

Total Shoulder Arthroplasty/Hemiarthroplasty Protocol

The intent of the protocol is to provide the therapist with a guideline for the post-operative rehabilitation course of a patient that has undergone a total shoulder arthroplasty (TSA) or hemiarthroplasty (humeral head replacement, HHR). It is not intended to be a substitute for appropriate clinical decision-making regarding the progression of a patient's post-operative course. The actual post-surgical physical therapy management must be based on the surgical approach, physical exam/findings, individual progress, and/or the presence of post-operative complications. If a therapist requires assistance in the progression of a post-operative patient, they should consult with Dr. Petkovic.

Phase I: Immediate Post Surgical (0-4 weeks)

- For total shoulder arthroplasty PT can begin 2 weeks postoperative.
- For reverse shoulder arthroplasties, no PT until 4 weeks postoperative

Goals:

- Allow healing of soft tissue
- Maintain integrity of replaced joint
- Gradually increase passive range of motion (PROM) of shoulder, restore active range of motion (AROM) of elbow/wrist/hand
- Diminish pain and inflammation
- Prevent muscular inhibition
- Independent with activities of daily living (ADLs) with modifications while maintaining the integrity of the replaced joint

Precautions:

- Flexion only to 130 degrees until week 4, then flexion as tolerated
- External rotation to 30 degrees until week 4, then external rotation as tolerated
- The sling should be worn for 4 weeks when asleep or in public, otherwise their arm can be at their side in the "shaking hands" position
- No active internal rotation and no extension of the shoulder past neutral for 6 weeks postoperative
- While lying supine, a small pillow or towel roll should be placed behind the below to shoulder hyperextension/anterior capsule/subscapularis stretch

- Avoid shoulder AROM
- No lifting of objects
- No excessive stretching or sudden movements (particularly external rotation)
- No supporting of body weight by hand on involved side
- Keep incision clean and dry (no soaking for 2 weeks)
- No driving for while in sling

Criteria for progression to the next phase:

- Tolerates PROM program
- at least 90 degrees PROM flexion
- at least 90 degrees PROM abduction
- at least 45 degrees PROM ER in plane of scapula
- at least 70 degrees PROM IR in plane of scapula
- Be able to isometrically activate all shoulder, RC and upper back musculature

Postoperative Day #1 (in hospital)

- Passive IR to chest
- Active distal extremity exercise (elbow, wrist and hand)
- Pendulums
- Frequent cryotherapy for pain, swelling and inflammation management
- Patient education regarding proper positioning and joint protection techniques

Postoperative days #14 (out of hospital)

- Continue above exercises
- Passive forward flexion in supine to tolerance
- ER in scapular plane to available gentle PROM (as documented in operative note— usually around 30 degrees)

DO NOT produce undue stress on the anterior joint capsule and subscapularis particularly with shoulder in extension

- Assisted flexion and abduction in the scapular plane
- Assisted ER
- Begin sub-maximal, pain-free shoulder isometrics in neutral
- Begin scapula musculature isometrics/sets
- Begin active assisted elbow ROM
- Pulleys (flexion and abduction)— as long as greater than 90 degrees PROM
- Continue cryotherapy as much as able to for pain and inflammation management
- Continue to progress PROM as motion allows
- Gradually progress to AAROM in pain-free ROM
- Progress active distal extremity exercise to strengthening as appropriate
- Restore active elbow ROM

Phase II – Early Strengthening (Weeks 3-6):

Goals:

- Continue PROM progression/gradually restore full PROM
- Gradually restore AROM
- Control pain and inflammation
- Allow continued healing of soft tissue
- Do not overstress healing tissue
- Re-establish dynamic shoulder stability

Precautions:

- Sling should be used as needed for sleeping and removed gradually over the course of the next two weeks, for periods throughout the day
- No active internal rotation and no extension of the shoulder past neutral for 6 weeks postoperative
- While lying supine a small pillow roll or towel should be placed behind the elbow to avoid shoulder hyperextension/anterior capsular stretch
- Begin Shoulder ROM against gravity
- No heavy lifting of objects (no heavier than coffee cup)
- No supporting body weight by hands and arms
- No sudden jerking motions

Criteria for progression to next phase:

- Tolerated P/AROM, isometric program
- Has achieved at least 140 degrees PROM flexion
- Has achieved at least 120 degrees PROM abduction
- Has achieved at least 60+ degrees PROM ER in plane of scapula
- Has achieved at least 70 degrees PROM IR in plane of scapula
- Be able to actively elevate shoulder against gravity with good mechanics to 100 degrees.

Week 3

- Continue with PROM, AAROM, isometrics
- Scapular strengthening
- Begin assisted horizontal adduction
- Progress distal extremity exercises with light resistance as appropriate
- Gentle joint mobilizations as indicated
- Initiate rhythmic stabilization
- Continue use of cryotherapy for pain and inflammation

Week 4

- Begin active forward flexion, internal rotation, external rotation and abduction in supine position, in pain free ROM
- Progress scapular strengthening exercises
- Wean from sling completely
- Begin isometrics of rotator cuff and periscapular muscles

Phase III – Moderate strengthening (week 6-12)

Goals:

- Gradual restoration of shoulder strength, power and endurance
- Optimize neuromuscular control
- Gradual return to functional activities with involved upper extremity

Precautions:

- No heavy lifting of objects (no heavier than 5#)
- No sudden lifting or pushing activities
- No sudden jerking motions

Week 6:

- Increase anti-gravity forward flexion, abduction, as appropriate
- Active internal and external rotation in scapular plane
- Advance PROM as tolerated, begin light stretching, as appropriate
- Continue PROM, as needed, to maintain ROM
- Initiative assisted IR behind back
- Begin light functional activities

Week 8:

- Begin progressive supine active elevation (anterior deltoid strengthening) with light weights (1-3#) and variable decrease of elevation

Week 10-12:

- Begin resisted flexion, abduction, external rotation (theraband/sport cords)
- Continue progressing internal and external strengthening
- Progress internal rotation behind back from AAROM to AROM as ROM allows (pay particular attention to avoid stress on the anterior capsule)

Phase IV—Advanced strengthening (week 12-6 months)

Goals:

- Maintain full non-painful AROM
- Enhance functional use of UE
- Improve muscular strength, power and endurance
- Gradual return to more advanced functional activities
- Progress closed chain exercises, as appropriate.

Precautions:

- Avoid exercise and functional activities that put stress on the anterior capsule and surrounding structures (for example, no combined ER and abduction above 80 degrees of abduction)
- Ensure gradual progression of strengthening

Criteria for discharge from skilled PT:

- Patient able to maintain full, non-painful AROM
- Maximized functional use of UE
- Maximized muscular strength, power and endurance
- Patient has returned to more advanced functional activities

Week 12+:

- Typically patient is just on a home exercise program 3-4x/week
- Gradually progress strengthening program
- Gradual return to moderately challenging functional activities

4-6 Months:

Return to recreational hobbies, gardening, sports, golf, doubles tennis