

University of Cihan-Sulaimaniya
College of Science
Department of ANS
Second year students



Human Anatomy

Week Eight

Nervous system

23 – 11 - 2024

Functions of Nervous System

- **Sensory Function**

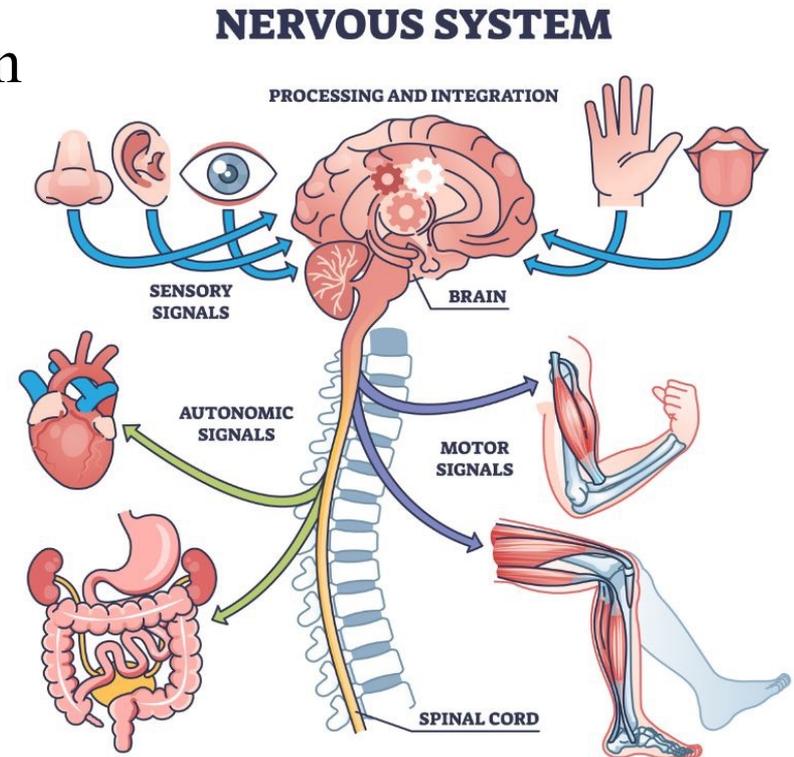
- Sensory receptors gather information
- Information is carried to the CNS

- **Motor Function**

- Decisions are acted upon
- Impulses are carried to effectors

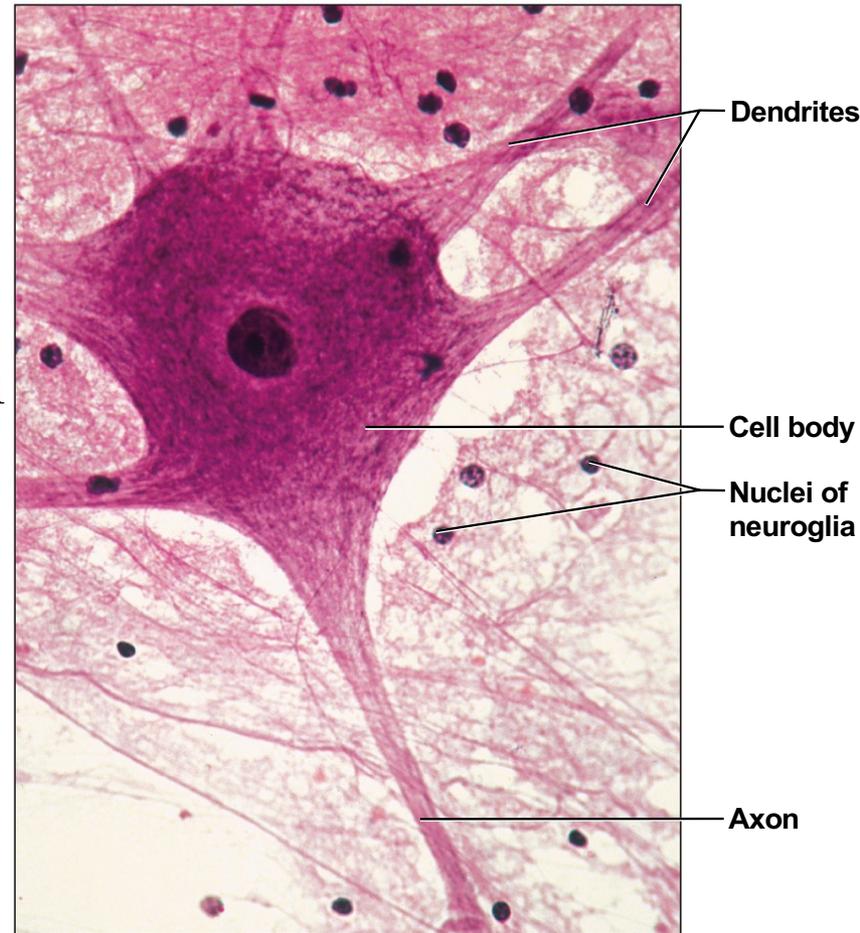
- **Integrative Function**

- Sensory information used to create:
 - Sensations
 - Memory
 - Thoughts
 - Decisions

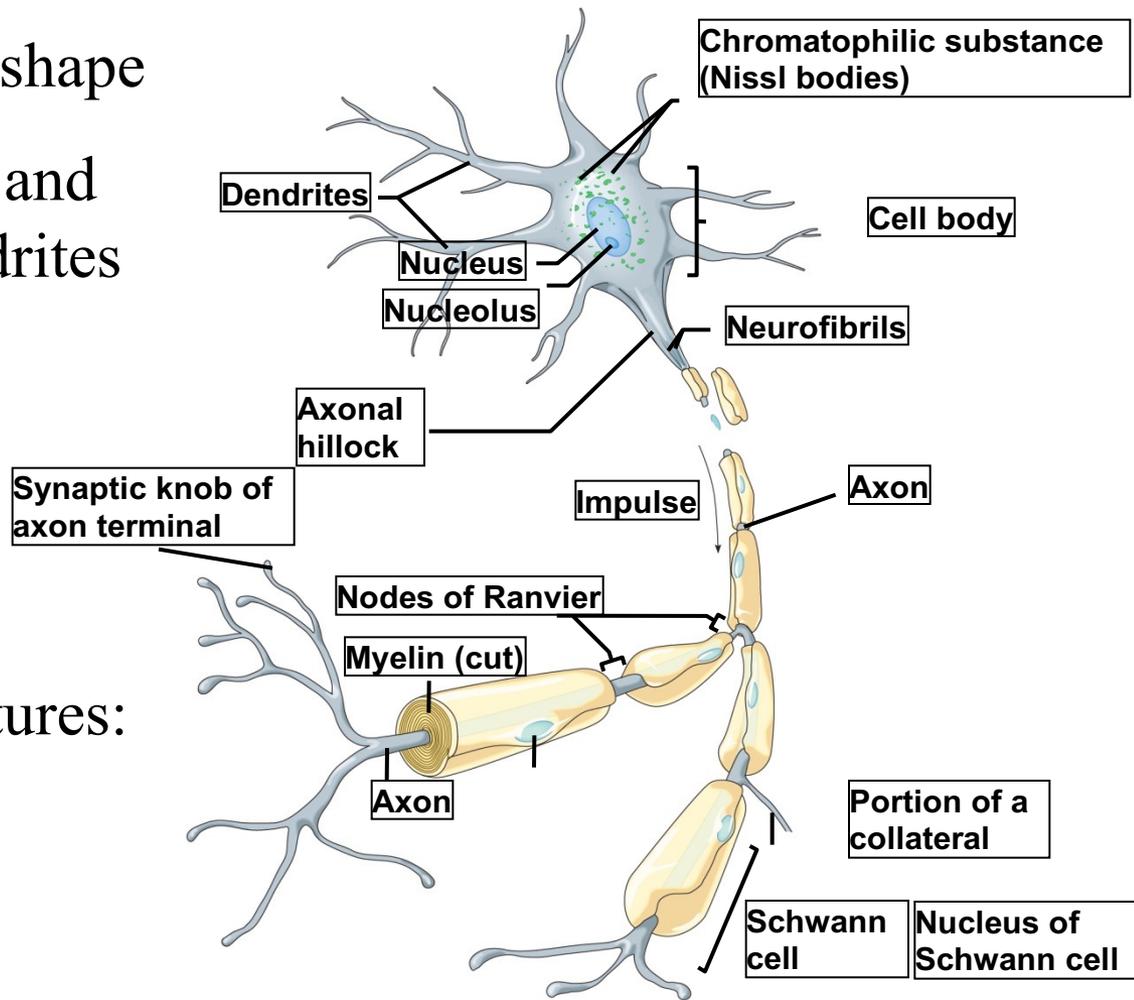


Nervous System

- Cell types in neural tissue:
 - **Neurons**; is the basic structural, functional unit of the nervous system
 - **Neuroglial cells** (also known as neuroglia, glia, and glial)



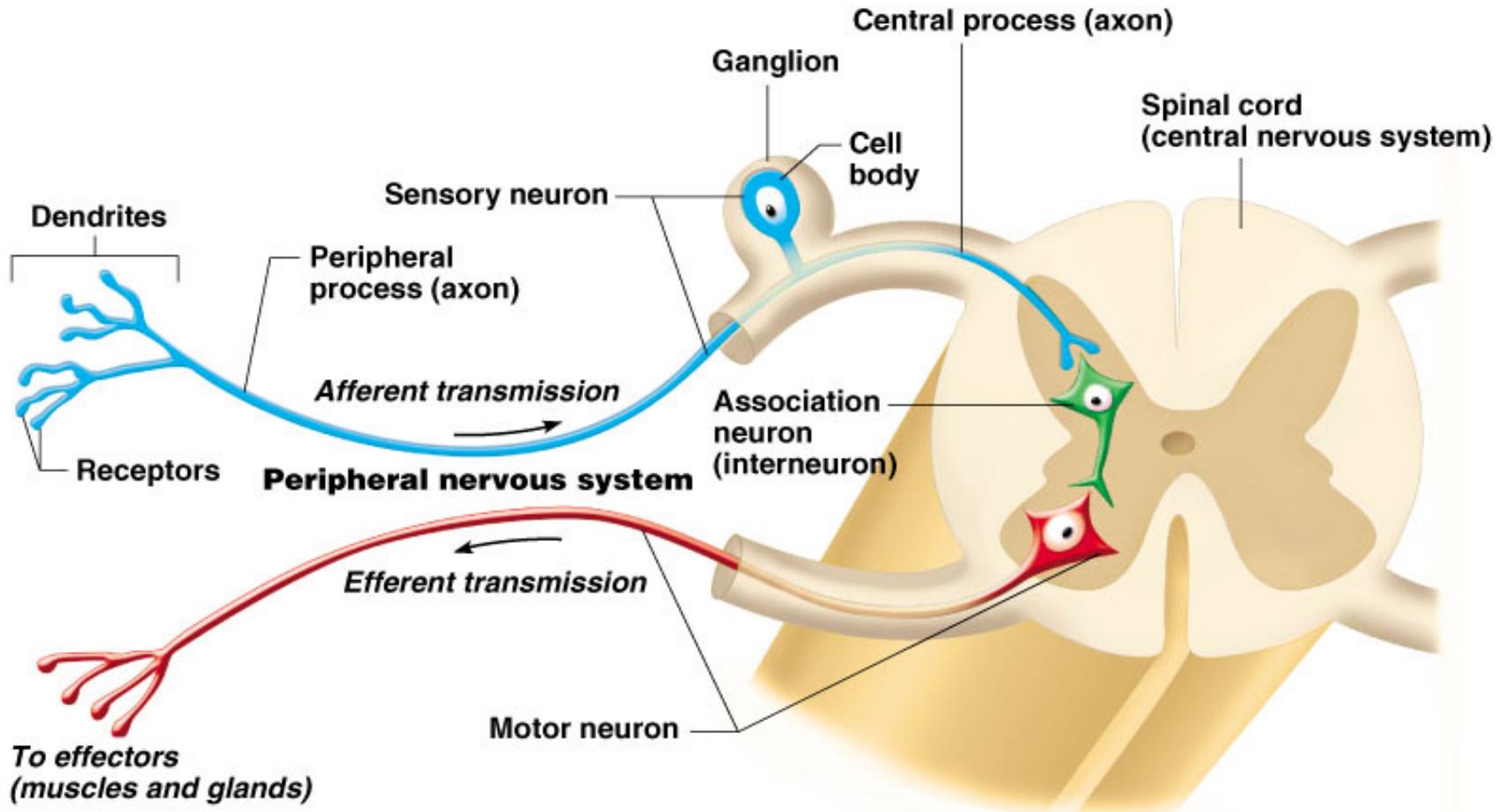
- **Neurons** vary in size and shape
- They may differ in length and size of their axons and dendrites



- Neurons share certain features:
 - Dendrites
 - A cell body
 - An axon

Types of Neuron

- 1- Sensory neuron
- 2- Motor neuron
- 3- Associated or interneuron



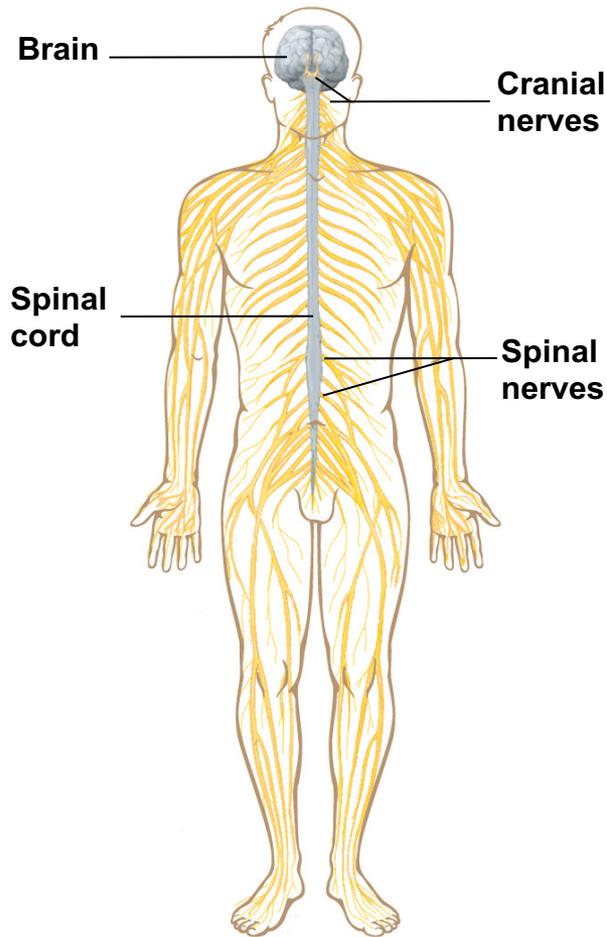
Divisions Nervous System

Central Nervous System (CNS)

- Brain
- Spinal cord

Peripheral Nervous System (PNS)

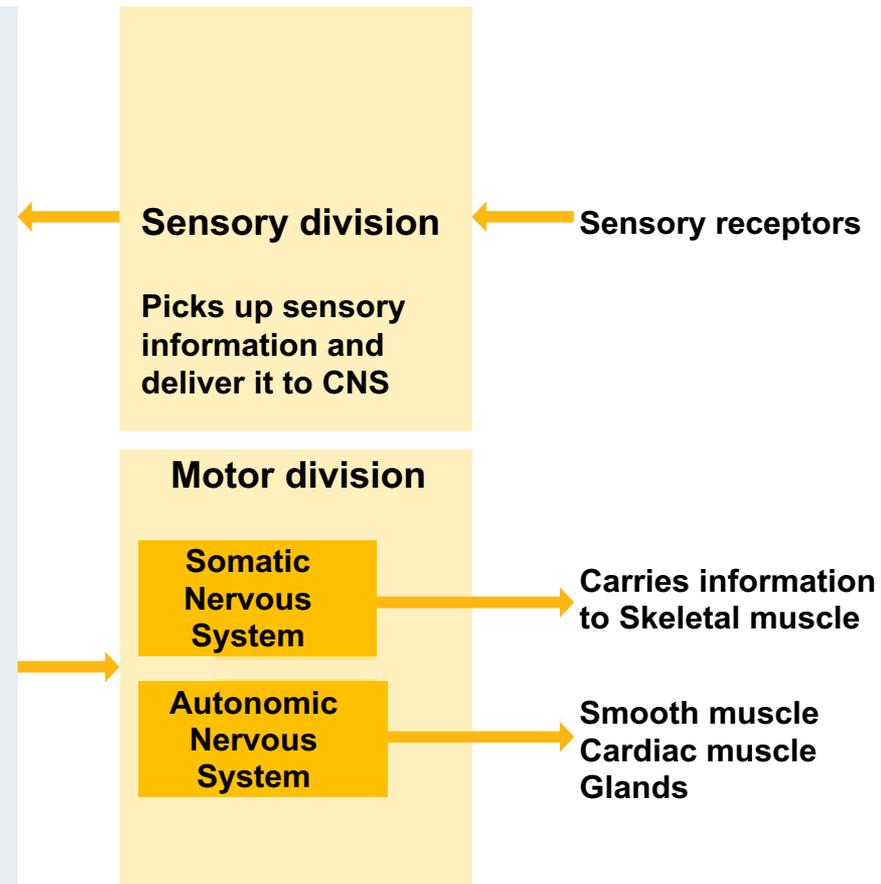
- Cranial nerves
- Spinal nerves



Central Nervous System (brain and spinal cord)



Peripheral Nervous System (cranial and spinal nerves)



THE HUMAN BRAIN

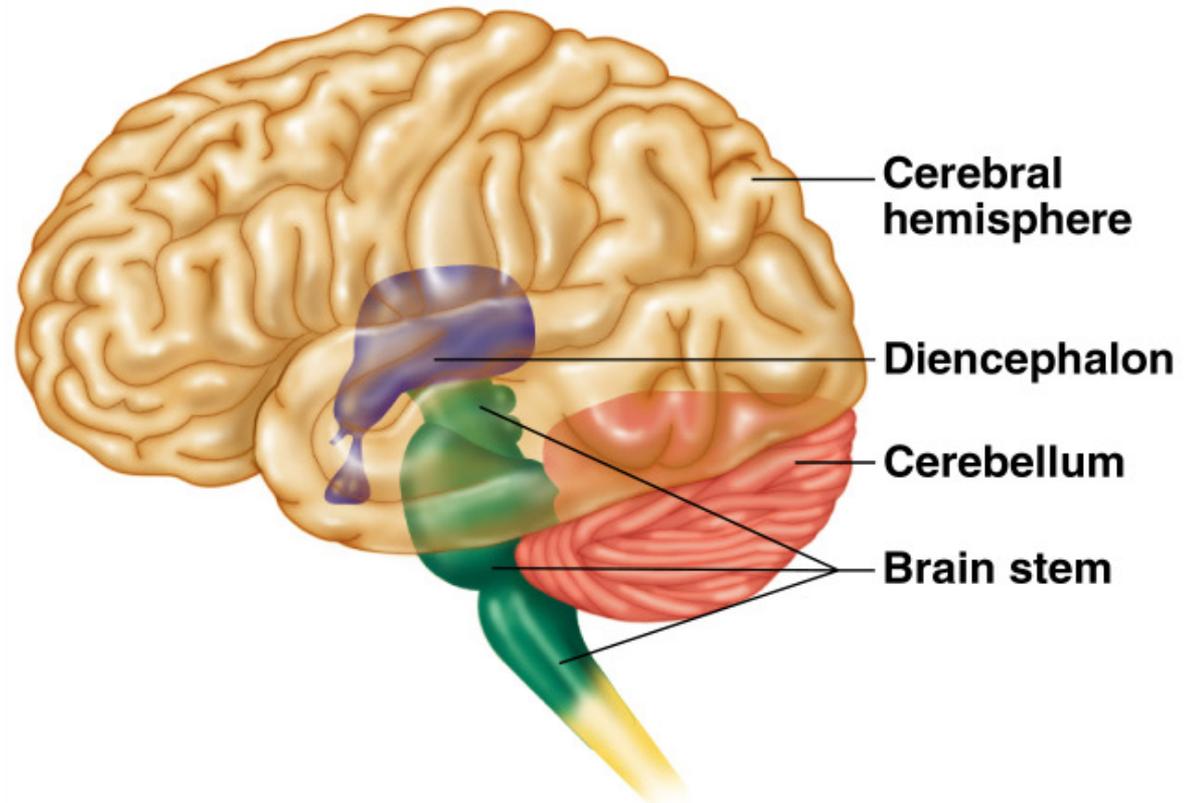
The human brain has three major subdivisions: brainstem, cerebellum, and cerebrum.

1- The Brainstem; The brainstem is the basal portion (portion of the base) of the brain. The brainstem can be divided as following:

- Midbrain
- Pons
- Medulla oblongata

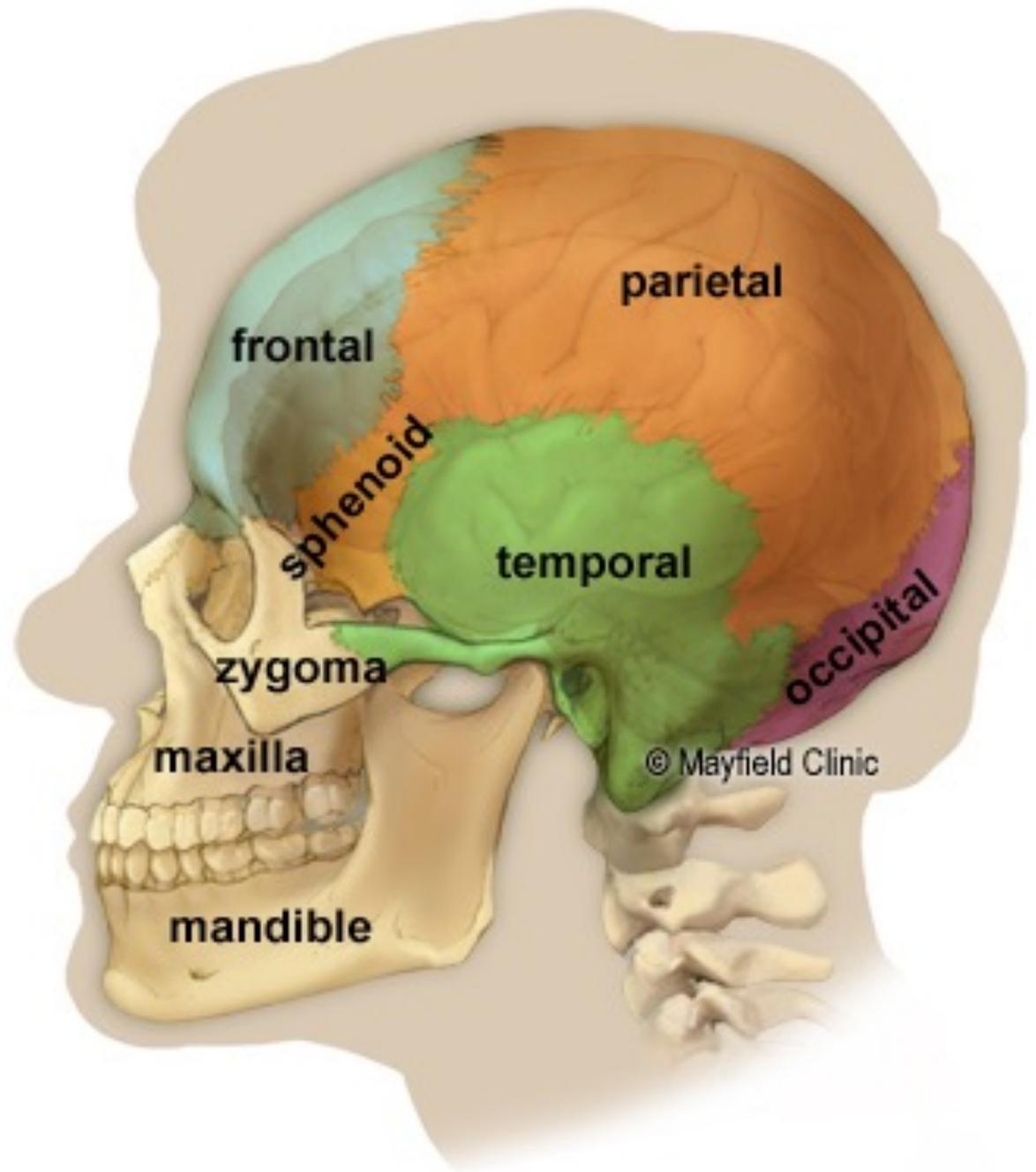
2- The cerebrum

3- The cerebellum



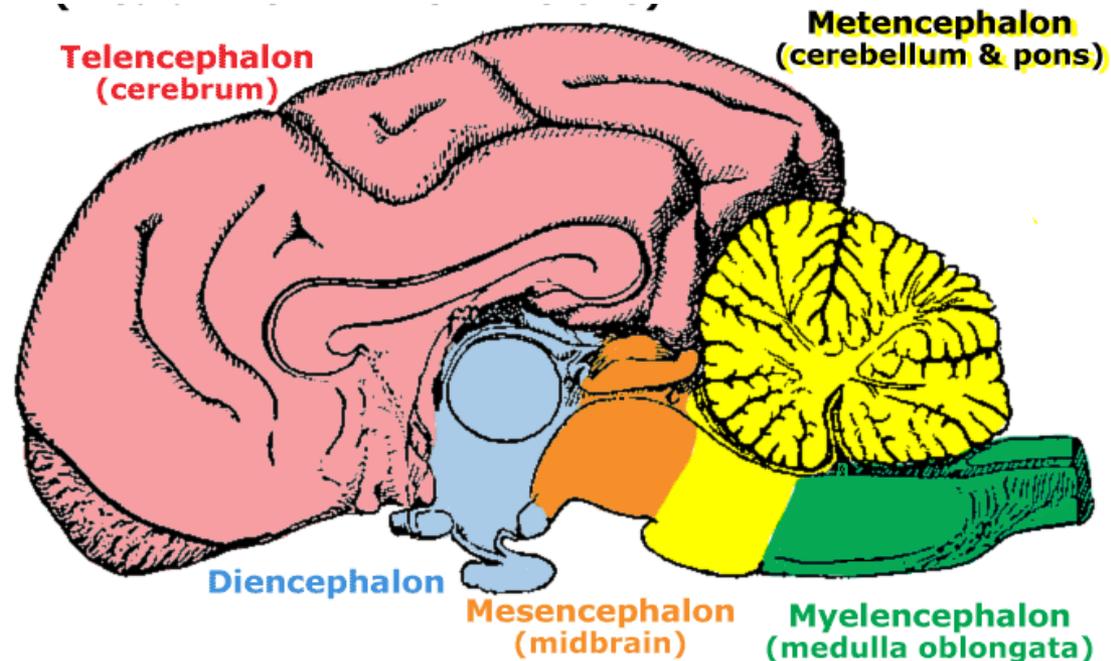
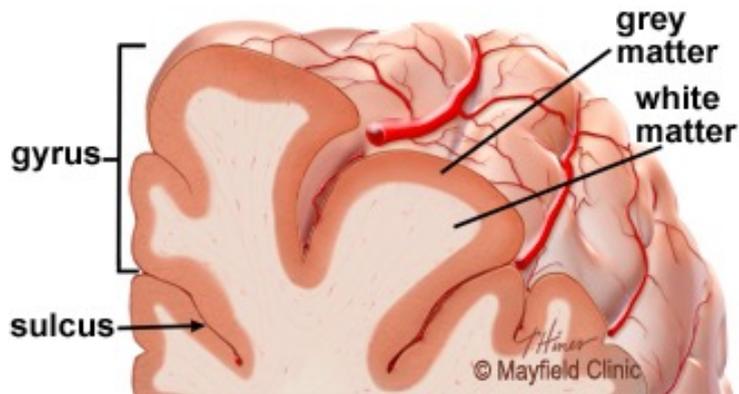
Lobes of cerebrum

- 1- Frontal lobe
- 2- Sphenoid lobe
- 3- Parietal lobe
- 4- Temporal lobe
- 5- Occipital lobe

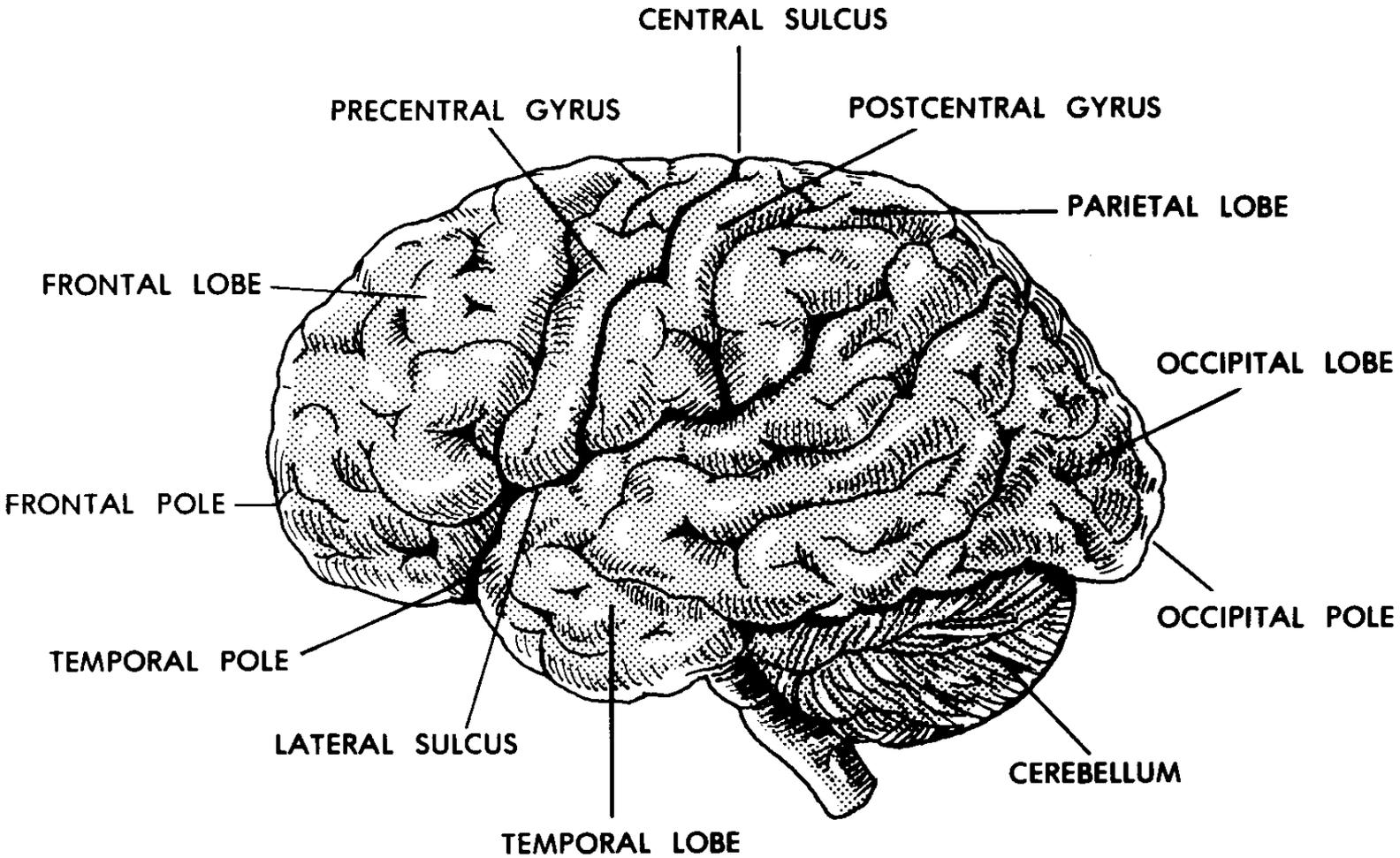


Division of Brain

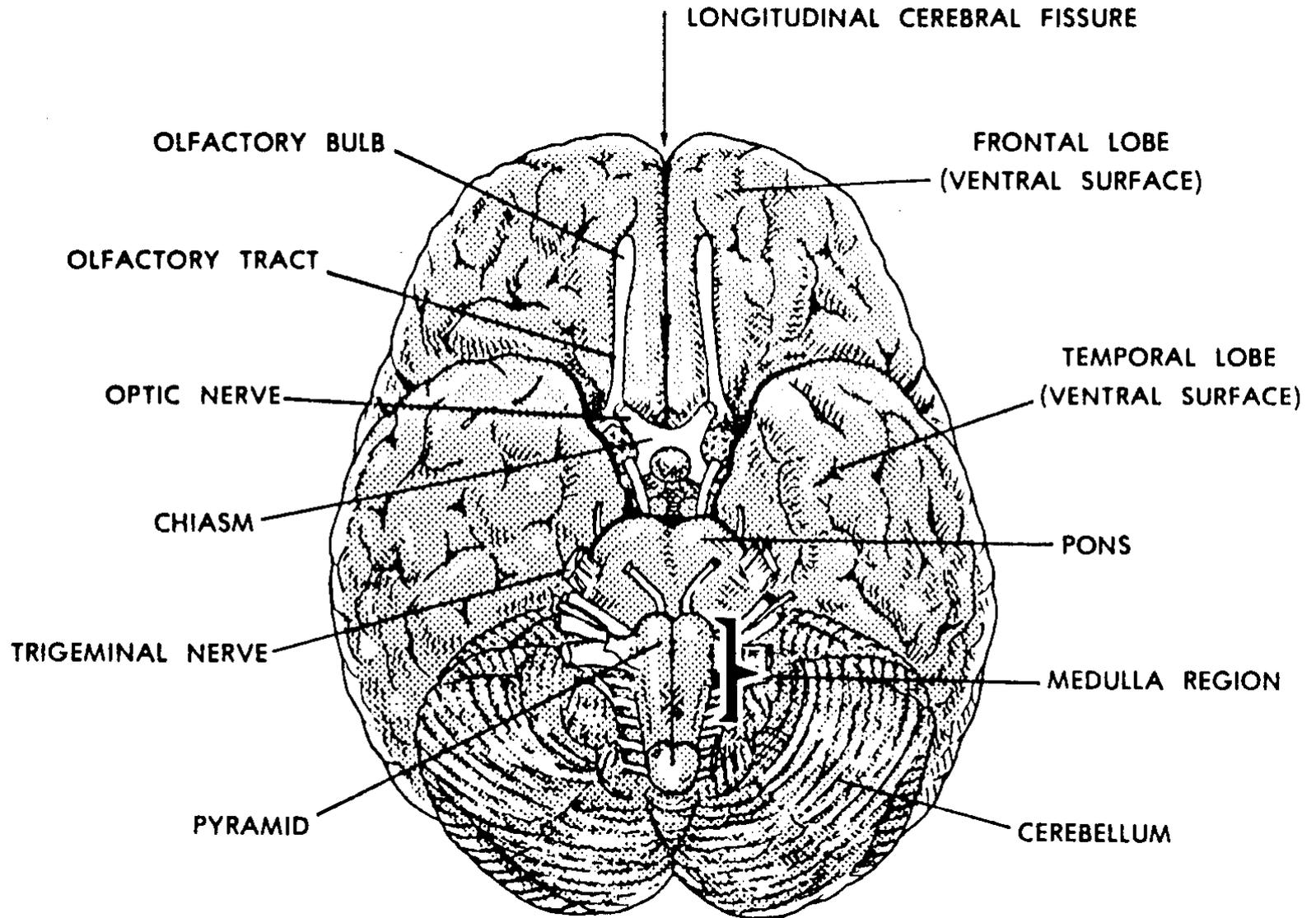
Embryonic Brain Division	Derived Brain Structures	Definitive Brain Cavities	Associated Cranial Nerves
FOREBRAIN Telencephalon Diencephalon	Cerebrum Thalamus, Hypothalamus,...	Lateral ventricles Third ventricle	Olfactory (I) Optic (II)
MIDBRAIN Mesencephalon	Midbrain	Corpora quadrigemina Mesencephalic aqueduct	III & IV
HINDBRAIN Metencephalon Myelencephalon	Pons & Cerebellum Medulla oblongata	Fourth ventricle Fourth ventricle	Trigeminal (V) VI - XII



Lateral view of the brain



Ventral view of the brain



Median section of the brain



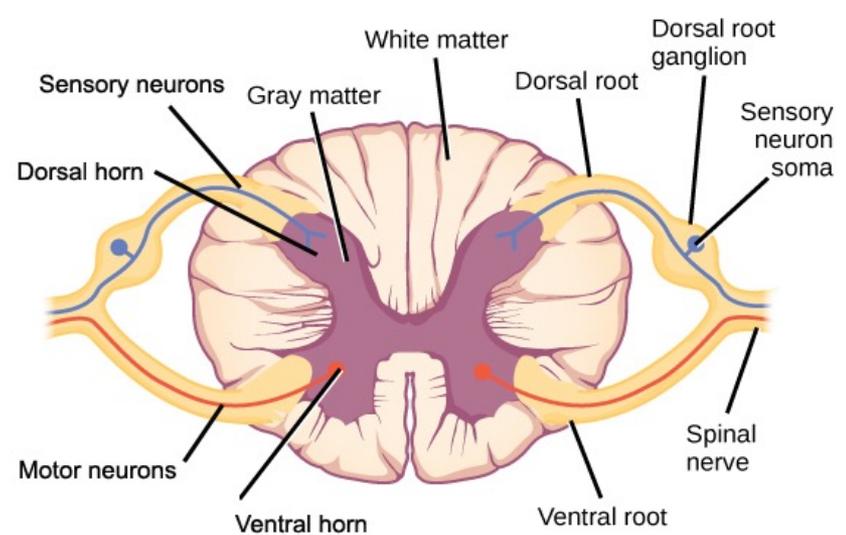
Cross section of the spinal cord

1- Grey mater

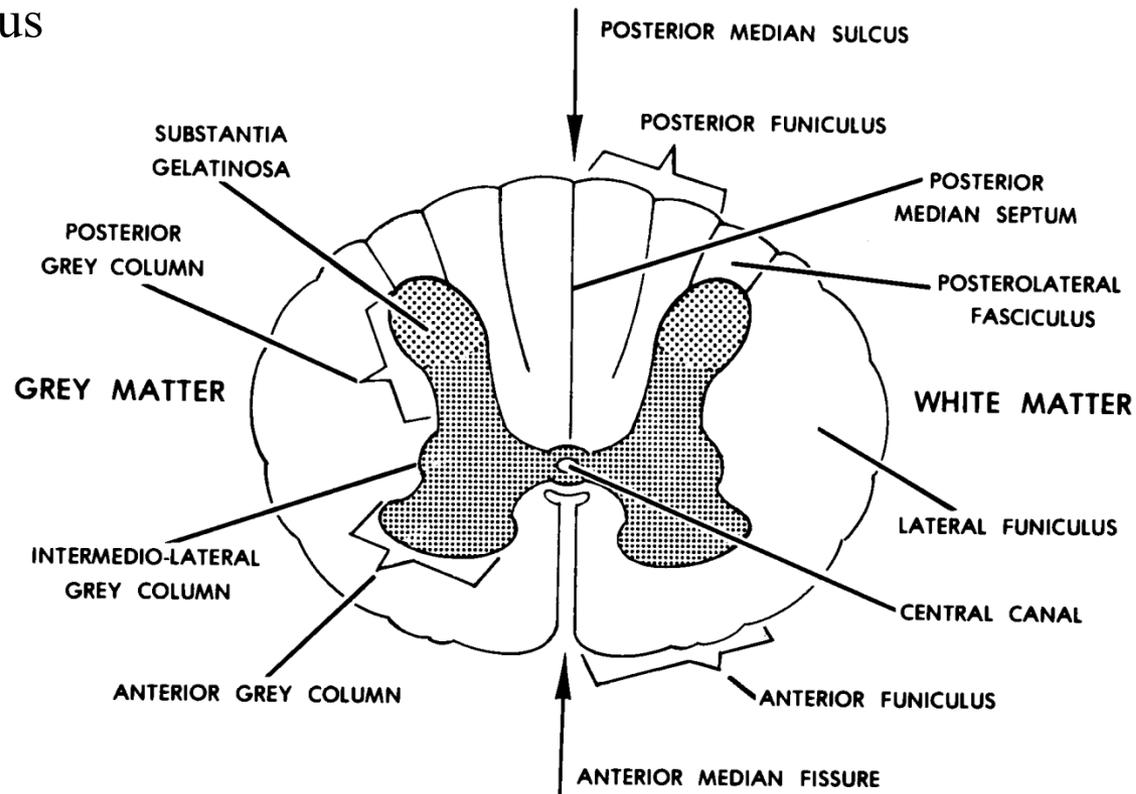
- Anterior grey column (right and left)
- Intermedio-lateral grey column
- Posterior grey column (right and left)
- Central canal

2- White mater

- Anterior median fissur
- Posterior median sulcus
- Anterior funiculus
- Posterior funiculus
- Lateral funiculus



Cross Section of Spinal Cord

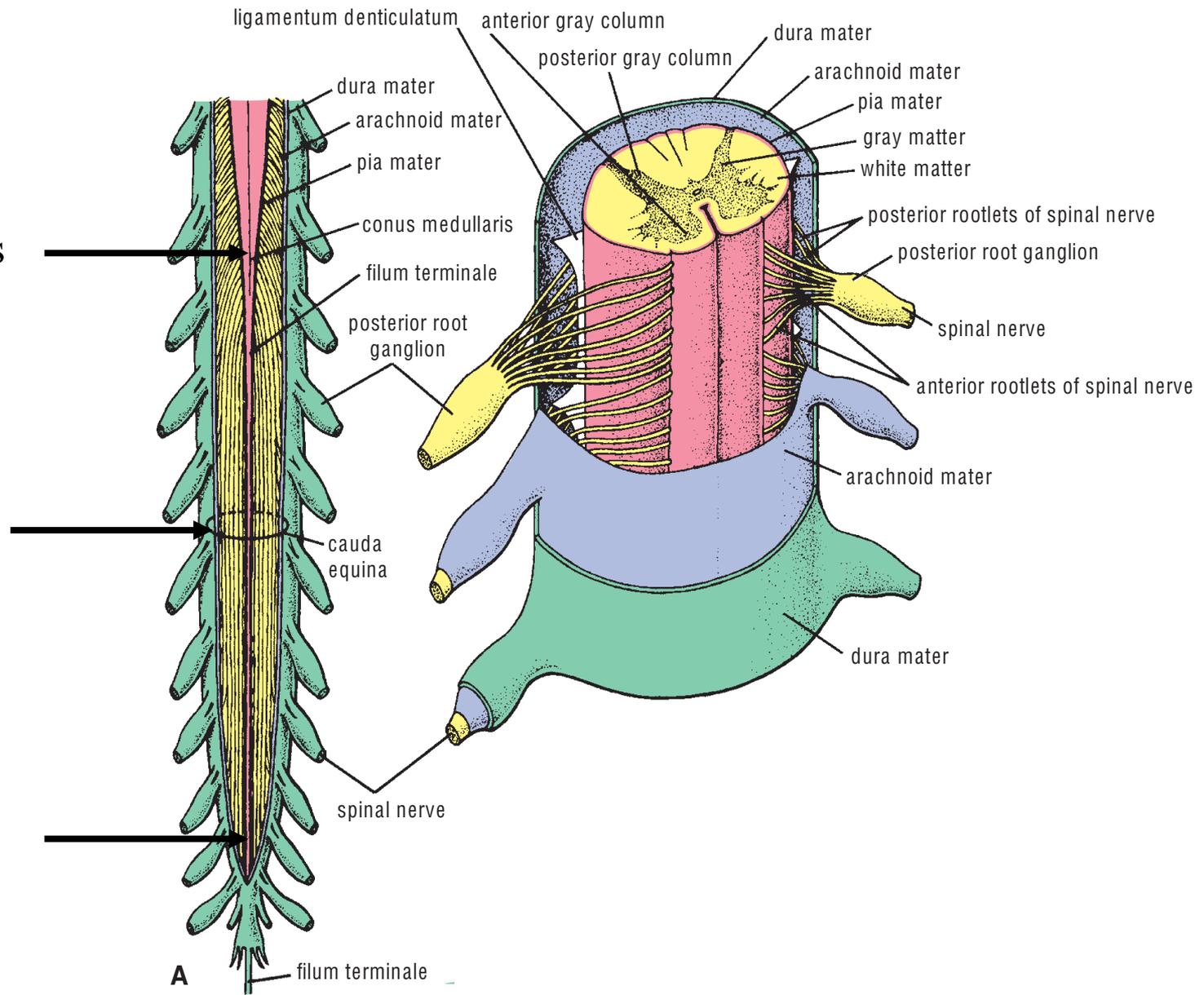


Spinal cord

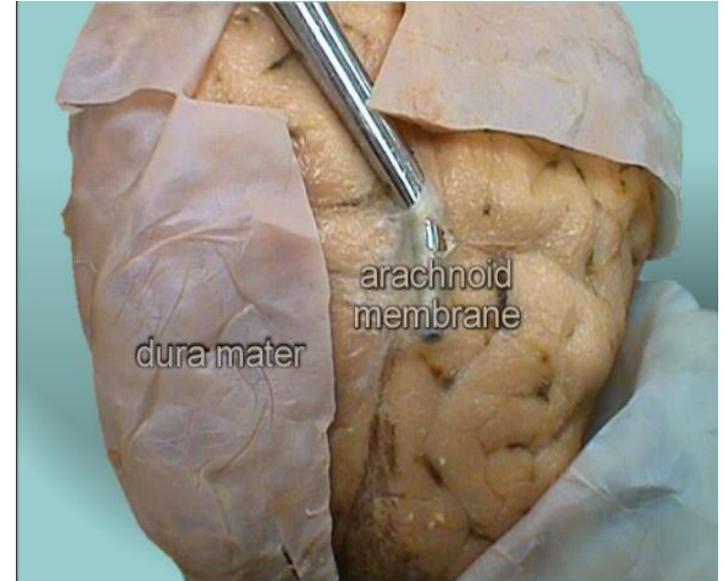
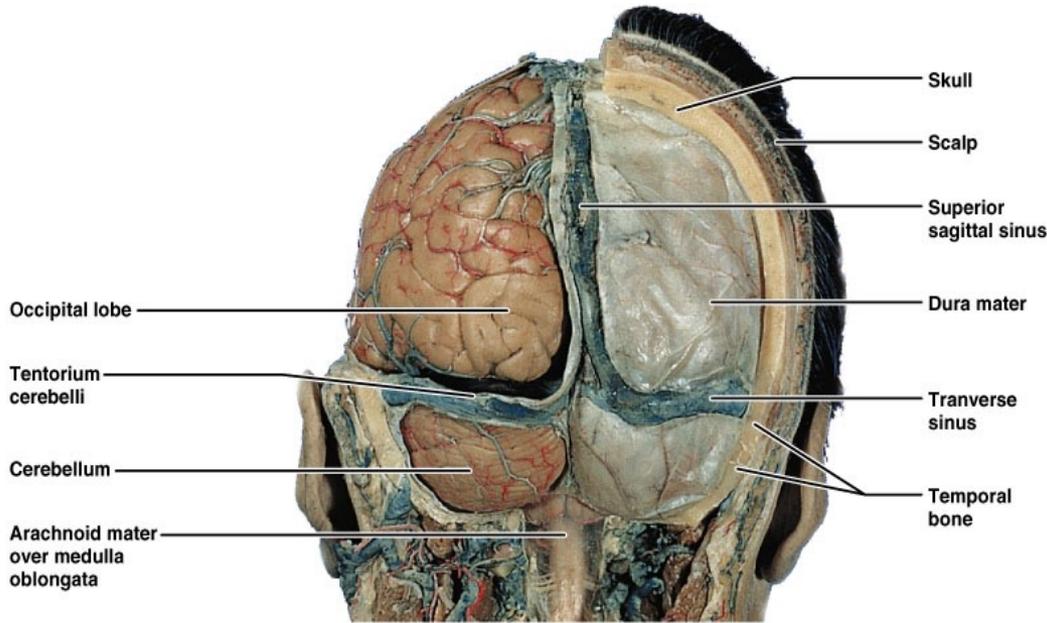
Conus medullaris

Cauda equina

Terminal end



Meninges (singular: meninx)



Layers of meninges

- 1-Pia mater
- 2-Arachnoid mater
- 3-Dura mater

