

EXTRA ORAL RADIOGRAPHIC EXAMINATION

Extra oral radiography:

Films are positioned extra orally to visualize the areas not covered by intra oral radiographs

Extra oral film sizes

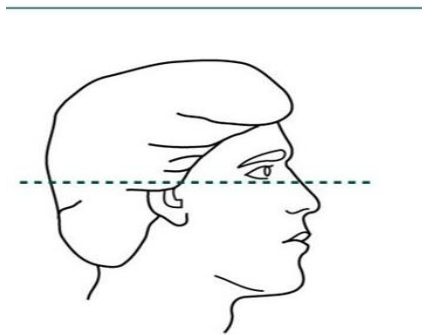
Lateral oblique view – 5*7 inches(13*18 cm)

Skull films – 8*10 inches (20*25 cms)

Reference Plane in Extra oral radiography

Proper positioning requires the use of skeletal landmarks

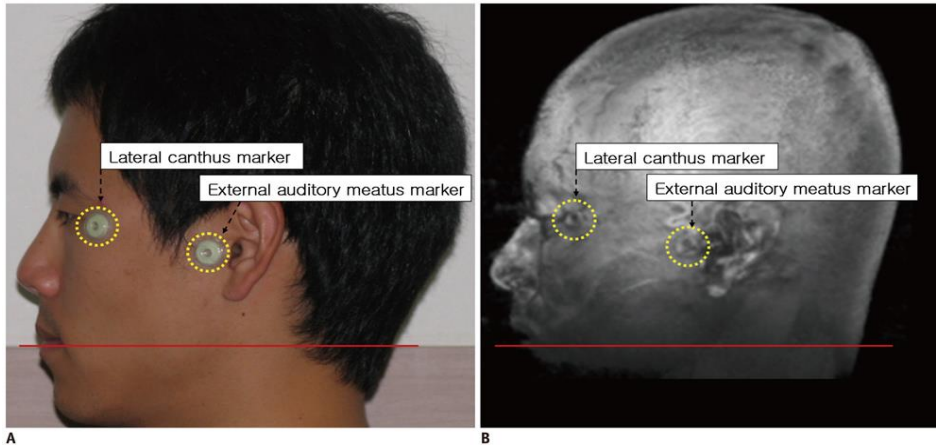
Frankfort plane – connects the superior border of external auditory meatus with the infra orbital rim, it is the classic reference plane



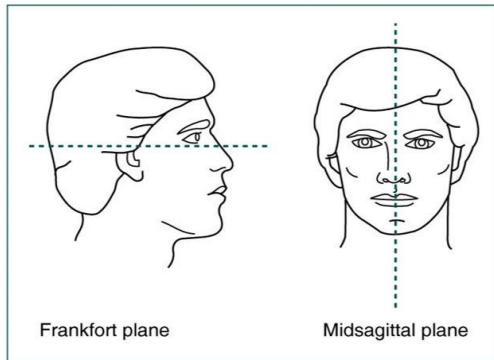
Frankfort plane

Cantho meatal line – joins the central point of the external auditory meatus to the outer canthus of the eye, forms an angle of about 10 degrees with the frankfort plane

Radiologists prefer using the Cantho meatal line for patient positioning because it is more easily visualized and a cephalostat must be used to obtain consistent results



Frankfort and midsagittal planes. The Frankfort plane passes through the floor of the orbit and the external auditory meatus. The midsagittal plane divides the body in half into right and left sides



EXTRA ORAL RADIOGRAPHIC VIEWS

PA SKULL

Head position – Canthomeatal line parallel to the floor

For Cephalometric applications - Canthomeatal line should be 10 degrees above the horizontal

Projection of central ray - perpendicular to the plane of the film;

Source film distance: 36-40 inches (91-102 cms) away and for Cephalometric projections it should be 60 inches (152.4cms)

Point of entry: The central ray should pass at the level of the bridge of the nose.

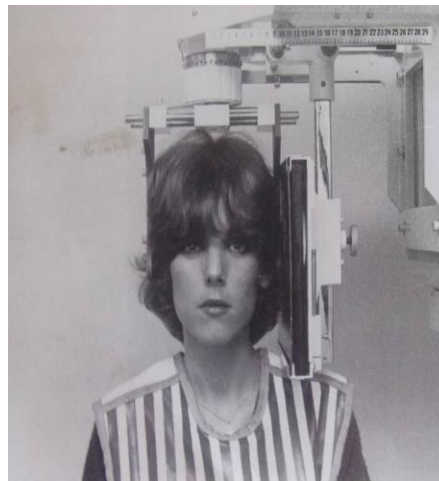
Exposure parameters - Screen film combination speed 250 ; KVP – 70 ; mA – 30-50



Indications

- Trauma, disease, developmental abnormalities.
- Maxillary sinus, frontal sinus, ethmoid sinus
- Mandible – symmetry and for fracture detection
- For Cephalometric examination, a slight variation of technique

LATERAL SKULL:



Head position: The Head is positioned in such a way that the left side of the face is near the cassette and the mid sagittal plane is parallel with the film

Projection of central ray and point of entry:

The central ray is directed through the external auditory meatus perpendicular to the plane of the film and mid sagittal plane at a distance of 60 inches (152.4 cms) away from the source

250; 70; 15-25

The important landmarks noted include Posterior wall of maxillary sinus, sella tursica, base of the , middle cranial fossa, external auditory meatus, mastoid air cells, soft palate, dorsum of tongue, nasion, anterior nasal spine, Point A and B.

Facial soft tissue profile in lateral Cephalogram unlike lateral skull

PNS

(WATER'S VIEW)



Head position: The canthomeatal line is 37 degrees above the horizontal (achieved by raising the chin) and when the mouth is open the sphenoid sinus is projected on the palate.

Point of entry

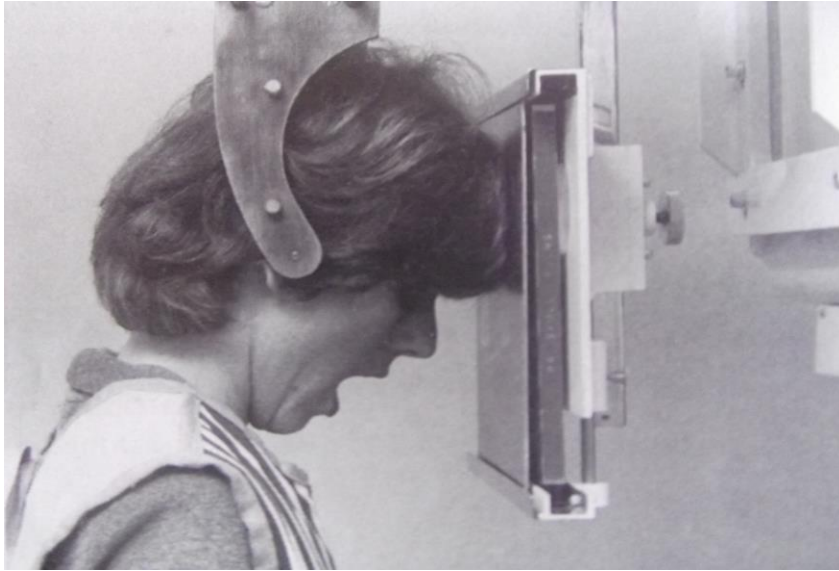
The central ray is projected at the level of the maxillary sinus:

250; 70; 100

Indications

Frontal sinus, maxillary sinus, Zygomatic arch, Zygomatic bone, sphenoid sinus

REVERSE TOWN'S VIEW



Head position:

The head should be tilted down so that the canthomeatal line is 25 – 30 degrees below the horizontal and the patient should open the mouth so that the condyles can be visualized better

Point of entry: The central ray is directed through the occipital bone

Exposure 250; 70; 100

Condyle of mandible, posterior wall of maxillary sinus

SUB MENTO VERTEX VIEW



The patient's head should be extended backward as far as possible with the vertex of the skull on the centre of the cassette

The canthomeatal line should extend 10 degrees past the vertical so that the frankfort line is vertical and parallel to the film

The central ray is directed below the mandible upward towards the vertex of the skull and is positioned far enough anterior to pass about 2 cms in front of a line connecting the right and left condylar processes (250; 70; 100)

Base of skull, sphenoid sinus, foramen ovale, spinosum, ramus of mandible

And for Zygomatic arch the exposure is reduced to one third

LATERAL OBLIQUE VIEW - BODY OF MANDIBLE



Film placement - The cassette is placed against the patient's cheek and centered over the first molar, its lower border parallel with the inferior border of mandible and extending atleast 2cm below it. The patient can hold the cassette in place.

Head position - Head tilted towards side being examined and mandible being protruded

Projection of central ray - directed towards first molar region of mandible from a point 2cm below the angle on the tube side; as close perpendicular to the plane of film as possible 65KVP, 10mA and 0.25 seconds for medium speed screen and film

Demonstrates the premolar – molar region and inferior border of mandible

Provides much broader coverage than that is possible with intra oral radiographs

LATERAL OBLIQUE VIEW - RAMUS OF MANDIBLE



The cassette is placed over the ramus and far enough posteriorly to include the condyle

The lower border of the cassette should be approximately parallel with the inferior border of the mandible and extend at least 2cm below the border

The head is tilted towards the side of the mandible of the mandible being examined until a line between the mandibular angle next to the tube and the condyle away from the tube is parallel with the floor and to prevent the ramus, the patient should protrude the mandible

The central ray is directed posteriorly towards the centre of the ramus on the side of interest from a point 3cm below the inferior border of the first molar region of the mandible on the tube side

65KVP, 10mA, 0.25 seconds; medium speed screen films

View of Ramus from angle of mandible to condyle

Often used for examining 3rd molar regions of maxilla and mandible