

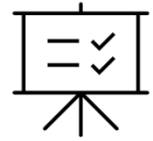
Rehabilitation of Soft Tissue Conditions of the Shoulder and Elbow

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Objectives

- To provide a brief overview of common test(s) for subacromial pain syndrome.
- To understand best practice physical therapy for management of subacromial pain syndrome.
- To differentiate between common physical therapy treatments in the management of subacromial pain syndrome based on shoulder irritability.



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Subacromial Pain Syndrome

- Observation & Palpation
 - Posture
 - Tenderness
 - Atrophy
- Segmental mobility
 - Thoracic Spine
- Muscle performance (HHD or MMT)
 - Rotator Cuff and Scapular Stabilizers
- Capsular mobility and ROM
 - Attention to posterior capsule (GIRD)
 - Painful arc
- Soft tissue restrictions
 - Attention to Pectoralis Major, Minor, and Upper Trapezius
- Cluster of tests (+LR 10.56)
 - Hawkins Kennedy Test, Painful Arc, Pain/Weakness ER MMT, Neer Test, Jobe Empty Can



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Subacromial Pain Syndrome

- Management based on evidence
 - Therapeutic Exercise
 - Strong recommendation
 - Scapular stability exercises, rotator cuff strengthening, and shoulder flexibility exercises
 - Manual Therapy
 - Strong recommendation, especially when combined with exercise
 - Multimodal Approach
 - Weak recommendation
 - Passive physical modalities, exercise, manual therapy, taping, corticosteroids, or electrotherapy
 - Corticosteroid injection
 - Moderate recommendation
 - Laser Therapy
 - Strong recommendation against
 - Ultrasound
 - Weak recommendation at best
 - Extracorporeal Shockwave Therapy
 - Reviews concluded evidence does not support

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Subacromial Pain Syndrome

Impairment(s)	High Irritability	Moderate Irritability	Low Irritability
Cuff and / or scapular stabilizer weakness	<ul style="list-style-type: none"> Scapular Retraction Scapular Clock(s) Table press RTC Iso metric(s) submaximal Supine press up Supine A-AROM flexion 	<ul style="list-style-type: none"> Rotator cuff isotonics below shoulder height and eccentric exercises Prone scapular retraction and Prone I 	<ul style="list-style-type: none"> Resisted higher load isotonics in elevation Prone W,T,Y,L, Superman Triplanar activities throughout functional ROM Push up plus
Restricted GHJ mobility	<ul style="list-style-type: none"> Manual therapy to GHJ and spine ROM exercises in mid-range (table slides, 4 corner at side) Pendulum 	<ul style="list-style-type: none"> Higher grade mobilizations to GHJ and spine ROM exercises in mid to end range (4 corner flexion, 4 corner IR) 	<ul style="list-style-type: none"> Sustained stretching (crossover, sleeper stretch) End range high grade GHJ mobilization followed by ROM/strengthening in new range

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Exercise Progression







< 11% MVC		< 30% MVC	
Supine A-AROM ER at 20° Abduction (not extended)		Towel slide (scapular plane)	
Supine press up (ceiling punch)		Wall slide (supported)	
Standing prayer stretch		Supine shoulder flexion with elbow extended	
Supine A-AROM elevation			

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Exercise Progression

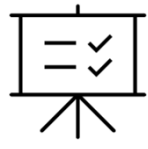
< 49% MVC with emphasis on motor control	>50% MVC (higher demand activities)
<p>Sidelying shoulder ER rotation</p> 	<p>Scaption</p> 
<p>Prone shoulder flexion</p> 	<p>Prone shoulder hor. Abd.</p> 
<p>Resisted (band) shoulder IR</p> 	<p>Push up with plus (wall → counter → floor)</p> 

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Objectives

- Discover the etiology likely contributing factors towards development of lateral and medial elbow tendinopathy
- Understand effective test(s) to confirm the diagnosis of lateral and medial elbow tendinopathy
- Identify current evidence-based practice treatment approaches for lateral and medial tendinopathy




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Lateral/Medial Elbow Tendinopathy

Contributing Factors

- Age
- Excess use/volume
- Magnitude or speed of loading
- Acute changes to amount or type of load
- Faulty biomechanics
 - Muscle weakness/imbalance
 - Decreased flexibility
 - Poor form




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Lateral/Medial Elbow Tendinopathy

Etiology

- Repeated rotation of the arm with flexion and extension
 - Combination of tension and compression
- Frequently a degenerative condition
- Excess or insufficient loading
- Mechanism of injury:
 - Sports
 - Work
 - Drug related
 - Metabolic disorder




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Lateral Elbow Tendinopathy

Examination

- Observation & Palpation
 - Pain primary symptom in LET
 - Tenderness at anterior aspect of lateral condyle
- Capsular mobility and ROM
 - Active or passively load tendon
- Muscle Performance (HHD or MMT)
 - MDC for pain free grip strength 5.2kg
- Special Tests:
 - Cozen test, Mill, Maudsley
 - No validated cluster of tests (Saroja et al.)



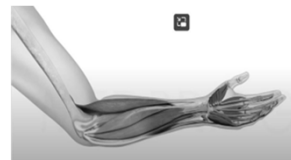
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Medial Elbow Tendinopathy

Examination

- Observation & Palpation
 - Tenderness at flexor-pronator origin
 - Tendons of flexor origin: FCR and pronator teres
 - occasionally PL, FCU, FDS
- Capsular mobility and ROM
 - Provocate with resisted wrist flexion or pronation
 - Passive wrist extension, forearm supination, and elbow extension
- Muscle Performance (HHD or MMT)
- Special tests:
 - Inadequate diagnostic accuracy to rule in/out



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Lateral/Medial Tendinopathy

Therapeutic Exercise Treatment Considerations

- Appropriate and optimal loading of the tendon
 - 1) Initial: 24 reps 10 second duration OR 6 reps 40 second hold (pain reduction)
 - 2) Heavy, slow-motion resistance training
 - 3) Endurance training (sustain compression loads) as tolerated but not initially
 - 4) Increase tendon load incrementally introducing speed first, then plyometric loads
- Removal of all negative factors internal / external
- Determine appropriate starting point for tensile load
- Symptom based loading progression program

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Lateral Elbow Tendinopathy

Management based on evidence

- Therapeutic Exercise:
 - Moderate recommendation:** Isometric, concentric and/or eccentric exercise for subacute and chronic LET
 - Expert opinion: phased approach reintroduce strength/endurance for high demand tasks
- Multimodal Approach
 - Moderate recommendation:** TE + other interventions
 - Weak recommendation: may include shoulder and scapular stabilizers
- Manual Therapy
 - Moderate recommendation:** local elbow joint mobilization /manipulation
 - Weak recommendation: STM, IASTM to LET, mobilization/manipulation cervical/thoracic spine, wrist
 - Conflicting evidence: deep transverse tendon cross friction massage
- Dry Needling
 - Moderate recommendation:** tendon or trigger point dry needling
- Orthoses:
 - Conflicting evidence for forearm counterforce or wrist orthosis for intermediate/long term relief
 - Expert opinion: forearm counterforce or wrist support worn for immediate improvement pain/strength for activity

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Lateral Elbow Tendinopathy

Management Based on Evidence: continued

- Modalities:
 - Moderate Recommendation**
 - Taping – rigid taping techniques
 - Weak Recommendation**
 - Taping – Kinesio Tape as part of multimodal treatment program
 - Cryotherapy- with burst TENS to reduce pain short term
 - Iontophoresis - with anti-inflammatory drug early in rehab phase
 - TENS - burst TENS, or high/low frequency TENS applied to acupuncture points
 - Laser - for pain and grip strength > 4 weeks to 6 months
 - Phonophoresis - should NOT use
 - Conflicting Evidence
 - Ultrasound – recommendation cannot be made as standalone treatment
 - Theoretical/Foundation:
 - Cryotherapy – used as standalone treatment to reduce pain
 - Ergonomics – workstation, ergonomic equipment, behavior modification

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Medial Elbow Tendinopathy

Management Based on Evidence

- Similar to LET regarding progressive strengthening,
 - eccentric focus less clear but still recommended
- Elastic taping
 - May be useful as adjunct
- MWM
 - Expert opinion
- Other treatment possibilities
 - PRP, BMAC, CPC injections – found to boost tendon regeneration help regain function for patients with MET, similar to LET

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- Photos used in this presentation captured from MedBridge.

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