



Orthopedic Assessment: Special Tests for Shoulder Tendinopathies

J. Kristopher Ware MD, DPT
Orthopedic Associates of Hartford
University of Hartford Team Physician

1



Disclosures

- I have no financial interest or contractual relationships with any commercial interest relating to this presentation.
- The views expressed in these slides and today's discussion are my own.

2

Objectives

- At the end of this session/activity, the participant/attendee will be able to:
 - Demonstrate Mastery of shoulder orthopedic special test for tendinopathy
 - Integrate special tests into their comprehensive shoulder evaluation.
 - Interpret the diagnostic significance of each special test.

3

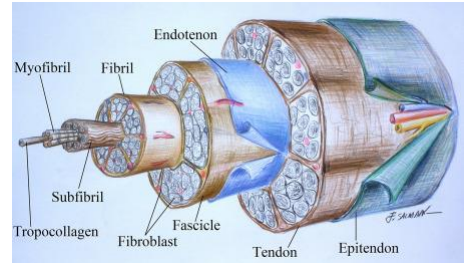
Tendin...what?

- Tendinopathy
 - Broad definition-painful and impaired functioning tendon
 - Tendinitis, Tendinosis, Tendon partial tears
 - Etiology
 - Intrinsic (cellular)
 - Age related changes
 - Genetics
 - Medications
 - Nicotine
 - Extrinsic (overload)
 - Repetitive tensile, abrasive, or compressive forces

4

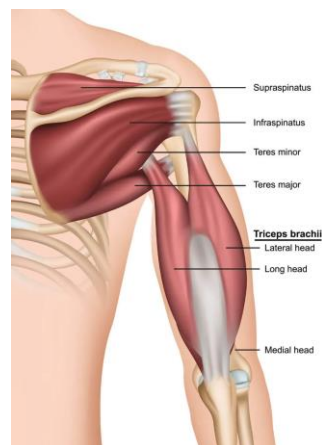
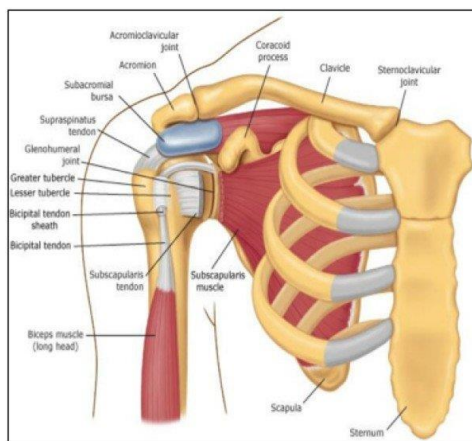
Pathophysiology

- Normal tendon
 - Tenocytes, Type 1 collagen, Glycosaminoglycans(GAGs)
- Pathohistologic features
 - Collagen disruption
 - Increased proteoglycan content
 - Abnormal tenocytes (apoptosis, proliferation, migration)
 - Altered cell populations (Monocytes, granulocytes, Mast cells)
 - Increased microvessels and micronerves
 - **Likely primary driver of pain in chronic tendinopathies**



5

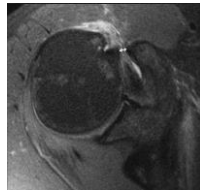
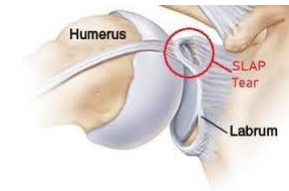
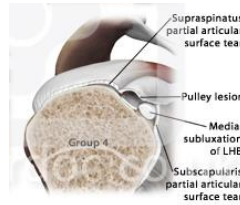
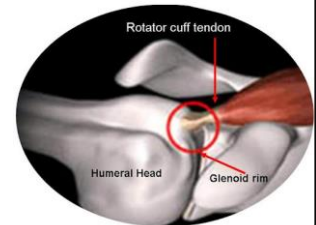
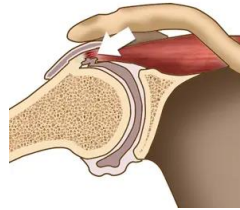
Shoulder anatomy



6

Common Tendinopathies of the Shoulder

- Supraspinatus/ Infrapinatus
 - External/ Internal impingement
- Long head of biceps
 - Traction, Instability
 - SLAP tear
- Subscapularis
 - ?subcoracoid impingment
- Long head of triceps
- Pectoralis Major



7

Clinical examination

- History
 - Sport/ position
 - Trauma/ change in activity
 - Duration
 - Location of symptoms
- Observation- swelling, deformity, posture, scapulohumeral mechanics
- Palpation- helpful for localizing involved structure
- Range of motion- position that reproduces symptoms
 - Check for tight posterior capsule
- Strength- pain with resisted testing can help identify source of symptoms

8

Special Tests: Supraspinatus/ Infrapinatus

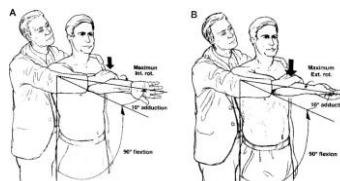
- Empty can test (Jobe test)
 - Shoulder at 90 degrees in scapular plane
 - Internal rotation of shoulder
 - Resist downward motion
- Hawkins Kennedy impingement test
 - Stabilize scapula
 - Passively elevate arm in internal rotation
- Resisted external rotation
 - Elbow at side
 - Hold isometric external rotation



9

Special Tests: Long head of biceps

- Speeds test
 - Subject holds arm out in front of body with hand supinated
 - Push down against resistance
- Yergason's test
 - Elbow at 90 degrees, forearm pronated, palpate biceps tendon
 - Have subject hold elbow flexed while resisting supination and externally rotating shoulder
- O'Brien's test (SLAP)



10

Special tests: Subscapularis

- Lift off test
 - Hand on low back
 - Subject lifts hand off of low back against light resistance

- Bear hug test
 - Subject holds hand against opposite shoulder and attempts to keep hand on shoulder against resistance



11

Clinical significance

- Individual special test hold limit clinical utility without a comprehensive examination
- Sensitivity, specificity, reliability, and validity are difficult to establish for tendinopathies
 - No non-invasive gold standard of measurement for tendinopathy
 - Most studies compare to complete tendon tears
- The tests are useful for helping to confirm or reject suspicion of specific tendinopathy from comprehensive history and clinical examination.

12

References

- Hanchard NC, Lenza M, Handoll HH, Takwoingi Y. Physical tests for shoulder impingements and local lesions of bursa, tendon or labrum that may accompany impingement. Cochrane Database Syst Rev. 2013
- 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.
- O'Kane JW, Toresdahl BG. The evidenced-based shoulder evaluation. Curr Sports Med Rep. 2014 Sep-Oct;13(5):307-13.
- Orthopedic Knowledge Update: Sports Medicine. 5th ed. AOSSM 2016.

13

Thank you!



14