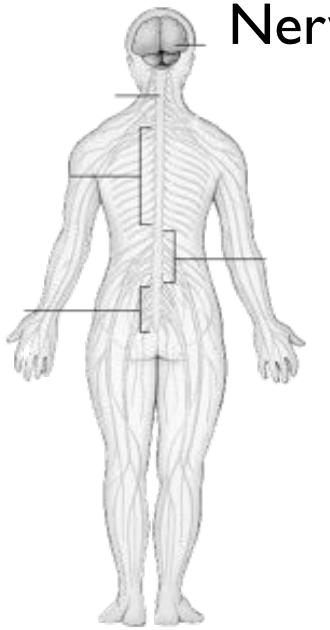
Lab 7

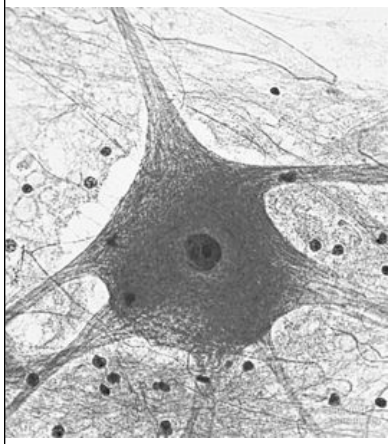
Nervous System
Ex 17,19



Nervous System

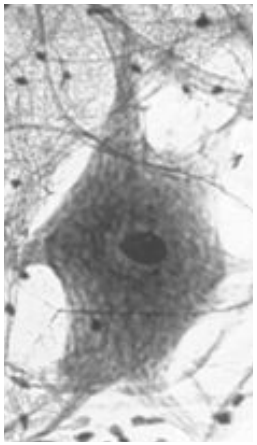
- Central Nervous System (CNS)
  - brain and spinal cord
  - integration
- Peripheral Nervous System (PNS)
  - all nervous tissue outside the CNS
    - nerves
    - sensory receptors

Nervous Tissue



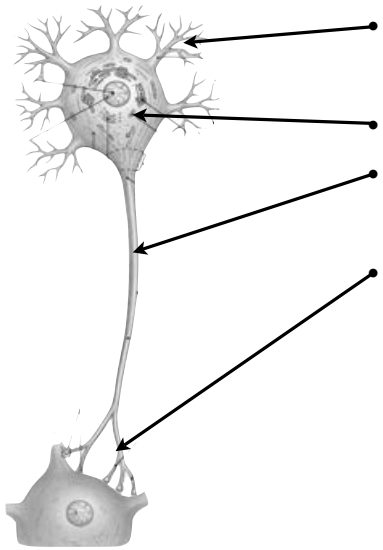
- Neurons
  - carry information "signals" called action potentials
    - electrical signals
- Neuroglia
  - support cells of the nervous tissue
    - physical support
    - cellular defenses
    - exchange nutrients, gasses

Neurons



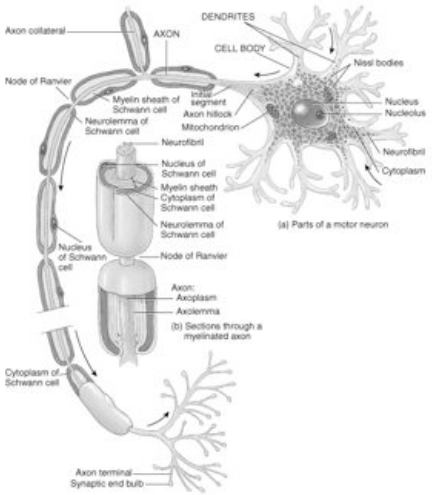
- Cell body
  - neurofibrils
  - nucelus

Neurons



- Dendrites
  - carry signals in to cell body
- Cell Body
- Axon
  - Carries signal out of cell body
- Axon Terminals
  - communicates with other cell's dendrites via a synapse

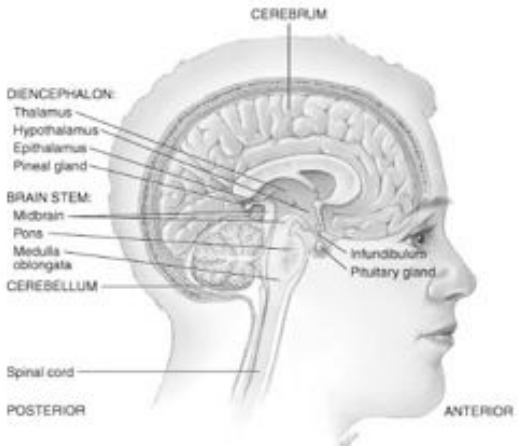
Neurons



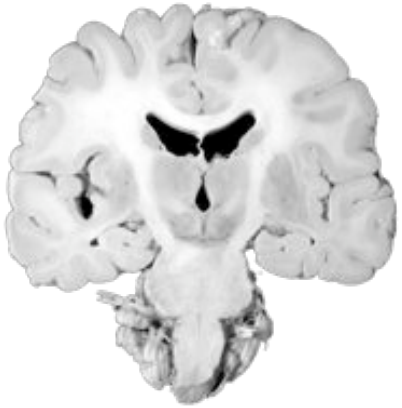
- Schwann Cells
  - glial cells that coat an axon with a substance called myelin
    - forms the myelin sheath
      - acts as an insulator which allows the signal to travel faster

Brain

- Cerebrum
- Diencephalon
- Brain Stem
- Cerebellum



Brain



- Gray Matter
  - areas of the brain that is composed of cell bodies and no myelin
  - information integration
- White Matter
  - areas of the brain that contain only myelinated axons
  - information traveling in tracts
    - corpus callosum

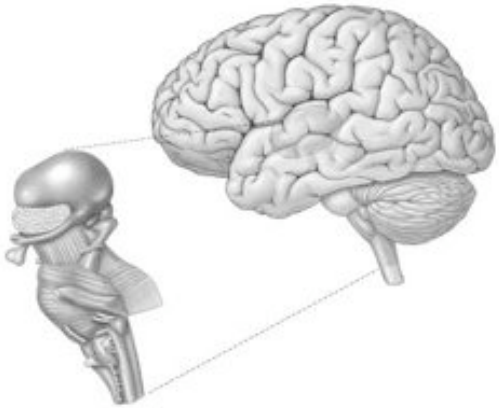
Brain

- Sulcus
  - depressions in the surface of the brain
- Gyrus
  - elevations on the surface of the brain
- help to increase the gray-matter surface area inside of the skull

Cerebrum

- Hemispheres
  - right and left
- Lobes
  - frontal
  - parietal
  - temporal
  - occipital

Diencephalon



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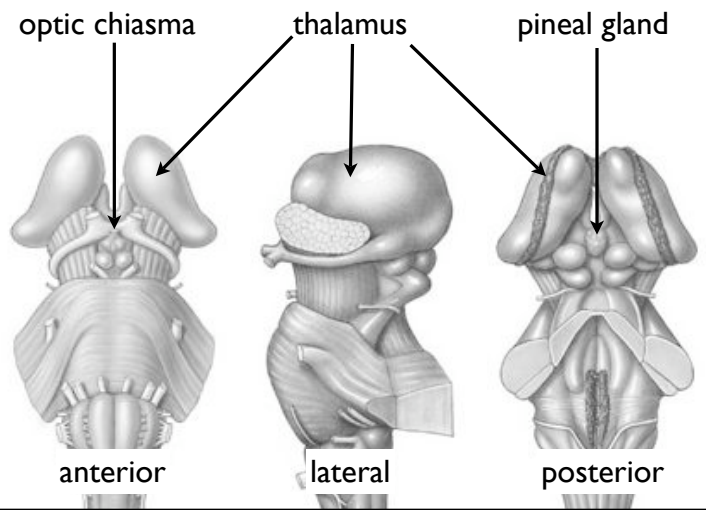
Diencephalon



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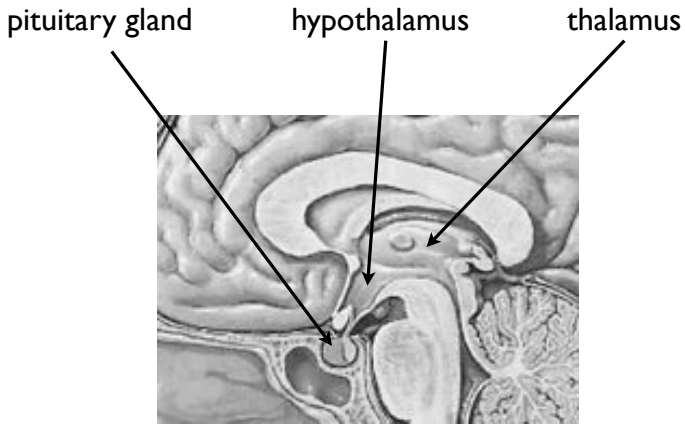
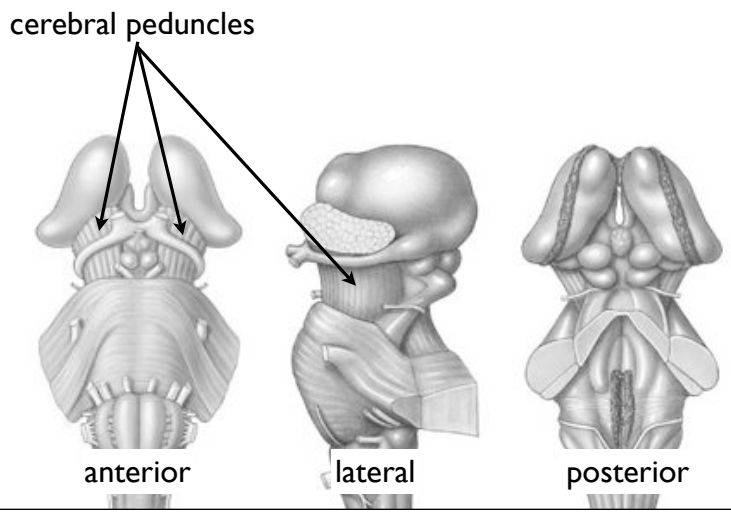
Diencephalon



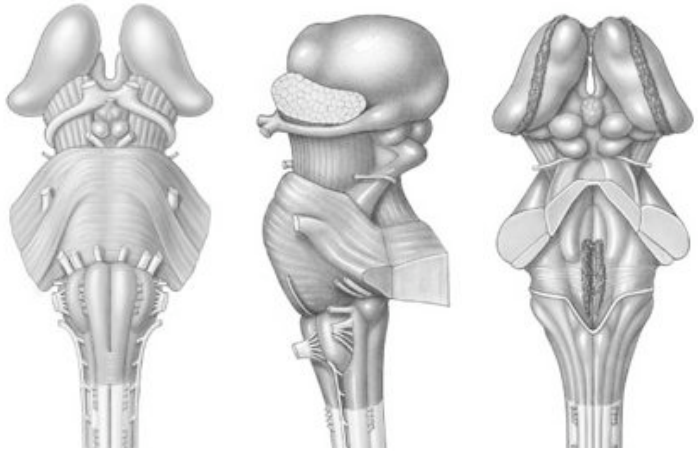
Brain Stem

midbrain



Brain Stem

pons



anterior lateral posterior

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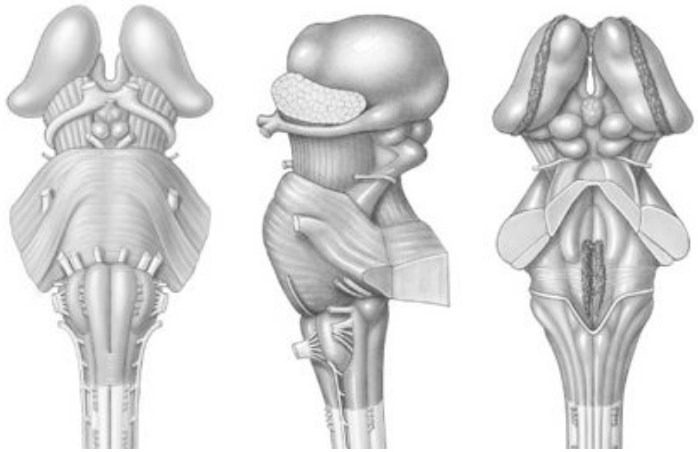
Brain Stem

medulla



anterior lateral posterior

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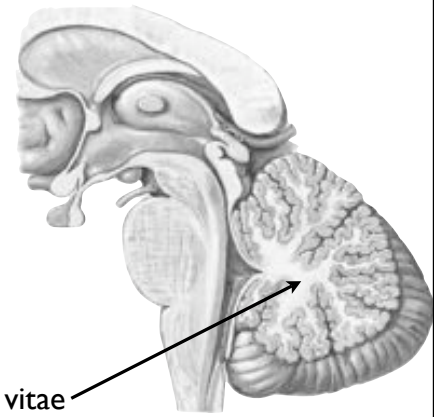
Cerebellum



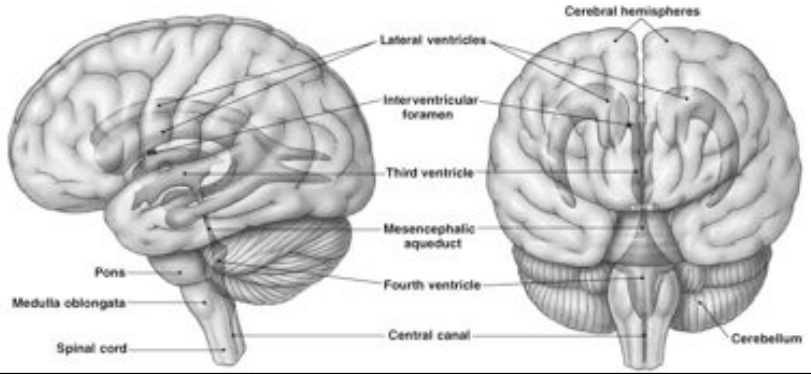
arbor vitae
- white matter

Meninges

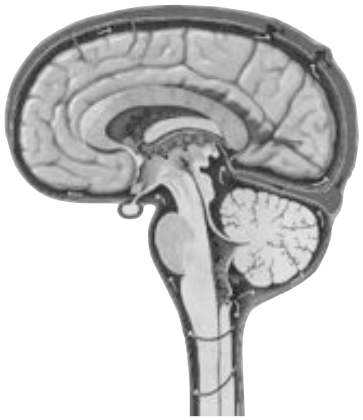
- Three membranes that cover and protect the brain and spinal cord
  - dura mater
    - the tough, outermost meningeal layer

Ventricles

- Spaces within the brain
  - 2 lateral
  - 3rd
  - 4th



Cerebrospinal Fluid



- Fluid produced in ventricles and circulates around the brain and spinal cord
  - floats and cushions the delicate neural tissue