

Reverse Shoulder Arthroplasty (RTSR): Physiotherapy information and recommended protocol.

The following is for guidance only and should not replace your clinical assessment. All patients are different and pain or complications of surgery may slow progress in some. We routinely review patients at approximately week 6, 18 and year one. If concerned please contact our office.

RTSR is used in conditions associated with irreparable rotator cuff damage or abnormal glenoid morphology. Examples include cuff arthropathy, complex fractures and revision surgery. In these situations a standard anatomic replacement or hemiarthroplasty (ATSR or HA) would not be balanced leading to early failure. Rehabilitation for a patient following the RTSR is different than the rehabilitation following an anatomic reconstruction as the rotator cuff is typically not in play. Occasional exceptions include subscapularis repair to add stability and internal rotation power. Rarely a posterior transfer of the Lat dorsi tendon will be involved to improve external rotation. These will be noted in the post op physio advice sheet.

It is noteworthy that there is a higher risk of shoulder dislocation following RTSR versus ATSR. This can be minimised by avoiding shoulder extension and forced adduction, especially when combined with internal rotation (e.g. tucking in a shirt position) for 12 weeks postoperatively.

Stability and function of RTSR is dependent upon the deltoid and periscapular musculature. Rehab should focus on these elements. There are mechanical limitations on reverse total shoulder replacements so expecting high overhead function and extensive glenohumeral rotation range is not realistic. Nonetheless we aim to maximize overall upper extremity function, while respecting soft tissue limitations. Improvements in range tend to be stepwise rather than linear and can improve up to a year or even longer post operatively.

In my practice RSA procedure is usually done via a deltopectoral approach (DPA), which minimizes surgical trauma to the anterior deltoid. On occasion an anterosuperior approach, detaching the anterior deltoid from the acromion and repairing it after implantation, is used. This requires the deltoid to be protected in the early postoperative phase. Avoidance of active assist and active range of motion (AAROM and AROM) for the first 6 weeks is necessary in such cases. Deltoid strengthening is reserved until 12 weeks post operatively. Where tendon repair or bone quality is poor, the onset of mobilisation protocols can be delayed, usually for 4 weeks. In that case what follows starts at that point (i.e. week 4 is week1). This will be noted in the post op sheet.

Phase 1: (week 1-6):

- Immobilisation: Sling except for exercises. Ensure well-fitting sling and patient/partner confident to don and doff. Includes in bed at night. Pillow behind the elbow to prevent extension in bed. No lying on the operated shoulder.
- AROM of elbow/wrist/hand, active scapular control (STC), neck ROM.
- Independent with activities of daily living (ADL's) with modifications.
- Commence home exercise program (HEP) with family assistance
- Cryotherapy but keep incision clean and dry
- No lifting of objects with operative extremity.
- No supporting of body weight with involved extremity
- Begin PROM in supine at 3 weeks. Forward flexion and elevation in the scapular plane in supine to 90 degrees as tolerated. Progress to 120 degrees around week 6 as tolerated. Allow External rotation (ER) in scapular plane to available ROM as indicated by operative findings/ subscap repair.
- Begin pain-free deltoid isometrics in scapular plane at week 5-6.
- Ensure can activate deltoid comfortably, has PROM to 90 and good distal /ST control before progressing.

Phase 3 (Week 12 +):

- Enhance functional use of operative extremity and advance functional activities.
- Enhance shoulder mechanics, muscular strength and endurance.
- Avoid sudden lifting or pushing activities. Avoid lifting over 2.5kg initially with gradual progression.
- Begin gentle periscapular and deltoid sub-maximal pain free isotonic strengthening exercises. Progress these from supine through beach chair through standing
- Similarly Progress IR and ER isotonic strengthening with light resistance.

Phase 2 (Week 6 to 12):

- Progress PROM, avoid over stressing deltoid and soft tissue inflammation. Cryotherapy if needed
- Gradually restore AAROM and progress to AROM.
- Re-establish dynamic shoulder and scapular stability
- Continue to avoid shoulder hyperextension but wean sling.
- Commence gentle lifting e.g. a coffee cup and allow light ADL's.
- No supporting of body weight by involved upper extremity.
- Continue with PROM programme. Include Gentle PROM IR to tolerance (not to exceed 50 degrees) in the scapular plane.
- Commence alternating shoulder isometrics.
- Progress strengthening of elbow, wrist, hand and STC.
- Patient should demonstrate the ability to isotonicly activate all components of the deltoid and periscapular musculature comfortably through range before progression.

Phase 4 (Week 18 +):

- Maintenance HEP with continued gains in range and strength to allow functional activity.
- On discharge the patient should be able to maintain pain free shoulder AROM demonstrating proper shoulder mechanics. (Aim for 90 – 120 degrees of elevation with functional ER of about 30 degrees and IR to the SIJ.). Light household and work activities should be possible.