

OUTPATIENT POST-OPERATIVE PHYSIOTHERAPY GUIDELINES

Rotator Cuff Repair

Please remember, individual patients will progress differently and their post operative protocol will be dependent on both the size of the tear and how secure the repair is. This primarily affects the length of time the arm is kept in the sling (up to 6 weeks)

Cuff tears are named by convention 'small' (less than 1cm), 'medium' (1-3cm), large (3-5cms) and massive (over 5cms). Supraspinatus is nearly always involved and as the tear size increases infraspinatus and biceps tendon can be affected. If there is a massive tear subscapularis /teres minor as well. Rarely there can be an isolated subscapularis tear when post operative instructions may differ. The quality of the tissue is usually determined first via MRI. Tissues showing increased fatty infiltration or tendon retraction may not be operated on. Acute tears are more likely to be operated on than degenerative tears. Acute tears (particularly involving any trauma) are a priority referral as the window of 6 weeks avoids significant shortening of the tendon and better outcomes. Steroid injections are not routinely given for pain with people with RC tears, or after repairs as it raises the chances of revision surgery due to apoptosis at the injection site, and decreased microvascularisation, cell proliferation, and pull-out strength of suture anchors. Go steady with rehabilitation time scales if they have had pre operative injections.

This surgery is done arthroscopically if possible, however if open access to the cuff is needed a mini-open approach is used by detaching a small portion of the Deltoid from the acromion and then splitting the muscle vertically. If this is the case then caution with active flexion up to 6 weeks.

Exercise and activity progression should be based on clinical judgement **taking the operation details and post operative instructions into account**. Pain control and regaining antigravity movement are key milestones in recovery. This protocol is for use with patients who have had a rotator cuff repair +/- sub- acromial decompression which is normally done as a precursor to the repair, to open the sub-acromial space. If a patient has had any additional procedures, post-operative notes will need to be adhered to.

General guidelines for rehabilitation

Routine (secure) repairs of small/medium/ large cuff tears at the NOC are immobilised in the sling for 3 weeks. Massive (often only partial repair achieved) or less secure large repairs may be immobilised for up to 6 weeks. Check post-op instructions and operation details. A high proportion of rotator cuff repairs are not healed at one year (MRI scans) (UKUFF monograph), some studies link this with early mobilisation (Littlewood et al) – though

patients generally do well even if this is the case. However better outcome scores have been found for those whose repair has healed (UKUFF monograph – HTA).

Advice on Return to Activity

- **Driving:** When adequate ROM and safe to control the car. Able to react in the event of an emergency i.e. able to perform an emergency stop. This will be dependent on the time is the sling but may not be possible for approximately 6 weeks.
- **Work:** Those in desk based roles should be able to return to work when comfortable and able to perform duties (with agreed modifications from the employer, if necessary). This may be at 4-6 weeks. Those in more manual work should be guided by the ability of the patient to perform the functional activities of their job.
- **Swimming:** Movement in water can be very helpful. However ‘swimming’ is likely to be modified – doggy paddle, modified breast stroke and then progressing to free style (if possible). This will be dependent on range of movement and pain levels but ‘swimming’ may be delayed until 8-12 weeks.
- **Non – Contact sports (e.g. racket sports, rock climbing, football, martial arts):** This will be dependent on range of motion, control and strength in relation to the tasks wishing to be undertaken. Improvements in strength can continue for up to 2 years. Strength training can start from 12 weeks. Sports with the potential for contact (e.g. football) or falling (skiing) may not be recommended for 4-6 months.

Week 0 – 3

Aims	Suggested Treatment
<ul style="list-style-type: none"> • Pain well controlled • Protect Rotator cuff repair • Wounds healthy • Encourage patient compliance • Complete Appropriate Outcome Measure • Maintain lower limb strength • Maintain Axilla hygiene • Teach carer to complete passive exercises if the patient is not able to do them alone OR is tending to do active movement. 	<ul style="list-style-type: none"> • Regular ice as needed • Elbow, Neck & Wrist ROM exercises • Scapula setting in sitting • Teach removal of sling/ brace as well as education on resting positions. • Ensure appropriate OPA made for approx. 3-4/52 time • ‘Passive’ flexion – supine (assisted with unaffected arm) • ‘Passive’ external rotation supine – to 0°. Use stick between hands & towel under humerus for support. Can take beyond 0°, if range before tension on repair is greater than 0° and recommended in operation notes. • Pendular exercises

Restrictions	Key Milestones to Achieve
<ul style="list-style-type: none"> • Immobilisation of shoulder for the first 3/52 or up to 6/52 for large/ massive tears • Do NOT complete passive external rotation if the subscapularis has been repaired – rare but should be recorded in op notes. 	<ul style="list-style-type: none"> • Ensure patient aware of how to protect surgical repair. • Pain controlled $\leq 3/10$ on the VAS • Exercises once a day if good mobility, twice a day otherwise, three times a day if tendency to be stiff.

Emphasis ‘passive’ nature of the movement – reinforce this with the patient

Week 3-6

Aims	Suggested Treatment
<ul style="list-style-type: none"> • Wean out of the sling as control increases • Aim to regain active movement • Regain maximal passive movement • Minimal pain • Improve scar mobility • Return to light work at 6/52 • Postural awareness • Correct movement pattern 	<ul style="list-style-type: none"> • Continue with passive ROM exercises of the GH joint. Take to early ‘tight’ sensation but no forcing or sudden stretching • Active assisted shoulder elevation (in scaption) – start with short lever arm (elbow flexed). Use of pulleys, auto-assisted, table slides. • Scapula stability work (sitting, prone lying as comfort allows) • Isometric cuff work in neutral position (pain free and scapula stable) • Maintain lower body strength • Elbow, Neck and Wrist ROM • Functional tasks at waist height e.g. eating, drinking and self care

Restrictions	Key Milestones to Achieve
<ul style="list-style-type: none"> • Do not target supraspinatus in the isometric strength work (abduction) • Repair strength is likely to be 19-30% of normal at 6 weeks • NO lifting or weights to be used • Consider avoiding wall slide/ wall walk only introducing when patient can actively elevate to 130° without pain (ref) 	<ul style="list-style-type: none"> • Adequate scapula control • Pain control • Aim for 90° flexion and $< 30^\circ$ external rotation at 6/52 unless post-op restrictions • Patients who have not met milestones should not be progressed • Pain no more than $\leq 3/10$ before moving on

Week 6 – 12

Aims	Suggested Treatment
<ul style="list-style-type: none"> • Minimal Pain • Increase active ROM • Increase cuff activation • Postural control • Optimal movement patterning 	<ul style="list-style-type: none"> • Core stability work • Progress active assisted movements – extension, hand behind back, abduction • Proprioception exercises – weight bearing • Progress cuff activity – isometric (from 6/52) through range to progressive loading (9/52) • Consider pulley & cane exercises, external rotation, internal rotation, rows and forward reaching. • Progress scapula muscle activity - LFT – progress to prone as comfortable • Build endurance – increase number of reps with use of low weights • Normal movement patterning – no shoulder hitching • Increase functional tasks into shoulder elevation • Can stretch if required

Restrictions	Key Milestones to Achieve
<ul style="list-style-type: none"> • Do NOT target supraspinatus with abduction with loading exercises • NO LIFTING • Repair strength likely to be 29-50% of normal at 12/52 • Consider avoiding wall slide/ wall walk only introducing when patient can actively elevate to 130° without pain 	<ul style="list-style-type: none"> • Wean out of sling completely • Passive ROM should be approximately 100% of contralateral side • Driving 6 weeks if safe to do so. • Running 10 weeks if comfortable • Aim for 120° flexion at 12/52 • Patients who have not met ROM milestones should not be progressed. • Pain ≤ 2/10 before progressing

12 weeks onwards

Aims	Suggested Treatment
<ul style="list-style-type: none"> • Improve endurance/power of operated shoulder • Good dynamic proprioception • Introduce sports specific exercises 	<ul style="list-style-type: none"> • Progress endurance exercises for arm elevation activities • Progress resistance to cuff and scapula as indicated • Closed chain quadruped/ tripod exercises • Start general strengthening exercises • Plyometric exercises if needed • Functional demands will direct rehabilitation – possible sports-specific rehab. • Introduce lifting if required

Restrictions	Key Milestones to Achieve
<ul style="list-style-type: none"> • No contraindications • Resistance levels for elbow extended/ or long lever exercises should be limited 0-2kg 	<ul style="list-style-type: none"> • Sport-specific non-contact exercises • Psychologically prepared for return to sport/ work

References

Holt, M, Gibson, J. & Frostick, S. 'GOST3: Guide for Orthopaedic Surgeons and Therapists'. 3rd Ed, Liverpool Upper Limb Unit and South Manchester University Hospitals Trust, Biomet-Merck.

Kibler, W B, McMullen, J and Uhl, T (2001). 'Shoulder rehabilitation strategies, guidelines and practice', *Orthopedic Clinics of North America*, 32, 3, 527-538.

McMullen, J & Uhl, T (2000). 'A kinetic chain approach for shoulder rehabilitation', *Journal of Athletic Training*, 35, 3, 329-337.

Carr AJ, Cooper CD, Campbell MK, Rees JR, Moser J, Beard DJ, *et al*. Clinical effectiveness and cost-effectiveness of open and arthroscopic rotator cuff repair [the UK Rotator Cuff Surgery (UKUFF) randomised trial]. *Health Technol Assess* 2015;19(80)

Littlewood C, Bateman M, Clark D et al (2015) Rehabilitation following rotator cuff repair: a systematic review. *Shoulder & Elbow* 7, 2, 115-124

Thigpen et al (2015/16) American consensus on rehabilitation after RCR