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REHABILITATION AFTER REVERSE SHOULDER ARTHROPLASTY

Precautions: There is a higher risk of shoulder dislocation following a reverse total shoulder arthroplasty (rTSA) than with conventional shoulder replacement. Stability and mobility of the shoulder joint is now dependent upon the deltoid and periscapular musculature. Patients with rTSA don't dislocate with the arm in abduction and external rotation. Rather, they tend to dislocate with the arm in internal rotation and adduction in conjunction with extension. Thus, tucking in one's shirt or performing bathroom hygiene with the operative arm is particularly dangerous. *These will remain in effect for at least 12 weeks postoperatively.*

- No shoulder extension past neutral
- No combined adduction and internal rotation and extension

The start of this protocol will often be delayed 3-4 weeks following rTSA for a revision.

Phase I: immediate postoperative phase (0-14 days after surgery)

Goals:

1. Protect the shoulder arthroplasty
2. Ensure wound healing
3. Prevent shoulder stiffness
4. Restore active ROM of the elbow, wrist and hand
5. Maximize ADL's with modifications/precautions in mind

Activities:

1. Use your sling during this period. Keep the sling on when sleeping at night for the first 6 weeks.
2. Begin the phase one exercises. Supine exercises should be done with a small rolled towel placed behind the elbow to avoid shoulder hyperextension and anterior capsular stretch. Keep your elbow in front of you – you should always be able to see your elbow when doing exercises.
3. No active motion of the shoulder. No lifting of objects with the operated side.
4. Continue to use your ice: 7 days per week, 4-5 times per day, 15-20 minutes per time.

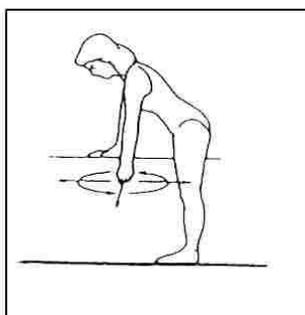
Exercises:

ALL EXERCISES SHOULD BE DONE SLOWLY TO MAXIMIZE MUSCLE AND SOFT TISSUE INVOLVEMENT. DISCOMFORT IS ALLOWED – PAIN IS NOT. IF THE PAIN LINGERS AFTER THE STRETCH THAT IS TOO FAR.

The following exercises will be demonstrated for you post-operatively. Once you are discharged from the hospital, continue doing these at home as shown.

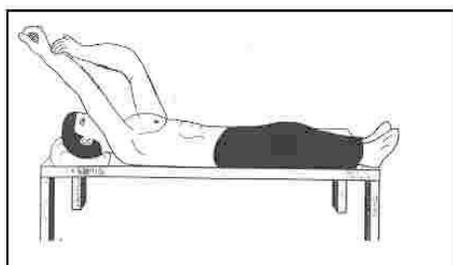
Program: 7 days per week, 4-5 times per day

Pendulum exercises	1-2 sets	20-30 reps
Supine external rotation	1-2 sets	10-15 reps
Supine forward arm elevation	1-2 sets	5-10 reps
Shoulder blade pinches	1-2 sets	5-10 reps



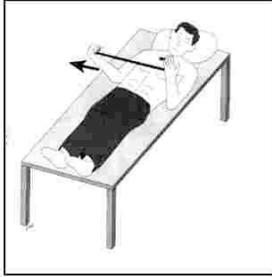
Pendulum exercise

Remove your sling, bend over at the waist and let the arm hang down. Using your body to initiate movement, swing the arm gently forward and backward and in a circular motion.



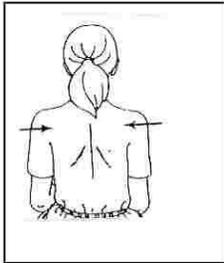
Supine forward flexion

Lie on your back. Hold the affected arm at the elbow with the opposite hand. Assisting with the opposite arm, lift the operated arm upward, as if to bring the arm overhead. Slowly lower the arm back to the bed. **The amount of allowed forward flexion will be specified after surgery.**



Supine external rotation

Lie on your back. Keep the elbow of the operated arm against your side with the elbow bent 90 degrees. Using a cane or a long stick in the opposite hand, push against the hand of the operated arm so that the operated arm rotates outward. Hold for 10 seconds, relax and repeat. **The amount of allowed external rotation will be specified after surgery.**



Shoulder blade pinches

While standing, pinch shoulder blades backward and together.

Phase II: initiate outpatient rehab (2-6 weeks after surgery)

Goals:

1. Protect the shoulder and avoid overstressing the repair
2. Restore full passive range of motion
3. Gradually restore active motion
4. Re-establish dynamic shoulder stability

Activities:

1. Continue using your sling during this period. Keep the sling on when sleeping at night for the first 6 weeks.
2. Continue to follow your shoulder dislocation precautions. No exceptions.
3. The following exercises will be demonstrated to you by our physical therapist at your post-operative visit. They will also give you a home exercise program. You should strive to do your home exercise program at least 3-4 times per day, every day. The success of your new shoulder depends on your rehab.
4. Supine exercises should be done with a small rolled towel placed behind the elbow to avoid shoulder hyperextension and anterior capsular stretch. Keep your elbow in front of you – you should always be able to see your elbow when doing exercises.
5. No active motion of the shoulder. No lifting of objects with the operated side.
6. Continue to use your ice: 7 days per week, 4-5 times per day, 15-20 minutes per time.
7. You will see Dr. Coyner at 2 weeks after surgery and again at 6 weeks after surgery.

Exercises:

Week 2-3:

- Continue all exercises listed above
- Begin sub-maximal pain-free deltoid isometrics in the scapular plane (avoid shoulder extension when isolating posterior deltoid)
- The scapular plane is defined as the shoulder positioned in 30 degrees of abduction and forward flexion with neutral rotation. ROM performed in the scapular plane should enable proper shoulder joint alignment.

Week 3-6:

- Progress above exercises
- Progress PROM:
 - Supine forward flexion and elevation in the scapular plane to 120°.
 - ER in scapular plane to tolerance. Respect soft tissue constraints – this should not hurt, but feel only like an uncomfortable stretch.
- Gentle resisted exercises of elbow, wrist and hand.

Phase II: active range of motion/early strengthening phase (6-12 weeks after surgery)

Criteria for progression to Phase II:

1. Tolerate shoulder PROM and isometrics
2. Tolerate AROM/minimal resistance program for elbow/wrist/hand
3. Demonstration of ability to isometrically activate all components of the deltoid and periscapular musculature in the scapular plane.

Goals:

1. Progression of PROM (note: full PROM is not expected).
2. Gradual restoration of AROM
3. Control pain and inflammation
4. Protect the wound, do not overstress soft tissues
5. Re-establish dynamic shoulder and scapular stability

Activities:

1. You will be weaned out of your sling at this time. It is advisable to continue to wear it when out in public or large crowds, as this may help people to avoid “slapping” you on the shoulder.
2. You may now use your operated arm. Avoid having your arm forcefully pulled. No supporting body weight with your operative upper extremity.
3. Continue to avoid heavy lifting or manual labor. You should not lift anything heavier than a coffee cup. Any lifting should be done with weight in front of you.
4. You may use your arm for feeding and light activities of daily living including dressing and washing.
5. Ice as needed for pain control. It is still a good idea to ice after therapy.
6. Check with Dr. Coyner regarding driving.
7. You will see Dr. Coyner at 3 months after surgery.

Exercises:

In the presence of poor shoulder mechanics, avoid repetitive shoulder AROM exercises and activity. Continue to avoid shoulder hyperextension and be mindful of dislocation precautions.

Weeks 6-8:

- Continue with PROM program.
- Start PROM IR to tolerance (not to exceed 50 degrees) in the scapular plane.
- Begin shoulder AA/AROM as appropriate.
 - Forward flexion and elevation in scapular plane in supine with progression to sitting/standing.
 - ER and IR in the scapular plane in supine with progression to sitting/standing.
- Begin gentle glenohumeral IR and ER sub-maximal pain free isometrics.
- Initiate gentle scapulothoracic rhythmic stabilization and alternating isometrics in supine as appropriate. Begin gentle periscapular and deltoid sub-maximal pain free isotonic strengthening exercises, typically toward the end of the 8th week.
- Progress strengthening of elbow, wrist, and hand.
- Gentle glenohumeral and scapulothoracic joint mobilizations as indicated.

Weeks 9-12:

- Continue with above exercises and functional activity progression.
- Begin AROM supine forward flexion and elevation in the plane of the scapula with light resistance resistive bands or sport cords at varying degrees of trunk elevation as appropriate. (e.g. supine lawn chair progression with progression to sitting/standing).
- Progress to gentle glenohumeral IR and ER isotonic strengthening exercises in sidelying position with light resistance resistive bands or sport cords.

Phase III: Strengthening phase (week 12 onward)

Criteria for progression to phase III:

1. Improving function of the shoulder.
2. Patient demonstrates the ability to isotonicly activate all components of the deltoid and periscapular musculature.
3. Patient is gaining strength.

Goals:

1. Enhance functional use of operative extremity and advance functional activities
2. Enhance shoulder mechanics, muscular strength and endurance

Activities:

1. No heavy lifting (nothing heavier than 5 lbs). Weights should never go behind the head – you should always be able to see them. For therapy exercises Therabands are preferred over weights as these are more easily controlled.
2. No sudden or jerking motion.
3. Ice as needed after therapy.
4. You will see Dr. Coyner at 6 months and 1 year after surgery.

Exercises:

Week 12 to Week 16:

- Continue with the previous program as indicated.
- Progress to gentle resisted flexion, elevation while standing.

Continued Home Program (Typically 4 + months post-op):

Typically the patient is on a home exercise program at this stage to be performed 3-4 times per week with the focus on:

- Continued strength gains
- Continued progression toward a return to functional and recreational activities within limits as identified by progress made during rehabilitation and outlined by surgeon and physical therapist.

Criteria for discharge from skilled therapy:

- Patient is able to maintain pain free shoulder AROM demonstrating proper shoulder mechanics. (Typically 80 – 120° of elevation with functional ER of about 30 degrees)
- Typically able to complete light household and work activities.