

Edward G. McFarland, M.D.
Professor, Division of Sports Medicine
and Shoulder Surgery
Vice Chairman, Adult Reconstruction

Department of Orthopaedic Surgery
Division of Sports Medicine
10753 Falls Road / Suite 215
Lutherville, MD 21093
410-583-2850 Telephone
410-583-2855 Fax
www.med.jhu.edu/ortho/sports



SHOULDER REPLACEMENT SURGERY REHABILITATION PROTOCOL

PREOPERATIVE PHYSICAL THERAPY:

MD: Prescription for out-patient pre-op appointment.

P.T.: Instruct patient in HEP - handout issued
Pre-op P.T. evaluation to establish baseline function
Schedule post-op out-patient appointment for 7 days after proposed surgery date

INPATIENT PHYSICAL THERAPY: Length of stay = approximately 3-5 days

MD: Sign consult in chart to begin in-patient P.T.
Issue prescription for out-patient P.T., to begin post-op day #7

The prescription for Out-Patient Therapy:

1. Indicates the patient's diagnosis and rehab category, which falls into two main groups:
 - Regular Program: After total shoulder replacement or hemiarthroplasty for most conditions not associated with rotator cuff repair nor a fracture.
 - Limited Program: After total shoulder replacement or hemiarthroplasty which involved a rotator cuff repair, or was done for a fracture. In this group, therapy is aimed at maintaining joint stability by achieving less motion with reasonable strength and function.
2. Indicates on the prescription form the amount of external rotation seen passively at surgery to guide the initial passive motions phase of therapy.

P.T.: Instruct in sling or shoulder immobilizer use
Instruct in AROM exercises; elbow, wrist, hand, and (Codmans as appropriate) usually days 2
Instruct in regular icing techniques or cold therapy device (use as much as possible out of 24 hours for 8-10 days)
Monitor for edema in forearm, hand, or finger.

OUTPATIENT PHYSICAL THERAPY

Phase I:

Post-Op day 7 - Week 4

Goals: decrease pain, decrease edema, increase shoulder motion, and educate regarding joint protection

1. Passive range of motion (PROM) - limit external rotation to amount specified on the prescription, and aim for 0 to 90 degrees of forward flexion by the end of 2 weeks. From day 1 patients with a total shoulder replacement may do active shoulder flexion in front of the plane of the scapula as pain allows.
2. Pendulum exercises - with the arm down at the side, the patient gently swings the hand forward and backward, then side to side, and then clockwise and counterclockwise.
3. Active motion - initially, only the elbow, wrist and hand. Active shoulder flexion as pain allows. Also work with the patient on grasping and gripping lightweight objects.
4. Ice packs for 20 - 30 minutes intervals, especially at the end of the exercise session; use home cold therapy device as much as possible out of 24 hours, for 8 - 10 days.
5. After 2 weeks begin isometric exercises: include isometric flexion, extension, abduction, adduction, and internal and external rotation.
6. At Week 3 begin rope and pulley exercise.
7. Include aerobic exercises as medical condition permits since overall conditioning will positively influence shoulder recovery.
8. Provide the patient with instructions for home exercises; instruct patient on home use of sling or immobilizer outside of clothing.
9. Patient can generally use arm to eat, read, etc. in front of body (anterior to plane of scapula) when feels comfortable lifts nothing heavier than a coffee cup. There is no limit to forward flexion actively for patients with a total shoulder replacement.

PHASE 2:

Weeks 5 - 10

Goals: decrease pain, increase active shoulder motion, begin to increase strength, and improve functional activities.

1. Continue PROM exercises, and gently increase external rotation as tolerated.
2. Continue pendulum exercises.
3. Begin AROM and AAROM (canes), limited to painfree arcs.

- assisted elevation supine using uninvolved arm to assist.
- assisted external rotation supine.
- assisted flexion and extension of the shoulder.
- encourage motion in flexion without scapular compensation

4. Wall walking with hands for forward flexion and elevation.
5. Continue isometrics.
6. Use exercise tubing emphasizing internal/external rotation, keeping elbow at about 90 degrees.
7. May begin light weight (<5 lbs.) strengthening of only the biceps and triceps (elbow motion). Elbow supported as needed.
8. Add scapular muscle strengthening exercise (trapezius, serratus anterior, rhomboids and latissimus dorsi muscles).
9. Continue aerobic training as medical condition permits.
10. Continue ice, may add warmth, massage, and water exercises when indicated. Ice after exercise and any athletic activity
11. Provide the patient with instructions for home therapy.

PHASE 3:

Week 11 and on

Goals: progress active motion, increase musculature and strength, and improve coordinated control of the shoulder for daily activities and work.

1. Continue to progress all elements from Phase 2.
2. Emphasize rope and pulley (flexion, abduction, and elevation) and exercise tubing (internal and external rotation) to gradually increase range of motion.
 - goal for elevation - about 140 degrees (limited program - about 90 degrees).
 - goal for external rotation - about 40 degrees (limited program - about 20 degrees).
 - goal for internal rotation - thumb to approx. L2 level (limited program - about L5 level).
3. May begin light weight (<5lbs.) strengthening of the shoulder muscles (flexion, extension, abduction, internal and external rotation) in addition to previous biceps and triceps.
4. Continue aerobic training as tolerated, and modalities as appropriate.
5. Continue to progress home program.

NOTES:

1. With proper exercise motion, strength, and function continue to improve even after one year.
2. The complication rate after surgery is about 5 - 8%. Listed complications include infection, fracture, heterotopic bone formation, nerve injury, instability, rotator cuff tear, and tuberosity nonunion. Therefore, look for clinical signs and any unusual symptoms or lack of progress with therapy and report those to the surgeon.
3. The therapy plan above only serves as a guide. Please be aware of specific individualized patient instructions as written on the prescription or through discussions with the surgeon.