The Orthopaedic & Fracture Clinic
Andrew McNamara, MD Hand and Upper Extremity Surgery
The Orthopaedic and Fracture Clinic | 1431 Premier Drive Mankato, MN 56001 | ph. 507-386-6600 call 24/7

Reverse Total Shoulder Arthroplasty
Rehabilitation Protocol

Patient Name:_____ **Date:** _____

Diagnosis:_____

Surgery: _____**Surgery Date:** _____

Phase I (0-6 weeks post op; 2 PT visits)

Postop education: 0-7 days

- *Use Ice pack up to 6-8x/day*
- *Stay in sling at all times, except for hygiene and to come out of sling for short periods for elbow, wrist and hand range of motion*
- *Sleeping: reclined may be the most comfortable with a small pillow or towel roll under the elbow and upper arm but not under the shoulder itself*
- *The patient is encouraged to perform scapular elevation, depression, retraction and protraction (clock exercises) frequently throughout the day.*
- *Review safety and ADLs for life in a sling. Emphasize donning/doffing of shirts*
- *Review postoperative precautions with patient and care-partner.*
  - *Avoid shoulder AROM.*
  - *No lifting of objects*
  - *When reclining or lying supine, the patient is encouraged to keep a pillow or blanket behind their elbow, preventing extension through the shoulder, to reduce stress on the anterior repair site. As a rule of thumb, the patient should always be able to see their elbow.*
  - *No excessive shoulder motion beyond side pocket, especially into internal rotation*
  - *No excessive stretching or sudden movements (particularly external rotation (ER))*
  - *No supporting of body weight by hand or elbow on involved side*
  - *May shower at 1 days postop, letting water run over the skin and patting dry with a clean towel. No standing in a pool for 3 weeks. No swimming for 10 weeks.*
  - *No driving for 3 weeks*

Goals:

- Allow healing of soft tissue
- Gradually increase shoulder passive range of motion, restore elbow/wrist/ hand active range of motion
- Reduce pain and inflammation
- Reduce muscle inhibition

- Independent with activities of daily living (ADLs) while maintaining integrity of replaced joint

Precautions:

- Sling should be worn for the first 7-10 days and then worn as needed for comfort
- While lying supine, a small pillow or towel roll should be place behind the elbow to avoid shoulder hyperextension, anterior capsule stretch, or subscapularis stretch.
- No lifting of objects
- No internal rotation (IR) behind the back or resisted internal rotation
- No supporting of body weight by hand on the involved side. No pushing up from bed or chair with the surgical arm/hand.
- No excessive stretching or sudden movements (especially into external rotation) Because the subscapularis is divided and repaired, the patient is cautioned against active internal rotation and passive external rotation beyond 30°. PROM in all other planes is permitted.
- Avoid shoulder AROM into abduction or flexion past 90 °.
- Active forward flexion and abduction are also permitted if the arm is held in internal rotation throughout the arc. Again, because of the subscapularis repair, the patient should be cautioned against resistive internal rotation as a strong contraction might stress the repair. Active and passive motion is permitted for the elbow, forearm, wrist and hand.

Post-operative PT Visit #1: Typically 8-10 days post-operatively

1. Dressing left intact, tegaderm may be reinforced
2. Supine passive forward flexion to 90° (Hand to top of head)
3. Passive lR to chest
4. Active distal extremity exercises (elbow/wrist/hand)
5. Pendulums
6. Scapular sub-max isometrics (primarily retraction)
7. Frequent cryotherapy for pain, swelling, and inflammation management, conventional high-rate TENS may be used
8. Patient education regarding proper positioning and joint protection techniques.

Post-operative PT Visit #2: Typically 2-3 weeks post-operatively

1. Dressing is removed
2. 3-view XR of operative shoulder
3. Continue previous exercises
4. Passive ER to neutral with arm by side.
5. Active-assisted exercises into flexion as tolerated -table slides to wall slides/walks
6. Begin sub-maximal deltoid and periscapular isometrics in neutral (avoid IR)
7. Continue distal extremity AROM
8. Continue PROM
9. Continue cryotherapy as much as able for pain and inflammation management

Phase I Home program exercises: (Starting at wk 2)

- Pendulums/Codmans
- Passive ER
- Passive Flexion
- Shoulder Shrugs
- Elbow and Hand ROM

Criteria for progression to the next phase:

- Tolerates PROM program
  - Achieves at least 90° of flexion
  - Achieves at least 0° of external rotation

- Achieves at least 70° of internal rotation measured at 30 ° abduction
- Patient demonstrates the ability to isometrically activate all components of the deltoid and periscapular musculature in the scapular plane

Phase II: Active ROM (typically from 6-12 weeks post op, 2-3x per week)

Goals:

- Restore full shoulder PROM
- Gradually restore shoulder AROM
- Control pain and inflammation
- Allow continued healing of soft tissue
- Re-establish dynamic shoulder stability

Phase II Home program exercises:

- (added to phase I)
- Cane Exercises Overhead
- Cane External Rotation
- Cane "Punches"
- Internal/External Rotation at side
- Shoulder Flexion to 90°
- Shoulder Abduction to 90°
- Bicep Curls
- Pulleys

Precautions

- While lying supine, a small pillow or towel roll should be place behind the elbow to avoid shoulder hyperextension, anterior capsule stretch, or subscapularis stretch.
- In presence of poor shoulder mechanics, avoid repetitious shoulder AROM exercises/activity against gravity in standing.
- No lifting of heavy objects objects (heavier than a coffee cup)
- No supporting of body weight by hand on the involved side
- No sudden jerking movements

Early Phase II: (typically from weeks 6-8)

- <u>ROM and stretching</u>
  - Continue with PROM/AAROM (slow progression of PROM into external rotation and abduction with arm externally rotated)
  - AAROM pulleys flexion and abduction (as long as PROM >90 °)
  - Begin assisted horizontal adduction
  - Initiate gentle glenohumeral and scapulohumeral mobilizations
- <u>Strengthening:</u>
  - Scapular strengthening
  - Submaximal shoulder isometrics in neutral
  - Initiate glenohumeral and scapulohumeral rhythmic stabilization
- Continue cryotherapy as much as able for pain and inflammation management

Late Phase II: (typically 8-12 weeks)

- Begin active flexion, internal rotation, external rotation, abduction in pain-free range of motion
- Progress scapular strengthening
- Continue cryotherapy as much as able for pain and inflammation management

Criteria for progression to the next phase:

- Tolerates PROM/AROM/isometric program

- Achieves at least 140° of flexion PROM
- Achieves at least 120° of abduction PROM
- Achieves at least 60° of external rotation PROM in plane of scapula
- Achieves at least 70° of internal rotation PROM measured in plan of scapula at 30 ° abduction
- Able to actively elevate the arm to 90° with good mechanics in supine

Phase III: strengthening phase (typically 12+ weeks, 2-3x per week)

Goals:

- Restore shoulder AROM
- Optimize neuromuscular control
- Gradual return to functional activities with involved extremity

Precautions:

- All exercises should be performed pain-free
- OK to lift, push, pull

Phase III Home program exercises:

- (Added to phase II)
- Wall pushups
- Sitting weight shift
- Theraband exercises
- Arm raise with up to 1lb weight (scaption)

Early Phase lll: (typically 12-14 weeks)

- ROM and stretching
  - Continue PROM as needed to maintain ROM
  - Advance PROM to stretching as appropriate (wand)
  - Progress AROM exercises/activity as appropriate
  - Initiate assisted shoulder internal rotation behind the back stretch
- Strengthening
  - Begin progressive supine active elevation strengthening (ant deltoid) with light weights (1-2lb) as tolerated
  - Supine shoulder elevation strengthening at progressive inclines
  - Continued distal upper extremity strengthening and scapular strengthening
- Begin light functional training

Late Phase lll: (typically 14+ weeks)

- Resisted shoulder internal and external rotation in scapular plane
- Progress to resisted flexion, abduction, extension (weights/theraband) in standing and/or prone
- Continue progressing internal and external rotation strengthening

Criteria for progression to the next phase:

- Tolerates PROM/AROM/strengthening
- Achieves at least 120° of flexion AROM
- Achieves at least 120° of abduction AROM
- Achieves at least 60° of external rotation AROM in plane of scapula
- Achieves at least 70° of internal rotation AROM measured in plan of scapula at 30 ° abduction

Note: In patients that are rotator cuff deficient, goals and criteria must be more functionally-based. Flexion and abduction should ideally be near 90° with 30° of ER and 70° of IR. Patient should be able

to reach their hand to the top of their head to perform personal hygiene

Phase IV: Advanced Strengthening Phase: Typically 4+ months to MMI: 1x per week

Goals:

- Maintain non-painful AROM
- Enhance functional use of the upper extremity
- Improve muscular strength, power, endurance
- Gradual return to more advanced functional activities
- Progress closed chain exercises as appropriate

Precautions

- Avoid exercises that puts excessive stretch on anterior capsule (90°-90° position)
- Ensure gradual strengthening

Typically patients are on a home exercise program performed 3-4 days per week with PT progression 1 visit per week

- ROM and stretching
    - Continue AROM stretching exercises as indicated
- Strengthening
    - Gradually progressing strengthening program with increasing resistance and decreasing repetitions
- Functional Progression
    - Gradual return to moderately challenging functional activities
    - Return to recreational hobbies including gardening, sports, golf, tennis

Criteria for discharge:

- Maintain non-painful AROM
- Maximized functional use of the upper extremity
- Maximum strength, power, endurance
- Return to activities/work

Modeled after Boudreau et al. Rehabilitation following reverse total shoulder arthroplasty. *Journal of Orthopaedic & Sports Physical Therapy*, 2007 Volume:37 Issue:12 Pages:734–743 DOI:10.2519/jospt.2007.2562