



RADIOGRAPHIC TECHNIQUE-2

SKULL PROJECTIONS

Sawa University

College of health and medical techniques

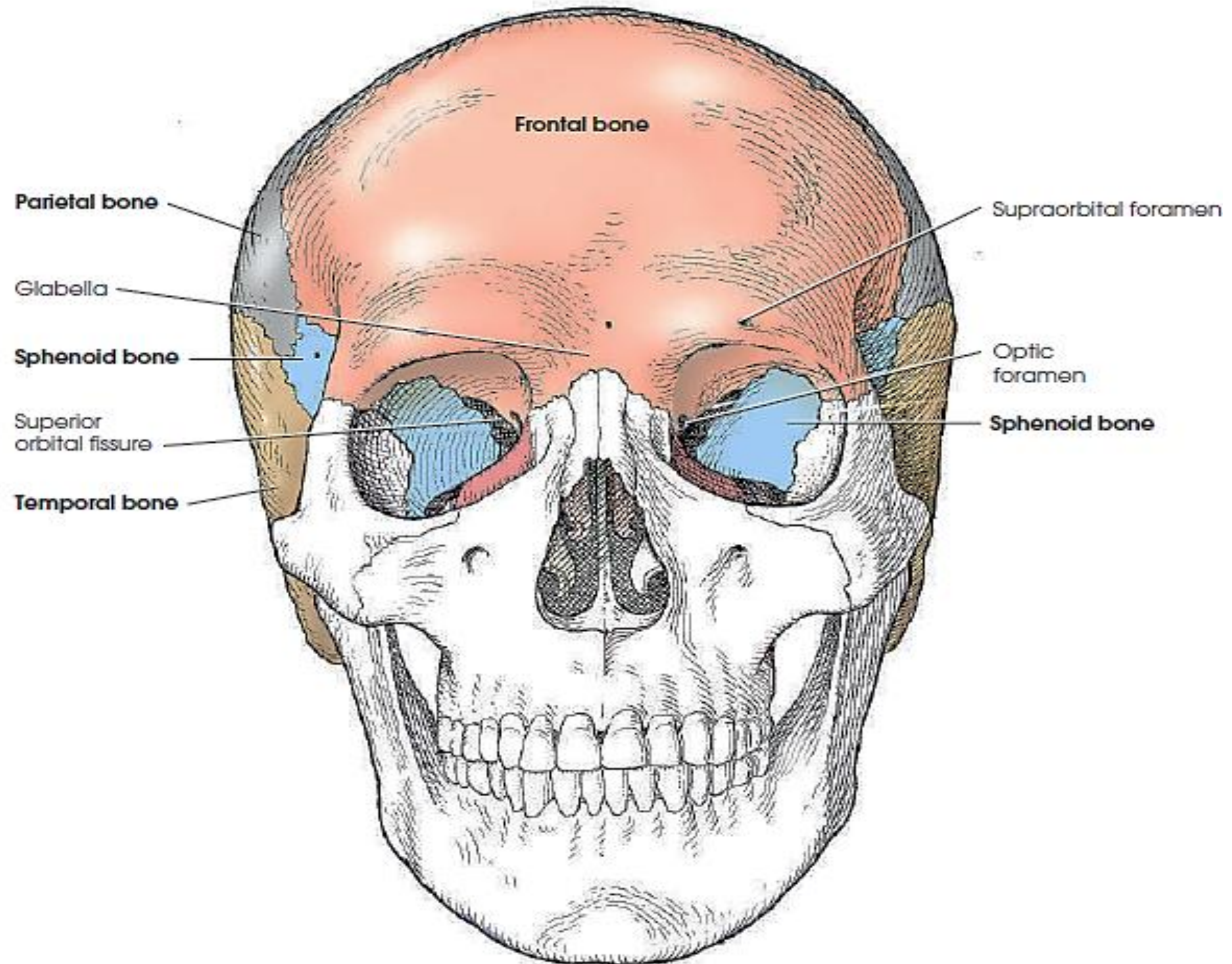
Department of Radiology Tech.

3rd Academic year

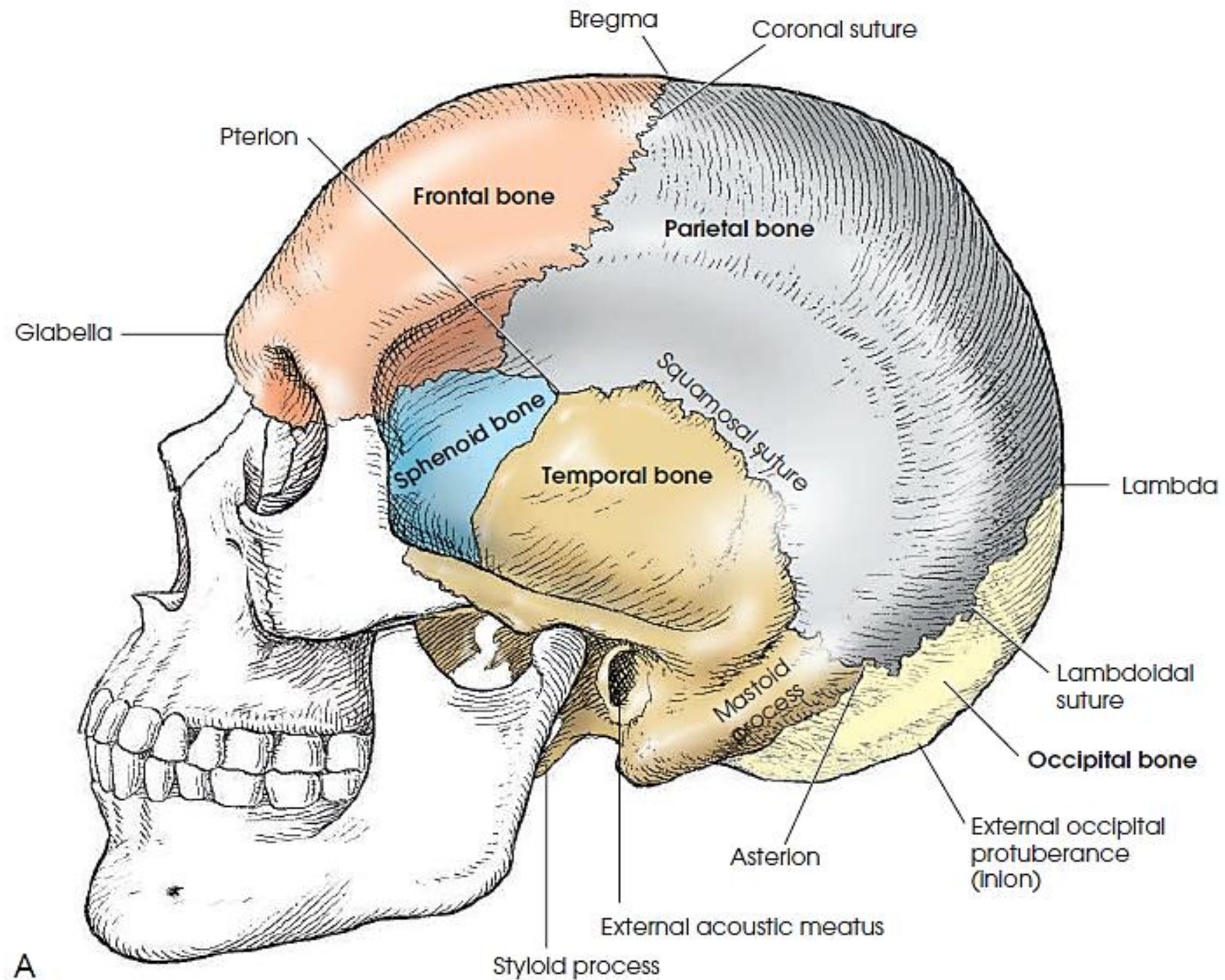
LEC.2

THEORETICAL

**Milad Ali Talib
M.Sc Radiology Technology**



Skull AP view



A

Skull lateral view

Skull Projections

1. Occipito-frontal Position (PA)

Indications

Fractures and any bony lesion of the skull and facial bone.

- **NOTE:** AP projection results in an **increased radiation dose** to the orbits and some loss of resolution of the anterior skull structures due to increased object-to-receptor distance.

Position of patient

- Patient is in the erect or prone position.
- The patient is seated facing the erect Bucky/receptor
- The median sagittal plane is with the midline of the IR and perpendicular to it.
- The neck is flexed so that orbito-meatal baseline is perpendicular to the IR.
- Ensure the nose and forehead are in contact with the IR.

1. Occipito-frontal Projection (PA)

Centra Ray: direct the central ray perpendicular to exit the nasion

Collimation: from the vertex of the skull, the base of the occipital bone and the lateral skin margins

Grid: yes

IR: 10X12 LW

SID: 100CM

kVp: 75

mAs: 20



Occipito-frontal Position (PA)

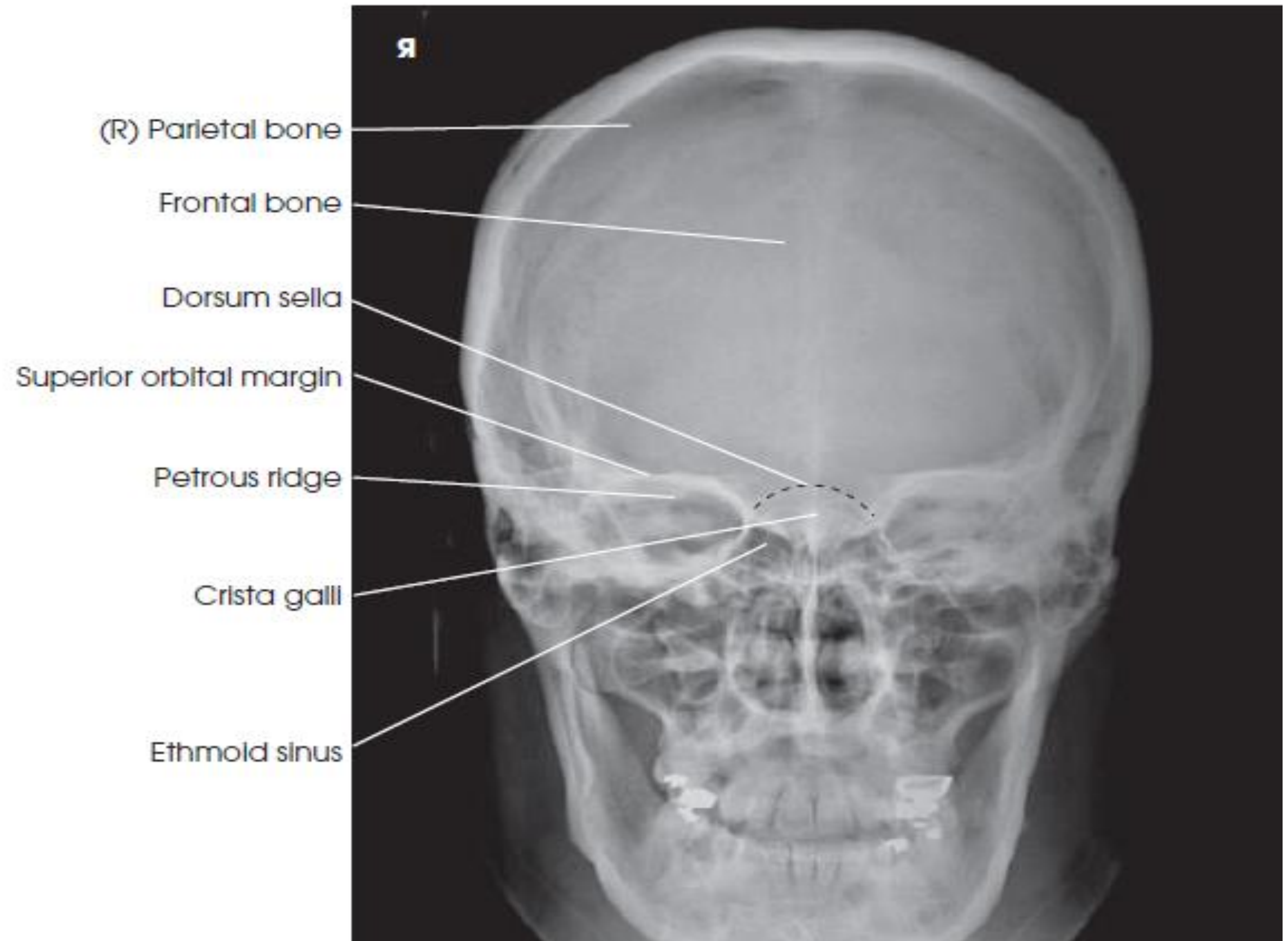


Fronto-occipital Position (AP). Central Ray: Perpendicular or directed to the nasion.

1. Occipito-frontal Position (PA)

Evaluation

- Frontal bone and crista galli demonstrated without distortion
- Petrous ridges at level of superior orbital margin.
- No rotation; equal distance between orbits and lateral skull.
- Optimal density (brightness) and contrast to visualize frontal bone and surrounding structures
- Sharp bony margins; no motion



2. Lateral Projection

Indications

Fracture of skull, deformation of sella turcica, inflammatory condition of paranasal sinus.

Position of patient

- The patient sits or semi-prone position facing the IR and the head is then rotated such that the median sagittal plane is parallel to the IR and the interpupillary line is perpendicular to IR.
- The shoulders may be rotated slightly to allow the correct position.
- Position the IR transversely such that its upper border is 5 cm above the vertex of the skull.
- Center the IR to the central ray.

Central ray: Perpendicular, entering (5 cm) superior to the EAM.

Collimation: On four sides to skull margins.

Grid: yes

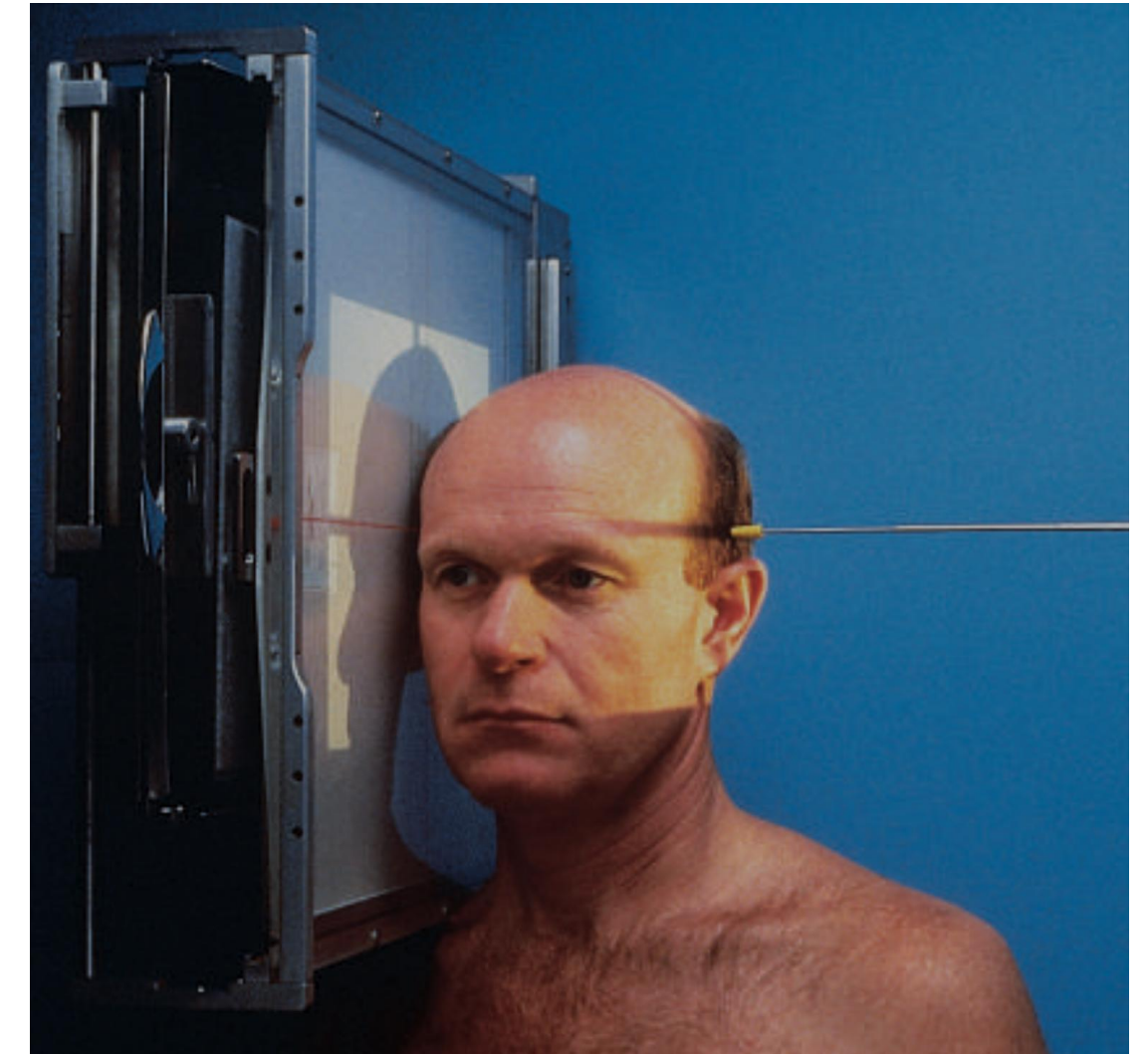
IR: 10X12 CW

SID: 100CM

kVp: 70

mAs: 16

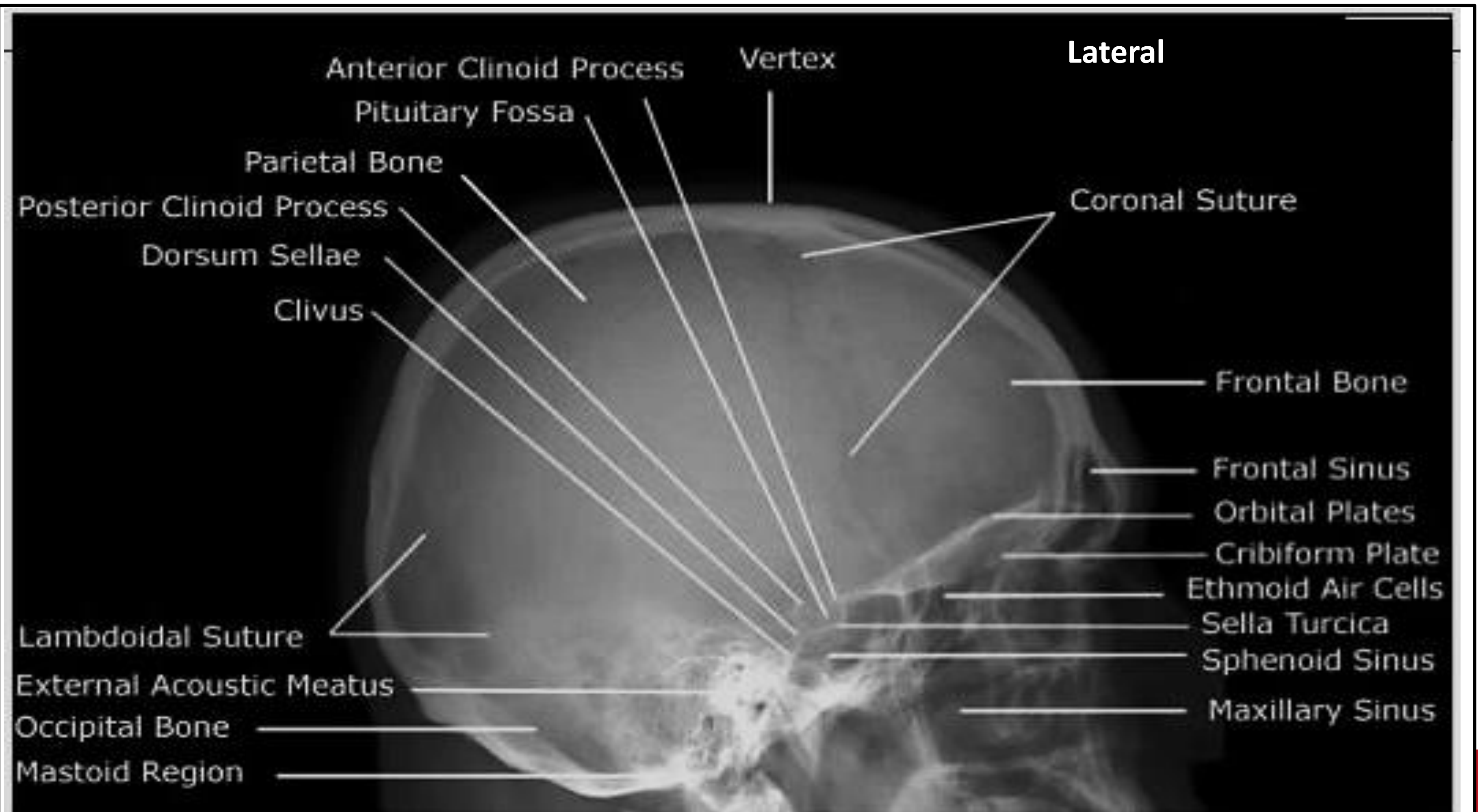
2. Lateral Projection



Lateral Projection

Evaluation

- Superimposition of the sella turcica anterior clinoid process,.
- External auditory meatus, and temporomandibular joint should be observed.
- The superimposition of superior orbital margins should be observed.



3. Half axial, fronto-occipital 30° caudal (Towne's Method)

Indications

Fractures and any bony lesion of the skull, deformation of foramen magnum, and sella turcica.

Position of patient

- The patient lies supine with the posterior aspect of the skull resting on an image receptor.
- The head is adjusted to bring the median sagittal plane at right angles to the IR
- The orbito-meatal baseline should be perpendicular to the IR.

Central ray: The vertical beam is angled caudally so it makes an angle of 30° to the orbito-meatal plane.

Collimation: To avoid irradiating the eyes the collimation is set to ensure the lower border is with the superior-orbital margin and the upper border includes the skull vertex. Laterally the skin margins should also be included within the field

Grid: yes

IR: 10X12 CW

SID: 100 CM

kVp: 80

mAs: 20

3. Half axial, fronto-occipital 30° caudal (Towne's Method)



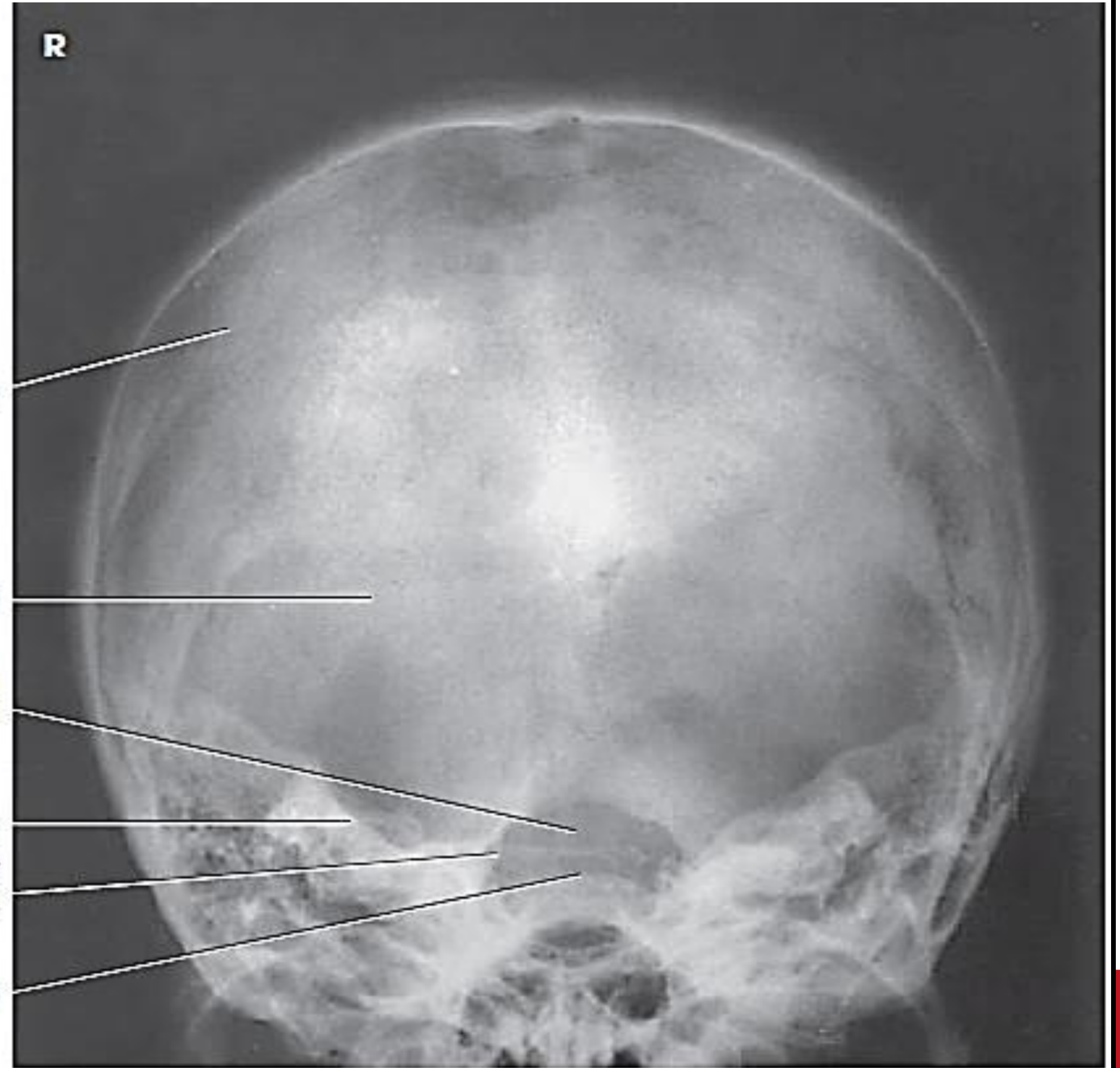
Parietal bone

Occipital bone

Foramen
magnum

Petrous ridge
Posterior
clinoid process

Dorsum sellae



4. PA Axial Caldwell (15° Caudad)

Indications

Fractures and any bony lesion of the skull, inflammatory of frontal and ethmoid sinuses

Position of patient

- Patient seated erect, or prone on head aligned to CR and centerline of IR
- Forehead and nose resting on tabletop, adjust head to place OML perpendicular to IR.
- No rotation or tilt, midsagittal plane perpendicular to IR
- Center IR to projected CR.

Central ray: 15° caudad to OML, centered to exit at nasion.

Collimation: On four sides to skull margins.

Grid: yes

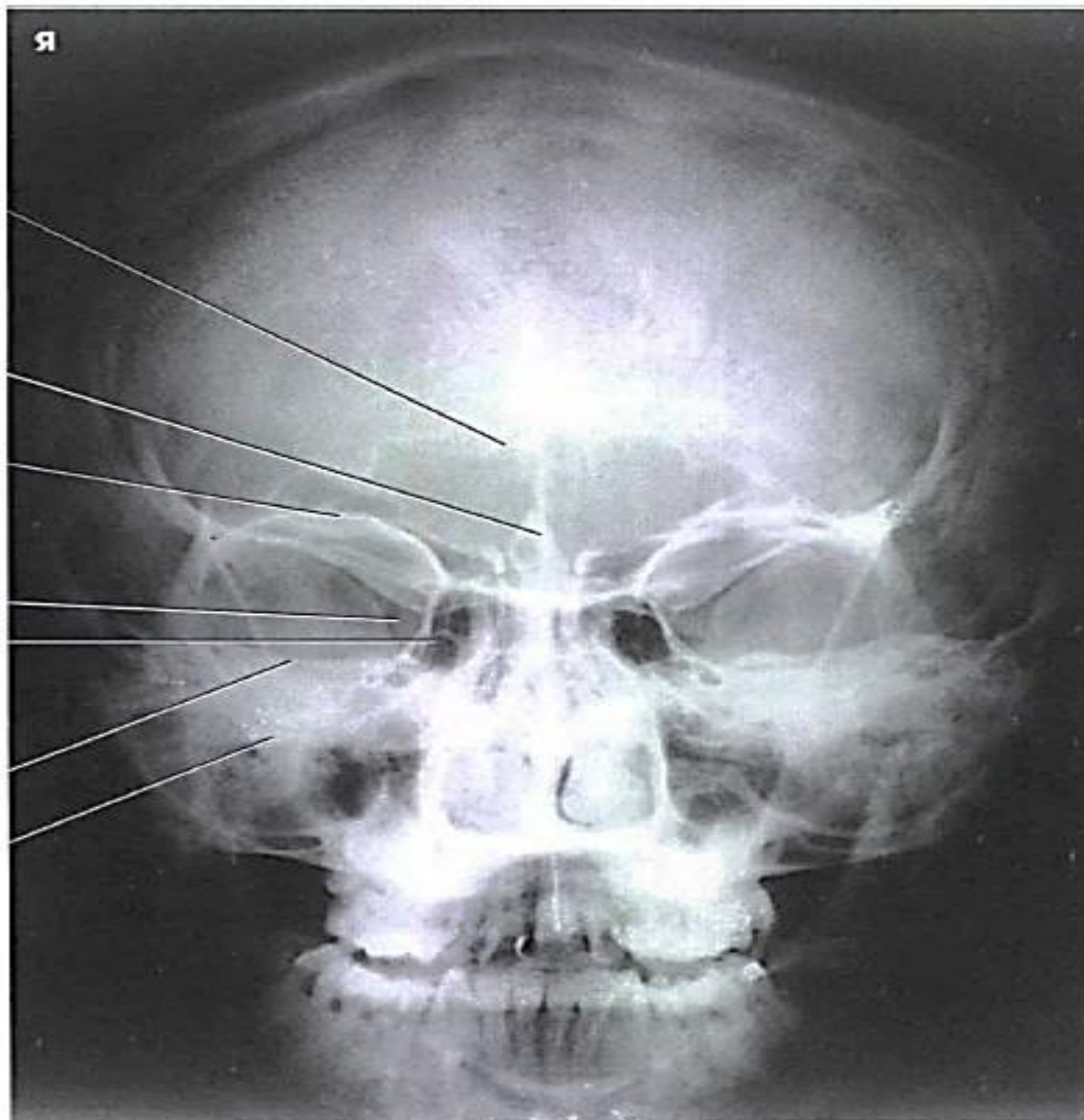
IR: 10X12 LW

SID: 100 LM

kVp: 75

mAs: 20

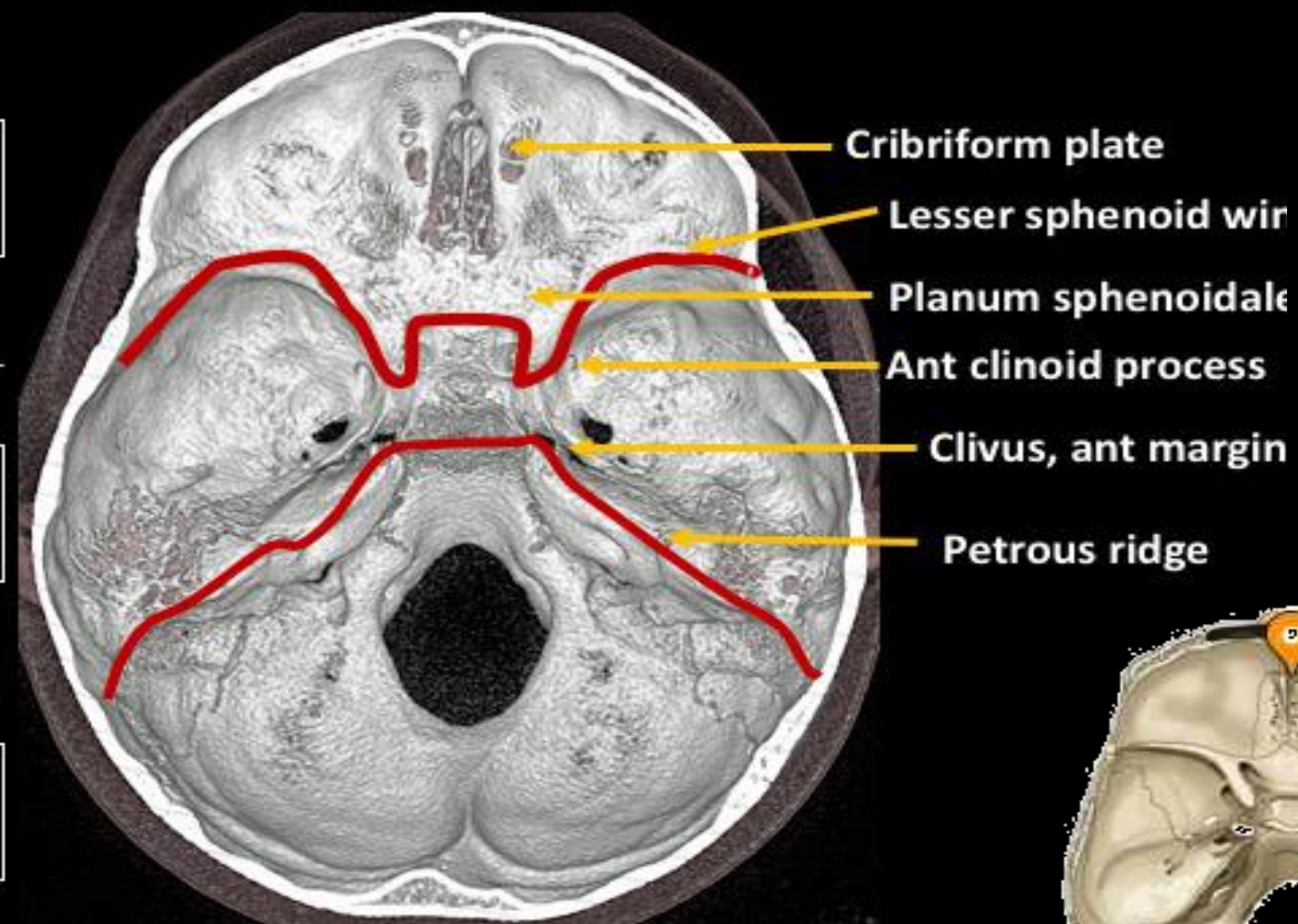




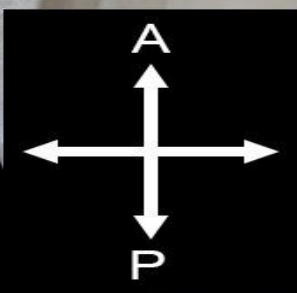
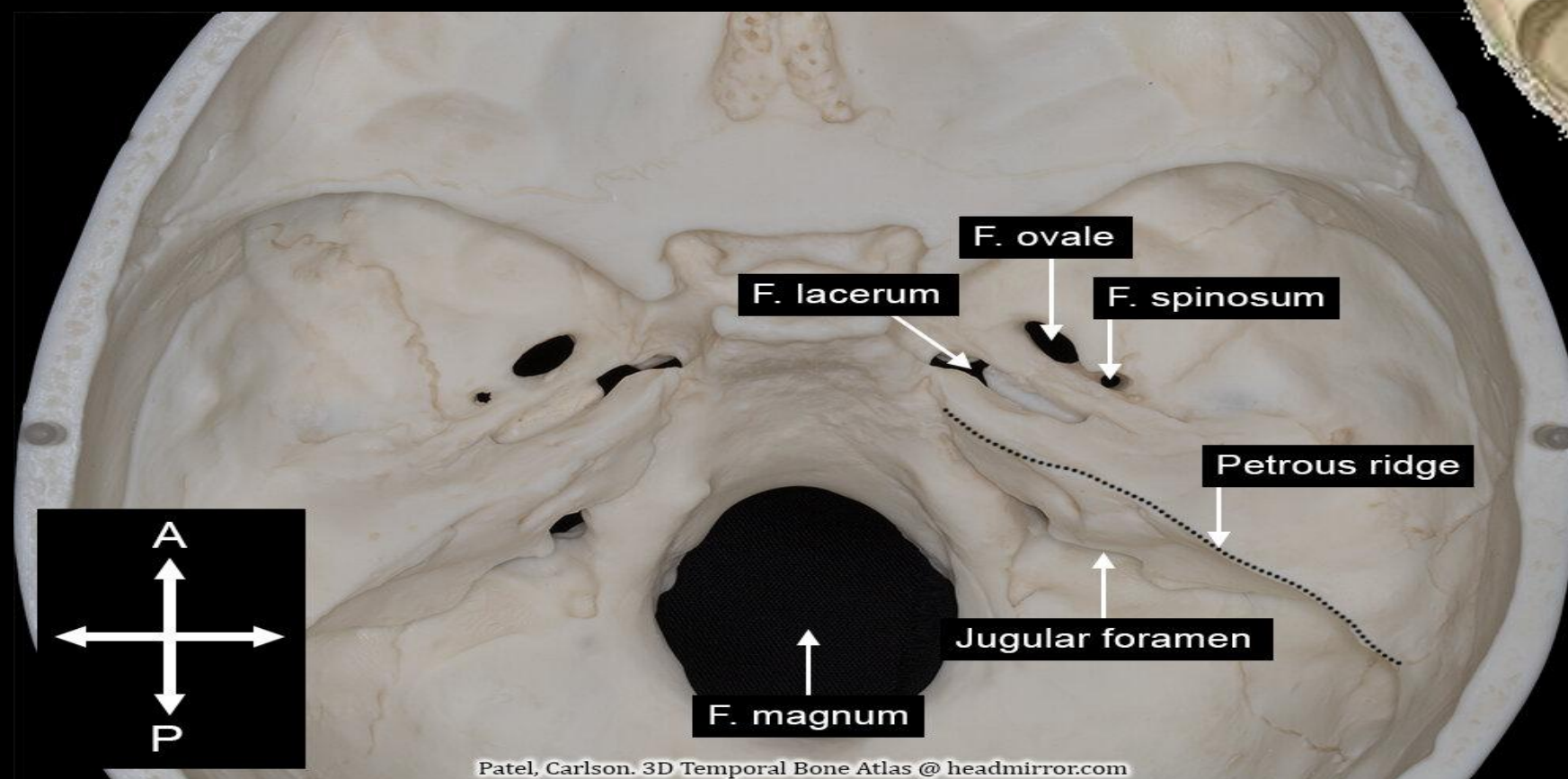
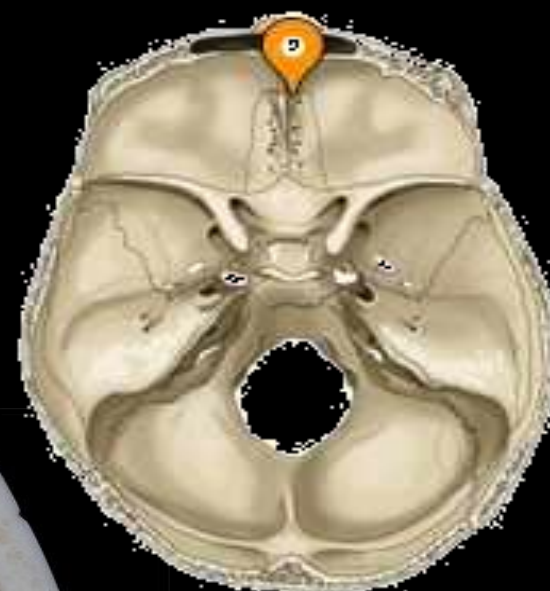
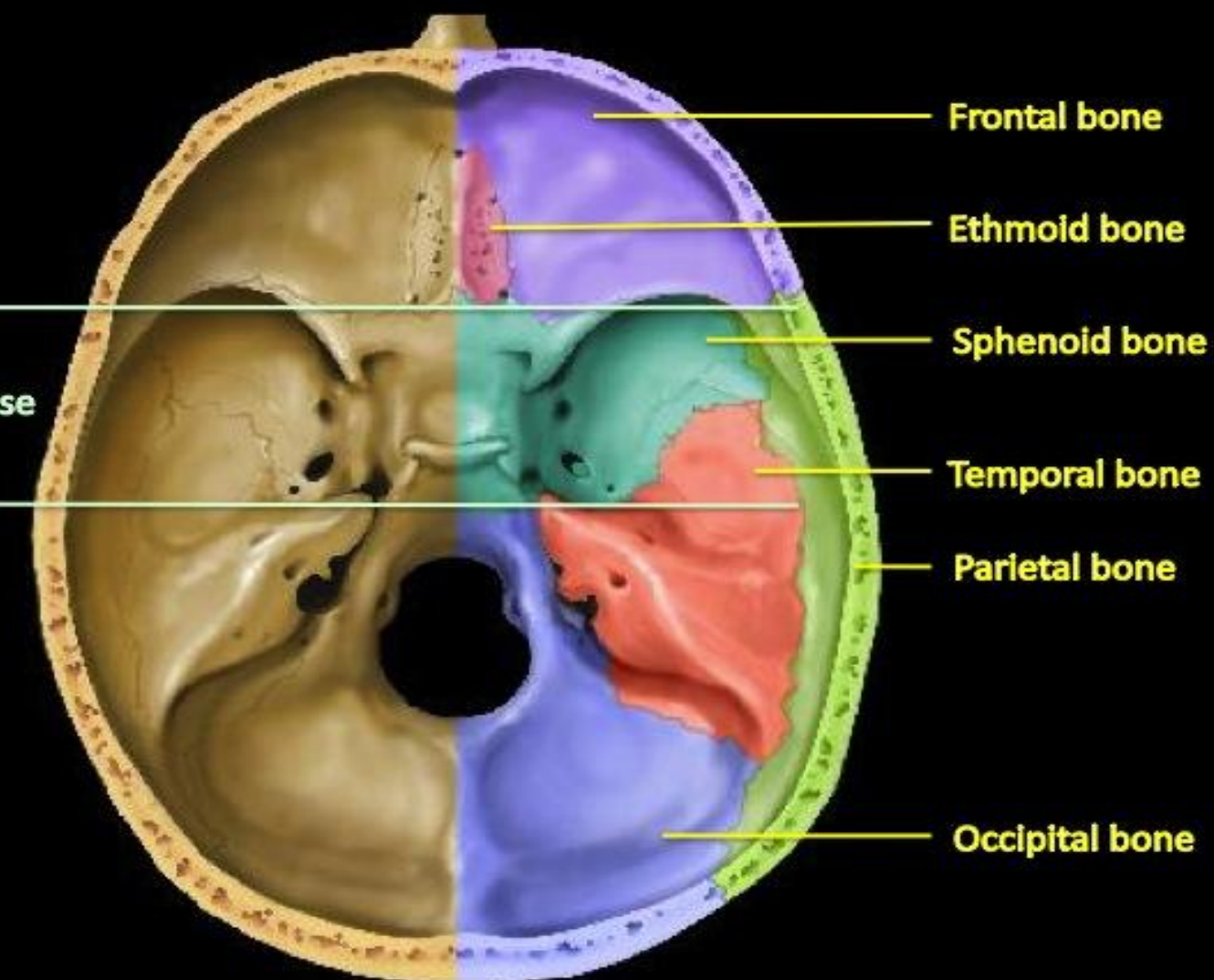
Anterior
Skull base

Central
Skull base

Posterior
Skull base



Central skull base



Patel, Carlson. 3D Temporal Bone Atlas @ headmirror.com

Thanks

**Greatest Hopes Require
Great Efforts**

"الآمال العظيمة تتطلب جهودا عظيمة"