The middle cranial fossa is separated from the posterior cranial fossa by the petrous part of the temporal bone.

The anterior cranial fossa is separated from the middle cranial fossa by the lesser wing of the sphenoid.

The interior of the base of the skull is divided into three cranial fossae:

1. Anterior
2. Middle
3. Posterior
Anterior Cranial Fossa

Contains the frontal lobes of the cerebral hemispheres

*It is bounded*

**Anteriorly:** by the inner surface of the frontal bone

**In the midline:** a *crest galli* for the attachment of the falx cerebri.

**Posteriorly:** the *lesser wing* of the sphenoid bone

Note: The medial end of the lesser wing of the sphenoid forms

**The anterior clinoid process**

gives attachment to the *Tentorium cerebelli*.

- The floor of the fossa is formed by:
  - **Laterally:** orbital plates of the frontal bone
  - **Medially:** by the cribriform plate of the ethmoid

The crista galli is a sharp upward projection of the ethmoid bone in the midline for the attachment of

**The falx cerebri.**
Middle Cranial Fossa

formed by:
the body of the sphenoid

**Anteriorly** by: the lesser wings of the sphenoid

**Posteriorly** by: the superior borders of the petrous parts of the temporal bones

**Laterally**: the squamous parts of the temporal bones, the greater wings of the sphenoid, and the parietal bones. The floor of each lateral part of the middle cranial fossa is formed by the greater wing of the sphenoid and the squamous and petrous parts of the temporal bone.
The sphenoid bone

- The body of the sphenoid contains the sphenoid air sinuses.
- The optic canal transmits:
  - A. The optic nerve
  - B. The ophthalmic artery
- The superior orbital fissure is a slitlike opening between the lesser and greater wings of the sphenoid. It transmits:
Lacrimal
Frontal
Trochlear
Superior division of Oculomotor nerve
Nasociliary
Inferior division of oculomotor nerve
Abducent nerves
together with the superior ophthalmic vein.
4- *The foramen rotundum* 
situated behind the medial end of the superior orbital fissure 
Transmits the maxillary nerve.

5- *The foramen ovale* 
lies posterolateral to the foramen rotundum 
Transmits the mandibular nerve and the lesser petrosal nerve.

6- *The small foramen spinosum* 
lies posterolateral to the foramen ovale. The foramen transmits the middle meningeal artery.

7- *Foramen lacerum* 
lies between the apex of the petrous part of the temporal bone and the sphenoid bone. In life, it is filled by cartilage and fibrous tissue, and only small blood vessels pass through this tissue from the cranial cavity to the neck.

8- *The carotid canal* 
Transmits: The internal carotid artery.

9- *Meckl’s cave:* 
impression on the apex of the petrous part of the temporal bone for the trigeminal ganglion.
10-The median part of the middle cranial fossa is formed by:

the body of the sphenoid bone

In front of it is

The sulcus chiasmatis

which is related to the optic chiasma

and leads laterally

to

THE OPTIC CANAL

On the superior aspect of the body is a depression called

The sella turcica

which contain

THE PITUITARY GLAND

The sella turcica is bounded posteriorly by a square plate of bone called

THE DORSUM SELLAE

The superior angles of the dorsum sellae have

two tubercles called

The posterior clinoid processes

which give attachment to the fixed margin of

The tentorium cerebelli.
Posterior Cranial Fossa

Contains the parts of the **hindbrain**: The cerebellum, Pons, and Medulla oblongata

Is bounded by:
- Anteriorly: the petrous part of the temporal bone
- Posteriorly: the internal surface of the squamous part of the occipital bone

The floor is formed by:
- Parts of the occipital bone
- The mastoid part of the temporal bone

The roof is formed by:
- **a fold of dura**
- **THE TENTORIUM CEREBELLI**
  which intervenes between the cerebellum below and the occipital lobes of the cerebral hemispheres above
1. The internal acoustic meatus pierces the posterior surface of the petrous part of the temporal bone. It transmits:
   A. THE VESTIBULOCOCHLEAR NERVE
   B. THE FACIAL NERVE.

2. The internal occipital protuberance attached to it the small falx cerebelli

3. Groove for the transverse sinus:
   On each side of the internal occipital protuberance
4-the sigmoid sinus

- Groove for inferior petrosal sinus
- Superior border of petrous part of temporal bone
- Groove for sigmoid sinus
- Groove for transverse sinus
- Internal occipital crest
- Foramen magnum
- Jugular tubercle
- Internal acoustic meatus
- Jugular foramen
- Hypoglossal canal
5-The foramen magnum
occupies the central area of the floor
Transmits
   A- *The medulla oblongata and its*
       surrounding meninges
   B- *The ascending spinal parts of the accessory nerves*
   C-*The two vertebral arteries*

6-The hypoglossal canal
is situated above the anterolateral boundary of the foramen magnum
Transmits the hypoglossal nerve
7-The jugular foramen
It transmits the following structures:
from before backward:
A-The inferior petrosal sinus
B-The 9th, 10th, and 11th cranial nerves
C-The large sigmoid sinus
D-The inferior petrosal sinus
E-The sigmoid sinus turns down through the foramen to become the internal jugular vein
Inferior View of the Skull

1-The hard palate which is made of:
   A-The palatal processes of the maxillae (vertical)
   B-The horizontal plates of the palatine bones

2-Incise fossa and foramen

3-The greater and lesser palatine foramina

4-The choanae (posterior nasal apertures).

5-The vomer

6-Medial and lateral pterygoid plates of the sphenoid bone
The greater wing of the sphenoid is pierced by the large 7-foramen ovale 8-foramen spinosum.

9-The spine of the sphenoid LOCATED Posterolateral to the foramen spinosum is

10-The mandibular fossa of the temporal bone and the articular tubercle form the upper articular surfaces for the temporomandibular joint.
11 - The styloid process of the temporal bone

12 - Tympanic plate of the temporal bone

13 - The external auditory meatus

14 - The opening of the carotid canal

15 - Foramen lacerum
16- The stylomastoid foramen  
In the interval between the styloid and mastoid processes

17-jugular foramen

18-Hypoglossal canal  
Superior to the occipital condyle for transmission of the hypoglossal nerve
19- The basilar part of the occipital bone

20- The occipital condyles

21- The external occipital protuberance.

22- **The superior nuchal lines**: posterior to the foramen magnum in the midline