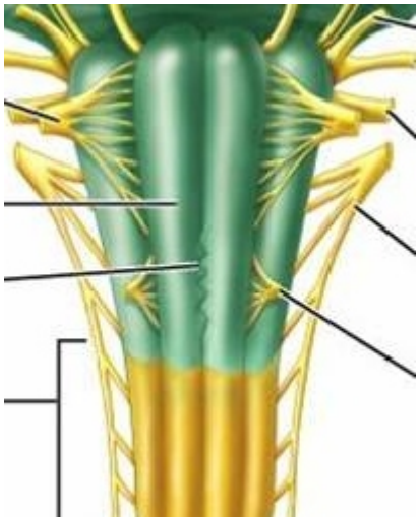
MEDULLA OBLONGATA, CEREBELLUM AND PONS

1/11/82, 11 Jan 00, 10 Jan 01, 15 Jan 03, 12 Jan 04, 10 Jan 05, 30Jan08, 12Jan09, 6Jan10, 5Jan11
S&M p 312, Martini's 4th: 448-456 (meninges, CSF), 471-474, 6th: 473-479, 7th: 453-, 8th: 469-474

MEDULLA OBLONGATA (same as. myelencephalon):(p 469)

cavity within is lower region of fourth ventricle, continuous with central canal

decusssation of the pyramids on ventral surface of medulla. Motor tracts originate in cerebrum, pass thru peduncles, some cross in medulla on way to spinal cord (corticospinal tracts). Cross hatching on surface of medulla



MEDULLARY FUNCTION: regulates heart rate and force, vasomotor, swallowing, respiration rate, coughing, vomiting.

Last four cranial **nerves leave fr** medulla:

IX	glossopharyngeal
X	vagus
XI	spinal accessory
XII	hypoglossal

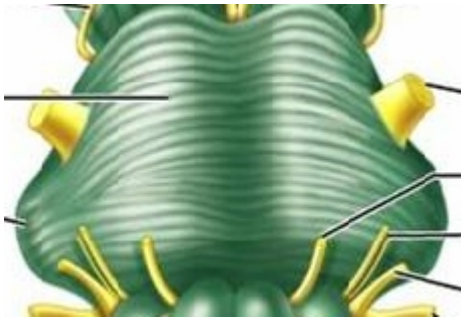
BRAIN STEM: **medulla, pons and mesencephalon** 464, 541

Reticular formation: **gray matter within brain stem**, receives info from all sensory tracts.

Selects impulses to relay to cortex, raising to consciousness.

Maintains **reticular activating system (RAS)**

Responsible for state of arousal. Damage to reticular formation produces coma.



PONS: contains two tracts, longitudinal and transverse (p 469, 470)

longitudinal	communicates between brain stem and cerebrum	Projection tract
transverse	between hemispheres of cerebellum	Commissural tract

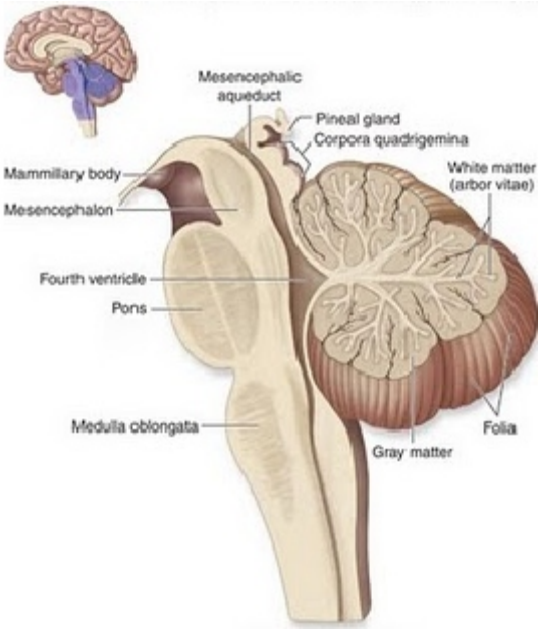
Contains nuclei of four cranial nerves:

V	trigeminal
VI	abducens
VII	facial
VIII	vestibulocochlear

Pons centers also adjusts respiration centers in medulla: **apneustic** inhibits urge to breathe; **pneumotaxic** stimulates urge to breathe

CEREBELLUM: (p 473)

tentorium cerebelli	this dura mater extension separates it from the cerebrum
vermis	Band of cortex separates R & L halves
Folia	gyri on surface
arbor vitae	internal white matter pathways
4th ventricle	ventricle between cerebellum and pons



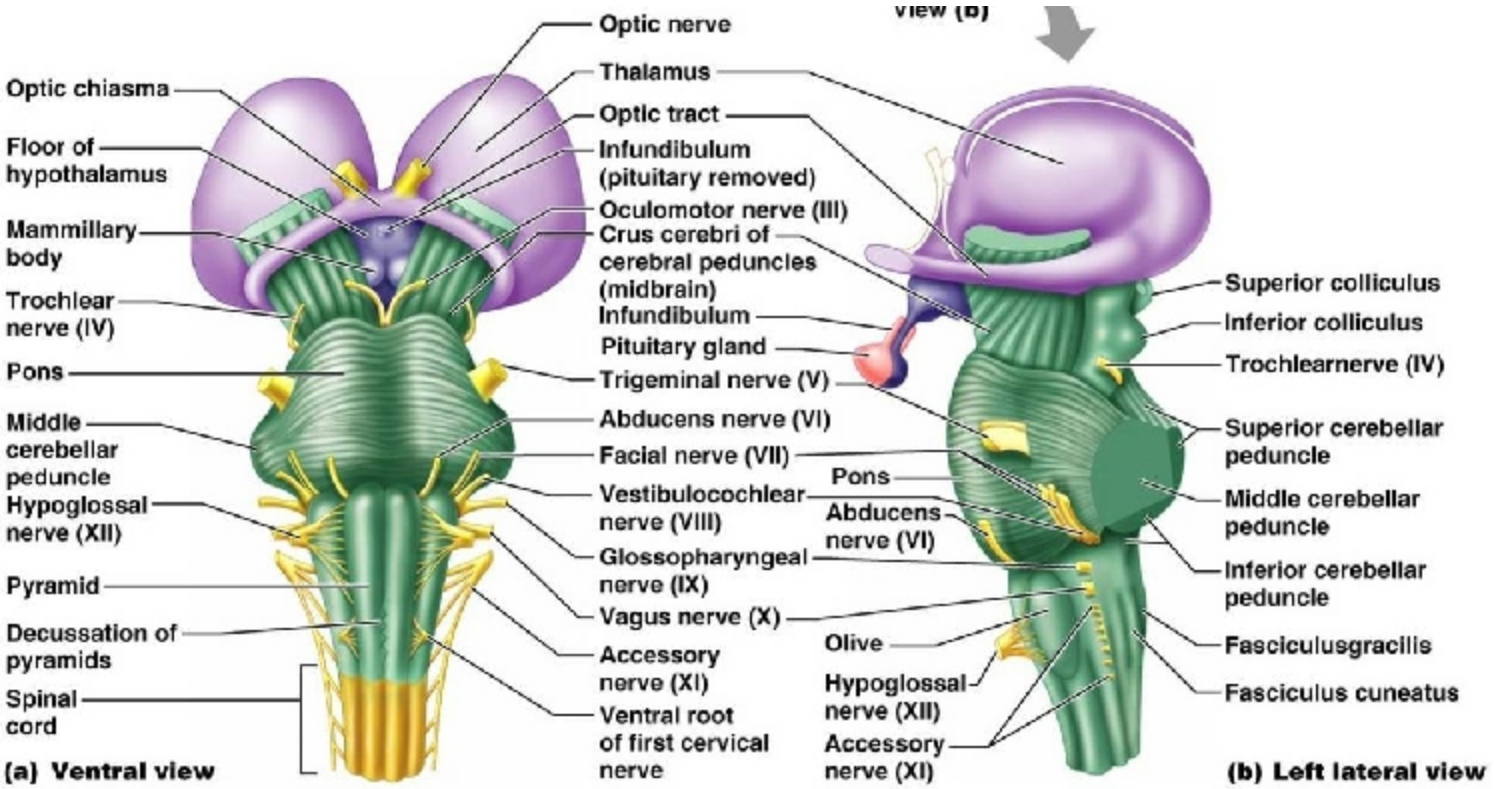
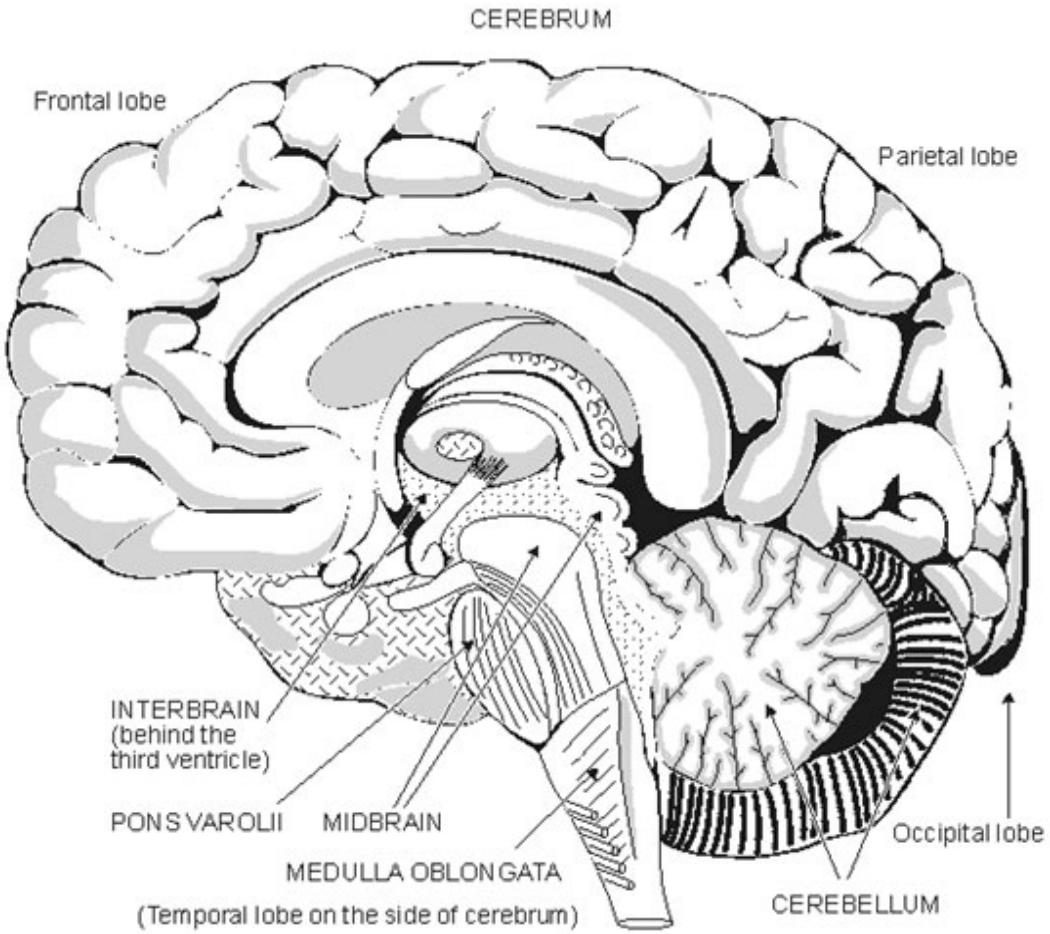
Cerebellum is connected to three other portions of brain by **peduncles**:

superior cerebellar peduncle	to the mesencephalon
middle cerebellar peduncle	to the pons
inferior cerebellar peduncle	to the medulla oblongata

Cerebellum can mediate some responses without consciousness

Serves as a coordinating unit

1) initiates voluntary movements
2) proprioceptors deliver info here
3) calculates best way to do cerebrum's will
4) adjusts motor activity to most accurately perform activity (comparator)



Copyright © 2006 Pearson Education, Inc., publishing as Benjamin Cummings.