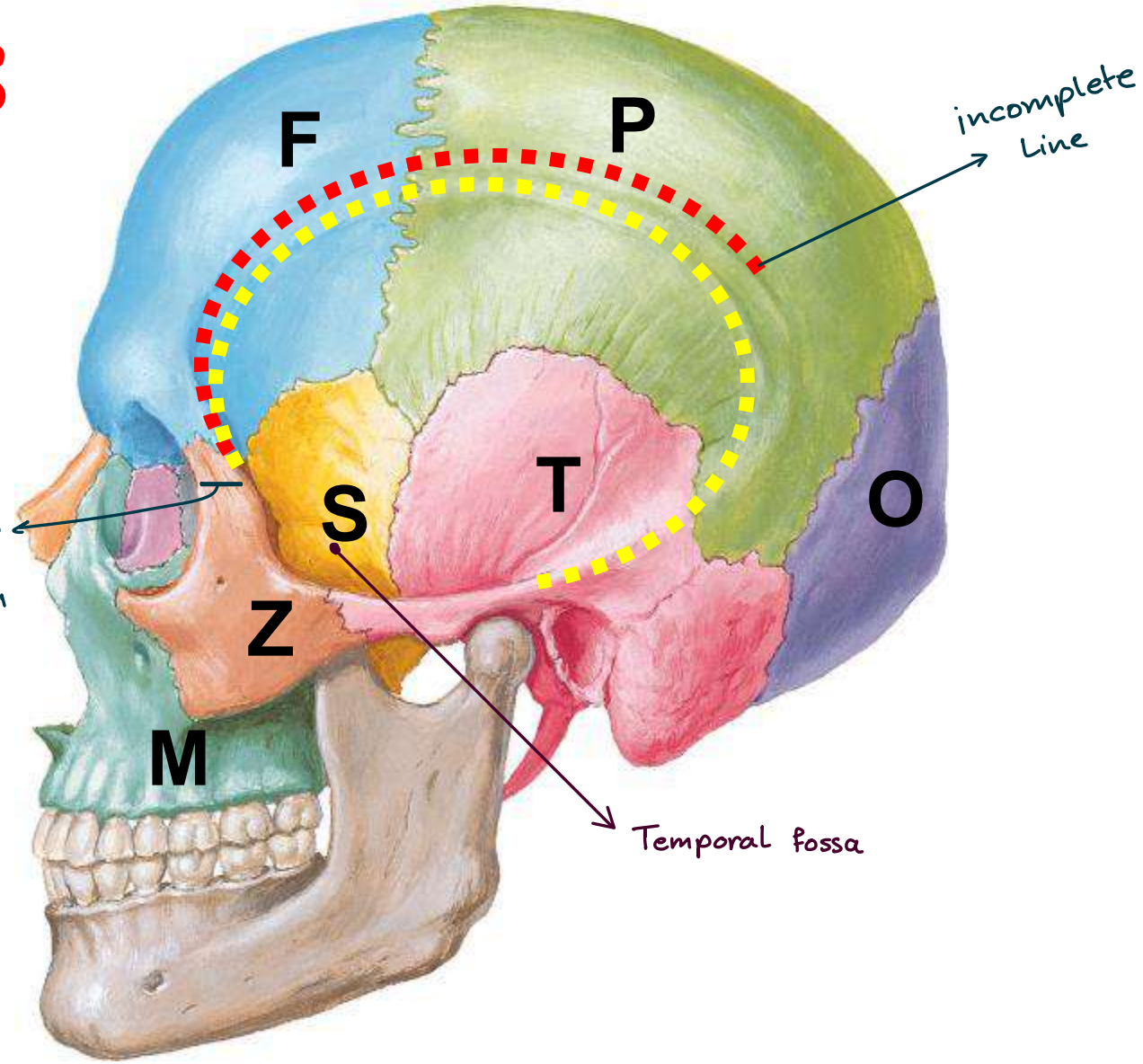
Lecture: 3

Done By: Rawan Shatnawi

Norma Lateralis

7 bones

*It is formed of: frontal, parietal, occipital, temporal, greater wing of sphenoid bone, maxilla and zygomatic bones.

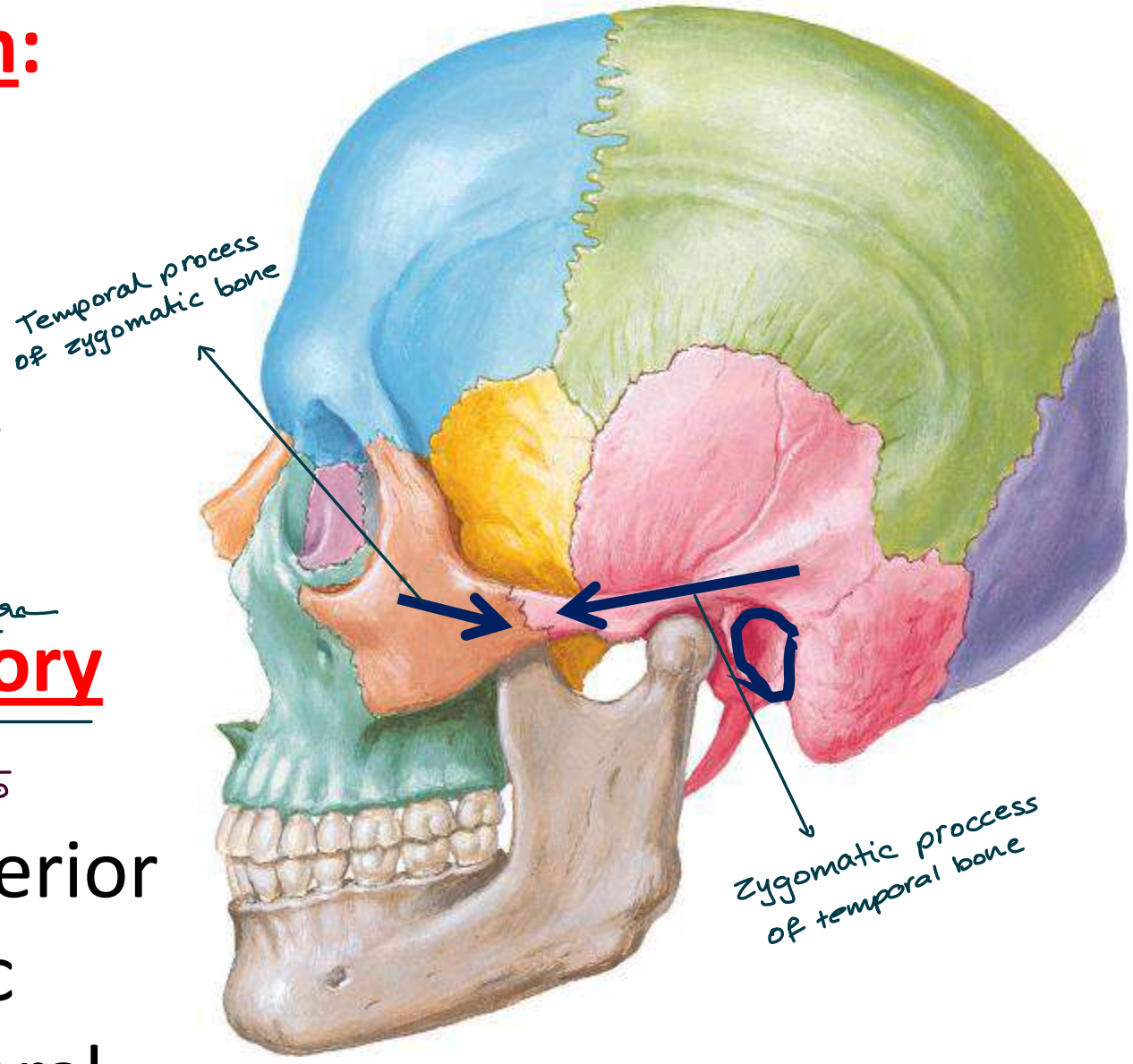


***The superior temporal line:** extends from zygomatic bone and passes backwards.

***The inferior temporal line:** with **the temporal fossa** lies below it.

* The zygomatic arch:

* Is formed by the temporal process of zygomatic bone and zygomatic process of temporal bone.



* The external auditory meatus:

* lies below the posterior part of the zygomatic process of the temporal bone.

of temporal bone

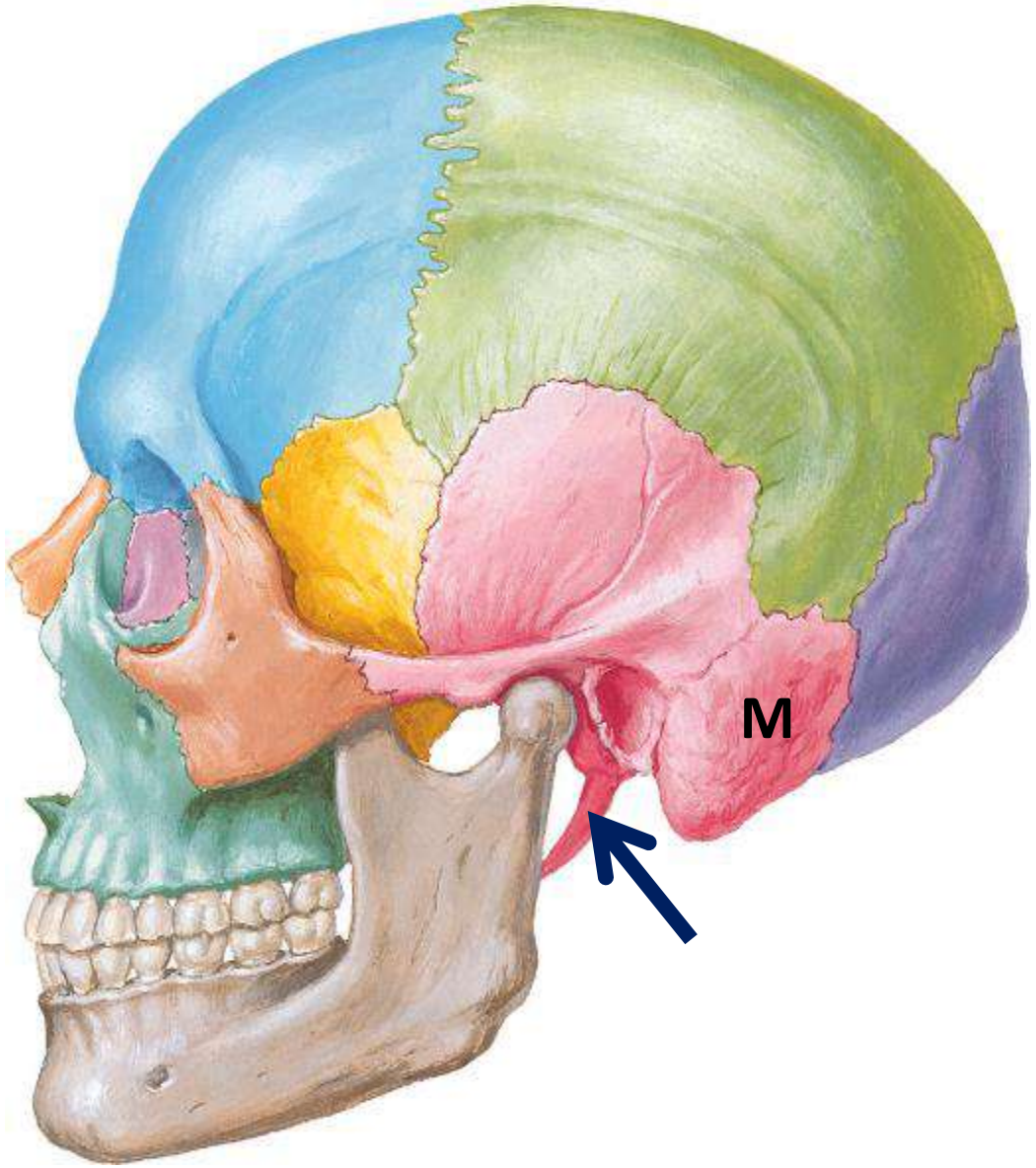
* The mastoid process (M):

* It is a part of the temporal bone.
* It lies behind the external auditory meatus.

ابري of temporal bone

* The Styloid process (↑):

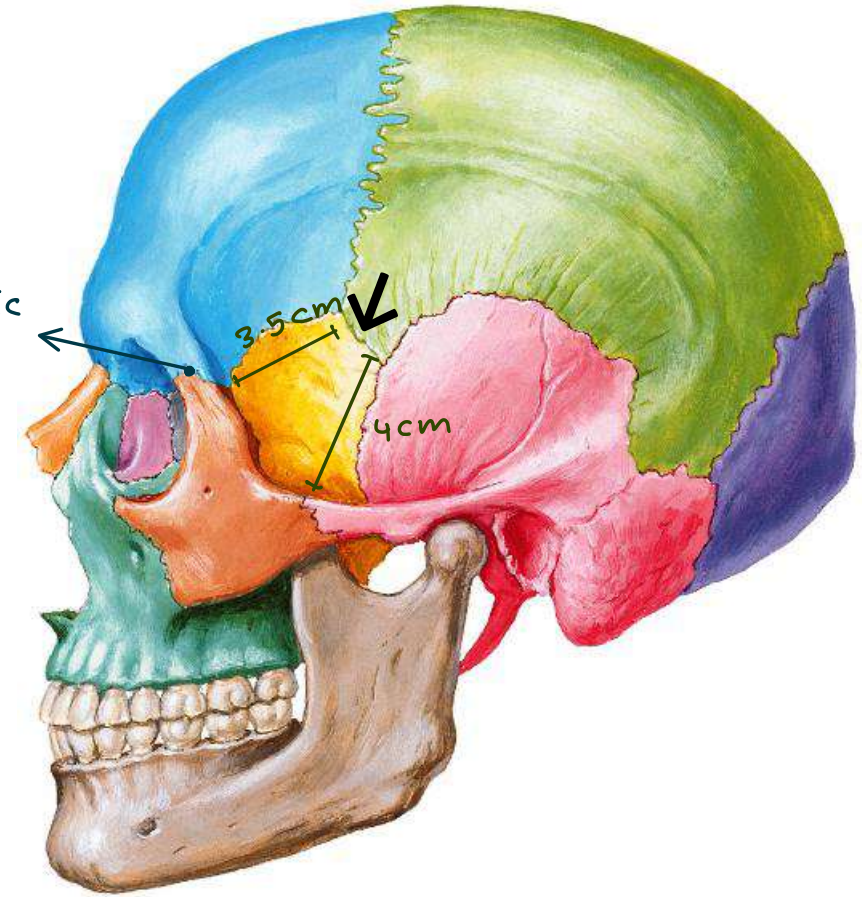
* It is a slender (طيل) projection of the temporal bone.



جناح

* **Pterion (↓):** The most important suture

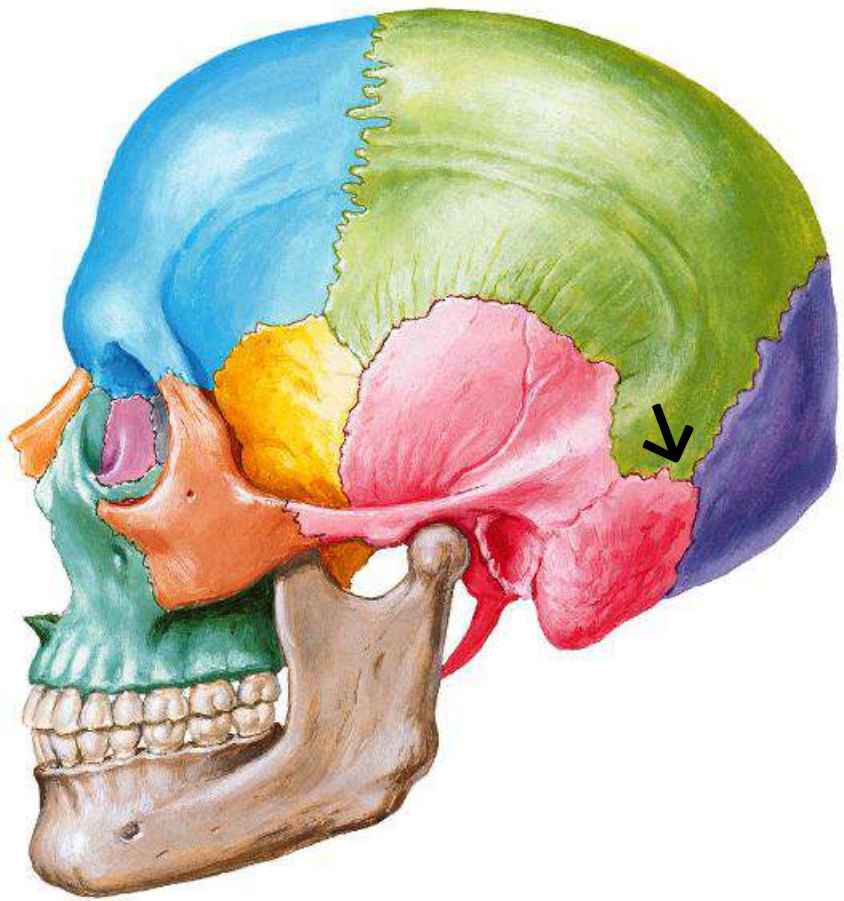
* It is the meeting point of 4 bones, the frontal, parietal, temporal and greater wing of sphenoid.
* It is an H-shaped suture.
* It is the ossified anterolateral (امامي جانبي) fontanelle at the age of 3 months.
* The center of the pterion lies 4 cm above the mid-point of the zygomatic arch & 3.5 cm behind frontozygomatic suture.
* It is related to the middle meningeal A. → Artery
* Since it is very thin, the pterion is the most frequently fractured (محور) part of skull in car accidents leading to hemorrhage (نزف) (extradural (خارج الجافية) hematoma (ورم دموي)) which compresses (يضغط) the motor area of the brain.



فسيدخلو عنا طريق ال pterion عشان يربطو الشريان إلي انقطع

* Asterion (↓):

* It is the meeting point of the parietal, occipital & mastoid part of temporal bones.
* It is the site of posterolateral fontanelle which ossifies at the age of 3 months.



Norma Basalis Externa

A. Anterior part:

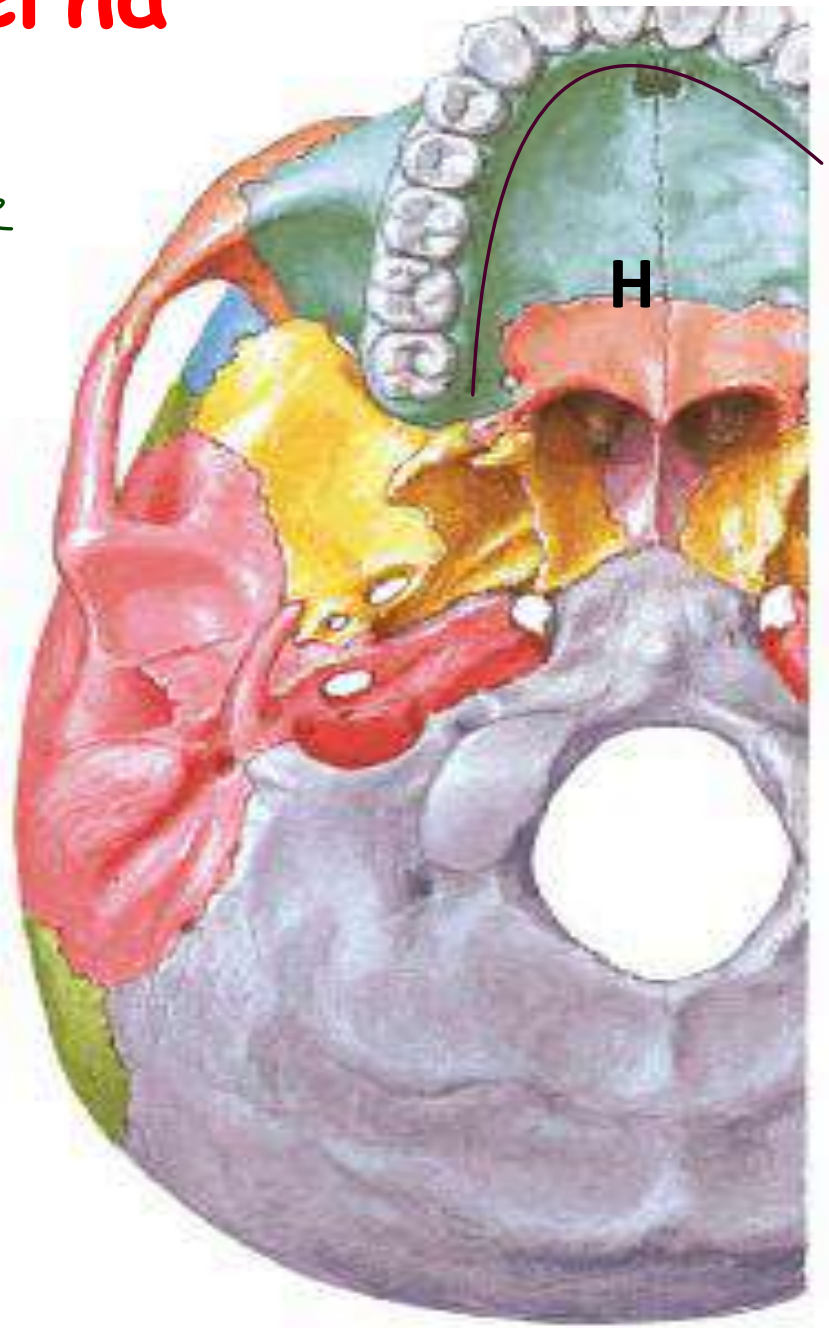
2 bones maxilla
palatine

* It is formed by the hard palate (H).

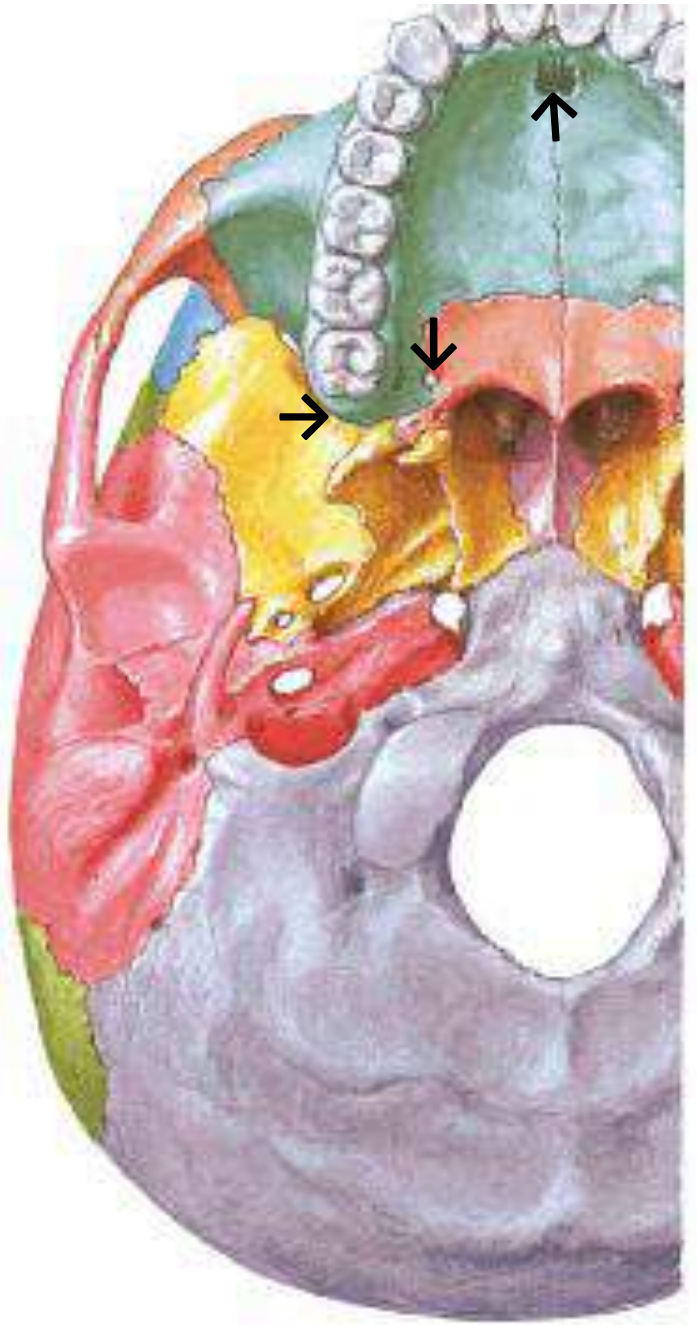
* The hard palate is bounded anteriorly by the alveolar arch, which has 16 sockets for the roots of the upper teeth.

تجاويف

الجزء اللي بيحمل الأسنان العلوية



* **The greater palatine foramen (↓) lies in the posterior part of the hard palate. It gives passage to greater palatine nerve & vessels.**
* **The lesser palatine foramina, usually two, lie behind the greater palatine foramen. They give passage to lesser palatine nerve & vessels.**
* **The maxillary tuberosity (→) is present at the posterior end of the alveolar arch.**
* **The incisive fossa (↑) lies posterior to the central incisor teeth. It contains foramina which serve as a connection between palate & nose.**



B. Middle part:

*** In the middle, it shows:**

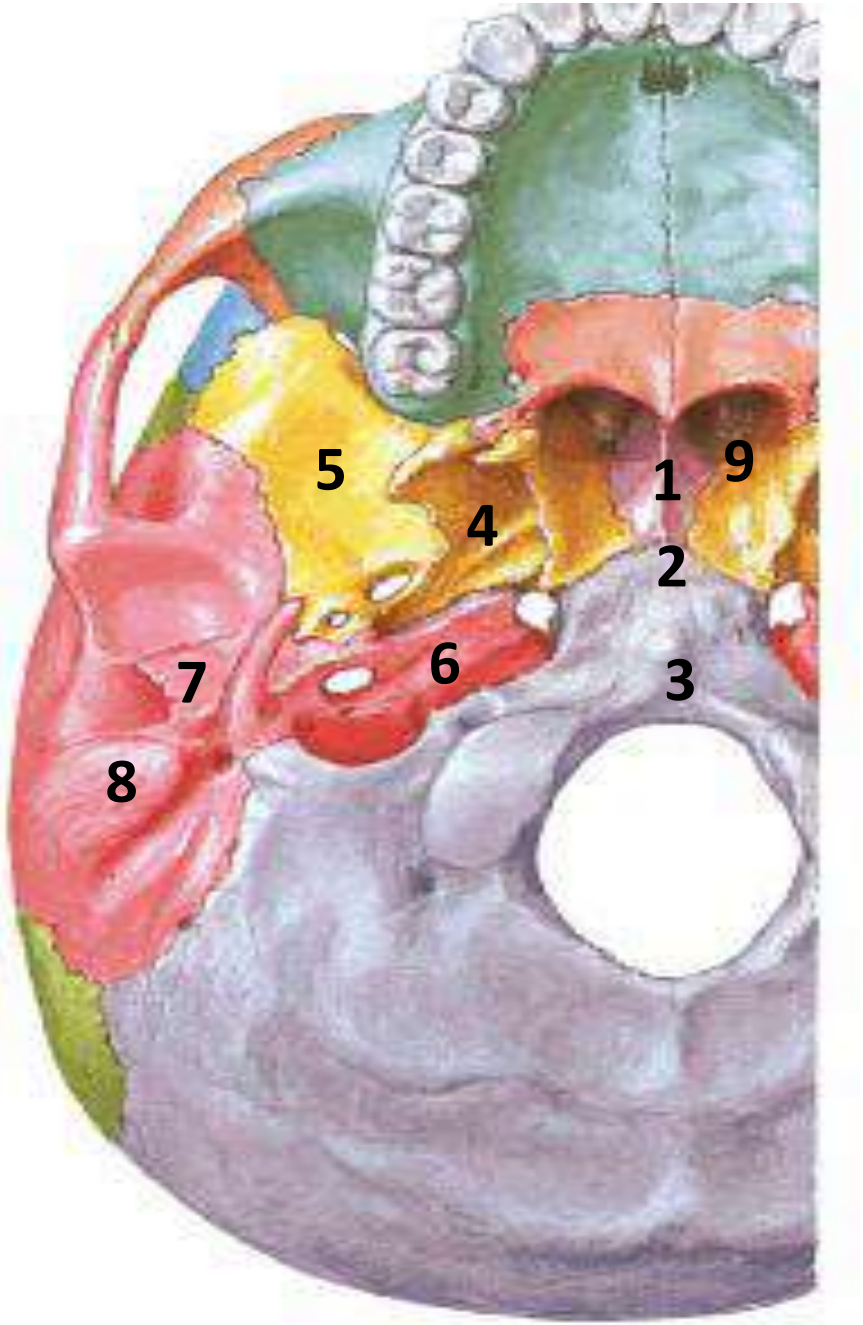
1. Vomer.
2. Body of sphenoid.
3. Basilar part of occipital bone.

*** Laterally, it shows:**

4. Pterygoid process.
5. Greater wing of sphenoid.
6. Petrous part of temporal bone.
7. tympanic parts of temporal bone.
8. Mastoid process.

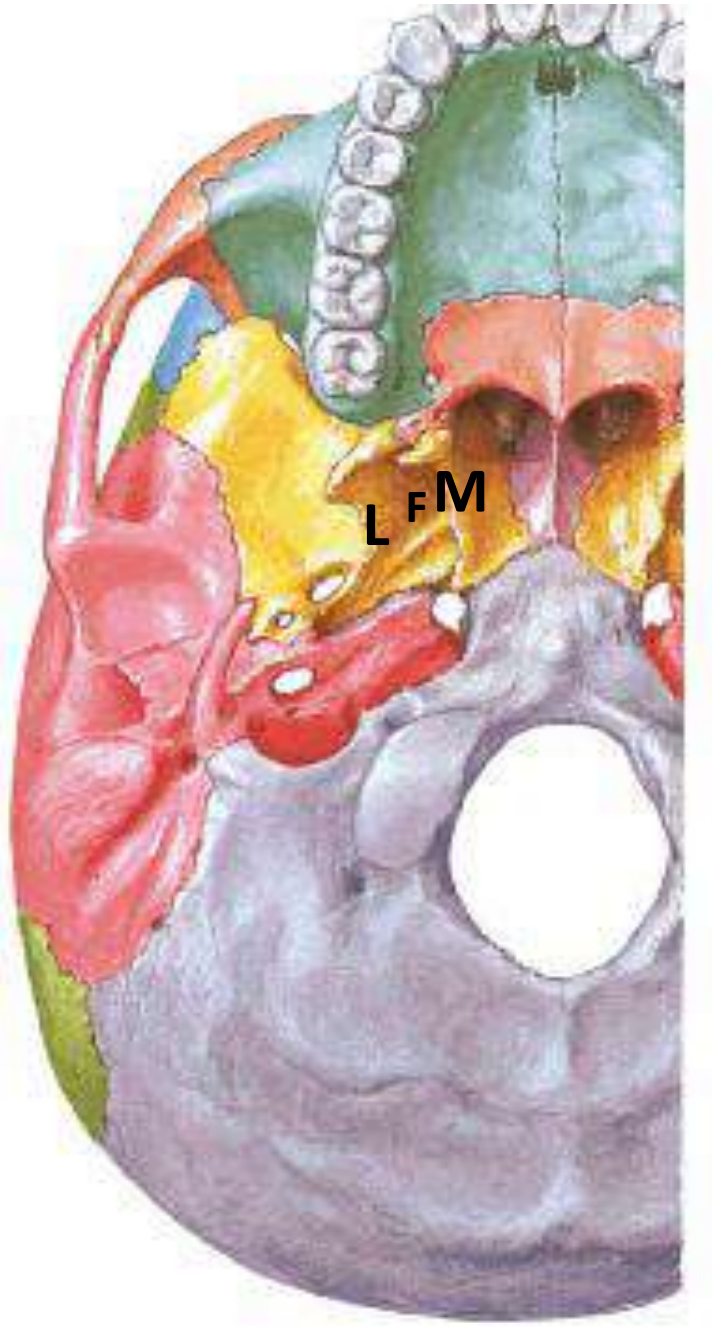
* It contains: Posterior nasal openings (9) (choanae) which are separated by vomer (part of nasal septum).

cavity



** The pterygoid process of the sphenoid bone:

* It is formed of lateral pterygoid plate (L) and medial pterygoid plate (M) with the pterygoid fossa (F) in between.

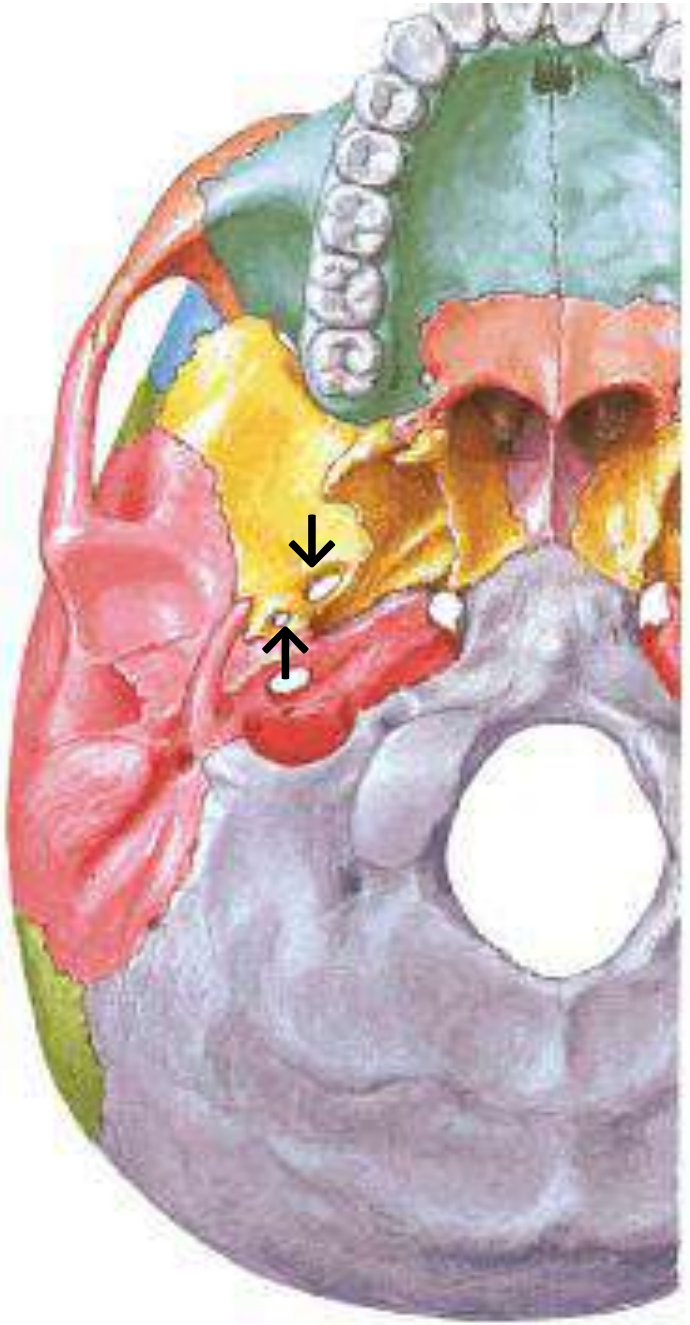


** The greater wing of sphenoid bone shows:

1. **Foramen ovale (↓):**
   * **Gives passage to:**
     - **a. Mandibular nerve.**
     - **b. Lesser petrosal nerve.**
     - **c. Accessory meningeal artery.**

emissary vein

2. **Foramen spinosum (↑):**
   * **Gives passage to:**
     - **a. Nervus spinosus.**
     - **b. Middle meningeal artery.**

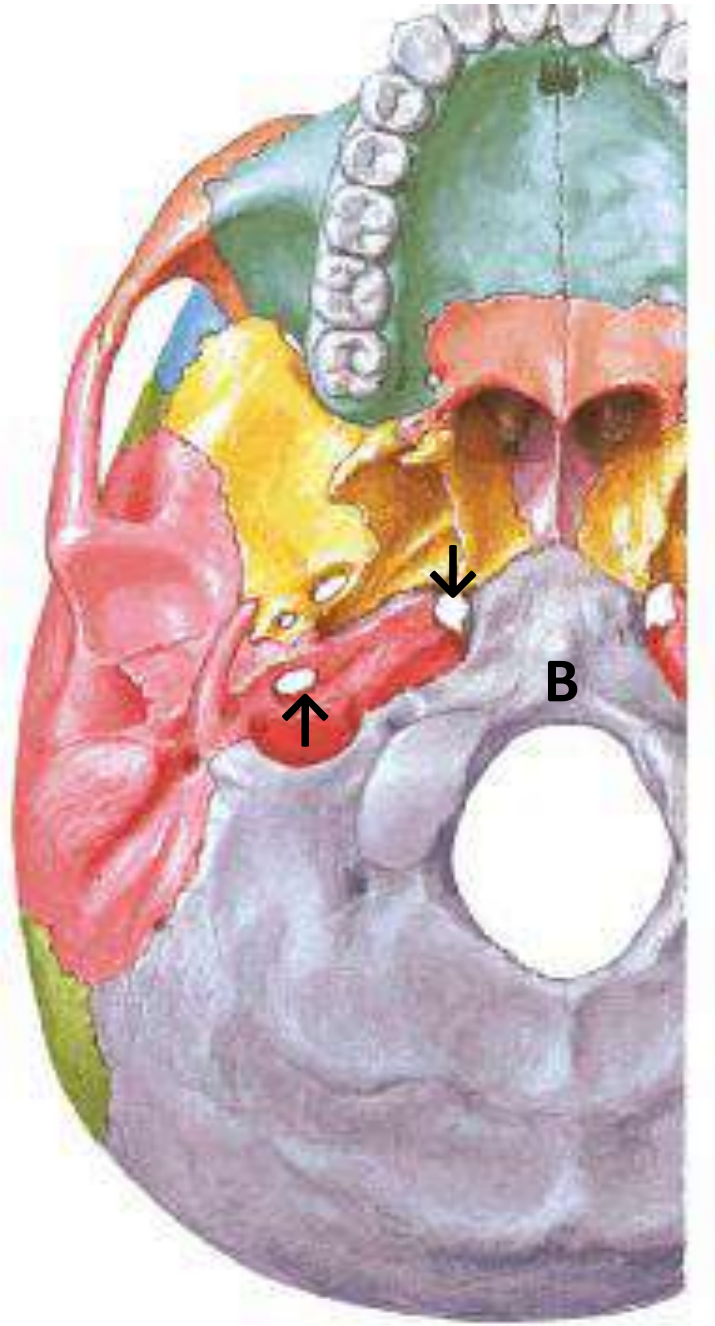


C. Posterior part:

** The basilar part of occipital bone (B) articulates anteriorly with the body of the sphenoid bone.

** Foramen lacerum (↓) lies between petrous part of temporal bone, basilar part of occipital and the pterygoid process. In life it is closed by cartilage plate.

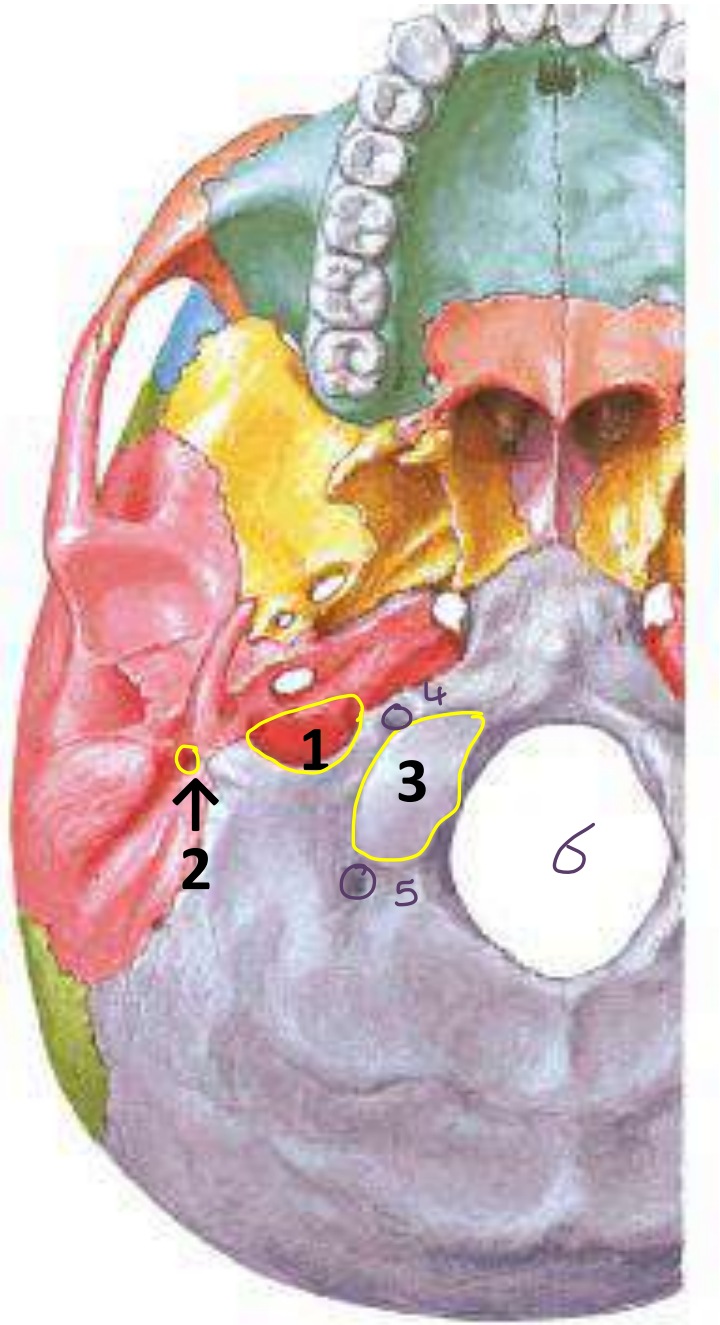
** The carotid canal (↑): lies posterolateral to foramen lacerum. Gives passage to internal carotid artery.

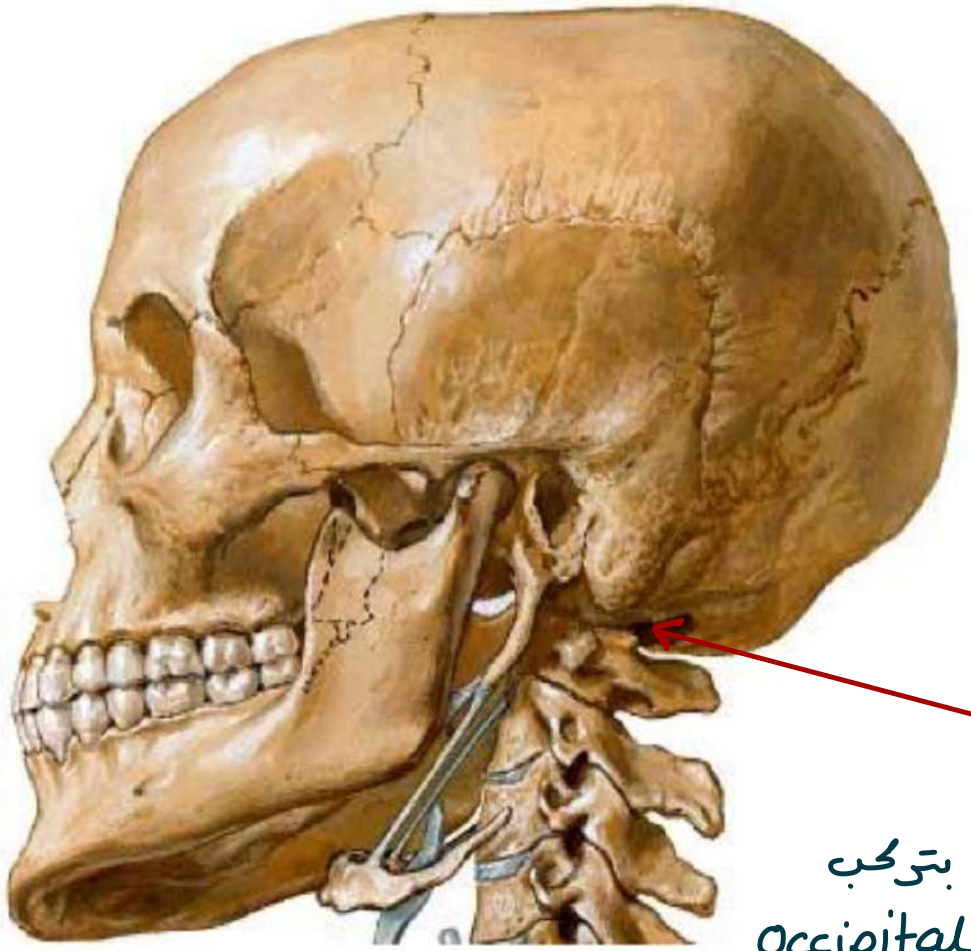


** **Notice the following:**

1. **The jugular foramen:** lies lateral to the occipital condyle. Gives passage to internal jugular vein.
2. **The stylomastoid foramen:** lies between styloid and mastoid processes. Gives passage to facial nerve.
3. **The occipital condyles:** articulate with the atlas to form atlanto-occipital joint.
4. **The anterior condylar (hypoglossal) foramen.** Gives passage to hypoglossal nerve.
5. **The posterior condylar foramen.** ما بمر خلالها أي إشي وبعدين بتحول لـ bone
6. **The foramen magnum:** communicates the cranial cavity with the vertebral canal. Gives passage to brain stem which continues as spinal cord.

الحبل الشوكي





Atlas

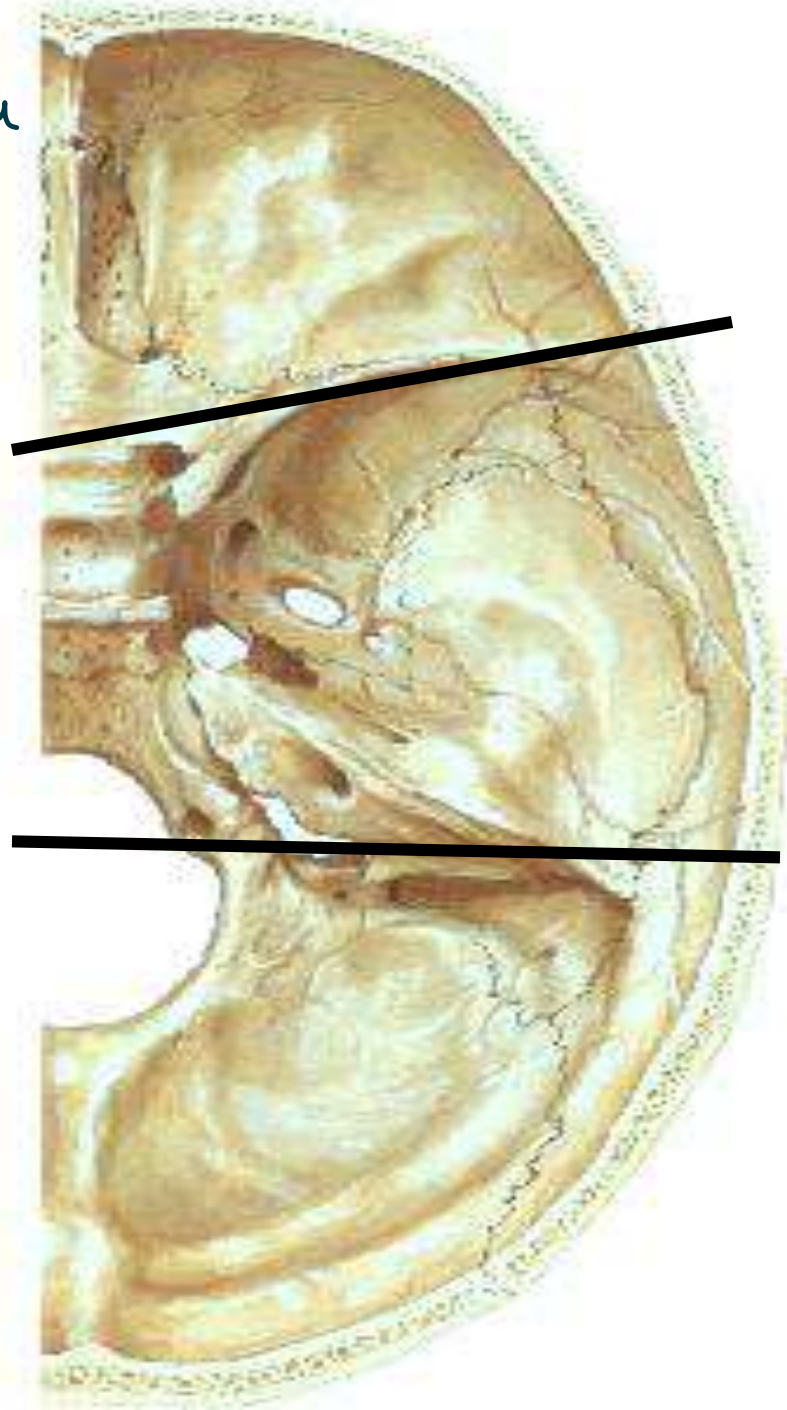
وبتيجي الـ Skull بتركب عليها بالـ Occipital bone condyle

وبتشكل Atlanto-occipital joint

Cranial Cavity norma basalis interna

* **It is divided into:**

1. Anterior cranial fossa.
   - لغاية frontal bone من ال
   - lesser wing of sphenoid ال
2. Middle cranial fossa.
   - lesser wing of sphenoid من ال
   - petrous bone لغاية ال
3. Posterior cranial fossa.
   - middle cranial bone من نهاية ال
   - occipital bone لنهاية ال



Ant. Cranial Fossa

* It is formed by the following bones:

* In the midline:

1- Frontal bone.

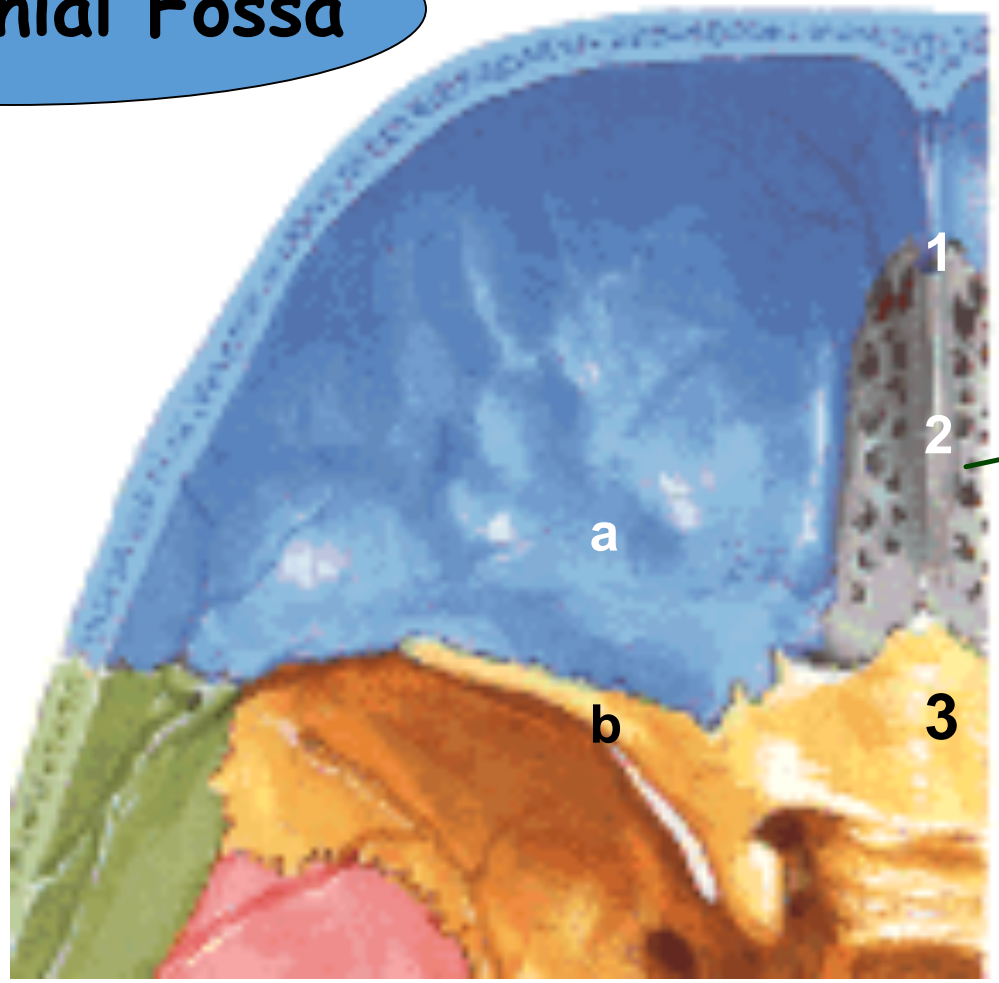
2- Ethmoid.

3- Sphenoid.

* On each side:

a. Frontal bone.

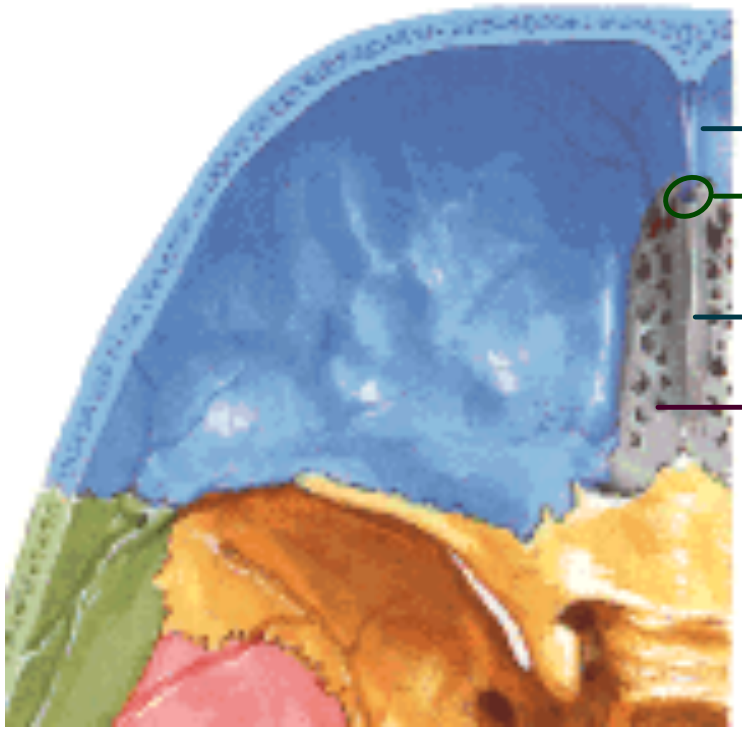
b. Sphenoid (lesser wing).



* Midline structures of the anterior cranial fossa:

1. Frontal crest.
2. Foramen caecum.
3. Crista galli.
4. Cribriform plate of ethmoid (gives passage to olfactory nerve).

الشم



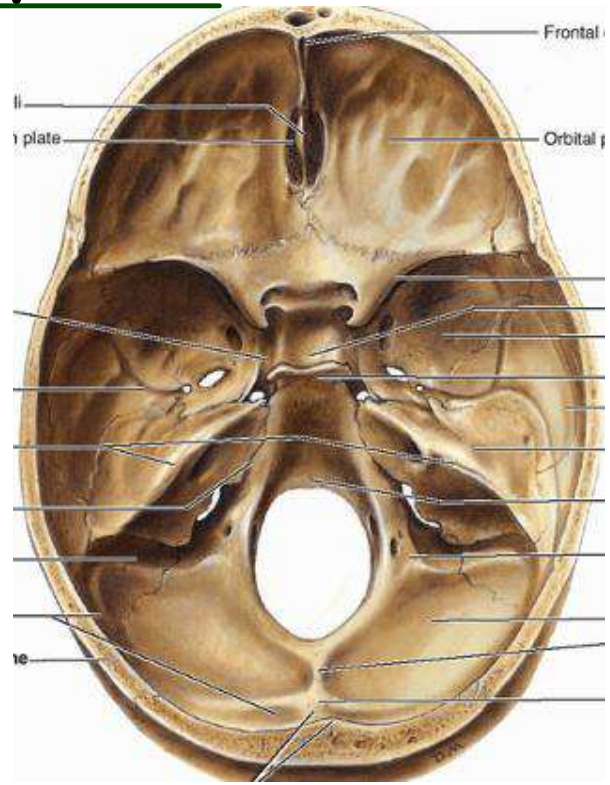
Frontal crest

Foramen ceacum

Cresta galli

Cribriform plate of ethmoid

(إلي شكلها زي المصفاة)



Middle Cranial Fossa

* Formed by the following bones:

* In the midline:

Sphenoid (body).

* On each side:

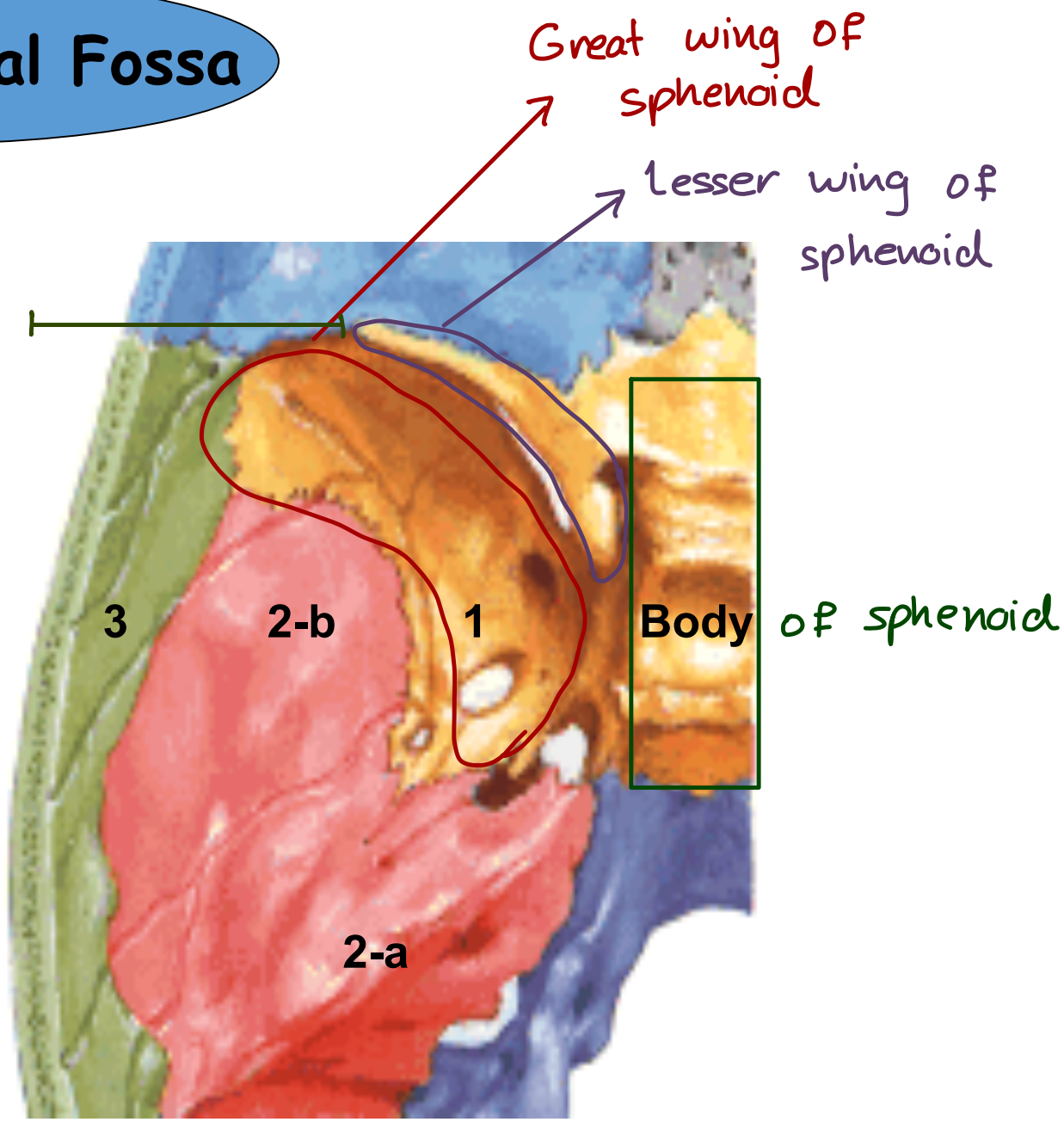
1- Sphenoid (greater wing).

2- Temporal bone:

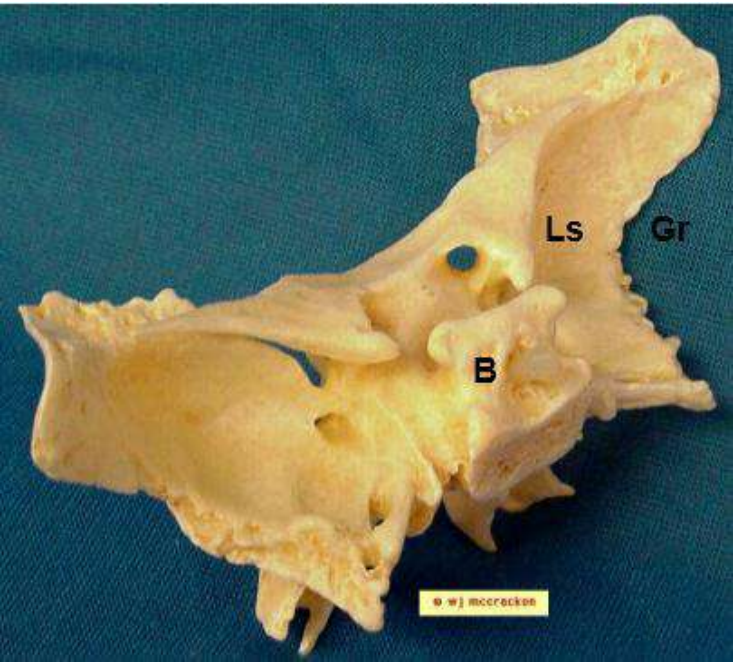
   a. Petrous part.

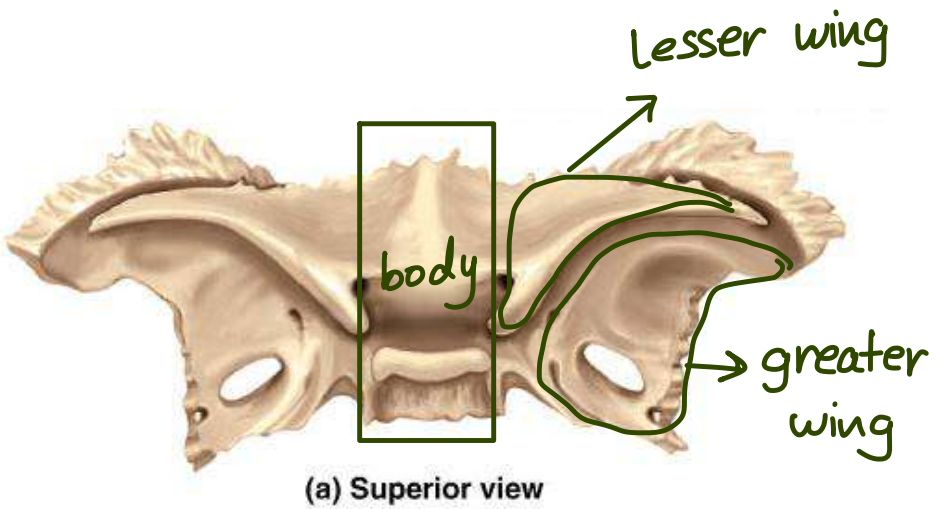
   b. Squamous part.

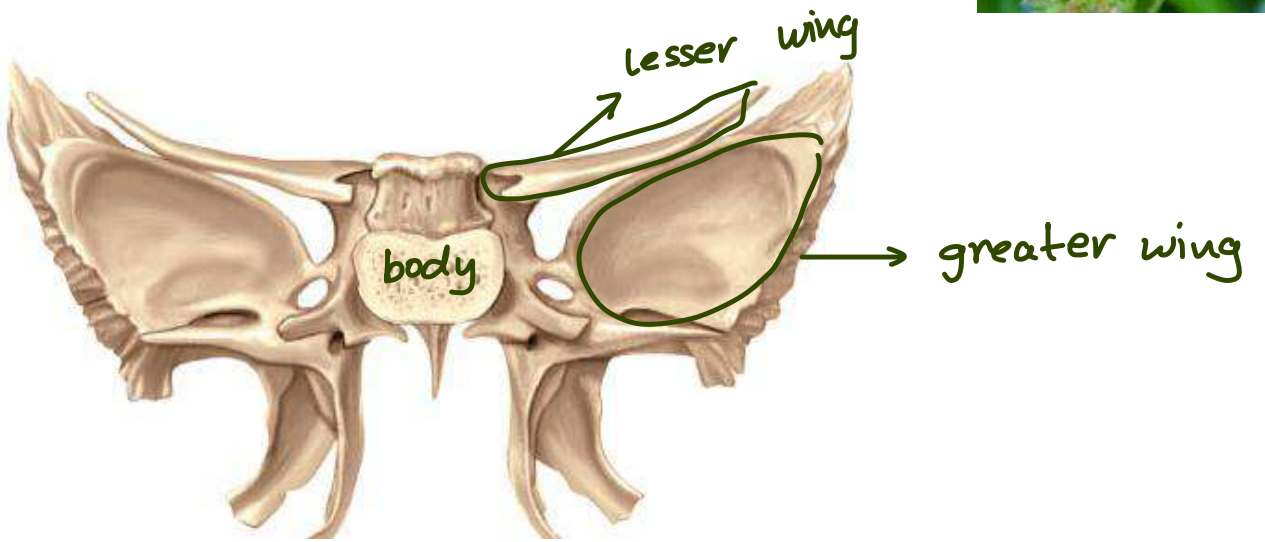
3- Parietal bone.



sphenoid bone is like a butterfly







* Middle cranial fossa shows:

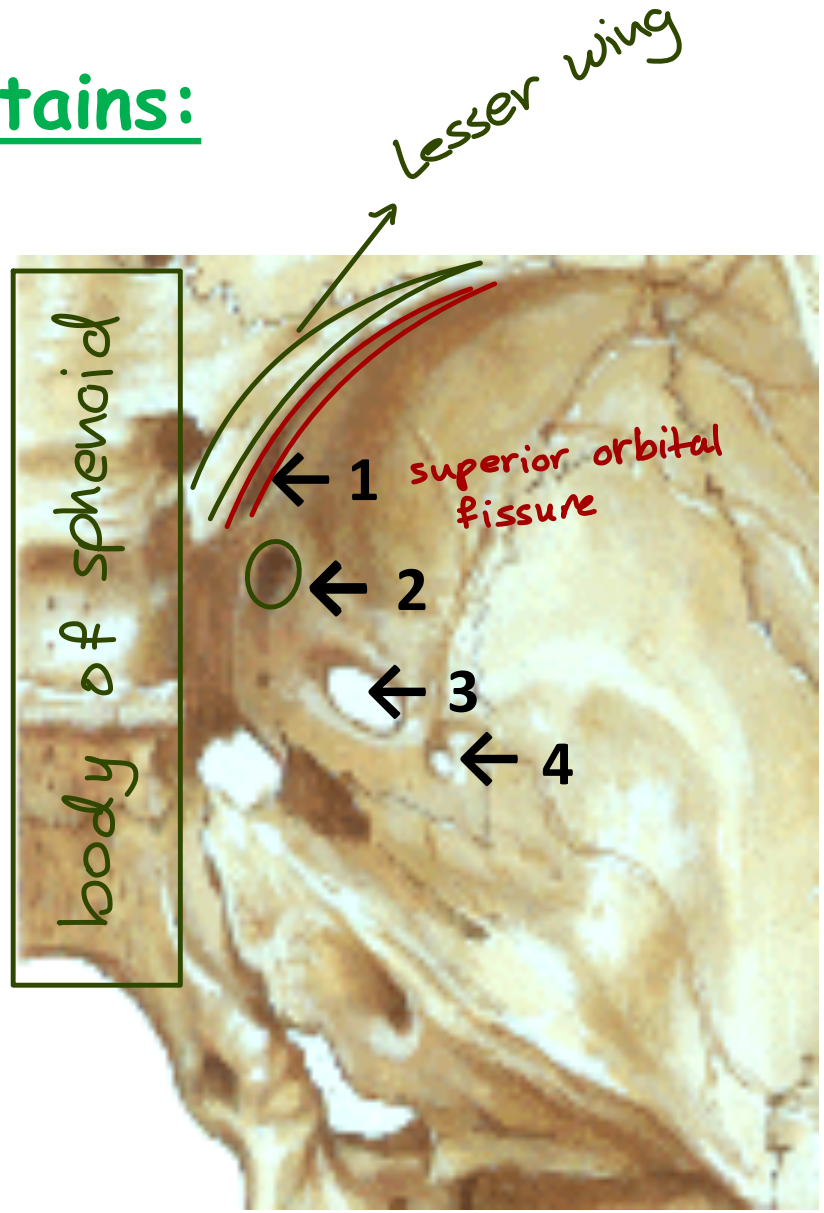
Greater wing of sphenoid which contains:

1. **Sup. Orbital Fissure** → gives passage to nerves & vessels of orbit.

2. F. Rotundum → gives passage to maxillary nerve

3. F. Ovale.

4. F. Spinosum.



Post. Cranial Fossa

* **Formed by the following bones:**

* **In the midline:**

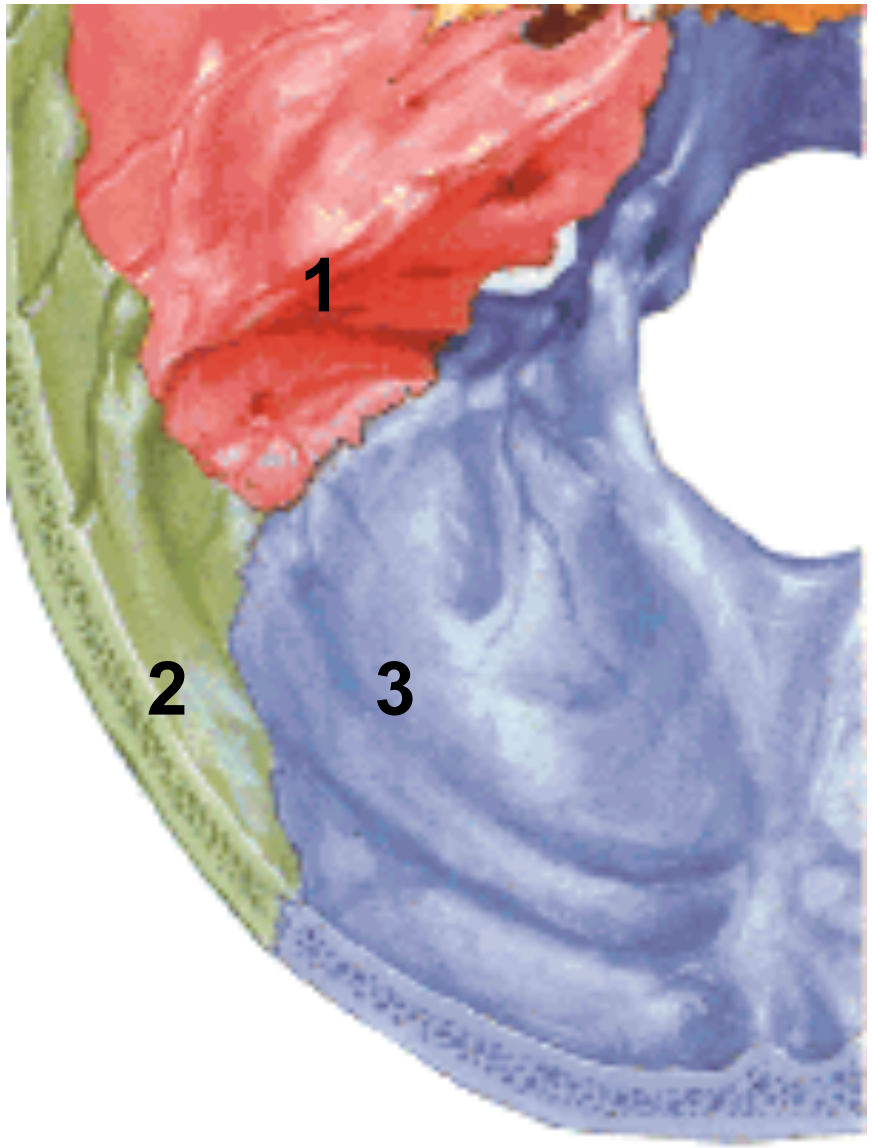
Occipital bone.

* **Laterally-placed:**

1- Petrous part of temporal bone.

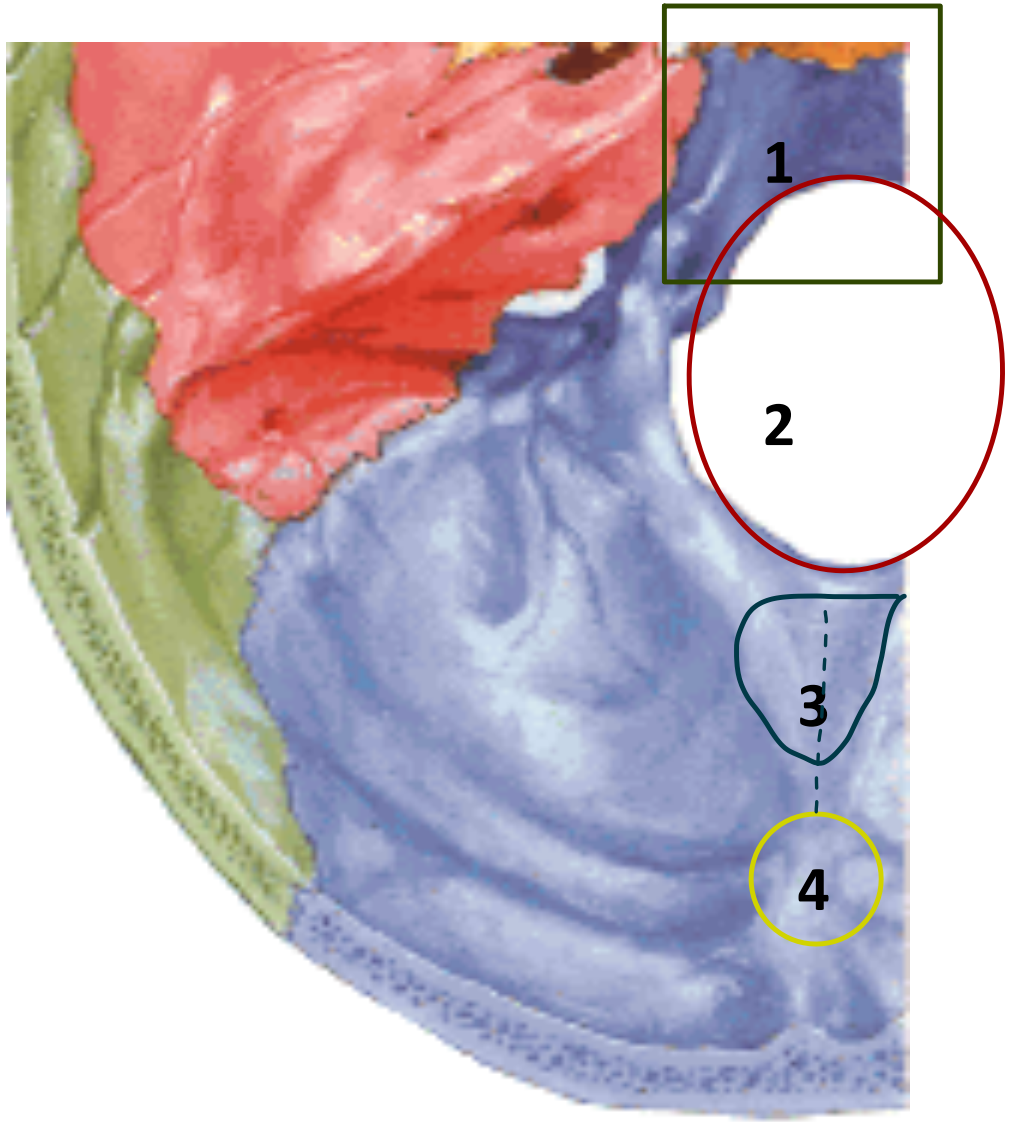
2- Parietal bone.

3- Occipital bone.



* Midline structures in the posterior cranial fossa :

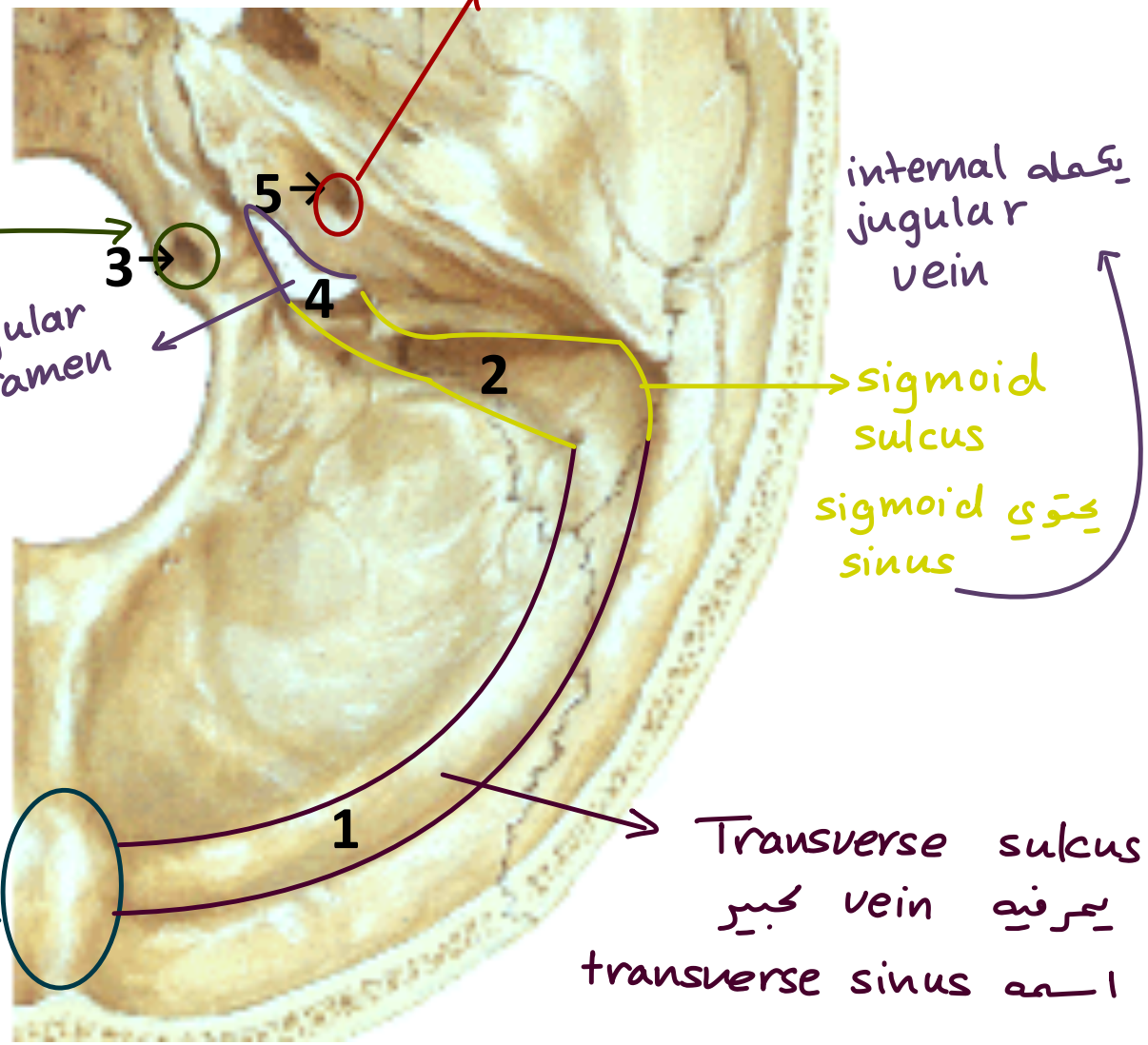
1. Clivus (formed by: body of sphenoid + basilar part of occipital bone).
2. Foramen magnum.
3. Internal occipital crest.
4. Internal occipital protuberance.



* Laterally-placed structures in the post. cranial fossa:

* Two sulci & 3 foramina:

1. Transverse sulcus (contains transverse sinus).
2. Sigmoid sulcus (contains sigmoid sinus).
3. Hypoglossal canal (gives passage to hypoglossal nerve).
4. Jugular foramen (gives passage to internal jugular vein).
5. internal auditory meatus → gives passage to 7th & 8th cranial nerves).



Thank You
Thank You
Thank You!!!!

General Anatomy

Lecture 3: Mandible & Vertebral Column

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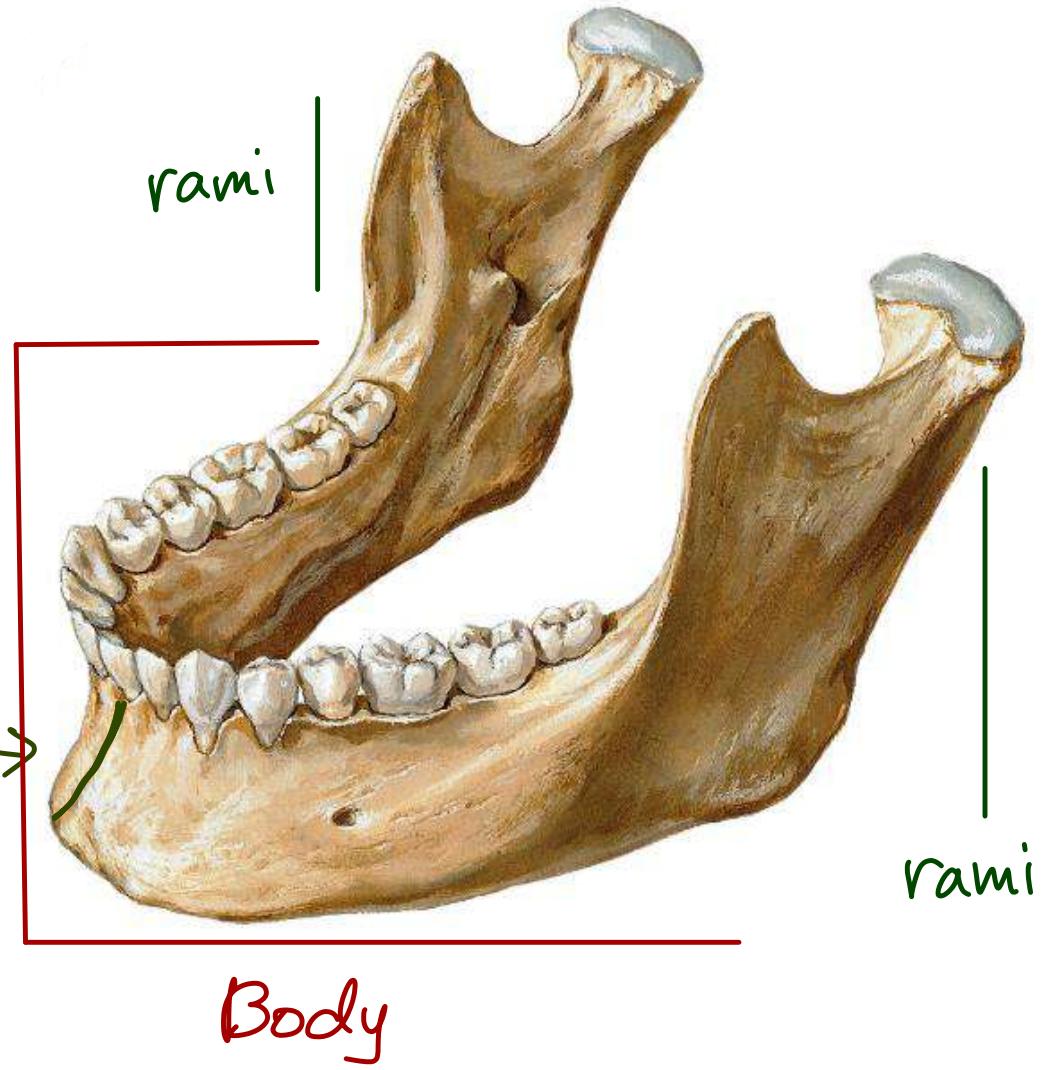
Mandible

** Is formed of two bones, (right and left) which unite at the symphysis menti after the frist year.

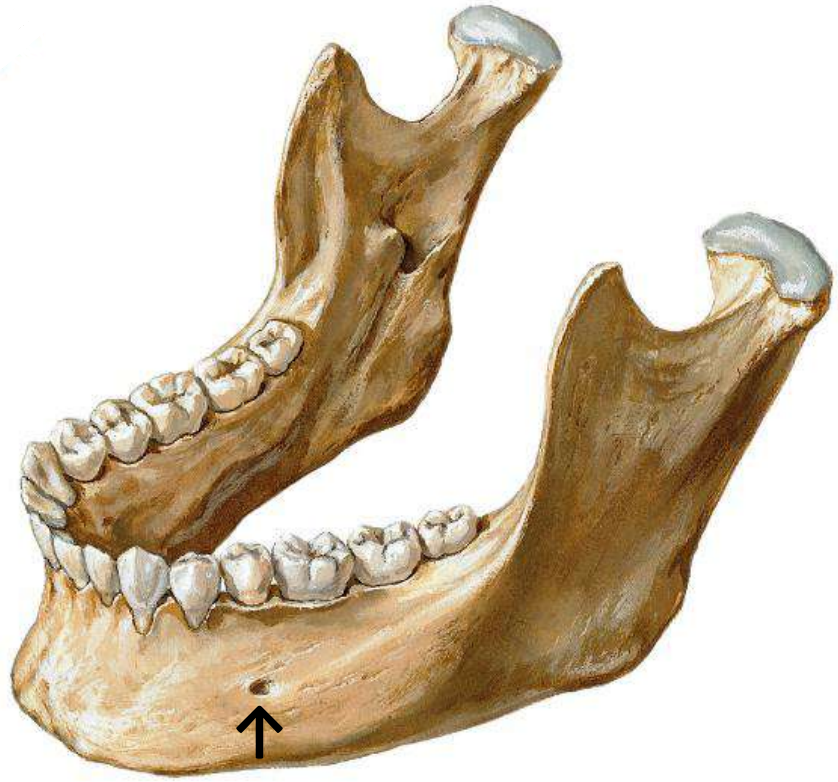
** The mandible is formed of a body and two rami. ذراع



A. The body

* **External surface:**

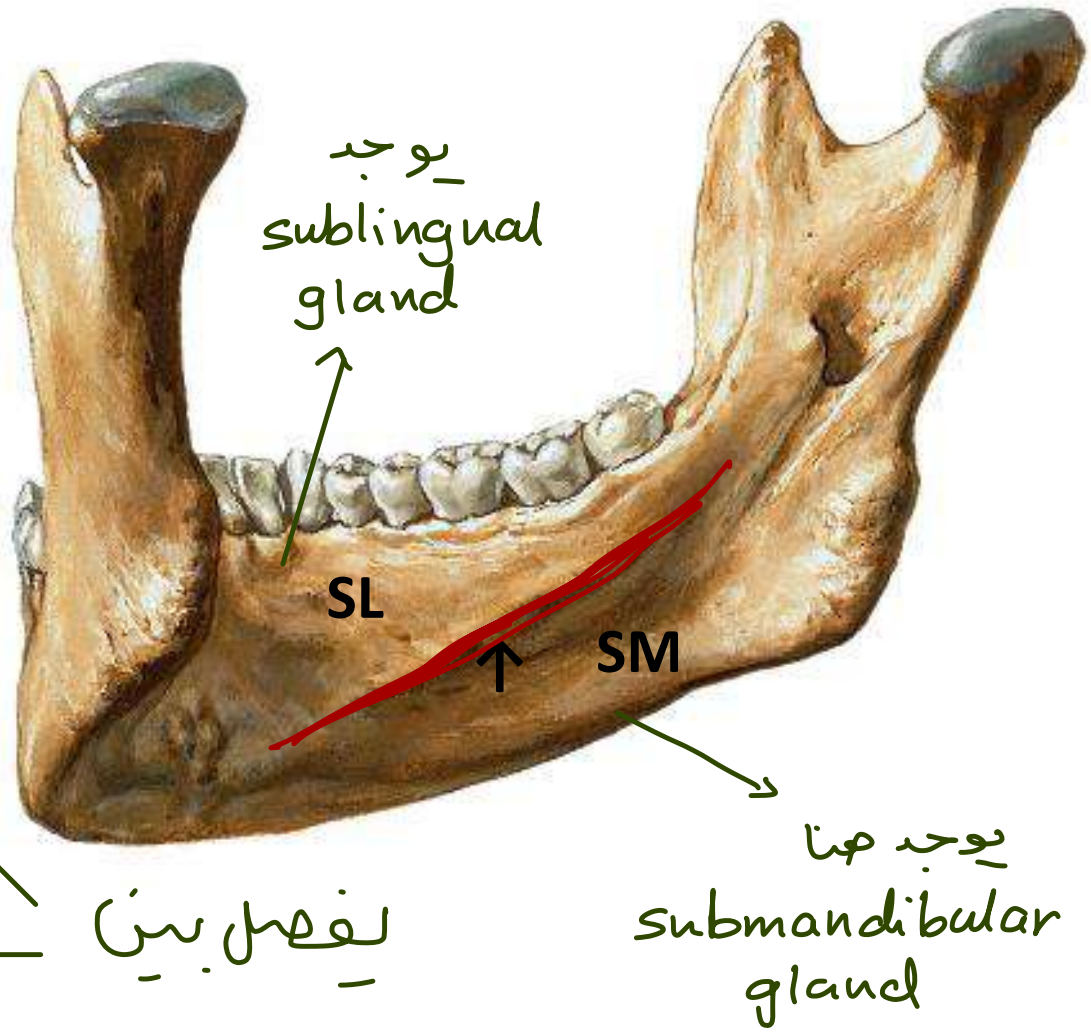
* **The mental foramen** lies midway between upper & lower borders, below 2nd premolar tooth.



mental nerve يمر من خلاله
mental vessles

* Internal surface :

- It shows the mylohyoid line (↑).
- Below this line is the submandibular fossa (SM), while above this line is the sublingual fossa (SL).



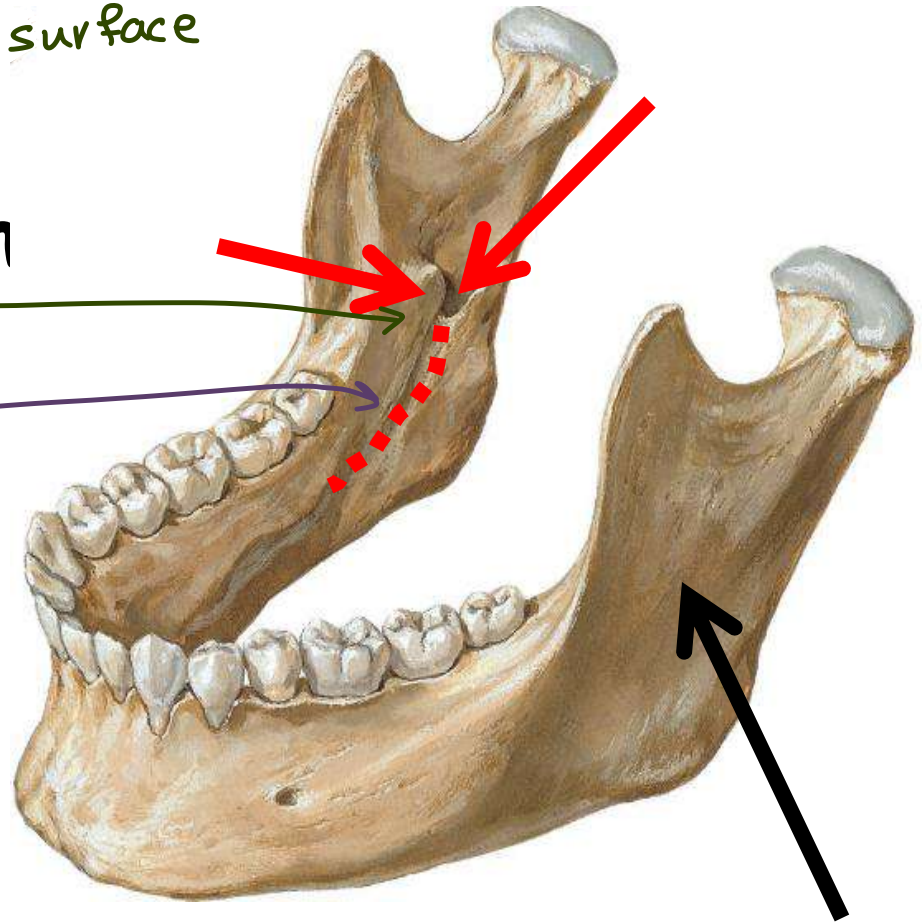
B. Ramus of mandible

* It has two surfaces.

medial surface

1. **The medial surface:** shows the **mandibular foramen** which leads to **mandibular canal.**

- Projecting over the foramen is the **lingula** .
- The **mylohyoid groove** starts at the lower border of the foramen.



2. **The lateral surface:** is flat

outer surface

** Upper border:

- Shows two process coronoid anteriorly and condylar process posteriorly and in between the mandibular notch.
- The condylar process is expanded to form the head of the mandible.
- The constricted area below the head is the neck. of the mandible
- Angle of the mandible is the area of meeting of body and the ramus . (connection)