Nervous system

Network of nerve cells and fibers that transmits nerve impulses between parts of the body

Central Nervous System

CNS

Consists of the brain and spinal cord

Peripheral Nervous System

PNS

System that carries nerve impulses to and from the CNS

Somatic Nerves

Major functions of the **somatic nervous system** include voluntary movement of the muscles and organs and reflex movements

Autonomic Nerves

Part of the nervous system responsible for control of the bodily functions not consciously directed, such as breathing, the heartbeat, and digestive processes

Sensory Neurons

Relay sensory information from the environment to the CNS

Interneurons

Interpret sensory information and connect to outgoing motor neurons

Motor Neurons

Carry responses to effectors (muscles and glands)

Dendrite

A short branched extension of a nerve cell, along which impulses received from other cells at synapses are transmitted to the cell

Axon

The long threadlike part of a nerve cell along which impulses are conducted from the cell body to other cells

Cell Body

The nucleus-containing central part of a neuron

Myelin Sheath

Consists of fat-containing cells that insulate the axon from electrical activity. This insulation acts to increase the rate of transmission of signals. A gap exists between each myelin sheath cell along the axon. Since fat inhibits the prop agation of electricity, the signals jump from one gap to the next

Neurilemma

The thin sheath around a nerve axon (including myelin where this is present)

Polarized Membrane

Has a positive charge outside the cell membrane and a negative charge inside

Depolarization

Caused by movement of positive ions into the cell

Refractory Period

Amount of time required for a cell to become repolarized

Neurotransmitters

Transmit messages across synapses(Space between neurons)

Acetycholine

Neurotransmitter that causes sodium channels to open

Cholinesterase

Enzyme that removes Acetylcholine allowing repolarization

Threshold Levels

Minimum level of stimulus required to initiate a response

All or None Response

Nerves respond fully or not at all

Hyperpolarized

Neurons with a strong positive charge outside the cell membrane

Summation

Cumulative action of 2 or more neurons to stimulate another

Parasympathetic

Calming

Sympathetic

Arousing

Dura Matter

Arachnoid Matter

Pia Matter

Outer layer

Middle layer

Inner layer

Membranes surrounding the brain

Frontal Lobe

Reasoning, logic, language, personality, motor skills

Occipital Lobe

Vision

Temporal Lobe

Sound, Language

Parietal

Touch, pressure, pain

Cerebrum

Speech, reasoning, memory, personality

Medulla Oblongata

Involuntary actions such as breathing

Cerebellum

Limb movements and balance