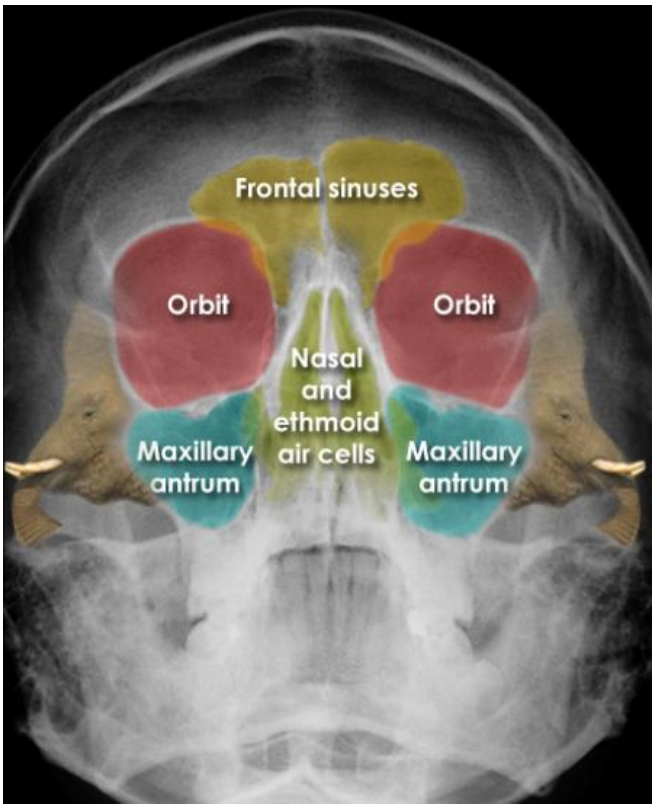
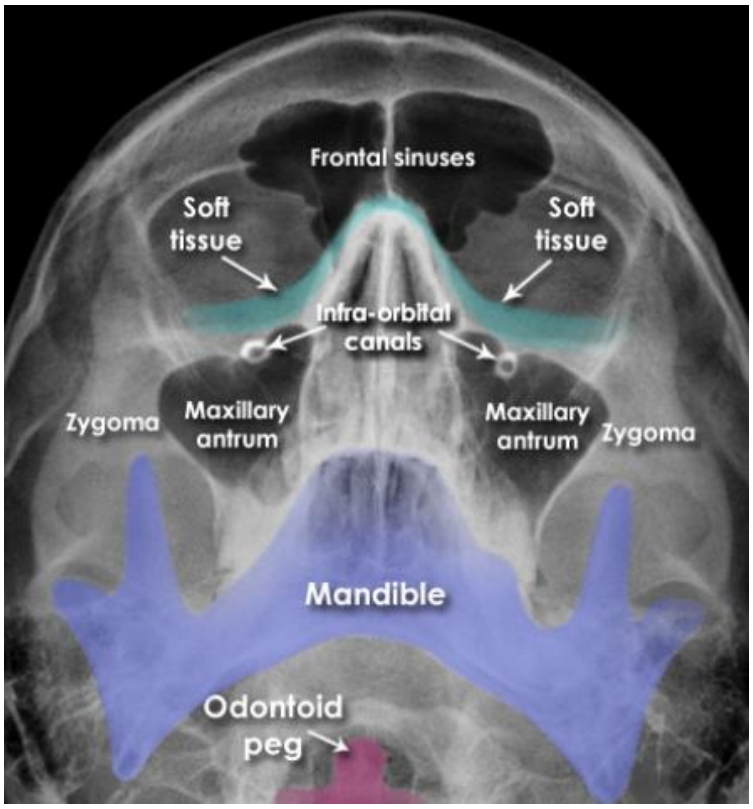
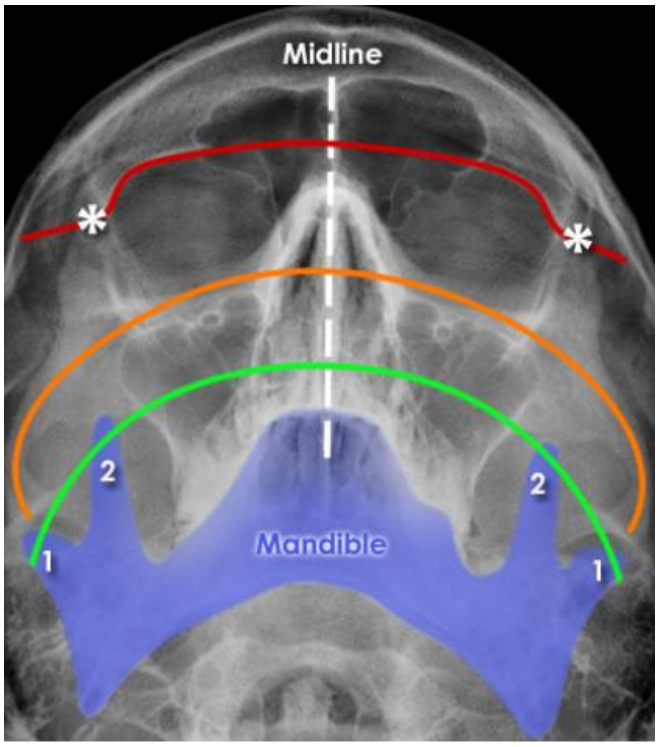
# TRAUMA

## FACIAL X-RAY INTERPRETATION

Facial x-rays should be obtained if there is clinical suspicion of a facial fracture. Interpretation can be difficult due to overlap of multiple structures; a systemic approach to interpretation and knowledge of common signs will help significantly. Because the appearance of structures is variable the images must be related to clinical findings.



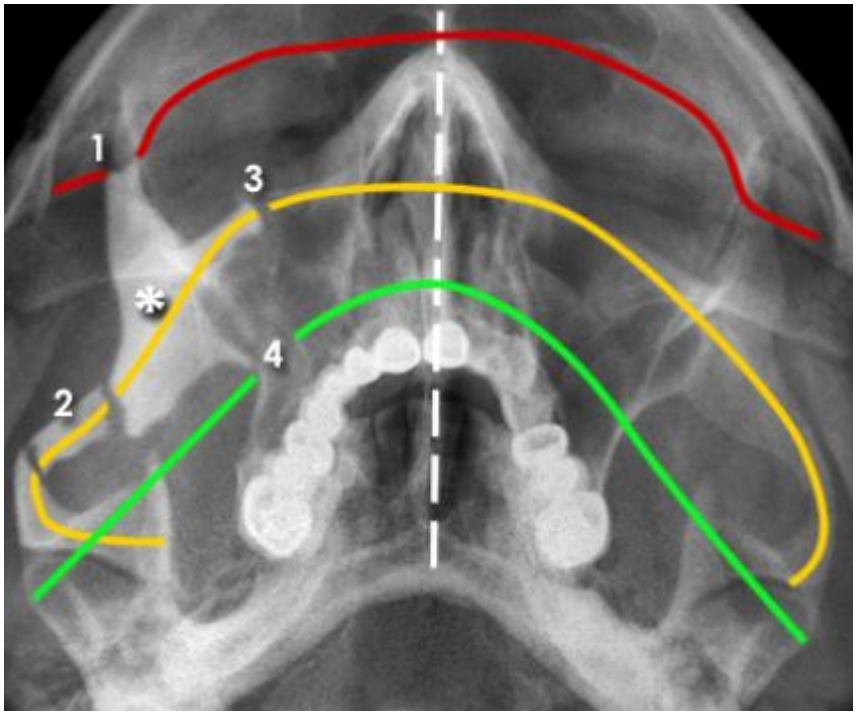

**Normal Facial X-Ray Interpretation**

XR provides occipitomental views in two planes: 10 degrees (above left) and 30 degrees (above right).

Note the orbits, frontal and maxillary sinuses, zygoma (elephants) and mandible. The infra-orbital canals are part of the orbital floor and carry the maxillary division of the trigeminal nerve.

**McGrigor-Campbell Lines** provide a simple aid to interpretation. Look for disruption along their length.

Red line: zygomaticofrontal sutures (*) & upper orbit.
Orange: zygomatic arch & inferior orbital margins.
Green: condyle (1) & coronoid (2) processes of mandible & lateral/medial walls of maxillary sinuses.




**Tripod Fracture 1** (left)

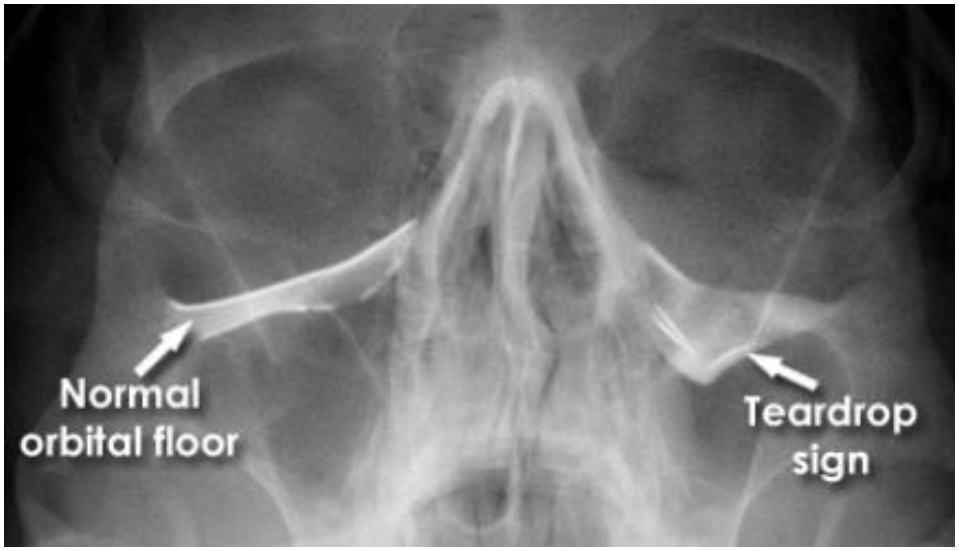
Note the disruption of the Campbell-McGrigor lines indicating fractures.

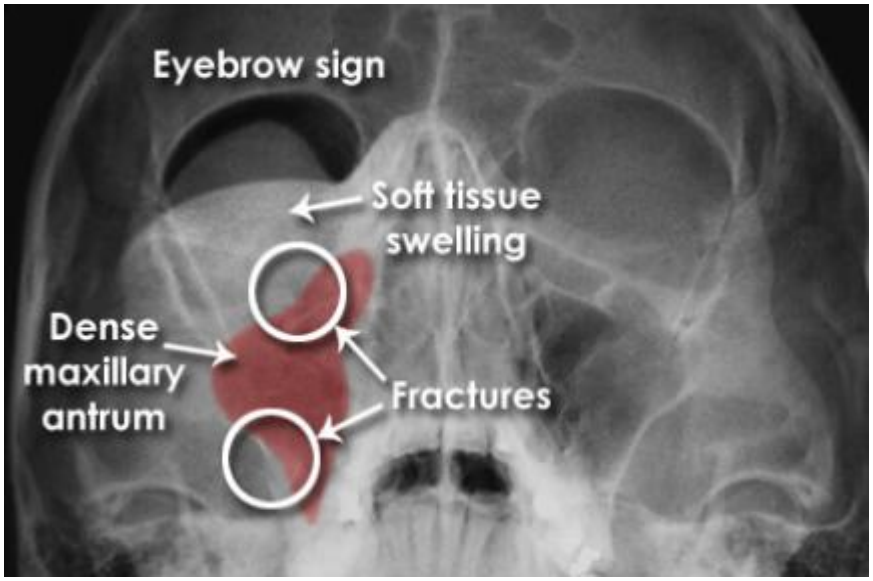
Tripod fractures involve:

- Zygomaticofrontal suture (1)
- Zygomatic arch (2)
- Orbital floor (3)
- Wall of the maxillary sinus (4)

**Tripod Fracture 2** (below left).

Fractures are circled. A fluid level can be seen in the maxillary sinus due to bleeding. Sinus density or fluid level may be the only sign of fracture.


**Orbital Blowout Fractures**

Trauma to the orbit increases intr-orbital pressure, causing a fracture of the thin orbital floor.

**Teardrop sign** (above right): herniation of the orbital contents through the orbital floor.

**Eyebrow sign** (left): associated fracture of the maxillary sinus allows air to leak into the orbit. This is visible as a dark patch.