

Inland Orthopaedic Surgery & Sports Medicine

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Shoulder Arthroplasty Rehabilitation Protocol

(modified from Matsen, Romeo, Cohen)

Phase 1: Weeks 0-6

Restrictions

•Shoulder motion

Week 1

- 120° of forward flexion
- 20° of external rotation with the arm at side
- 75° of abduction with 0° of rotation

Week 2

- 140° of forward flexion
- 40° of external rotation with the arm at the side
- 75° of abduction with 0° of rotation

No active internal rotation

No backward extension

Immobilization

•Sling

After 7-10 days, sling used for comfort only.

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

- 140° of forward flexion
- 40° of external rotation
- 75° of abduction

•Exercises

- Begin with Codman pendulum exercises to promote early motion.
- Passive ROM exercises.

- Capsular stretching for anterior, posterior, and inferior capsule, by using the opposite arm to assist with motion.
- Active-assisted motion exercises
 - Shoulder flexion.
 - Shoulder extension.
 - Internal and external rotation
- Progress to active ROM exercises

Motion: Elbow

- Passive – progress to active
 - 0° to 130°
 - Pronation and supination as tolerated

Muscle Strengthening

- Grip strengthening only.

Phase 2: Weeks 6-12

Criteria for Progression to Phase 2

- Minimal pain and tenderness.
- Nearly complete motion.
- Intact subscapularis without evidence of tendon pain on resisted internal rotation.

Restrictions

- Increase ROM goals
 - 160° of forward flexion
 - 60° of external rotation with the arm at the side
 - 90° of abduction with 40° of internal and external rotation

Immobilization

None

Pain Control

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

Motion: Shoulder

- Goals
 - 160° of forward flexion
 - 60° 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

- Rotator cuff strengthening: Only three times per week to avoid rotator cuff tendonitis, which will occur with overtraining.
 - Begin with closed-chain isometric strengthening
 - External rotation.
 - Abduction
 - Progress to open-chain strengthening with Theraband.
 - 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

- Full painless ROM
- Satisfactory physical 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 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.