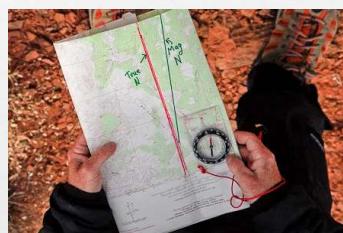


# Upper Limb Radiology

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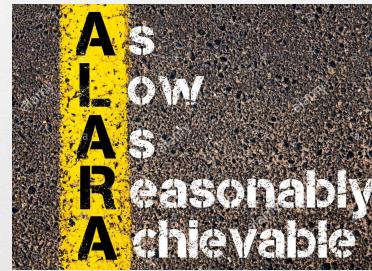
## Aim of this talk



## Radiology Principles



Ionising Radiation  
(Medical Exposure)  
Regulations (e-IRMER)



‘Shall we just get an XR...?’



## The C Spine



## A systematic approach

- A: ADEQUACY
  - Name & Date
  - C1-C7/T1 junction on lateral and AP (incl. PEG)
- B: BONES
  - Alignment: 3 lines
  - Trace all bones on each view
- C: CARTILAGE & SOFT TISSUE
  - Anterior soft tissue shadow
  - Disc spaces and C1→Peg distance

## C-spine Adequacy

3 views:



*Must include C1-C7/T1 junction*

## C-spine - Lateral

- Adequacy:
  - C1 – C7/T1 border



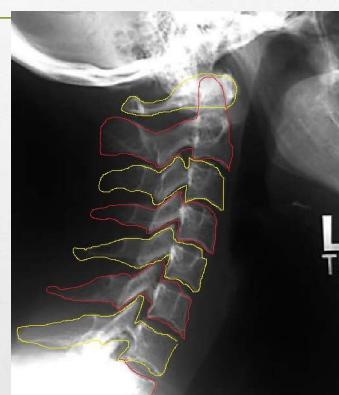
## C-spine - Lateral

- Bones:
  - Alignment
    - 3 lines
      - ❑ Anterior spinal
      - ❑ Posterior spinal
      - ❑ Spino-laminar



## C-spine - Lateral

- Bones:
  - Trace each bone



## C-spine - Lateral

- Cartilage & Soft tissue:



## C-spine - Lateral

- Cartilage & Soft tissue:

- Anterior soft tissue shadow
  - 3mm to C3
  - 7 mm below C3



## C-spine - Lateral

- Cartilage & Soft tissue:

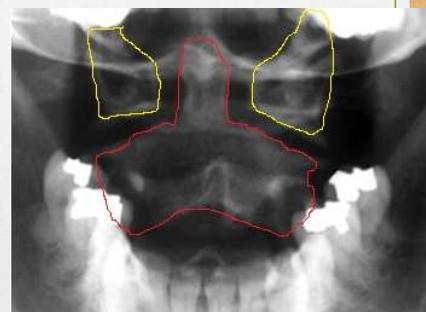
- Gap between Peg and C1  
(≤3mm in adults)
- Disc spaces
- Facet joints



## C-spine - Peg

- Bones:

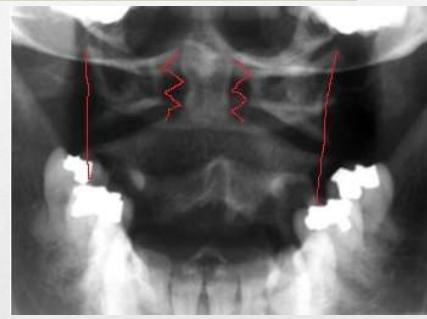
- Trace around lateral masses C1
- Trace around C2
- Examine each bone for lucent lines



## C-spine - Peg

- Cartilage/Soft tissues:

- Check lateral masses C1 symmetrical about C2 and do not overlap borders C2



## C-spine - AP

- Adequacy:

- C1 (incl. Peg) – T1

- Bones:

- Look at each vertebra
  - Spinous processes
    - Alignment
    - Equal spacing

- Cartilage.....



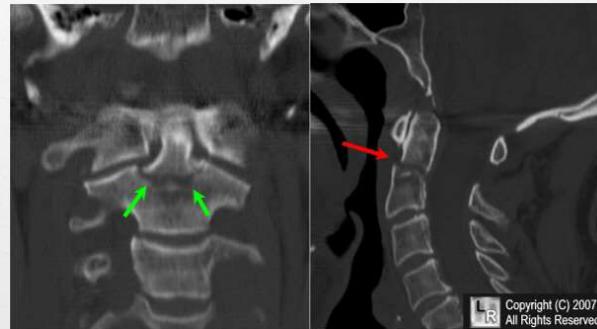
25 year old fell from quad bike



75 year old slipped and hit head



## CT confirmation

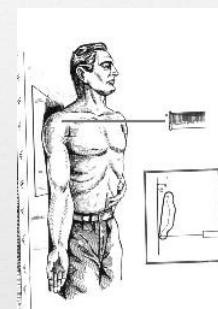


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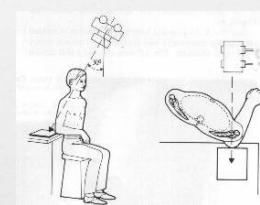
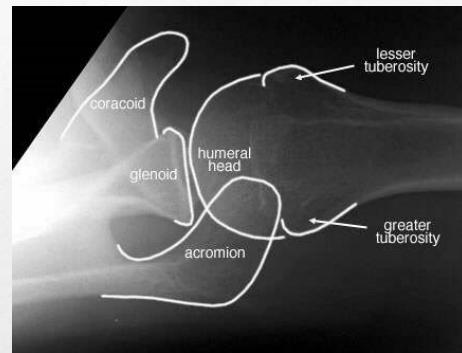
## ‘Clearing the C-spine’

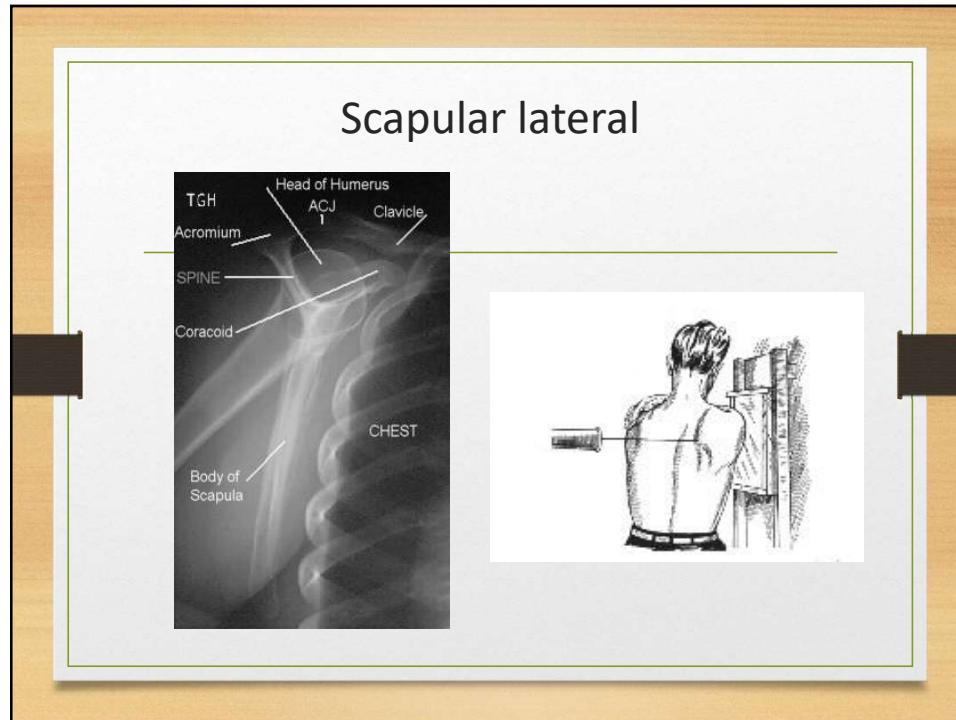
- If no indication for C-spine imaging
- If normal C-spine imaging *and*:
  - No midline tenderness
  - No abnormal neurology
  - GCS 15/15 & not intoxicated

## Shoulder – normal anatomy



## Axial View





## The ABC Approach

---

- Adequacy
  - Most of the clavicle and proximal humerus
- Alignment
  - Humerus in the glenoid.
  - Relationship of clavicle to acromium.
- Bones
  - Name and draw around each bone
- Cartilage, joints, soft tissues Lipohaemarthrosis, calcification
  - AC, Glenohumeral joint, supraspinatus tendon
- Chest

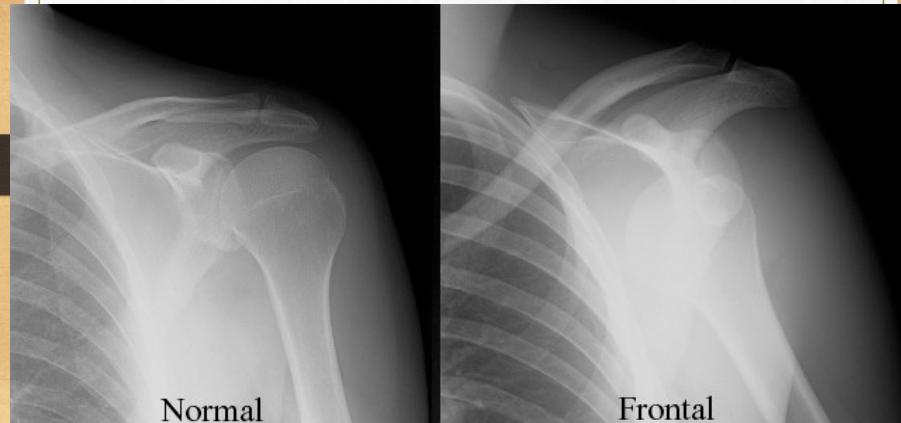
60 year old fell on bus onto arm



30 year old fell on bus onto arm



Dislocation  
Anterior



Dislocation  
Anterior



27 year old seizure – can't move arm



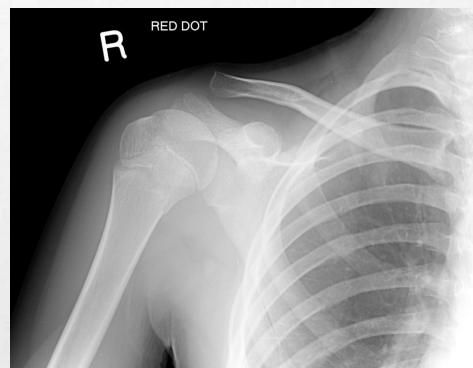
One view is one view too few



17 year old fall during rugby tackle

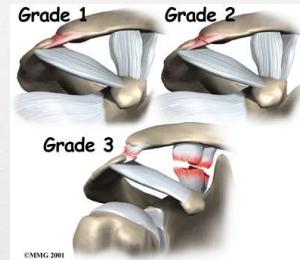


16 year old punched dad



## AC Joint injury

- Classification:
  - I – Sprain
  - II – Subluxation
  - III – Dislocation
- Patient will point to site of pain: ACJ. Tenderness/Asymmetry



## Isolated Ulnar fractures



- Spiral fractures seldom occur when the person is not moving
- Consider age and mechanism (? defensive)

Mx:

- If undisplaced, above elbow backslab at 90°
- If displaced - refer

## Galeazzi fracture-dislocation



- Check carefully for NV status
- # radius and dislocation of distal radio-ulnar joint ('MUGR')

Mx:

- Immobilize and refer for ORIF

## Monteggia fracture-dislocation

- # ulnar associated with dislocation of the radial head



## Normal left wrist

ABC...



2 views:

- PA
- Lateral

## Colles fracture

- Distal radius is angulated dorsally



Mx:

- If undisplaced, backslab and H.A.S.
- # clinic f/u
- If displaced - manipulate

## Smith fracture (a ‘reverse colles’)

- Distal radius is angulated *anteriorly*



Mx:

- Put in backslab
- Often requires referral for MUA or ORIF

## Barton's fracture

- Intra-articular # of distal radius



Mx:

- Put in backslab
- Often requires referral for ORIF

## Normal left hand



ABC...

2 views:

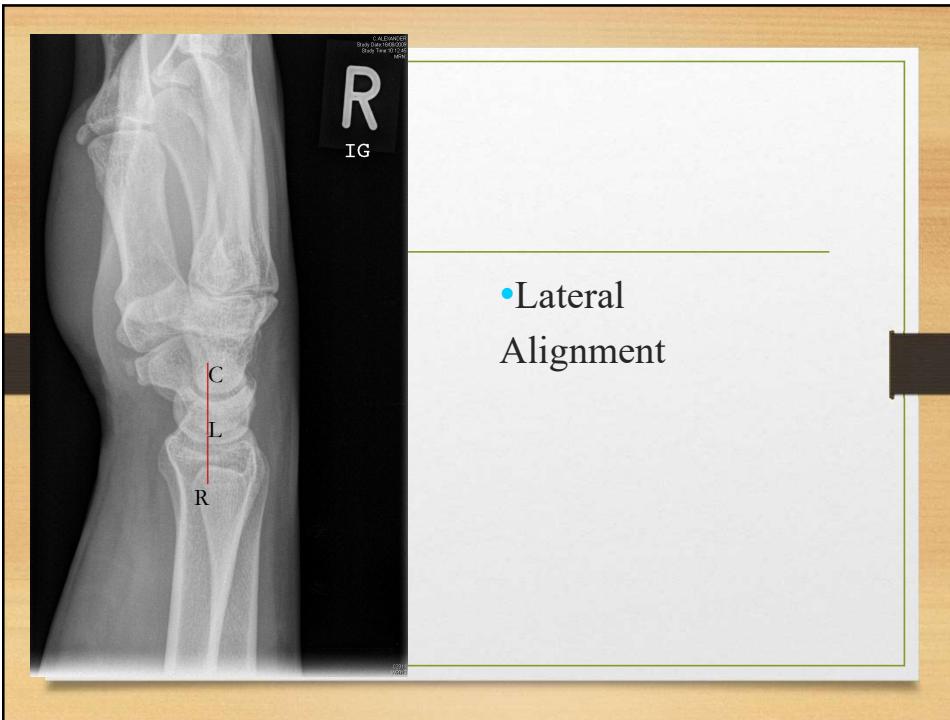
- PA
- Lateral

Bone  
revision..

PA



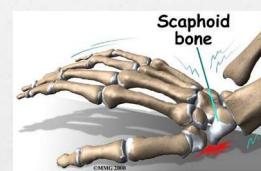
- Bottom row:  
Scaphoid  
Lunate  
Triquetral  
Pisiform



35 year old slipped FOOSH



### Scaphoid fracture



- These require 4 views

## Normal Hand



ABC...

2 views:

- PA
- Oblique (or lateral if single digit)

## Boxer's fracture



transverse # of the metacarpal neck

Mx:

- If undisplaced – immobilise
- If scissoring or rotation – refer for ORIF



## Phalangeal dislocation

- Posterior dislocation of the thumb



Mx:

- X-ray before reduction to look for #.
- Reduce under digital nerve block.
- Confirm reduction.
- Buddy strap and H.A.S.
- # clinic f/u

## Mallet finger



Mx:

- If no #, use a mallet splint for 6 wks, and arrange f/u (usually ED)
- Refer larger bony fragments (>1/3<sup>rd</sup> articular surface) for k-wire internal fixation.

## Distal phalangeal fractures



Mx:

- If closed - elevation
- If compound – explore under digital block, wound toilet, consider Abx and tetanus.
- Arrange f/u

ANY  
QUESTIONS?