

STRUCTURE

General structure
of a neuron



Part	Function
Cell body (soma)	Contains the nucleus and organelles; the site of integration of incoming signals.
Dendrites	Receive signals from other neurons and transmit them to the cell body.
Axon	Transmits signals away from the cell body to other neurons or muscles.
Myelin sheath	Insulates the axon and speeds up the transmission of signals.
Axon terminals	Release neurotransmitters to communicate with other neurons or muscles.

Neuron types
There are three main types of neurons: multipolar, bipolar, and unipolar.

Multipolar neurons
These neurons have one axon and multiple dendrites. They are the most common type of neuron in the brain and spinal cord.

Bipolar neurons
These neurons have two dendrites and one axon. They are found in the retina and the inner ear.

Unipolar neurons
These neurons have one dendrite and one axon. They are found in the dorsal root ganglia of the spinal cord.

Neuroglia
These cells support and protect neurons. They include astrocytes, oligodendrocytes, microglia, and ependymal cells.

Neurotransmitters
These chemical messengers transmit signals between neurons. They include acetylcholine, dopamine, serotonin, and GABA.

Neural pathways
These are the routes that signals take through the brain and spinal cord. They include the somatic motor pathway and the autonomic nervous system.

Neural plasticity
This is the ability of the brain to change and adapt to new information and experiences. It involves the formation of new neural connections and the strengthening of existing ones.

Neural development
This is the process by which the nervous system develops from a single-celled zygote to a complex, multi-celled organism. It involves the differentiation of neural stem cells into various types of neurons and neuroglia.