SKULL PRACTICAL LAB 🥼

Skull Practical Lab (Pt.1):

* In the adult human skull, there are 22 bones, these are divided into two main groups:

- Cranial Bones: (8)

  Frontal, 2 parietal, 2 temporal, occipital, sphenoid, ethmoid.

https://youtu.be/AL8kbjtm_nO?si=YF6NYHIvlCpMWmOl

https://youtu.be/v7porB2DYVE?

These two videos are informative and advantageous

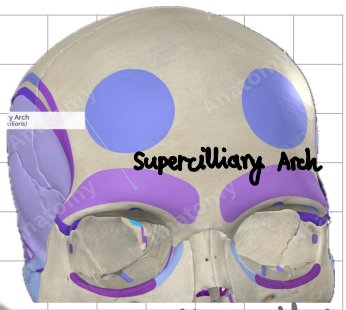
- Facial Bones: (14)

  2 Maxillae, 2 Zygomatic, 2 Nasal, 2 acrimal, 2 Palatine, 2 Inferior Nasal Conchae, 1 Vomer, 1 Mandible.

* There are five different views of the skull:

1. Norma Frontalis (Anterior View).
2. Norma Lateralis (Lateral View).
3. Norma Occipitalis (posterior View).
4. Norma Basalis (Inferior View).
5. Norma Verticalis (Superior View).

Norma Frontalis:



(brow ridge)

1 frontal bone

Supraorbital foramen (notch)

Glabella

Orbital 6 Apertures

5 nasal bone

2

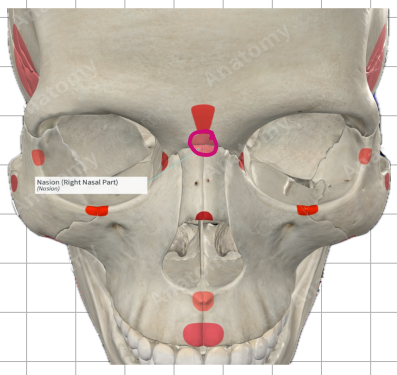
Infraorbital foramen

7 → Anterior nasal aperture

Zygomatic bone

3 maxilla

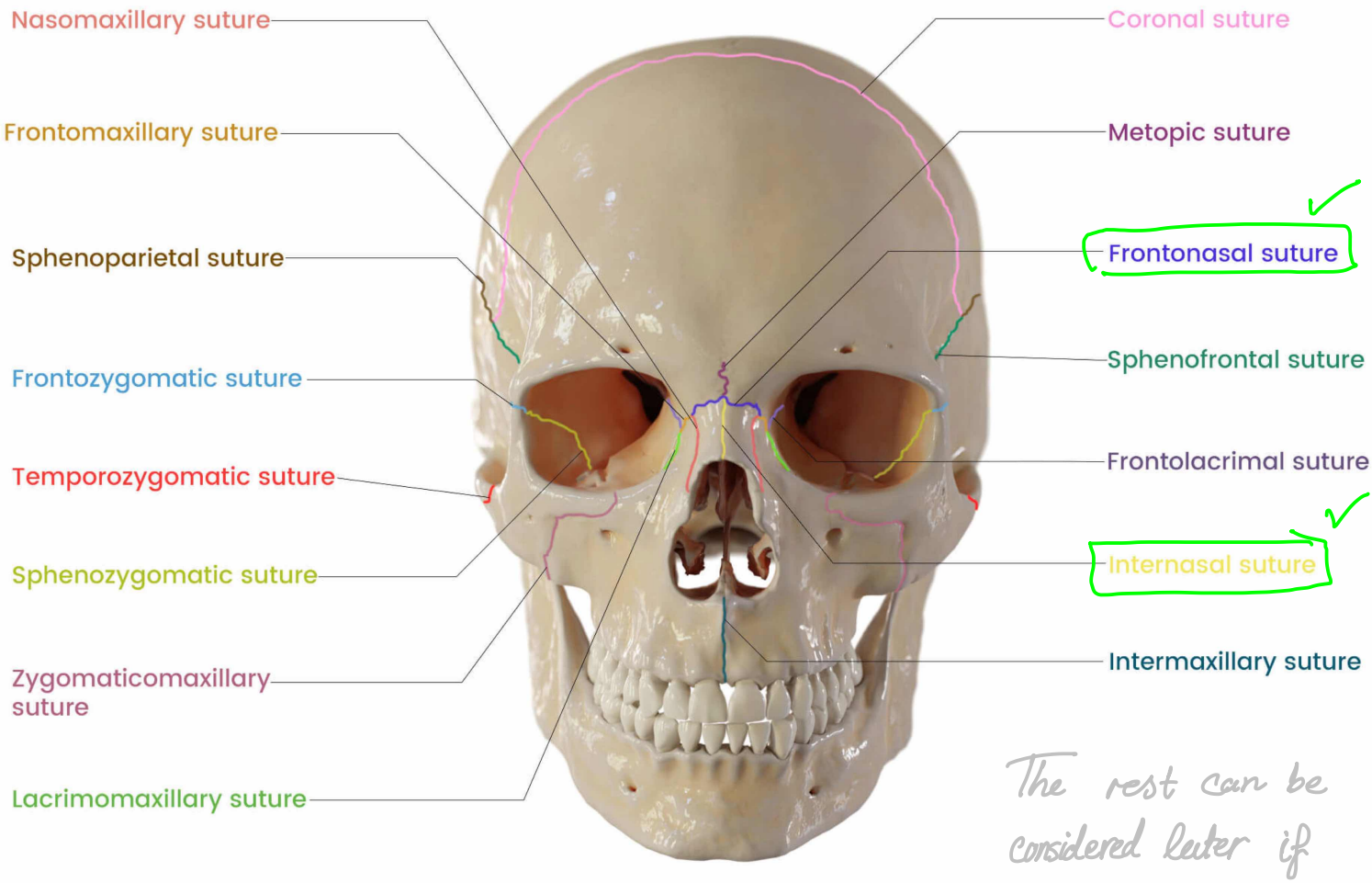
4 mandible



Nasion

It's a depression between the eyes (junction between the frontal and nasal bones).

Sutures of the skull



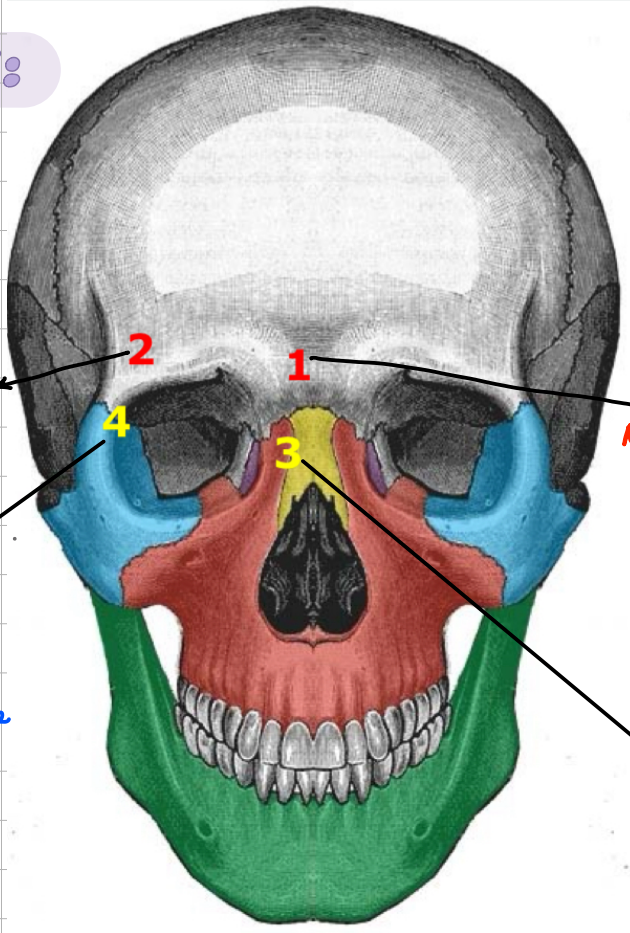
The rest can be considered later if needed.

Anatomy.app

Anterior view

Skull processes:

Remember: process is bulging bony outgrowth of a larger bone.



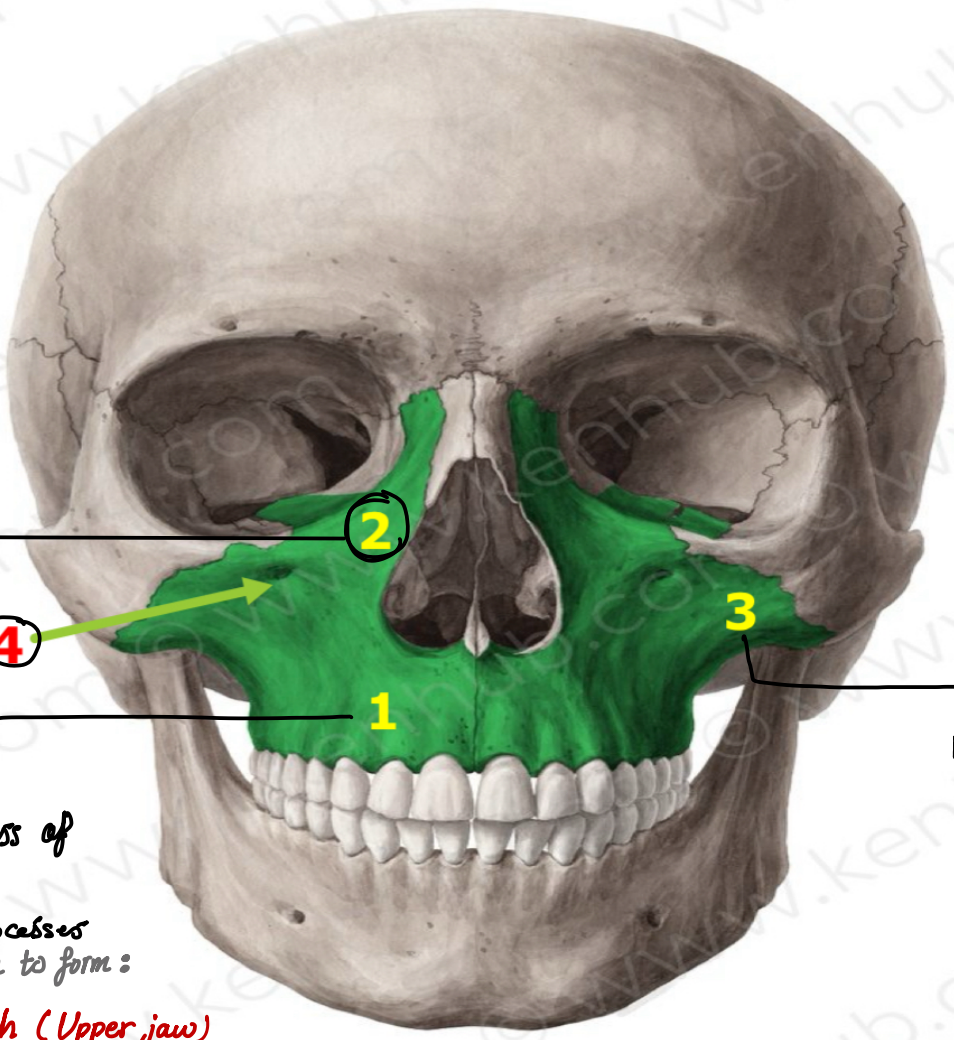
Zygomatic process of Frontal bone

Maxillary process of Frontal bone

Frontal process of zygomatic bone

Frontal process of Maxilla

Maxillary Bone:



Frontal process of maxilla

Infraorbital foramen

Zygomatic process of maxilla

Alveolar process of maxilla.

2 alveolar processes ↓ unite to form:

Alveolar Arch (Upper jaw)

Zygomatic Bone:

Frontal process of Zygomatic

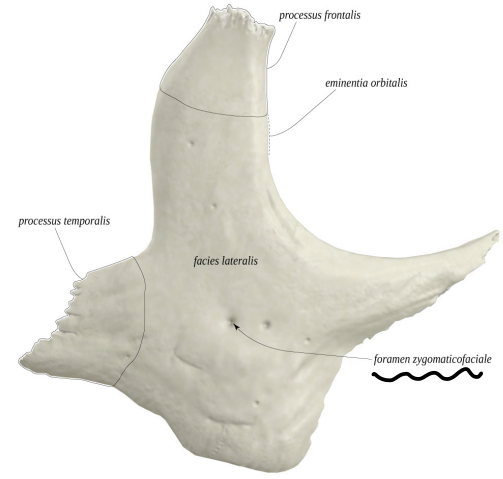
Zygomaticofacial foramen

Maxillary process of Zygomatic

▷ Zygomatic bone has:

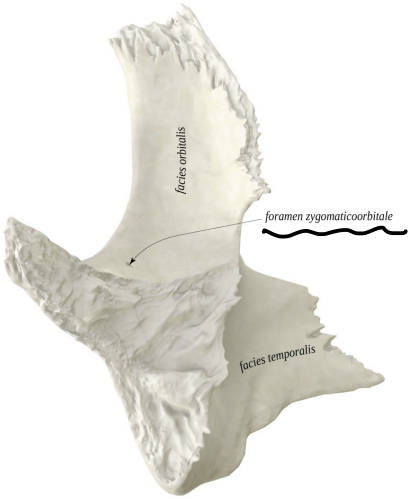
3 Processes:
- Frontal.
- Maxillary.
- Temporal.

4 Foramina:
- Zygomatico facial (on the lateral surface).
- Zygomaticotemporal (on the posterior surface).
- Zygomatico orbital.
- Accessory foramen.



ANATOMY STANDARD

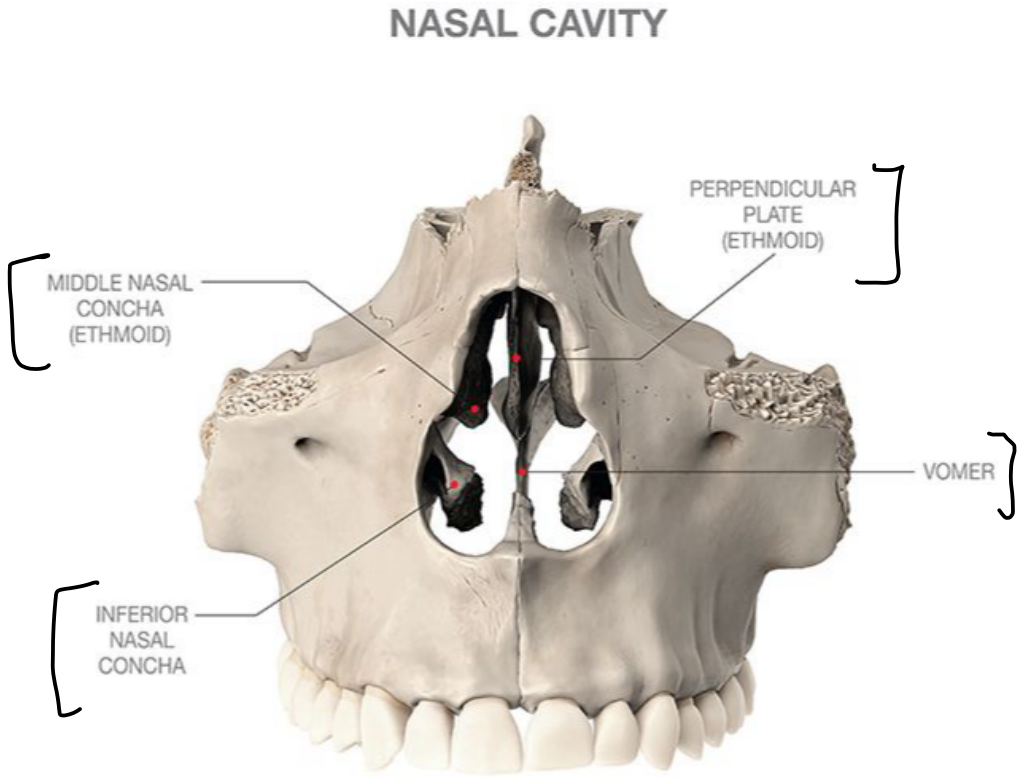
lateral view



ANATOMY STANDARD

posterior view

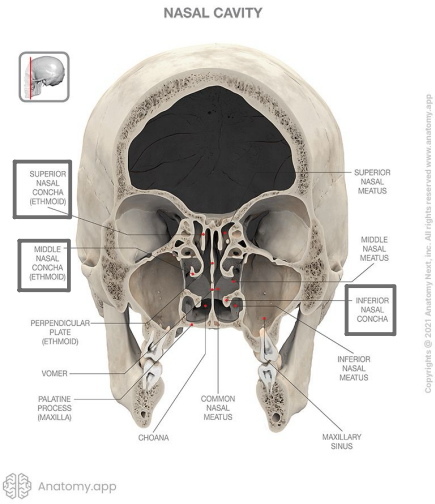
Nasal Cavity:



* Nasal conchae: they are bony structures within the nasal cavity that help condition the inhaled air.

There are 3 conchae:

I. Superior Nasal concha
II. Middle Nasal concha → parts of ethmoid bone.
III. Inferior Nasal concha → independent bone.



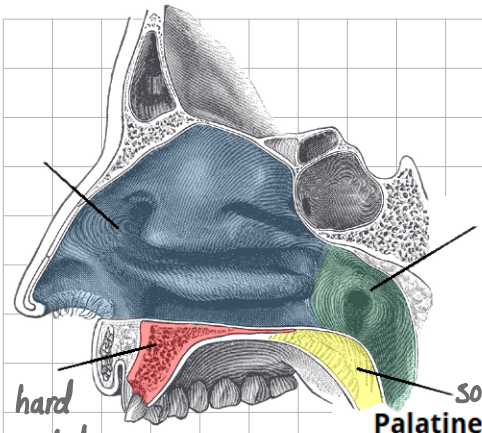
→ Bones of The Nasal Cavity:

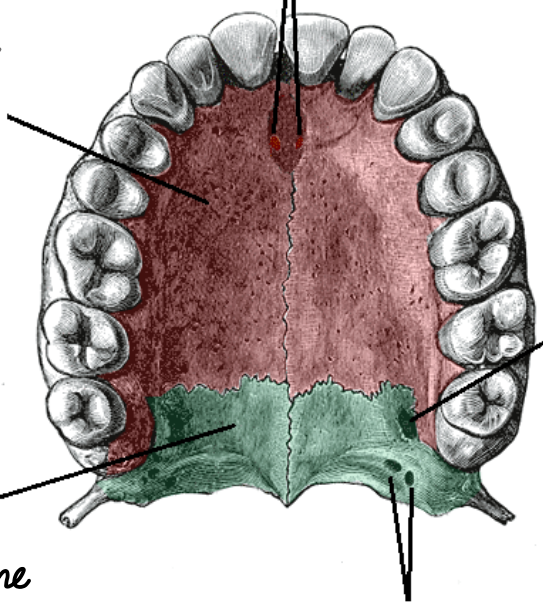
- Ethmoid bone → cribriform plate (part of the roof of the cavity)
  → perpendicular plate (superior portion of the septum)
  → superior and middle nasal conchae
- Nasal bones (paired, small bones).
- Maxillae (paired maxillary bones).
- Vomer: (part of nasal septum).
- Palatine bones.
- Lacrimal bones.
- Inferior Nasal concha.

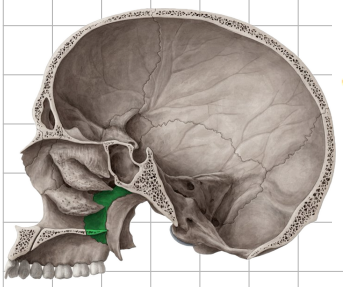
Now, let's discuss the hard palate. الحنك العظمي (الصلب)

* Bones of the hard palate:

① Anterior 2/3 → palatine process of the maxilla
② Horizontal plate of the palatine bone (posterior 1/3)
↳ joins the maxilla at the transverse palatine suture.



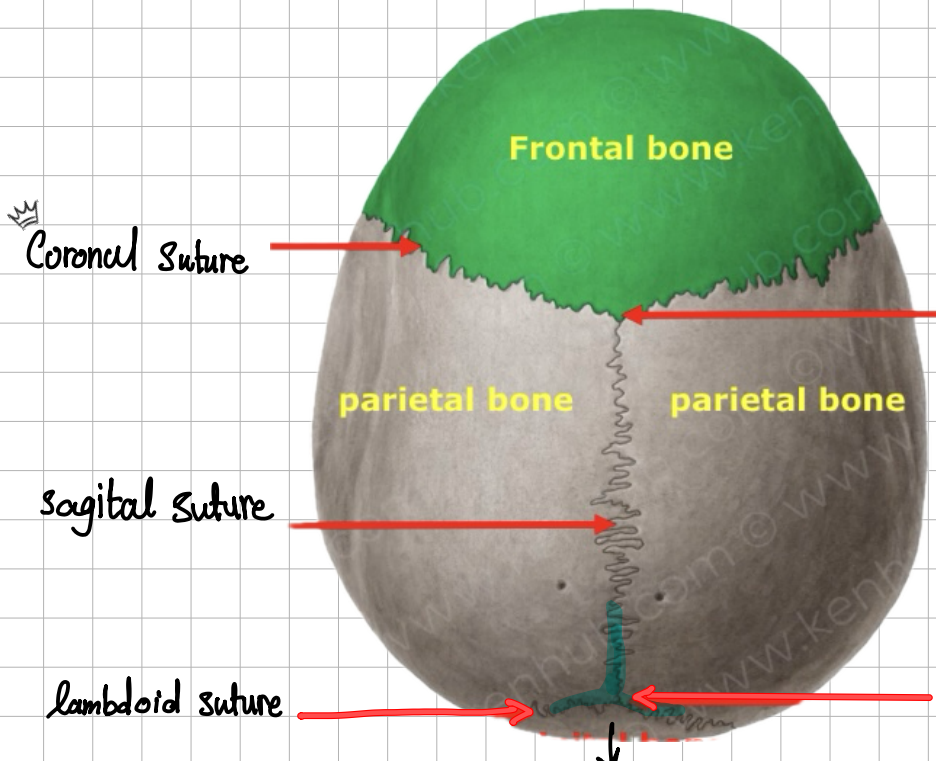




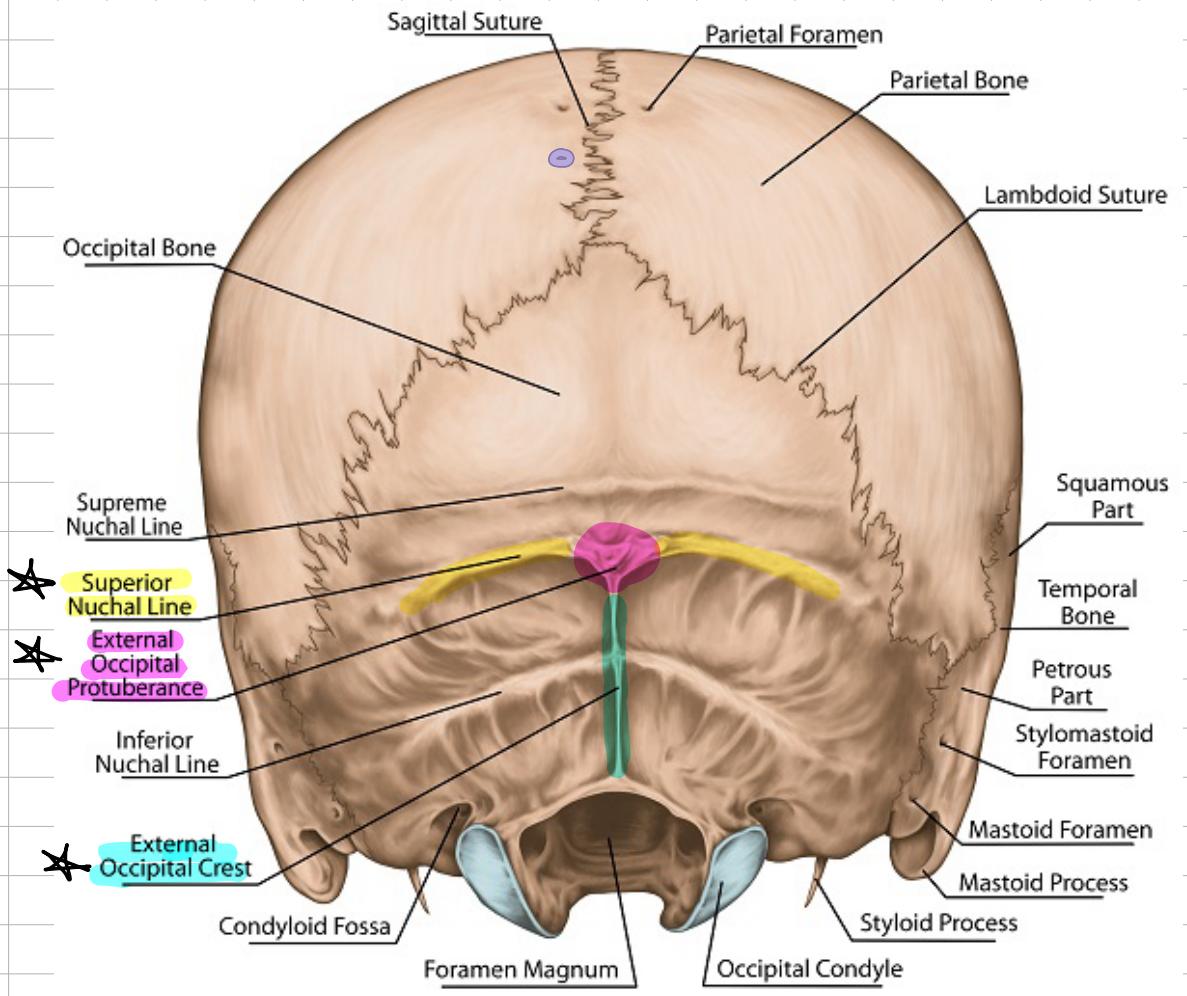
L-shaped bone

https://youtu.be/P7gbcaTO3IU?si=Hl7tKSY8RgKO8MPN

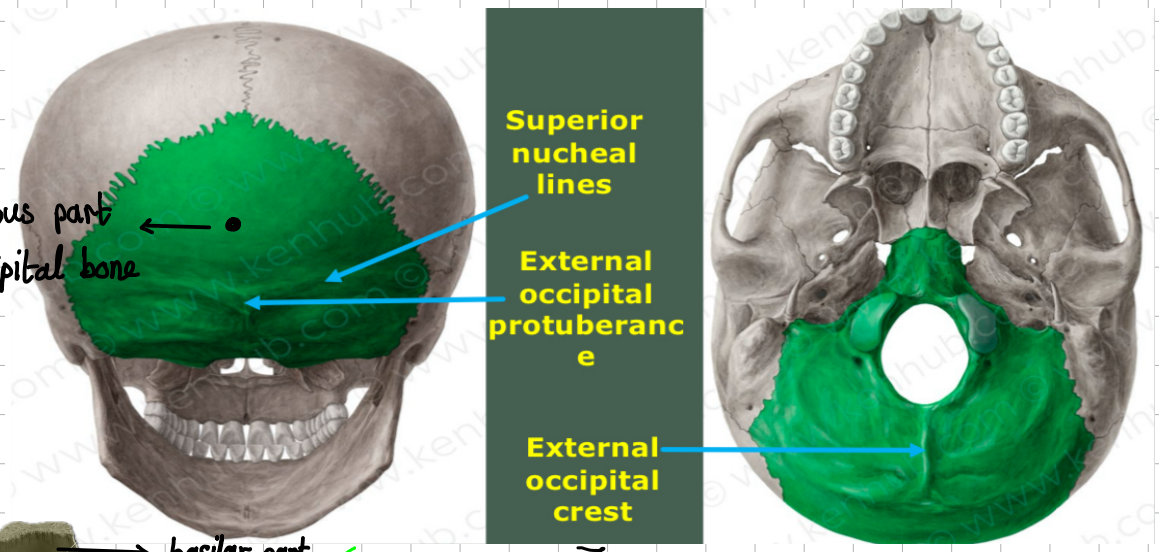
Norma Verticalis :

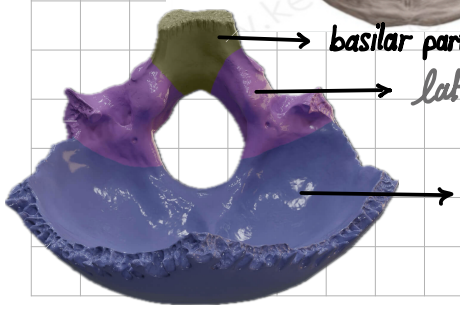


Norma occipitalis



* protuberance = projection , Crest = raised part

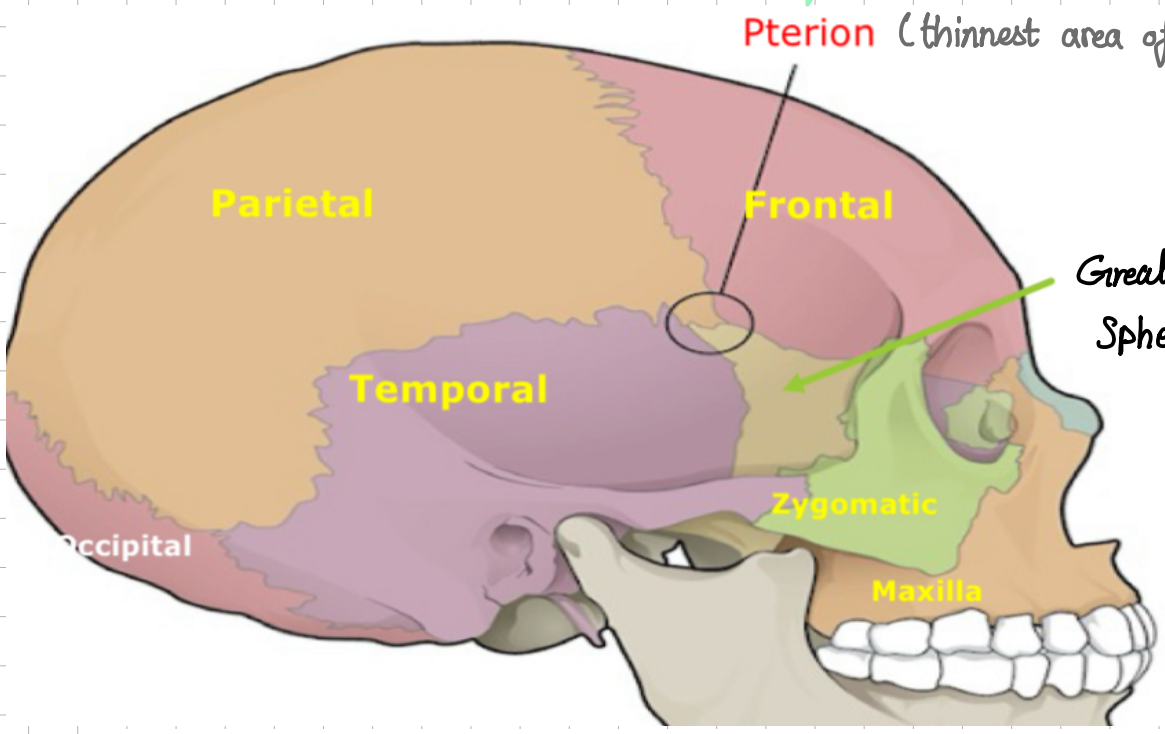


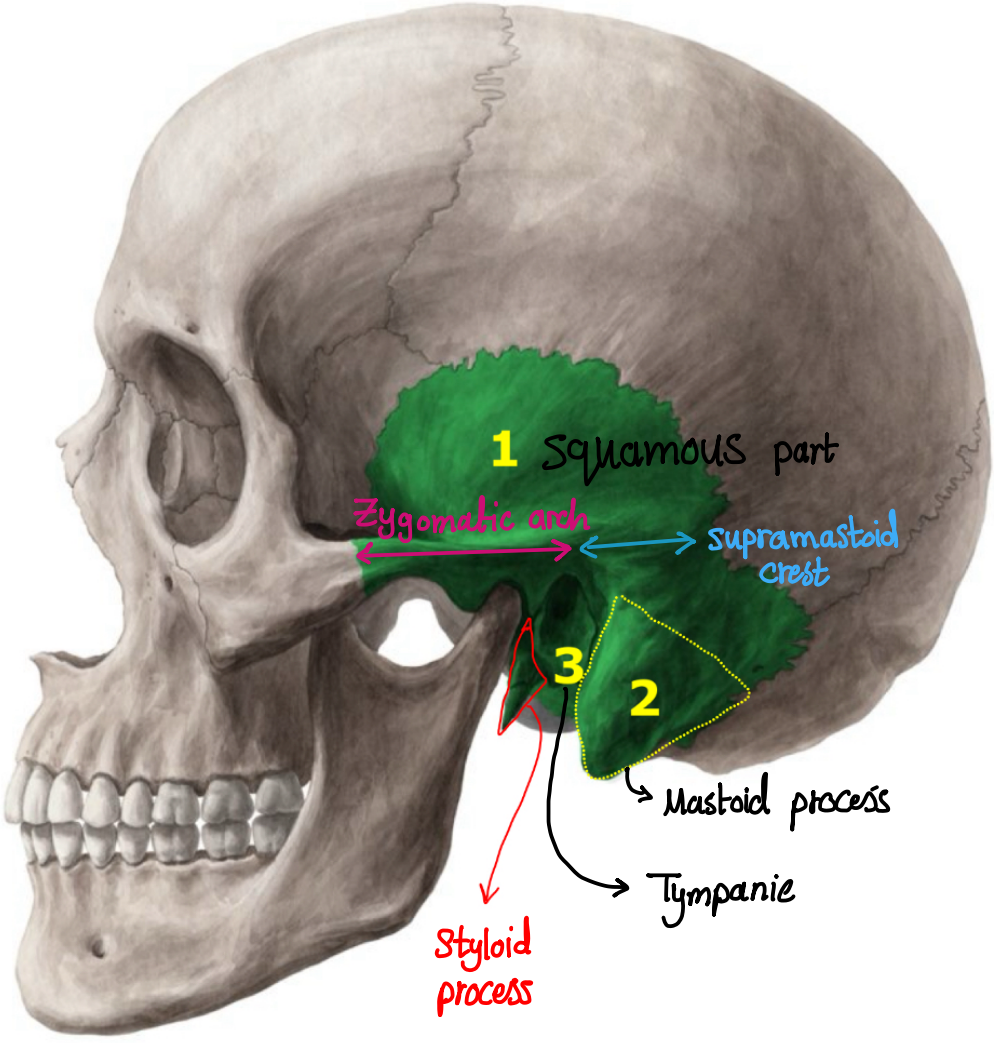


basilar part ✓
lateral part
squamous part ✓

→ parts of occipital bone

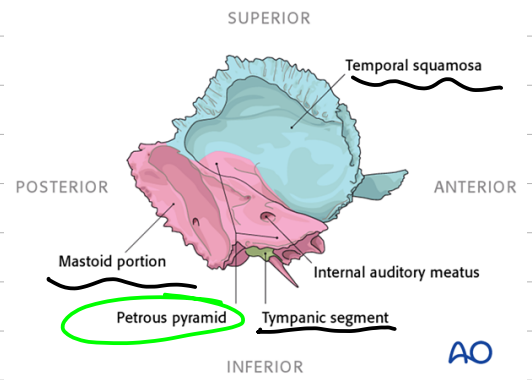
Norma Lateralis



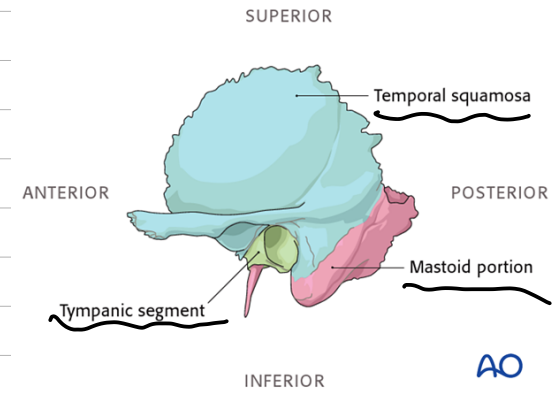


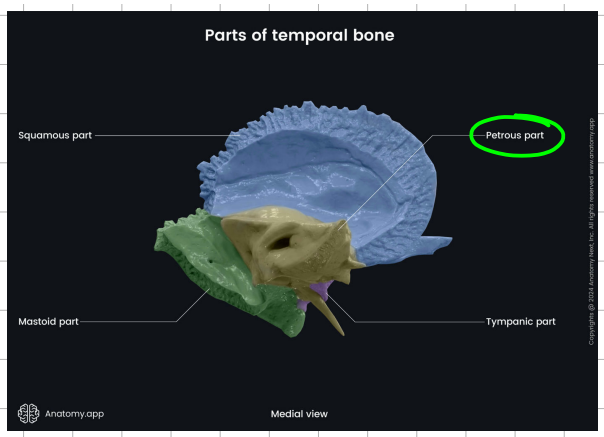
* Parts of Temporal Bone :

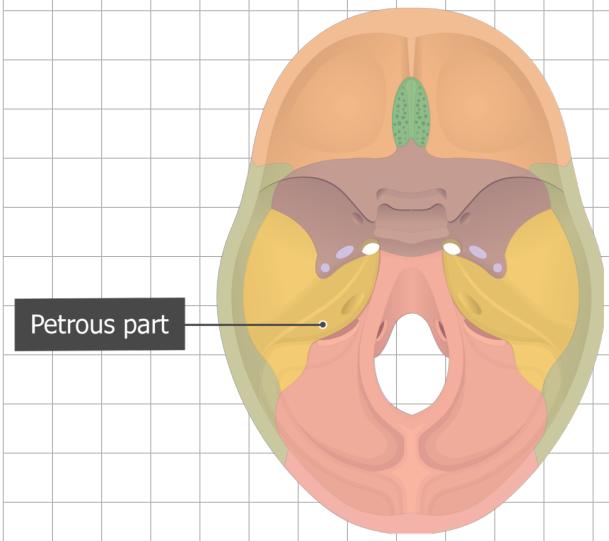
Squamous, Mastoid, Tympanic, petrous.



Petrous part



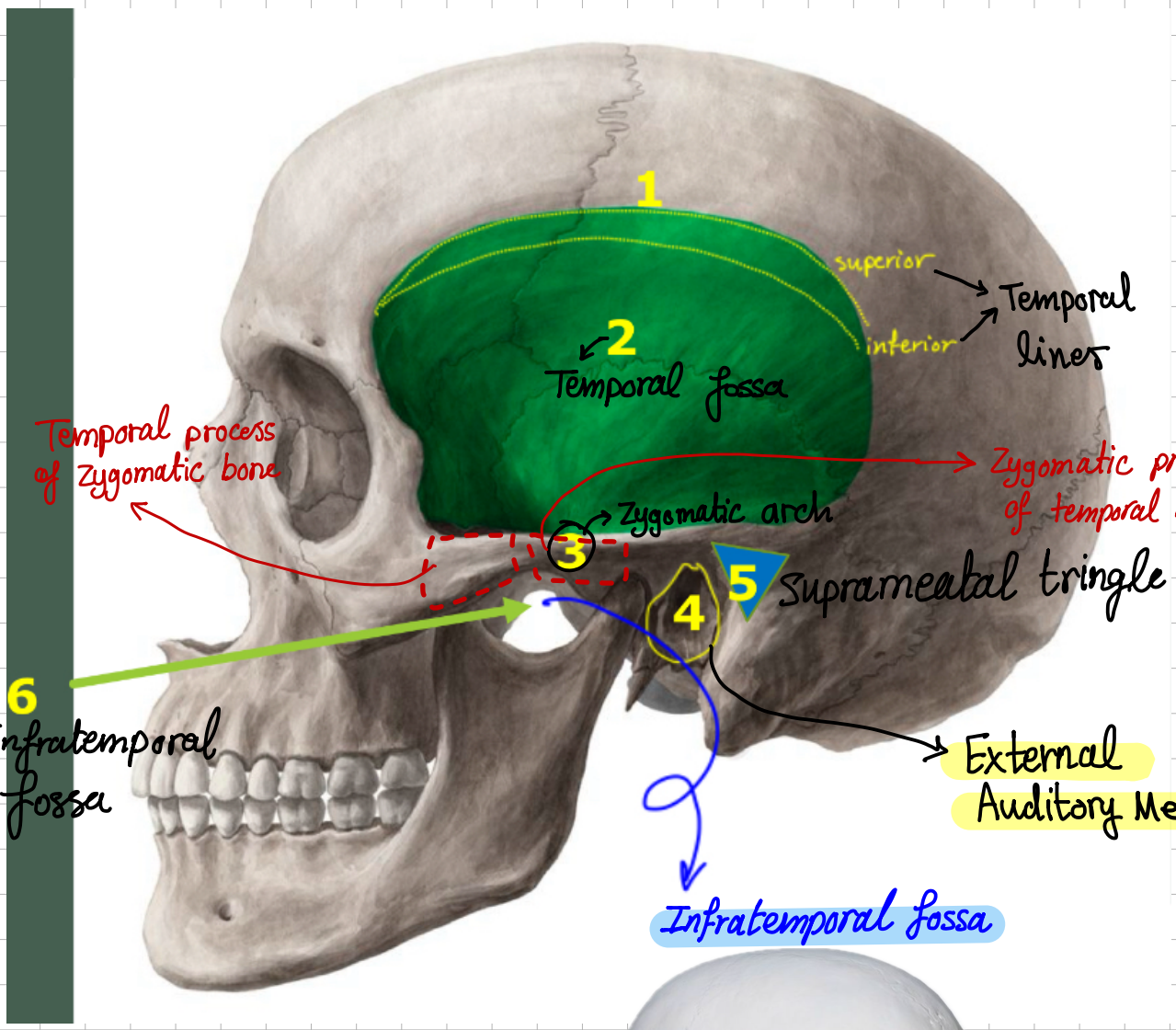


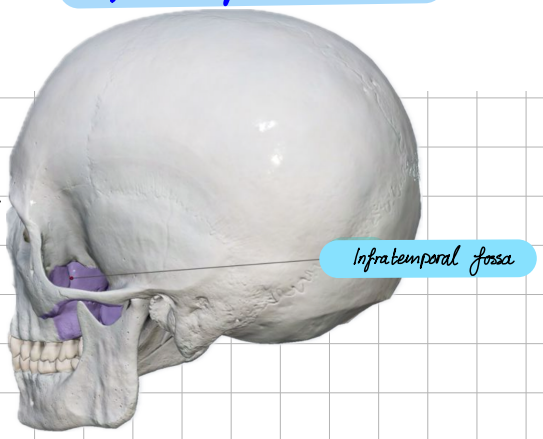


Found near our ears, this pyramid-shaped portion of the temporal bone is nicknamed the petrous bone. The bone is very hard, possibly because it needs to protect fragile structures such as the cochlea, which translates sound into brain signals, and the semicircular canals, which help us maintain our balance.

https://youtu.be/C59YGpm8JOQ?

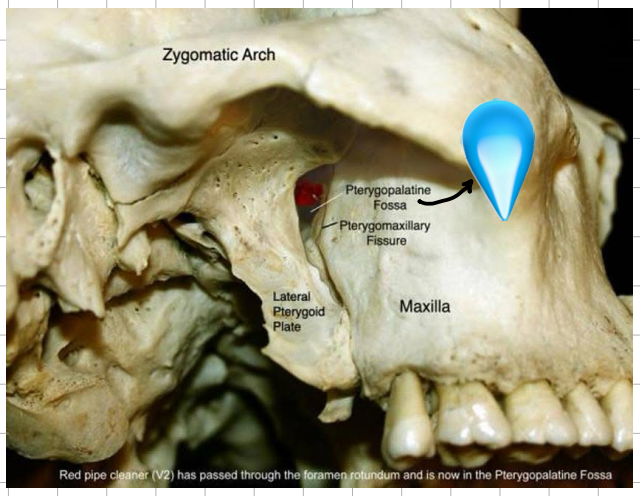
Watch this video for a better understanding

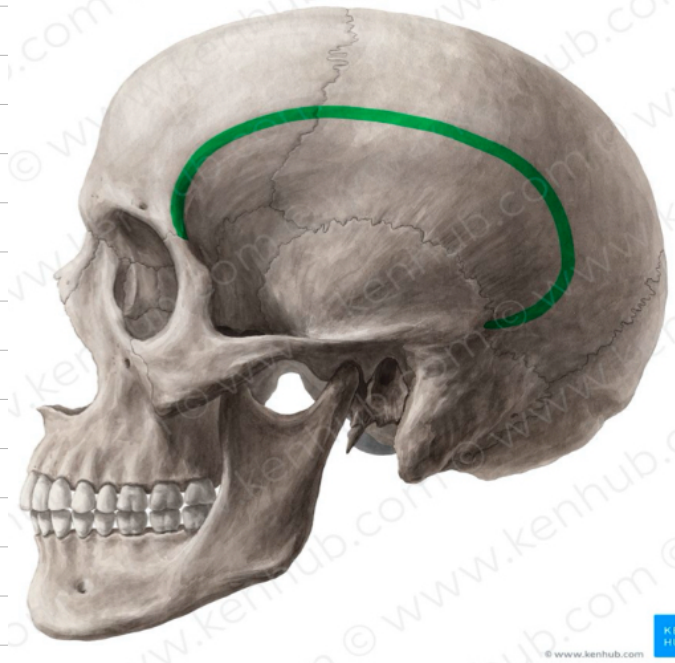


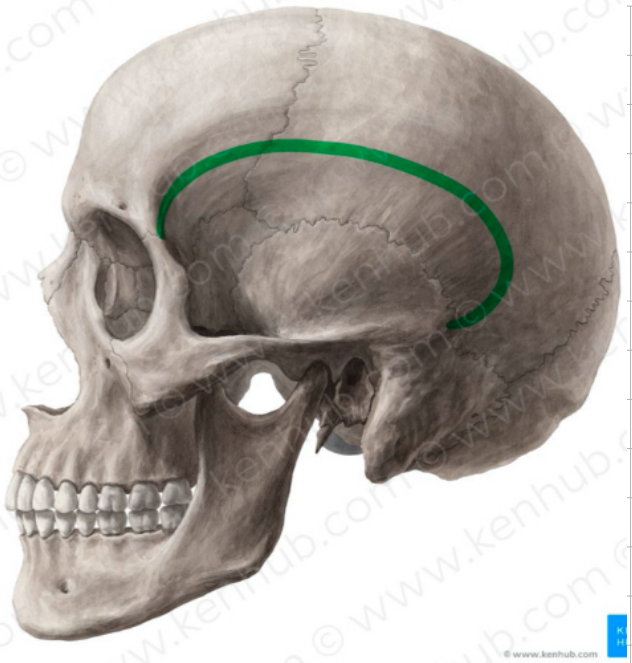


Infratemporal fossa contains: ⇐

- pterygomaxillary fissure.
- pterygopalatine fossa.







Superior temporal line

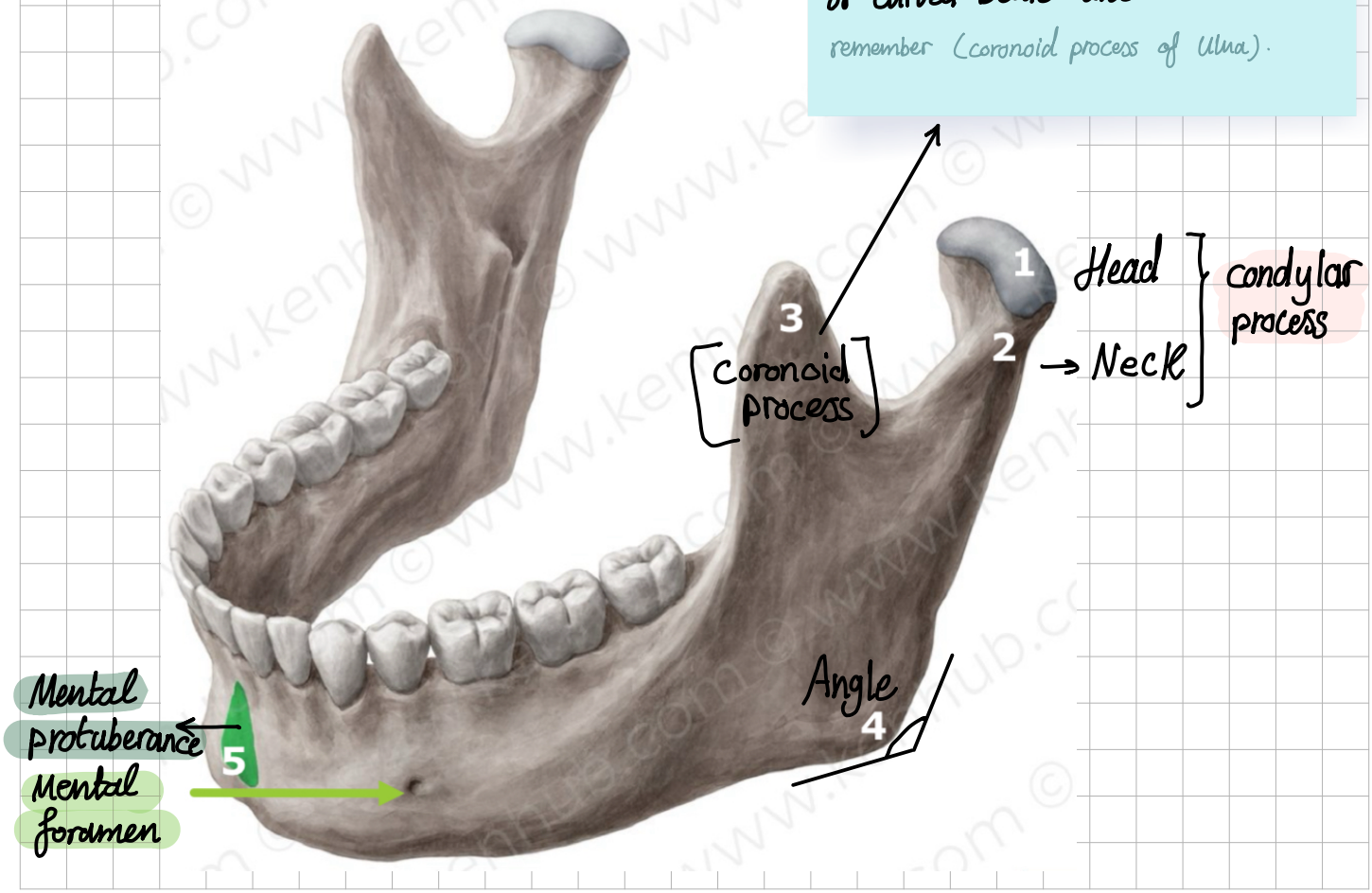
Inferior temporal line

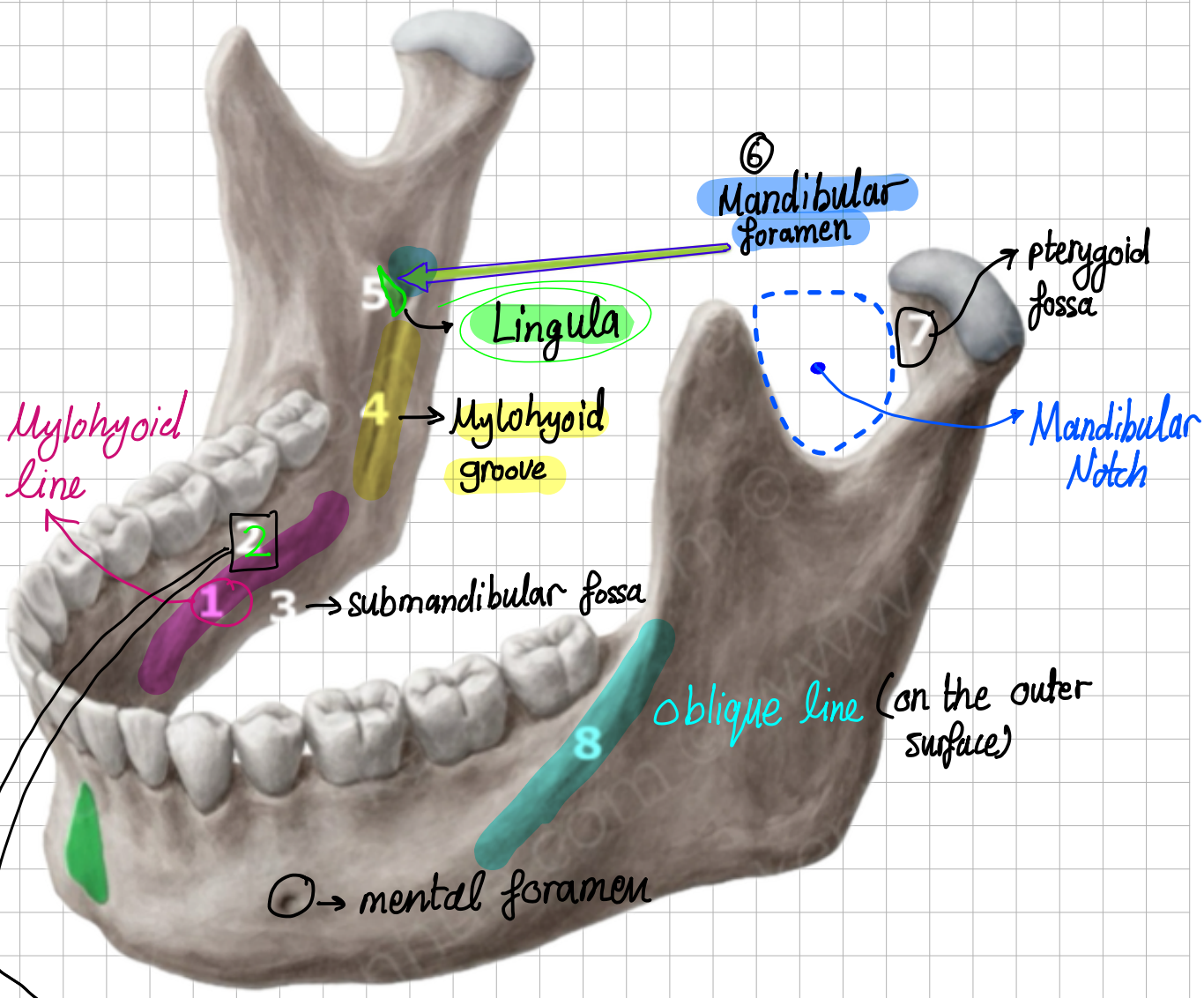
Skull practical Lab (Pt.2):

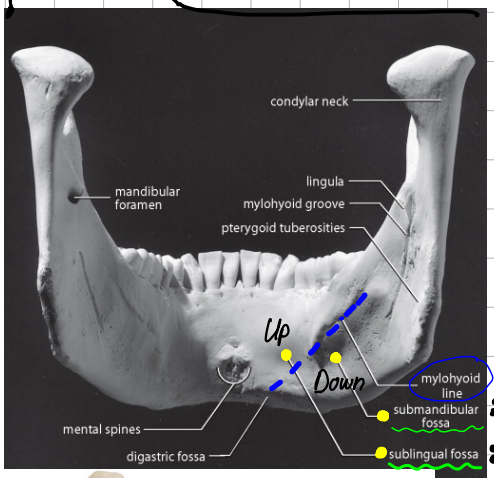
* Mandible:

"Coroncid" → It's used in Anatomy to describe bony projections that resemble a crown or curved beak-like structure.

remember (coronoid process of Ulna).



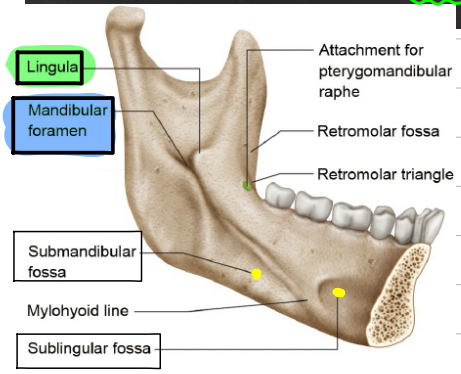




* Mylohyoid groove: provides a passage for the mylohyoid nerve and vessels.

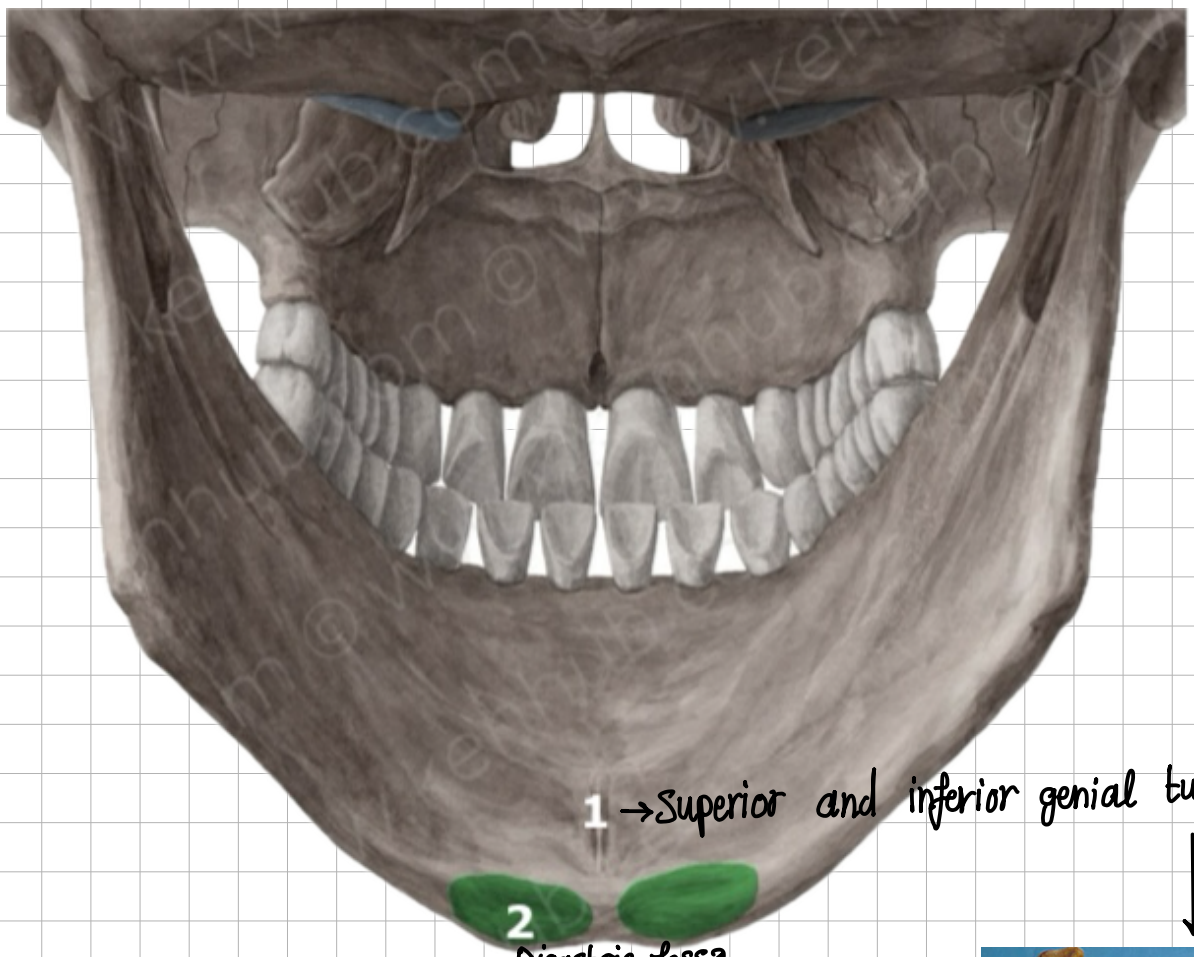
* Mylohyoid line: serves as the attachment site for the mylohyoid muscle.

: It's the location for submandibular gland.
: It's the location for sublingual gland.



يا حبذا الجنةُ واقترابُها طيبةً وباردًا شرابُها ...

جعفر بن أبي طالب

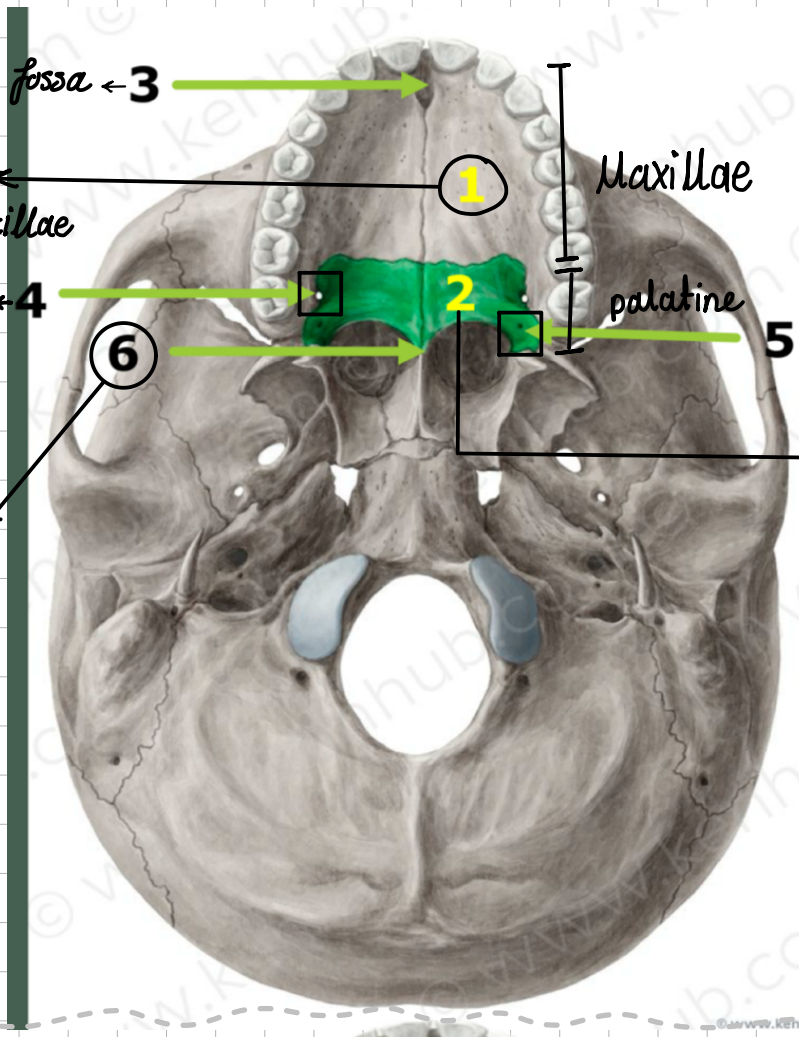


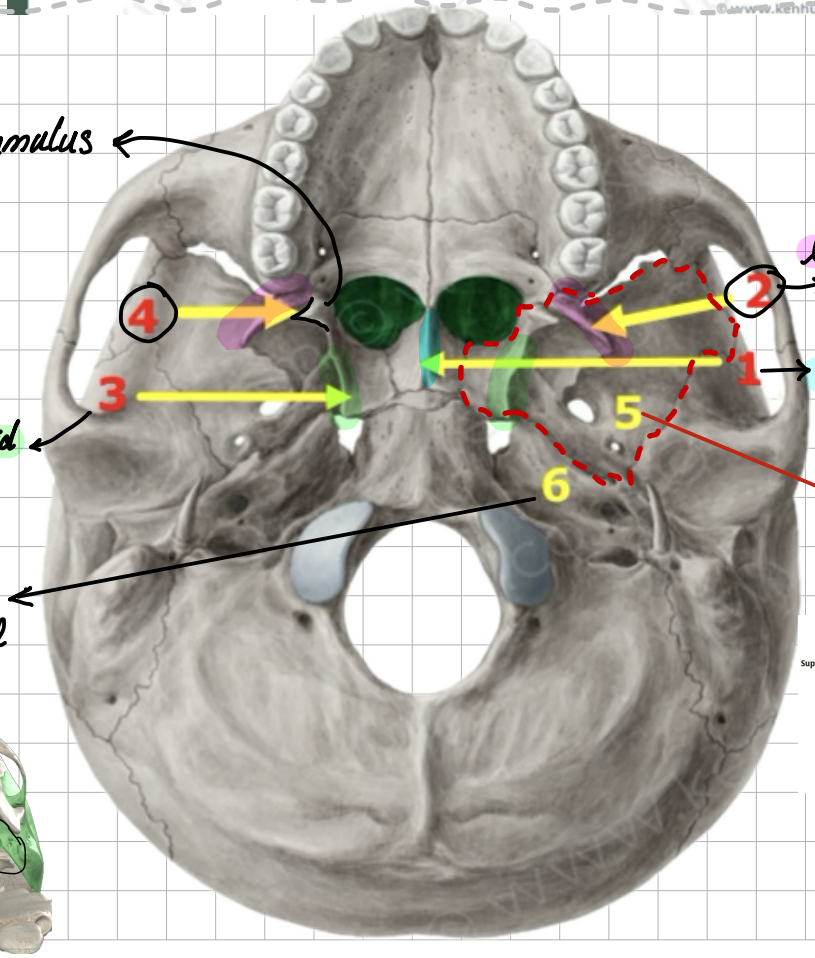
1 → Superior and inferior genial tubercles

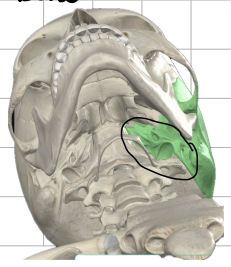
2 Digastric fossa

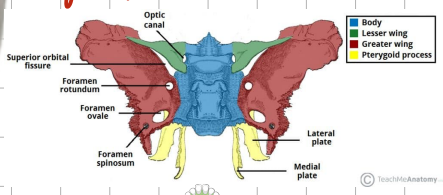
↳ Site of orgin of the anterior belly of digastric muscle.

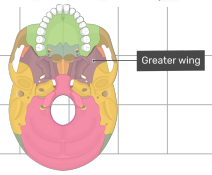
Norma Basalis Externa 2

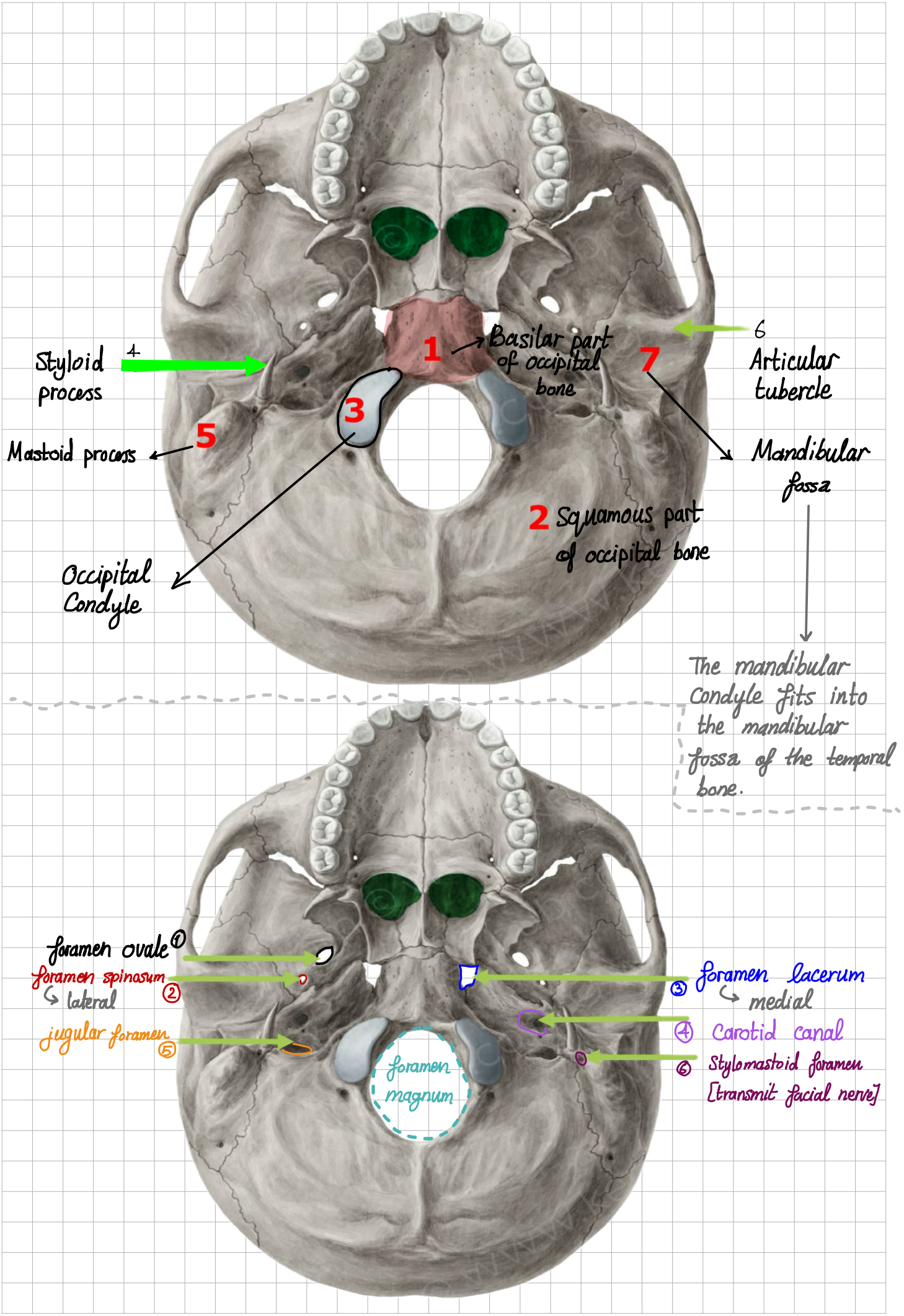




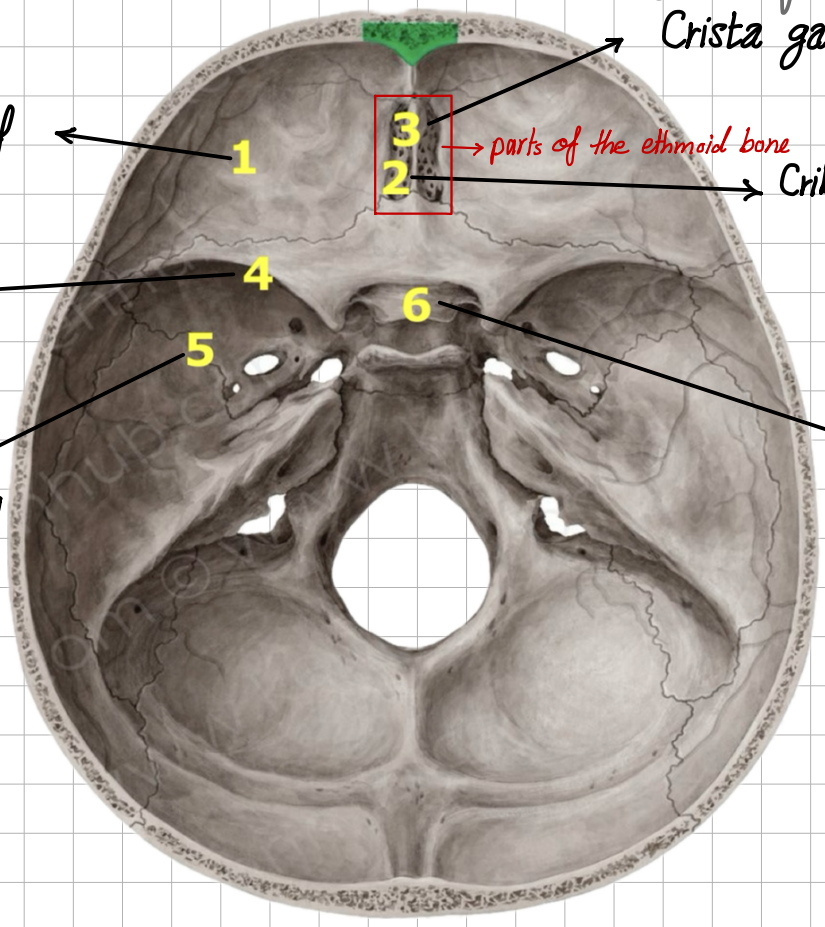







Styloid process 4
1
Basilar part of occipital bone
6
Articular tubercle
7
3
5
Mastoid process
Mandibular fossa
2 Squamous part of occipital bone
Occipital Condyle
The mandibular condyle fits into the mandibular fossa of the temporal bone.
foramen ovale ①
foramen spinosum ②
↳ lateral
jugular foramen ⑤
foramen magnum
③ foramen lacerum ↳ medial
④ carotid canal
⑥ Stylomastoid foramen [transmit facial nerve]

Norma Basalis Interna :



Located in the medline of the skull, it provides an attachment site for the flax cerebri, which helps stablize the brain within the skull.

Crista galli

3 → parts of the ethmoid bone

Orbital plates of the frontal bone

Cribriform plate of ethmoid

Lesser wing of sphenoid

Greater wing of sphenoid

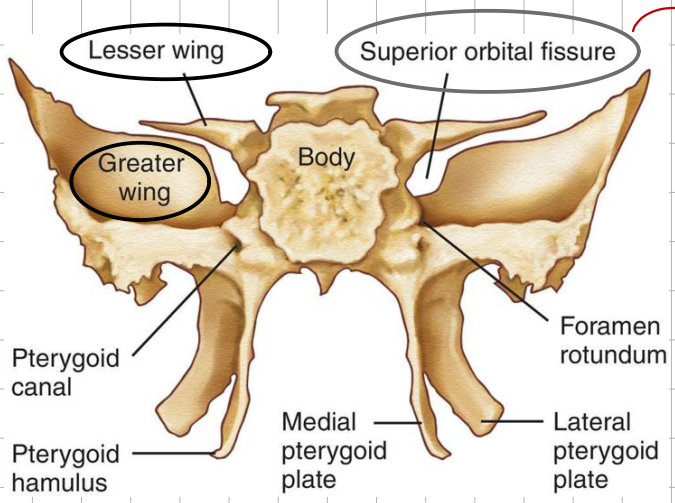
Sulcus chiasmaticus

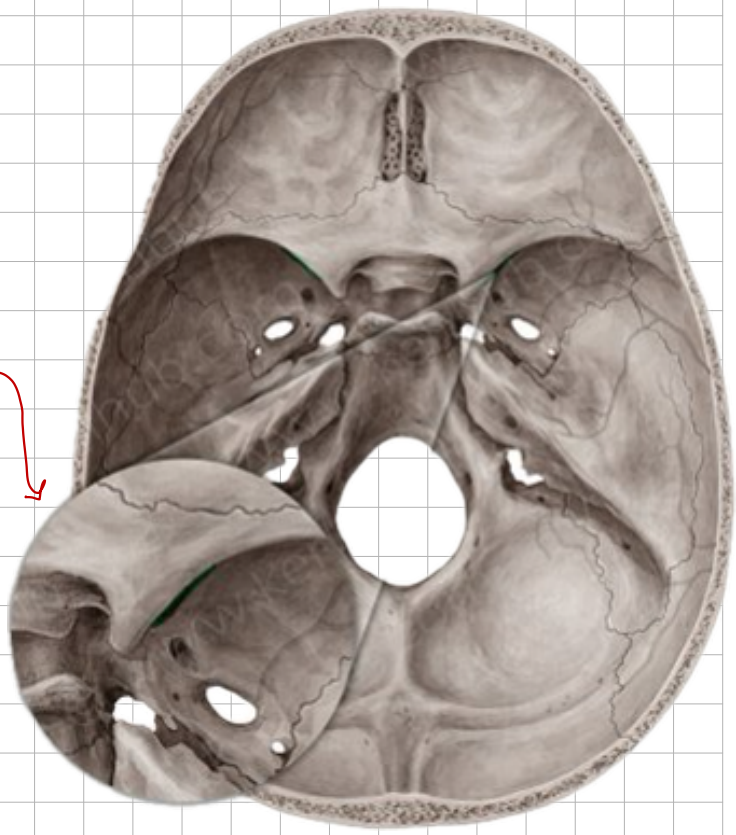
Serves as the site where the optic chiasm

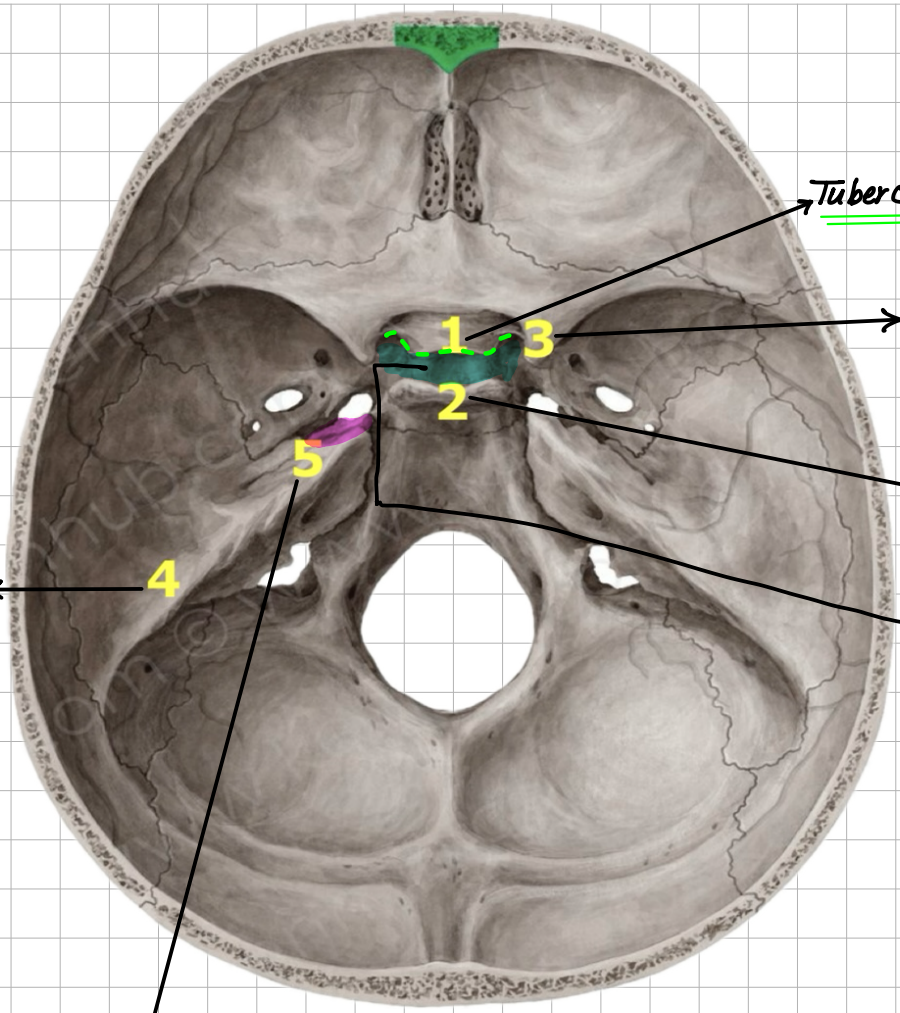
↓

the point where the optic nerves cross

The Superior orbital fissure Separates the lesser wing and greater wing of sphenoid bone.







Tuberculum sellae

Anterior clinoid process

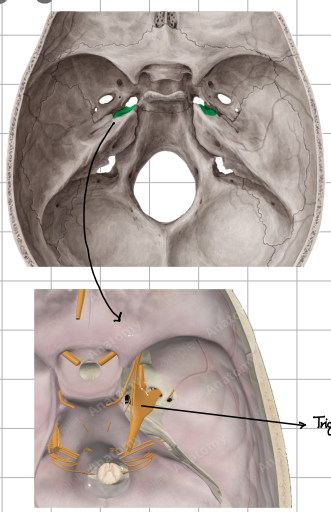
Dorsum sellae

Hypophysial fossa in the middle

posterior part of temporal bone

Trigeminal impression

shallow depression on the petrous part where the trigeminal ganglion is located.

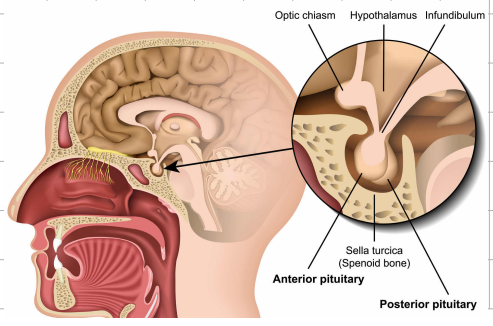


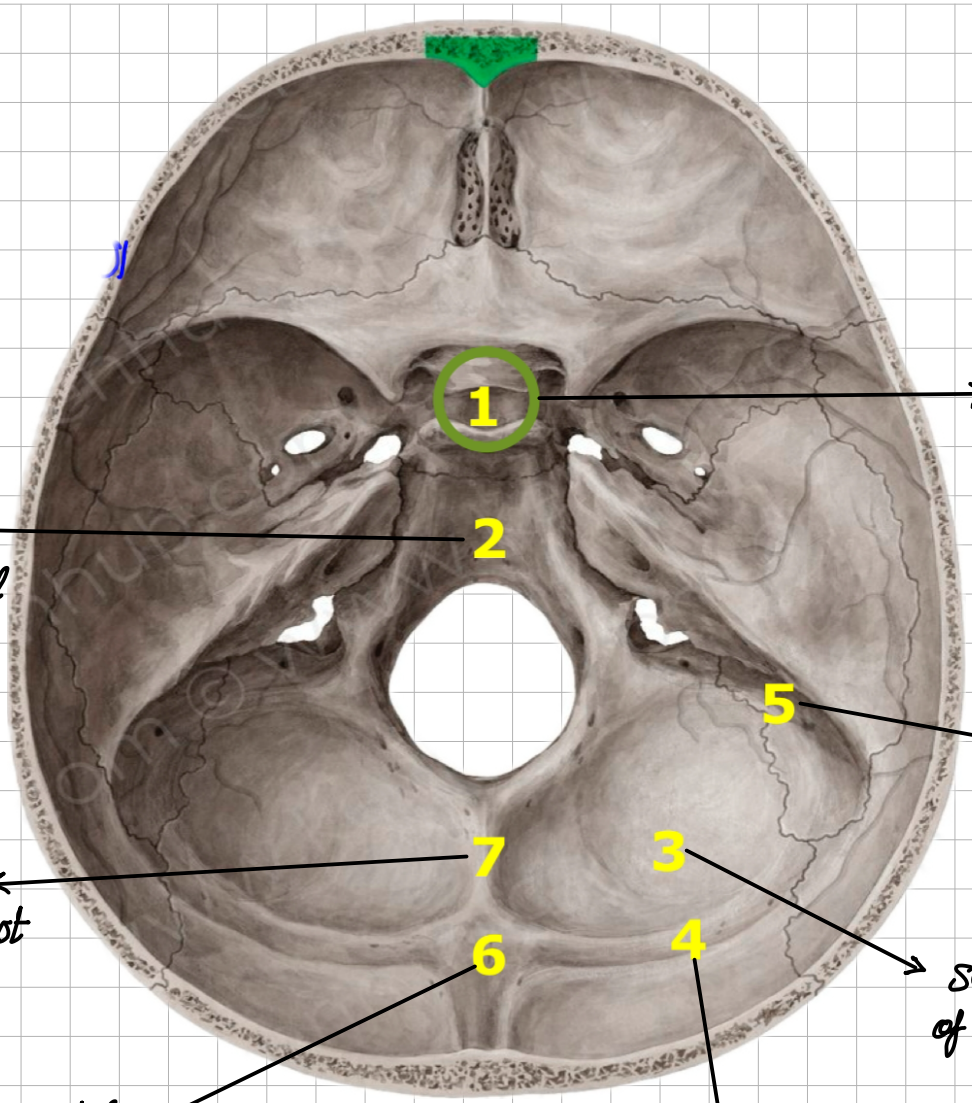
* Sella turcica:

it houses and protects the pituitary gland (hypophysis).

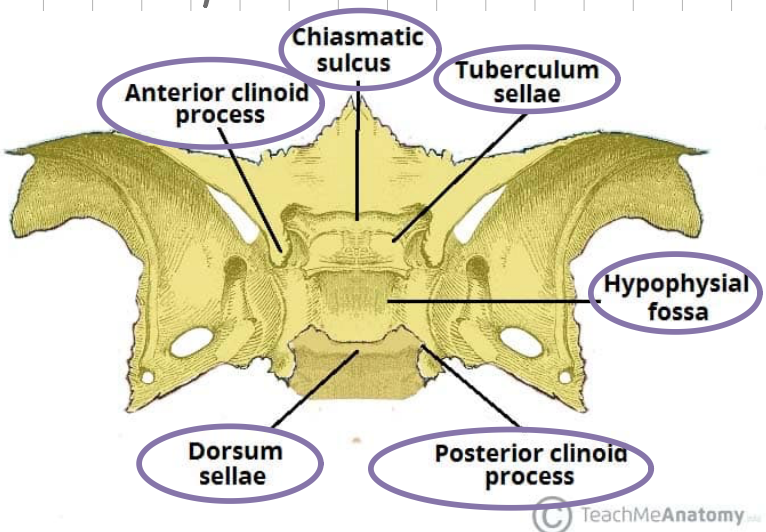
▷ Anatomical features:

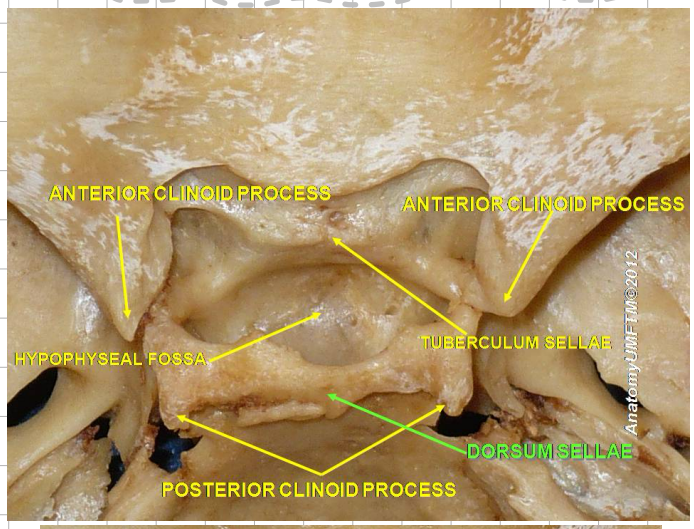
- Tuberculum sellae → Anteriorly
- Dorsum sellae → posteriorly
- Hypophyseal fossa → The central depression where the pituitary gland sites.
- Anterior and posterior clinoid process.

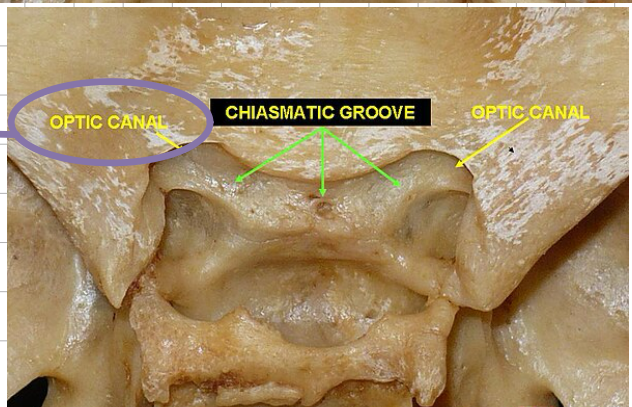




Additional photos:

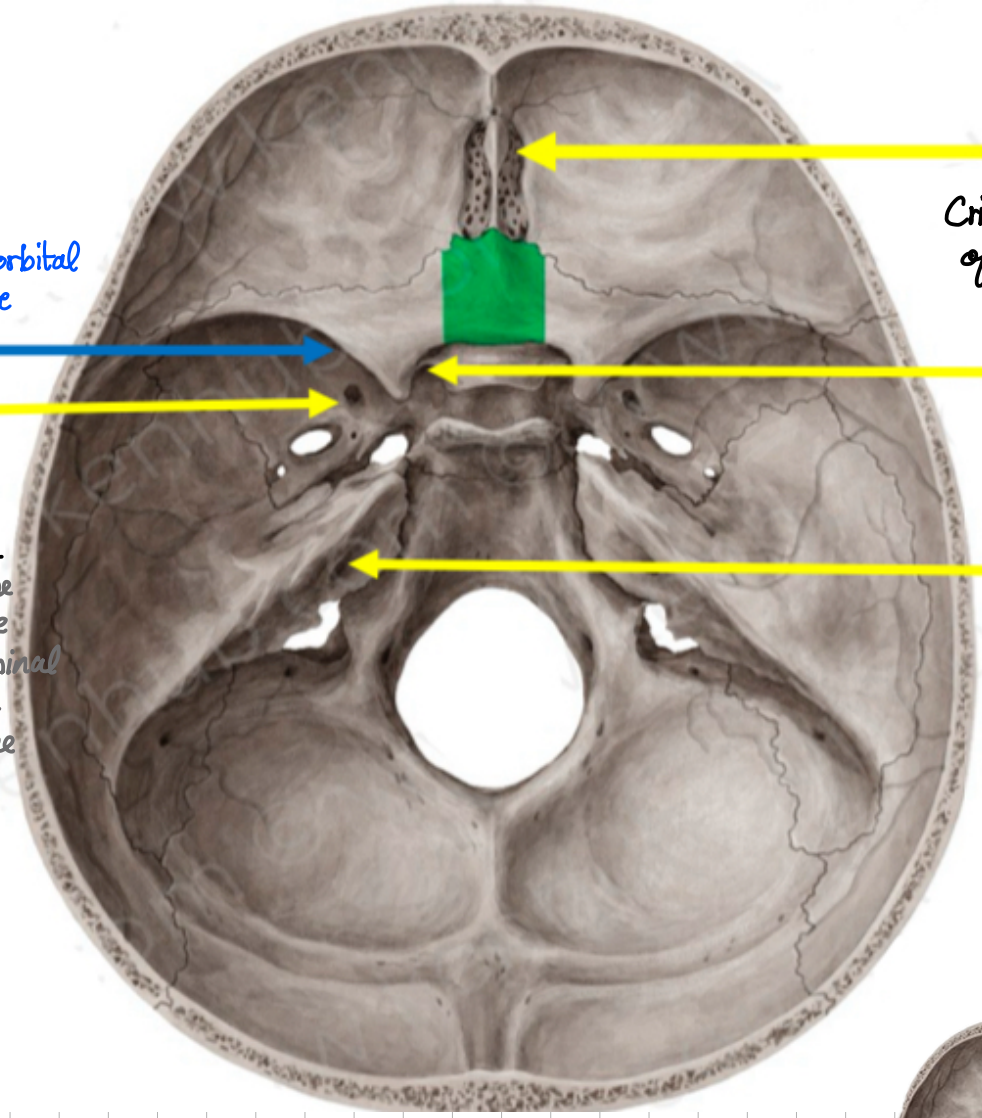






Clinical application:

https://youtu.be/v4IAJGP-Xml?si=ZBo_8HIZeGGOSMr2



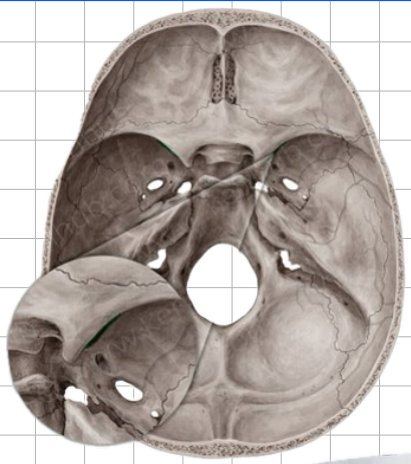
1
Cribriform plate of ethmoid

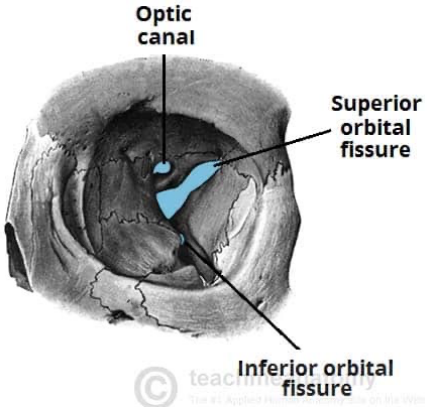
2
Optic canal

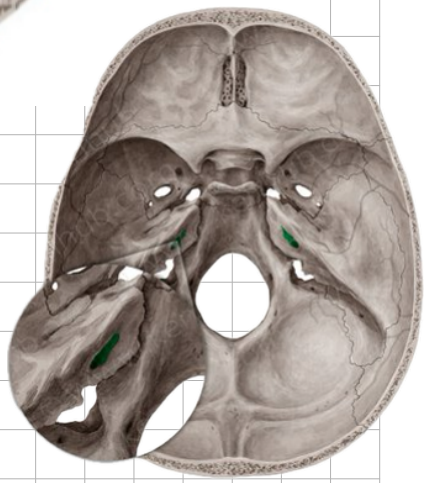
3
Superior orbital fissure

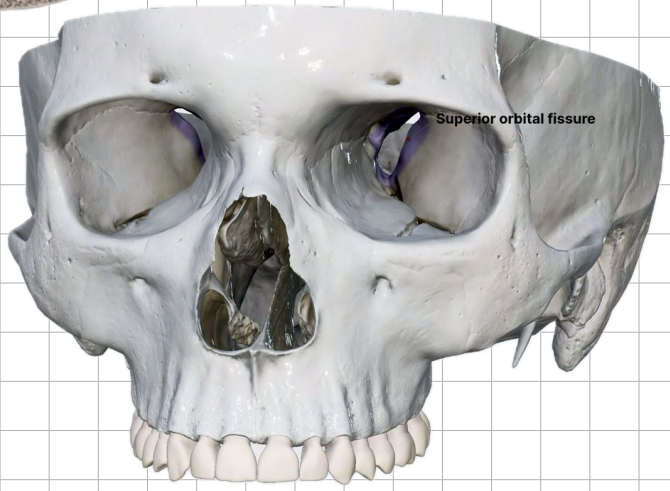
4
Foramen Rotundum
transmits the maxillary nerve from the trigeminal ganglion to the pterygopalatine fossa.

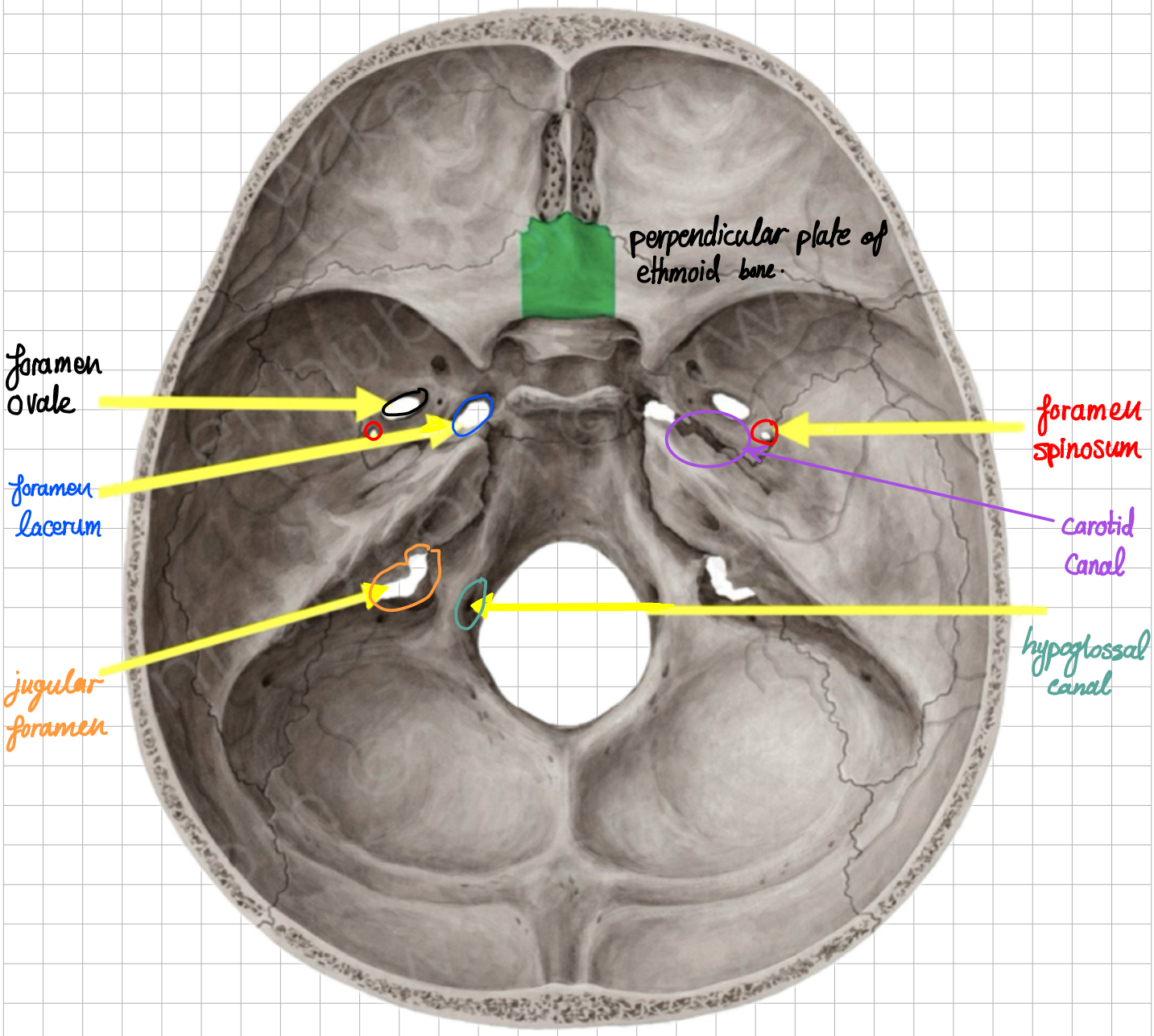
5
Internal acoustic meatus





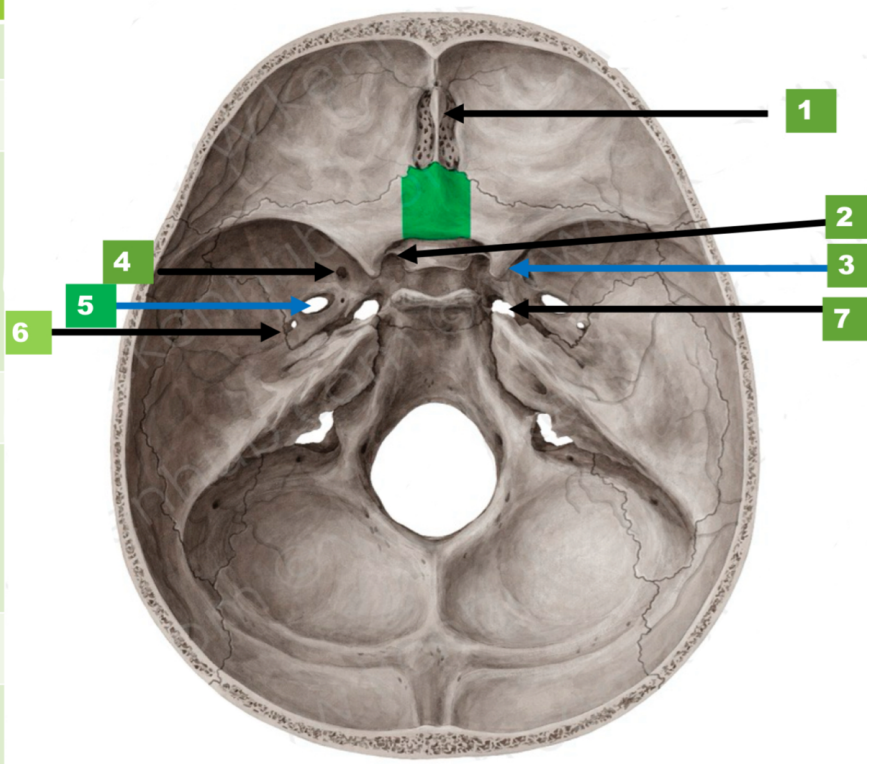




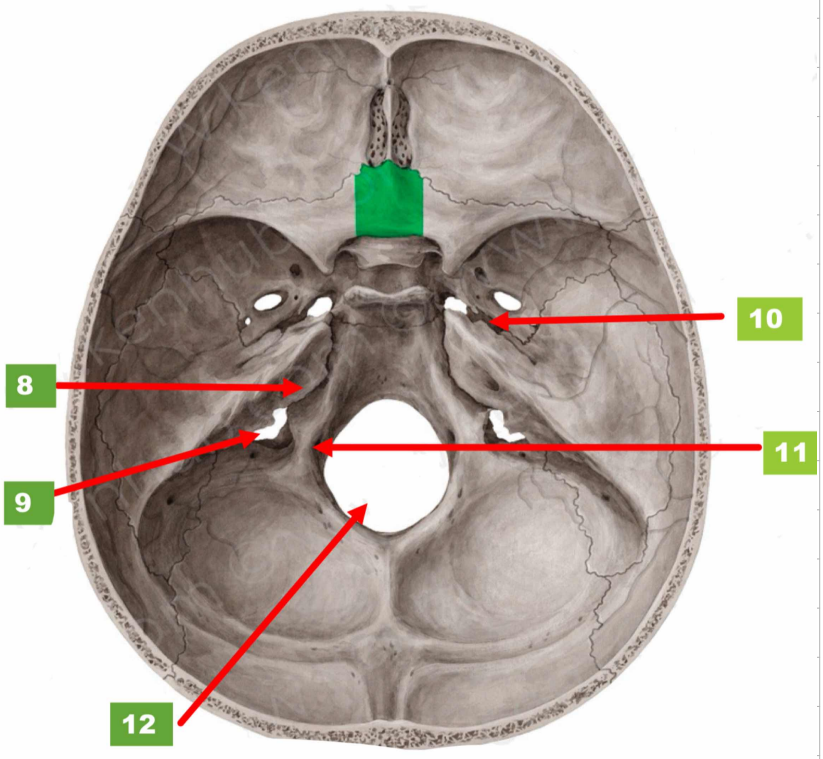

perpendicular plate of ethmoid bone.
foramen ovale
foramen lacerum
jugular foramen
foramen spinosum
carotid canal
hypoglossal canal

Skull foramina :

Foramina	Contents
1-Cribriform Plate	Olfactory N (I)
2-Optic canal	Optic nerve (II) and ophthalmic artery
3-Superior orbital fissure	Occulomotor (III),Trochlear (IV), Abducence (VI) and (lacrimal, frontal and nasociliary) branches of ophthalmic nerves (V1)
4-Foramen Rotundum	Maxillary nerve
5-Foramen Ovale	MALE **M**andibular nerve V3 **A**ccessory meningeal A **L**esser petrosal nerve **E**missary vein
6-Foramen spinosum	Middle meningeal artery
7-Foramen Lacerum	Nerve and Artery of pterygoid canal and emissary vein



Foramina	Contents
8-Internal acoustic meatus	Facial nerve (VII), vestibulocochlear nerve (VIII)
9-Jugular Foramen	Inferior petrosal sinus (Anterior) Glossopharyngeal nerve (IX), vagus nerve (X), accessory nerve (XI) (Intermediate) Sigmoid sinus (Posterior)
10- Carotid canal	Internal carotid artery
11-Hypoglossal Canal	Hypoglossal Nerve (XII)
12-Foramen magnum	spinal cord and meninges; vertebral arteries; anterior and posterior spinal arteries; dural veins; spinal roots of the accessory nerve



سُبحانكَ اللّهمّ وبحمدك، أشهدُ أن لا إلهَ إلا أنتَ، أستغفرُكَ وأتوبُ إليك

سُورَةُ القَمَرِ

إِنَّ ٱلْمُتَّقِينَ فِى جَنَّٰتٍ وَنَهَرٍ ﴿٥٤﴾ فِى مَقْعَدِ صِدْقٍ عِندَ مَلِيكٍ مُّقْتَدِرٍ ﴿٥٥﴾