Rotator Cuff Repair Protocol

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Core Clinical Philosophy

- **Tendon Integrity First:** Protection of the repair site is paramount for the first 6 weeks.
- **Criteria-Based Progression:** Patients progress based on functional milestones, not just the calendar.
- **The 15% Rule:** In Phase III, do not increase resistance by more than 15% per week to prevent "reactive tendinopathy."

Phase I: Maximum Protection (Weeks 0–6)

Goals: Protect repair, optimize biology, maintain distal mobility.

- **Sling Education:** * Weeks 0–4: Continuous wear.
    - Weeks 4–6: Wean during quiet home activities. **Avoid "reaching and grabbing"** (e.g., reaching for a seatbelt or a gallon of milk).
- **ROM (Strictly Passive):**
    - **Forward Elevation:** Goal 140 degrees in the scapular plane.
    - **External Rotation:** Limit to 30 degrees to protect the subscapularis and anterior repair.
    - **Internal Rotation:** Avoid stretching into IR for 6 weeks.
- **Neuromuscular Readiness:** * **Active Distal ROM:** Full elbow/wrist/hand AROM to prevent "complex regional pain syndrome" and promote circulation.
    - **Submaximal Isometrics:** Start at Week 4 (gentle "fist-to-wall" holds) to prevent muscle atrophy without straining the tendon-bone interface.

Phase II: Controlled Loading & AROM (Weeks 6–10)

Goals: Restore full AROM; eliminate compensatory "shrugging" patterns.

- **Kinetic Chain Integration:** * Incorporate core and lower extremity stability. Studies show that a stable base reduces the required force from the rotator cuff by up to 20%.
- **Motion Progression:**
    - **AAROM:** Wand/Cane exercises (Flexion, ER, Abduction).

- **AROM:** Begin "Short Lever" flexion (elbow bent) to reduce the moment arm on the repair.
- **Scapular Dyskinesis Correction:** Emphasize lower trapezius and serratus anterior activation to ensure the humerus centers in the socket.

Phase III: Strengthening & Endurance (Weeks 10–16)

Goals: Restore rotator cuff strength; improve tendon "load capacity."

- **Evidence Update:** Utilization of **Towel Roll ER**. Placing a small towel between the elbow and ribs during ER exercises increases EMG activity of the infraspinatus and improves blood flow to the "critical zone" of the supraspinatus.
- **Exercises:**
  - **Resisted ER/IR:** Start with yellow/red bands (low load/high reps for endurance).
  - **Prone Series:** Y, T, and W exercises to target the posterior chain.
  - **Bicipital Control:** Gentle curls (elbow at side) to stabilize the humeral head.
- **Proprioception:** Closed-chain weight-bearing (e.g., quadruped rocking) to improve joint position sense.

Phase IV: Advanced Power & Return to Function (Weeks 16–24+)

Goals: Full return to sport/heavy labor; power development.

- **Plyometric Progression:**
  - Stage 1: Two-hand medicine ball chest pass.
  - Stage 2: One-hand overhead tosses (Week 20+).
- **Eccentric Training:** Crucial for patients returning to overhead sports (Tennis/Swimming) to prevent re-tear during the "deceleration" phase of the motion.
- **Discharge Criteria:**
  - Rotator cuff strength > 90% of the uninvolved side (via dynamometer if available).
  - SANE score (Single Assessment Numeric Evaluation) > 85%.

Red Flags & Therapist Notes

1. **The "Drop Sign":** If the patient suddenly loses the ability to hold the arm at 90 degrees of abduction, notify Dr. Gent.
2. **Smoking/Nicotine:** Remind patients that nicotine reduces tendon-to-bone healing by up to 50%; compliance with smoking cessation is critical for surgical success.