



## Inland Orthopaedic Surgery & Sports Medicine

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### Reverse Shoulder Arthroplasty(rTSA) Rehabilitation Protocol

Reverse shoulder arthroplasty rehabilitation is framed to meet the individual situation. For most patients a rTSA is done due to a loss of rotator cuff function and arthritis, occasionally for complex fractures. Often formal physical therapy will be started two to six weeks post- surgery. For most internal and external rotation is often less than seen in patients with an anatomic shoulder arthroplasty. For those who have remaining rotator cuff the functional gains are often better. Goals are to optimize and protect deltoid function and protect the joint from instability while it remodels and heals.

#### **Phase 1: Weeks 0-6**

**Restrictions – Avoid using arm to assist in getting up from seated position. Avoid adduction internal rotation- extension positions. Always contact if have concerns.**

•Shoulder motion – **gentle** active assisted, may lift up to a soda can. Avoid pendulum exercises first two weeks. In some passive motion will be recommended. **Supine** motion emphasized.

#### **Week 1**

- 90° of forward flexion, Elbow and wrist range of motion at side.  
Cervical spine range of motion
- 0° of external rotation with the arm at side
- 60° of abduction with 0° of rotation

#### **Week 2**

- 110° of forward flexion
- ° of external rotation with the arm at the side
- 60° of abduction with 0° of rotation

No active internal rotation

No backward extension

#### **Weeks 3-6**

- Advance elevation to 120 degrees with 20 external rotation
- Supine stretches emphasized.
- Active recruitment of scapular stabilizers

#### **Immobilization**

•Sling with cushion – for four-six weeks at all times except during therapy and showers. May remove and keep hand near belly button for 2-3 hours daily.

#### **Pain control**

- Reduction of pain and discomfort is essential for recovery.
- Medications

Narcotics – for 7-10 days following surgery

NSAIDs – for patients with persistent discomfort following surgery

Tylenol preferred to NSAIDS, after 1 week.

- Therapeutic modalities

Ice, ultrasound, HVGS

Moist heat before therapy, ice at end of session

**Motion: Shoulder**

- Goals

- 120° of forward flexion

- 0° of external rotation

- 60° of abduction

- Exercises

- Begin with Codman pendulum exercises after three weeks to promote early motion.

- Passive ROM exercises are preferred if at all possible the first two weeks.

## **Phase 2: Weeks 6-12**

### **Criteria for Progression to Phase2**

- Minimal pain and tenderness.
- Motion goals of Phase 1 met
- Intact subscapularis without evidence of tendon pain on resisted internal rotation.

### **Restrictions**

- Increase ROM goals
  - 140° of forward flexion
  - 20° of external rotation with the arm/elbow at the side
  - 90° of abduction with 30° of internal and external rotation

### **Immobilization**

None – begin gentle use.

### **Pain Control**

- NSAIDs/ Tylenol – for patients with persistent discomfort following surgery.
- Therapeutic modalities
  - Ice, ultrasound, HVGS.
  - Moist heat before therapy, ice at end of session.

### **Motion: Shoulder**

- Goals
  - 140° of forward flexion
  - 20° of external rotation with the arm at the side
  - 90° of abduction with 40° of internal and external rotation
- Exercises
  - Increase active ROM in all directions.
  - Focus on passive stretching at end ranges to maintain shoulder flexibility.
  - Utilize joint mobilization techniques for capsular restrictions, especially the posterior capsule.

## **Muscle Strengthening**

- Avoid deltoid strengthening for 12 weeks post-surgery.
  - Grip strengthening okay at 6 week mark.
- Begin with closed-chain isometric strengthening
  - External rotation.
  - Abduction
- Progress to open-chain strengthening with Theraband at 12 weeks post-surgery.
  - Exercises performed with elbow flexed to 90°.
  - Starting position is with the shoulder in neutral position of 0° of forward flexion, abduction and external rotation.
  - Exercises are performed through an arc of 45° in each of the five planes of motion.
  - Six color-coded bands are available; each provides increasing resistance from 1 to 6 pounds, at increments of 1 pound.
  - Progression to the next band occurs usually in 2-3 week intervals. Patients are instructed not to progress to the next band if there is any discomfort at the present level.
  - Theraband exercises permit concentric and eccentric strengthening of the shoulder muscles and are a form of isotonic exercises (characterized by variable speed and fixed resistance)
    - External rotation.
    - Abduction
    - Forward flexion.
  - Progress to light isotonic dumbbell exercises
    - External rotation.
    - Abduction.
    - Forward flexion.
- Scapular stabilizer strengthening
  - Closed-chain strengthening exercises
    - Scapular retraction (rhomboides, middle trapezius).
    - Scapular protraction (serratus anterior).
    - Scapular depression (latissimus dorsi, trapezius, serratus anterior).
    - Shoulder shrugs (trapezius, levator scapulae).

## **Phase 3: Months 3-12**

### **Criteria for Progression to Phase 3**

- Painless ROM to 140 degrees.
- Satisfactory physical and xray examination.

### **Goals**

- Improve shoulder strength, power and endurance.
- Improve neuromuscular control and shoulder proprioception.
- Prepare for gradual return to functional activities.
- Home maintenance exercise program
  - ROM exercises two times a day.
  - Rotator cuff strengthening three times a week.
  - Scapular stabilizer strengthening three times a week.

### **Motion**

- Achieve motion equal to contralateral side.
- Utilize both active and passive ROM exercises to maintain motion.

### **Muscle Strengthening**

- Shoulder

- Begin internal rotation and extension strengthening
    - First closed-chain isometric strengthening and advance to Theraband and lightweight isotonic strengthening.
  - Scapular stabilizers
    - Progress to open and closed-chain strengthening.
  - Deltoid Strengthening
- 8 to 12 repetitions for each exercise, for three sets.  
Strengthening only three times per week to avoid rotator cuff tendonitis.

### **Functional Strengthening**

- Plyometric (light) exercises

Maximum improvement by 12-18 months

### **Warning Signs**

- Loss of motion.
- Continued pain.

### **Treatment of Complication**

- These patients may need to move back to earlier routines.
- May require increased use of pain control modalities as outlined above.