

## Base of the Skull

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

1-Anterior

1-Anterior

The anterior cranial fossa is separated from the middle cranial fossa By

The lesser wing of the sphenoid

2-Middle

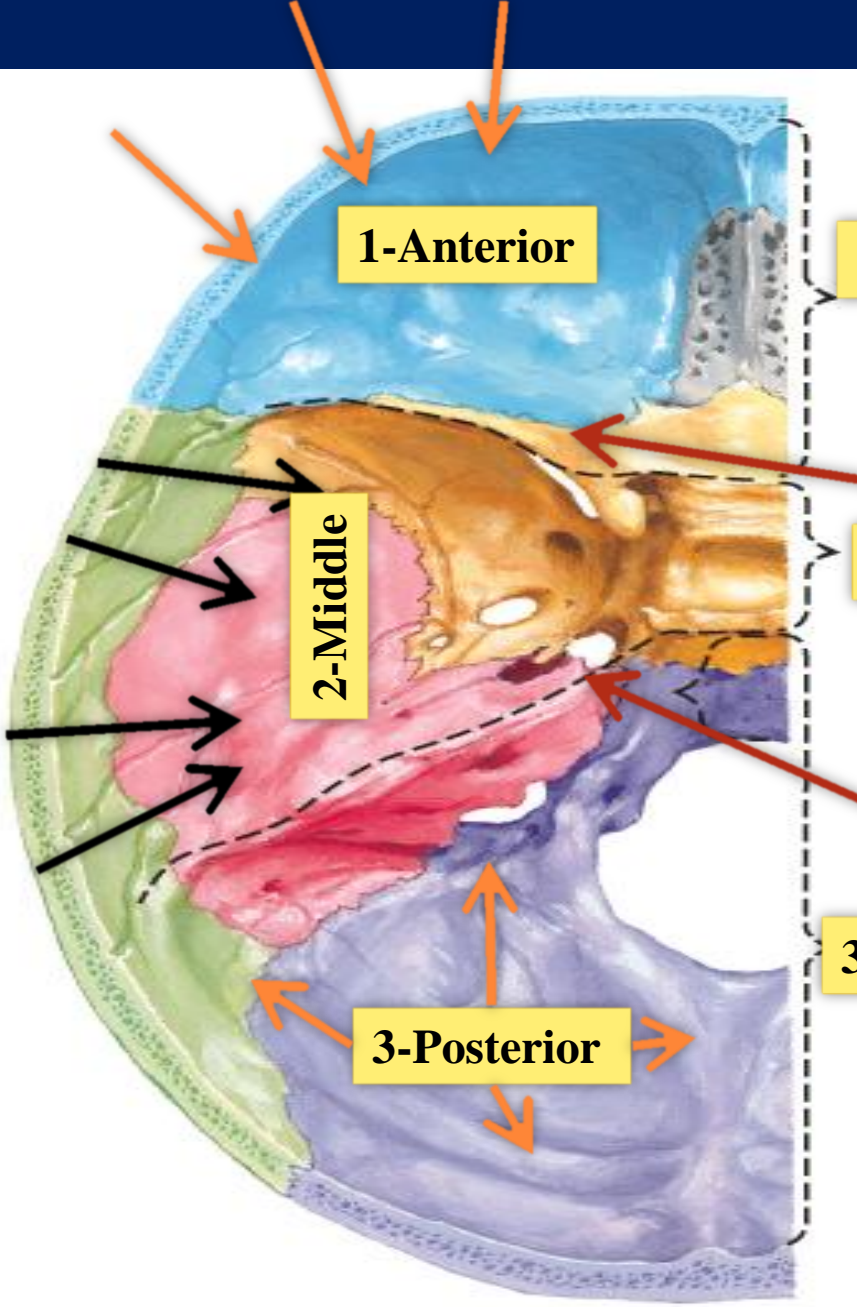
2-Middle

The middle cranial fossa is separated from the posterior cranial fossa By

The petrous part of the temporal bone

3-Posterior

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

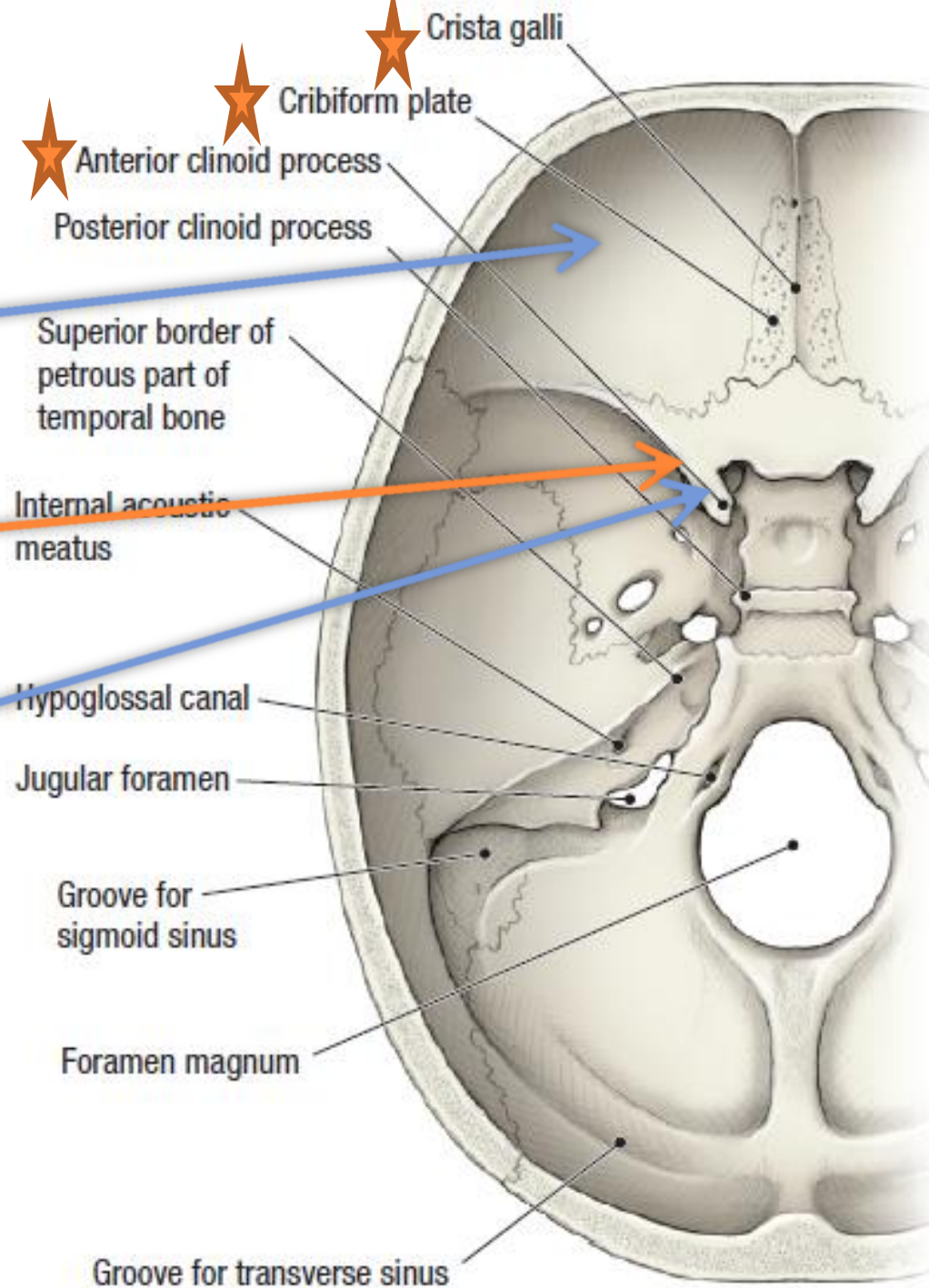
**The anterior clinoid process** gives attachment to the **Tentorium cerebelli.**

❖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.**



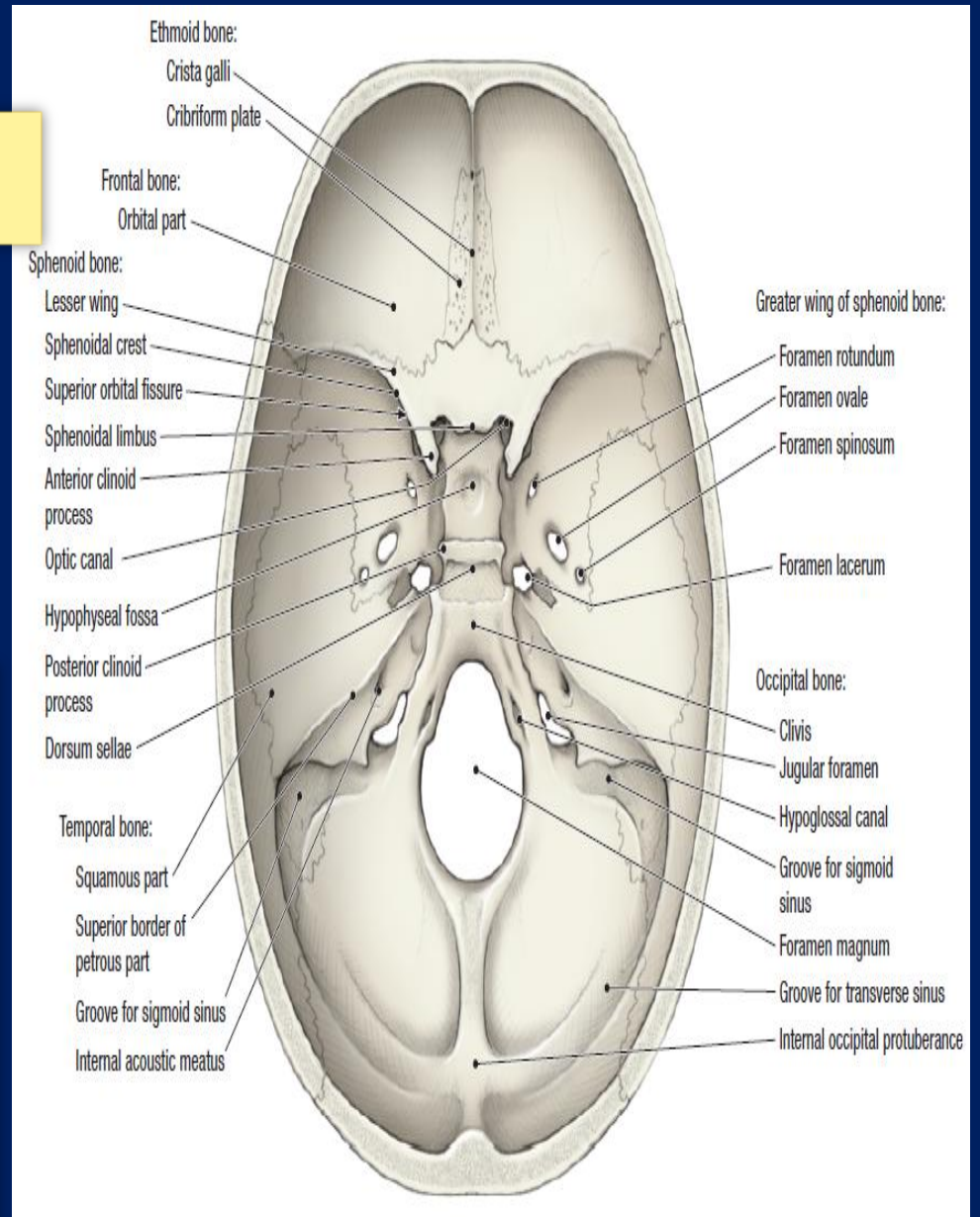
## Middle Cranial Fossa

formed by:  
the body of the sphenoid It is bounded

***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

resembles a bat having a centrally placed body with greater and lesser wings that are outstretched on each side

1-The body of the sphenoid :contains the  
**sphenoid air sinuses**

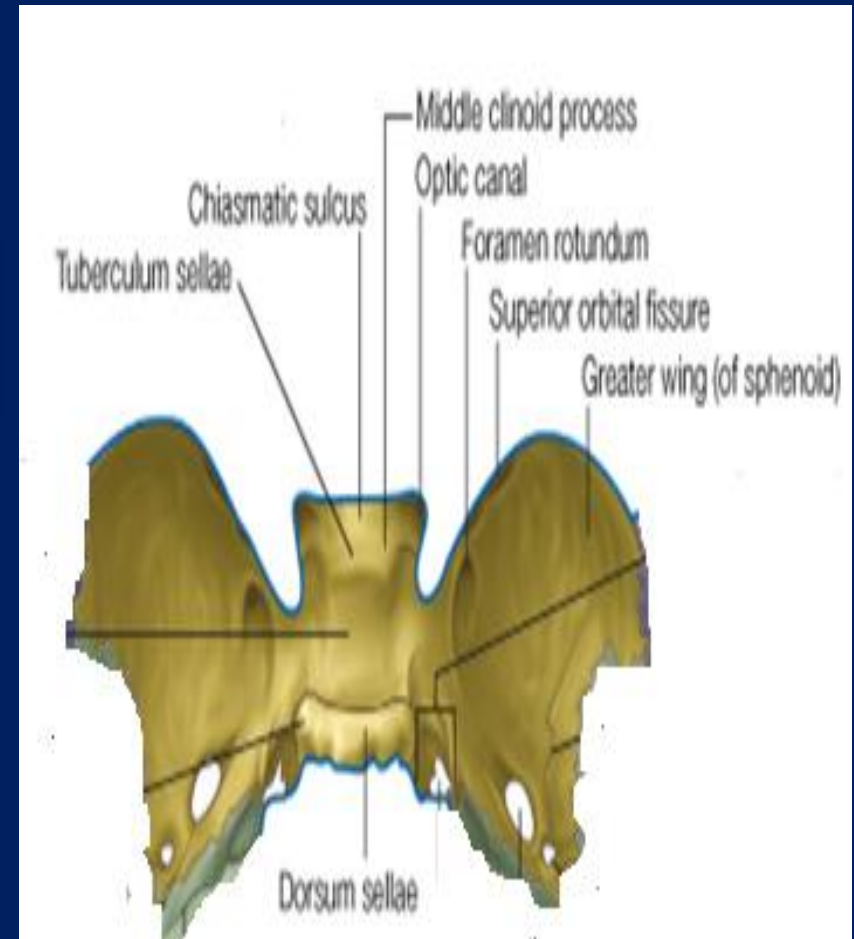
2-The **optic canal** transmits

A- The optic nerve

B-The ophthalmic artery

**3-The superior orbital fissure**

is a slitlike opening between the **lesser and greater** wings of the sphenoid transmits:



**Live  
Free  
To  
See  
No  
Insult  
At all**

**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  
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**

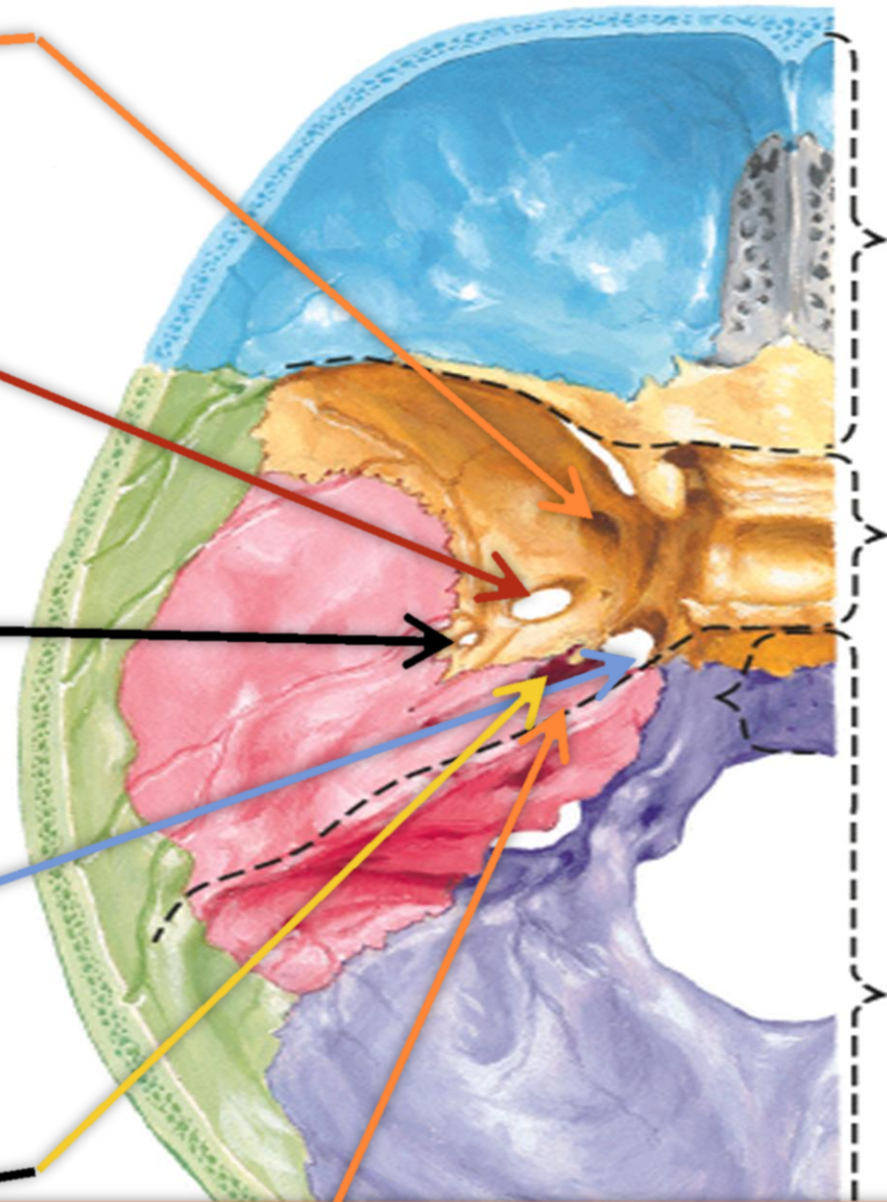
lies between the apex of the petrous part of the temporal bone and the sphenoid bone  
in life is **filled by cartilage and fibrous tissue**, and only small blood vessels pass through this tissue from the cranial cavity to the neck.

#### **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

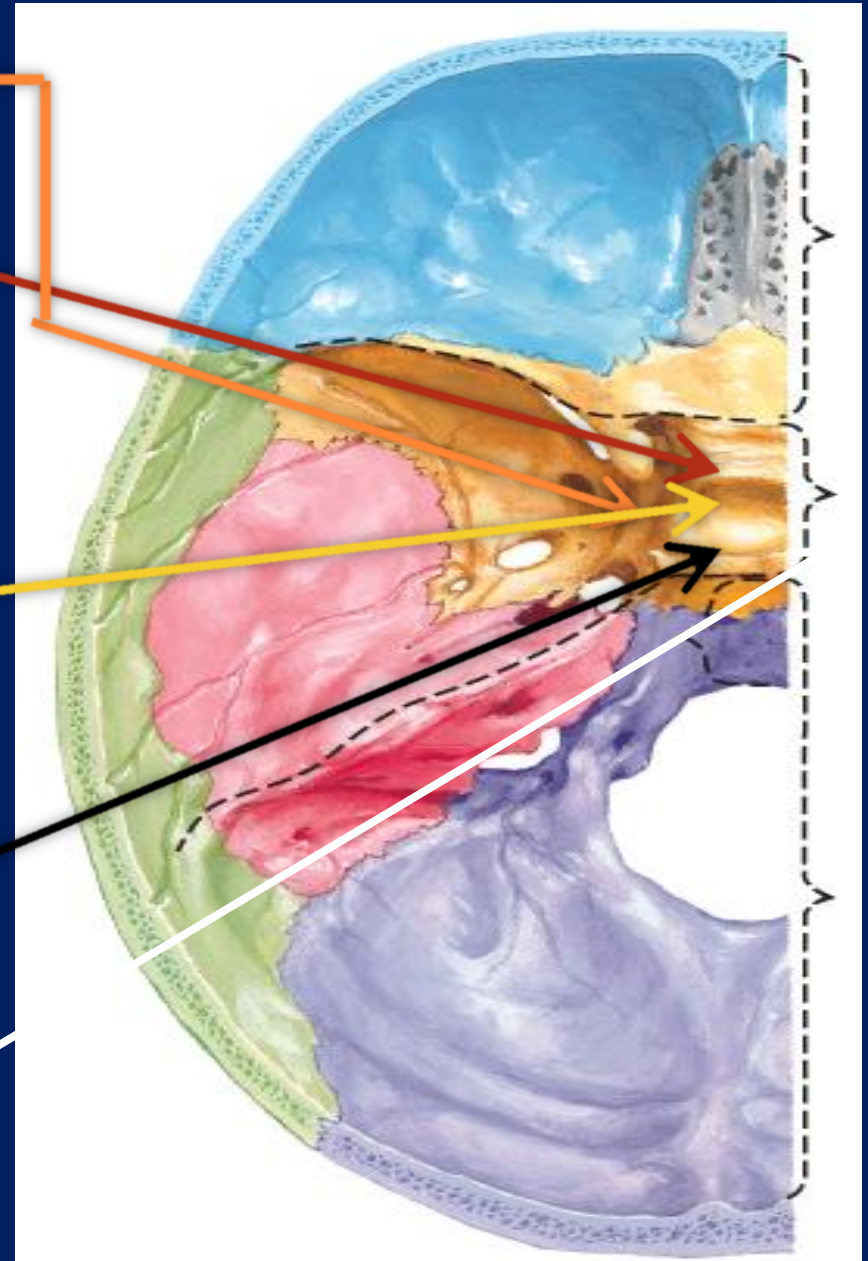
**THE DORSUM SELLAE**

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

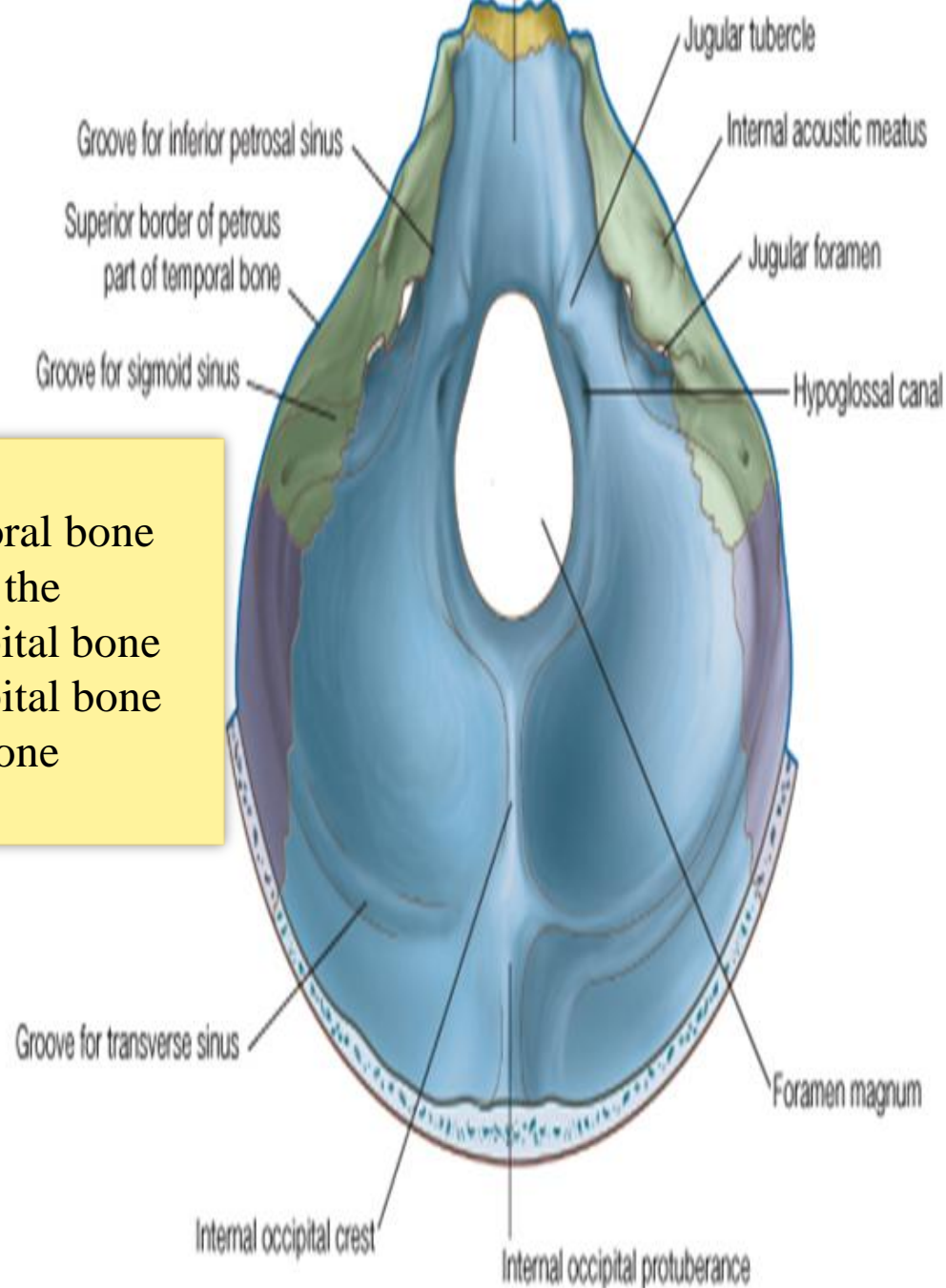
The mastoid part of the temporal bone

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.

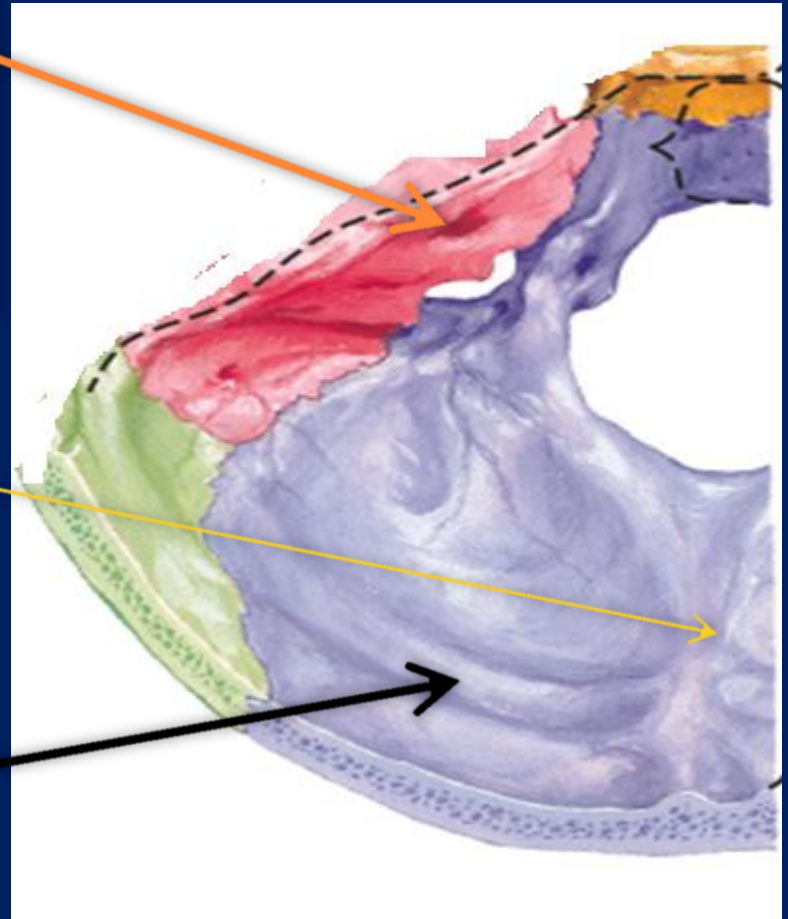
It transmits:

**A- THE VESTIBULOCOCHLEAR NERVE**

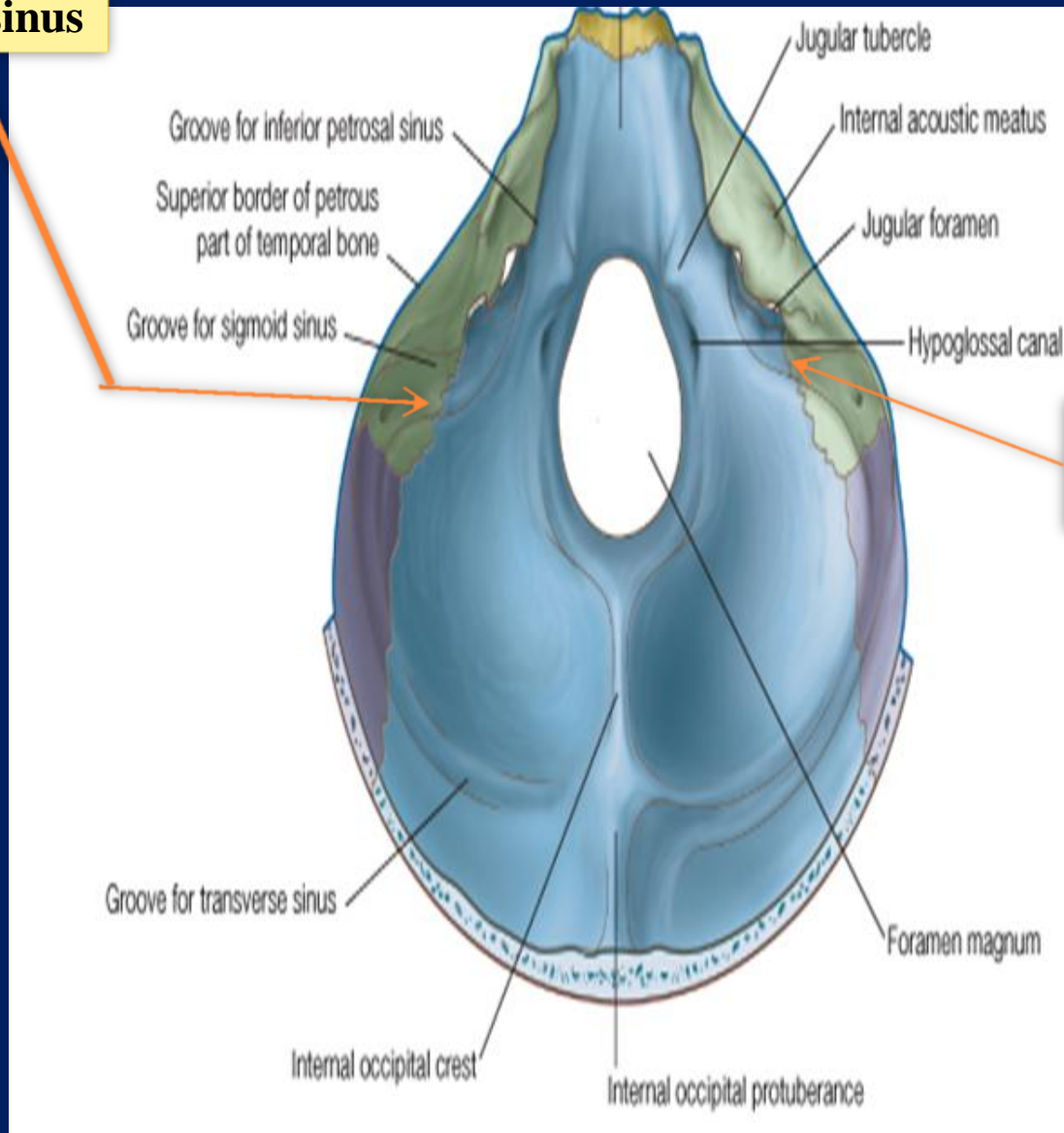
**B- THE FACIAL NERVE.**

**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



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## 5-The foramen magnum

occupies the central area of the floor

Transmits

*A- The medulla oblongata and its  
surrounding meninges*

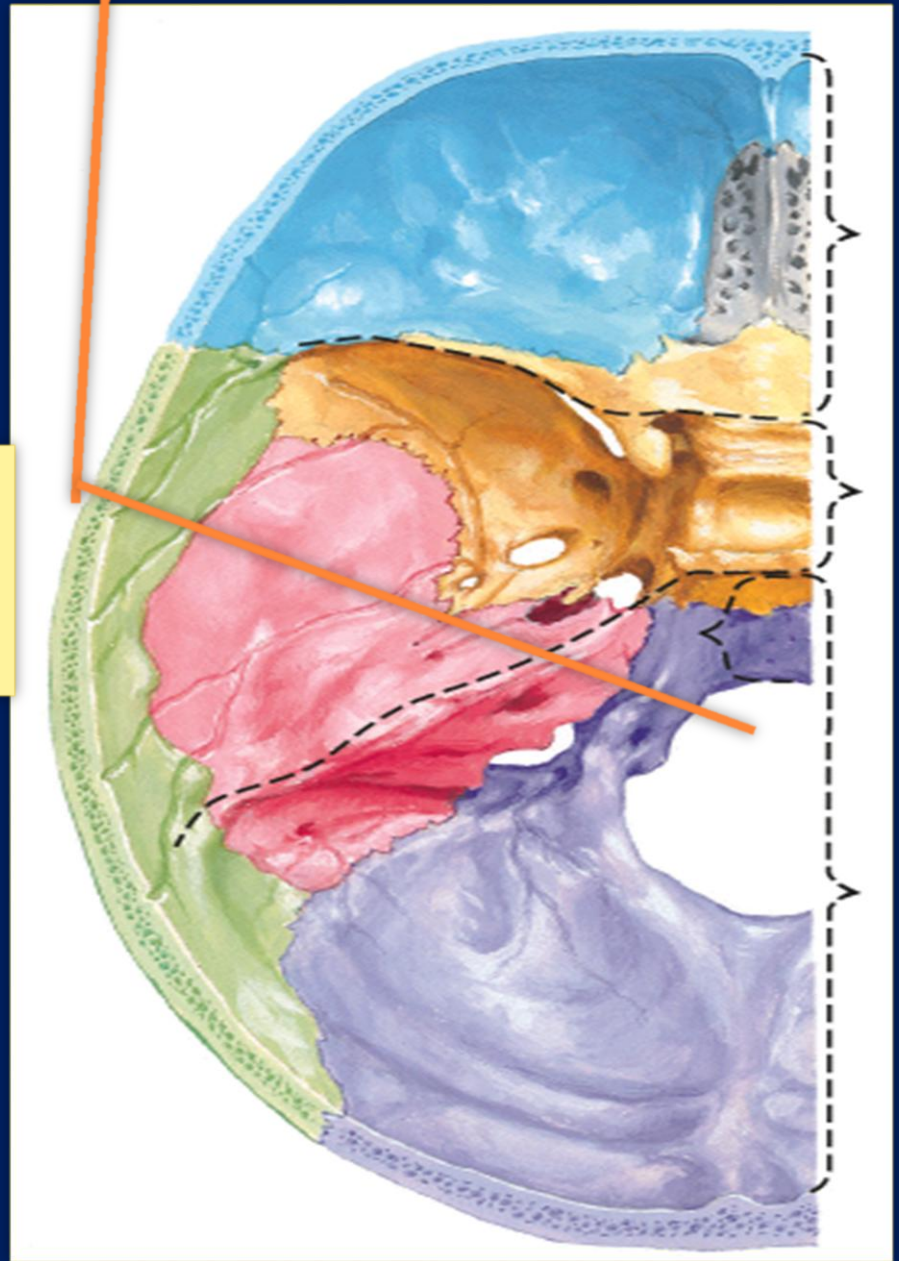
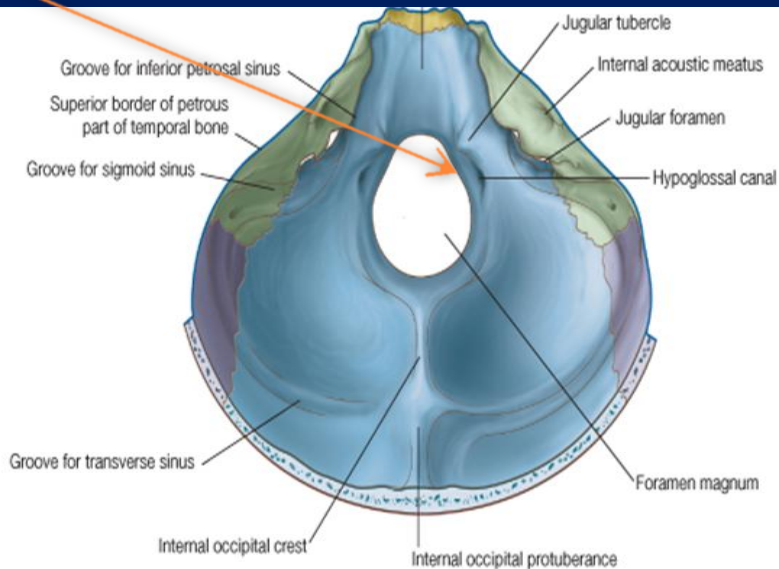
*B- The ascending spinal parts of the accessory  
nerves*

*C- The two vertebral arteries*

## 6-The hypoglossal canal

is situated above the anterolateral boundary  
of the foramen magnum

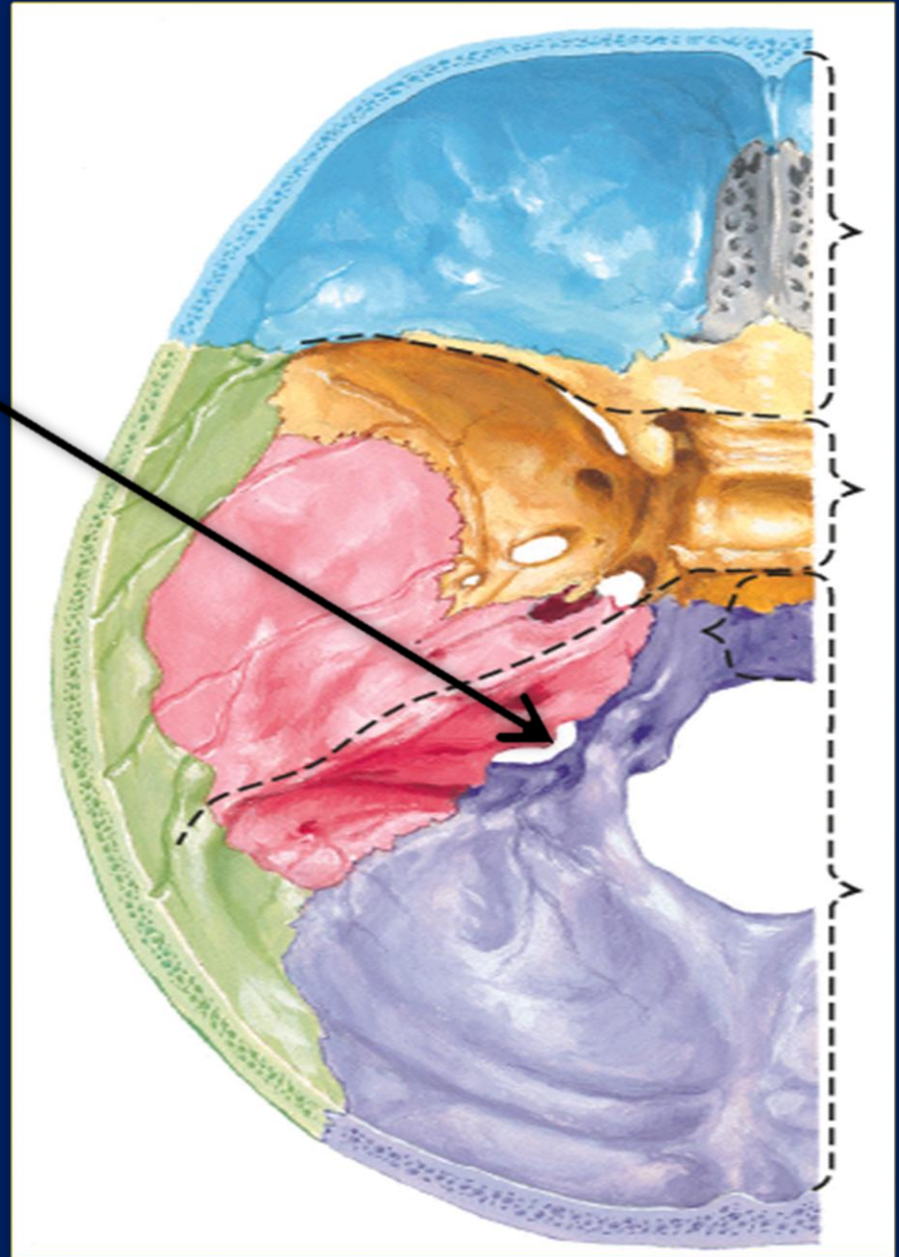
Transmits the hypoglossal nerve



## **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

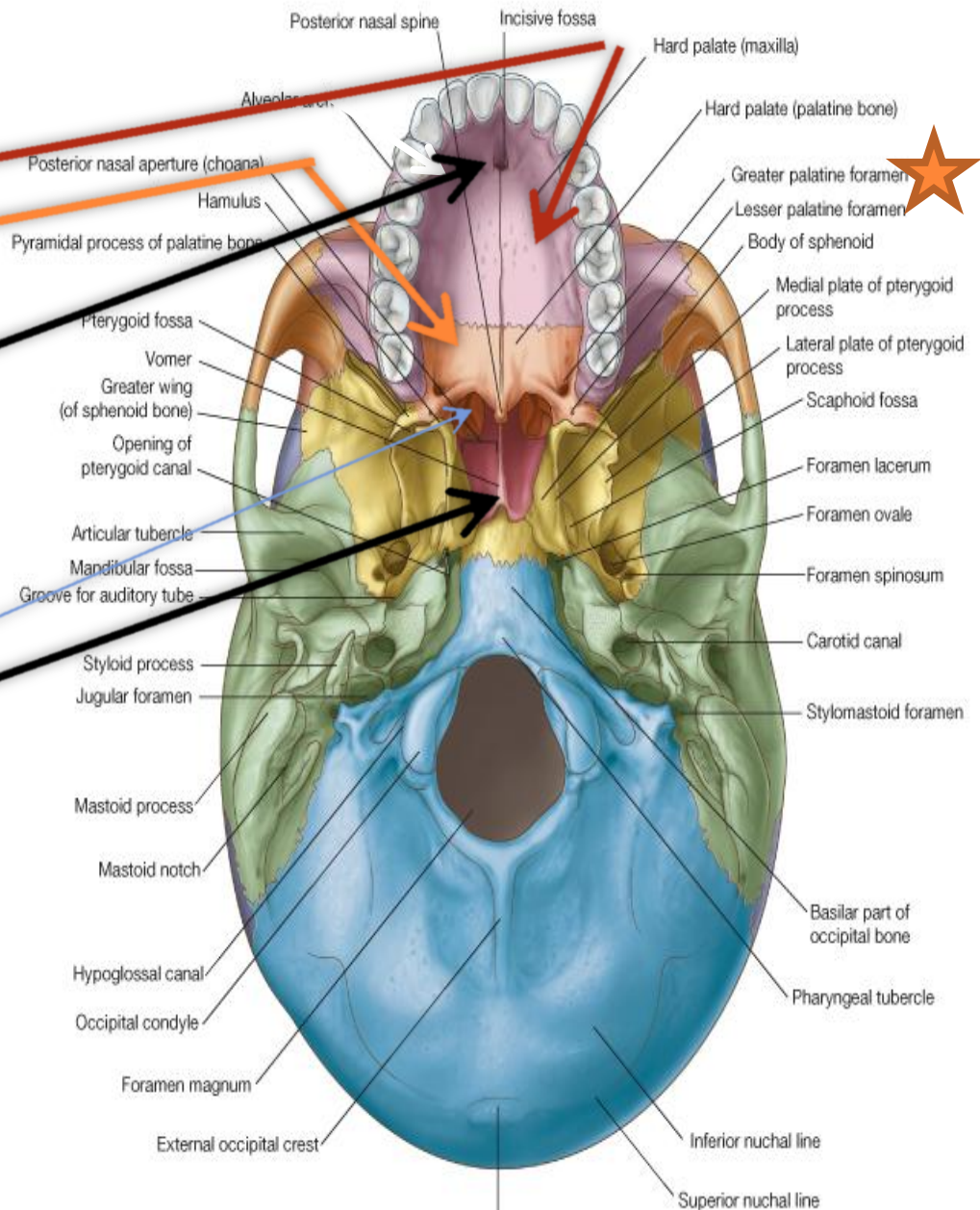
**2-Incise fossa and foramen**

**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

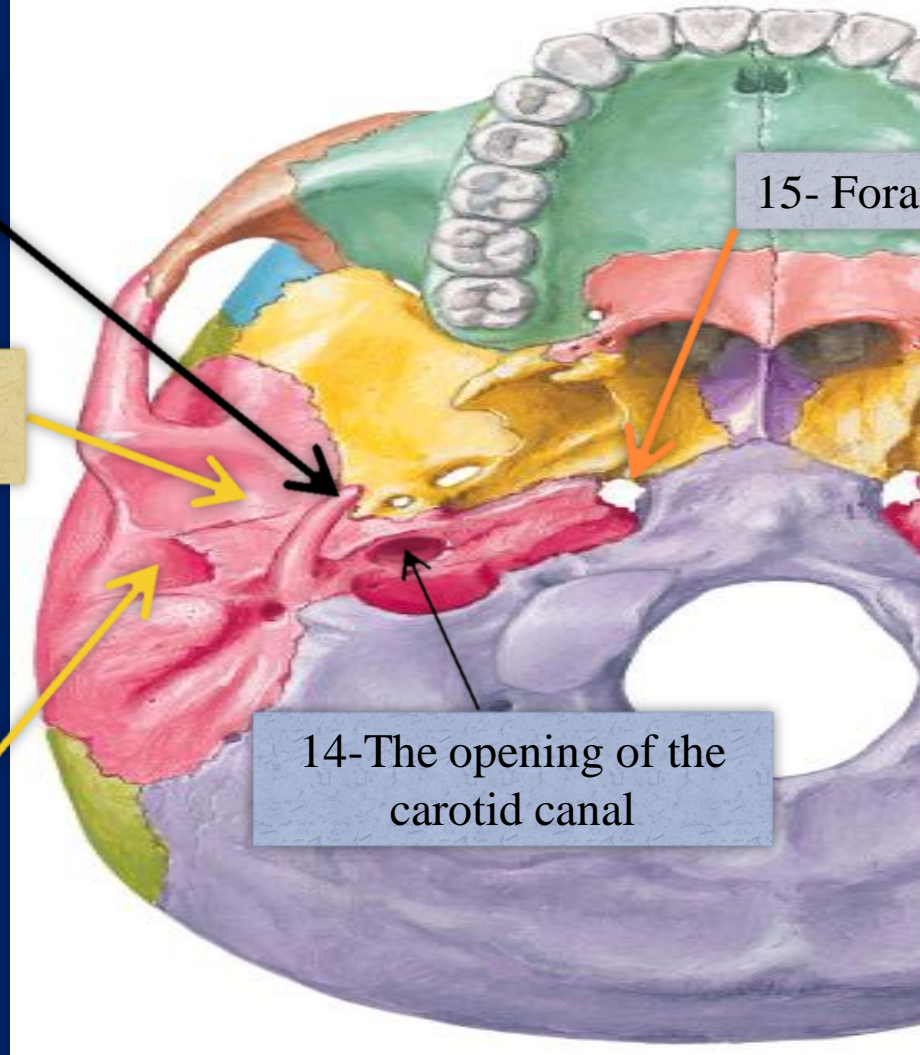
9-The spine of the sphenoid  
LOCATED Posterolateral to  
the foramen spinosum is

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

Cranial Base  
Inferior View



## Cranial Base Inferior View



11-The styloid process of the temporal bone

12-Tympanic plate of the temporal bone

13-the external auditory meatus

15- Foramen lacerum

14-The opening of the carotid canal

## Cranial Base Inferior View

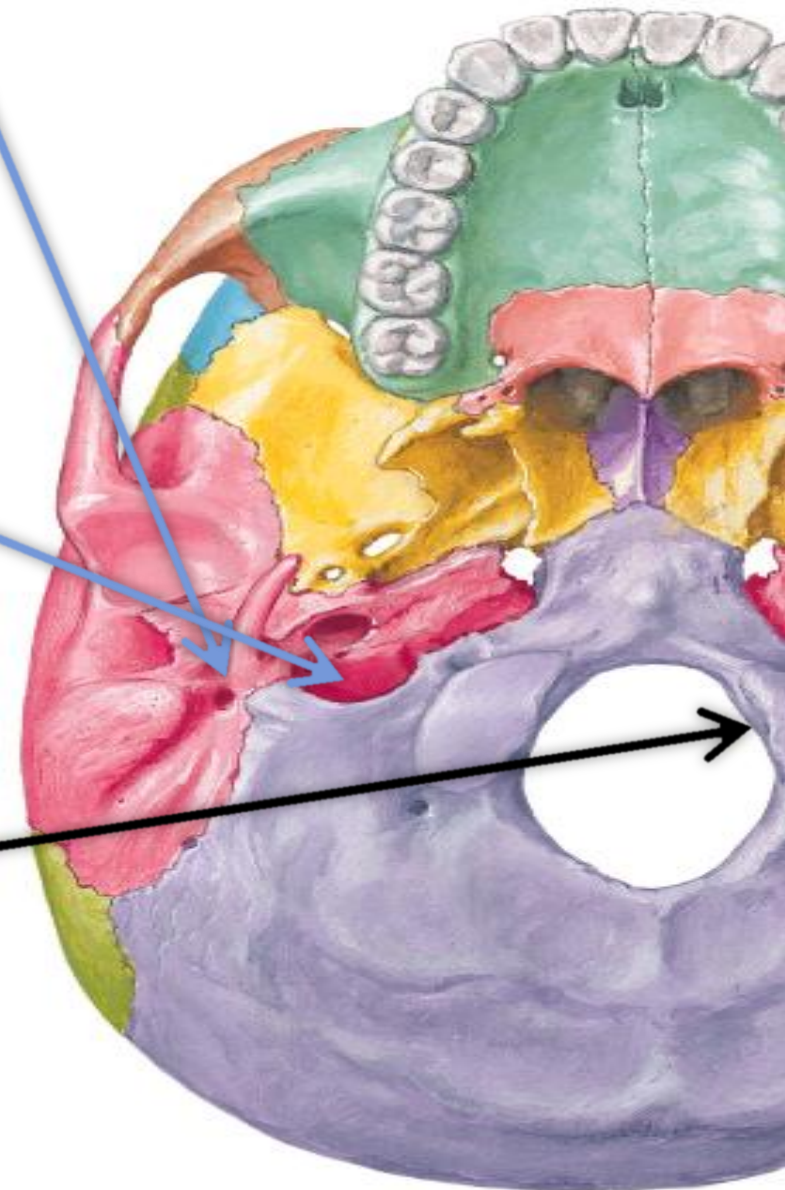
### 16- The stylomastoid foramen

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



## Cranial Base Inferior View

**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

