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Rehabilitation Protocol
Reverse Total Shoulder Arthroplasty for Proximal Humerus Fracture

Phase 1: *Immediate Motion – Protect the Tuberosity Repair (0 to 4 weeks)*

- Patients may shower on Post op day #3 - over plastic, waterproof dressing
- Waterproof dressing will be removed by surgeon at 1st post-op visit
- Sutures are all underneath the skin and will dissolve on their own
- Bruising of the anterior arm, chest wall, and forearm is **EXPECTED** after fracture surgery and should be monitored clinically
- **Sling should be worn at all times** except for showering, shoulder exercises, and the light ADLs below
    - **The sling must come off every day for exercises** – the goal of this protocol is early motion
    - **At 2 weeks:** ok to remove the sling while at rest (seated, arm supported on a pillow or armrest)
- **Immediate light ADLs are permitted** with the elbow at the side: eating, drinking, brushing teeth, and similar waist-to-face tasks
    - No lifting heavier than a cup of coffee; no pushing, pulling, or weight-bearing through the involved arm
- While lying supine, the distal humerus/elbow should be supported by a pillow or towel roll to avoid shoulder extension
- Therapist should teach the following in hospital on POD1 to be performed 3 times per day **starting immediately**:
    - Elbow, forearm, and hand AROM
    - Pendulums
    - Supine passive ROM – flexion to 130, ER to 20

      ****Supine exercises should be performed with a small towel placed behind the elbow to avoid shoulder hyperextension and anterior capsular stretch****
    - Emphasize home program
- Restrictions:
    - No active ROM of the shoulder (other than light ADLs above)
    - No PROM into IR beyond neutral (0°)
    - Avoid extension of shoulder and reaching behind the back

Phase 2: *Protect the Tuberosity Repair – Add AAROM (4 to 6 weeks)*

- **Discontinue sling at 4 weeks**
- Maintain the following restrictions:
    - Limit ER to 20
    - No resisted IR, and **no PROM/AAROM into IR beyond neutral (0°)**
    - Avoid extension of shoulder
    - Avoid reaching behind the back
    - Do not lift anything greater than 2 to 3 lbs with the involved hand
    - No active ROM of the shoulder against gravity until 6 weeks
    - While lying supine, the distal humerus/elbow should be supported by a pillow or towel roll to avoid shoulder extension
- Continue Phase 1 exercises with the addition of:
    - AAROM - Pulleys into scapular plane elevation to 130, ER to 20

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- Supine AAROM (wand) into flexion and ER with above limits
- Emphasize home program

Phase 3: *AROM (6 to 12 weeks)*

- **Advancement to AROM requires surgeon clearance of the 6-week radiographs** (acceptable tuberosity position and progression toward healing). If tuberosity displacement or delayed healing is noted, remain in Phase 2 until cleared
- Lifting restriction of 10 pounds until 3 months
- Initiate AROM; advance AROM, AAROM, and PROM as tolerated
  - Maintain ER limit of 30 until 12 weeks
  - Advance elevation as tolerated
- **At 8 weeks:** initiate PROM/AAROM into internal rotation in the scapular plane (arm supported at the side, elbow near 90°) — begin gently and advance as tolerated. Do not combine IR with extension or adduction (i.e., no hand-behind-back stretching) until 10 weeks, to protect the healing lesser tuberosity/subscapularis
- **At 8 weeks:** begin gentle extension ROM
- Scapular stabilizer strengthening
- **NO RESISTED ROTATOR CUFF STRENGTHENING (IR OR ER), NO RESISTED EXTENSION, AND NO RESISTED OVERHEAD STRENGTHENING UNTIL 12 WEEKS**
- Starting at 8 weeks, document functional IR by spinal landmark reached (e.g., sacrum, L3, T12) at each visit — this creates an early trend line so a stalling IR trajectory is caught early

Phase 4: *Strengthening (>12 weeks)*

- Advance shoulder ER range of motion as tolerated (Light stretching only)
- May initiate rotator cuff strengthening, including resisted IR, ER, and extension
- May initiate overhead strengthening
- Advance shoulder and rotator cuff strengthening as tolerated
- Incorporate low level functional activities at 3 months (swimming, water aerobics, light tennis, jogging)
- Start higher-level activities at 4 months (tennis, light weight training, and golf)
- Initiate functional progression to sports specific activities at 4 months

Anterior Capsule / Extension Mobility Progression (begin once above criteria are met, ~12–14 weeks):

Rationale: functional (hand-behind-back) IR requires >40° of shoulder extension. Months of protective extension avoidance allow the anterior capsule/subscapularis to adaptively shorten — this progression directly re-lengthens those structures once the tuberosity repair has healed.

- Progressive doorway/corner anterior capsular stretch into horizontal abduction and extension, advancing arm position weekly as tolerated
- Progressive towel- or wand-assisted hand-behind-back stretch (combined extension + IR + adduction), 2–3x/day, gentle end-range hold
- Thoracic extension mobility (foam roller or wall thoracic extensions) — improves the trunk-extension contribution to functional IR
- Cross-body adduction stretch for the posterior capsule — lateralized glenosphere designs can over-tension the posterior capsule, which also restricts IR
- Functional task practice: simulated toileting, dressing, and hygiene tasks to reinforce combined-motion IR carryover

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Red Flag / Escalation Criteria — refer back to surgeon if:

- New loss of active elevation, a new "pop," or increasing pain at any stage — obtain radiographs to rule out tuberosity displacement
- No improvement in functional IR spinal landmark over a **4-week** period by the **14-week** visit
- Active or passive IR remains substantially restricted at the **14-week** visit despite consistent home program adherence
- Marked asymmetric loss of passive extension or anterior capsular end-feel (firm/capsular, non-painful block) on exam

Early referral allows consideration of manipulation under anesthesia, targeted anterior capsular mobilization, or formal PT re-evaluation *before* soft tissue matures into a fixed contracture