



# HARVARD MEDICAL SCHOOL AND BRIGHAM AND WOMEN'S HOSPITAL



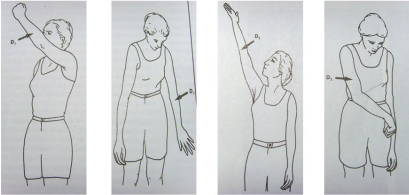
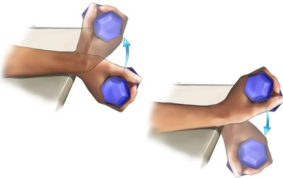
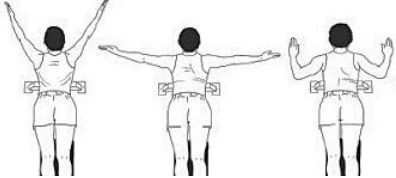


## UCL Non-Operative Treatment Protocol

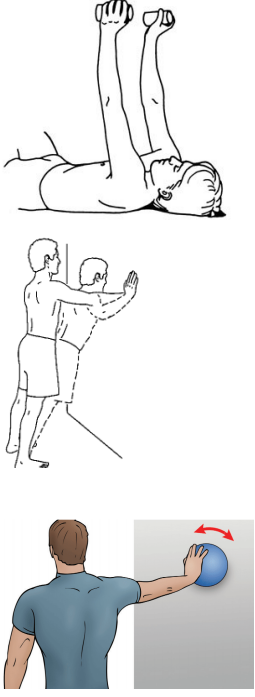
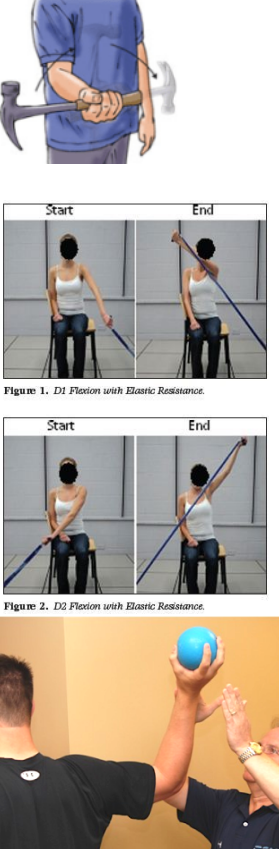
Sprains or Partial UCL Tears

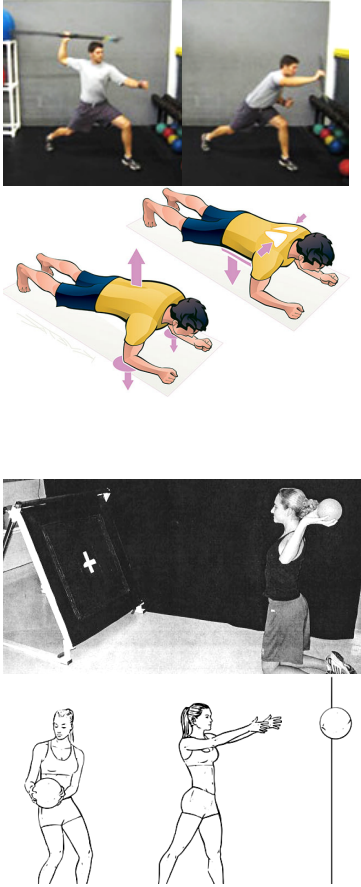
For any questions please contact Carolyn M Hettrich, MD at (617)525-3427.

Hinged elbow brace for first 6 weeks to protect healing tissue. Restore ROM while wearing brace during this time.

<p>Week 0-3</p>	<p>NSAIDs, Ice, Compression, E-stim for pain modulation and inflammation</p> <p>ROM- Limit between 10-100° (pain free ROM)</p> <ul style="list-style-type: none"><li>• Elbow PROM, AROM and AAROM in brace</li><li>• Shoulder ROM<ul style="list-style-type: none"><li>○ NO ER stretching</li></ul></li><li>• Wrist flexion/extension</li></ul> <p>Strengthening</p> <ul style="list-style-type: none"><li>• Lower extremity &amp; core</li><li>• Periscapular activation</li><li>• Shoulder isometrics – <b>NO IR strengthening</b> to limit stress on medial elbow (load above elbow)</li><li>• Wrist isometrics</li><li>• Grip strengthening</li></ul>	
<p>Week 3-4</p>	<p>Use NSAIDs, Ice, Compression and E-stim as necessary for pain modulation</p> <p>Begin to increase elbow ROM 5-10° per week in brace within a pain free range (10-115°)</p> <ul style="list-style-type: none"><li>• Active shoulder and elbow ROM (table slides)</li><li>• Pronation/supination – no pain</li><li>• Wrist stretching</li></ul> <p>Strengthening</p> <ul style="list-style-type: none"><li>• Lower extremity, core, scapula control and stabilization</li></ul>	

	<ul style="list-style-type: none"> <li>• Shoulder rotator cuff isometrics</li> <li>• Isometric elbow and wrist flexion/extension</li> <li>• Continue grip strength</li> </ul>	
<p>Week 4-5</p>	<p>Goal: Gradually continue increasing elbow ROM (5-125°)</p> <p>Stretching</p> <ul style="list-style-type: none"> <li>• Restore ulnar deviation</li> <li>• Shoulder and wrist stretching</li> <li>• Low-load, long-duration stretch into elbow extension with light resistance.</li> </ul> <p>Strengthening (must resolve pain and inflammation prior to elbow strengthening)</p> <ul style="list-style-type: none"> <li>• Lower extremity, core and balance</li> <li>• Scapular control with low level arm elevation</li> <li>• Shoulder strengthening progression <ul style="list-style-type: none"> <li>○ D1/D2 patterns</li> </ul> </li> <li>• Initiate isotonic exercises concentrically and eccentrically <ul style="list-style-type: none"> <li>○ Wrist curls</li> <li>○ Pronation/supination</li> <li>○ Biceps/triceps</li> </ul> </li> </ul> <p>Shoulder rhythmic stabilization</p>	 <p>Sleeper Stretch</p>   
<p>Week 5-6</p>	<p>Goal: Achieve full ROM by end of week 6 (0°-135/145°)</p> <p>Full shoulder and elbow ROM</p> <p>Continue strengthening lower extremity, core and scapular muscles.</p> <p>Work on single leg balance</p> <p>Plyometrics</p> <ul style="list-style-type: none"> <li>• Two handed below chest plyoball toss</li> <li>• Double and single leg balance</li> </ul>	 

<p>Week 6-7</p>	<p>Goal: Actively stressing the UCL</p> <p>Maintain ROM with continual stretching, no varus or valgus stress on the elbow</p> <p>Lower extremity and core strengthening</p> <p>Continue to work on balance</p> <p>Early Closed Kinetic Chain exercises against wall</p> <p>Scapular strengthening with longer lever arm</p> <ul style="list-style-type: none"> <li>• Supine serratus anterior punches</li> <li>• Upright wall push up</li> <li>• Wall ball rolls</li> </ul>	
<p>Week 7-8</p>	<p>Goal: Initiate Thrower's Ten Program</p> <p>Strengthening</p> <ul style="list-style-type: none"> <li>• Lower extremity, core, and scapula</li> <li>• Shoulder advanced exercises <ul style="list-style-type: none"> <li>○ 90/90 activation</li> <li>○ PNF - D1/D2 resistance</li> </ul> </li> <li>• Wrist and forearm</li> </ul> <p>Plyometrics</p> <ul style="list-style-type: none"> <li>• Side toss seated with truck rotation</li> <li>• Continuous ball drops at 90° ABD for pronator mass endurance</li> </ul> <p>Rhythmic stabilizations at 90/90</p>	 <p><small>Figure 1. D1 Flexion with Elastic Resistance.</small></p> <p><small>Figure 2. D2 Flexion with Elastic Resistance.</small></p>

<p>Week 9-12</p>	<p>Goal: Strengthen most muscle groups by week 12</p> <p>Strengthening</p> <ul style="list-style-type: none"> <li>• Continue to strengthen kinetic chain <ul style="list-style-type: none"> <li>○ Core and scapula</li> </ul> </li> <li>• Elbow strengthening <ul style="list-style-type: none"> <li>○ flexion/extension</li> <li>○ pronation/supination</li> </ul> </li> </ul> <p>PNF patterns with body blade</p> <p>Progressing CKC – elbow to hand push-ups</p> <p>Plyometrics</p> <ul style="list-style-type: none"> <li>• Plyoball with mini tramp <ul style="list-style-type: none"> <li>○ Begin with two-hand plyos</li> <li>○ Progress to one-hand <ul style="list-style-type: none"> <li>▪ Start 0° abduction, progress to 90° over time</li> </ul> </li> </ul> </li> <li>• Plyometric wall throws with trunk rotation <ul style="list-style-type: none"> <li>○ Emphasize core control and strength</li> </ul> </li> </ul>	
<p>CRITERIA FOR RETURN TO PLAY</p>	<ul style="list-style-type: none"> <li>• Full pain free elbow ROM and strength <ul style="list-style-type: none"> <li>○ Pronation (flexor pronator mass), supination, extension, and flexion</li> </ul> </li> <li>• Can demonstrate good throwing mechanics for particular sport</li> </ul>	
<p>Week 12+</p>	<p><b>Initiate Interval Throwing Program</b></p> <p>Continue throwers 10 exercise and Plyometrics</p>	

REFERENCES:

1. Rettig AC, Sherrill C, Snead D, Mendler C, Mieling P. Nonoperative Treatment of Ulnar Collateral Ligament Injuries in Throwing Athletes. *Am J Sports Med.* 2001;29(1):15-17.
2. Wilk KE, Macrina LC, Cain EL, Dugas JR, Andrews JR. Rehabilitation of the Overhead Athlete's Elbow. *Sports Health.* 2012;4(5):404-414.

3. Garrison JC, Arnold A, Macko MJ, Conway JE. Baseball Players Diagnosed With Ulnar Collateral Ligament Tears Demonstrate Decreased Balance Compared to Healthy Controls. *J Orthop Sports Phys Ther.* 2013;43(10):752-758.
4. Podesta L, Crow SA, Volkmer D, Bert T, Yocum LA. Treatment of partial ulnar collateral ligament tears in the elbow with platelet-rich plasma. *Am J Sports Med.* 2013;41(7):1689-1694.
5. Ford GM, Genuario J, Kinkartz J, Githens T, Noonan T. Return-to-Play Outcomes in Professional Baseball Players After Medial Ulnar Collateral Ligament Injuries: Comparison of Operative Versus Nonoperative Treatment Based on Magnetic Resonance Imaging Findings. *Am J Sports Med.* 2016;44(3):723-728.
6. Frangiamore SJ, Lynch TS, Vaughn MD, et al. Magnetic Resonance Imaging Predictors of Failure in the Nonoperative Management of Ulnar Collateral Ligament Injuries in Professional Baseball Pitchers. *Am J Sports Med.* 2017;45(8):1783-1789.