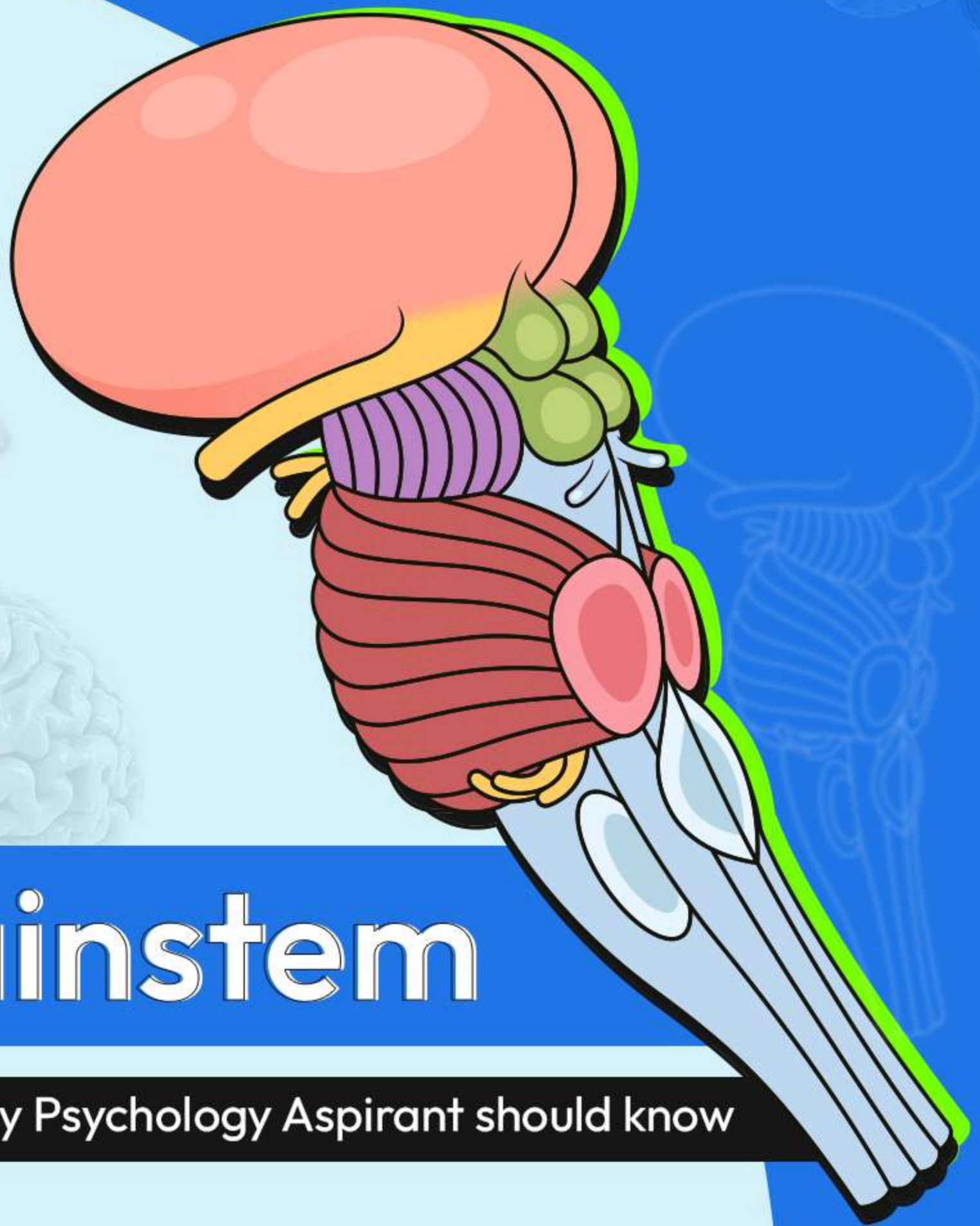
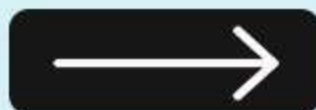




Brainstem

Basics every Psychology Aspirant should know



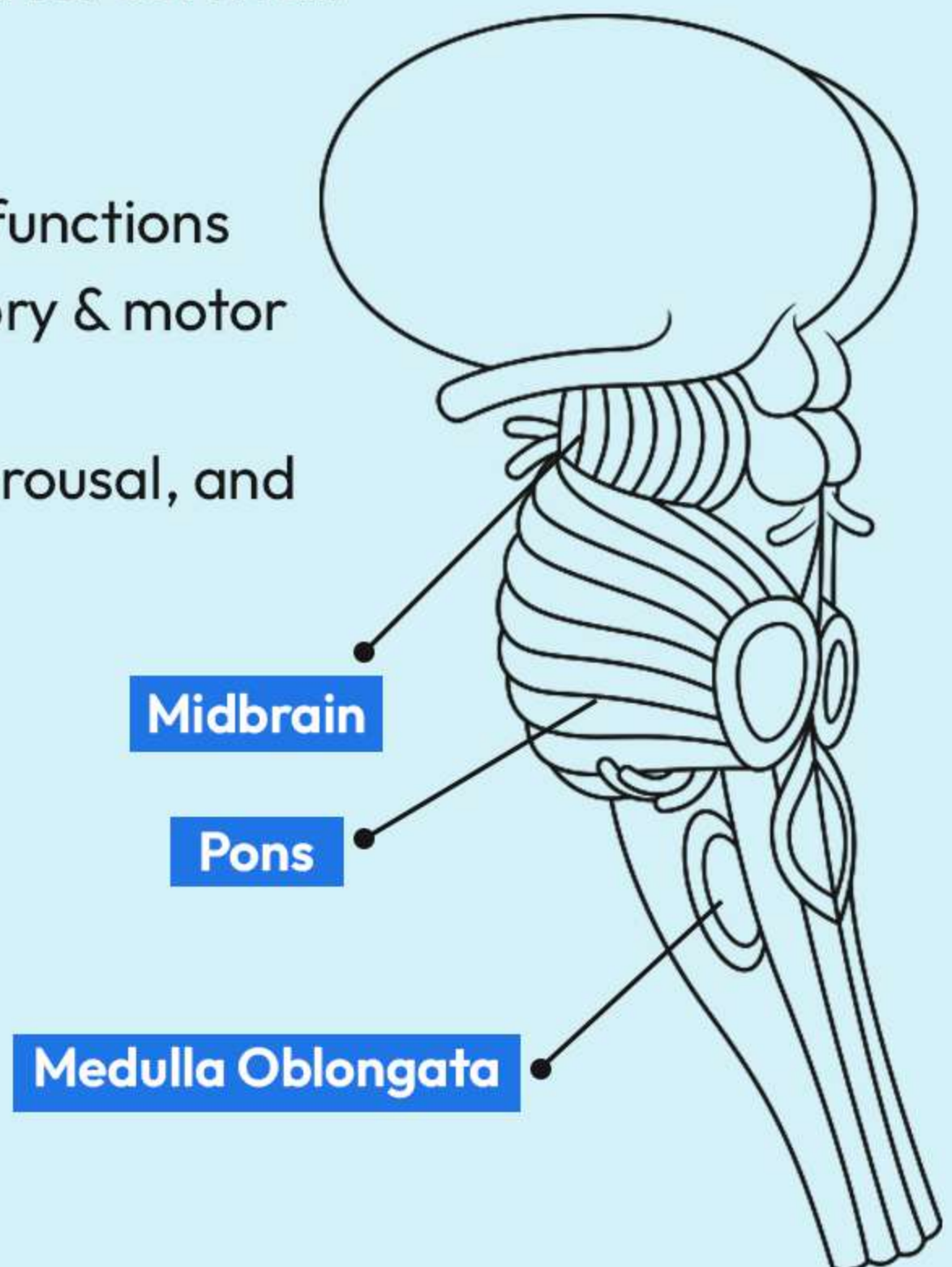
What is the Brainstem?

The brainstem is the lower extension of the brain that connects the spinal cord to higher brain regions.

It is the most primitive (evolutionarily old) part of the brain and is essential for survival.

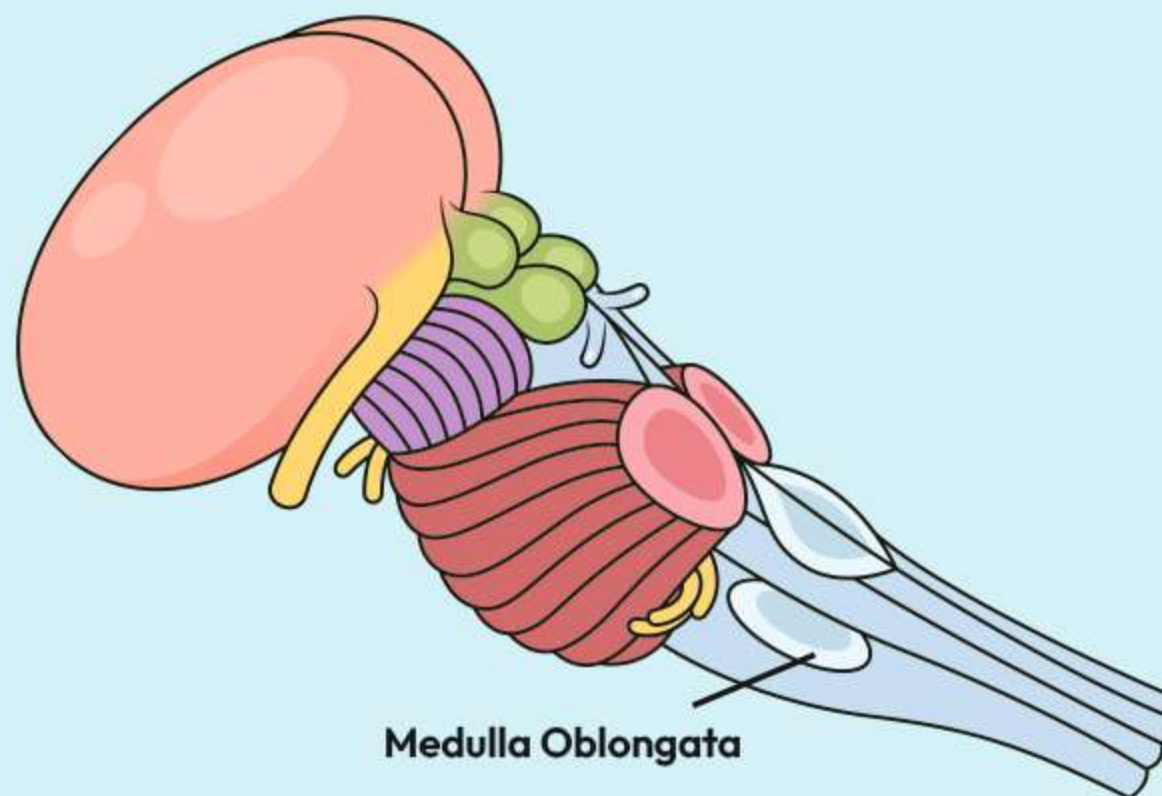
Major roles:

- Controls vital life functions
- Passage for sensory & motor pathways
- Regulates sleep, arousal, and reflexes



Medulla Oblongata

Located just above the spinal cord, it is most critical for survival.



Main Functions:

- Regulates heart rate
- Maintains blood pressure
- Controls breathing
- Controls reflexes
 - Swallowing
 - Sneezing
 - Coughing
 - Vomiting

Works with the Autonomic Nervous System (ANS) to maintain homeostasis.

Damage → respiratory failure or cardiac arrest.

Pons

“Pons” means bridge and that’s exactly what it does. Located between medulla and midbrain.

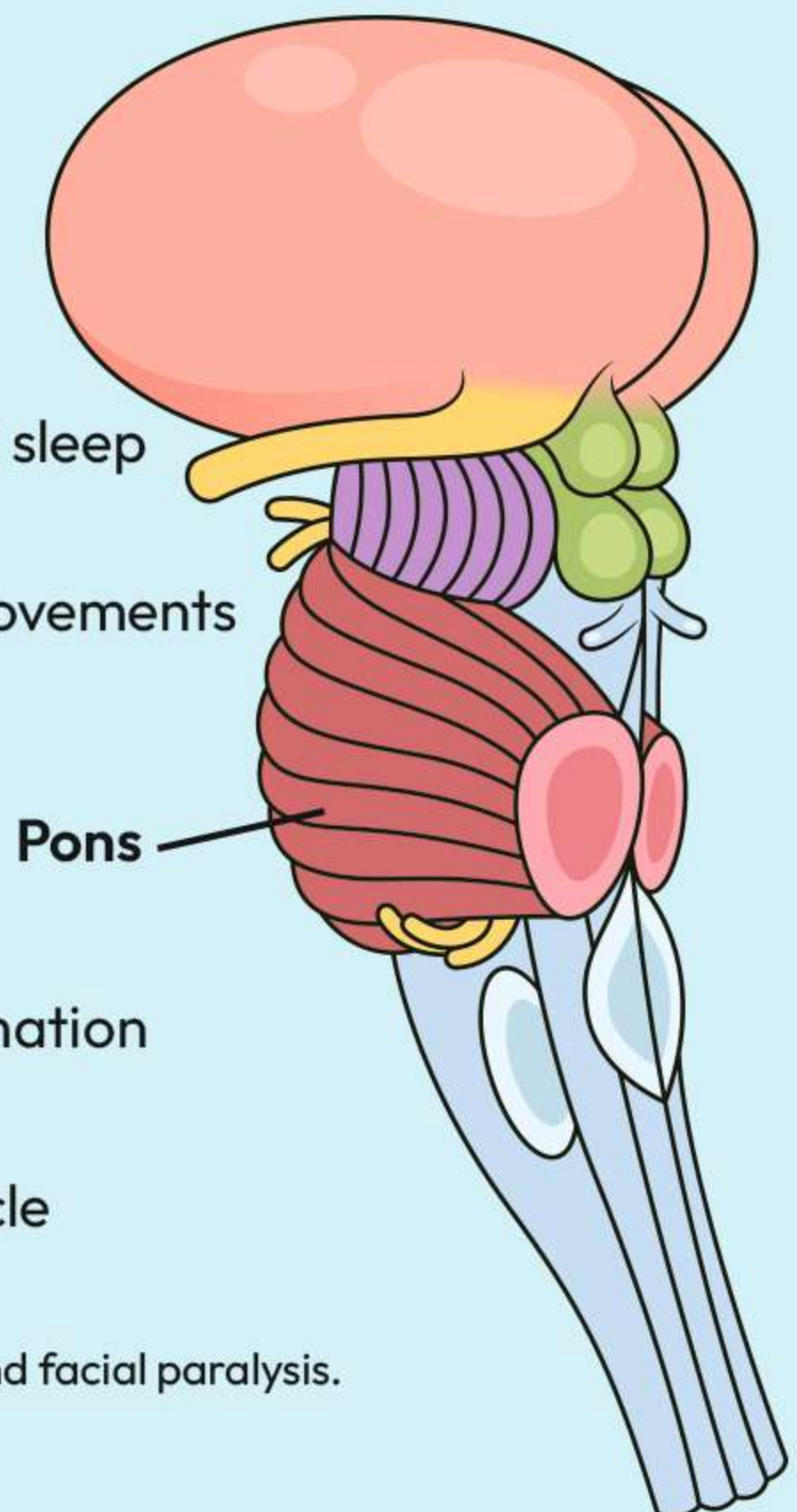
Main Functions:

- Connects the cerebellum with the rest of the brain (especially the cerebrum) via relay nuclei
- Regulates sleep, especially REM sleep
- Helps control breathing rhythm
- Controls facial expressions & movements

Psychology Links:

- Contributes to the reticular formation network involved in alertness
- Important in the sleep–wake cycle

Damage may lead to Sleep disturbances and facial paralysis.



Midbrain

Uppermost part of the brainstem.

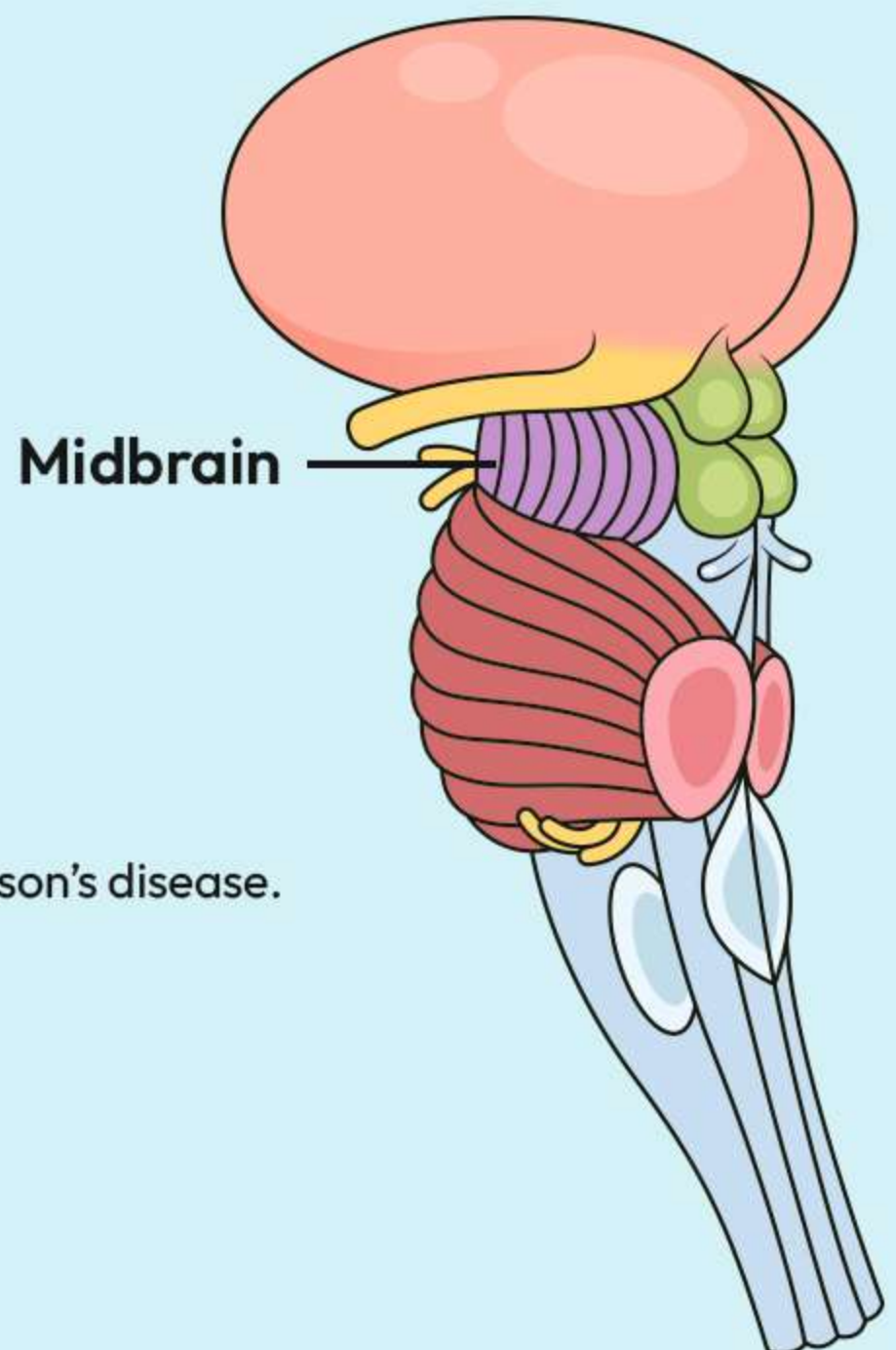
Key Structures:

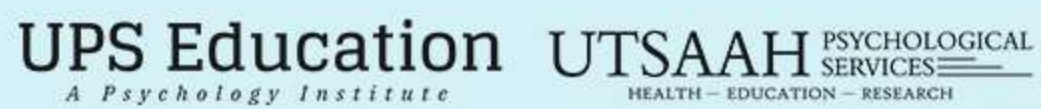
- **Superior colliculi**
visual reflexes
- **Inferior colliculi**
auditory reflexes
- **Substantia nigra**
dopamine production

Main Functions:

- Eye movements
- Visual & auditory reflexes
- Motor control
- Orienting reflexes
(turning head/eyes
toward stimuli)

Degeneration of substantia nigra → Parkinson's disease.





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