# Chapter 37-38.2 – The Nervous System

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| Learning Objectives: **Students should be able to;** * Explain and describe the structure and function of a neuron
* Explain how action potentials propagate impulses along neurons.
* Describe how information is transmitted between neurons across synapses via neurotransmitters.
* Explain how transmission of information across neurons leads to a response that is either stimulatory or inhibitory.
* Describes how the nervous system detects external and internal signals.
* Explain how different regions of the vertebrate brain have different functions. Ex: vision, hearing, muscle movement, emotions, etc.
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 **Academic Vocabulary**

Cell body Glia Peripheral Nervous System Ion channels

Dendrites Sensory neurons Nerves Equilibrium Potential

Axon Interneurons Membrane Potential Gated Ion Channel

Synapse Motor neurons Resting Potential Hyperpolarization

Neurotransmitters Central Nervous System Depolarization

Sodium Potassium Pump Refractory period Saltatory conduction Spatial summation

Graded Potential Myelin sheath Ligand-gated ion channel Acetylcholine

Action Potential Oligodendrocytes Excitatory postsynaptic potential Glutamate

Voltage-gated ion channel Schwann cells Inhibitory postsynaptic potential GABA

Threshold Nodes of Ranvier Temporal summation Norepinephrine

Dopamine Gray Matter Parasympathetic division Cerebellum

Serotonin White Matter Forebrain Cerebrum

Endorphins Motor System Midbrain Cerebral hemispheres
Astrocytes Autonomic nervous system Hindbrain Cerebral cortex

Reflexes Sympathetic division Brainstem Corpus callosum

Thalamus

Hypothalamus

Pons

Medulla Oblongata

Biological clock