

CAVITIES OF THE SKULL

Pages 167-184, 213-219, 256, 269, 291 and 297- 310



Orbital cavity

- Four-sided pyramidal cavity that points back
- Contain eyeballs and extraocular muscles

- **Base - margin**

Sup: frontal bone

Lat: frontal and
zygomatic bone

Inf: zygomatic bone + maxilla

Med: lacrimal bone,
frontal bone and
frontal process of ...



- **Wall**

Sup: orbital plate of the ...
bone and lesser wing of ...

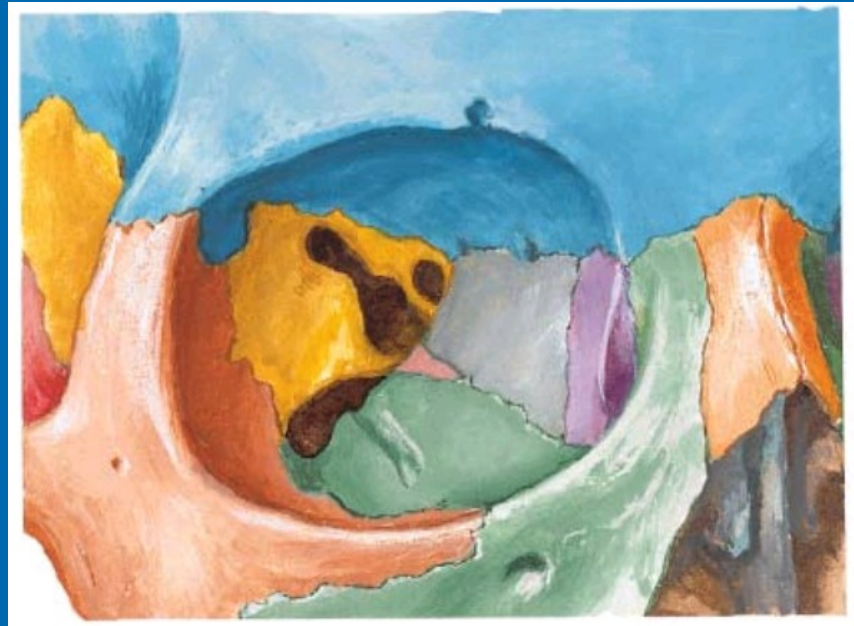
Inf: orbital surface of ... + ...
and orbital process of ...

Lat: orbital process of ... ,
orbital plate of greater wing
of ...

Med: frontal process of ...
lacrimal bone, orbital plate
of ... ,

and lesser wing and
small part of body of ...





- **Opening**

- Supraorbital notch

- Infraorbital foramen

- Optical canal → middle cranial fossa

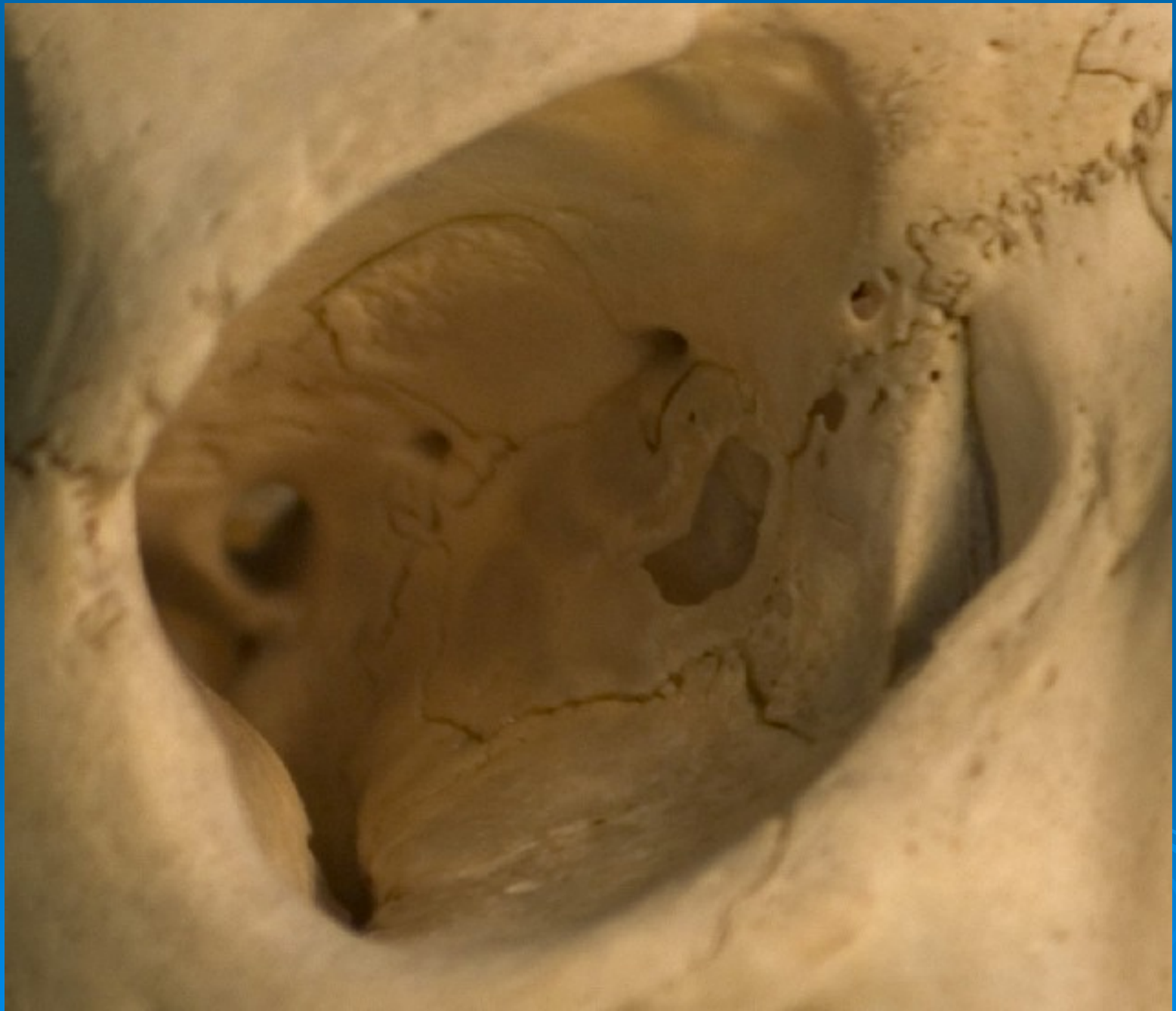
- Superior orbital fissure → middle cranial fossa

- Inferior orbital fissure

- Post. and ant. ethmoidal for. → ethmoidal air sinus

- Zygomatic canal

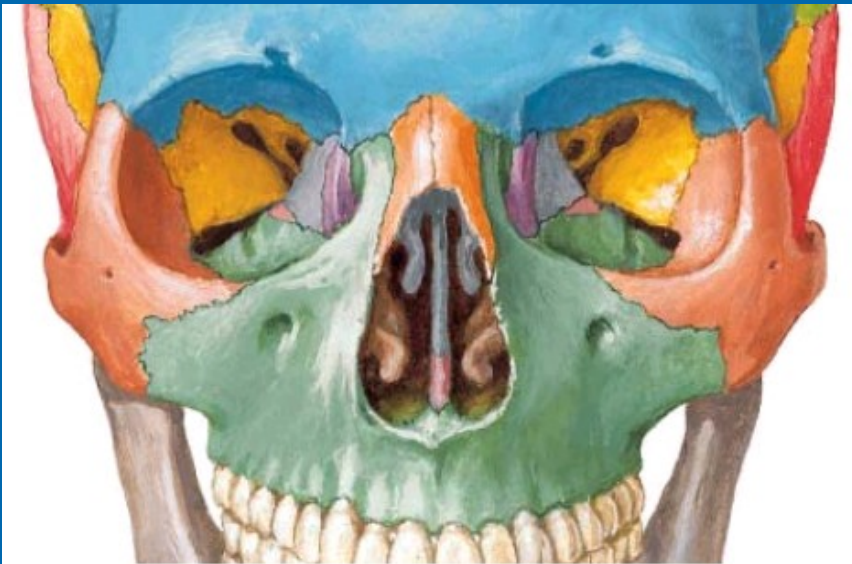
- Nasolacrimal duct → nasal cavity



Nasal region

Anterior nasal aperture → nasal cavity





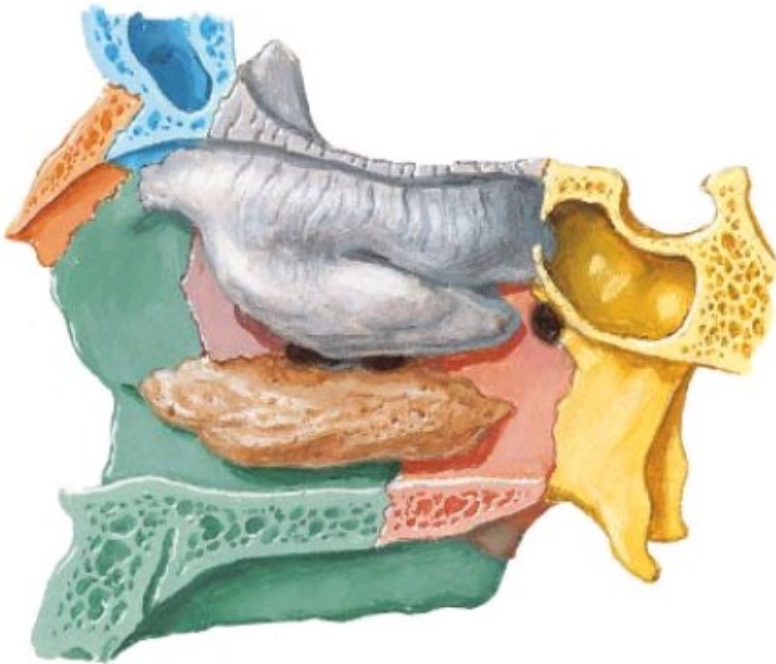
- **Wall**

Sup: nasal bone, lamina cribrosa of ... , middle and superior concha body and sphenoid sinus

Inf: horizontal plate of ... and palatine process of ...

Lat: maxilla and perpendicular plate of ... , medial pterygoid plate, labyrinth of ... , inferior concha

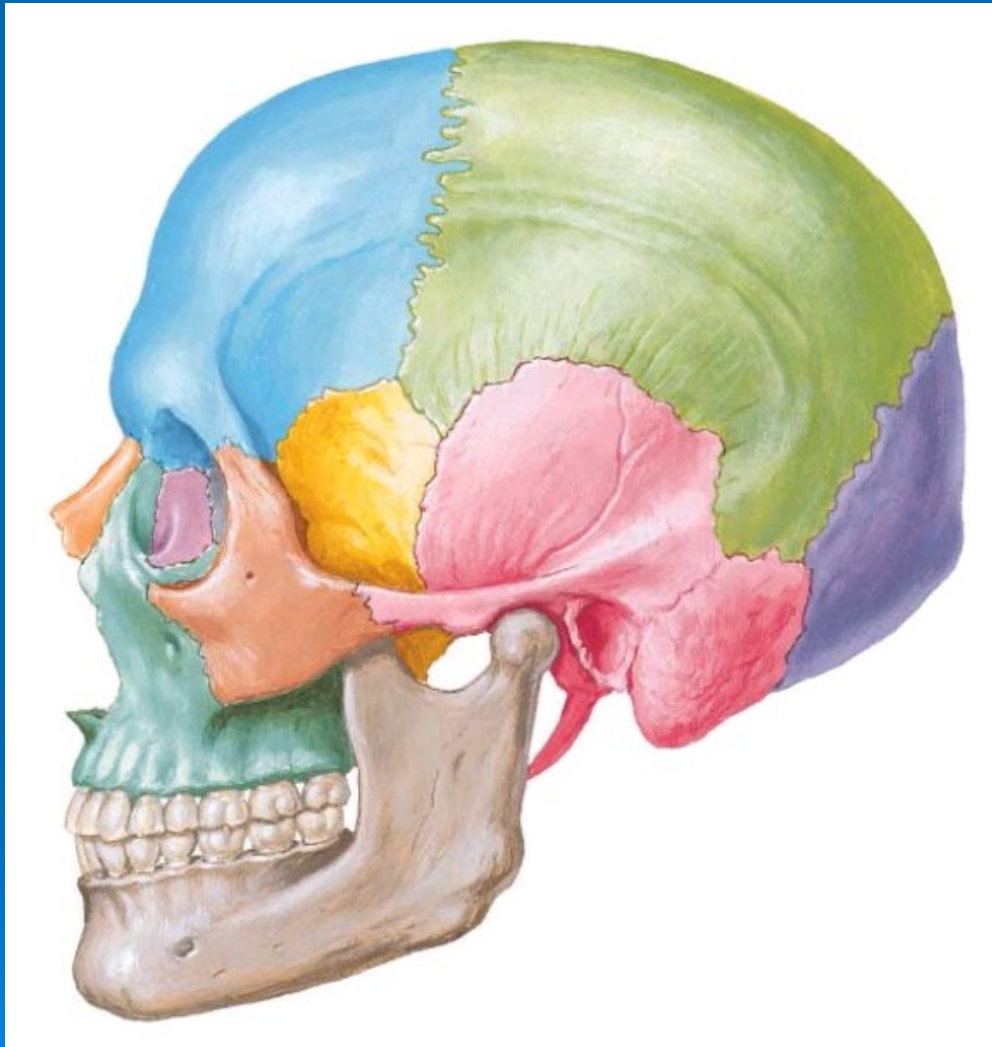
Med: vomer and vertical plate of ...





Temporal fossa





Bounded

Sup. and Post: superior and inferior temporal lines

Inf: zygomatic arch

Ant: frontal and zygomatic bone



Infratemporal fossa

An irregular space inferior and deep to the zygomatic arch and mandible and posterior to maxilla



- **Wall**



Sup: greater wing of ...
inferior portion of ...

Ant: posterior aspect of
maxilla

Lat: medial surface of the
mandibular ramus

Med: lateral pterygoid
plate of ...

Inf: doesn't exist

- **Opening**

Inferior orbital fissure → orbit

Pterygomaxillary fissure - between the pterygoid process of the sphenoid bone and the maxilla → pterygopalatine fossa

Posterior superior alveolar foramina





Pterygopalatine fossa

A small pyramidal space inferior to the apex of the orbit and medial to the infratemporal fossa



- **Bounded**

Ant: superomedial part of the infratemporal surface of maxilla

Post: root of the pterygoid process and adjoining anterior surface of the greater wing of ...

Med: perpendicular plate + sphenoidal processes of ...

Lat: pterygomaxillary fissure

Inf: pyramidal process of the palatine bone



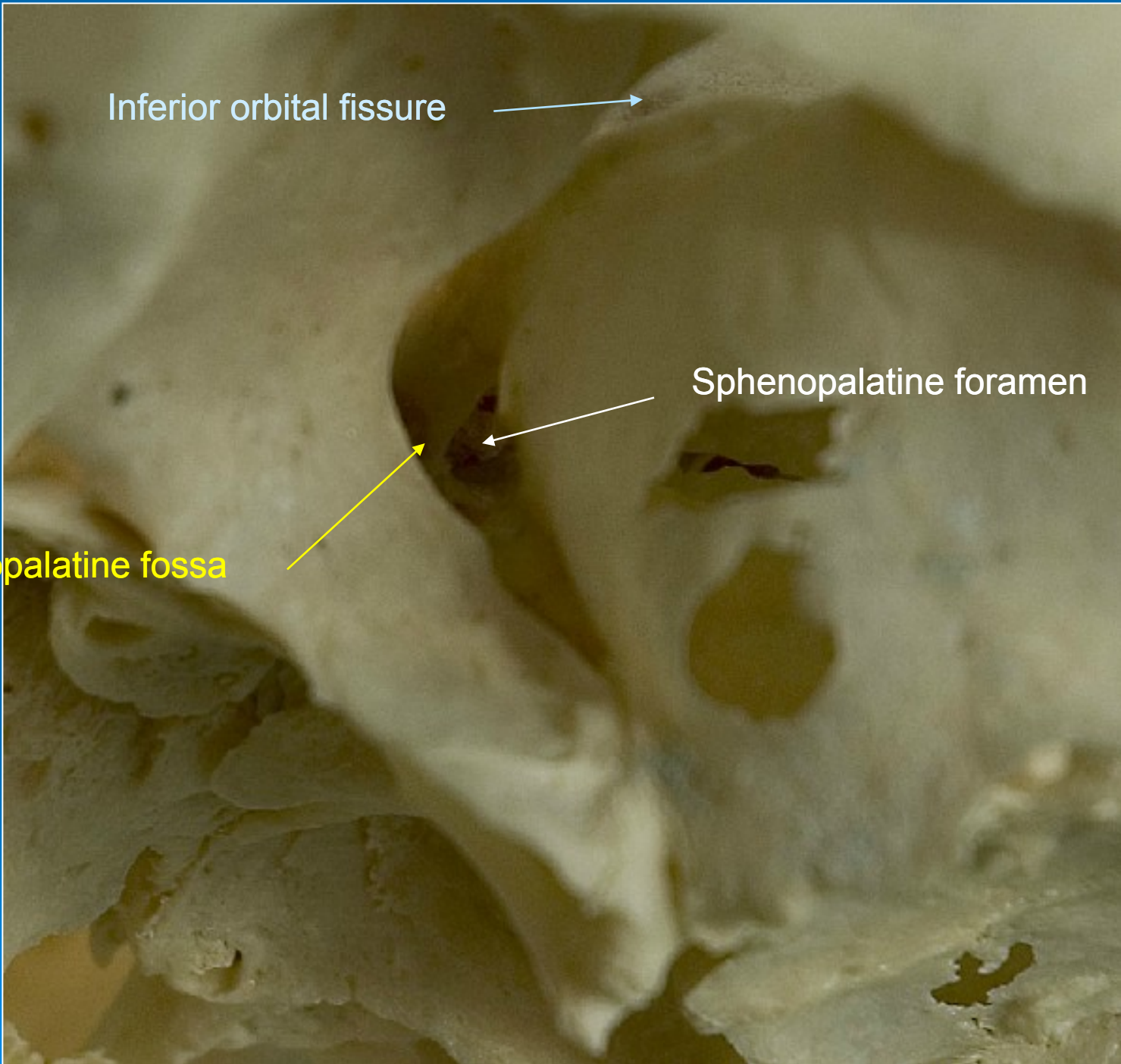
Inferior orbital fissure

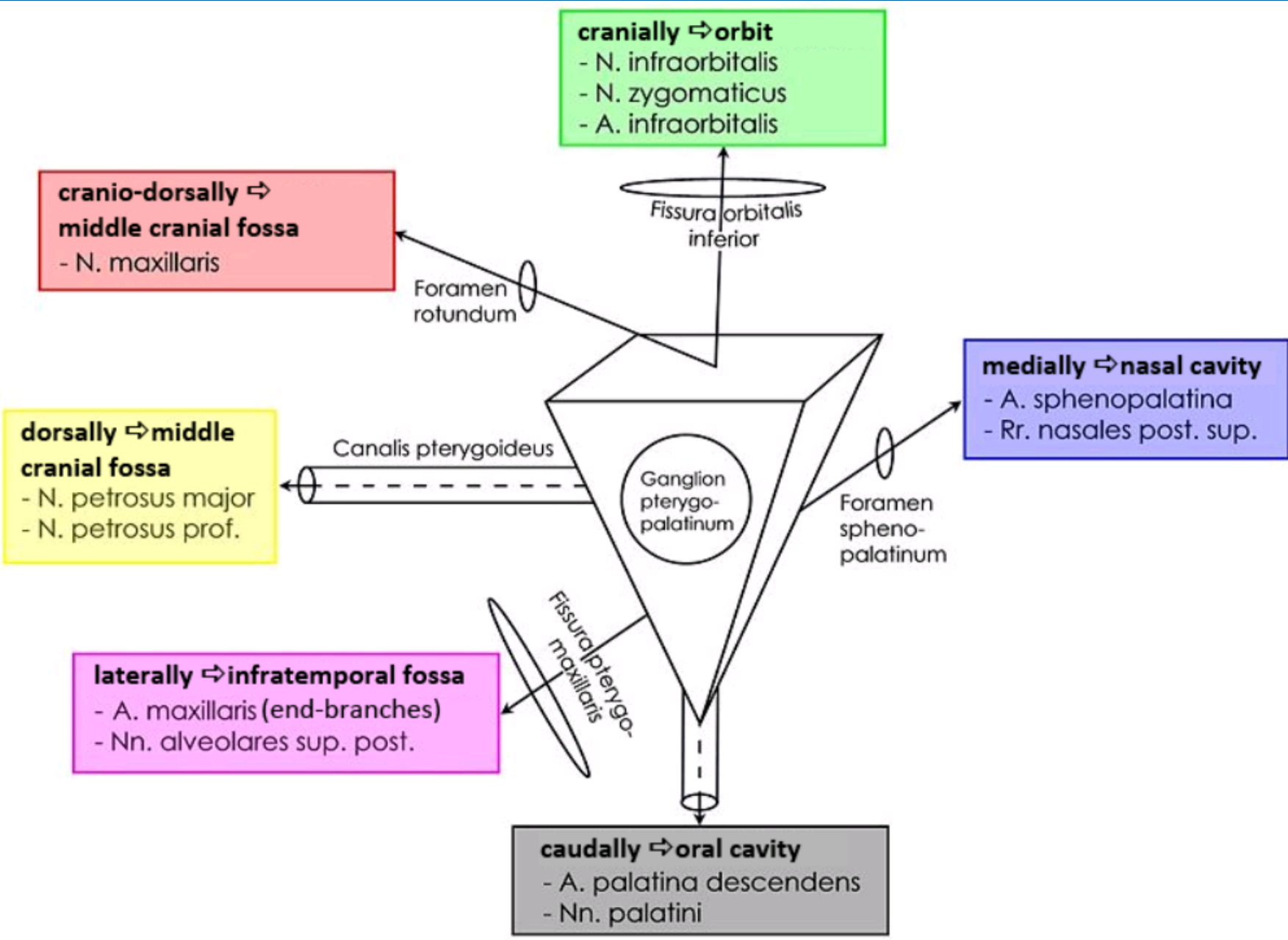


Sphenopalatine foramen



Pterygopalatine fossa



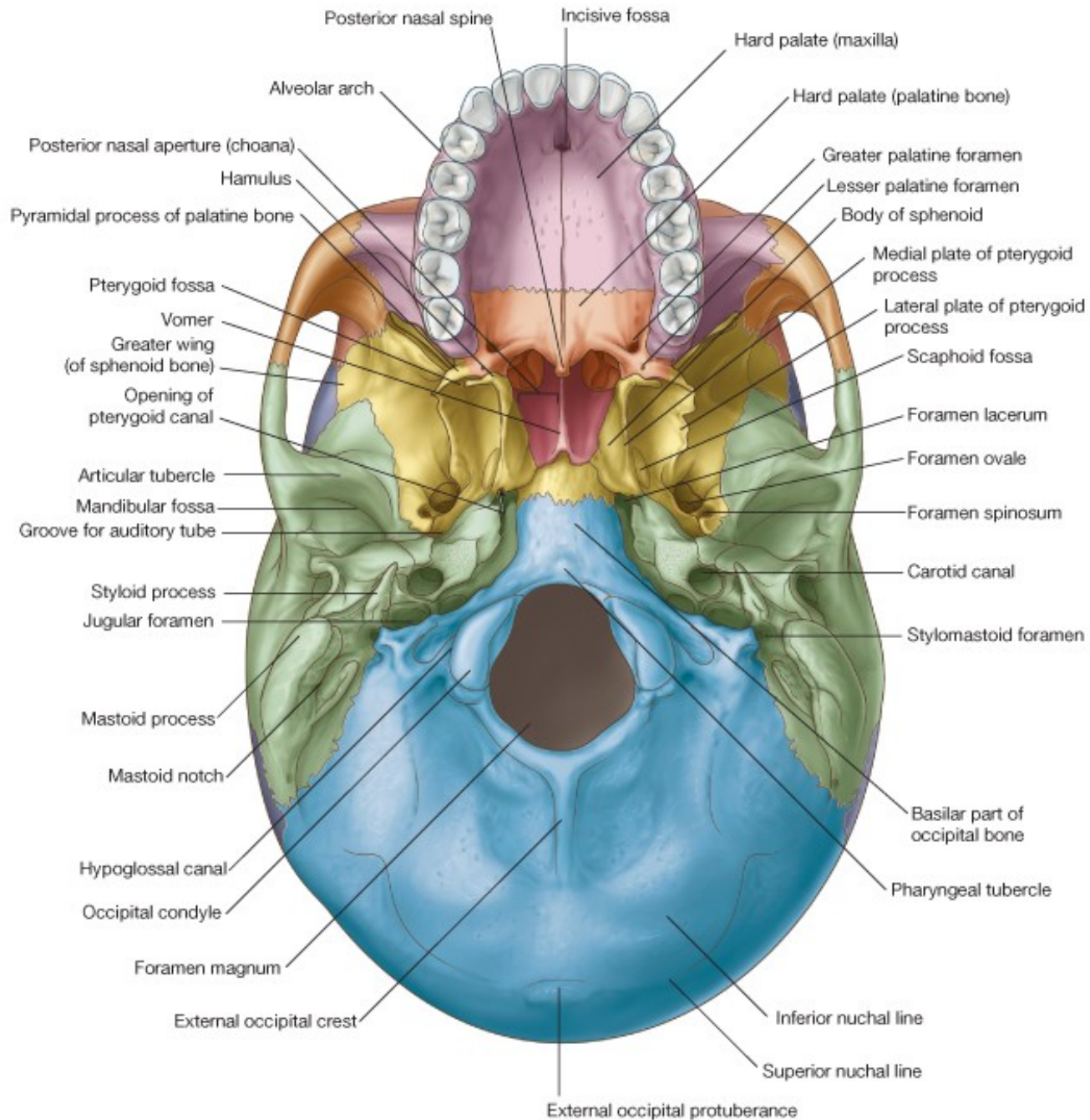


Base of the skull





- Maxillae
- Palatine bones
- Sphenoid bone
- Vomer
- Temporal bones
- Occipital bone

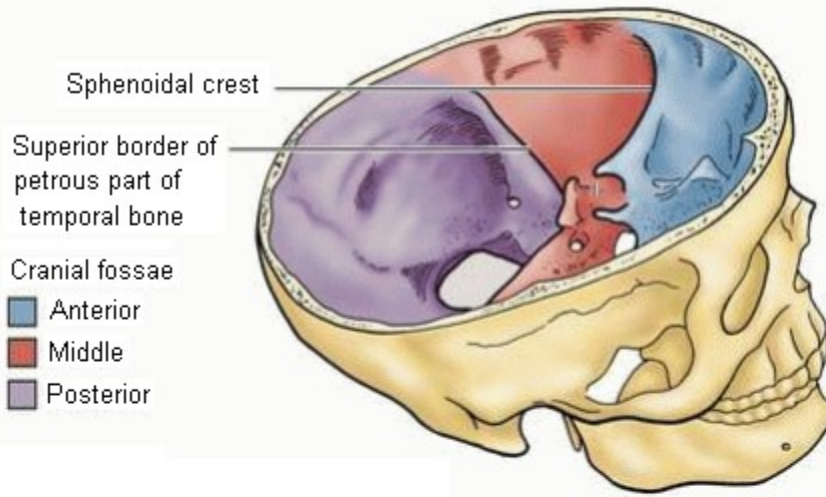


Anterior transverse line

- Joints R and L articular eminence

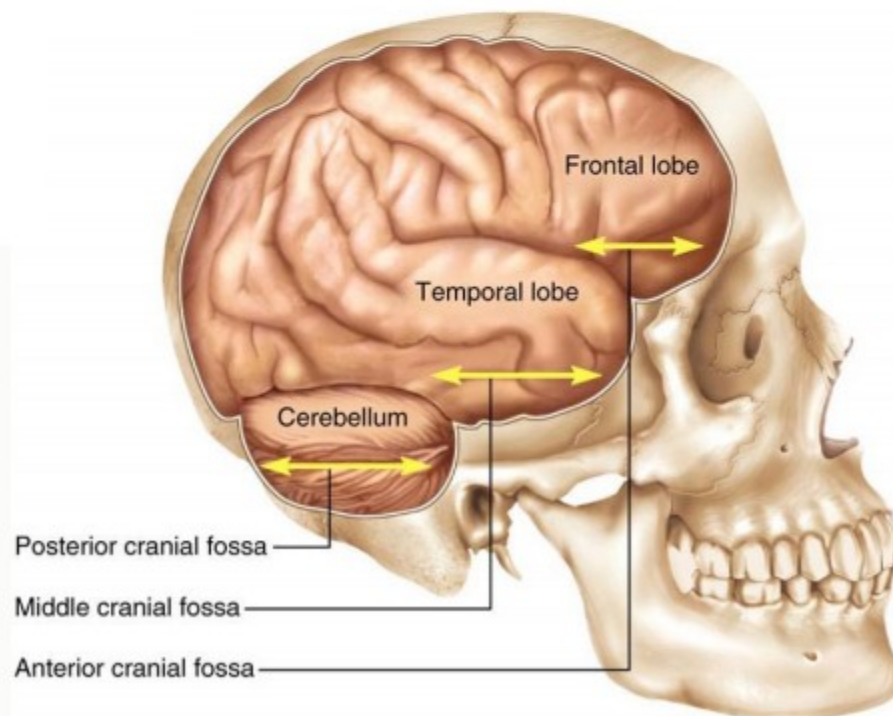
Posterior transverse line

- Joints R and L mastoid processes
→ anterior, intermediate and posterior region



Cranial cavity

- Anterior cranial fossa
- Middle cranial fossa
- Posterior cranial fossa



Anterior cranial fossa

- **Formed by**

- Ant:** frontal bone

- Med:** ethmoid bone

- Post:** body and lesser wing

- **Bounded by**

- Ant:** squama of frontal b.

- Post:** sharp borders of the lesser wing



Anterior cranial fossa

Foramen cecum

Nasal emissary vein (1% of population)

Cribriform foramina in cribriform plate

Axons of olfactory cells in olfactory epithelium that form olfactory nerves

Anterior and posterior ethmoidal foramina

Vessels and nerves with same names

Middle cranial fossa

- **Central part**
composed of the sella turcica on the body of sphenoid
- **Lateral part**
Lat: greater wings of the sphenoid and squamous part of the temporal bone
Post: petrous part of temporal bone

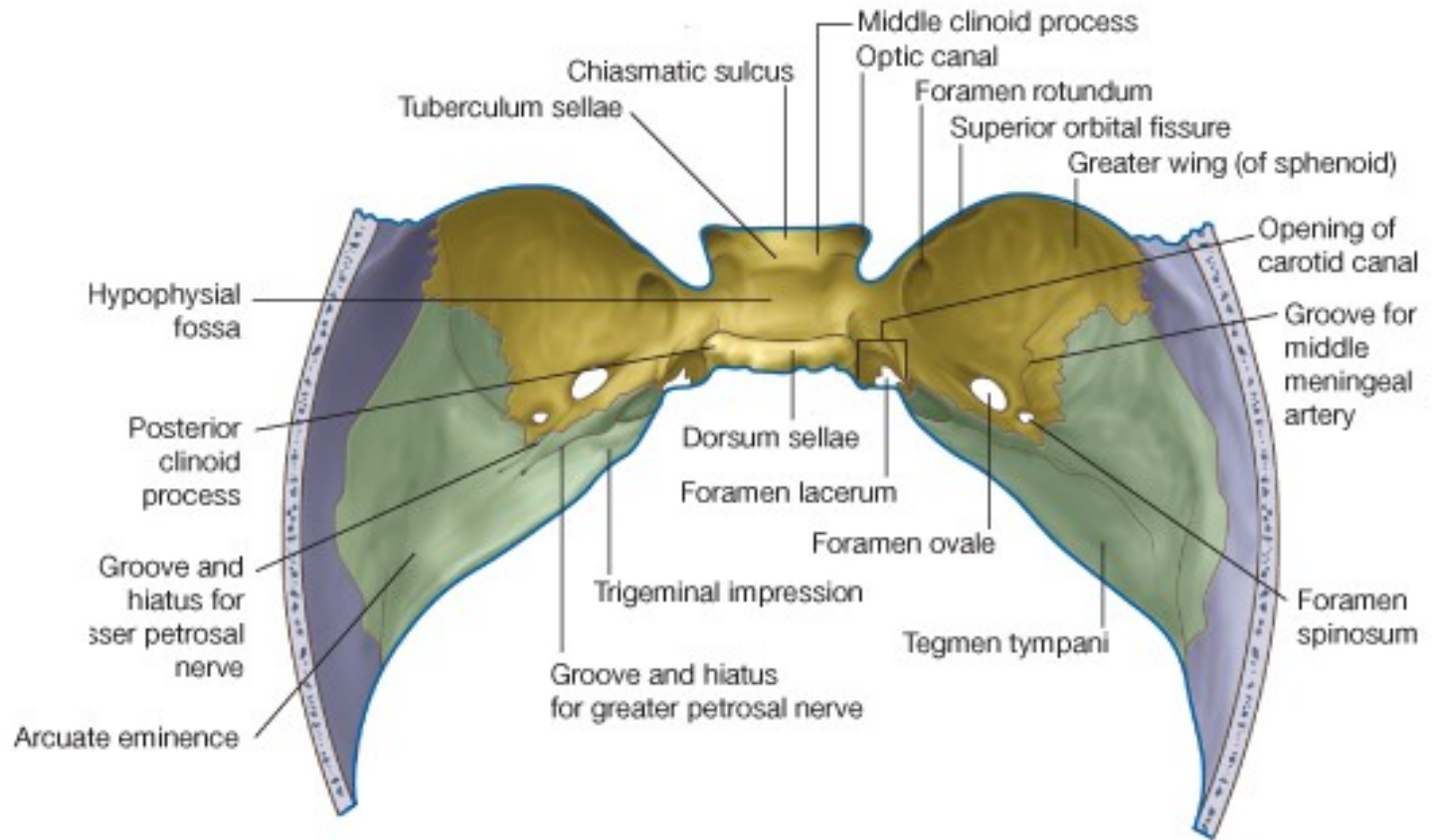
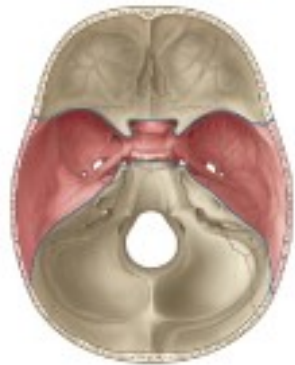


- **Bounded by**

Ant: sharp posterior borders of the lesser wings of ...

Post: dorsum sellae + superior border of petrous part of ...





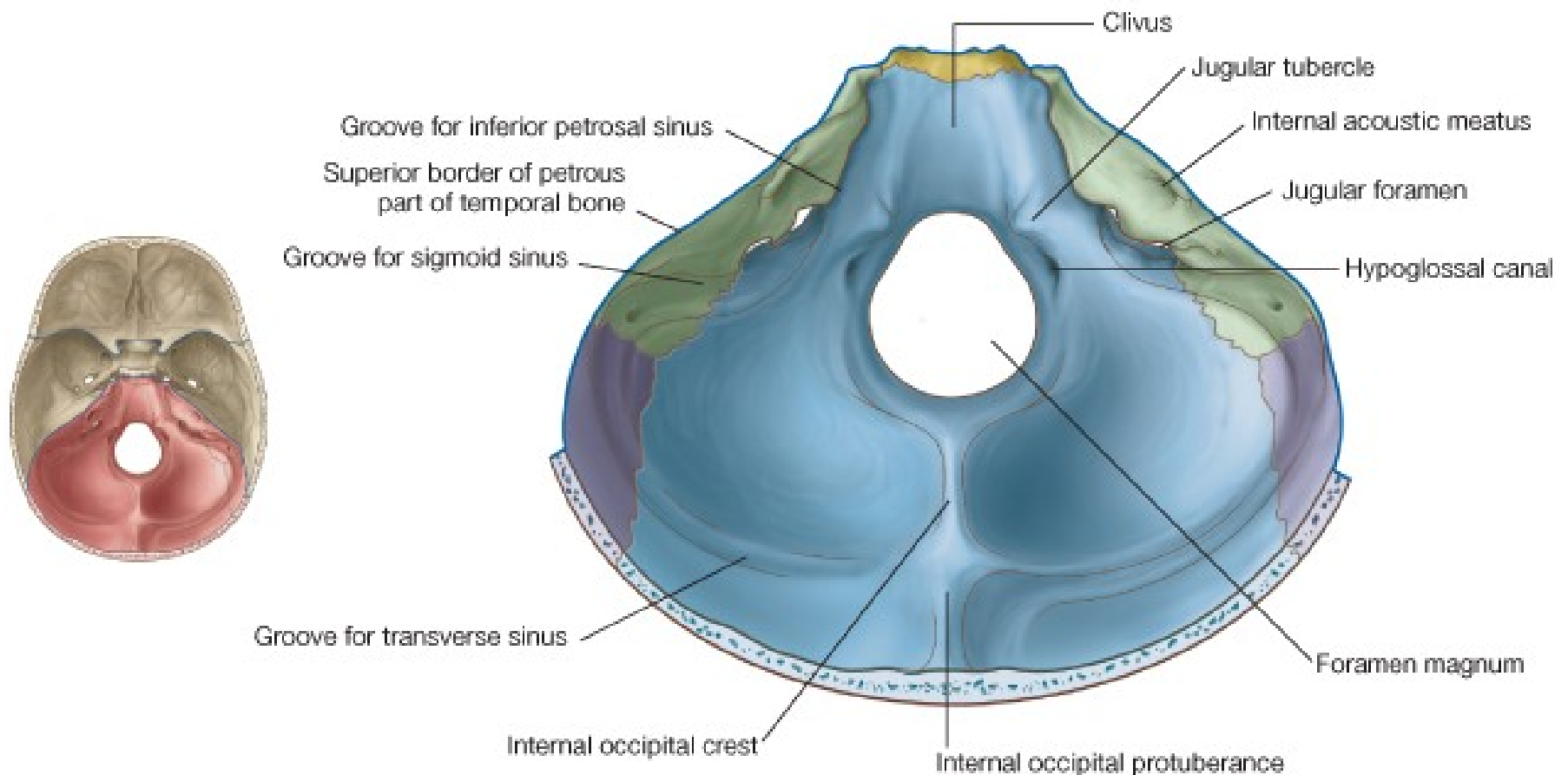
Middle cranial fossa

Optic canals	Optic nerves (CN II) and ophthalmic arteries
Superior orbital fissure	Ophthalmic veins; ophthalmic nerve (CN V ₁); CN III, IV, and VI; and sympathetic fibers
Foramen rotundum	Maxillary nerve (CN V ₂)
Foramen ovale	Maxillary nerve (CN V ₃) and accessory meningeal artery
Foramen spinosum	Middle meningeal artery and vein and meningeal branch of CN V ₃
Foramen lacerum	Deep petrosal nerve and some meningeal arterial branches and small veins
Groove or hiatus of greater petrosal nerve	Greater petrosal nerve and petrosal branch of middle meningeal artery

Posterior cranial fossa

- **Bounded by**
Ant: dorsum sellae +
superior border of petrous
part of ...
Post: squama of the
occipital bone
- **Formed by**
occipital bone,
dorsum sellae centrally +
petrous and mastoid parts
of ... anterolaterally





Posterior cranial fossa

Foramen magnum

Medulla and meninges, vertebral arteries, CN XI, dural veins, anterior and posterior spinal arteries

Jugular foramen

CN IX, X, and XI; superior bulb of internal jugular vein; inferior petrosal and sigmoid sinuses; and meningeal branches of ascending pharyngeal and occipital arteries

Hypoglossal canal

Hypoglossal nerve (CN XII)

Condylar canal

Emissary vein that passes from sigmoid sinus to vertebral veins in neck

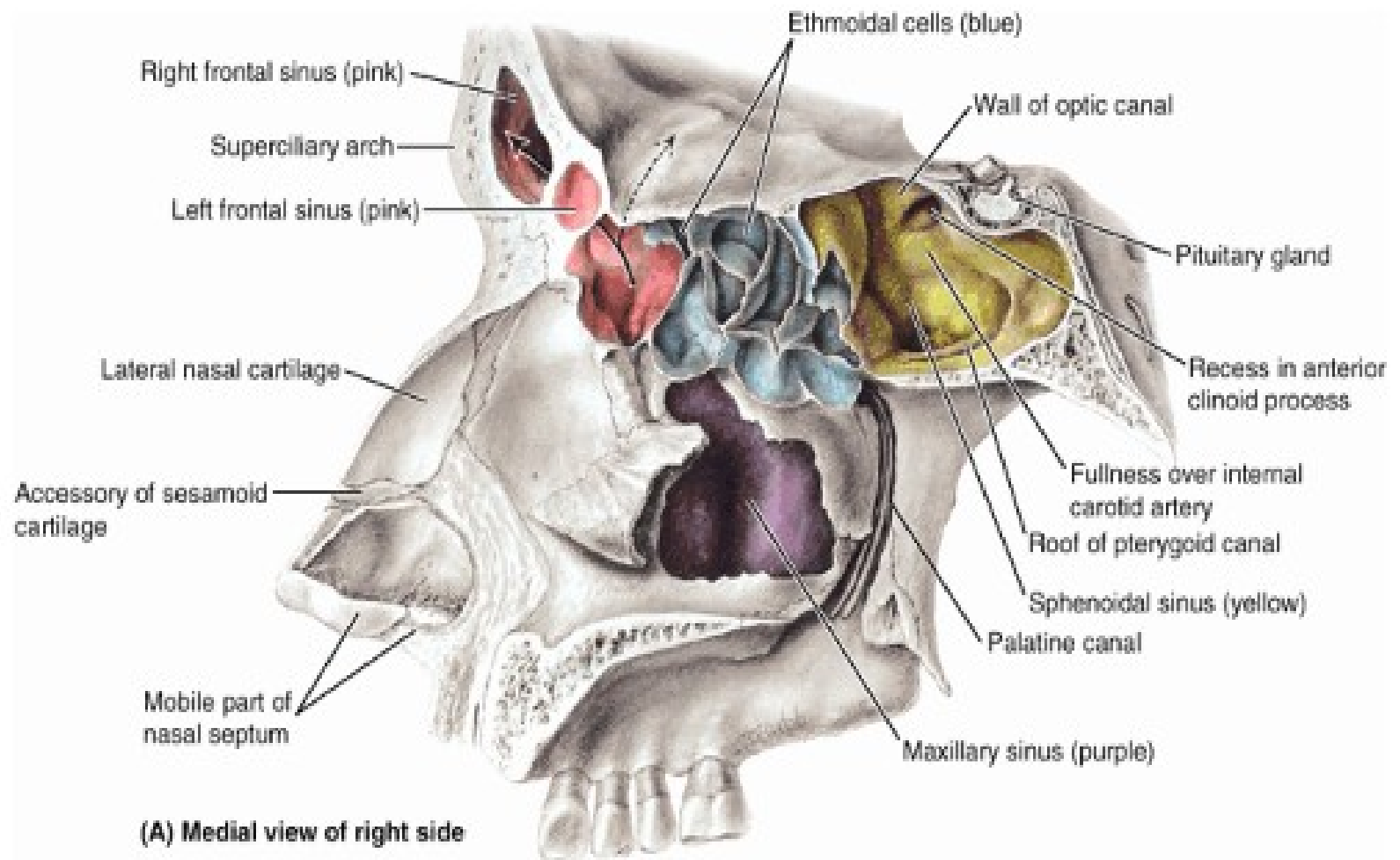
Mastoid foramen

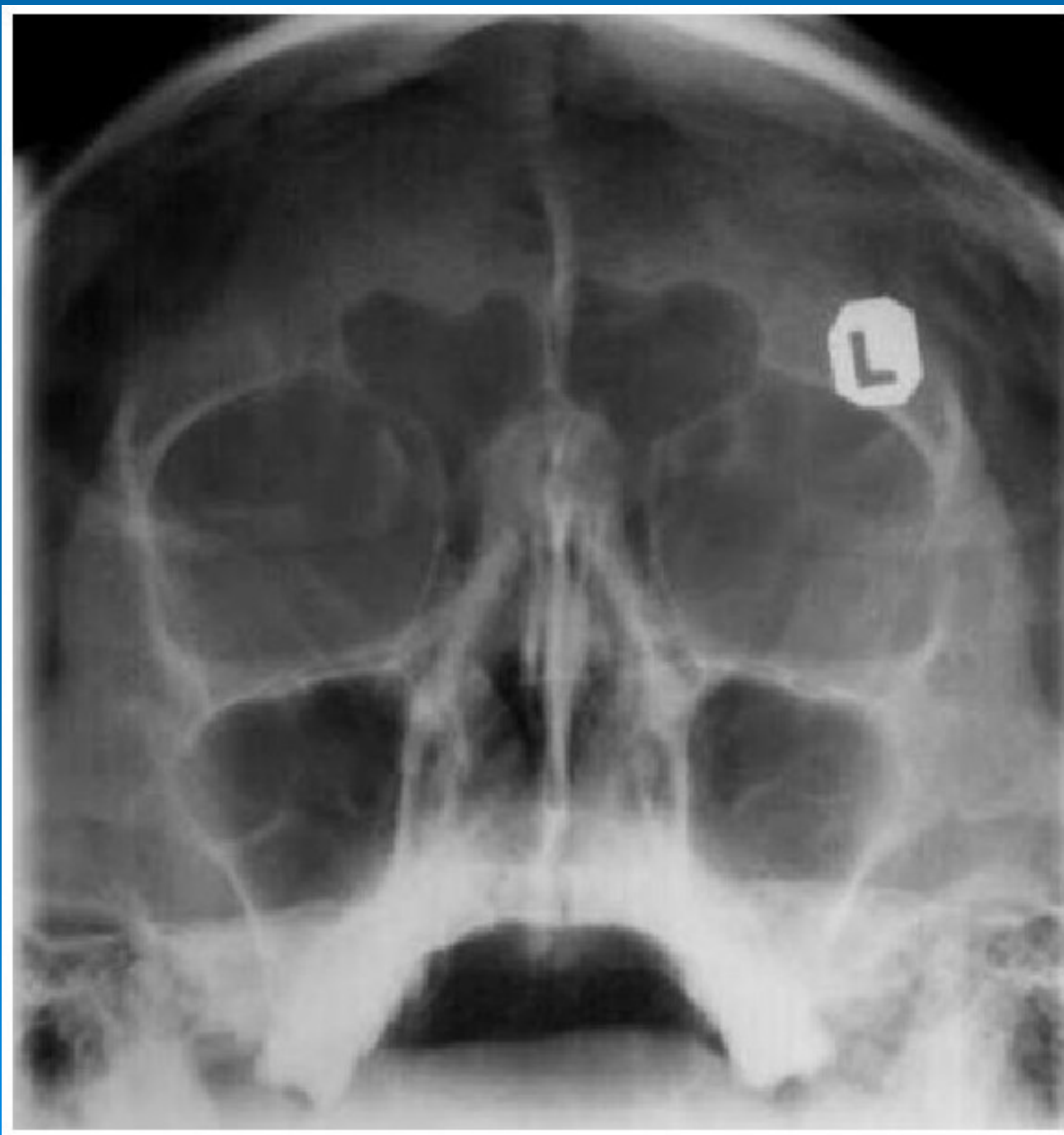
Mastoid emissary vein from sigmoid sinus and meningeal branch of occipital artery

Paranasal sinuses

- A group of four paired air-filled space - **frontal, sphenoid, ethmoid and maxilla**
- Presumably to decrease their weight
- Volume of paranasal sinuses increases with age







Development



- The skull bones of the fetus and child are separated by membranous spaces - **fontanelles**
- They disappear during the course of ossification
- The largest occur between the angles of the flat bones – **anterior, posterior, sphenoidal and mastoid**

