

Anatomic Total Shoulder Arthroplasty

Postoperative Rehabilitation Protocol

Johnny T. Nelson MD
RaleighUpperEx.com

The intent of this protocol is to provide the clinician with guidelines of the postoperative rehabilitation after anatomic total shoulder arthroplasty (“TSA”). It is not intended to be a substitute for special instructions from Dr. Nelson or clinical decision making regarding the progression of a patient’s post-operative course. The actual postsurgical physical therapy management must be based on surgical approach, physical exam/findings, individual progress, and/or the presence of post-operative complications. Please contact Dr. Nelson with any questions. Expectation for range of motion gains should be set on a case-by-case basis depending upon underlying pathology.

*Maximum medical improvement for an uncomplicated total shoulder replacement usually **exceeds 6 months** and not uncommonly extends to **one year**.*

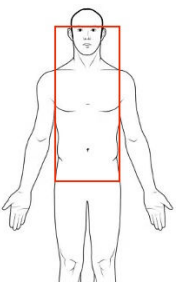
Phase I: Immediate Post-Surgical Phase: Typically 0-4 weeks; 2 PT Visits

- Goals:
 - Allow healing of soft tissue
 - Maintain integrity of replaced joint
 - Educate patient on joint protection
 - Gradually increase shoulder passive range of motion
 - Restore elbow/wrist/hand active range of motion
 - Reduce pain and inflammation
 - Reduce muscle inhibition and splinting
 - Independent with activities of daily living (ADL’s) while maintaining integrity of replaced joint
- Precautions:
 - Sling should be worn at all times
 - Exceptions: showering, dressing, and joint gliding & hand/wrist/elbow range of motion exercises
 - While lying supine, a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension, anterior capsule stretch, or subscapularis stretch
 - Avoid shoulder extension past neutral
 - Avoid shoulder adduction and internal rotation, “scratching the back” (should be avoided for 12 weeks postoperatively)
 - Avoid shoulder AROM as much as possible.
 - No lifting, pushing, or pulling with operative arm anything heavier than coffee cup
 - No internal rotation (IR) behind the back (toileting, bra straps) or resisted internal rotation (“washing the belly”)
 - No supporting of body weight by hand on the involved side
 - No excessive stretching or sudden movements (especially into external rotation (ER))
- Post-Operative PT Visit #1: Typically 8-10 days post-operatively
 - Begin 5x daily Phase I Gliding Exercises on postoperative day 3
 - Video available at www.YouTube.com/@RaleighUpperExMD
 - Instruct patient on proper technique, should be fully passive ROM with assistance from contralateral extremity
 - Passive IR to chest
 - Active distal extremity exercises (elbow/wrist/hand)
 - Cervical range of motion, trapezius stretches

- Pendulums
- Scapular mobilization and sub-max isometrics - shrugs & squeezes
- Frequent cryotherapy for pain, swelling, and inflammation management
- Patient education regarding proper positioning and joint protection techniques
 - Sling alignment, fit, with abduction pillow in proper position
- Post-Operative PT Visit #2: Typically 2-3 weeks post-operatively
 - Continue previous exercises
 - Continue Phase I Gliding Exercises
 - Continue cryotherapy as much as able for pain and inflammation management

Phase II: Early Strengthening Phase: Typically 4-8 weeks

- Goals:
 - Restore full shoulder PROM over approximately 6 weeks
 - Gradually restore shoulder AROM
 - Control pain and inflammation
 - Allow continued healing of soft tissue
 - Re-establish dynamic shoulder stability
 - Strengthening of elbow, wrist, and hand
- Precautions:
 - Sling should be continued weeks 5 & 6 when out of house
 - While lying supine, a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension, anterior capsule stretch, or subscapularis stretch
 - No internal rotation (IR) behind the back (toileting, bra straps, scratching the back, tucking in a shirt) (should be avoided for 12 weeks postoperatively)
 - No resisted internal rotation (“washing the belly”) to protect tenotomy integrity
 - Avoid shoulder extension past neutral
 - Avoid repetitive shoulder AROM exercises, cyclic loading, high frequency motions, or activity against gravity
 - Avoid passive ER stretching
 - No lifting heavier than a coffee cup
 - No supporting of body weight by hand on the involved side
 - No sudden jerking movements
- 4 weeks postoperative: Early Phase II
 - PROM
 - Passive elevation in scapular plane to tolerance - pulleys OK
 - Usually 120° maximum in this phase
 - NO ER passive motion or stretching
 - Begin AAROM & AROM
 - ER to neutral
 - Instruct patient on avoidance of ER past neutral to protect subscapularis repair
 - Elevation in scapular plane to 90° (note difference between PROM & AROM)
 - **Begin Phase II Motion Exercises**
 - Video Available at www.Youtube.com/@RaleighUpperExMD
 - This is a supine exercise, stabilizes scapulothoracic joint, eliminates gravity at 90 degrees, engages pecs/lats/deltoid/traps, encourages and re-trains normal glenohumeral rhythm without scapular substitution or trapezial over-activation
 - Encourage frequent (5x daily) home performance
 - Functional rehabilitation
 - Patient may discontinue sling to begin gentle waist-level activities at home
 - Computer use, food preparation without loading/exertion, dressing, frontal hygiene, hand-to-mouth and head activities
 - Instruct patient on “catcher’s box” concept (see diagram): not permitted to use hands outside rectangular space between beltline, face/mouth
 - Gentle glenohumeral and scapulohumeral mobilizations
 - Initiate glenohumeral and scapulohumeral rhythmic stabilization



- May initiate periscapular strengthening
 - Isometric squeezes and shrugs only
- Progress elbow/wrist/hand strengthening
- Continue cryotherapy as much as able for pain and inflammation management
- Late Phase II: (typically 6-8 weeks)
 - Completely discontinue/wean from sling
 - Progress PROM (except ER)
 - Elevation as tolerated in scapular plane
 - Horizontal adduction to tolerance - reach contralateral shoulder
 - Continue ER restrictions no AROM/PROM past neutral until phase III (usually 8 weeks)
 - Acceptable to have less than full AROM/PROM in this phase
 - Progress AROM (except ER)
 - flexion, abduction, horizontal adduction to pain free tolerance
 - Instruct and ensure proper performance of frequent Phase II Motion exercises in supine position
 - Progress scapular strengthening beyond isometrics
 - Initiate periscapular stretching & mobilization
 - Continue cryotherapy as much as able for pain and inflammation management

Phase III: Moderate Strengthening Phase: Typically 8-12 weeks: 2-3xper week

- Goals:
 - Optimize functional shoulder AROM
 - Gradual strengthening
 - Normalize and optimize neuromuscular control and movement rhythm
 - Gradual return to all functional activities with involved extremity
- Precautions:
 - No heavy lifting of objects (>5lbs)
 - No sudden lifting or pushing activities
 - No sudden jerking
- Early Phase III: (typically 8-10 weeks)
 - Continue PROM as needed to maintain ROM
 - Advance PROM to stretching as appropriate (wand, pulleys) with goal to restore FULL PROM in all planes
 - May begin ER PROM to 30°
 - Progress AROM exercises/activity as appropriate
 - May begin ER AROM to 30°
 - Strengthening
 - Resisted shoulder internal and external rotation with arm at the side
 - **Isometric**, sub-maximal, pain free
 - Begin supine active elevation strengthening (anterior deltoid) with light weights (1-2lb)
 - **Isotonic**, sub-maximal, pain free
 - Continued distal upper extremity strengthening and scapular strengthening
- Late Phase III: (typically 10-12 weeks)
 - Progress strengthening
 - Resisted **isotonic** flexion, abduction, extension, internal & external rotation (light weights/theraband) in standing, supine, and/or prone
 - Deltoid strengthening
 - May incorporate lateral and posterior heads of deltoid, gentle, low-weight **isotonic** exercises
 - Begin more advanced functional rehabilitation
 - May gradually begin work incorporating scapulohumeral movements in anticipation of higher-complexity motor activity in phase IV (e.g., golf swing)
 - Initiate AAROM & AROM internal rotation behind the back
 - Avoid PROM or stretching behind back

Phase IV: Full Strengthening/Endurance Phase: 3+ months postoperative

- Goals:

- Continue strengthening shoulder musculature focusing on **endurance**
- Progression toward a return to **full functional** and **appropriate recreational** activities
- Develop a home exercise program 3-4x/week Week 16+
 - Continue with previous exercise and strength training
 - Start advanced activities (tennis, light low-weight strength training, golf) with progression to sports specific activities

To obtain further copies of this protocol, please visit www.RaleighUpperEx.com