

SLAP Repair

Sling	What can I do from day 1?	Restrictions?	Commence strengthening?
Up to 3 weeks	Active assisted/active supported within safe zone*	No combined AB/ER and end range ER until 6 weeks.	Dependent on dynamic control and ROM – no eccentric strengthening biceps until 8-12 weeks

* Safe zone will be stipulated by the Surgeon in the operation notes. If this is not stipulated then limit mobilisation to anterior to the scapula plane below 120° elevation and 50% of ER (compared with other side) respecting pain and movement pattern.

Pre-operatively

- Teach active assisted /active supported mobilisation programme
- Advice re postural awareness / movement pattern correction
- Patient education regarding procedure and expectations

Factors that may affect progression rate:

- Pre-operative status
- Age
- Laxity
- Revision surgery vs. primary
- Type of labral lesion- extent/location/number of anchors
- Kinetic chain (previous injury)

NB : It is essential to check the operation notes to ascertain any associated procedures involving the biceps tendon(e.g. repair/tenodesis) as this may impact timescales/progression rates.

Acute phase (0-4 weeks¹)

Sling

This is worn for 2-3 weeks depending on pain and passive range of movement. The sling is purely for pain relief and to protect the repair and avoid the arm being knocked into risk positions. The sling is removed to allow axillary hygiene and when the patient is doing their exercises. It should be worn for comfort at night.

Avoid:

- X** Combined abduction/external rotation
- X** Forced end range mobilisation especially ER
- X** Eccentric or concentric loading of biceps (just active ROM through range and ADL when out of sling)

Goals:

- Protect the anatomical repair
- Diminish pain and inflammation
- Prevent negative effects of immobilisation
- Promote optimal cuff/scapula control
- Prevent compensatory movement patterns that may compromise recovery

Rehabilitation:

It is important to establish the safe zone (i.e. that which doesn't compromise the surgical repair) for immobilisation before commencing the active assisted exercise programme. In SLAP repairs this is generally up to 120° elevation anterior to the scapula plane and ER < 50% compared with the un-operated limb.

Treatment Note:

NB. The following are considerations for exercise inclusion however in reality these can be incorporated in 2-4 key exercises. Clinical reasoning of the patient's key issues will inform which factors are priorities. It is important not to prescribe too many exercises as this has been shown to impact adherence.

- Elbow, wrist and hand exercises
- Closed kinetic chain /proprioception exercises low load
- Active assisted/active supported mobilisation within safe zone
- Rotator Cuff & Scapula muscle facilitation exercises
- Sub-maximal isometrics upper quadrant musculature
- Kinetic chain exercises
- Movement pattern correction
- Encourage use of hand in sling (light activities)

Criteria for progression;

- Well controlled pain
- Range of movement- note patient requires adequate rotational range of movement (approx. 60-70%) before introducing active through range cuff facilitation work above 90° (i.e. against resistance).
- Compliance with exercises/restrictions

Treatment Note : *The principles of cross-education can be used early in the rehabilitation phase. Isometrics targeting the rotator cuff and biceps of the un-operated arm e.g. external rotation with the arm supported at 30 degrees of abduction in the scapula plane will help facilitate muscle activation patterns and cortical activation together with small strength gains in the operated limb.*

Intermediate stage (4-8 weeks¹)

Avoid:

- X Forced combined abduction/external rotation
- X Forced stretching/mobilisation end range external rotation
- X Eccentric loading biceps i.e. elbow extension (until re-established good cuff/scapula control)
- X Heavy lifting/concentric overload biceps

Goals:

- Preserve integrity surgical repair
- Restoration functional range of movement
- Cuff recruitment and scapula control through range
- Enhance proprioceptive acuity
- Prevent compensatory movement patterns that may compromise recovery

Rehabilitation:

- Mobilisation any capsular restriction (respecting restrictions)
- Progress cuff and scapula recruitment through range
- Progress kinetic chain integration
- Increase functional emphasis movement pattern correction
- Proprioceptive re-education incorporating closed chain exercises

At this stage it is essential that any exercise prescription ensures that the patient is able to maintain good cuff and scapula control i.e. there should be no evidence of scapula winging, or compensatory muscle patterning (commonly involving latissimus dorsi or latissimus dorsi) during exercise execution.

Criteria for progression;

- Pain-free functional range of movement
- Preserve integrity surgical repair
- Good cuff and scapula control through range

Late stage (8-16 weeks¹)

Aims;

- Restore full active range of movement
- Restore optimal cuff and scapula control through range and under load
- Restoration biceps strength with good control
- Optimise function specific power, strength and endurance
- Ensure transference movement pattern correction and cuff/scapula control to functional demands
- Ensure cuff/scapula control maintained during biceps loading (functionally relevant)

Rehabilitation;

- Mobilisation any residual capsular restriction
- Specific biceps strengthening/control work ensuring maintenance scapula control and humeral head position
- Function specific strengthening and endurance exercises ensuring glenohumeral joint and scapula control are maintained
- Preparatory and reactive stabilisation drills in risk positions e.g. plyometrics (if functionally relevant)

Expected Outcomes

The aim of these expected outcomes is to help clinicians set realistic expectations for patients in terms of timescales for recovery. Reported outcomes are derived from a review of recent literature of arthroscopic SLAP repair.

The quality of literature is insufficient to draw an unequivocal conclusion as to what the expected course of outcome following SLAP repair is, however the findings do suggest some typical patterns in recovery.

OUTCOME	<3 Months	3-6 Months	6-12 Months	12+ Months
Function	Normal function in 13.1% pts at mean 8.9 weeks			Statistically significant improvements in shoulder scores at minimum 2 years post op. Final outcome: 81% excellent 13% good 3% fair 3% poor (FU 26 months)
Pain	Pain absent in 26.3% patients at mean 8.9 weeks post op.			Statistically significant improvements in VAS at 2 years post op in: Non athletes Non overhead athletes But not in Recreational overhead athletes

<p>Return to Work (RTW)</p>	<p>There is insufficient evidence in the literature to predict time frame for RTW.</p> <p>Currently average return to work (with light load) is 12 weeks.</p>
<p>Return to sport/recreational activities, ROM, Strength</p>	<p>Return to sport. There is insufficient evidence in the literature to predict time frame for return to sport. 74% of patients returned to their pre injury level of competition, rising to 92% in patients who reported an initial discrete traumatic event (mean FU 2.7 years).</p> <p>85% returned to sports but 23% overhead athletes did not return (FU 26 months).</p> <p>ROM and Strength. There is insufficient evidence in the literature to predict time frame for ROM or strength.</p> <p>Statistically significant improvements in AROM at minimum 2 years post op.</p>
<p>Recurrent Instability</p>	<p>Significant association between patients requiring revision surgery and age less than 20 ($p < 0.035$) and pre operative participation in throwing activities ($p < 0.001$).</p>

