



Steadman Hawkins Clinic
Vail, Colorado

Peter J. Millett, MD, MSc
Director of Shoulder Service
Knee and Sports Medicine

Total Shoulder Arthroplasty/Hemiarthroplasty Protocol:

The intent of this 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. Millett.

Please Note:

Those patients with a concomitant repair of a rotator cuff tear and/or a TSA/HHR secondary to fracture should be progressed to the next phase based on meeting the Clinical Criteria (not based on the post-op time frames) as appropriate in collaboration with Dr. Millett.

Deleted: These time frames are based on recovery for a TSA/HHR

Deleted: e

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

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 (dressing, bathing, etc.) with modifications while maintaining the integrity of the replaced joint.

Precautions:

- Sling should be worn for 3 weeks for comfort
- Sling should be used for sleeping and removed gradually over the course of the four weeks, for periods throughout the day.
- While lying supine a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension / anterior capsule / subscapularis stretch.
- Avoid Shoulder active range of motion.



Steadman Hawkins Clinic
Vail, Colorado

Peter J. Millett, MD, MSc
Director of Shoulder Service
Knee and Sports Medicine

- No lifting of objects
- No excessive shoulder motion behind back
- 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 3 weeks

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 Forward Flexion in supine to tolerance
- ER in scapular plane to available gentle PROM (as documented in Operative Note) – usually around 30 degrees.
(Attention: DO NOT produce undue stress on the anterior joint capsule and subscapularis particularly with shoulder in extension)
- Passive internal rotation to chest
- Active distal extremity exercise (Elbow, Wrist, Hand)
- Pendulums
- Frequent cryotherapy for pain, swelling and inflammation management
- Patient education regarding proper positioning & joint protection techniques

Postoperative Days # 2-10 (out of hospital)

- Continue above exercises
- Assisted flexion and abduction in the scapular plane
- Assisted external rotation
- 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 of PROM
- Continue Cryotherapy as much as able for pain and inflammation management



Steadman Hawkins Clinic
Vail, Colorado

Peter J. Millett, MD, MSc
Director of Shoulder Service
Knee and Sports Medicine

Postoperative Days # 10-21:

- Continue previous exercises
- 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 passive ROM
- Gradually restore Active motion
- Control Pain and Inflammation
- Allow continue 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.
- While lying supine a small pillow roll or towel should be placed behind the elbow to avoid shoulder hyperextension / anterior capsule stretch.
- Begin shoulder AROM against gravity.
- No heavy lifting of objects (no heavier than coffee cup)
- No supporting of body weight by hands and arms
- No sudden jerking motions

Criteria for progression to next phase:

- Tolerates P/AAROM, 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.



Steadman Hawkins Clinic
Vail, Colorado

Peter J. Millett, MD, MSc
Director of Shoulder Service
Knee and Sports Medicine

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 lbs.)
- No sudden lifting or pushing activities
- No sudden jerking motions

Criteria for progression to the next phase (IV):

- Tolerates AA/AROM
- Has achieved at least 140 degrees AROM flexion supine
- Has achieved at least 120 degrees AROM abduction supine.
- Has achieved at least 60+ degrees AROM ER in plane of Scapula supine
- Has achieved at least 70 degrees AROM IR in plane of Scapula supine
- Be able to actively elevate shoulder against gravity with good mechanics to least 120 degrees.



Steadman Hawkins Clinic
Vail, Colorado

Peter J. Millett, MD, MSc
Director of Shoulder Service
Knee and Sports Medicine

WEEK 6:

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

WEEK 8

Begin progressive supine active elevation (anterior deltoid strengthening) with light weights (1-3 lbs) and variable degrees of elevation.

WEEK 10-12:

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

Phase IV – Advanced strengthening (weeks 12 to 6 months):

Goals:

- Maintain full non-painful active ROM
- 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. (example: no combined ER and abduction above 80 degrees of abduction.)
- Ensure gradual progression of strengthening.

Criteria for discharge from skilled therapy:

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



Steadman Hawkins Clinic
Vail, Colorado

Peter J. Millett, MD, MSc
Director of Shoulder Service
Knee and Sports Medicine

WEEK 12+:

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

4-6 months –

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