

Introduction to Musculoskeletal Radiography



Outline

- General principles
- Requesting and Reporting Radiographs
 - Upper extremity
 - Lower extremity
 - Spine radiographs
- Examples of pathologic radiographs and tips in detecting pathologies
- Prerequisites:
 - Knowledge of anatomy (from 3D Perspective)
 - Intense Imagination



Reporting Xrays

- Start with the view, laterality(?) and the date
- Systematically, comment on:
 - quality of the film (exposure, extent)
 - bone quality, integrity and alignment
 - joint surfaces
 - soft tissue



Quality



Integrity



Alignment



Joints



Soft tissue



What do you want to see?

- Joint above and below for long bones
- Centered for joints
- Orthogonal (at least 2, usually AP and lateral)
- Contralateral view for children (sometimes)
- Splinted (with radioluscent material)
- Special views (as needed)
 - Dynamic views
 - Stressed views



Joint above and below



Orthogonal





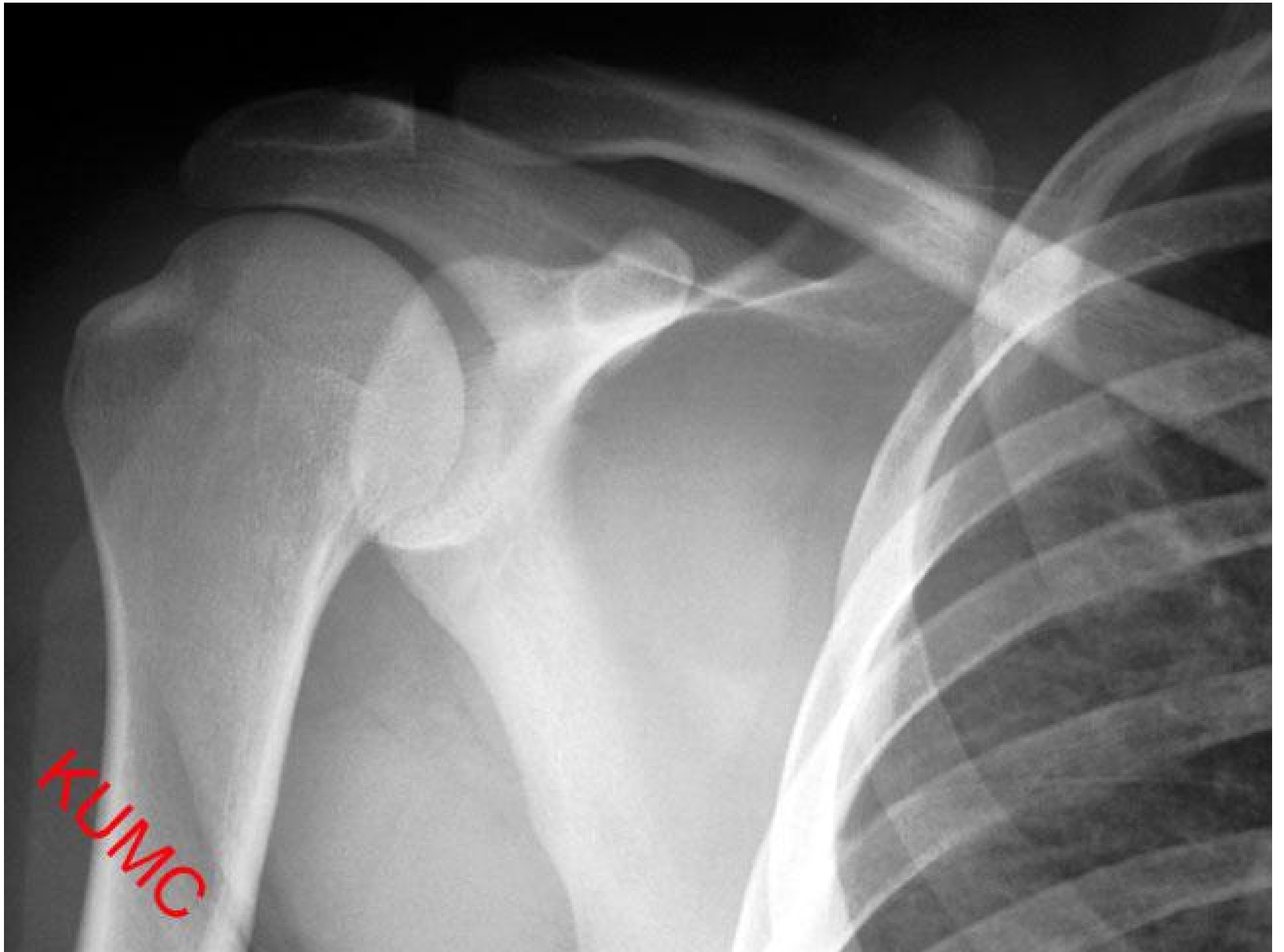
Upper Extremity



Common views for the upper extremity

- Shoulder **true** AP-**axial**-lateral (Scapular Y view)
- Humerus AP-lateral
- Elbow AP-lateral
- Forearm AP-lateral
- Wrist **PA**-lateral
- Hand AP **oblique** +/- lateral views
- Finger/Thumb AP-lateral





(R)

AP SHOULDER

24 YR OLD MALE

Acromion

Clavicle

Superior angle-scapula

Greater tubercle

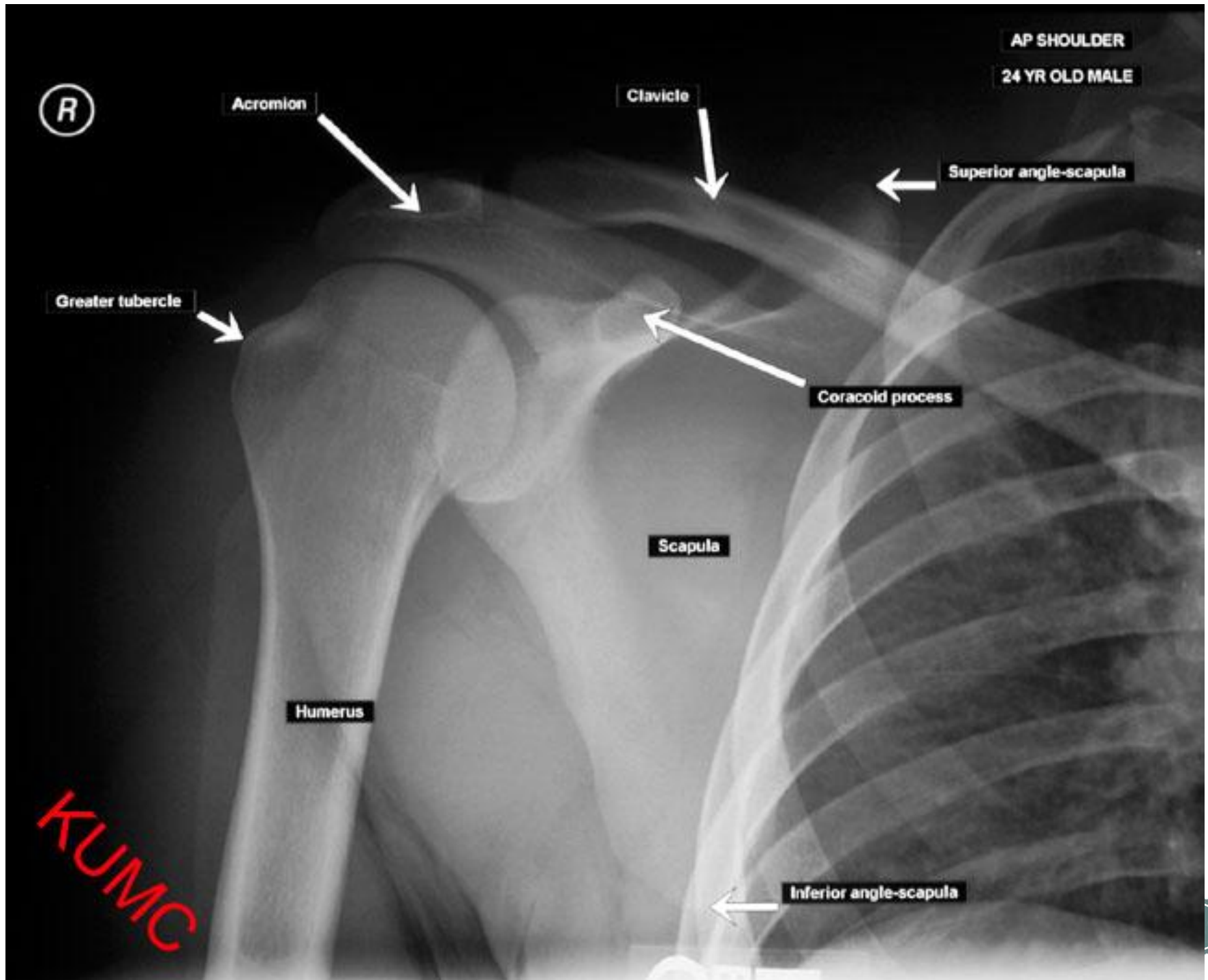
Coracoid process

Scapula

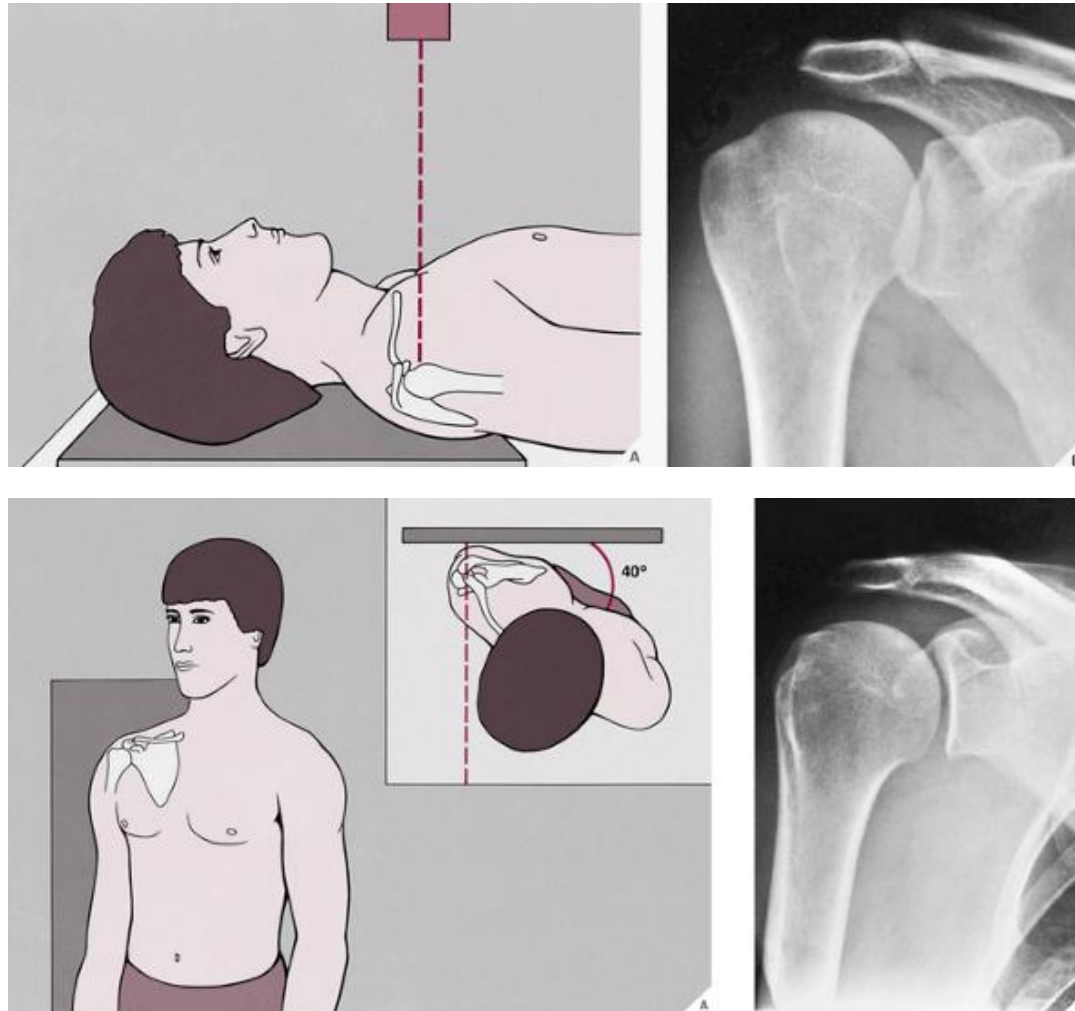
Humerus

Inferior angle-scapula

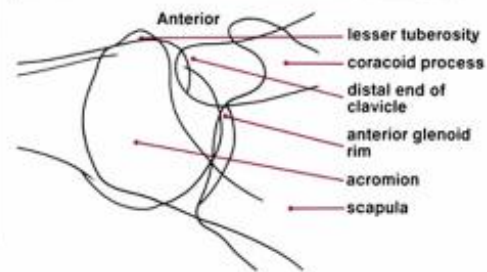
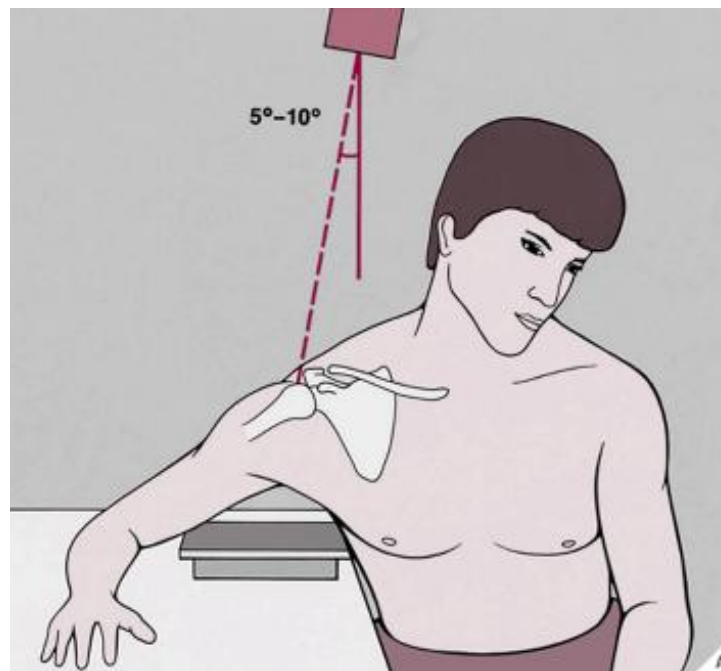
KUMC



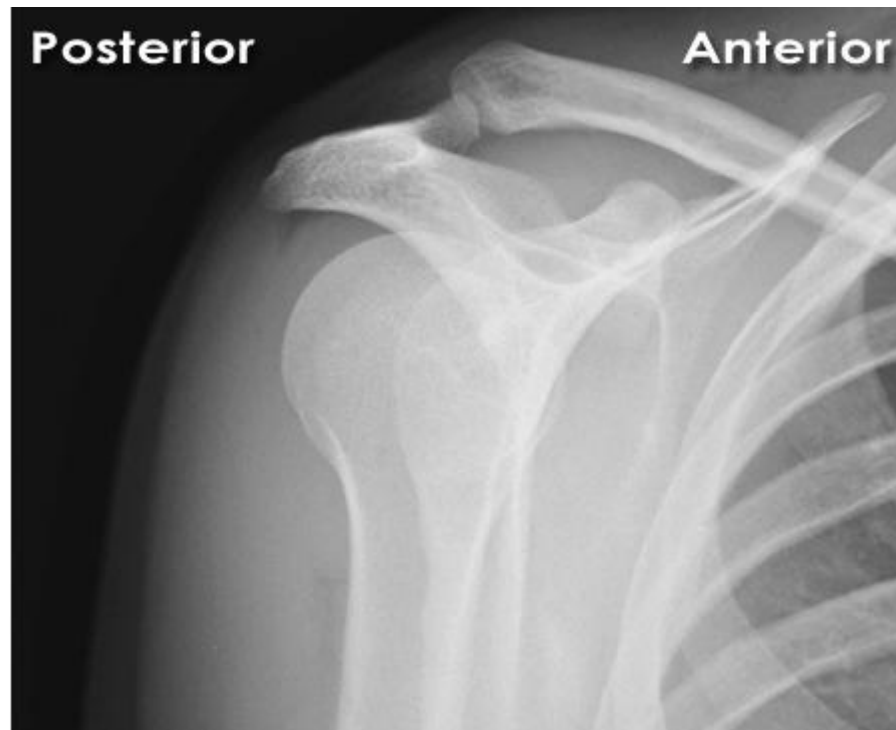
True Shoulder AP



Shoulder Axial (90deg from AP)



Shoulder (Scapular Y lateral)



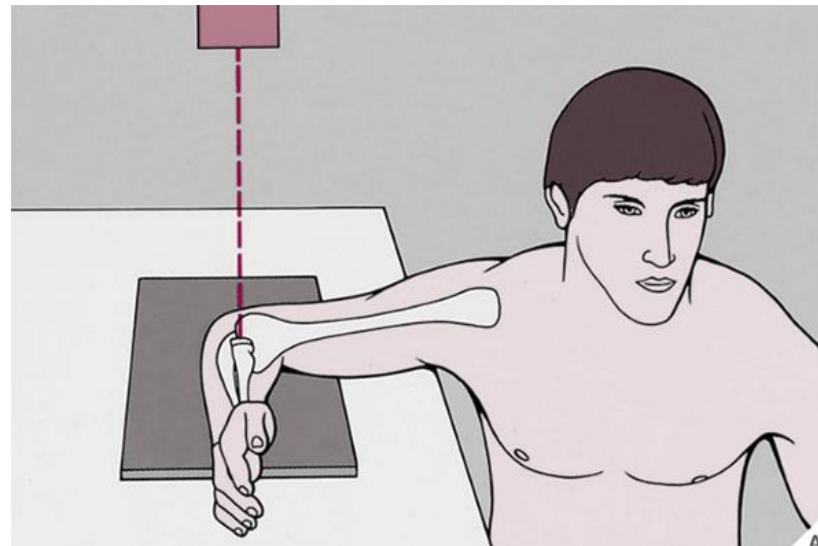
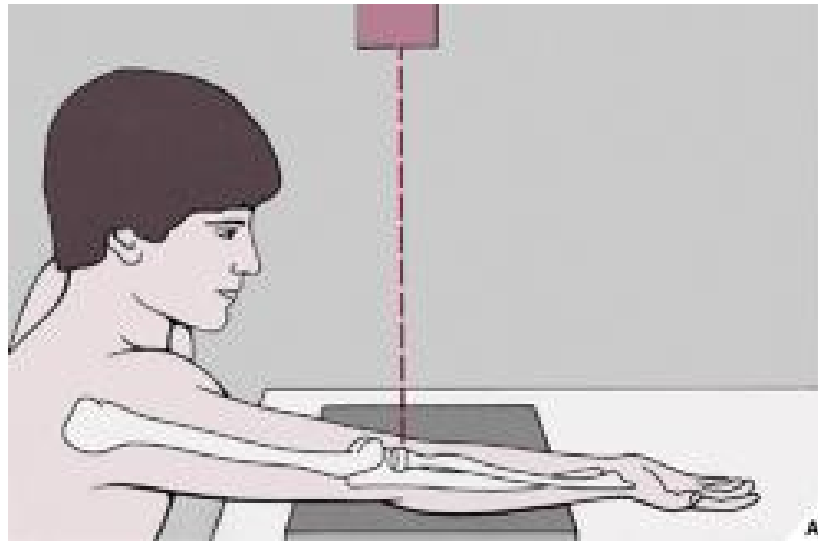
Humerus



Forearm



Forearm



Elbow AP and lateral



Reading?



Elbow



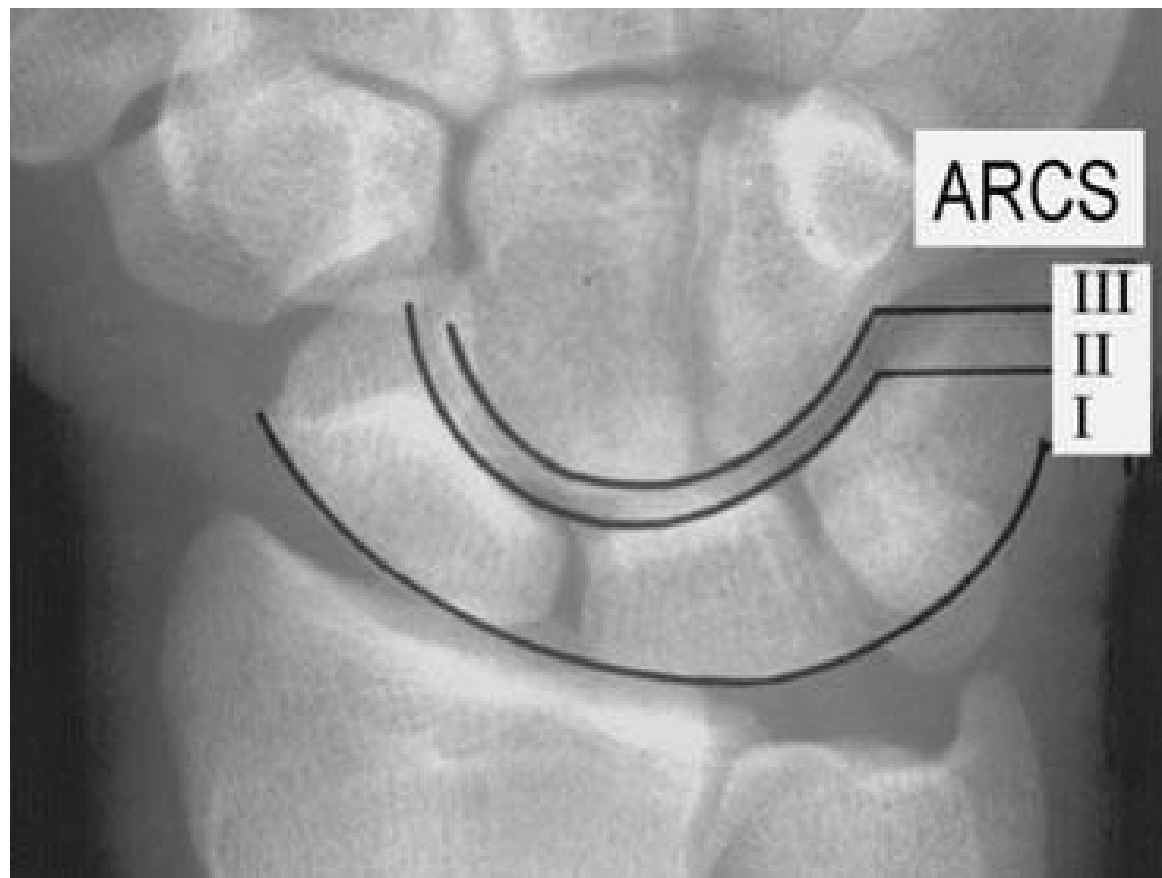
Wrist PA



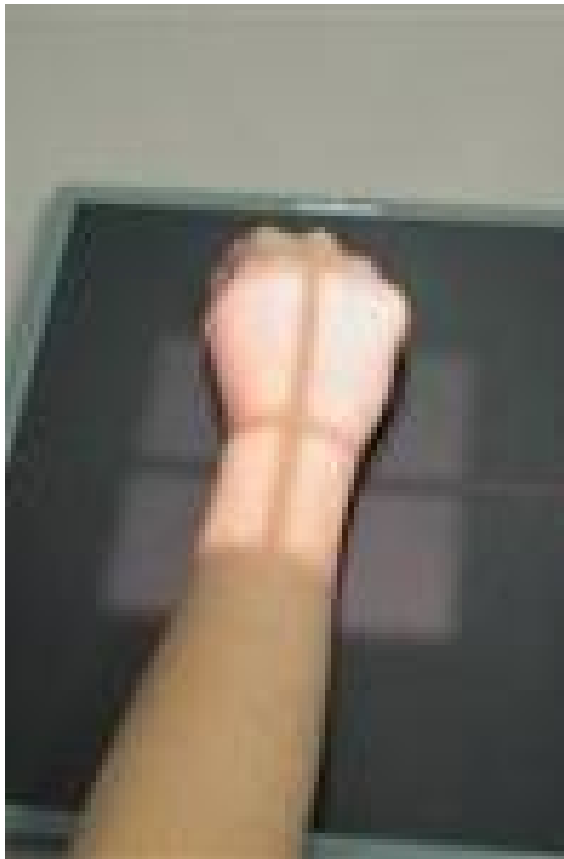
Wrist Lateral (SPC)



Gilula's Lines



Terry Thomas Sign for SL Dissociation



Hand AP



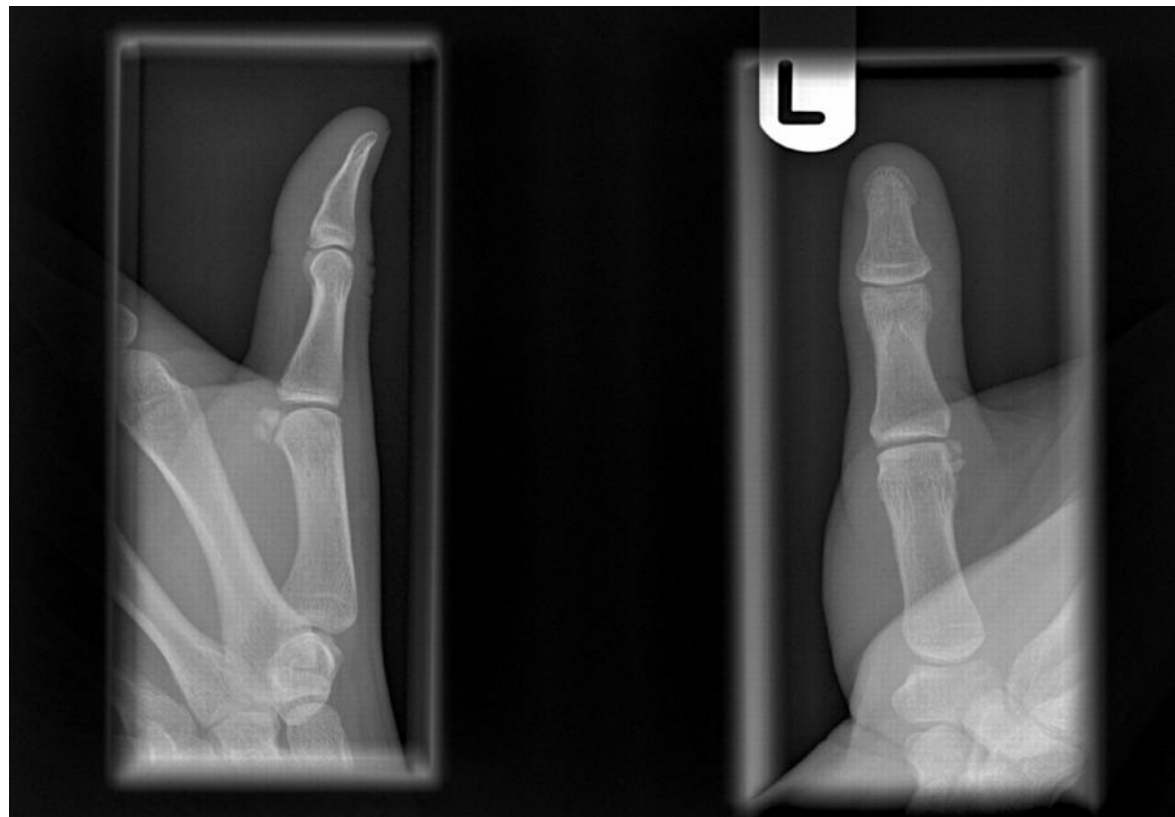
Hand oblique and lateral



Finger views



Thumb views





Lower Extremity

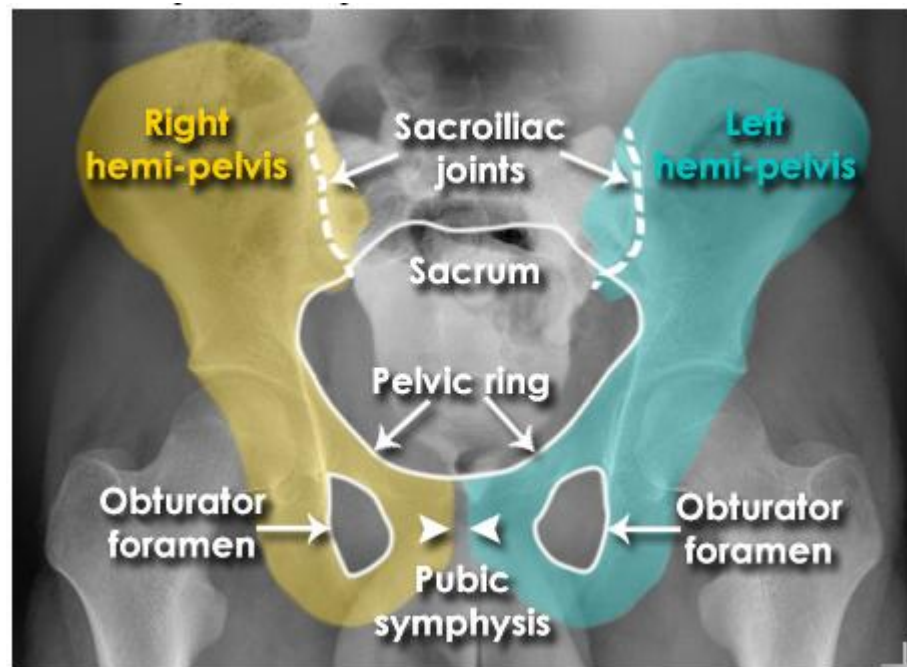


Common views for the Lower extremity

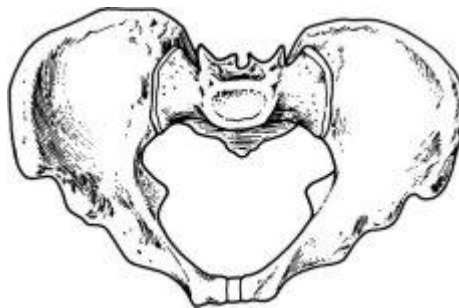
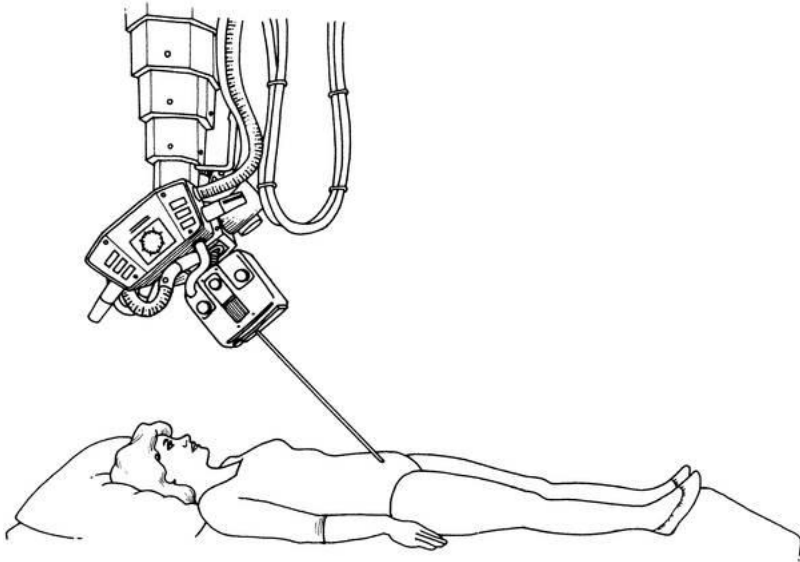
- Pelvis inlet, outlet and oblique views
- Both hips AP, Frog leg lateral (for children), **cross table lateral** views for adults
- Femur AP lateral
- Knee AP (**standing**) lateral +/- Patella **skyline** view
- Leg AP lateral
- Ankle **mortise** AP lateral
- Foot AP Oblique and lateral views



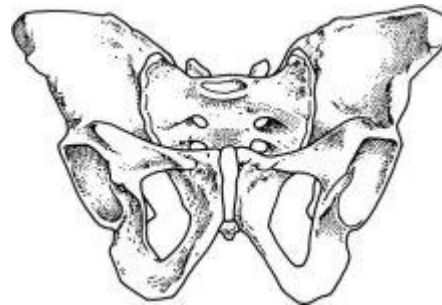
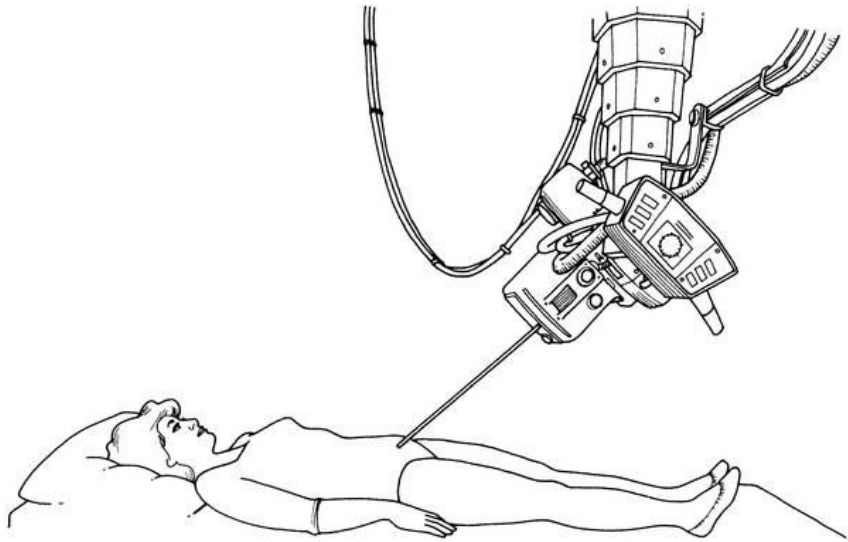
Pelvis/Hip AP



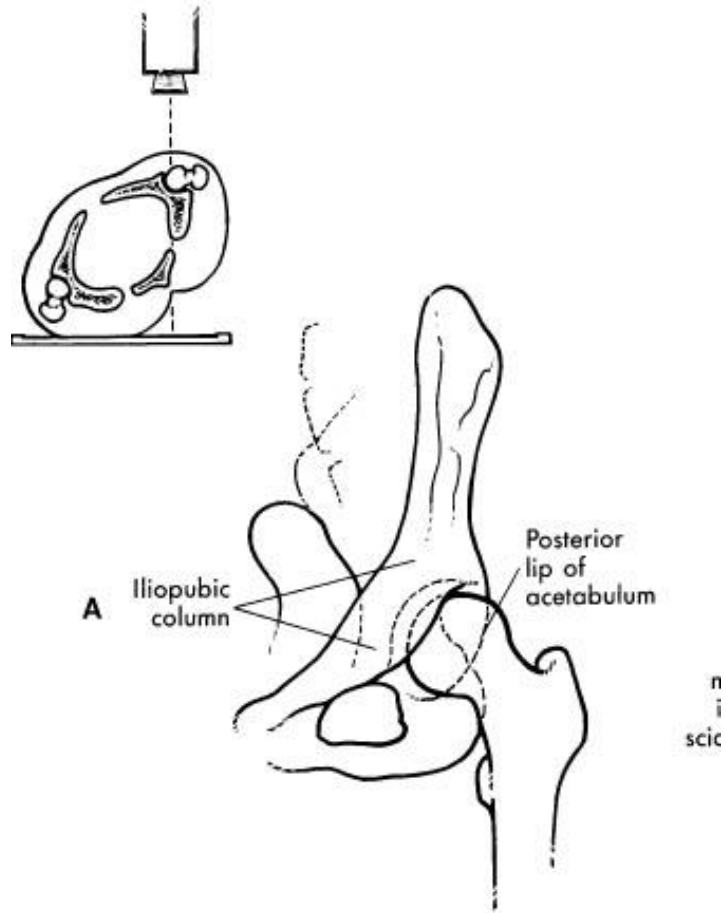
Pelvis - Inlet



Pelvis - Outlet



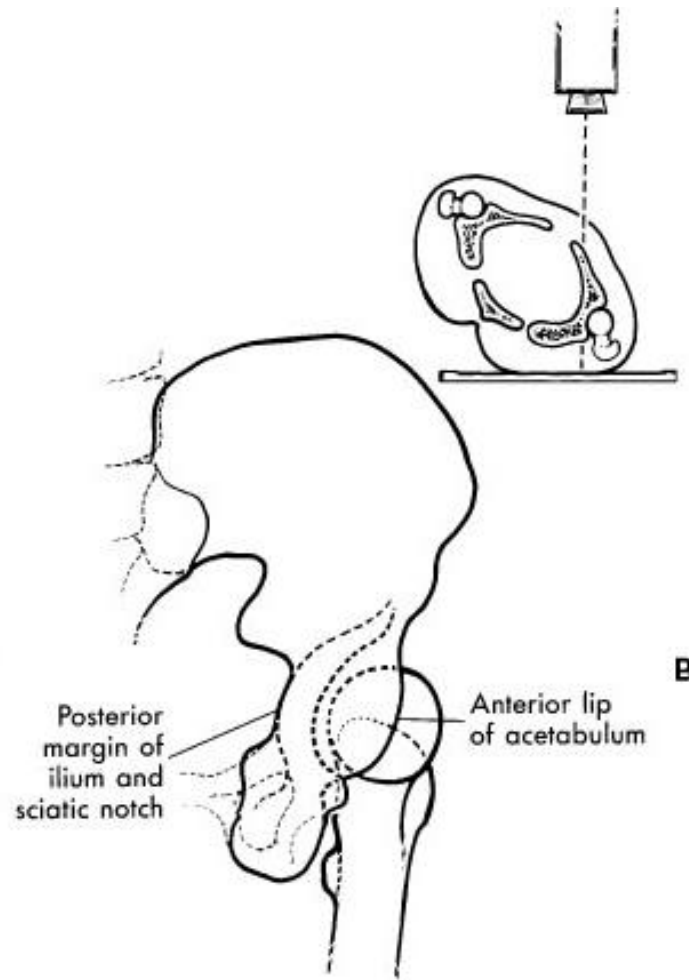
Pelvis - Oblique



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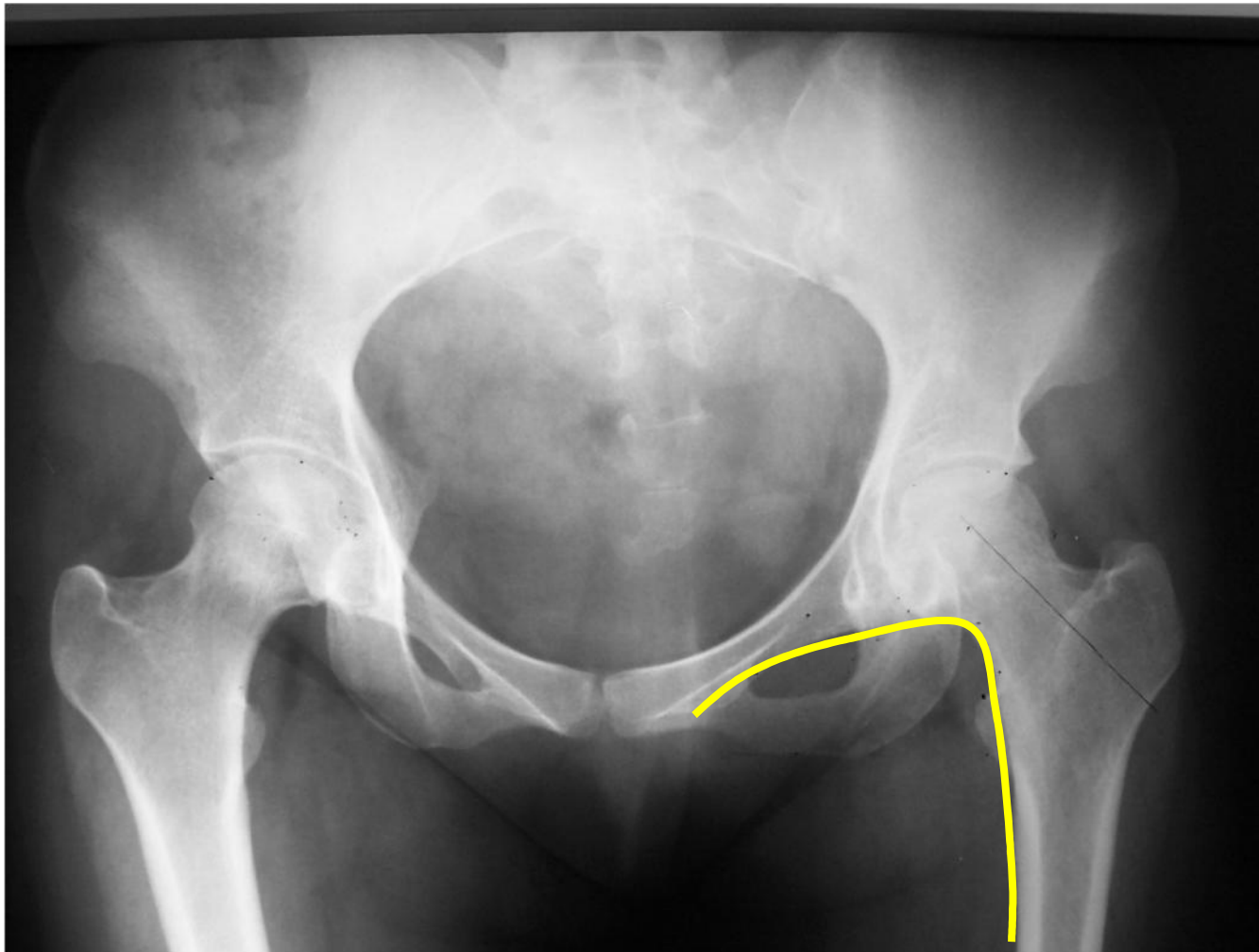
Pelvis - Oblique



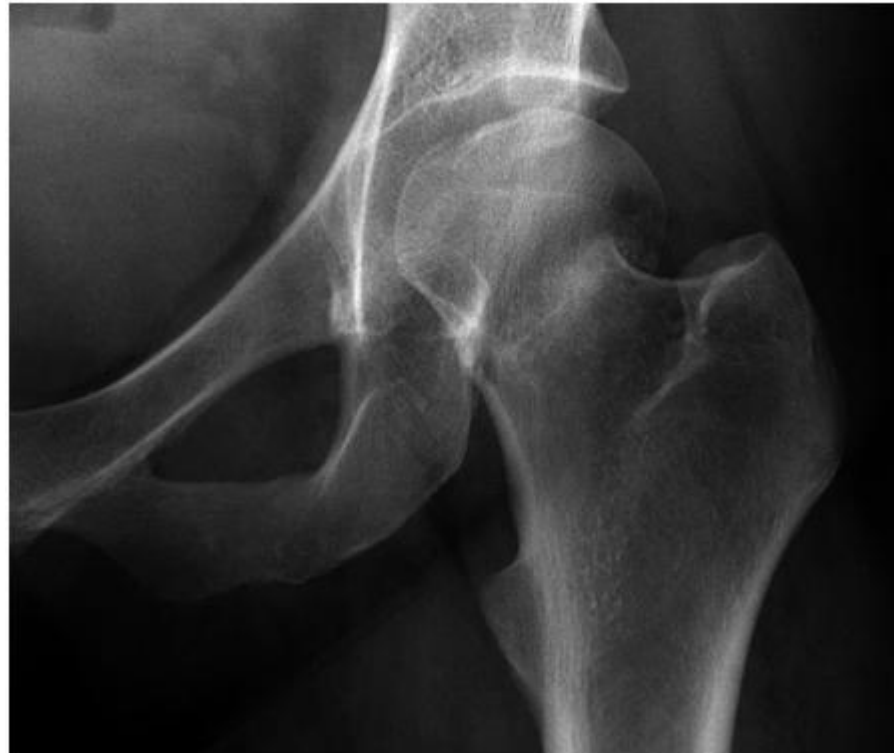
Hip AP



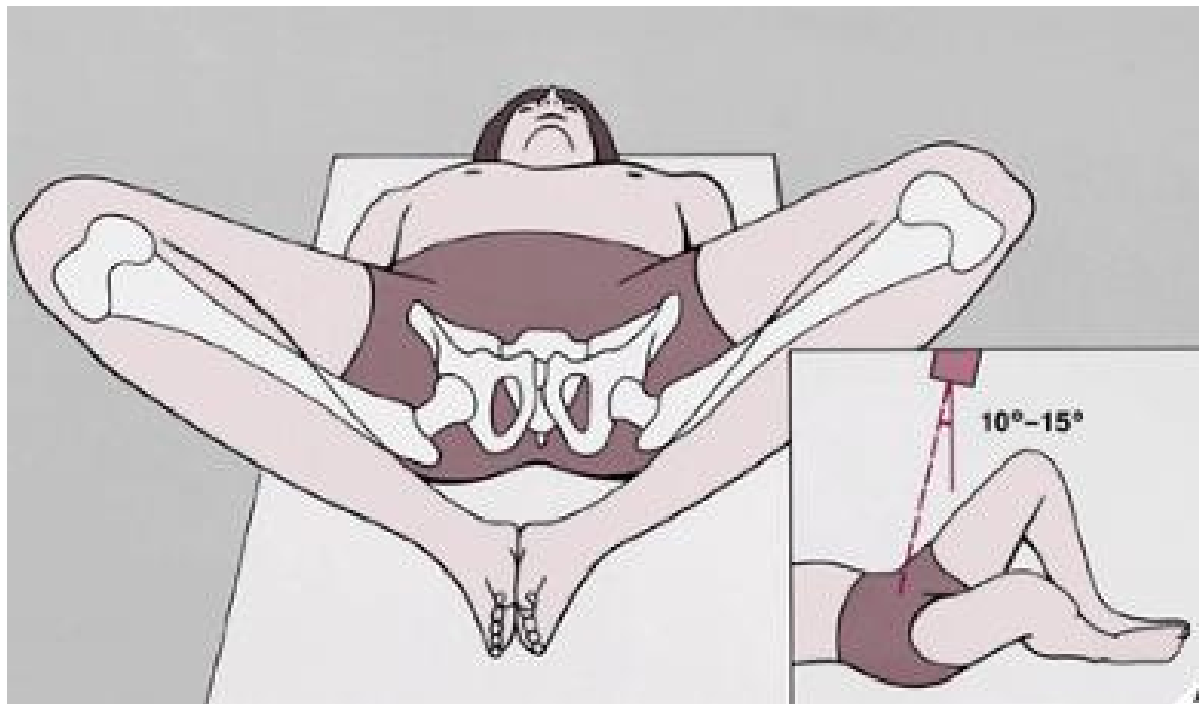
Hip Continuity – Shenton's line



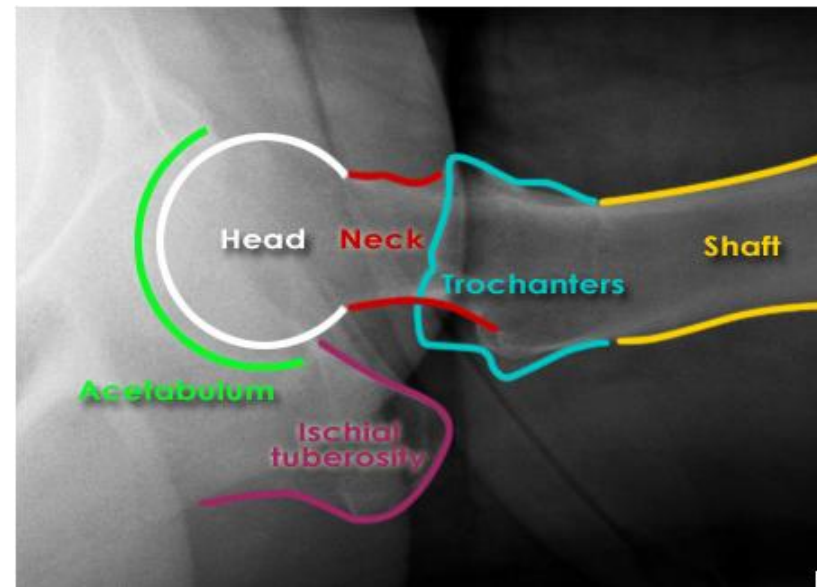
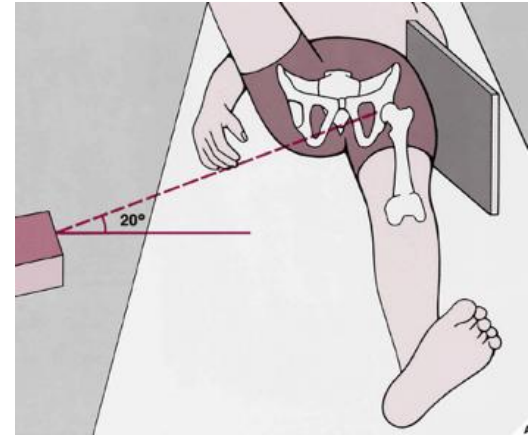
Hip AP



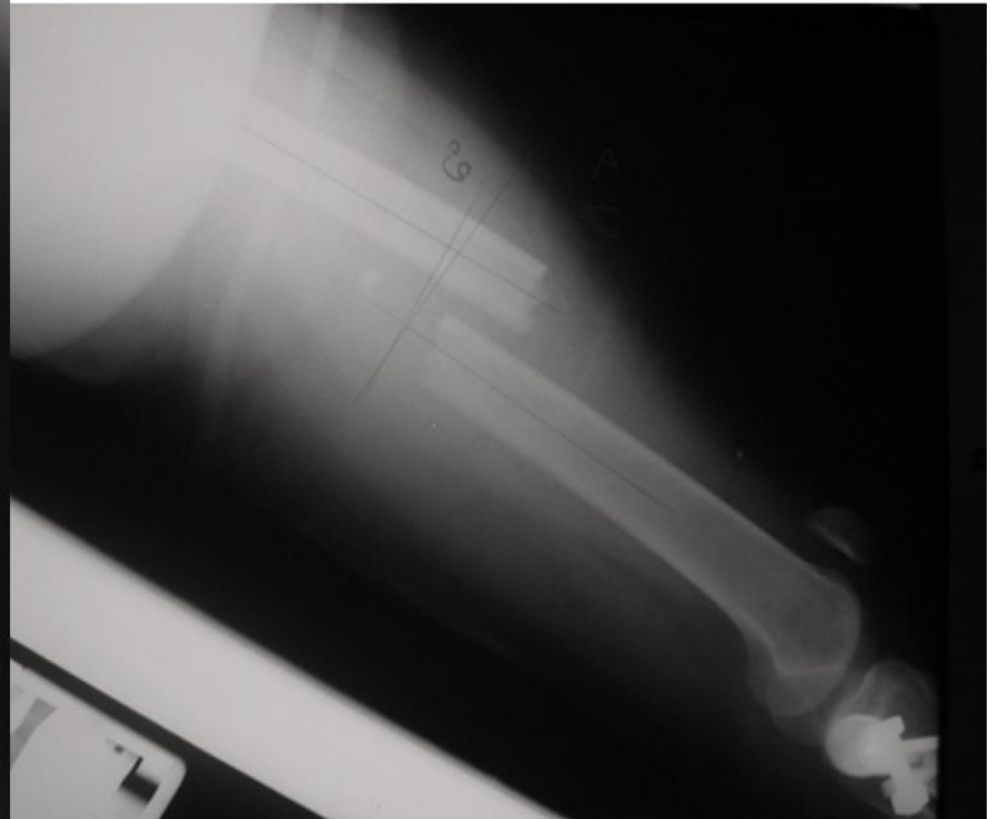
Hip – Frogleg lateral



Hip – Cross table



Femur AP – cross table lateral



Knee AP/ AP (loading)



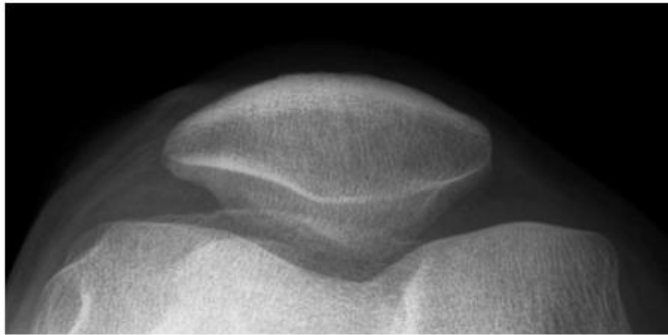
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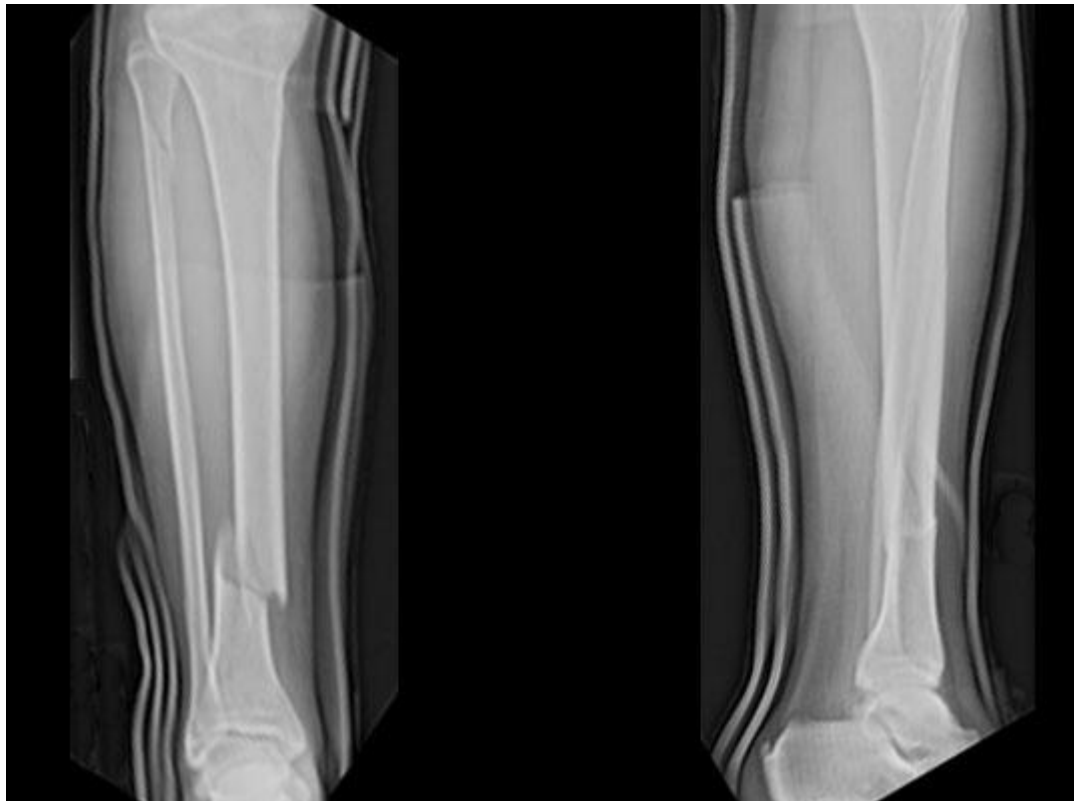
Knee lateral



Knee – Skyline view



Leg AP-lateral



Ankle AP/Mortise views



Ankle lateral



Reading?



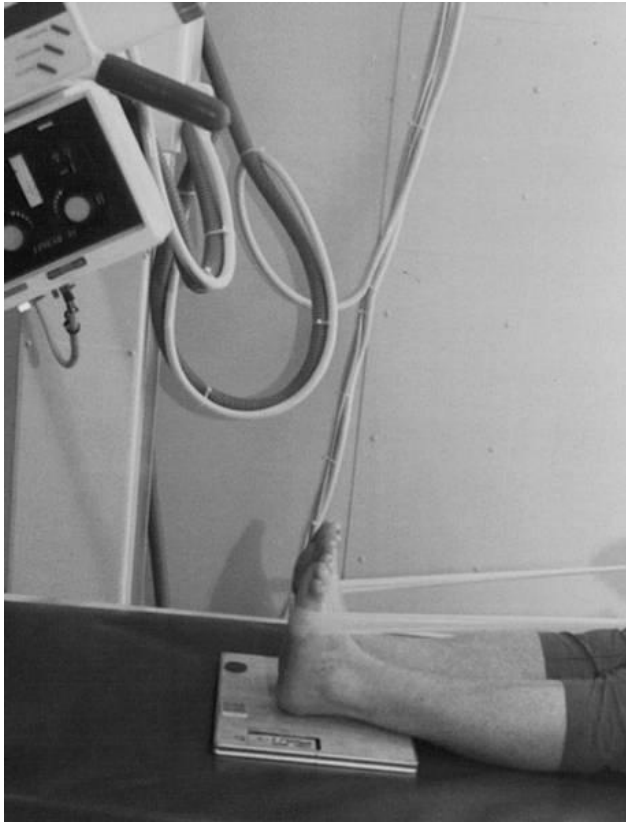
Foot AP-oblique-lateral



Spot the difference



Calcaneus axial





Common views for the spine

- Cervical AP Lateral Open mouth views
- Thoraco lumbar AP lateral
- Lumbosacral AP lateral



Cervical AP



Cervical lateral

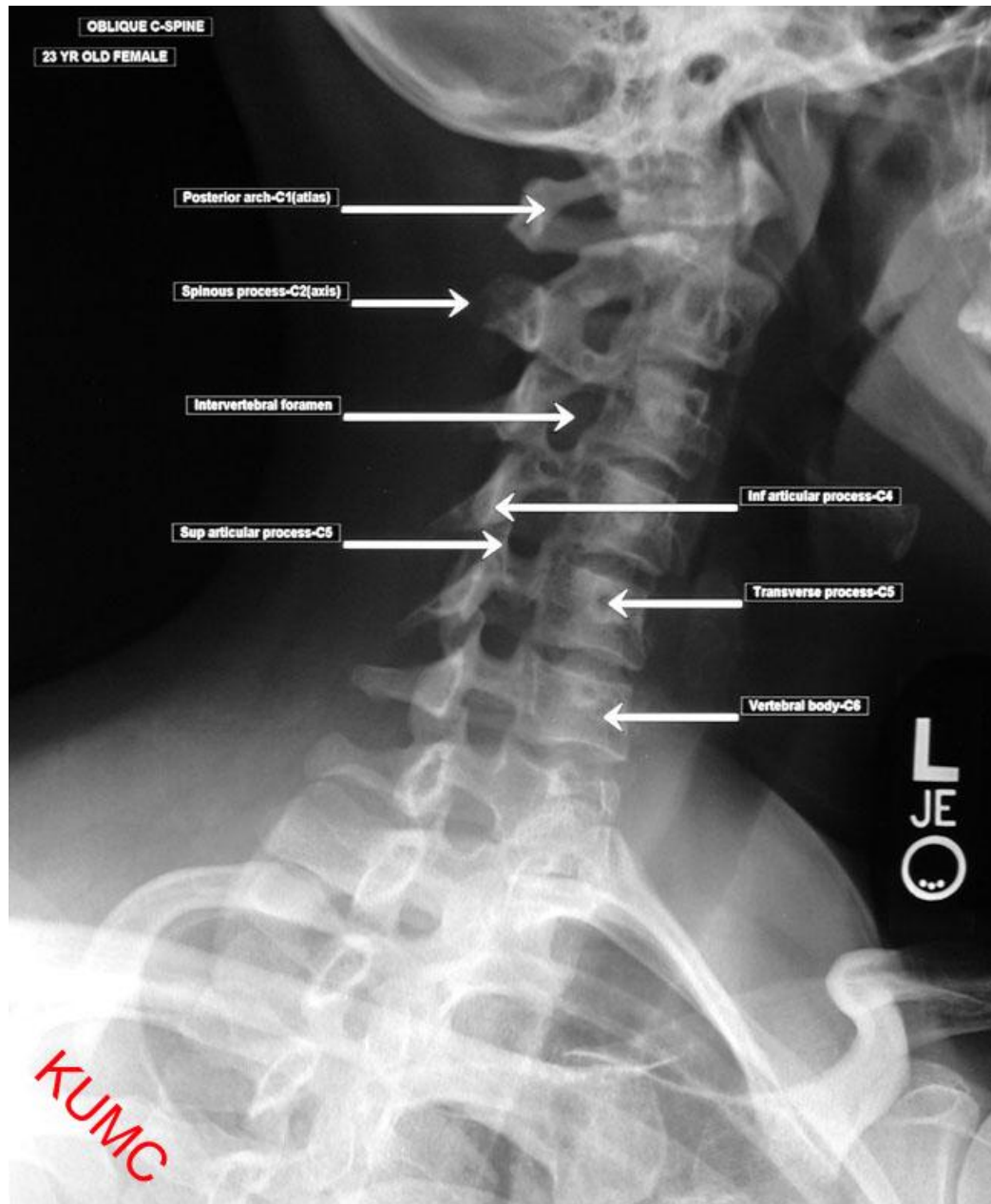


Cervical open mouth

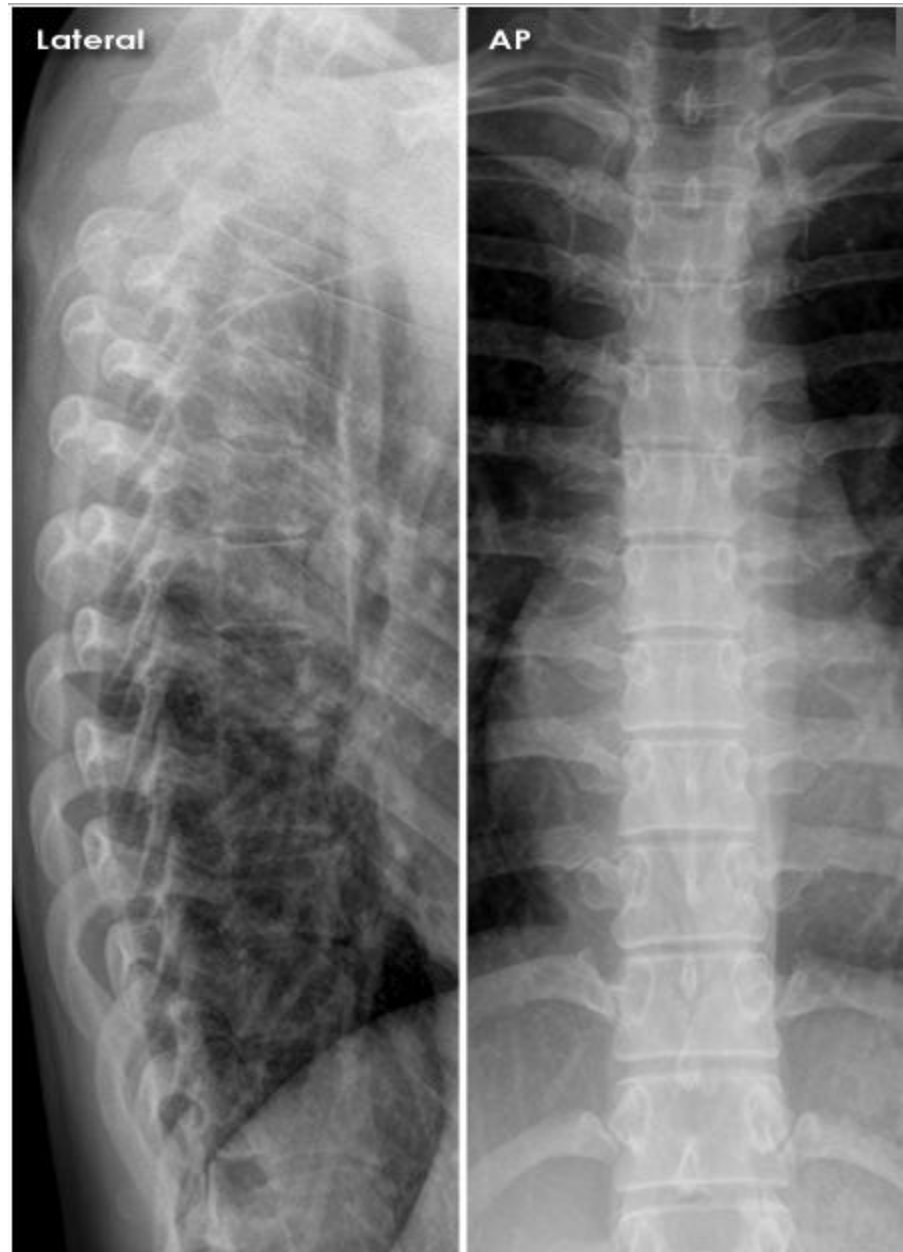


Reading?





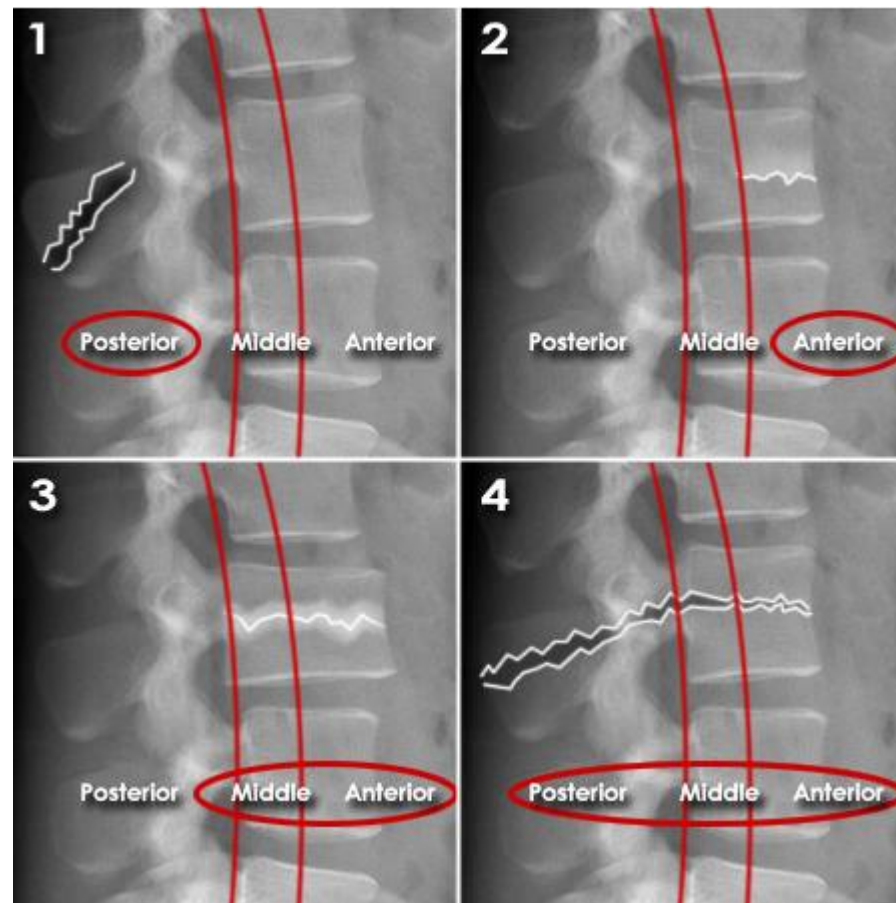
Thoracic Spine AP-lat



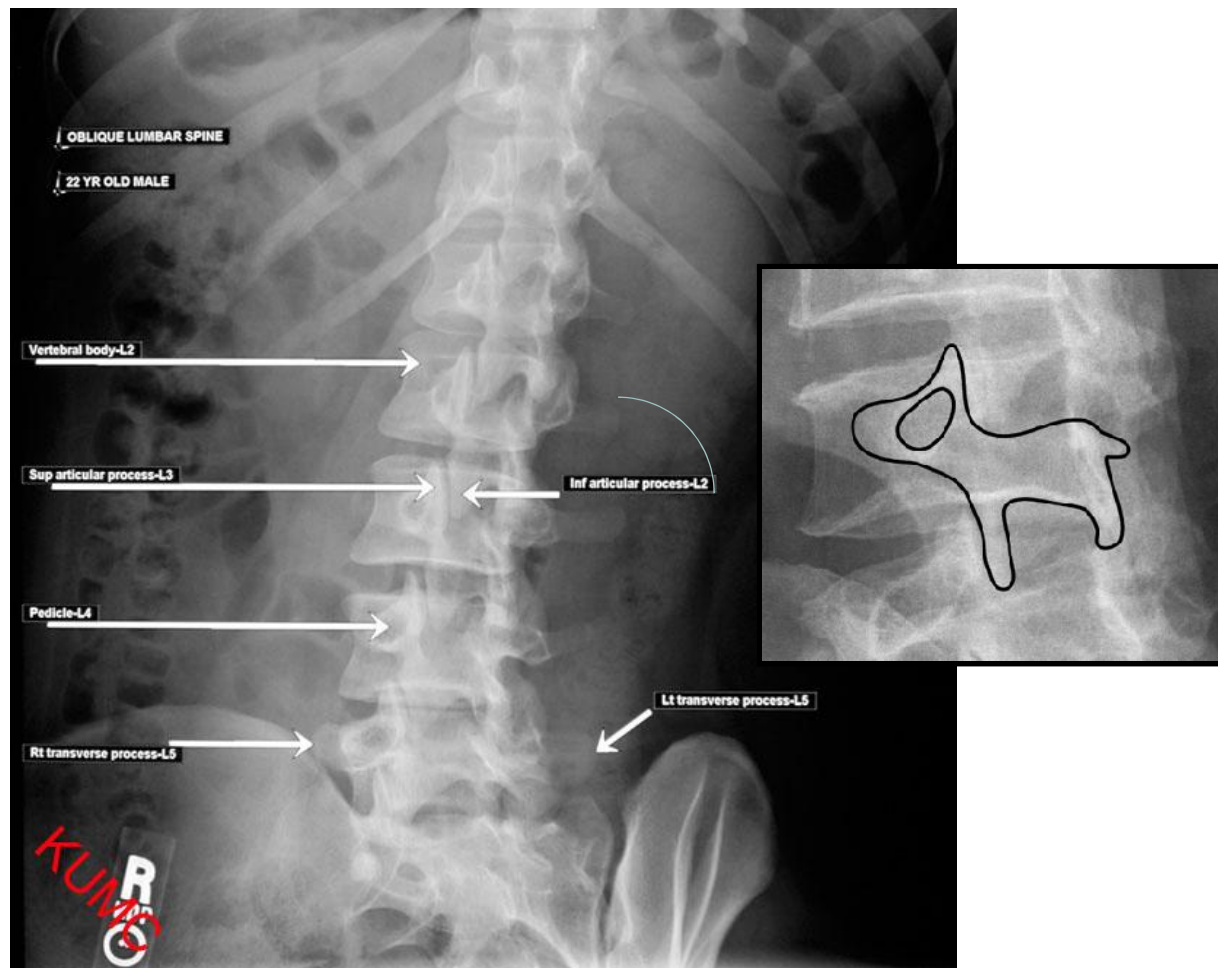
Lumbar Spine AP-lateral



Lumbar Spine Columns



Lumbar Spine oblique



Summary

- Knowledge of Anatomy is a prerequisite
- Intense imagination is an asset
- Common views
 - Orthogonal: AP-Lateral
 - Oblique: to avoid overlapping
 - Stressed: to evaluate effects of loading
- Be systematic in evaluating/reading the films



Thank You!!!

