MUSCULOSKELETAL SYSTEM

THE SKULL

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Sunday 23 February 2025

Bones of the Skull

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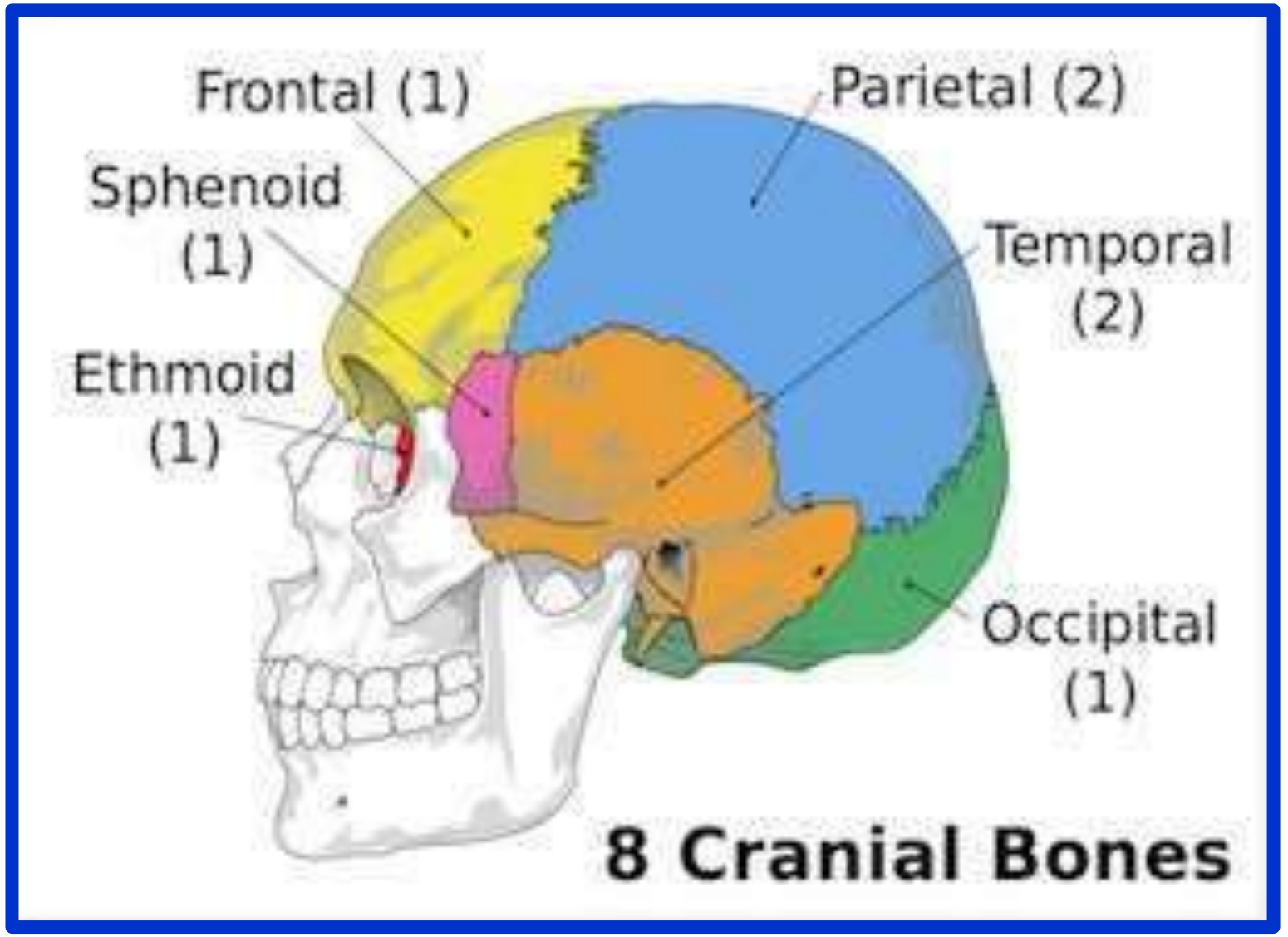
The cranium consists of the following bones, two of which are paired

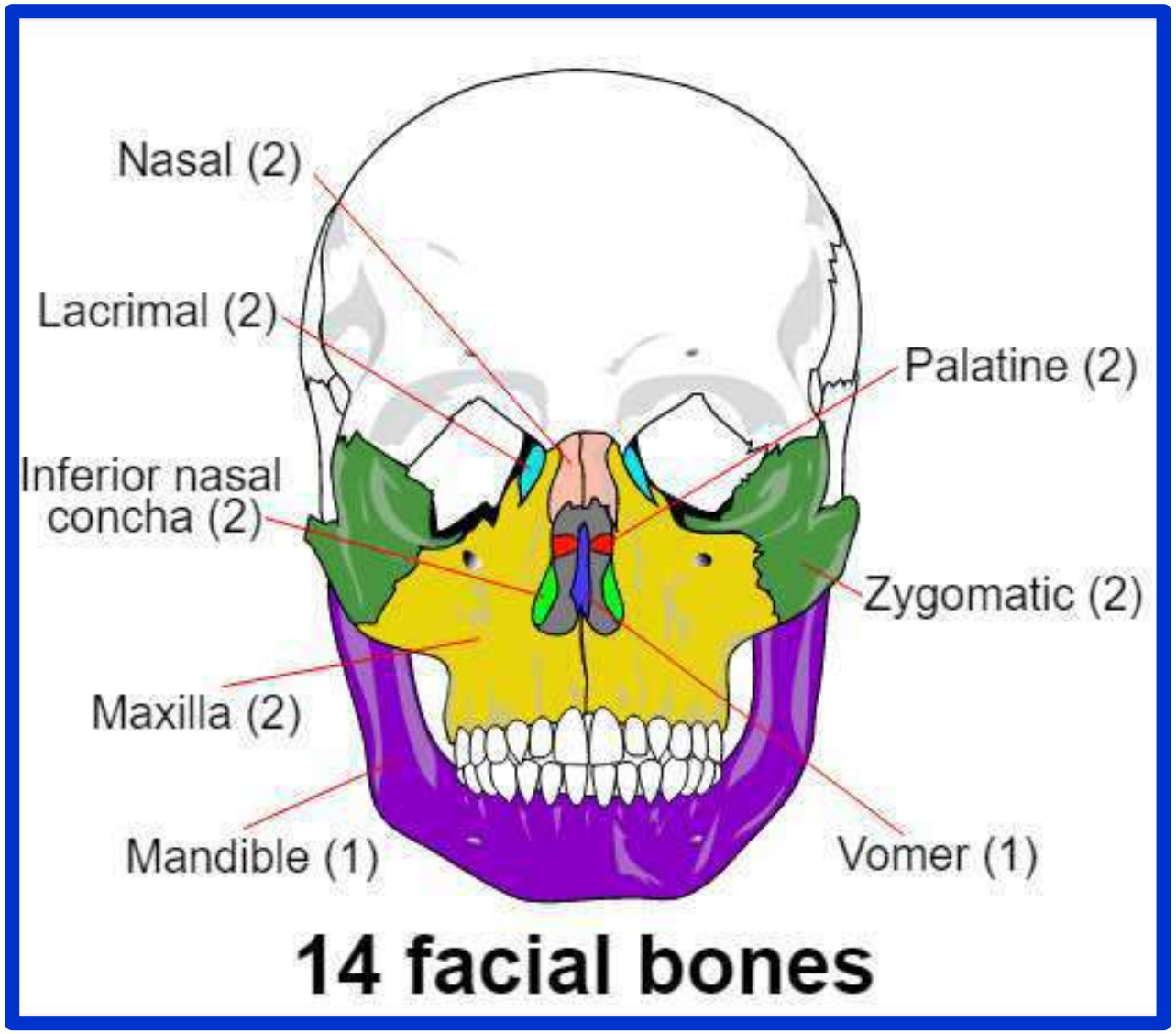
- ✓ *Frontal bone: 1*
- ✓ *Parietal bones: 2*
- ✓ *Occipital bone: 1*
- ✓ *Temporal bones: 2*
- ✓ *Sphenoid bone: 1*
- ✓ *Ethmoid bone: 1*



Bones of the Skull

***The facial bones** consist of the following, two of which are single:*

- ✓ ***Zygomatic bones:** 2*
- ✓ ***Maxillae:** 2*
- ✓ ***Nasal bones:** 2*
- ✓ ***Lacrimal bones:** 2*
- ✓ ***Vomer:** 1*
- ✓ ***Palatine bones:** 2*
- ✓ ***Inferior conchae:** 2*
- ✓ ***Mandible:** 1*



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External Views of the Skull

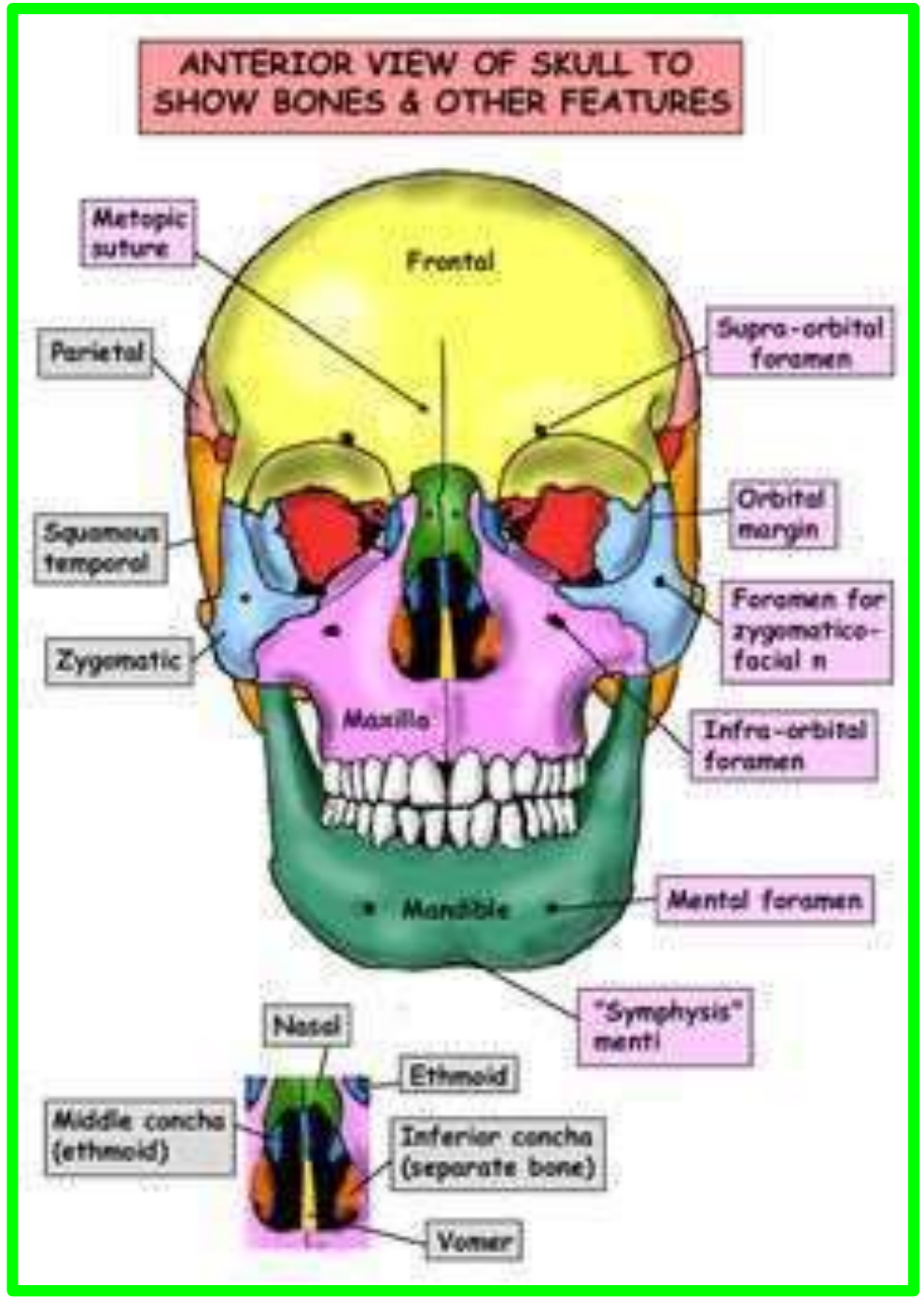
Anterior View of the Skull

❖*The frontal bone*, or forehead bone, curves downward to make the upper margins of the orbits

❖The *superciliary arches* and *the supraorbital notch*, or *foramen* ,can be recognized.

❖The orbital margins are bounded by:

- ✓*The frontal bone* superiorly,
- ✓*The zygomatic bone* laterally,
- ✓*The maxilla* inferiorly,
- ✓*The processes of the maxilla and frontal bone* medially.



Anterior View of the Skull

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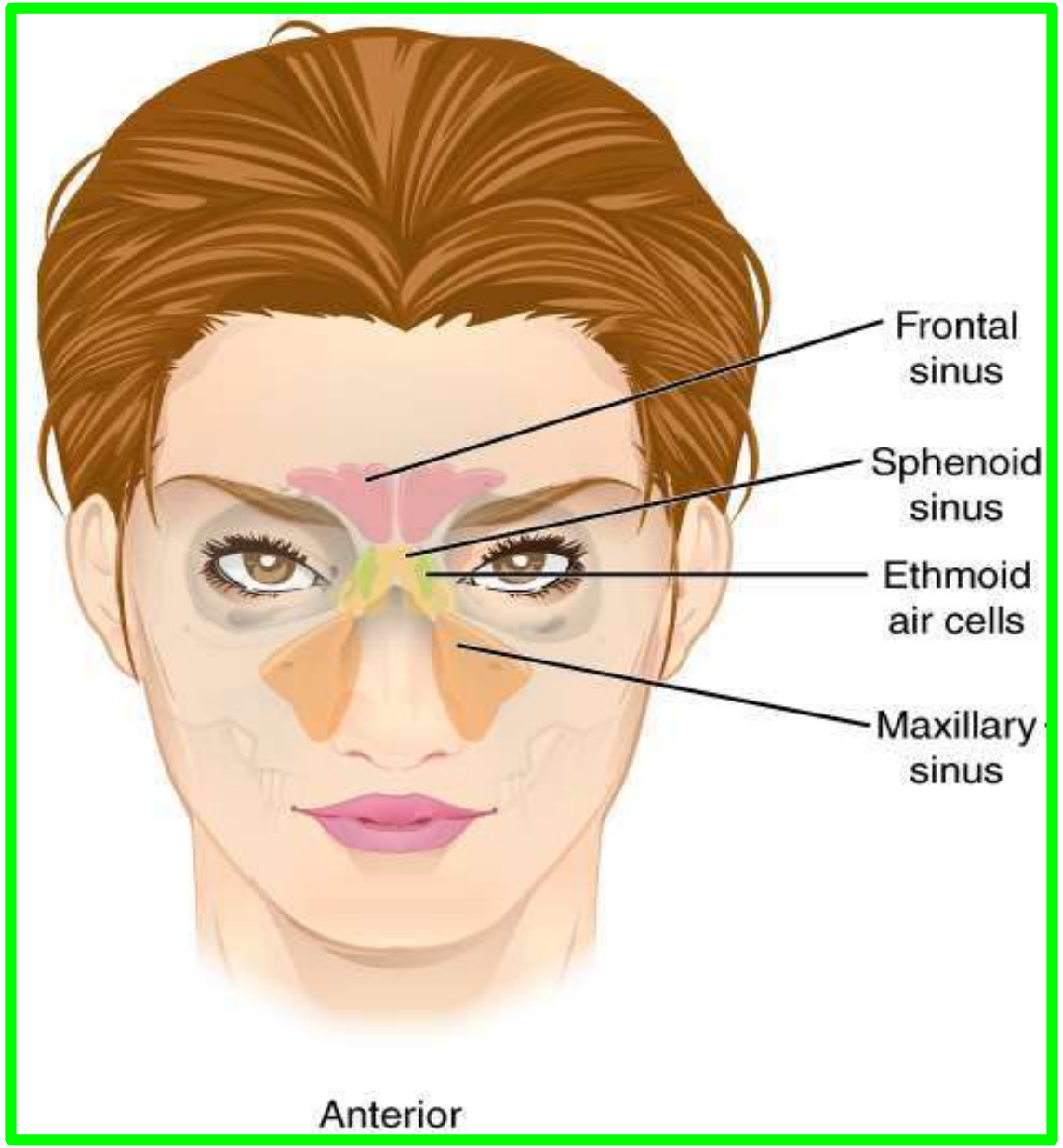
❖*Within the frontal bone, just above the orbital margins, are two hollow spaces lined with mucous membrane called the frontal air sinuses.*

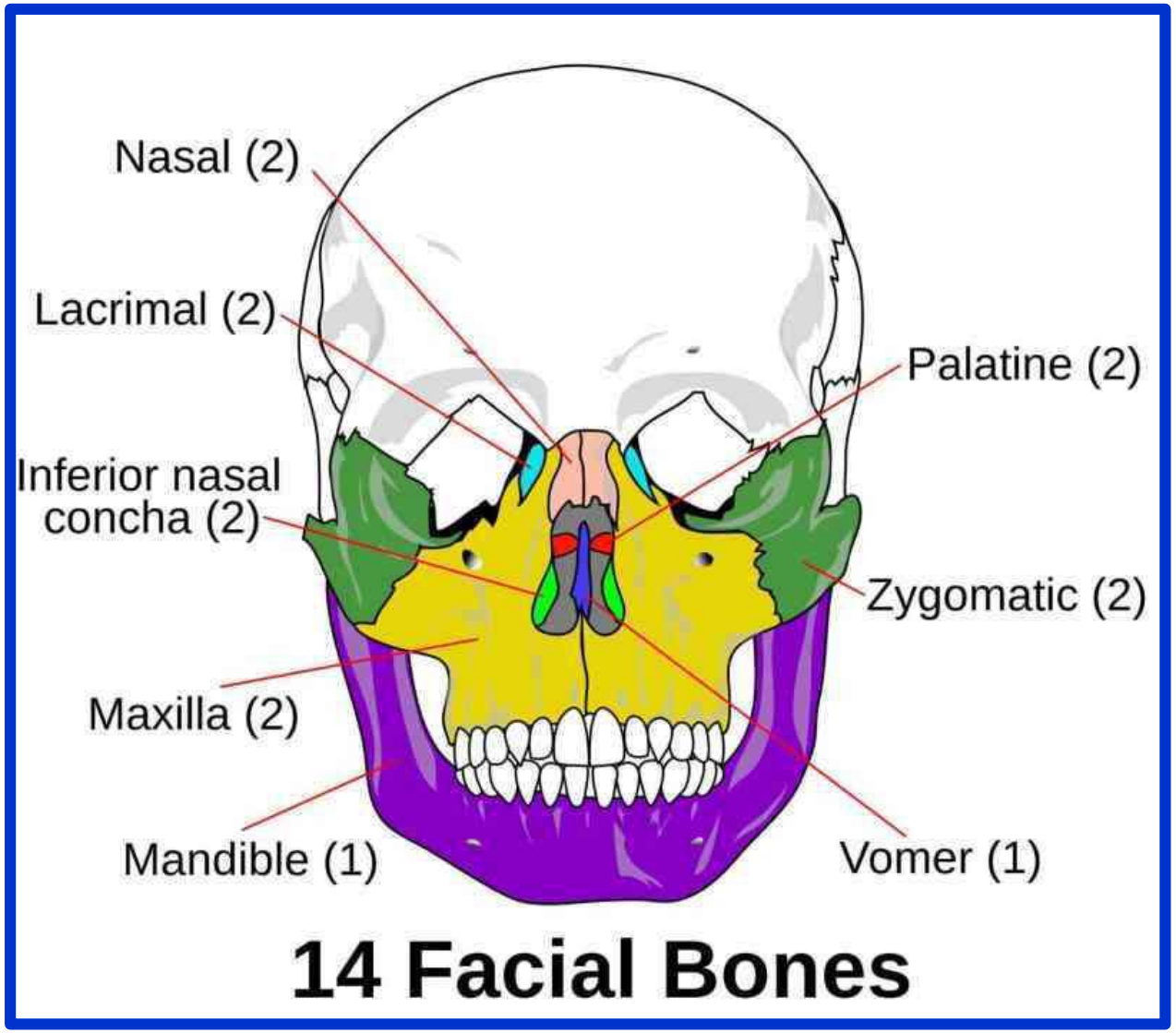
These communicate with the nose and serve as voice resonators.



Anterior View of the Skull

❖*The two nasal bones form the bridge of the nose. Their lower borders, with the maxillae, make the anterior nasal aperture.*

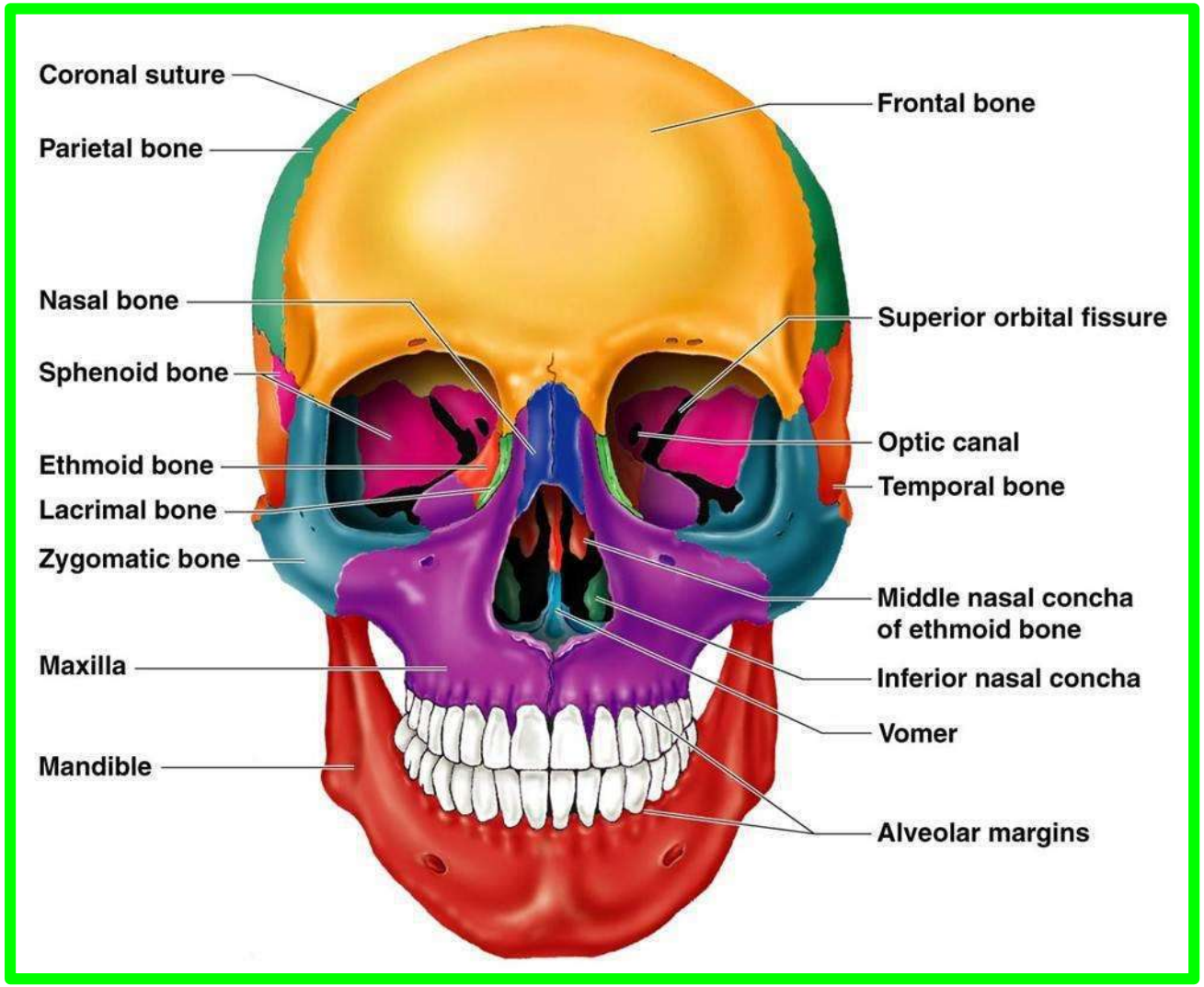
❖*The nasal cavity is divided into two by the bony nasal septum, which is largely formed by The Vomer.*



Anterior View of the Skull

❖*The two maxillae form the upper jaw, the anterior part of the hard palate, part of the lateral walls of the nasal cavities, and part of the floors of the orbital cavities.*

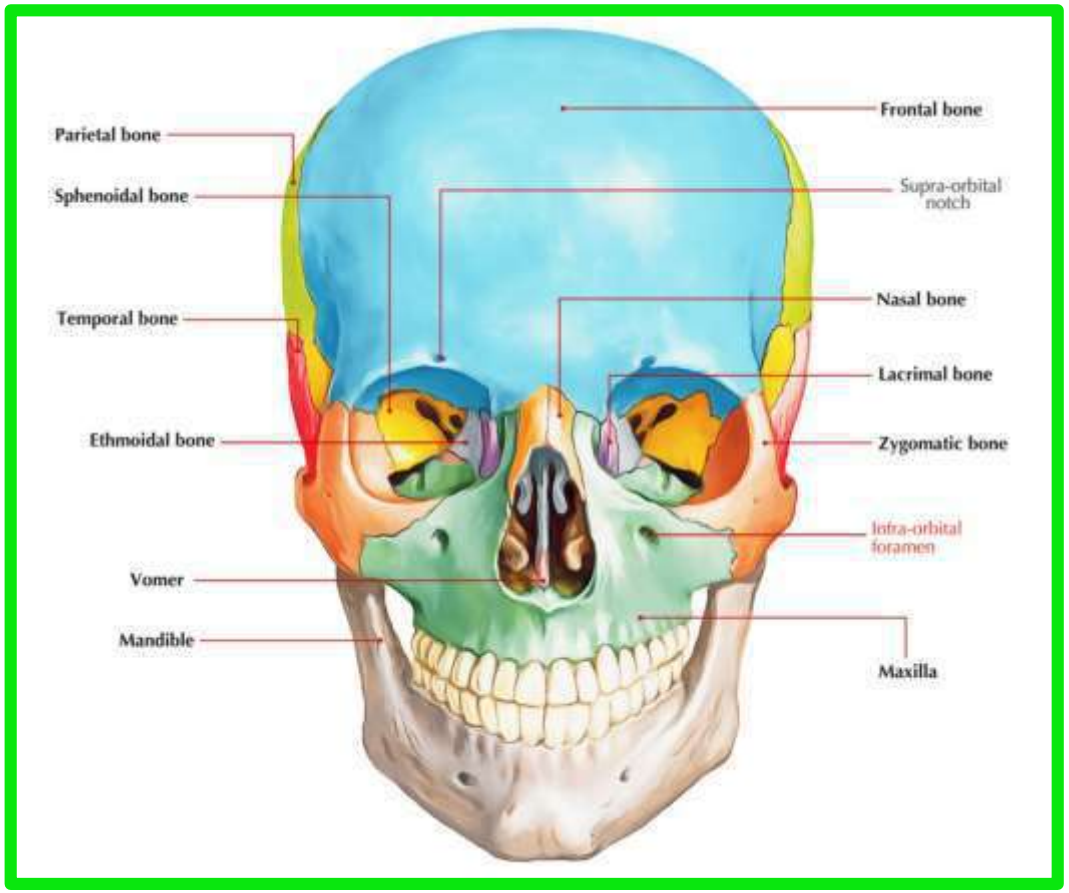
❖*The two bones meet in the midline at the intermaxillary suture and form the lower margin of the nasal aperture.*

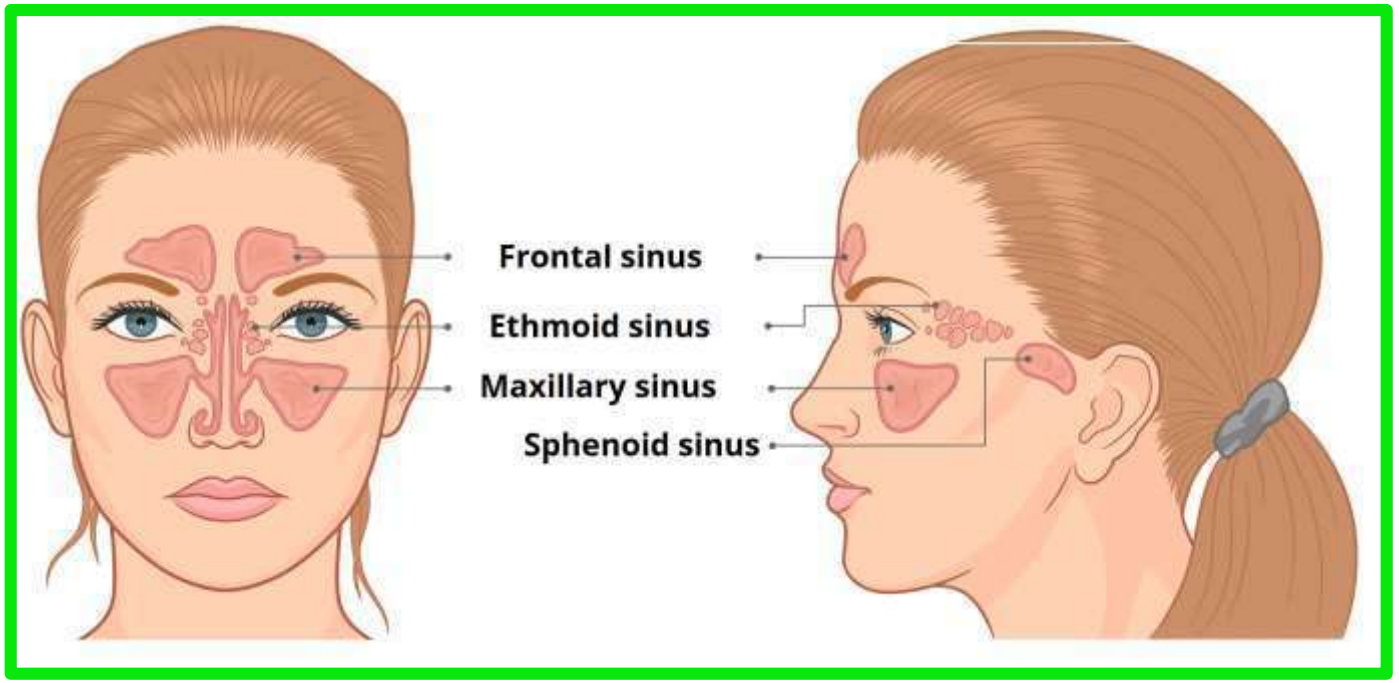


Anterior View of the Skull

❖Below the orbit, the maxilla is perforated by the *infraorbital foramen*.

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



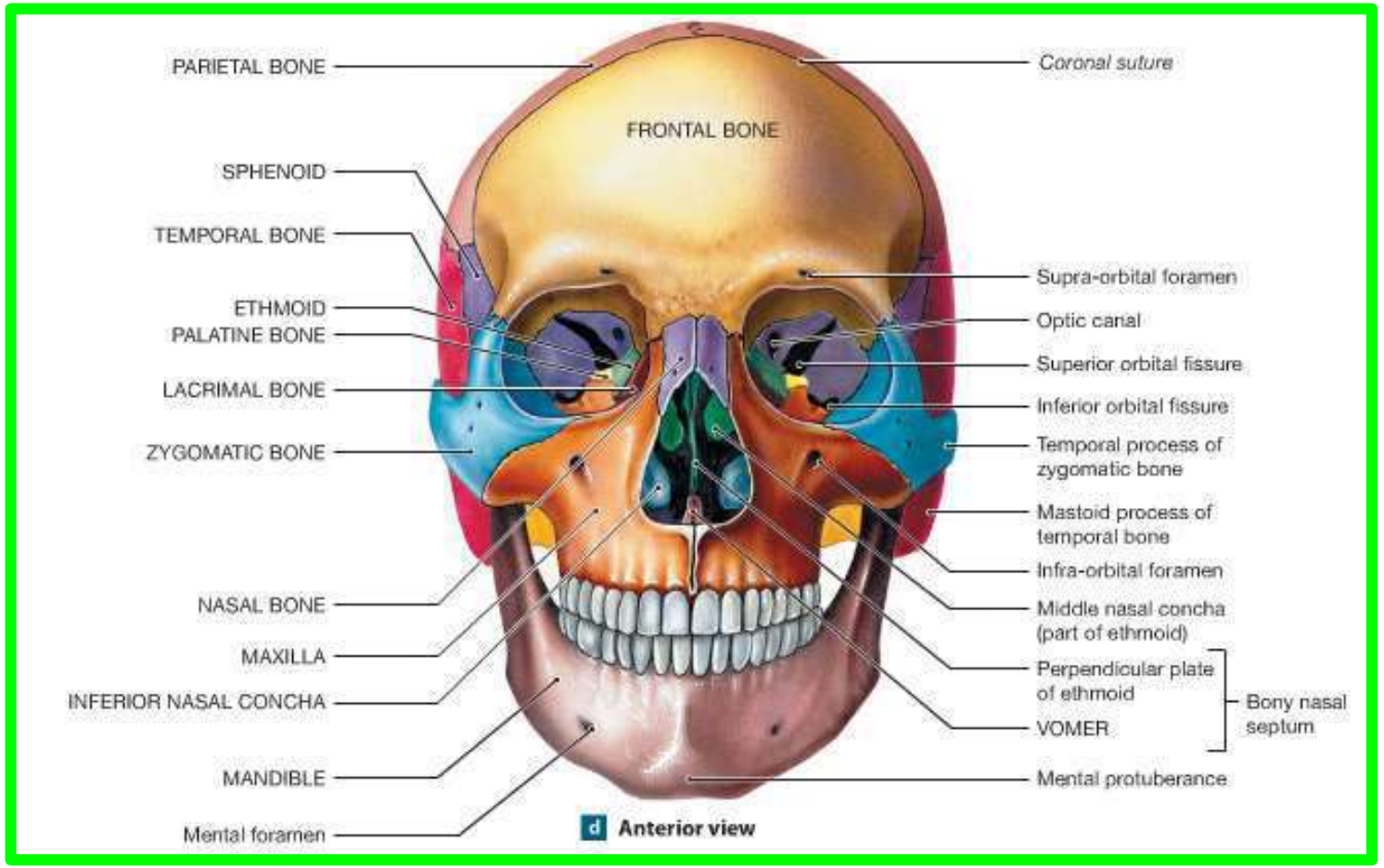


Anterior View of the Skull

❖*The Zygomatic bone* forms *the prominence of the cheek* and *part of the lateral wall and floor of the orbital cavity.*

❖*The Zygomatic bone* is *perforated by two foramina for the zygomaticofacial* and *zygomaticotemporal nerves*

❖*The mandible*, or *lower jaw*, *consists of a horizontal body and two vertical rami*

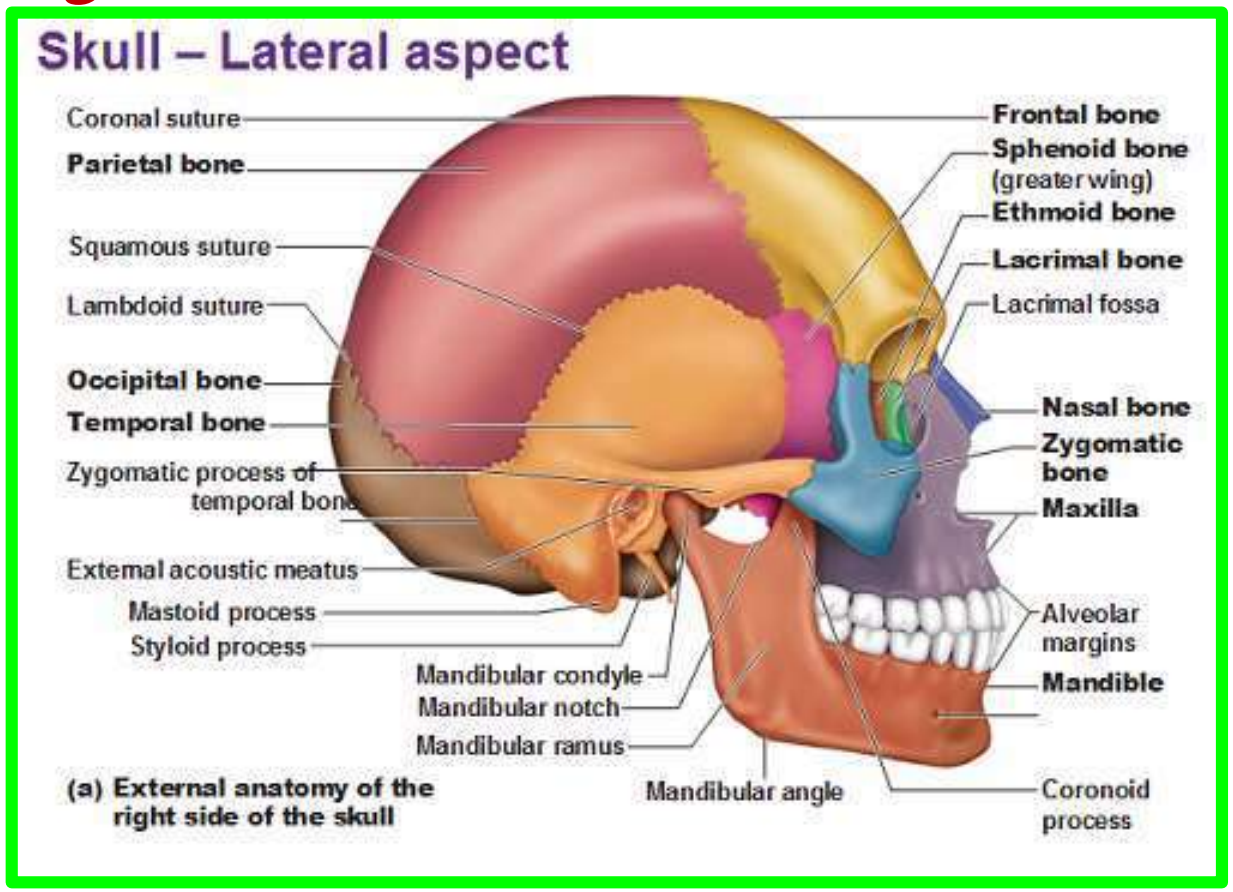


Lateral View of the Skull

✓*The frontal bone* forms the anterior part of the side of the skull and articulates with *the parietal bone* at *the coronal suture*

✓*The parietal bones* form the sides and roof of the cranium and articulate with each other in the midline at *the sagittal suture.*

✓*The parietal bones* articulate with *the occipital bone* behind, at *the lambdoid suture.*



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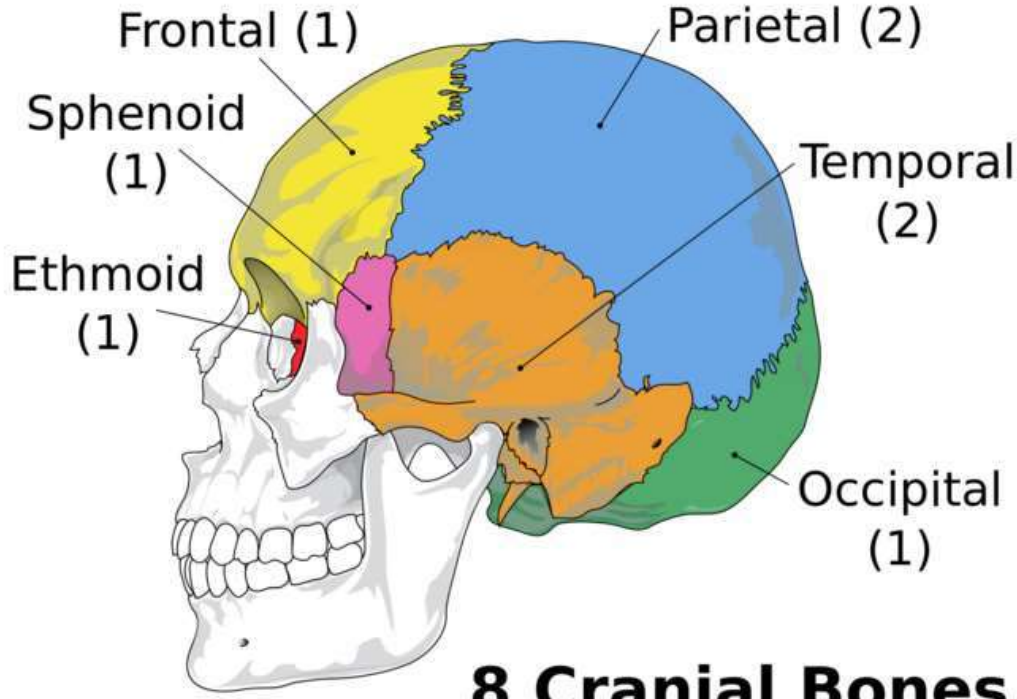
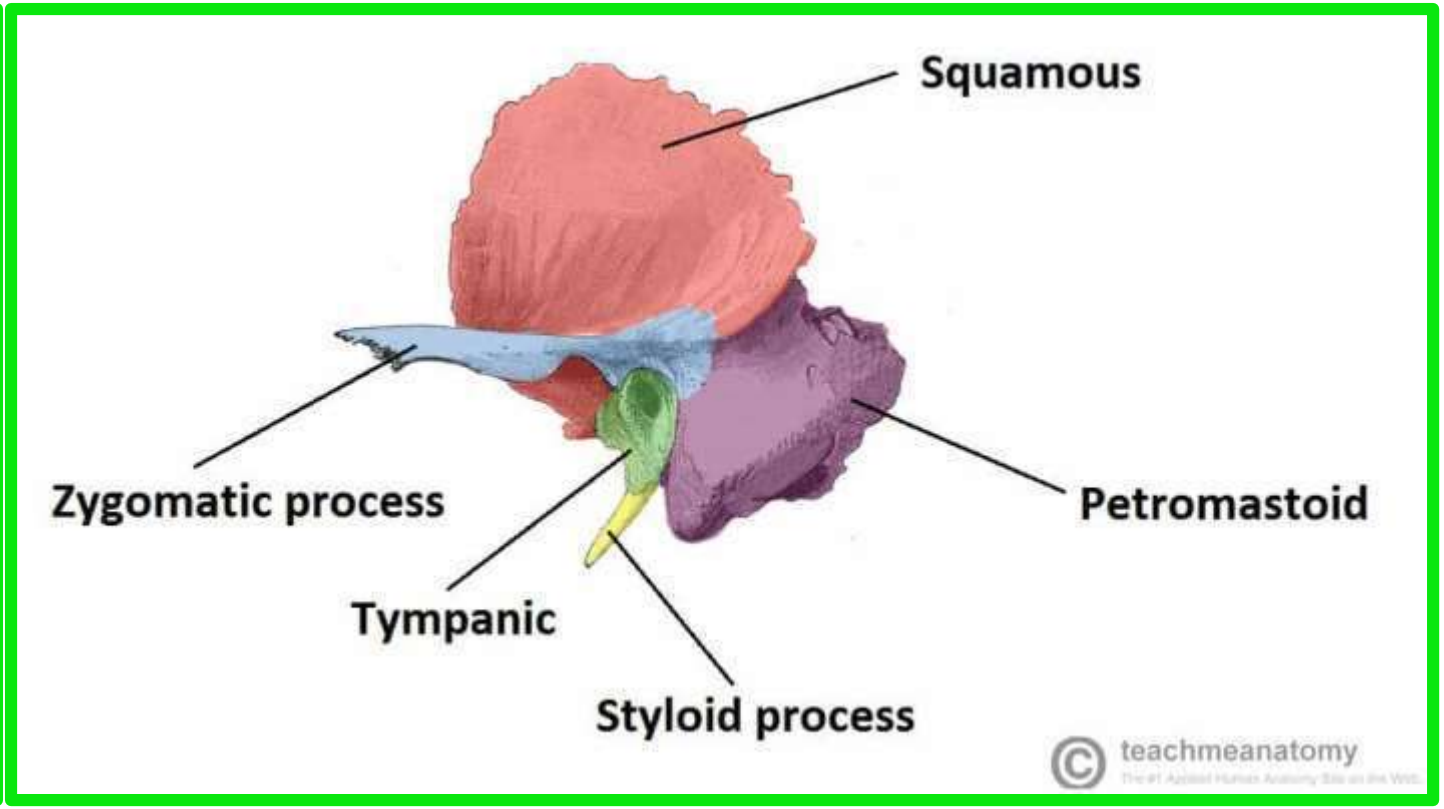
Lateral View of the Skull

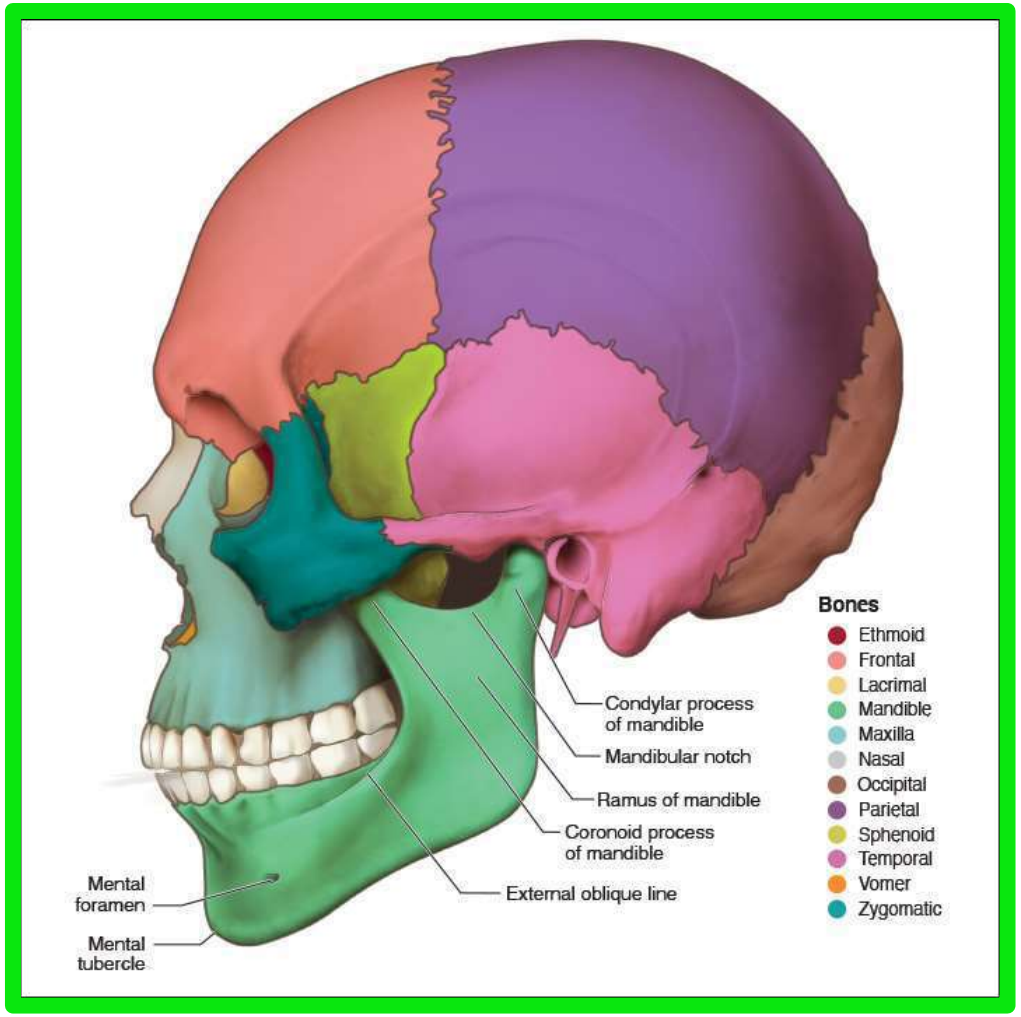
❖*The skull is completed at the side by the squamous part of the occipital bone; parts of the temporal bone, namely,*
The squamous, tympanic, mastoid process, styloid process, and zygomatic process; and the greater wing of the sphenoid.

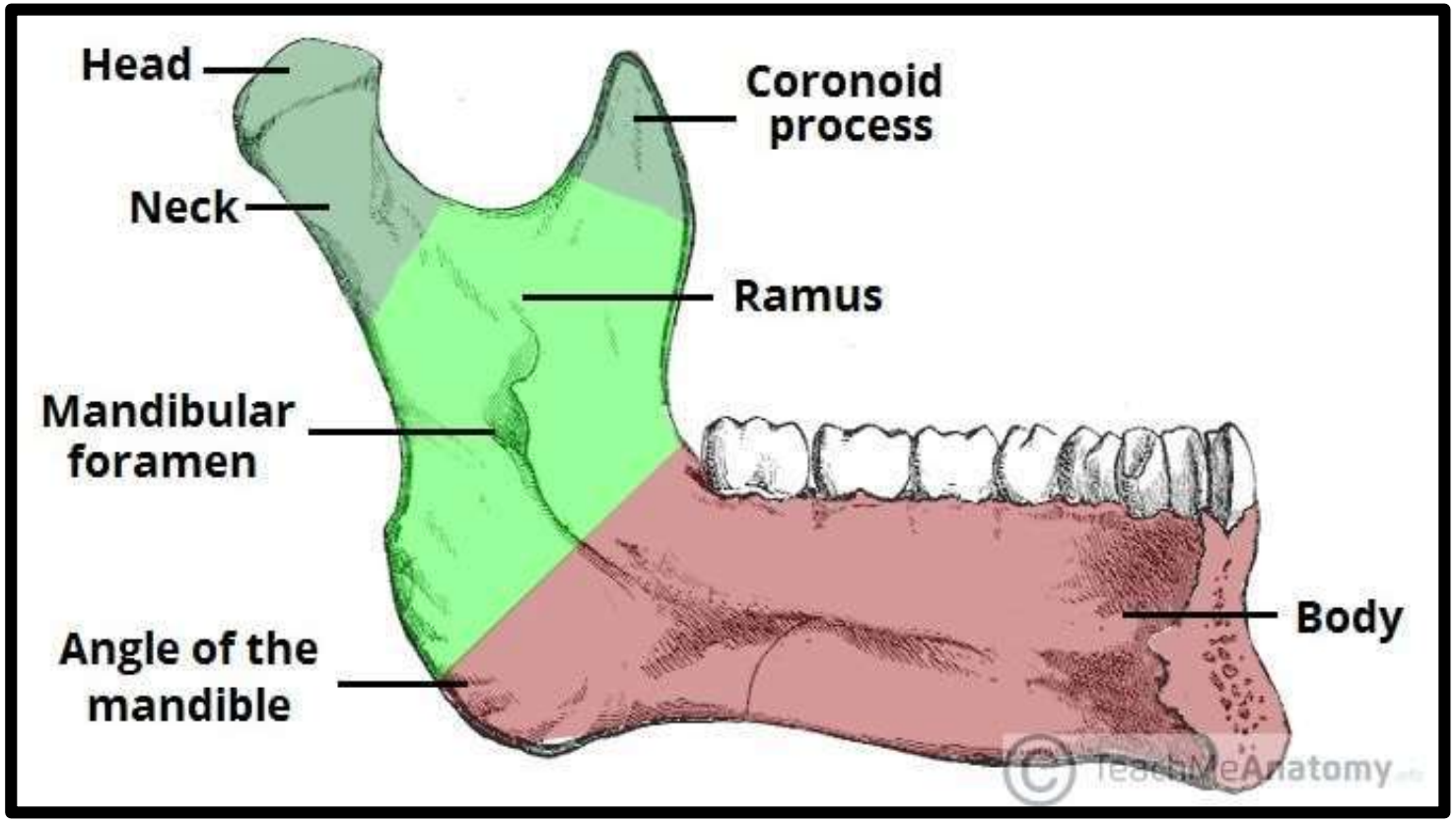




Lateral View of the Skull

❖*The ramus and body of the mandible lie inferiorly*





Lateral View of the Skull

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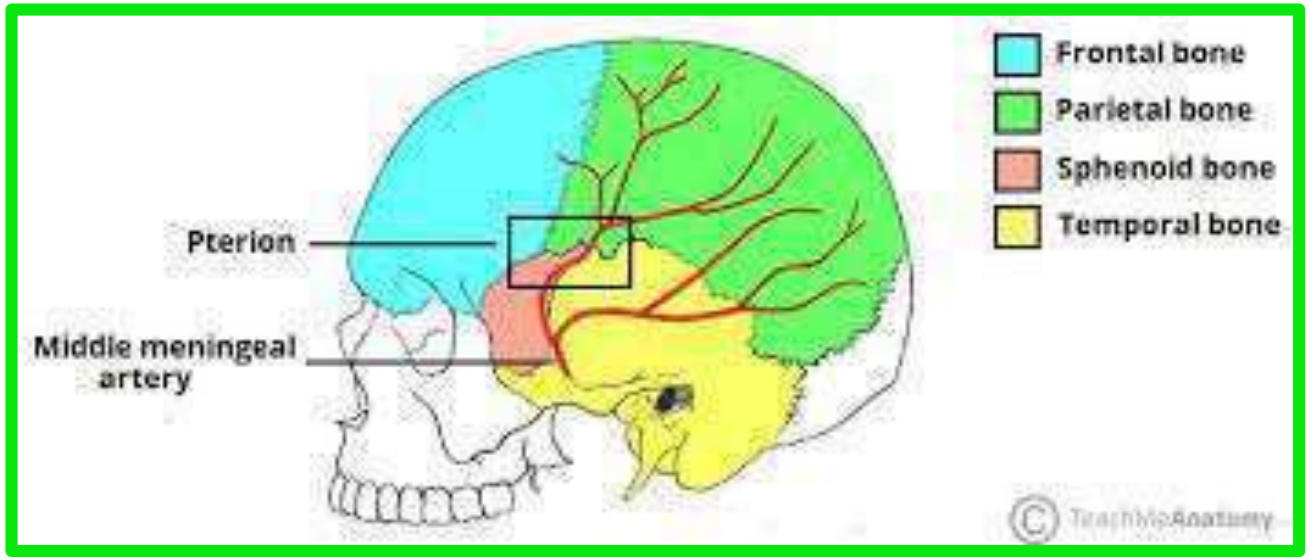
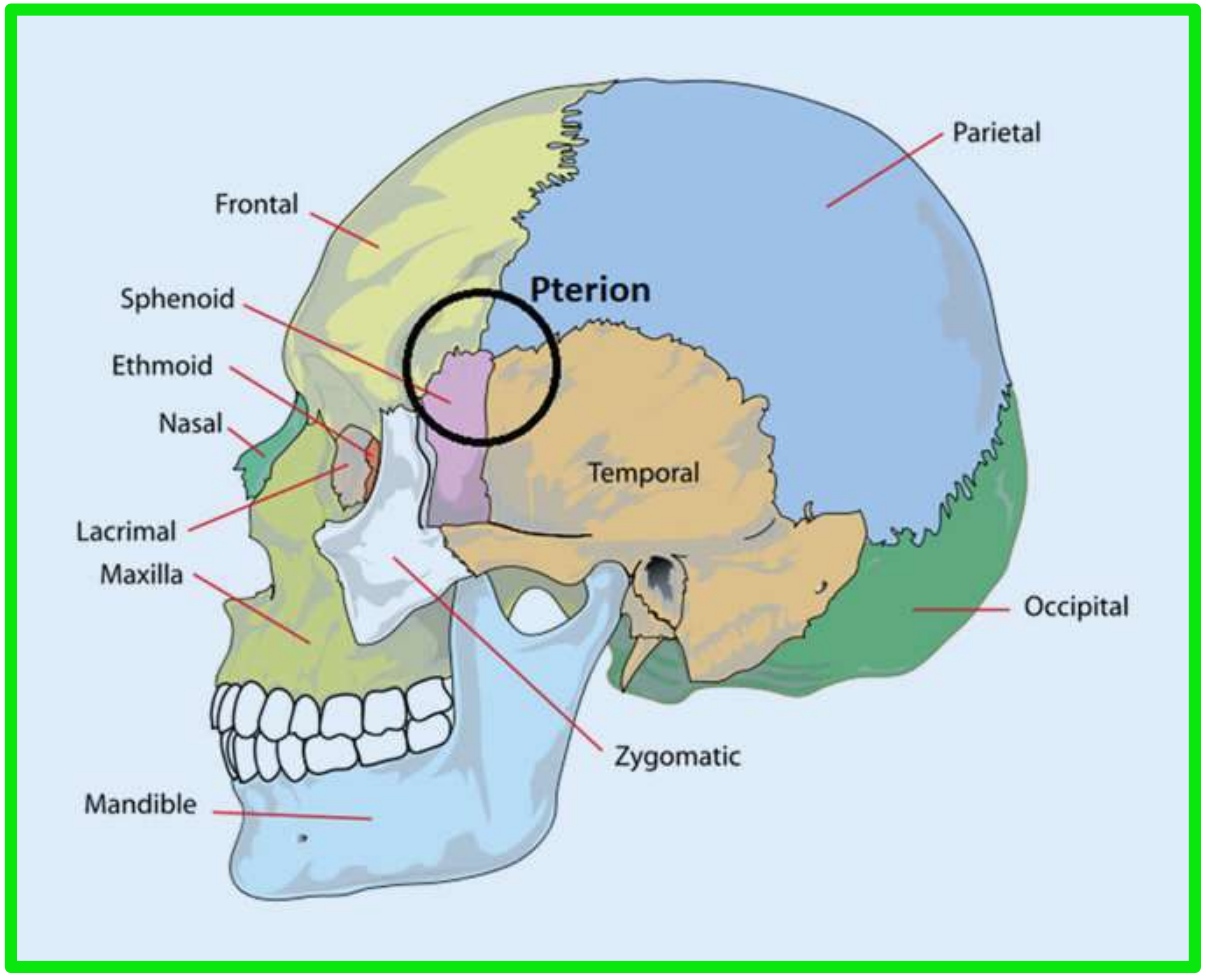
❑Note that the thinnest part of the lateral wall of the skull is where the anteroinferior corner of the parietal bone articulates with the greater wing of the sphenoid; this point is referred to as the pterion.

❑Clinically, the pterion is an important area because it overlies the anterior division of the middle meningeal artery and vein.

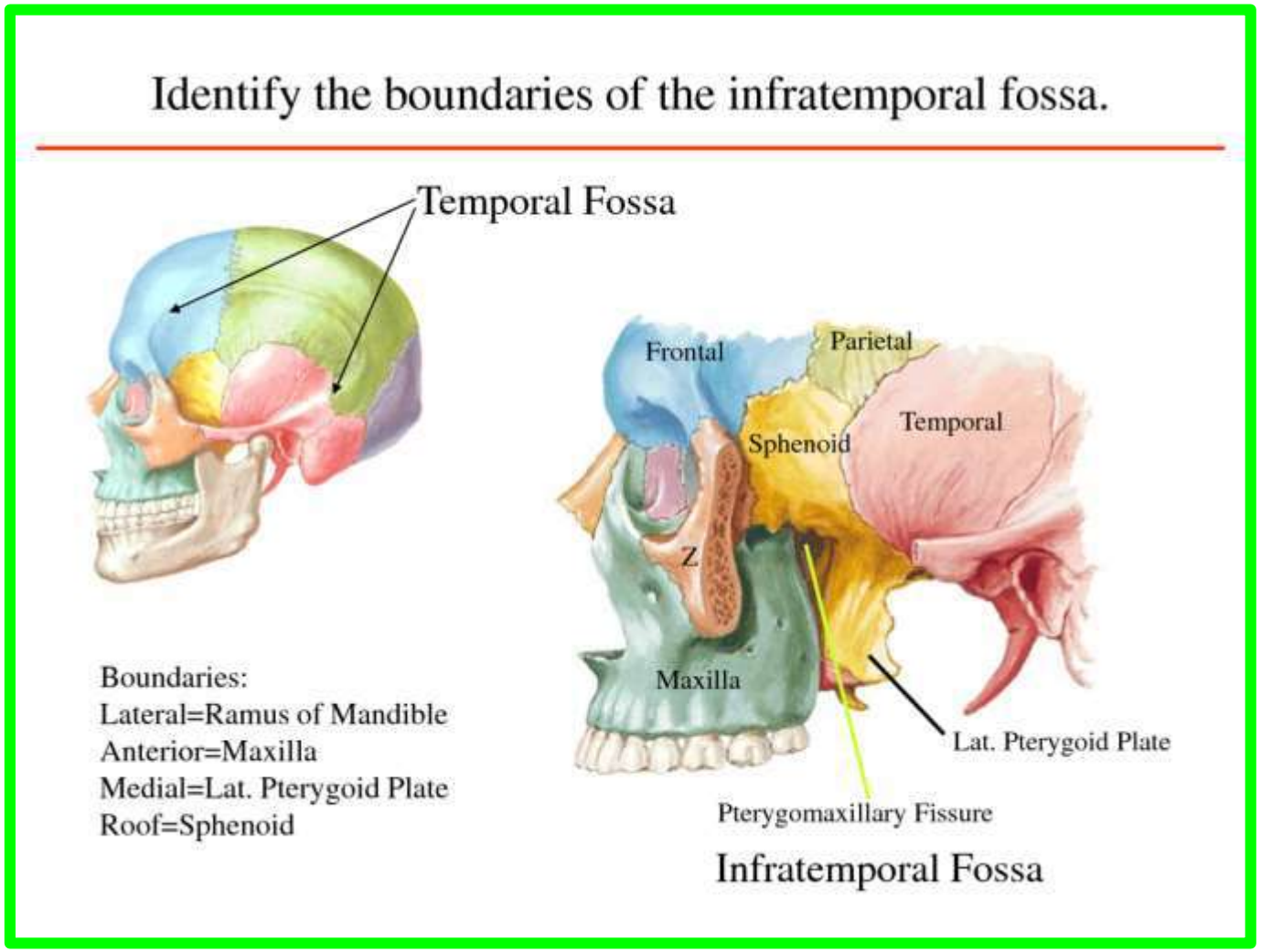




Lateral View of the Skull

- ***The infratemporal fossa*** ***lies below the infratemporal crest on the greater wing of the sphenoid.***

- ***The pterygomaxillary fissure*** ***is a vertical fissure that lies within the fossa between the pterygoid process of the sphenoid bone and back of the maxilla. It leads medially into the pterygopalatine fossa***



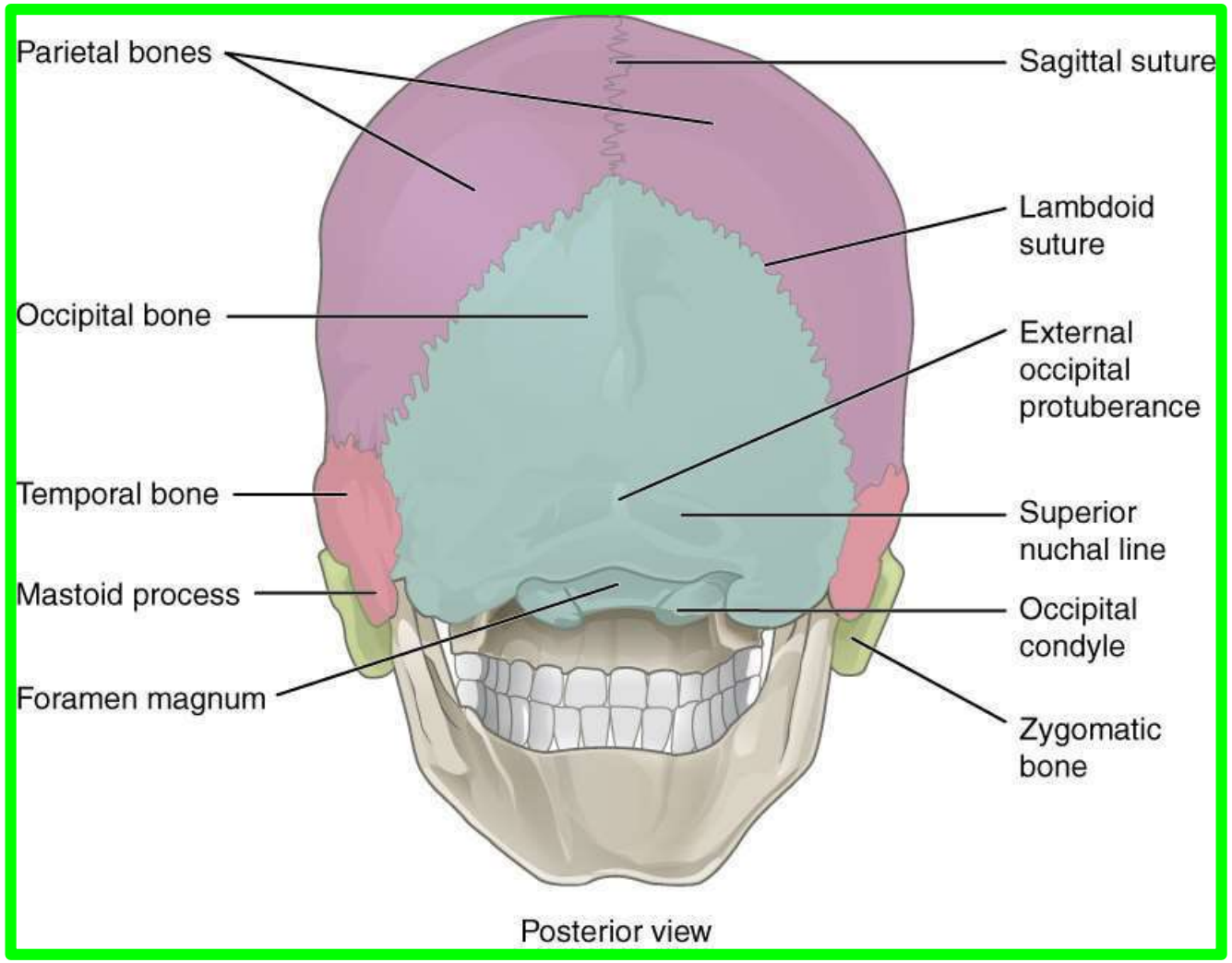
Posterior View of the Skull

✓The posterior parts of the two parietal bones with the intervening sagittal suture are seen above. Below, the parietal bones articulate with the squamous part of the occipital bone at the lambdoid suture.

✓On each side the occipital bone articulates with the temporal bone.

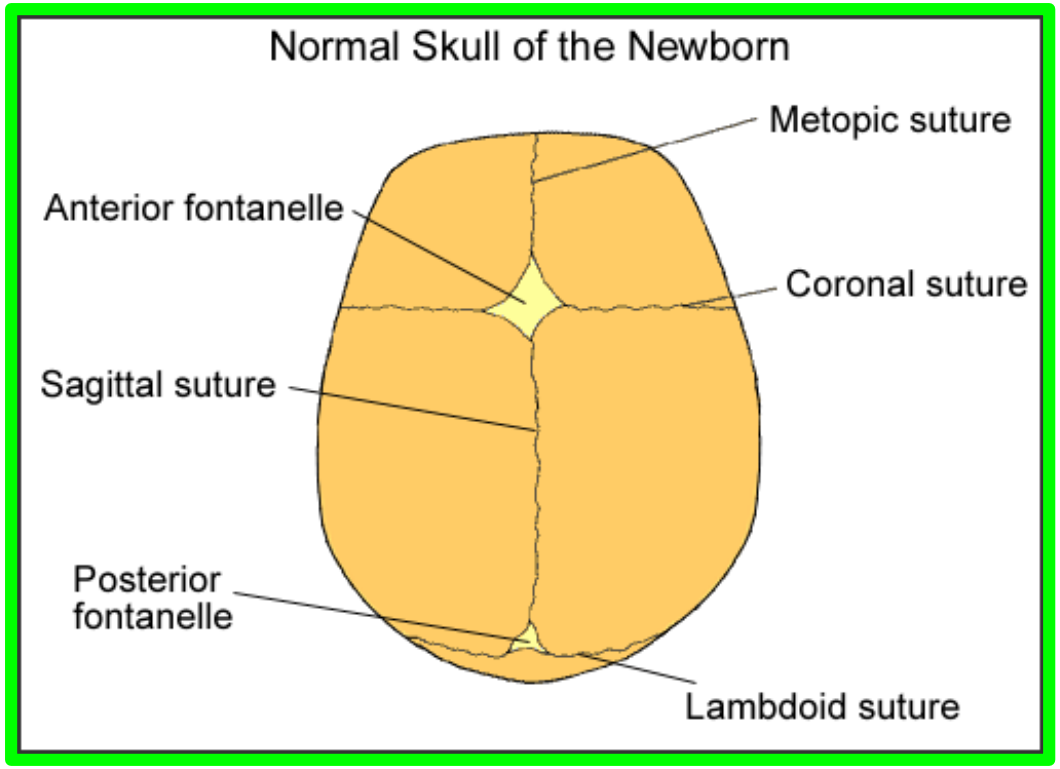
✓ In the midline of the occipital bone is a roughened elevation called the external occipital protuberance, which gives attachment to muscles and the ligamentum nuchae.

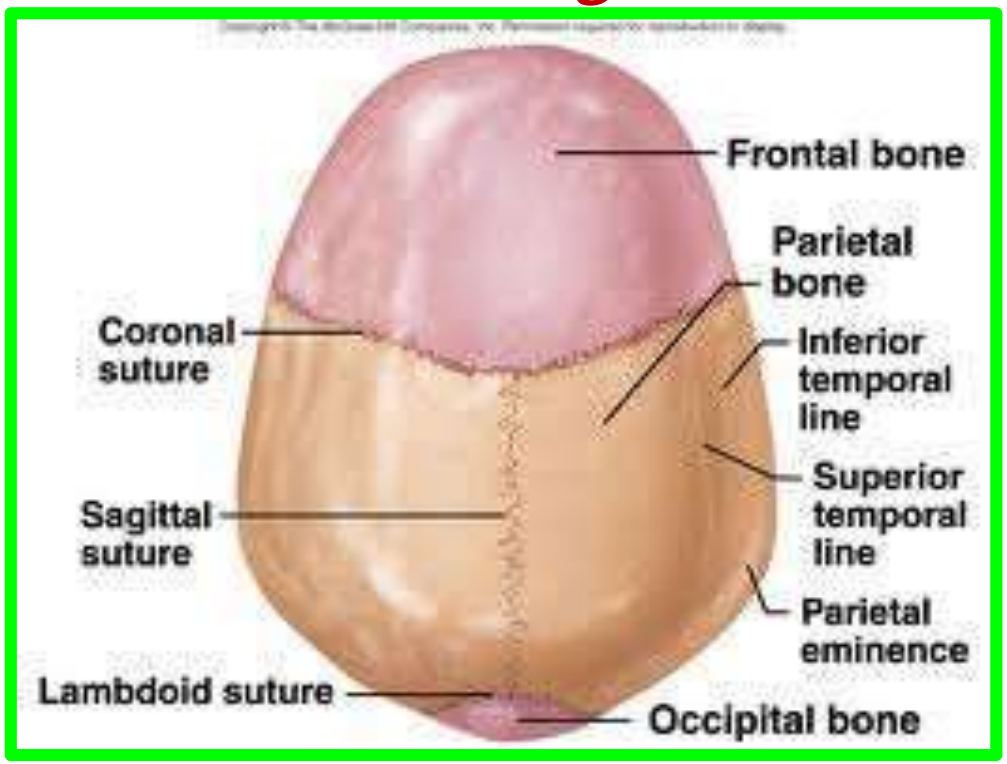
✓ On either side of the protuberance the superior nuchal lines extend laterally toward the temporal bone



Superior View of the Skull

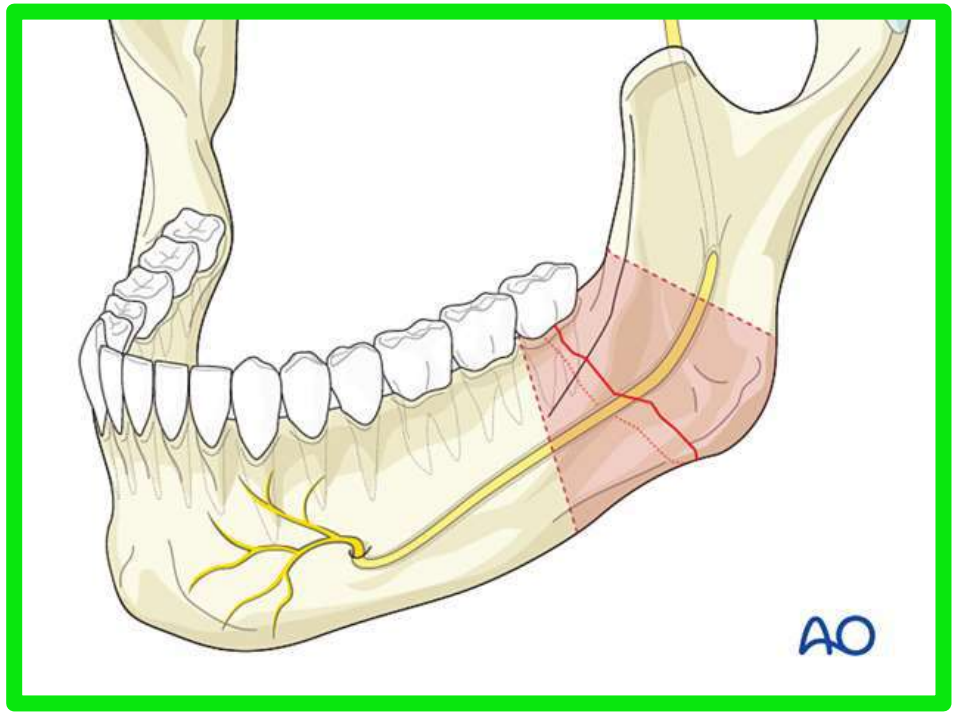
- Anteriorly, the frontal bone articulates with the two parietal bones at the coronal suture.
- Occasionally, the two halves of the frontal bone fail to fuse, leaving a midline metopic suture.
- Behind, the two parietal bones articulate in the midline at the sagittal suture

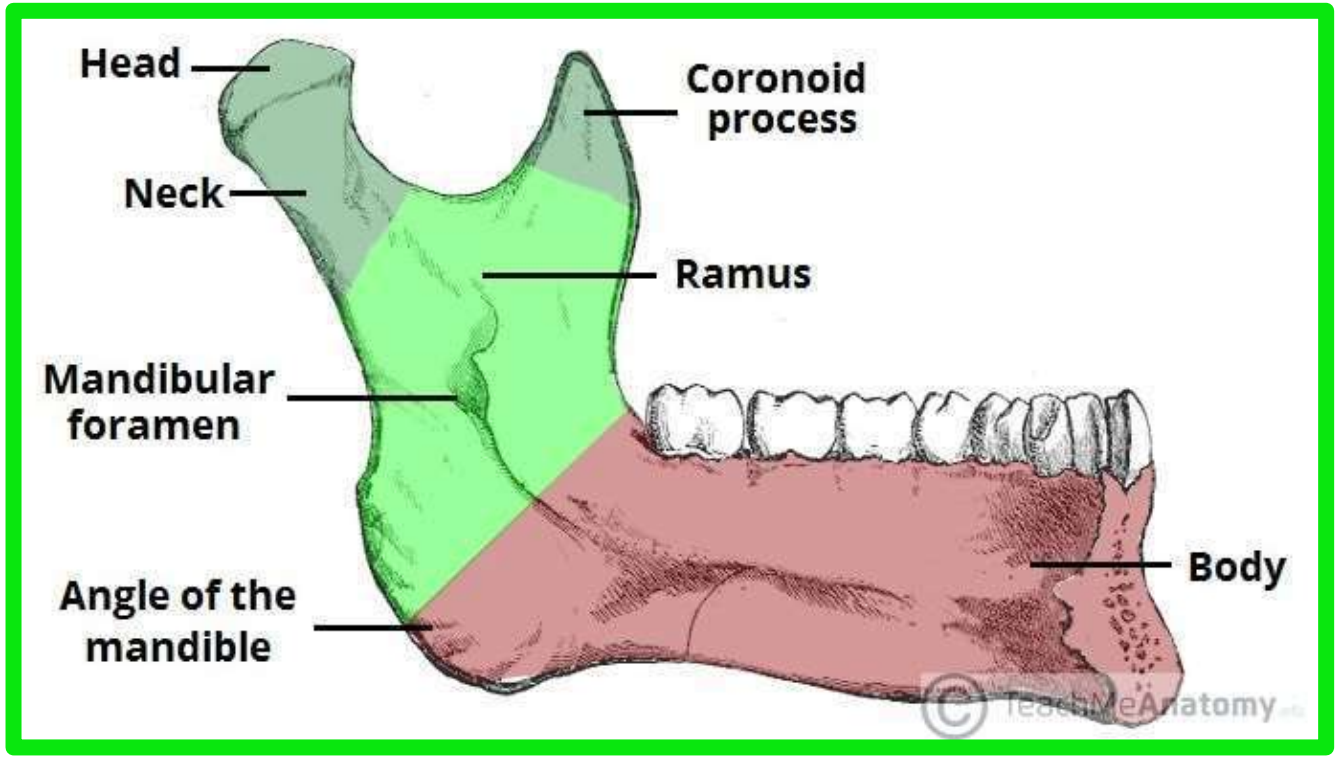




The Mandible

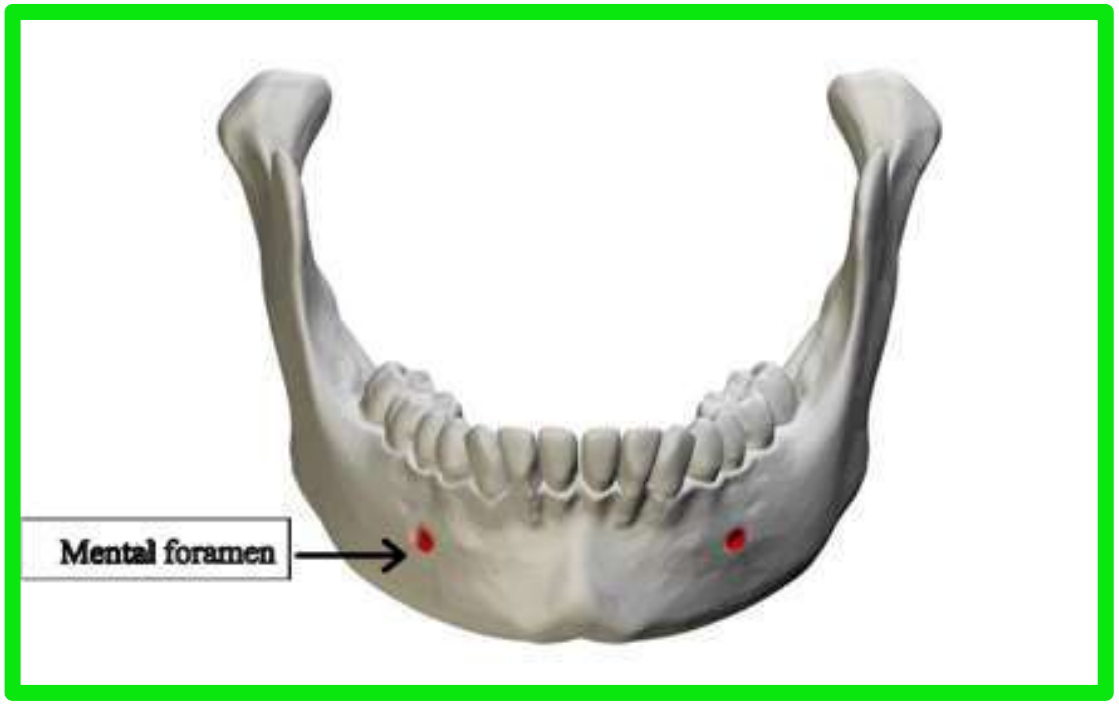
- ✓ Is the largest and strongest bone of the face
- ✓ It articulates with the skull at the temporomandibular joint.
- ✓ Consists of a horseshoe-shaped body and a pair of rami.
- ✓ The body of the mandible meets the ramus on each side at the angle of the mandible

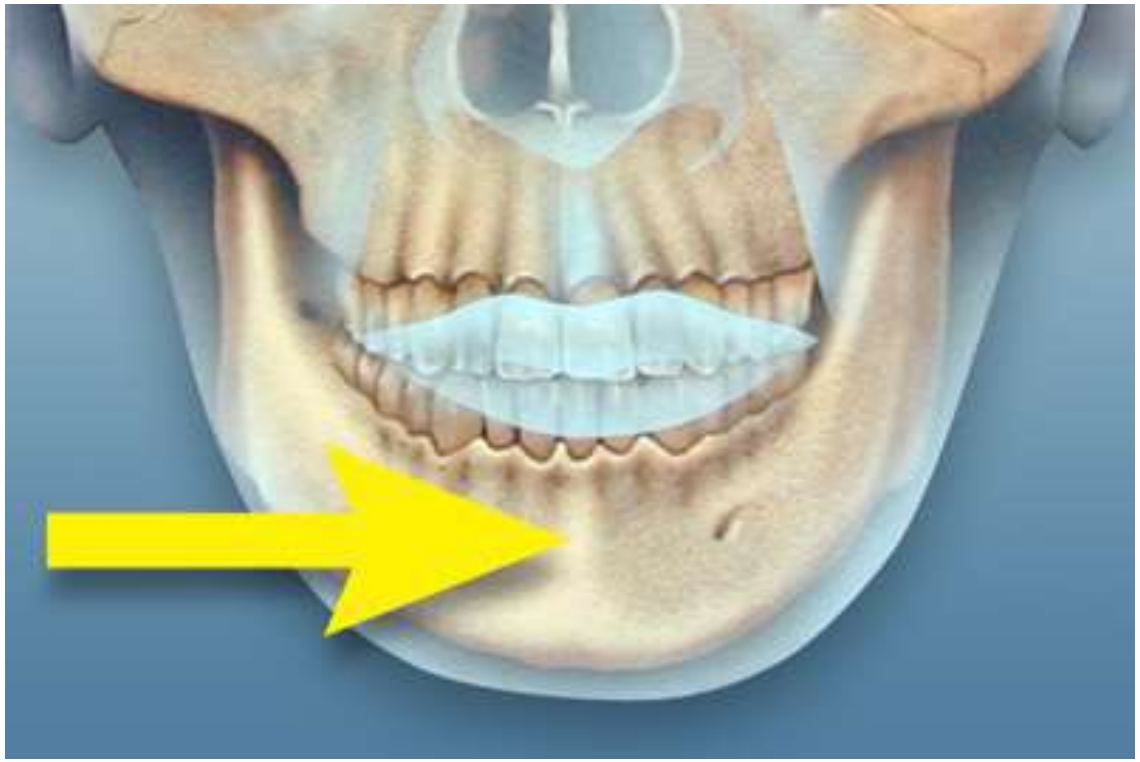




The Mandible

- ✓ On the external surface in the midline of the body of the mandible, has a faint ridge indicating the line of fusion of the two halves during development at the symphysis menti.
- ✓ The mental foramen can be seen below the second premolar tooth; it transmits the terminal branches of the inferior alveolar nerve and vessels.

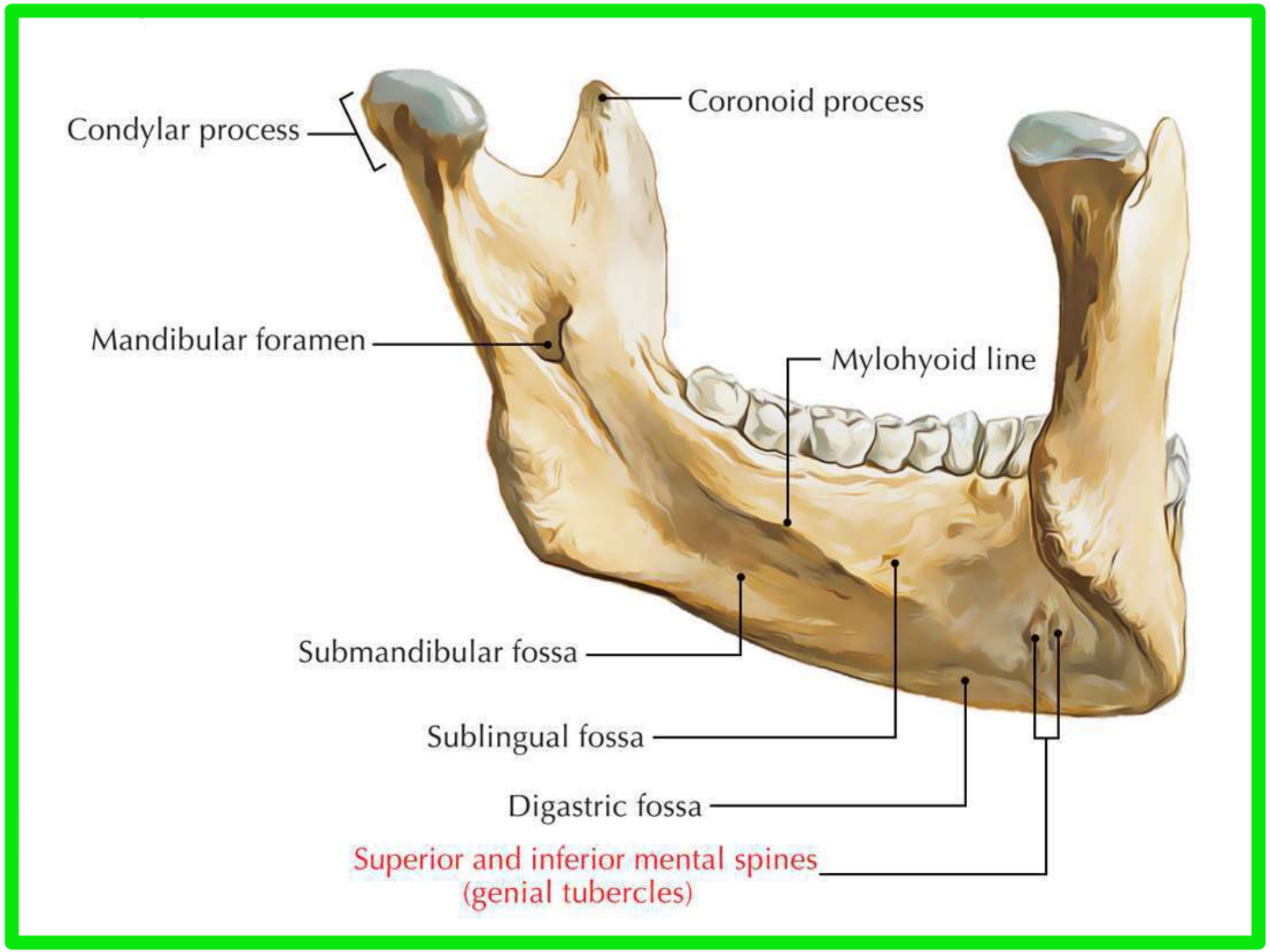




The Mandible

- ✓ On the medial surface of the body of the mandible in the median plane are seen the mental spines.

- ✓ The mylohyoid line can be seen as an oblique ridge that runs backward and laterally from the area of the mental spines to an area below and behind the third molar tooth.



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The Mandible

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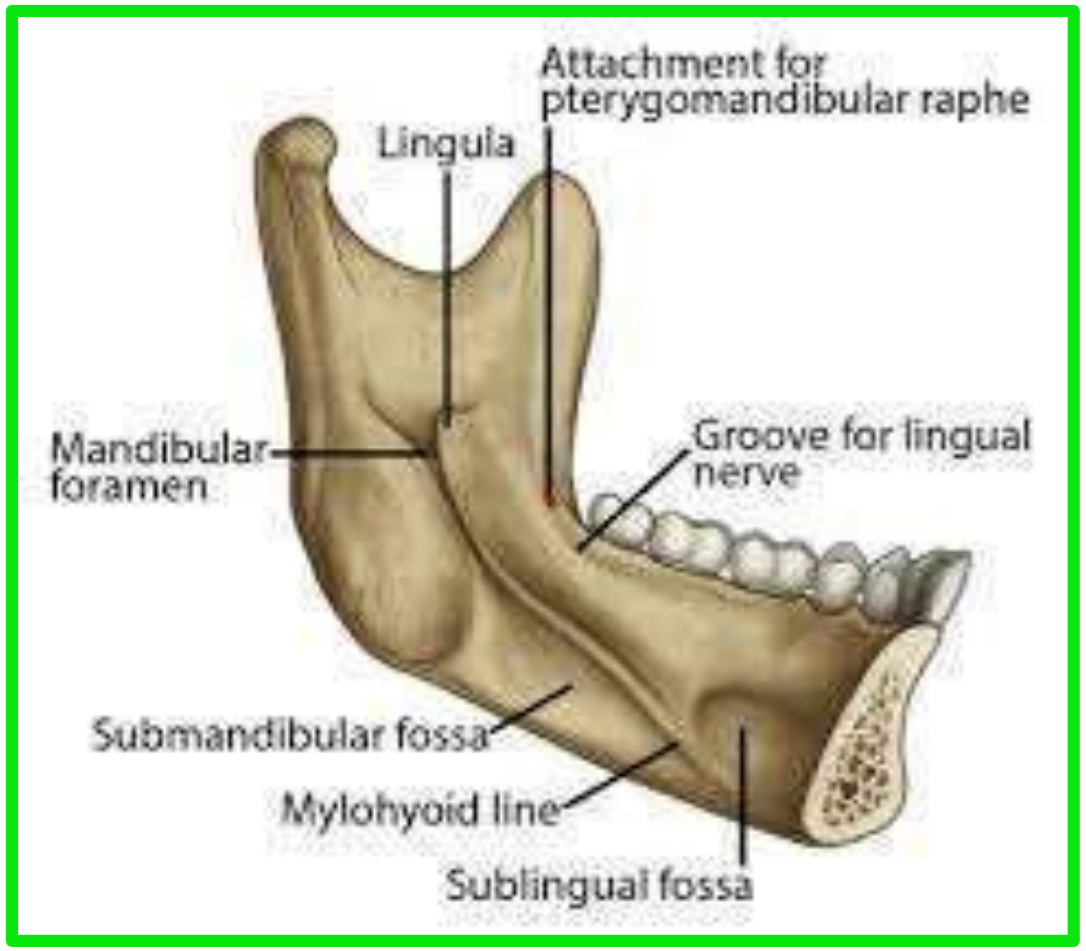
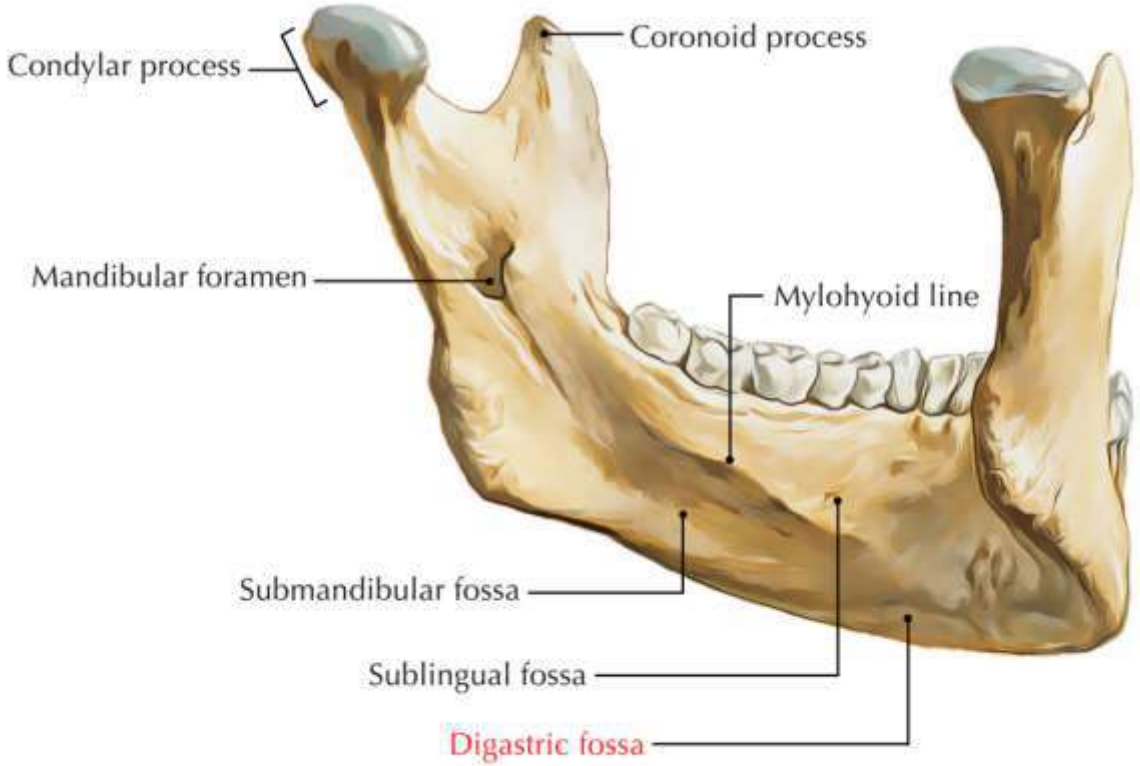
- ✓ The submandibular fossa, for the superficial part of the submandibular salivary gland, lies below the posterior part of the mylohyoid line.
- ✓ The sublingual fossa, for the sublingual gland, lies above the anterior part of the mylohyoid line.

- ✓ The upper border of the body of the mandible is called the alveolar part; in the adult, it contains 16 sockets for the roots of the teeth



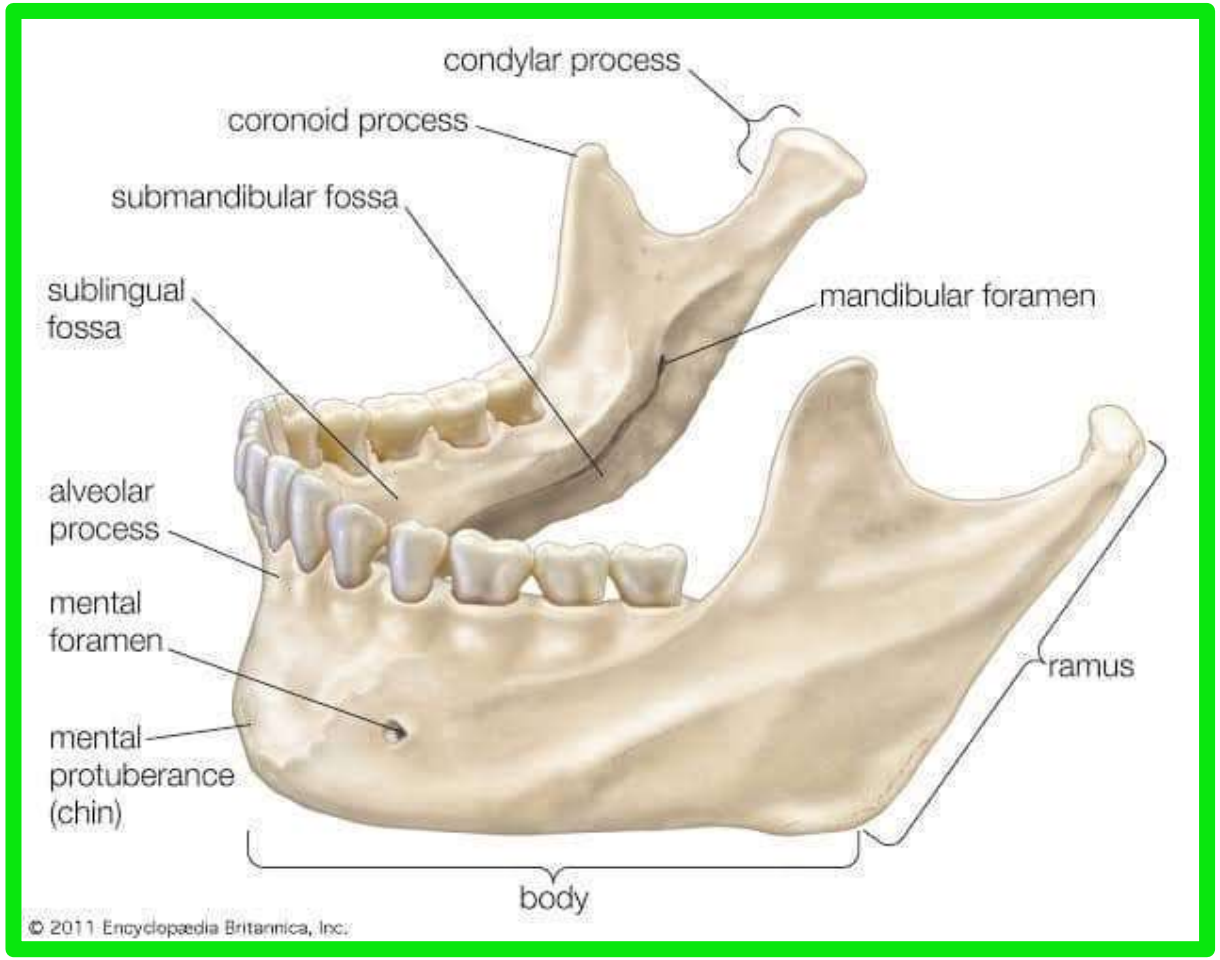
The Mandible

- ✓ The lower border of the body of the mandible is called the base.
- ✓ The digastric fossa is a small, roughened depression on the base, on either side of the symphysis menti for the anterior bellies of the digastric muscles attachment.



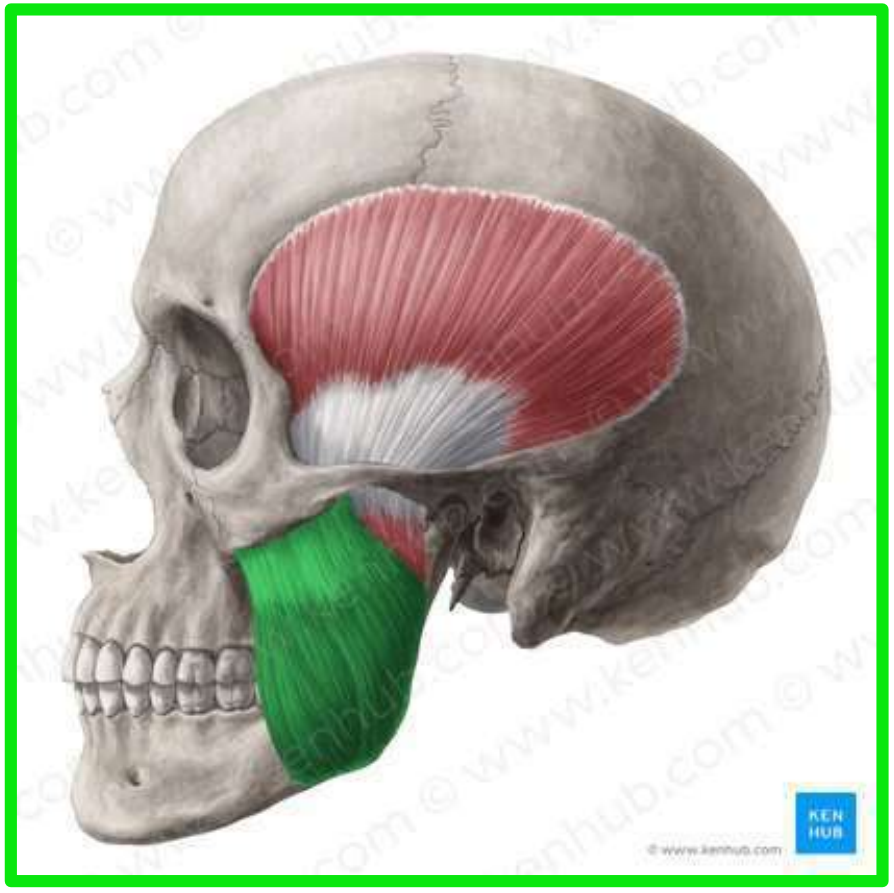
The Mandible

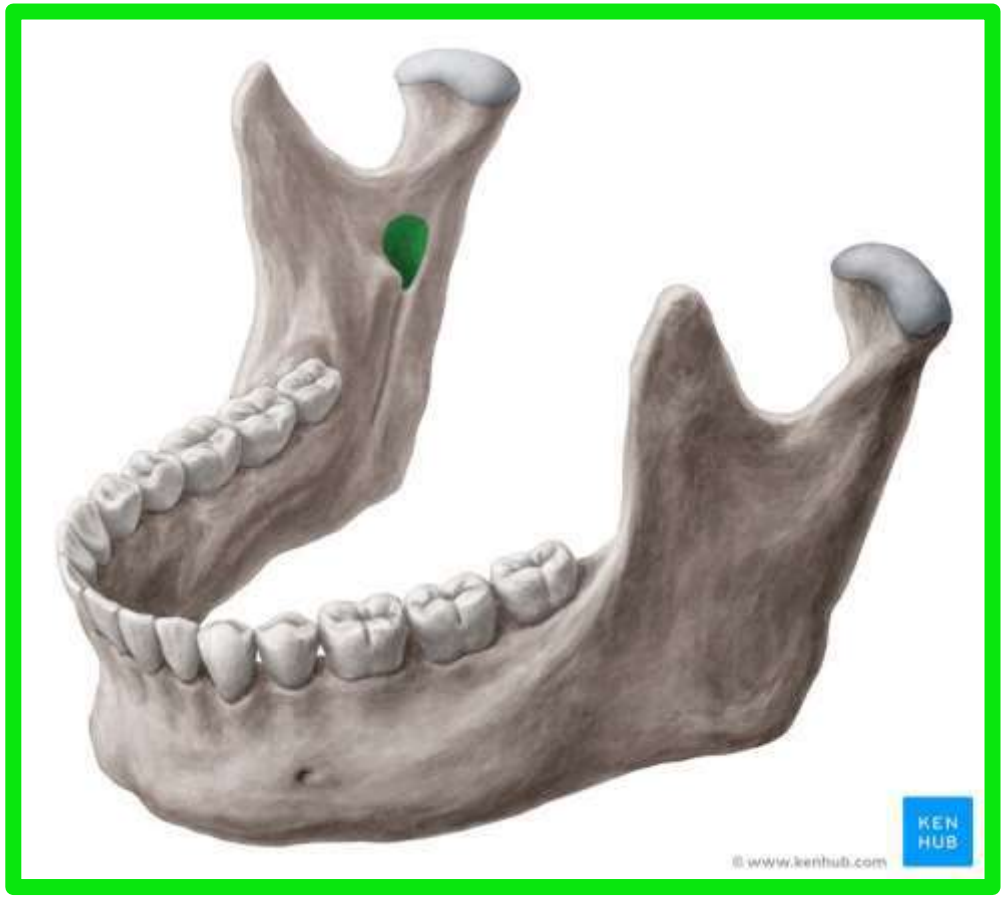
- ✓ **The ramus of the mandible is vertically placed and has an anterior coronoid process and a posterior condylar process, or head; the two processes are separated by the mandibular notch**



The Mandible

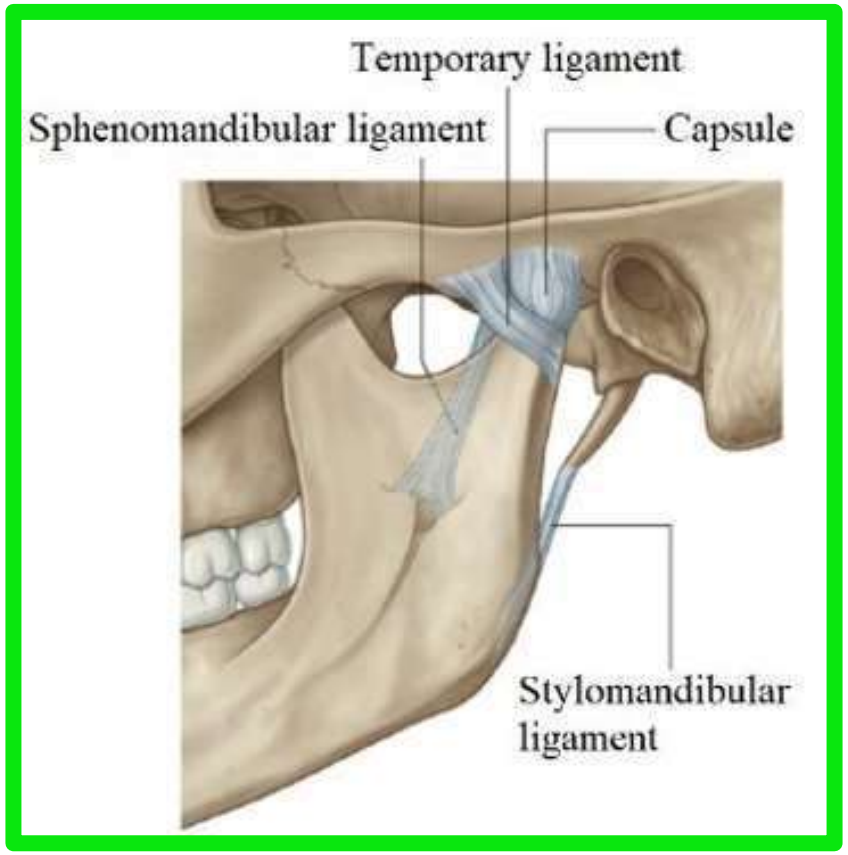
- ✓ On the lateral surface of the ramus are markings for the attachment of the masseter muscle.
- ✓ On the medial surface is the mandibular foramen for the inferior alveolar nerve and vessels

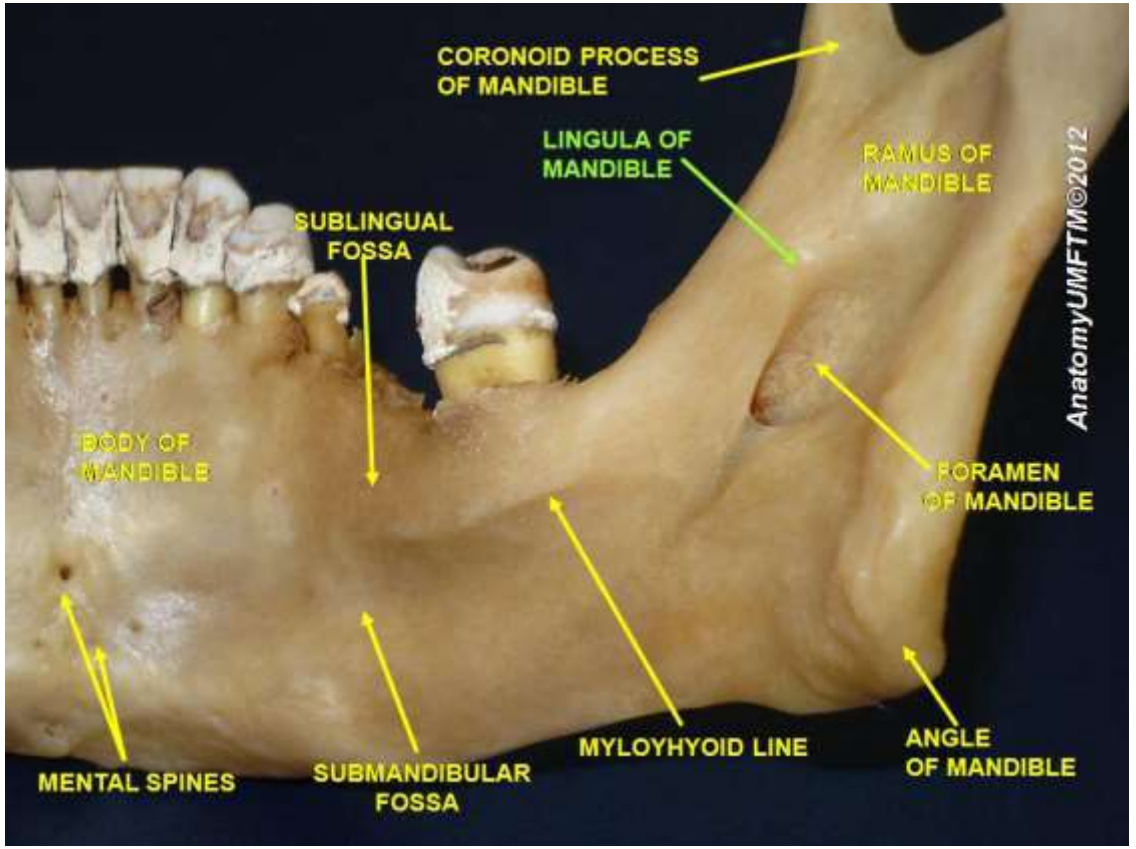




The Mandible

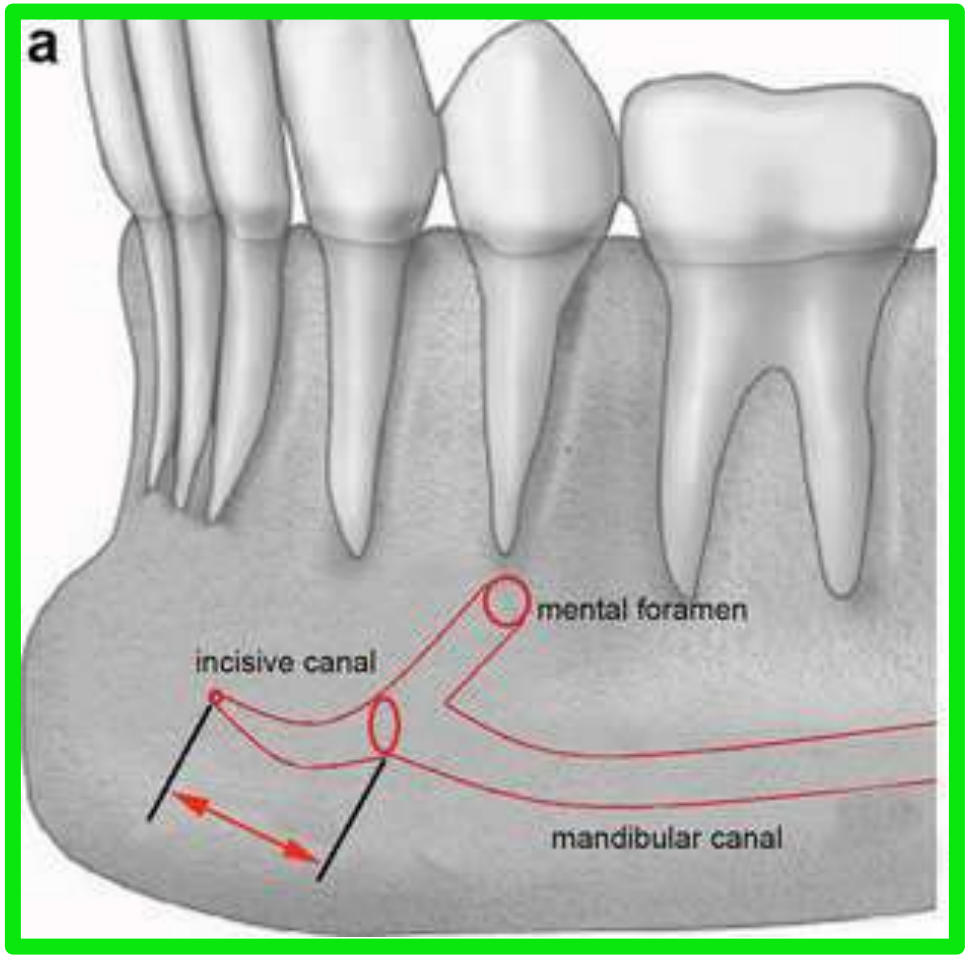
- ✓ In front of the foramen is a projection of bone, called the lingula, for the attachment of the sphenomandibular ligament
- ✓ The foramen leads into the mandibular canal, which opens on the lateral surface of the body of the mandible at the mental foramen

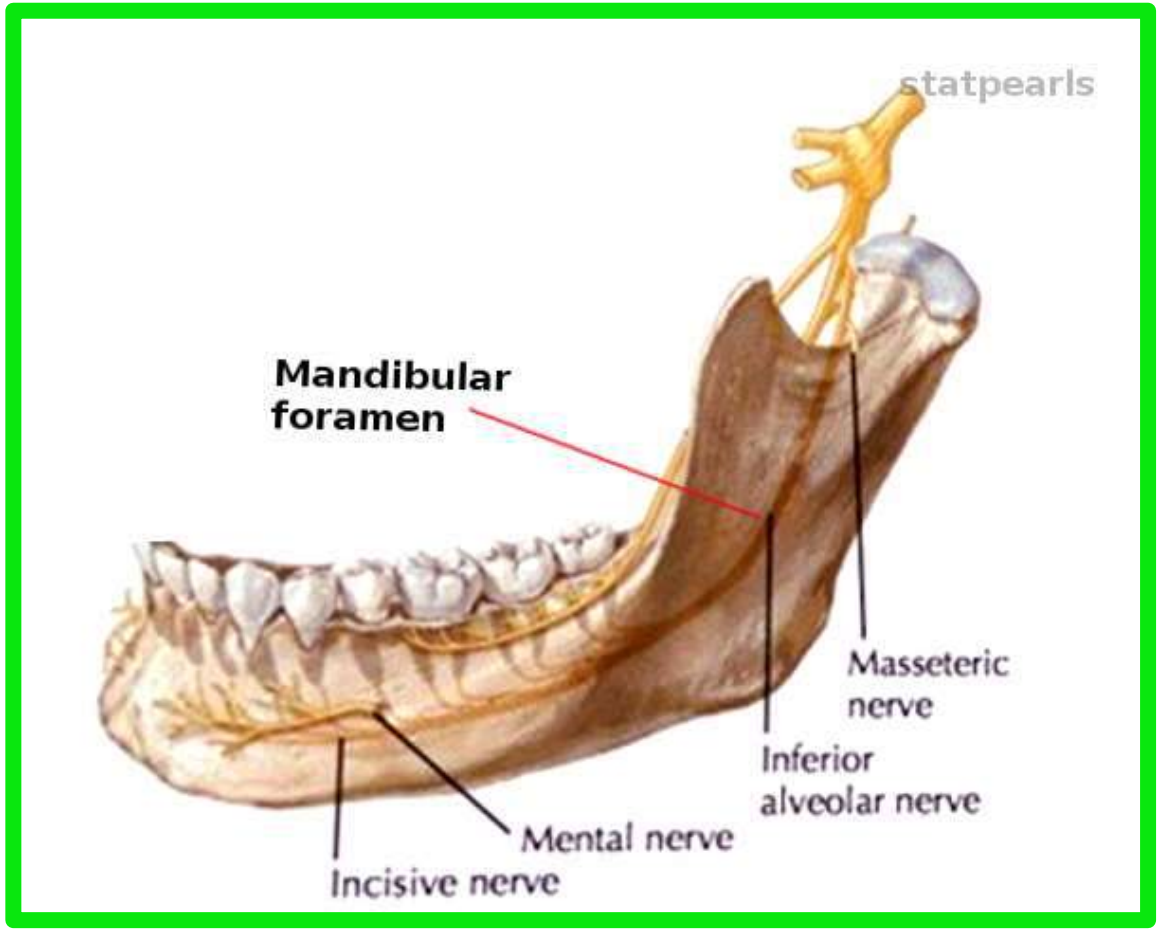




The Mandible

- ✓ **The incisive canal is a continuation forward of the mandibular canal beyond the mental foramen and below the incisor teeth.**



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