

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

# EXTERNAL FEATURES OF BRAIN STEM

***DR. MAHVISH JAVED***

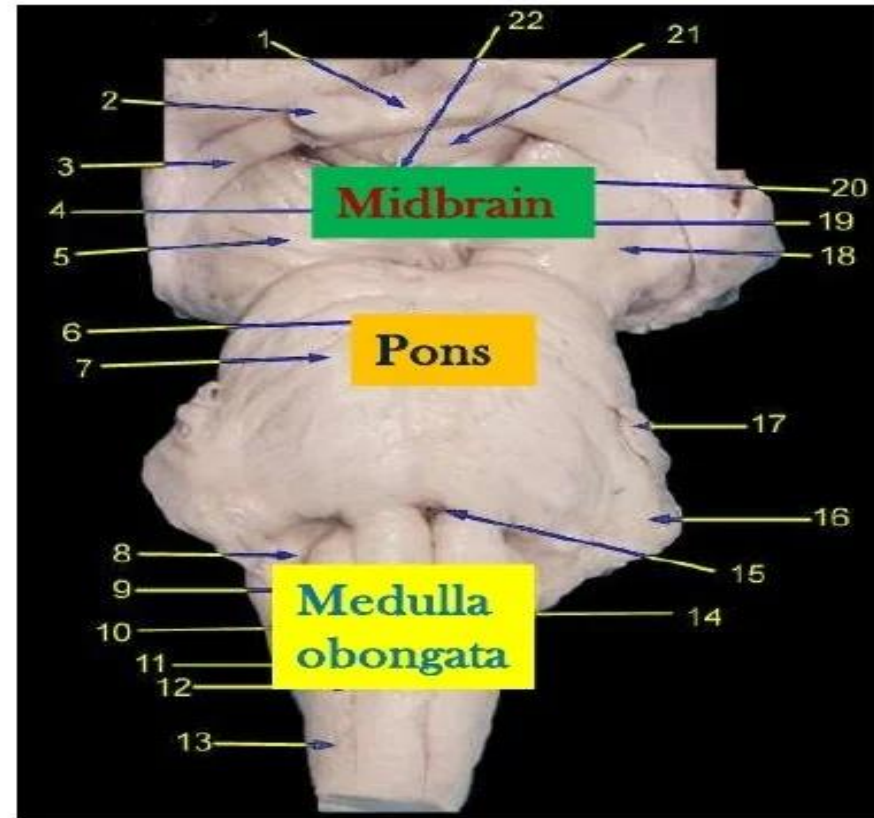
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ANATOMY DEPARTMENT

KGMC PESHAWAR

# Brainstem

- ❖ Located between the cerebrum and the spinal cord
  - Provides a pathway for tracts running between higher and lower neural centers.
- ❖ Consists of the midbrain, pons, and medulla oblongata.
- ❖ Each region is about an inch in length.  
**Microscopically**, it consists of deep gray matter surrounded by white matter fiber tracts.
- ❖ Produce automatic behaviors necessary for survival.



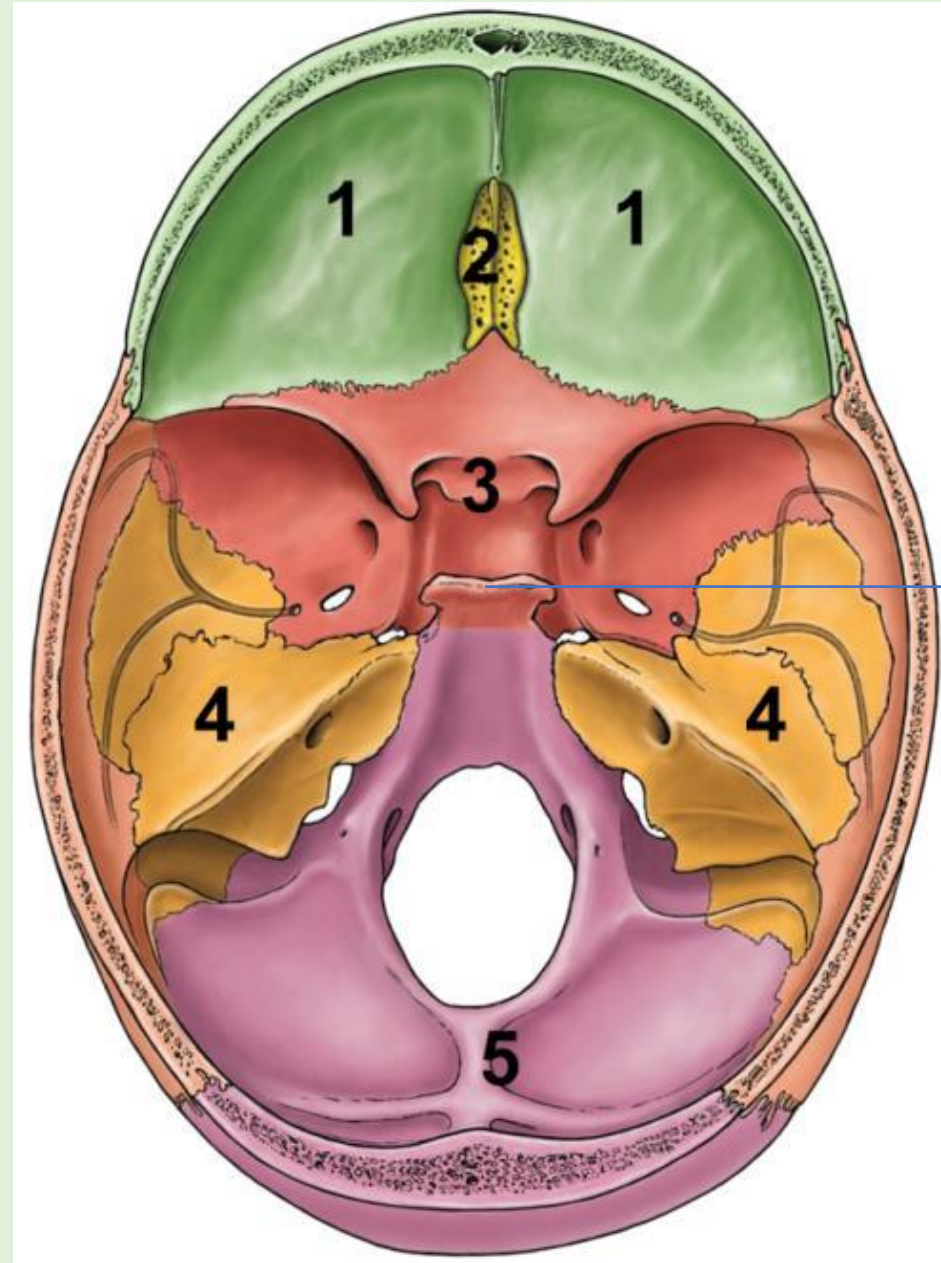
## **CONNECTIONS WITH CEREBELLUM:**

- Each part of brain stem is connected to
- cerebellum by cerebellar peduncles
- White matter ” (superior, middle & inferior).

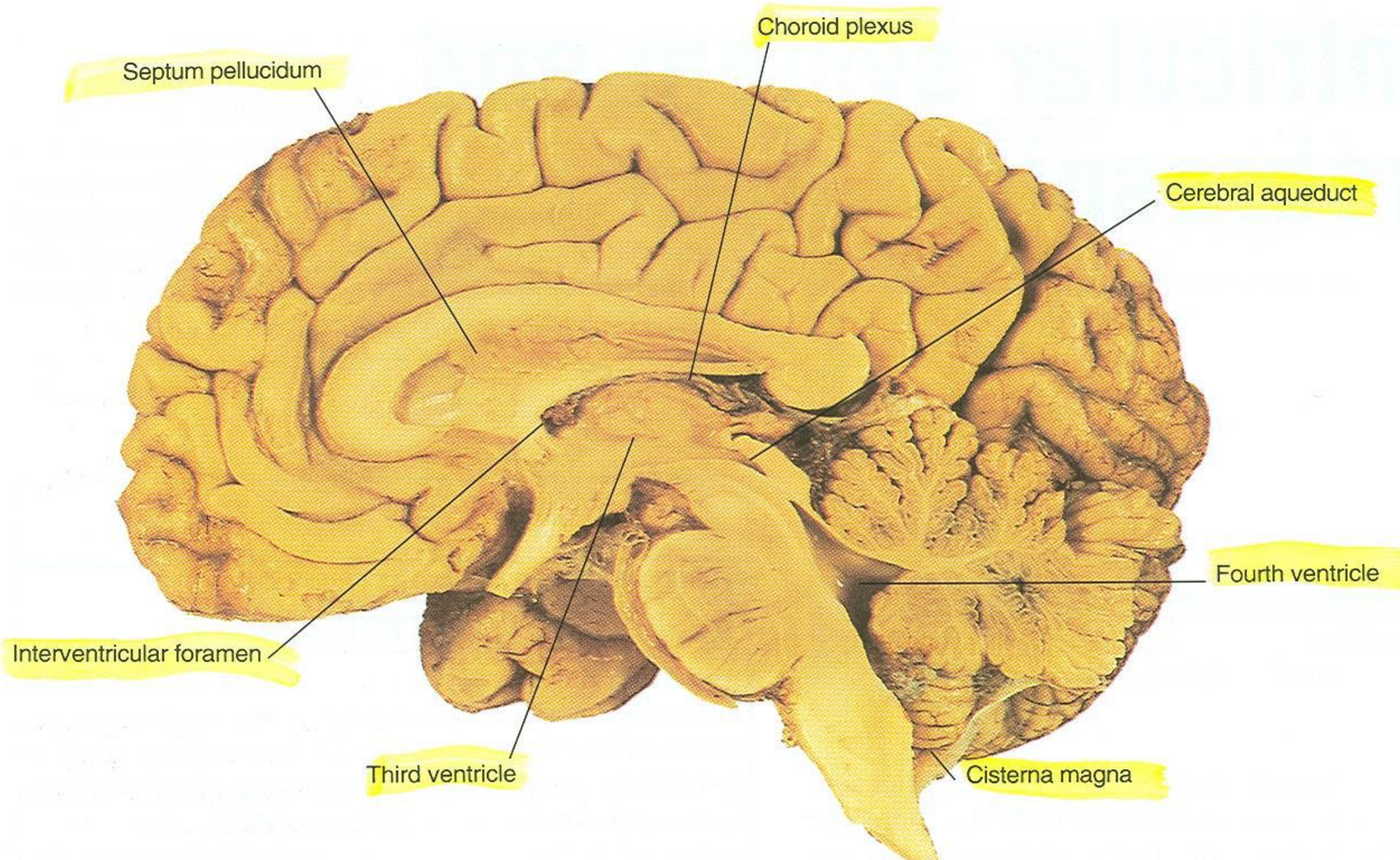
# LOCATION

- The brainstem is very small, making up around only 2.6 percent of the brain's total weight
- Posterior cranial fossa

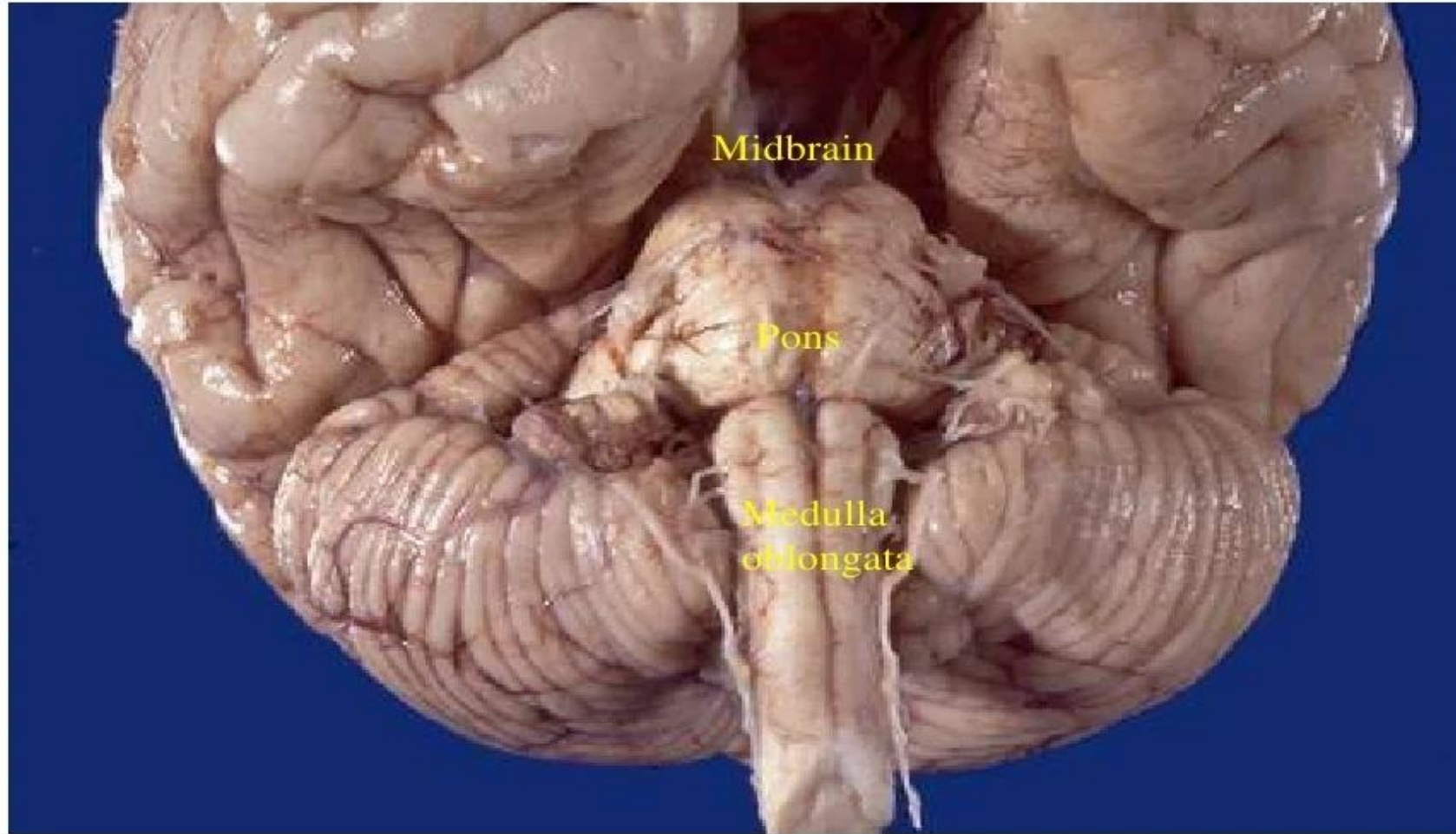
# SKULL



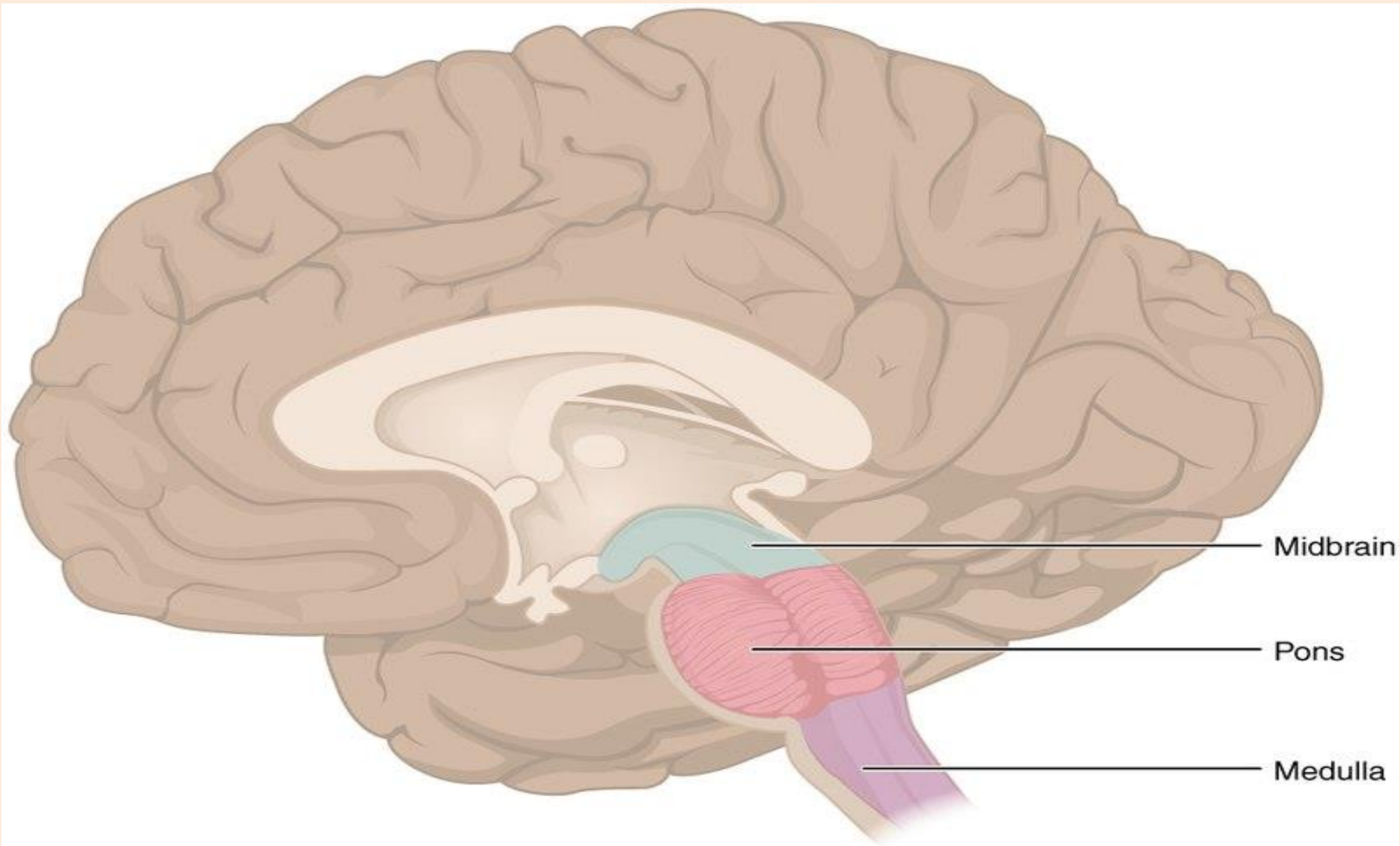
**CLIVUS**



## VENTRAL SURFACE OF BRAIN STEM







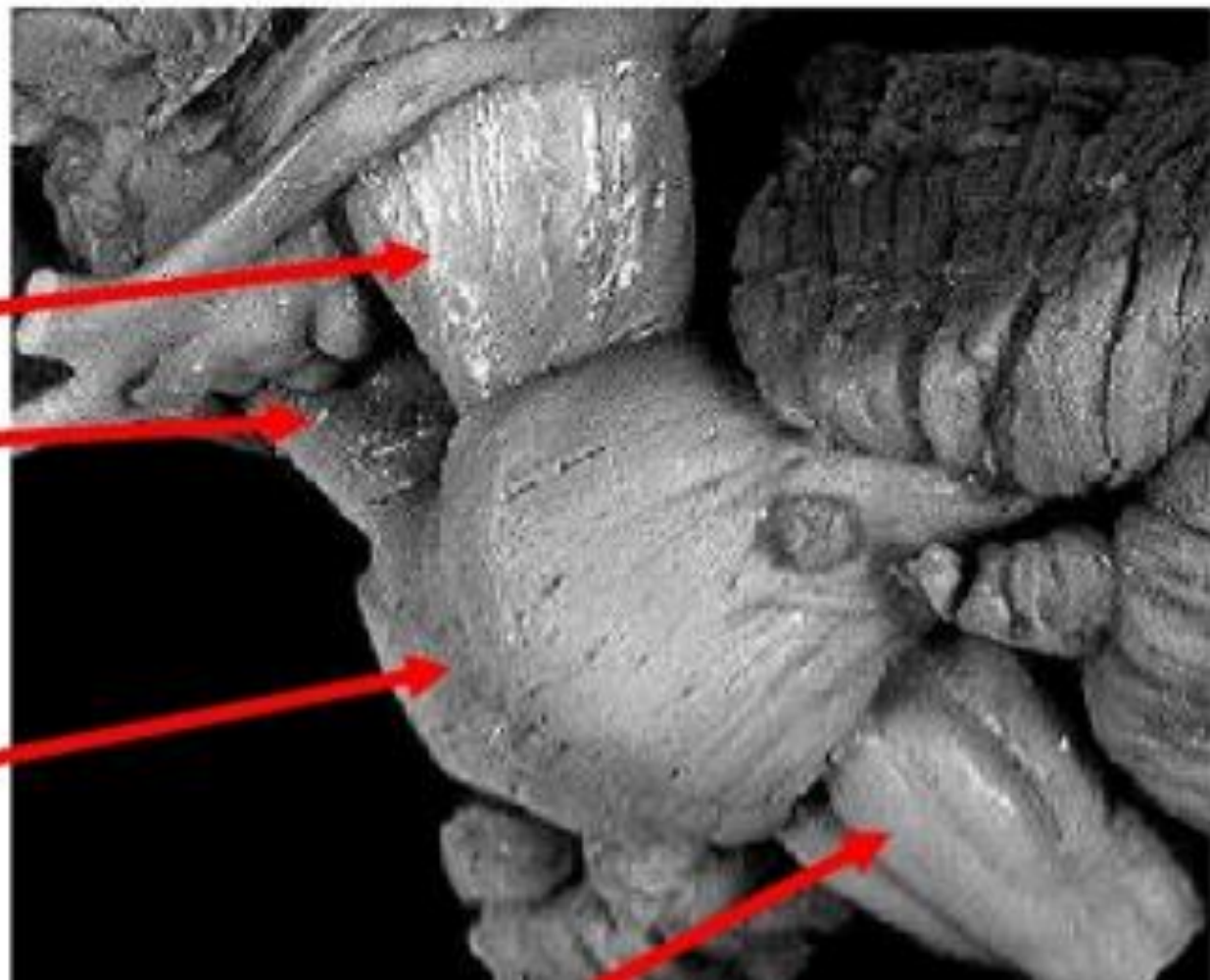
## Ventral – Lateral View

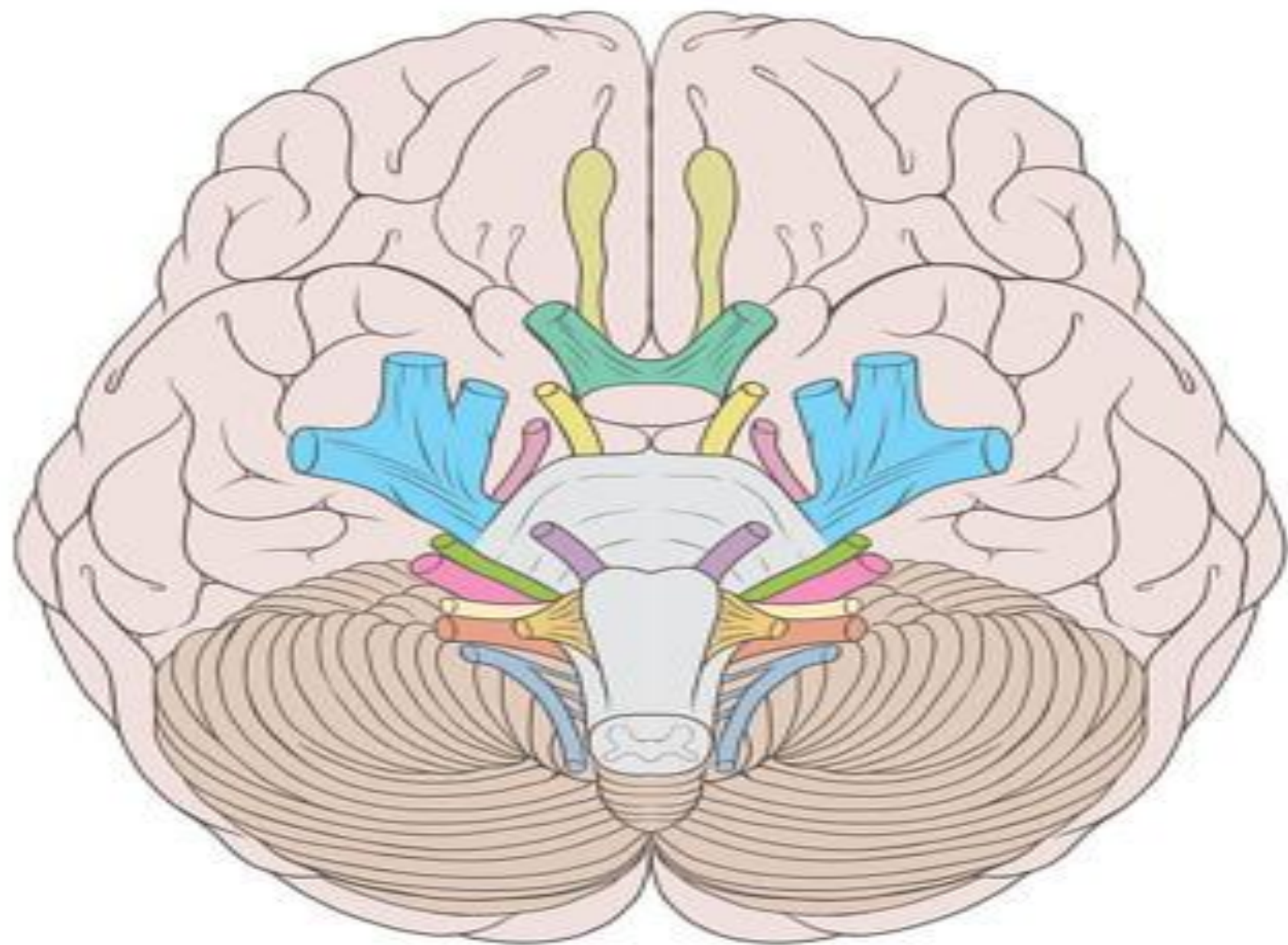
**Midbrain**

Cerebral  
peduncles

**Pons**

Basis pontis





-  CN I Olfactory n.
-  CN II Optic n.
-  CN III Oculomotor n.
-  CN IV Trochlear n.
-  CN V Trigeminal n.
-  CN VI Abducens n.
-  CN VII Facial n.
-  CN VIII Vestibulocochlear n.
-  CN IX Glossopharyngeal n.
-  CN X Vagus n.
-  CN XI Accessory n.
-  CN XII Hypoglossal n.

# COMPOSITION OF BRAINSTEM

1- Well defined tracts (white matter)

2-Nuclei(grey matter)

3-Diffuse system of nerve fibers and nerve cells called as Reticular formation).

# FUNCTIONS OF BRAINSTEM

- It is also of prime importance in the conveyance of motor and sensory information.
- These pathways include
- the [corticospinal tract](#) (motor function)
- the [dorsal column-medial lemniscus pathway](#) ([fine touch](#), [vibration sensation](#), and [proprioception](#))
- the [spinothalamic tract](#) ([pain](#), temperature, itch, and [crude touch](#)) pathways from the rest of the brain to the body, and from the body back to the brain.

1. It contains important **autonomic reflex centers** which can regulate cardiac, and respiratory function, helping to control heart rate and breathing rate.
2. It supply the face and neck via the cranial nerves. Ten pairs of cranial nerves come from the brainstem.
3. Other roles include the regulation of the central nervous system and the body's sleep cycle.
4. It contains **Reticular activating system** which controls consciousness (alertness)

THANK YOU.....  
THANK YOU.....

