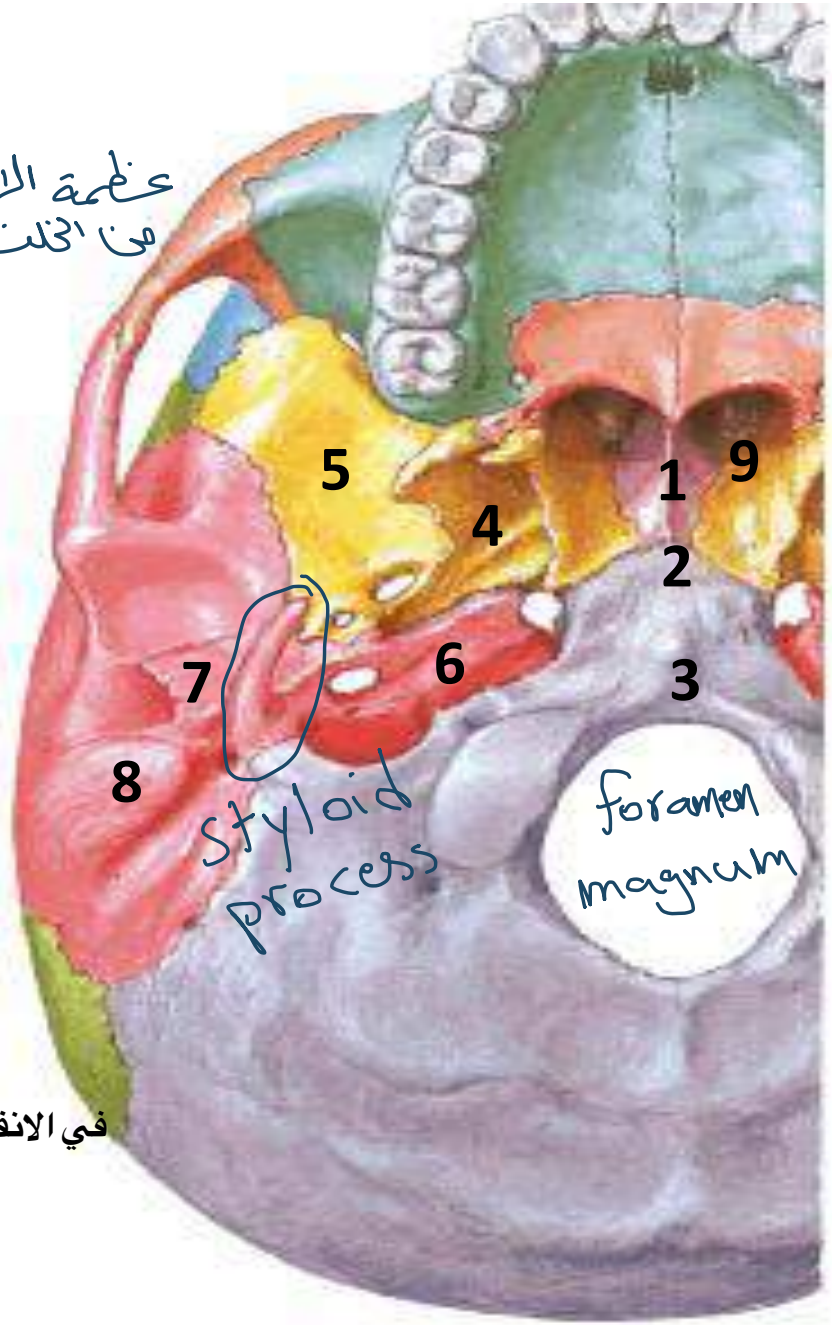
Lecture: 3

Done By: Haneen Frehat

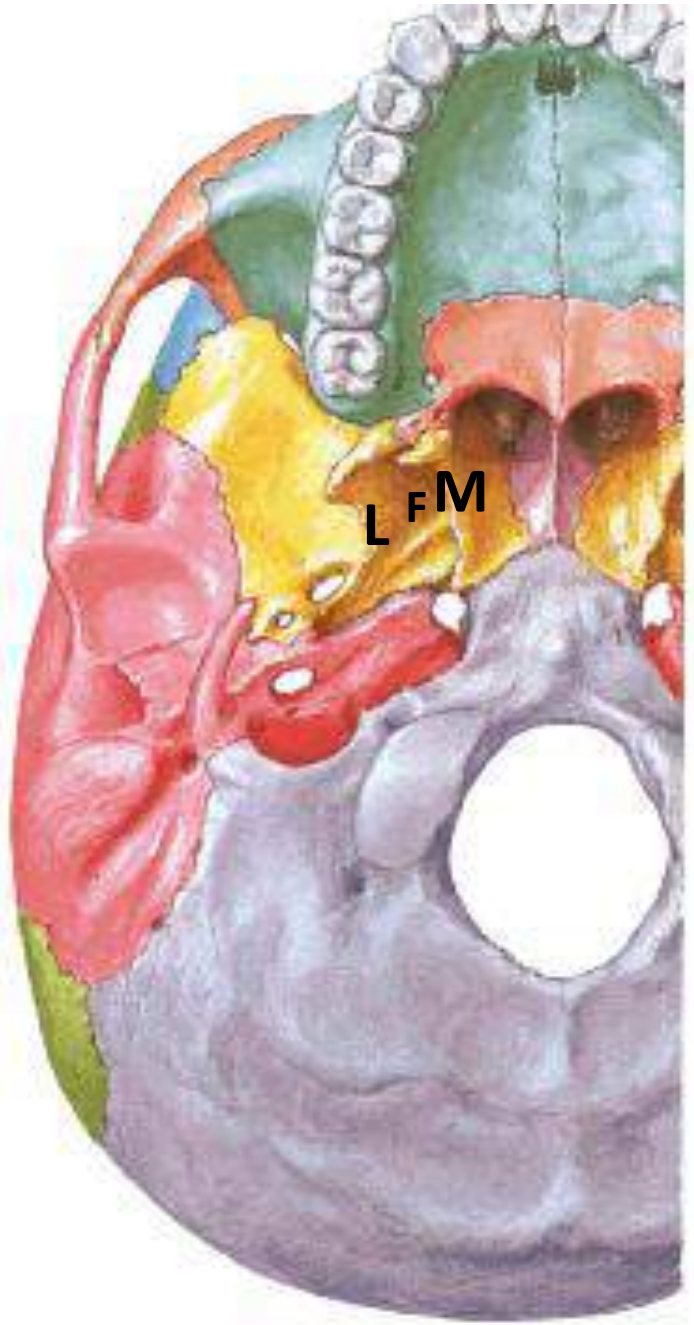
B. Middle part: foramen magnum و hard palate مابين

* **In the middle, it shows:**
  1. **Vomer.** → bone of the nose ⇒ عظمة الانف من الخلف
  2. **Body of sphenoid.**
  3. **Basilar part of occipital bone.**
* **Laterally, it shows:**
  4. **Pterygoid process.** ⇒ جزء من الsphenoid
  5. **Greater wing of sphenoid.**
  6. **Petrous part of temporal bone.** صخري
  7. **tympanic parts of temporal bone.** طبلي
  8. **Mastoid process.**
* **It contains: Posterior nasal openings (9) (choanae) which are separated by vomer (part of nasal septum).** Cavity في الانف من الخلف



** 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:

يحتوي 2 foramena.

1. Foramen ovale (↓): بيضاوي

   * Gives passage to: يمشي فيها

   MAL

   M a. Mandibular nerve.

   L b. Lesser petrosal nerve.

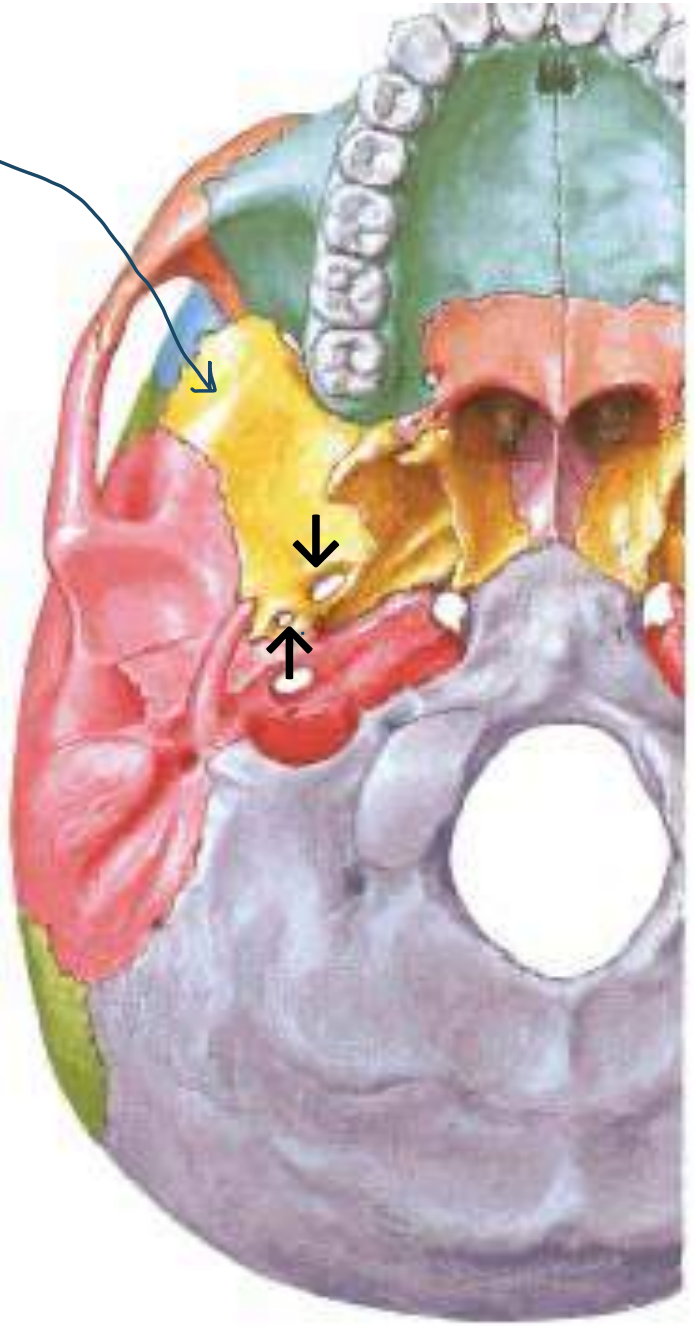
   A c. Accessory meningeal artery.

2. Foramen spinosum (↑):

   * Gives passage to:

   a. Nervus spinosus.

   b. Middle meningeal artery.

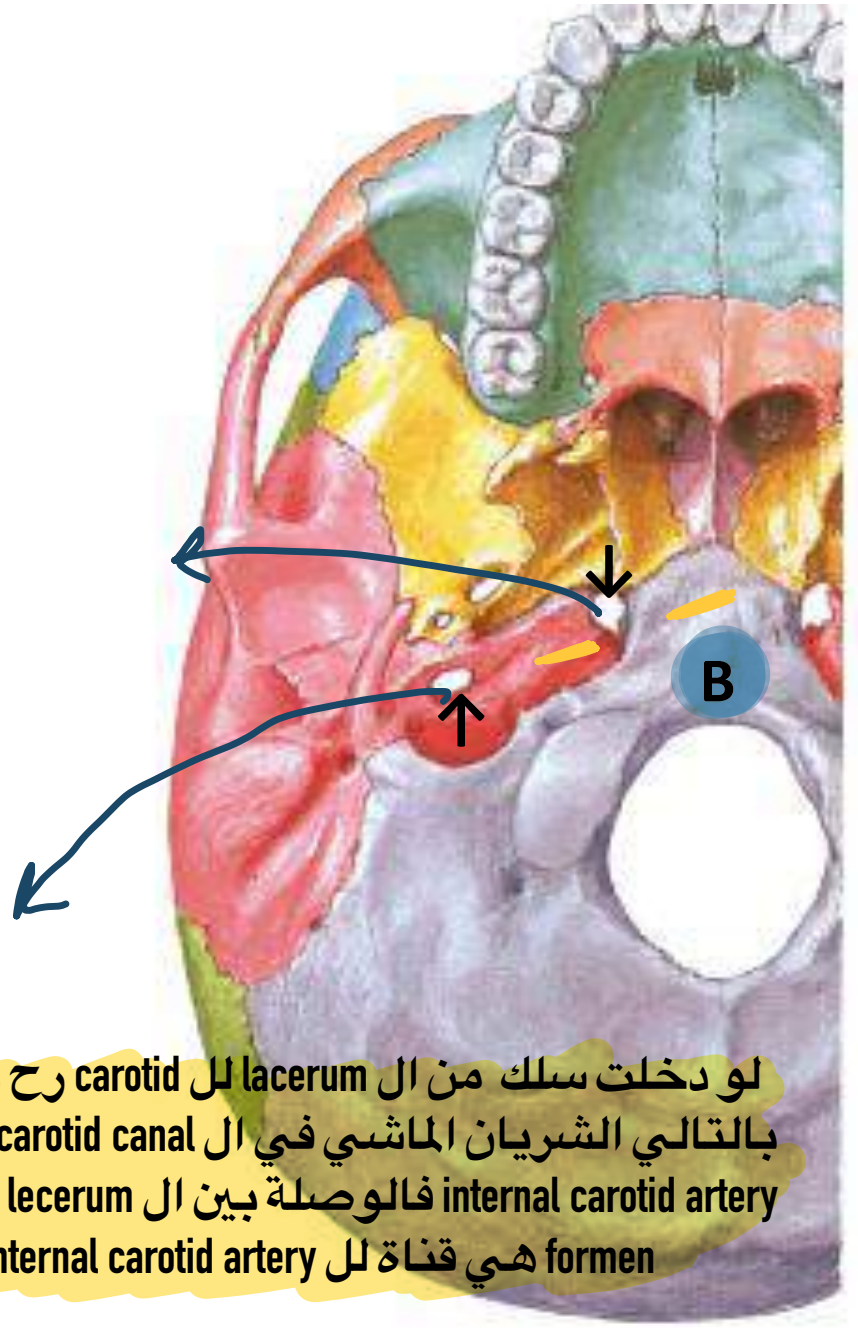


C. Posterior part:

** 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.



لو دخلت سلك من ال lacerum للـ carotid رح توصل بالتالي الشريان الماشي في ال carotid canal تسمى internal carotid artery فالوصلة بين ال carotid & lecerum هي قناة للـ internal carotid artery formen

** 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.

occipital bone العظمة كاملة

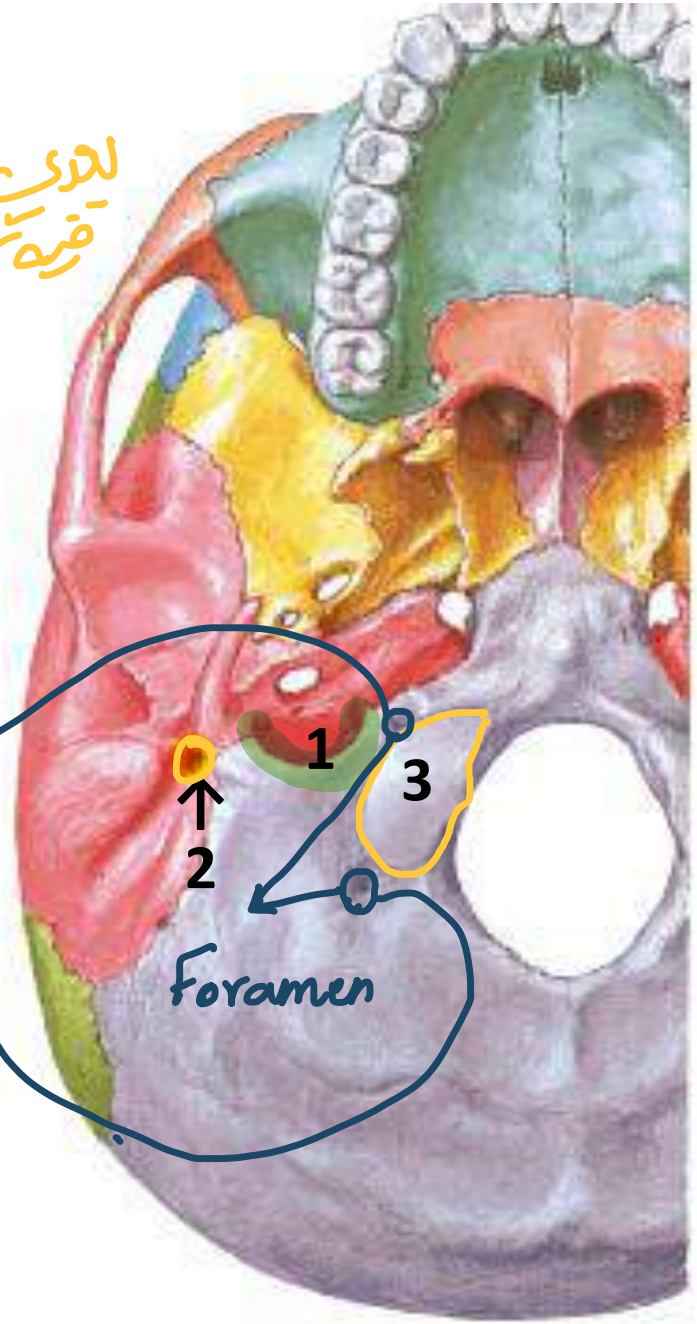
3. The occipital condyles: articulate with the atlas to form atlanto-occipital joint.

4. The anterior condylar (hypoglossal) foramen. Gives passage to hypoglossal nerve.

5. The posterior condylar foramen.

6. The foramen magnum: communicates the cranial cavity with the vertebral canal. Gives passage to brain stem which continues as spinal cord.

spinal cord هو ال brain stem الذي يكمل ويعدي منها



Cranial Cavity

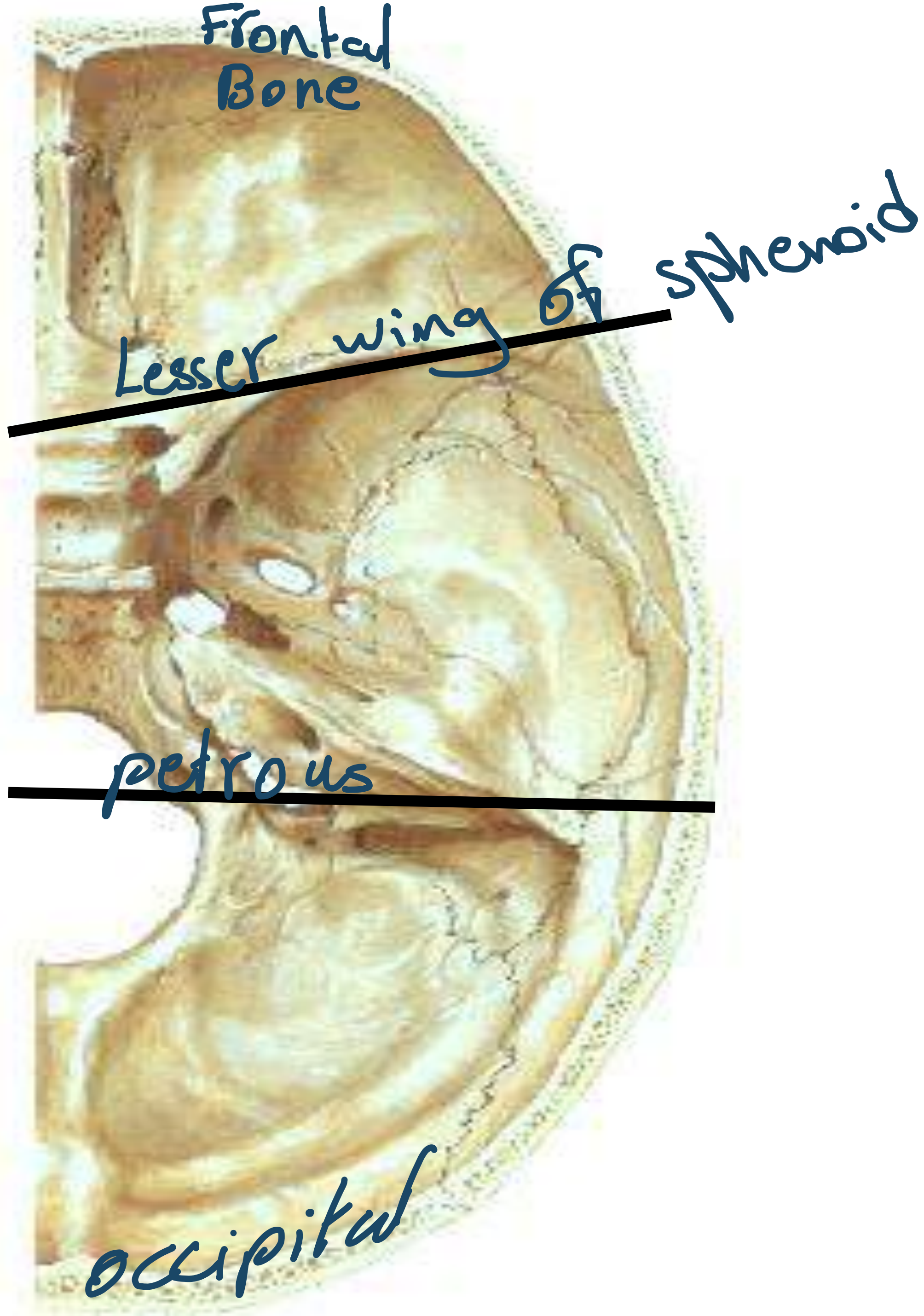
داخل الجمجمة

* **It is divided into:**

1. Anterior cranial fossa.

2. Middle cranial fossa.

3. Posterior cranial fossa.



Ant. Cranial Fossa

* It is formed by the following bones:

* In the midline:

1- Frontal bone. من الداخل

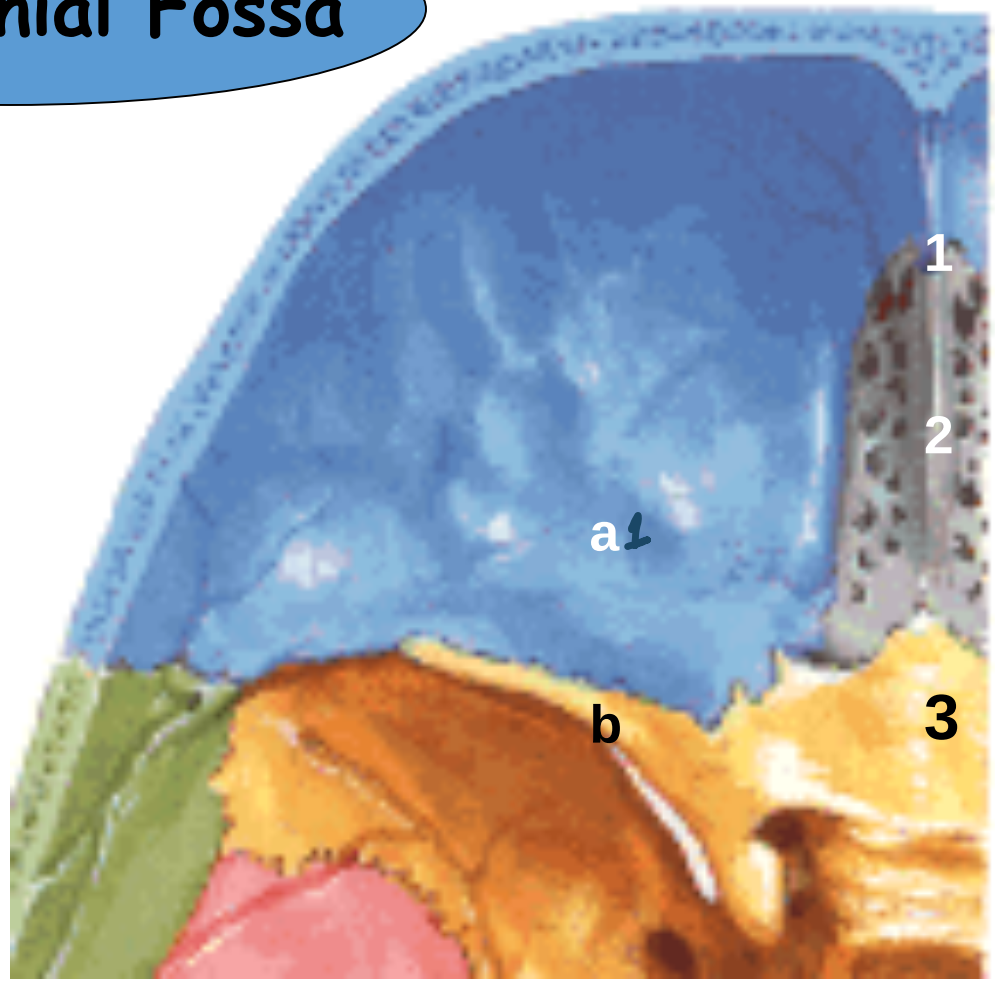
2- Ethmoid.

3- Sphenoid.

* On each side:

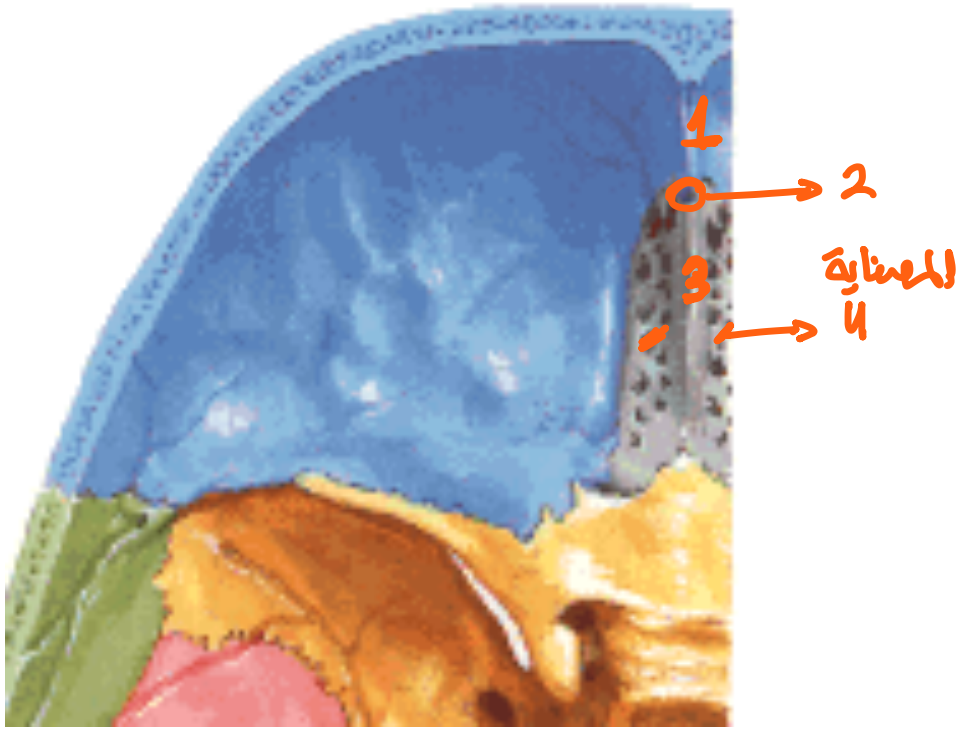
a. Frontal bone.

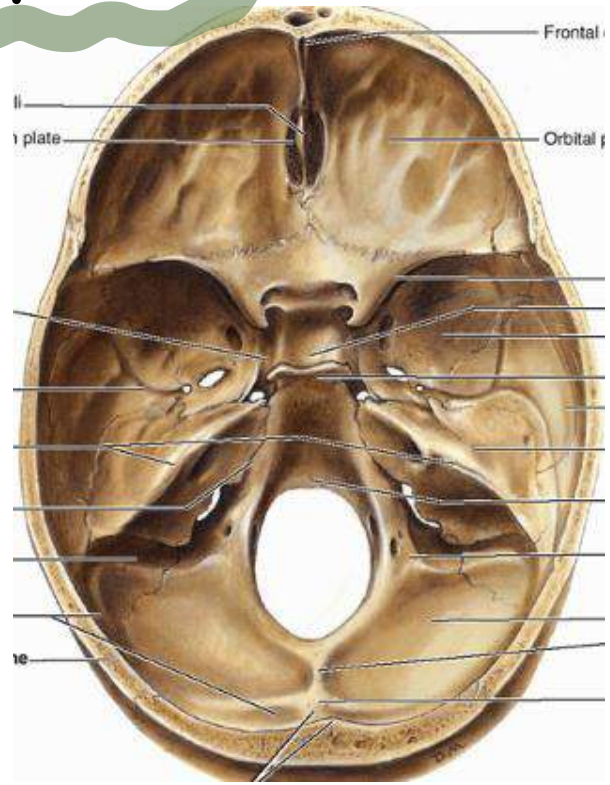
b. Sphenoid (lesser wing).



* Midline structures of the anterior cranial fossa:

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





Middle Cranial Fossa

* Formed by the following bones:

* In the midline:

Sphenoid (body).

* On each side:

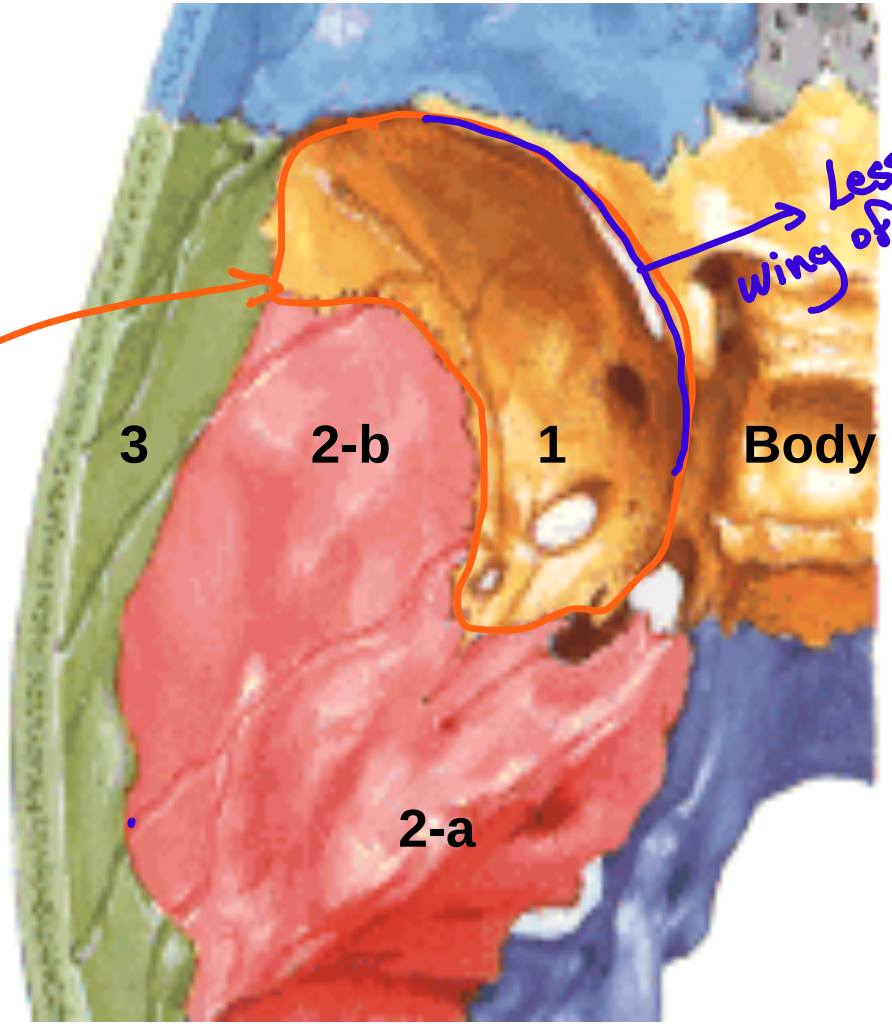
1- Sphenoid (greater wing).

2- Temporal bone:

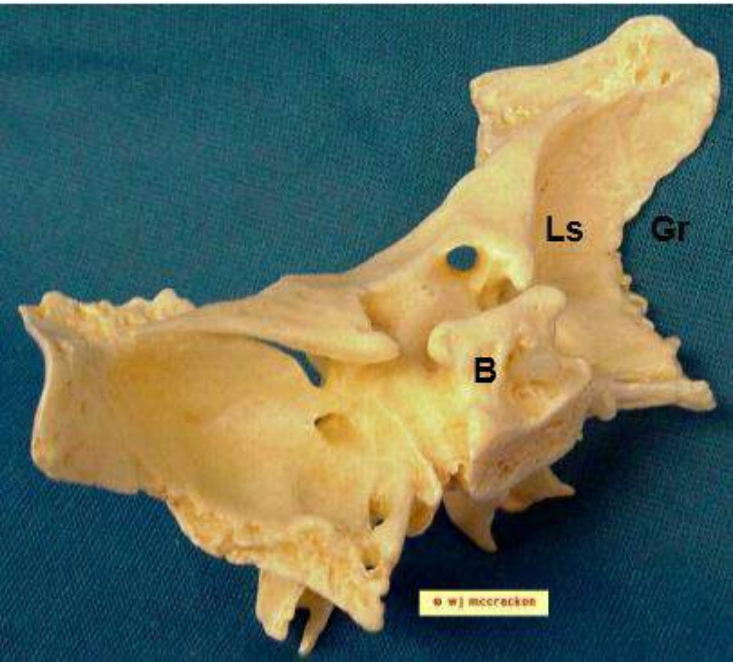
   a. Petrous part. ⇒ الهرمي

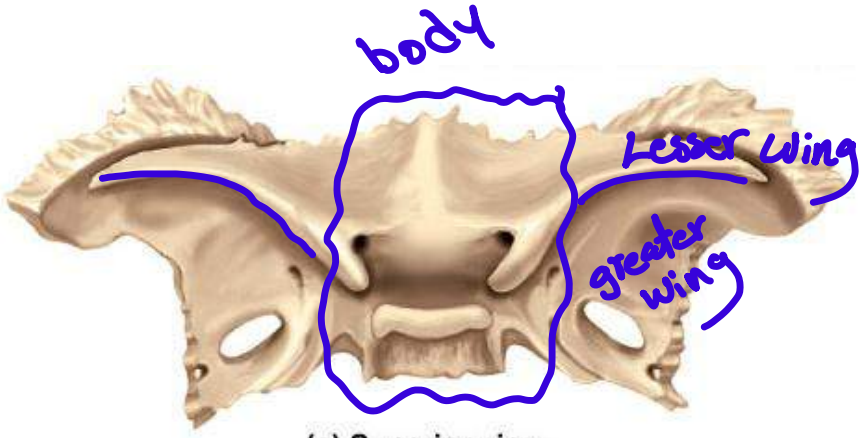
   b. Squamous part.

3- Parietal bone.

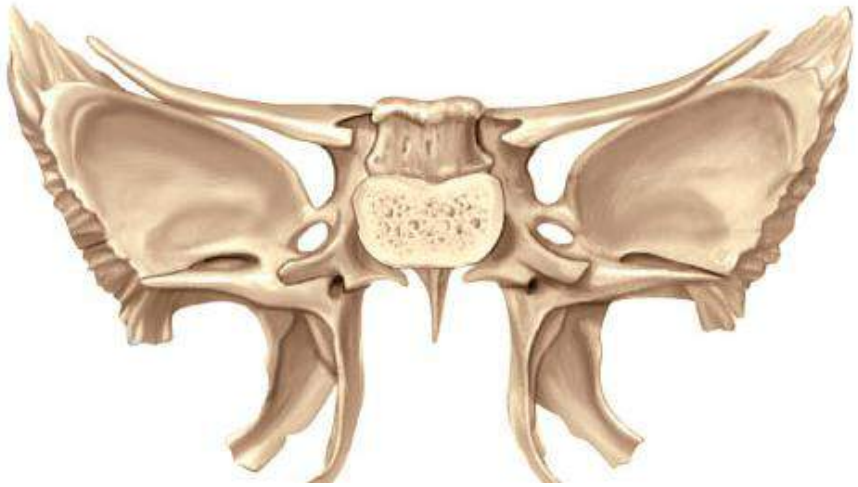


sphenoid bone is like a butterfly





(a) Superior view

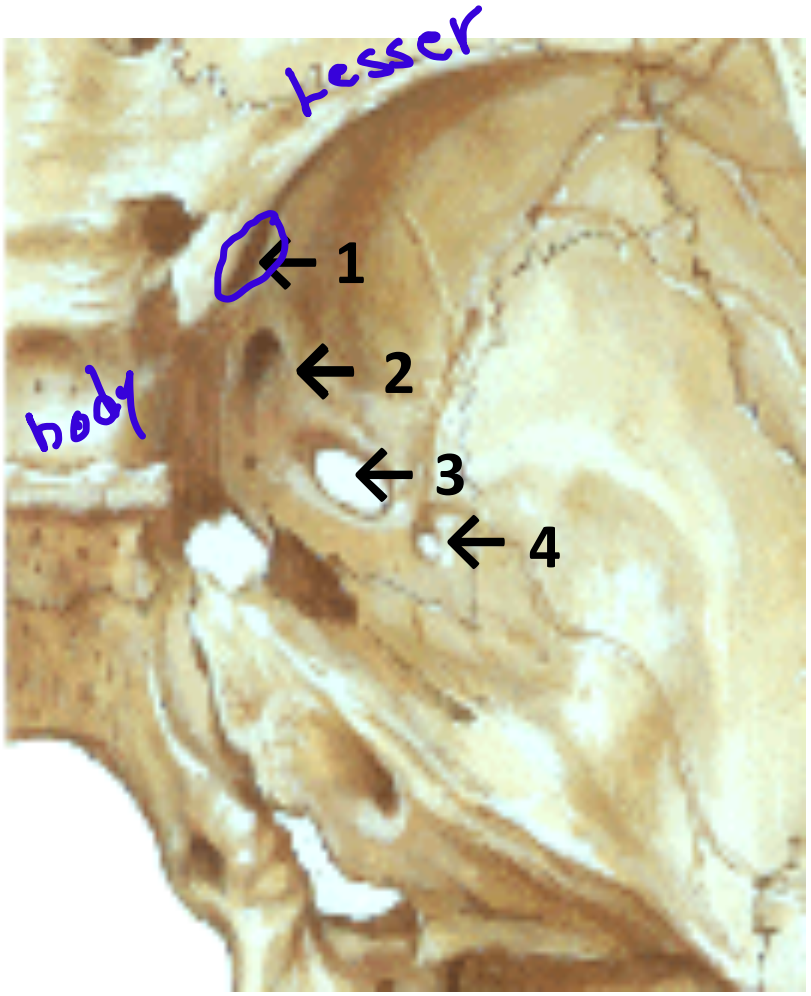


* Middle cranial fossa shows:

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.**

ROS



Post. Cranial Fossa

* **Formed by the following bones:**

* **In the midline:**

العظمة الإسفينية

Occipital bone.

* **Laterally-placed:**

تبدأ من

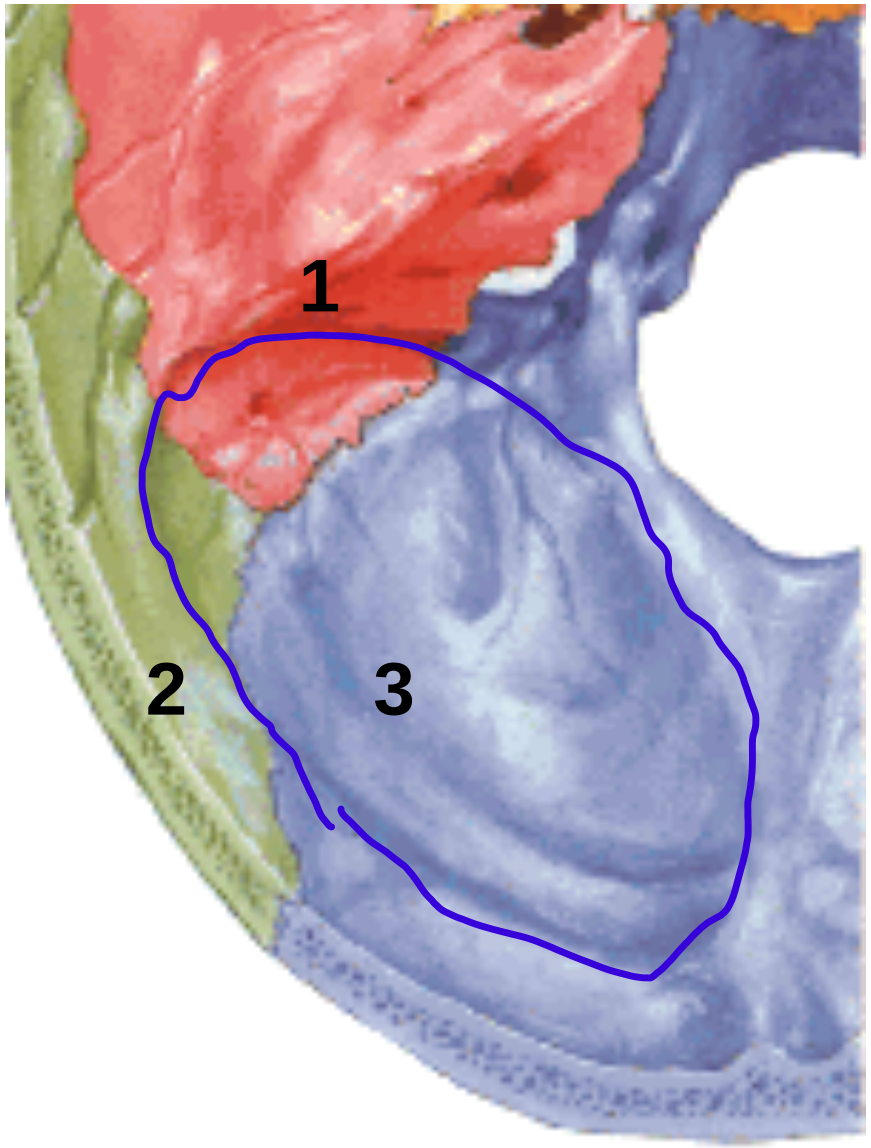
1- Petrous part of temporal bone.

وتاخذ جزء من ال

2- Parietal bone.

والجزء الكبير من

3- Occipital bone.

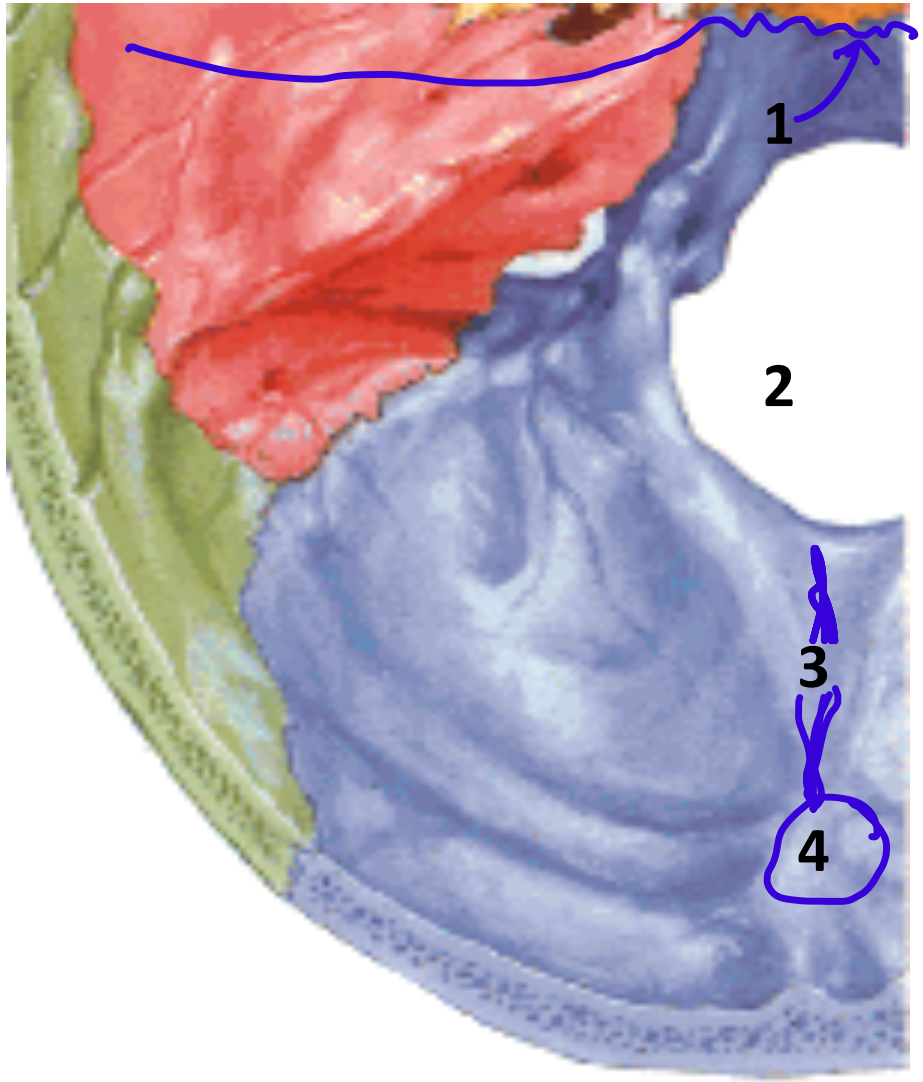


* Midline structures in the posterior cranial fossa :

عبارة عن joint ال zigzag المرجود في اخر ال body of sphenoid والاعلى من basilar part of occipital bone

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

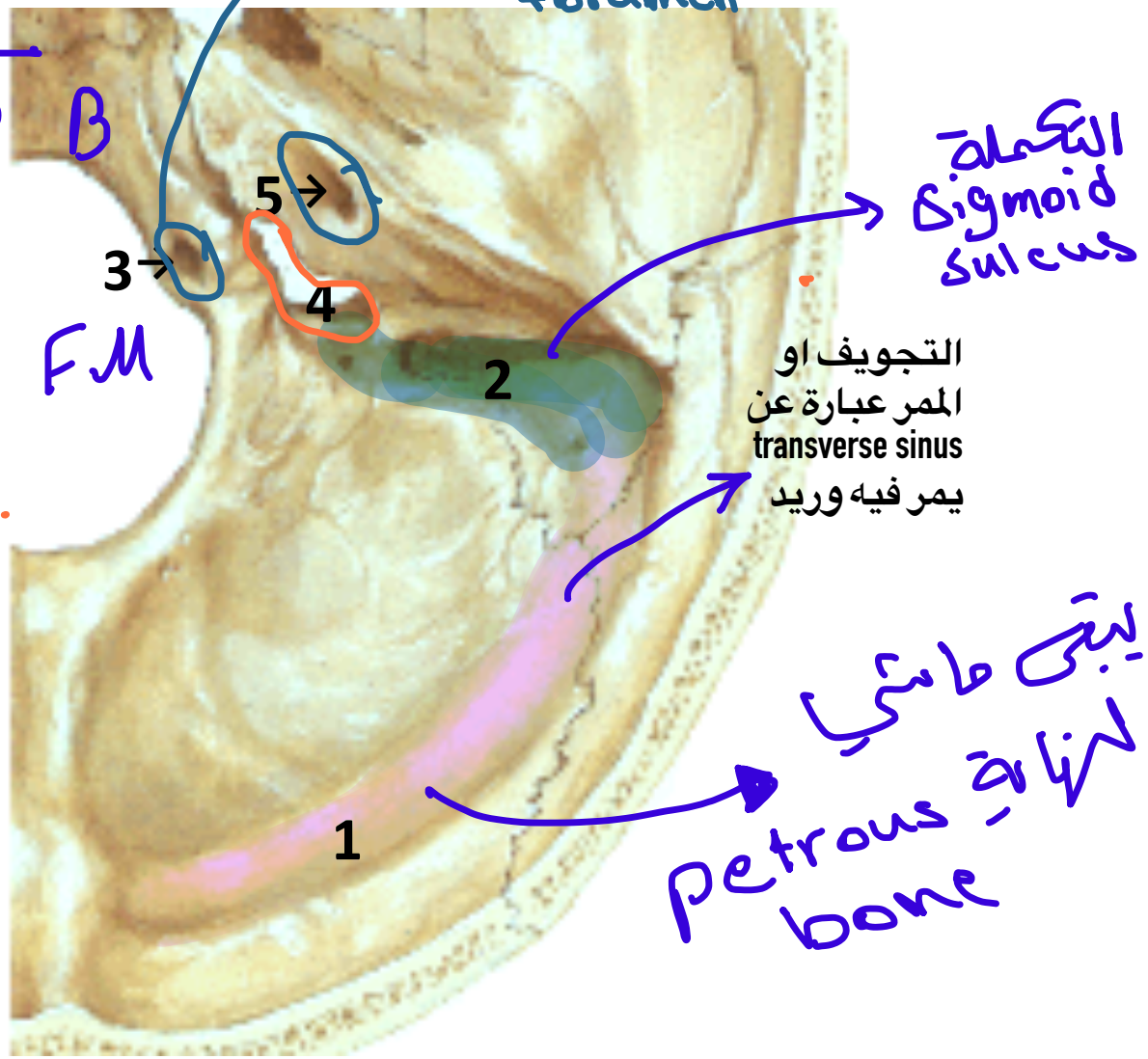
نفس باقي في الخارج



* 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
Thank You!!!!

General Anatomy

Lecture 3: Mandible & Vertebral Column

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عبارة عن جزئين بيلتقوا في

Mandible

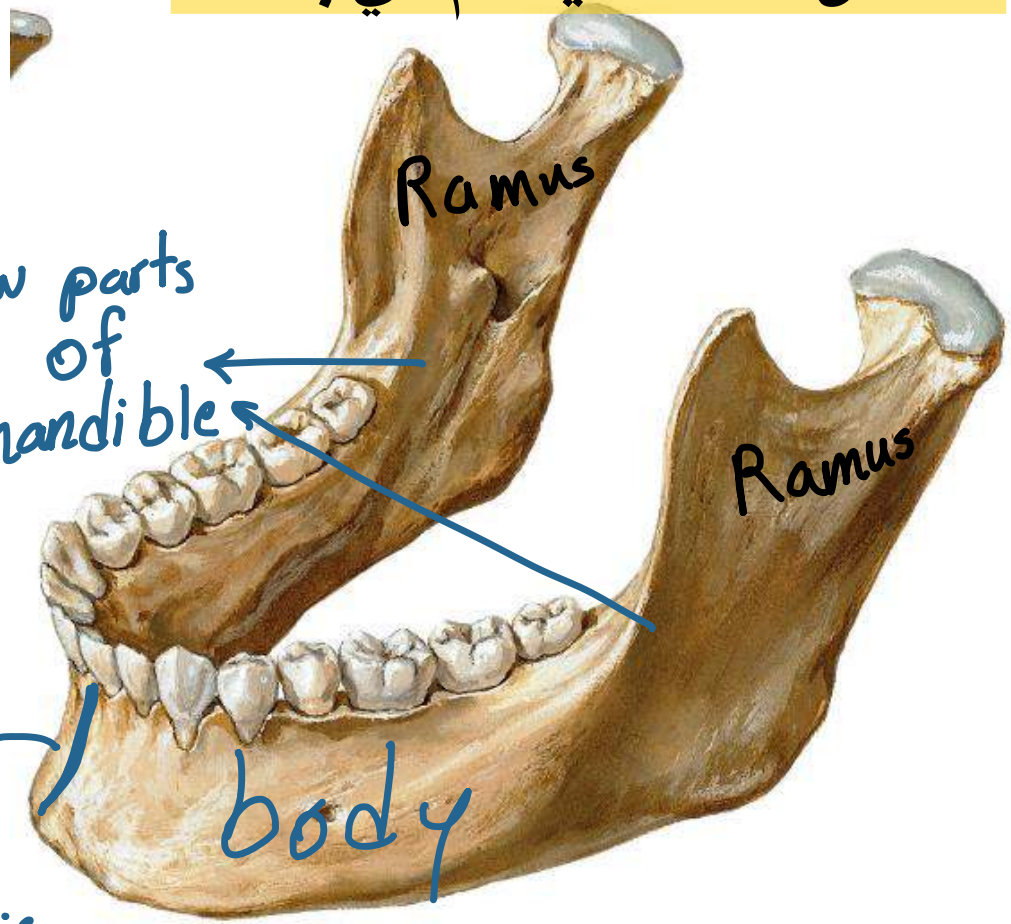
عندي two part of mandible بيلتقوا في symphysis menti عند السنة الاولى يبدأ ال mandible يلحم في بعضه

** 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.

يتوحد

ذراع

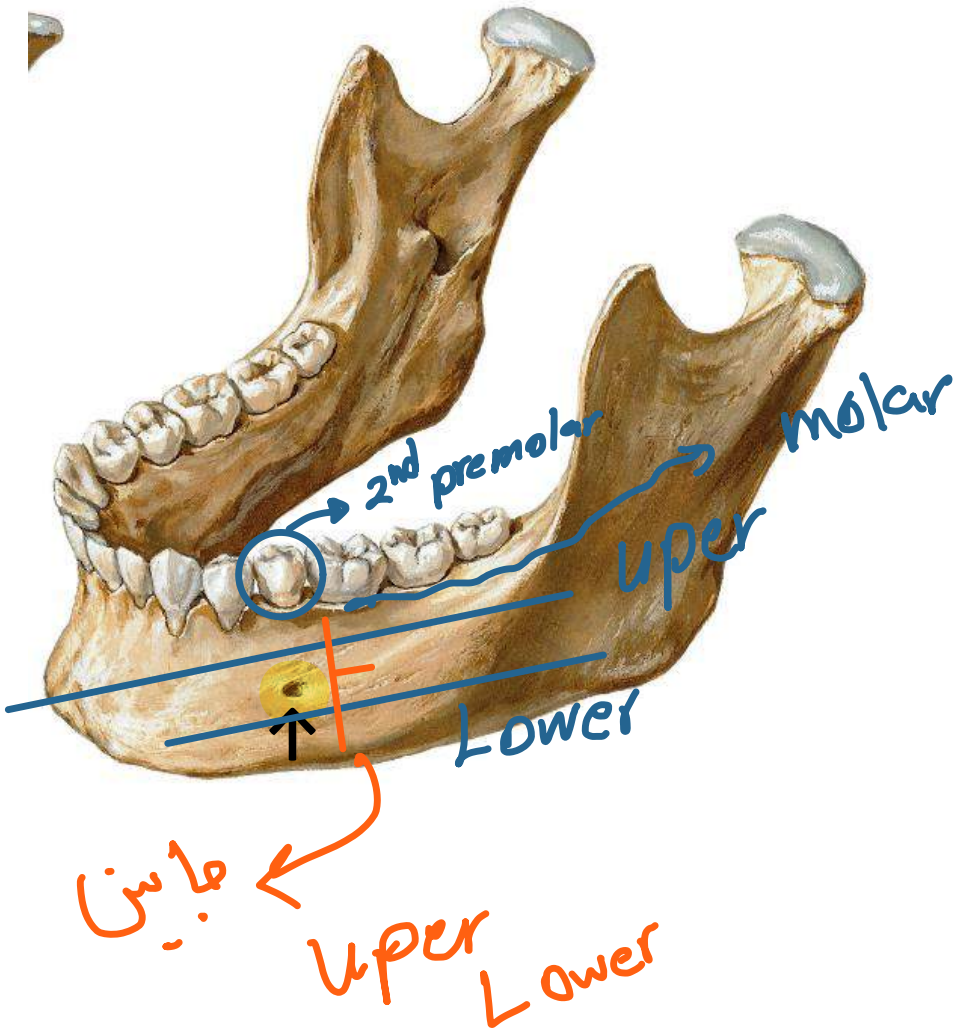


A. The body

* يخرج منها mental nerve & mental vessels

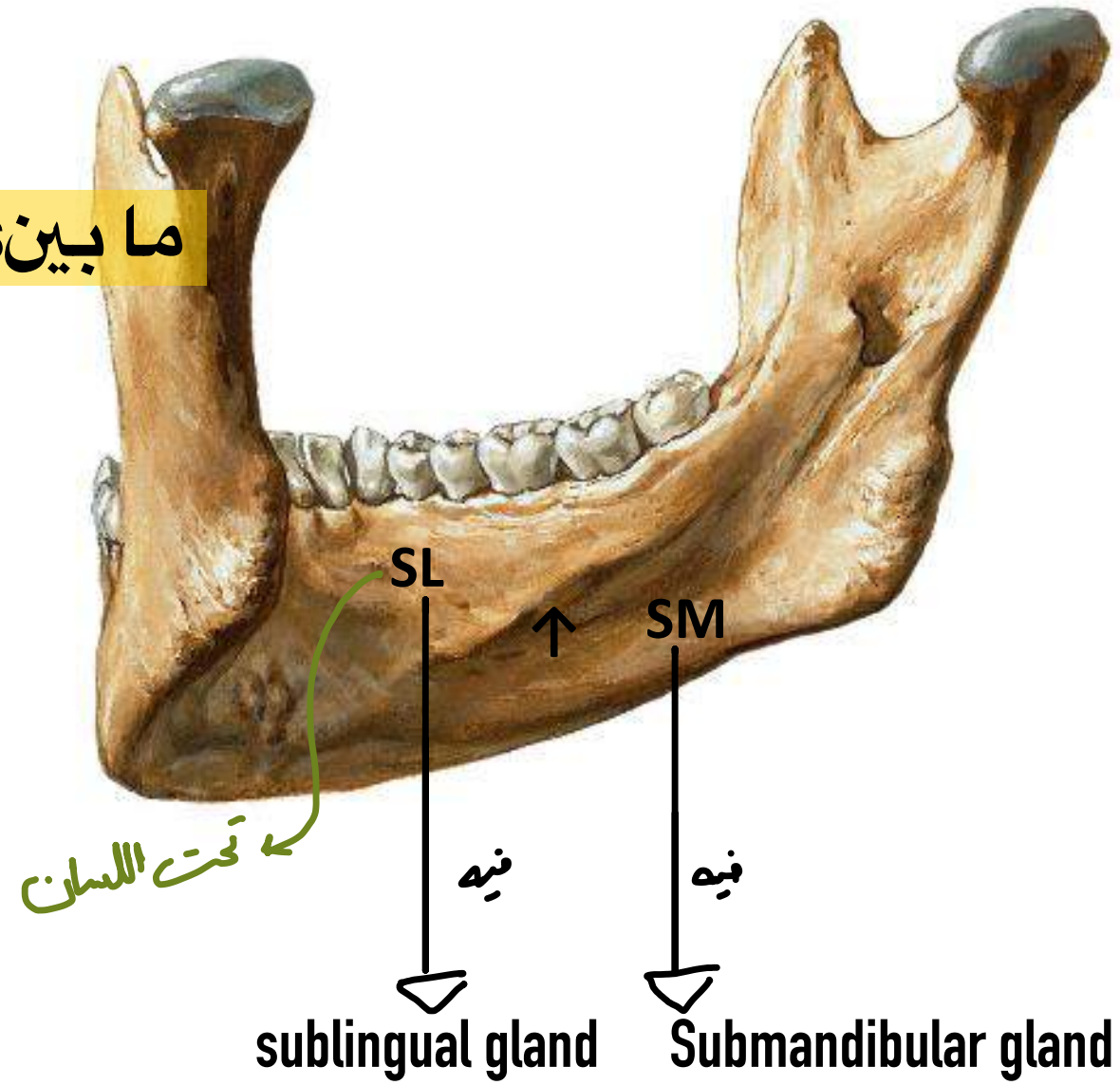
* **External surface:**

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



* 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

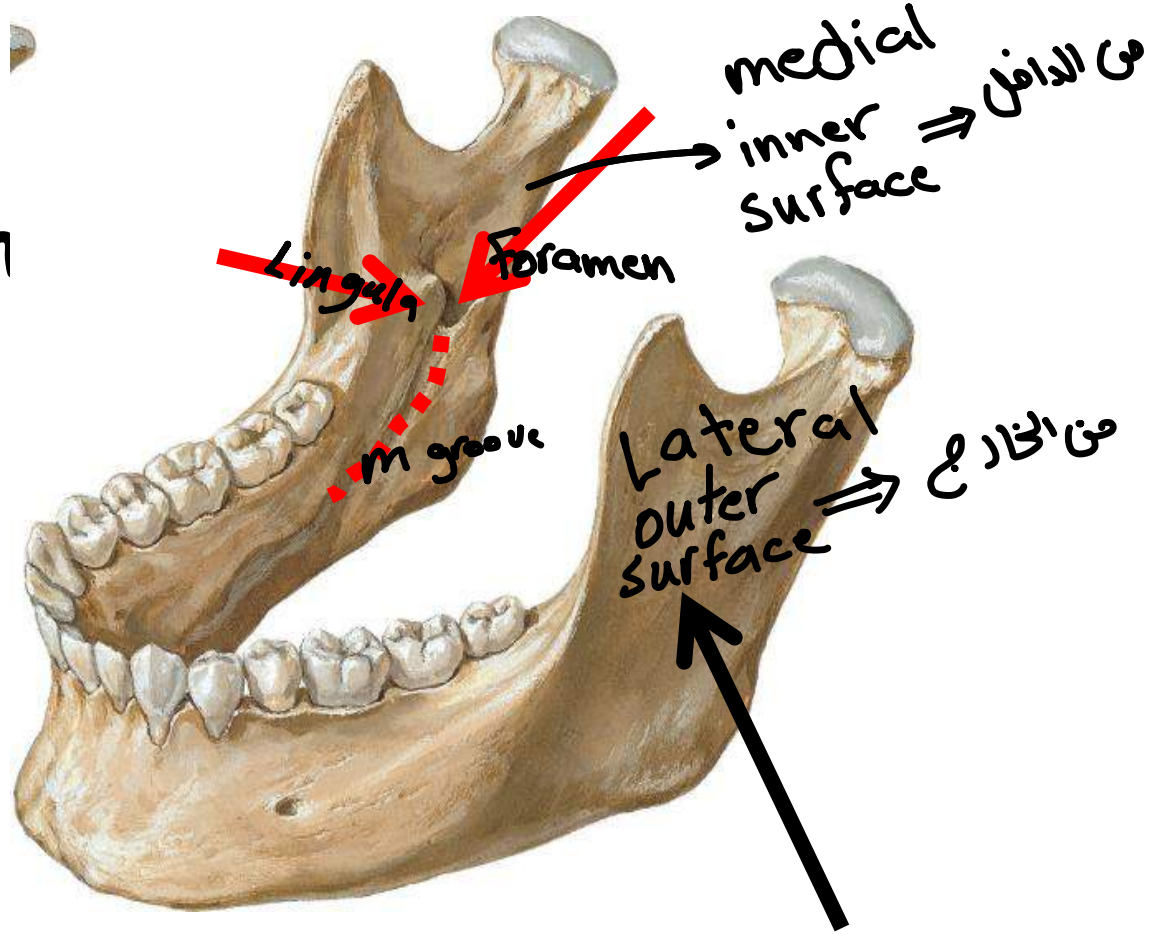
لو دخلت من ال mandibular Foramen رح اخرج من ال mandibular foramen التي من الناحية الاخرى
مجرد الدخول بعدها ندخل mandibular canal التي في بدايتها process مثل اللسان اسمه lingula وعند النزول لتحت ال mandibular foramen يوجد groove يسمى mylohyoid
يبدأ من lower end of m foramen

* It has two surfaces.

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

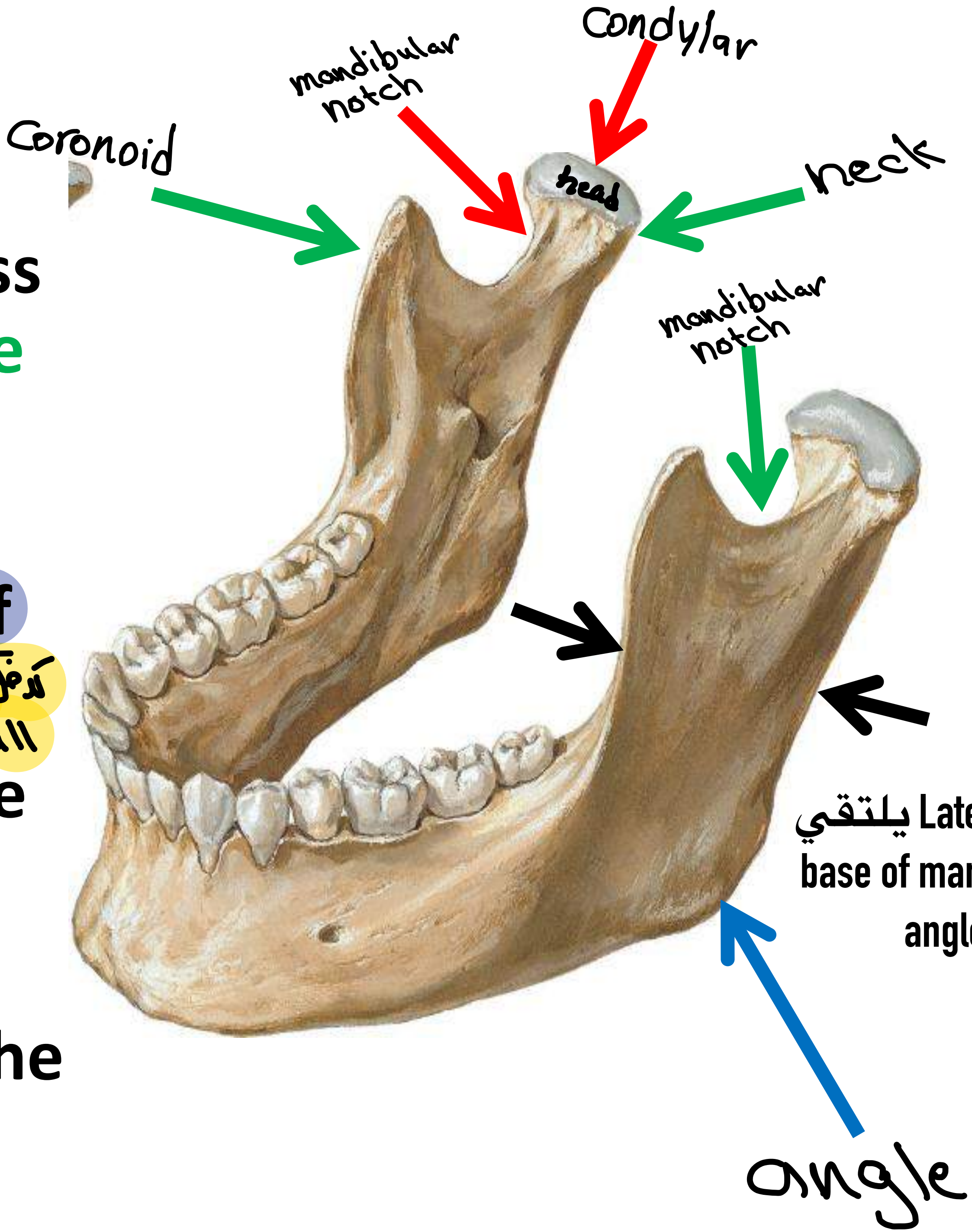
- Projecting over the foramen is the **lingula** .
- The **mylohyoid groove** starts at the **lower border of the foramen**.

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



** Upper border:

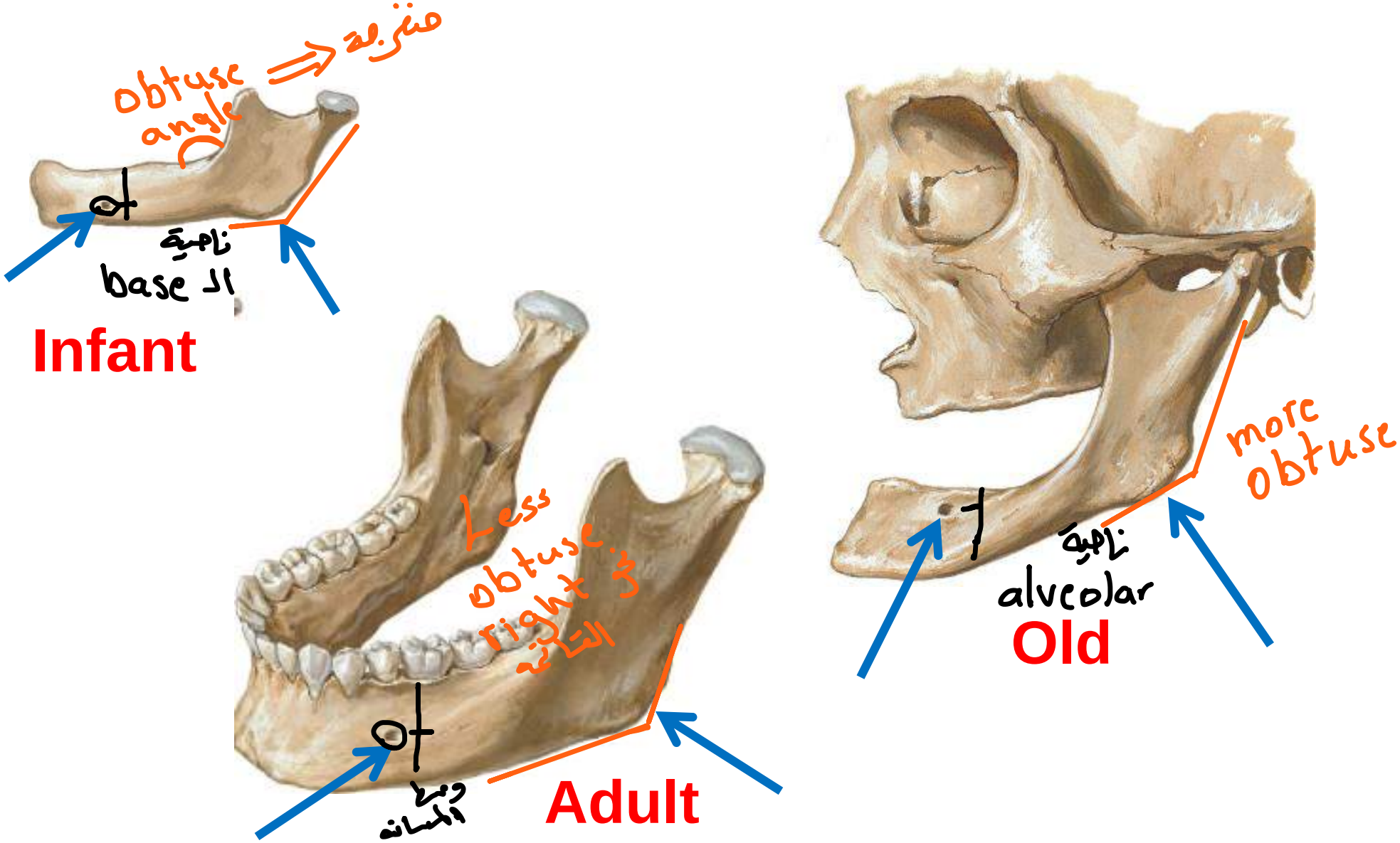
- Shows two process coronoid anteriorly and condylar process posteriorly and in between the mandibular notch.
- The condylar process is upper end expanded to form the head of the mandible. → temporomandibular joint ⇐ تدخل في ال skull
- The constricted area below the head is the neck. of mandible
- Angle of the mandible is the area of meeting of body and the ramus.



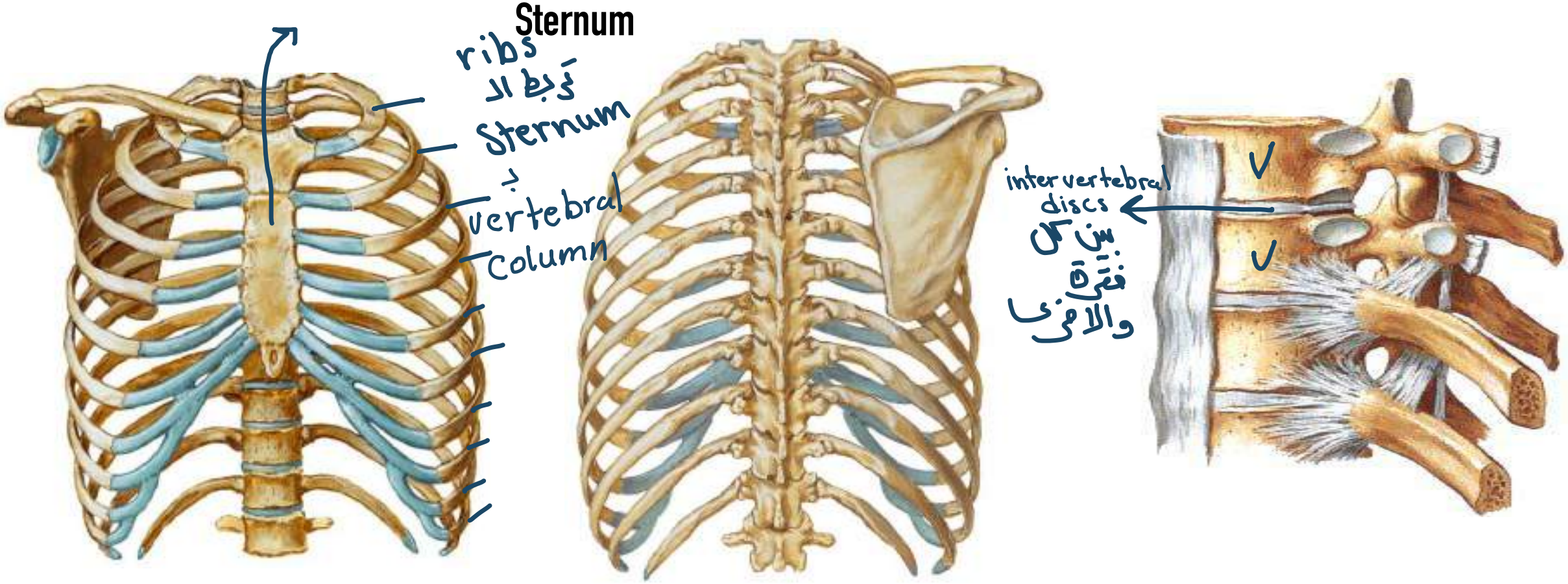
يلتقي Lateral surface .
base of mandible مع ال
angle في

obtuse angle

Age changes of the mandible



* **The vertebral column:** is formed of a series of bones called vertebrae (which are 33 vertebrae).
* The vertebrae articulate together by cartilagenous intervertebral discs.



* **The column is divided into 5 regions:**

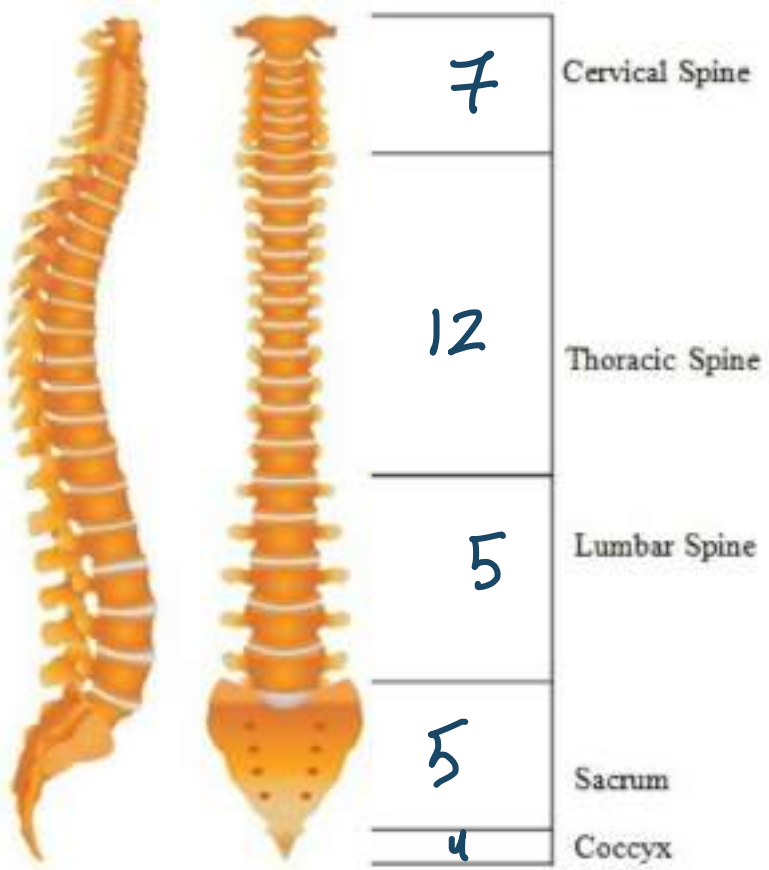
7 cervical - 12 thoracic - 5 lumbar - 5 sacral (fused to form the sacrum) - 4 coccygeal (fused to form the coccyx).

Function of
* **The vertebral column:**

1. Forms the axial skeleton of the body.
2. Supports the weight of the body.
3. Protects & surrounds the spinal cord.

يحمي - يحيط - الحبل الشوكي

Carve لـ vertical بس


7
Cervical Spine
12
Thoracic Spine
5
Lumbar Spine
5
Sacrum
4
Coccyx

** **Curves of vertebral column:**

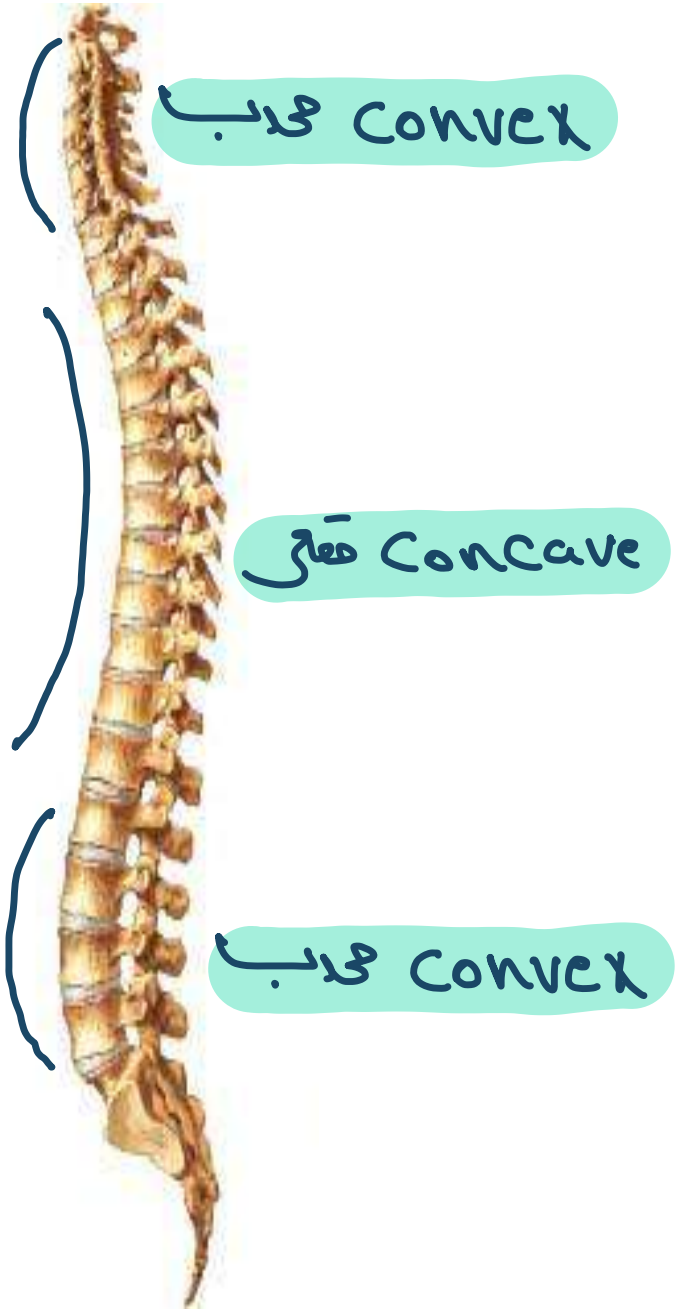
* **Primary curve:** The vertebral column is concave anteriorly مقعر at birth.

* **Secondary curves:**

(a) The cervical curve: becomes convex محدب anteriorly when the child extends his head at the 3rd - 4th month.

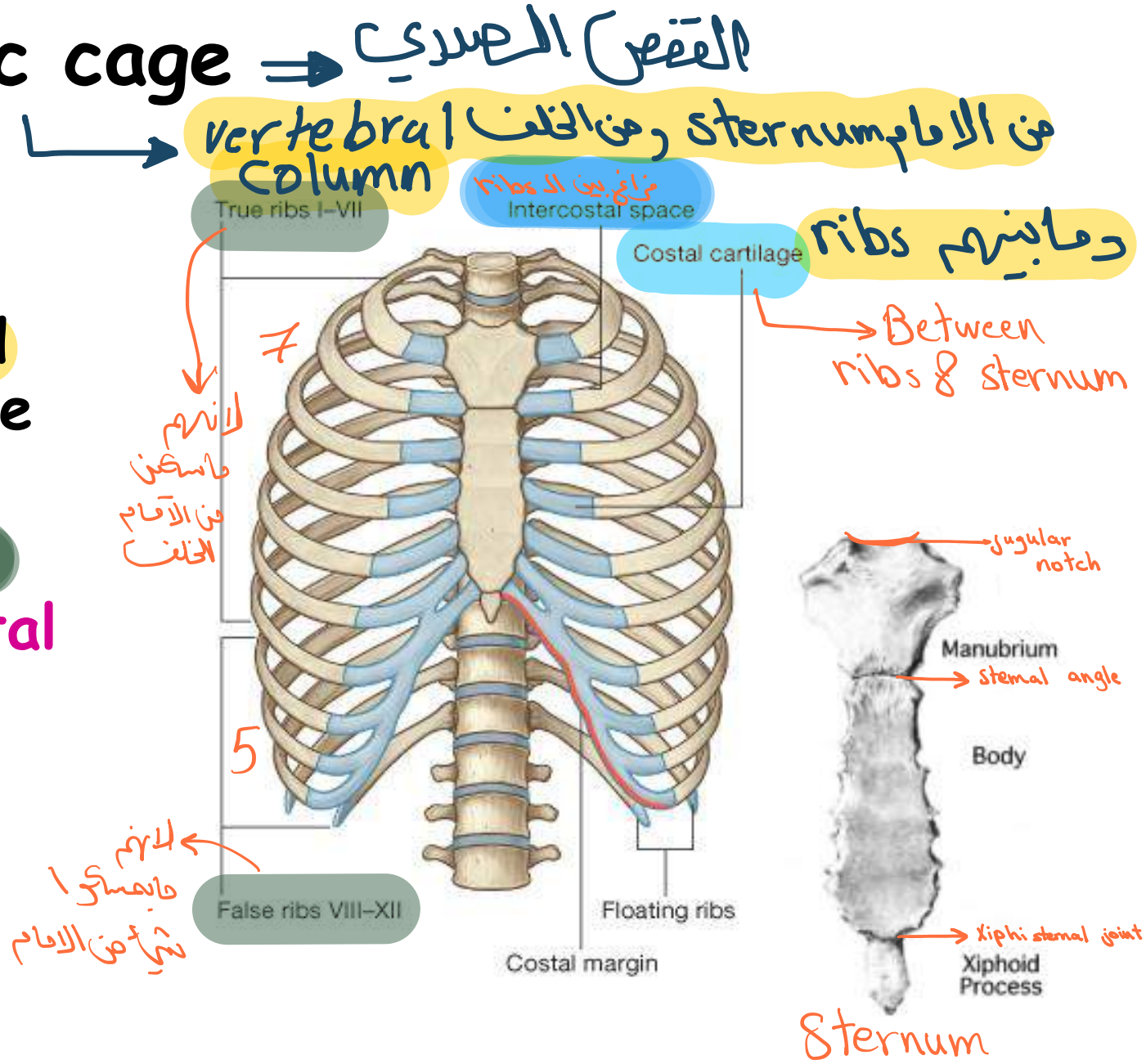
(b) The lumbar curve: becomes convex anteriorly when the child begins to walk between 12-18 months عند المشي due to strengthening of the muscles of the back.

تقوية
⬇
تؤدي لشد على الفقرات
فما يؤدي للحدبها

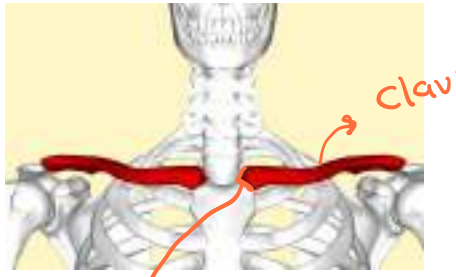


Thoracic cage ⇒ القفص الصدري

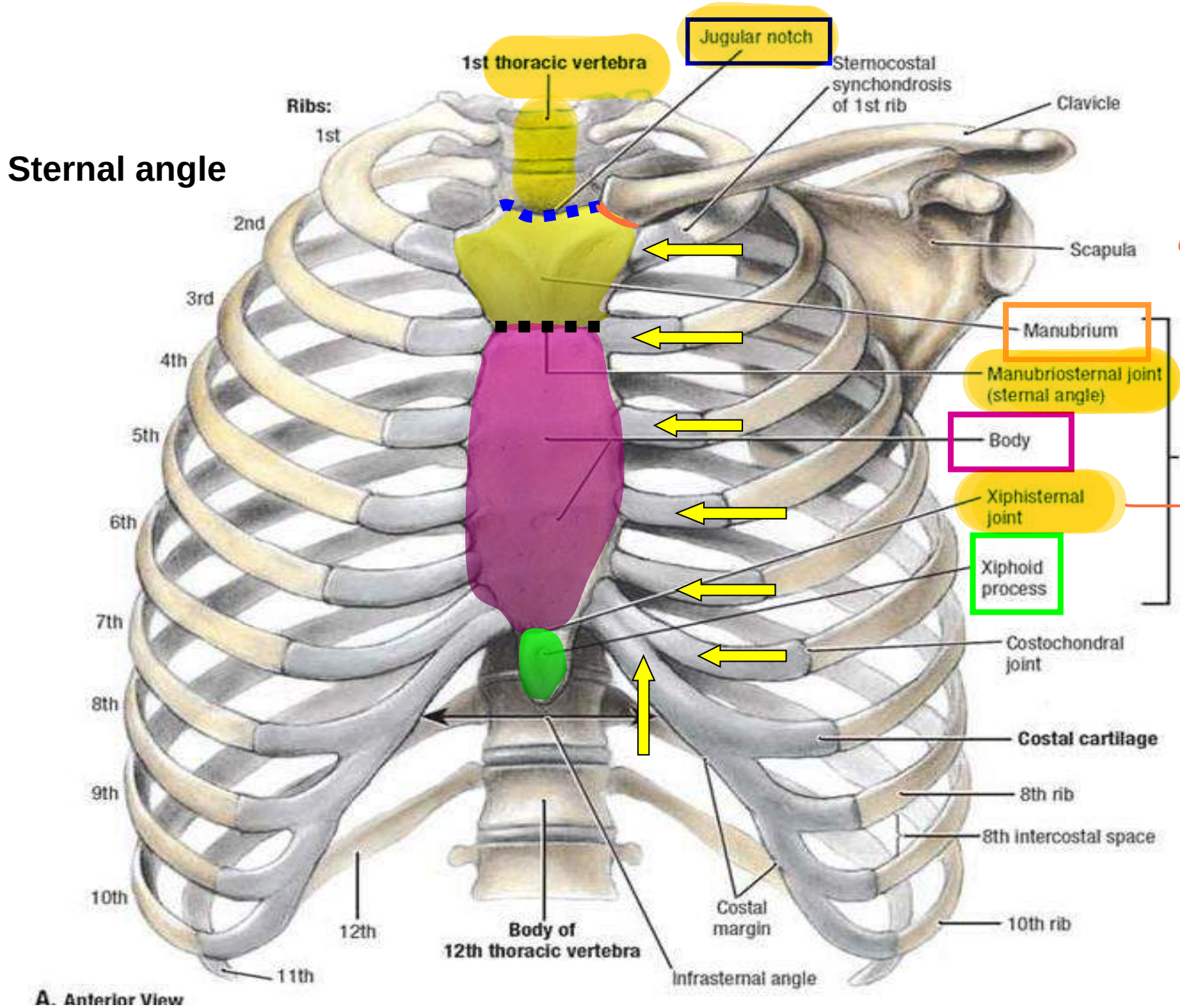
- **Formed of:**
- **Anteriorly→ sternum (manubrium, body & xiphoid process). It is joined to the upper 7 costal cartilages.**
- **On each side→ 12 pairs of ribs separated by intercostal spaces.**
- **Posteriorly→ 12 thoracic vertebrae.**



Sternal angle



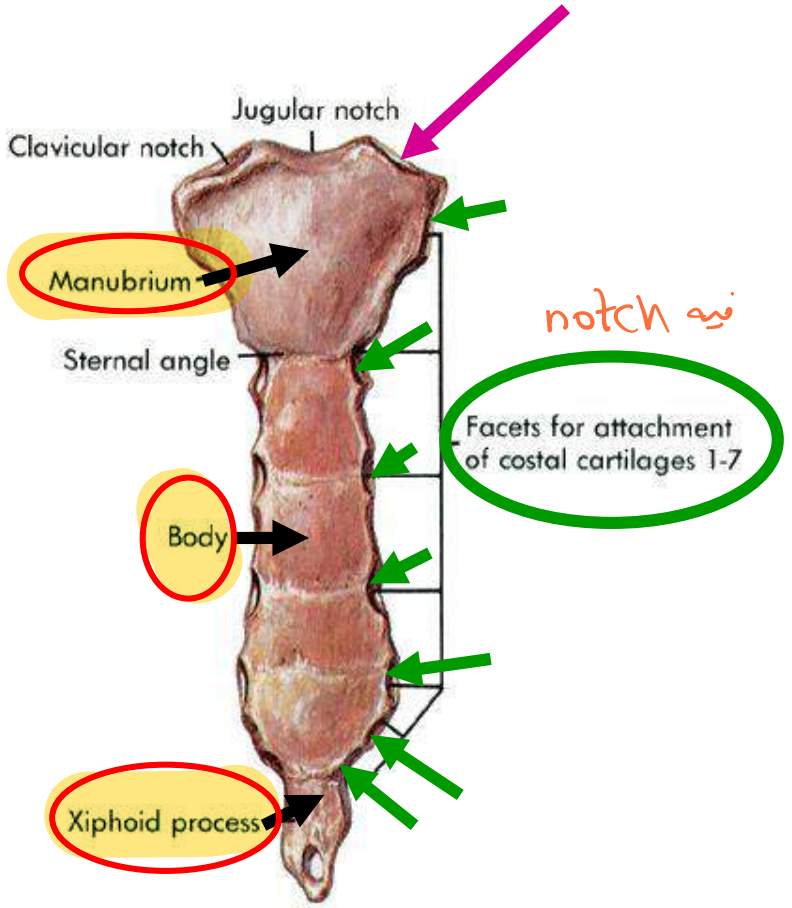
clavicular notch
يدخل فيها a head of clavic تعمل
sternoclavicular joint مفصل



مفاصل في sternum

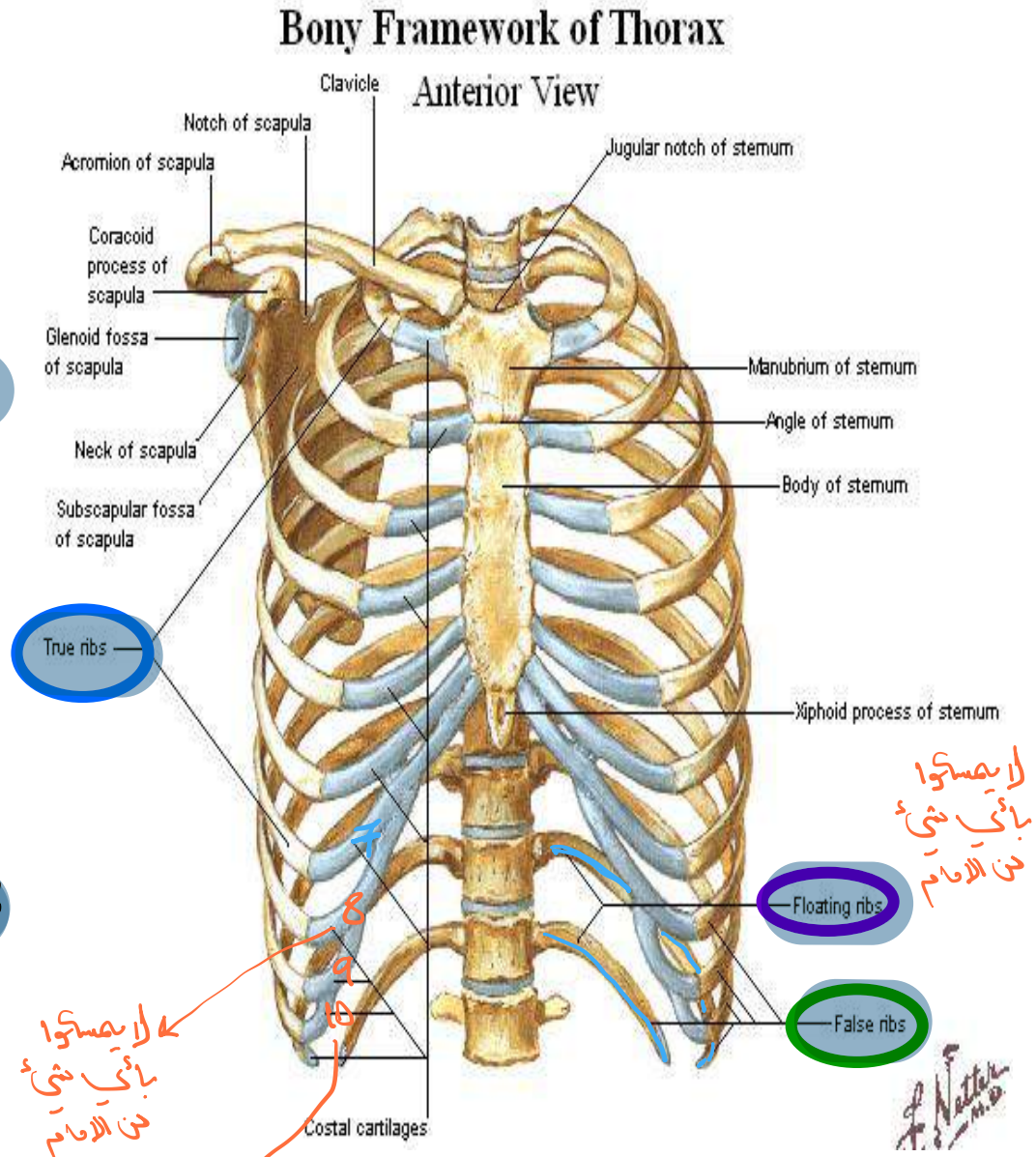
The Sternum

- Formed of 3 parts → manubrium, body & xiphoid process.
- Articulates with → clavicles & upper 7 costal cartilages.



The Ribs

- 12 pairs of ribs articulate with the thoracic vertebrae.
- Upper seven are true ribs as each articulates by its costal cartilage to the sternum.
- Lower five are false ribs as their costal cartilages fail to reach the sternum.
- Last two are called floating ribs as their costal cartilages are free.



لا يمسكوا بأي شيء من الأمام

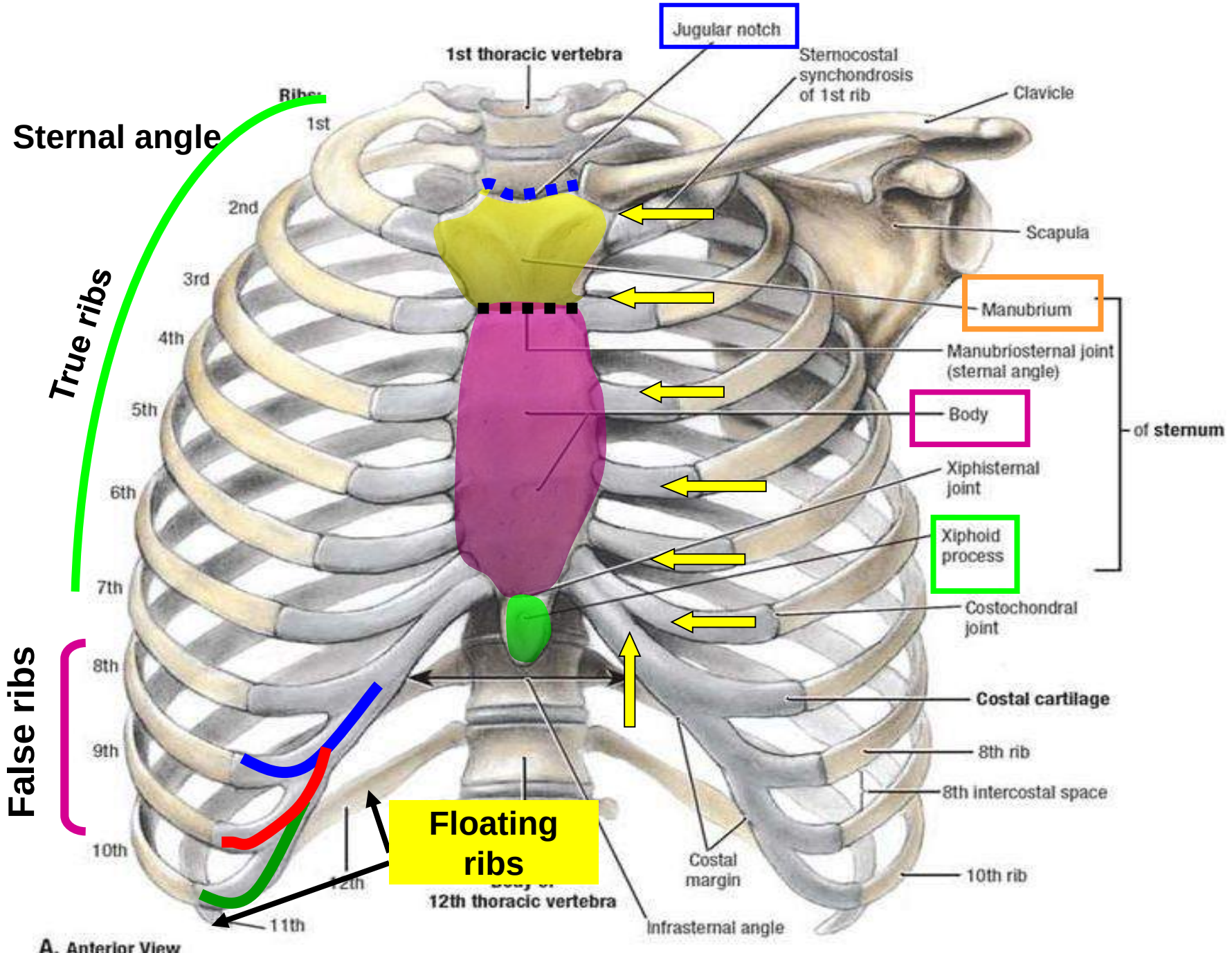
Costal + cartilage free

8,9,10

لا يمسكوا بأي شيء من الأمام

Costal cartilage يمسكوا الـ grow

Costal margin


Sternal angle
True ribs
False ribs
Jugular notch
1st thoracic vertebra
Sternocostal synchondrosis of 1st rib
Clavicle
Ribs:
1st
2nd
3rd
4th
5th
6th
7th
8th
9th
10th
11th
12th
Scapula
Manubrium
Manubriosternal joint (sternal angle)
Body
of sternum
Xiphisternal joint
Xiphoid process
Costochondral joint
Costal cartilage
8th rib
8th intercostal space
10th rib
Floating ribs
Costal margin
12th thoracic vertebra
Infrasternal angle
A. Anterior View