

Review Chapters 13 (Spinal Cord & Spinal Nerves)
and 14 (Brain & Cranial Nerves)

CNS = brain & spinal cord

PNS = all the rest

afferent (incoming, sensory) nerves have neuron in dorsal root ganglion

efferent (outgoing, motor) nerves have neuron in ventral root

nerve fiber that leaves the vertebral column divides into 4 branches: **(fig 13.11)**

1. meningeal branch returns to inside vertebral column to innervate meninges
2. dorsal branch innervates skeletal muscles dorsal to the vertebral column
3. ventral " " " " ventral " " " "
4. rami communicantes are pre-synaptic neurons that synapse in the paravertebral ganglia with post-synaptic neurons that innervate viscera

31 spinal nerves: **(fig 13.17)**

8 cervical nerves	cervical plexus - neck , shoulders, arms
12 thoracic nerves	brachial plexus - medial surface of arms (no plexus) - chest & abdomen
5 lumbar nerves	lumbar plexus - hips and front of legs
5 sacral nerves	sacral plexus - buttocks, genitals, back of legs
1 coccygeal nerve	

12 cranial nerves: **(table 14.3)** mixed sensory, spinal, and autonomic

OOOTT

AFVGVVAH

4 areas of brain: **(fig 14.1)**

cerebrum

cerebellum (balance)

diencephalon (thalamus and hypothalamus)

brain stem (mid-brain, pons, medulla oblongata)

5 lobes of cerebrum: **(fig 14.11)**

frontal (motor and "deep thought")

parietal (sensory)

occipital (sight)

temporal (hearing, speech)

insula (gnostic area)

3 meningeal layers (meninx):

dura mater → *subdural space* → arachnoid → *subarachnoid space* → pia mater

4 ventricles:

2 lateral → *interventricular foramen* → 3rd → *cerebral aqueduct* → 4th

csf circulates in subarachnoid space of brain and spinal cord and central canal of spinal cord

csf produced by ependymal cells that line ventricles
csf absorbed at sagittal sinus