



## BRIGHAM AND WOMEN'S HOSPITAL

A Teaching Affiliate of Harvard Medical School  
75 Francis St., Boston, Massachusetts 02115

### Department of Rehabilitation Services

This protocol has been adopted from Brotzman & Wilk, which has been published in Brotzman SB, Wilk KE, *Clinical Orthopedic Rehabilitation*. Philadelphia, PA: Mosby Inc; 2003:315-319. The Department of Rehabilitation Services at Brigham & Women's Hospital has accepted a modification of this protocol as our standard protocol for the management of patients s/p ulnar collateral ligament reconstruction.

### **ULNAR COLLATERAL LIGAMENT OF THE ELBOW RECONSTRUCTION USING AUTOGENOUS GRAFT PROTOCOL:**

The intent of this protocol is to provide the clinician with a guideline of the post-operative rehabilitation course of a patient that has undergone an ulnar collateral ligament reconstruction **without concomitant fracture**. It is by no means intended to be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam/findings, individual progress, and/or the presence of post-operative complications. If a clinician requires assistance in the progression of a post-operative patient they should consult with the referring Surgeon.

### **Progression to the next phase based on Clinical Criteria and/or Time Frames as Appropriate.**

#### **Phase I – Immediate Post Surgical Phase (Day 1-21):**

##### **Goals:**

- Protect healing tissue
- Decrease pain/inflammation
- Retard muscular atrophy
- Promote scar mobility

##### **Week 1:**

- Posterior splint (applied in the operating room) at 90 degrees elbow flexion with forearm in neutral
- Range of Motion – Wrist active range of motion (AROM) ext/flexion
- Elbow compression dressing: Apply 2-3 days after surgery

##### **Exercises:**

- Gripping exercises (AROM)
- Wrist AROM/PROM
- Sub-maximal shoulder isometrics (\*\*no shoulder ER isometrics to avoid force on repaired UCL)

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- Sub-maximal pain-free biceps isometrics in neutral elbow ROM
- Cryotherapy

### **Week 2:**

- Brace – Application of hinged elbow brace set at 30-100 degrees of open motion

#### Exercises:

- Initiate sub-maximal and pain free wrist isometrics
- Initiate sub-maximal and pain free elbow flexion/extension isometrics
- Continue all exercises listed above

#### Edema/scar management:

- Scar massage/scar pads as needed
- Manage edema with light compression as needed

### **Week 3:**

- Brace – Advance hinged elbow brace 15-110 degrees (Gradually increase ROM 5 degrees extension/10 degrees flexion per week)

#### Exercises:

- Continue all exercises listed above

## **II. Intermediate Phase (Weeks 4-8):**

### **Goals:**

- Gradual increase in range of motion
- Promote healing of repaired tissue
- Regain and improve muscular strength

### **Week 4**

- Brace – hinged elbow brace set 10-120 degrees

#### Exercises:

- Wrist curls, extensions, pronation, supination with light weight (1-2#)
- Elbow extension/flexion AAROM/AROM

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- Progress shoulder isometrics to isotonics, emphasize rotator cuff strengthening (Avoid resisted external rotation until 6<sup>th</sup> week to minimize forces on repaired UCL)

### **Week 6**

- Brace – hinged elbow brace set 0-130 degrees.
- Brace may be discontinued at the end of week 6

#### Exercises:

- AROM 0-145 degrees without brace
- Progress elbow strengthening exercises as appropriate
- Initiate shoulder external rotation strengthening
- Progress shoulder program

## **III. Advanced Strengthening Phase (Weeks 9-13):**

### **Goals:**

- Increase strength, power, and endurance
- Maintain full elbow ROM
- Gradually initiate sporting/functional/occupational activities

### **Week 9**

#### Exercises:

- Initiate eccentric elbow flexion/extension
- Continue isotonic program; forearm & wrist
- Continue shoulder program (Throwers Ten Program if appropriate)
- Manual resistance diagonal patterns
- Initiate plyometric exercise program if appropriate

### **Week 11**

#### Exercises:

- Continue all exercises listed above
- Begin light sport/functional activities (i.e., golf, swimming, light lifting, reaching) if appropriate

## **IV. Return to Activity Phase (Weeks 14-26):**

### **Goals:**

- Continue to increase strength, power, and endurance of upper extremity musculature.
- Gradual return to sport/functional/occupational activities

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**Week 14**

Exercises:

- Athletes initiate interval throwing program (phase 1)
- Non-athletes initiate endurance program that simulates desired work activities/requirements
- Continue strengthening program (shoulder, elbow, wrist, hand)
- Emphasis on overall UE flexibility program to maximize ROM/muscle length

**Weeks 22-26 (Time Frame may be adjusted based on Surgeon's assessment of surgical repair.)**

Activities:

- Return to competitive throwing
- Return to full work capacity (lifting, pulling, reaching, pushing)

Formatted by Ethan Jerome, PT 04/06