

# Chapter Eight: Cellular Structure and Function

## Lesson 8.4: Homeostasis and Cells

In terms of numbers, unicellular organisms dominate life on Earth!

To maintain homeostasis, unicellular organisms grow, respond to the environment, transform energy, and reproduce.

- Prokaryotes like bacteria are remarkably adaptable living in soil, leaves, oceans, air.
- Eukaryotes like amoebas, algae, and yeasts (unicellular fungi) are common worldwide.

The cells of multicellular organisms become specialized for particular tasks and communicate with one another to maintain homeostasis.

- Just like in football or volleyball, players have specific jobs, so do the cells in multicellular organisms.

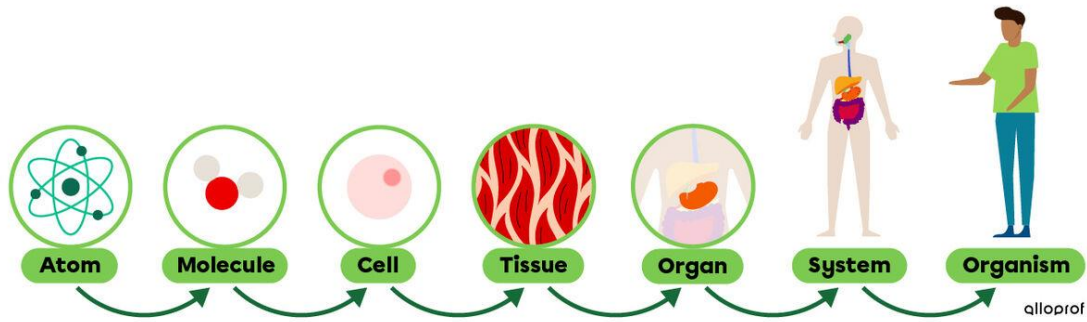
**Tissue:** group of similar cells that perform a particular function

**Organ:** group of tissues that work together to perform closely related functions

- The brain is an organ that is made up of nerve and fat tissues along with blood vessels.

**Organ system:** groups of organs that work together to perform a specific function

- The brain, spinal cord, and nerves throughout the body work together as the nervous system.



Specialization and interdependence (mutually reliant on each other) are two of the remarkable characteristics of living things.

**Receptor:** on or in a cell, a specific protein to whose shape fits a specific molecular messenger, such as a hormone

- Accepts and responds to molecular signals
- In animals, impulses are carried by nerve cells (or neurons) carrying messages rapidly from one part of the body to another.