex.
The function of the whole organism is carried out by a single cell.	Specialized functions are performed by different cells, tissues, organs or organ systems.
Usually prokaryotic in nature.	They are mostly eukaryotic in nature.
The body of the cell is exposed to the environment on all sides.	Outer cells face the environment.
Any injury to cell can cause death of the organism.	Injury or death of some cells does not affect the organisms, the affected cells are replaced.
A limit is imposed to the size of the cell by the surface area to volume ratio and hence it can attain large size.	Due to multicellularity the organism can attain large size.
Lifespan of the organism is usually short.	Organisms have a longer lifespan.
Reproduction is by vegetative/asexual methods.	Reproduction is sexual type.