SAWA UNIVERSITY

RADIOGRAPHIC TECHNIQUE-2

FACIAL BONES RADIOGRAPHIC POSITIONING

Sawa University

College of health and medical techniques

Department of Radiology Tech.

3rd Academic year

LEC.3

THEORETICAL

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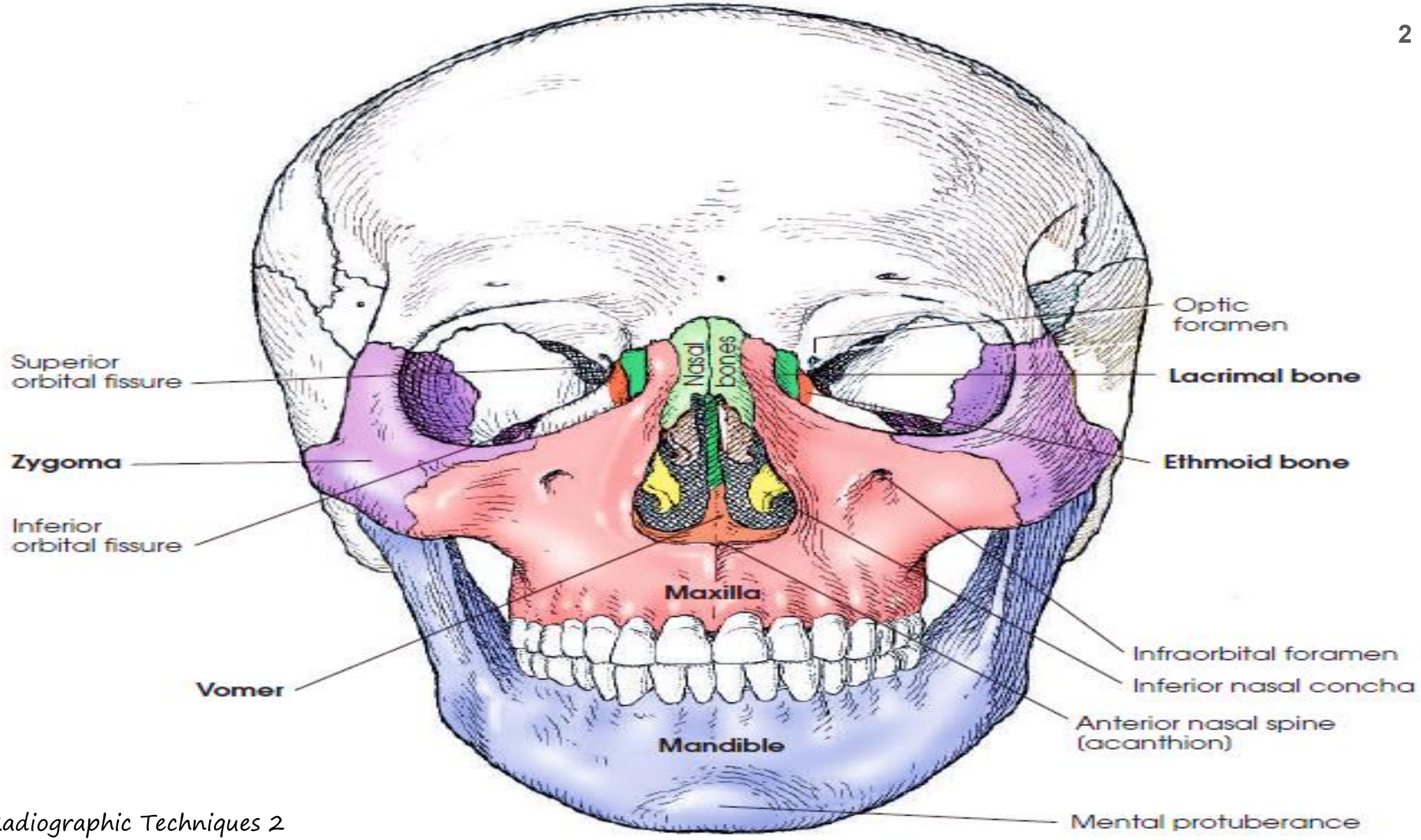
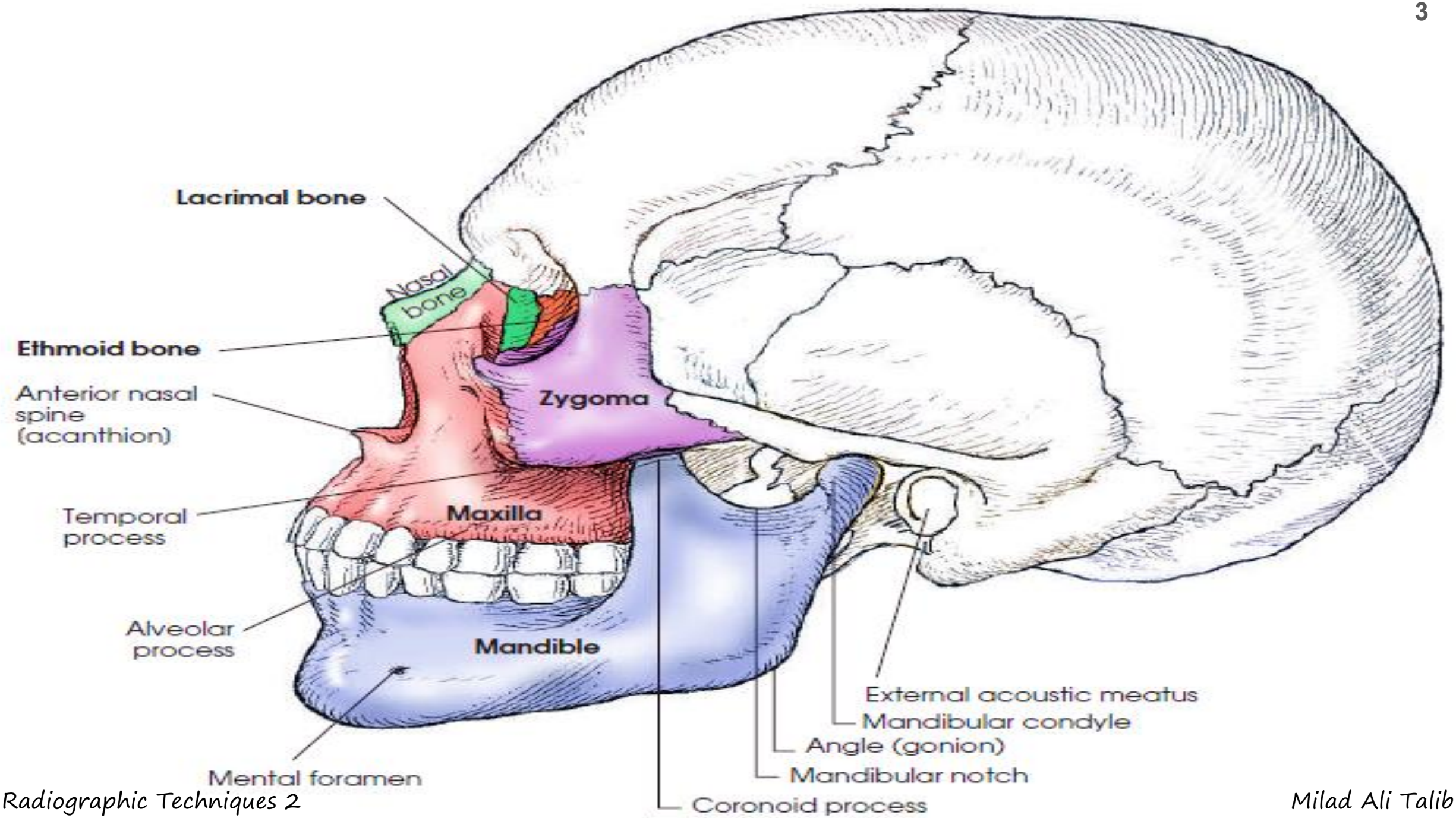
M.Sc Radiology Technology


Optic foramen
Superior orbital fissure
Nasal bones
Lacrimal bone
Zygoma
Ethmoid bone
Inferior orbital fissure
Maxilla
Infraorbital foramen
Inferior nasal concha
Vomer
Anterior nasal spine (acanthion)
Mandible
Mental protuberance


Lacrimal bone
Nasal bone
Ethmoid bone
Anterior nasal spine (acanthion)
Zygoma
Temporal process
Maxilla
Alveolar process
Mandible
Mental foramen
External acoustic meatus
Mandibular condyle
Angle (gonion)
Mandibular notch
Coronoid process

Facial Bones radiographic positioning

Routine Positioning

1. Lateral
2. Parietoacanthial
   (Waters method)
3. PA axial
   (Caldwell method)

Clinical Indications

- Fractures
- Neoplastic
- Inflammatory processes of the facial bones, orbits, and mandible

1. LATERAL PROJECTION (R or L position)

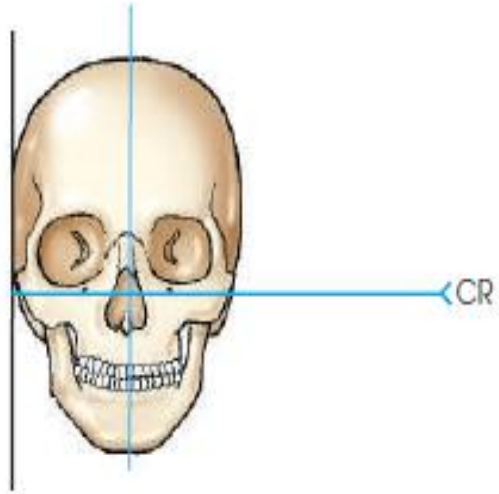
Patient Position

- Patient position is erect or recumbent semiprone. (same lateral skull position)
- Rest lateral aspect of head against table or upright imaging device surface, with side of interest closest to IR.
- Adjust head into a true lateral position and oblique body as needed for patient's comfort.
- Align MSP parallel to IR, Align IPL perpendicular to IR.
- Adjust chin to bring IOML perpendicular to front edge of IR.

1. LATERAL PROJECTION (R or L position)

CR: Align CR perpendicular to IR. Center CR to zygoma (the cheek) , midway between outer canthus and EAM

Collimation: Collimate on four sides to anatomy of interest.



Upright lateral facial bones diagram.

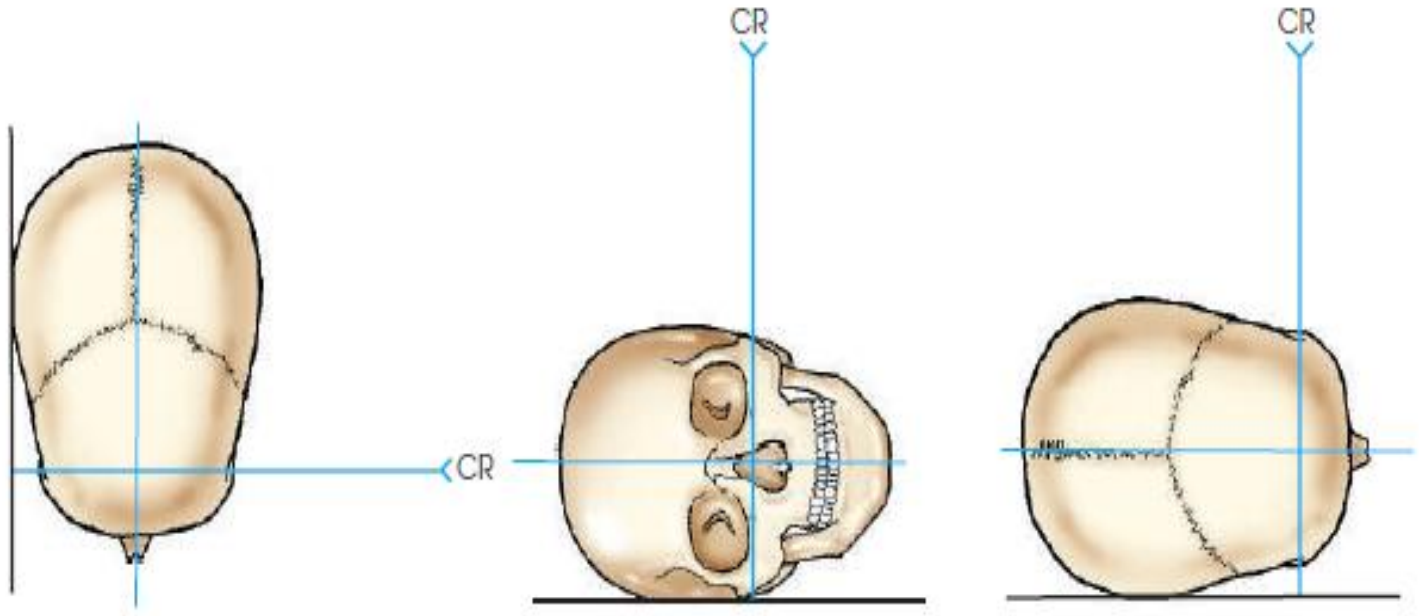
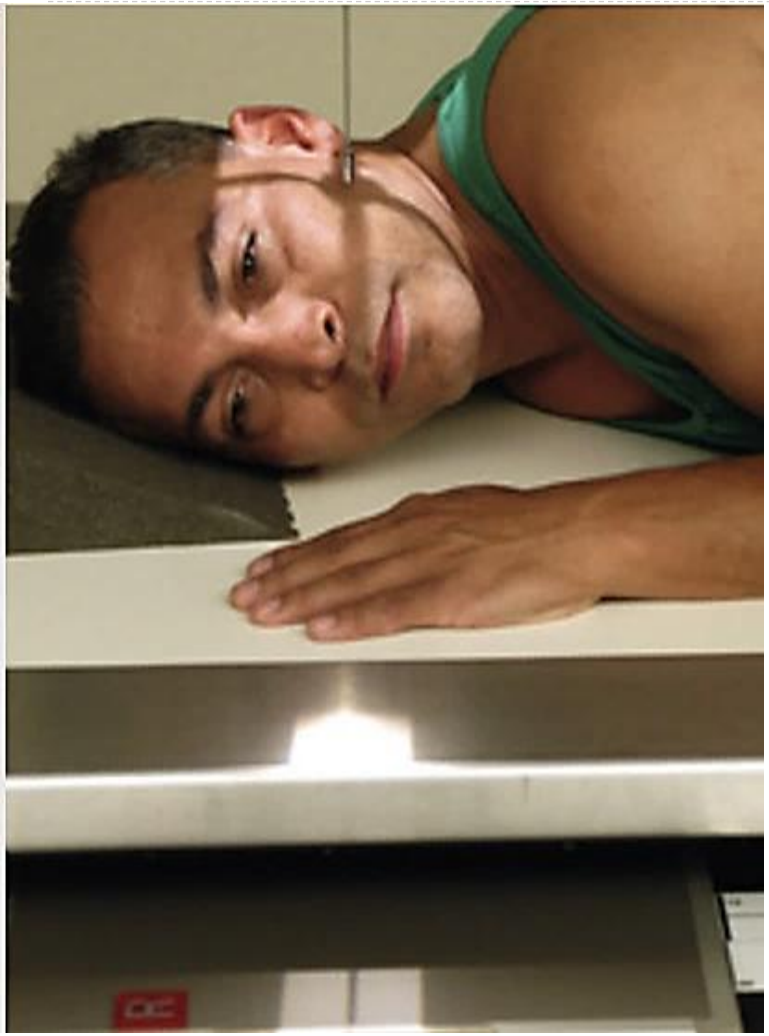


Table radiography diagram: lateral facial bones.

1. LATERAL PROJECTION (R or L position)



1. LATERAL PROJECTION (R or L position)

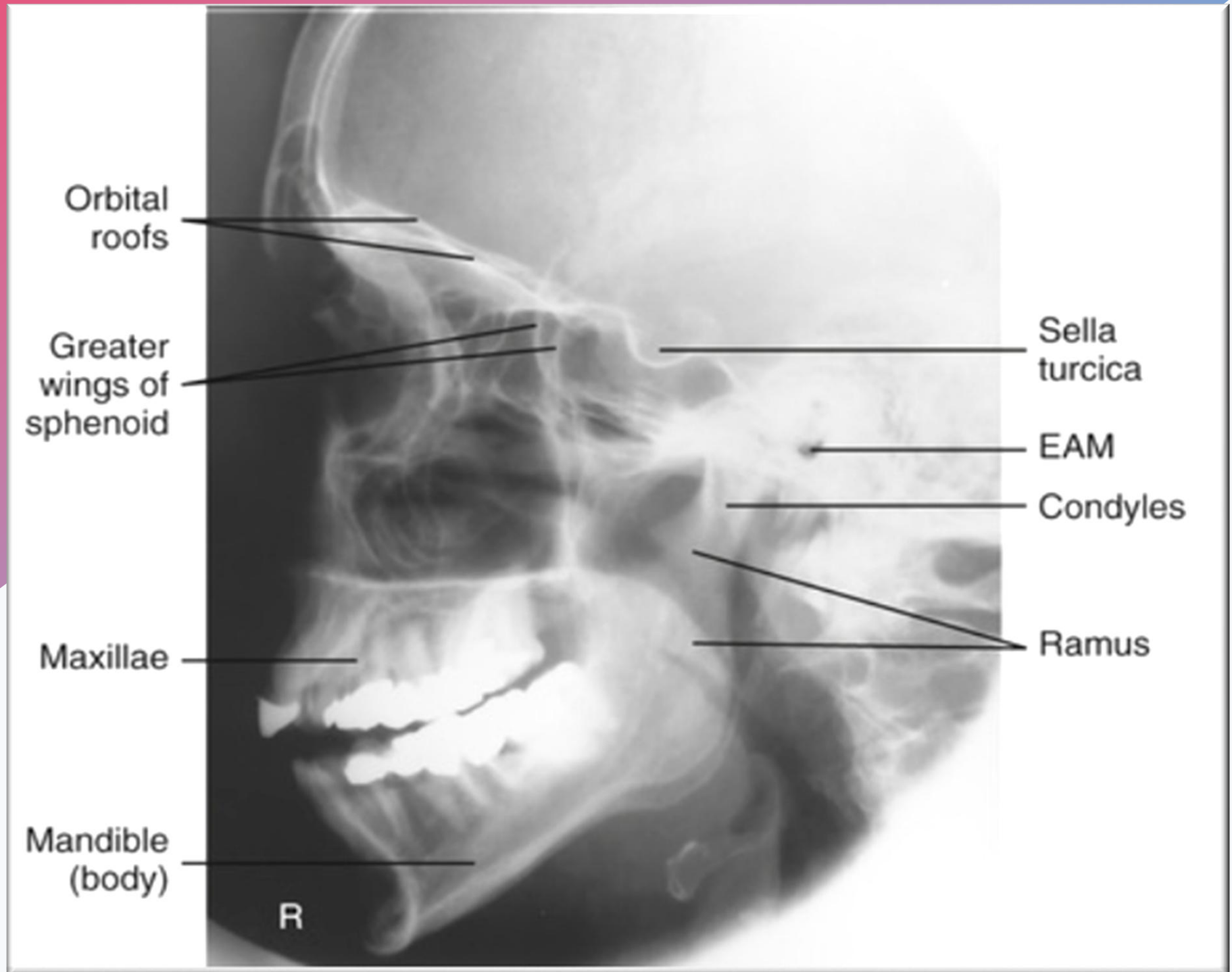
Technical Factors

* SID: 102 cm
* Grid: yes
* IR size: (8 × 10 inches) L.W
* kV: 75
* mAs: 25
* Respiration: Suspended

Evaluation Criteria

- Superimposed facial bones, greater wings of the sphenoid, orbital roofs, sella turcica, zygoma, and mandible are demonstrated.
- No rotation or tilt of the facial bones (All facial bones in the center).
- Proper brightness and contrast.

Lateral image of the facial bones demonstrates no rotation or tilt.



2. PARIETOACANTHIAL PROJECTION (Waters method)

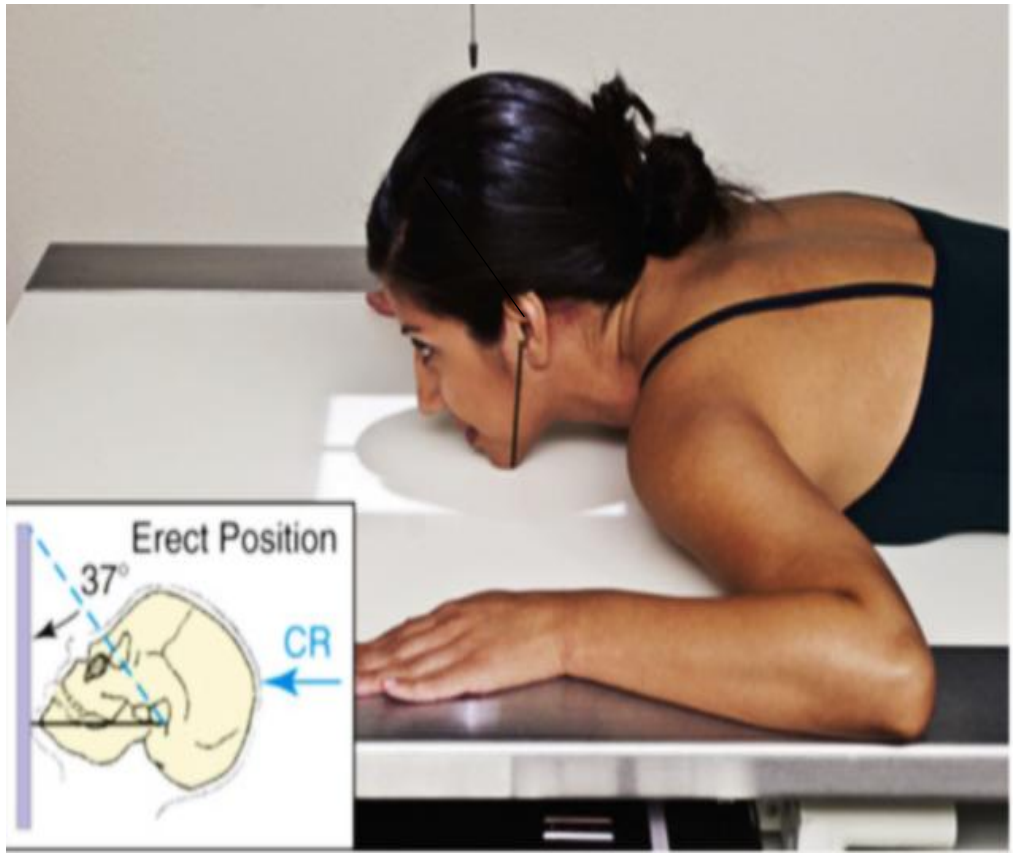
Clinical Indications: Fractures (particularly tripod and Le Fort fractures*) and neoplastic or inflammatory processes, foreign bodies in the eye

Patient position:

- Patient position is erect (preferred) or prone.
- Position MSP perpendicular to midline of grid or IR.
- Extend neck, resting chin against the table.
- Adjust head until MML is perpendicular to IR. (OML forms a 37° angle with IR).
- Center IR to CR.

*** Tripod and Le Fort fractures**: Midface fractures involving the maxilla and surrounding facial structures.

2. PARIETOACANTHIAL PROJECTION (Waters method)



Parietoacanthial (Waters)— MML perpendicular (OML 37°).

2. PARIETOACANTHIAL PROJECTION (Waters method)

CR: Align CR perpendicular to IR to exit at acanthion. Center IR to CR.

Collimation: Collimate on four sides to anatomy of interest.

Technical Factors

- SID: 102 cm
- IR size: (8 ×10 inches) L.W
- kV: 80
- Respiration: Suspended

* Grid: yes

*mAs: 28

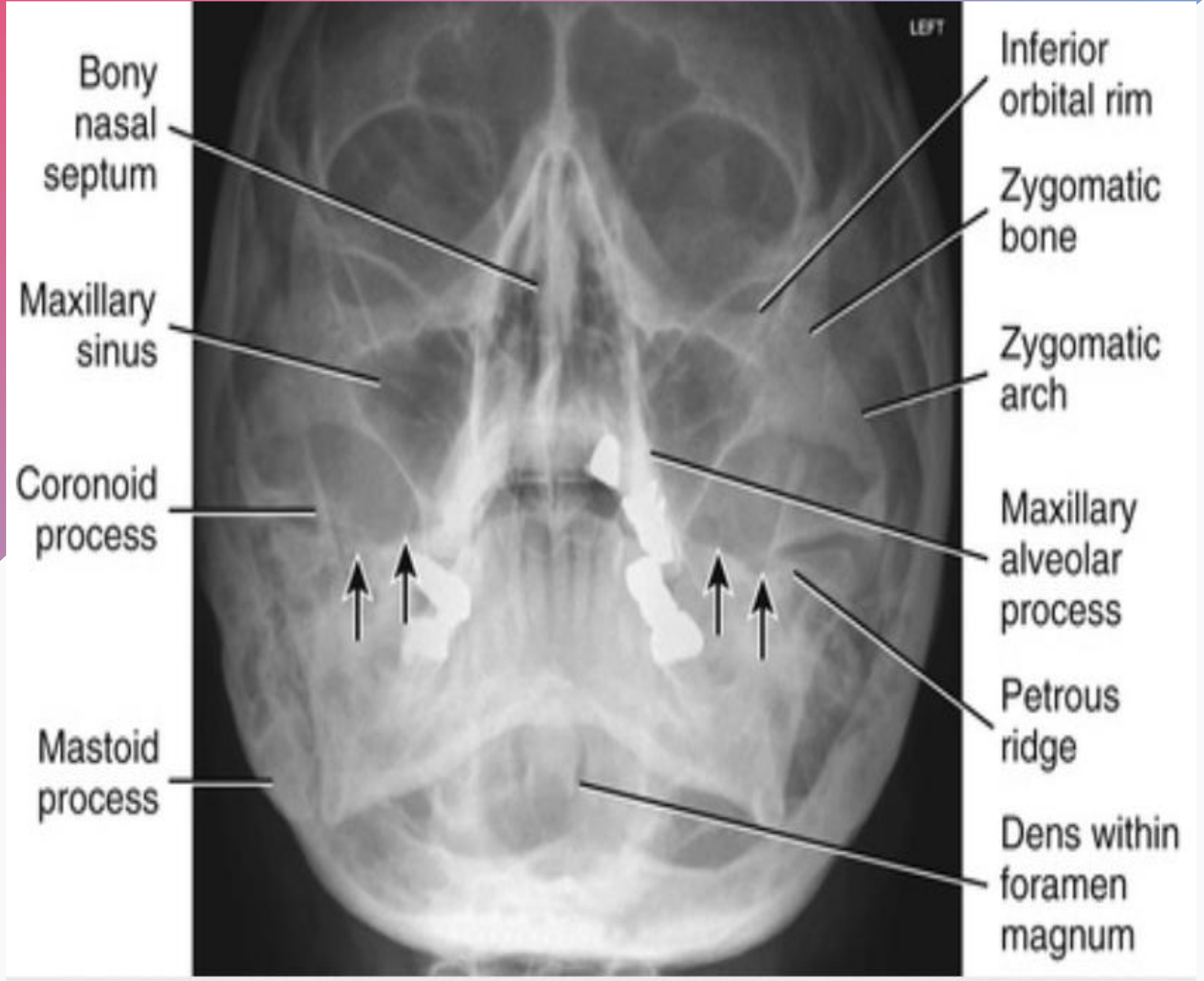
2. PARIETOACANTHIAL PROJECTION (Waters Method)

Evaluation Criteria

- IOMs, maxillae, nasal septum, zygomatic bones, zygomatic arches, and anterior nasal spine.
- Petrous ridges just inferior to the maxillary sinuses
- No patient rotation exists, as indicated by equal distance from the midlateral orbital margin to the lateral cortex of cranium on each side.

Parietoacanthial

(Waters) projection



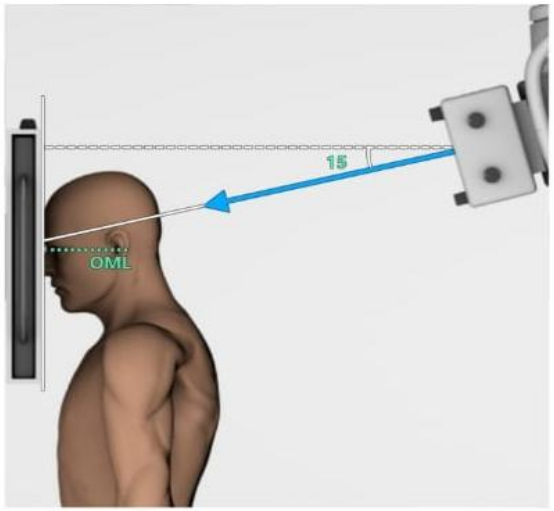
3. PA Axial Projection,15° caudad (Caldwell Method)

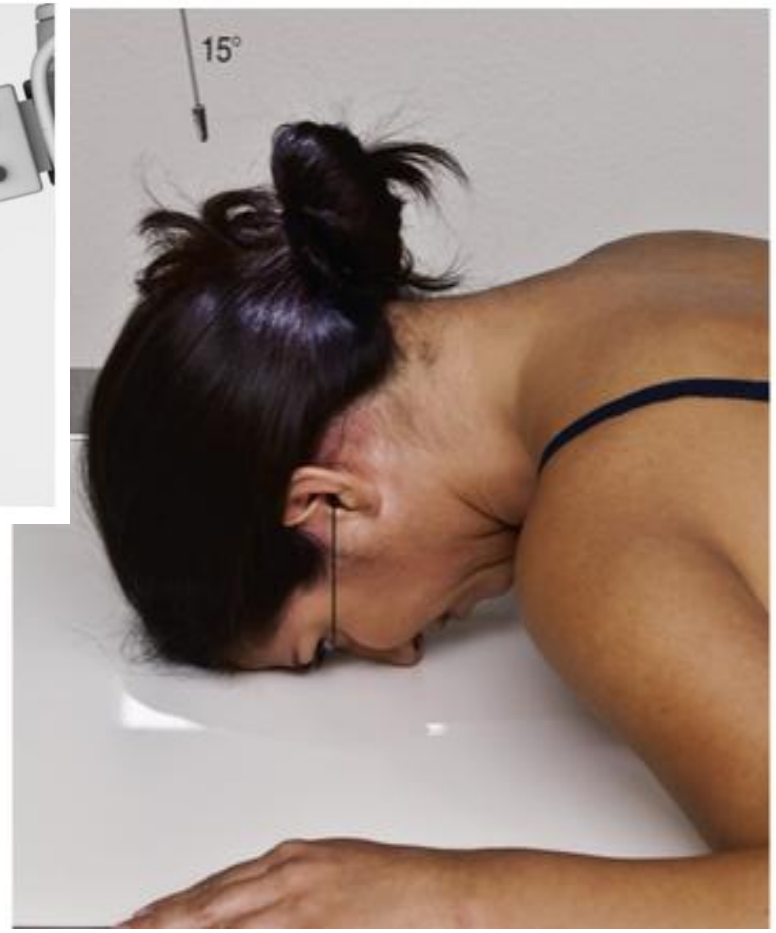
Clinical Indications: Fractures and neoplastic or inflammatory processes of the facial bones.

Patient position

- Erect (preferred).
- Rest patient's nose and forehead against tabletop.
- Tuck chin, bringing OML perpendicular to IR.
- Align MSP perpendicular to midline of IR. Ensure no rotation or tilt of head.

3. PA Axial Projection,15° caudad (Caldwell Method)





3. PA Axial Projection,15° caudad (Caldwell Method)

CR: Angle CR 15° caudad, to exit at nasion. Center CR to IR.

NOTE: If area of interest is the orbital floors, use a 30 ° caudad angle to project the petrous ridges below the IOM. CR will exit level of midorbits.

Collimation: Collimate on four sides to the anatomy of interest.

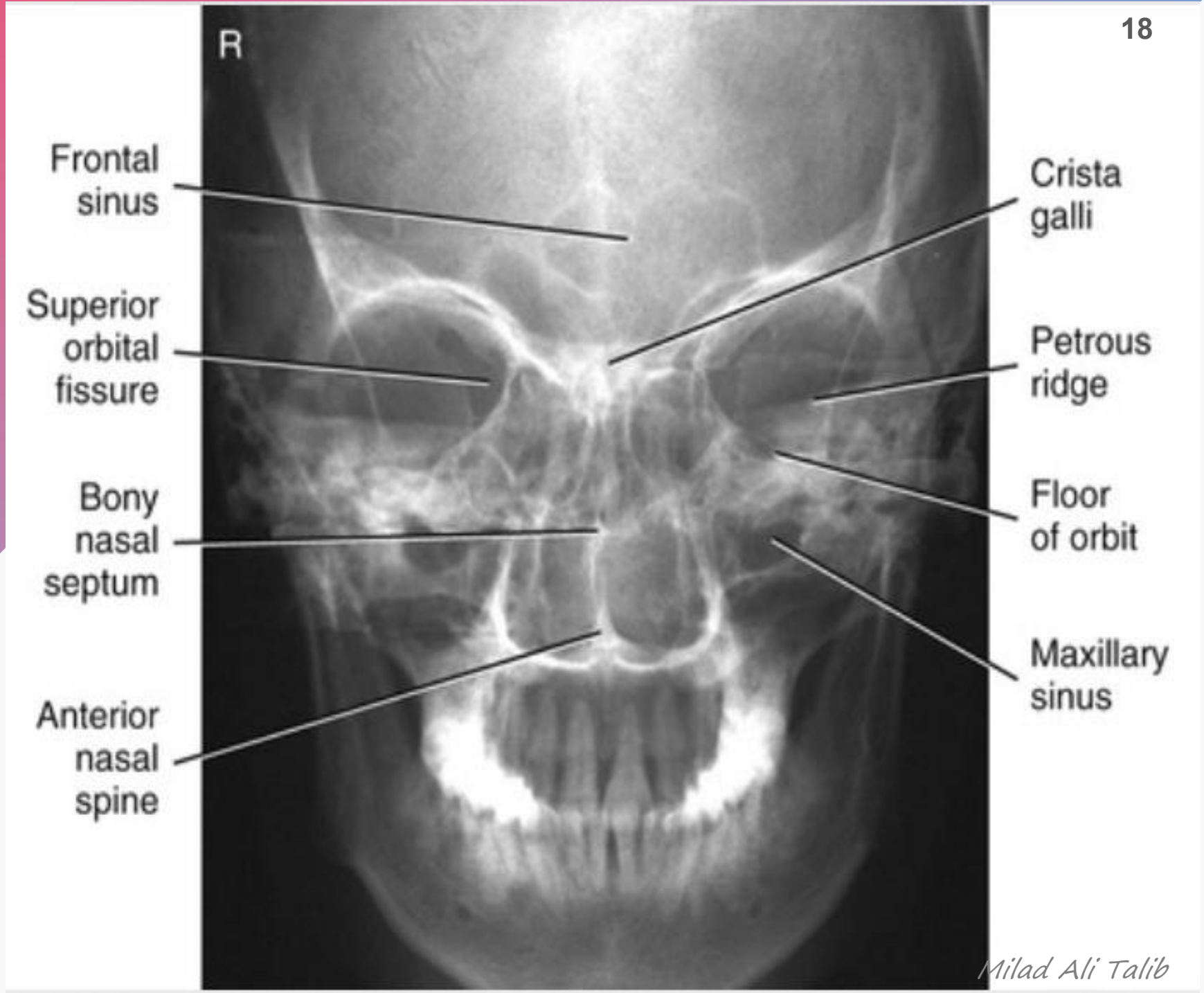
Technical Factors

* SID: 102 cm
* Grid: yes
* IR size: (8 × 10 inches) L.W
* kV: 75
* mAs: 25
* Respiration: Suspended

Evaluation Criteria: Orbital rim, maxillae, nasal septum, zygomatic bones, and anterior nasal spine.

PA Axial Projection, 15° caudad

(Caldwell Method)



Nasal Bones

- Lateral
- Parietoacanthial (Waters method)

1. Lateral Position:

Clinical Indications: Nasal bone fractures, both sides should be examined for comparison, with side closest to IR best demonstrated.

Patient position:

- Recumbent semiprone or erect.
- Rest lateral aspect of head against the IR, with side of interest closest to IR.

Nasal Bones

- Position nasal bones to center of IR.
- Adjust head into a true lateral position and oblique body as needed for patient's comfort (place sponge block under chin if needed).
- Align MSP parallel with a table /upright IR.
- Align IPL perpendicular to IR. Position IOML perpendicular to front edge of IR.

Left lateral nasal bones—recumbent semi-prone or erect.

Nasal Bones

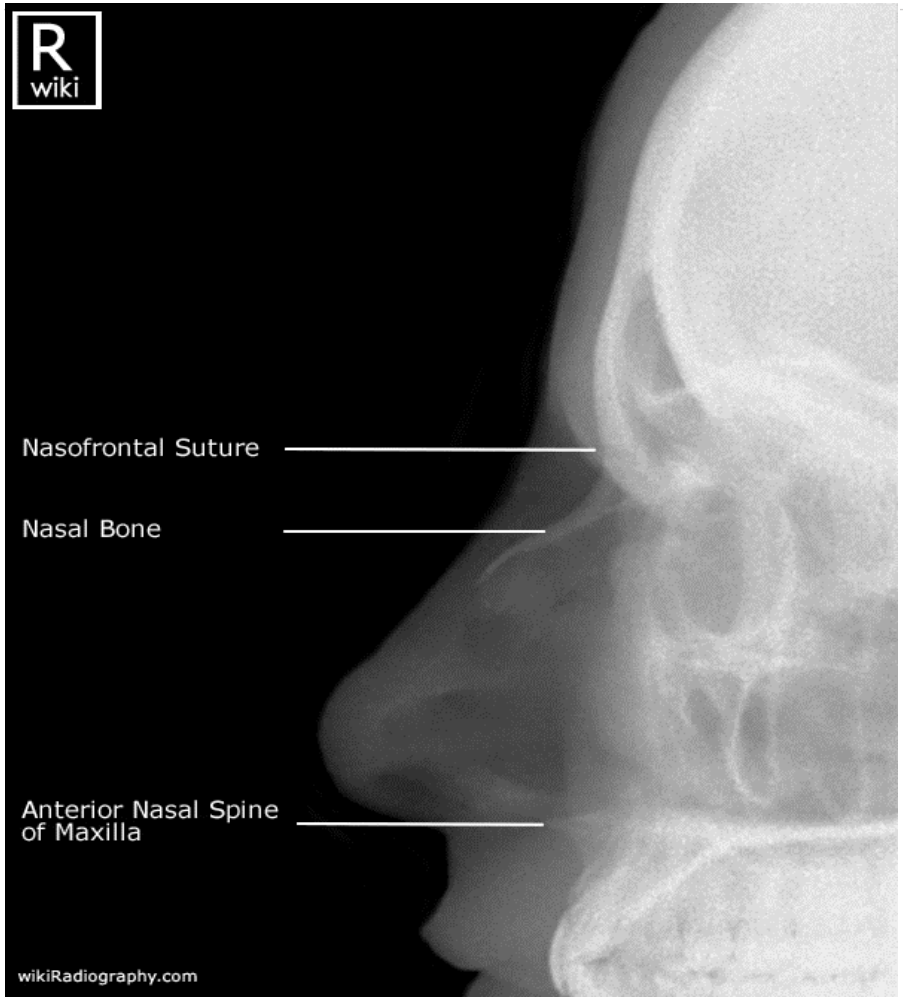
CR: Align CR perpendicular to IR. Center CR to (1.25 cm) inferior to nasion.

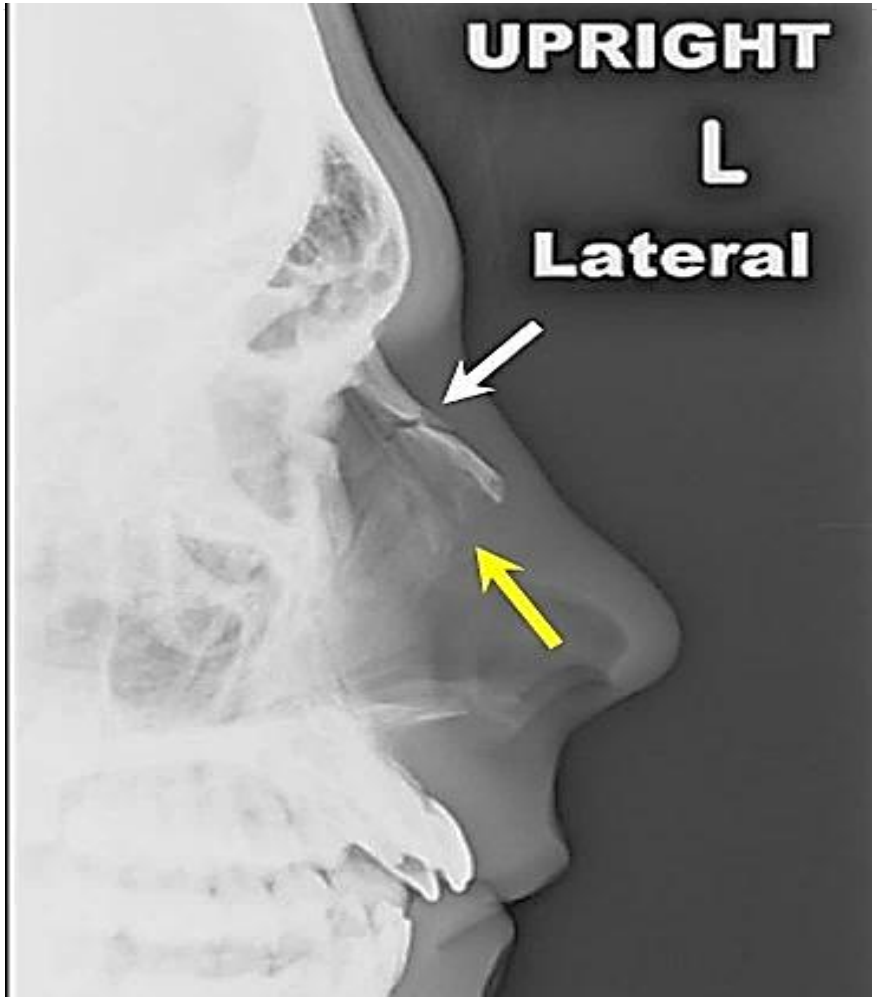
Collimation: Collimate on all sides to within (5 cm) of nasal bone.

Technical Factors

- SID: 102 cm Grid: No IR size: (8 × 10 inches) L.W
- kV: 55 mAs: 3 Respiration: Suspended

Nasal Bones





Right and left lateral nasal bones

Abbreviations

- IR: Image receptor
- CR: Central ray
- MSP: Median sagittal plane
- IPL: Interpupillary (interorbital) line
- OML: Orbitomeatal line
- IOML: Infraorbitomeatal line
- EAM: External acoustic meatus
- MML: Mentomeatal line
- IOMs: Inferior orbital margins

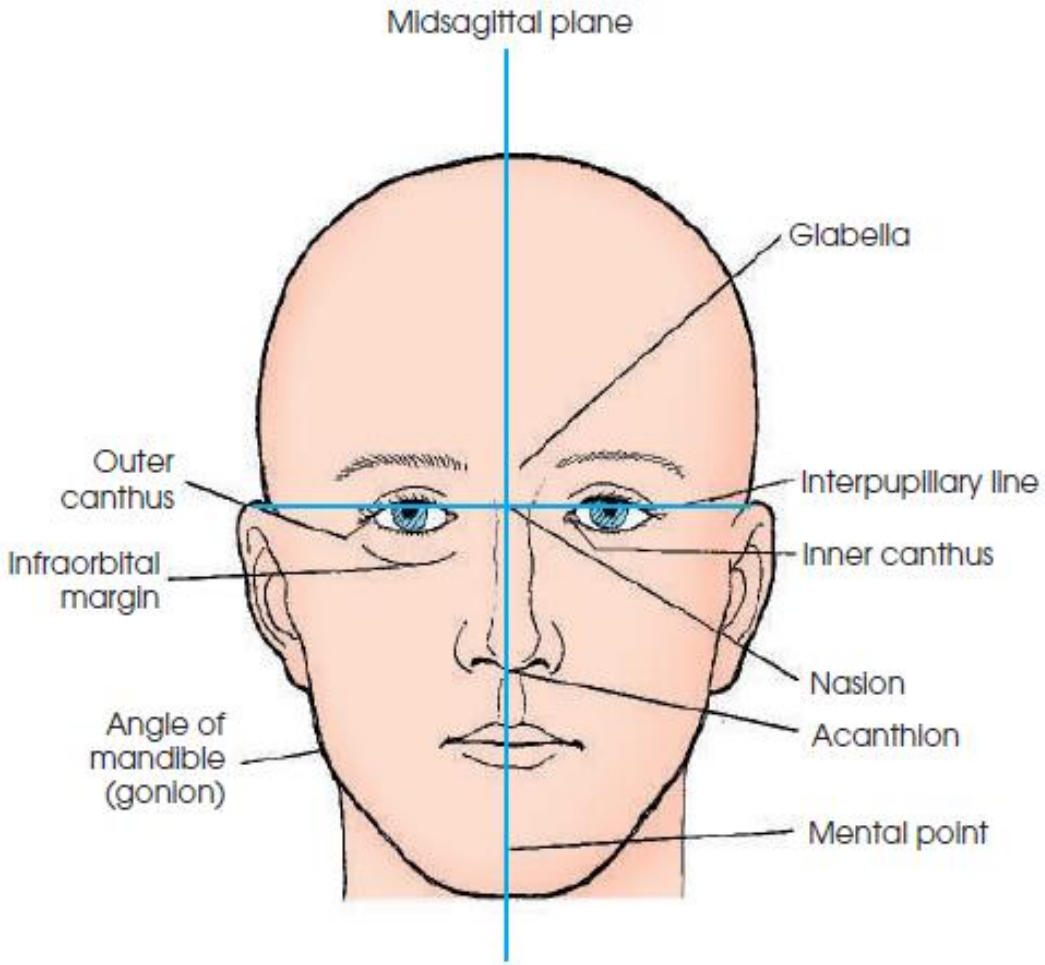


Fig. 20-37 Anterior landmarks.

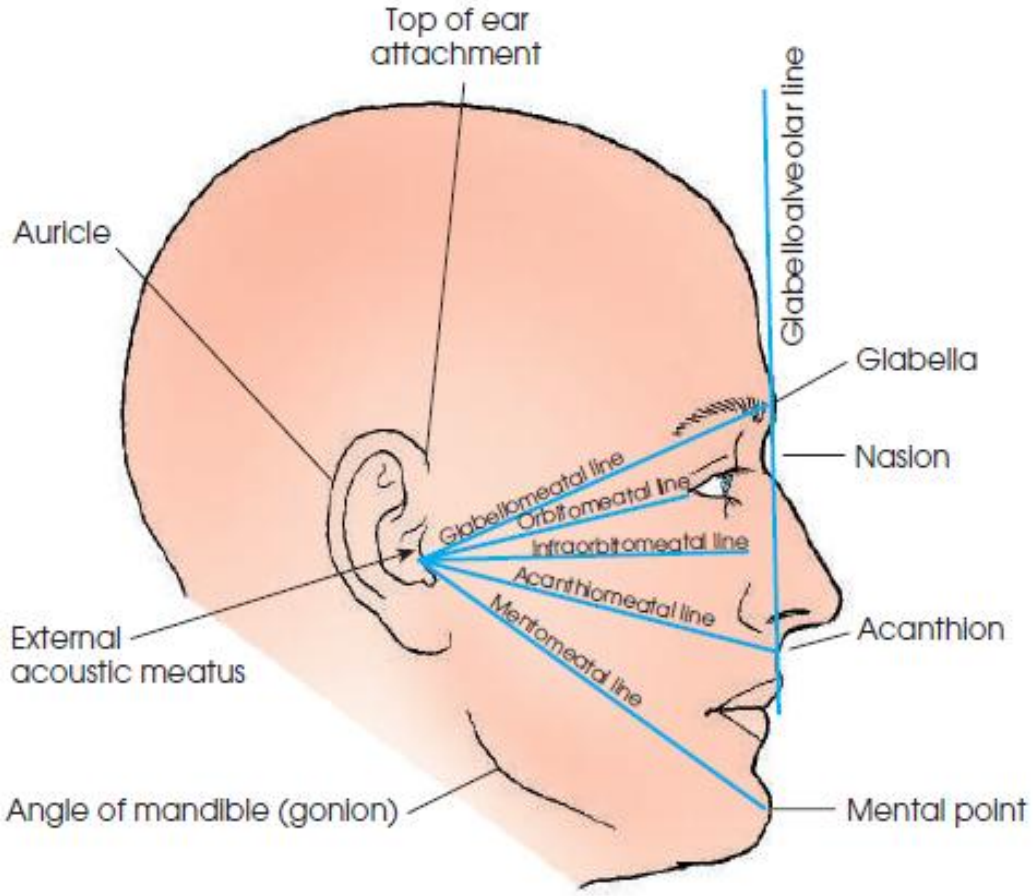
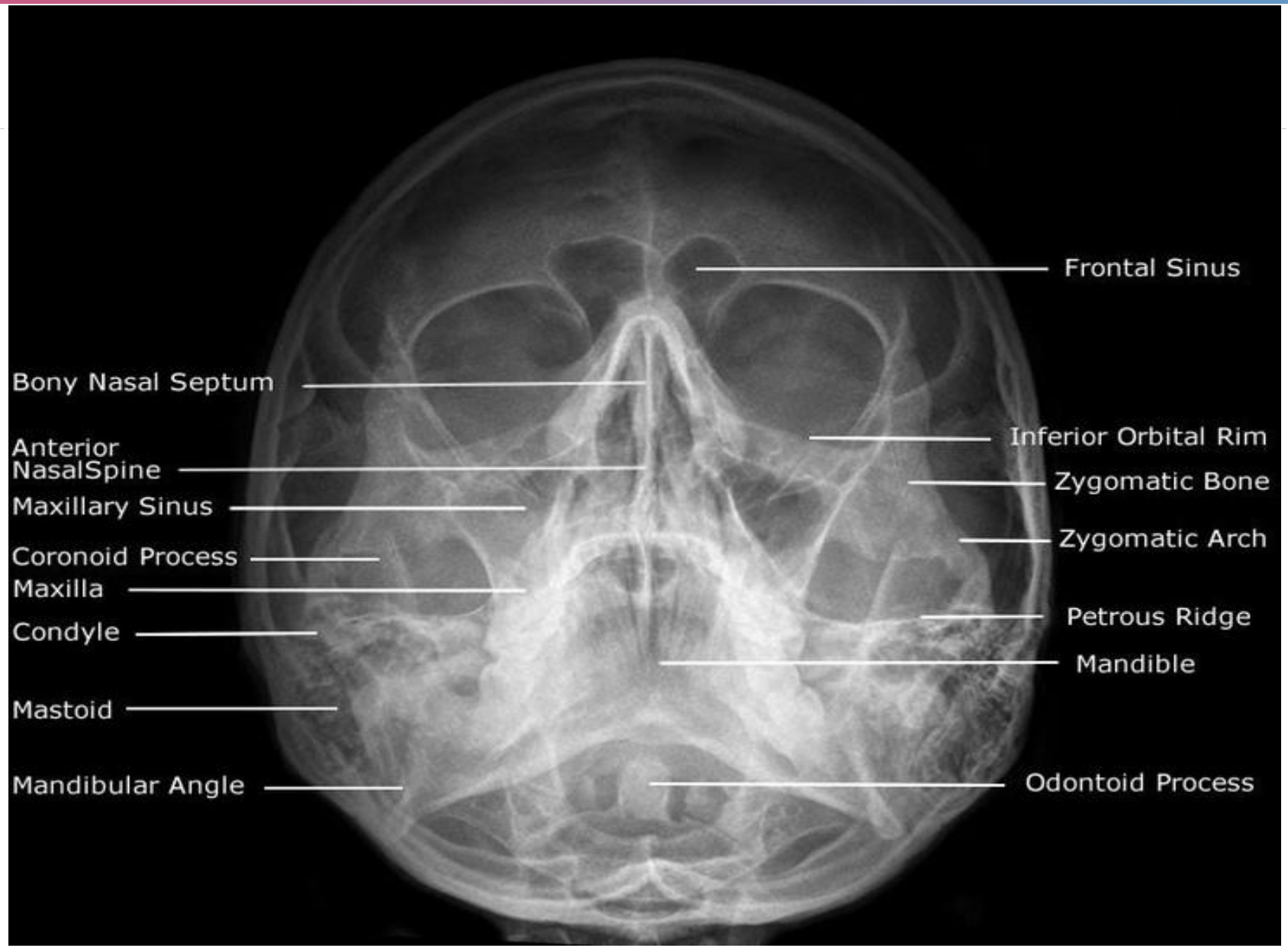


Fig. 20-38 Lateral landmarks.


Frontal Sinus
Bony Nasal Septum
Inferior Orbital Rim
Anterior
NasalSpine
Zygomatic Bone
Maxillary Sinus
Zygomatic Arch
Coronoid Process
Maxilla
Petrous Ridge
Condyle
Mandible
Mastoid
Mandibular Angle
Odontoid Process


Thank You