



OrthoCarolina



## ROTATOR CUFF REPAIR PROTOCOL (NON-MASSIVE)

This is a general guideline for rehabilitation of an **arthroscopic rotator cuff repair for small (<1cm) to medium (1-3cm) size tears**. Large tears (3-5cm), massive tears(>5cm), poor tissue quality, tendon retraction, and poor bone quality will slow the progression of rehabilitation and require a more conservative approach. Thus, communication with the surgeon is essential to achieve optimal outcome. Also consider patient characteristics (age, lifestyle, work, recreational activity, dominant arm) and pre-morbid state.

**Surgical procedure:** Usually 4-5 arthroscopic incisions are made. Through these portals the surgeon is able to visualize the GH joint and surrounding soft tissue, mobilize the cuff, implant suture anchors, and tie suture knots. Tendon fixation to the bone can be achieved by single row sutures, double row sutures, and suture anchors.

### Other considerations:

- Open rotator cuff repairs: considered for large to massive tears, significant tendon retraction, and presence of adhesions.
  - The deltoid is detached from the anterior acromium during this procedure, therefore, it is important to protect the deltoid from tensile loads and avoid shoulder extension for 8-10 weeks post op
- Mini open rotator cuff repairs with arthroscopy: uses a smaller vertical incision through the deltoid but does not take down the attachment.
- Supraspinatus repair: Avoid IR behind the back for 8-10 weeks post op
- Supraspinatus repair with **SUBSCAPULARIS** repair: limit ER to 20 unless physician instructs otherwise, for the first 4 weeks; then slow progression after that. Do not initiate resisted IR until 8-12 weeks post op.
- Supraspinatus repair with **INFRASPINATUS** repair: cautious and slow IR PROM in the scapular plane until 8 weeks post op. Avoid IR behind the back for 8-10 weeks. Do not initiate resisted ER until 8-12 weeks post op.
- Rotator cuff repair with **BICEP TENODESIS**: NO resisted bicep activity for 8-12 weeks. Do not stretch elbow extension aggressively.
- Rotator cuff repair with **SAD** (subacromial decompression) and **DCR** (distal clavicle resection): more likely to develop subacromial adhesions and scarring that can be avoided with early regular PROM and grade 1 and 2 GH mobilizations
- Presence of **intra-articular capsulitis**: shoulder will get stiff after surgery.  
\*\*\*especially important to communicate with physician on how aggressive you can be with PROM to avoid getting too stiff\*\*\*

### Primary goals for postoperative rehab:

- **Protect the repair and allow the repair to heal:** patient to wear ultrasling for 6 weeks post op.
  - Patient education is essential

*Protocol developed in conjunction with OrthoCarolina Physicians.*

- Gradually restore passive motion, scapulohumeral rhythm, dynamic stabilization of the glenohumeral joint, and strength.

## **PHASE I: PROTECTION PHASE (0-6 WEEKS)**

- Sling 4-6 weeks. Gradually wean out of daytime sling at 4 weeks post op in a controlled environment. Continue to sleep in sling until 6 weeks post op.
- During this time the physician might allow the patient to come out of the sling in a controlled environment (quiet home or office) if the elbow is supported while keyboarding, reading, or watching television.
- Educate patient's family in gentle PROM to be performed 2-3x/day
- Patient to ice at least 4x/day in sling to reduce pain and inflammation.
- Return to driving at 6 weeks post op.

**Precautions:** Avoid shoulder AROM, reaching away from the body, aggressive stretching, reaching behind the back, lifting, WB through surgical UE.

**Goals:** protect the repair, gradually increase PROM, and reduce pain and inflammation.

### 0-1 weeks

- Gradual PROM, no shoulder extension
- AROM elbow, wrist, and hand. Grip strengthening
- Patient education: posture, joint protection, positioning, keep the incision clean and dry

### 1-4 weeks

- Gradual PROM to pain tolerance, no shoulder extension
- PROM goals: FE 130, ER(0) in the scapular plane to 35
- Scapular retraction isometrics, avoiding shoulder extension. Cervical AROM.
- Supine AAROM with cane for ER/IR in the scapular plane with towel roll under elbow
- Resume general conditioning: walking and stationary bike **with sling on**. No shoulder extension.

### 4-6 weeks

- Gradual PROM to tolerance, no shoulder extension
  - PROM goals: FE  $\geq$  145 degrees, ER(0) in the scapular plane  $\geq$  to 45 degrees, IR( in 45 degrees of abduction) hand to belly
  - Initiate gentle scapula and GH mobs (Grades 1 and 2) as needed to assist with restoring ROM. Avoid aggressive stretching to achieve full PROM.
- Gentle pain free, submax shoulder isometrics
- Gentle pain free, submax open chain rhythmic stabilization at 100 degrees of elevation in the scapular plane in supine.
- AAROM supine forward elevation with cane. PT to provide assistance as needed.
- Initiate use of pulleys in the scapular plane for overhead ROM
- May initiate UBE avoiding extension, below shoulder height, pain free.

*Protocol developed in conjunction with OrthoCarolina Physicians.*

***\*\* Do no progress to phase II if patient presents with excessive stiffness and pain. Contact physician if excessive stiffness is present and they are not meeting ROM goals\*\****

## **PHASE II: PROTECTION TO AROM PHASE (6-12 WEEKS)**

**Precautions:** No lifting, WB through surgical UE, sudden jerking motions, aggressive behind the back motions.

**Goals:** restore normal scapula-thoracic and glenohumeral kinematics, continued repair protection

Restore dynamic shoulder stability, gradual return to functional activity, achieve full PROM, pain-free AROM.

### 6-8 weeks

- Sidelying ER AROM with small towel under arm
- Supine forward elevation AROM in the scapular plane in pain free range. \*\*Progress to standing only when patient can perform pain free without substitutions\*\*
- Prone scapulothoracic strengthening: Prone Row, Extension, horizontal abduction, abduction 100, ER (90/90). **Limit the range to prevent shoulder extension past midline of body.**
- Rows with thera-band. Limit the range to prevent shoulder extension past midline.
- Continue rhythmic stabilizations to restore dynamic glenohumeral joint stability

### 8-10 weeks

- Progress above AROM repetitions working on endurance; **high reps, no resistance**
- Continue PROM, AAROM, joint mobilizations grade 3 and 4 as needed to achieve full ROM.
- IR/ER theraband at side
- Return to jogging
- Initiate gentle internal rotation behind the back
- Begin gentle close kinetic chain stabilization

### 10-12 weeks

- Progress AROM to RROM ( high repetitions, low weight: 1 to 2lbs), only if pain-free and without substitution patterns
- **It should be strongly encouraged that the patient's main focus in phase I and II should be to restore ROM slowly and incrementally and that strengthening is secondary.**

***\*\*Do not progress to strengthening phase if the patient cannot perform AROM without pain and without shoulder and scapular shrugging/hiking\*\****

***Protocol developed in conjunction with OrthoCarolina Physicians.***

### **PHASE III: PROGRESSION FROM AROM TO PROTECTED STRENGTHENING (12-16 WEEKS)**

**Goals:** maintain full ROM; enhance functional use of UE, improve strength

12-16 weeks

- Progress RROM in pain free ranges
- Progress phase II scapulothoracic strengthening
- Progress theraband IR and ER from neutral → scapular plane → 90/90 position
- Proprioception with body blade, PNF patterns
- Progress CKC exercises such as ball on the wall, quadruped position on table progressing to unsteady surface, wall push ups.
- Low level plyometric progression: ball dribbling, 2 hand plyoback
- Continue ROM, capsular stretching, flexibility exercises to maintain full ROM
- Enhance functional use of UE

### **PHASE IV: ADVANCED STRENGTHENING PHASE (16 - 24 WEEKS)**

**Goals:** maintain integrity of rotator cuff repair; gradual return to strenuous work activity; gradual return to recreational sport activity

Must demonstrate good scapulohumeral mechanics, good dynamic stability, and adequate strength for progression into work/sports related activity.

These timeframes are average. Some surgeons may be more aggressive or more conservative when allowing return to sport.

- Initiate interval golf program
  - 16 weeks chipping and putting
  - 20-24 weeks progress full swing depending on surgery done to dominant or non-dominant arm.
- Initiate interval tennis program
  - 20 weeks ground strokes
  - 24 weeks doubles tennis
- Initiate return to throwing program
  - 24 weeks
- Initiate job specific rehab
  - 16 weeks

**\*\*Patient to continue a fundamental shoulder exercise program until 12 months post op\*\***

References:

1. Ghodadra NS, Provencher MT, Verma NN, Wilk KE, Romeo AA. Open, Mini Open, and All-Arthroscopic Rotator Cuff Repair Surgery: Indications and Implications for Rehabilitation. *J Orthopaedic Sports Physical Therapy*. 2009;39:81-89.

***Protocol developed in conjunction with OrthoCarolina Physicians.***

2. Millett PJ, Wilcox RB, O'Holleran JD, Warner JJP. Rehabilitation of the Rotator Cuff: An Evaluation-Based Approach. *J American Academy Orthopaedic Surgeons*. 2006;14:599-609.
3. OrthoCarolina *Rotator Cuff Repair Protocol* (revised 2005).

***Protocol developed in conjunction with OrthoCarolina Physicians.***