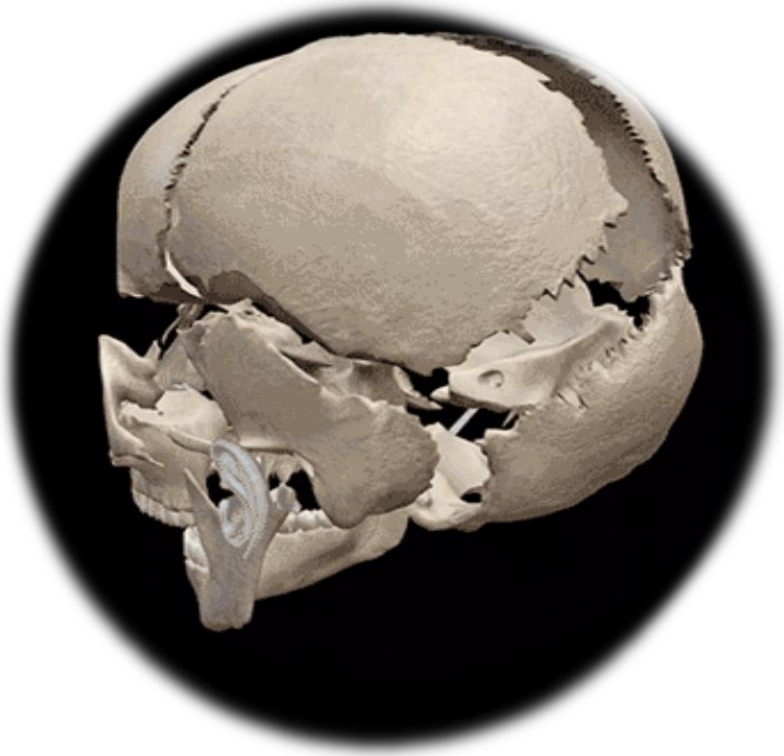


Anatomy Of Skull
Lecture (1)

By Dr: Hassna Bader Jawad
Department of human anatomy
College of medicine
University of Basrah

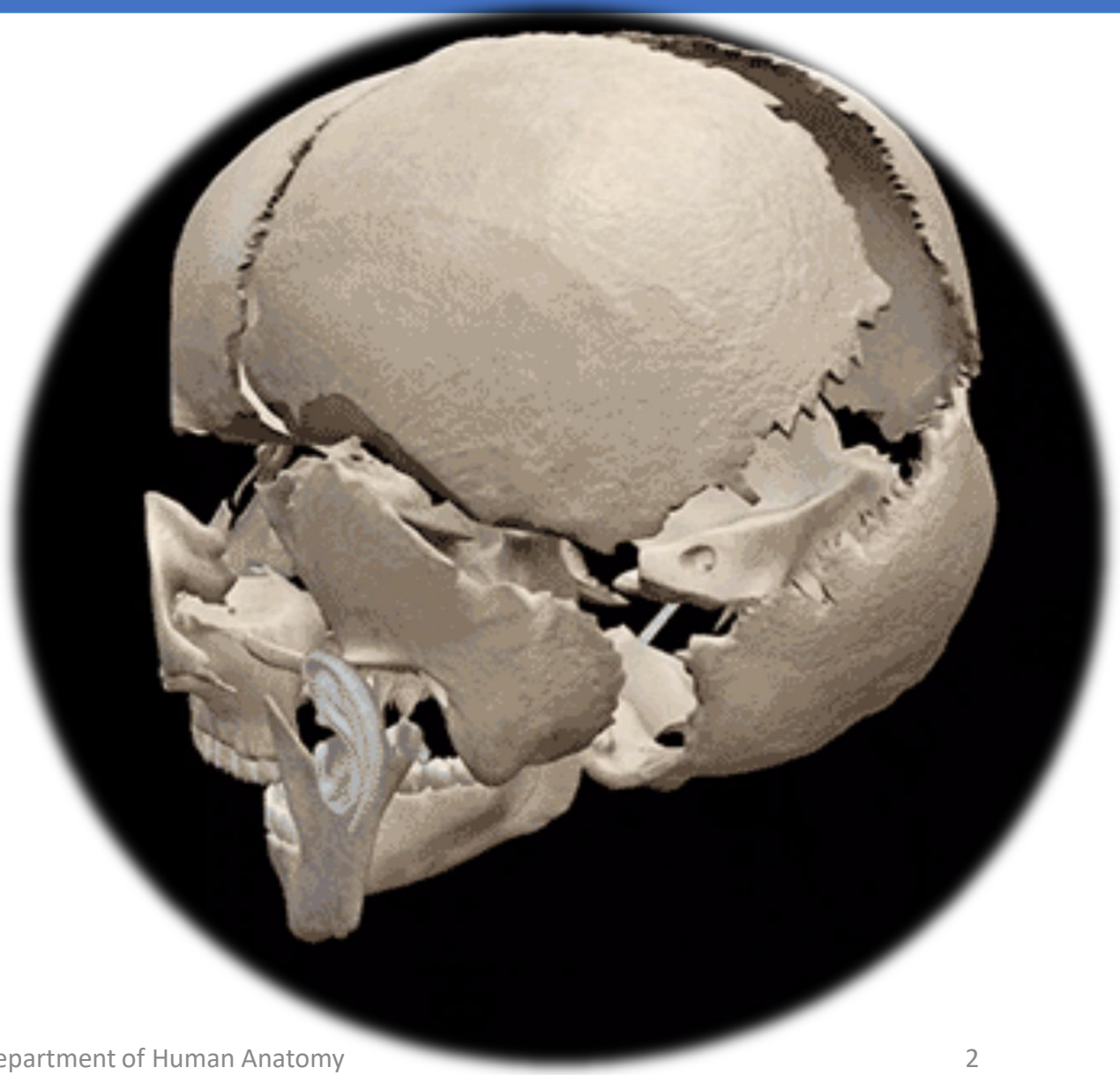
Objective Learning

1. Define the skull.
2. List Functions of skull

3. Describe Anatomical position of the skull .

4. List and describe cranial bones.

5. List and describe facial bones.



Skull Anatomy

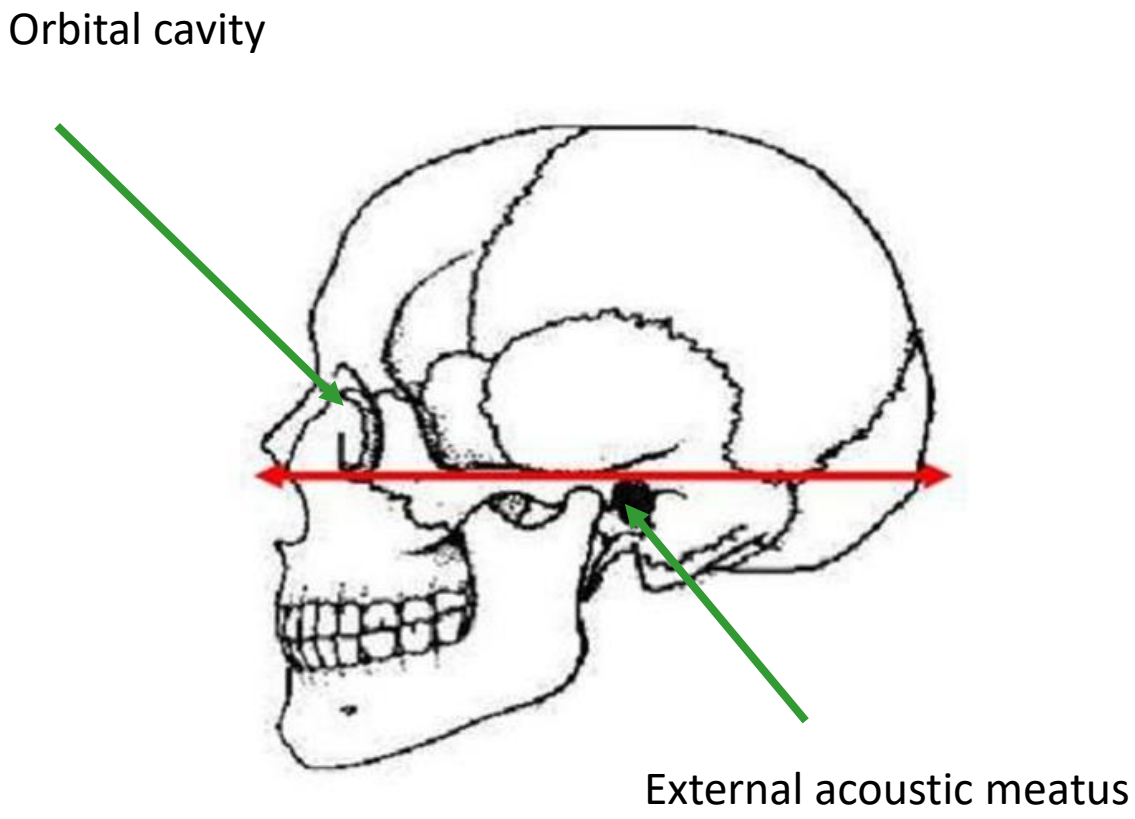
The skull is a bony structure that supports the face and forms a protective cavity for the brain.

FUNCTIONS OF THE SKULL

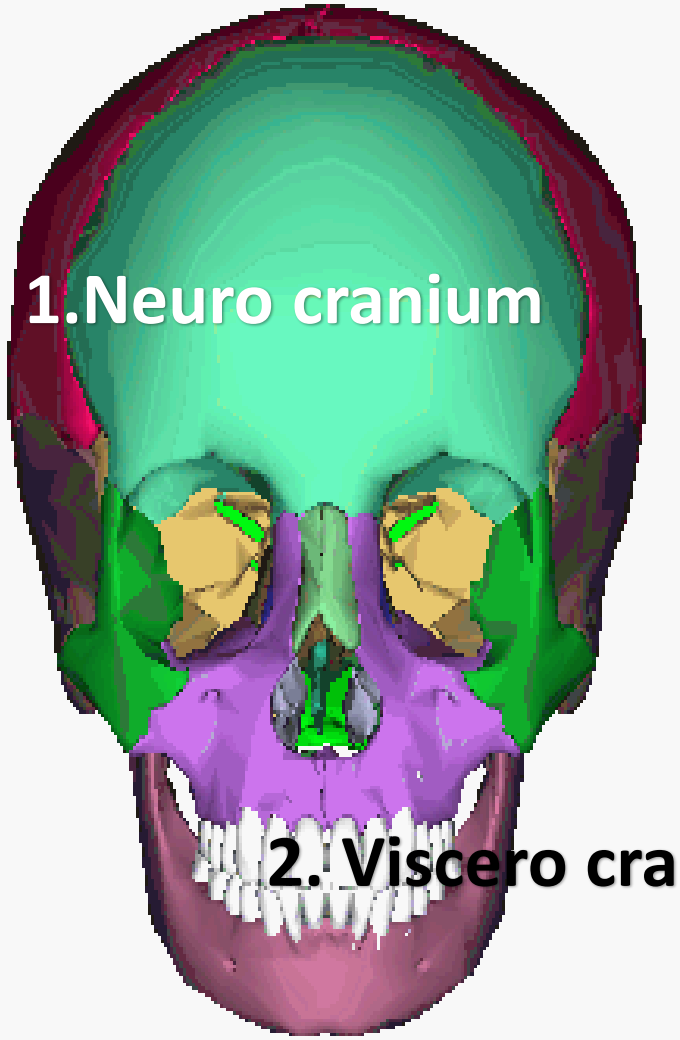
☠Gives case for protection of the brain and its coverings (meninges).
☠Gives cavities for adjustment of organs of special senses like vision, hearing.
☠Gives openings for the passage of air and food (mouth and nose).
.

Anatomical position of skull

It's the position of skull where the orbital cavities are directed forwards and lower margins (infraorbital margins) of the orbits and upper margins of external acoustic meatuses is located in the same horizontal plane (Frankfurt's plane).

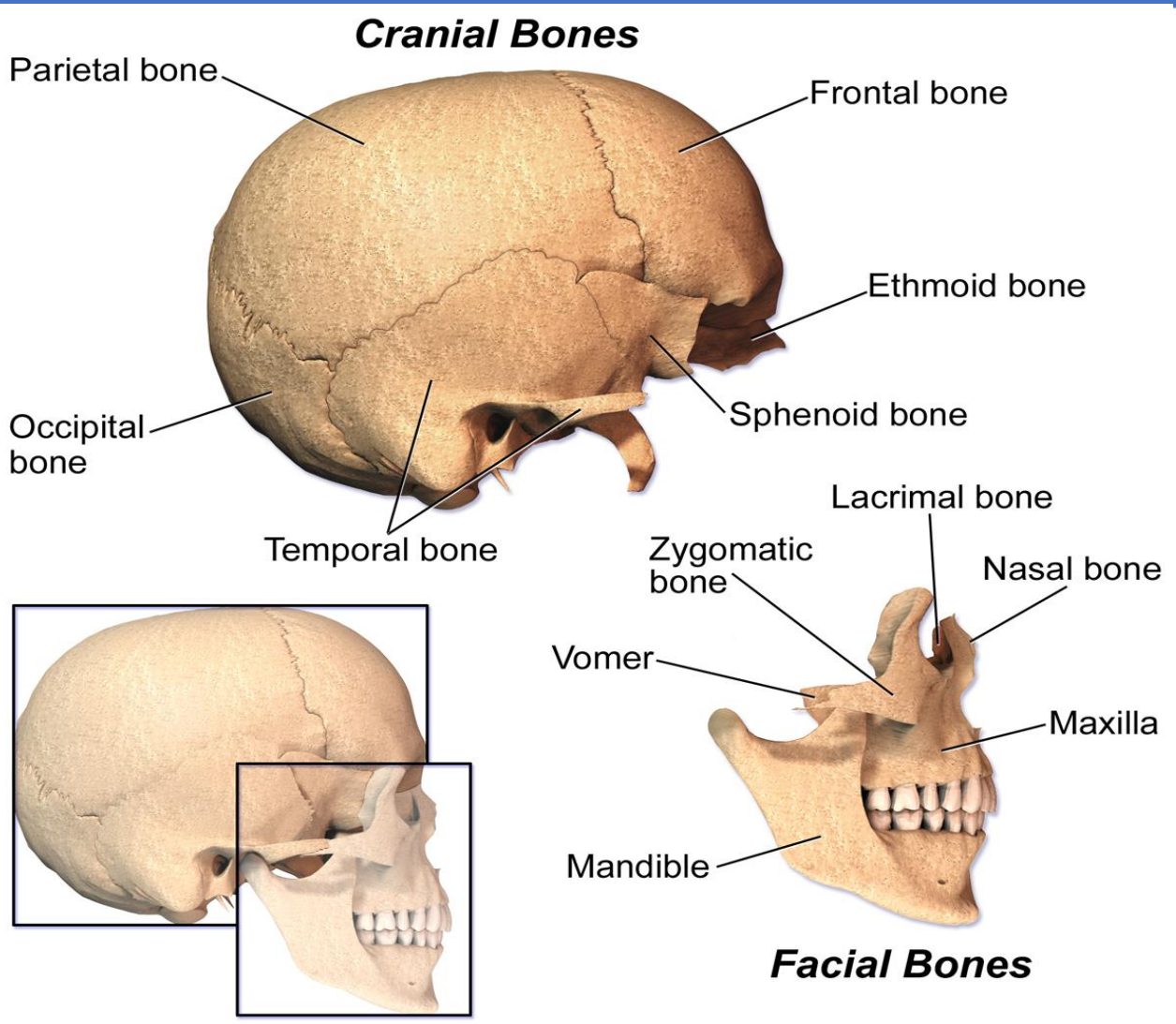


Parts of skull



1.Neuro cranium

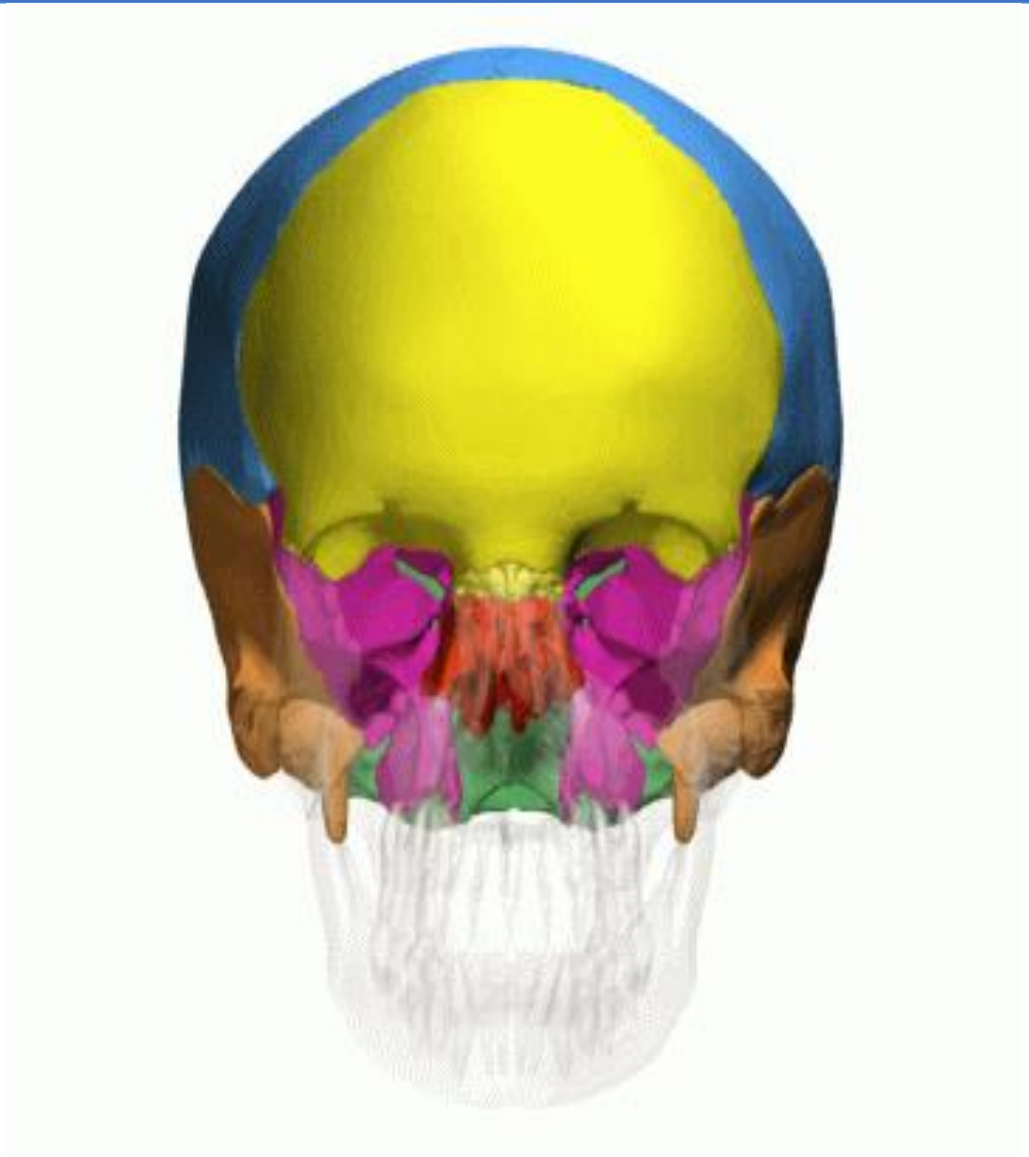
2. Viscero craniumum



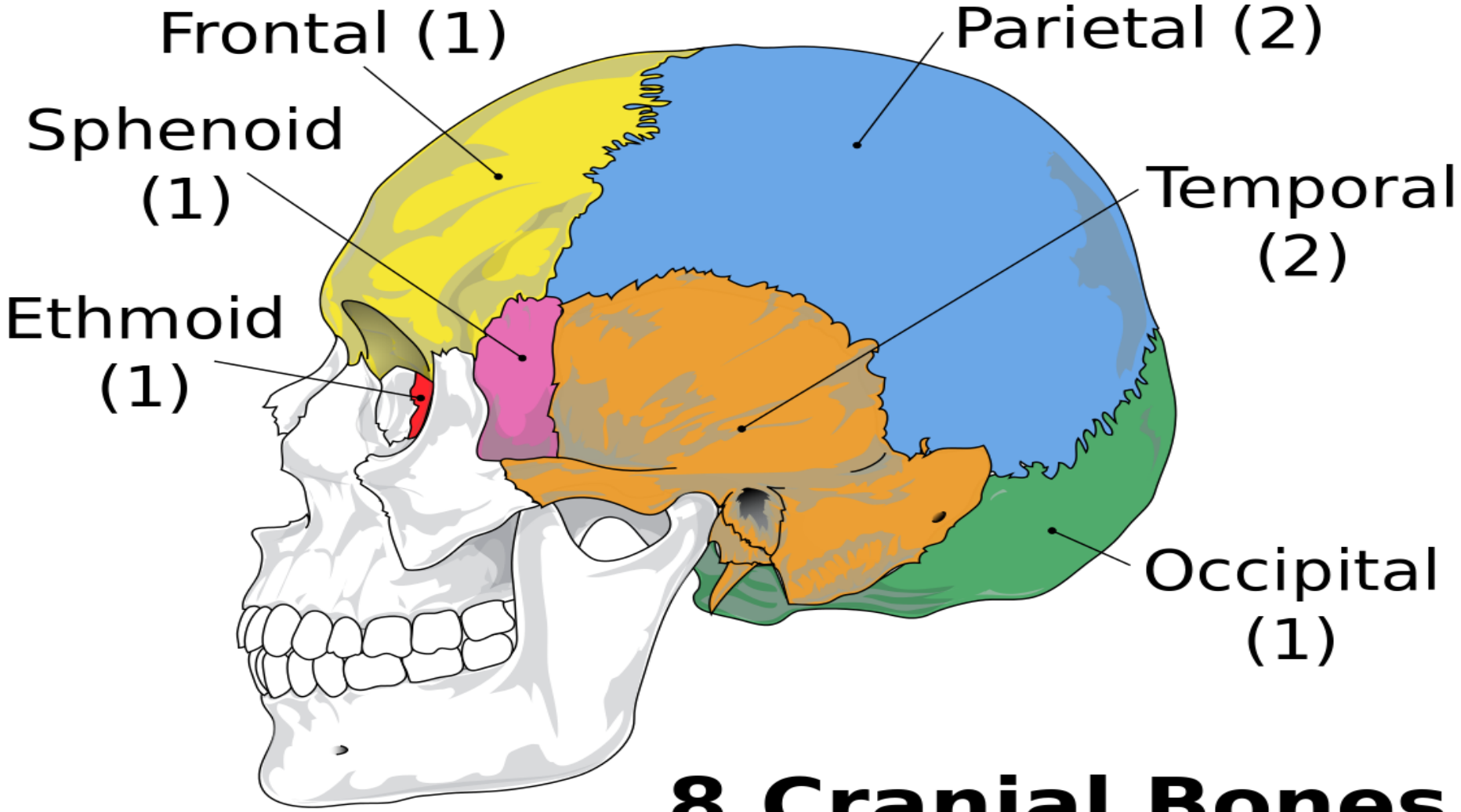
Cranial and Facial Subdivisions of the Skull

1. Neurocranium

Is the superior aspect of the skull. It encloses and protects the brain, meninges and cerebral vasculature.



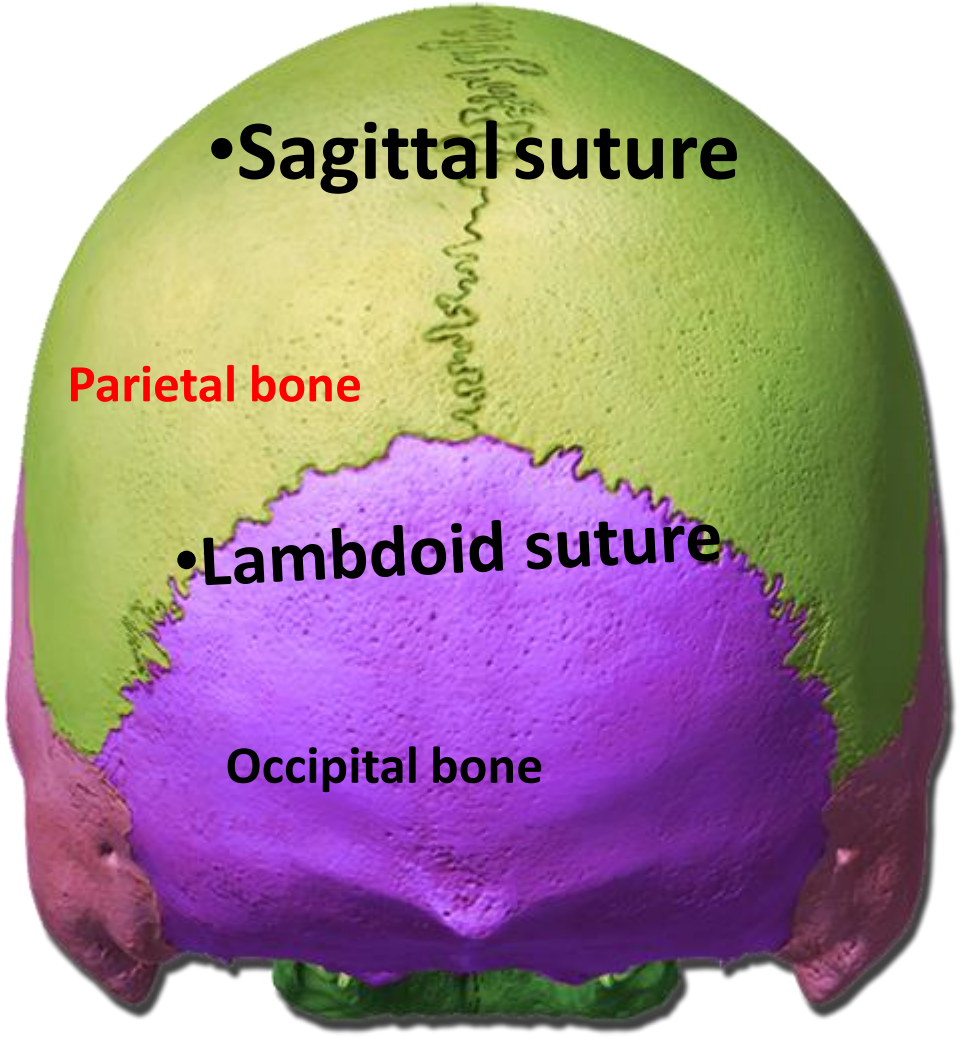
8 Cranial bones

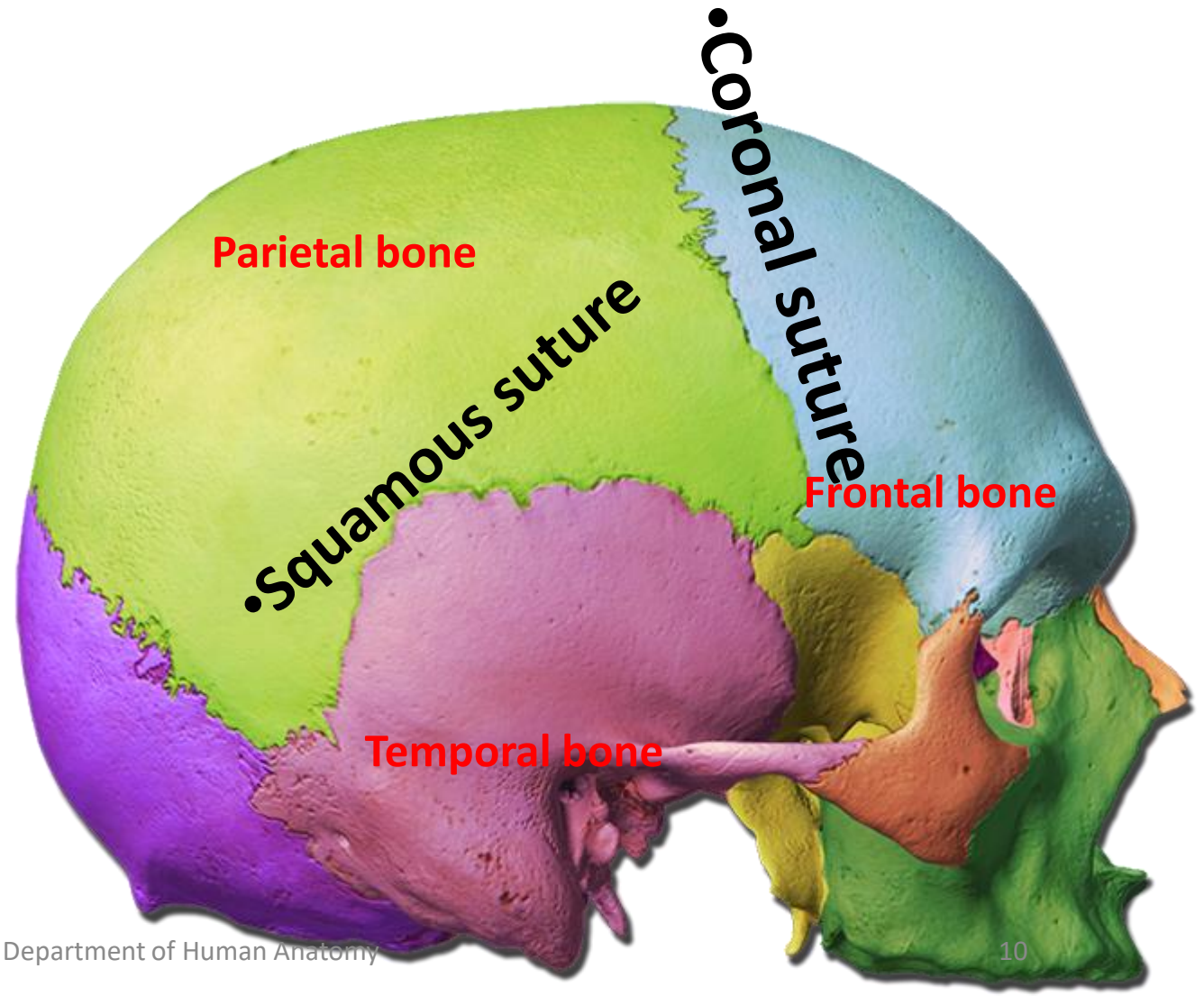


Sutures

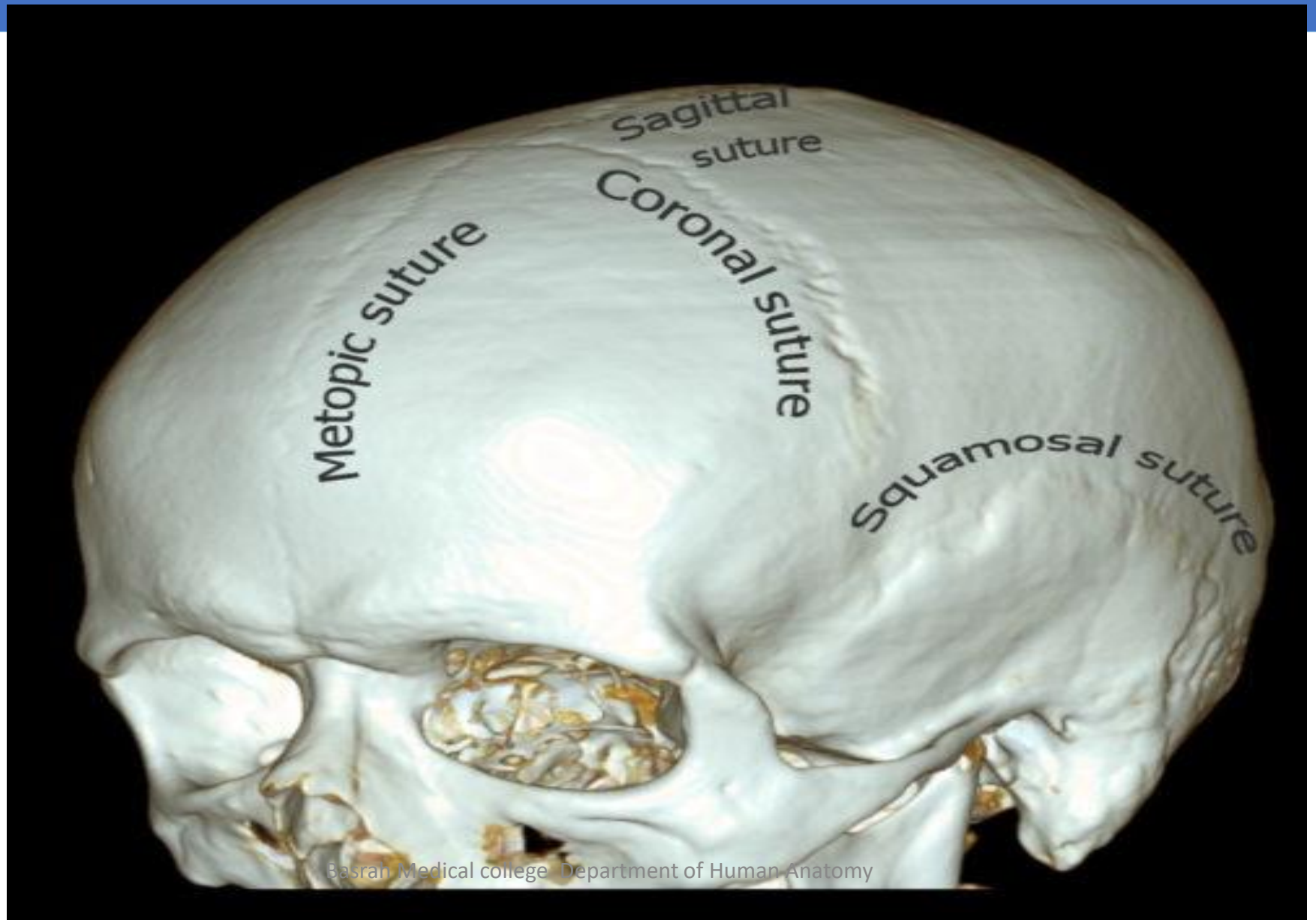
The cranial sutures are fibrous joints connecting the Flat bones of the skull. In fetal skull the sutures are wide and allow slight movement during birth, but later they become rigid and fixed just like in the adults.

Sutures

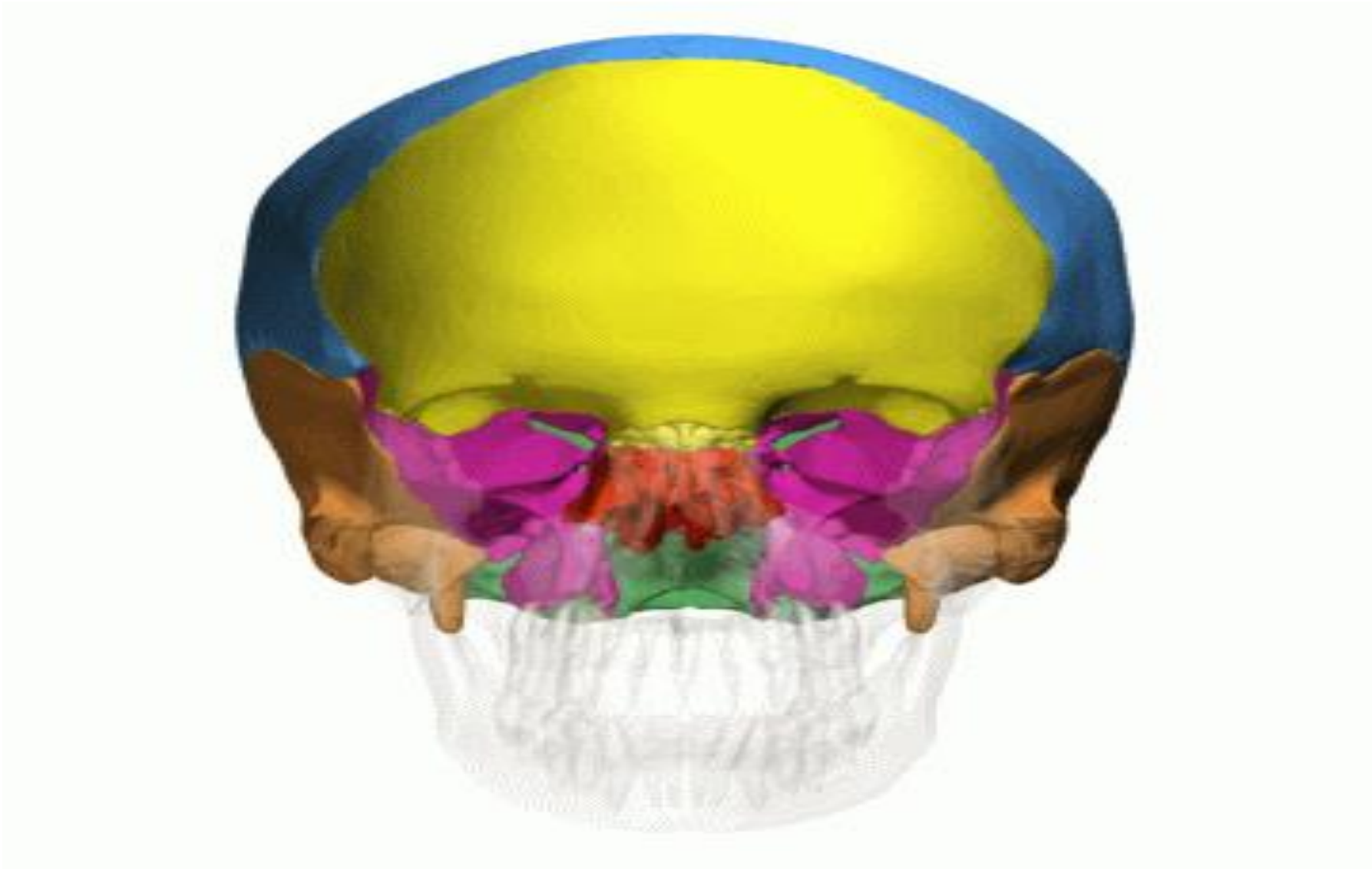

•Sagittal suture
Parietal bone
•Lambdoid suture
Occipital bone


•Coronal suture
Parietal bone
•Squamous suture
Frontal bone
Temporal bone

Metopic Sutures

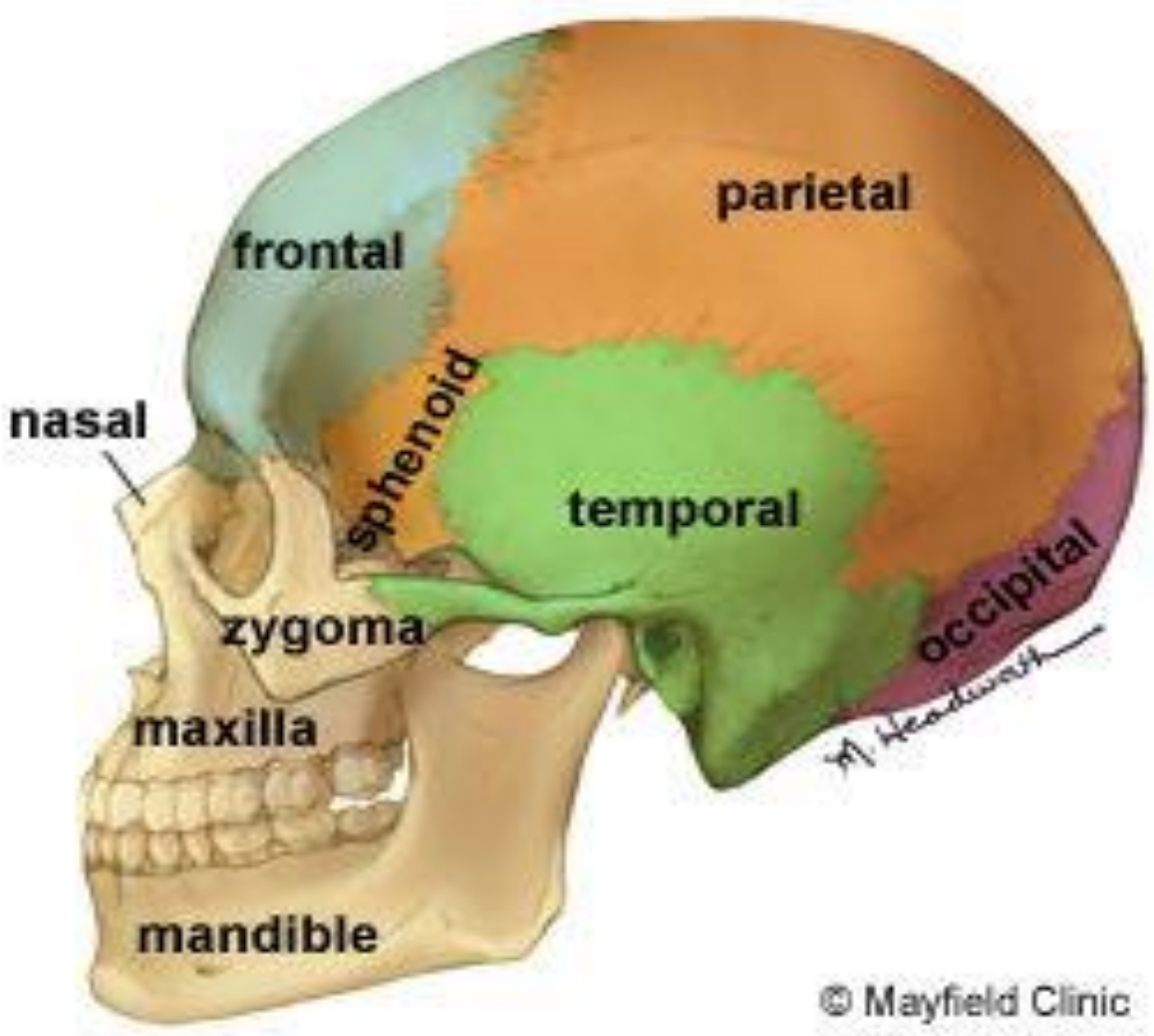


Cranial Bones

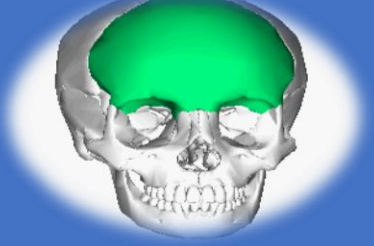


1. Frontal Bone

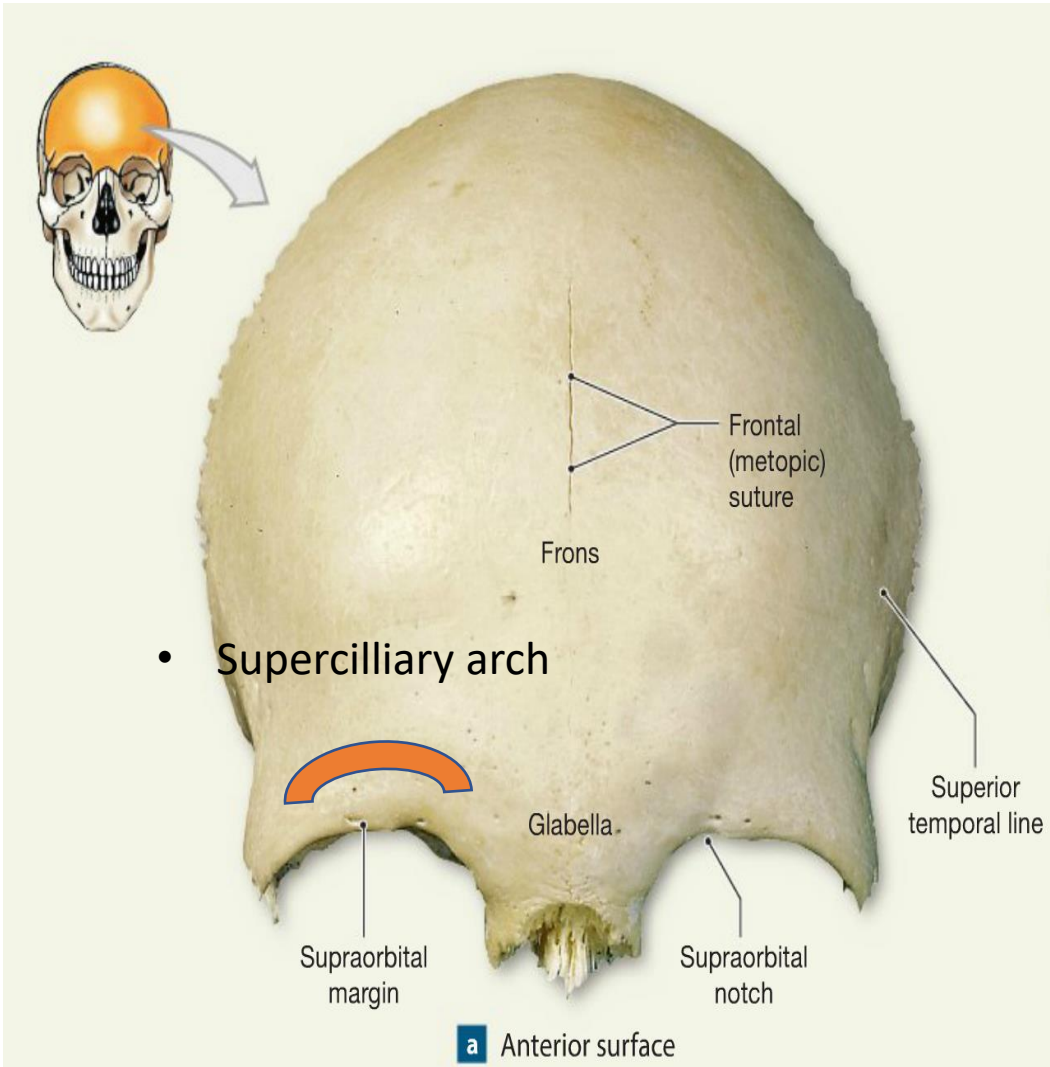
- The large bone that makes up the forehead and supplies the upper edge and roof of the orbit
- The frontal bone articulates with a number of other bones including the parietal, nasal, ethmoid, maxillary, and zygomatic bones.



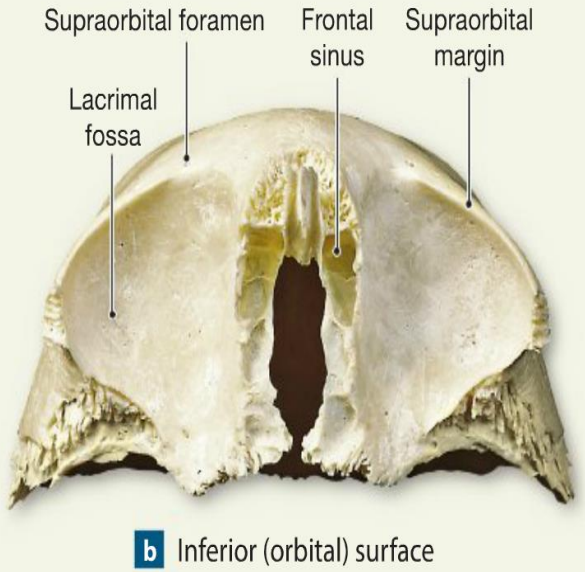
Landmarks



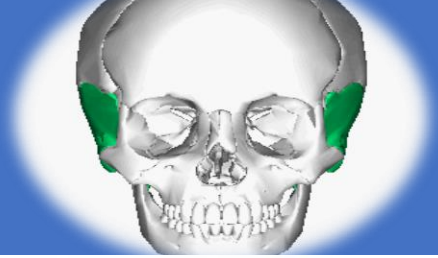
- **Squama**: flat portion
- **Supraorbital margin**: ridge under the eyebrow,
- **Supraorbital foramen (or notch)** for blood vessels and nerves
- **Orbital plate**
- **Frontal sinuses**
- **Lacrimal fossa :** for lacrimal gland .
- **Supercilliary arch**
- **Glabella**



- Supercilliary arch



2.Temporal bones



Two irregular bone s connected with the mandible via the temporomandibular (TM) joint.

Four parts

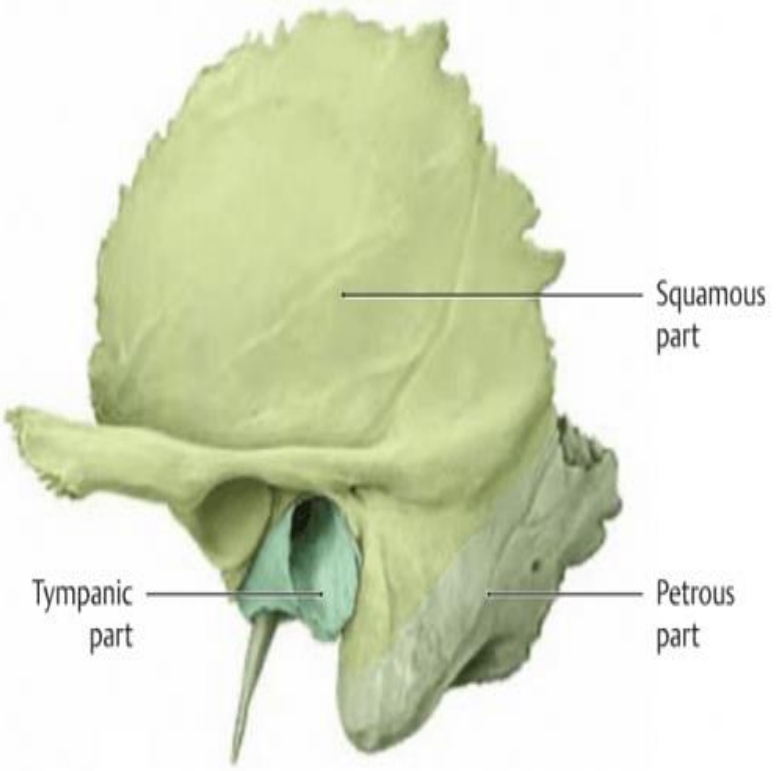
1.Squamous

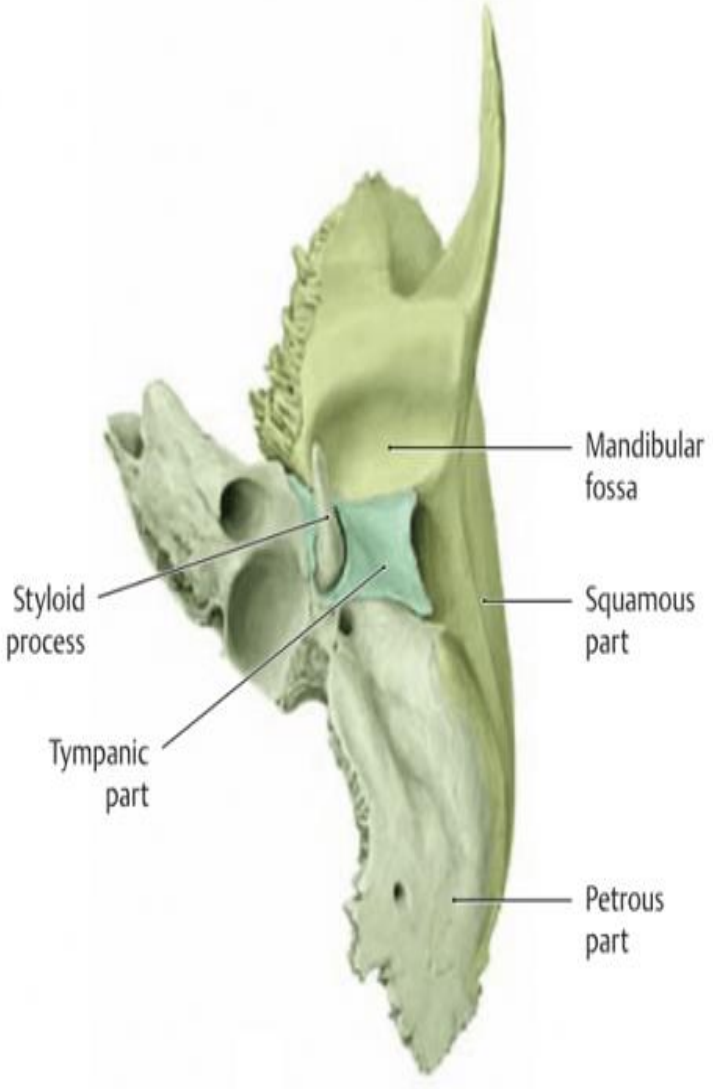
2.Tympanic

3.Petrous

4. Mastoid

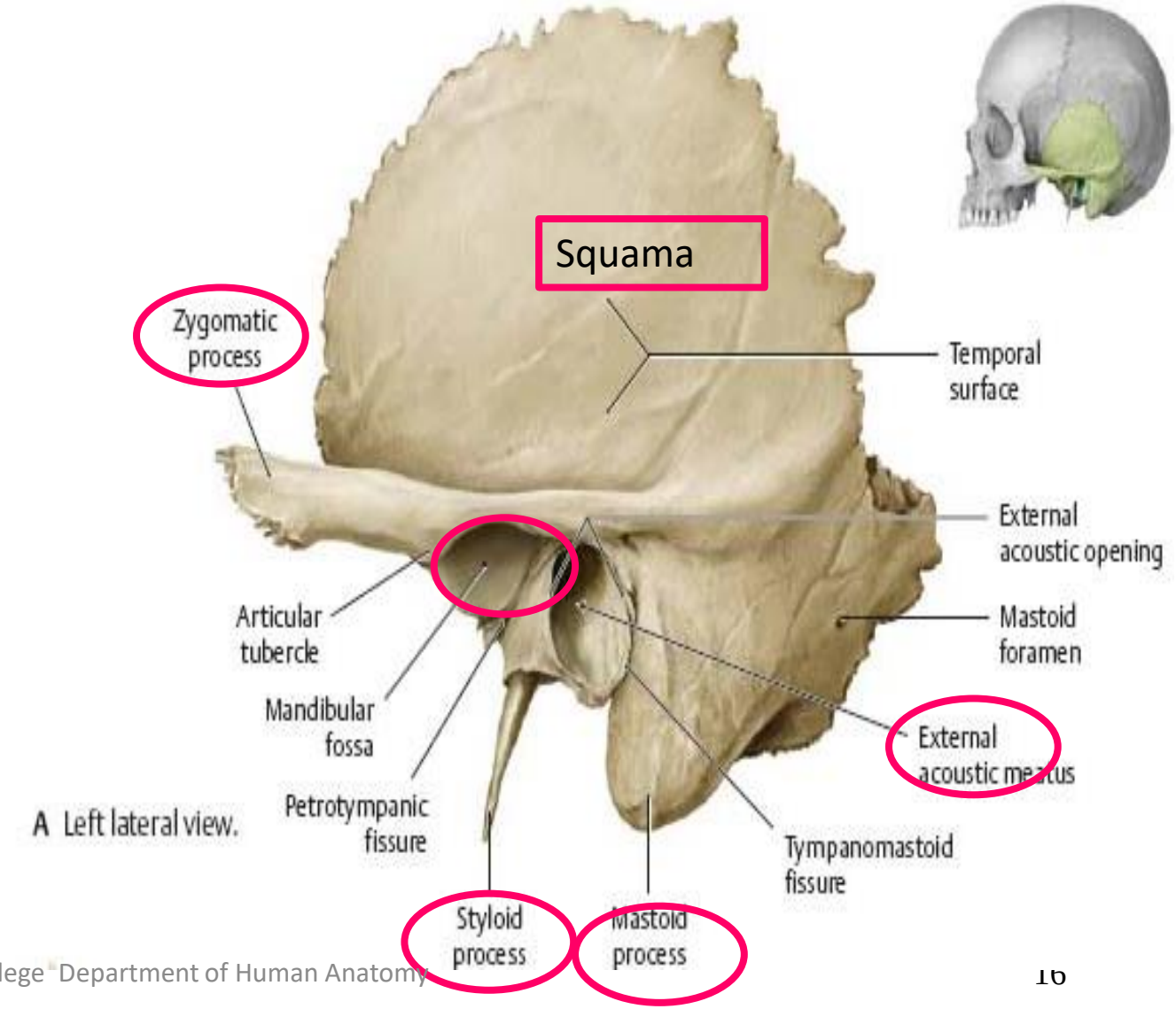
The petrous portion of the temporal bone contains the structures of the inner ear.





Landmarks

- **Squama**: flat portion of the temporal
- **Zygomatic process**: process forming part of the cheek
- **Petrous portion**: internal, forming part of the floor of the cranium.
- **Mandibular fossa**: socket between squama and petrous portion, articulates with the condyle of the mandible (TMJ)
- **External auditory meatus**: opening to the ear canal
- **Mastoid process**: bony prominence behind the external auditory meatus
- **Styloid process**: looks like an elephant's tusk located between the mastoid process and the jaw.

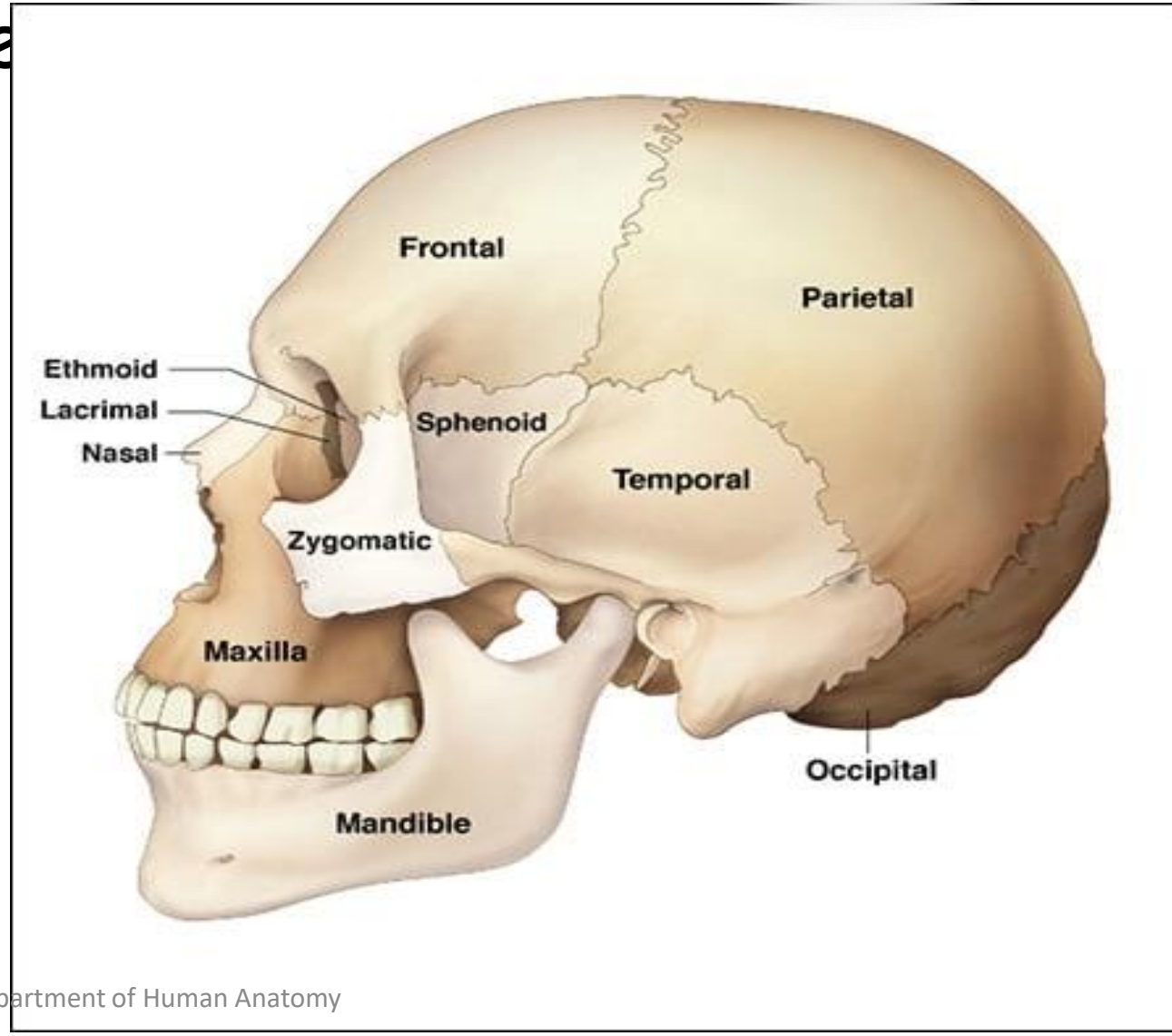


A Left lateral view.

3. Parietal bone

- Two bones form T main bone on the side of the skull.

- Articulates with
- Parietal bone of other side
- frontal bone in front of it,
- occipital bone behind it,
- sphenoid bone
- temporal bones lower down on the side of the skull.

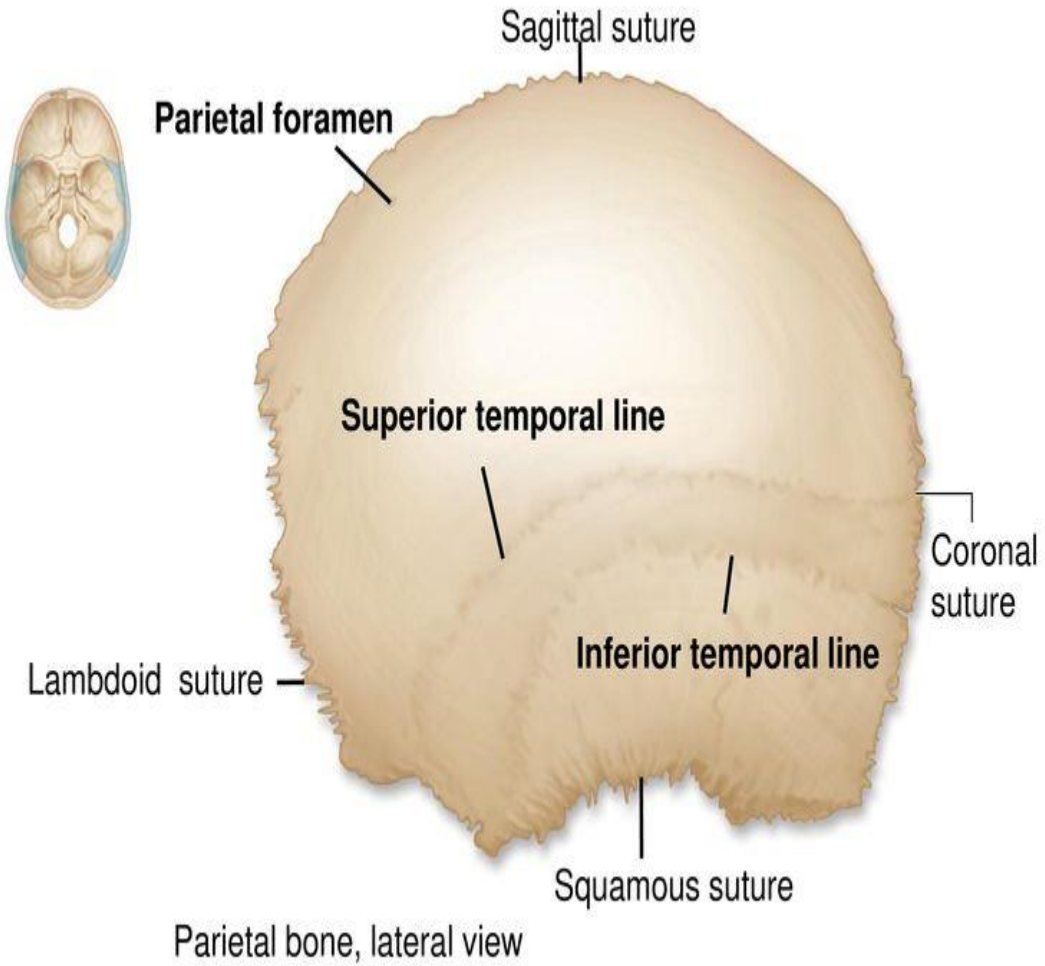


Borders

4 Borders:

1. **Sagittal border**
2. **Lambdoid border**
3. **Squamous border**
4. **Coronal border**

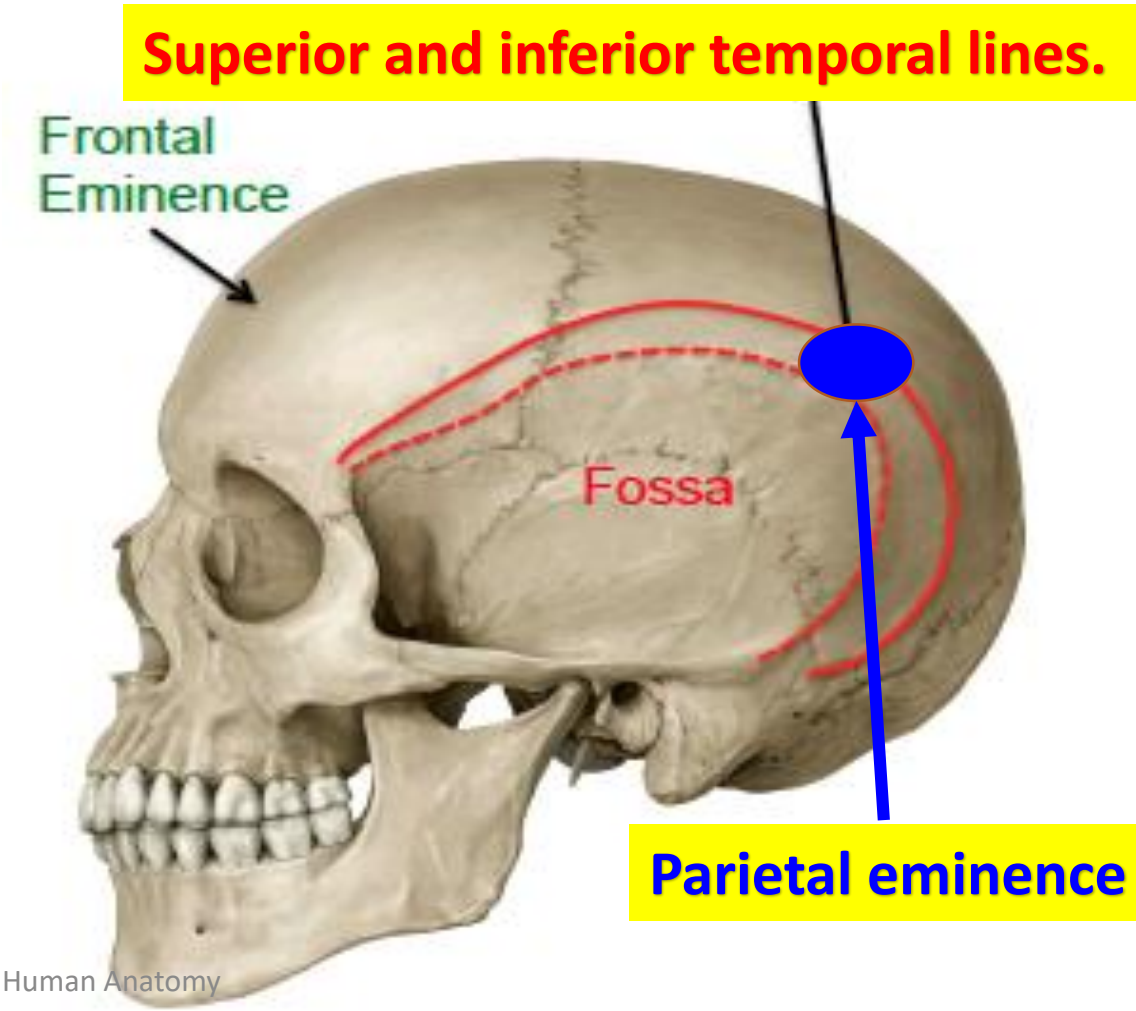
Fig. 7.11



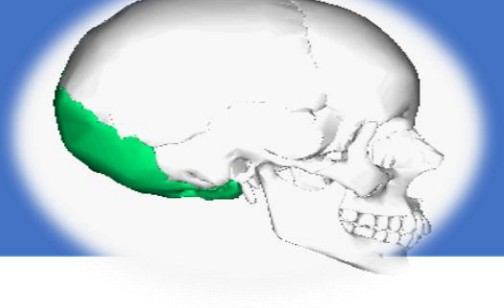
Parietal bone, lateral view

Land marks

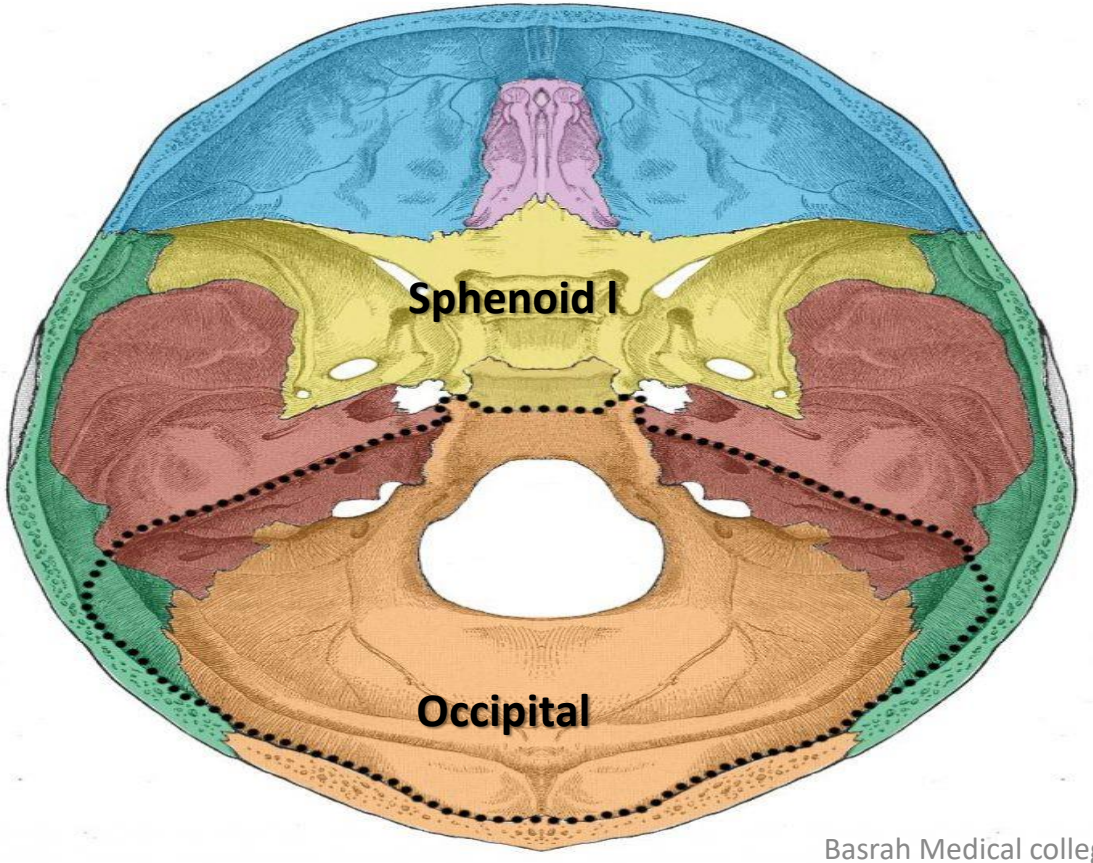
1. **Parietal eminence**
2. **Superior and inferior temporal lines.**
3. **Parietal foramen**

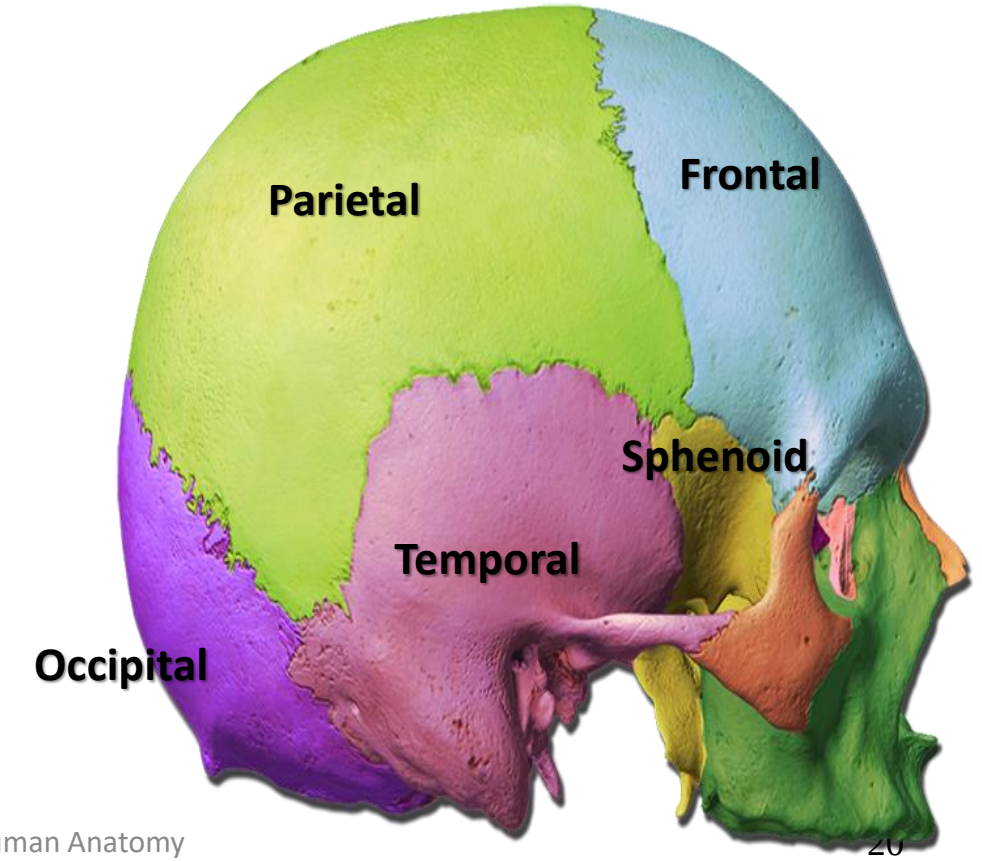


4. Occipital bone



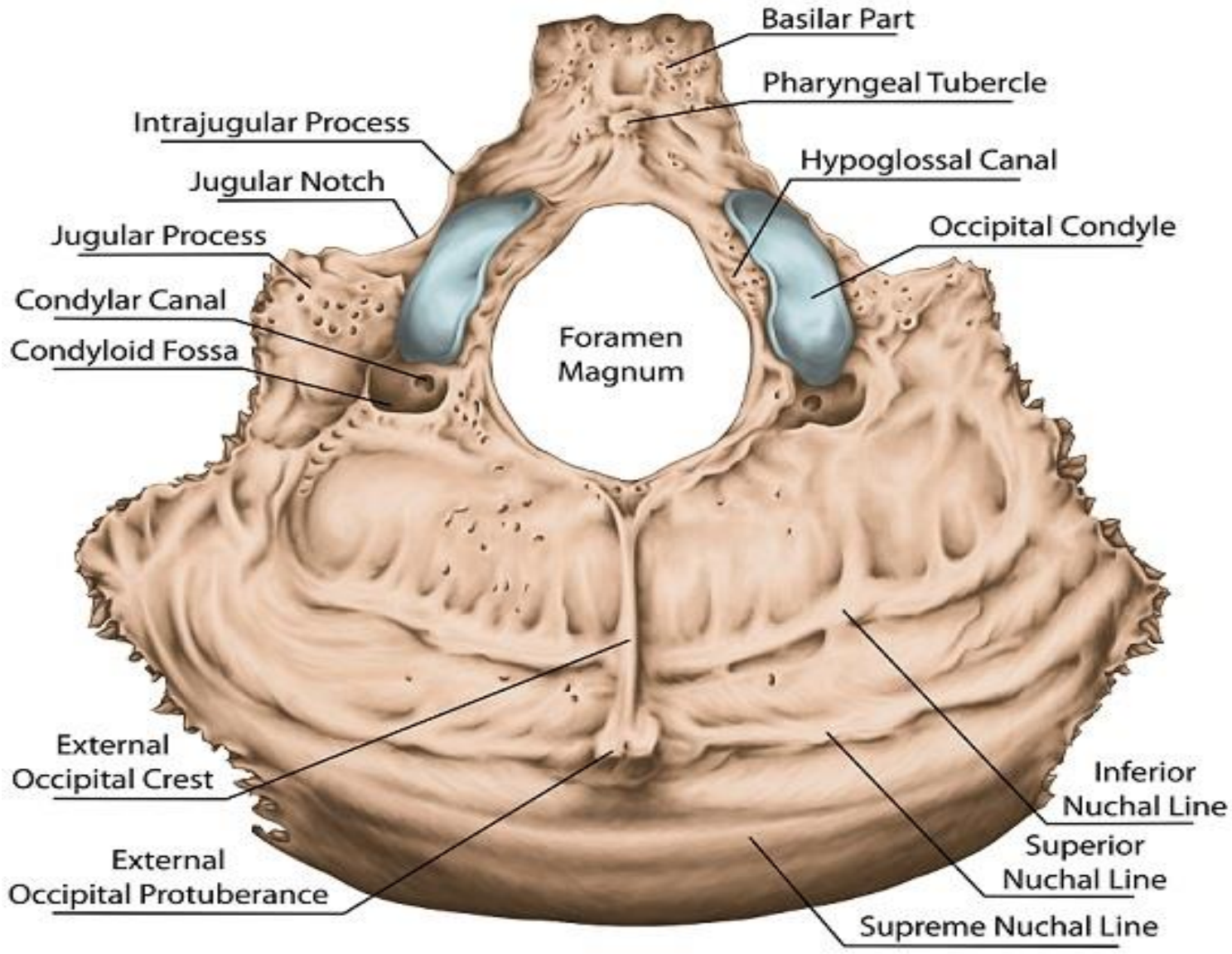
Articulates with parietal temporal , sphenoid bone in front of it and the first cervical vertebra (the atlas) beneath it .

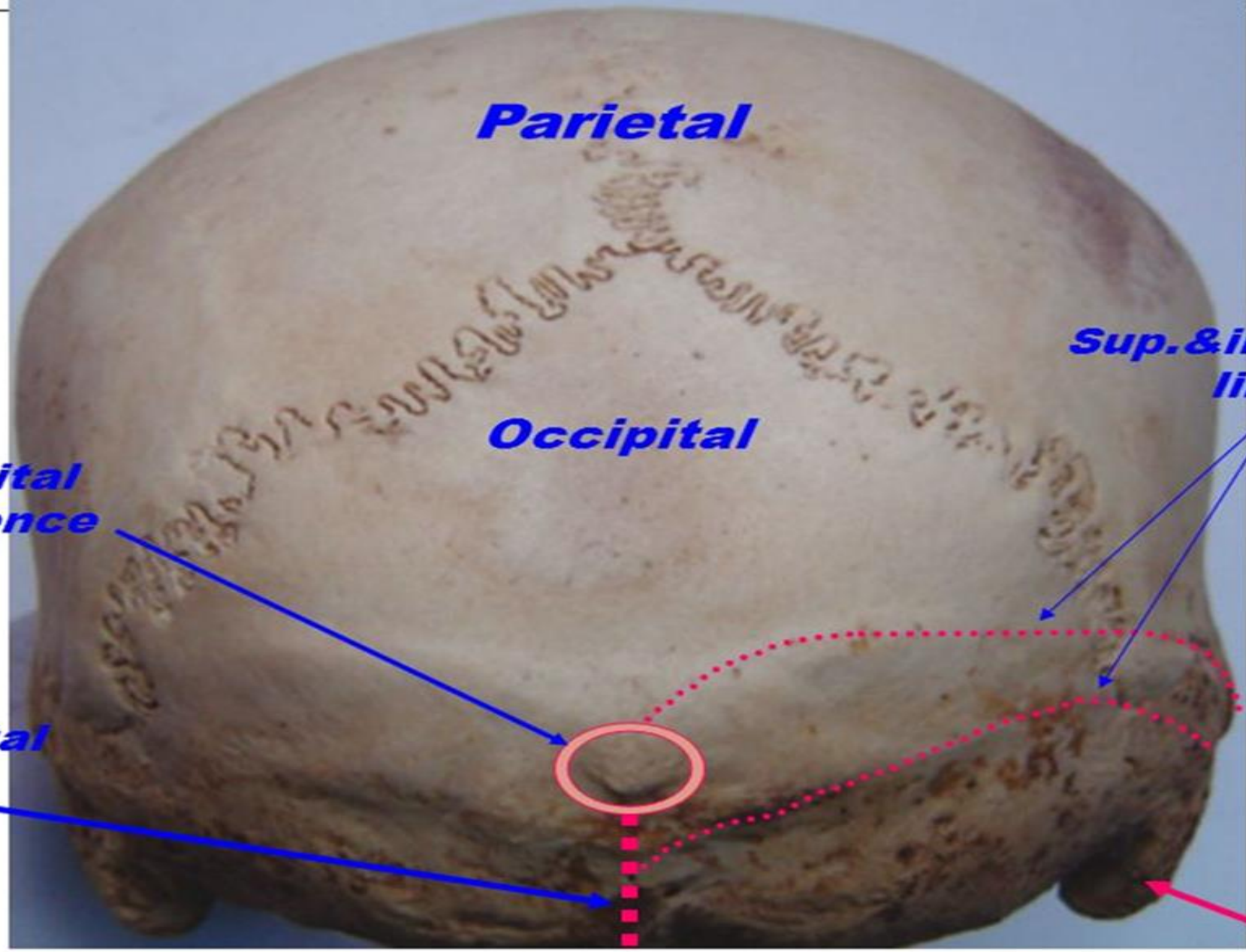




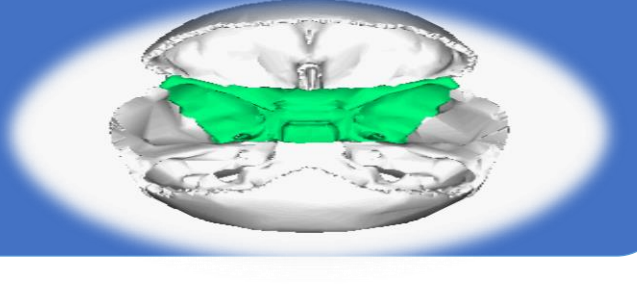
Landmarks

- Foramen magnum: large hole, allowing passage of the spinal cord
- External occipital protuberance (EOP): prominent projection on back of occiput
- Nuchal lines: a superior and inferior line running
- External occipital crest
- Occipital condyles
- Condylar fossa
- Hypoglossal canal

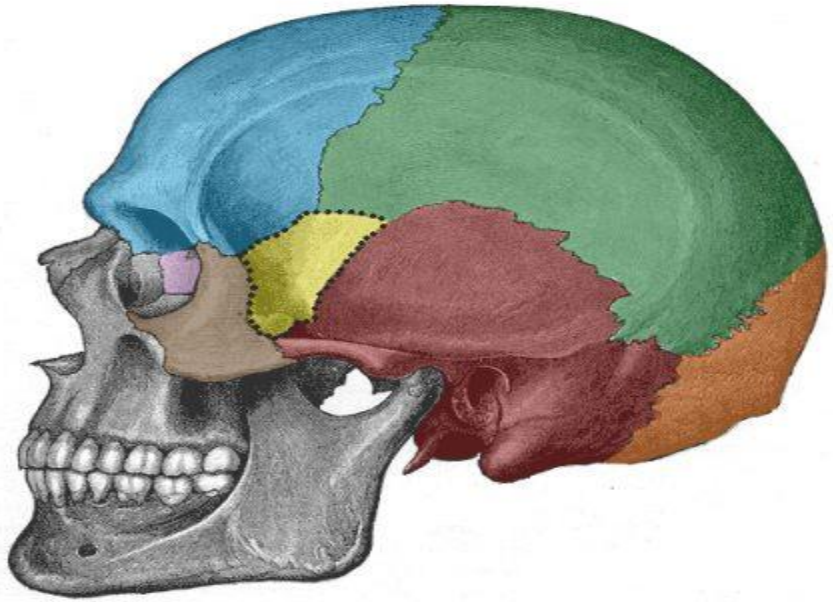


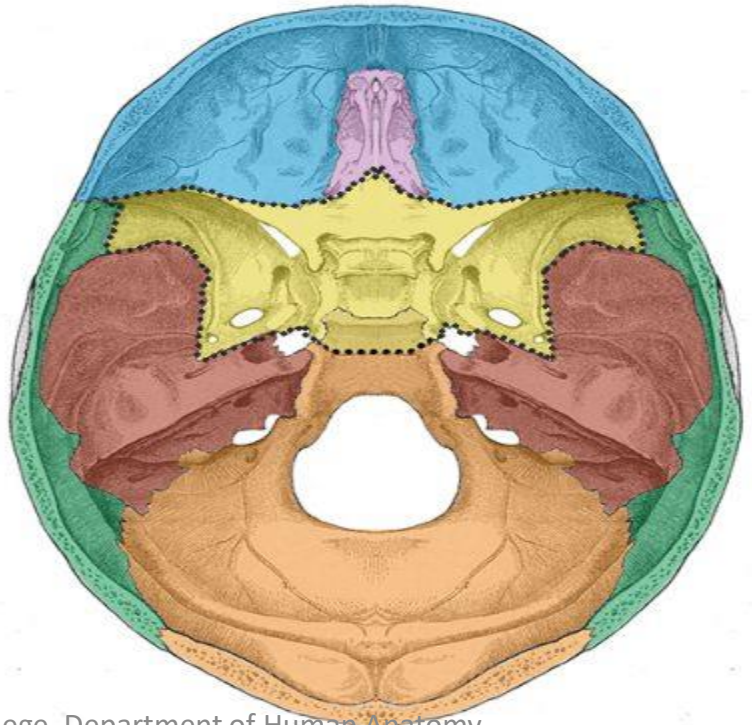

Parietal
Occipital
Sup.&inf.nuchal lines
Ext.occipital protuberence
Ext.occipital crest
Mastoid

5. Sphenoid



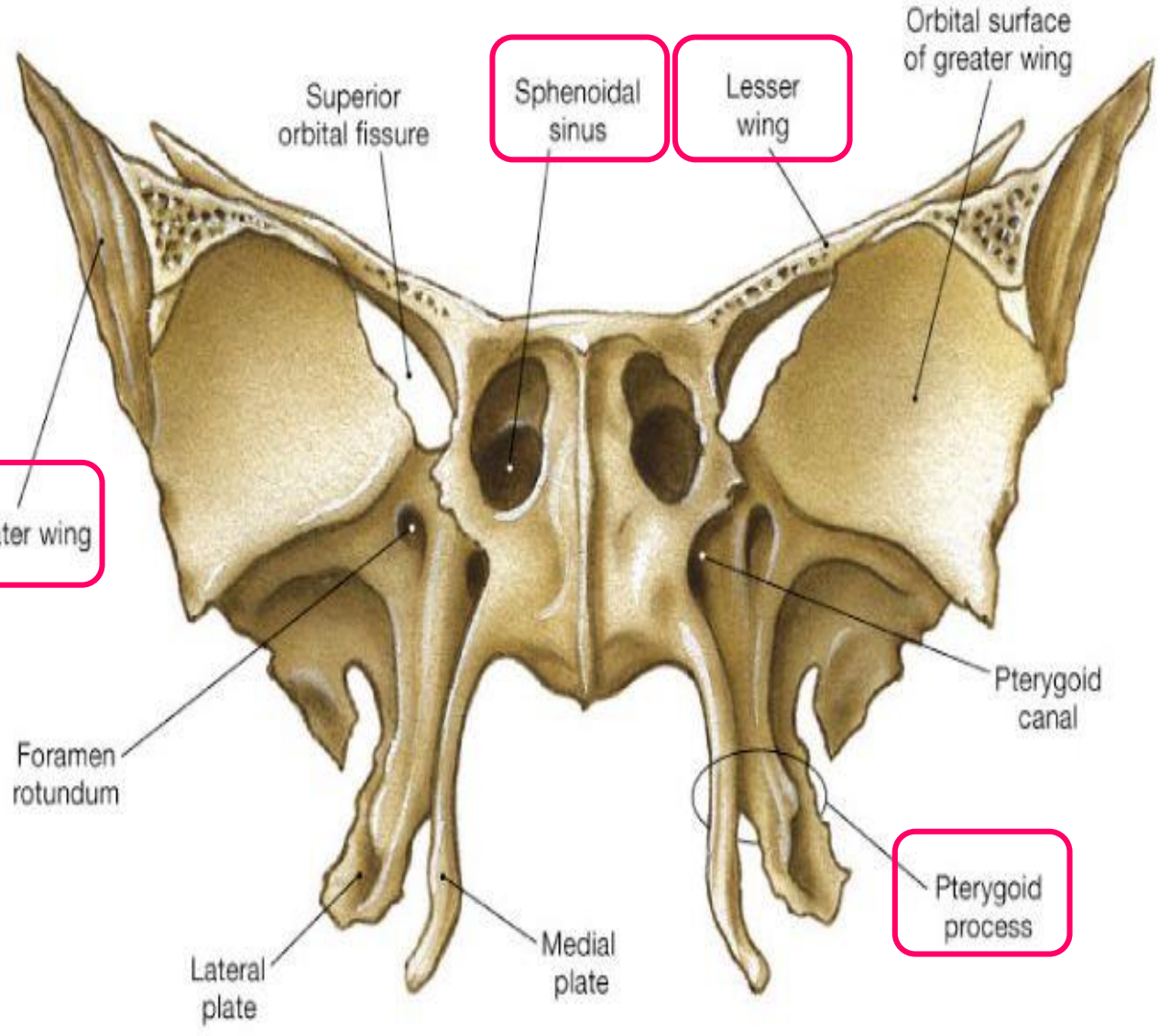
A prominent, irregular, butterfly -shaped bone at the base of the skull. The sphenoid bone has been called the "keystone" of the cranial floor since it is in contact with all of the other cranial bones.





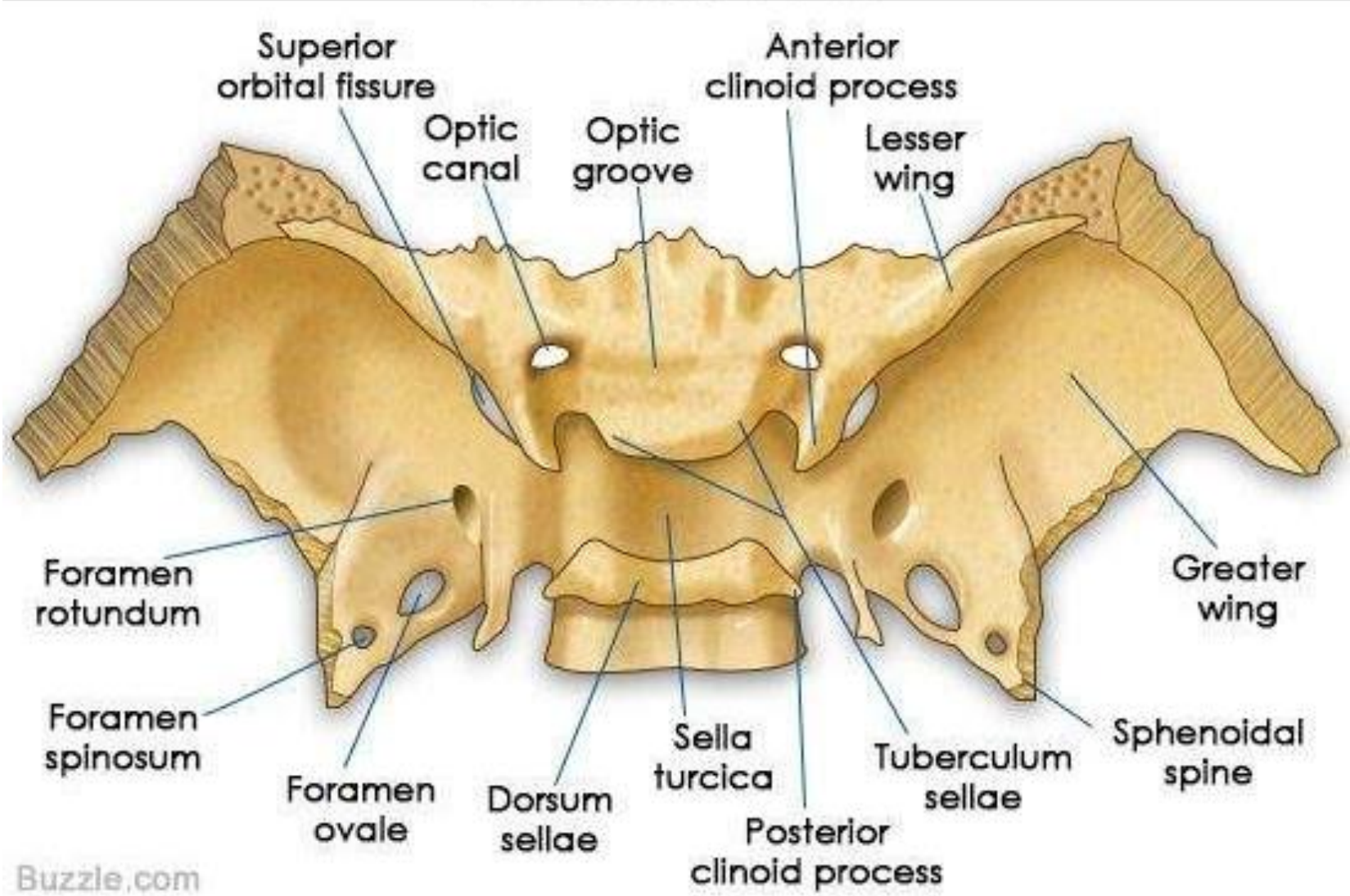
Land marks

- **Greater wings**: large lateral projections of bone
- **Lesser wings**: smaller lateral
- **Pterygoid processes**: two long downward projections from the greater wings that act as a point of muscle attachment.
- **Sphenoidal air sinus**.

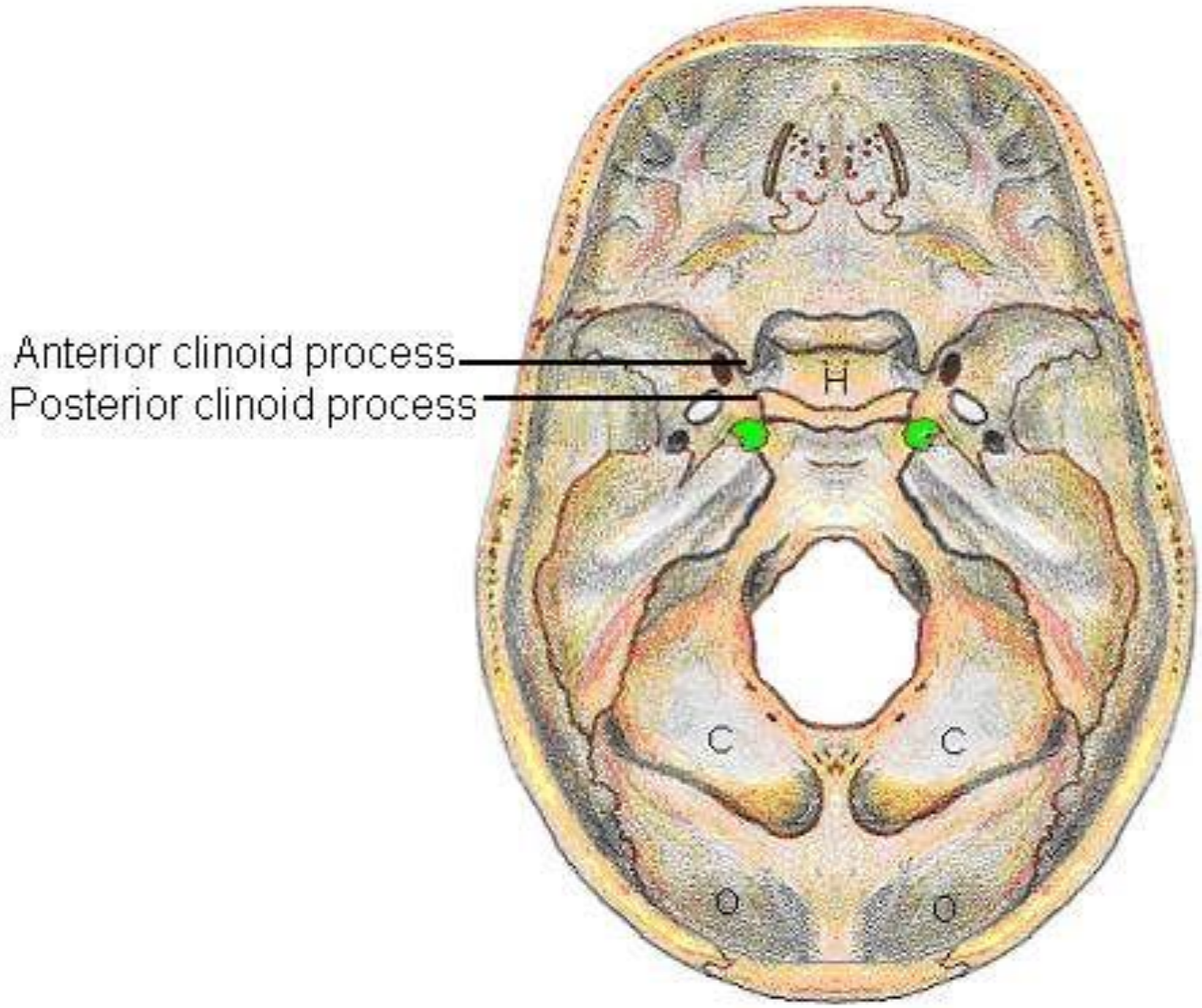


Body of sphenoid

- **3. Body of sphenoid: a median portion, contains the following**
- **Chiasmatic groove – a sulcus formed by the optic chiasm (where the optic nerves partially cross).**
- **2. • Tuberculum sellae – forms the the posterior aspect of the chiasmatic groove.**
- **3. • Sella turcica – a saddle-shaped depression. known as the Turkish Saddle, lies behind tuberculum sellae**
- **3. 4. Hypophyseal fossa – the deepest part of the sella turcica, where the pituitary gland is located.**
- **• Dorsum sellae – forms the posterior wall of the sella turcica.**
- •

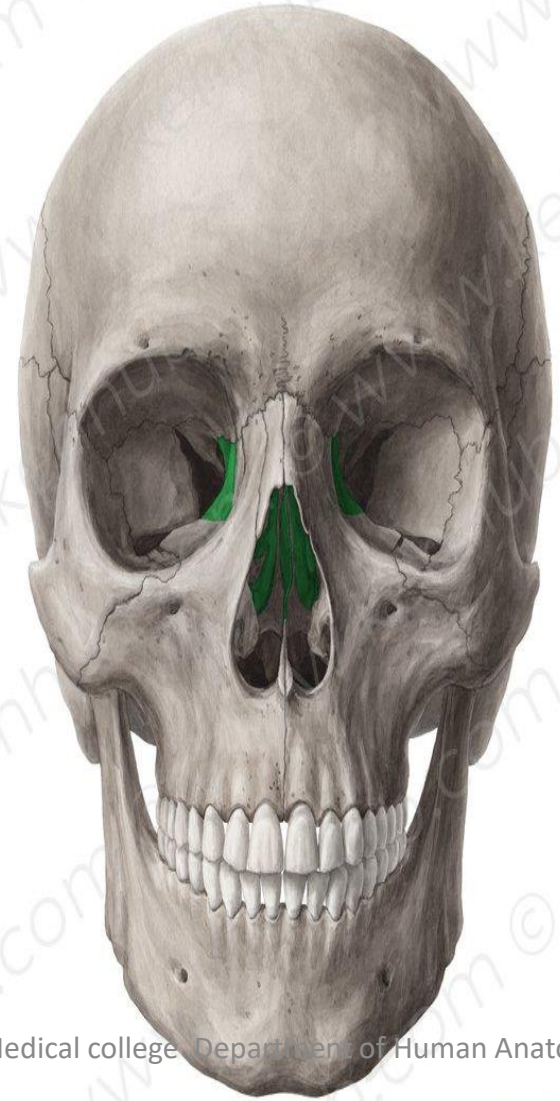


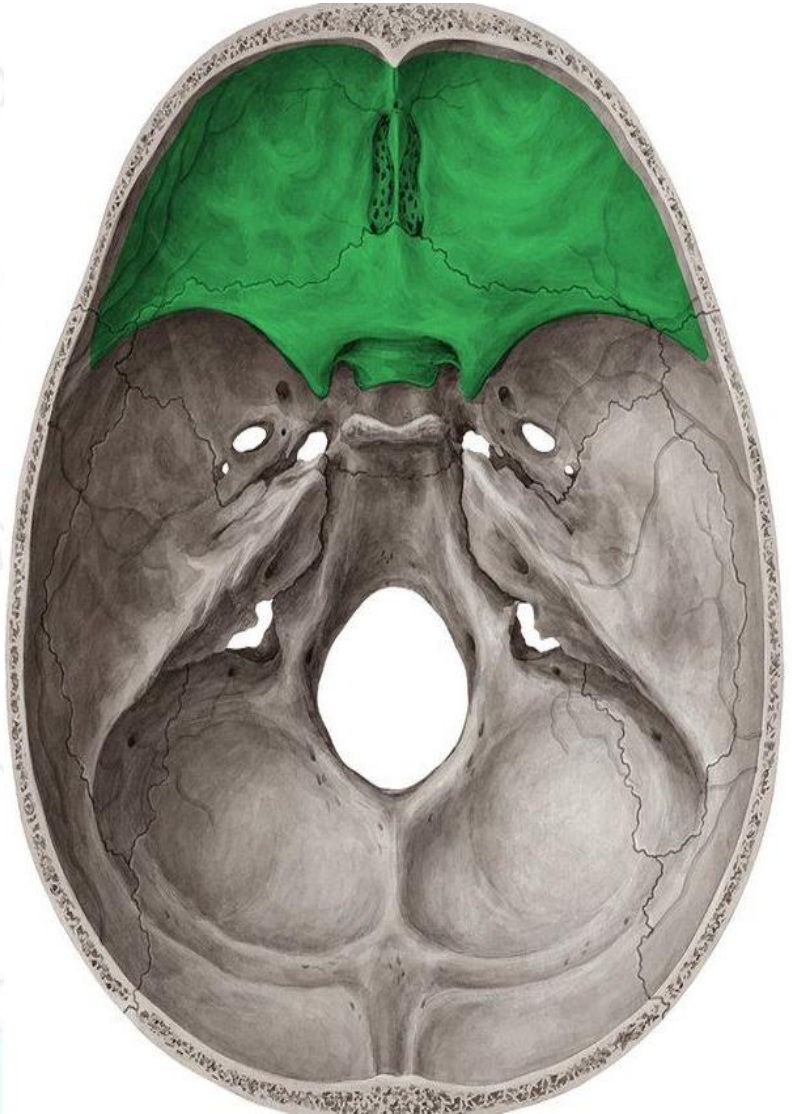
- **The sella turcica is surrounded**
- **The anterior clinoid processes arise from the sphenoidal lesser wings**
- **The posterior clinoid processes are the superolateral projections of the dorsum sellae.**
- **They serve as attachment points for the tentorium cerebelli (Dural fold)**



6. Ethmoid Bone

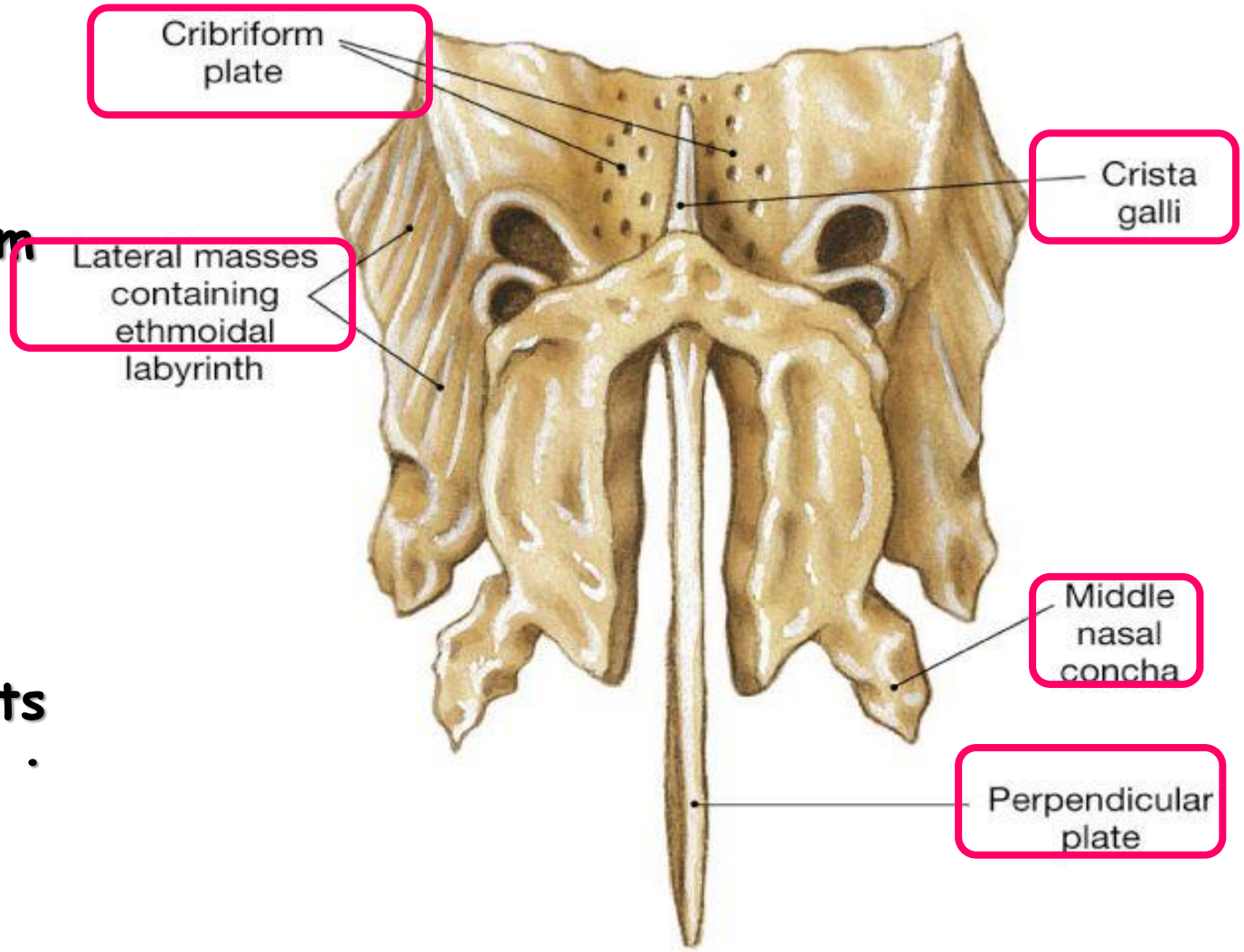
- **An irregularly shaped, spongy bone that provides:**
- **Floor of the anterior cranial fossa .**
- **Medial wall of orbital cavity**
- **Roof of the nasal cavity.**





Landmarks

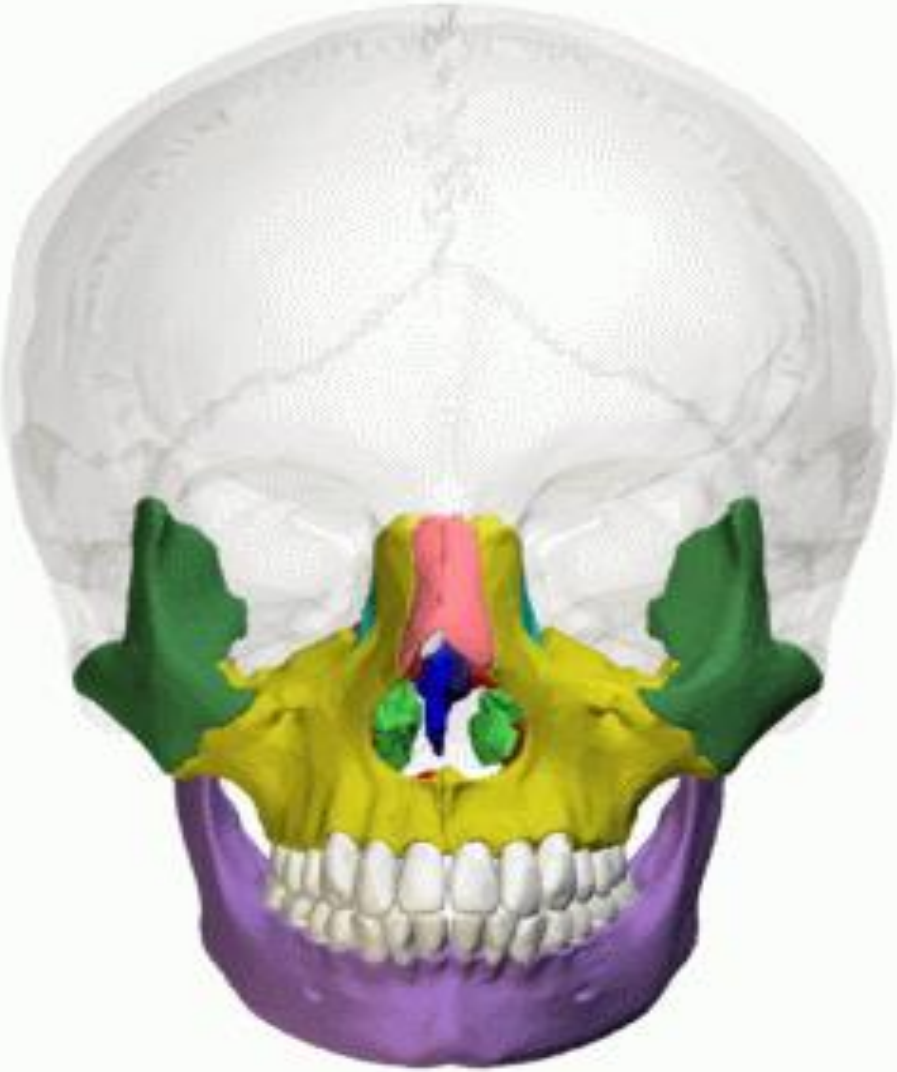
- **Lateral masses:** form most of the wall between the nasal cavity and the orbits.
- **Perpendicular plate**: forms the superior portion of the nasal septum
- **Cribiform plate**: forms the roof of the nasal cavity.
- **Olfactory foramina**: small holes within the cribiform plate for passage of the first cranial nerve.
- **Crista galli**: upward extension of bone above the cribiform plate, acts as an anchoring point falx cereberi .
- **Nasal concha** (turbinates): two scroll-shaped projections on either side of the nasal septum.

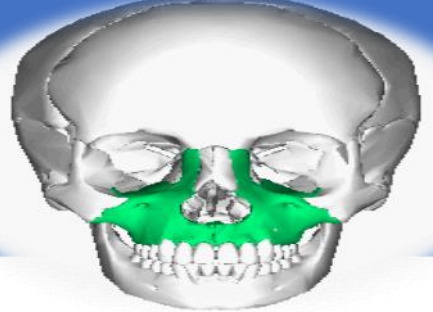


(b) Anterior view

2. Viscerocranium

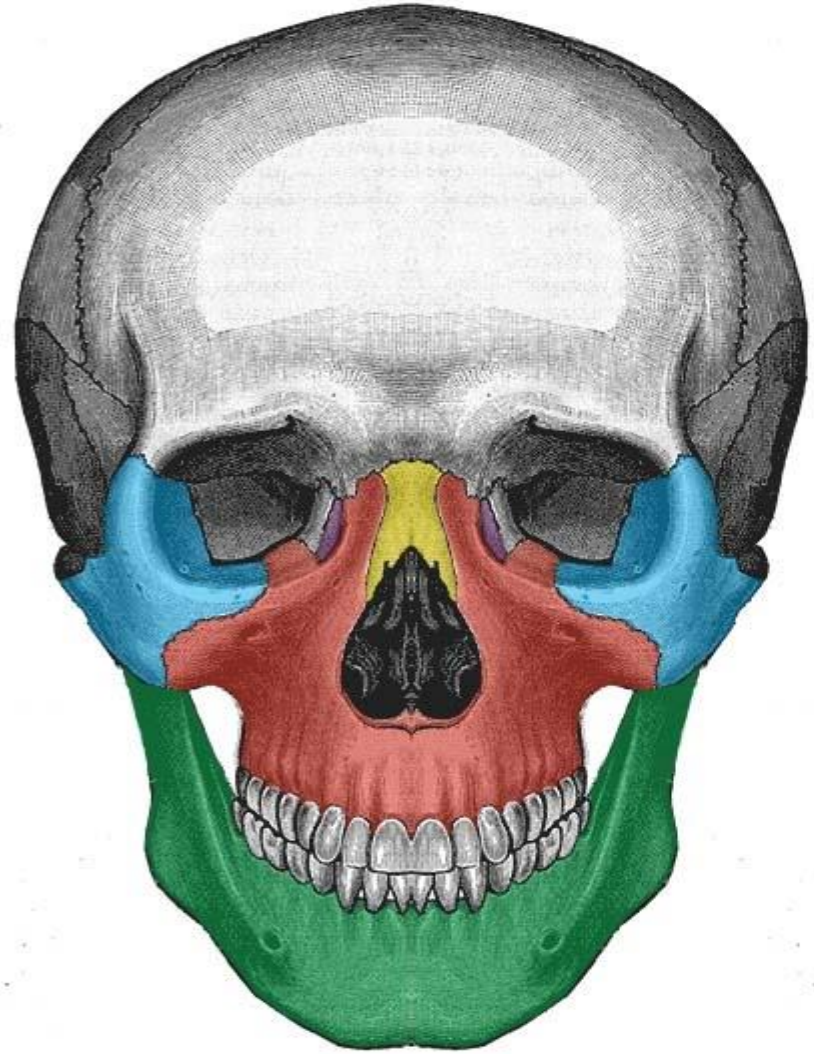
Facial bones supports the soft tissues of the face.
It consists of 14 individual bones, which fuse to house the orbits of the eyes, nasal and oral cavities, as well as the sinuses.





1. Maxilla

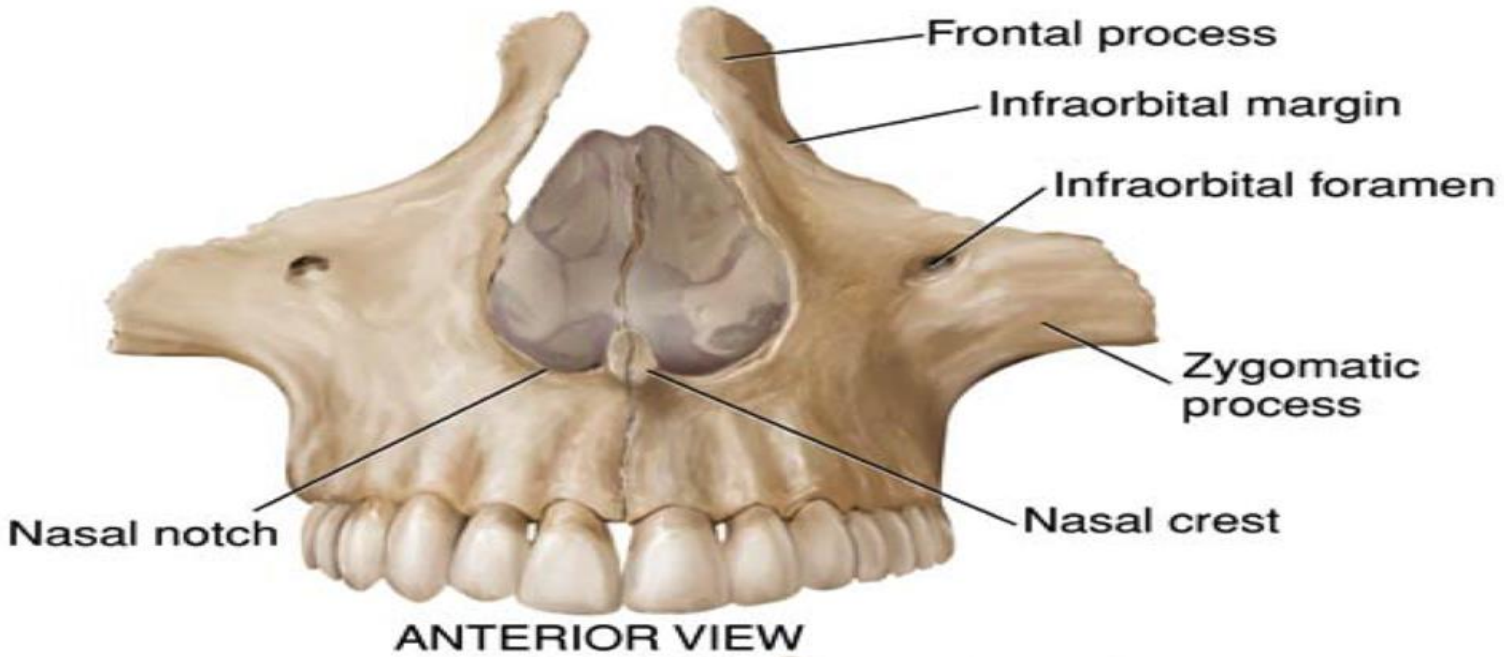
- Two maxillae hold the upper teeth, and connect on the left and right to the zygomatic bones (cheek bones).
- Each assists in forming the boundaries of three cavities, namely, the roof of the mouth, the floor and lateral wall of the nose, and the floor of the orbit.

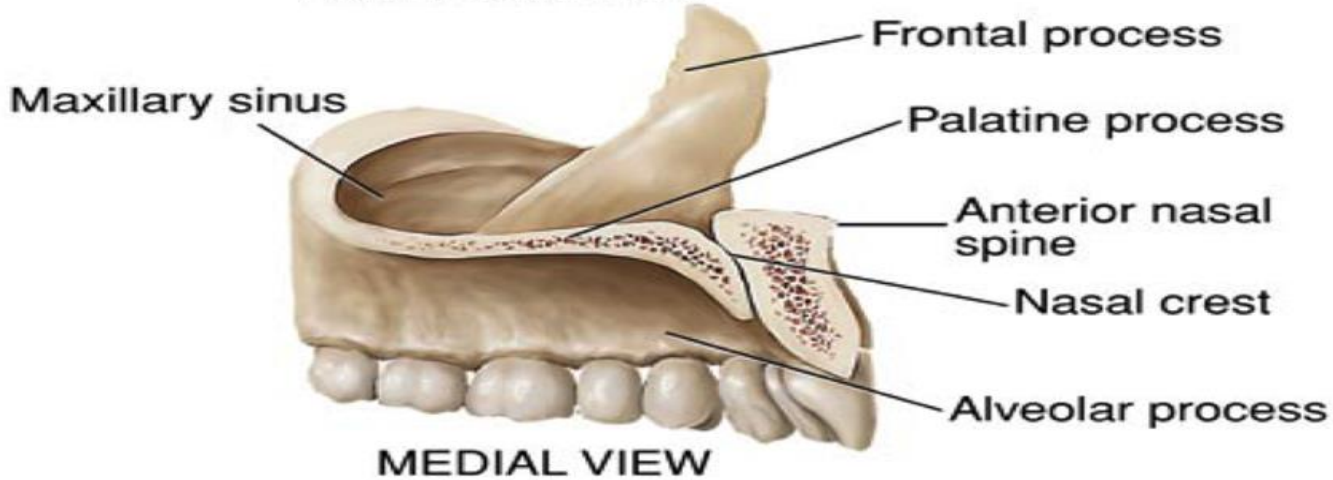


Maxilla

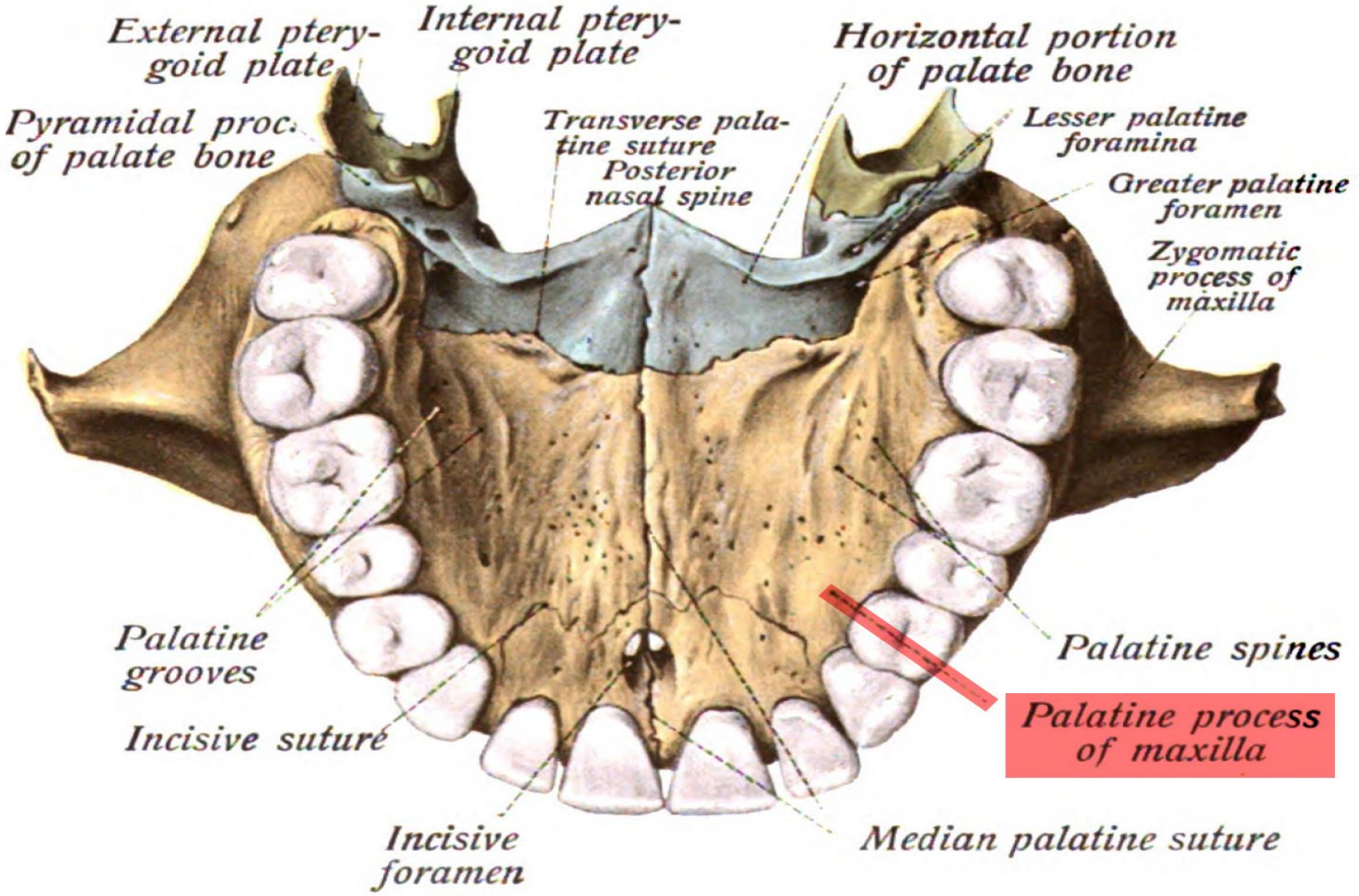
Landmarks:

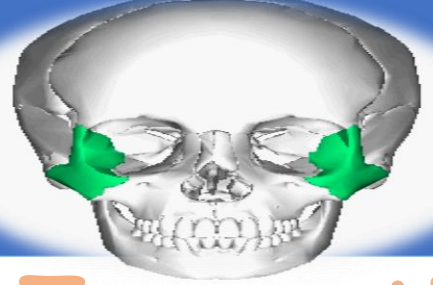
- 1. Infra Orbital foramen: hole below the orbit, for blood vessels and nerves
- 2. Alveolar process: arch of the maxilla containing the upper teeth.
- 3. Frontal process.
- 4. Zygomatic process
- 5. Palatine process: horizontal projection of the maxilla forming the anterior $\frac{3}{4}$ of the hard palate





Maxilla

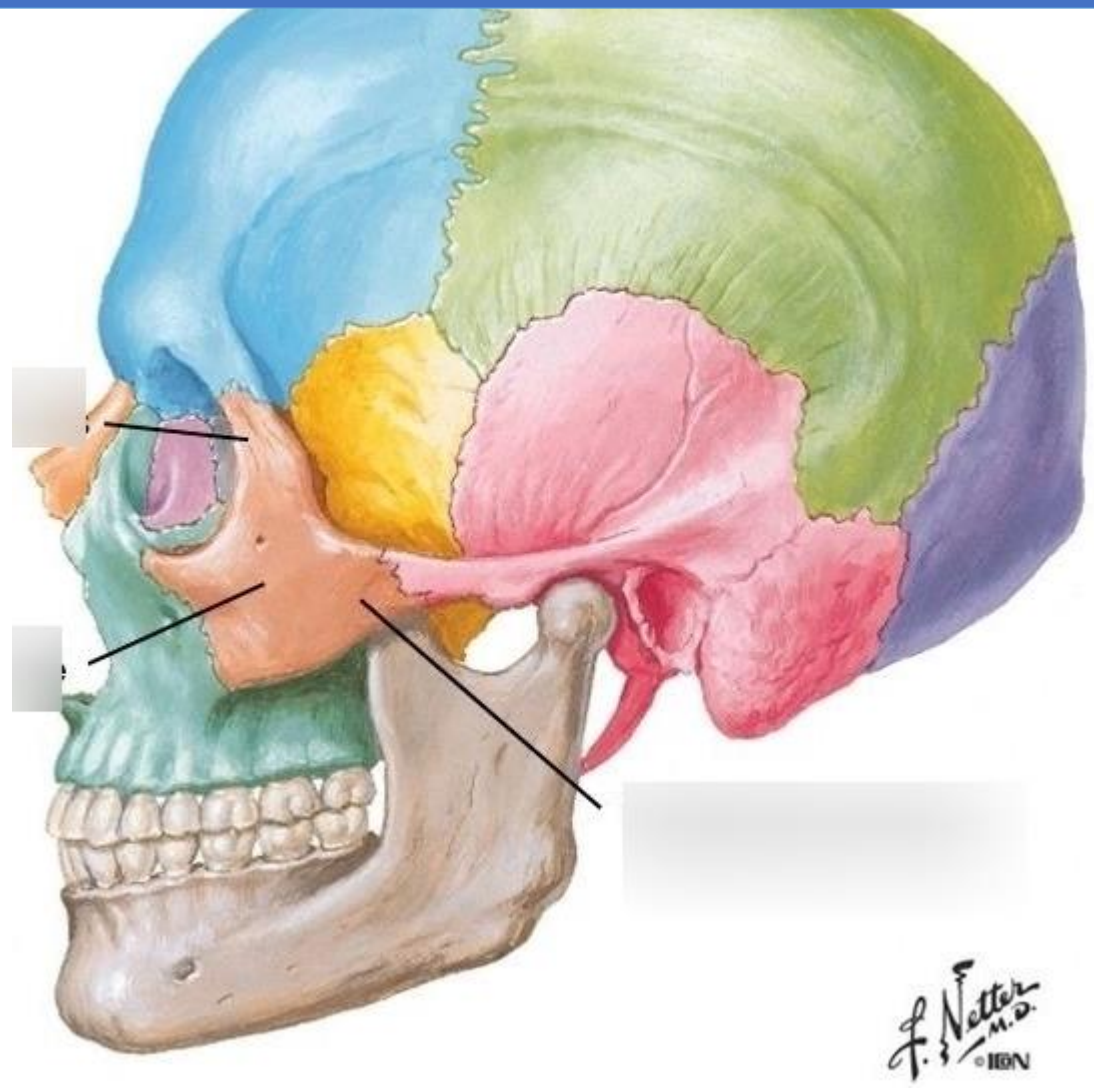

External ptery-goid plate
Internal ptery-goid plate
Horizontal portion of palate bone
Pyramidal proc. of palate bone
Transverse pala-tine suture
Posterior nasal spine
Lesser palatine foramina
Greater palatine foramen
Zygomatic process of maxilla
Palatine grooves
Palatine spines
Palatine process of maxilla
Incisive suture
Incisive foramen
Median palatine suture

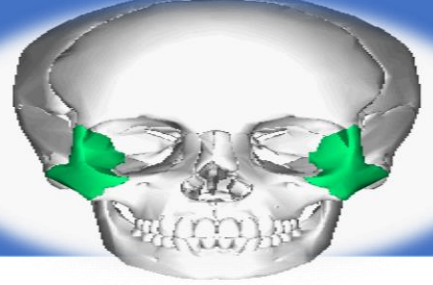


2.Zygomatic bones

- Zygomatic (Two)
  Forms the cheek bones of the face, Articulates with:

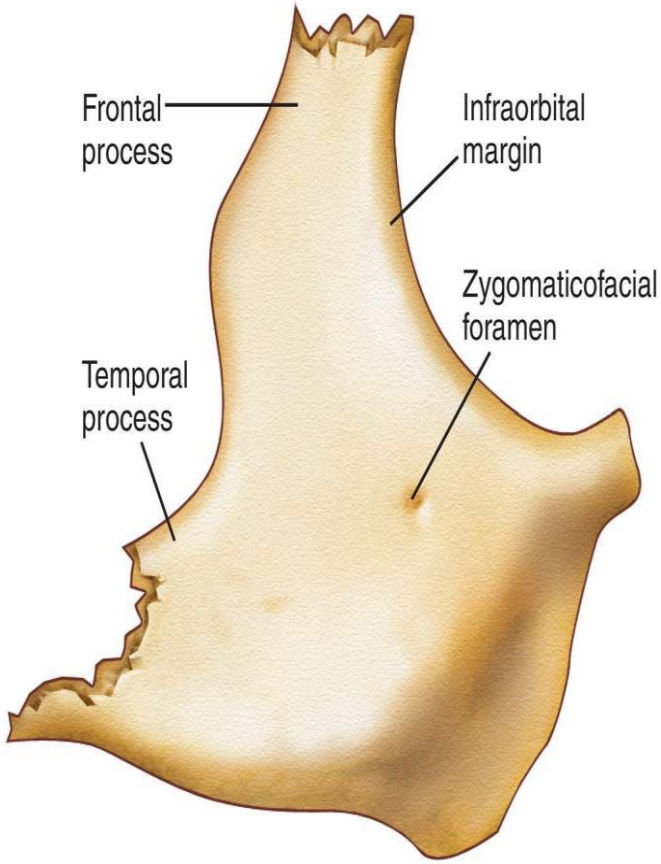
- Frontal
- sphenoid
- temporal
- maxilla

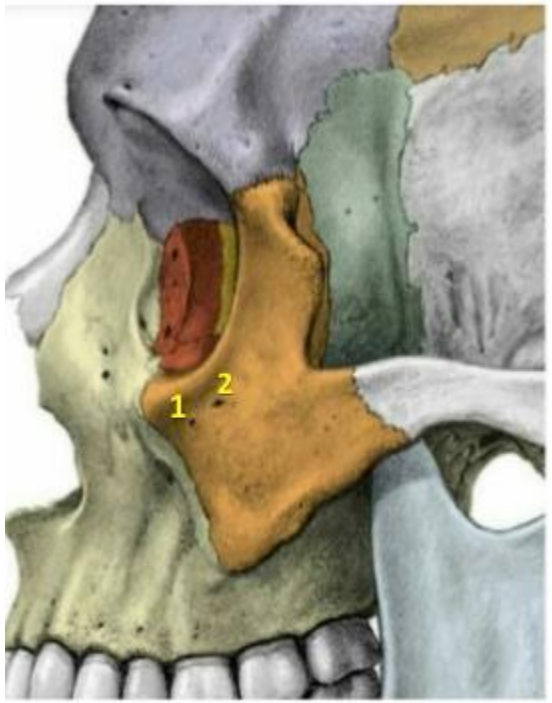


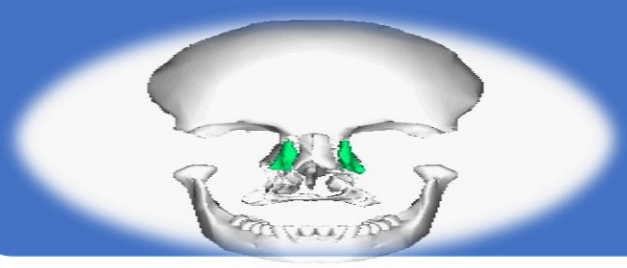


Land marks

- **Process are :**
- **Frontal process**
- **Temporal process**
- **Maxillary process**
- **Foramina are:**
- **1. zygomatico-facial foramen.**
- **2. zygomatico-temporal foramen**







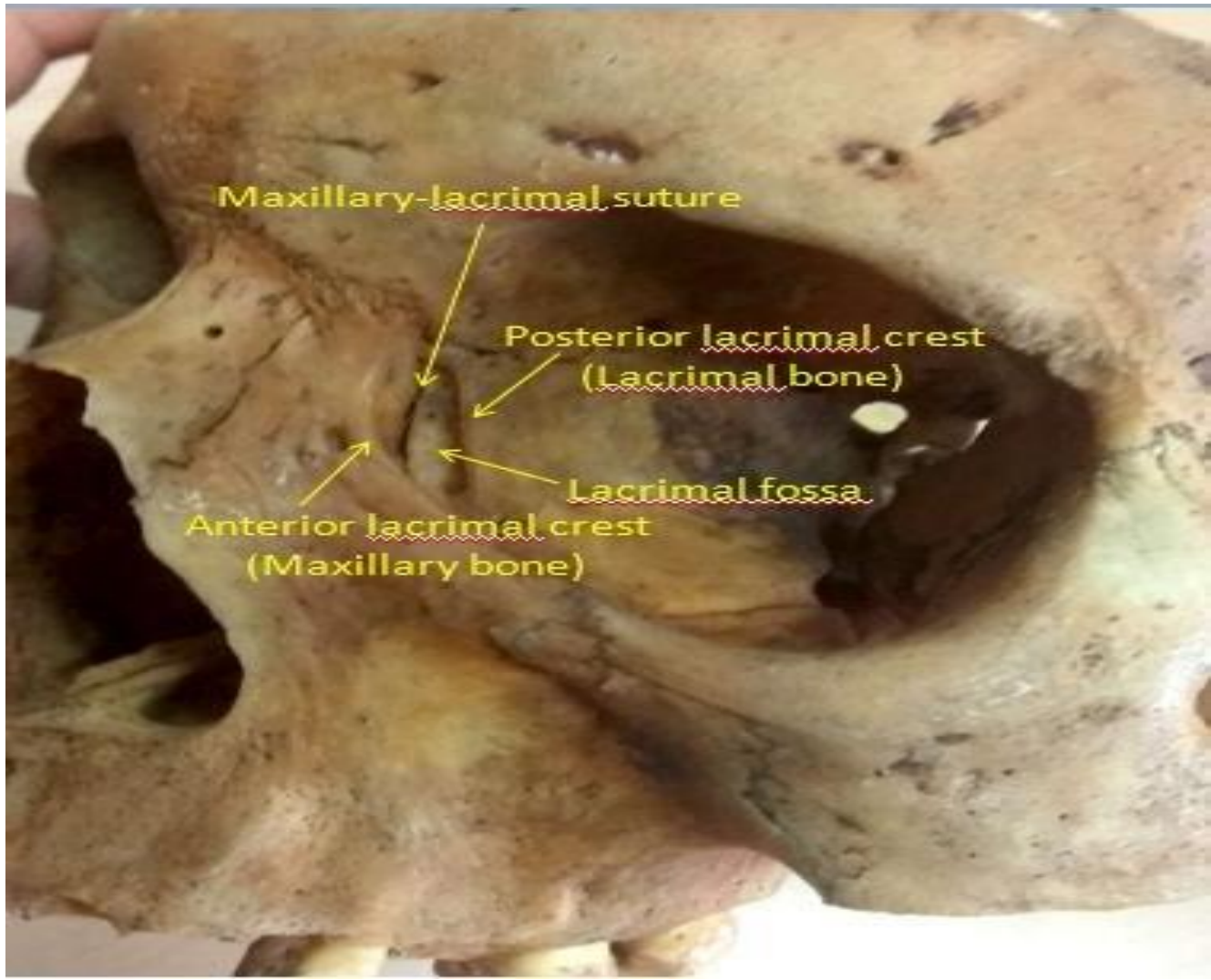
3. Lacrimal bones

The lacrimal bone is a small and fragile bone of the facial skeleton . It is roughly the size of the little fingernail. Two lacrimal bones situated at the front part of the medial wall of both orbit

Land marks :

1.Fossa for lacrimal sac

2. Posterior lacrimal crest



4. Palatine bones

Palatine (Two bones) – Situated at the rear of oral cavity, and forms part of the hard palate.

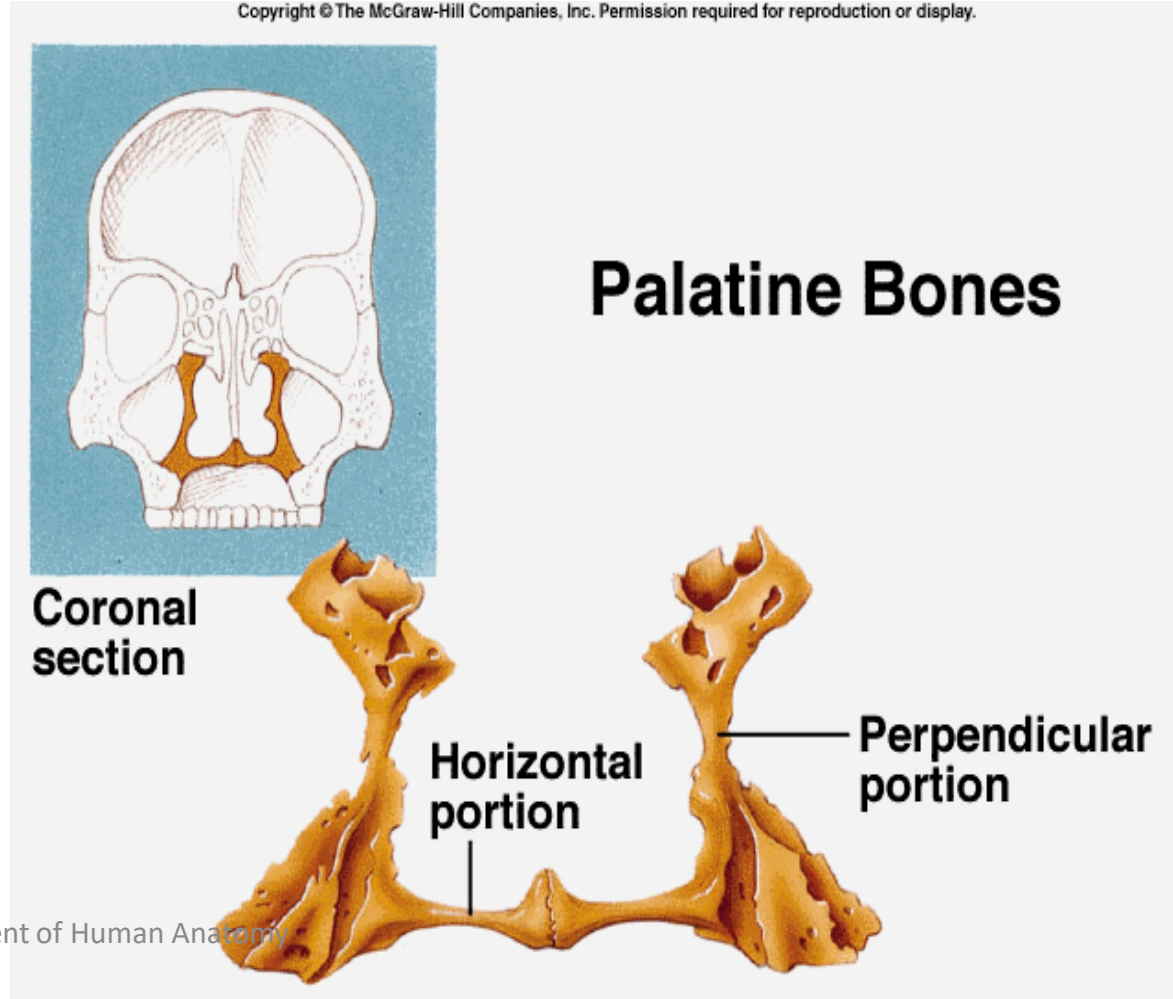
It contributes to the walls of three cavities

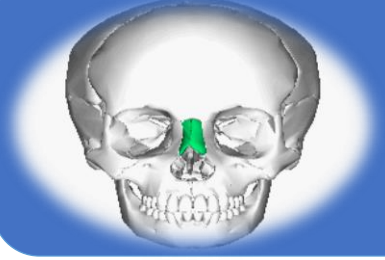
- **Floor and lateral wall of the nasal cavity.**
- **Roof of mouth**
- **Floor of orbit**

Parts :

1. Horizontal part

2. Perpendicular part





5. Nasal bones

Paired Bone > They are placed side by

side at the middle and

upper part of the face

and form, by their

junction, "the bridge" of

the nose

Inferior nasal conchae

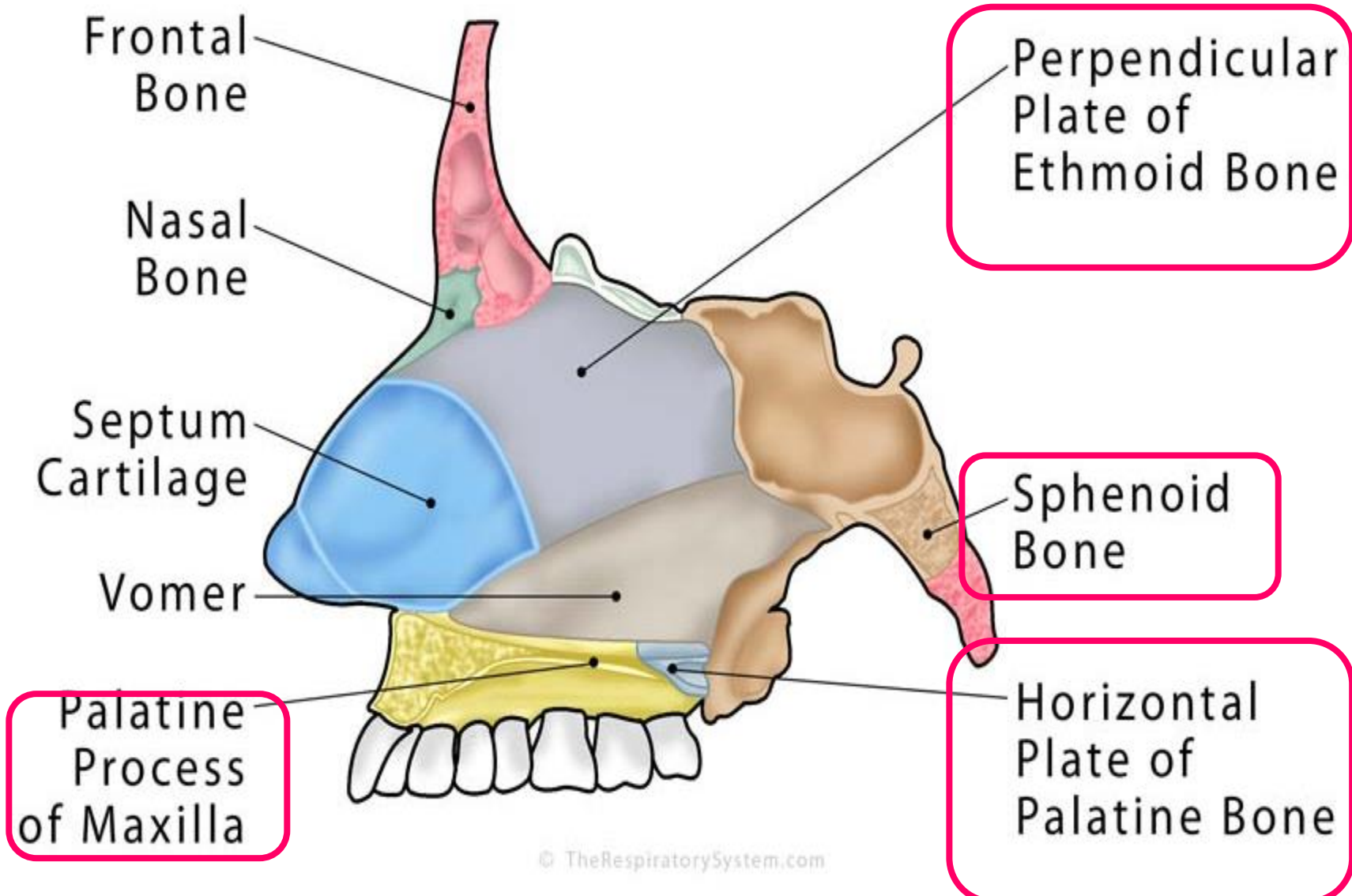
Paired Right and left conchae
Extends horizontally
along the lateral wall
of the nasal cavity
and consists of a
lamina of spongy
bone, curled upon
itself like a scroll.
It helps to increase the surface area of the nasal cavity

Vomer

*One of the single facial bones of the skull. It forms the lower part of nasal septum

*Located in the midsagittal line,

*Articulates with sphenoid, ethmoid, left and right palatine bones, and left and right maxillary bones.




THANK
YOU