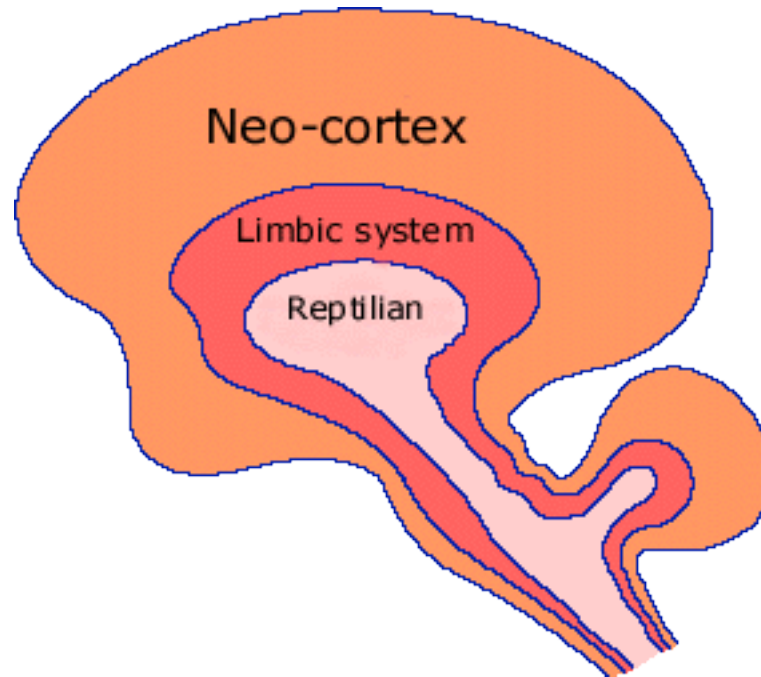


Neuroanatomy

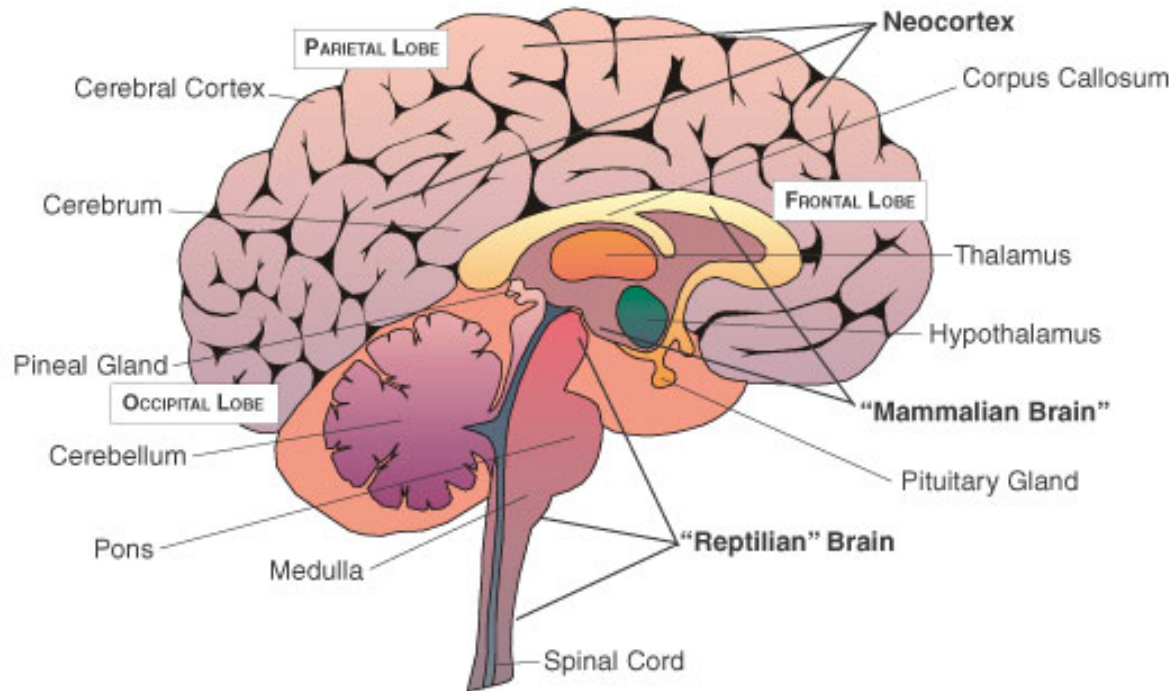
Evolutionary Layers to Brain

- Layers of brain reflect evolutionary adaptations



Reptilian Brain (Triune Brain)

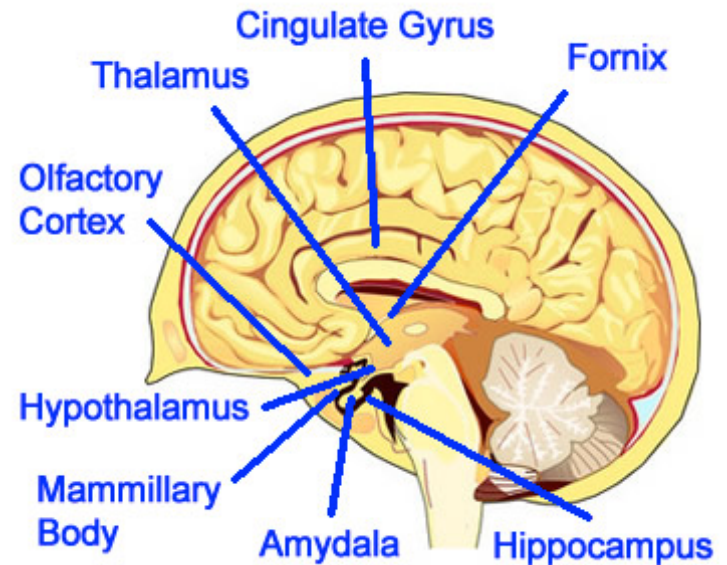
- **Spinal cord:** connects body to brain
- **Medulla:** autonomic functions – breathing/heart rate
- **Pons:** sleep, breathing, equilibrium
- **Basil Ganglia:** motor action & reward
- **Cerebellum:** motor
- **Limbic System:** Emotions



Limbic System

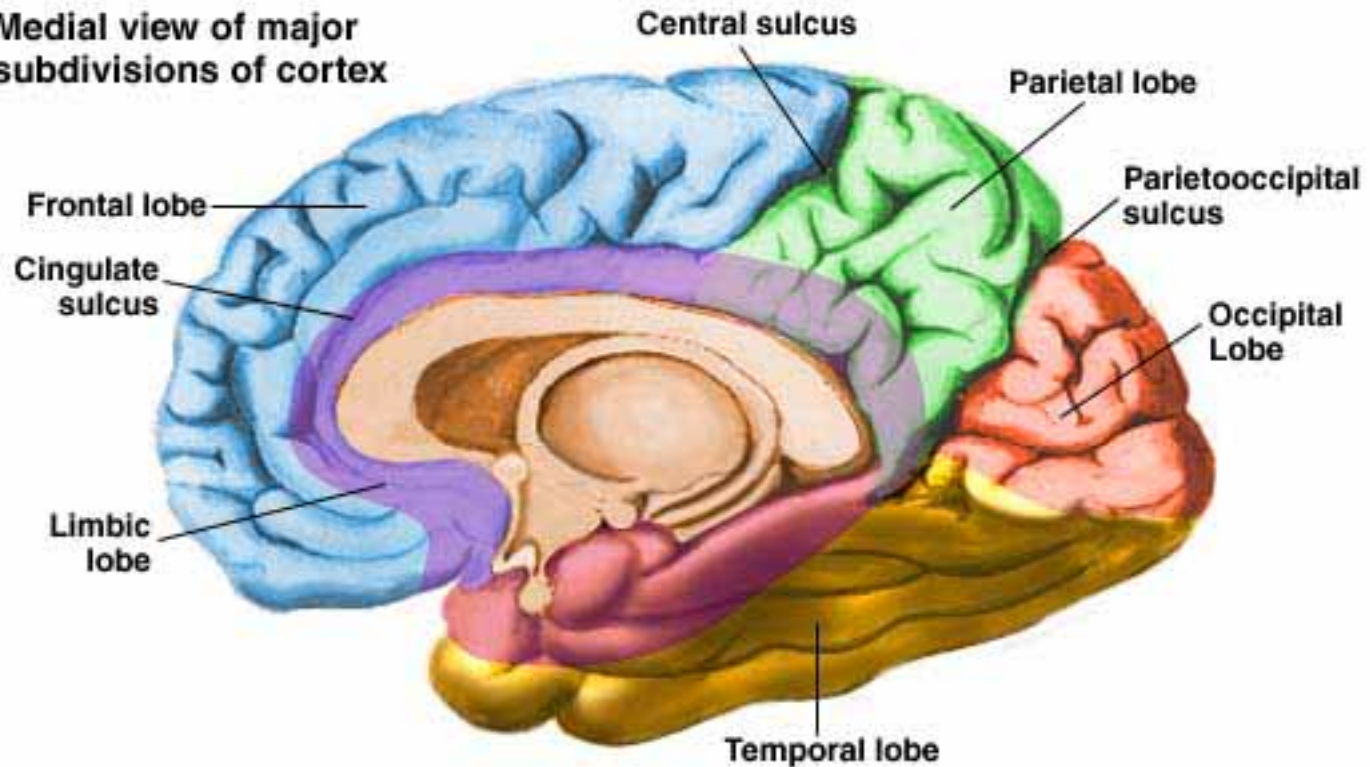
Emotion & Motivation System

- **Cingulate:** regulate bodily functions and attention
- **Fornix:** carry messages within limbic system
- **Hippocampus:** memory
- **Amygdala:** alerts cortex to salient information
- Mammillary body: role in memory
- Hypothalamus: regulate body function
- Olfactory cortex: smell → emotion



Cortex

Medial view of major subdivisions of cortex



Frontal: higher cog. function, controls other subsystems

Parietal: spatial navigation, working memory, attention

Temporal lobe: auditory processing, memory, language, object perception

Occipital lobe: visual processing and imagery

Brain in Your Hand Analogy

- **Arm:** spinal cord
- **Wrist:** pons, medulla, cerebellum
- **Thumb:** limbic system
- **Fingers:** cortex
- Cortex regulates limbic system
- Limbic system can override cortex = 'popping your top'

