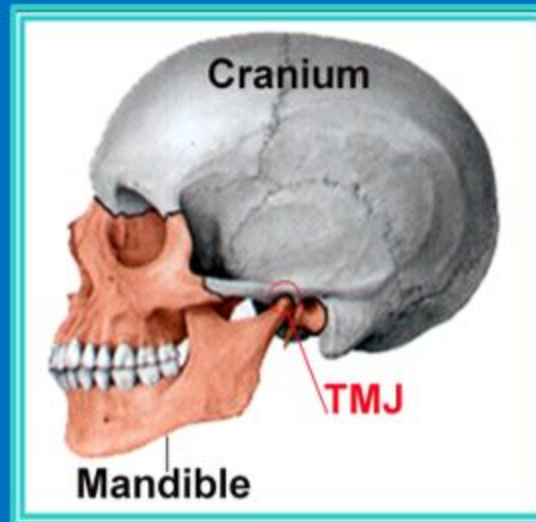
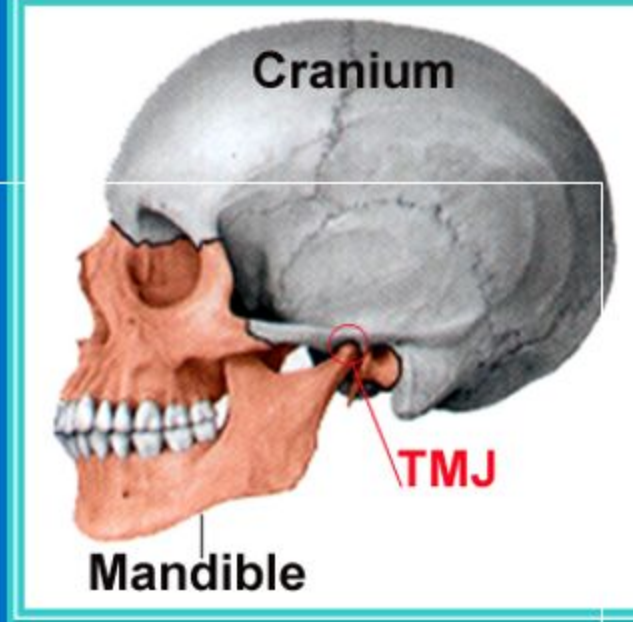


Skull & TMJ



Overview of the Skull in Adults

- Consist 22 + 6 middle ear bones.
- Form of 2 parts:
 1. **Cranium** → Upper fixed part.
 2. **Mandible** → Lower mobile part.
- **Articulated** by the 2 Temporomandibular (synovial) Joints (**TMJ**). The rest of the cranial bones are united at immobile CT joints (**sutures**).
- Also subdivided into:
 - **Neurocranium (gray)**, bones enclosing the brain, **8 in number**.
 - **Facial skeleton (orange)**, bones of the face, **14 in number**.



Cranial bones

• 4 Single bones:

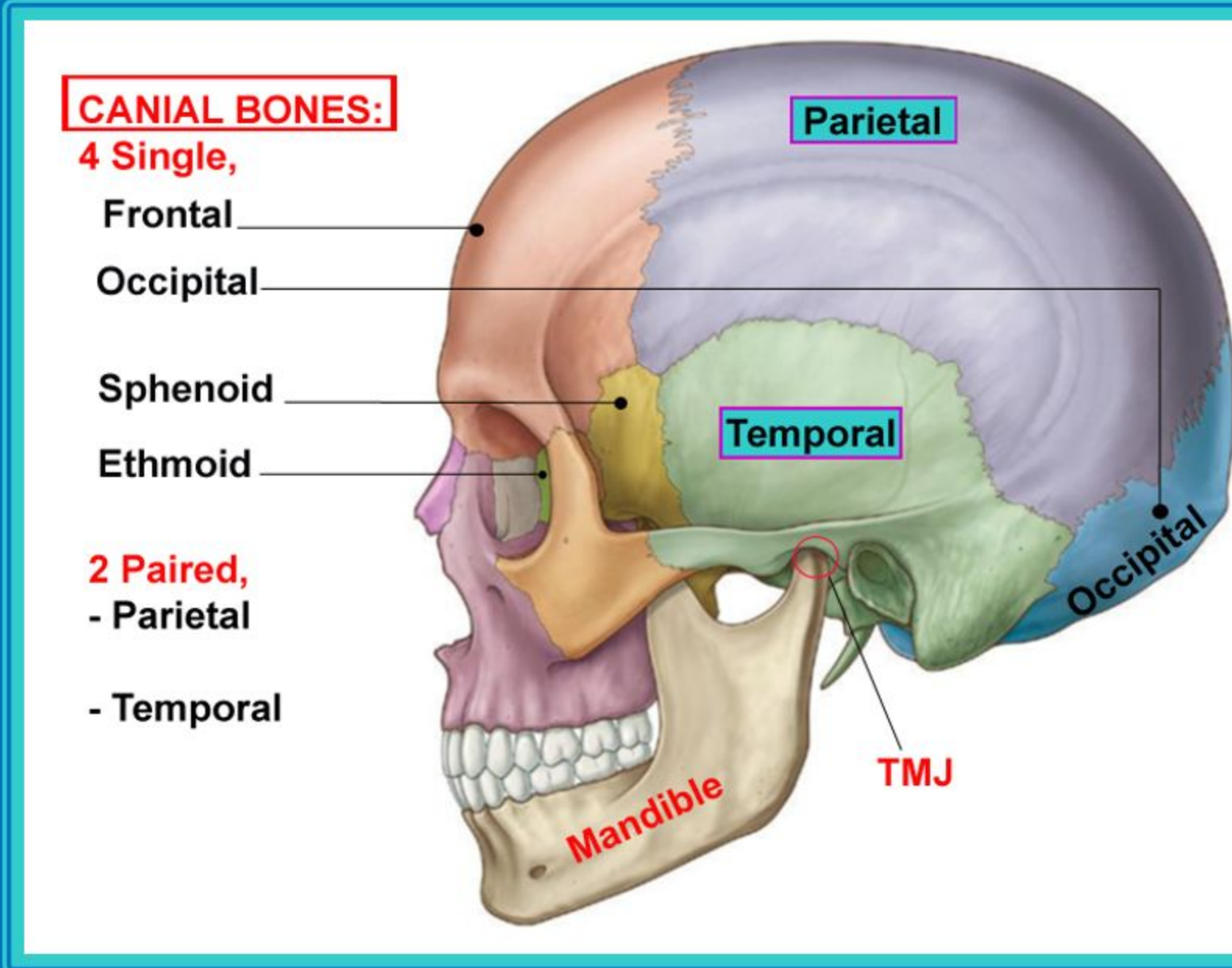
- Frontal
- Occipital
- Sphenoid
- Ethmoid

• 2 Paired bones:

- Parietal
- Temporal

• Most of these bones are **Flat**, form by **intramembranous ossification** and united by **sutures**.

• Bones of the cranial base and the occipital bone form via **endochondral ossification**.



Facial skeleton

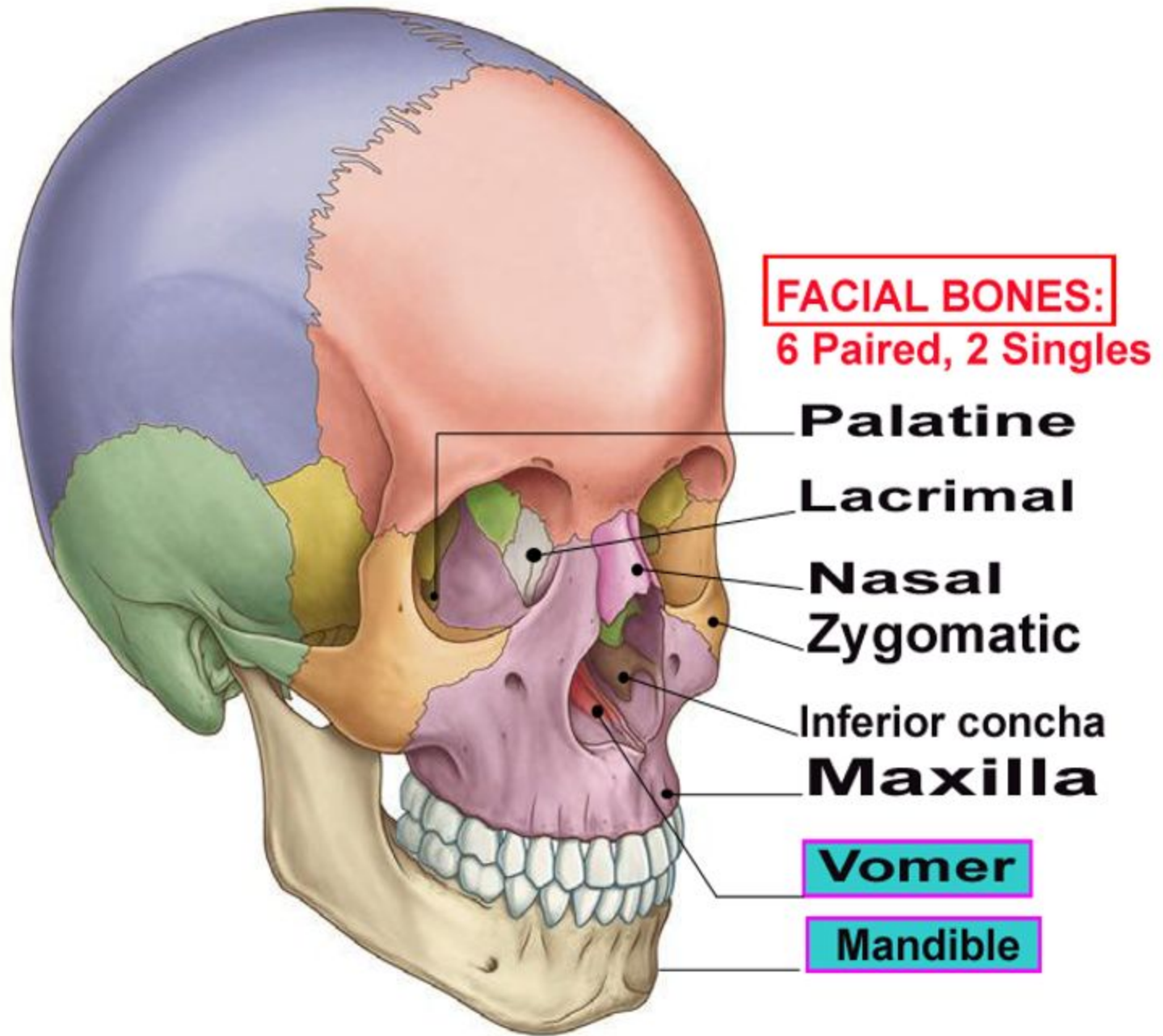
Consists of 14 irregular bones:

- 2 single

- Mandible
- Vomer

- 6 paired

- Maxilla (upper jaw bone)
- Zygomatic (Cheek bone)
- Nasal
- Lacrimal
- Inferior nasal concha.
- Palatines

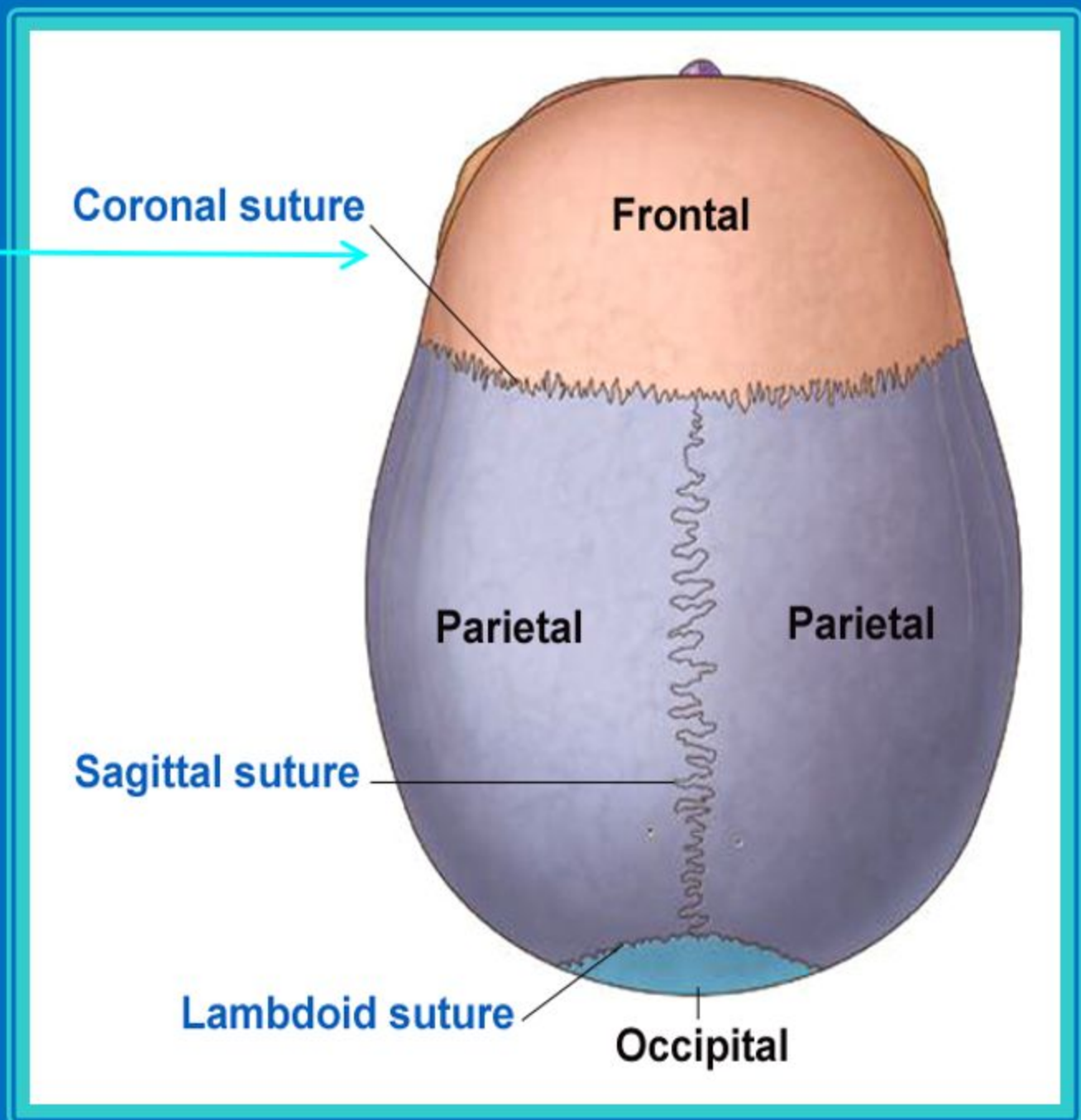
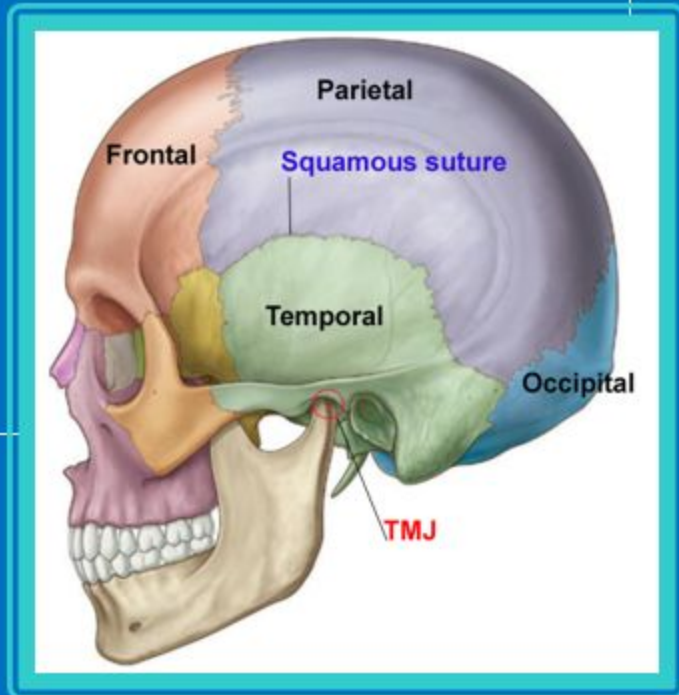


Sutures

- Cranial bones united by immobile fibrous joints → **Sutures.**
- Important sites of growth.
- Allow bones to overlap during birth.

• Names:

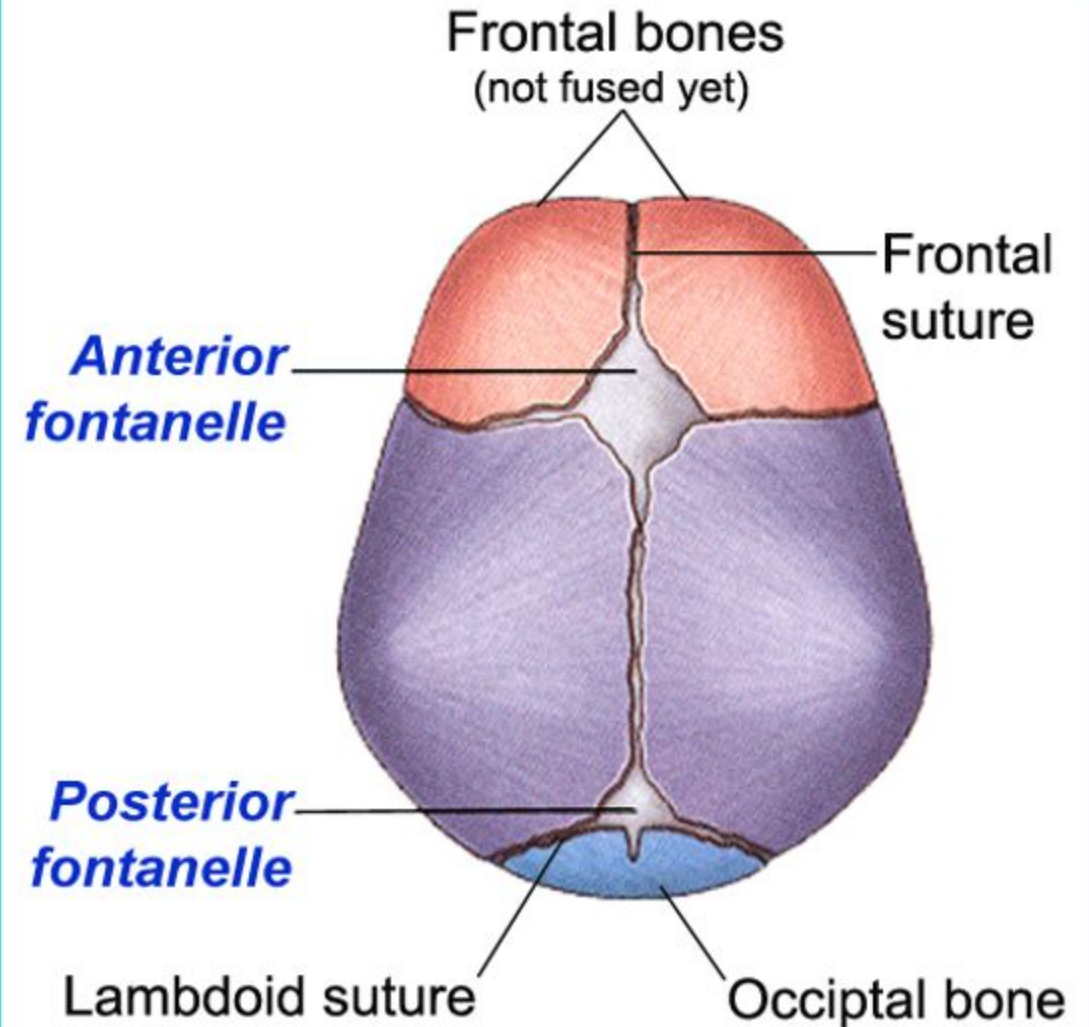
- Coronal
- Sagittal
- Lambdoid
- Squamous



Skull of newborn- Superior View

➤ The merging site between bones of the skull at birth form a large membranous unossified soft spaces called Fontanelles.

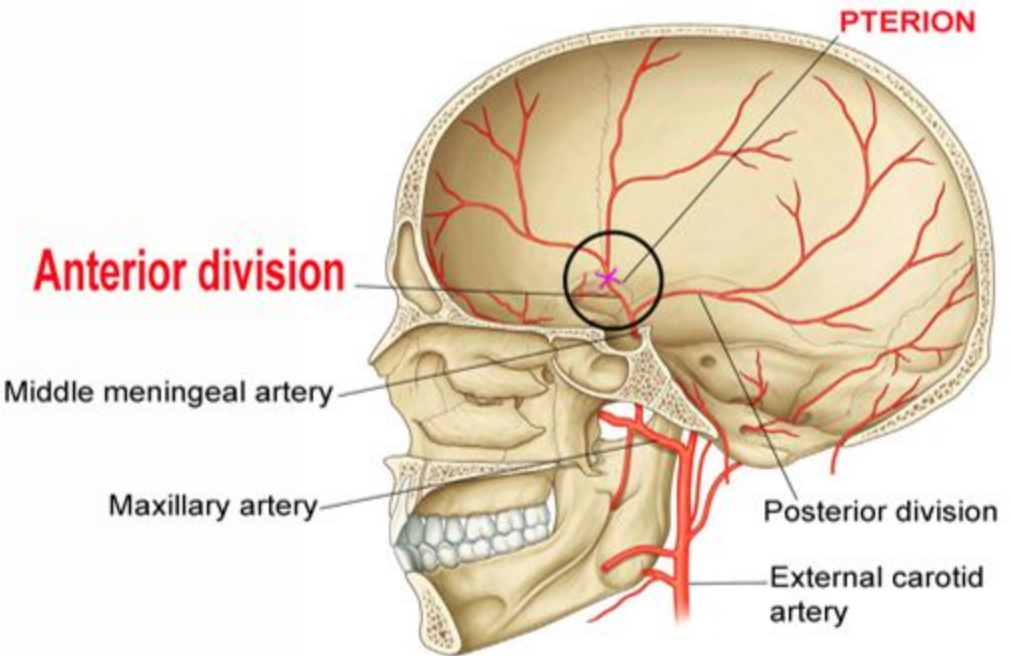
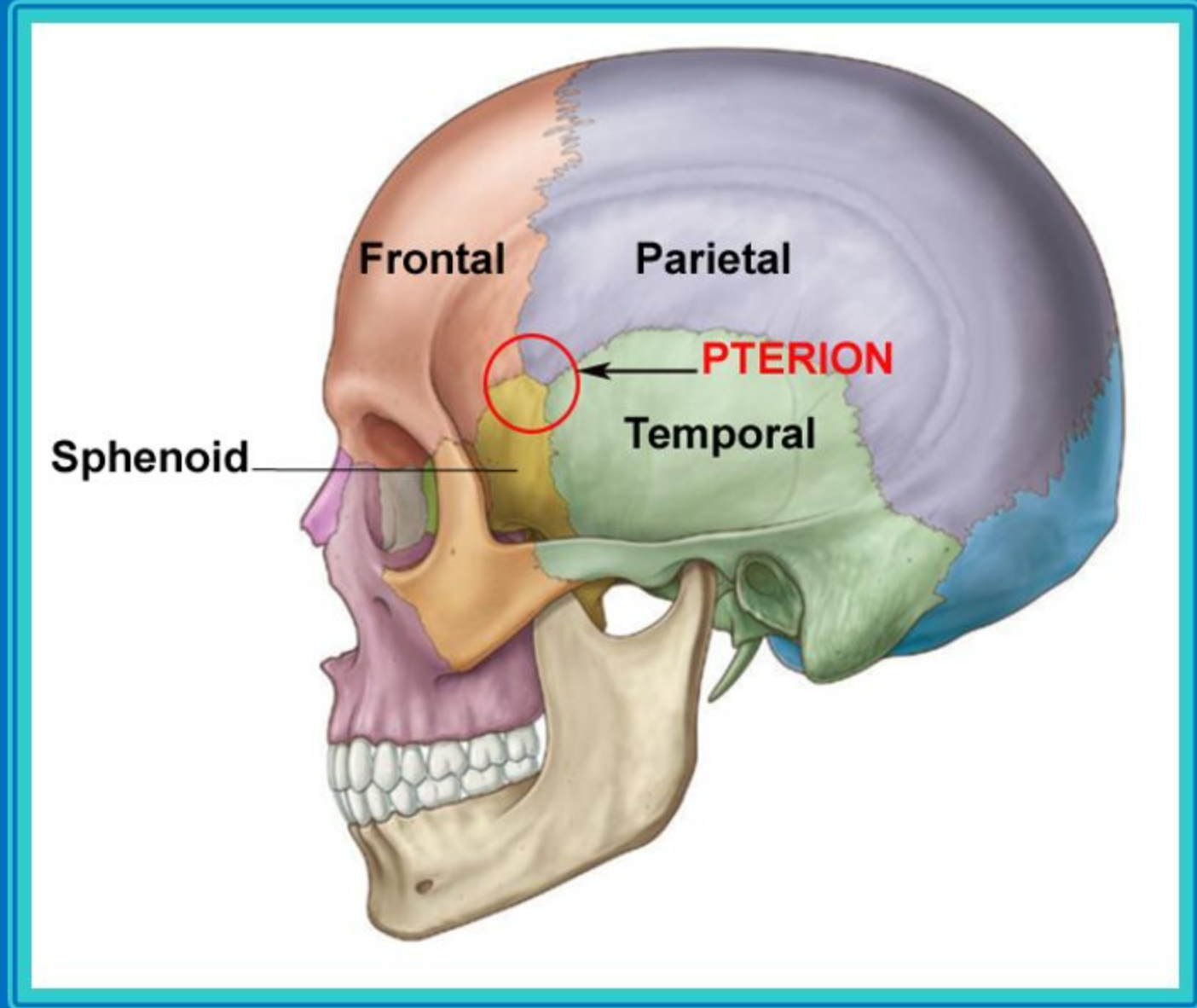
- **Anterior fontanelle**: Close by the end of 2nd year.
- **Posterior fontanelle**: Start closure by end of the 2nd month.
- **Important for:**
 - Easy birth.
 - Postnatal growth of brain.



Pterion (i.e. wing)

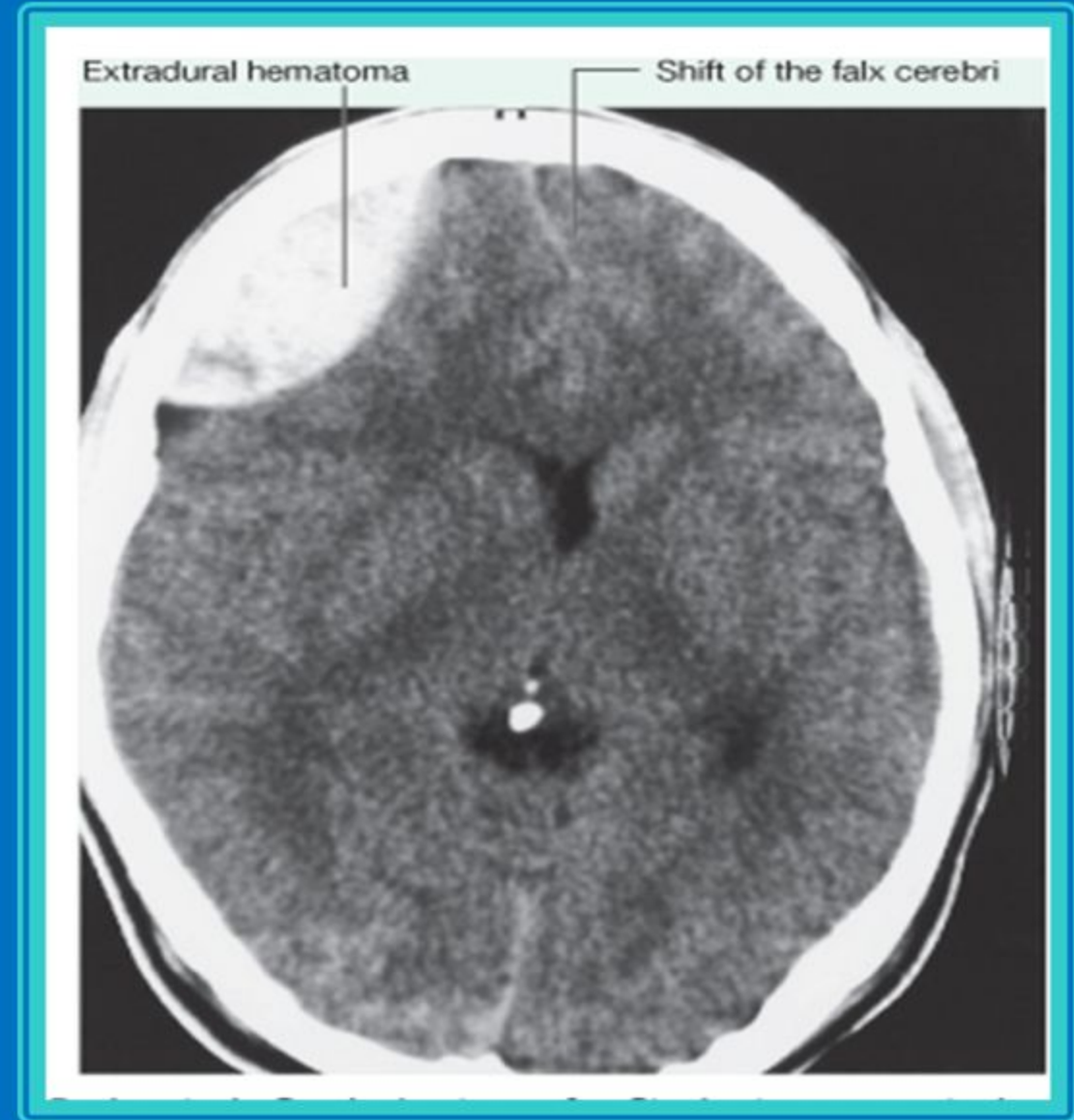
The junction site of the frontal, parietal, sphenoid, and temporal bones.

- Bones in this area are very thin, overlies anterior division of the middle meningeal artery.



Extradural hematoma

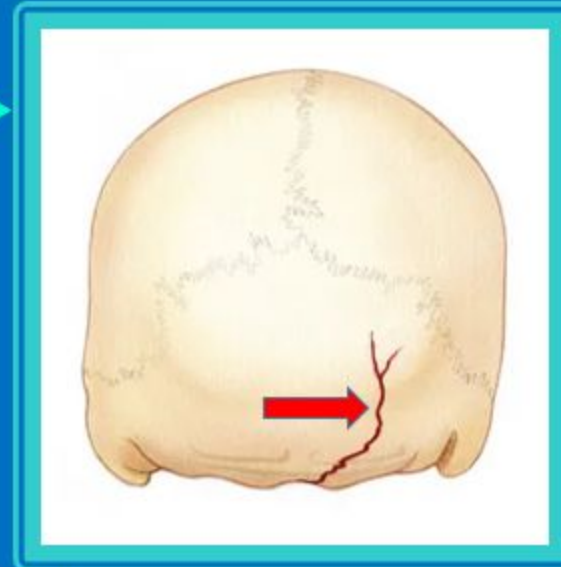
- Skull fracture in this area can damage the MMA causing internal bleeding (Extradural hematoma) that may compress the inner vital structures.
- Typically caused by a direct blow to the head that produces drowsiness followed by unconsciousness, which may lead to death.



Axial CT scan of the brain

Skull fracture

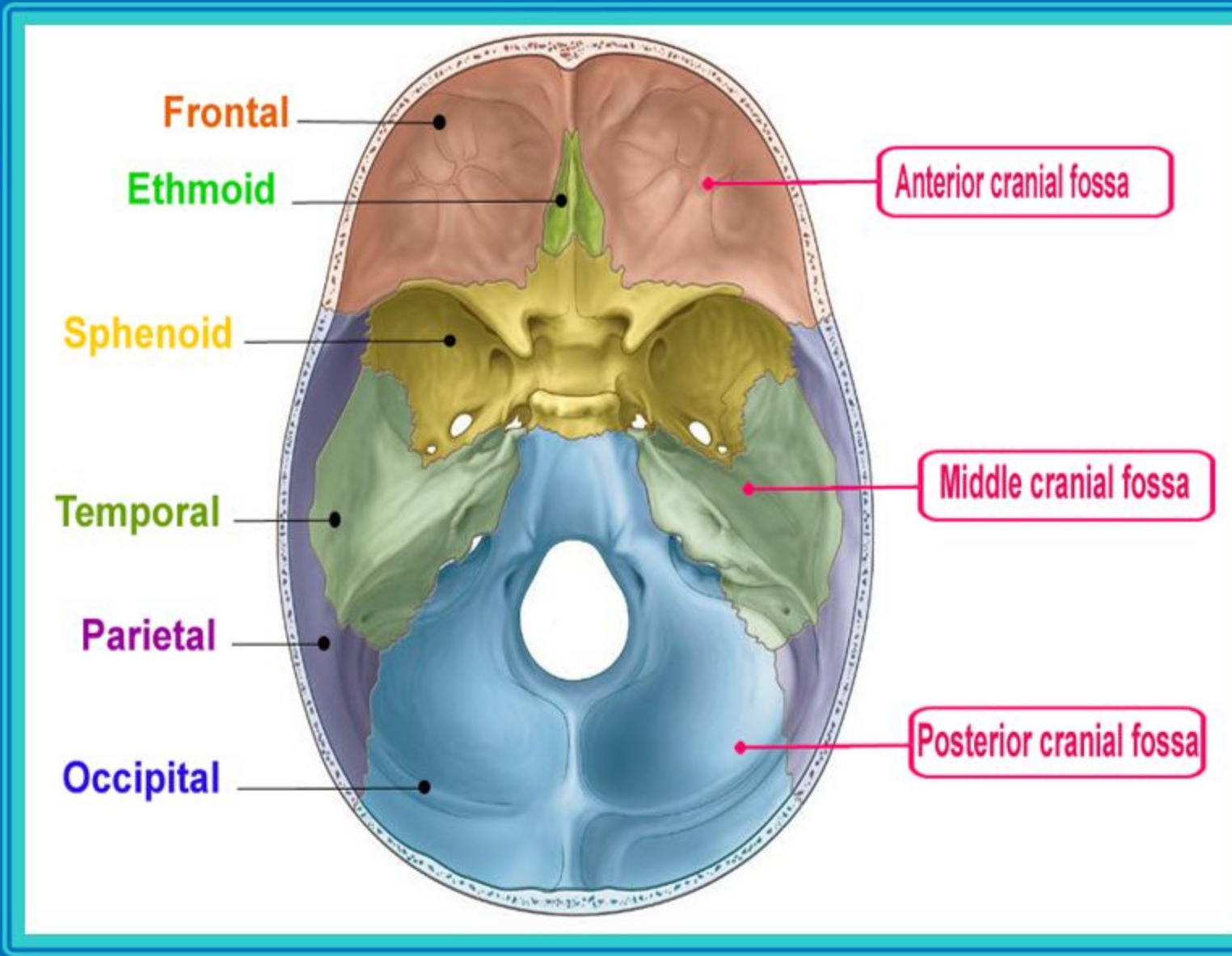
- **Depressed fracture** in bones developed by **Intramembranous ossification**.
- **Linear fracture** in bones developed by **Endochondral ossification**.



Cranial Cavity

Divided into 3 Fossae.

- Each contributed by specific bones.
- Each related to specific part/s of the brain.
- Each have its specific foramens.
- Each foramen transmits specific structure/s.



Cranial nerves

