Upper Extremity Physical Examination Skills and Special Tests

Stephanie DeSandro, MS, PA-C

Baylor College of Medicine

Houston, Texas

DISCLOSURES:

I have no relevant relationships with ineligible companies to disclose within the past 24 months.

Google Drive

Scan me!

Box

One Drive

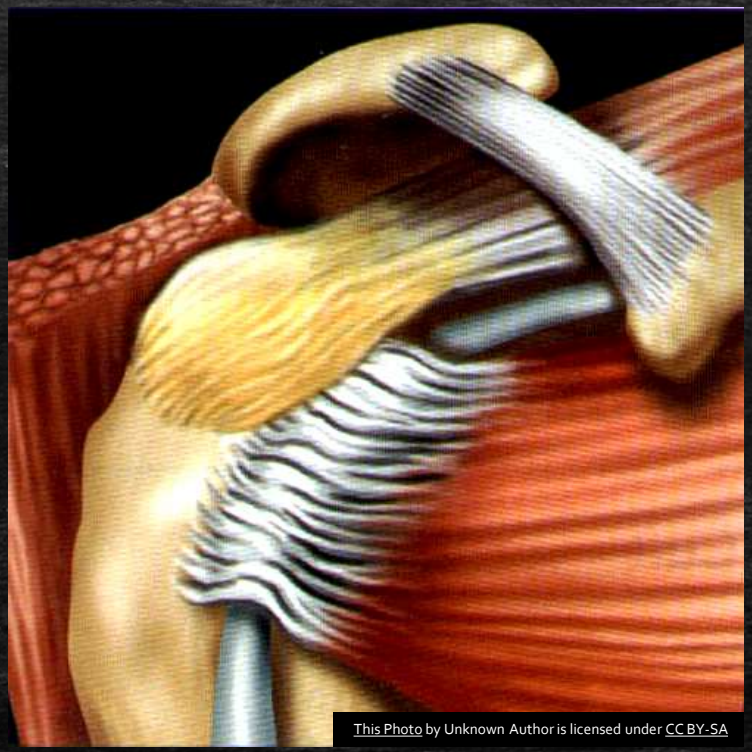
Overview

- Review most common upper extremity orthopedic complaints
- Describe each step of the physical exam for the upper extremity
- Describe physical exam special tests for assessing common upper extremity orthopedic complaints
- Demonstrate the physical exam and special tests for assessing common upper extremity orthopedic complaints

Physical Exam Basics

- Inspection
- Palpation
- Range of motion (ROM)
- Strength against resistance (SAR)
- Sensation
- Pulses

Rotator Cuff Pathology



Anatomy of the Shoulder

- Bones: Humerus, Scapula, Clavicle
- Muscles: Rotator Cuff, Deltoid, Scapular stabilizers, Bicep, Tricep
- Tendons: Rotator cuff, Deltoid, **Bicep,** Tricep
- Nerves: Axillary, Long Thoracic, Suprascapular, Musculocutaneous
- Vessels: Axillary artery branches superior thoracic, thoracoacromial, lateral thoracic, subscapular, anterior/posterior humeral circumflex

- Rotator Cuff Muscles and Tendons:
  - Supraspinatus
  - Infraspinatus
  - Teres Minor
  - Subscapularis

Shoulder Pathology- AC Joint

Condition	Description	Presentation	Causes
Acromioclavicular joint pathology	Acute .	• "shoulder separation"	• Men>women • Younger age, 20's • Contact sports • Direct blow superior/lateral aspect
	Chronic	• Overuse injury	• Weightlifting overhead • Crossbody pulley
		• Degeneration	• Older age over 40

Condition	Physical Exam
AC joint separation	• Deformity or asymmetry • Swelling • Painful ROM with shoulder flexion and internal rotation • **+Cross Body adduction** • **+O'Brien test/active compression**
AC joint degeneration	• Possible deformity • Palpable enlargement over joint • **+Cross Body adduction** • **+O'Brien test/active compression**

Cross Body adduction/Crossover impingement test/Scarf test:

- Examiner passively elevates patient's shoulder to 90 degrees flexion and adduct the arm across the body.

Findings: AC jt pathology if patient reports pain at the AC jt.

77% sensitive 79% specificity

Chronopoulos E, Kim TK, Park HB, Ashenbrenner D, McFarland EG. Diagnostic value of physical tests for isolated chronic acromioclavicular lesions. Am J Sports Med. 2004 Apr-May;32(3):655-61. doi: 10.1177/0363546503261723. PMID: 15090381

O'Brien's/Active Compression test:

- Patient holds arm at 90 degrees flexion with elbow fully extended and internally rotated (thumbs down), adduct 10-15 degrees. Patient then resists while examiner pushes downward.
  2) Patient maintains this same position however now supinates with palms up while resisting examiners pushing downward.

Finding: AC jt pathology if pain at AC jt or on top of the shoulder. If 'click' or pain inside shoulder, then labral pathology is suspected.

41% sensitivity 95% specificity for AC jt pathology

Chronopoulos E, Kim TK, Park HB, Ashenbrenner D, McFarland EG. Diagnostic value of physical tests for isolated chronic acromioclavicular lesions. Am J Sports Med. 2004 Apr-May;32(3):655-61. doi: 10.1177/0363546503261723. PMID: 15090381

Rotator Cuff Pathology- Impingement

Condition	Description	Symptoms	Causes
Tendinitis	Inflammation of the rotator tendons.	• Pain with overhead activities, • Possible tenderness over the supraspinatus, infraspinatus or lateral/posterior-lateral border of the acromion	• Overuse • Repetitive motion • Age
Impingement	Compression of the rotator cuff tendons between the acromion and the humeral head.	• Pain and weakness, especially with arm elevation • Pain lying on affected side	• Subacromial impingement, associated with repetitive overhead activities

Rotator Cuff Pathology- Impingement

Condition	Physical Exam
Tendinitis and Impingement	• Limited ROM and weakness with SAR testing, specifically abduction and external rotation • Tenderness over the supraspinatus, infraspinatus muscles or lateral/posterior-lateral border of the acromion • **+ Painful Arc** • **+ Neer 's test** • **+Hawkin's test** • **+ Empty Can/Jobes**

Painful Arc Test

- Patient fully abducts affected arm with elbow in extension.

Findings: Positive test if pain between 60-120 degrees.

33% sensitivity 81% specificity

Calis, M., Akgun, K., Birtane, M., et al. (2000). Diagnostic values of clinical diagnostic tests in subacromial impingement syndrome. Ann Rheum Dis, 59, 44-47.

Neer's Test

- Examiner passively forward flexes the patient's arm while supporting scapula to prevent shoulder shrugging due to guarding.

Severity by arc angle, patient reports pain at:

- 90 degrees mild impingement
- 60-70 degrees moderate impingement
- 45 degrees or below severe impingement

72% sensitivity 60% specificity

Hegedus EJ, Goode AP, Cook CE, et al. Which physical examination tests provide clinicians with the most value when examining the shoulder? Update of a systematic review with meta-analysis of individual tests British Journal of Sports Medicine 2012;46:964-978

Hawkins-Kennedy Test

- Examiner stabilizes shoulder passively flexes patient's shoulder to 90 degrees, flexes elbow 90 degrees and internally rotates shoulder.

Findings: Positive test if pain with internal rotation.

58-80% sensitivity 56-67% specificity

Hegedus EJ, Goode AP, Cook CE, et al. Which physical examination tests provide clinicians with the most value when examining the shoulder? Update of a systematic review with meta-analysis of individual tests British Journal of Sports Medicine 2012;46:964-978

Empty Can/Jobe's Test

- Patient abducts shoulder 90 degrees with full elbow extension then adducts 30 degrees with full internal rotation (thumbs down-empty can). Patient then resists examiners downward force.

Findings: Positive test with localized pain. If pain, proceed to full can test. If no pain or weakness with full can test, impingement due to rotator cuff less likely.

74% sensitivity 30% specificity

Hegedus EJ, Goode AP, Cook CE, et al. Which physical examination tests provide clinicians with the most value when examining the shoulder? Update of a systematic review with meta-analysis of individual tests British Journal of Sports Medicine 2012;46:964-978

Rotator Cuff Pathology- Tear

Condition	Description	Symptoms	Causes	Physical Exam
Tear	Partial or complete tears. Supraspinatus, infraspinatus, subscapularis, teres minor	• Pain over lateral deltoid • *Weakness • Limited ROM, and at times snapping or popping sensation	• Aging-middle to older • Degeneration • Overload • Impingement • Trauma	• **+ Painful Arc test** • **+ Drop arm test** • **+ Weakness with external rotation** • **+ Empty can/Jobes** • **+ Lift off test**

Painful Arc Test

- Patient fully abducts affected arm with elbow in extension.

Findings: Positive test if pain between 60-120 degrees.

33% sensitivity 81% specificity

Calis, M., Akgun, K., Birtane, M., et al. (2000). Diagnostic values of clinical diagnostic tests in subacromial impingement syndrome. Ann Rheum Dis, 59, 44-47.

Drop Arm Test-supraspinatus

- Examiner passively abducts patient's arm to 90 degrees, has patient hold the position and then slowly lower the arm to the side.

Findings: Positive test confirmed if patient has sudden arm drop or weakness with smoothly lowering arm to side. Pain is common with lesions, weakness points towards tear.

24% sensitivity 96% specificity

Jain NB, Luz J, Higgins LD, Dong Y, Warner JJ, Matzkin E, Katz JN. The Diagnostic Accuracy of Special Tests for Rotator Cuff Tear: The ROW Cohort Study. Am J Phys Med Rehabil. 2017 Mar;96(3):176-183. doi: 10.1097/PHM.0000000000000566. PMID: 27386812; PMCID: PMC5218987.

External Rotation Test-infraspinatus

- Patient has arm at their side, elbow flexed to 90 degrees and externally rotated 30 degrees. Examiner applies resistance to forearm while patient externally rotates.

Findings: Positive test with pain, likely tear with weakness.

90% sensitivity 74% specificity

Micheroli R, Kyburz D, Ciurea A, Dubs B, Toniolo M, Bisig SP, Tamborrini G. Correlation of findings in clinical and high resolution ultrasonography examinations of the painful shoulder. J Ultrason. 2015 Mar;15(60):29-44. doi: 10.15557/JoU.2015.0003. Epub 2015 Mar 30. PMID: 26674725; PMCID: PMC4579705.

Empty Can/Jobe's Test

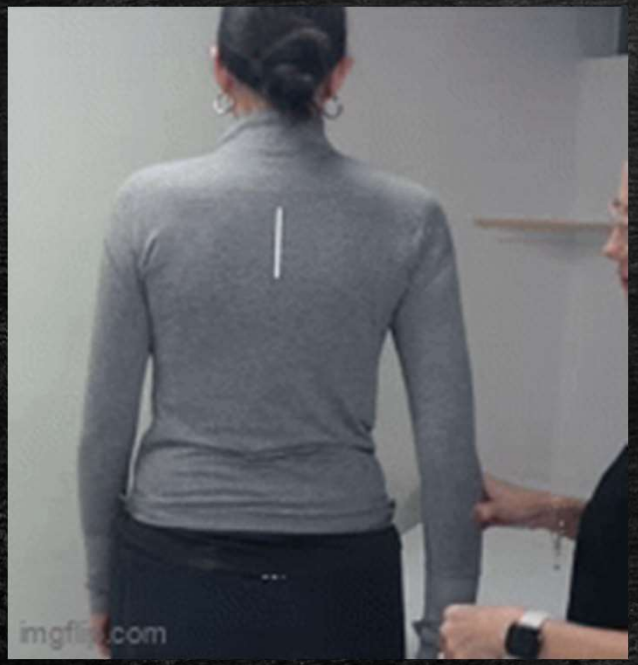
- Patient abducts shoulder 90 degrees with full elbow extension then adducts 30 degrees with full internal rotation (thumbs down-empty can). Patient then resists examiners downward force.

Findings: Positive test with localized pain. If pain, proceed to full can test. If no pain or weakness with full can test, impingement due to rotator cuff less likely.

74% sensitivity 30% specificity

Hegedus EJ, Goode AP, Cook CE, et al. Which physical examination tests provide clinicians with the most value when examining the shoulder? Update of a systematic review with meta-analysis of individual tests British Journal of Sports Medicine 2012;46:964-978

Lift Off Test-subscapularis



- Patient places hand behind back with palm facing out and then lifts it away from back against examiners resistance.

Findings: Positive test is patient cannot raise the hand off the back with resistance or compensates by extending the elbow and shoulder.

Other: Belly push, Bear hug

25% sensitivity 92% specificity

Schiefer M, Júnior YA, Silva SM, Fontenelle C, Dias Carvalho MG, de Faria FG, Franco JS. CLINICAL DIAGNOSIS OF SUBSCAPULARIS TENDON TEAR USING THE BEAR HUG SEMIOLOGICAL MANEUVER. Rev Bras Ortop. 2015 Nov 4;47(5):588-92. doi: 10.1016/S2255-4971(15)30008-2. PMID: 27047870; PMCID: PMC4799441.

Superior Labral Anterior and Posterior Lesions- (SLAP)

Condition	Description	Symptoms	Causes	Physical Exam
SLAP	Fraying or tear of the superior anterior to posterior labrum.	• Anterior shoulder pain • Clicking with abduction and external rotation(throwing position) • *night pain uncommon	• Overuse- Athletes, Laborers • Trauma	• **+O'Brien's test** • **+Crank test** • Speed's test • Yergason's test

O’Brien’s Test- SLAP

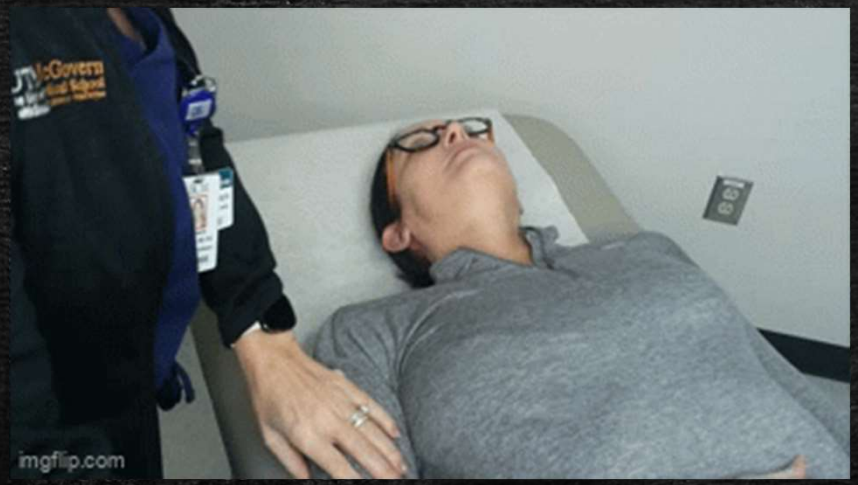
- Patient holds arm at 90 degrees flexion with elbow fully extended and internally rotated (thumbs down), adduct 10-15 degrees. Patient then resists while examiner pushes downward. 2) Patient maintains this same position however now supinates with palms up while resisting examiners pushing downward.

Finding: AC jt pathology if pain at AC jt or on top of the shoulder, if ‘click’ or pain inside shoulder then labral pathology is suspected.

65% sensitivity 50% specificity

Buijze GA, Mariaux S, van Spanning SH, Verweij LPE, van Rijn SK, Lafosse L, Lafosse T. The O'Brien test demonstrates a higher diagnostic value in identifying posteroinferior labral tears than superior labral anterior to posterior (SLAP) tears. JSES Int. 2022 Oct 30;7(1):67-71. doi: 10.1016/j.jseint.2022.10.006. PMID: 36820434; PMCID: PMC9937831.

Crank Test- SLAP



- In either the supine position or standing, the examiner positions the patient with the shoulder and arm at **160 degrees of abduction/elevation**. The elbow is flexed to 90 degrees, and axial load is applied using one hand. During the application of axial load, the examiner systematically rotates the shoulder in both internal and external rotation.

Findings: Positive if clicking with or without pain/apprehension.

46% sensitivity 72% specificity

Gismervik SØ, Drogset JO, Granviken F, Rø M, Leivseth G. Physical examination tests of the shoulder: a systematic review and meta-analysis of diagnostic test performance. BMC Musculoskelet Disord. 2017 Jan 25;18(1):41. doi: 10.1186/s12891-017-1400-0. PMID: 28122541; PMCID: PMC5267375

Bicep Tendinosis- Long head of the proximal bicep tendon

Condition	Description	Symptoms	Causes	Physical Exam
Bicep Tendinosis	Inflammation of the long head of the proximal bicep tendon most common.	• Pain in the anterior shoulder with radiation distally over the biceps muscle.	• Overuse- pulling, lifting, reaching, or throwing • Trauma	• **+Speed's test** • **+Yergason's test**

Speed's Test- Long Head of the Bicep tendon

- Patient places both arms in 90 degrees shoulder flexion, external rotation, full elbow extension and forearm supination. Patient resists examiners downward pressure.

Findings: Positive test for tendinitis if pain focused at the bicipital groove. Positive test for labral pathology if pain within joint or clicking.

19-84% sensitivity 17%-95% specificity Hegedus EJ, Goode AP, Cook CE, et al. Which physical examination tests provide clinicians with the most value when examining the shoulder? Update of a systematic review with meta-analysis of individual tests British Journal of Sports Medicine 2012;46:964-978.

Yergason's Test- Long Head of the Bicep tendon

- Patient has humerus in neutral position, elbow flexed to 90 degrees and in pronation. Examiner has one hand on bicipital groove and the other grasping just above the wrist. Patient then supinates while examiner resists.

Findings: Positive test if pain noted at bicipital groove. If clicking is noted, the transverse humeral ligament may have damage.

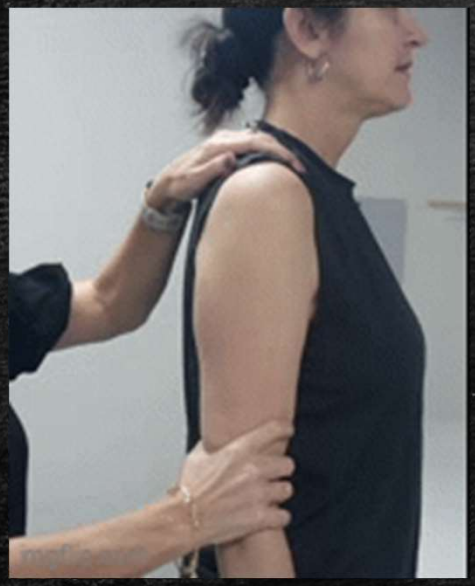
37 % sensitivity 86% specificity

Caliş M, Akgün K, Birtane M, Karacan I, Caliş H, Tüzün F. Diagnostic values of clinical diagnostic tests in subacromial impingement syndrome. Ann Rheum Dis. 2000 Jan;59(1):44-7. doi: 10.1136/ard.59.1.44. PMID: 10627426; PMCID: PMC1752990. specificity

Instability

Condition	Description	Symptoms	Causes	Physical Exam
Instability	Injury to shoulder stabilizers: Rotator cuff, deltoid, scapular and periscapular.	Laxity • Asymptomatic at times Instability • Sensation of instability "giving way" • Pops or clicking • Pain	• Congenital joint laxity • Overuse overhead activities • Trauma	• **+Sulcus sign** • **+Apprehension/ relocation test** • **+Posterior Jerk test**

Sulcus sign: laxity due to superior glenohumeral and coracohumeral ligaments



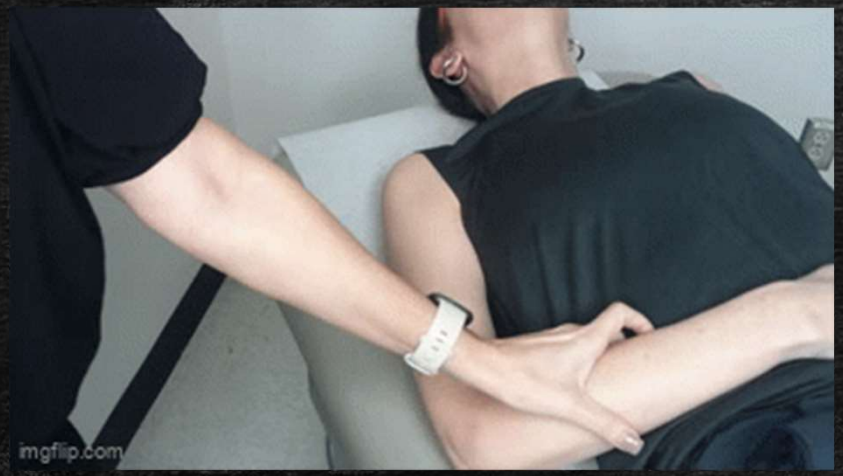
- Patient sitting, relaxed with humerus in neutral position, examiner firmly grasps distal humerus and applies downward traction.

Findings: Positive test if inferior translocation of the humerus produces a gap between the humeral head and the acromion.

More than 2 cm translocation: 28% sensitivity 97% specificity

Tzannes A., Paxinos A., Callanan M., Murrell G.A. An assessment of the interexaminer reliability of tests for shoulder instability. J. Shoulder Elbow Surg. 2004;13(1):18–23. doi: 10.1016/j.jse.2003.09.002.

Apprehension/Relocation Test: Anterior instability



- Patient is supine on examining table. Examiner passively abducts patient shoulder to 90 degrees, and places maximal external rotation while applying anterior force.

Findings: Positive test with resistance or "apprehension" as the humerus subluxates anteriorly.

- **Relocation** follows apprehension test. Examiner conducts same exam however applying posterior force to the humeral head.

Findings: Patient reports less pain or apprehension.

Posterior Jerk Test: Posterior instability

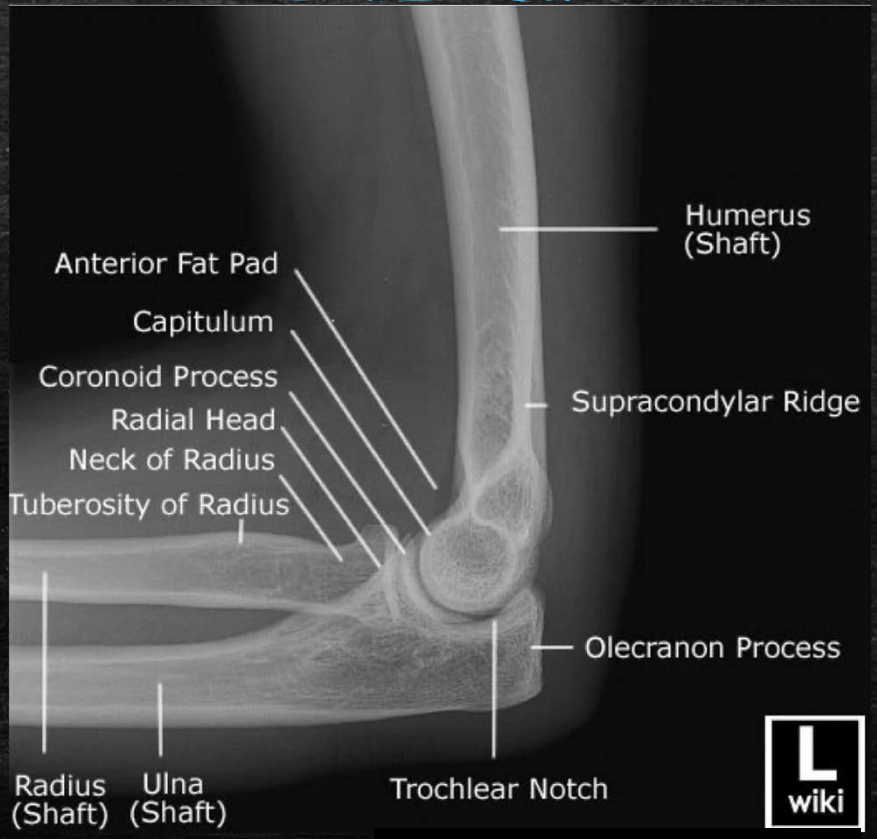
- While patient is seated, examiner stabilizes patient's scapula with one hand and holds the arm at 90 degrees abduction with elbow flexed to 90 degrees and internal rotation. Examiner then applies axially load to the humerus towards the patient while moving the arm horizontally across the patient.

Findings: Positive test is confirmed with a clunk or pain as the humeral head slides off the glenoid.

90 % sensitivity 85% specificity

Kim SH, Park JC, Park JS, Oh I. Painful jerk test: a predictor of success in nonoperative treatment of posteroinferior instability of the shoulder. Am J Sports Med. 2004 Dec;32(8):1849-55. doi: 10.1177/0363546504265263. PMID: 15572311.

Elbow Pathology



Anatomy of the Elbow

- Bones: Humerus, ulna, and radius
- Muscles: Biceps Brachii, Brachialis, Brachioradialis, Triceps, Anconeus
- Tendons: Bicep, Tricep, Brachialis, Brachioradialis, Aconeus
- Lateral and Medial Collateral Ligaments
- Nerves: Median, Radial, Ulnar, Musculocutaneous
- Vessels: Brachial artery

Wrist extensors/flexors with origin within the elbow:

- Common Extensors:
  - Carpi radialis brevis
  - Digitorum communis
  - Carpi ulnaris
- Common Flexors:
  - Carpi ulnaris
  - Palmaris Longus
  - Carpi Radialis

Elbow Pathology

Condition	Description	Symptoms	Causes
Lateral Epicondylitis (Tennis Elbow)	Inflammation of the extensor carpi radialis brevis tendon	• Gradual onset of pain and tenderness over the lateral epicondyle • Aggravation with gripping or wrist extension activities.	• Overuse • Repetitive motion- tennis, pickleball, carpentry, manual labor, weightlifting • Age >30
Medial Epicondylitis (Golfer's Elbow)	Inflammation of the medial common flexor tendon	• Gradual onset of pain and tenderness over the medial epicondyle • Aggravation with gripping, wrist flexion activities or lifting objects	• Overuse • Repetitive motion- golfing, baseball/pitching, manual labor • Age 45-54 • Women>men
Instability	Weakening or tear of the Ulnar collateral or lateral collateral ligaments	• Pain with movement or throwing • Sliding or shifting with movement • Locking/catching/clinking with movement	• Overuse • Trauma • Post-surgical
Cubital Tunnel Syndrome (Ulnar nerve entrapment)	Compression of the ulnar nerve	• Numbness or paresthesia in the ulnar nerve distribution • Medial elbow pain with radiation along the medial forearm • Grip weakness and difficulty lifting and carrying	• Acute trauma • Nerve compression, traction or friction • Prolonged flexion • Mass lesions

Condition	Physical Exam
Lateral Epicondylitis (Tennis Elbow)	• **+Cozen's Test** • **+Mill's Test**
Medial Epicondylitis (Golfer's Elbow)	• **+Golfer's Elbow**
Elbow instability	• **+Varus stress test (LCL)** • **+Valgus stress test (Ulnar CL)**
Cubital Tunnel Syndrome (Ulnar nerve entrapment)	• **+Tinel Test** • **+Froment's sign** • Reproducible symptoms with prolonged elbow flexion

Cozen's Test: extensor carpi radialis brevis

- While patient is in a relaxed position, examiner places one hand/finger on the lateral epicondyle while the forearm is pronated. Patient then makes a fist, radial deviates and extends against examiner resistance.

Finding: Positive test if patient has pain at the lateral epicondyle.

91% sensitivity

Karanasios S, Korakakis V, Moutzouri M, Drakonaki E, Koci K, Pantazopoulou V, Tsepis E, Gioftsos G. Diagnostic accuracy of examination tests for lateral elbow tendinopathy (LET)-a systematic review. Journal of Hand Therapy. 2021 Feb 27.

Mills's Test: extensor carpi radialis brevis

- With patient standing and elbow in flexion, examiner places finger/thumb over the lateral epicondyle, passively pronates forearm, flexes wrist and extends elbow.

Findings: Positive test if patient's pain is repeated with maneuver.

53% sensitivity 100% specificity

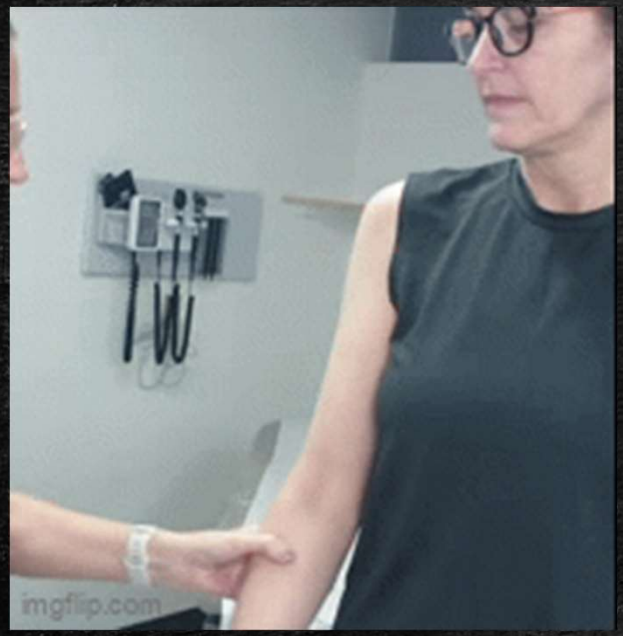
Saroja G, Aseer PA, Venkata Sai PM. Diagnostic accuracy of provocative tests in lateral epicondylitis. Int J Physiother Res. 2014 Dec 11;2(6):815-23.

Medial Epicondylitis Test(Golfer's elbow):

- Patient in standing position, examiner places thumb/finger over the medial epicondyle while elbow is flexed then passively supinating the forearm and extends the wrist. While in this position, the examiner then extends the elbow.

Findings: Positive test if maneuver reproduces patient's pain.

Instability test: Ulnar Collateral/LCL



Elbow is tested in 0 and 30 degrees of flexion and humerus externally rotated.

- Valgus: Tests for integrity of the medial(ulnar) collateral ligaments. Examiner stabilizes the lateral elbow and applies a valgus stress to the elbow.
- Varus: Tests for integrity of the lateral collateral ligaments. Examiner stabilizes the medial elbow and applies a varus stress.

Finding: Positive test indicated with increase laxity with comparison of contralateral side with pain.

Tinel's Sign elbow: ulnar nerve compression

- Examiner locates the ulnar nerve within the groove between the olecranon process and medial epicondyle. The examiner then taps rapidly over the nerve.

Findings: Positive sign if patient reports tingling in the ulnar distribution of the forearm and hand.

62% sensitivity 53% specificity

Beekman R, Schreuder AH, Rozeman CA, Koehler PJ, Uitdehaag BM. The diagnostic value of provocative clinical tests in ulnar neuropathy at the elbow is marginal. J Neurol Neurosurg Psychiatry. 2009 Dec;80(12):1369-74. doi: 10.1136/jnnp.2009.180844. Epub 2009 Jun 23. PMID: 19553231.

Froment's Sign: ulnar nerve palsy

- Patient tries to pinch a piece of paper in between thumb and index finger while examiner pulls paper away.

Findings: Positive sign if the patient compensates by hyperflexion of both interphalangeal joints of the thumb and index fingers.

Anatomy of the Wrist

- Bones: distal radius, distal ulna, carpal and proximal portions of the metacarpals
- Muscles: flexor carpi radialis, flexor carpi ulnaris, extensor carpi radialis longus and brevis, extensor carpi ulnaris, palmaris longus
- Ligaments: 33 different intra articular and intra-capsular ligaments; intrinsic and extrinsic carpal
- Nerves: Radial, Ulnar, Median
- Vessels: Radial, Ulnar

- Intrinsic Carpal ligaments
  - Scapholunate interosseous
  - Lunotriquetral interosseous
  - Distal row and Palmar midcarpal (7 different)
- Extrinsic Carpal ligaments
  - Volar radiocarpal
  - Volar ulnocarpal
- Focus:
  - Abductor pollicis longus
  - Extensor pollicis brevis

Wrist Pathology

Condition	Description	Symptoms	Causes
Carpal Tunnel Syndrome	Compression of the medial nerve as it travels through the carpal tunnel Anatomic compression and/or inflammation	• Dull, aching pain to hand or wrist with radiation to the proximal forearm • Paresthesia in median nerve distribution • Possible weakness	• Older age • Women>men • Higher BMIs • Repetitive and forceful overuse • Work with vibrating tools • Sustained wrist/palm pressure • Prolonged wrist extension/flexion
de Quervain's Tenosynovitis	Inflammation of the tendon and sheath around the abductor pollicis longus and extensor pollicis brevis	• pain and tenderness at the radial side of the wrist • Decreased ROM of the thumb and wrist with grasping or pinching	• 30-50 years old • Women>men • Pregnancy • Manual labor

Condition	Physical Exam
Carpal Tunnel Syndrome	• +Hand elevation test • +Manual carpal compression • +Phalen maneuver • +Tinel's sign
de Quervain's tenosynovitis	• +Finkelstein test • Eichhoff test: patient clenches thumb with other fingers while deviated the wrist towards the ulna

Hand Elevation Test: median nerve compression

- Patient in standing or sitting position raises both hands above the head and maintains this position for 2 minutes.

Findings: Positive if patient reports tingling or paresthesia in the medial nerve distribution(1^{st}, 2^{nd}, 3^{rd} digit and lateral half of the 4^{th} digit) or dull pain in the median nerve aspect within 2 minutes of exam.

86.7 % sensitivity 88.9 % specificity

Ma H, Kim I. The diagnostic assessment of hand elevation test in carpal tunnel syndrome. J Korean Neurosurg Soc. 2012 Nov;52(5):472-5. doi: 10.3340/jkns.2012.52.5.472. Epub 2012 Nov 30. PMID: 23323168; PMCID: PMC3539082.

Phalen's Test: median nerve compression

- Patient maximally flexes wrist holding dorsum of hands together for 1 minute.

Findings: Positive if patient reports tingling or paresthesia in the medial nerve distribution(1st, 2nd, 3rd digit and lateral half of the 4th digit)

68% sensitivity 73% specificity

MacDermid JC, Wessel J. Clinical diagnosis of carpal tunnel syndrome: a systematic review. J Hand Ther. 2004 Apr-Jun;17(2):309-19. doi: 10.1197/j.jht.2004.02.015. PMID: 15162113.

Tinel's Sign: median nerve compression

- Examiner lightly taps repeatedly over the carpel tunnel.

Findings: Positive if patient reports tingling or paresthesia in the medial nerve distribution(1st, 2nd, 3rd digit and lateral half of the 4th digit)

50% sensitivity 77% specificity

MacDermid JC, Wessel J. Clinical diagnosis of carpal tunnel syndrome: a systematic review. J Hand Ther. 2004 Apr-Jun;17(2):309-19. doi: 10.1197/j.jht.2004.02.015. PMID: 15162113.

Finkelstein's Test: Extensor Pollicis Brevis and Abductor Pollicis Longus

- Patient's affected arm rests on the exam table with the wrist ulnar side down with hand hanging off the edge. Assess pain with 1) gravity and active ulnar deviation 2) examiner gently applies ulnar deviation force 3) examiner grasps thumb passively flex it into palm.

Findings: Positive findings with each stage produces pain at the radial styloid.

100% specificity

Wu F, Rajpura A, Sandher D. Finkelstein's Test Is Superior to Eichhoff's Test in the Investigation of de Quervain's Disease. J Hand Microsurg. 2018 Aug;10(2):116-118. doi: 10.1055/s-0038-1626690. Epub 2018 Mar 20. PMID: 30154628; PMCID: PMC6103758.

Take Home Points:

Adding more physical exam components can help provider differentiate pathology that can be conservatively treated verses those that need immediate orthopedic consult.

No single special provocative test offers optimal specificity and sensitivity. However, when these tests are combined, they can assist a healthcare provider in more accurately identifying joint pathology.

References

- UpToDate:
  - Anatomy and basic biomechanics of the hand, wrist, elbow, shoulder, rotator cuff
  - Bicep tendinopathy
  - Carpal Tunnel Syndrome
  - De Quervain's tendinopathy
  - Elbow tendinopathy
  - Evaluation of the adult with shoulder, elbow, wrist complaints
  - Instability of the shoulder
  - Rotator Cuff tendinopathy
  - Ulnar neuropathy at the elbow and wrist

References

- Satteson E, Tannan SC. De Quervain Tenosynovitis. 2023 Nov 22. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan–. PMID: 28723034.
- Creech JA, Silver S. Shoulder Impingement Syndrome. [Updated 2023 Apr 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK554518/
- Wu F, Rajpura A, Sandher D. Finkelstein's Test Is Superior to Eichhoff's Test in the Investigation of de Quervain's Disease. J Hand Microsurg. 2018 Aug;10(2):116-118. doi: 10.1055/s-0038-1626690. Epub 2018 Mar 20. PMID: 30154628; PMCID: PMC6103758.
- Kiel J, Kaiser K. Golfers Elbow. [Updated 2023 Jun 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK519000/
- Hegedus EJ, Goode AP, Cook CE, Michener L, Myer CA, Myer DM, Wright AA. Which physical examination tests provide clinicians with the most value when examining the shoulder? Update of a systematic review with meta-analysis of individual tests. Br J Sports Med. 2012 Nov;46(14):964-78. doi: 10.1136/bjsports-2012-091066. Epub 2012 Jul 7. PMID: 22773322.
- Maruvada S, Madrazo-Ibarra A, Varacallo M. Anatomy, Rotator Cuff. 2023 Mar 27. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan–. PMID: 28722874.
- Cotter EJ, Hannon CP, Christian D, Frank RM, Bach BR Jr. Comprehensive Examination of the Athlete's Shoulder. Sports Health. 2018 Jul-Aug;10(4):366-375. doi: 10.1177/1941738118757197. Epub 2018 Feb 14. PMID: 29443643; PMCID: PMC6044121.
- Garving C, Jakob S, Bauer I, Nadjar R, Brunner UH. Impingement Syndrome of the Shoulder. Dtsch Arztebl Int. 2017 Nov 10;114(45):765-776. doi: 10.3238/arztebl.2017.0765. PMID: 29202926; PMCID: PMC5729225.

Google Drive

One Drive

Questions:

Stephanie DeSandro, MS, PA-C
Assistant Professor
Baylor College of Medicine
desandro@bcm.edu