

Inland Orthopaedic Surgery & Sports Medicine

Dr. Ed Tingstad

825 SE Bishop Blvd., Suite 120 Pullman, WA 99163 (509)332-2828

Post Operative Rotator Cuff Rehabilitation Protocol

(Modified from Matsen, Bach, Cohen, and Romeo)

Often modified for each patient

Phase 1: Weeks 0-6

Restrictions

- No active ROM exercises.
- Active ROM exercises initiation based on size of tear
 - Small tears (0-1 cm) – no active ROM before 4 weeks
 - Medium tears (1-3 cm) – no active ROM before 6 weeks
 - Large tears (3-5 cm) – no active ROM before 8 weeks
 - Massive tears (> 5 cm ROM) – no active ROM before 12 weeks
- Delay active-assisted ROM exercises for similar time periods based on the size of the tear
- Passive ROM only
 - 100° of forward flexion.
 - 30° of external rotation.
 - 60° of abduction without rotation.
- No strengthening/resisted motions of the shoulder until 12 weeks after surgery
- For tears with high healing potential (small tears, acute, patients younger than 50 years, nonsmoker), isometric strengthening progressing to Theraband exercises may begin at 8 weeks. Strengthening exercises before 12 weeks should be performed with the arm at less than 45° of abduction.

Immobilization

- Type of immobilization depends on amount of abduction required to repair rotator cuff tendons with little or no tension.
- Use of sling – if tension of repair is minimal or none with the arm at the side
 - Small tears – 1-3 weeks
 - Medium tears – 3-6 weeks
 - Large and massive tears – 6-8 weeks
- Abduction orthosis – if tension of repair is minimal or none with arm in 20-40° abduction
 - Small tears – 6 weeks
 - Medium tears – 6 weeks
 - Large and massive tears – 8 weeks

Pain Control

- Patients treated with arthroscopic rotator cuff repair experience less postoperative pain than patients treated with mini-open or open repairs (but more tenuous repair).
- Medications
 - Narcotic – for 7-10 days following surgery.

- NSAIDs – for patients with persistent discomfort following surgery. In the older population with additional comorbidities, consider newer COX-2 inhibitor formulas.
- Therapeutic modalities
 - Ice, ultrasound, HVGS.
 - Moist heat before therapy, ice at end of session.

Shoulder Motion

- Passive only
 - 140° of forward flexion.
 - 40° of external rotation.
 - 60-80° of abduction.
- For patients immobilized in abduction pillow, avoid adduction (i.e., bringing arm toward midline).
- Exercises should begin “above” the level of abduction in the abduction pillow
 - Begin Codman pendulum exercises to promote early motion.
 - Passive ROM exercises only.

Elbow Motion

- Passive – progress to active motion
0-130° degrees
Pronation and supination as tolerated.

Muscle Strengthening

- Grip strengthening only in this phase

Phase 2: Week 6 – 12

Criteria for Progression to Phase 2

- At least 6 weeks of recovery has elapsed
- Painless passive ROM to
 - 140° of forward flexion
 - 40° of external rotation
 - 60-80° of abduction

Restrictions

- No strengthening/resisted motions of the shoulder until 12 weeks after surgery.
- During phase 2, no AROM exercises for patients with massive tears.

Immobilization

- Discontinuation of sling or abduction orthosis.
- Use for comfort only.

Pain Control

- NSAIDs for patients with persistent discomfort following surgery.
- Therapeutic modalities
 - Ice, ultrasound, HVGS.
 - Moist heat before therapy, ice at end of session.

Shoulder Motion

Goals

- 140° of forward flexion – progress to 160°
- 40° of external rotation – progress to 60°
- 60-80° of abduction – progress to 90°

Exercises

- Continue with passive ROM exercises to achieve above goals.
- Begin active-assisted ROM exercises 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.

Muscle Strengthening

- Begin rotator cuff and scapular stabilizer strengthening for small tears with excellent healing potential – as outlined below in phase 3.
- Continue with grip strengthening.

Phase 3: Months 4-6

Criteria for Progression to Phase 3

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

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 and 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 Therabands
 - 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 patient's side.

- Exercises are performed through an arc of 45° in each of the five planes of motion.
- Six color-coded bands are available; each provides increasing resistance from 1 to 6 pounds, at increments of 1 pound.
- Progression to the next band occurs usually in 2-3 week intervals. Patients are instructed not to progress to the next band if there is any discomfort at the present level.
- Theraband exercises permit concentric and eccentric strengthening of the shoulder muscles and are a form of isotonic exercises (characterized by variable speed and fixed resistance)
 - Internal rotation.
 - External rotation.
 - Abduction.
 - Forward flexion.
 - Extension.
- Progress to light isotonic dumbbell exercises
 - Internal rotation.
 - External rotation.
 - Abduction.
 - Forward flexion.
 - Extension.
- Strengthening of the deltoid – especially anterior deltoid
- Strengthening of scapular stabilizers
 - Closed-chain strengthening exercises
 - Scapular retraction (rhomboidus, 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 to 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

- Small tears – 4-6 months
- Medium tears – 6-8 months
- Large and massive tears – 8-12 months
- Patients will continue to show improvement in strength and function for at least 12 months

Warning Signals

- Loss of motion – especially internal rotation.
- Lack of strength progression – especially abduction.

- Continued pain – especially at night.

Treatment

- These patients may need to move back to earlier routines.
- May require increased utilization of pain control modalities as outlined above.
- May require repeat surgical intervention.
 - Indications for repeat surgical intervention
 - Inability to establish more than 90° forward elevation by 3 months
 - Steady progress interrupted by a traumatic event and/or painful pop during the healing phase with a lasting loss of previously gained active motion.
 - Radiographic evidence of loosened intra-articular implants (e.g., corkscrews) after an injury in the postoperative rehabilitation period. The patient has a loss of active motion and/or crepitation of the joint as well.