

**POST-OPERATIVE REHABILITATION PROTOCOL:  
LARGE- MASSIVE ROTATOR CUFF REPAIR**

Arthroscopic     Mini-open     Open

**Tear size:**                      **Biceps tenodesis:**                      **Distal clavicle resection:**  
 Large                               Yes     Yes  
 Massive                             No     No

**Phase I: Weeks 0 – 6**

- No active range of motion (ROM) exercises
- Limited supine position passive ROM only.
  - 90° of forward flexion weeks 0 – 2
  - Passive ER to 30° at Week 4
  - 60° of abduction without rotation
  - May progress supine passive forward flexion to 10 - 15° per week starting at Week 2 as patient tolerates (goal of 130 - 140° at 6 weeks)
  - May progress passive abduction to 70 - 80° at week 4 as patient tolerates
- Pendulums (Codman's)
- May do table slides (or equivalent) at 14 – 20 days, hand resting on table, torso leaning forward, pain free, within limits of forward elevation as outlined above
- No pulleys
- No strengthening/resisted motions of the shoulder until 12 weeks after surgery, unless indicated otherwise
- Use sling for protection for 6 weeks
  - Sling may be removed during day when sitting upright in chair prn, but with strict instructions for not active shoulder motion
  - Sling should be worn at night
- Therapeutic modalities
  - Ice, ultrasound, HVGS
  - Moist heat before therapy, ice at end of session
- Elbow ROM
  - Passive progress to active motion
  - 0 - 130°
  - Pronation and supination as tolerated
  - **Note: If biceps tenodesis, no active elbow flexion or forearm supination until 4 weeks post-op**
- Wrist ROM
  - Full, all planes

- Grip strengthening as tolerated

### **Criteria for progression to Phase II**

- At least 6 weeks of recovery has elapsed
- Painless passive ROM to:
  - 130° of forward flexion
  - 30° of external rotation
  - 60° of abduction

### **Phase II: Weeks 6 – 12**

- No strengthening/resisted motion of the shoulder until 12 weeks after surgery, unless indicated otherwise
- Discontinuation of sling
- Therapeutic modalities
  - Ice, ultrasound, HVGS
  - Moist heat before therapy, ice at end of session
- Shoulder ROM goals:
  - 150° of forward flexion – progress to 160 - 170°
  - 30° external rotation – progress to 60°
  - 60° of abduction – progress to 90°
- Continue with passive ROM exercise to achieve above goals
- Begin active-assisted ROM exercise for the above goals
- Progress to active ROM exercises as tolerated after full motion achieved with active-assisted exercises
- Light passive stretching at end ROMs
- Pendulums and pulleys (or other equivalent)
- Some early strengthening may be allowed depending on certain patient factors and tear/repair characteristics. This is at the surgeons discretion
- Continue with grip strength

### **Criteria for progression to Phase III**

- Painless active ROM
- No shoulder pain or tenderness
- Satisfactory clinical examination

### **Phase III: 3 – 6 months**

#### **Goals**

- Improve shoulder strength, power and endurance
- Improve neuromuscular control and shoulder proprioception
- Prepare for gradual return to functional activities
- Establish a home exercise maintenance program that is performed at least three times per week for strengthening

- Stretching exercises should be performed daily

### **Motion**

- Achieve motion equal to contralateral side
- Use passive, active-assisted and active ROM exercises
- Passive capsular stretching at end ROMs especially cross body (horizontal) adduction and internal rotation to stretch the posterior capsule

### **Muscle Strengthening**

- Strengthening of the rotator cuff
- Begin with closed chain isometric strengthening
- Internal rotation
- External rotation
- Abduction
- Forward flexion
- Extension
- Progress to open chain strengthening with free weight (i.e., dumbbells)
- Exercises performed with the elbow flexed to 90°
- Starting position is with the shoulder in the neutral position of 0° of forward flexion, abduction, and external rotation. The arm should be comfortable at the patients side
- Exercises are performed through an arc of 45° in each of the five planes of motion
- Weight progression typically with light object (i.e., tuna or soup can) and increasing gradually in 1-2 pound increments
- Progression to the next weight level occurs usually in 2-3 week intervals. Patients are instructed not to progress to the next level if there is any discomfort at the present level
- Internal rotation
- External rotation
- Abduction
- Forward flexion
- Extension
- Strengthening of deltoid especially anterior deltoid
- Strengthening of scapular stabilizers
- Closed chain strengthening exercises
- Scapular retraction (rhomboids, middle trapezius)
- Scapular protraction (serratus anterior)
- Scapular depression (latissimus dorsi, trapezius, serratus anterior)
- Shoulder shrugs (trapezius, levator scapulae)
- Progress to open chain scapular stabilizer strengthening

### **Goals**

- Three times per week
- Begin with 10 repetitions for one set, advance to 8-12 repetitions for three sets
- Functional strengthening: (begins after 70% of strength recovered)
- Plyometric exercises

- Progressive, systematic interval program for returning to sports
  - Throwing athletes
  - Tennis players
  - Golfers

### **Maximal Improvement**

- Large tears 6 – 10 months
- Massive tears 10 -15 months

Patients will continue to show improvement in strength and function for at least 12 – 15 months

### **Warning Signals**

- Loss of motion especially internal rotation
- Lack of strength progression especially abduction
- Continued pain especially at night

THIS PROTOCOL PROVIDES YOU WITH GENERAL GUIDELINES FOR THE REHABILITATION OF THE PATIENT UNDERGOING ARTHROSCOPIC, MINI-OPEN, OR OPEN REPAIR OF A LARGE OR MASSIVE ROTATOR CUFF TEAR.

SPECIFIC CHANGES IN THE PROGRAM WILL BE MADE BY THE PHYSICIAN AS APPROPRIATE FOR THE INDIVIDUAL PATIENT.

QUESTIONS REGARDING THE PROGRESS OF ANY SPECIFIC PATIENT ARE ENCOURAGED, AND SHOULD BE DIRECTED TO COREY A. WULF, MD @ 952-944-2519.

### **REFERENCE**

Brotzman, S.B. & Wilk, K.E. (2003). *Clinical orthopaedic rehabilitation* (2<sup>nd</sup>. Ed.). Mosby.