

Large-to-Massive Rotator Cuff Repair: Physical Therapy Protocol

General Considerations

• Definition: Large-to-massive tears involve multiple tendons, significant retraction, or poor tissue quality. These repairs require a conservative approach to rehabilitation.

Factors Affecting Outcomes:

- Tear size and tissue quality
- Number of tendons involved
- Patient factors such as age, BMI, and comorbidities (e.g., diabetes)
- Concomitant subscapularis repair requires extra caution: No external rotation (ER) past 0° or abduction past 90° in Phase I.

Red Flags:

- For Therapists:
 - Monitor for signs of stiffness (e.g., inability to achieve expected PROM milestones), repair failure (e.g., sharp pain, significant weakness, or clicking sensation), or excessive swelling.
- For Patients:
 - Report the following immediately:
 - Persistent or sharp shoulder pain not improving with rest.
 - Sudden onset of weakness or inability to lift the arm.
 - Significant increase in swelling, warmth, or redness around the shoulder.

Phase I: Immediate Post-Operative Protection (Weeks 0–6)

Goals:

- Protect tendon repair and promote tendon-to-bone healing.
- Minimize inflammation and pain (e.g., cryotherapy, TENS).
- Maintain mobility of the hand, wrist, and elbow.

Precautions:

- No active or passive shoulder movement.
- No weight-bearing through the surgical arm.
- No reaching overhead, behind the back, pushing, or pulling.
- If subscapularis was repaired: No ER past 0° or abduction past 90°.

Sling Use:

- Worn full-time (including while sleeping) with an abduction pillow (30°–45° abduction).

Interventions:

- Hand, Wrist, Elbow AROM: Avoid active elbow flexion for 4 weeks if biceps tenodesis was performed.
- Scapular Mobility: Performed within sling.
- Pain Management: Cryotherapy recommended 20 minutes, 2–3 times per day.

Criteria to Progress:

- Pain and inflammation controlled.
- Adherence to immobilization and precautions.
- No signs of repair compromise.

Phase II: Passive Range of Motion (Weeks 6–10)

Goals:

- Minimize stiffness while protecting repair.
- Gradually introduce passive range of motion (PROM).
- Educate on post-operative restrictions and home exercise program (HEP).

Precautions:

- No active shoulder motion.
- Avoid painful or aggressive PROM.
- No internal rotation (IR) or reaching behind the back.

Interventions:

- PROM (With PT Assistance):
 - Forward elevation: 0°–100°
 - External rotation (scapular plane): 0°–30°
 - Abduction: Avoid if subscapularis was repaired.
- Gentle Scapular Exercises: Retraction, elevation, and depression without resistance.
- Table Slides and Pendulums: Avoid active shoulder muscle use.

Criteria to Progress:

- PROM: $\geq 120^\circ$ forward elevation, $\geq 45^\circ$ external rotation.
- Pain and inflammation controlled.
- Compliance with restrictions and HEP.

Phase III: Active Assisted and Active Range of Motion (Weeks 10–18)

Goals:

- Initiate active-assisted range of motion (AAROM) and active range of motion (AROM).
- Normalize motion and perform daily activities.

Precautions:

- No lifting or pain-inducing activities.
- Avoid sudden, jerking motions or excessive loading.

Interventions:

- AAROM Progression:
 - Cane-assisted forward flexion and external rotation (supine to upright progression)
 - Wall slides and wall walks (starting at Week 12)
- AROM Progression (Week 14):
 - Side-lying and standing external rotation
 - Active forward reach and shoulder elevation
- Strengthening (Week 14): Isometrics for shoulder flexion, extension, and ER/IR (submaximal effort only).

Criteria to Progress:

- AROM without compensations.
- Functional ROM for activities of daily living (ADLs).
- Pain levels <3/10 during exercises.

Phase IV: Initial Strengthening Phase (Weeks 18–22)

Goals:

- Restore full PROM and progress strength, endurance, and power.
- Achieve ADLs and modified recreational activities without discomfort.

Precautions:

- No lifting objects heavier than 5 lbs.
- Avoid uncontrolled or overhead lifting.

Phase V: Advanced Strengthening (Weeks 22–26)

Goals:

- Restore maximal strength, power, and endurance.
- Maintain full ROM and pain-free function.

Phase VI: Return to Sport (Weeks 26–30+)

Goals:

- Safely return to work, recreational, or athletic activities.
- Achieve shoulder strength ≥85%–90% of the contralateral side.

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Precautions:

- Avoid heavy or forceful lifting.
- No painful activity progression.

Interventions:

- Conditioning: Gradual progression to general upper extremity strengthening.
- Return-to-Sport Training: Sport or activity-specific drills under therapist guidance.

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