

## Human Body Systems

Every cell in the human body is both an independent and interdependent part of a larger community.

Eleven organ systems of the body work together to maintain homeostasis.

### Maintaining Homeostasis

Non-living example: Heat drops below a certain level, thermostat switches furnace on and heats house, when temperature increase thermostat turns the furnace off.

The heating system controlled by feedback inhibition (process by which the product of a system shuts down the system).

Same idea hold true in body.

Nervous System: Controls and coordinate functions throughout the body and responds to internal and external stimuli.

Neurons are cells that transmit electrical signal called impulses.

3 types of neurons:

Sensory: carry impulses from sense organs to brain and spinal cord.

Motor: carry impulses from brain and spinal cord to muscles and glands

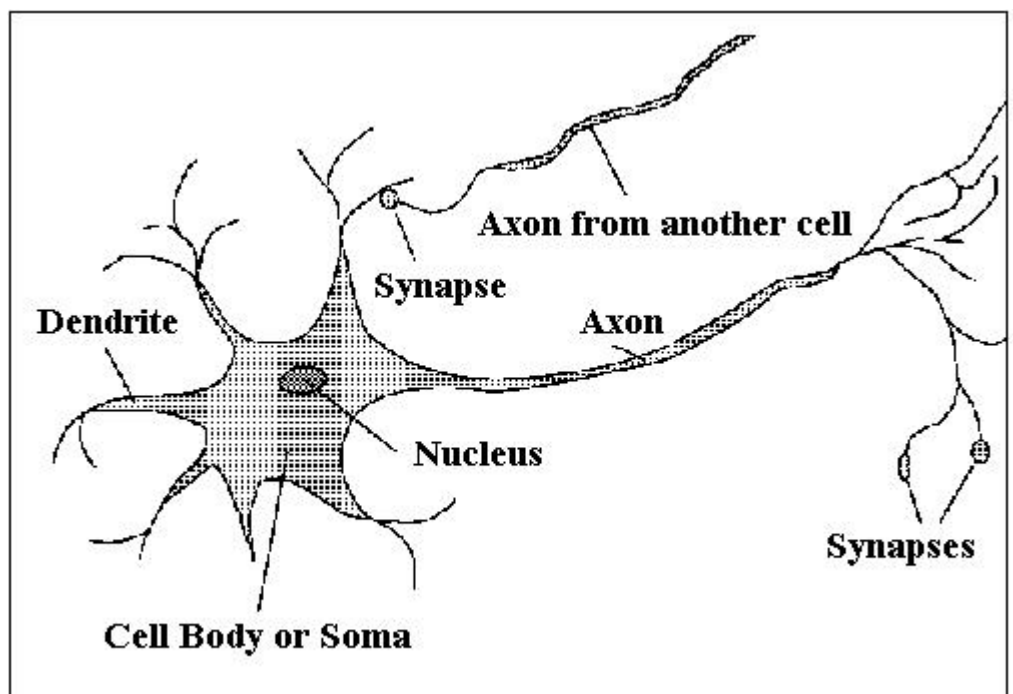
Interneuron: connects sensory and motor neurons.

Cell body: largest part of neuron and contains nucleus and cytoplasm.

Dendrites: short, branched extension that carry impulses.

Axon: long fiber that carries impulses away from the cell body.

Myelin sheath: insulating membrane.



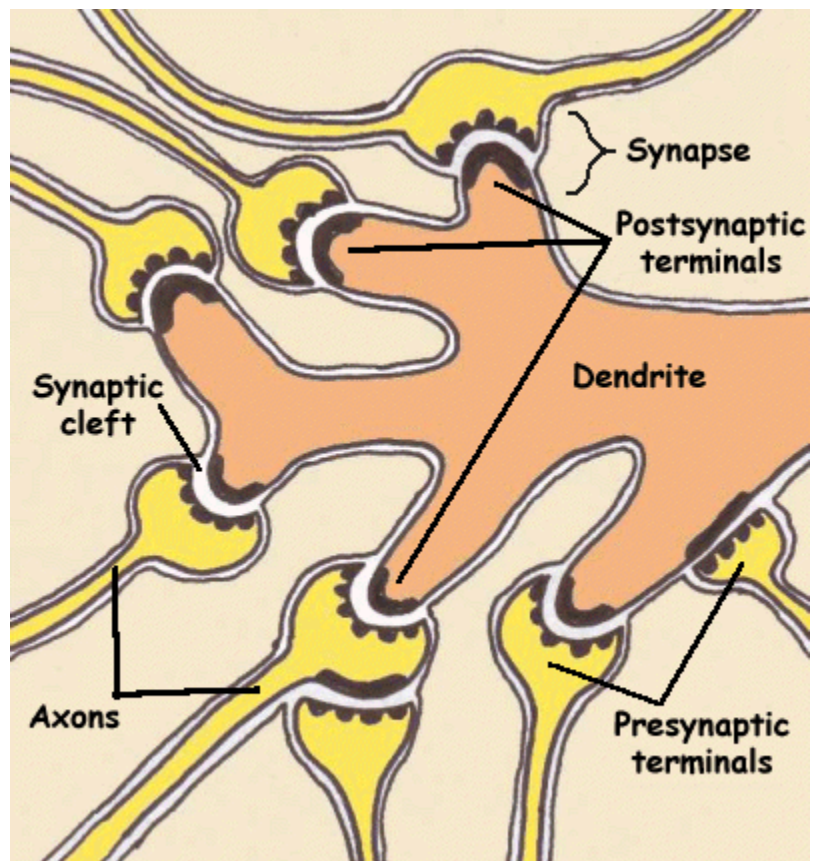
Location at which a neuron can transfer an impulse to another cell is called a synapse.

Axon of 1 cell and dendrites of another are NOT connected!

Neurotransmitters are chemicals used by the neuron to transmit an impulse across the synapse.

### Divisions of the Nervous System (NS)

Central NS (CNS) relays messages, processes and analyzes information.



CNS consists of the brain and spinal cord.

Meninges are connective tissue for the brain and spinal cord.

Cerebrospinal fluid acts like a shock absorber for the CNS.