

Chapter 13

Upper Limb and Shoulder Girdle

Learning Objectives

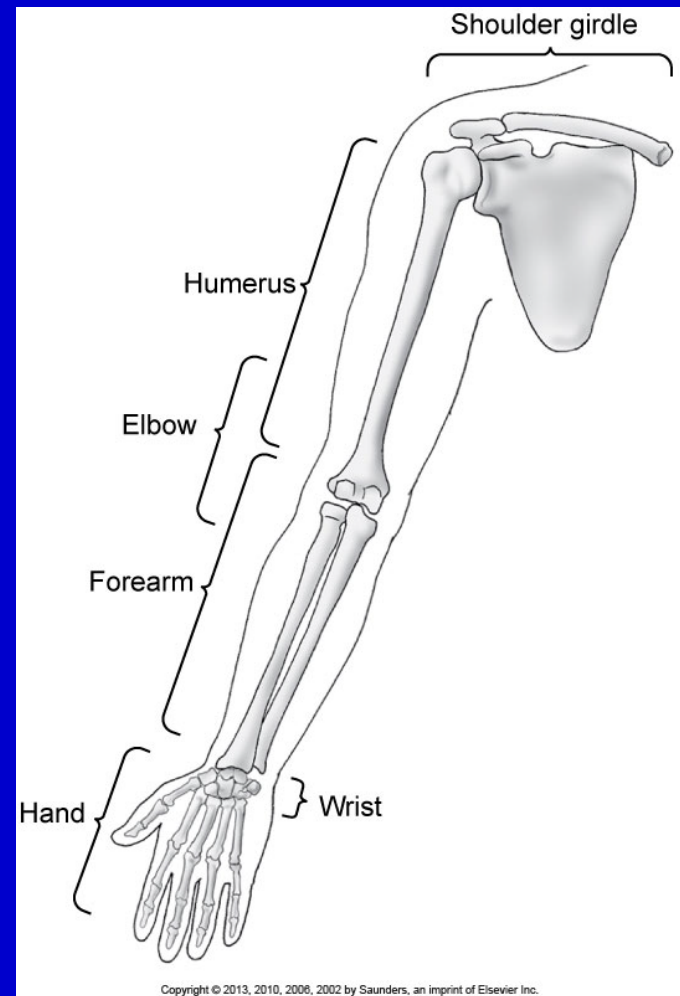
- Name the bones that compose the upper limb and shoulder girdle and identify each on an anatomic diagram and on a radiograph
- Name and identify the significant bony prominences and depressions of the upper limb and shoulder girdle and identify significant positioning landmarks by palpation

Learning Objectives (Cont'd)

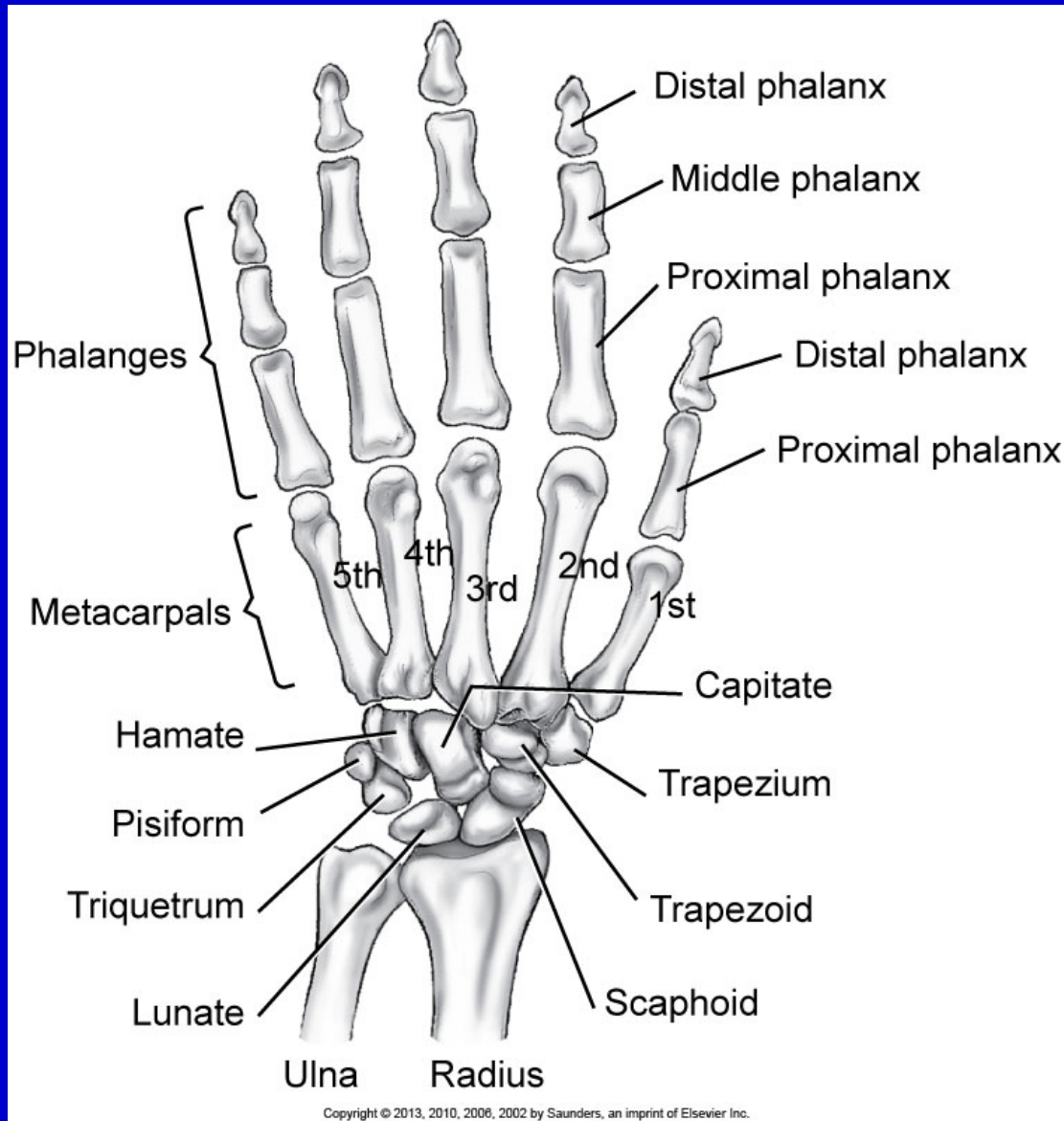
- Demonstrate correct body and part positioning for routine projections and common special projections of the upper limb and shoulder girdle
- Correctly evaluate radiographs of the upper limb and shoulder girdle for positioning accuracy
- Describe and recognize on radiographs pathologic conditions common to the upper limb and shoulder girdle

Parts of the Upper Limb

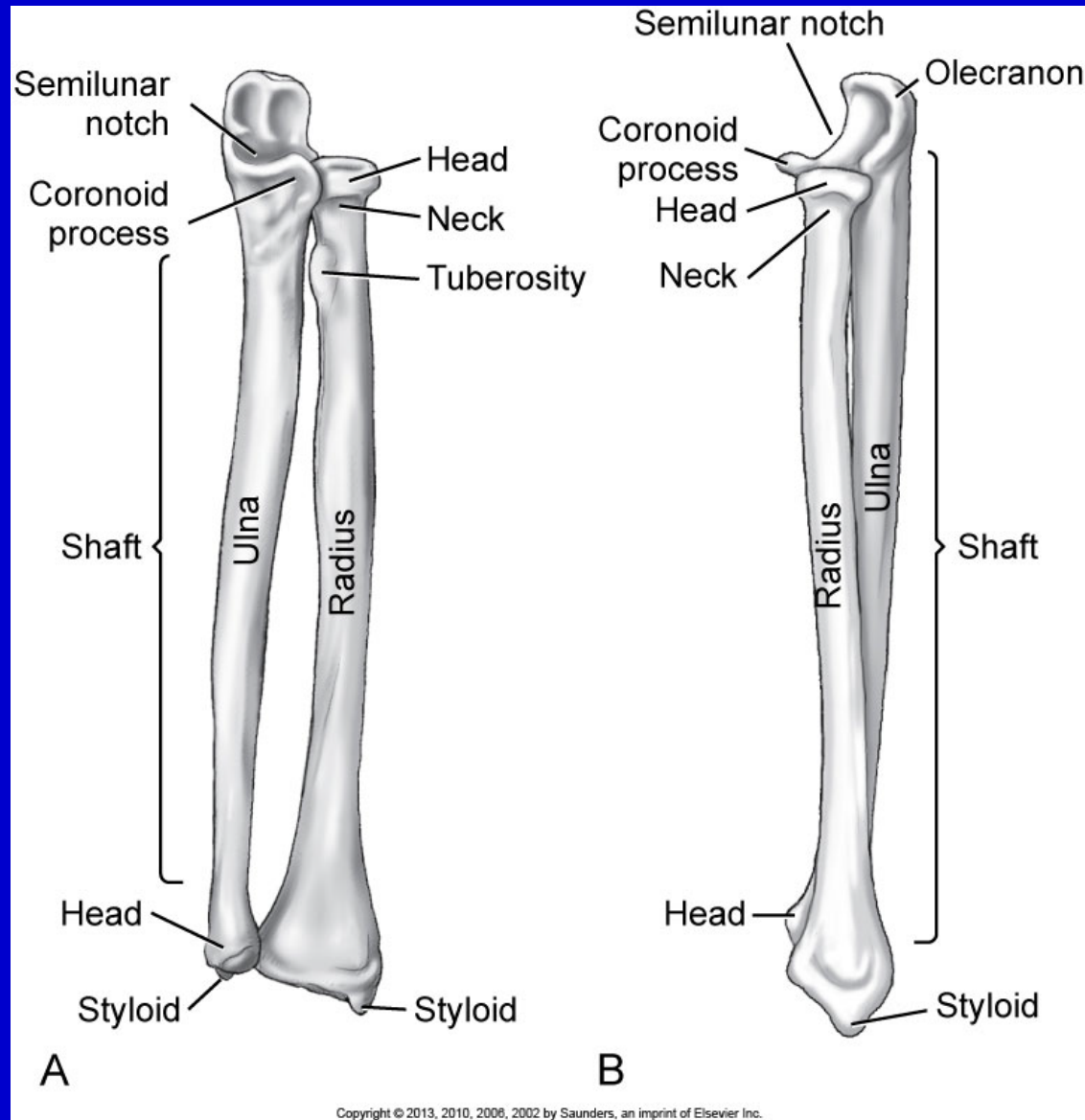
- Humerus
- Elbow
- Forearm
 - Radius
 - Ulna
- Wrist
 - Carpals
- Hand
 - Metacarpals
 - Phalanges



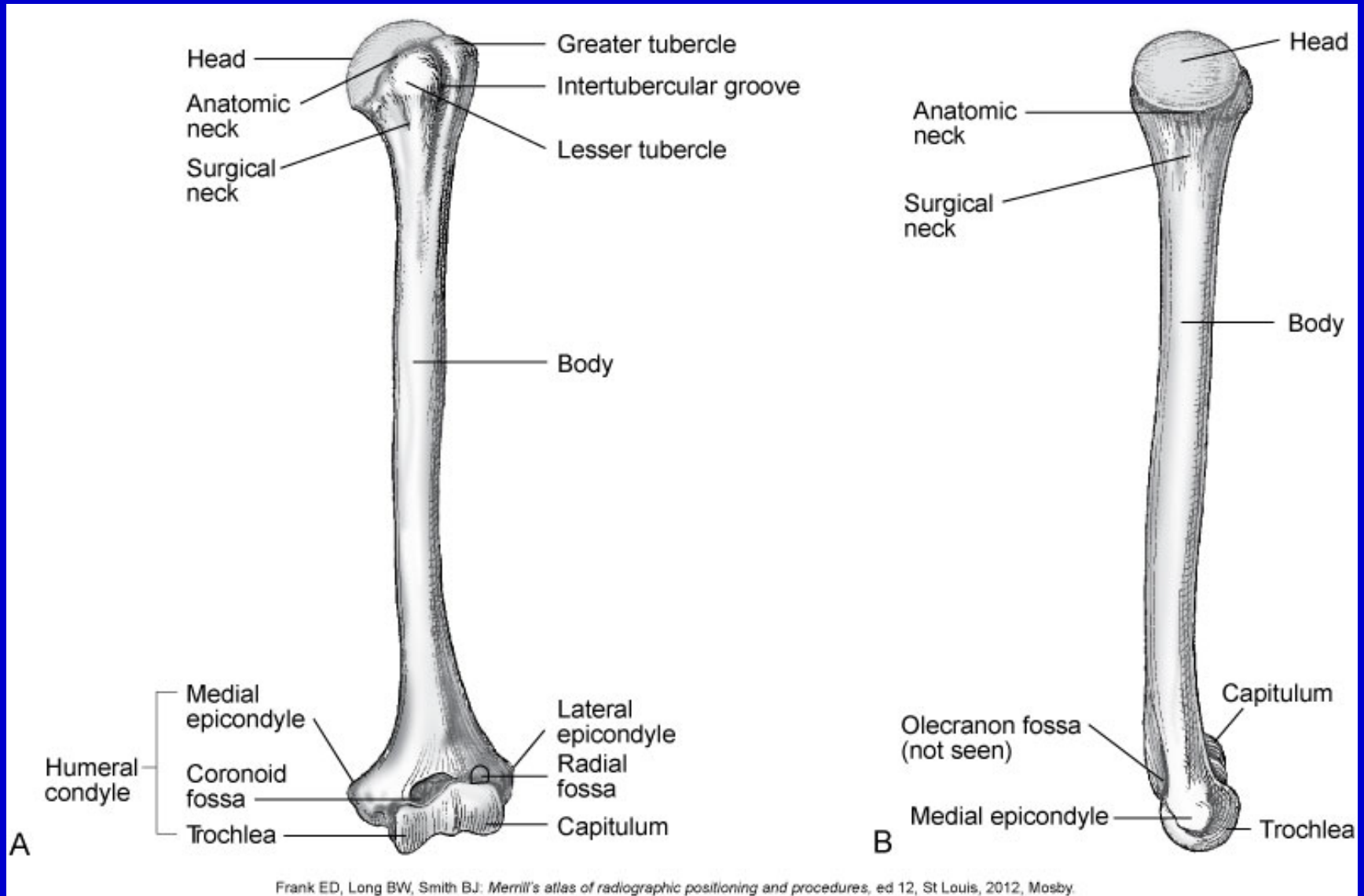
Hand and Wrist



Forearm

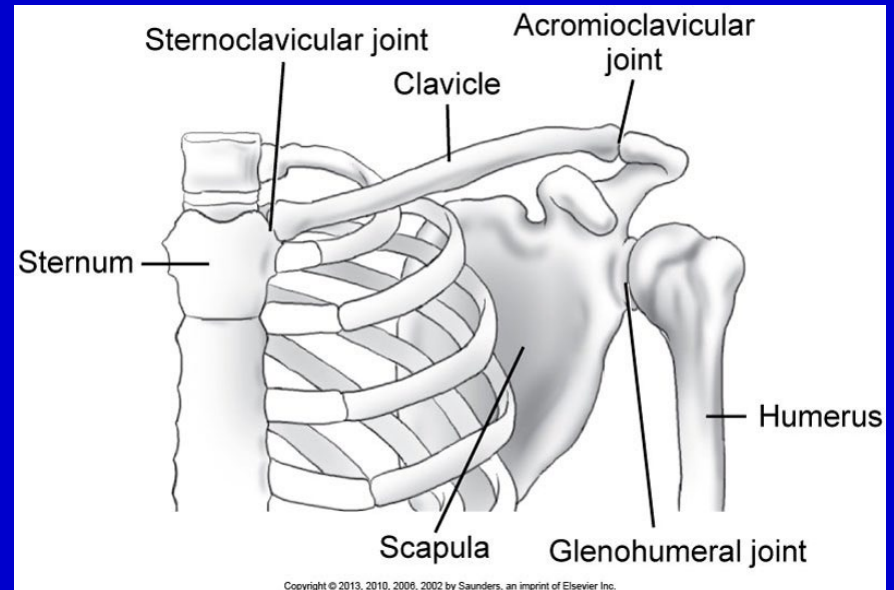


Humerus or Upper Arm

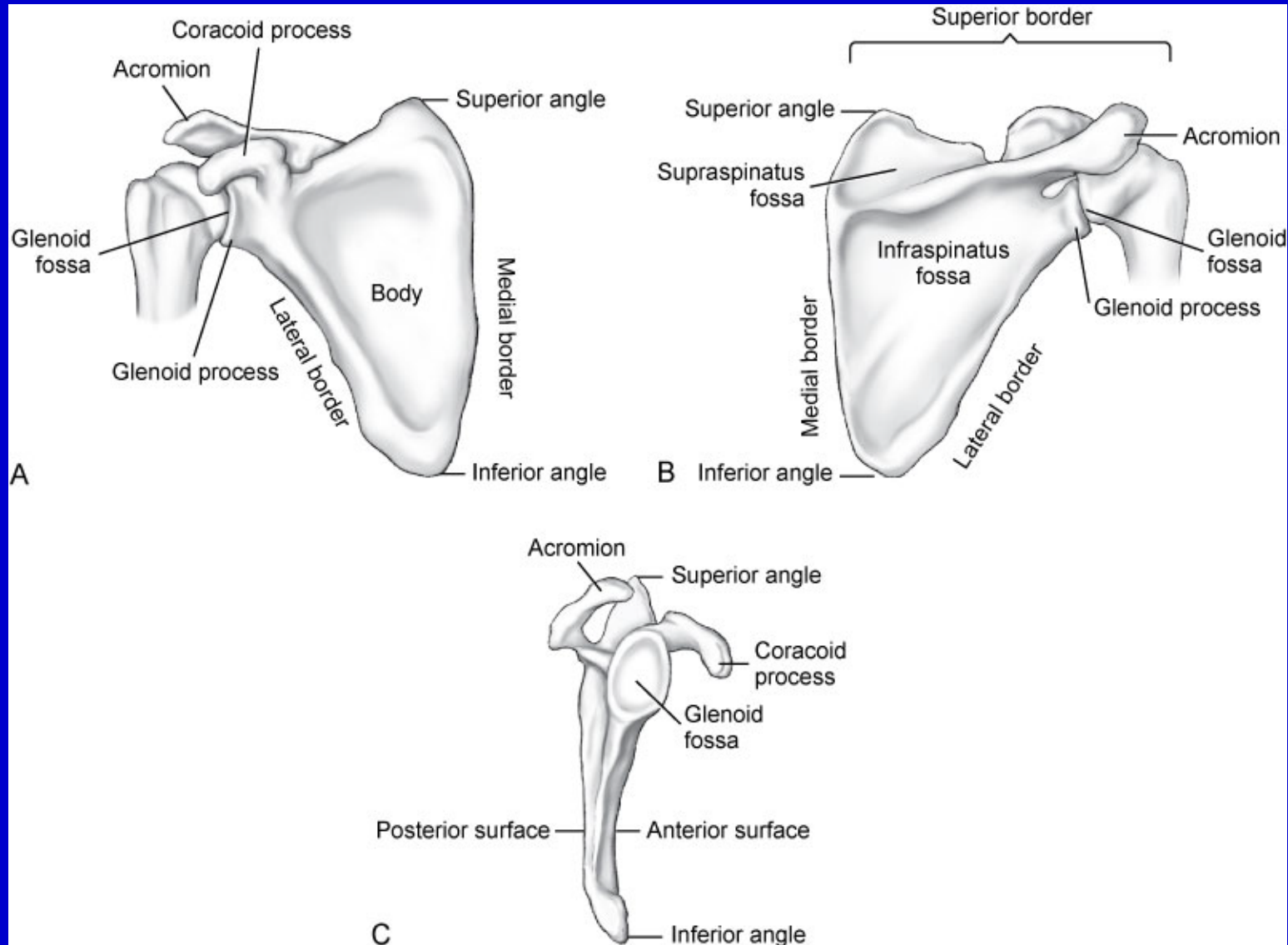


Parts of the Shoulder Girdle

- Clavicle
- Scapula
- Sternoclavicular joint
- Acromioclavicular joint
- Shoulder joint



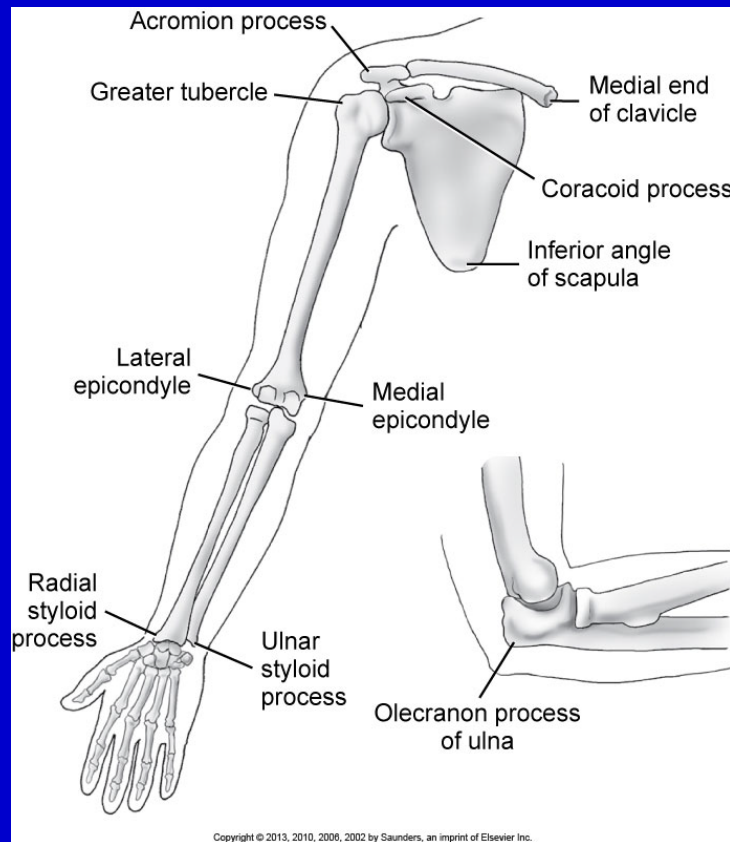
Scapula



Ballinger PW, Frank ED: *Merrill's atlas of radiographic positions and radiologic procedures*, ed 10, St Louis, 2003, Mosby.

Palpable Bony Landmarks

- Used to position the body part correctly



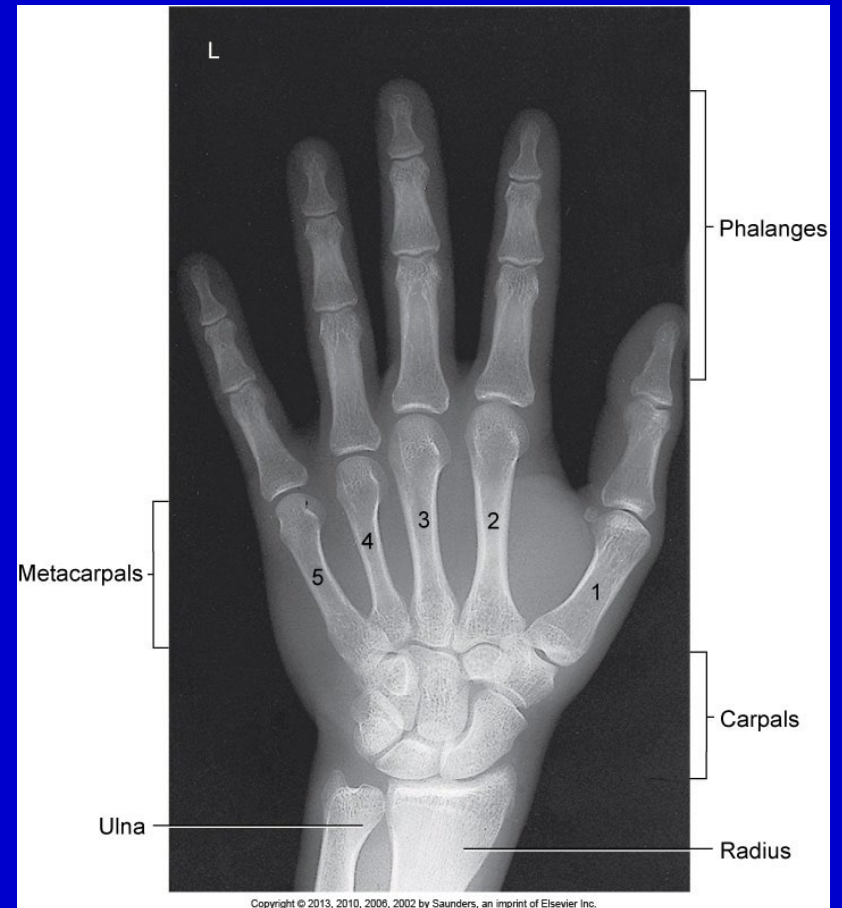
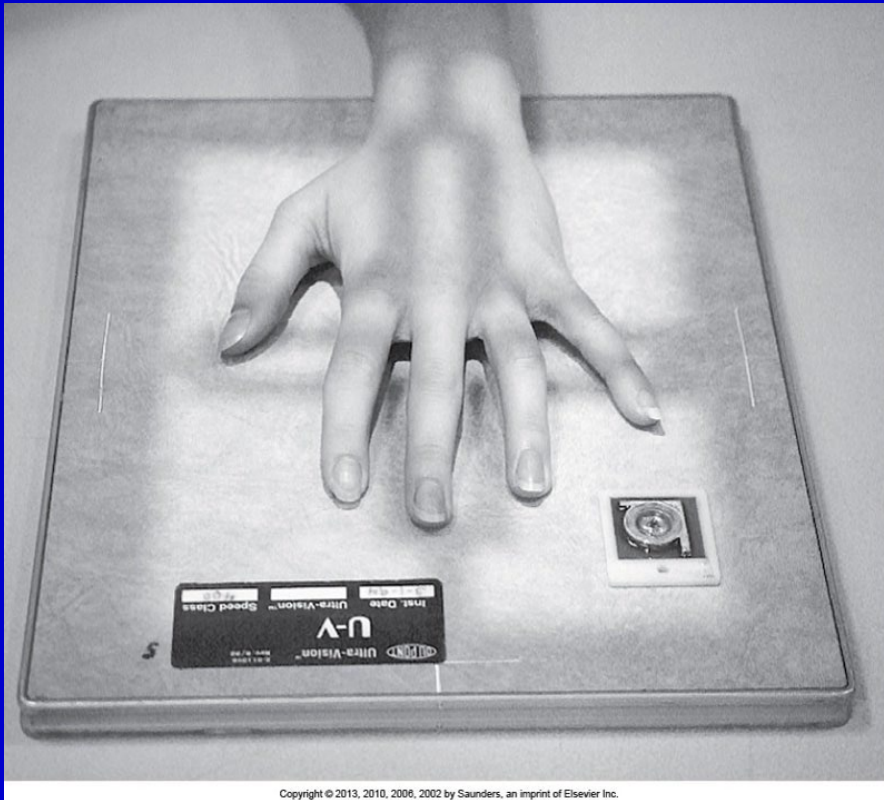
Examination of the Elbow, Forearm, Wrist, and Hand

- Place IR on table top
- Seat patient at end of table
- Remove jewelry or other items that may be within the radiation field
- Place appropriate image markers
- Shield gonads



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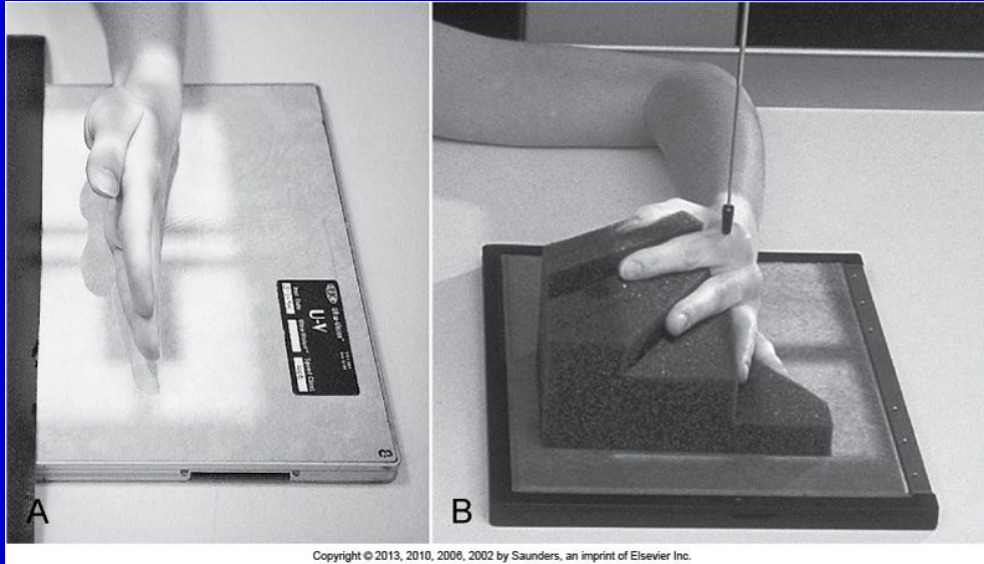
PA Projection of the Hand



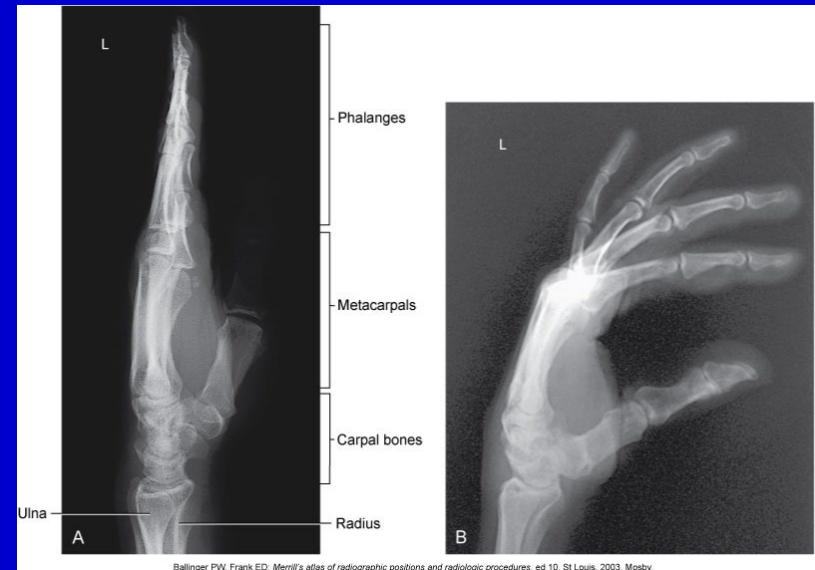
PA Oblique Projection of the Hand



Lateromedial Projection of the Hand



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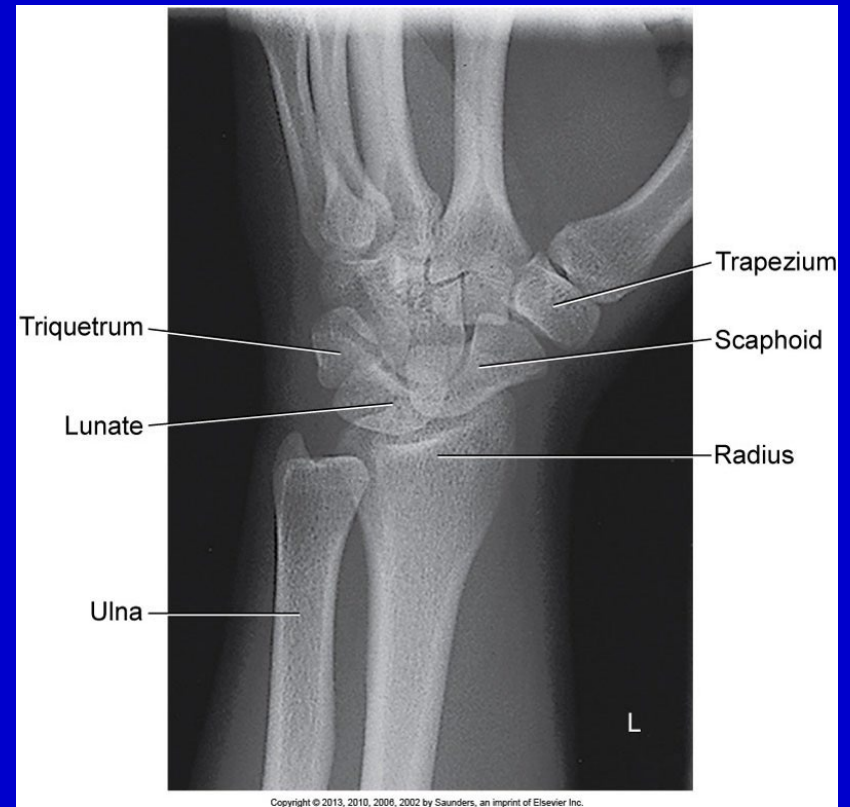


Ballinger PW, Frank ED: Merrill's atlas of radiographic positions and radiologic procedures, ed 10, St Louis, 2003, Mosby

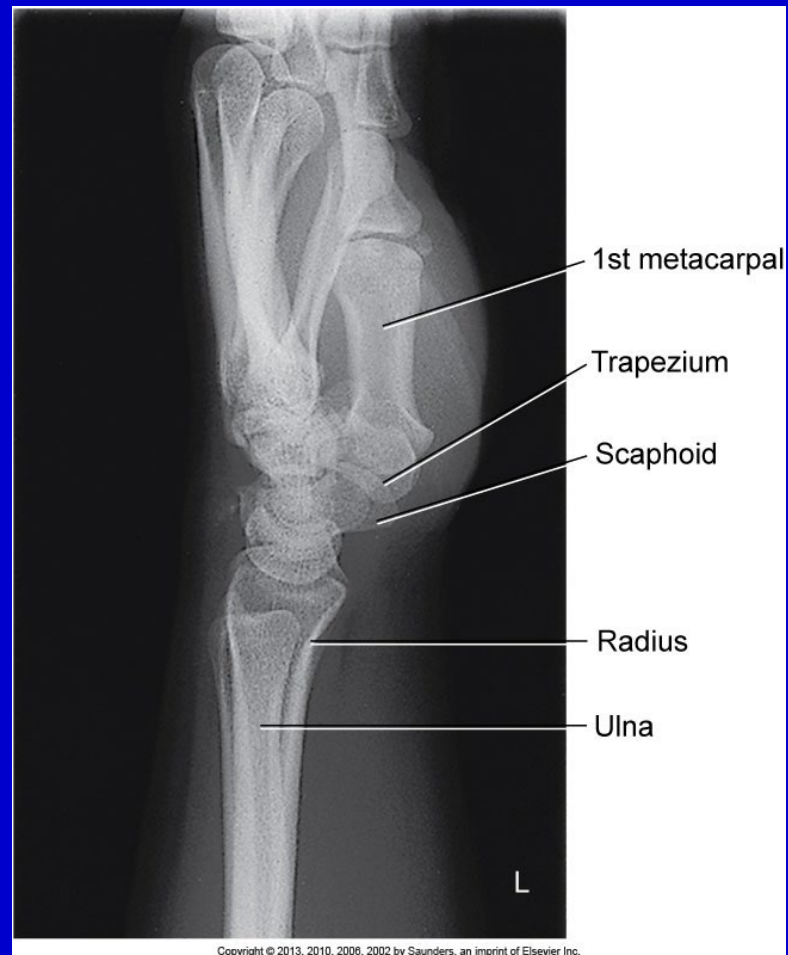
PA Projection of the Wrist



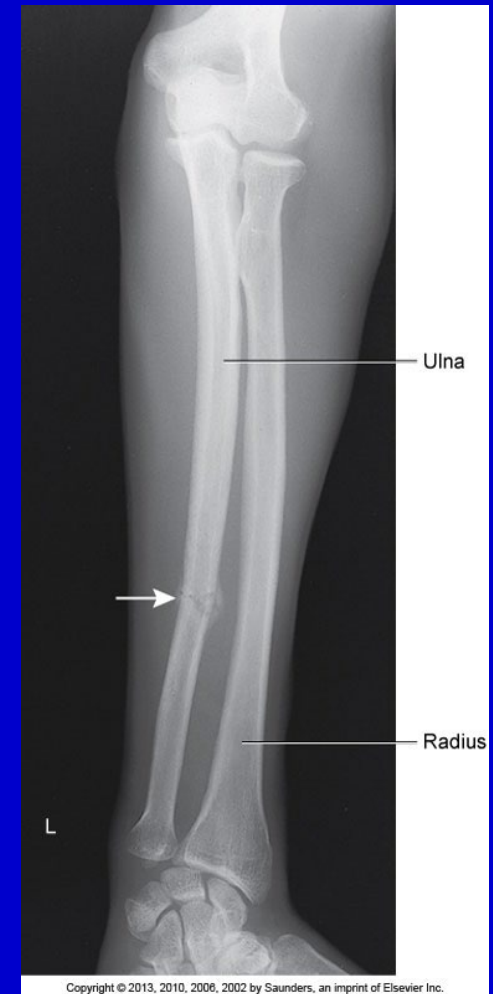
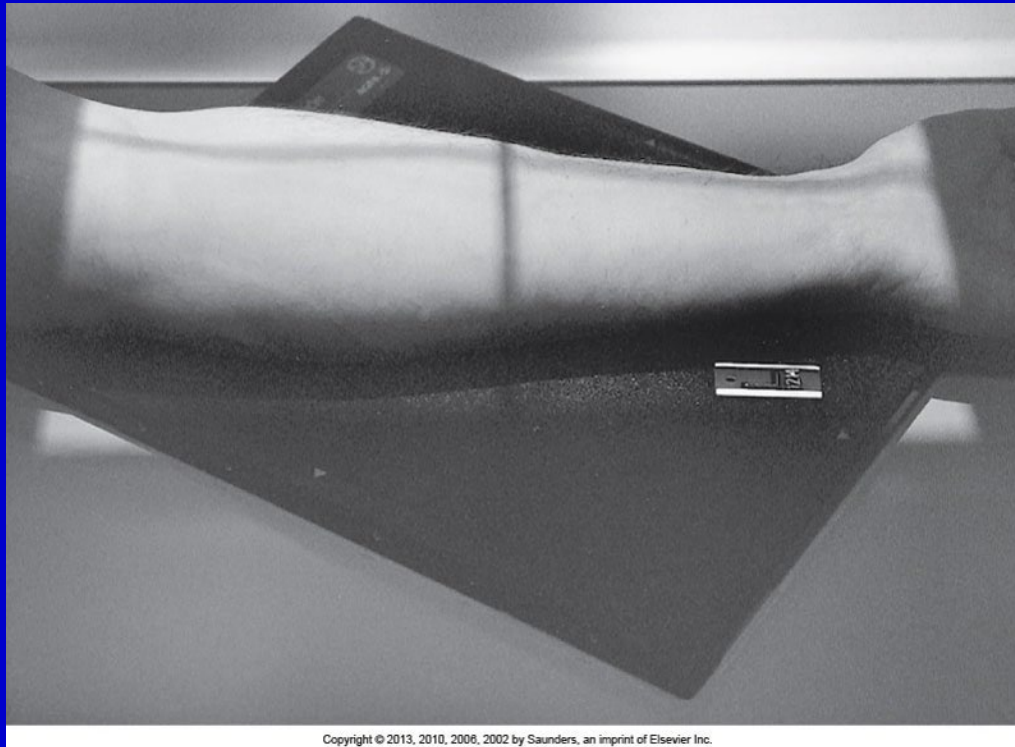
PA Oblique Projection of the Wrist



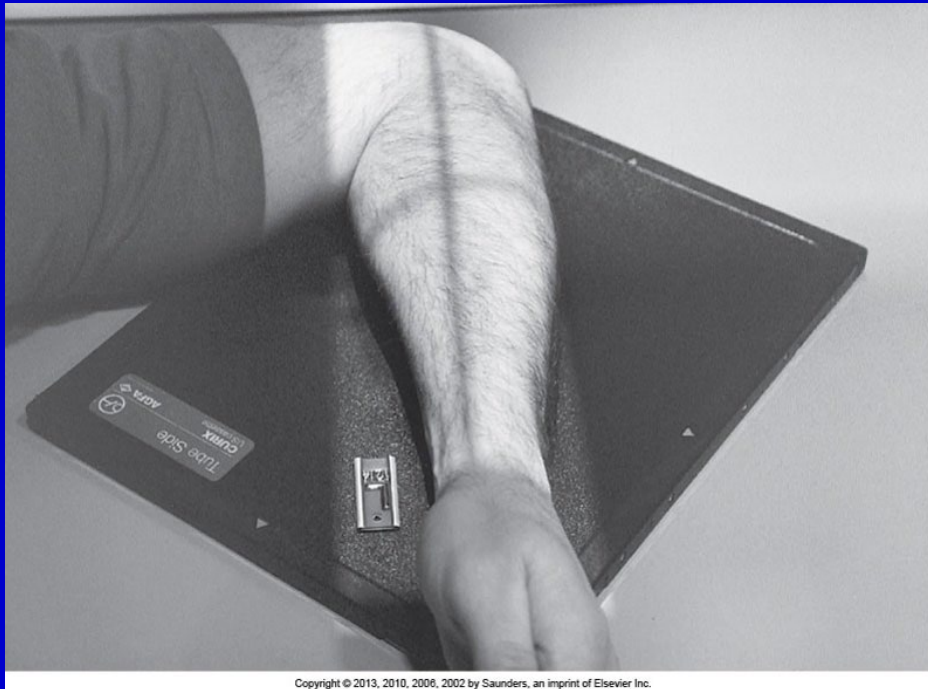
Lateromedial Projection of the Wrist



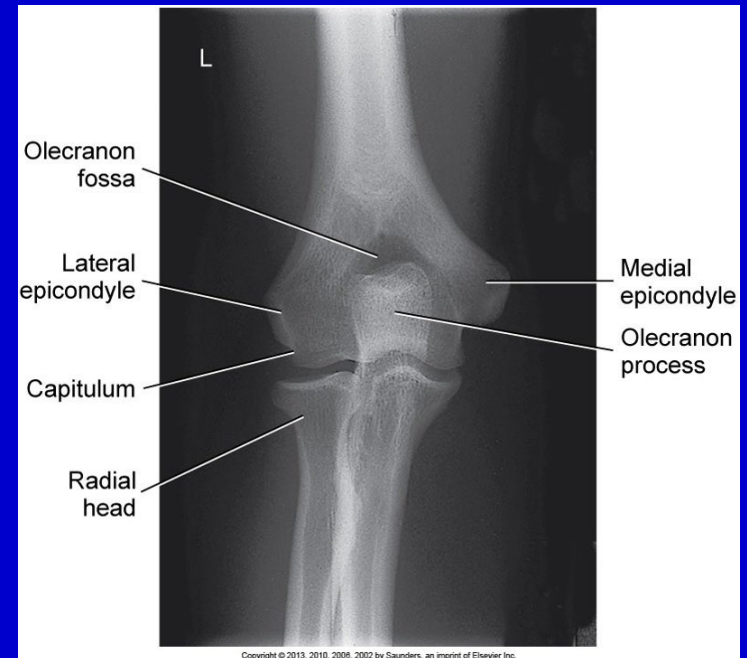
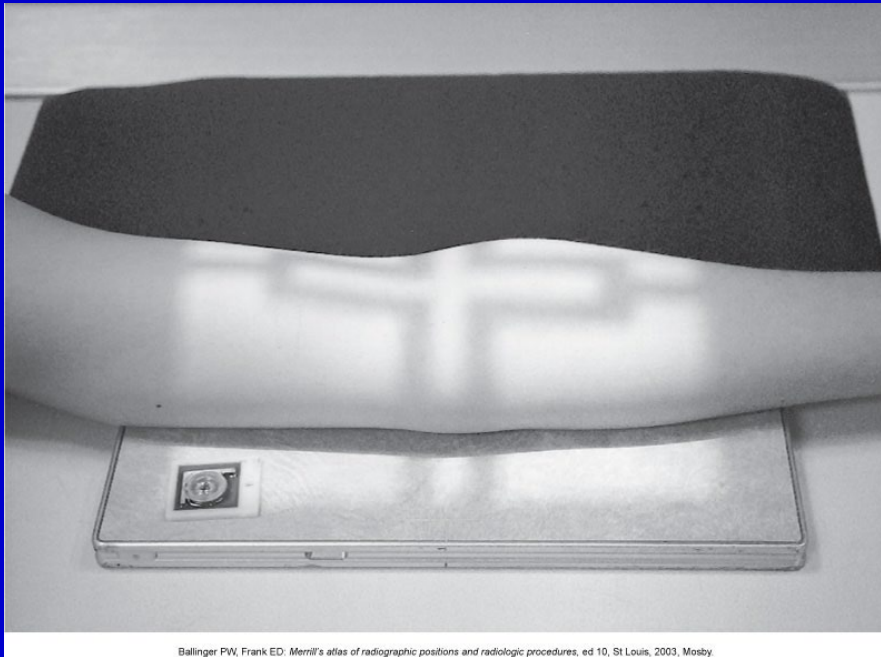
AP Projection of the Forearm



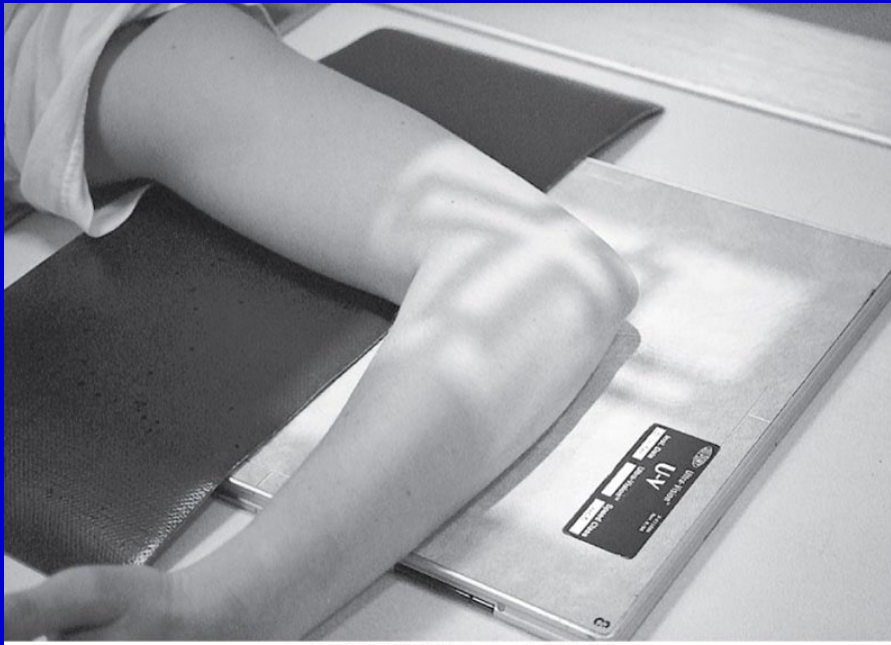
Lateral Projection of the Forearm



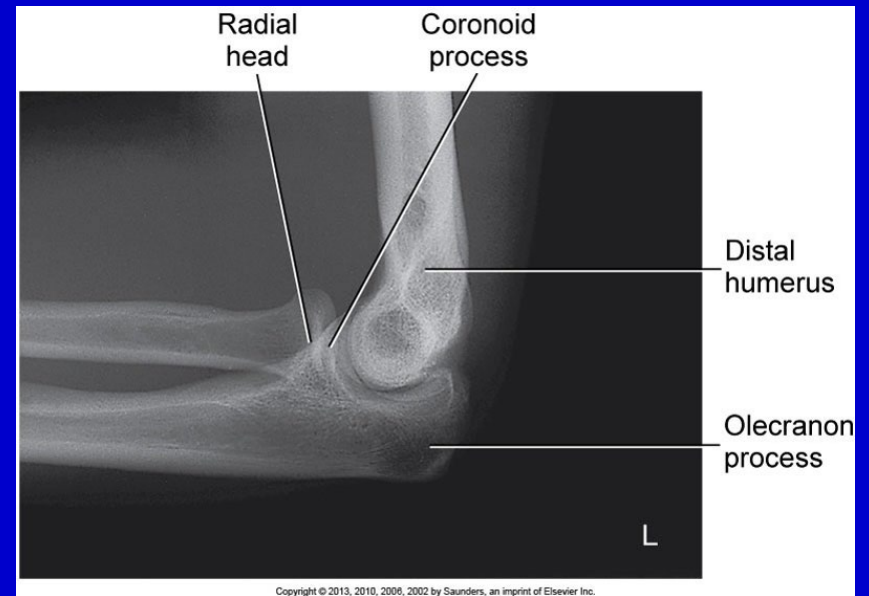
AP Projection of the Elbow



Lateromedial Projection of the Elbow

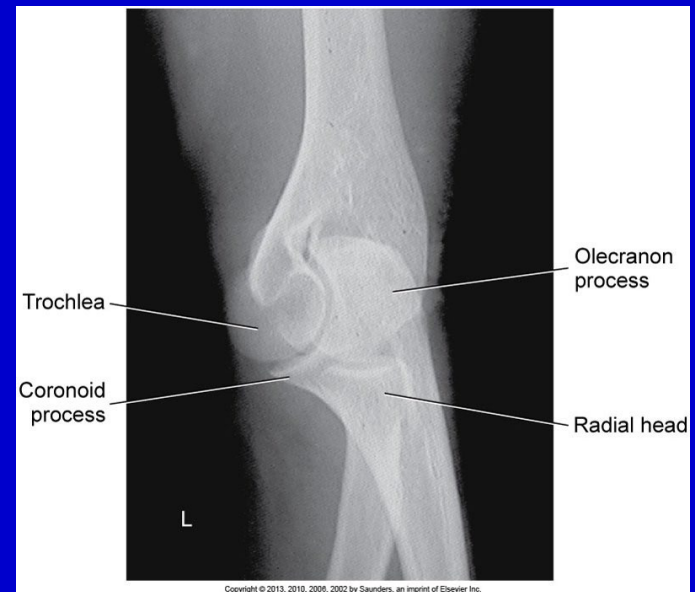
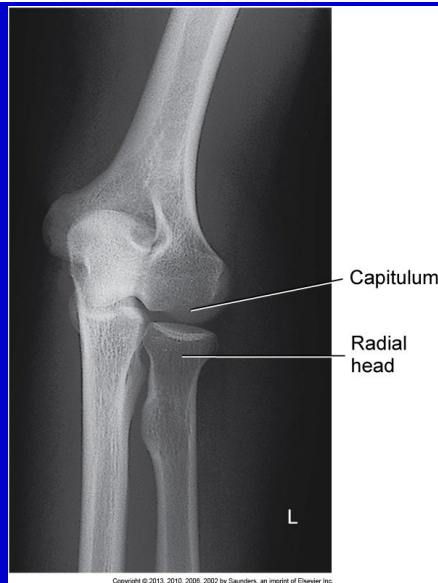
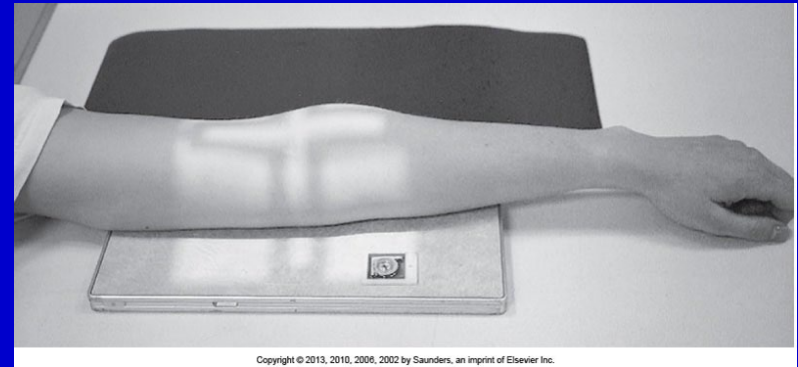
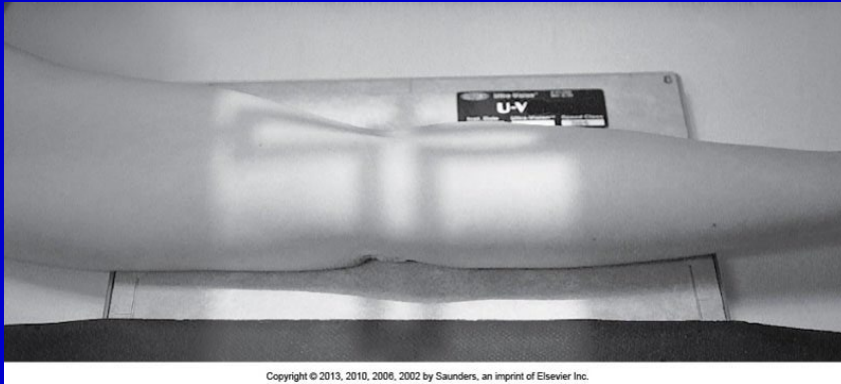


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Oblique Projections of the Elbow with Lateral and Medial Rotation

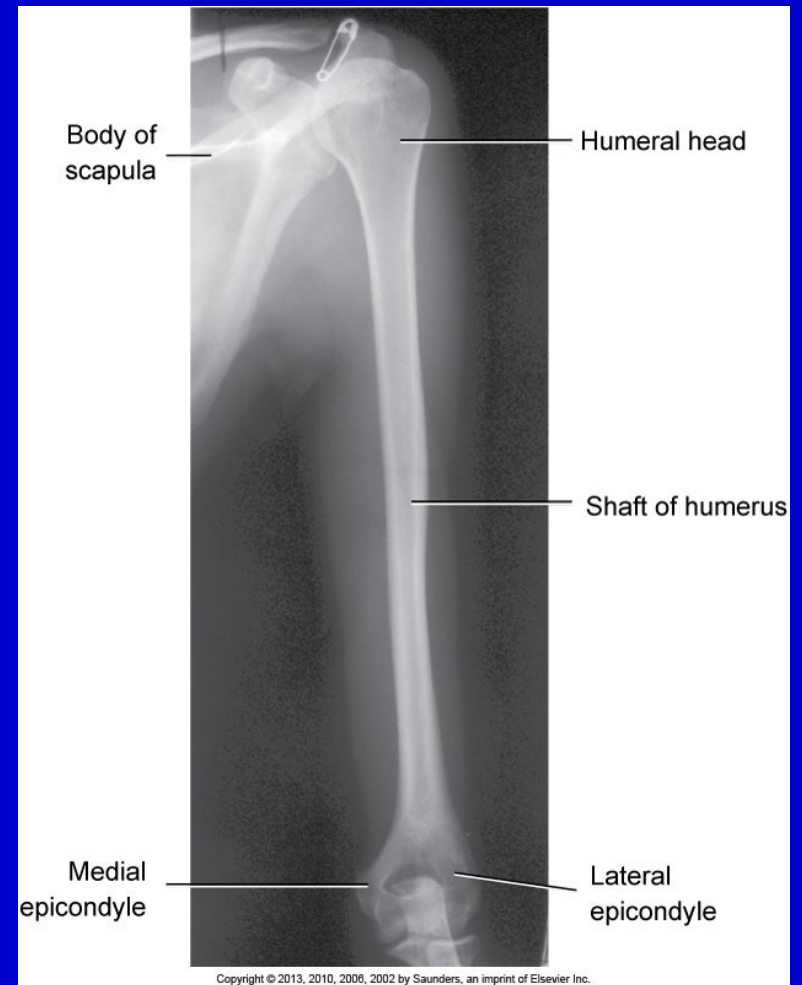


Examination of the Humerus, Shoulder Joint, and Clavicle

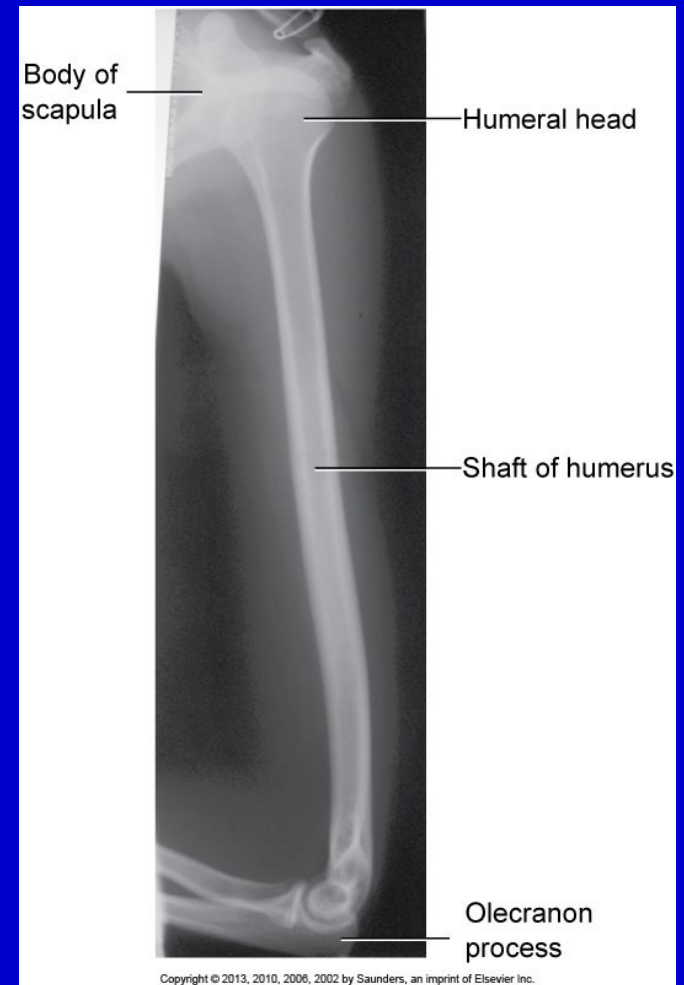
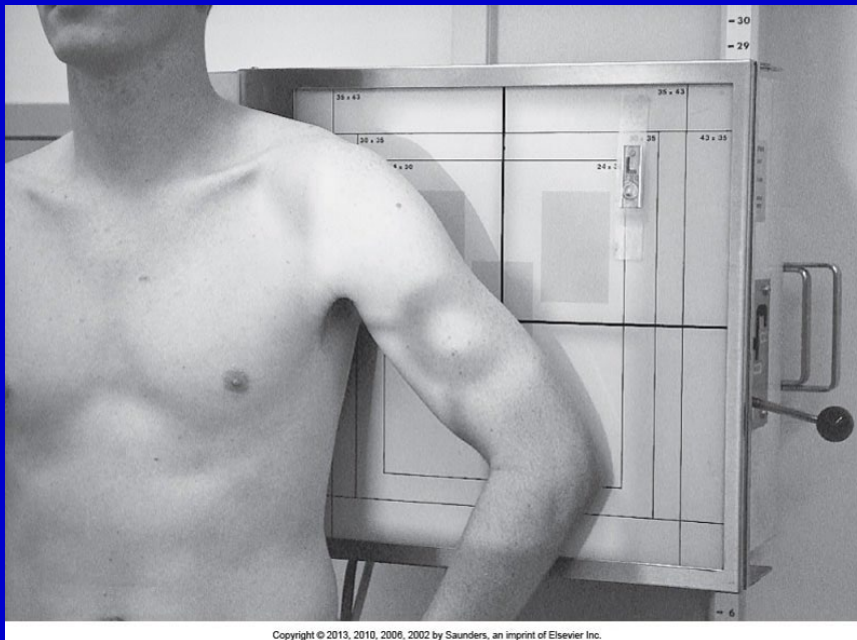
- Place IR in the Bucky tray
- Place patient erect in front of the upright cassette holder or recumbent on the table
- Remove jewelry or other items that may be within the radiation field
- Place appropriate image markers
- Shield gonads



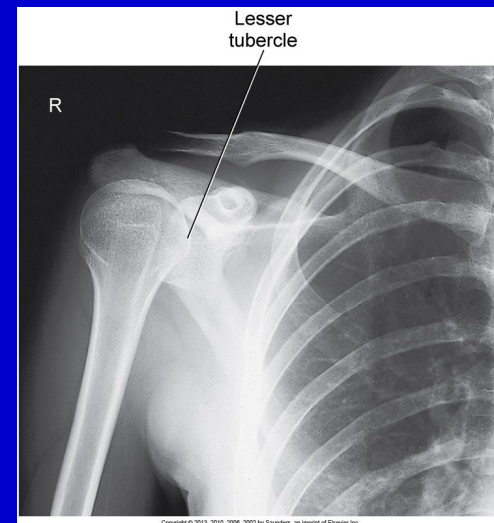
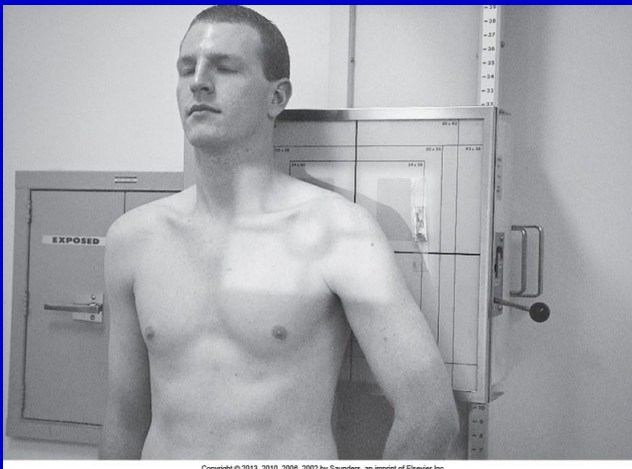
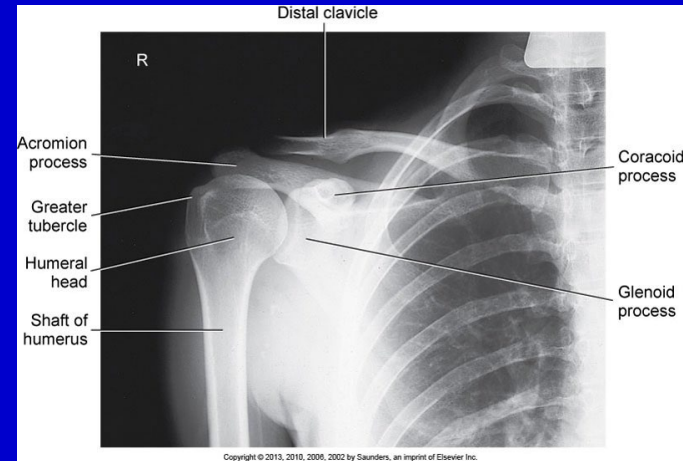
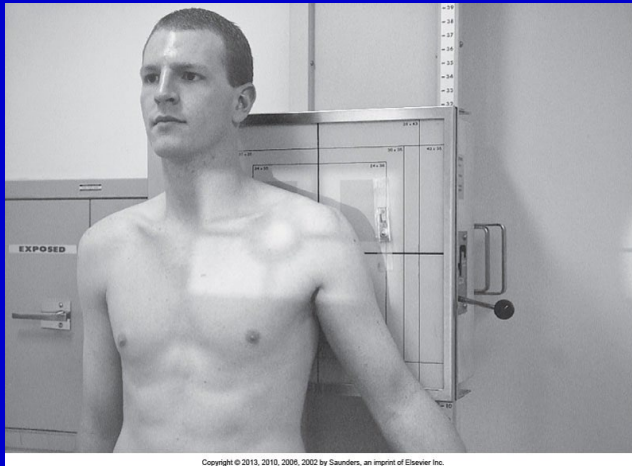
AP Projection of the Humerus



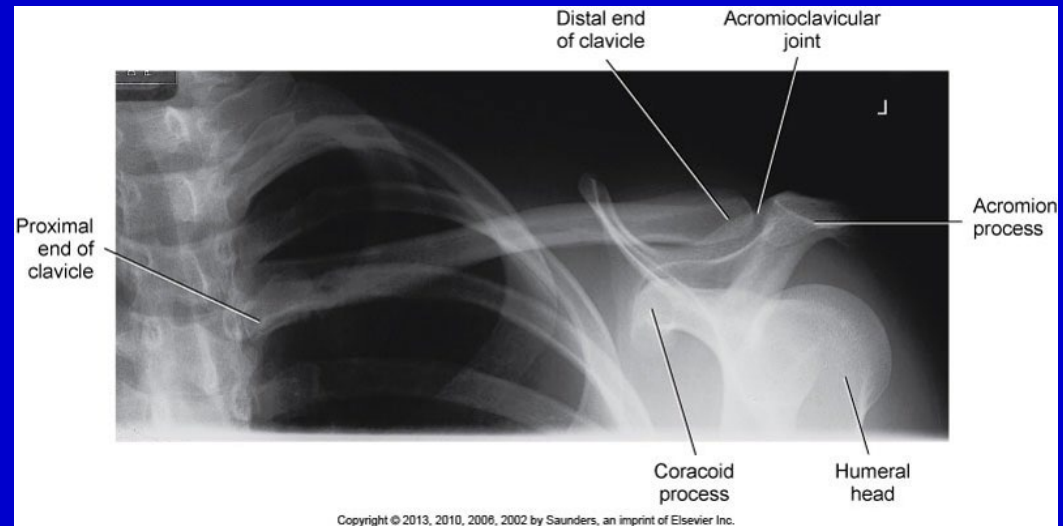
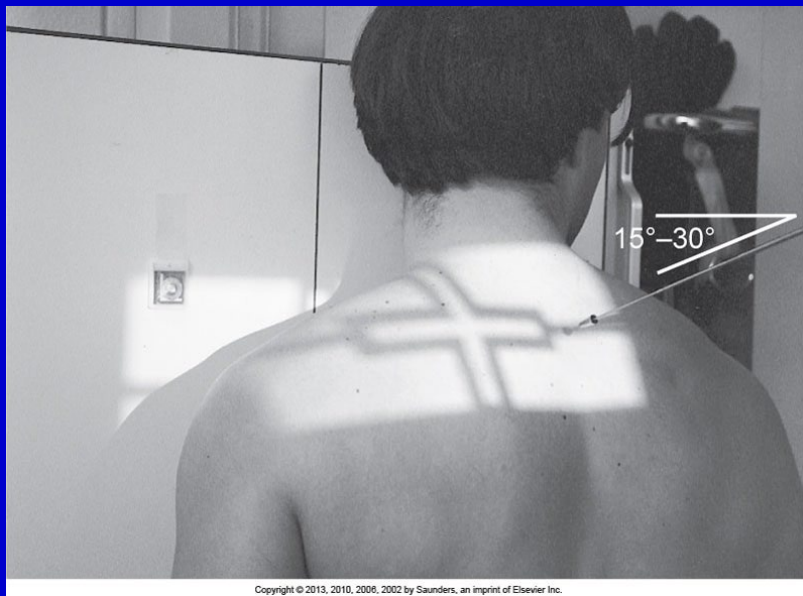
Lateral Projection of the Humerus



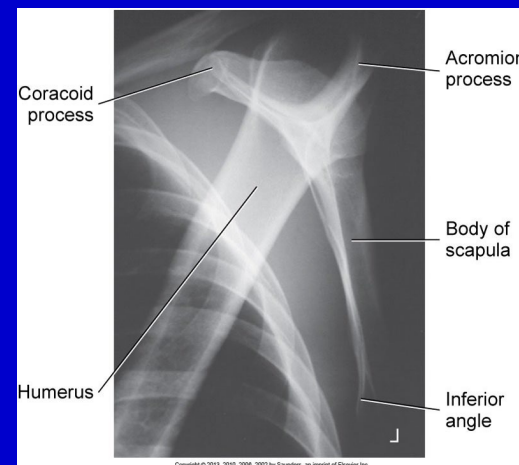
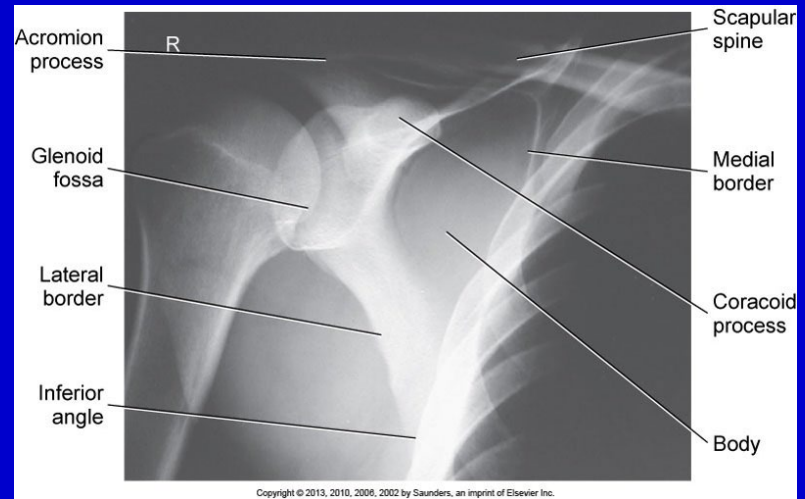
AP Projections of the Shoulder in External and Internal Rotation



PA Axial Projection of the Clavicle



AP and Lateral Projections of the Scapula



Pathology

- Fractures

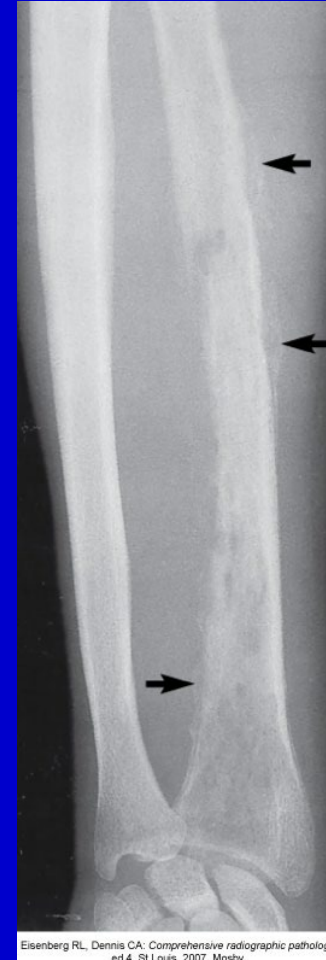
- Boxer's



- Colles
 - Scaphoid
 - Monteggia
 - Radial head
 - Humeral surgical neck
 - Clavicle

Pathology (Cont'd)

- Dislocations
- Bursitis
- Osteoarthritis
- Osteomyelitis
- Cysts



Summary

- Bones of the upper limb and shoulder girdle include clavicle, scapula, humerus, radius, ulna, carpals, metacarpals, and phalanges
- Bony landmarks such as the acromion process and medial and lateral epicondyles are used to position the shoulder girdle and upper limb

Summary (Cont'd)

- Basic projections include:
 - Hand
 - PA, PA oblique, lateral
 - Wrist
 - PA, PA oblique, lateral
 - Forearm
 - AP and lateral
 - Elbow
 - AP, medial and lateral rotation obliques, lateral

Summary (Cont'd)

- Basic projections include:
 - Humerus
 - AP and lateral
 - Shoulder
 - AP external and internal rotation
 - Clavicle
 - PA axial
 - Scapula
 - AP and lateral

Summary (Cont'd)

- Fracture is one of the most common injuries of the shoulder girdle and upper limb
- Other pathologic conditions include dislocations, bursitis, osteoarthritis, osteomyelitis, and cysts