Vocabulary

Types of connections/membrane proteins: Electrical synapse, gap junction, chemical synapse, ionotropic receptors, metabotropic receptors, transporters

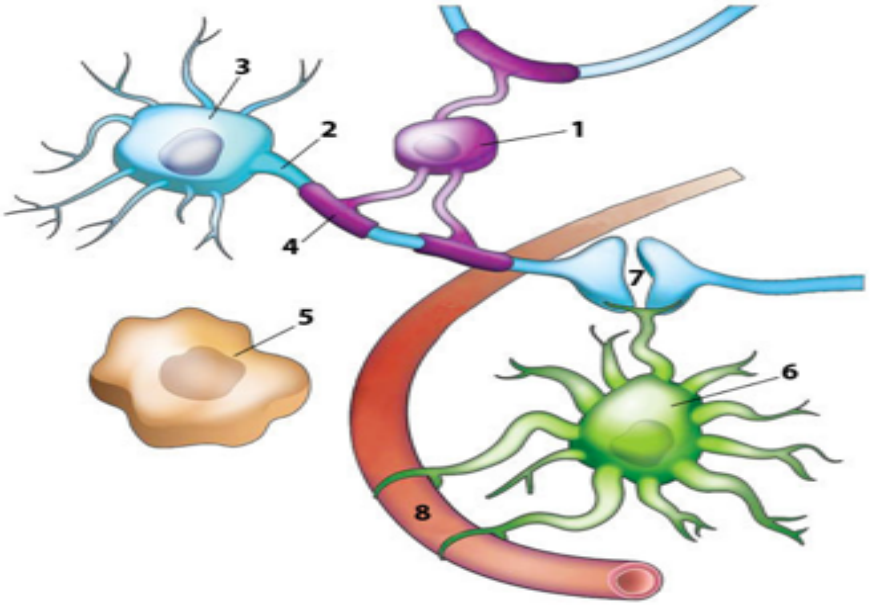
Neuron parts: dendritic tree, dendritic spines, soma, axon hillock, axon, synaptic bouton

Cell types: neuron (axon, dendrite, apical process), microglia, macroglia, oligodendrocyte, Schwann cell

Neural communication: action potential, sodium channels, potassium channels, Nernst potential, Goldman-Hodgkin-Katz equation, resting potential, reversal potential, depolarize, hyperpolarize, synaptic currents, AMPA receptors, GABA, glutamate, neurotransmitters, temporal summation, spatial summation, time constant, length constant, refractory period, G proteins

Other: myelination, ganglia, grey matter, white matter, neuropil

Cellular Makeup of the Nervous System

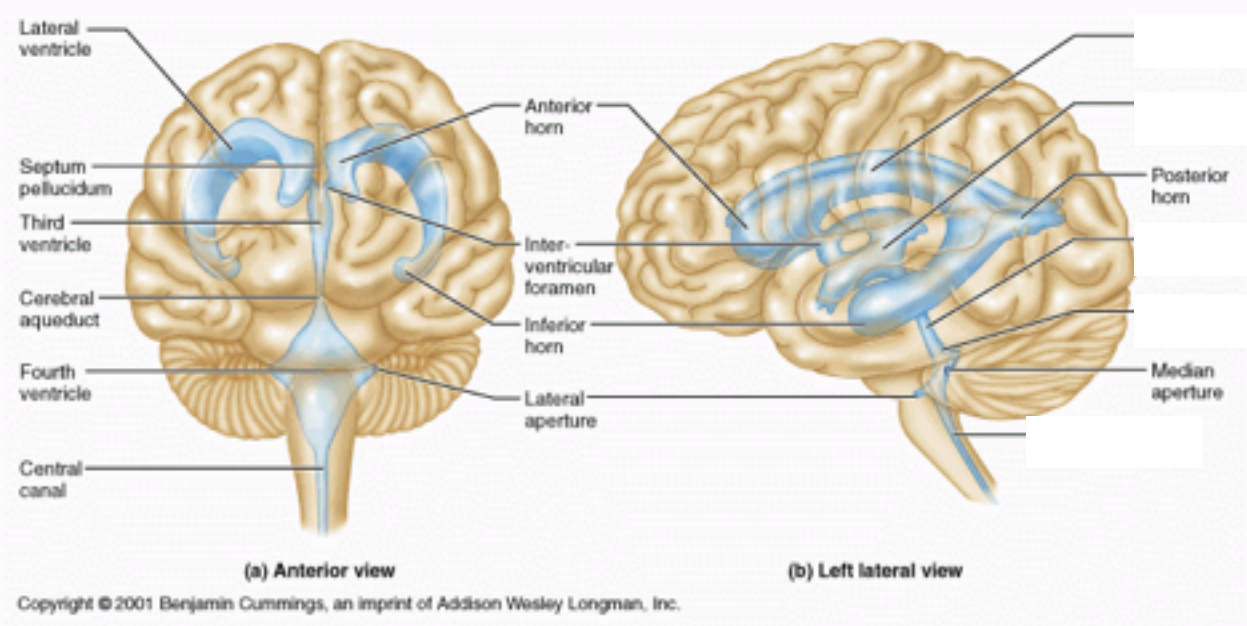


Label the image using the following terms: microglia, astrocyte, neuron, oligodendrocyte, blood vessel, synapse, myelin, axon, dendrites, a postsynaptic cell, presynaptic cell,

Does this picture depict the central or peripheral nervous system? Why?

Something about this image is misleading. Can you tell what?
Hint – think about the blood-brain barrier

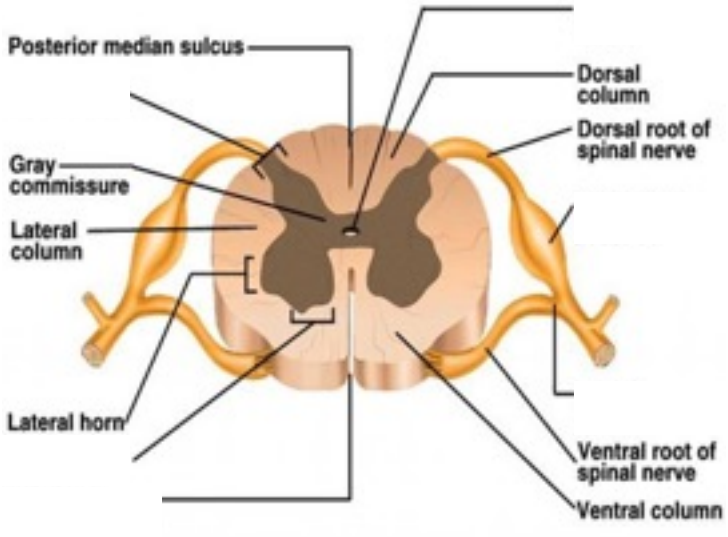
Ventricular System
Label the sagittal view of the ventricular system.



The ventricular system of the brain is filled with _____.

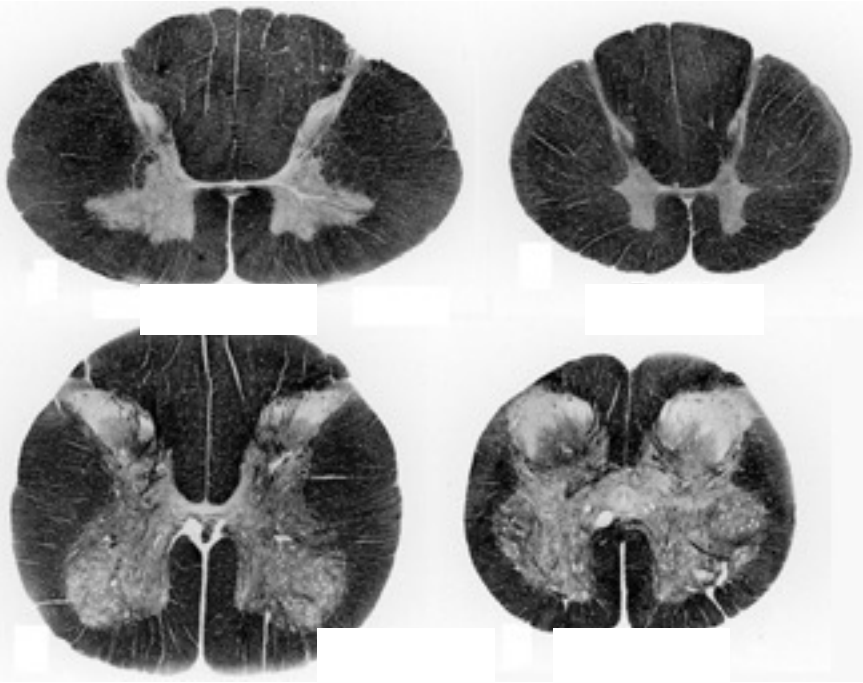
Brain Anatomy
Label the cerebral hemisphere using the following terms: parietal lobe, frontal lobe, occipital lobe, temporal lobe. What structures of the hindbrain can you see?

Spinal Cord Anatomy
Label the missing anatomical features of the spinal cord using the following terms: spinal nerve, ventral horn, central canal, anterior median fissure, dorsal root ganglion.



The ventral horn has motor neurons that sits in collections called pools. The pools are topographically organized. The pools that are most **mediately/laterally** situated, innervate the axial musculature.

Label the following as either: cervical, thoracic, lumbar or sacral. How can you tell?



Brainstem Review

We have discussed three important structures that make up the brainstem. List them and give a brief description of their function.

1.

2.

3.

Physicians, health care workers, members of the clergy, and laypeople throughout the world have accepted fully that a person is dead when his or her brain is dead. There is a clear difference between severe brain damage and brain death. When characterizing brain death, physicians will look for 2 important components. What are they?