

THE SKULL

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قال الإمام علي :
من اعتمد على الناس مل
و من اعتمد على ماله قل
و من اعتمد على سلطانه زل
و من اعتمد على الله
فلا مل ولا قل ولا زل

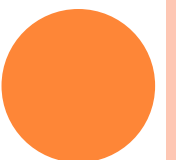


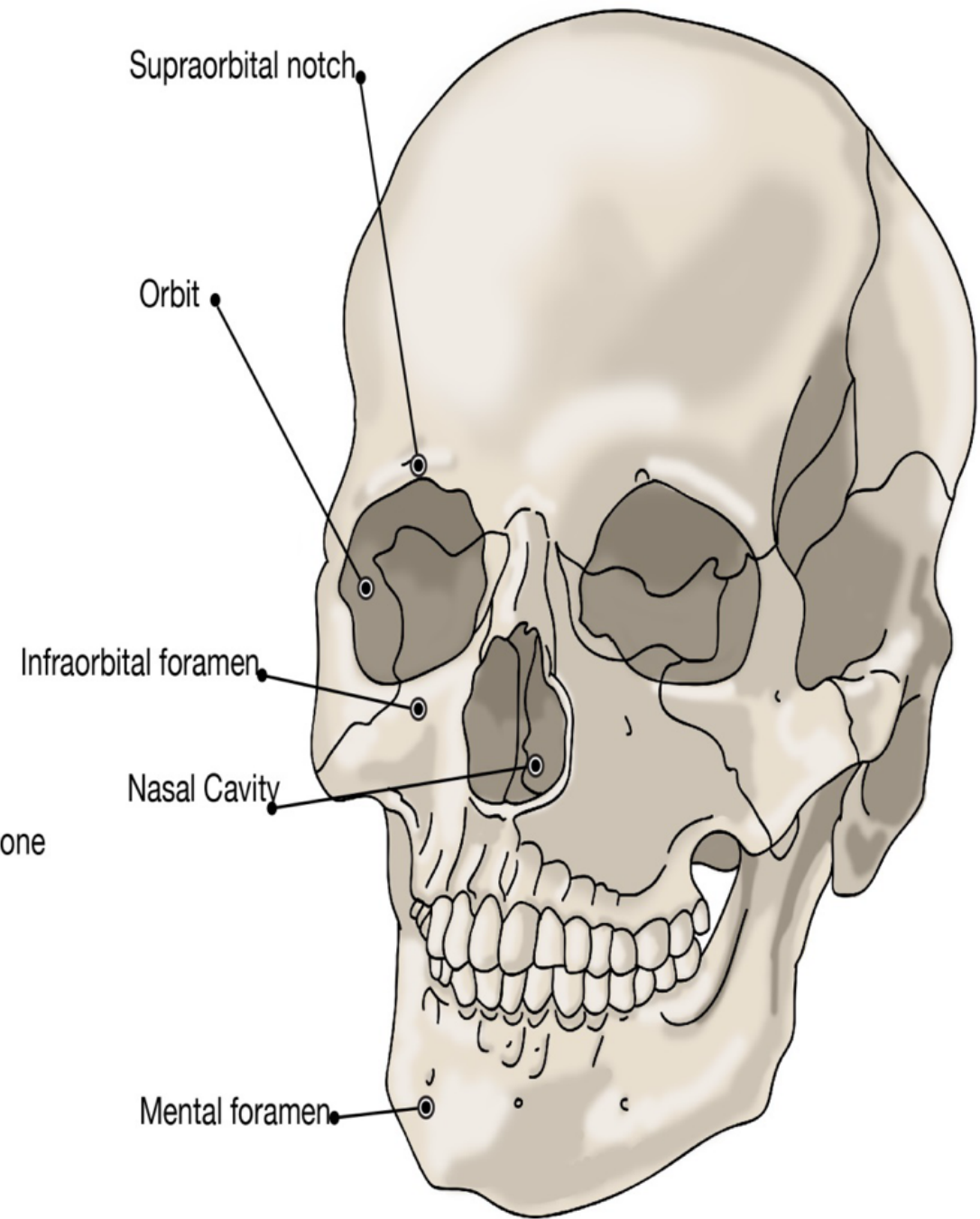
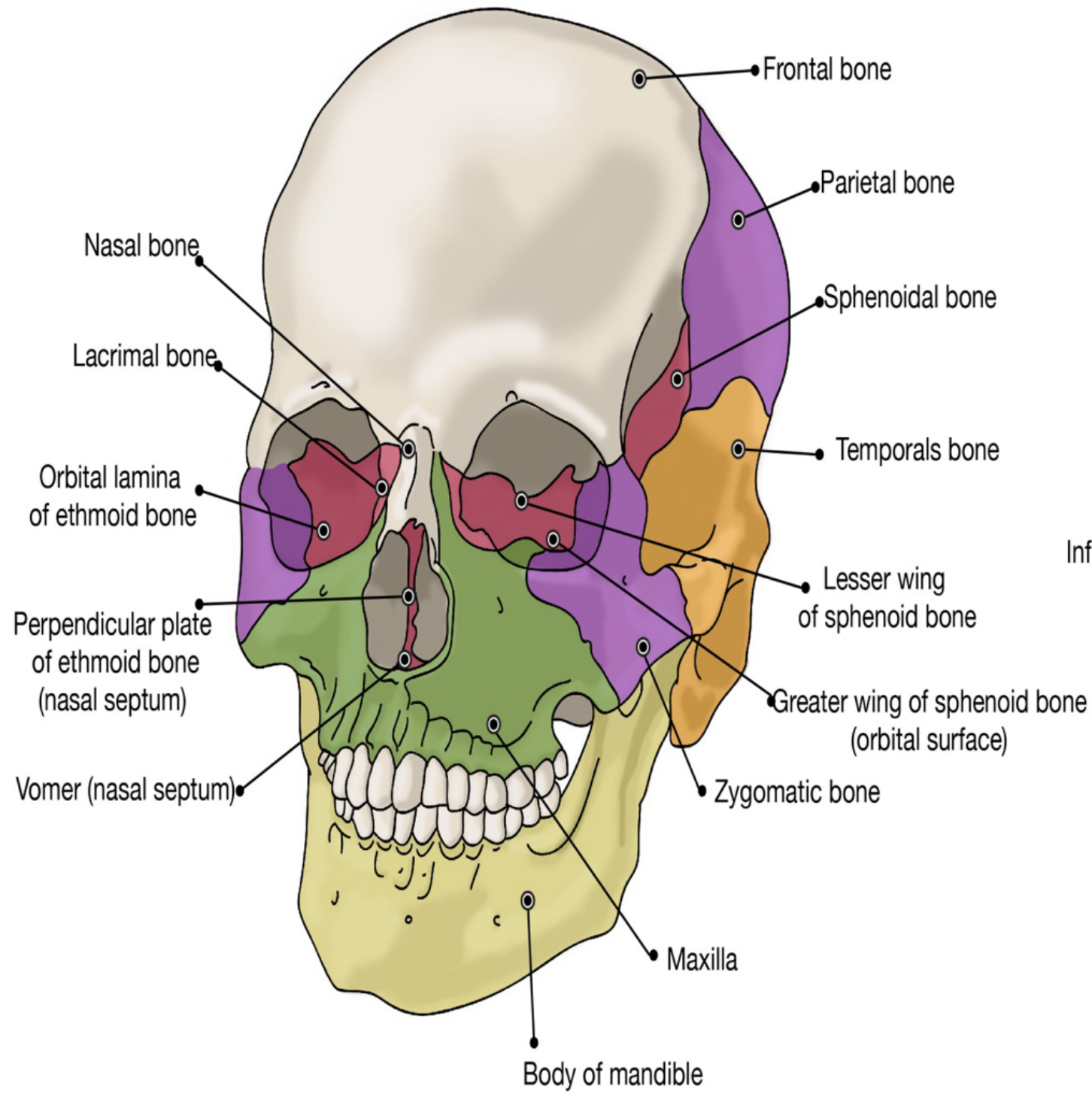
- ❑ The skull is composed of a number of separated bones united at immobile joints called **suture**.
- ❑ connective tissue between the bones called **sutural ligaments**.
- ❑ Except the mandible which is united with the skull through TM joint.
- ❑ The skull are made of **external** and **internal** tables of compact bone separated by spongy bone called **diploe**
- ❑ The bones are covered on the outer and inner surfaces with periosteum namely **pericranium** and **endocranium**.



THE CRANIUM CONSISTS OF THE FOLLOWING BONES:

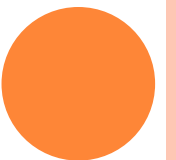
1. Frontal bone 1
2. Parietal bones 2
3. Occipital bone 1
4. Temporal bones 2
5. Sphenoid bone 1
6. Ethmoid bone 1

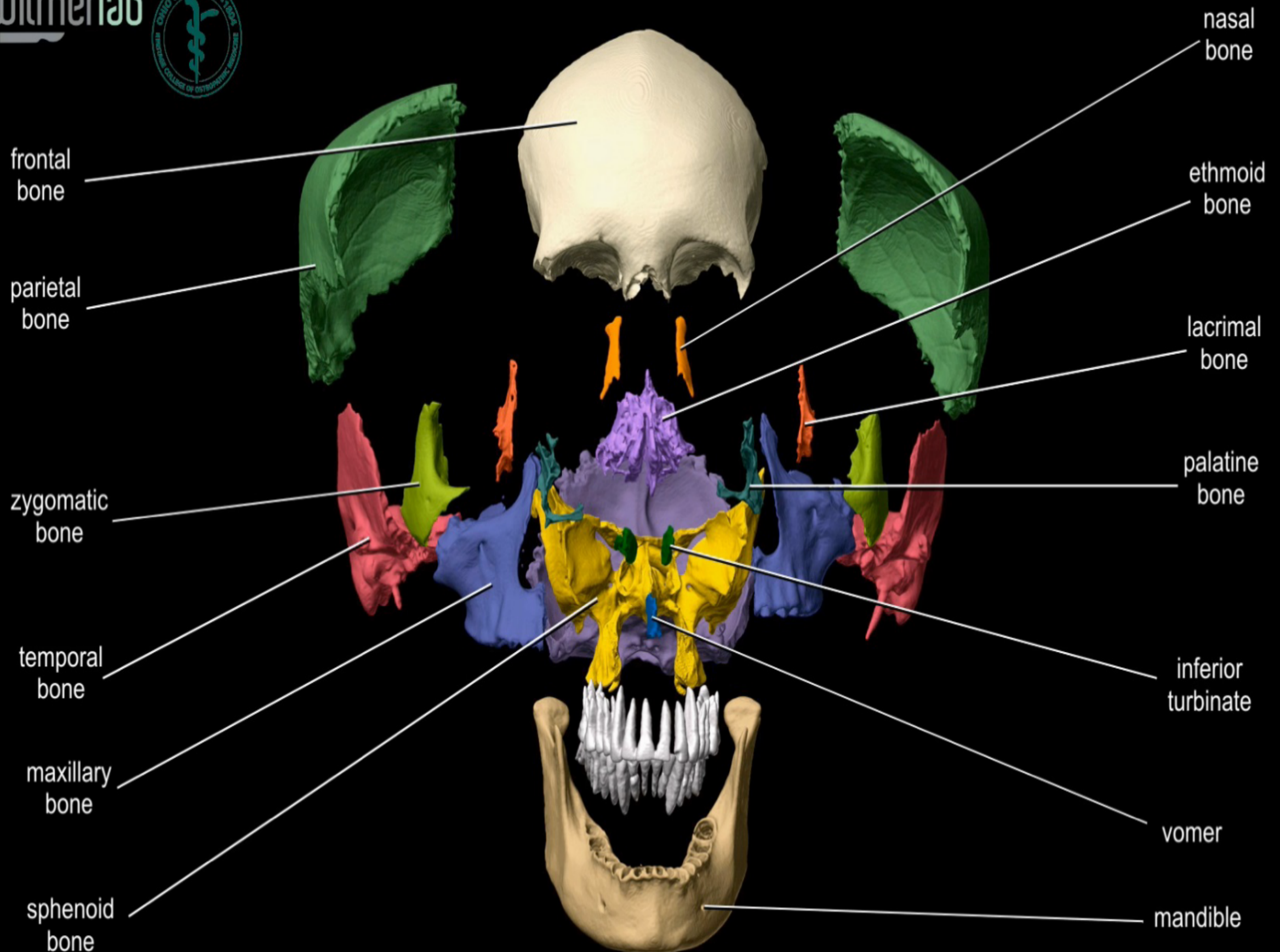


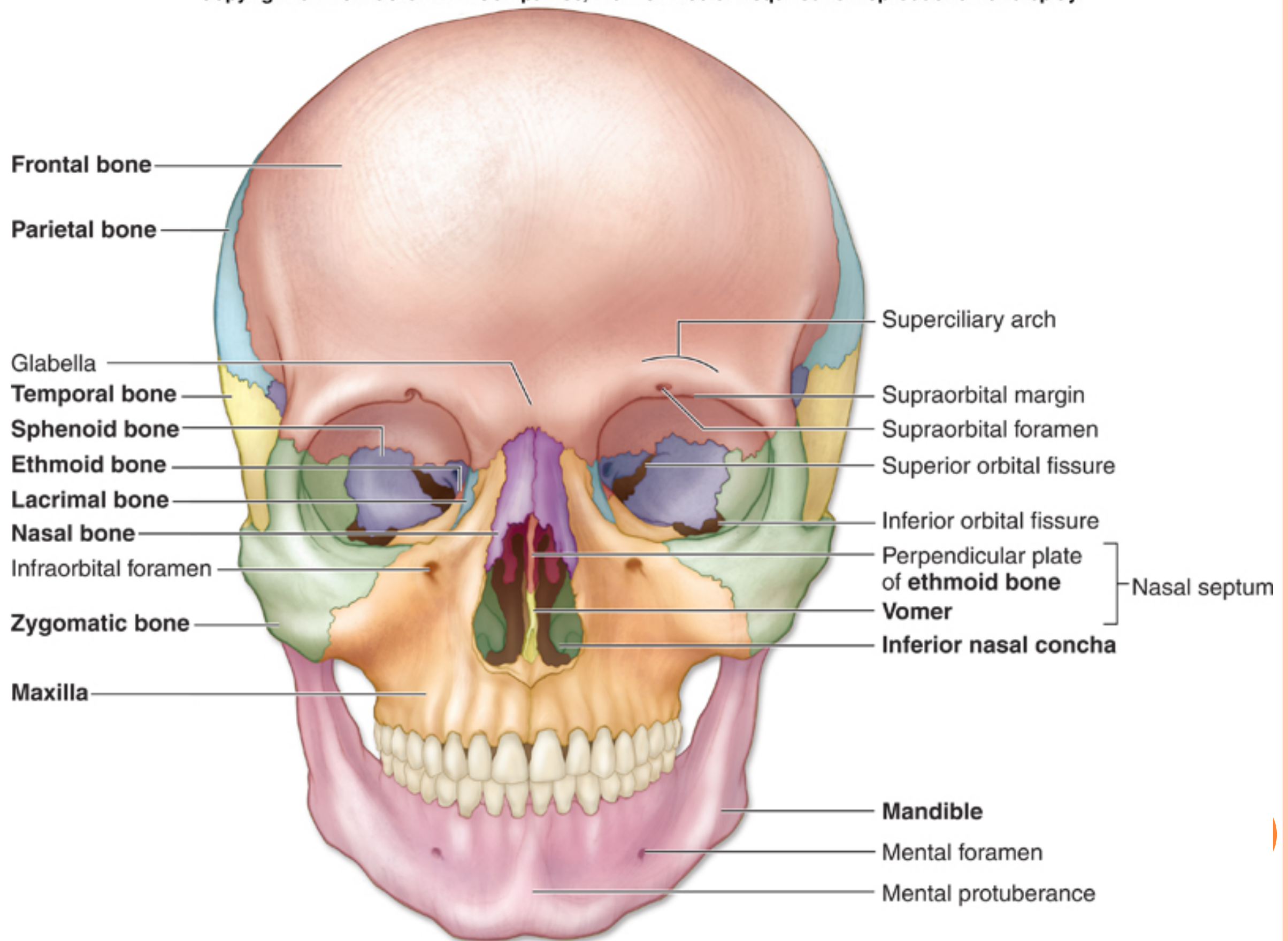


THE FACIAL BONES CONSIST OF THE FOLLOWING BONE

1. Zygomatic bones 2
2. Maxillae 2
3. Nasal bones 2
4. Lacrimal bones 2
5. Vomer 1
6. Palatine bones 2
7. Inferior conchae 2
8. Mandible 1

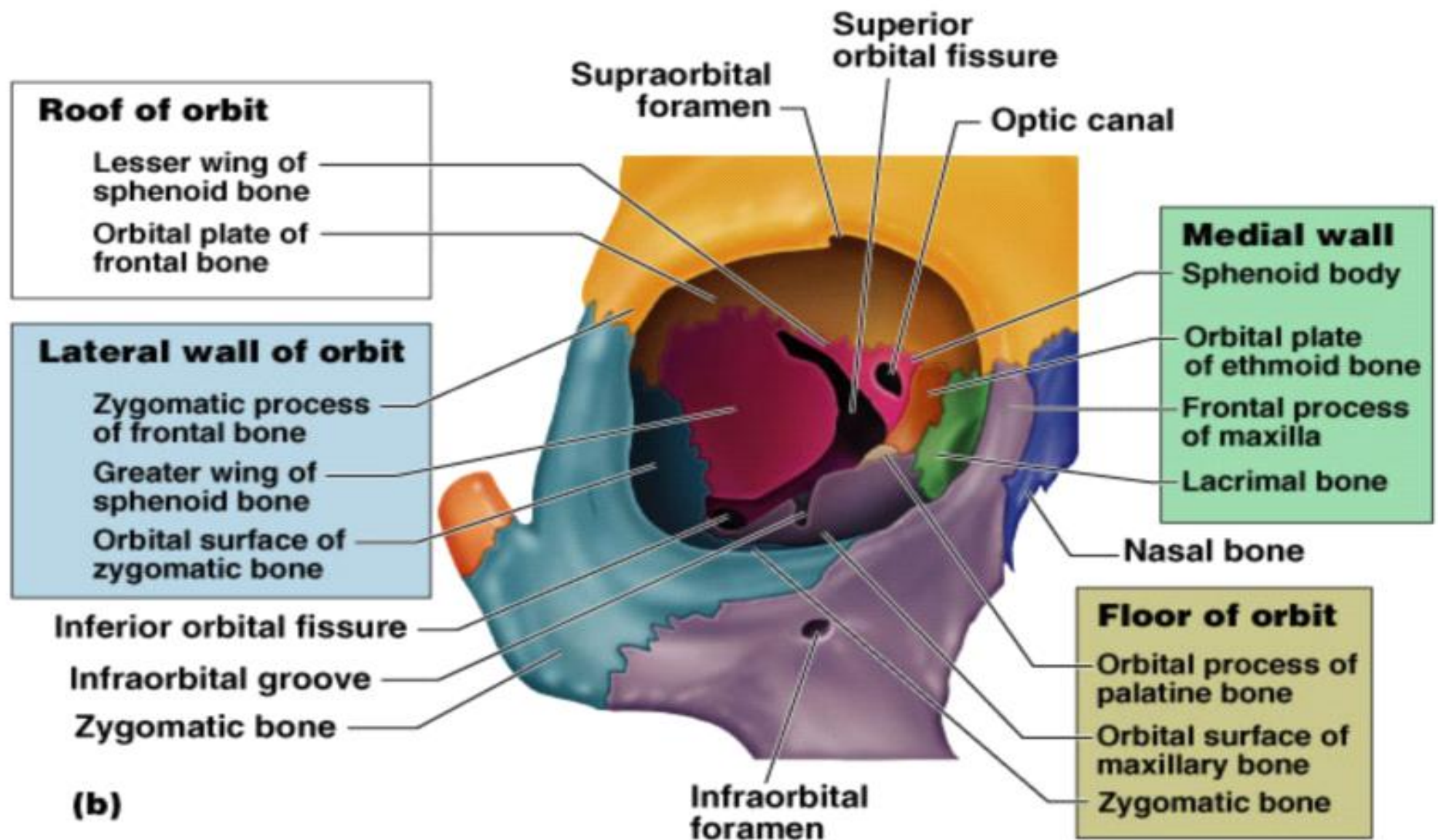
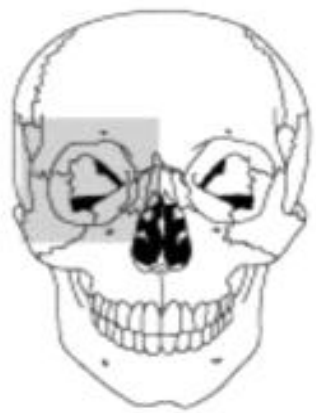






ANTERIOR VIEW OF SKULL

- ? The orbital margins are bounded
- ? Superiorly ---- frontal bone
- ? Laterally ---- zygomatic bone
- ? Inferiorly ---- maxilla
- ? Medially ---- frontal bone



THE NOSE

- ❑ The external nose is pyramidal in shape and maintained by the skeletal framework.
- ❑ **Bony constituents:**
 - ❑ 1. Nasal process of the frontal bone
 - ❑ 2. Nasal bones
 - ❑ 3. Ascending process of the maxilla.



NASAL FOSSA

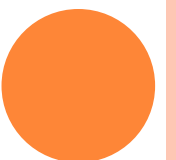
❑ The right and left nasal cavities are separated by the nasal septum.

❑ **Floor is formed by:**

1. palatine process of maxilla (in the ant. 3/4)
2. Horizontal parts of palatine bones (post. 1/4)

. Roof

1. Cribriform plate of ethmoid
2. Body of sphenoid.



Medial wall

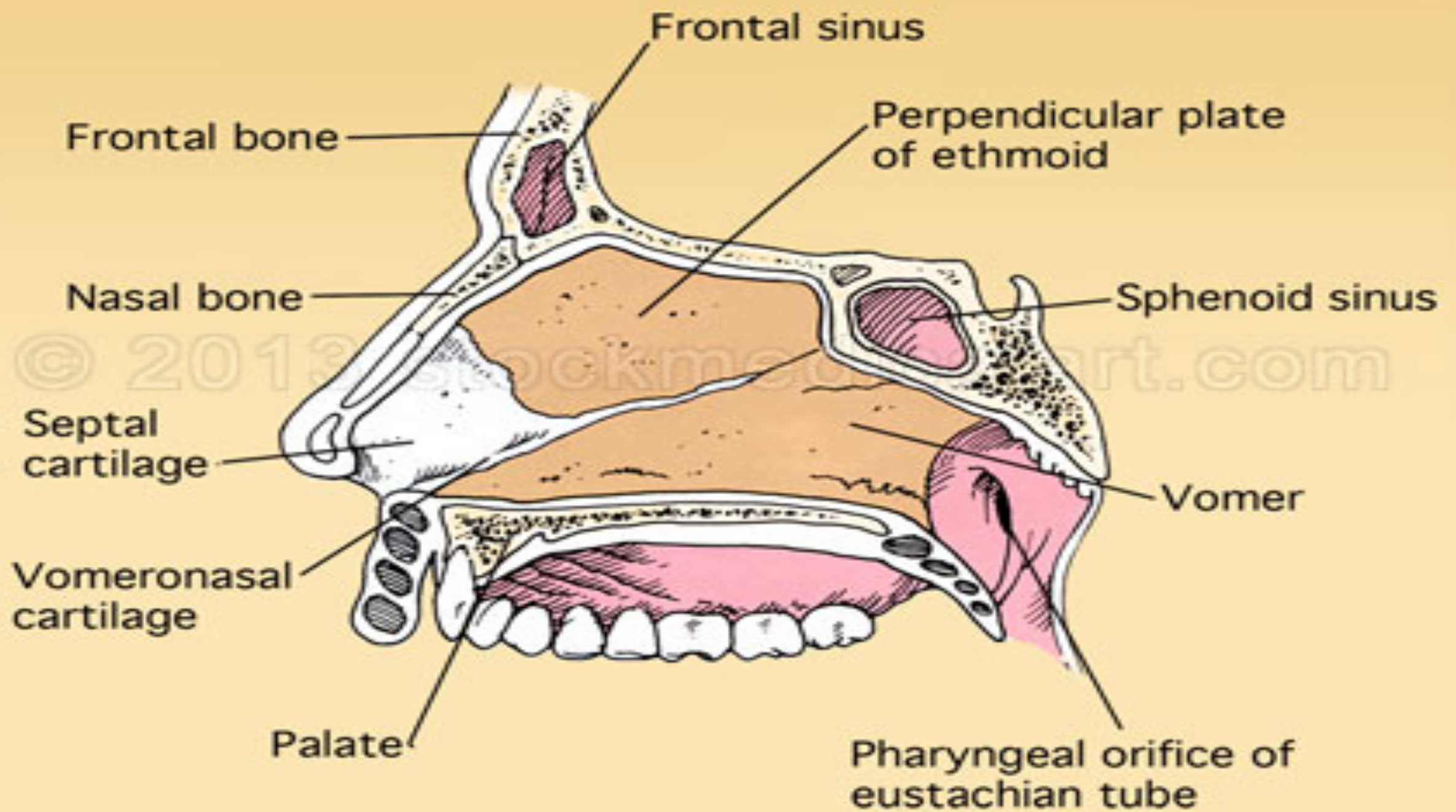
Nasal septum :

-  1. Perpendicular plate of ethmoid.
-  2. Vomer.
-  3. Quadrilateral cartilage (between 1 and 2).

Lateral wall is formed from

-  1. Medial wall of maxilla
-  2. Lateral mass of ethmoid and lacrimal bone.

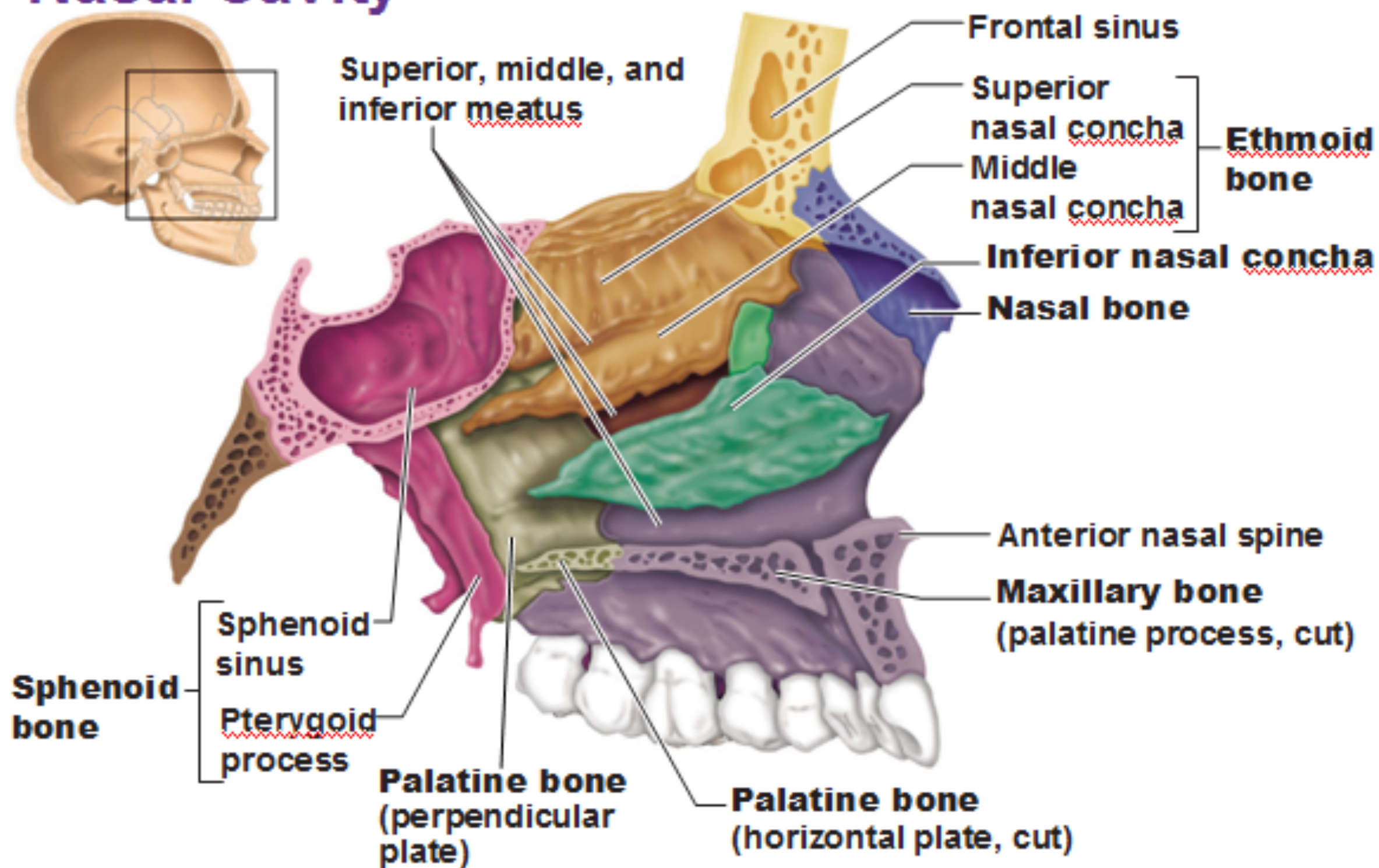




- ❑ **The main features of the lateral wall are:**
- ❑ **Three turbinates** (superior, middle and inferior)
- ❑ **Three meatus**
- ❑ **1. spheno-ethmoidal recess** : above the superior meatus and receives the ostium of sphenoidal sinus.
- ❑ **2. Superior meatus**: receives the ostia of the post. Ethmoidal cells.
- ❑ **3. Middle meatus** : most important and most complex. It receives the ostia of maxillary, anterior ethmoidal, and frontal sinuses.
- ❑ **4. Inferior meatus**: receives the nasal opening of the nasolacrimal duct.



Nasal Cavity



(a) Bones forming the left lateral wall of the nasal cavity (nasal septum removed)

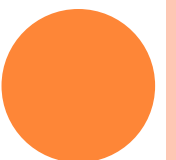
THE MAXILLA

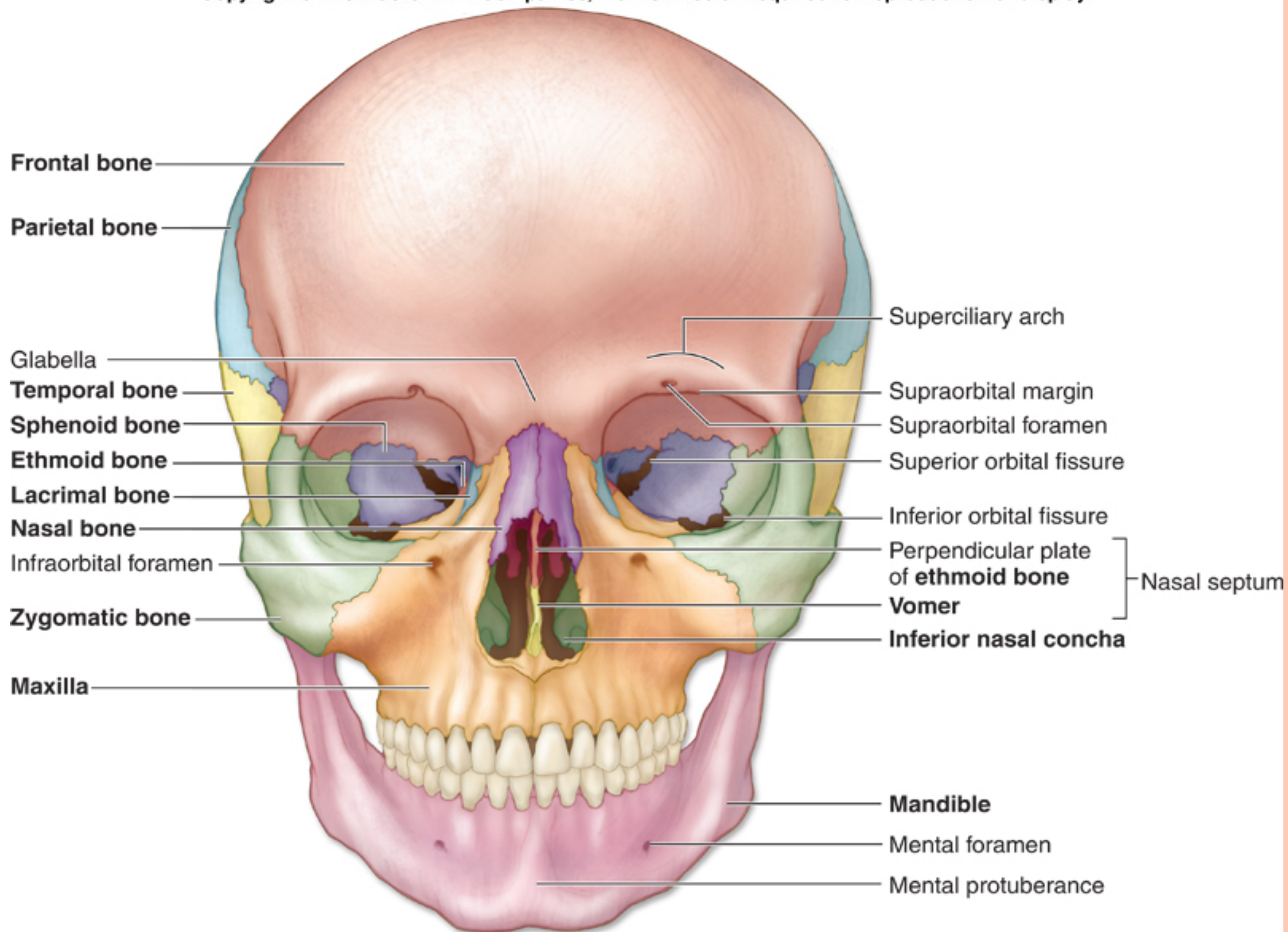
- ☐ Two maxillae from the upper jaw.
 1. The ant. Part of hard palate.
 2. Lateral wall of nasal cavities.
 3. Part of the floor of orbital cavities.

The two bones meet in the midline at **intermaxillary suture**. And form the floor of the nose.

The **alveolar process** project downward and together with the fellow forms the **alveolar arch** which carries the upper teeth.

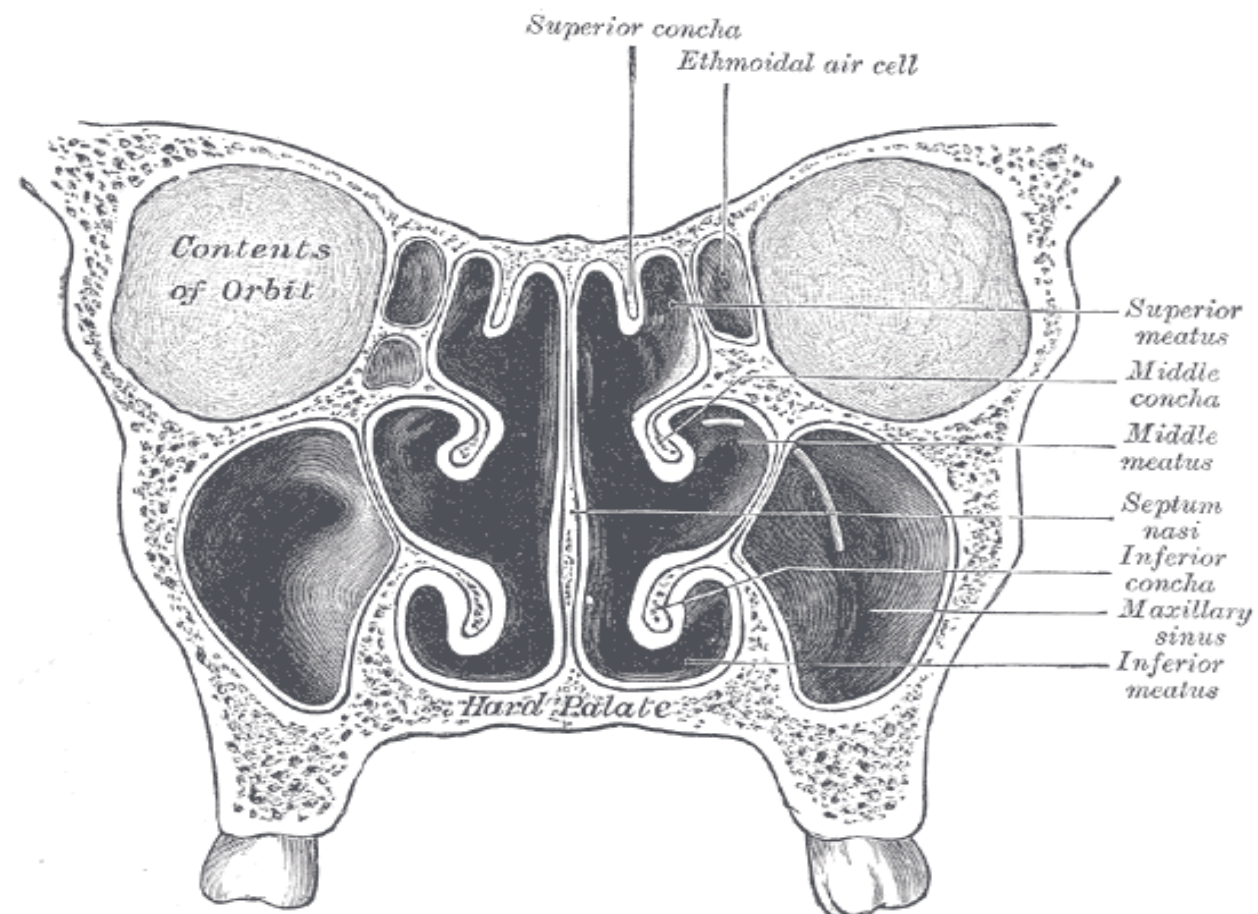
Within each maxilla is a large pyramid-shaped cavity lined with mucous membrane called the **maxillary sinus**.





MAXILLARY SINUS

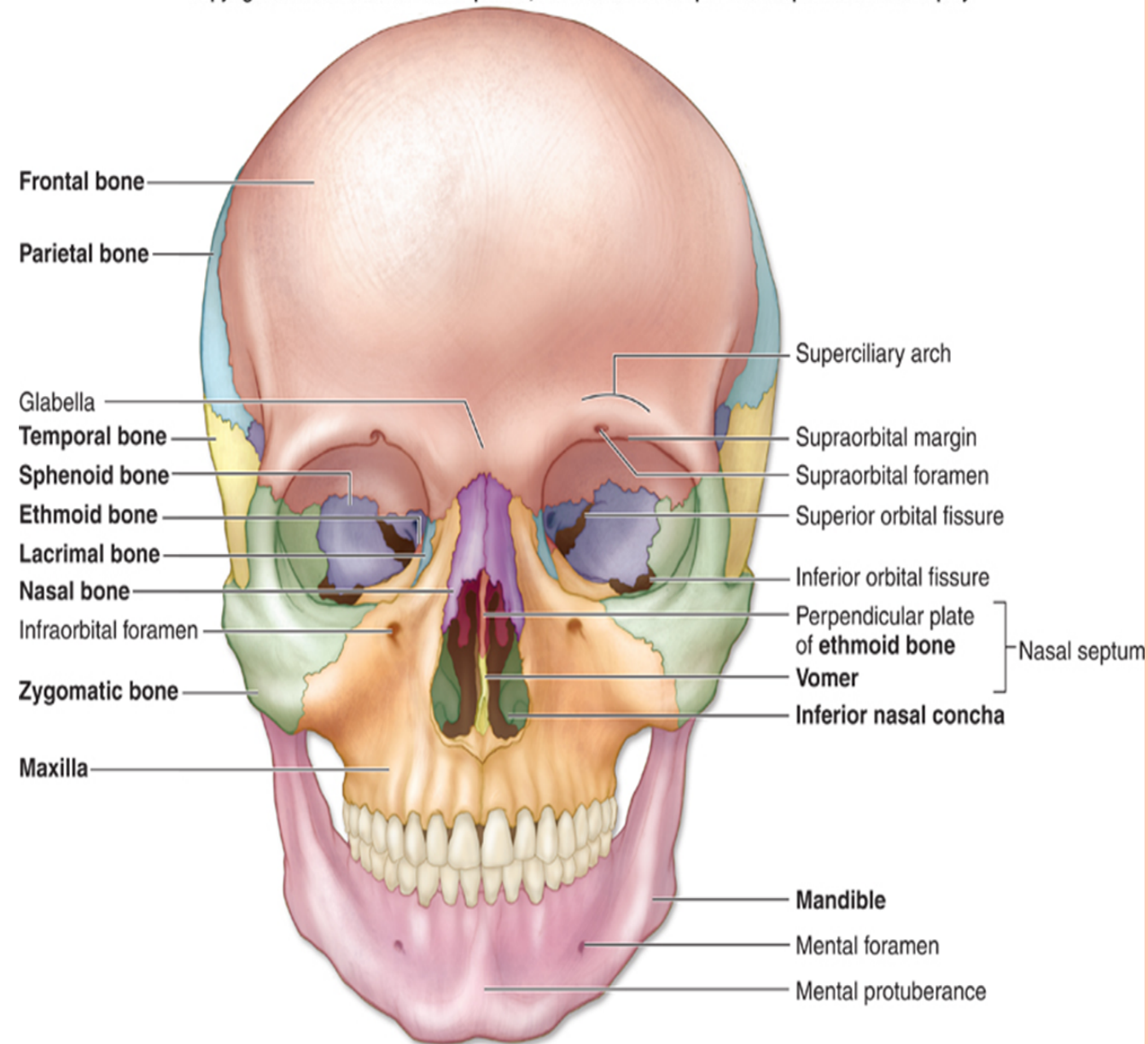
- ❑ Is the largest of sinuses with an average capacity of about 15 ml in the adult. It is pyramidal in shape, the base medially, the apex in the zygomatic portion of the maxilla.
- ❑ **Medial wall:** between the sinus and nasal cavity
- ❑ **Roof:** is the thin floor of the orbit.
- ❑ **Floor:** alveolar process and hard palate.



ZYGOMATIC BONE

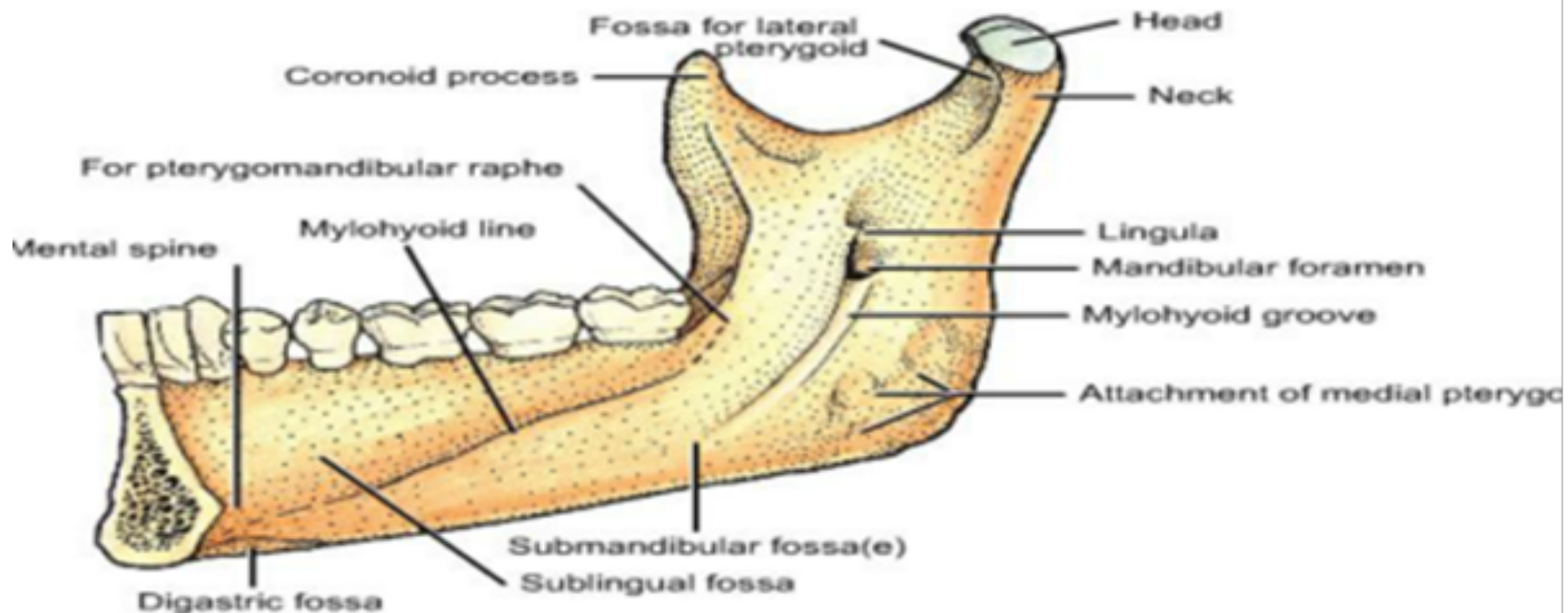
- ? Form the prominence of the cheek .
- ? Superiorly it form the floor and lateral wall of the orbit.
- ? Medially articulate with maxilla.
- ? Laterally, it articulate with zygomatic process of the temporal bone to form the zygomatic arch
- ? The zygomatic bone perforated by 2 foramina for the zygomaticofacial and zygomaticotemporal nerves

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THE MANDIBLE

- ? Or lower jaw consist of horizontal (horse shoe shape) body and 2 vertical rami
- Symphysis menti,
- mental foramen(below 2nd premolar 2 mental spine superior and inferior (midline medially) attaches genoglossus +genohyoid muscle
- Body meets rami at the angle of the mandible
- Mylohyoid line : below it submandibular fossa
- Above it sublingual fossa
- Alveolar process: Superiorly



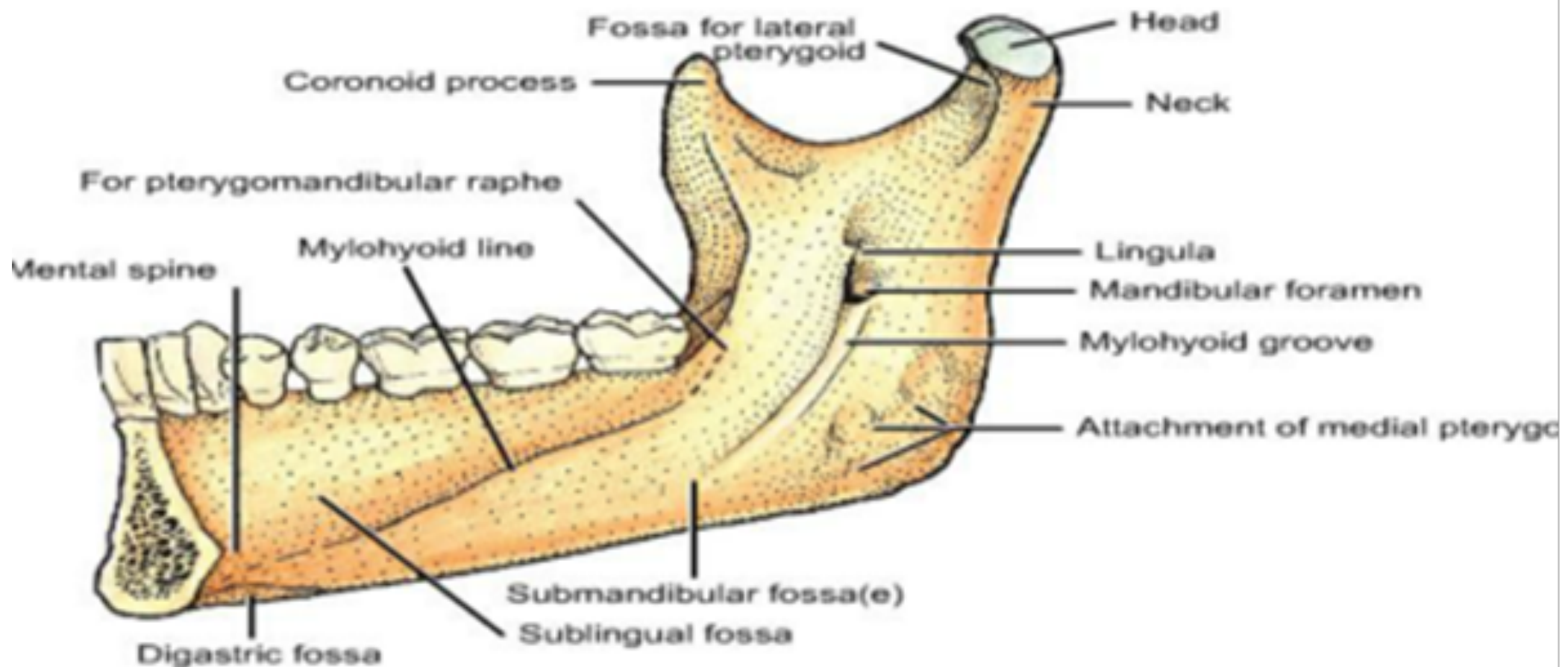
? **Lingula:** small projection in front of the mandibular foramen (for sphenomandibular ligament)

- **Mandibular canal:** lead to mental foramen

- **Incisive foramen :** continuation of the mandibular canal.

- **Coronoid process:** attachment of the temporalis Muscle Head.

- **Neck :** short below condyloid process.



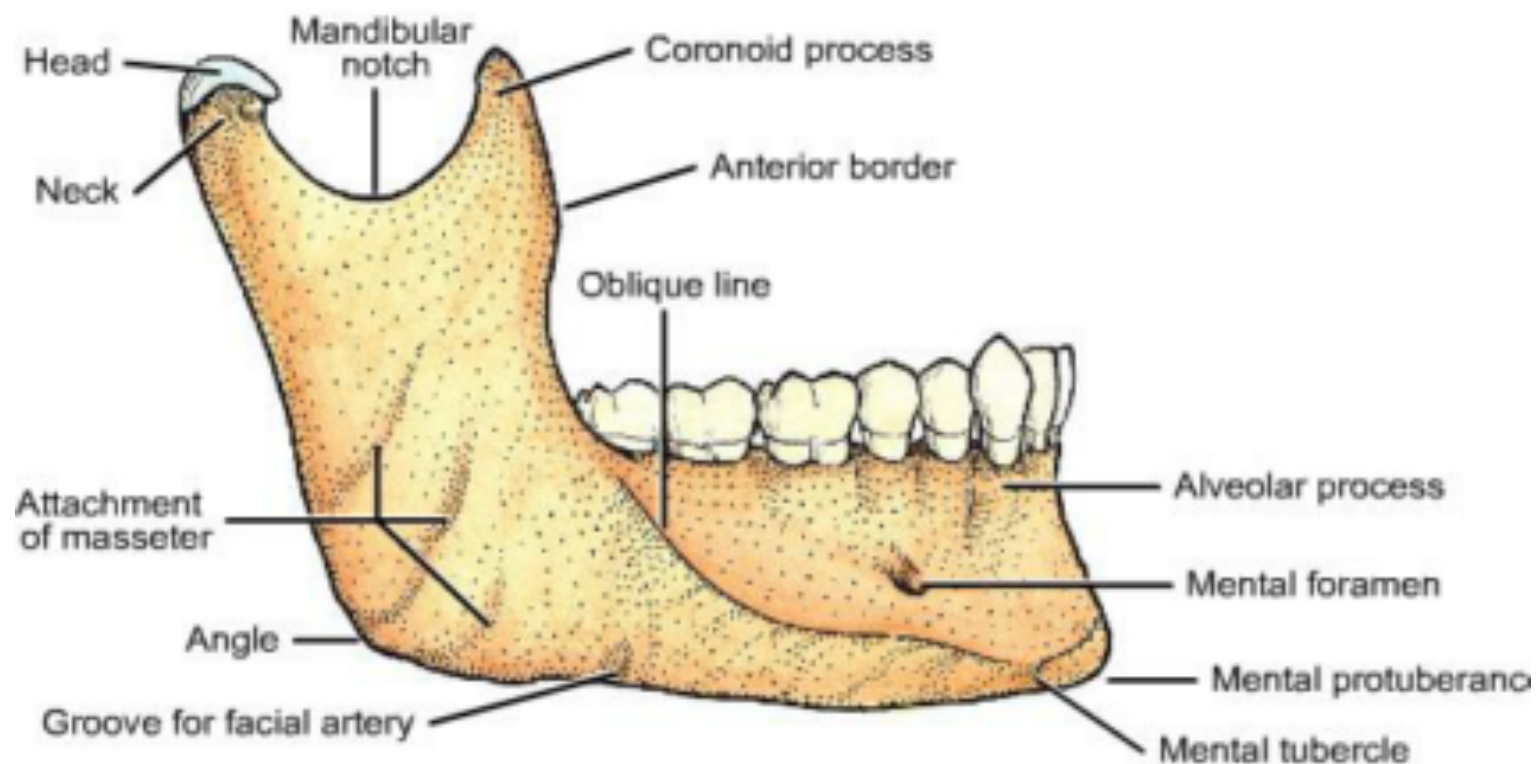
? Temporomandibular joint

? Anterior coronoid process

- Posterior condyloid process

- Mandibular notch

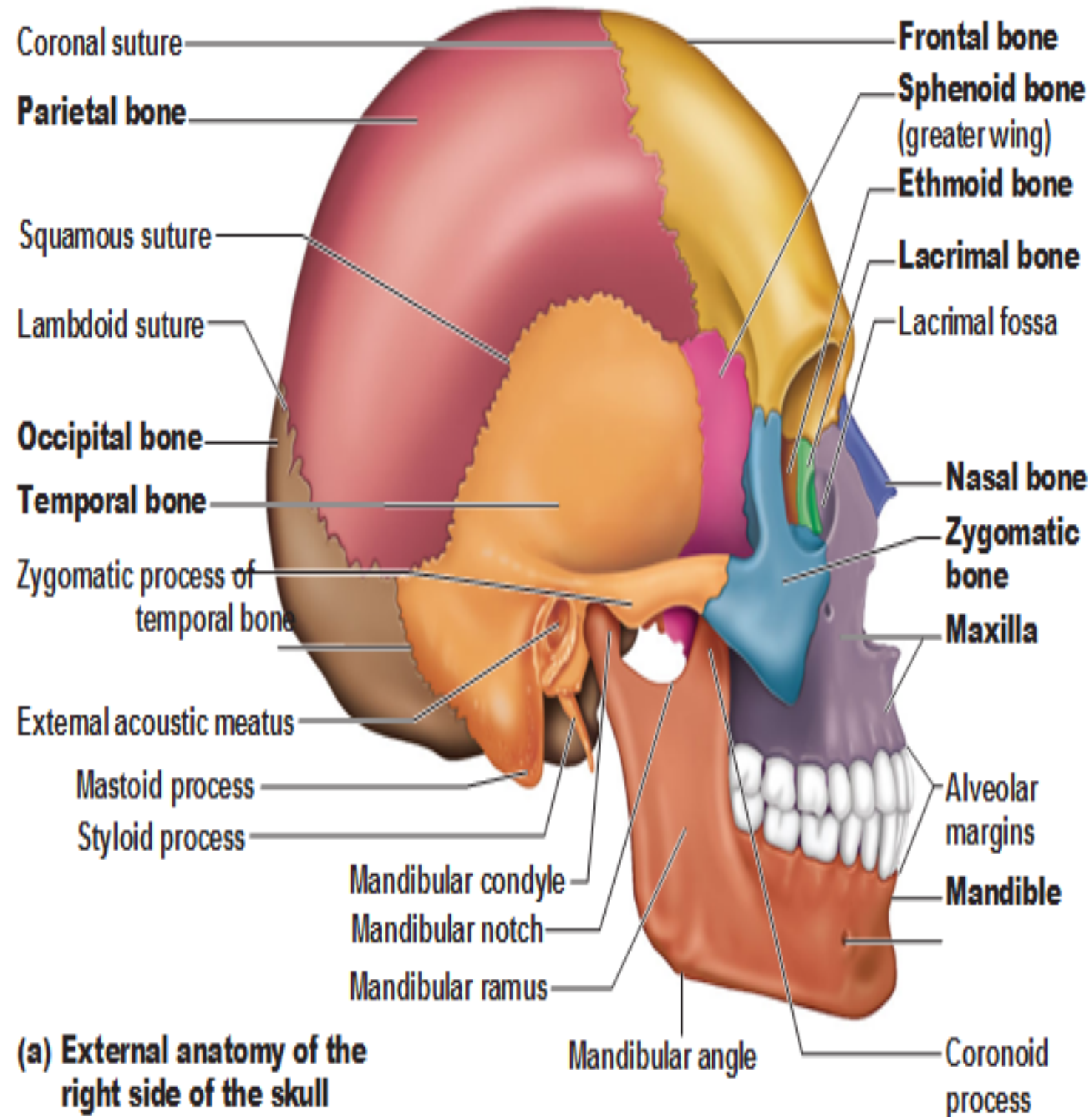
? Mandibular foramen on medial surface



LATERAL VIEW OF THE SKULL

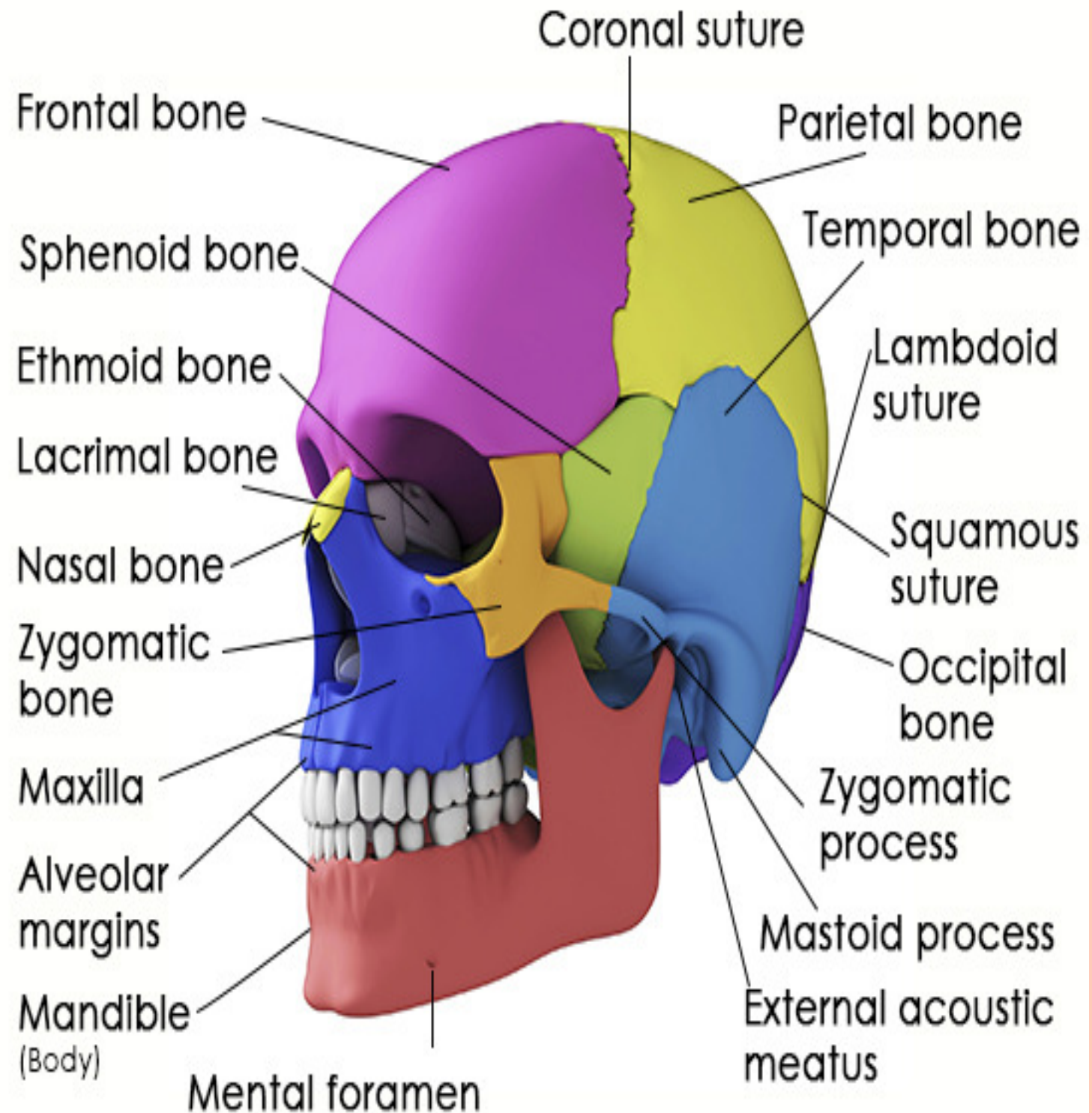
Skull – Lateral aspect

- ? Frontal bone articulate with parietal bone at **coronal suture**.
- ? Parietal bone articulate with each other at **sagittal suture**.
- ? They articulate with occipital bone at **lambdoid suture**.
- ? The temporal bones with parietal bones at **squamous suture**

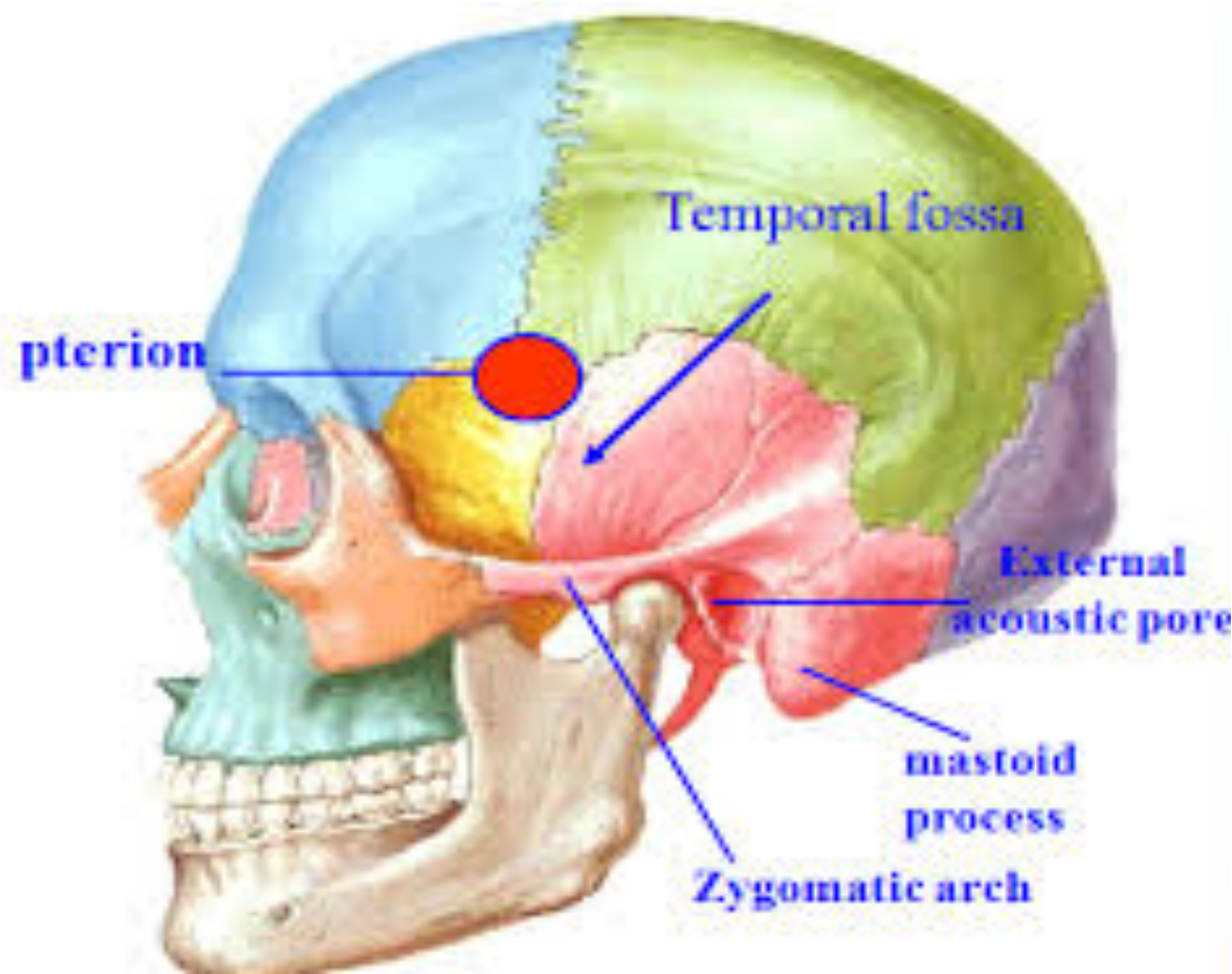


? Lateral wall completed from the side by:

- ? 1. Squamous part of occipital bone**
- ? 2. Parts of temporal bone (squamous, tympanic, mastoid 3. process, styloid process, and zygomatic process)**
- 4. Greater wing of sphenoid.**



- ❓ **Pterion.** an H-shaped bony neurological landmark located on the side of the bony skull in the temporal region, where four bones meet. These bones include the frontal bone, parietal bone, greater wing of the sphenoid bone, and the temporal bone. The **pterion** marks the front end of the parietosquamous suture on the skull's side.
- ❓ Clinically it is important area because it overlies the anterior division of the middle meningeal artery and vein it lies 2.5 cm behind the frontal process of the zygomatic bone and about 4 cm above the zygomatic arch



- ❓ Clinically, the pterion is significant because the anterior division of the middle meningeal artery runs beneath it, on the inner side of the skull, which is quite thin at this point. The combination of both a vital artery in this area and the relatively thin bone structure make it clinically important.
- ❓ A blow to the pterion (e.g. in boxing) may rupture the artery causing an extradural haematoma. The pterion may also fracture indirectly. Blows to the top or back of the head may not cause fracture at the site of impact, but may place sufficient force on the skull that its weakest part, the pterion, will fracture.



Thank you

