



Lecture: 2

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الجامعة الهاشمية
The Hashemite University

نصيحة احضرو شرح د محمد فتحي عاليوتيوب عن
الموضوع هاض بالذات



General Anatomy

الجمجمة

Lecture 2: Axial Skeleton: The Skull

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THE SKELETON

ال skeleton لل skull عبارة عن :

* It comprises **cartilages**, **bones**, **ligaments** & **joints**.

* The **bones** are **rigid** and **heavier** than **cartilages**.

* Cartilages are more flexible and lighter.

* The younger the age, the greater is the contribution of cartilage to the skeleton.

كل ما كان الشخص عمره اصغر كل ما كان ال cartilages اكثر من ال bones

اشقل

مقارنة بين ال bones وال cartilages :

أخف وزنا.

جامدة

1

2

3

4

5

6

7

*** Divisions of the skeleton:**

1. Exoskeleton: rudimentary in man.

It is represented by: nails & enamel of teeth .

2. Endoskeleton: about 206 bones & is formed of:

a. The axial skeleton.

b. The appendicular skeleton.

Regional classification of bones

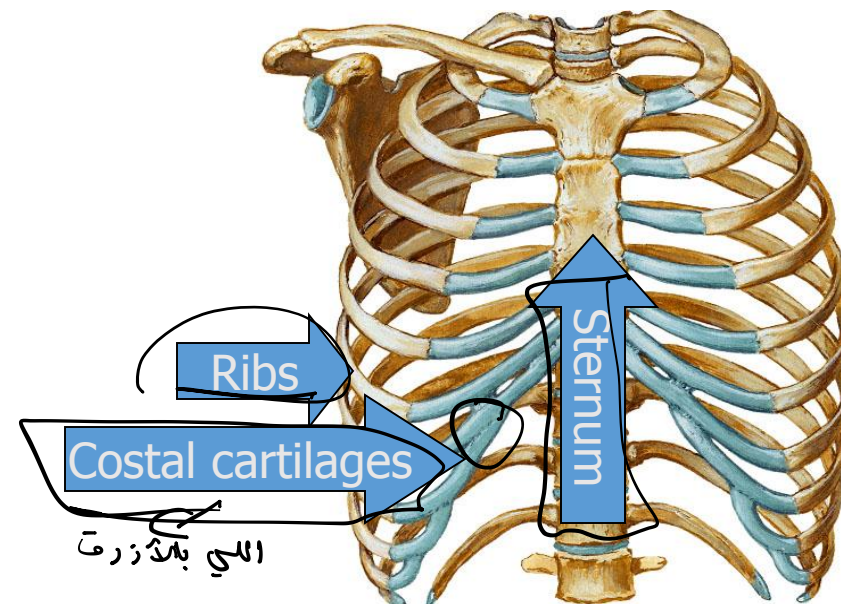
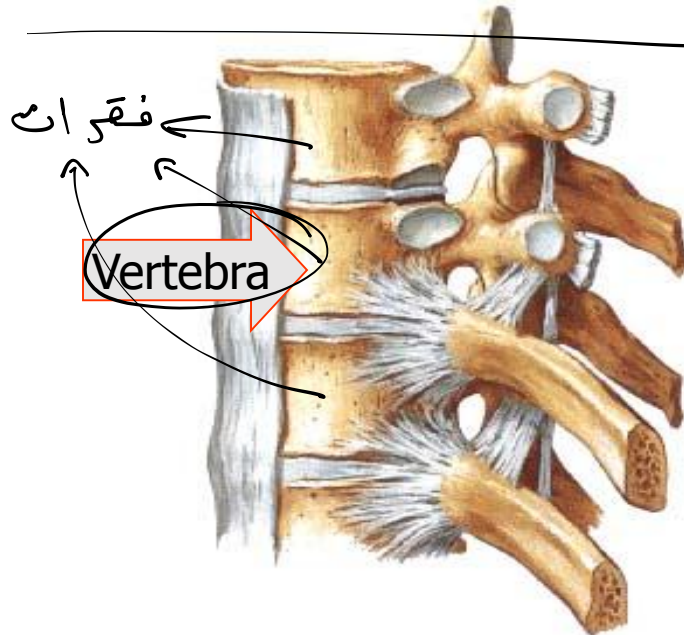
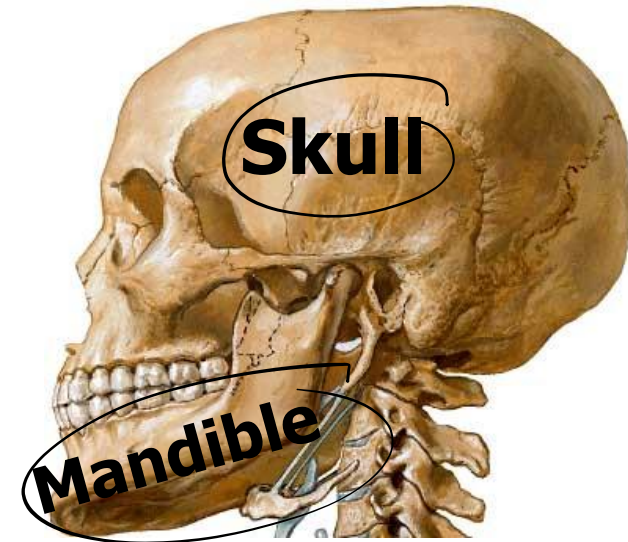
* The human skeleton is divided into:

1. Axial skeleton: which includes skull, vertebral column, ribs & sternum.

2. Appendicular skeleton: which includes the bones of the appendages (upper & lower limbs) & their girdles (shoulder & pelvic).

Axial skeleton

1. Skull & mandible.
2. Ribs.
3. Sternum.
4. Vertebral column.

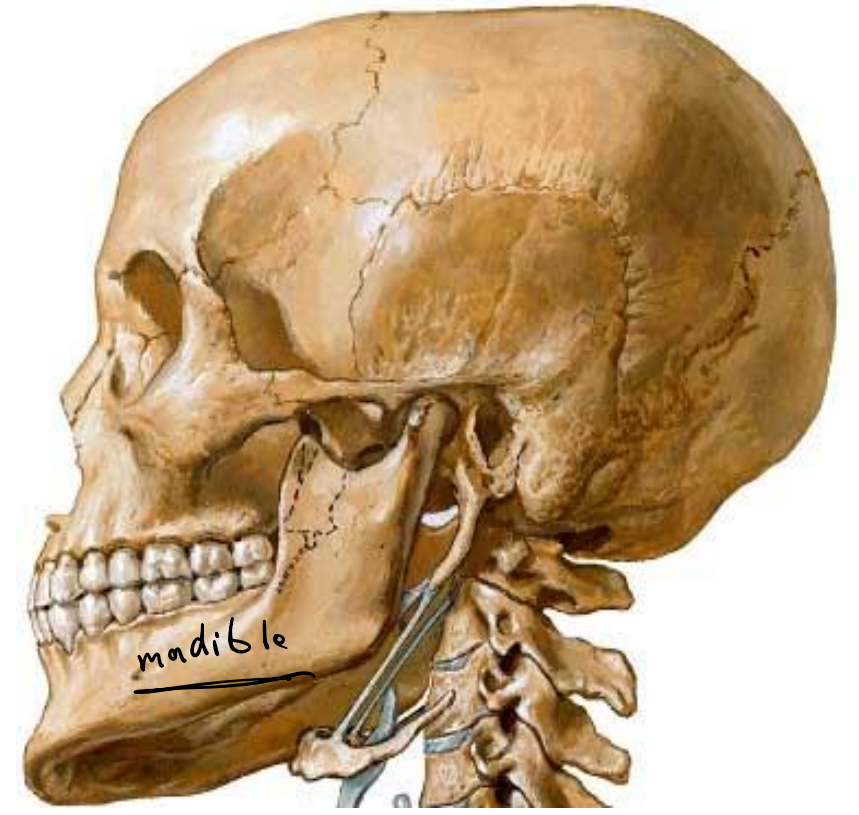


*** The skull (cranium)**
(which contains the
brain + its meninges)
+ the mandible (part
of facial bones) →
form the skeleton of
the head.

يَكُونُ فَن

① skull + mandible

Brain + its meninges



The skull

Is formed of **22 separate bones**

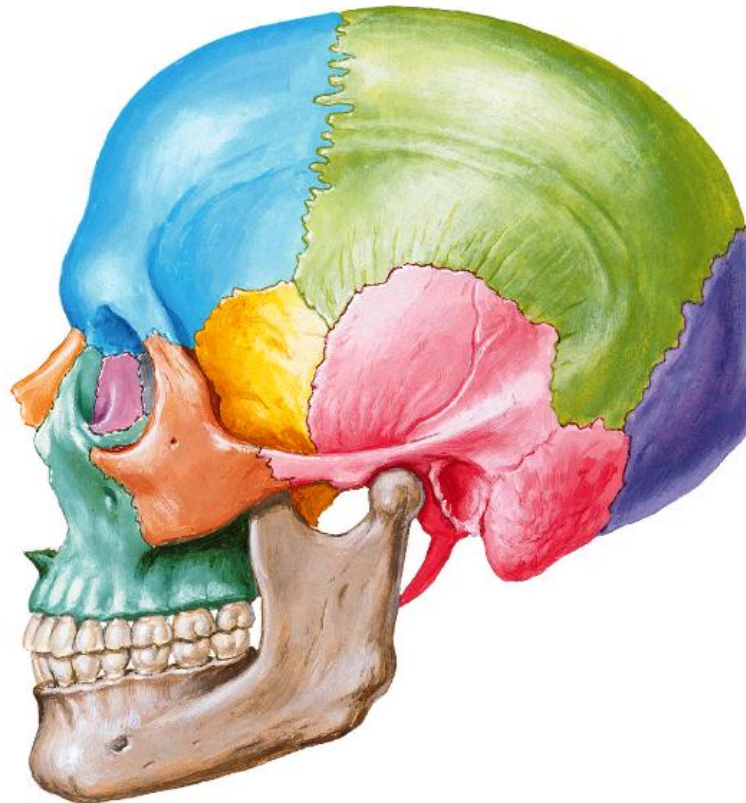
One movable bone

The mandible

21 immovable bones

Articulating together by **sutures**
(which are fibrous joints)

يرتبطوا مع بعضهن عن طريق
مفاصل ليفية



5 Unpaired bones

پہلی عظمیٰ وحدہ کی اد skull کا مکملہ

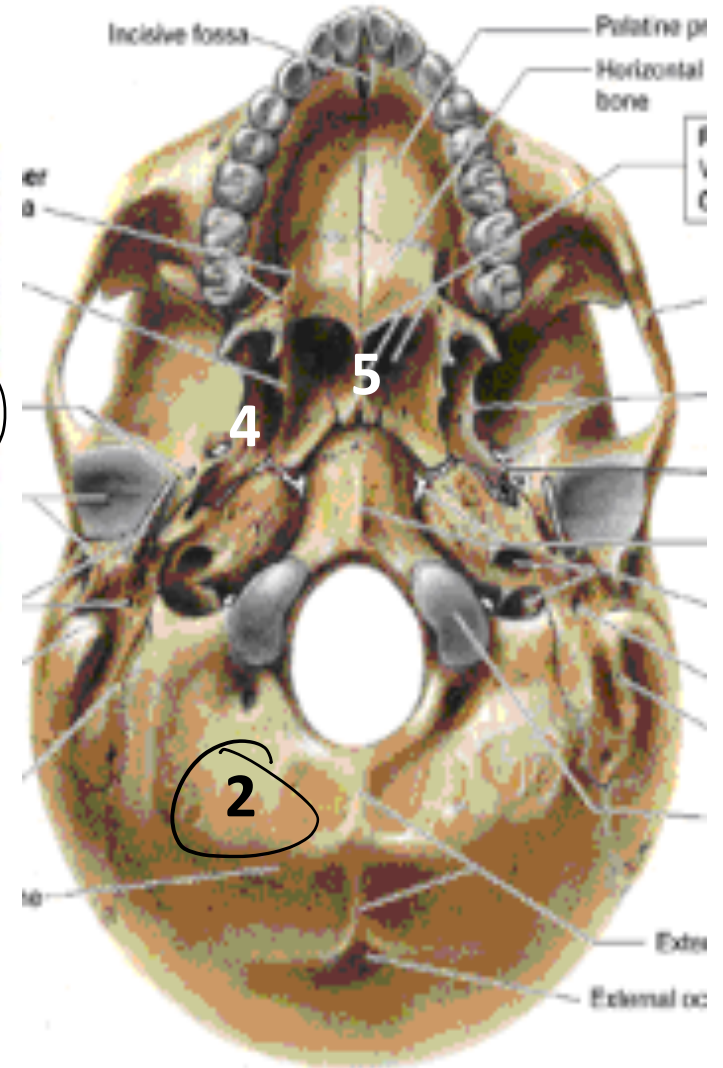
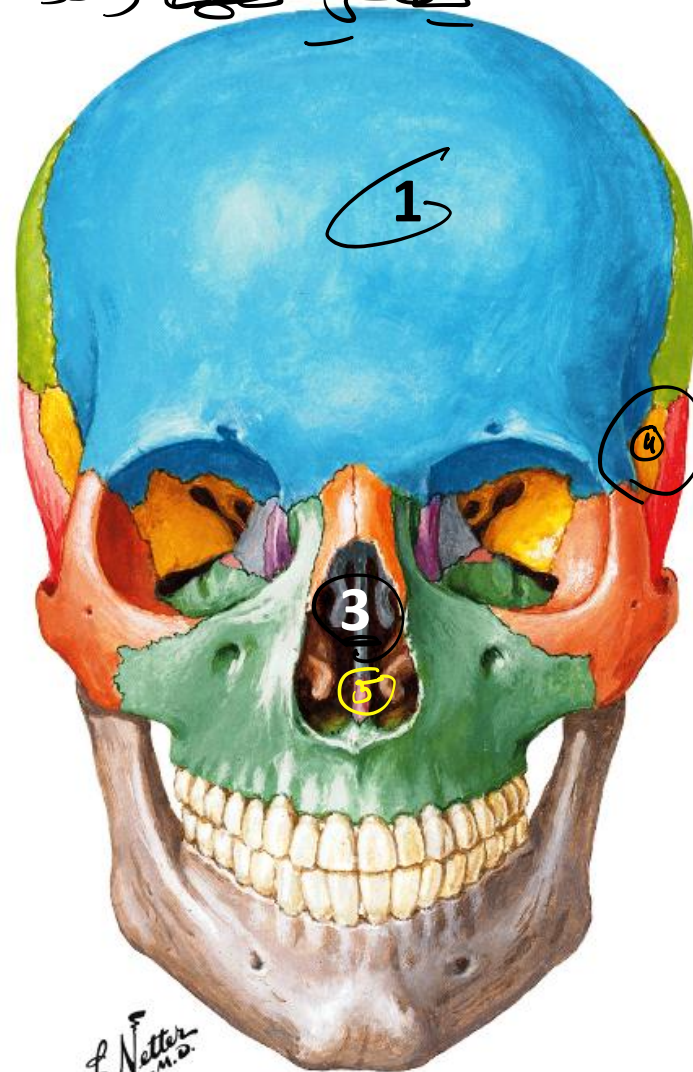
1. Frontal

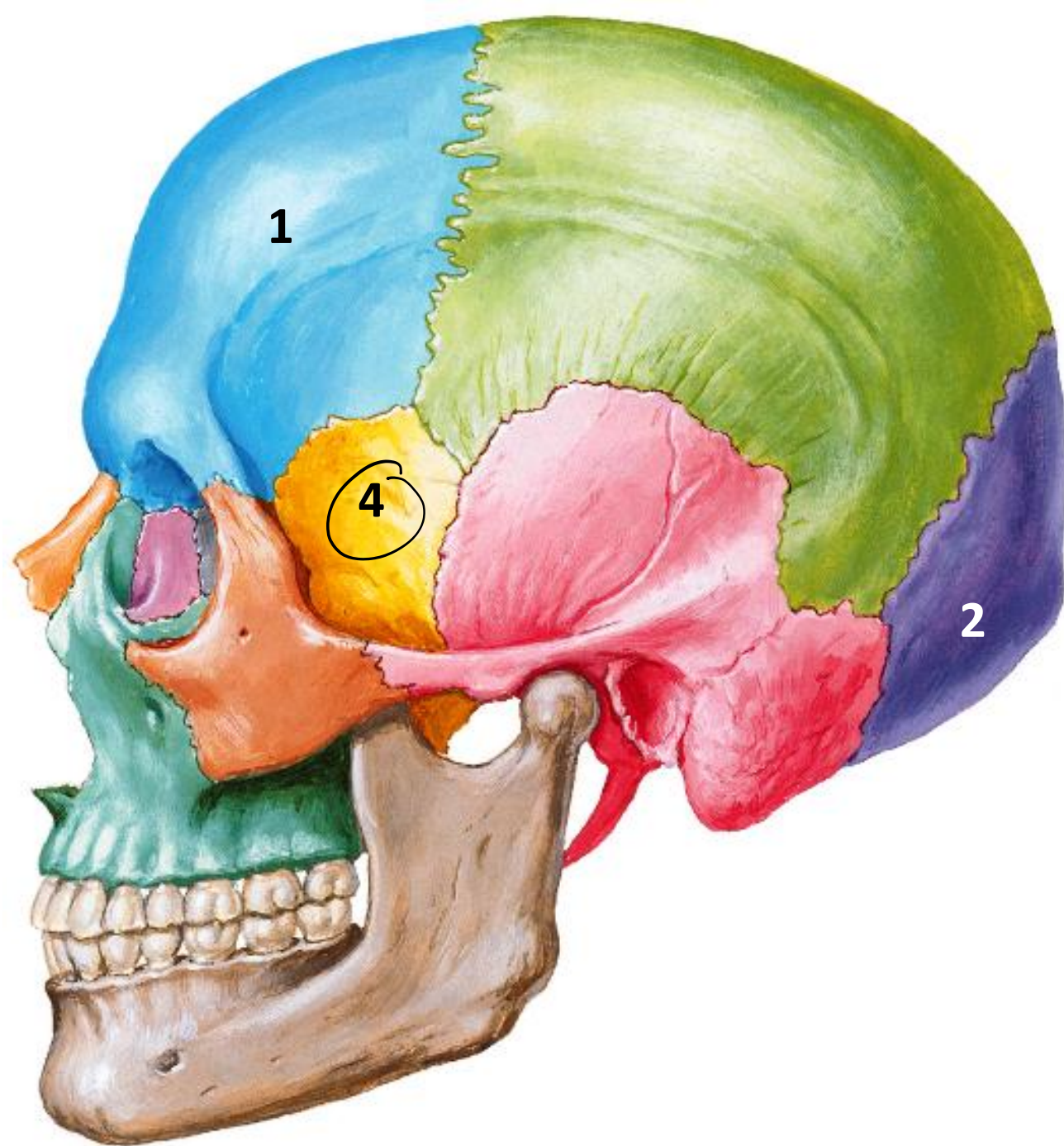
2. Occipital

3. Ethmoid

4. Sphenoid

5. Vomer





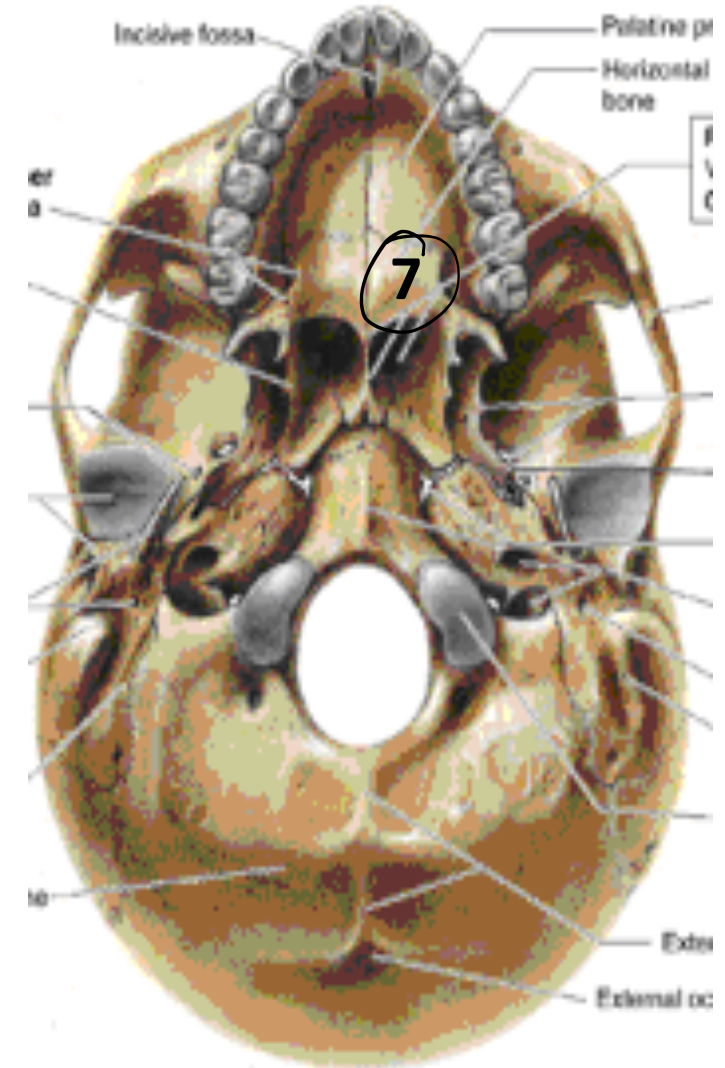
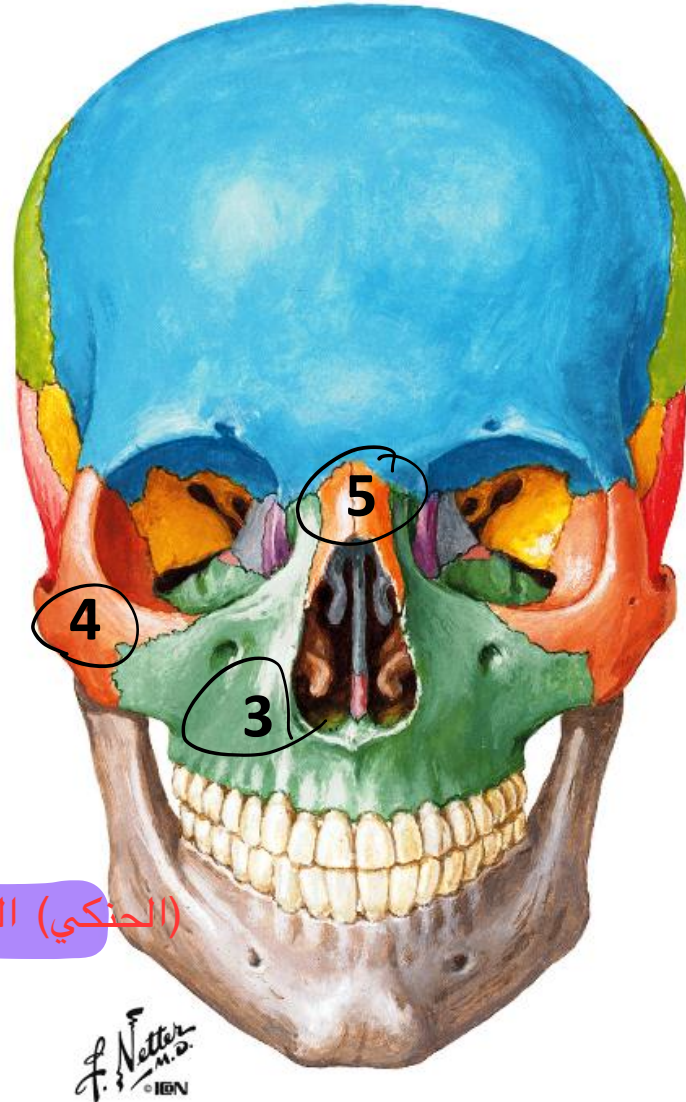
8 Paired bones

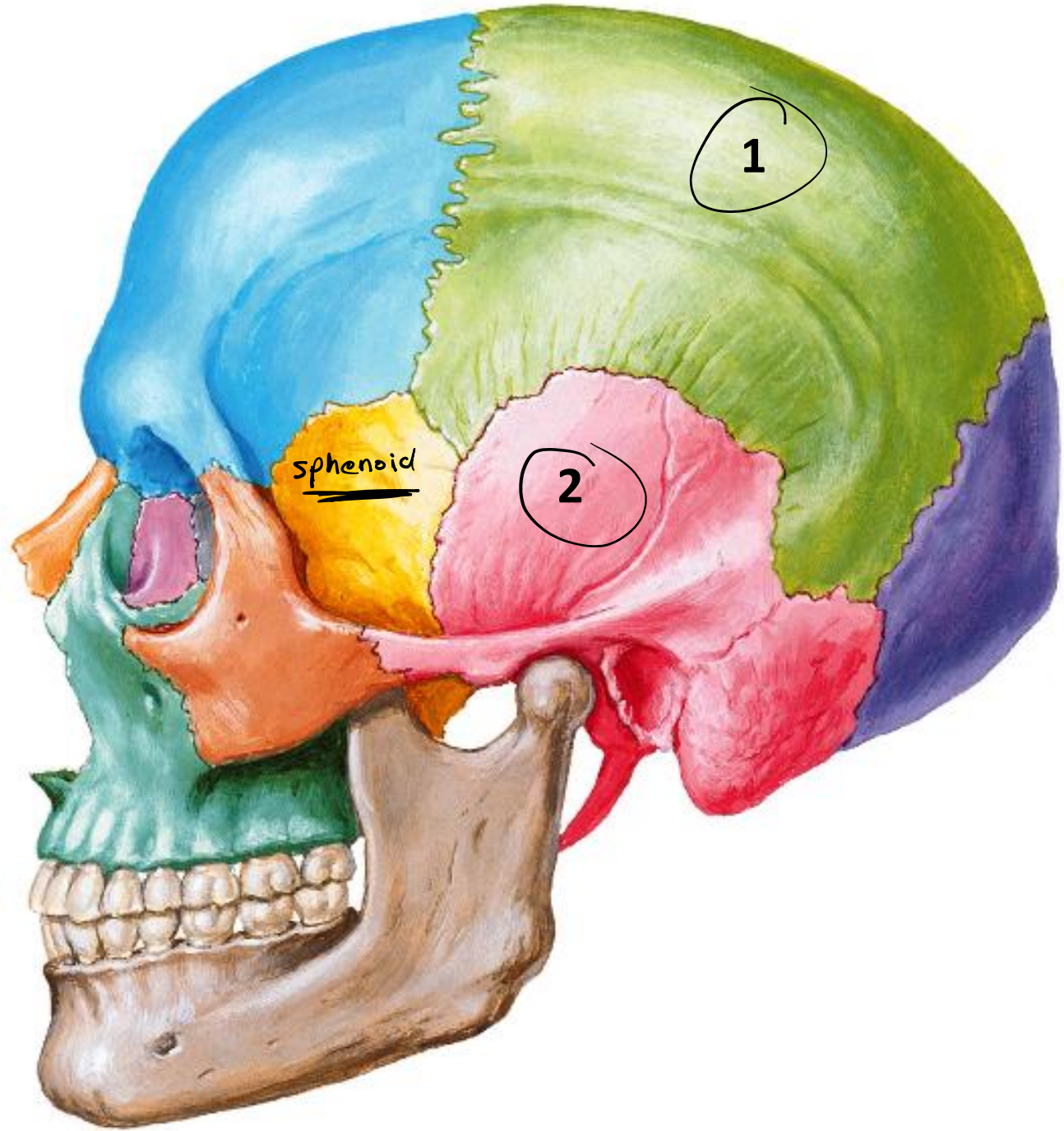
يصلني عظمة في كل جهة من الراكس

1. Parietal
2. Temporal
3. Maxillary
4. Zygomatic
5. Nasal
6. Lacrimal
7. Palatine
8. Inferior concha

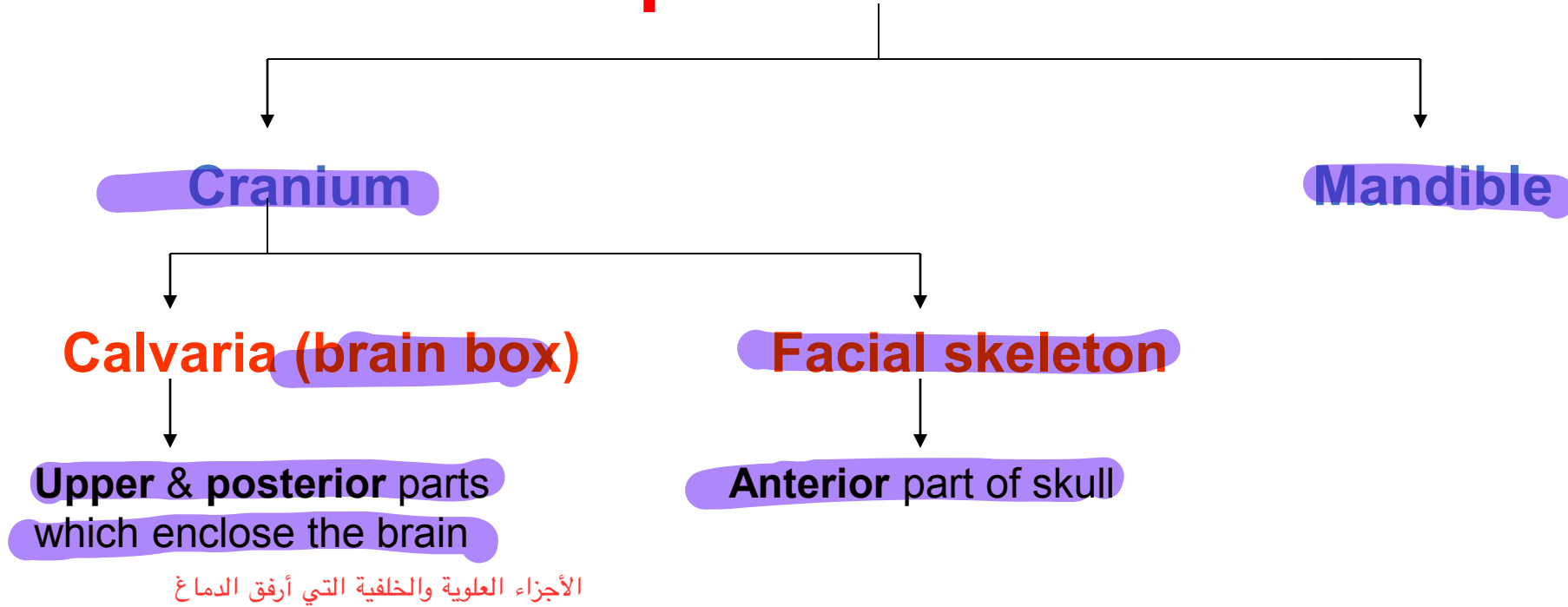
الدمعية

(الحنكي) اللي هي سقف الحلق





The parts of the skull



Norma verticalis

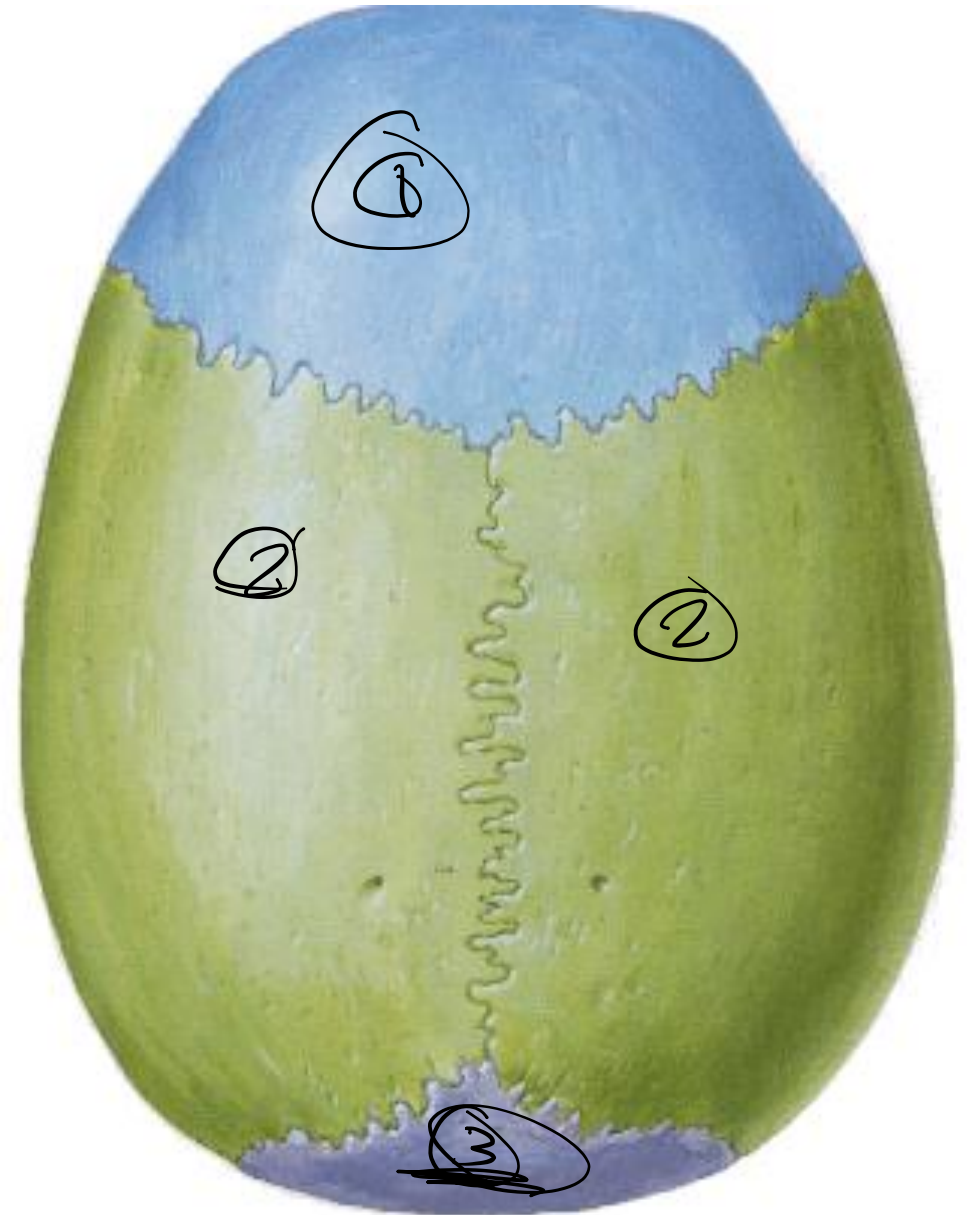
* It is the **upper aspect** (**vault**) of the skull.

* **It presents 4 bones:**

1. The **frontal bone** in its **anterior part.**

2. The **2 parietal bones** behind the frontal bones.

3. The **occipital bone** in its **posterior part.**

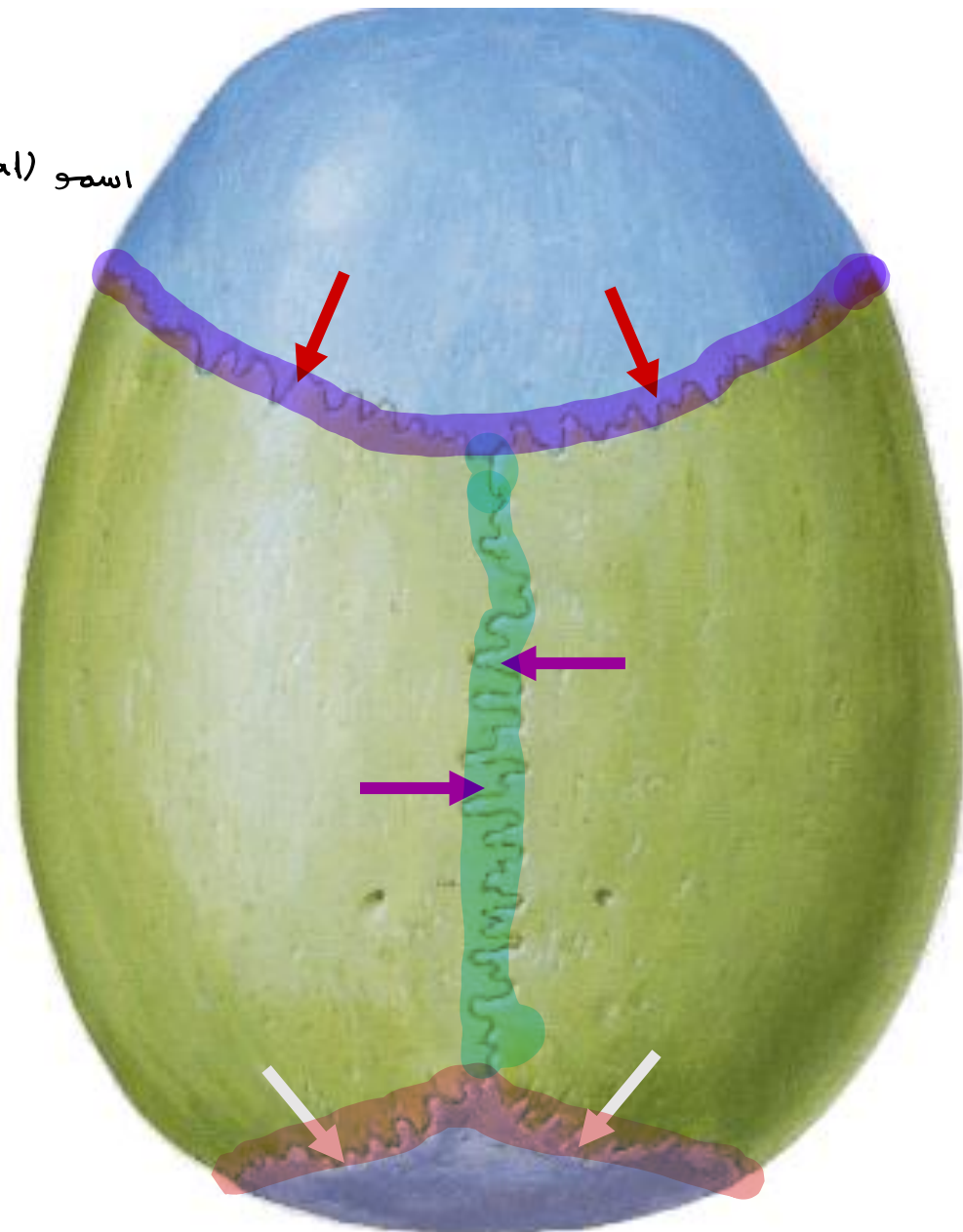


* It presents 3 sutures:

1. The coronal suture:
between the frontal bone
and the 2 parietal bones.

2. The sagittal suture:
between the 2 parietal
bones.

3. The lambdoid suture:
between the occipital bone
and the 2 parietal bones.



* It presents 2

parietal emissary

foramina:

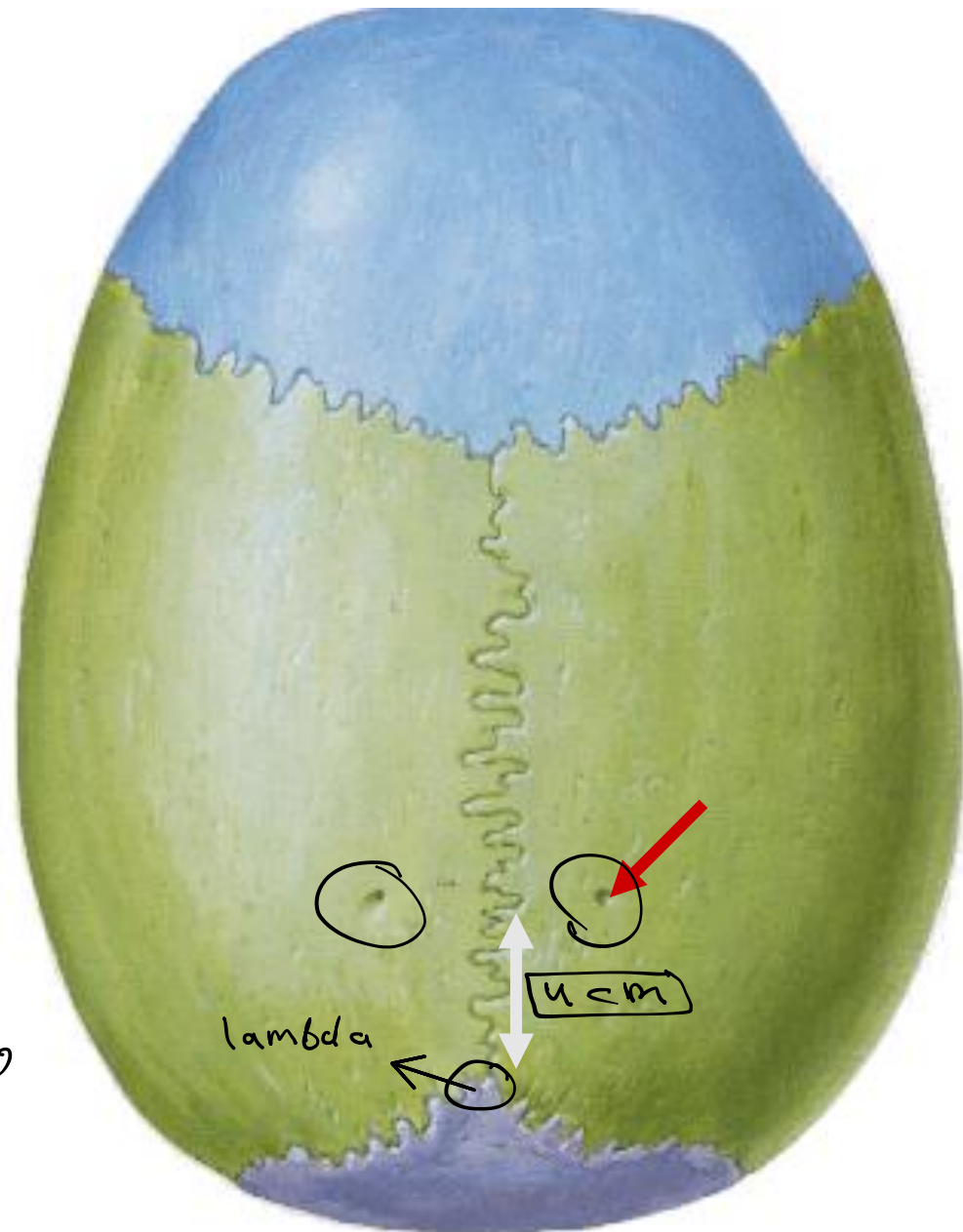
* One on each side of the sagittal suture, 4

cm anterior to the lambda.

* It transmits an
emissary vein.

وطيفة هزول العقبين ←

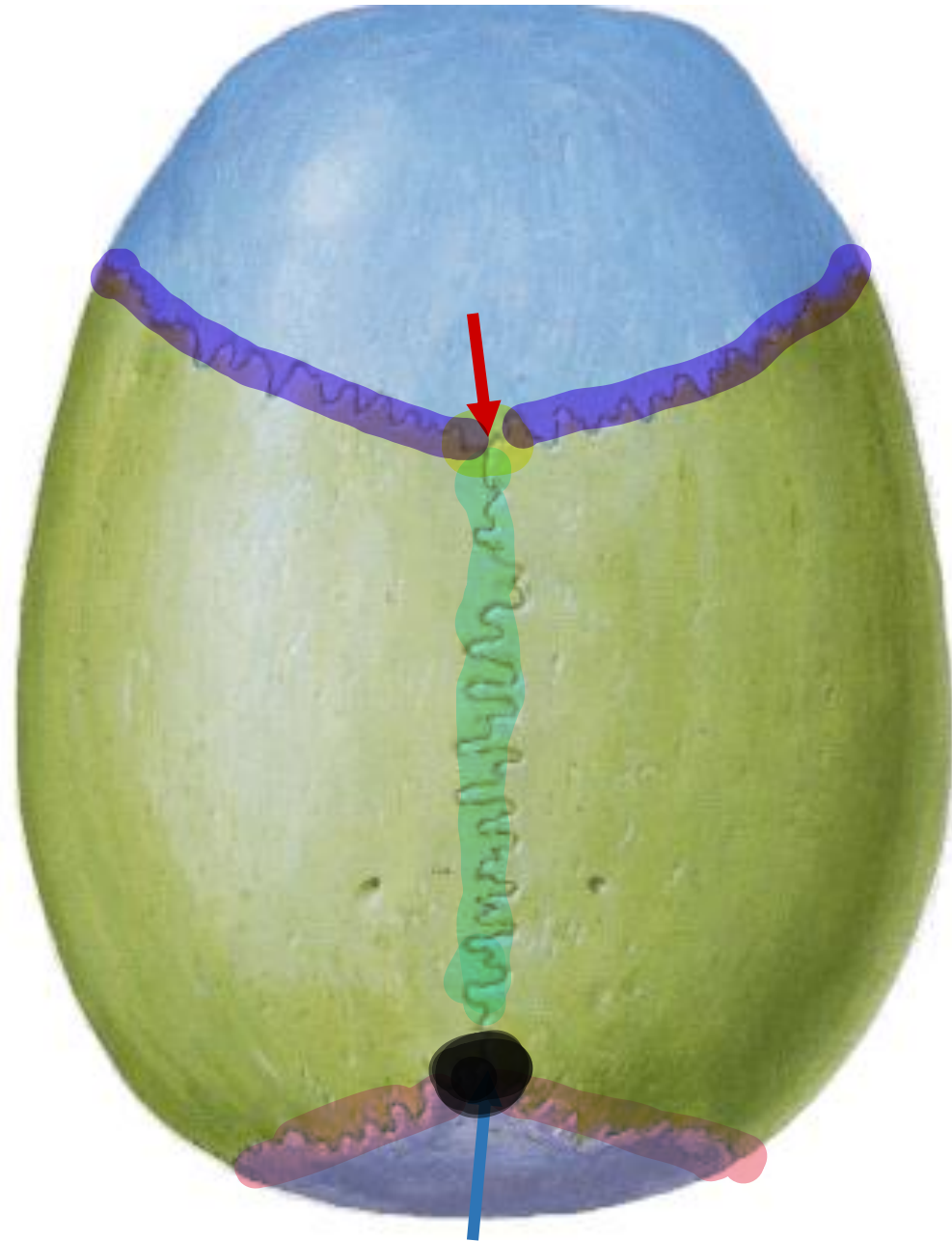
تنقل الوريد المبعوث.



*** It presents 2
meeting points:**

1. The bregma: is the meeting of coronal and sagittal sutures.

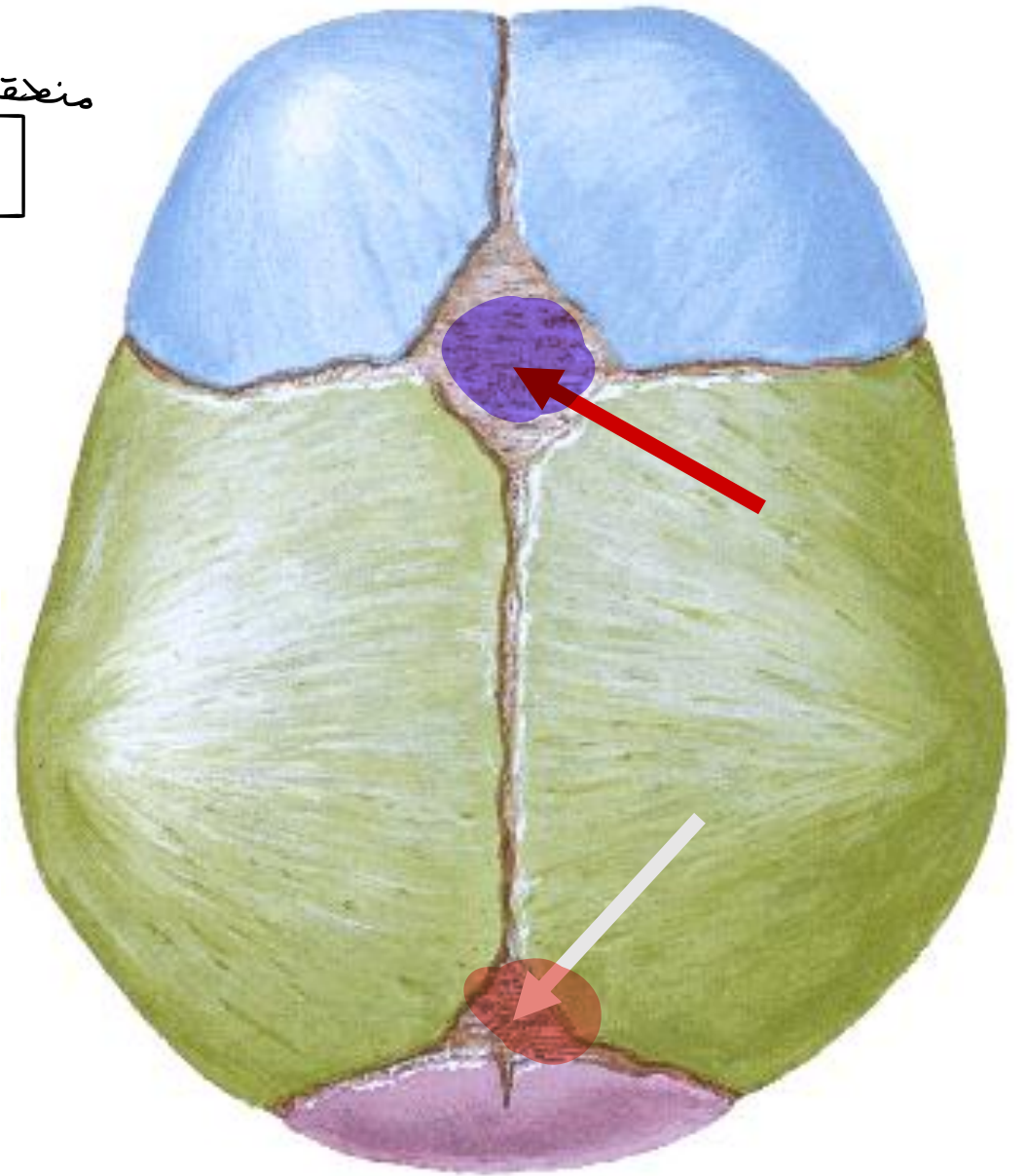
2. The lambda: is the meeting of the lambdoid and sagittal sutures.



*** During foetal life:**

1. **The bregma** is the site of ^{منطقة على شكل مصين} membrane – filled **rhomboidal area** called **anterior fontanelle**. It usually closes **1.5 – 2 years** after birth.

2. **The lambda** is the site of a ^{على شكل مثلث} membrane – filled **triangular area**, called the **posterior fontanelle**. It usually closes **6 months** after birth.



* Clinical importance of fontanelles:

ب موجود ان عشان عظام الجمجمة تتداخل اثناء عملية الولادة

1. They are present at birth to allow overlap of skull bones during delivery.

2. They give an idea about the intra cranial pressure:

ب تصطي فكرة عن ضغط الدم داخل ال cranium :

▪ If the pressure \uparrow it bulges.

▪ If the pressure \downarrow it sinks (dehydration).

3. They help in diagnosis of some diseases: (ب)

الانغلاق المبكر

▪ Premature closure causes craniostenosis → microcephaly.

صغر الرأس

الانغلاق المتأخر

▪ Delayed closure diagnoses rickets.

(٦)

4. They can be used as a site for IV injection (superior Sagittal sinus).

مكان الحقن الآمن

Norma Frontalis

* It presents:

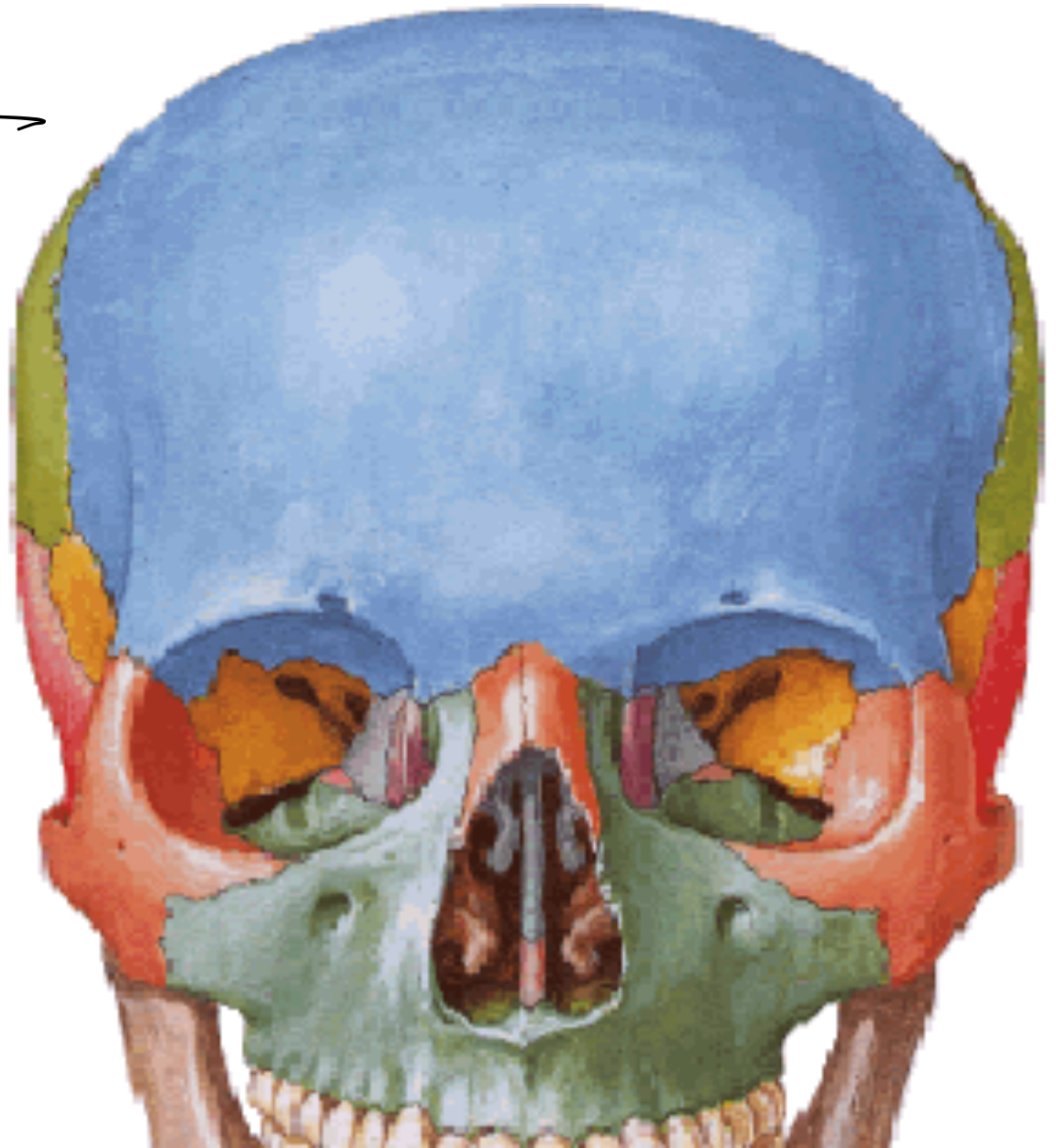
* 4 bones.

* 3 apertures

(surrounding 3

cavities; 2 orbital

& 1 nasal).



1. The frontal bone:

* Before the age of 8 years, the frontal bone is formed of two halves separated by

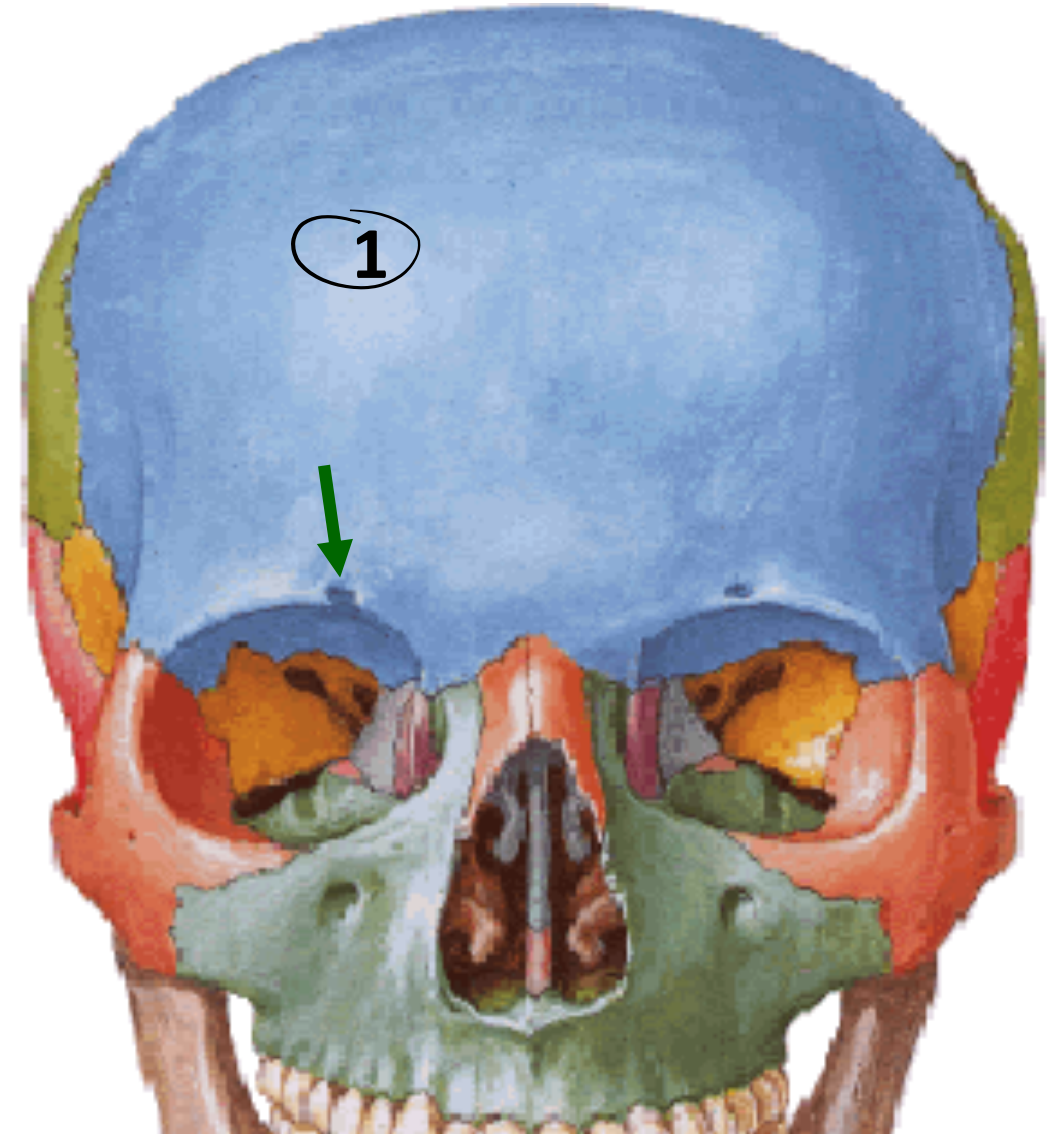
metopic suture which is

متوپک جی تھامہ

completely ossified by 8 years.

* It persists in black race & in 8% of population.

* It is pierced by the **supraorbital foramen** (which gives passage to supraorbital nerve & vessels).

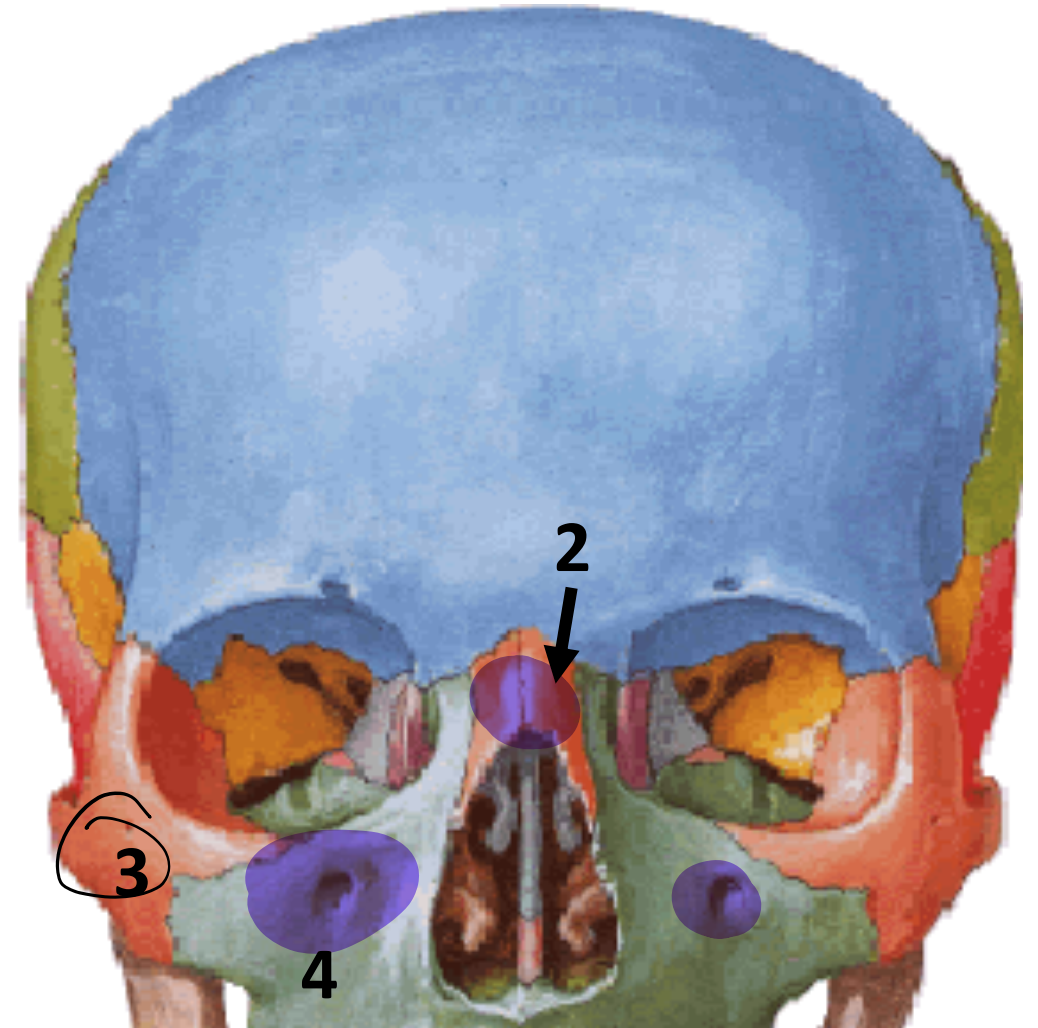


2. The 2 nasal bones: form the bridge of the nose.

3. Zygomatic bone: cheek's bones

4. The maxillary bone:

- Is has a **body** which contains the maxillary air sinus. الجيوب الأنفية
منقوبة
- It is pierced by the **infra-orbital foramen** (which gives passage to infra-orbital nerve & vessels).



Norma Occipitalis

* The occipital bone
presents:

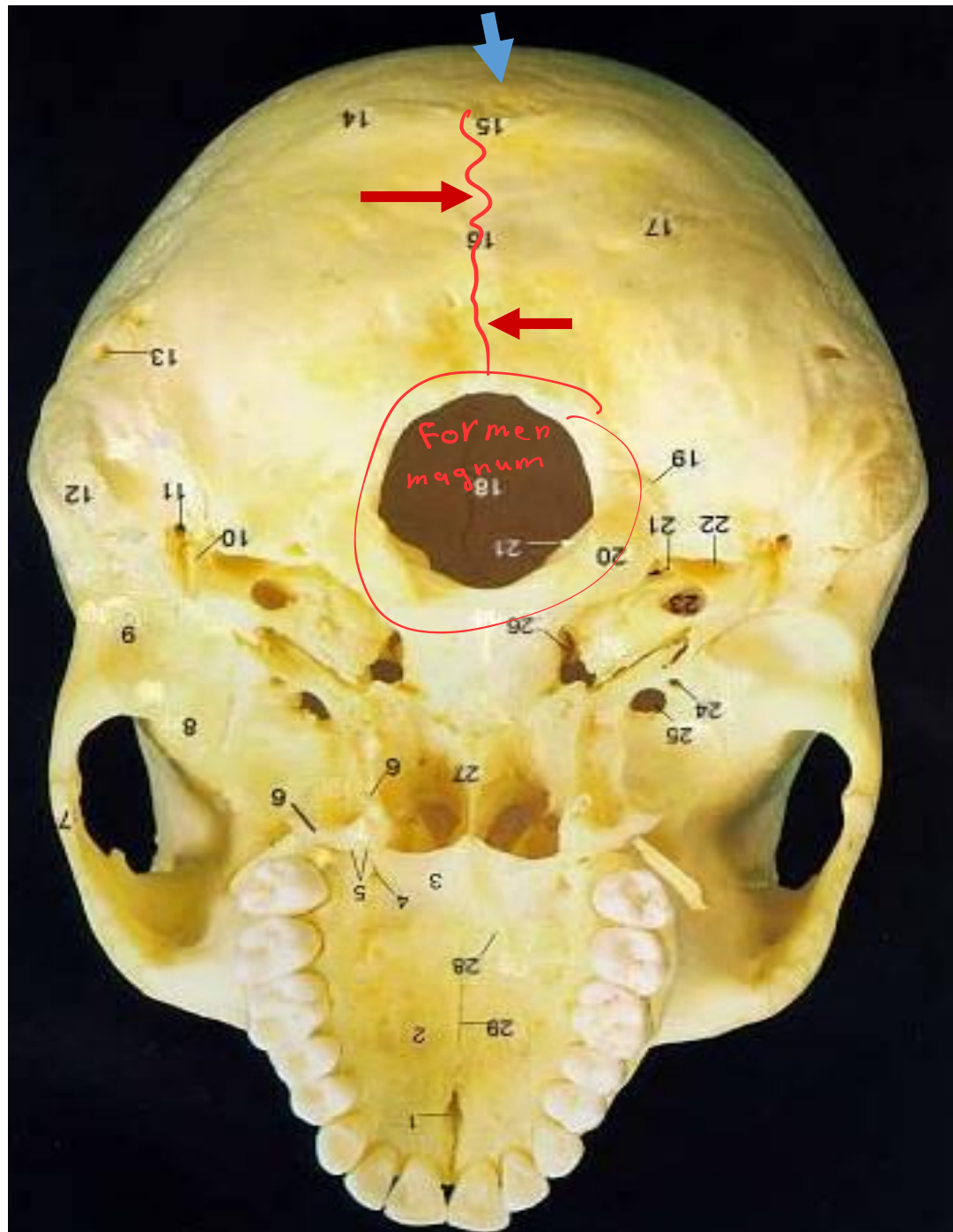
1. External occipital protuberance: it is a median elevation on the occipital bone. Its most projecting point is called **inion**.

2. External occipital crest: extends from the protuberance to the foramen magnum.

عند السهم الأزرق

عند السهم الأحمر

تعتبر من ال protuberance للجوف الذي اسمه (foramen magnum) الموجود بالوصلة

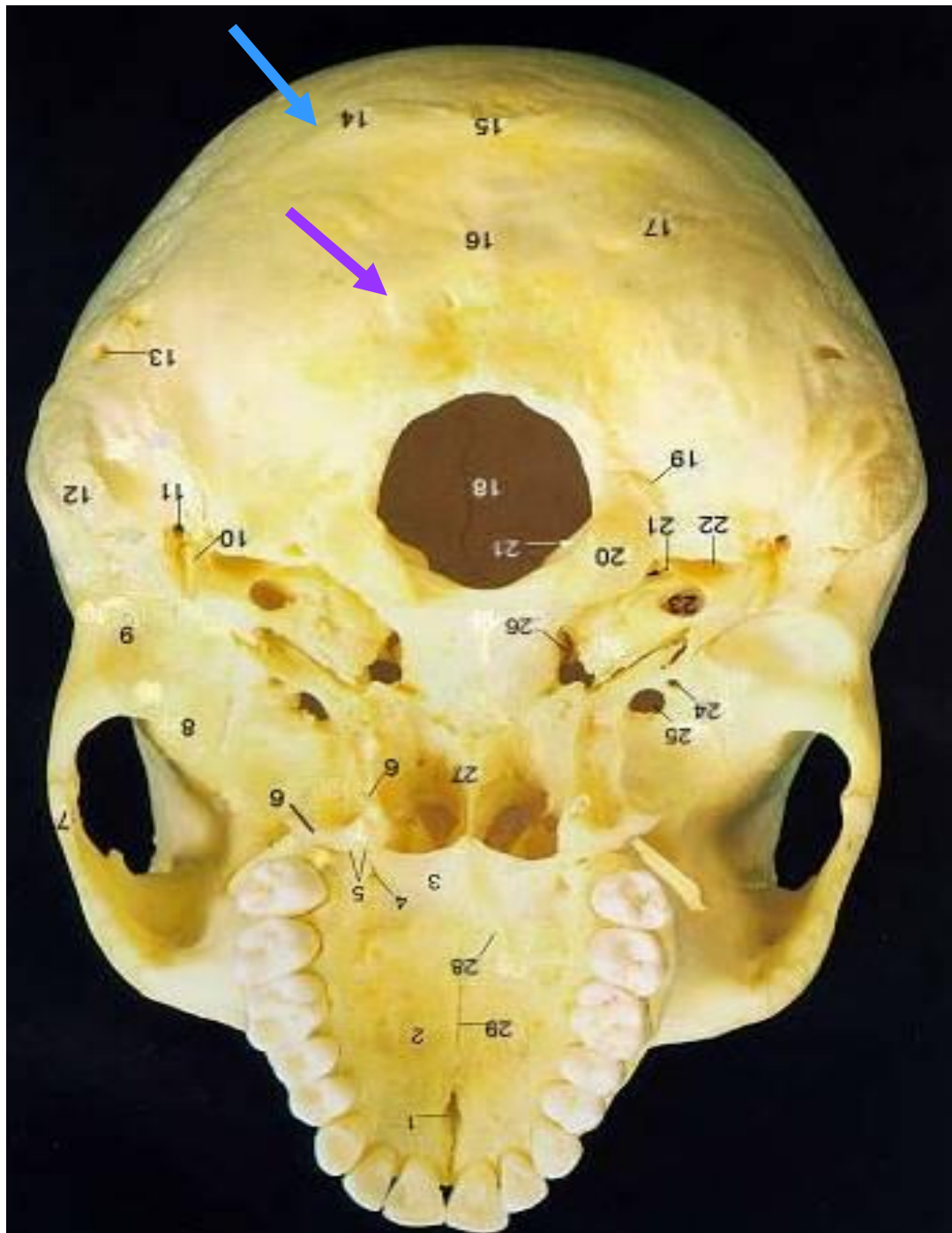


3. The superior عند السهم الأزرق

nuchal lines: extends laterally from the protuberance.

4. The inferior عند السهم البنفسجي

nuchal lines: extends laterally from the crest & run parallel to and below the superior nuchal lines. مستوازي





نعم بحمد الله