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## **Shoulder Arthroplasty Rehabilitation Framework**

The following is a basic framework from which to work during rehabilitation following anatomic total shoulder arthroplasty when the subscapularis is taken down with tenotomy. However, it is critical to communicate with the surgeon in order to be aware of the condition of the tissue at the time of repair, any concomitant procedures that might have been performed, etc, that might impact the progression that is appropriate for each specific patient.

Healing of the subscapularis repair following the tenotomy optimizes the outcome after this surgery, and this mandates limitation of external rotation in the initial stages of healing, and internal rotation strengthening for 12 weeks

### **PHASE I: Passive Motion (Weeks 0 - 6)**

#### **Goals:**

- PROM – forward flexion to 140 by the end of week 6
- PROM – ER: to neutral POD 1-end of week 3; to 30 degrees 4 – 6 weeks
- Decrease pain, decrease muscle atrophy, educate regarding joint protection
- Provide the patient with instructions for home exercises 3 to 5 x per day

#### **Precautions:**

- Stay within precautionary range limits for subscapularis healing: first 3 weeks ER to neutral only; 3 – 6 weeks ER to 30 degrees in scapular plane; passive forward flexion to 140
- Week 1 – 2: Sling with abduction pillow at all times, removed only for 3 to 5 x/day exercises, showering, and dressing
- Week 3 – 6: Sling while out of home/uncontrolled environment, continue wearing during sleep if patient is an active sleeper.
- Week 3 – 6: Okay to perform waist level activities WITH ELBOW AT SIDE in front of the body
  - Typing, eating utensils, combing hair and washing face with elbow at side
  - No lifting, reaching or pulling heavier than a coffee cup with elbow at side



### **Teaching:**

- Emphasize home PROM (flexion and ER as above)
- Instruct regular icing techniques or cold therapy device (use as much as possible out of 24 hours for 8 – 10 days)
- Ice packs for 20 – 30 minute intervals, especially at the end of an exercise session
- Monitor for edema in forearm, hand, or finger

### **Exercises**

- Pendulum exercises
- Passive, supine well-arm assisted forward flexion, or table top supported forward flexion as tolerated up to 140 degrees
- Passive ER to 0 degrees for first 3 weeks, then to 30 degrees week 3 – 6 (seated with well arm or supine with cane assist and arm supported in scapular plane)
- Active scapular retraction, elevation in sitting or standing
- Active elbow, wrist, hand ROM – Grasping and gripping lightweight objects

## **PHASE II: Active Range of Motion (Weeks 6 - 12)**

### **Goals:**

- Full range of motion by end of week 12. After 6 week physician visit, patient and therapist can move beyond the safe zones as pain allows.
- Emphasis should be on range of motion before strengthening
- Improve strength, decrease pain, increase functional activities, scapular stabilization

### **Precautions:**

- No sling use
- No resisted internal rotation until 12 weeks post-op
- No aggressive external rotation stretching – allow motion to return gradually without force



**Teaching:**

- Encourage continued stretching at home. Limited only by pain
- Ice after exercise

**Exercises:**

- Encourage patient to use smooth, natural movement patterns
- Continue to work on PROM until expected range is full: forward flexion 160, ER 60, IR T12
- Begin AROM and AAROM (using a cane), progressively, to full ROM
- Assisted forward flexion supine using uninvolved arm to assist – progressing to active motion in a reclined position and then to sitting
- Side-lying ER against gravity
- Encourage normal scapular mechanics with active motion
- Add Theraband exercises or light dumbbell weights (2#) for flexion, extension, ER
- Scapulothoracic strengthening (prone extension, prone T, etc.)
- Aquatic therapy, if available, can begin no earlier than 1 month post-op if wound is completely healed.
  - Week 1 – 6: Stay within established safe zone listed above. Passive motion only
  - Week 6+ : Shoulder fully submerged – slow, active motions for flexion, elevation, ER/IR and horizontal abduction/adduction out to scapular plane, range of motion limited by pain only.

**PHASE III: Final Strengthening ( Weeks 10+)**

**Goals:**

- If acceptable motion has been achieved (>160 FF, >60 ER, IR T12 or above), then Maximize strength – otherwise continue with stretching program
- Improve neuromuscular control
- Increase functional activities



**Precautions:**

- No sudden, forceful resisted IR (ex. Golfing, wood splitting, swimming) until > 3 months post-op

**Teaching:**

- Continue home stretching minimum 1 x per day to maintain full range of motion

**Exercises:**

- Continue to increase difficulty of Theraband and dumbbell exercises as tolerated
- Increase resistance exercises – must be light enough weight that > 20 reps are achieved per set
- Continue aerobic training as tolerated, and modalities as appropriate
- Continue to progress home program