Concept Map: The Organization of the Nervous System KEY

The Nervous System

Central Nervous System (CNS)

- receives and processes information
- initiates action

Interneuron (association neuron)

- located entirely within CNS
- short dendrites
- axons long or short
- conveys messages between system parts in CNS

Brain

- receives and processes sensory information
- initiates responses
- stores memories
- generates thoughts and emotions

Spinal Cord

- conducts signals to and from the brain
- controls reflex activities

Peripheral Nervous system (PNS)

• transmits signals between the CNS and the rest of the body

Motor Neurons

- carry signals from the CNS that control the activities of muscles and glands
- short dendrite
- long axon
- cell body positioned inside the CNS

Sensory Neurons

- carry signals to the CNS from sensory organs
- long dendrite
- short axon
- cell body is outside CNS in ganglia

Somatic Nervous System

• controls voluntary movements by activating skeletal muscles

Autonomic Nervous System

controls involuntary responses by influencing organs, glands, and smooth muscle

Medulla Oblongata:

- breathing, heartbeat, reflexes **Cerebrum**
- consciousness

Thalamus

• gatekeepers to the cerebrum,

Cerebellum

• maintaining/restoring balance

Hypothalamus

- maintains the homeostasis
- links the nervous system with the endocrine system

Corpus callosum

• connects the two cerebral hemispheres to share info

- 1. dilates pupils
- 2. accelerates heartbeat and breathing rate
- 3. inhibits digestive tract blood flow & peristalsis
- 4. increases blood flow to skeletal muscle and CNS

Sympathetic Nervous System

- prepares the body for stressful or energetic activity
- "fight or flight" response
 - neurotransmitter -Noradrenalin

Parasympathetic Nervous System

- dominates during times of rest
- directs maintenance activities
- neurotransmitter -Acetylcholine