Sports Medicine
University of Colorado

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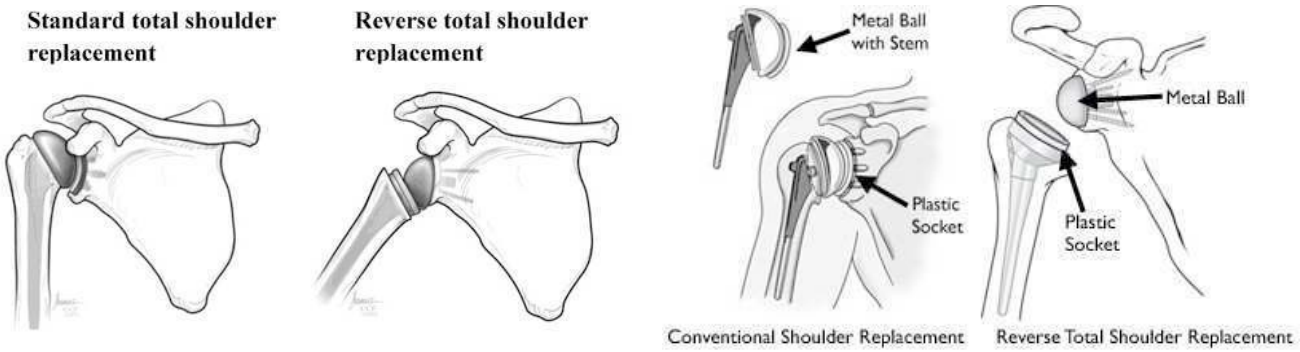
Anatomic/Reverse Total Shoulder Arthroplasty

Rehabilitation Protocol



The shoulder arthroplasty procedure is performed to improve function, increase active range of motion, and reduce pain of the shoulder. The following is a guideline for progression of post-operative treatment. The time required for full recovery is generally 9-12 months. Please note that patients may never regain full, normal motion, but patients will be encouraged to reach their max level of function.

During this procedure, the subscapularis is detached in order to expose the glenohumeral joint. This is reattached in surgery but it must be protected for 6 weeks following surgery. Therefore, strengthening activities involving active internal rotation and passive external rotation beyond neutral **must be avoided.**

In a reverse total shoulder arthroplasty- It is critical that the patient avoid putting the arm in adduction and internal rotation in conjunction with extension (tucking in a shirt, lifting oneself off the toilet, bathroom/personal hygiene) as this position greatly increases the risk of dislocation.

Immobilization:
It is important that the sling is worn for the first 6 weeks following surgery (unless directed otherwise by the surgeon). The sling should be worn at all times except getting dressed, showering, and physical therapy. It is OK to remove the sling in order to stretch the elbow, wrist, and hand.

PHASE 1 (Week 0-6):

Goals*:*

- Protection of prosthesis and Subscapularis repair: NO active internal rotation, NO external rotation past 0 degrees
- Passive range of motion (PROM) of shoulder
- Active range of motion (AROM) of elbow, wrist, hand
- Development of Home Exercise Program (HEP)
- Independent with activities of daily living (ADL's) with modification
- Cryotherapy
- Pain and inflammation control

Week 0-3:

- PROM in supine position
    - Forward flexion and elevation in the scapular plane to 90 degrees
- Periscapular sub-maximal pain-free isometrics in scapular plane
- Sub-maximal pain-free deltoid isometrics in the scapular plane
- AROM/AAROM of elbow, wrist, and hand
- Pendulums

Week 3-6:

- PROM in supine position
    - Forward flexion and elevation in the scapular plane to 120 degrees
    - ER in scapular plane to 30 degrees
- If tolerated, AAROM with pulleys in supine position in scapular plane
    - Forward Flexion to 130
    - External Rotation to 30
- Gentle resisted exercise of elbow, wrist, and hand

In order to progress to phase II, the patient must be able to:

1. Tolerate PROM of shoulder
2. AROM of elbow, wrist, and hand
3. Isometrically activate all components of the deltoid and periscapular musculature in the scapular plane.

PHASE 2: (Week 6-12):

Goals:

- Discontinue sling at 6 weeks. Should still be worn in public/crowded areas
- Restrict lifting of objects to no heavier than a coffee cup
- Gradually restore AROM
- Re-establish dynamic shoulder and scapular stability
- Strengthen rotator cuff and shoulder musculature (Isometrics, Theraband, dumbbell) AVOID resisted IR and hyperextension during phase 2.
- Limit sudden increases of deltoid activity to avoid acromion stress and fracture, this should be gradual and pain-free

Week 6-9:

- Continue working on shoulder PROM
    - OK to start PROM internal rotation to tolerance (not to exceed 50 degrees)
- Begin AAROM/AROM as appropriate if not already done so

    - Forward flexion, elevation, IR, ER (limit of 30 degrees) in scapular plane in supine with progression to sitting/standing
- Progress strengthening of elbow, wrist, hand
- Scapular stabilizer strengthening. Minimize deltoid recruitment during all exercise

Week 10-12:

- Continue with above exercises and functional activity progression
- Begin gentle glenohumeral IR and ER isometrics with progression to sidelying position with light weight (1-3lbs)
- Begin periscapular and deltoid isometrics
- Forward Flexion AROM strengthening in the scapular plane (1-3lbs) at varying degrees of trunk elevation

In order to progress to phase III, the patient must be able to:

1. Demonstrate FF 130 degrees/ ER 30 degrees and making progress
2. Isotonically activate the deltoid and periscapular muscles and is gaining strength

PHASE 3: (Week 12+):

Goals:

- Regain full range of motion
- Enhance shoulder mechanics, strength, and endurance
- Enhance functional use

Week 12-16:

- Continue with previous exercises
- Progress to resisted flexion, elevation while standing
- Incorporate low level functional activities (swimming, water aerobics, jogging)

PHASE 4: (4 months post-op):

Goals:

- Continue strengthening shoulder musculature focusing on endurance
- Progression toward a return to functional and recreational activities
- *Typically, the patient is on a home exercise program 3-4x/week*

Week 16+:

- Continue with previous exercise and strength training
- Start higher level activities (tennis, light weight training, golf)
- Initiate functional progression to sports specific activities

Criteria for discharge from skilled therapy:

1. Pain free shoulder AROM with proper shoulder mechanics
(80-120 degrees of elevation with functional ER of 30 degrees)

2. Can complete light household and work activities

3. Has met patient specific functional/activity goals

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Biceps Tenodesis Rehab Protocol

POST OPERATIVE MANAGEMENT

- Pain control with ice and anti-inflammatories
- Protect repair in sling x4-6 weeks

Week 1-4:

- Shoulder:
  - PROM
  - Stop at first resistance for external rotation for first 2 weeks
  - No extension past body for first 2 weeks
  - Scapular AROM retraction/protraction, elevation/depression with sling
  - Pendulums with wrist in neutral position
- Elbow:
  - PROM until 14 days post-surgery
  - AAROM flexion/extension with wrist in neutral position starting week 3
  - AAROM supination/pronation starting week 3
  - Avoid end-range elbow extension coupled with pronation for first 2 weeks
- Hand:
  - Gripping exercises
  - AROM

Week 5-9:

- Shoulder:
  - Progress towards full PROM as tolerable
  - AAROM→AROM
    - No shoulder flexion/abduction with elbow fully extended (long lever elevation) until 9 weeks postoperatively
  - Scapular isometrics/rhythmic stabilization at PT
  - Scapular AROM retraction/protraction, elevation/depression without sling
  - Rotator cuff and deltoid isometrics in neutral position
- Elbow:
  - Progress towards full PROM as tolerable
  - AROM flexion/extension with wrist neutral weeks 5-6, with supination weeks 7-9
  - AAROM flexion/extension with wrist supinated weeks 5-6
  - AROM pronation/supination
- Hand:
  - Continue previous exercises as needed

Goals by week 10:

1) Full PROM of shoulder and elbow
2) Pain free AROM through available ROM

Week 10-16:

- Shoulder:
  - Initiate PRE for RC and peri-scapular muscles
- Elbow:
  - Begin bicep PRE

- High repetition/low velocity/low repetition
- Begin 1 lb, progress 1 lb/week

Week 16-24:

- Functional Training/Sport Specific

Week 24+:

- return to sport

Criteria for discharge:

1. Full, pain free range of motion
2. Strength is equal bilaterally
3. Has met specific functional/activity goals
4. Has been cleared by physician

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Capsular Release Rehab Protocol

POST OPERATIVE MANAGEMENT

- Control pain—ice and anti-inflammatories
- Promote ROM
- Begin PT within 1-3 days post-operatively

Goals	• Achieve normal, pain free PROM/AROM without restrictions • Physical therapy to begin immediately post-operatively (Day 1-3) • Achieve normal rotator cuff strength with proper glenohumeral mechanics
Guidelines	• Modalities PRN • Glenohumeral and scapular joint mobs • PROM/stretching • HEP consisting of stretches, RTC and scapular stabilizer strengthening • *Maintain proper glenohumeral mechanics*

Criteria for discharge:

1. Full, pain free range of motion
2. Strength is equal bilaterally
3. Has met specific functional/activity goals
4. Has been cleared by physician