

ANATOMY OF HUMAN BRAIN – COMPLETE & EASY NOTES

The **human brain** is the most complex organ of the body. It is the **control center of the nervous system** and controls all body activities like thinking, movement, emotions, memory, and vital functions.

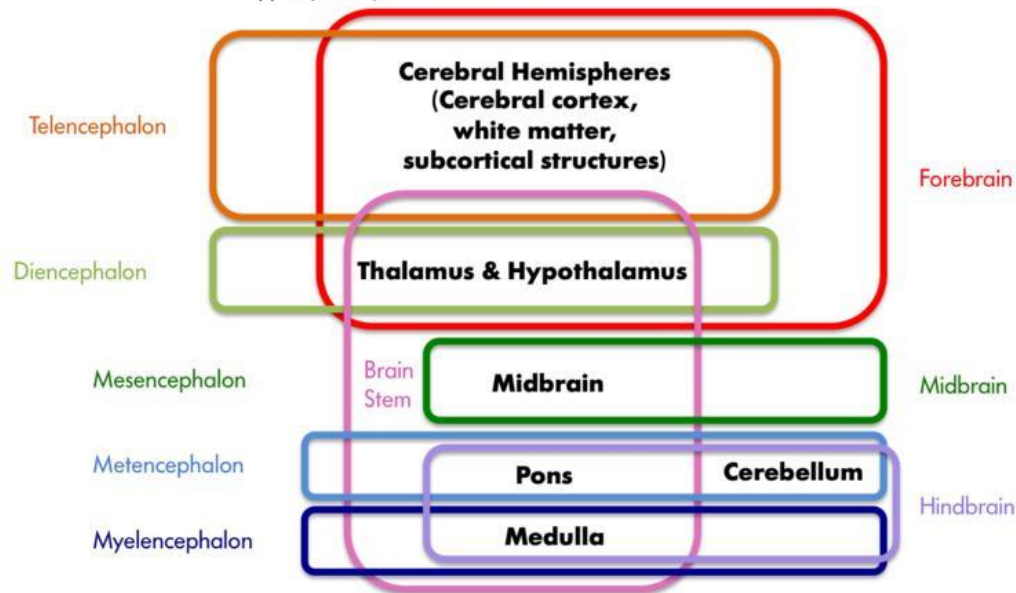
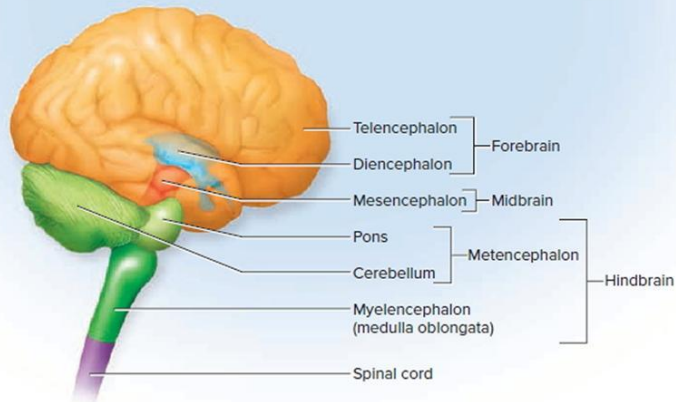
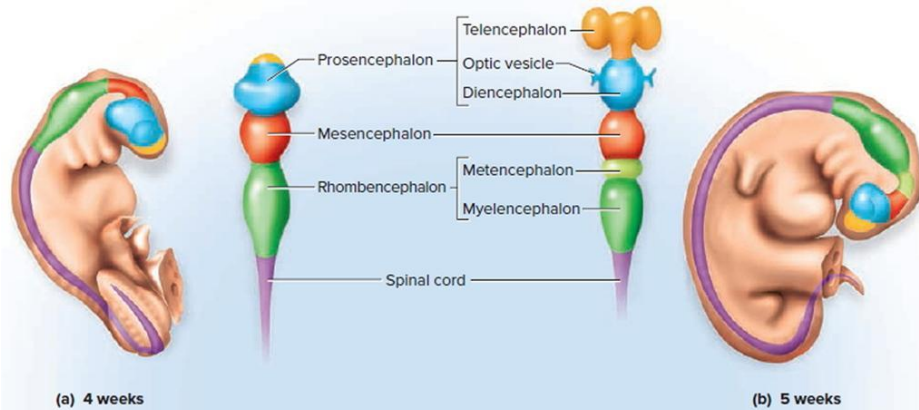
□ Simple meaning:

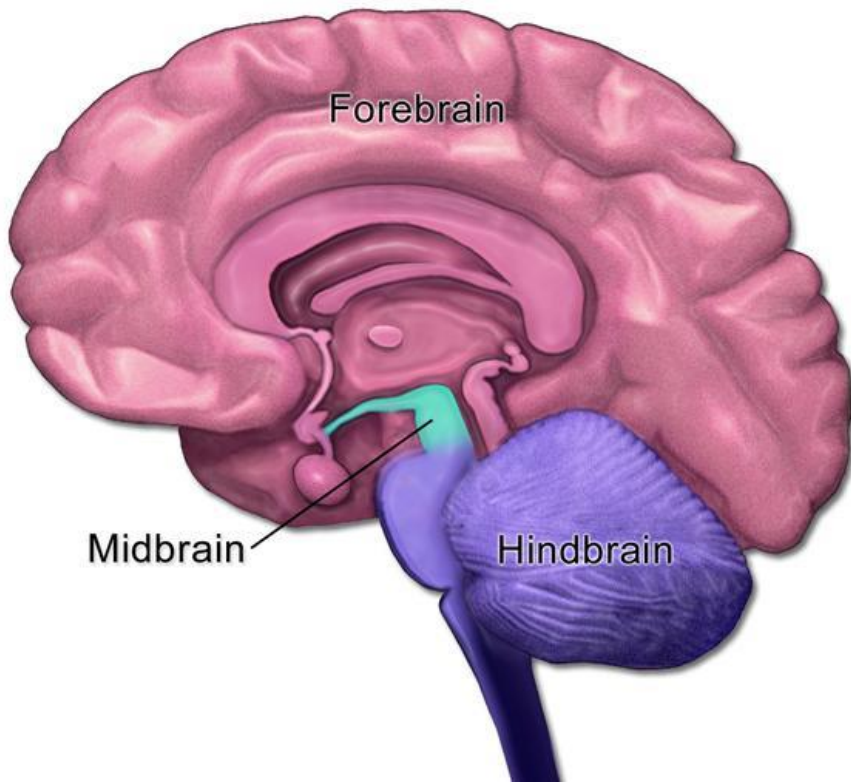
Brain = Body control center

□ EMBRYOLOGICAL DIVISIONS OF BRAIN (VERY IMPORTANT)

During development, the brain is divided into **3 primary parts**:

1. Prosencephalon (Forebrain)





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□ **It further divides into:**

A. Telencephalon (Most Developed Part)

- Becomes **Cerebrum**
- Largest part of brain

Functions:

- Thinking & intelligence
 - Memory & learning
 - Speech & emotions
 - Voluntary movements
-

B. Diencephalon

- Located deep inside brain

Main parts:

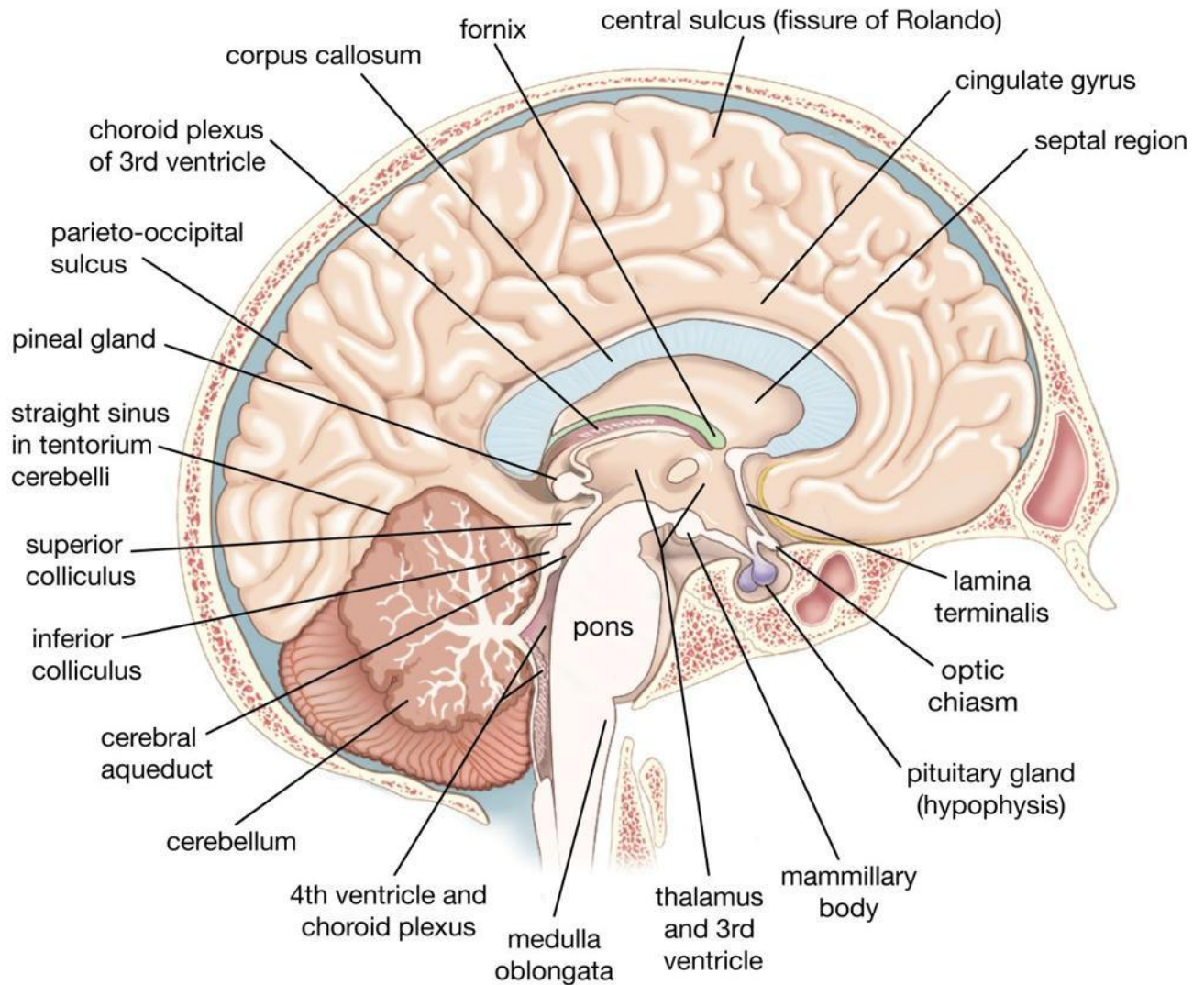
- Thalamus
- Hypothalamus

Functions:

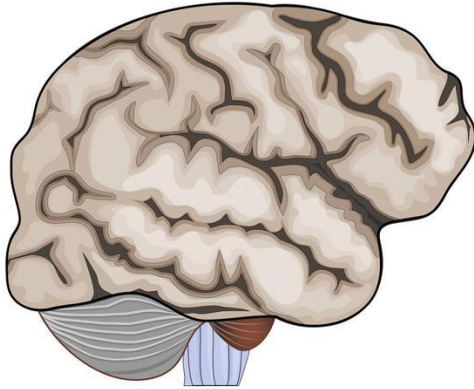
- Sensory relay (thalamus)
- Temperature, hunger, hormones control (hypothalamus)
- Homeostasis (body balance)

2. Mesencephalon (Midbrain)

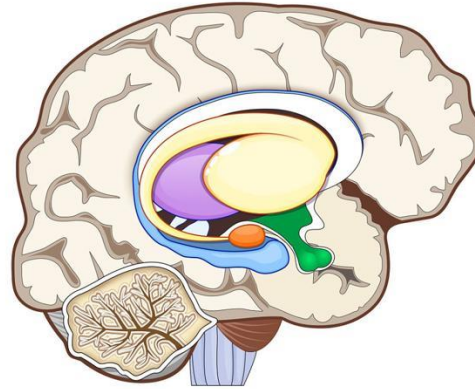
Human brain in cross section



HUMAN BRAIN



Side view

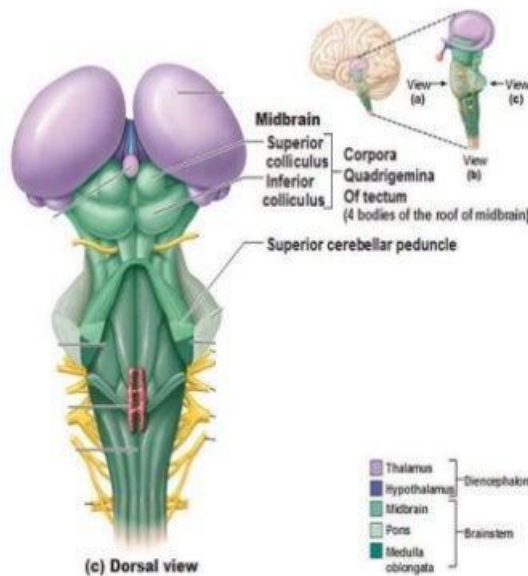


Cross section

Brain Anatomy – Midbrain

Includes:

- **Corpora Quadrigemina (tectal plate)**
 - **Superior Colliculus:**
Visual reflex center
(turns eyes and head in response to visual stimulus)
 - **Inferior Colliculus:**
Auditory reflex center
(turns eyes and head in the direction of a sound)
- **Cerebral Peduncles**



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□ Simple Definition:

The **midbrain** connects forebrain and hindbrain.

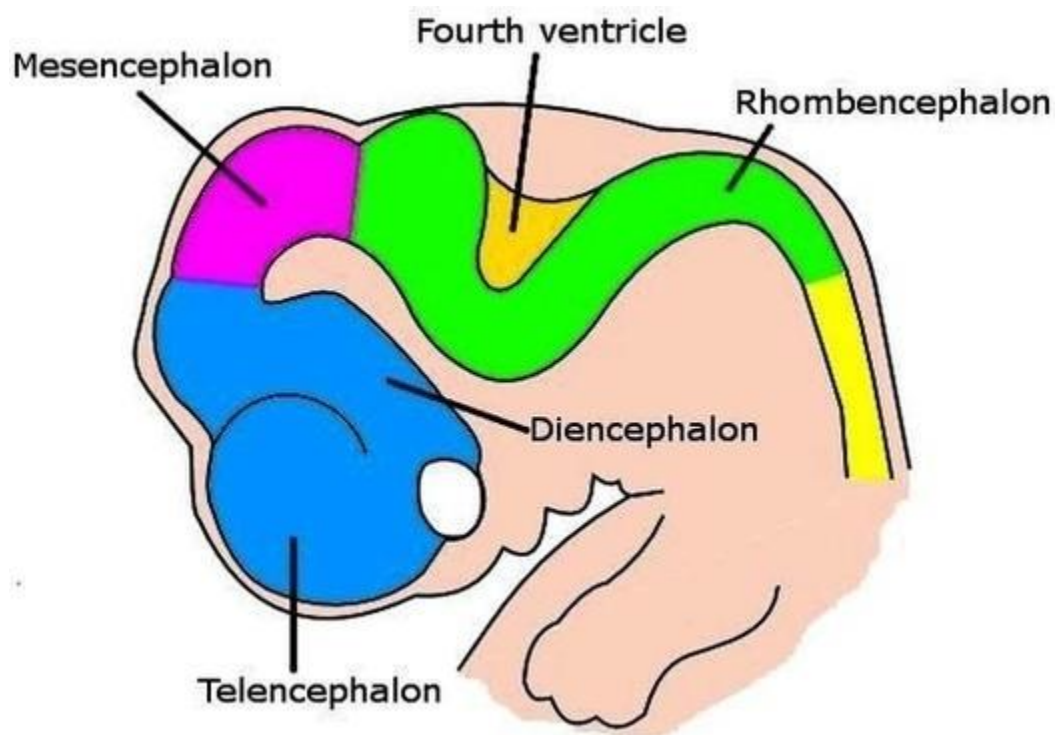
Functions:

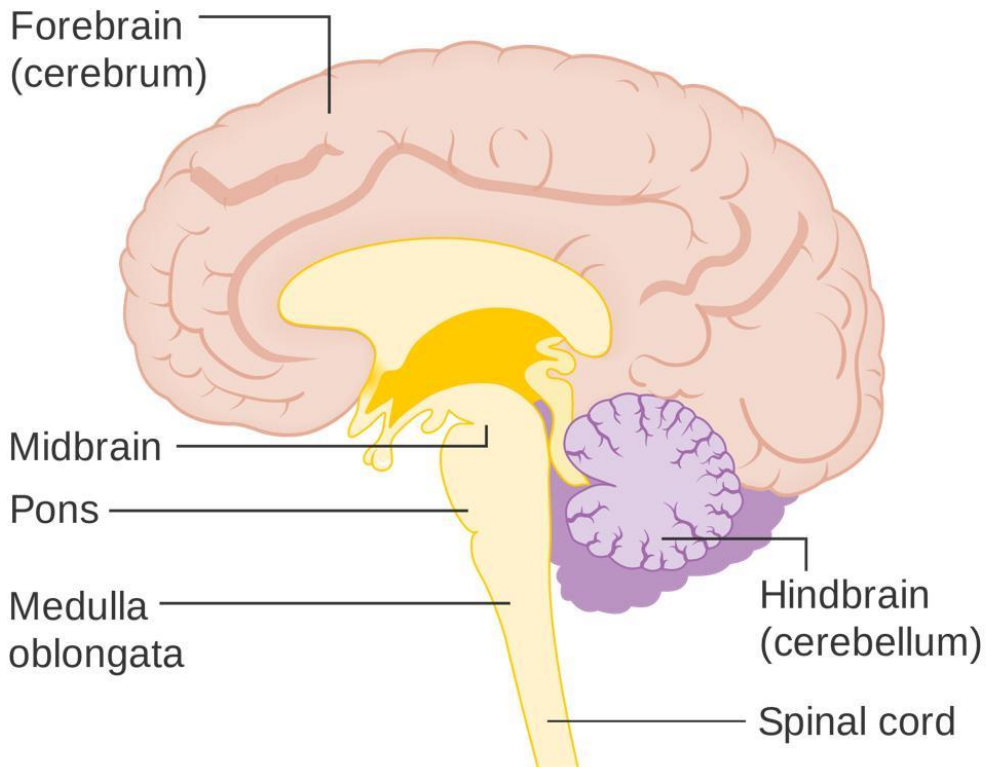
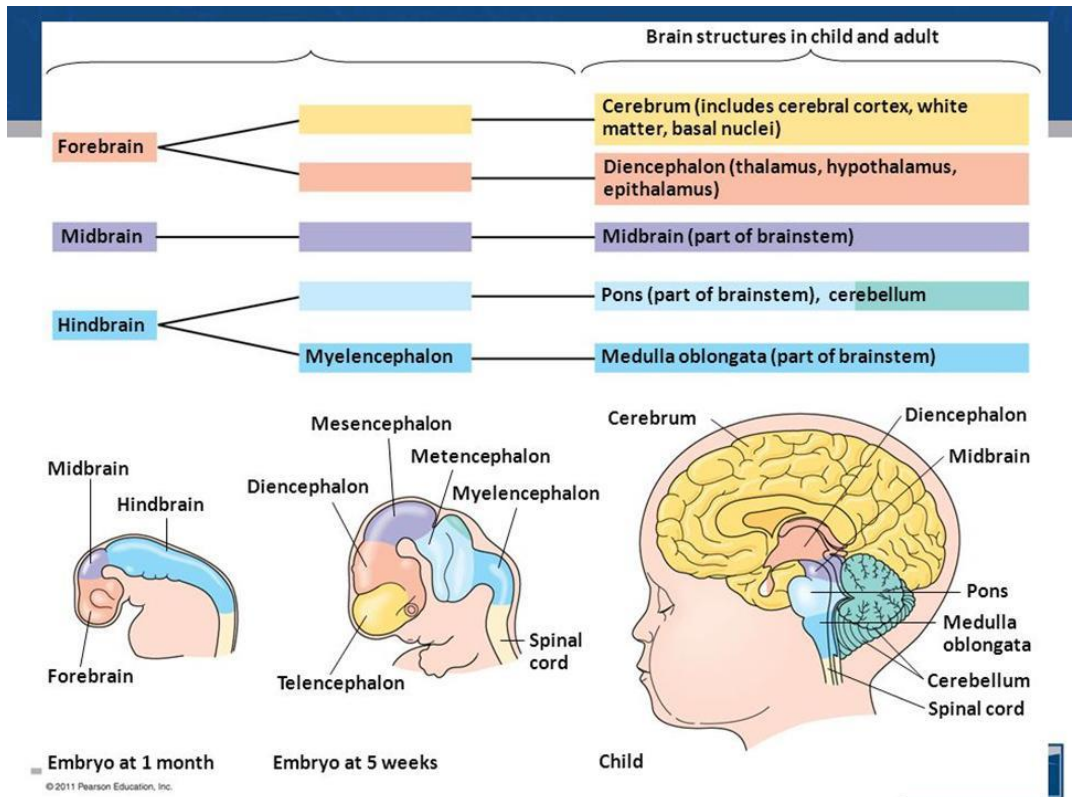
- Visual reflexes
- Hearing reflexes
- Eye movement control

□ Simple:

Helps in reflex actions for eyes and ears

3. Rhombencephalon (Hindbrain)





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It divides into:

A. Metencephalon

- Forms:
 - **Cerebellum**
 - **Pons**

Functions:

- Balance & coordination (cerebellum)
 - Communication between brain parts (pons)
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B. Myelencephalon

- Forms:
 - **Medulla oblongata**

Functions:

- Controls breathing
- Controls heart rate
- Controls blood pressure

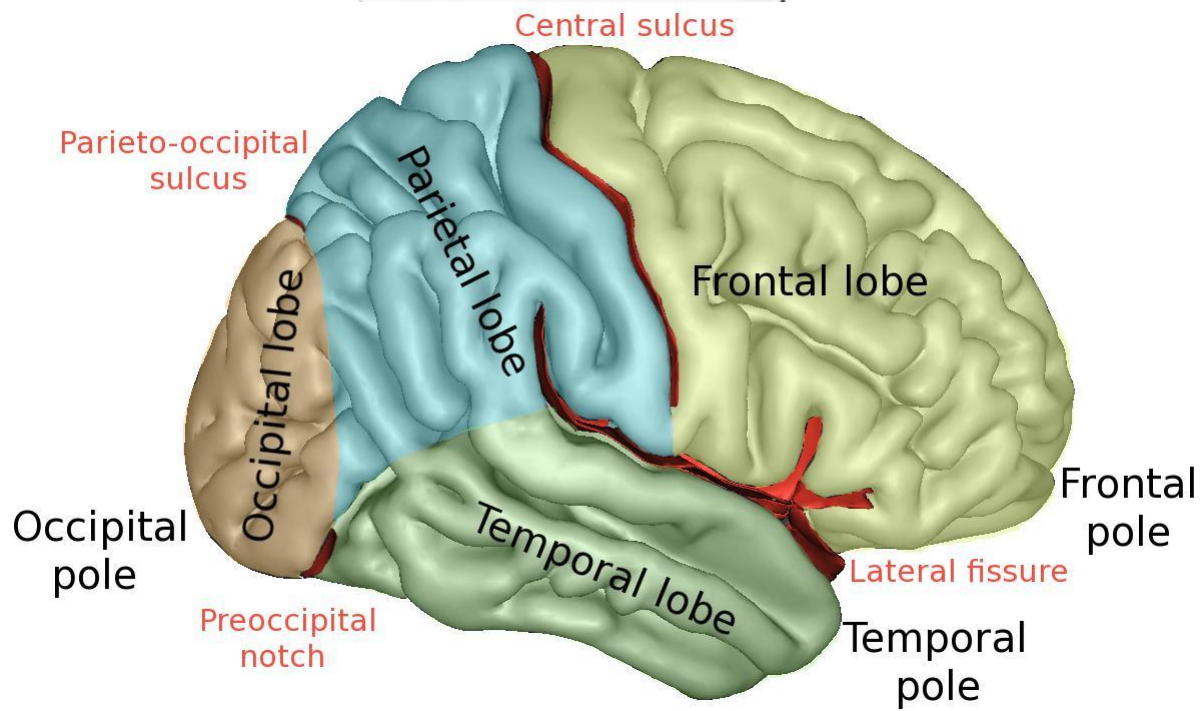
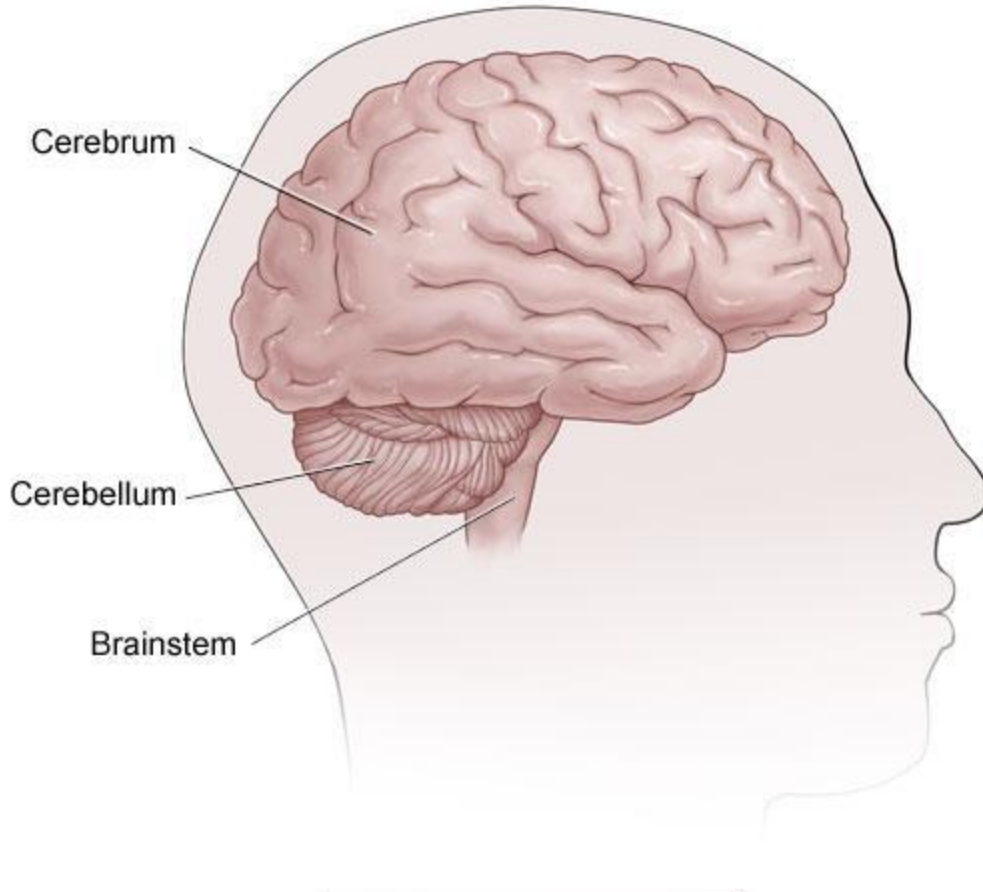
Simple:

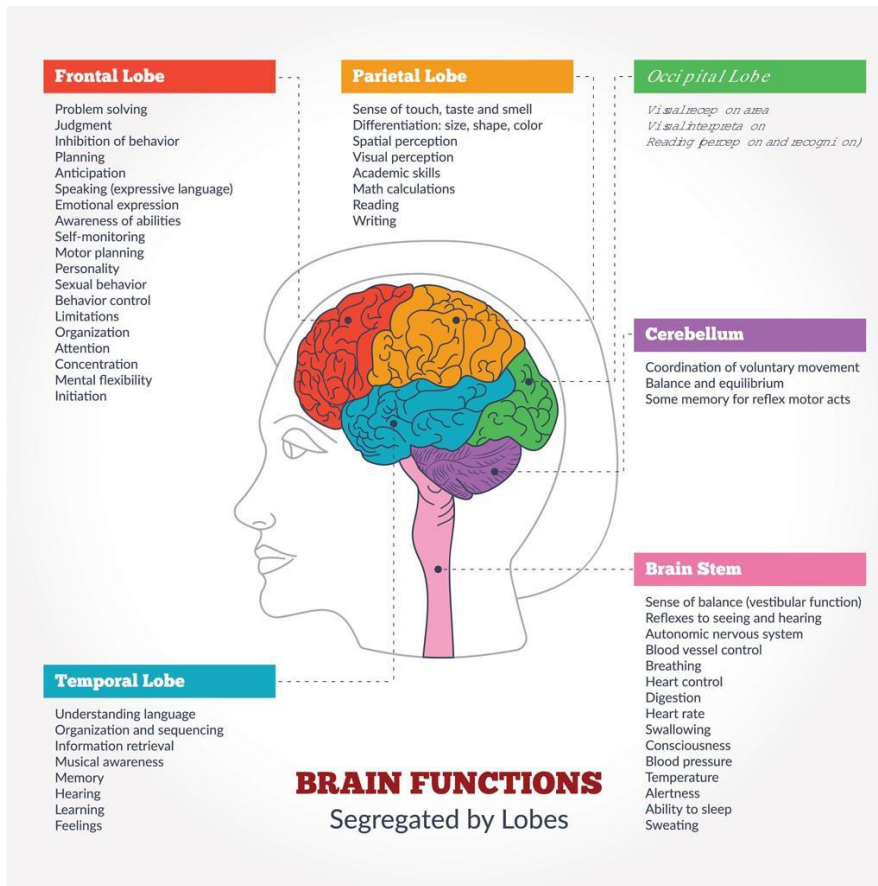
Keeps you alive automatically

MAIN PARTS OF ADULT BRAIN

1. Cerebrum (Largest Part)

Major Parts of the Brain





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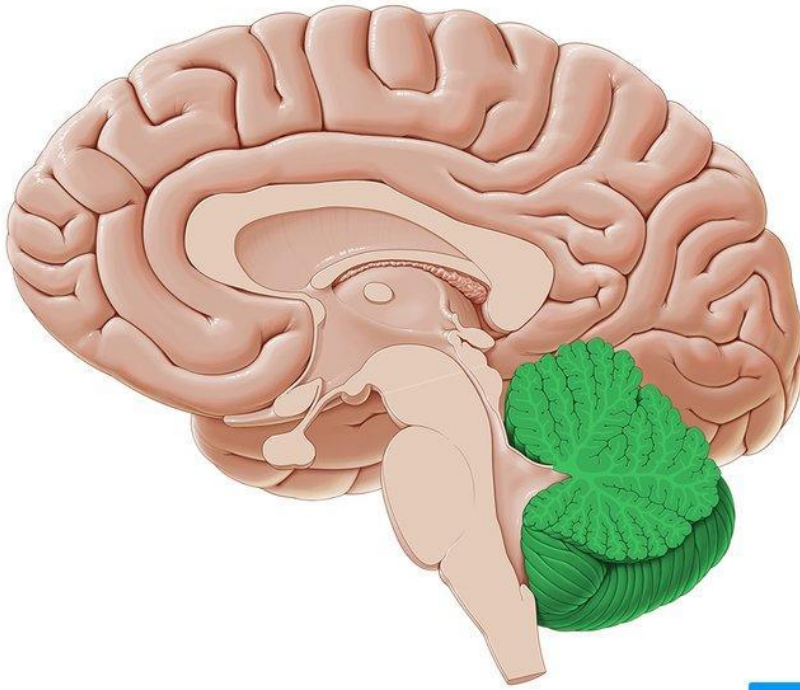
Functions:

- Thinking and intelligence
- Memory and learning
- Speech and emotions
- Voluntary movements

Lobes:

- Frontal → thinking, speech
- Parietal → touch
- Temporal → hearing
- Occipital → vision

2. Cerebellum



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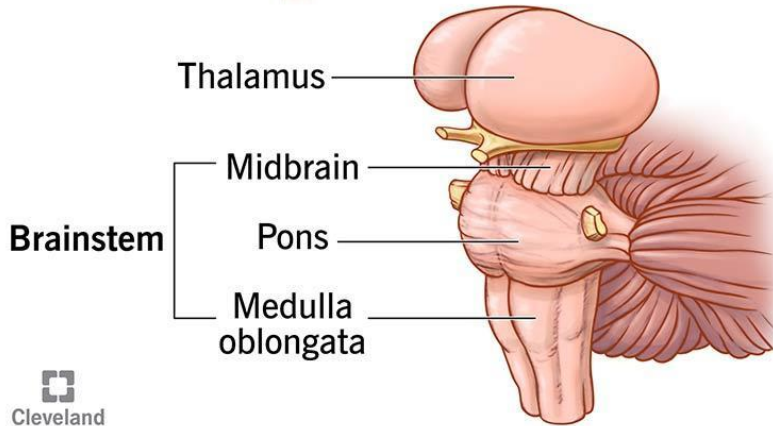
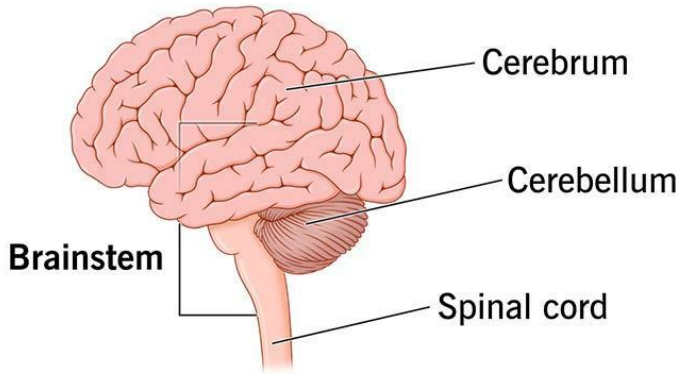
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Functions:

- Balance
- Walking coordination
- Muscle control

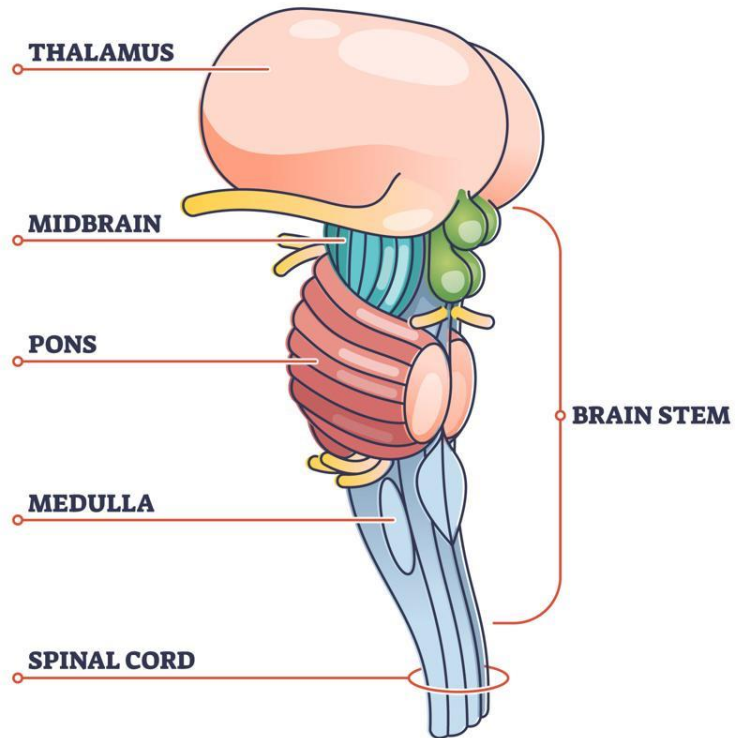
3. Brainstem

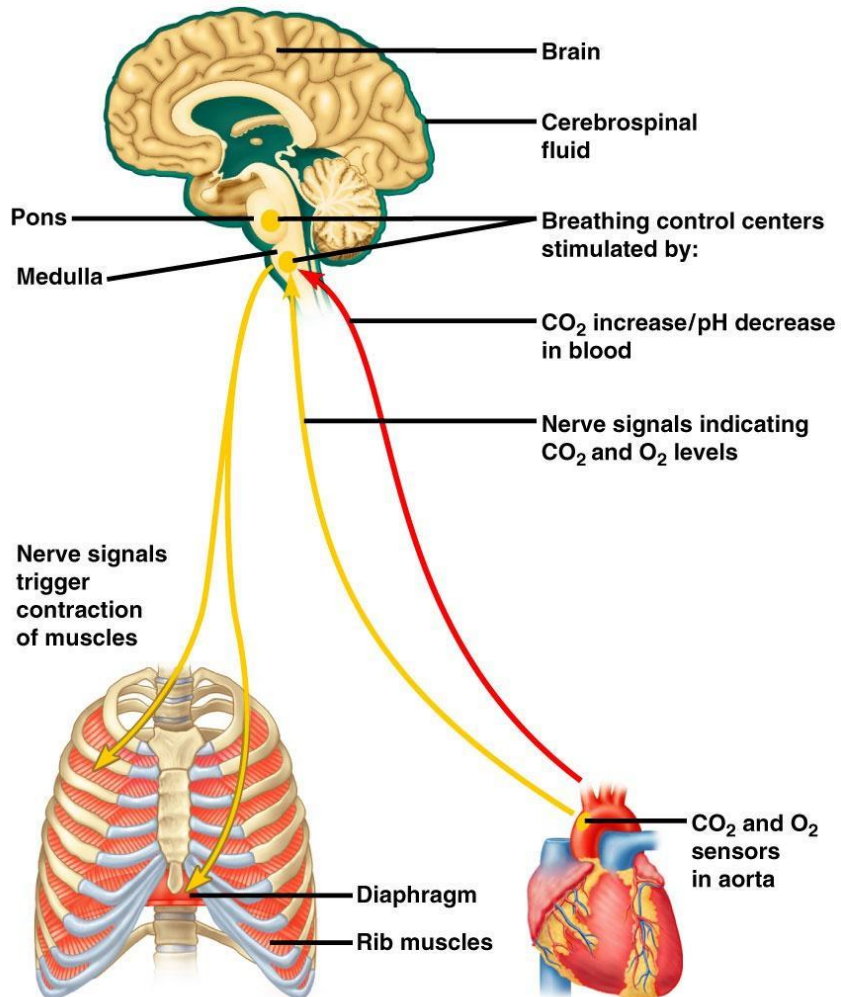
Brainstem



(Cerebrum removed)

BRAIN STEM





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Parts:

- Midbrain
- Pons
- Medulla oblongata

Functions:

- Breathing
 - Heartbeat
 - Blood pressure
 - Reflex actions
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☐ **IMPORTANT DEEP STRUCTURES**

Thalamus

- Sensory relay station
- Sends signals to cerebrum

Hypothalamus

- Controls temperature
- Controls hunger & thirst
- Controls hormones

Pituitary Gland

- Master gland
 - Controls other glands
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☐ **FUNCTIONS OF BRAIN (SUMMARY)**

- Thinking & intelligence
 - Memory & learning
 - Movement control
 - Sensory processing
 - Emotions
 - Life functions (breathing, heartbeat)
-

☐ **FINAL SHORT REVISION TABLE**

| Division | Structure | Function |
|-----------------|------------------------|------------------------|
| Telencephalon | Cerebrum | Thinking, memory |
| Diencephalon | Thalamus, Hypothalamus | Sensory + body control |
| Mesencephalon | Midbrain | Reflexes |
| Metencephalon | Cerebellum, Pons | Balance + coordination |
| Myelencephalon | Medulla | Vital life functions |
