



Sick Call Screener Course

Musculoskeletal System –

Upper Extremities

(2.7)

R³

Relevant, Responsive, Requested

2.7-2-1



Enabling Objectives

- 1.46 Utilize the knowledge of musculoskeletal system anatomy while assessing a patient with a musculoskeletal complaint
- 1.47 Utilize the knowledge of musculoskeletal system physiology while assessing a patient with a musculoskeletal complaint
- 1.48 Obtain history from patient with common orthopedic disorders



Enabling Objectives (Cont.)

- 1.49 Perform an orthopedic examination
- 1.50 State signs and symptoms of common orthopedic disorders
- 1.51 State treatments for common orthopedic disorders
- 1.16 State Red Flag criteria



Introduction

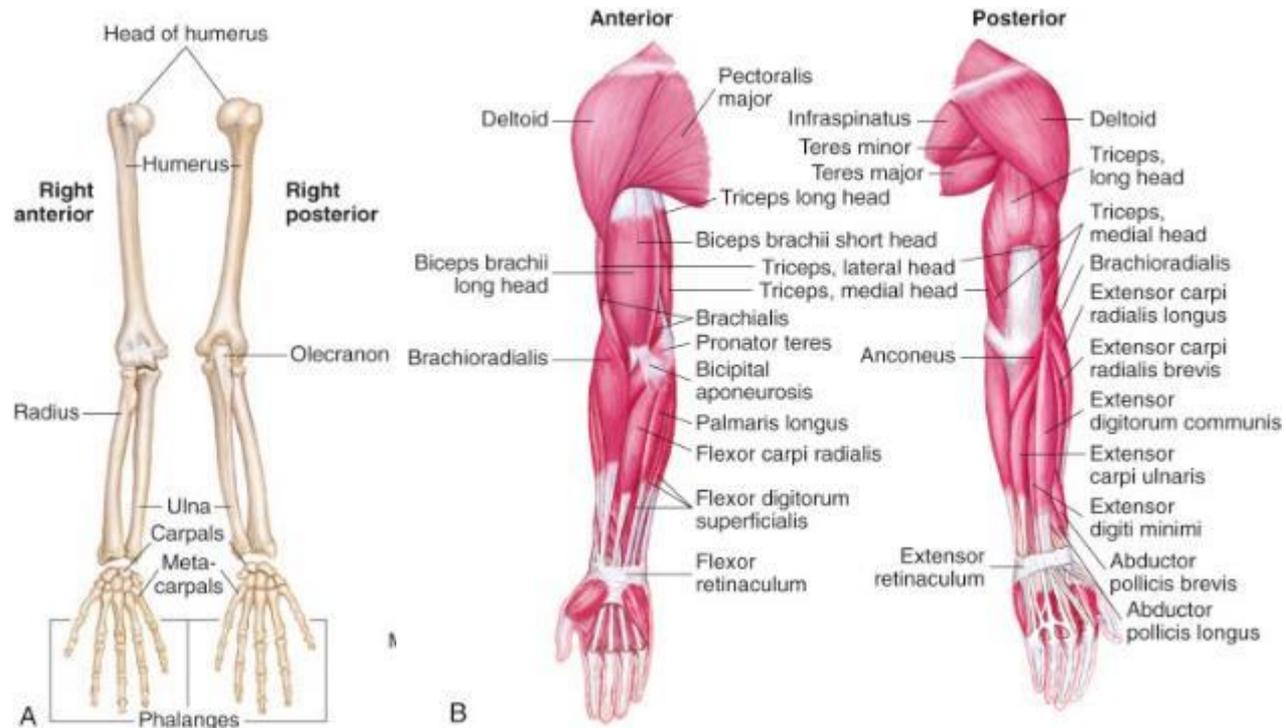
- The upper extremities are vital to a person's ability to function
- Understanding the supporting bones, muscles and vascular supply is critical in knowing how to access and treat an injury



Anatomy and Physiology

- The upper extremities consist of:

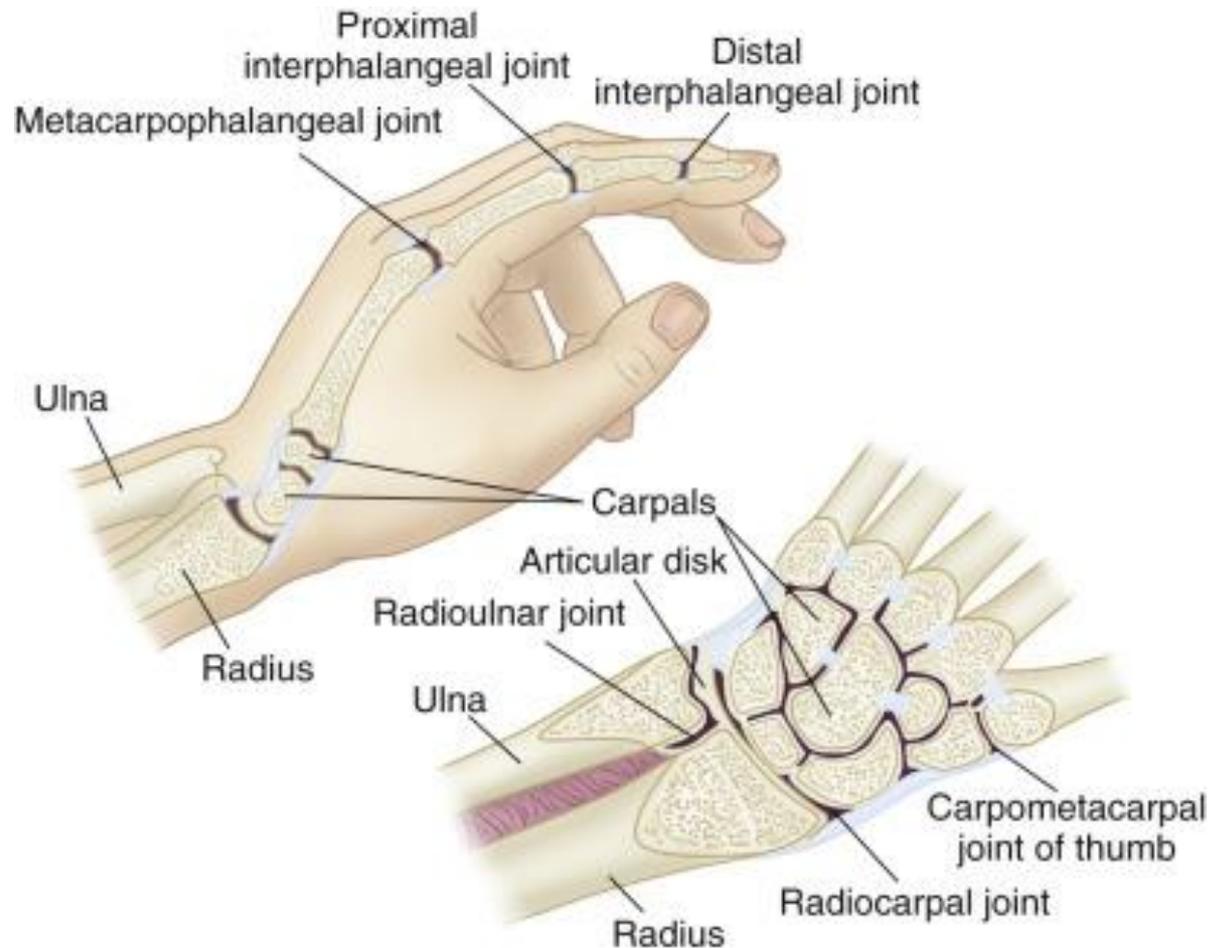
- Wrist
- Hand
- Elbow
- Shoulder





The Wrist

- Ulna
- Radius
- 8 - Carpal bones

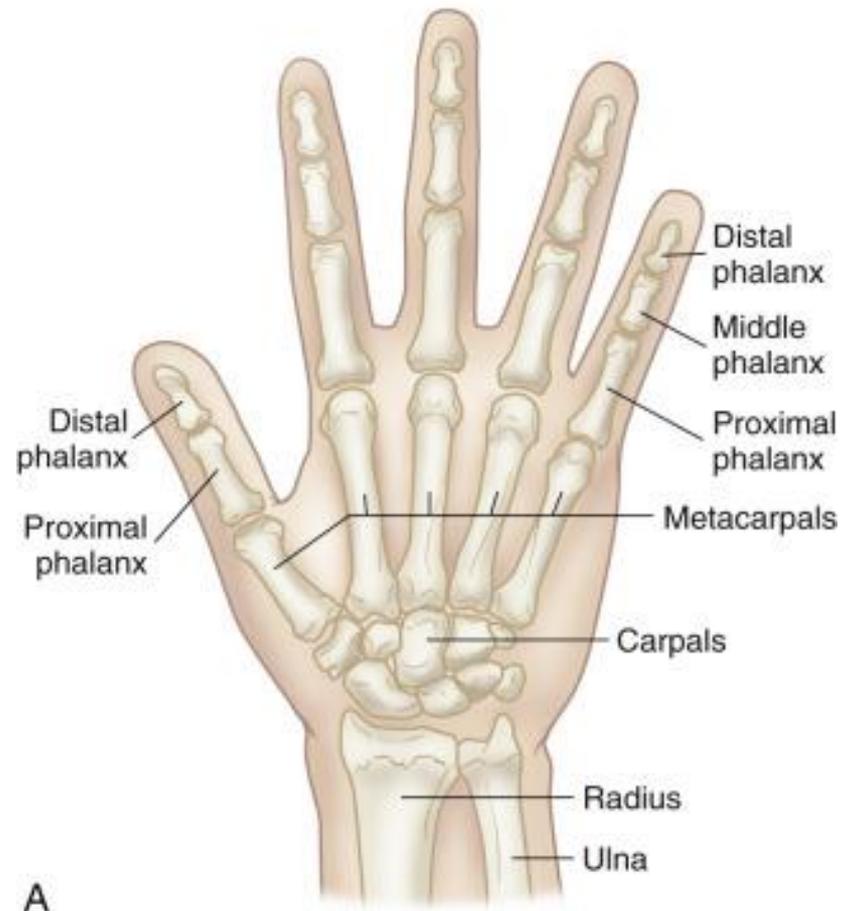


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



The Hand

- Metacarpals
- Proximal Phalanx
- Middle Phalanx
- Distal Phalanx

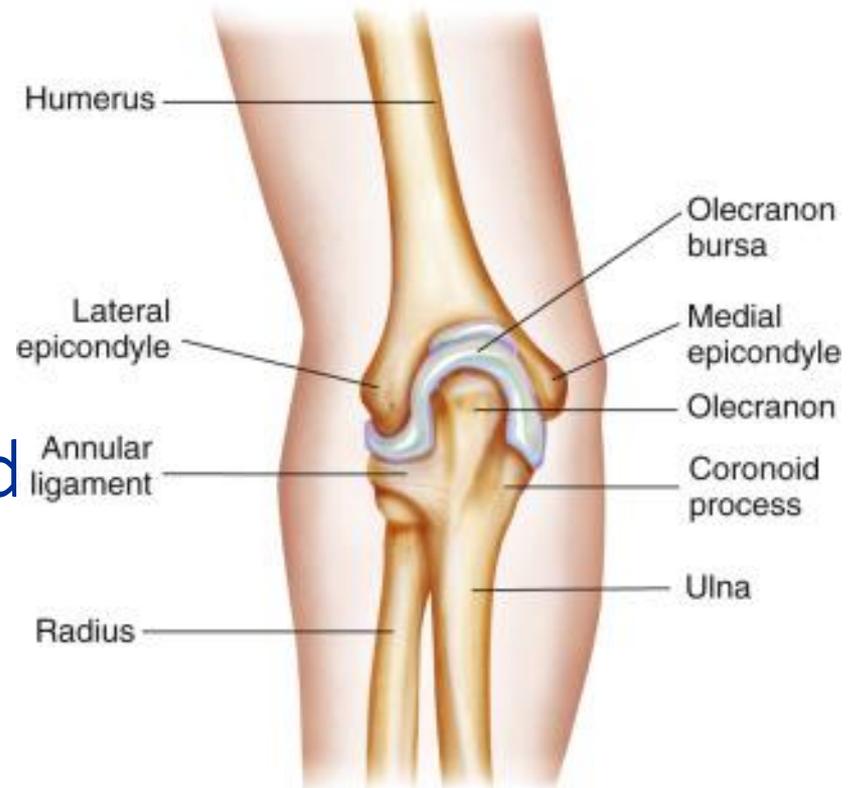


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



The Elbow

- Humerus
- Radius
- Ulna
- Olecranon
- Lateral/Medial epicond
- Olecranon bursa
- Coronoid process
- Annular ligament

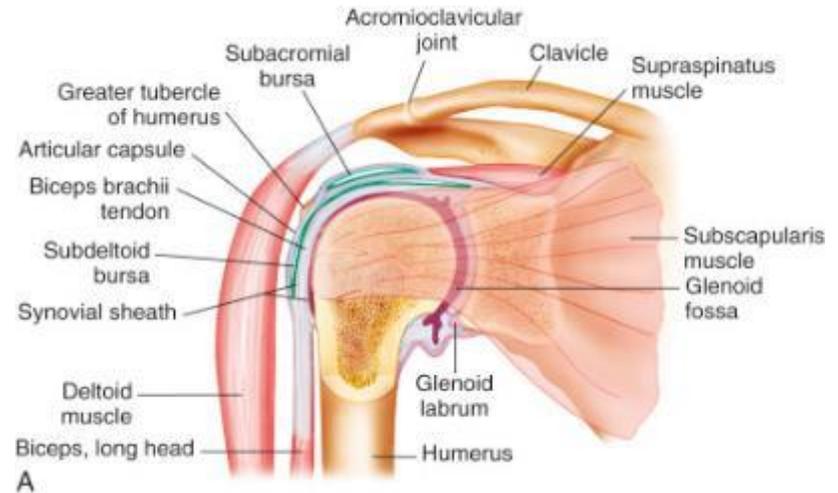


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



The Shoulder

- Humerus
- Scapula
- Clavicle
- Supraspinatus
- Infraspinatus
- Teres Major/Minor
- Subscapularis



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Obtain Patient History

(S) Subjective: What the patient tells you:

- Chief Complain (CC)
- History of present illness (HPI)
 - OLDCARTS
 - Past Medical History
 - Family History



Examination

- All exams require the following assessments:
 - Inspect
 - Palpate
 - Range Of Motion (ROM)



Examination (Cont.)

- Neurovascular exam
 - Motor Strength
 - Sensation
 - Reflexes
 - Vascular status
- Special Test



Wrist & Hand Examination

- Inspect
 - Symmetry
 - Abnormalities (swelling, discoloration, skin breaks)
 - Evidence of trauma
 - Calluses and deviations along the joints



Palpation

- Feel for normal anatomy
- Feel the different carpal bones
- Palpate the anatomical "snuff box", is there tenderness?



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)

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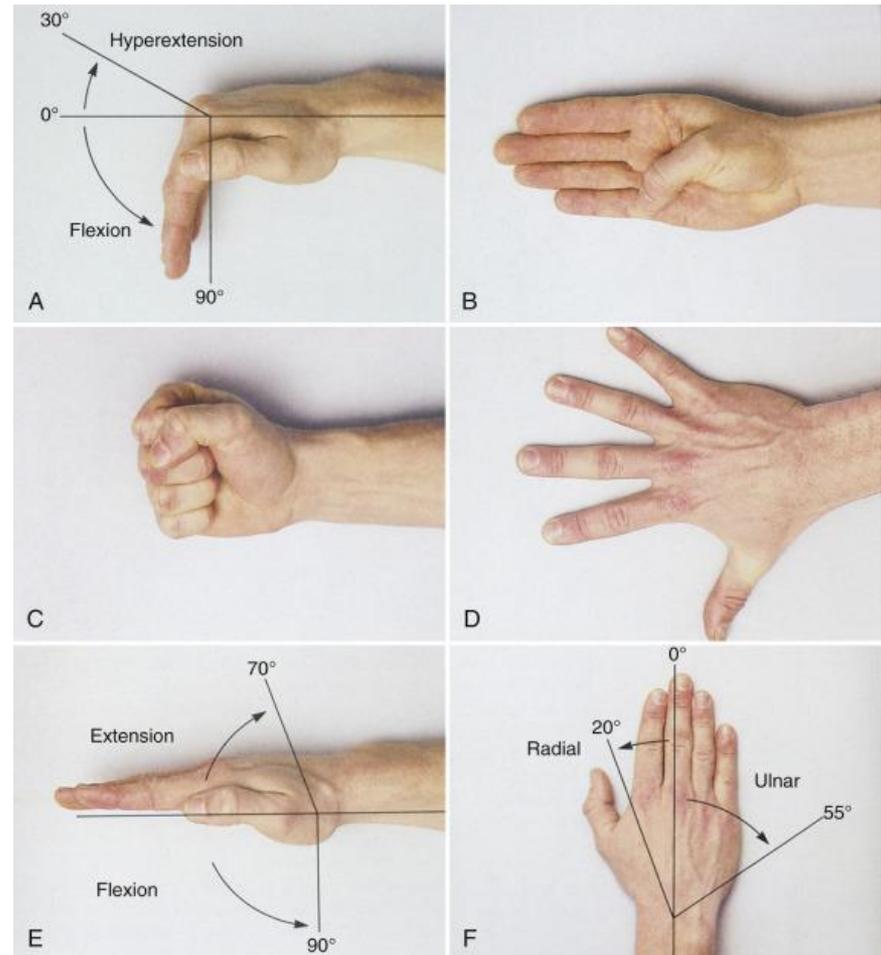
Relevant, Responsive, Requested

2.7-2-14



Range of Motion

- Smooth motions
- Test
 - Flexion
 - Extension
 - Ulnar deviation
 - Radial deviation
 - Adduction/abduction (thumb)



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Motor Strength

- Motor strength – 5/5?
- Test ROM with resistance
 - Sensation
 - Reflexes
 - Neurovascular

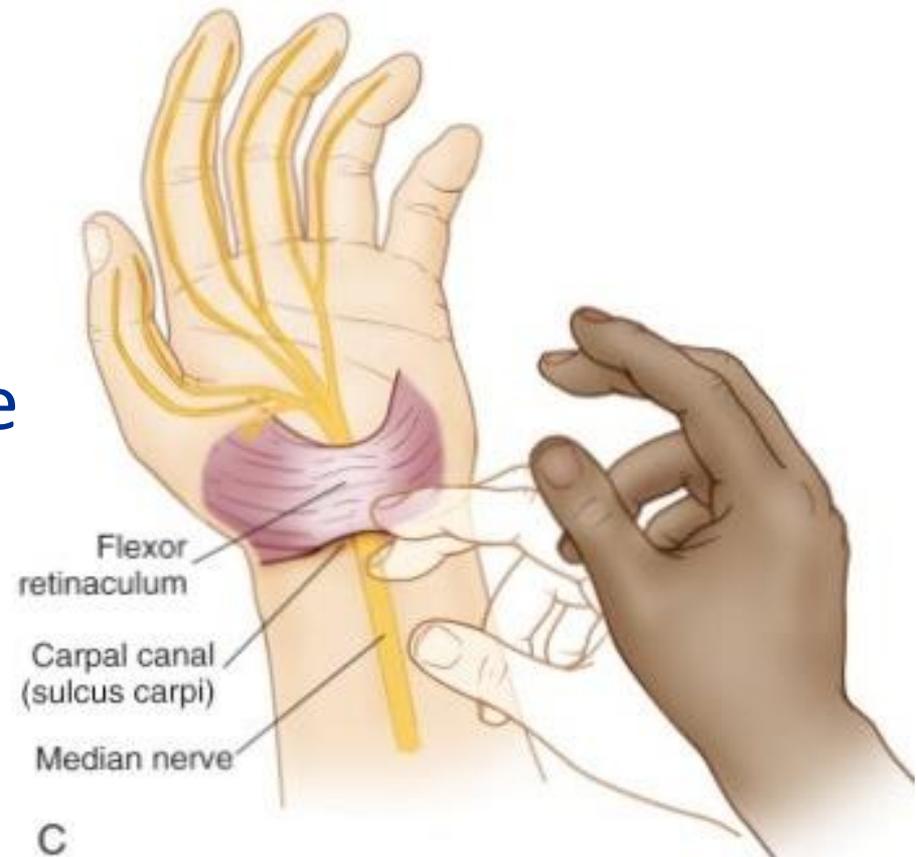


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Tinel's Test

- Tap over anterior wrist (volar carpal ligament)
- Reproduce pain in the distribution of the median nerve.

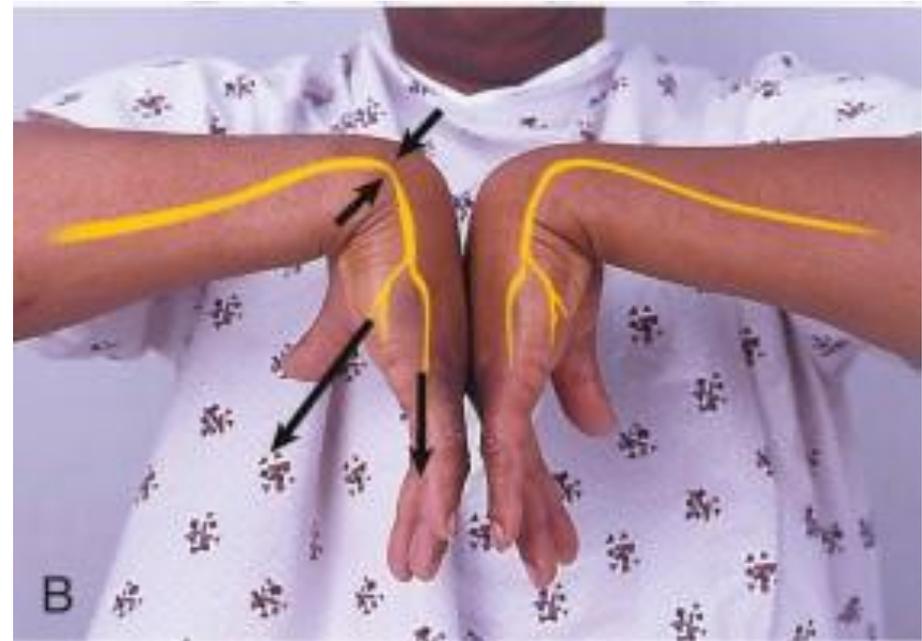


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Phalen's Test

- Flexing the wrist to their maximum degree
- Holding for at least one minute
- Positive test if numbness or tingling along median nerve

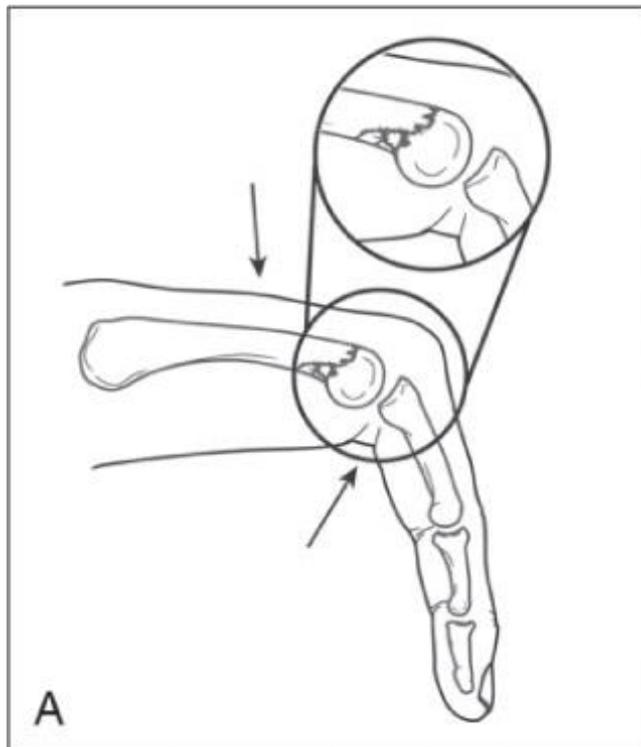


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Boxer's Fracture

- Fracture to the fifth metacarpal caused by striking a hard object



(From Armstrong, A.D. and others. [2016]. Essentials of musculoskeletal care [5th ed.]. Rosemont, IL: American Academy of Orthopedic Surgeons.)



Boxer's Fracture (Cont.)

- Signs and Symptoms
 - Pain, 5th metatarsal
 - Deformity
 - Swelling, tenderness, ecchymosis
 - Abrasions, lacerations (bite marks)
- Plan:
 - Ice
 - NSAIDs
 - Light duty
 - X-ray
 - Ortho referral, casting



Scaphoid Fracture

- Hyperextension of the wrist
- Occurs when patient falls on outstretched hand.



(Stat!Ref: Essentials of Musculoskeletal Care [5th ed.]. Rosemont, IL: American Academy of Orthopedic Surgeons.)



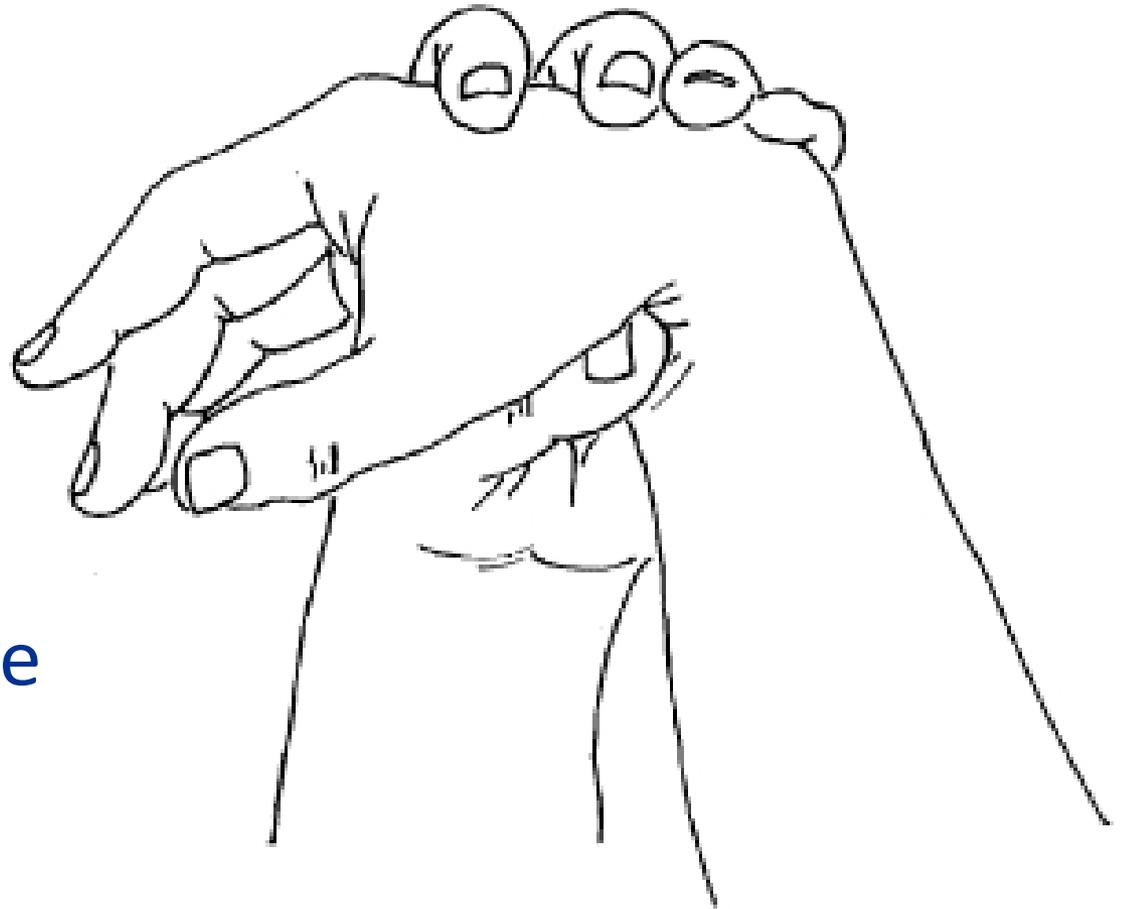
Scaphoid Fracture (Cont.)

- Signs and Symptoms
 - Localized pain
 - Significant pain in “stuffbox”
 - Swelling, tenderness, ecchymosis
- Plan:
 - Ice
 - NSAIDs
 - Light duty
 - X-ray
 - Ortho referral, casting
 - Follow up



Carpal Tunnel Syndrome

- Compression neuropathy on the median nerve
- Decreased sensation and grip to first three fingers



STAT!Ref: The 5-Minute Orthopedic Consult, <https://online.statref.com/>



Carpal Tunnel Syndrome (Cont.)

- Signs and Symptoms
 - Localized pain
 - Significant pain in “stuffbox”
 - Swelling, tenderness, ecchymosis
- Plan:
 - Ice
 - NSAIDs
 - Light duty
 - Refer to Medical Officer
 - Ortho referral, brace



Dorsal Ganglion

- Abnormal accumulation of synovial and tendosynovial fluid creating a cyst between the tendon sheaths



Hochberg MC et al: [2011]. Rheumatology [5th ed.]. St. Louis: Mosby.)



Dorsal Ganglion (Cont.)

- Signs and Symptoms
 - Painless lump
 - Tenderness to nerve
 - Wrist motion painless
- Plan:
 - Observation
 - Simple aspiration
 - Light duty
 - Ortho referral



Finger and Thumb Sprain

- Results from direct trauma causing hyperextension or hyperflexion of one of the joints.



Finger Sprain, Elsevier Interactive Patient Education, www.clinicalkey.com)



Finger and Thumb Sprain (Cont.)

- Signs and Symptoms
 - Pain
 - Swelling
 - Ecchymosis
 - Limited ROM
- Plan:
 - Ice
 - NSAIDs
 - Light duty
 - X-ray
 - Buddy splint



Elbow Examination

- Inspect
 - Symmetry
 - Abnormalities (swelling, discoloration, skin breaks)
 - Evidence of trauma
 - Deviations along the joints



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Palpation

- Feel for normal anatomy
- Feel the different bony prominences

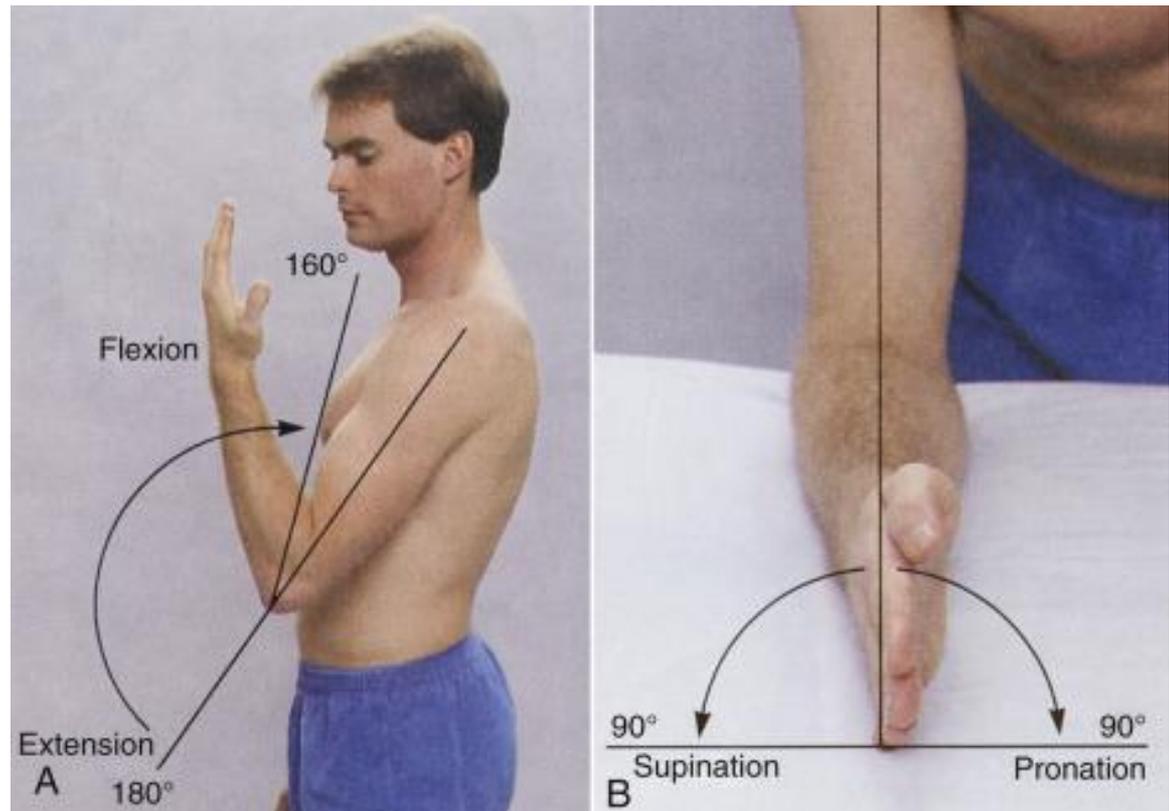


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Range of Motion

- Smooth motions
- Test
 - Flexion
 - Extension
 - Supination
 - Pronation



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Motor Strength

- Motor strength – 5/5?
- Test ROM with resistance
 - Sensation
 - Reflexes
 - Neurovascular



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Tennis Elbow Test

- Stabilize the elbow
- Make a fist and extend his wrist
- Force the wrist into flexion against resistance
- Positive if tenderness is noted over the lateral epicondyle

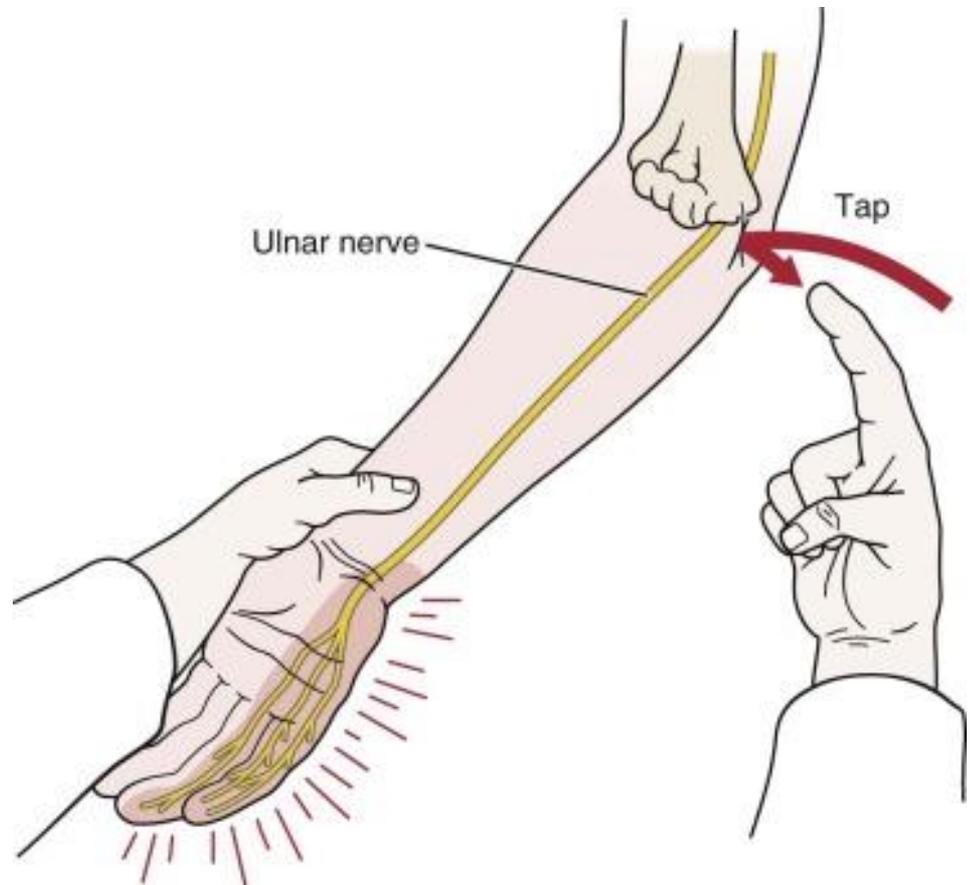


(Stat!Ref: Essentials of Musculoskeletal Care [5th ed.]. Rosemont, IL: American Academy of Orthopedic Surgeons.)



Tinel Sign Test

- Tap the groove between the olecranon and medial epicondyle
- Positive if a tingling radiates down the forearm into the hand



(Magee, David J. [2014]. Orthopedic physical assessment [6th ed.]. St. Louis, MI: Saunders.)



Olecranon Bursitis

- An inflammation of the bursal sac
- Secondary development of trauma, inflammation, or infection



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



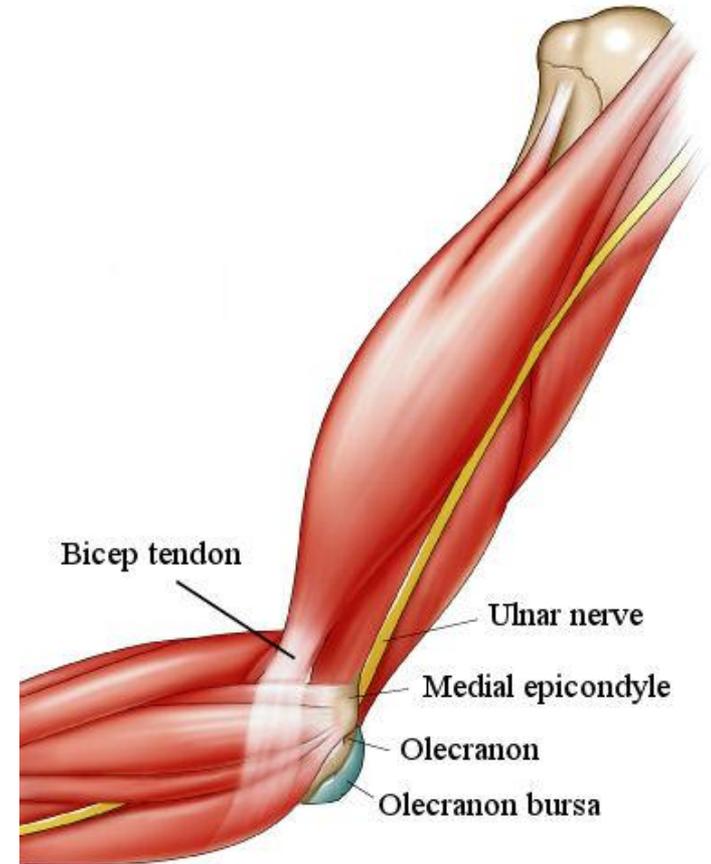
Olecranon Bursitis (Cont.)

- Signs and Symptoms
 - Painless
 - Swelling, stiffness
 - Elbow lump
 - Warm to touch
- Plan:
 - Compression
 - NSAIDs
 - Referral to MO if red and warm



Lateral Epicondylitis

- An injury overuse or repetitious extension of the wrist or rotation of the forearm
- Activities such as tennis, golf, or even turning a screwdriver



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(Lateral Epicondylitis, Elsevier Interactive Patient Education, www.clinicalkey.com)

R³

Relevant, Responsive, Requested

2.7-2-37



Lateral Epicondylitis (Cont.)

- Signs and Symptoms
 - Tenderness
 - Weakness
 - Pain with extension
 - Pain with grasping objects
- Plan:
 - Ice
 - NSAIDs
 - Light duty
 - Volar splint
 - Physical therapy
 - Follow-up



Medial Epicondylitis

- Inflammation of the medial epicondyle



(Stat!Ref: Essentials of Musculoskeletal Care [5th ed.]. Rosemont, IL: American Academy of Orthopedic Surgeons.)

R³

Relevant, Responsive, Requested

2.7-2-39



Medial Epicondylitis (Cont.)

- Signs and Symptoms

- Deep pain
- Swelling
- Redness
- Ulnar neuropathy

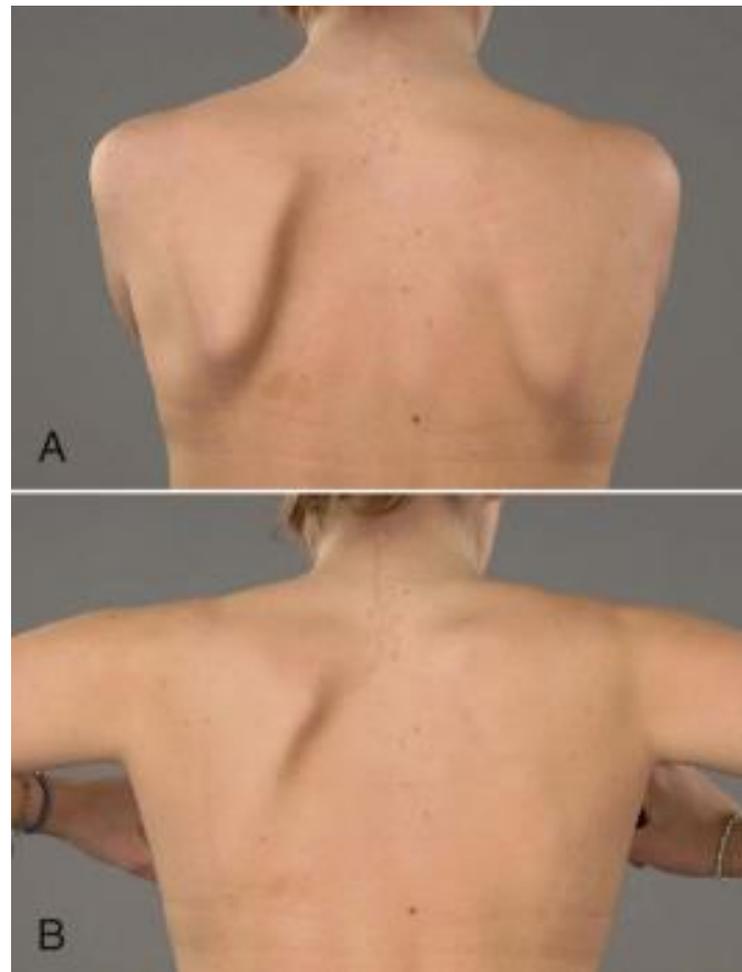
- Plan:

- Ice
- NSAIDs
- Light duty
- Volar splint
- Physical therapy
- Follow-up



Shoulder Examination

- Inspect
 - Symmetry
 - Abnormalities (swelling, discoloration, skin breaks)
 - Shoulder blades
 - clavicle bones
 - Deltoids, biceps and triceps

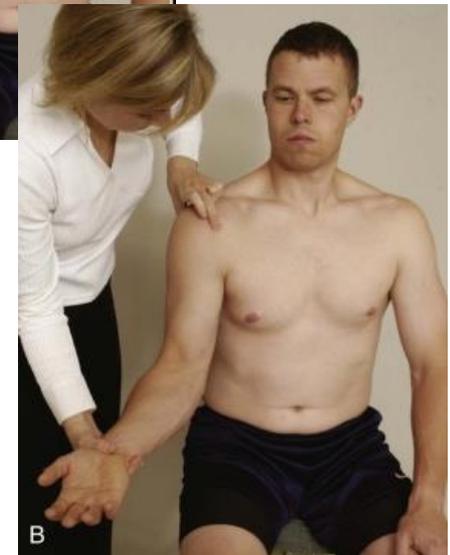


(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Palpation

- Feel for normal anatomy
- Feel the different bony prominences
- Feel different muscles associated to joint



(Magee, David J. [2014]. Orthopedic physical assessment [6th ed.]. St. Louis, MI: Saunders.)

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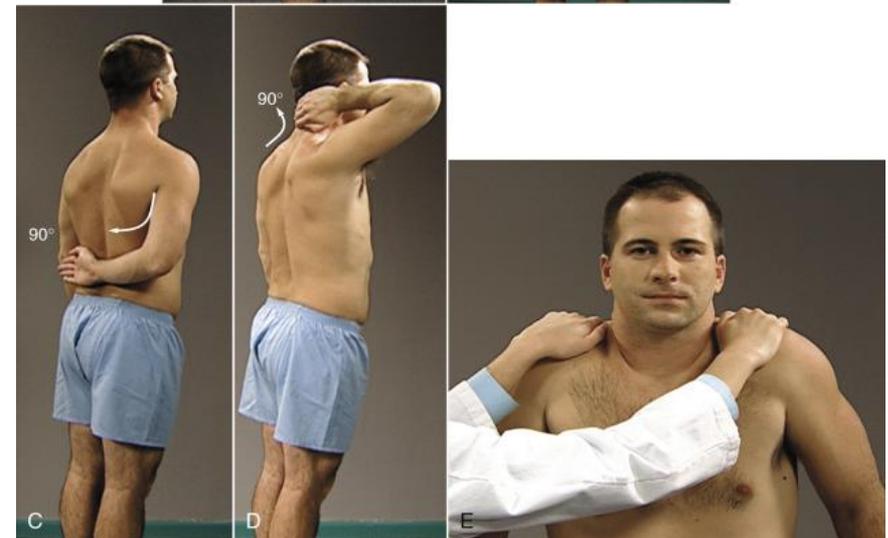
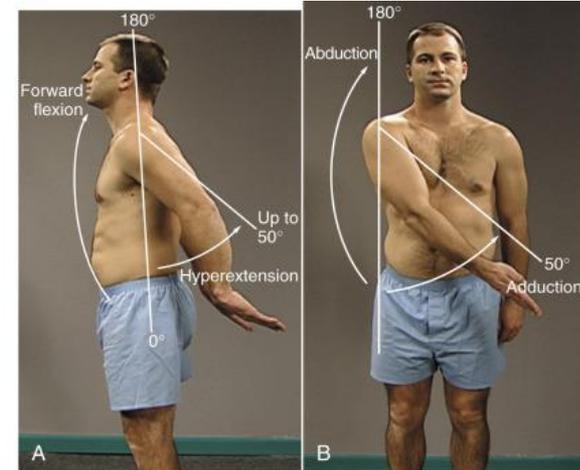
Relevant, Responsive, Requested

2.7-2-42



Range of Motion

- Smooth motions
- Test
 - Abduction/Adduction
 - Extension
 - Flexion
 - External Rotation
 - Internal Rotation



(From Seidel, H.M. and others. [2006]. Mosby's guide to physical examination [6th ed.]. St. Louis: Mosby.)



Motor Strength

- Motor strength – 5/5?
- Test ROM with resistance
 - Sensation
 - Reflexes
 - Neurovascular

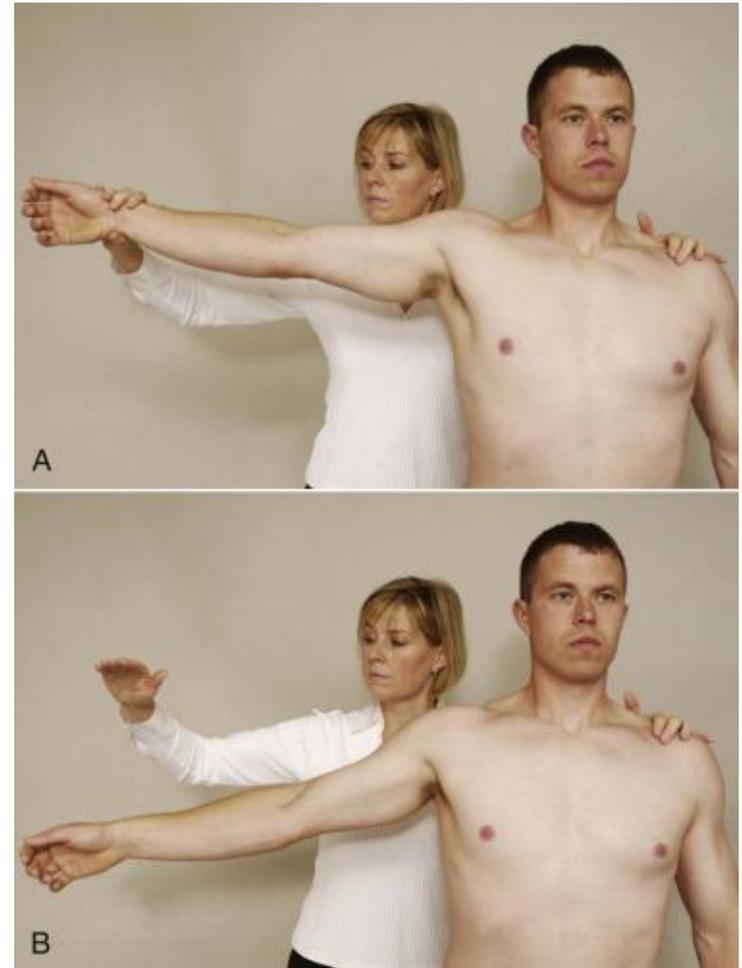


(Magee, David J. [2014]. Orthopedic physical assessment [6th ed.]. St. Louis, MI: Saunders.)



Drop Arm Test

- Abduct arms over their head
- Slowly lower his arms to his side
- Lower their arms to shoulder level and hold them there
- Gently tap on the forearms

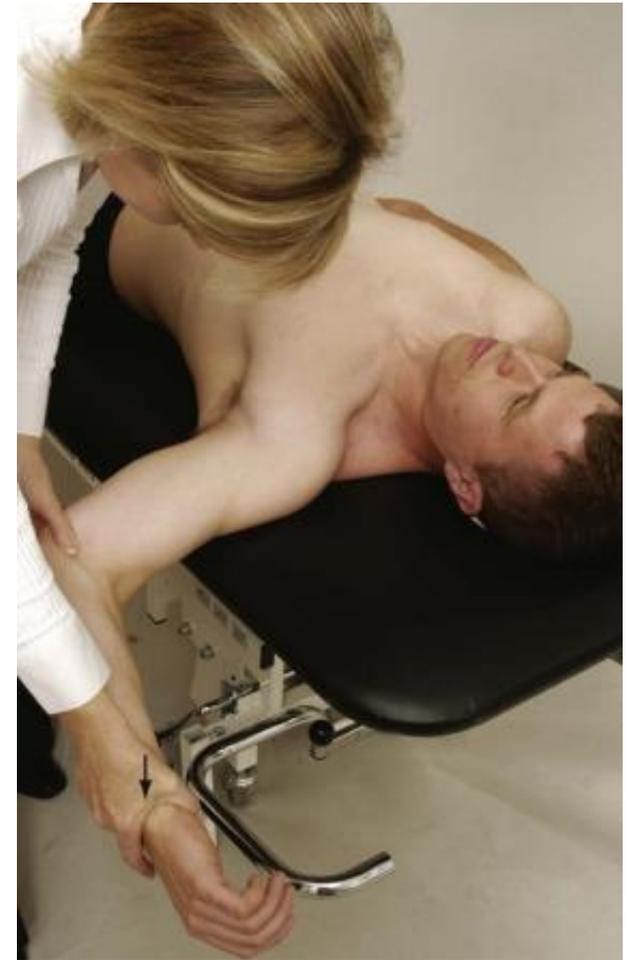


(Magee, David J. [2014]. Orthopedic physical assessment [6th ed.]. St. Louis, MI: Saunders.)



Apprehension Test

- Elbow flexed, abduct and externally rotate the arm (throwing a baseball)
- Apply pressure on the shoulder
- Patients resists further motion



(Magee, David J. [2014]. Orthopedic physical assessment [6th ed.]. St. Louis, MI: Saunders.)



The Yergason Test

- Flexed elbow
- Grasp elbow and wrist
- Externally rotate patients arm while pulling down on elbow
- Experiences sharp pain



(Magee, David J. [2014]. Orthopedic physical assessment [6th ed.]. St. Louis, MI: Saunders.)

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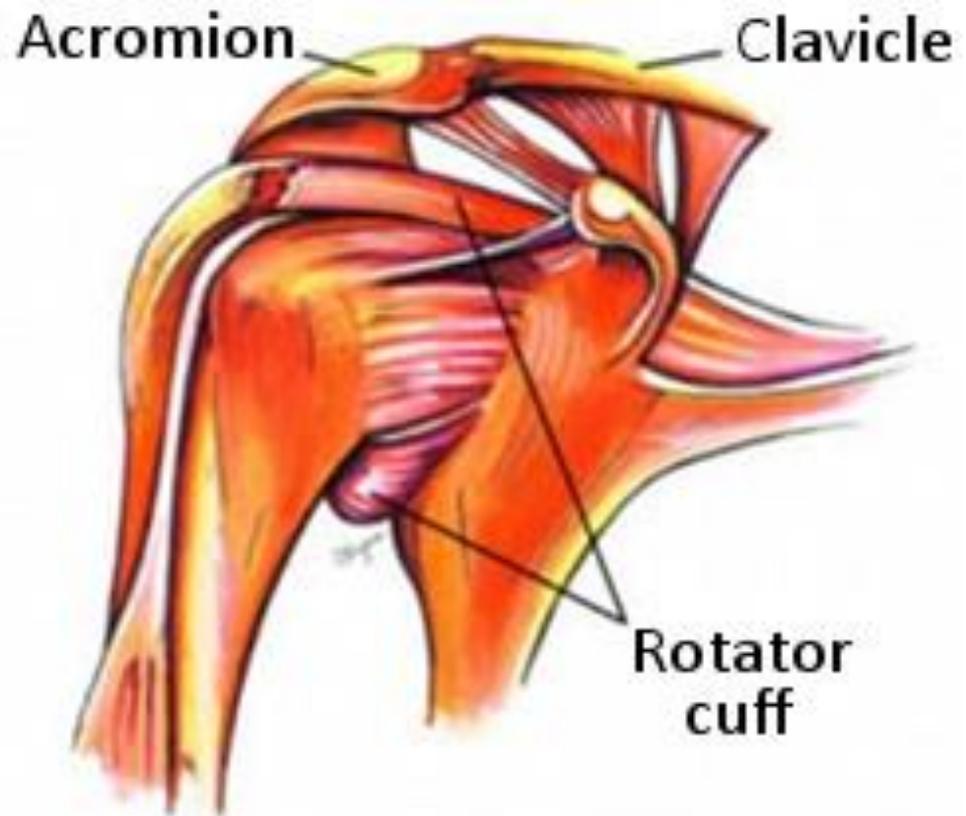
Relevant, Responsive, Requested

2.7-2-47



Rotator Cuff Tear

- Loss of the normal integrity of the infraspinatus or supraspinatus tendons over the humeral head.



(Rotator Cuff, Elsevier Interactive Patient Education, www.clinicalkey.com)

R³

Relevant, Responsive, Requested

2.7-2-48



Rotator Cuff Tear (Cont.)

- Signs and Symptoms

- Joint weakness
- Pain sleeping on affected side
- Trouble overhead reaching or holding

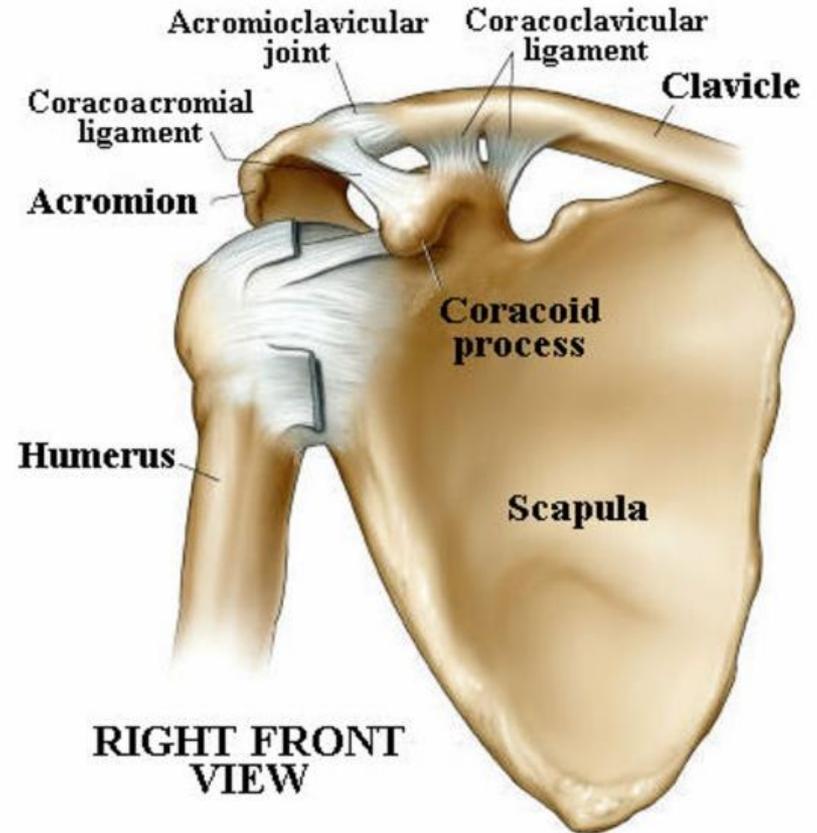
- Plan:

- Ice
- NSAIDs
- Light duty
- Use sling
- Physical Therapy
- Surgery



AC Separation or Strain

- Partial or full tear of the acromioclavicular ligament
- Direct fall to shoulder



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(AC Separation, Elsevier Interactive Patient Education, www.clinicalkey.com)

R³

Relevant, Responsive, Requested

2.7-2-50



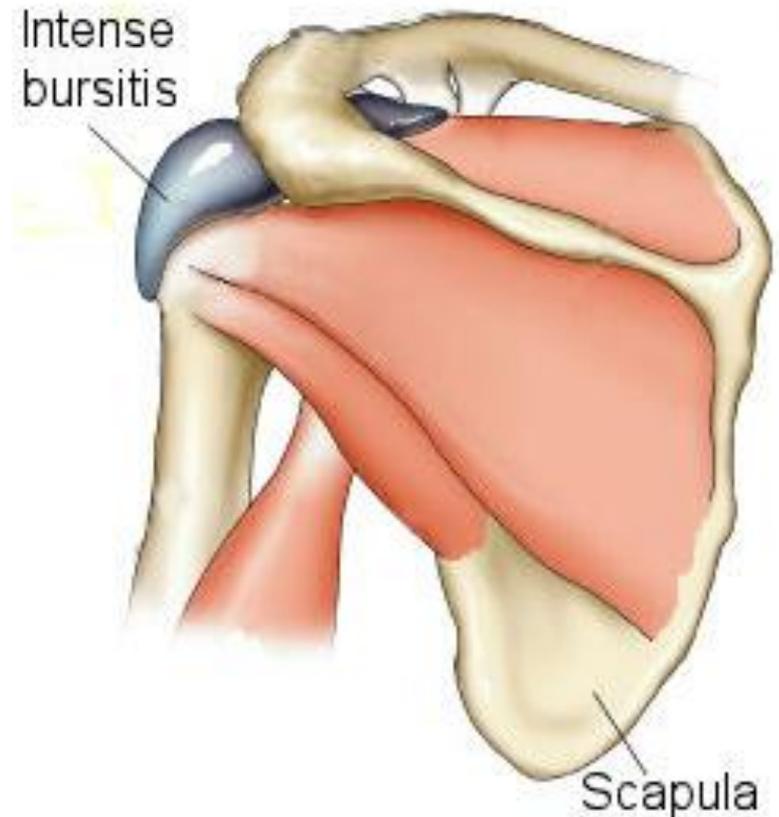
AC Separation or Strain (Cont.)

- Signs and Symptoms
 - Swelling, ecchymosis, tenderness
 - Limited ROM
 - Pain with downward traction
- Plan:
 - Ice
 - NSAIDs
 - Use sling
 - Light duty
 - Physical Therapy



Subacromial Bursitis

- Cause of repetitive overhead activity aggravating the subacromial bursa



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(Intense Bursitis, Elsevier Interactive Patient Education, www.clinicalkey.com)

R³

Relevant, Responsive, Requested

2.7-2-52



Subacromial Bursitis (Cont.)

- Signs and Symptoms

- Full ROM but uncomfortable
- Tenderness under palpation

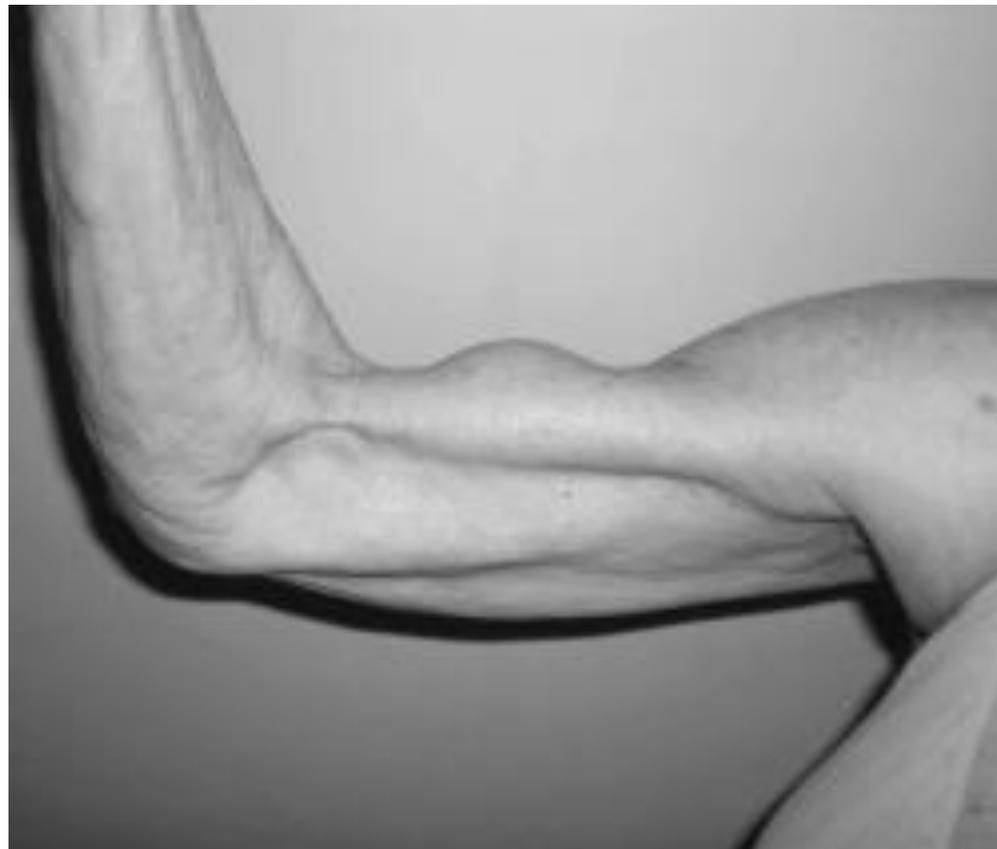
- Plan:

- Ice
- NSAIDs
- Use sling
- Light duty



Biceps Tendonitis

- Inflammation of the tendon
- Micro-tearing
- Spontaneous ruptures



(Biceps Tendonitis, Elsevier Interactive Patient Education, www.clinicalkey.com)

R³

Relevant, Responsive, Requested

2.7-2-54



Biceps Tendonitis (Cont.)

- Signs and Symptoms
 - Frontal shoulder pain
 - Tenderness in bicep groove
 - Bulging in the AC fossa
- Plan:
 - Ice
 - NSAIDs
 - Light duty



Summary and Review

- 1.46 Utilize the knowledge of musculoskeletal system anatomy while assessing a patient with a musculoskeletal complaint
- 1.47 Utilize the knowledge of musculoskeletal system physiology while assessing a patient with a musculoskeletal complaint
- 1.48 Obtain history from patient with common orthopedic disorders

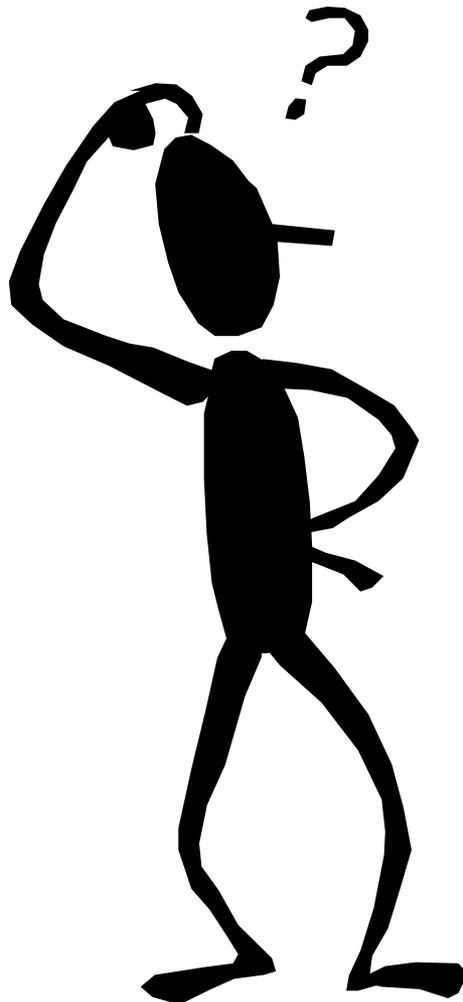


Summary and Review (Cont.)

- 1.49 Perform an orthopedic examination
- 1.50 State signs and symptoms of common orthopedic disorders
- 1.51 State treatments for common orthopedic disorders
- 1.16 State Red Flag criteria



Questions



R³

Relevant, Responsive, Requested

2.7-2-58



Application

- Job Sheet SCSC 2.7-3, Upper Extremities
- SCSC Performance Test 7