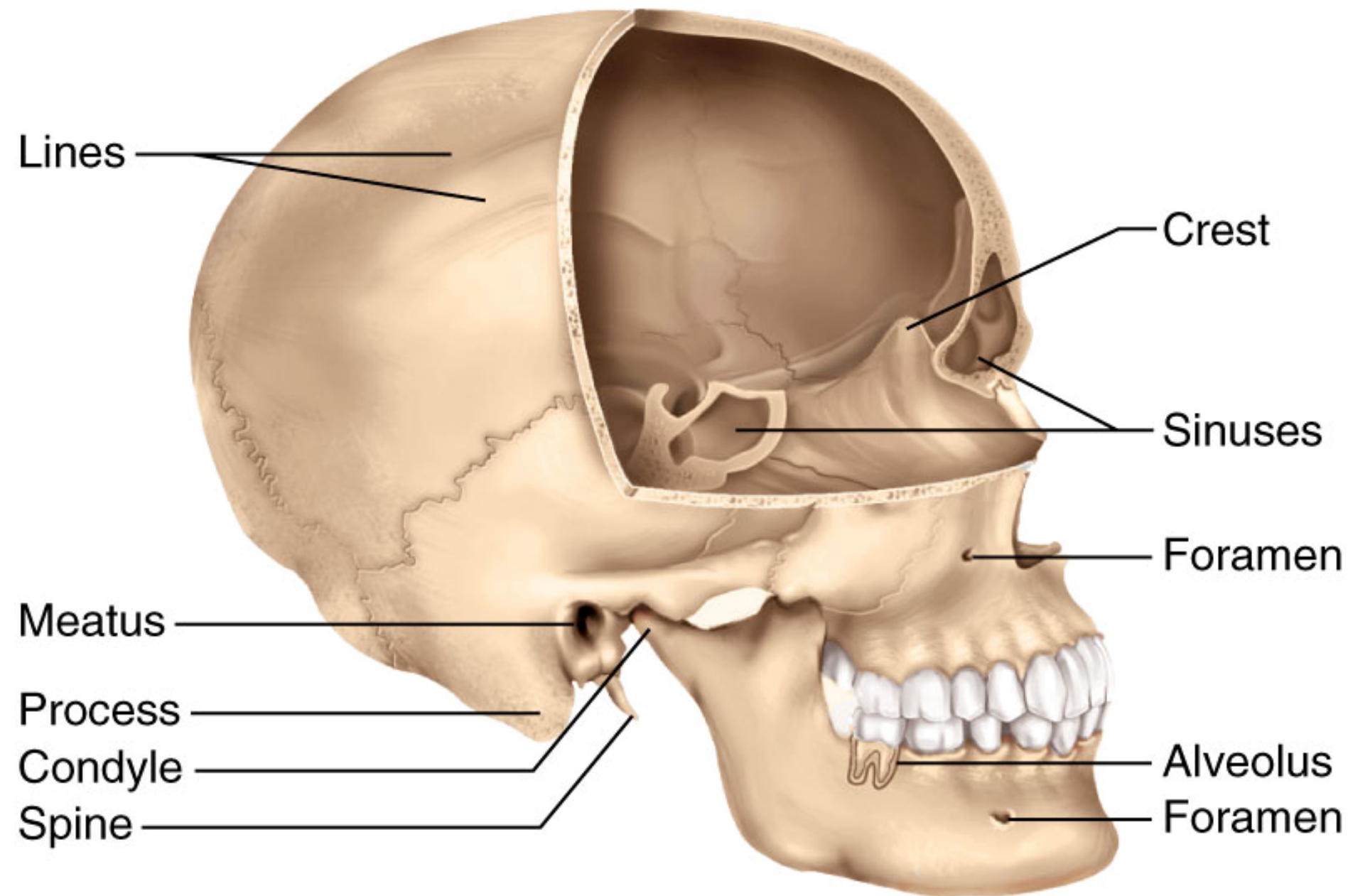
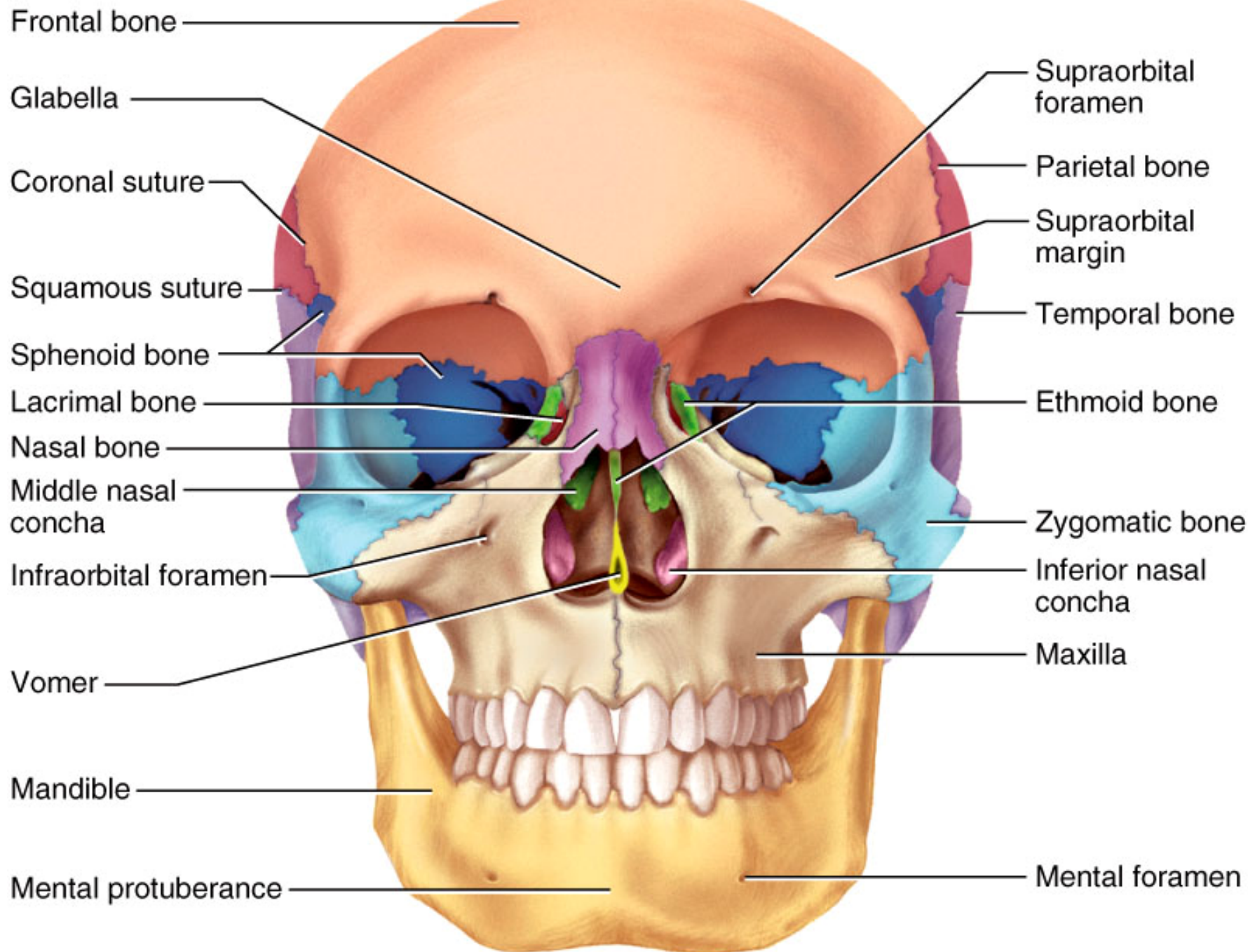
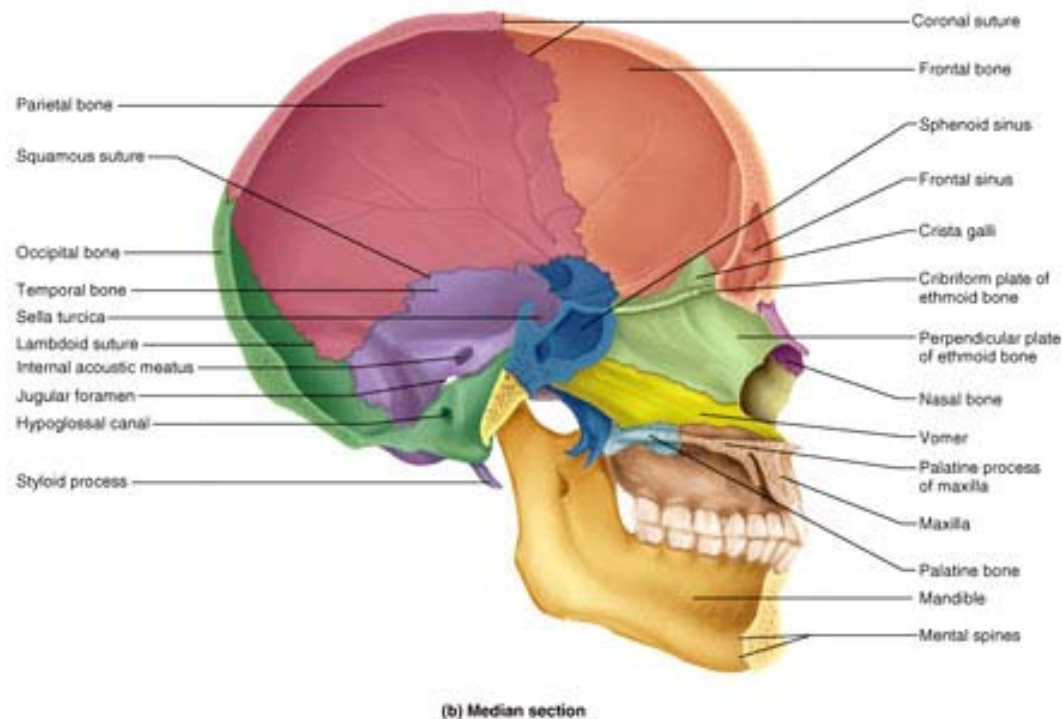
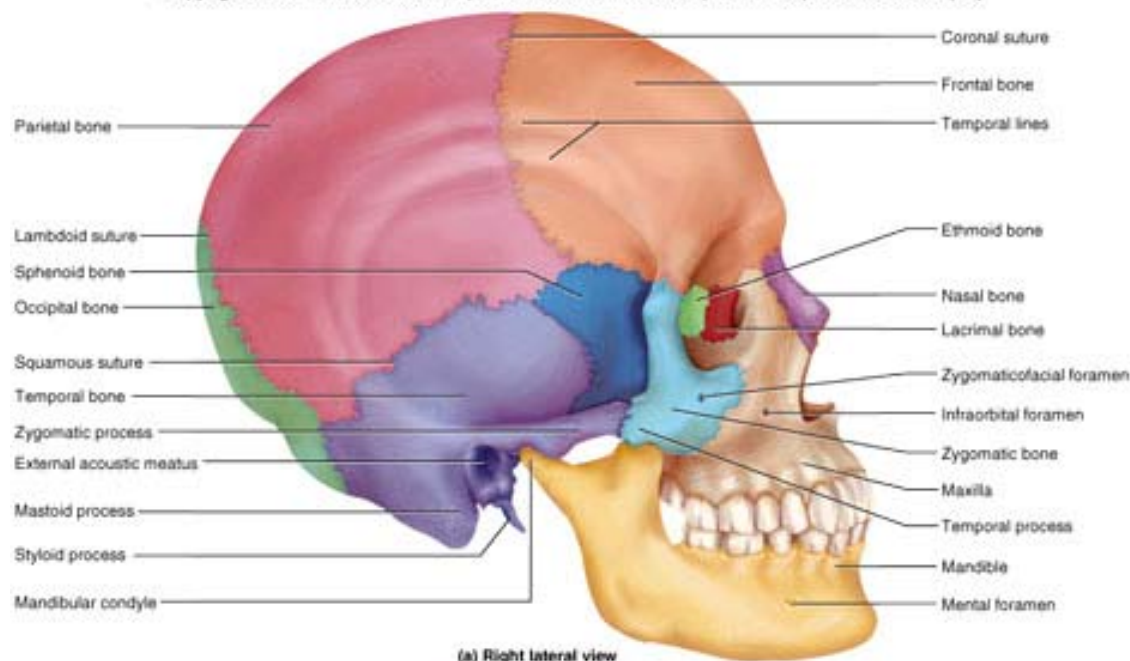


# MC3 A/P Lab - Unit 1- Skull

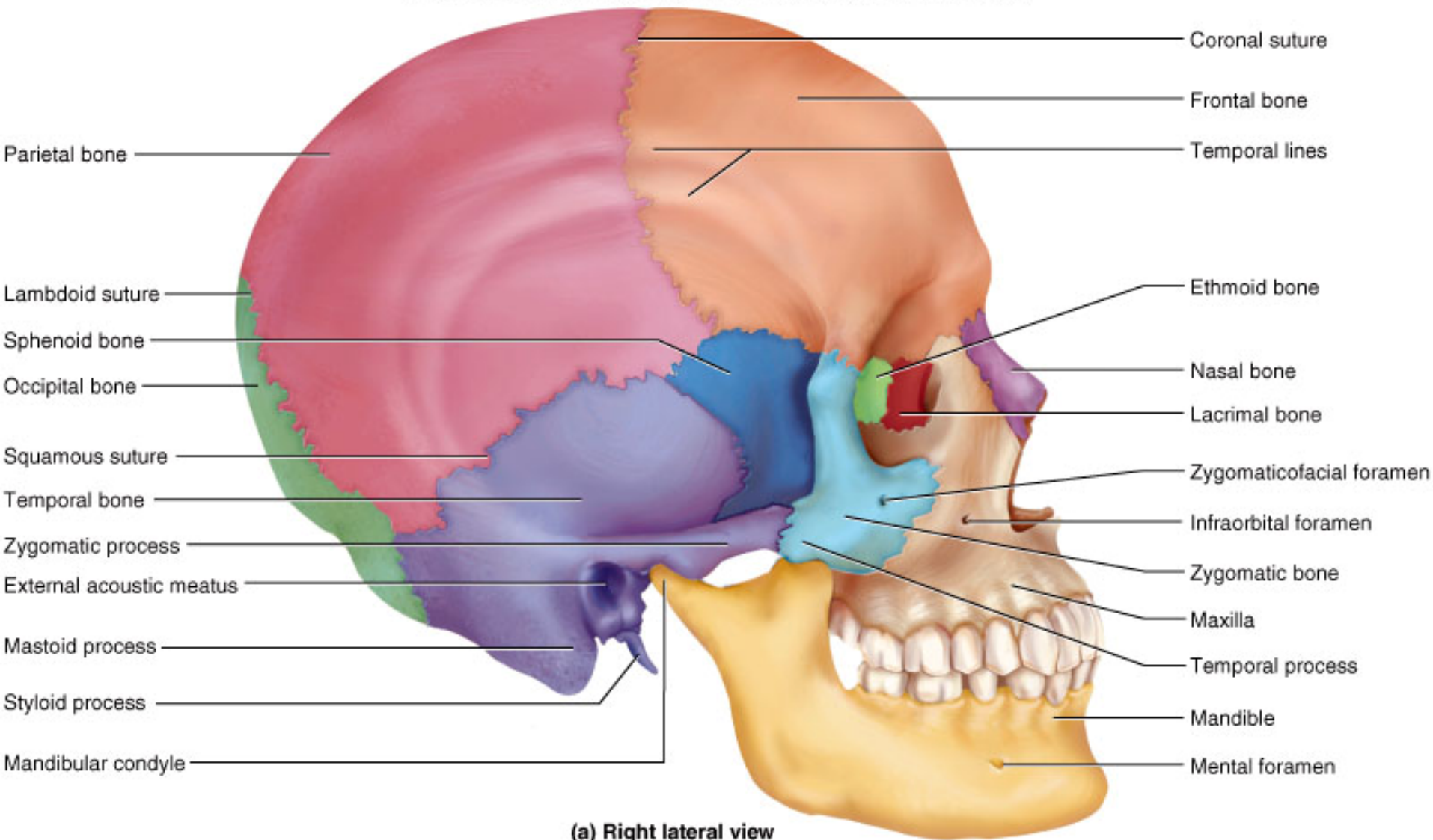


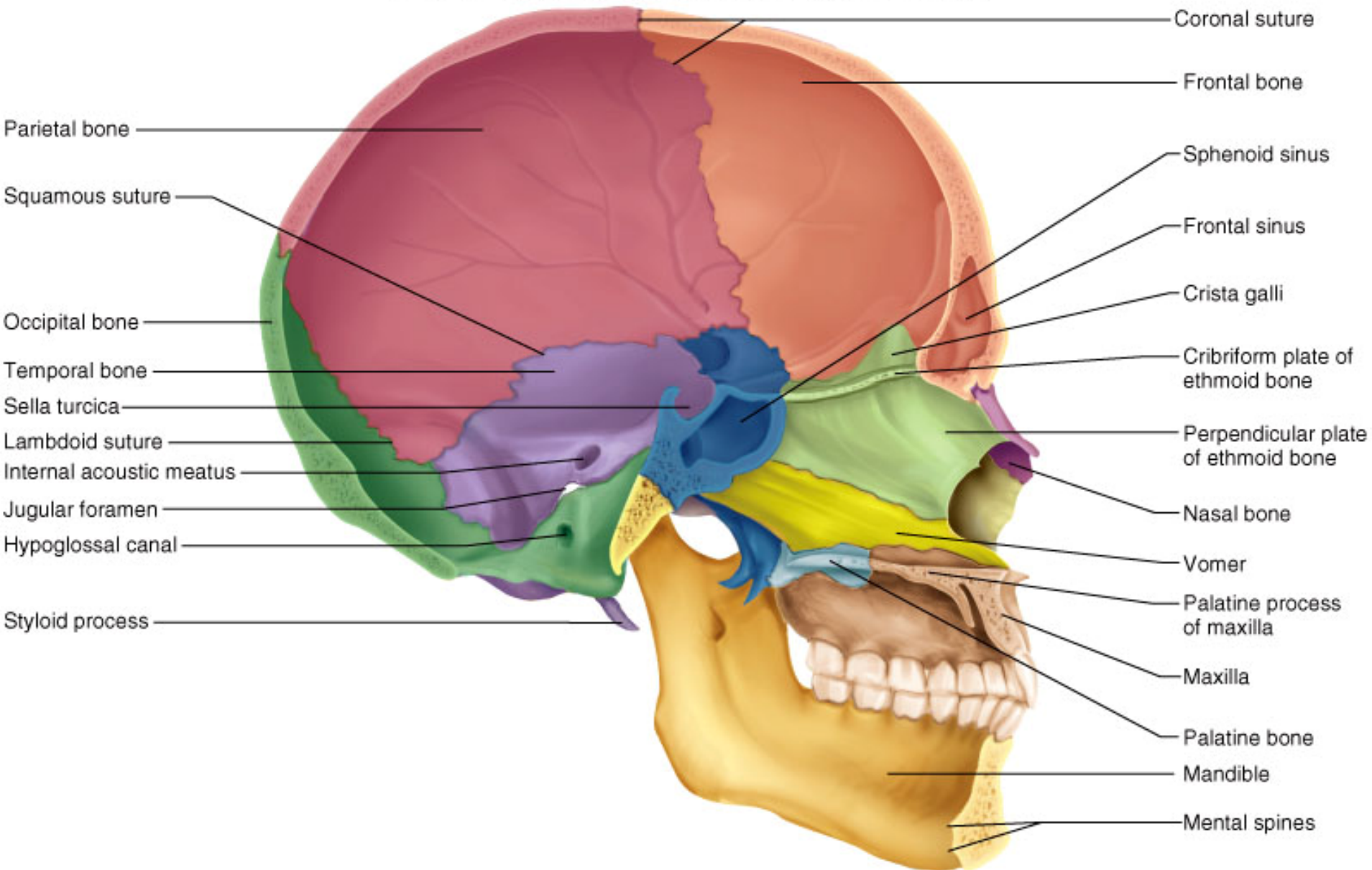
**(a) Skull (lateral view)**



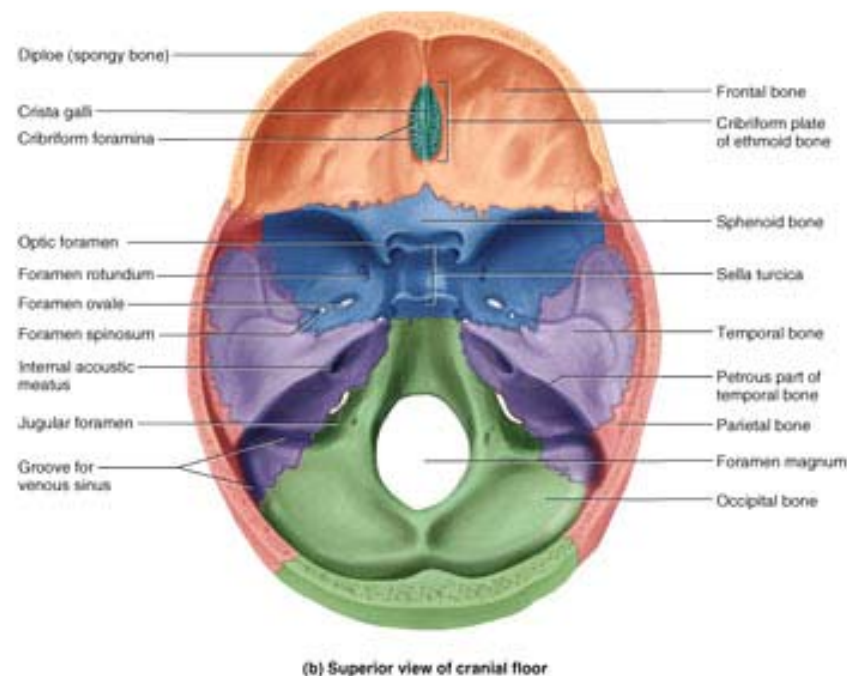
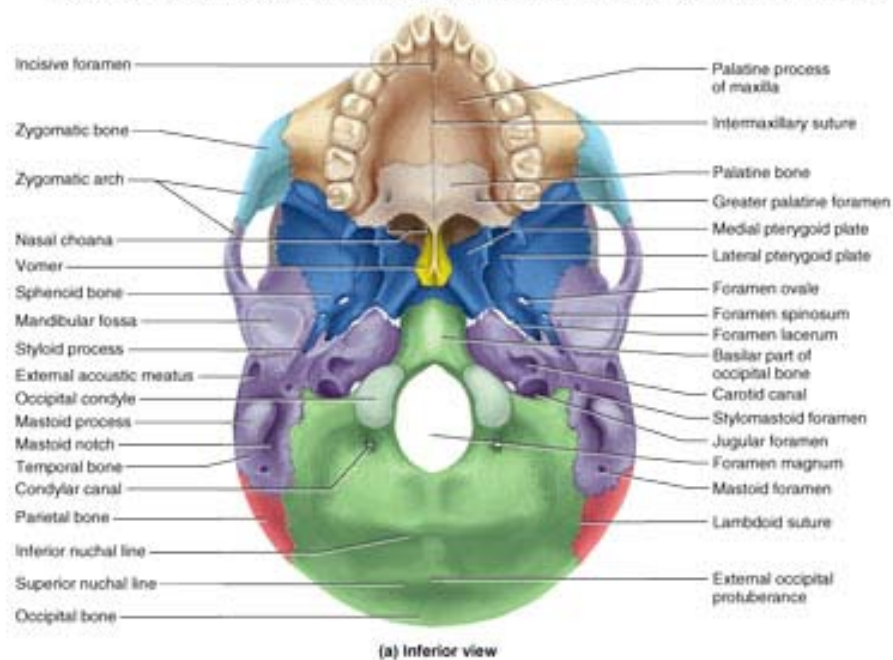




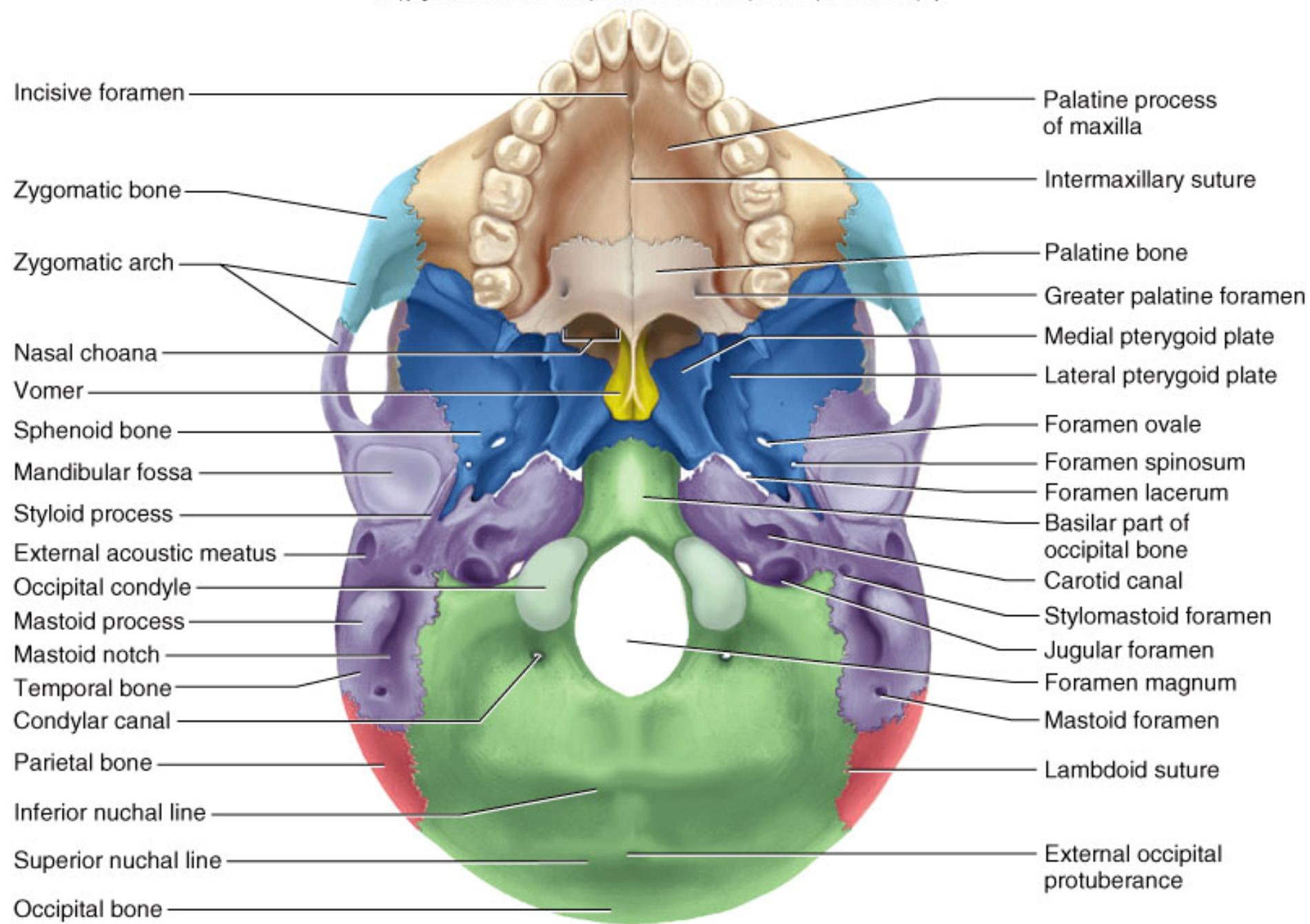




**(b) Median section**

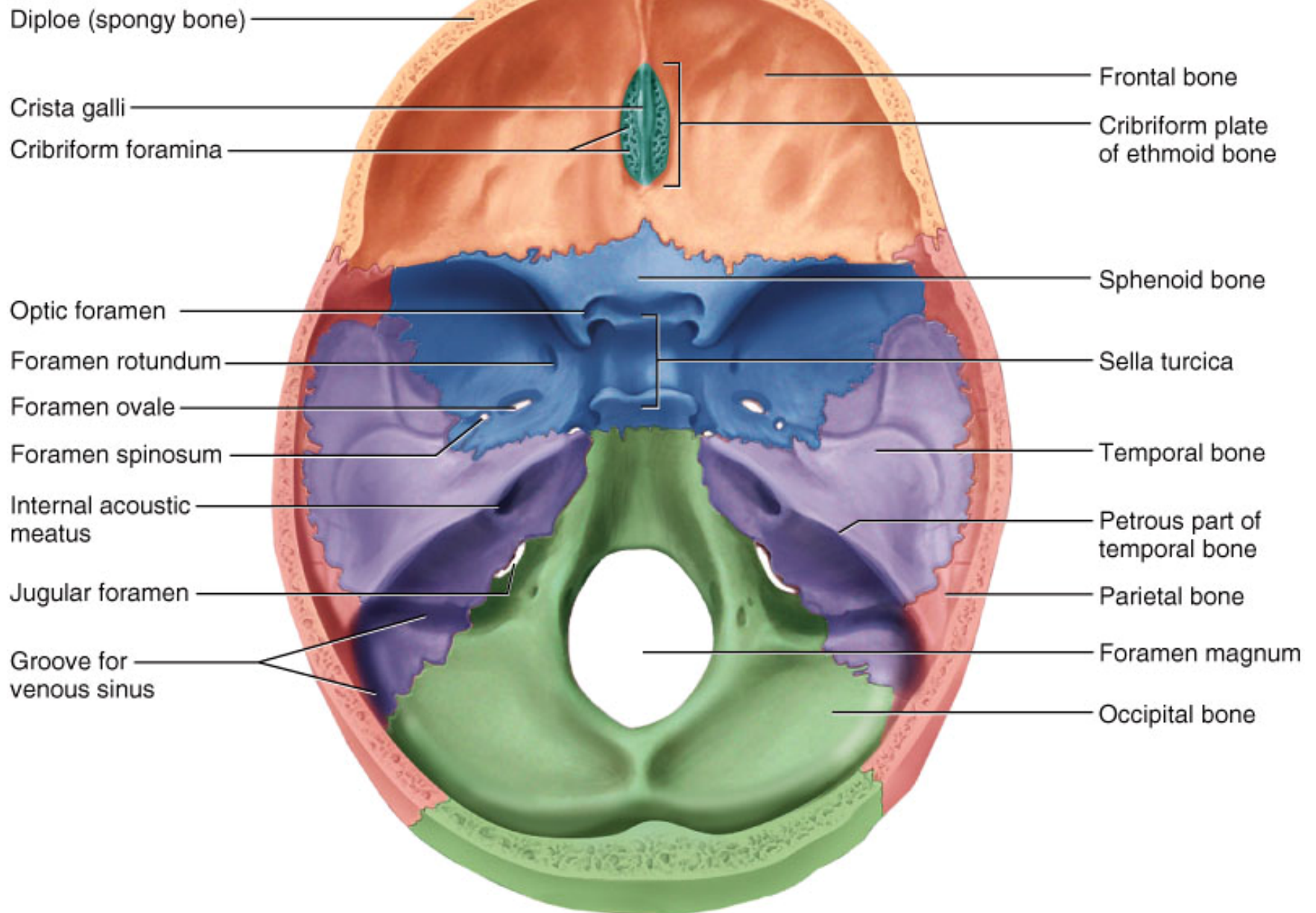






(a) Inferior view





**(b) Superior view of cranial floor**

**Anterior**

Frontal bone

Coronal suture

Parietal bone

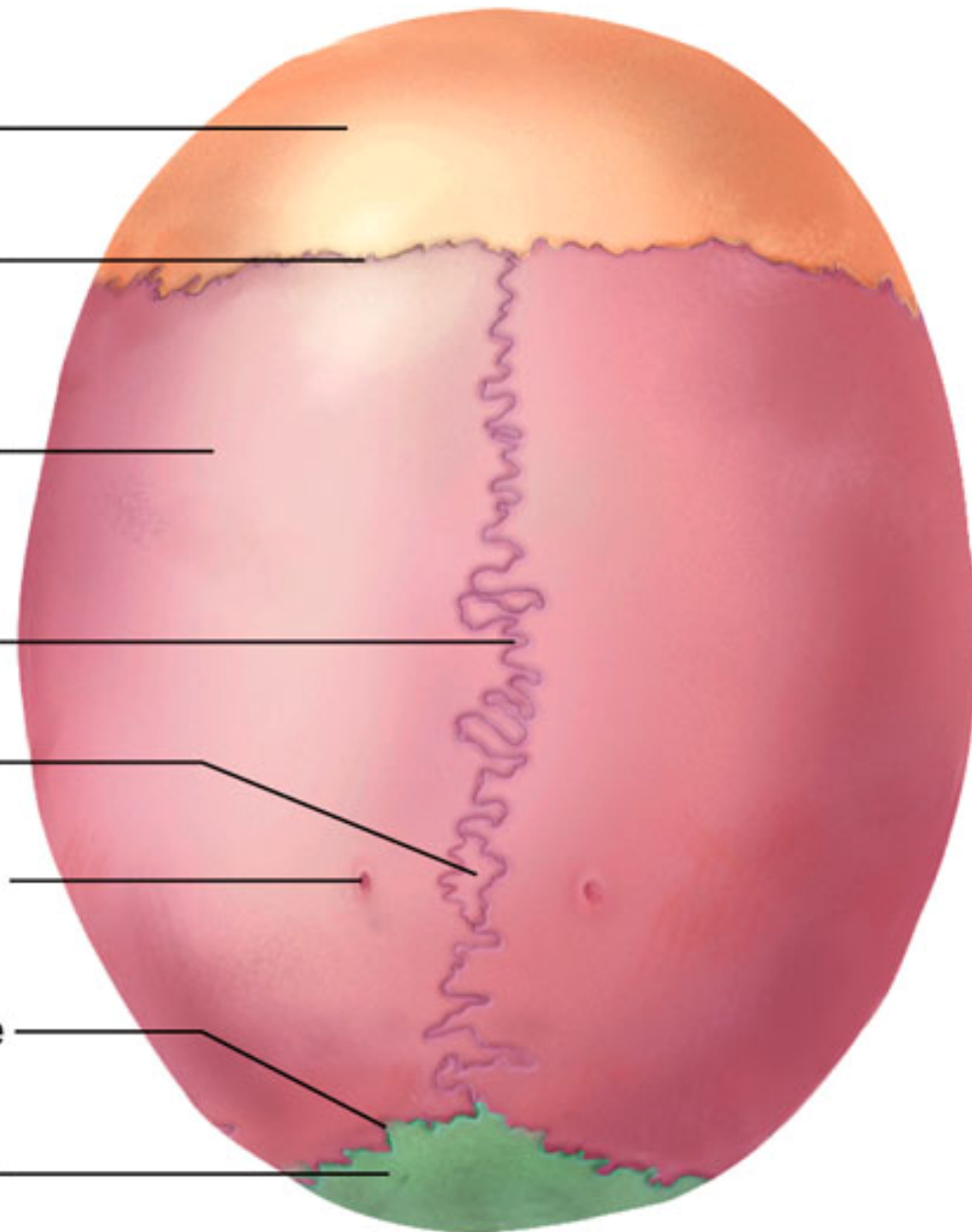
Sagittal suture

Sutural bone

Parietal foramen

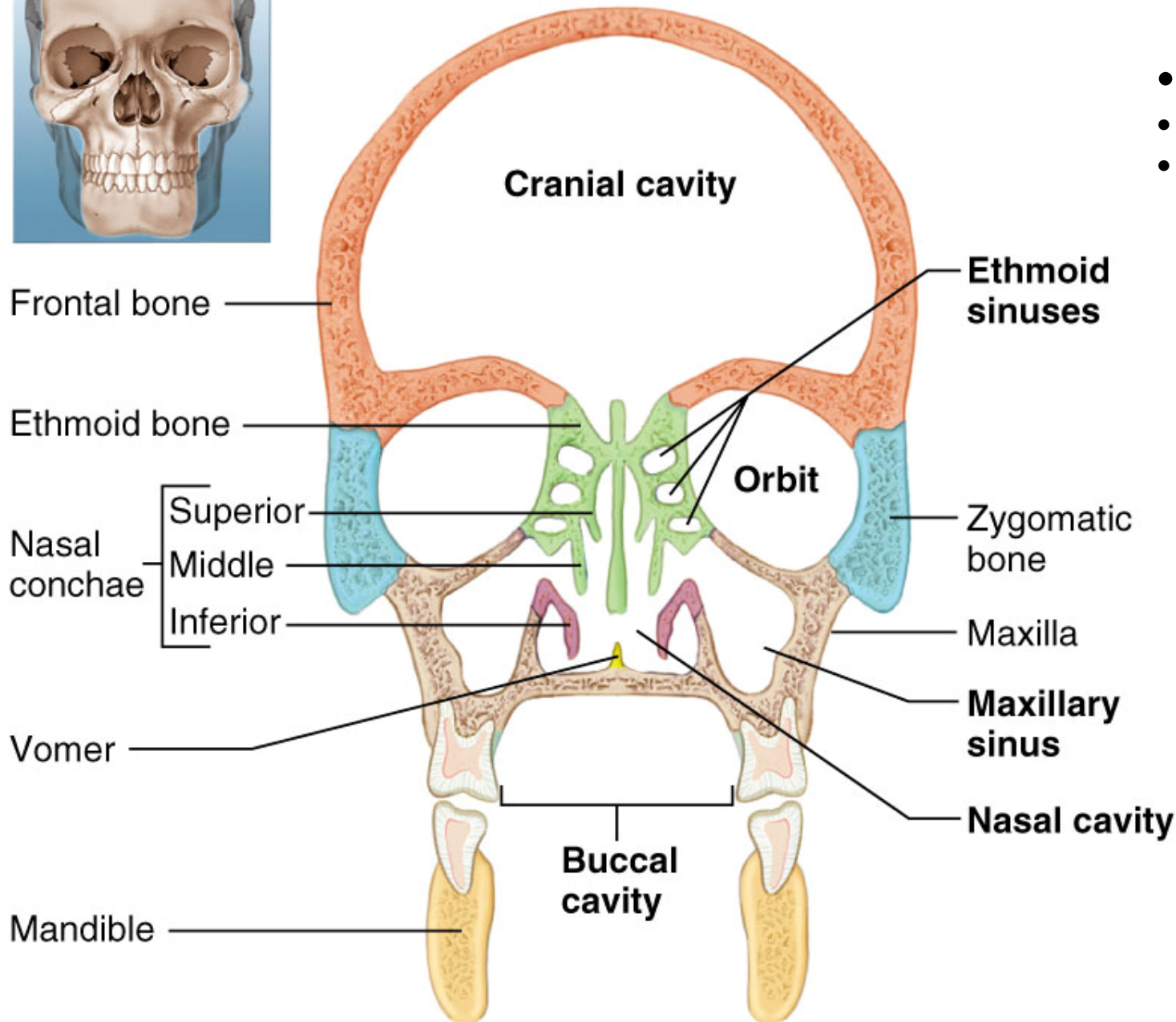
Lambdoid suture

Occipital bone



**Posterior**

# Major Skull Cavities

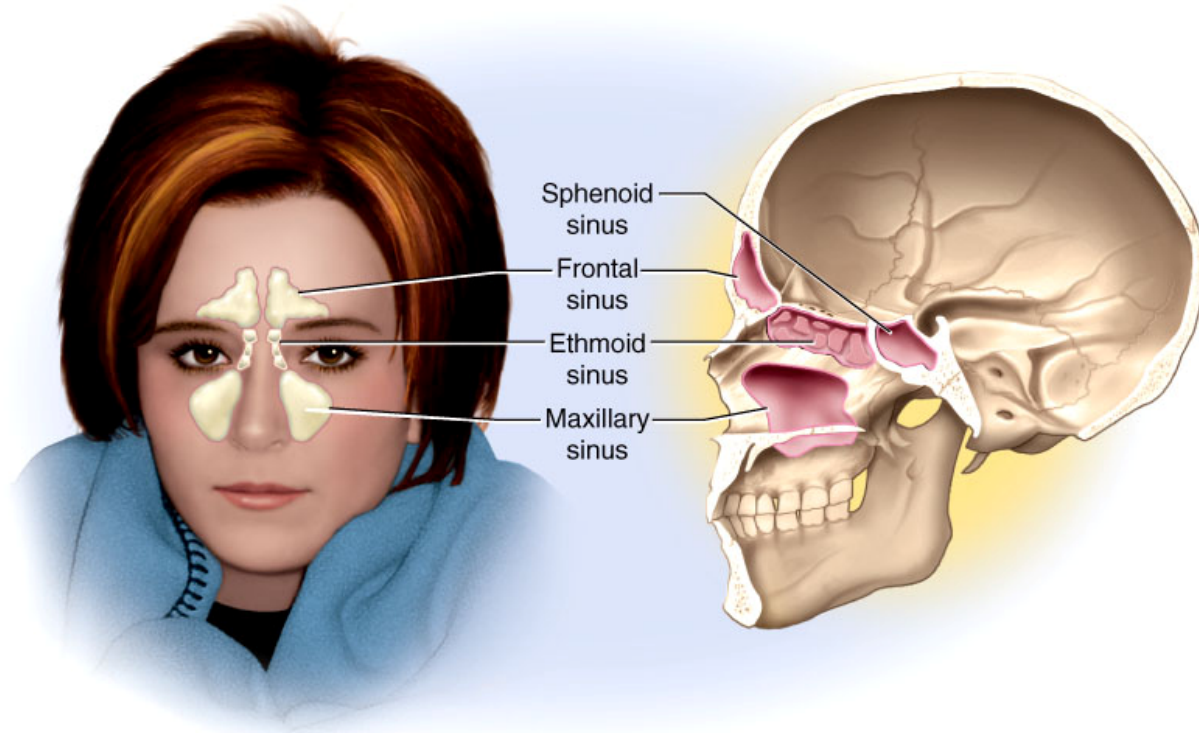


- middle ear cavity
- inner ear cavity
- paranasal sinuses
  - frontal
  - sphenoid
  - ethmoid
  - maxillary



# Locations of Paranasal Sinuses

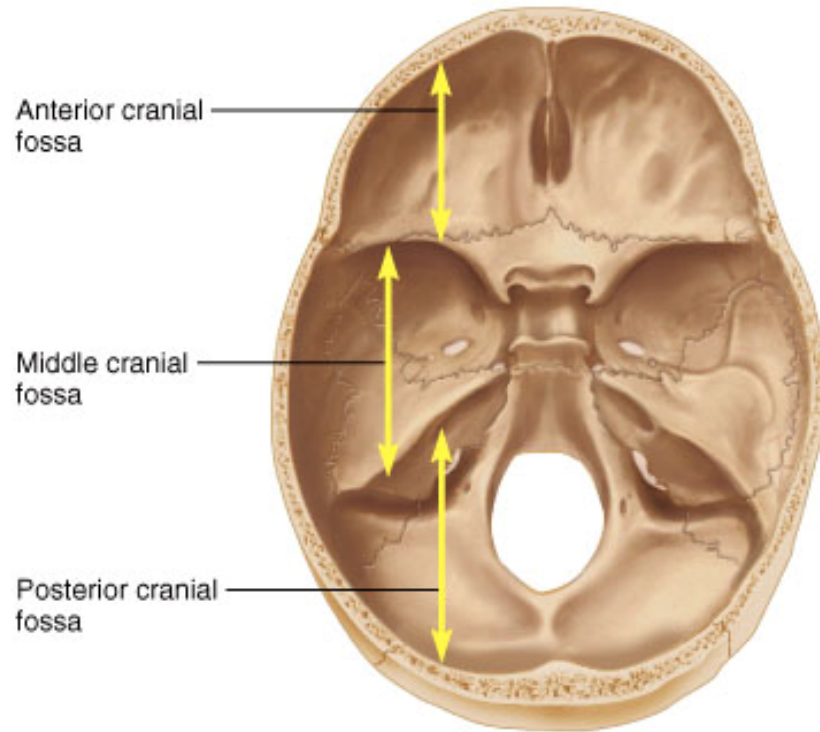
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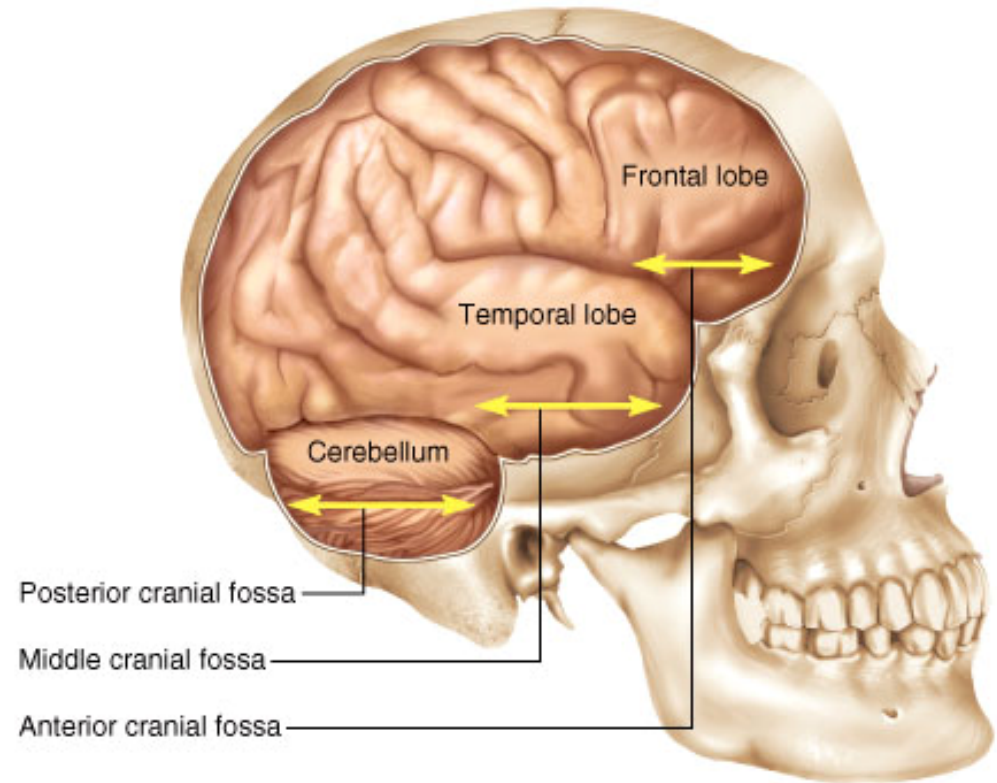
- Maxillary sinus fills maxillae bone
- Other bones containing sinuses are frontal, ethmoid and sphenoid.

# Cranial Fossa

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(a) Superior view

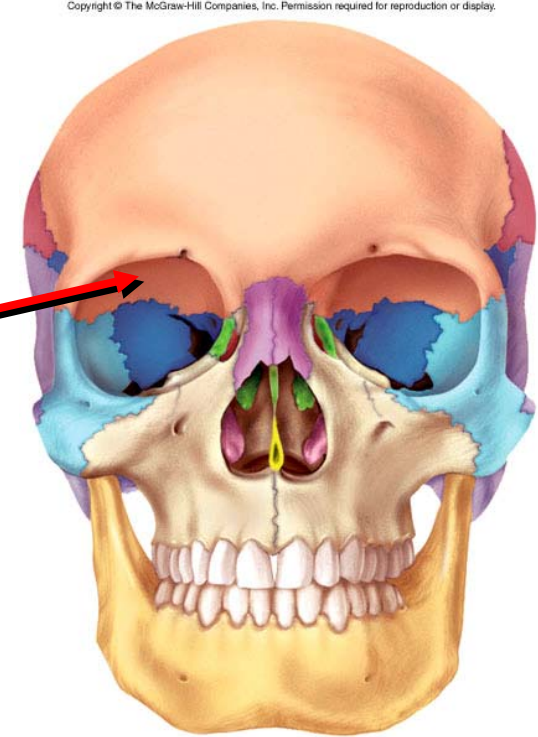


(b) Lateral view

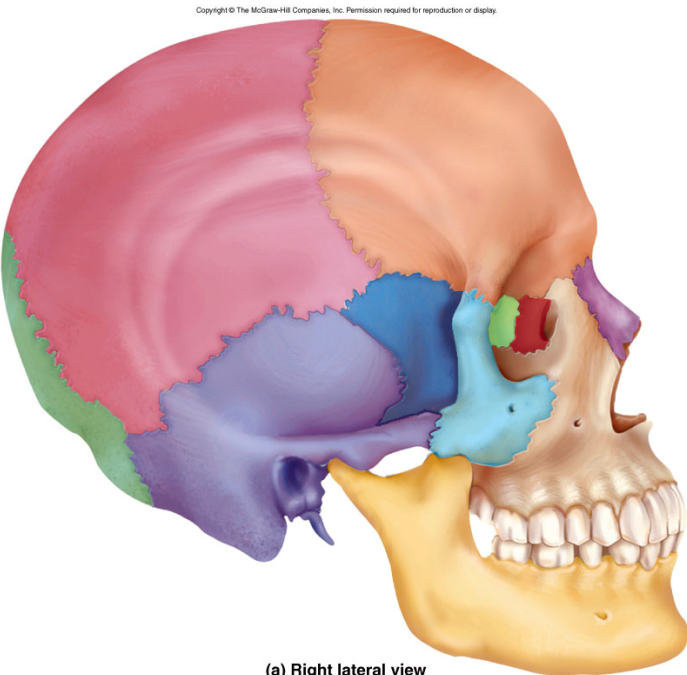
- 3 basins that comprise the cranial floor or base
  - anterior fossa holds the **frontal lobe** of the brain
  - middle fossa holds the **temporal lobes** of the brain
  - posterior fossa contains the **cerebellum**
- Swelling of the brain may force tissue through foramen magnum resulting in death

# Frontal Bone

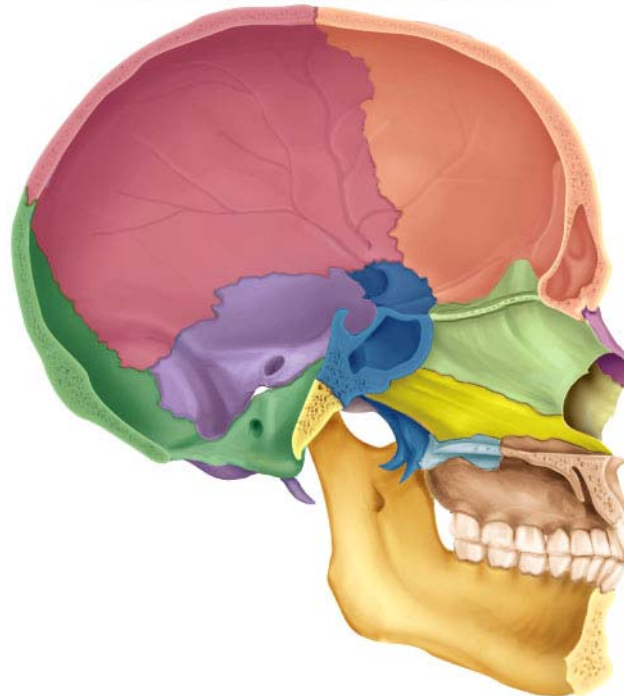
- Forms forehead and part of the roof of the cranium
- Forms roof of the orbit
- Contains frontal sinus



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(a) Right lateral view

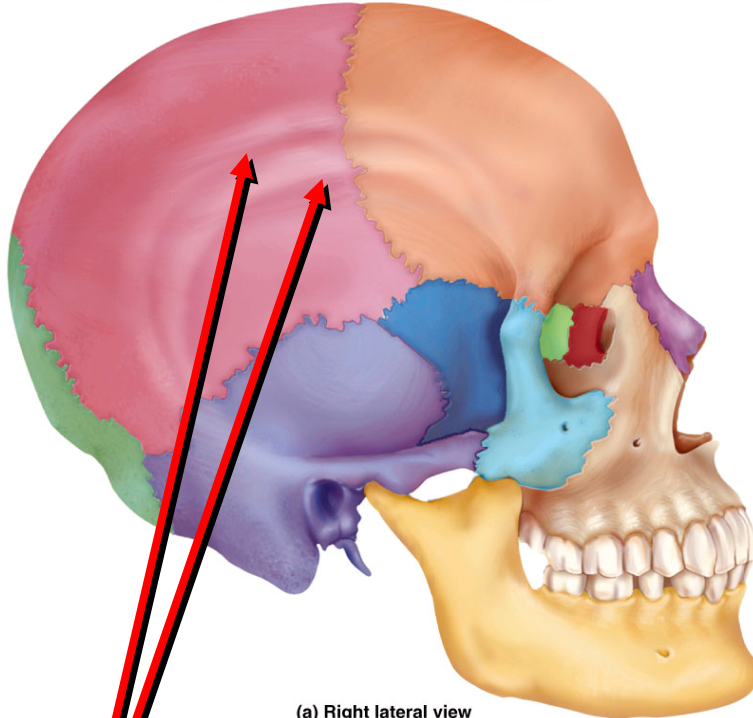


(b) Median section



# Parietal Bone

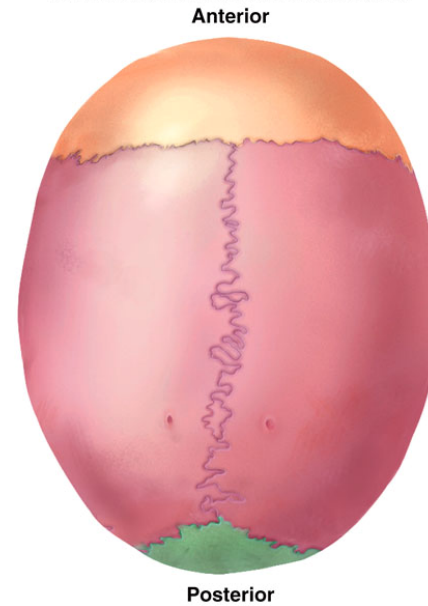
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(a) Right lateral view

Temporal lines

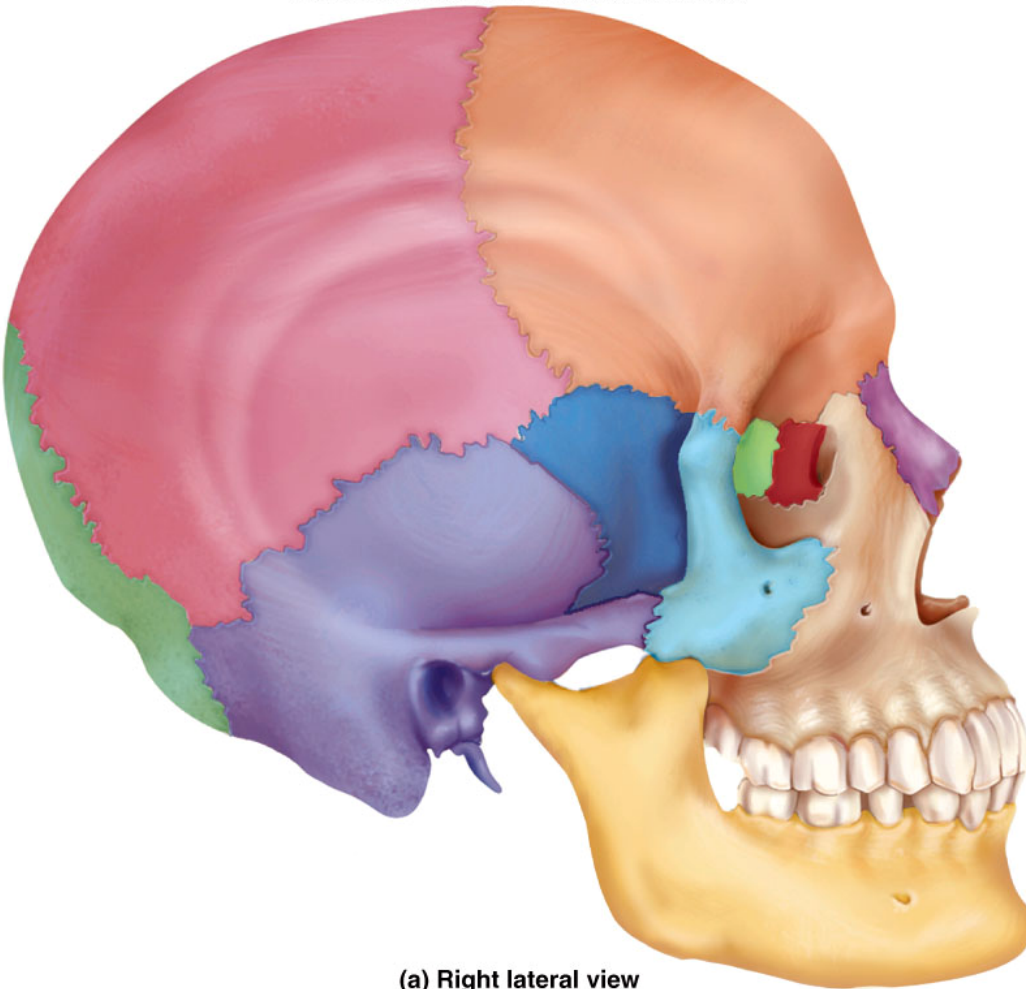
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- Cranial roof and part of its lateral walls
- Bordered by 4 sutures
  - coronal, sagittal, lambdoid and squamous
- Temporal lines of temporalis muscle

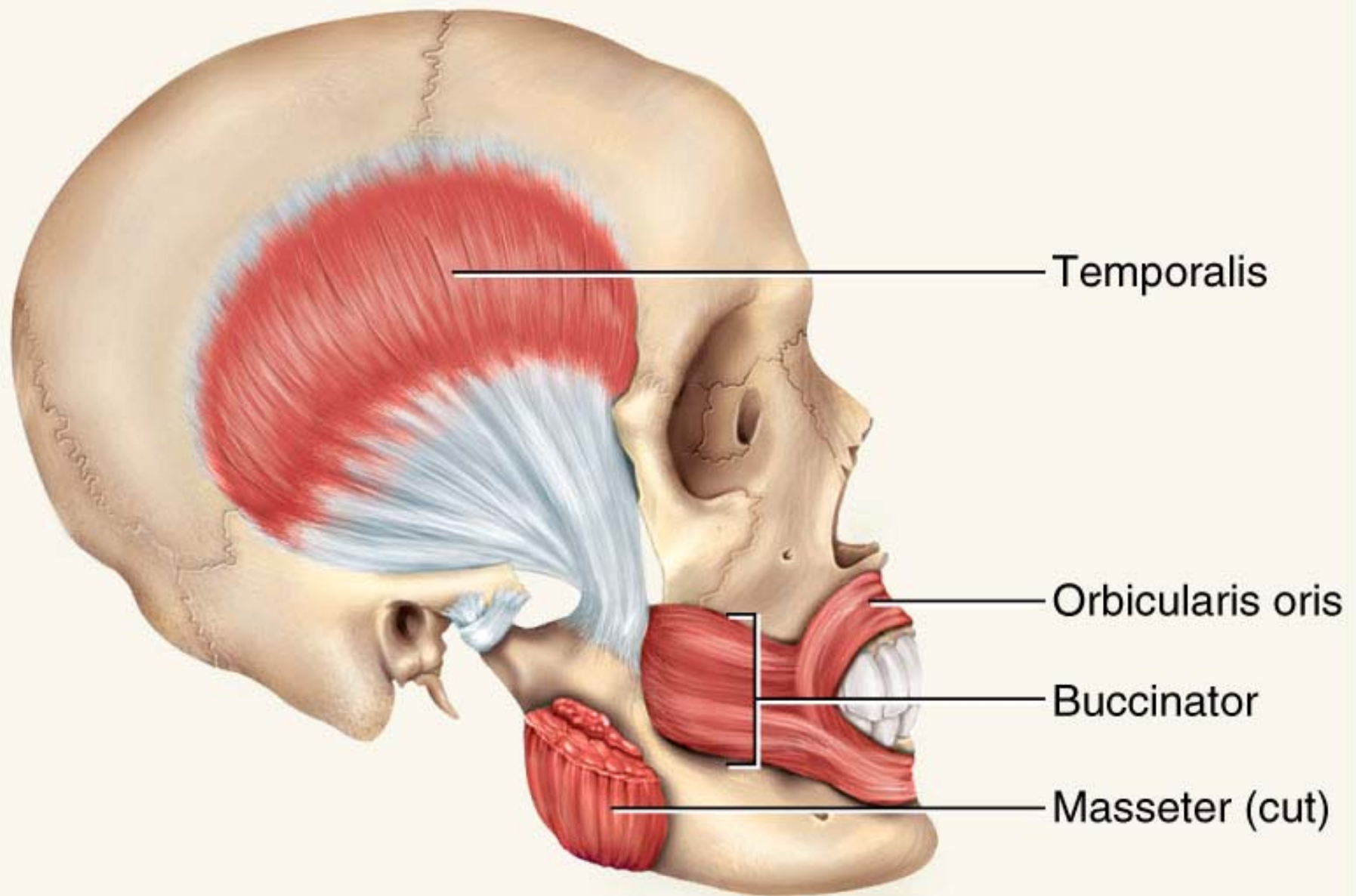
# Temporal Bone

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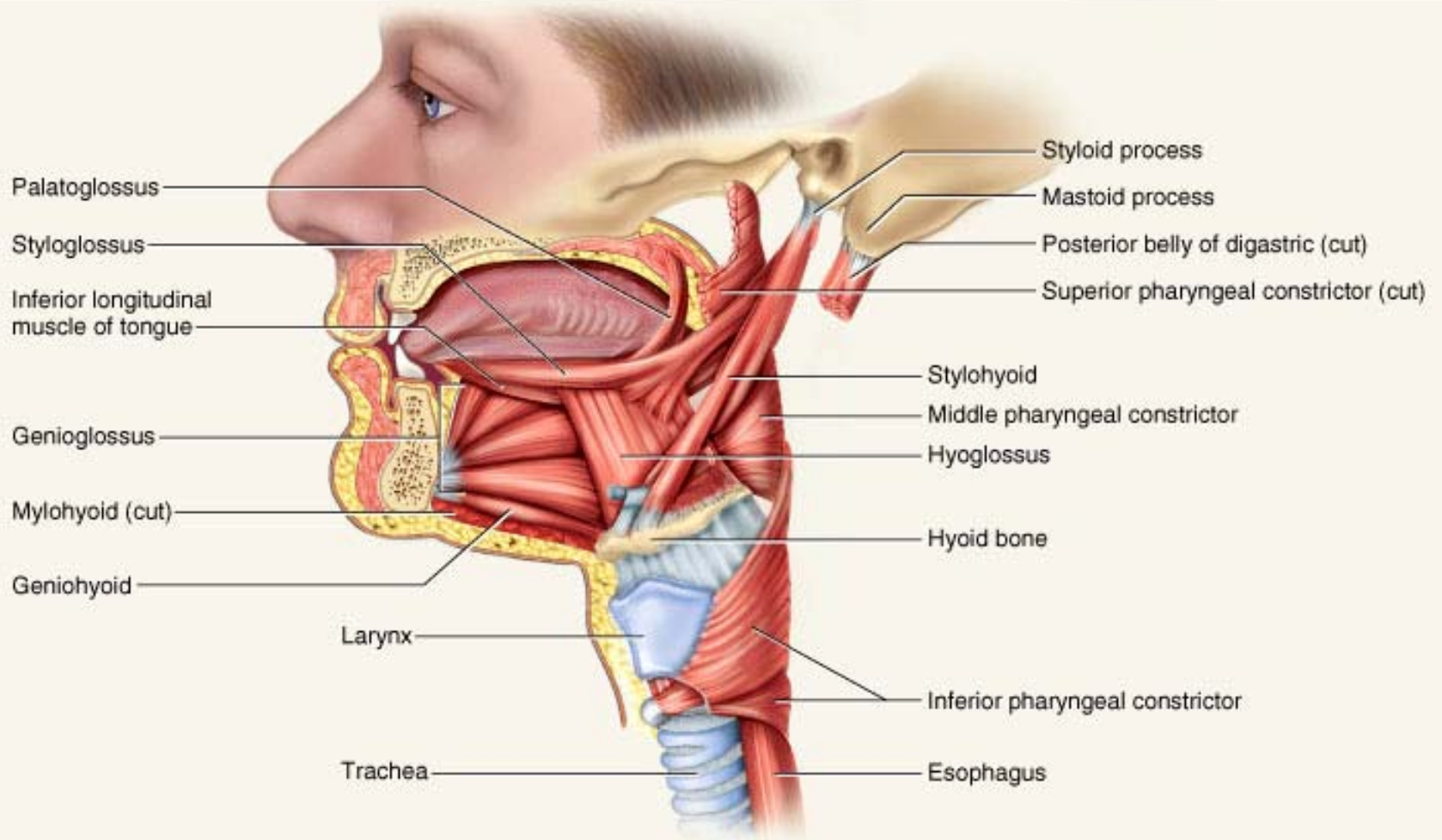
(a) Right lateral view

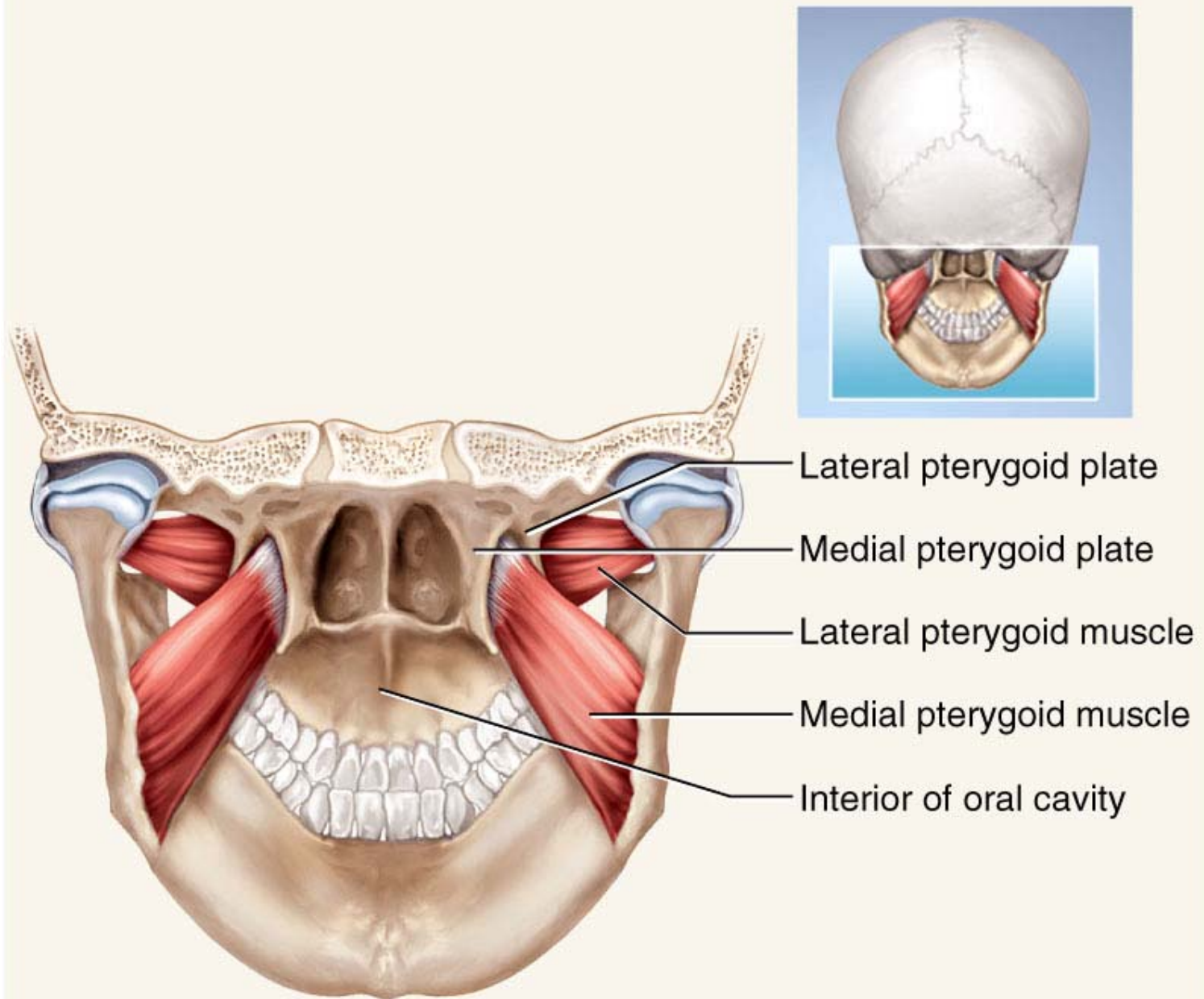
- Lateral wall and part of floor of cranial cavity
  - squamous part
    - zygomatic process
    - mandibular fossa and TMJ
  - tympanic part
    - external auditory meatus
    - styloid process
  - mastoid part
    - mastoid process
      - mastoiditis from ear infection
    - mastoid notch
      - digastric muscle
      - medial



**(a) Lateral view**



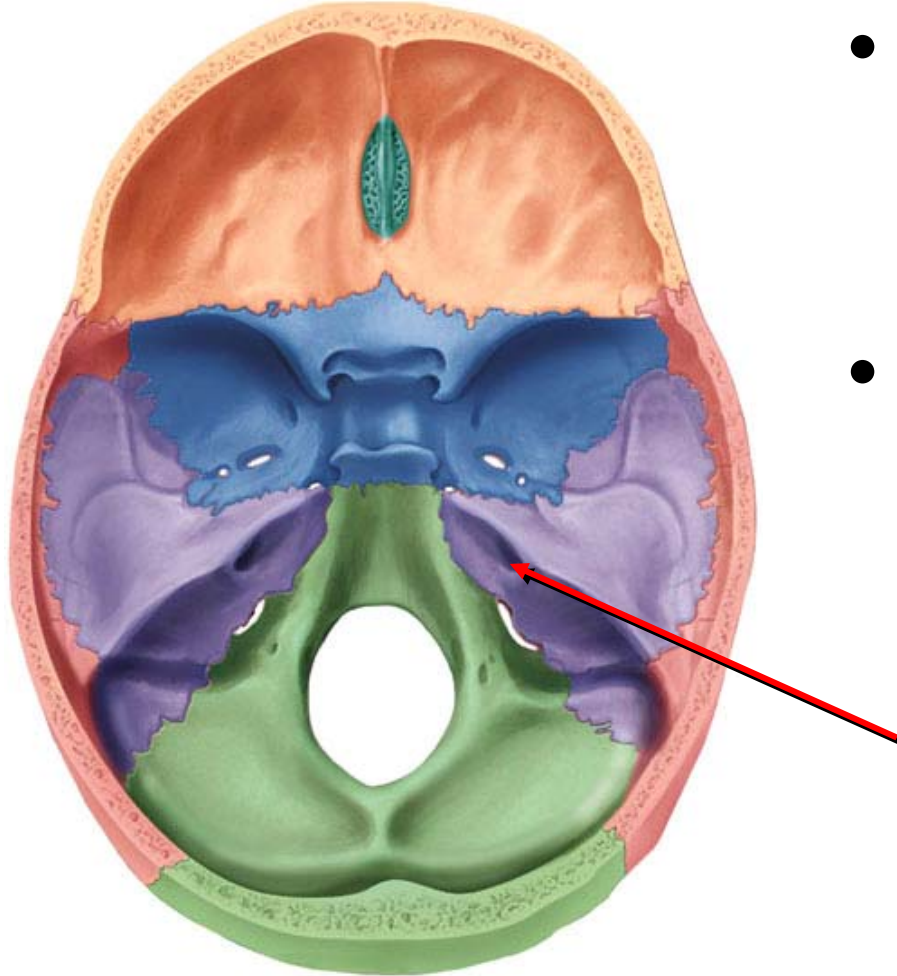




**(b) Posterior view**

# Petrous Portion of Temporal Bone

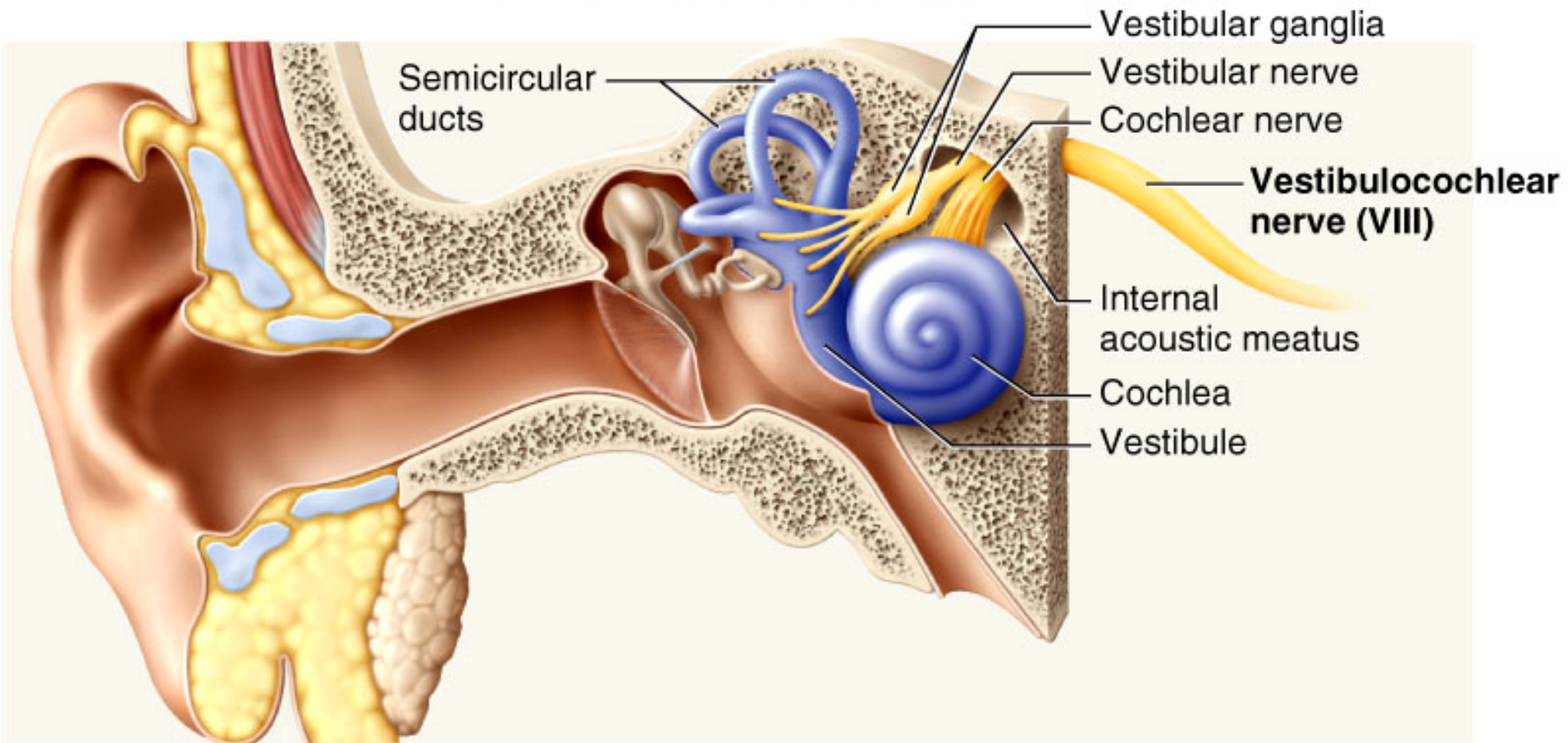
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(b) Superior view of cranial floor

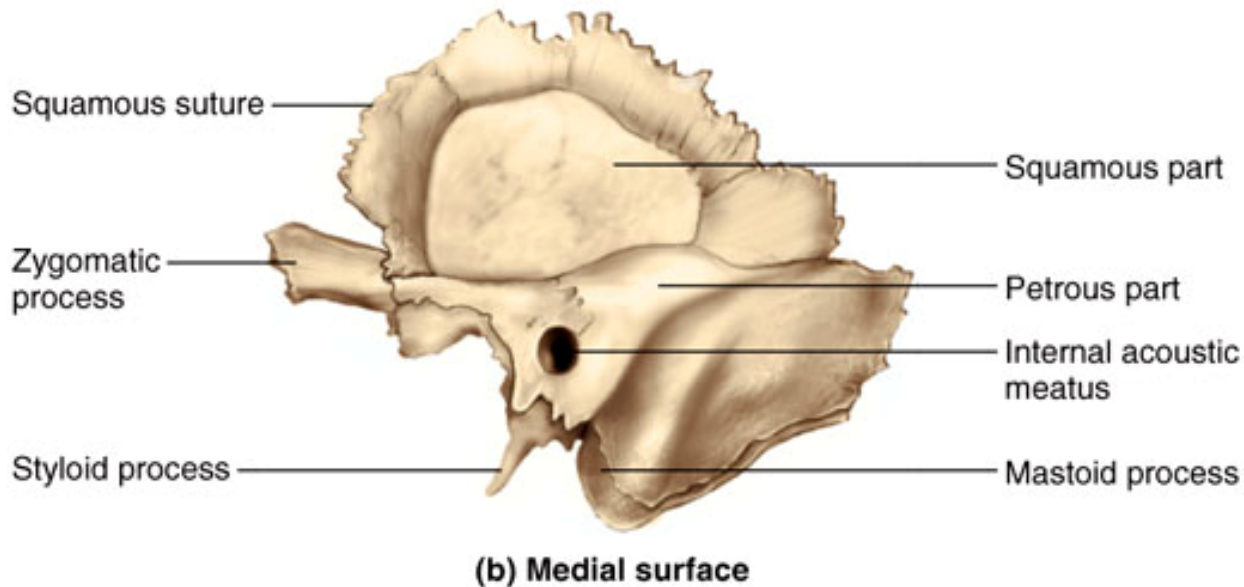
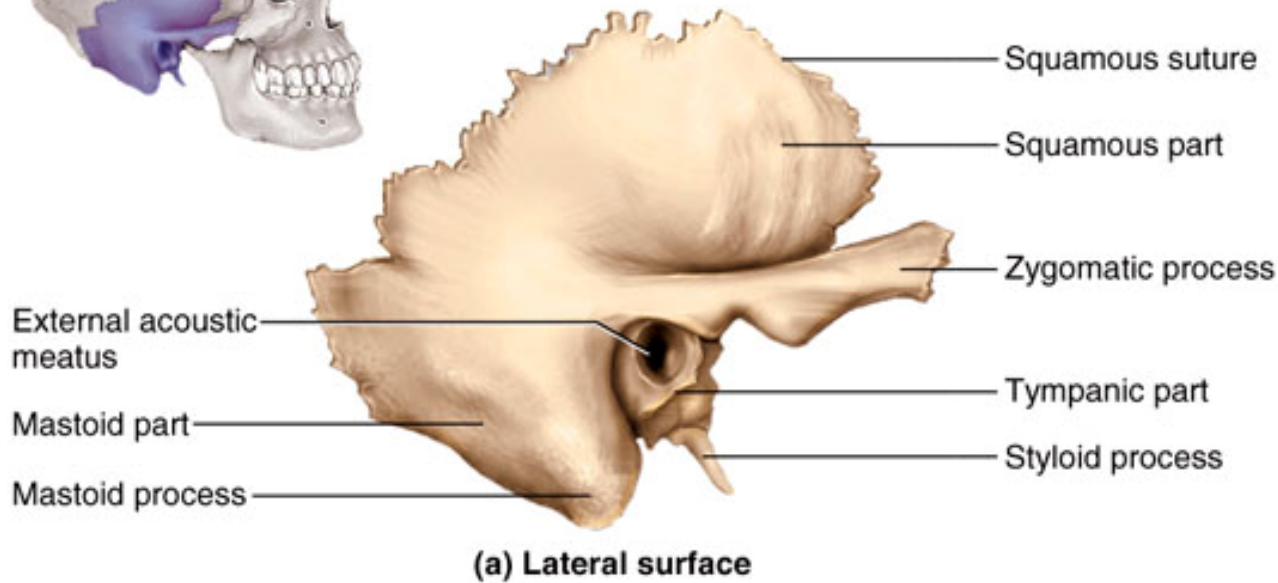
- Part of cranial floor
  - separates middle from posterior and anterior cranial fossa
- Houses middle and inner ear cavities
  - receptors for hearing and sense of balance
  - internal auditory meatus = opening for CN VII (vestibulocochlear nerve)





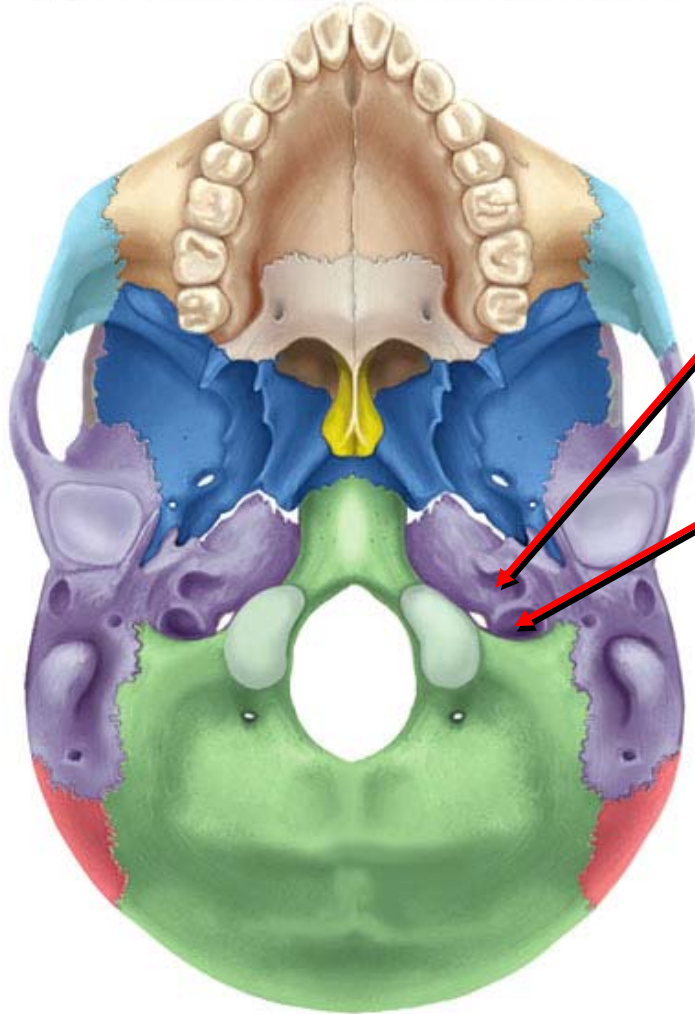


## Right Temporal Bone



# Openings in Temporal Bone

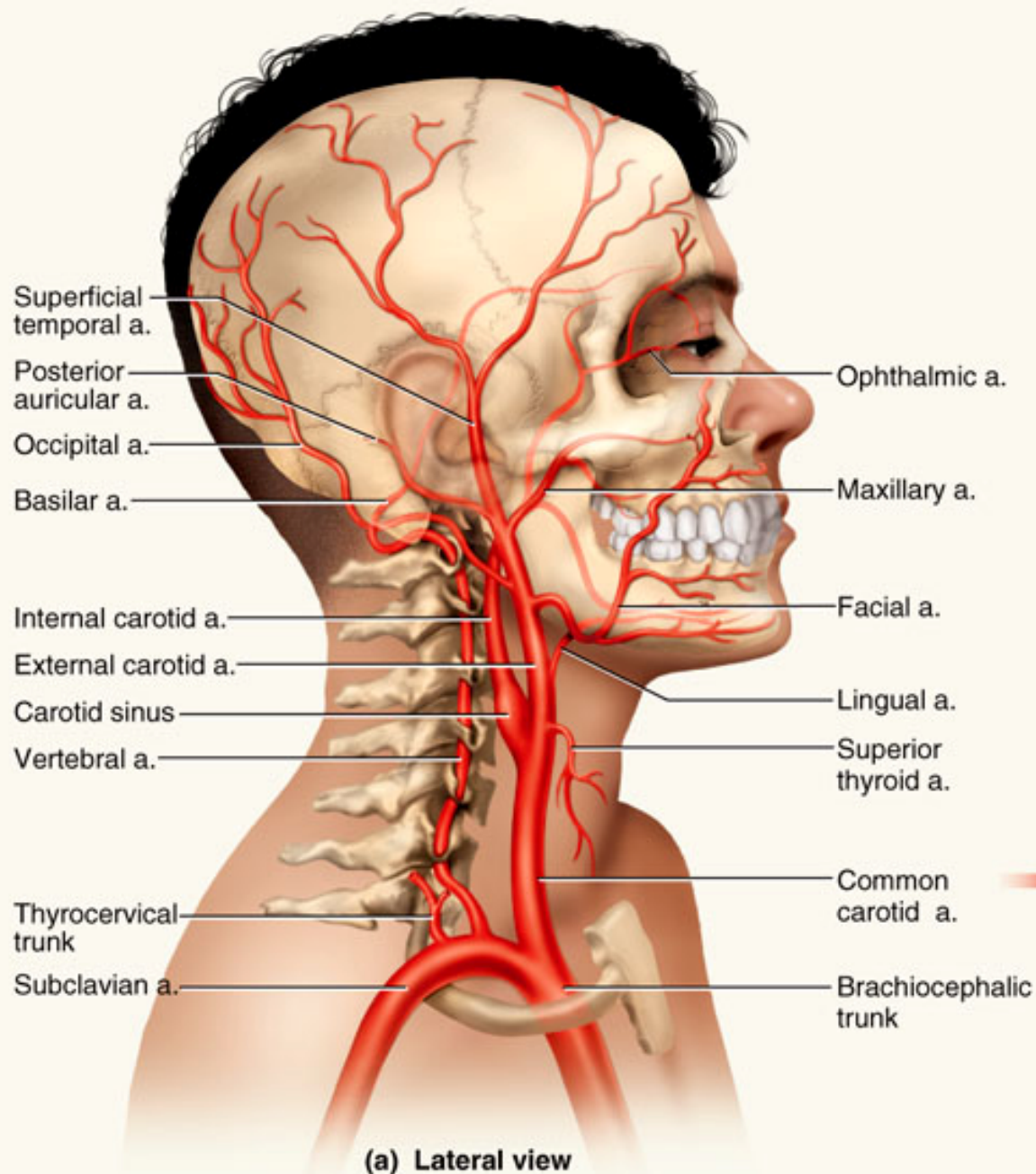
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(a) Inferior view

- **Carotid canal**
  - passage for internal carotid artery supplying the brain
- **Jugular foramen**
  - irregular opening between temporal and occipital bones
  - passageway for drainage of blood from brain to internal jugular vein



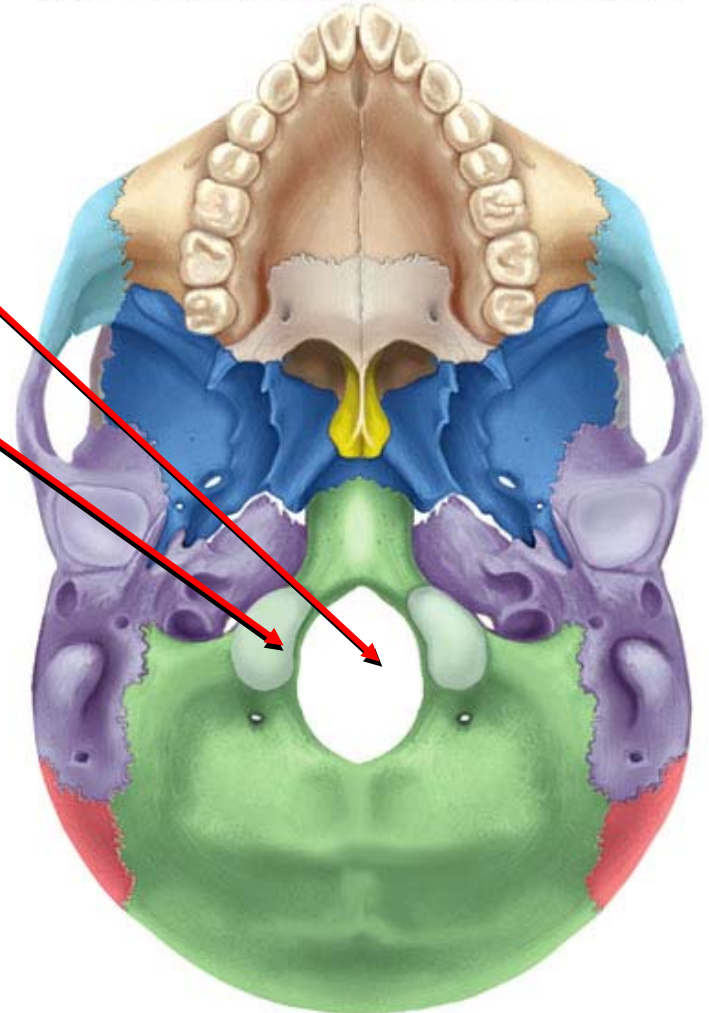




# Occipital Bone

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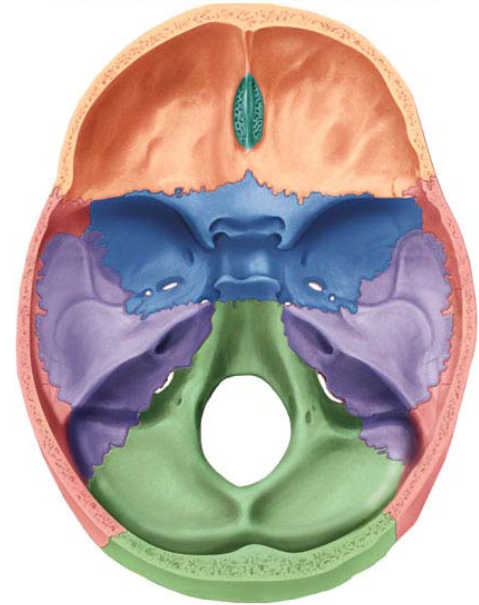
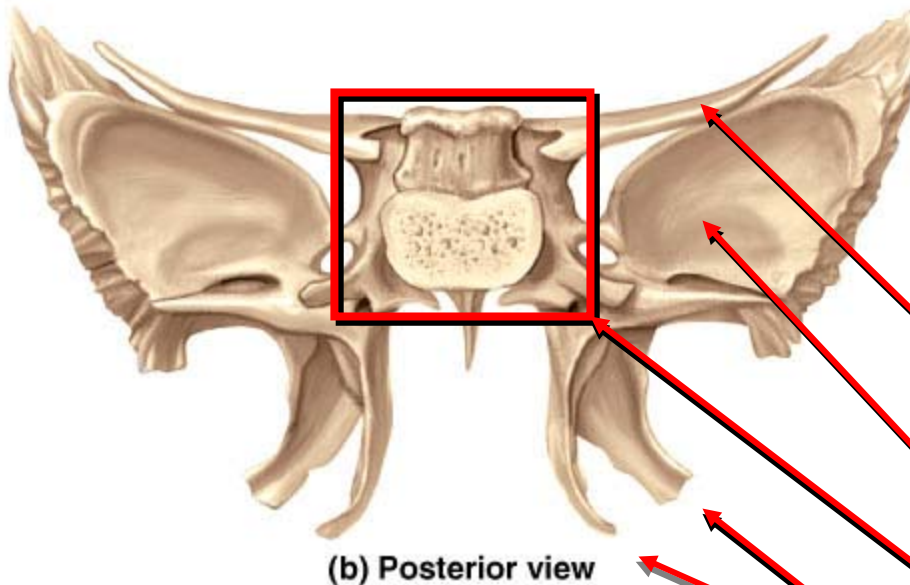
- Rear and base of skull
- Foramen magnum holds spinal cord
- Skull rests on atlas at occipital condyles
- Hypoglossal canal transmits hypoglossal nerve (CN XII) supplying tongue muscles
- External occipital protuberance for nuchal ligament
- Nuchal lines mark neck muscles



(a) Inferior view

# Sphenoid Bone

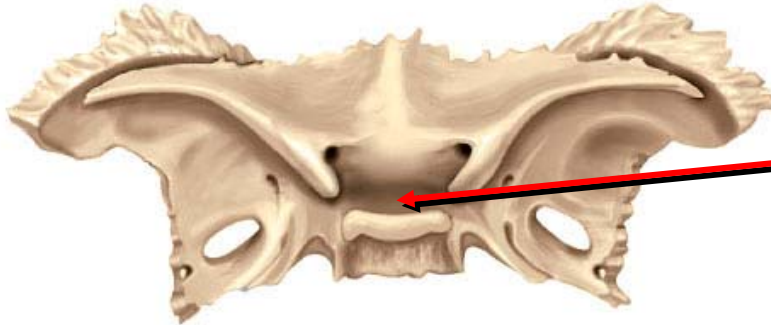
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- Lesser wing
- Greater wing
- Body of sphenoid
- Medial and lateral pterygoid processes

# Sphenoid Bone

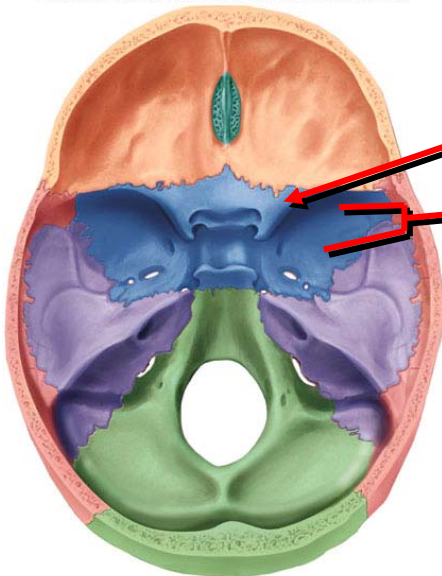
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(a) Superior view

- Body of the sphenoid
  - sella turcica contains hypophyseal fossa
  - houses pituitary gland

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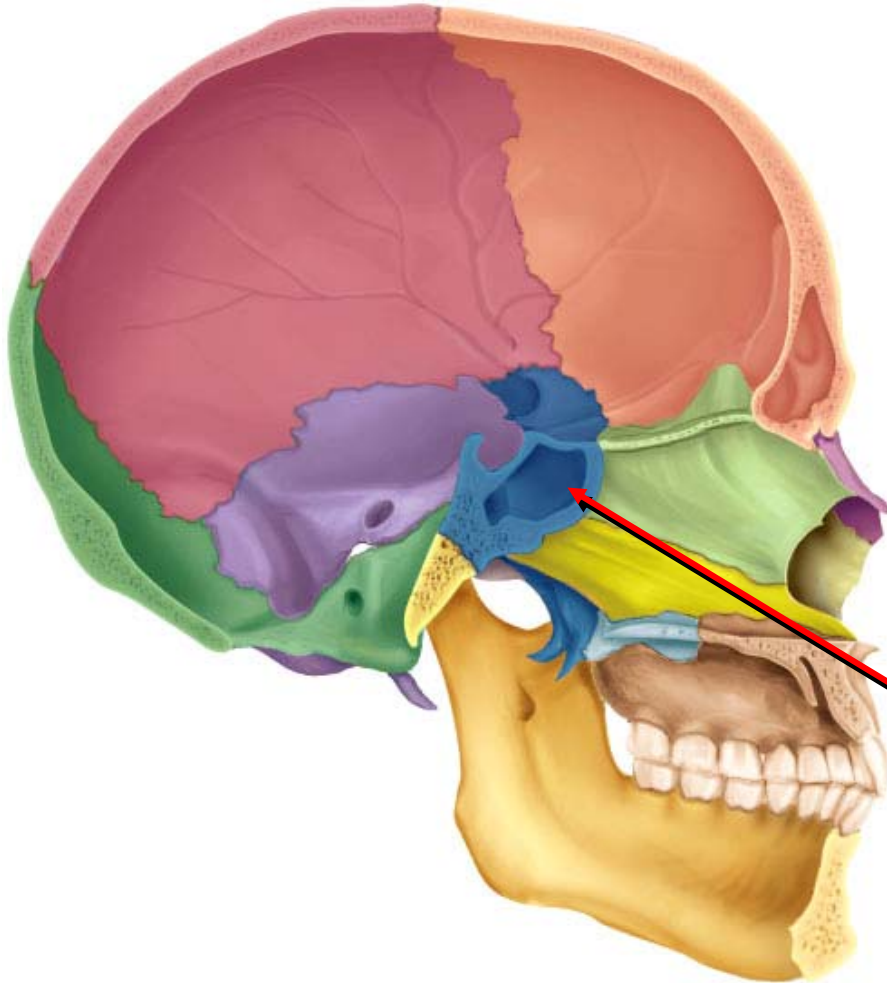


(b) Superior view of cranial floor

- Lesser wing
  - optic foramen
- Greater wing
  - foramen rotundum and ovale for brs. trigeminal nerve
  - foramen spinosum for meningeal artery

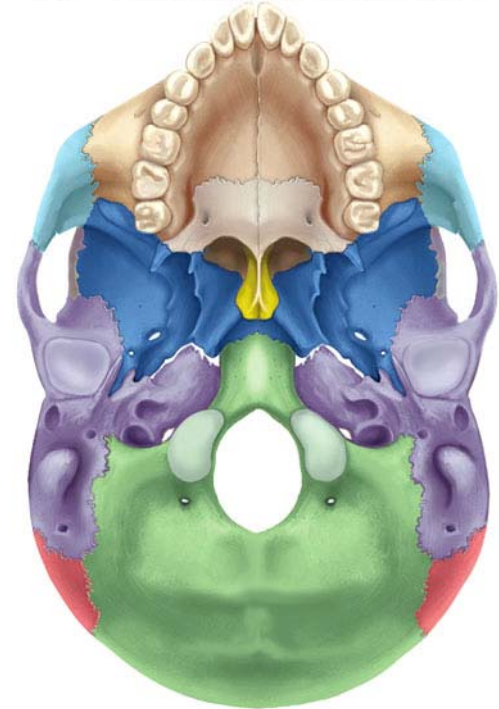
# Sphenoid Bone

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(b) Median section

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(a) Inferior view

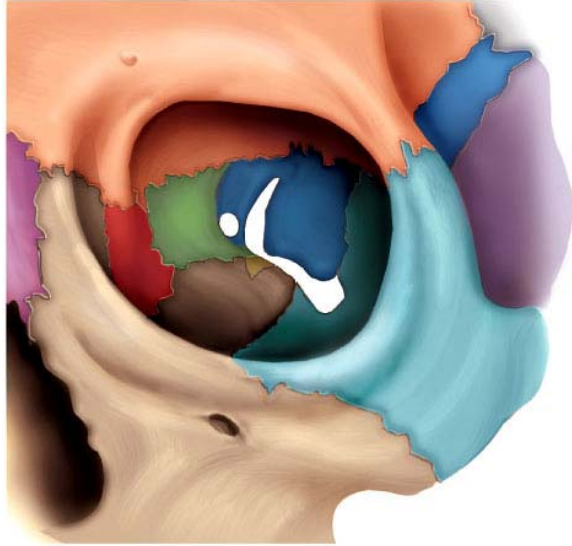
• Sphenoid sinus



# Ethmoid Bone

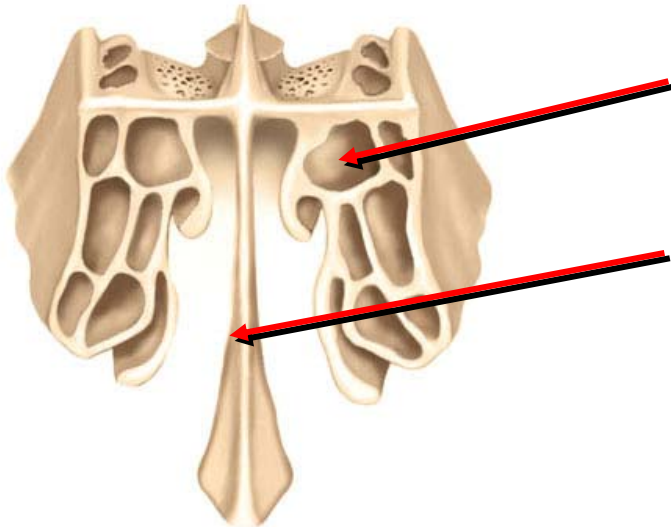


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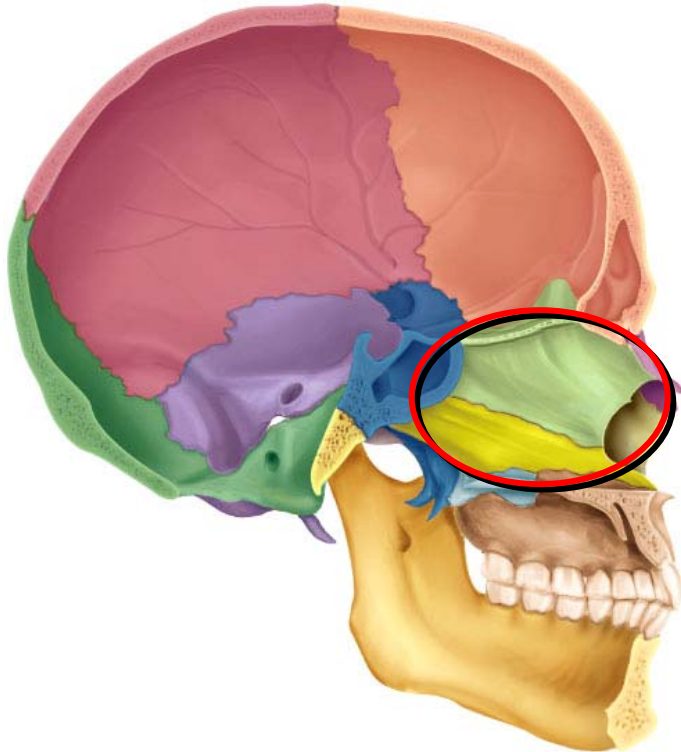
- Between the orbital cavities
- Lateral walls and roof nasal cavity
- Cribriform plate and crista galli
- Ethmoid air cells form ethmoid sinus
- Perpendicular plate forms part of nasal septum
- Concha (turbinates) on lateral wall



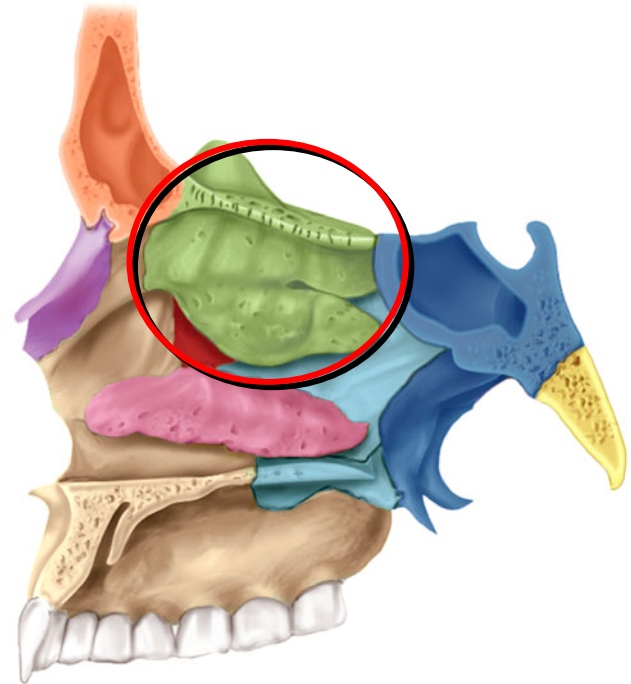
# Ethmoid Bone

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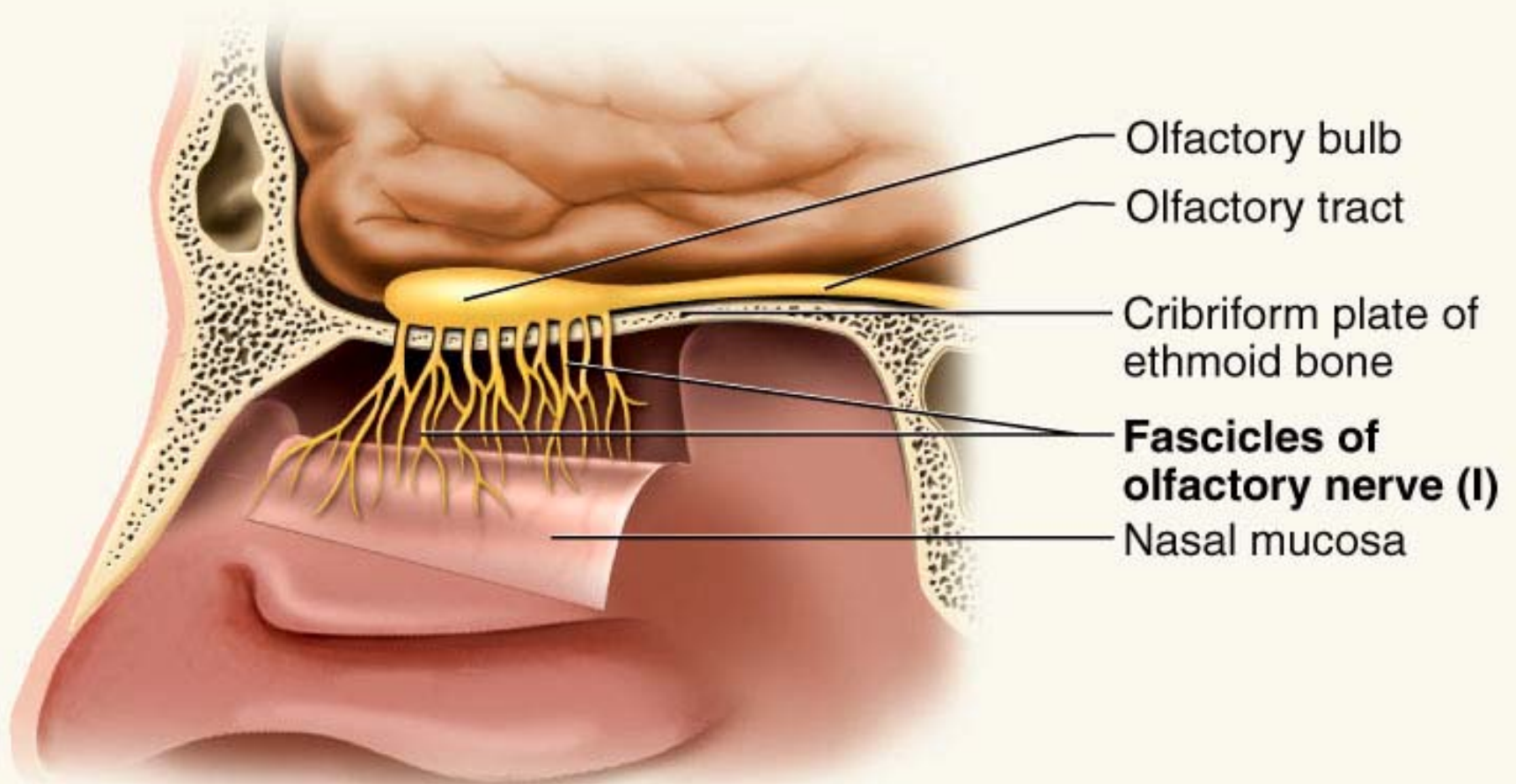
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(b) Median section



- Superior and middle concha
- Perpendicular plate of nasal septum

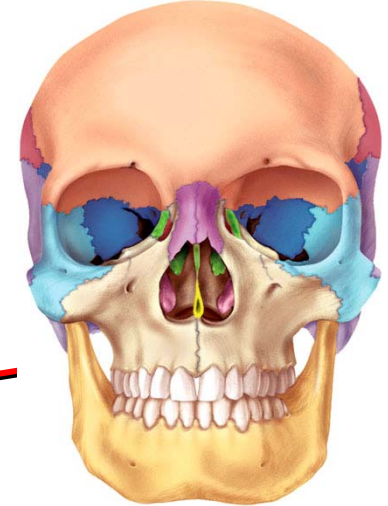


Trauma to head can shear off the olfactory nerves that pass through cribriform plate, result in loss of smell (anosmia).

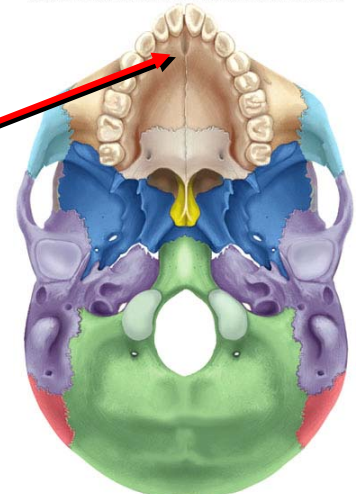
# Maxillary Bones

- Forms upper jaw
  - alveolar processes are bony points between teeth
  - alveolar sockets hold teeth
- Forms inferomedial wall of orbit
  - infraorbital foramen
- Forms anterior 2/3's of hard palate
  - incisive foramen
  - cleft palate

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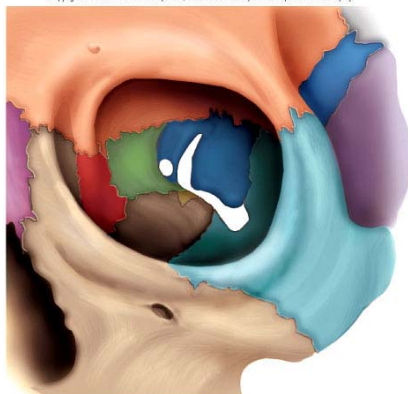
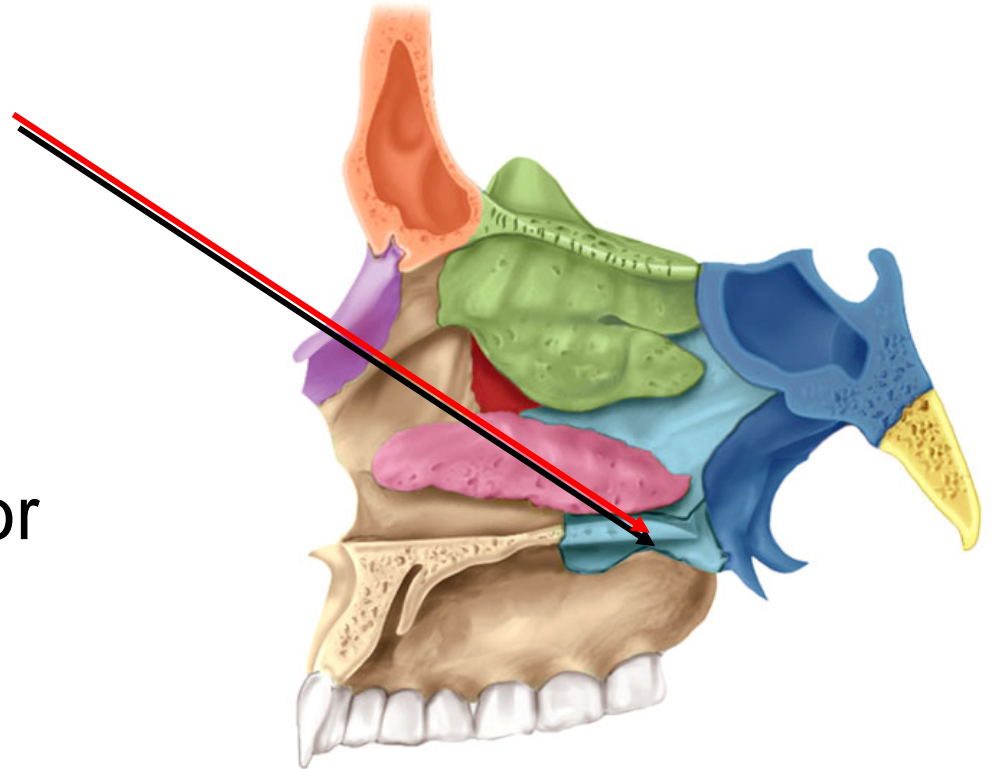
(a) Inferior view



# Palatine Bones

- L-shaped bone
- Posterior 1/3 of the hard palate
- Part of lateral nasal wall
- Part of the orbital floor

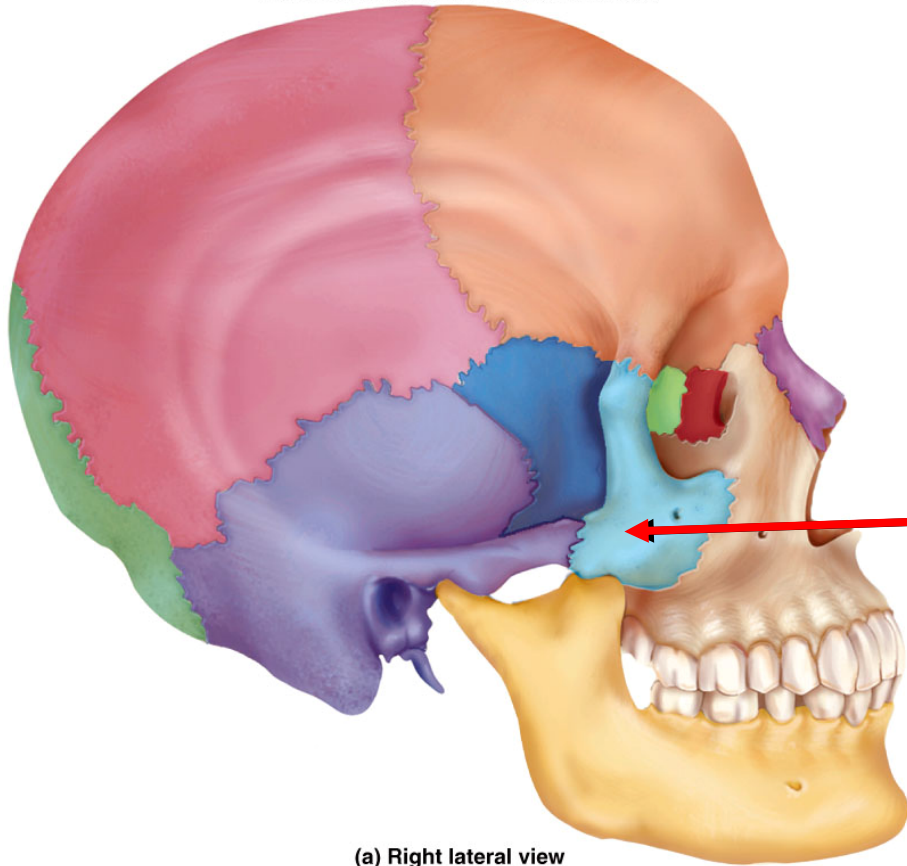
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# Zygomatic Bones

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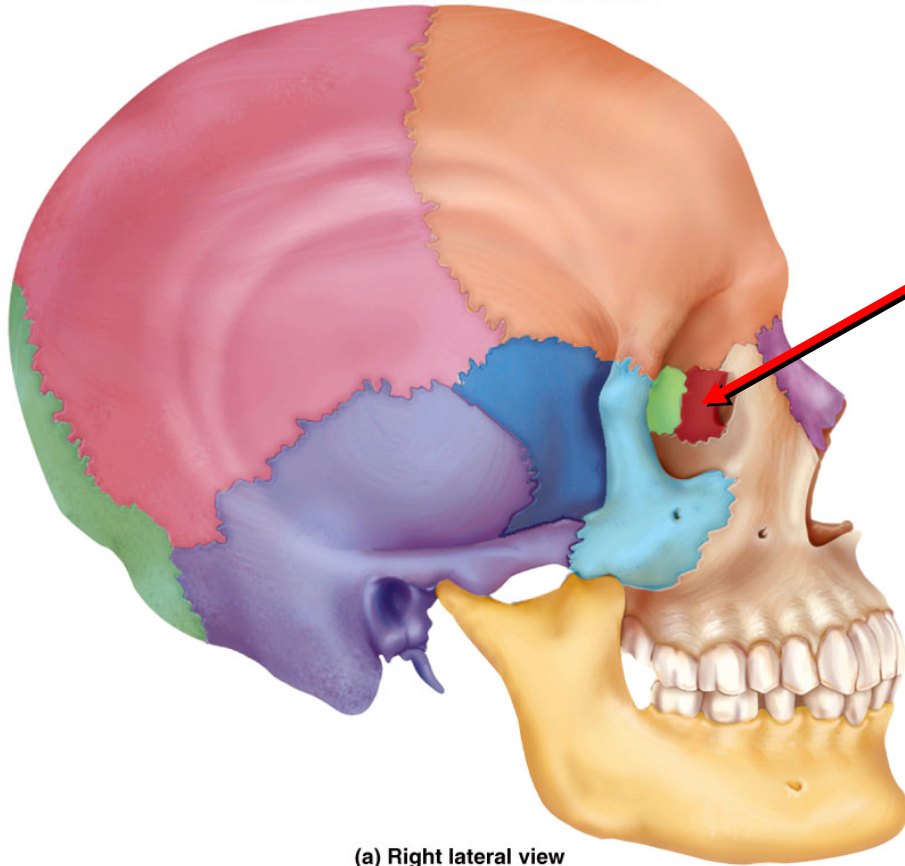


(a) Right lateral view

- Forms angles of the cheekbones and part of lateral orbital wall
- Zygomatic arch is formed from temporal process of zygomatic bone and zygomatic process of temporal bone

# Lacrimal Bones

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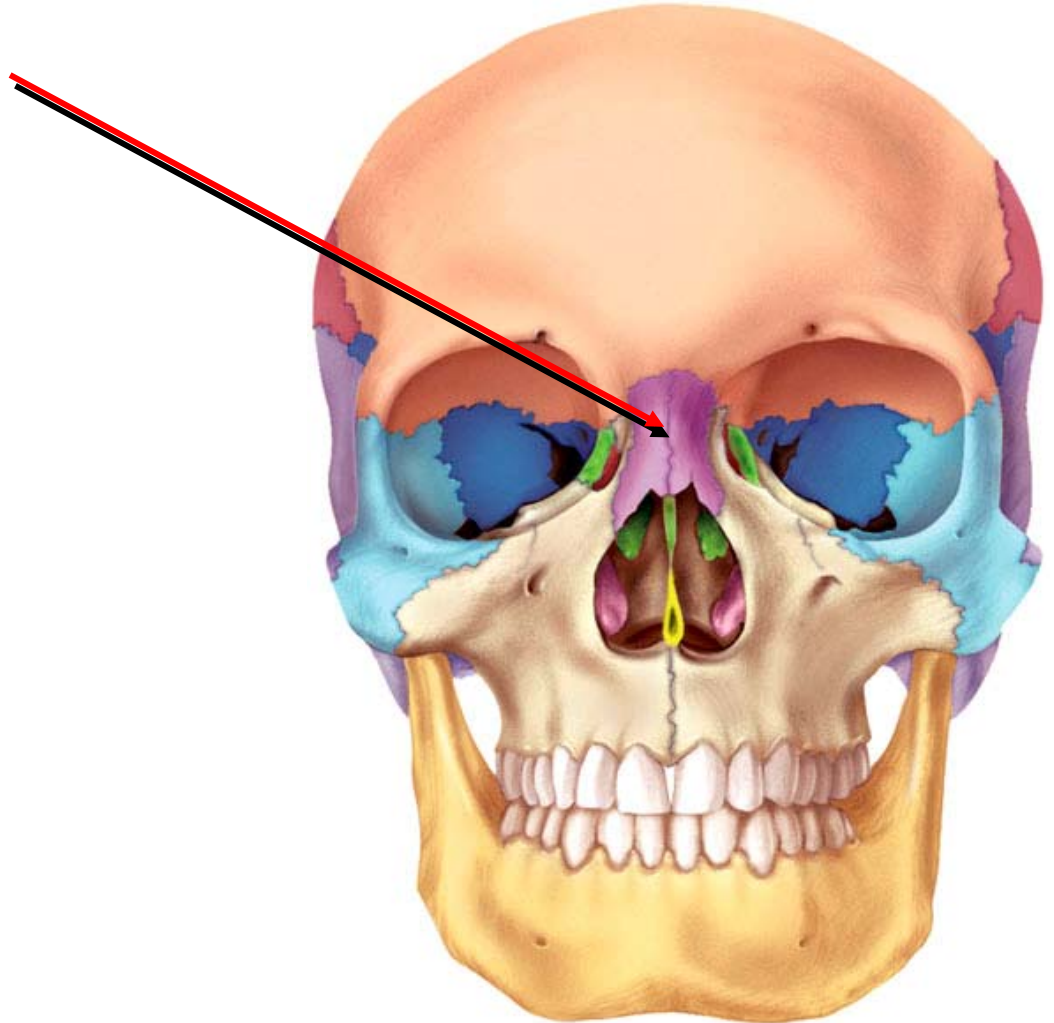
(a) Right lateral view

- Form part of medial wall of each orbit
- Lacrimal fossa houses lacrimal sac in life
  - tears collect in lacrimal sac and drain into nasal cavity

# Nasal Bones

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- Forms bridge of nose and supports cartilages of nose
- Often fractured by blow to the nose

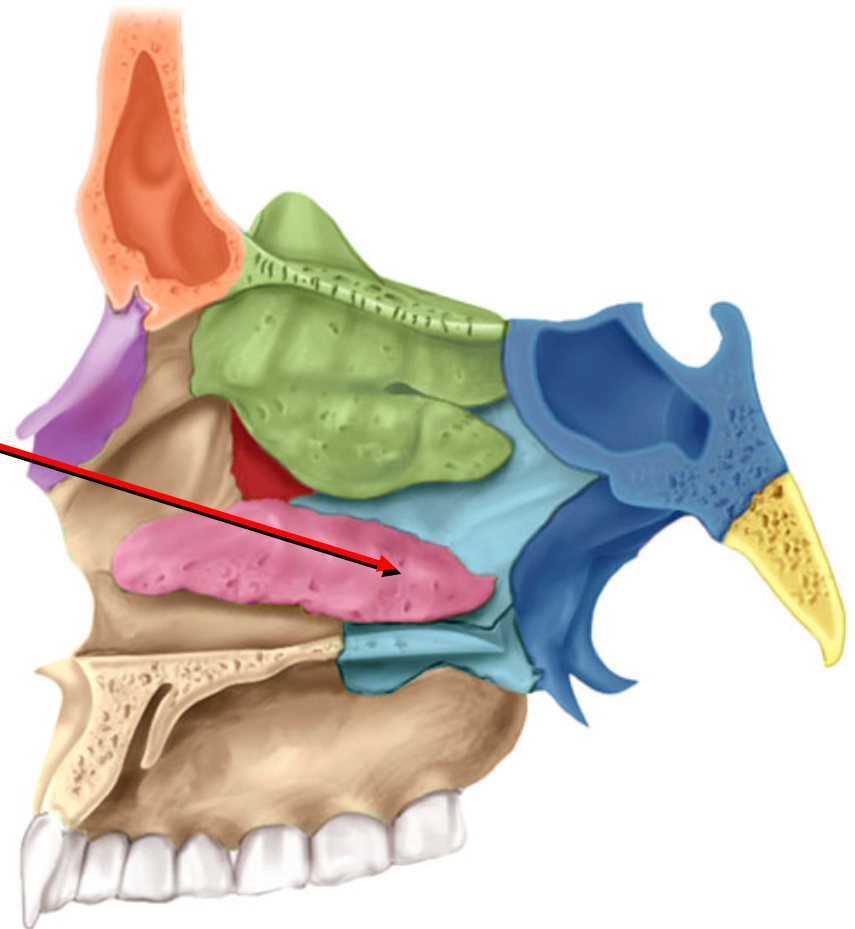




# Inferior Nasal Conchae

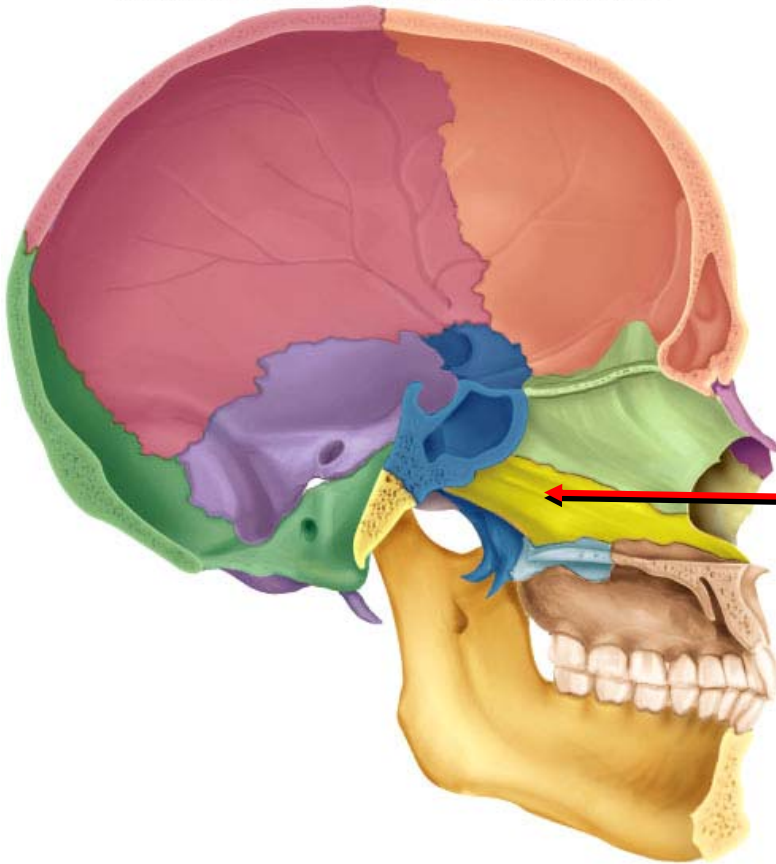
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- A separate bone
- Not part of ethmoid like the superior and middle concha or turbinates



# Vomer

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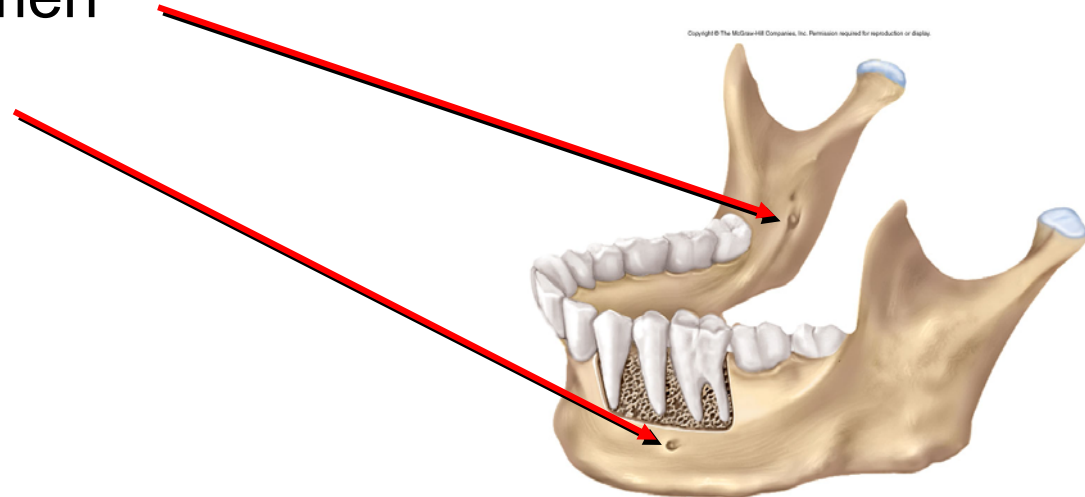
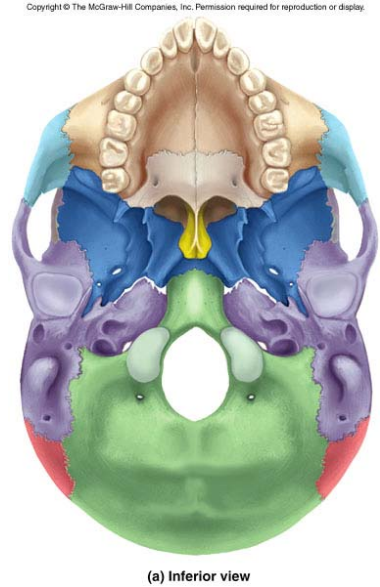


- Inferior half of the nasal septum
- Supports cartilage of nasal septum

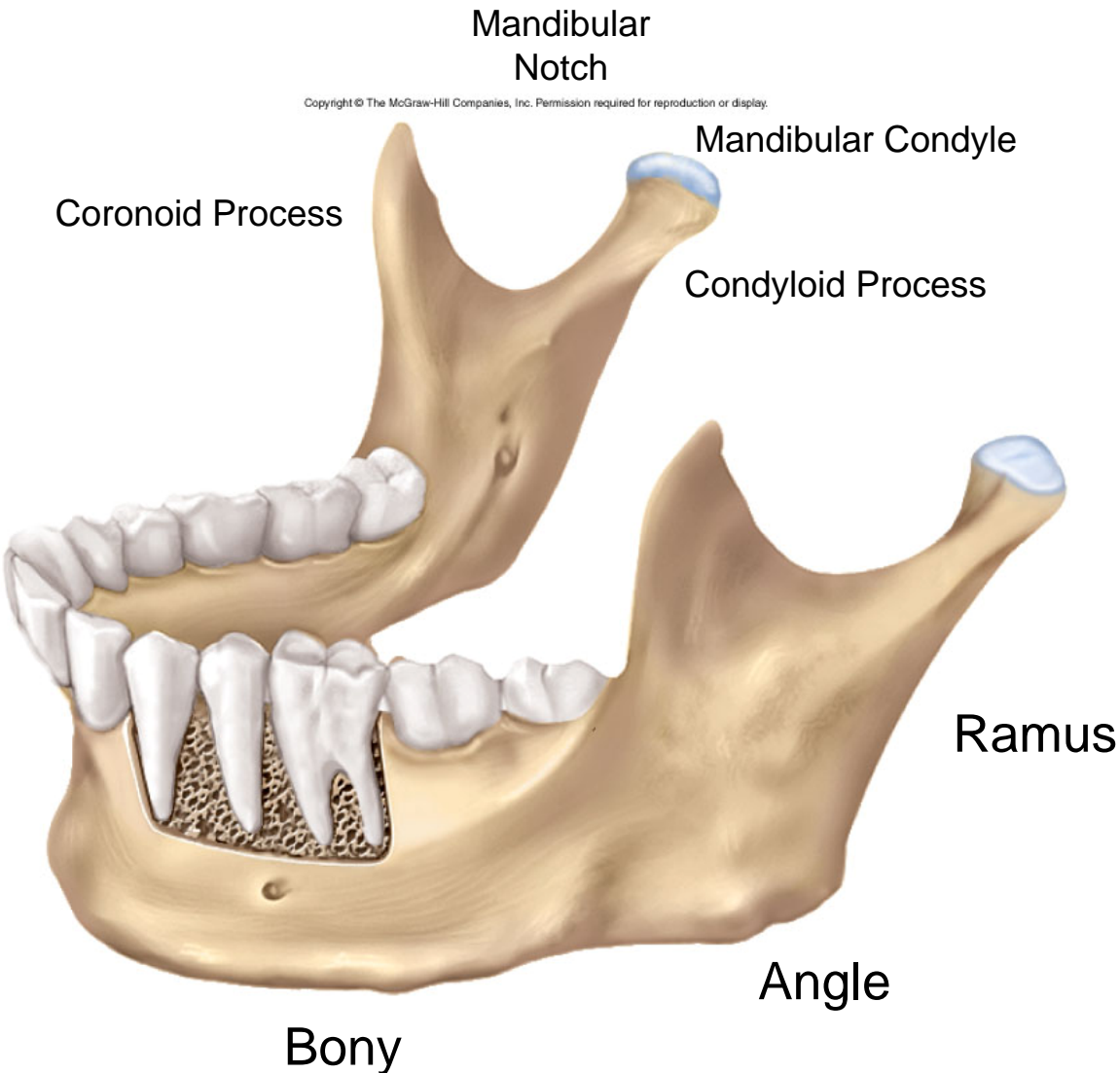
(b) Median section

# Mandible

- Only movable bone
  - jaw joint between mandibular fossa and condyloid process
- Holds the lower teeth
- Attachment of muscles of mastication
  - temporalis muscle onto coronoid process
  - masseter muscle onto angle of mandible
- Mandibular foramen
- Mental foramen



# Ramus, Angle and Body of Mandible



- Strongest bone of the skull
- Forms as two bones in the fetus, midsagittal cartilaginous joint called the mental symphysis
- mental protuberance = chin
- Masseter, muscle of mastication inserts at angle
- Temporomandibular Joint (TMJ)



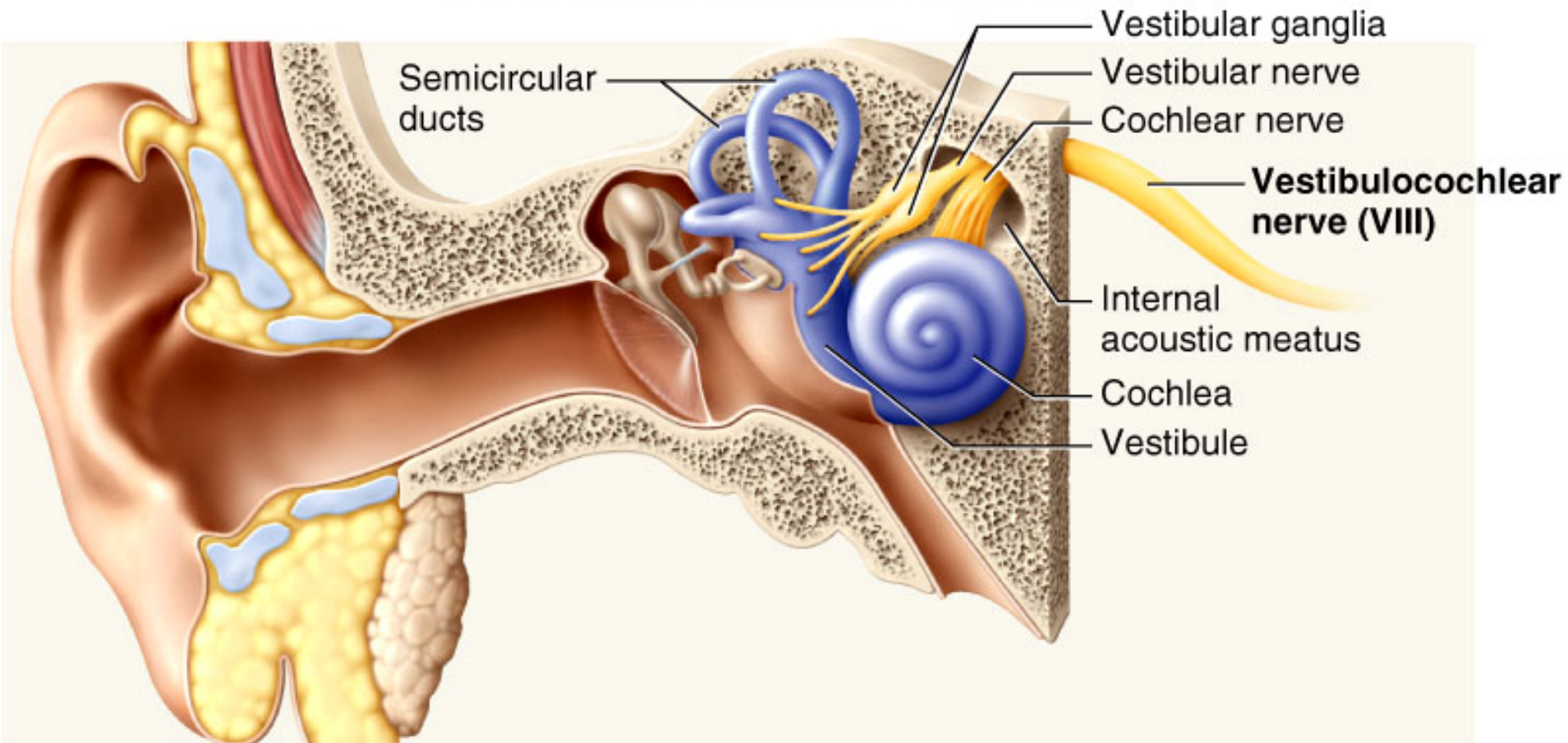
# Bones Associated With Skull

- Auditory ossicles
  - malleus, incus, and stapes
- Hyoid bone
  - suspended from styloid process of skull by muscle and ligament
  - greater and lesser cornua

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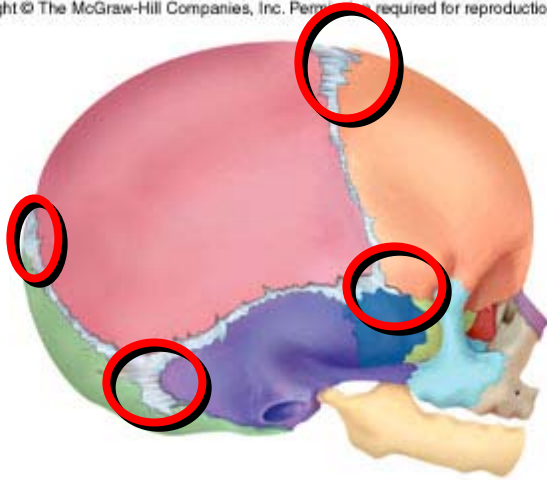
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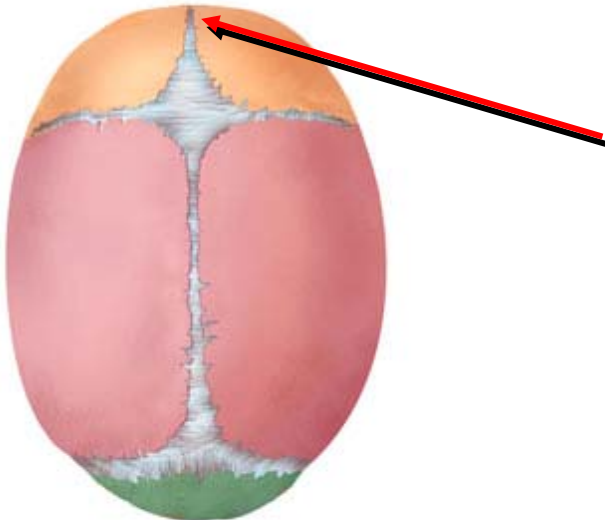
Malleous, Incus, Stapes

# Skull in Infancy and Childhood

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(a) Lateral view



(b) Superior view

- Spaces between unfused bones called fontanelles
  - filled with fibrous membrane
  - allow shifting of bones during birth and growth of brain
- 2 frontal bones fuse by age six (metopic suture)
- Skull reaches adult size by 8 or 9