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## **Arthroscopic Rotator Cuff Repair Standard Protocol**

This rehabilitation protocol has been developed for the patient following a rotator cuff surgical procedure. The protocol will vary in length and aggressiveness depending on factors such as:

- Size and location of tear
- Quality of the repaired rotator cuff tissue
- Presence of additional procedures such as biceps tenodesis
- Degree of shoulder instability/laxity prior to surgery
- Acute versus chronic condition
- Length of time immobilized
- Strength/pain/swelling/range of motion status
- Rehabilitation goals and expectations

Early passive range of motion is highly beneficial to enhance circulation within the joint to promote healing. The protocol is divided into phases. Each phase is adaptable based on the individual and special circumstances. The **overall goals** of the surgical procedure and rehabilitation are to:

- Control pain, inflammation, and effusion
- Regain normal upper extremity strength and endurance
- Regain normal shoulder range of motion
- Achieve the level of function based on the orthopedic and patient goals

**Initiation of this protocol may be delayed up to 6 weeks post-op.** The supervised rehabilitation program is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility. **Important post-op signs** to monitor:

- Swelling of the shoulder and surrounding soft tissue
- Abnormal pain response, hypersensitivity, increasing night pain
- Severe range of motion limitations
- Weakness in the upper extremity musculature
- Improper mechanics or scapular dyskinesia
- Core and peri-scapular strength deficits

**Return to activity** requires both time and clinical evaluation. To safely and most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and endurance. Functional evaluation including strength and range of motion testing is one method of  
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evaluating a patient's readiness return to activity. Return to intense activities following a rotator cuff repair require both a strenuous strengthening and range of motion program along with a period of time to allow for tissue healing. Symptoms such as pain, swelling, or instability should be closely monitored by the patient and therapist. Specific exercises may be added, substituted, or modified

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where clinically appropriate by experienced sports/shoulder therapists or trainers who have expertise in the care of post-operative rotator cuff rehabilitation. While patients may be "cleared" to resume full activities at 6+ months following surgery, additional time spent in full activity or sport participation is often necessary to achieve maximal recovery.

Suggestions during rehab:

1. The RC gets a better blood supply when the shoulder is slightly away from the body; in addition, higher EMG activity is elicited at the posterior cuff when the arm is in a slightly abducted position vs by the side; therefore, we advocate the use of a towel roll under the arm when in a resting position or when performing isometric/isotonic RC TB exercises.
2. The RC muscles are very small; therefore, we use lower intensities to isolate each muscle without recruitment from surrounding larger muscles. Focus on hypertrophy initially by high volume ( $V = \text{Reps} \times \text{intensity/weight}$ ). Following the hypertrophy phase, strength is the focus with lower reps and higher intensities/weight.
3. Closed chain rotator cuff exercises facilitate cuff strength and shoulder proprioception. Like closed chain exercises for the knee, these can be safely initiated early in the post op course.

#### **PHASE 1: Early Postop Week 1-4**

##### GOALS OF PHASE 1

Promote healing of repaired tissue  
Control pain and inflammation  
Gradual increase of ROM  
Independent in HEP

##### BRACE/SLING

To be worn at for 4-6 weeks per Dr Shybut (default is 6 weeks)

Brace to be worn while sleeping

Can be removed for exercises only

##### PRECAUTIONS

**No Active shoulder ROM / No shoulder AAROM for 3 weeks**

\* No AROM until week 4 if subscapularis repair

ROM: Gradual  $\uparrow$  Passive ROM in scapular plane

\* Limit abduction to 90 degrees, ER to 30 degrees if subscapularis repair

Avoid excessive adduction and IR

##### EXERCISES

Passive Pendulum exercises – keep circles very small, monitor and teach proper technique

ER with cane (not to exceed 30° of ER at 45° abduction)

AA flexion supine

Gentle posterior capsular stretch (week 3)

Seated and/or supine scapular retractions – perform every hour

Shoulder shrugs

Active elbow ROM all planes as tolerated

Grip strengthening using ball or putty

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#### MANUAL

STM to decrease pain and muscle spasm

PROM all planes except extension adhering to limitations

#### MODALITIES

Moist heat 10-15 min prior to exercise

Ice 10-15 min following exercise and as needed

E-stim/TENS for pain as needed

US as needed

#### CRITERIA TO PROGRESS

90 degrees shoulder PROM forward elevation

20 degrees of shoulder PROM ER in the scapular plane

0 degrees of shoulder PROM IR in the scapular plane

Palpable muscle contraction felt in scapular and shoulder musculature

No complications with Phase I

#### **PHASE 2: WEEK 5-6**

##### GOALS OF PHASE

Control pain and inflammation

Initiate light RC muscle contraction

Gradual increase in ROM / Minimize substitution patterns with AAROM

Initiate light scapular stabilizer contraction

Continue to protect surgical repair

Patient education

##### BRACE/SLING

Per MD discretion (usually d/c at week 6)

##### PRECAUTIONS

No lifting of objects

No supporting of body weight with hands

##### ROM

Pendulum exercise

AA Flexion supine – gradually progress

ER with cane

Posterior capsule stretch

Initiate towel IR stretching

Rope/Pulley (flex/scaption)

##### STRENGTH

Continue grip strengthening as needed

Initiate submaximal pain-free isometrics week 4

Supine Active flexion without resistance with elbow flexed progress to elbow extended

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Rows and shrugs with theraband

Row on physioball, extension on physioball

Washcloth press

Supine protraction

Supine and side-lying rhythmic stabilization

Initiate TB IR/ER week 6

Standing flexion and scaption – only if good scapulo-humeral rhythm

Side-lying ER AROM progress to dumbbell

Initiate UBE without resistance at week 4

Body blade with elbow flexed, arm by side moving into IR/ER

Prone rows

\* If biceps tenodesis, no light resistive biceps exercises until week 8

\* If subscapularis repair no resisted IR until 6+ weeks

**MANUAL THERAPY**

STM as needed

Continue PROM

Initiate Grade I-II joint mobilization

**MODALITIES**

Moist heat 10-15 min prior to exercise

Ice 10-15 min following exercise and as needed

E-stim/TENS for pain as needed

US as needed

**CRITERIA TO PROGRESS**

90 degrees shoulder PROM forward elevation

20 degrees shoulder PROM ER in scapular plane

0 degrees of shoulder PROM IR in the scapular plane

Minimal substitution patterns with AAROM

Pain < 4/10

No complications with Phase II

**PHASE 3: WEEK 7-8**

**GOALS OF PHASE**

Do not overstress healing tissue

Reduce swelling, minimize pain

Gradually increase shoulder PROM/AAROM

Initiate shoulder AROM

Improve scapular muscle activation

Patient education

**PRECAUTIONS**

No lifting of heavy objects (>10 lbs)

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#### ROM

PROM: ER < 30 scapular plane, Forward elevation < 120

AAROM: seated shoulder elevation with cane, seated incline table slides, ball roll on wall

AROM: elevation < 120, supine flexion, salutes, supine punch, wall climbs

#### STRENGTH

Continue grip strengthening as needed

Continue Phase II exercises

Periscapular: Resistance band shoulder extension, resistance band seated rows, rowing, lawn mowers, robbery, serratus punches

Initiate scapular retraction/depression/protraction with subscapularis and teres minor repair

Elbow: Biceps curl, resistance band bicep curls and triceps

\* If biceps tenodesis, no light resistive biceps exercises until week 8

\* If subscapularis repair progress resisted IR gradually

#### MANUAL THERAPY

STM as needed

Continue PROM

Initiate Grade I-II joint mobilization

#### MODALITIES

Moist heat 10-15 min prior to exercise

Ice 10-15 min following exercise and as needed

E-stim/TENS for pain as needed

US as needed

#### CRITERIA TO PROGRESS

120 degrees shoulder PROM forward elevation

30 degrees shoulder PROM ER and IR in scapular plane

Minimal substitution patterns with AROM

Pain < 4/10

#### **PHASE 4: Week 9-12**

##### GOALS OF PHASE

Do not overstress healing tissue

Gradual increase shoulder PROM / AAROM / AROM to full

Improve dynamic shoulder stability

Progress periscapular strength

Gradual return to functional ADLs

#### ROM

Gradual progression to full PROM -> AAROM -> AROM

#### STRENGTH

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Continue with all strengthening from previous phases increasing resistance and repetition  
Manual rhythmic stabilization exercises in standing at 90° flex/scapation  
Supine punches with resistance  
Prone shoulder extension  
Prone scaption  
Prone ER with abduction  
Initiate D1/D2 PNF patterns in standing  
Push-up progression – start at week 8 on wall  
UBE for endurance training  
Bicep/Tricep work  
Body blade – multi-planar  
Continue earlier phase interventions / exercises

**MANUAL**

Initiate Grade II-IV joint mobs as needed  
Continue to gradually progress PROM  
Continue STM as needed

**MODALITIES**

MHP as needed  
Ice 10-15 minutes  
Ultrasound as needed

**CRITERIA TO PROGRESS**

Full pain-free PROM / AROM  
Minimal to no substitution patterns w shoulder AROM  
Perform all exercises with symmetric scapular mechanics  
Pain < 2/10

**PHASE 5: WEEK 13-16**

**GOALS OF PHASE**

Maintain pain free ROM  
Initiate RTC strengthening (with clearance from surgeon)  
Initiate motor control exercise  
Enhance functional use of UE

**STRENGTH**

ER/IR isometrics, side-lying ER  
Standing ER vs resistance band, standing IR vs resistance band; IR, ER, sidling ABD -> standing ABD  
Periscapular T and Y; W exercise, resistance band Ws, dynamic hug, resistance band dynamic hug  
IR and ER in scaption and flex 90-125 rhythmic stabilization  
Continue push up progressions  
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Quadruped alternating isometrics and ball stabilization on wall  
PNF D1 diagonal lifts -> D2 diagonal lifts  
Field goals

**CRITERIA TO PROGRESS**

Full pain-free PROM and AROM  
ER/IR strength minimum 85% uninvolved arm  
ER/IR ratio 60% or more  
Negative impingement and instability signs  
Performs all exercises demonstrating symmetric scapular mechanics

**PHASE 6: Weeks 17-36+**

**GOALS OF PHASE**

Maintain pain-free ROM  
Continue strengthening and motor control development  
Enhance functional use of upper extremity  
Maximize upper extremity strength and endurance  
Maximize neuromuscular control  
Optimize shoulder mechanics/kinematics  
Optimize core stability  
Gradual return to strenuous work / sporting activities  
Initiate sports specific training/functional training

**STRENGTH:**

Progress strengthening program with increase in resistance and high speed repetition  
UBE high resistance for endurance  
IR/ER exercises at 90° abduction  
Progress rhythmic stabilization activities to include standing PNF patterns with tubing  
Initiate single arm plyotoss (ball toss, ball on wall)  
Eccentric RC strengthening  
Initiate military press, bench press, flys, lat pulldowns week 16+ (do NOT let elbow extend past plane of thorax)  
Initiate sport specific drills and functional activities  
Initiate interval throwing program week 16-20 – consult with Dr. Shybut first\*  
Initiate light upper body plyometric program week 16-20  
Progress isokinetics to 90° abduction at high speeds

**MANUAL**

Grade III-IV joint mobs as needed for full ROM  
Full PROM

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#### MODALITIES

MHP as needed

Ice 10-15 minutes

Ultrasound as needed

#### CRITERIA TO PROGRESS

For athletes and people performing strenuous manual tasks, return-to-sport or return-to-activity decision making should be individualized and based upon factors including level of demand on the upper extremity, contact / collision vs non contact sport, frequency and intensity of participation, etc. We encourage close discussion with the patient and surgeon and physical therapist prior to advancing return to sport progressions.