

## **Physical Therapy Protocol: PROXIMAL HUMERUS FRACTURE ORIF**

### **RESTRICTIONS:**

- NO lifting, pushing, pulling, or weight bearing through operative arm until cleared
- NO external rotation beyond 35° (protect lesser tuberosity) for 6 weeks
- NO reaching behind back (protect greater tuberosity) for 6 weeks

### **Phase I – Protection and Early Mobility (0–6 Weeks Post-Op)**

#### **Goals:**

- Protect surgical fixation and promote bone healing
- Manage pain and edema
- Maintain mobility of distal joints and scapula
- Prevent stiffness through gentle, protected motion

#### **Precautions:**

- NO lifting, pushing, pulling, or weight bearing through operative arm until cleared
- NO external rotation beyond 35° (protect lesser tuberosity) for 6 weeks
- NO reaching behind back (protect greater tuberosity) for 6 weeks
- Maintain sling use except for hygiene and exercises

#### **Interventions:**

- **Immobilization:**
  - Sling or abduction pillow (typically 4–6 weeks)
- **Pain and Edema Control:**
  - Cryotherapy 15–20 min, x6/day for 1 week. As needed following weeks
  - Compression sleeve if indicated
- **ROM:**
  - **Elbow/wrist/hand:** Active range of motion (AROM) encouraged immediately
  - **Shoulder:** Begin **passive range of motion (PROM)** at 2 weeks post-op
    - Flexion to 90–120°
    - External rotation to 35° in neutral
  - Gentle pendulum exercises
- **Scapular Control:**
  - Gentle scapular retraction, depression, and protraction AROM
- **Postural Exercises:**
  - Cervical and thoracic mobility to avoid compensatory stiffness

### Criteria to Advance to Phase II:

- Pain controlled and incision healed
  - Passive flexion  $\geq 120^\circ$ , ER  $\geq 40^\circ$ , pain-free
  - Surgeon clearance based on radiographic signs of fracture stability
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### Phase II – Active Motion and Controlled Strengthening (6–12 Weeks Post-Op)

#### Goals:

- Restore active shoulder motion
- Re-establish dynamic stability and muscle activation
- Maintain full mobility of adjacent joints
- Begin gentle strengthening once healing confirmed

#### Precautions:

- Avoid heavy resistance or lifting  $>2-3$  lb until 10–12 weeks
- Avoid painful or forceful stretching until complete union confirmed on x-rays (usually 8 to 12 weeks)

#### Interventions:

- **ROM Progression:**
  - Transition from PROM  $\rightarrow$  active-assisted (AAROM)  $\rightarrow$  active (AROM)
  - Gradually restore flexion, abduction, ER, IR as tolerated
- **Strengthening (start ~8 weeks once full AROM achieved):**
  - Isometrics for deltoid, rotator cuff, and scapular stabilizers
  - Progress to isotonic exercises with light resistance bands or weights
- **Scapular Stabilization:**
  - Rows, prone retraction, and wall slides emphasizing control and symmetry
- **Neuromuscular Re-education:**
  - Rhythmic stabilization, proprioceptive drills in supported positions
- **Manual Therapy:**
  - Soft tissue mobilization to address deltoid, pec, lat, and capsule tightness

### Criteria to Advance to Phase III:

- Full or near-full AROM without pain
- Good scapulohumeral rhythm
- Strength  $\geq 4/5$  throughout
- Surgeon clearance based on radiographic signs of fracture healing

### **Phase III – Strengthening and Functional Reintegration (12+ Weeks Post-Op)**

#### **Goals:**

- Restore full functional strength, endurance, and motion
- Improve proprioception and dynamic control
- Return to prior level of activity, work, or sport

#### **Precautions:**

- Avoid impact loading until radiographic union confirmed
- Gradual return to sport or heavy work under supervision

#### **Interventions:**

- **Strengthening Progression:**
  - Resistance band and weight training (rotator cuff, deltoid, scapular muscles)
  - Eccentric and closed-chain exercises as tolerated
- **Functional Training:**
  - Reaching, lifting, carrying, and overhead tasks in graduated progression
  - Sport- or job-specific drills (simulate functional loads)
- **Flexibility:**
  - Maintain full shoulder and scapular mobility
- **Proprioception & Endurance:**
  - Dynamic stabilization drills (body blade, ball-on-wall, perturbation)
  - Cardiovascular conditioning (e.g., UBE, elliptical)