



Orthopaedic Protocols

Total Shoulder Arthroplasty/Hemiarthroplasty

Phase I-Immediate Post-operative:

- 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.
- Reduce pain and inflammation.
- Reduce muscular inhibition,
- Independent with Activities of Daily Living (ADL) with modifications while maintaining the integrity of the replaced joint.

Precautions:

- Sling should be worn continuously for 3-4 weeks
- While lying supine, a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension/anterior capsule stretch/subscapularis stretch. **(When lying supine patient should be instructed to always be able to visualize their elbow. This ensures they are not extending their shoulder past neutral.) – This should be maintained for 6-8 weeks post-op.**
- Avoid shoulder AROM.
- No lifting of objects.
- No excessive shoulder motion behind back, especially into internal rotation (IR).
- No excessive stretching or sudden movements (particularly external rotation (ER)).
- No supporting of body weight by hand on involved side.
- Keep incision clean & dry (no soaking for 2 weeks).
- No driving for 3 weeks.

Post-op Day (POD) #1 (in hospital)

- Passive forward flexion in supine to tolerance.
- Gentle ER in scapular plane to available PROM (as documented in operation note) – usually around 30 degrees.
(**Attention:** DO NOT produce undue stress on the anterior joint capsule, particularly with shoulder in extension).
- Passive IR to chest.
- Active distal extremity exercise (elbow, wrist, hand)
- Pendulum exercises.
- Frequent cryotherapy for pain, swelling, & inflammation management.
- Patient education regarding proper positioning & joint protection techniques.

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Early Phase I: (out of hospital)

- Continue above exercises.
- Begin scapula musculature isometrics/sets (primarily retraction)
- Continue active elbow range of motion (ROM.)
- Continue to use cold packs/ice as much as able for pain & inflammation management.

Late Phase I:

- Continue previous exercises.
- Continue to progress PROM as motion allows
- Begin assisted flexion, elevation in the plane of the scapula, ER, IR in the scapular plane.
- Progress active distal extremity exercise to strengthening as appropriate.

Criteria for progression to the next phase (II):

If the patient has not reached the below ROM, forceful stretching & mobilization/manipulation is not indicated. Continue gradual ROM & gentle mobilization (i.e. Grade I oscillations), while requesting soft tissue constraints.

- Tolerates PROM program.
- Has achieved at least 90 degree PROM forward flexion & elevation in the scapular plane.
- Has achieved at least 45 degree PROM ER in plane of scapula.
- Has achieved at least 70 degree PROM IR in plane of scapula measured at 30 degree of abduction.

Phase II-Early Strengthening Phase

(Not to begin before 4-6 weeks post-op to allow for appropriate soft tissue healing):

Goals:

- Restore full passive ROM.
- Gradually restore active motion.
- Control pain & inflammation.
- Allow continue healing of soft tissue.
- Do not overstress healing tissue.
- Re-establish dynamic shoulder stability.

Precautions:

- Sling should only be used for sleeping & removed gradually over the course of the next 2 weeks, for periods throughout the day.
- While lying supine a small pillow or towel should be placed behind the elbow to avoid shoulder hyperextension/anterior capsule stretch.
- In the presence of poor shoulder mechanics avoid repetitive shoulder AROM exercises/activity against gravity in standing.
- No heavy lifting of objects (no heavier than coffee cup).
- No supporting of body weight by hand on involved side.
- No sudden jerking motions.

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Early Phase II:

- Continue with PROM, active assisted range of motion (AAROM).
- Begin active flexion, IR, ER, elevation in the plane of the scapula pain free ROM.
- AAROM pulleys (flexion & elevation in the plane of the scapula)-as long as greater than 90 degrees of PROM.
- Begin shoulder sub-maximal pain-free shoulder isometrics in neutral.
- Scapular strengthening exercises are appropriate.
- Begin assisted horizontal adduction.
- Progress distal extremity exercises with light resistance as appropriate.
- Gentle glenohumeral & scapulothoracic (shoulder) joint mobilization as indicated
- Initiate glenohumeral & scapulothoracic (shoulder) rhythmic stabilization
- Continue use of cold packs/ice for pain & inflammation.

Late Phase II:

- Progress scapular strengthening.

Criteria for progression to the next phase (III):

If the patient has not reached the below ROM, forceful strengthening & mobilization/manipulation is not indicated. Continue gradual ROM & gentle mobilization (i.e. Grade I oscillations), while respecting soft tissue constraints.

- Tolerates P/AAROM, isometric program.
- Has achieved at least 140 degree PROM forward flexion & elevation in the scapular plane.
- Has achieved at least 60+ degree PROM ER in plane of scapula.
- Has achieved at least 70 degree PROM in plane of scapula measured at 30 degree if abduction.
- Able to actively elevate shoulder against gravity with good mechanics to 100 degrees.

Phase III-Moderate Strengthening

(Note to begin before 6 weeks post-op to allow for appropriate soft tissue healing & to ensure adequate ROM):

Goals:

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

Precautions:

- No heavy lifting of objects (no heavier than 3 kg).
- No sudden lifting or pushing activities.
- No sudden jerking motions.

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Early Phase III:

- Progress AROM exercises/activity as appropriate,
- Advance PROM to stretching as appropriate.
- Continue PROM as needed to maintain ROM.
- Initiate assisted shoulder IR behind back stretch.
- Resisted shoulder IR, ER in scapular plane.
- Begin light functional activities.
- Wean from sling completely.
- Begin progressive supine active elevation strengthening (anterior deltoid) with light weights (0.5-1.5 kg) at variable degrees of elevation.

Late Phase III:

- Resisted flexion, elevation in the plane of the scapula, extension (therabands/sport cords).
- Continue progressing IR, ER strengthening.
- Progress IR stretch behind back from AAROM to AROM as ROM allows
(Pay particular attention as to avoid stress on the anterior capsule)

Criteria for progression to the next phase (IV):

If the patient has not reached the below ROM, forceful stretching & mobilization/manipulation is not indicated. Continue gradual ROM & gentle mobilization (i.e. Grade I oscillations), while respecting soft tissue constraints.

- Tolerates AA/AROM/strengthening.
- Has achieved at least 140 degrees AROM forward flexion & elevation in the scapular plane 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 in 30 degree of abduction.
- Able to actively elevate shoulder against gravity with good mechanics to at least 120 degrees.

Note: (If above ROM are not met then patient is ready to progress if their ROM is consistent with outcomes for patients with the given underlying pathology).

Phase IV-Advanced Strengthening:

(Not to begin before 12 weeks to allow for appropriate soft tissue healing & to ensure adequate ROM, & initial strength):

Goals:

- Maintain non-painful AROM.
- Enhance functional use of upper extremity.
- Improve muscular strength, power & enhance.
- Gradual return to more advanced functional activities.
- Progress weight bearing exercises as appropriate.

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Precautions:

- Avoid exercises & functional activities that put stress on the anterior capsule & surrounding structures. (Example: no combined ER & abduction above 80 degrees abduction).
- Ensure gradual progression of strengthening.

Early Phase IV:

Typically patient is on a home exercise program by this point to be performed 3-4 times per week.

- Gradually progress strengthening program.
- Gradual return to moderately challenging functional activities.

Late Phase IV (Typically 4-6 months post-op):

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

Criteria for discharge from skilled therapy:

- Patient able to maintain non-painful AROM.
- Maximized functional use of upper extremity.
- Maximized muscular strength, power & endurance.
- Patient has returned to advanced functional activities.