

## Post Operative Guidelines -



### Rotator Cuff Repair -Small and medium (<3cm)

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The risk of re-tear is greatest in the first 12 weeks post-surgery. Groups with greater risk of re-tear include older patients, smokers, diabetics, those with minimal postoperative symptoms and those with >3 cm tears.

The risk of stiffness is greatest in younger patients (<50 yrs.), those with PASTA type rotator cuff tears (Partial articular supraspinatus tension avulsion), those having an associated labral repair and single tendon repairs.

Timescales are guidelines and are dependent on individual factors and pre-operative status. Factors that may affect progression rate:

- Pre-operative stiffness
- Age
- Tissue quality
- Associated procedures

### Acute phase (0-4 weeks)

#### **Histology**

Peak collagen deposition and growth factors 10 days post op with plateau at 28-56 days. Requires gentle stress to guide fibre orientation but no strain.

#### **Goals**

1. Protect surgical repair and optimize tissue healing
2. Diminish pain and inflammation
3. Gentle regaining range of motion respecting pain and avoiding compensatory movement patterns.
4. Minimise muscle inhibition

#### **Immobilisation**

- Patients generally wear a sling for 2-4 weeks for comfort and to avoid stressing the repair. The sling is removed to allow axillary hygiene and when patient is performing their exercises
- Patients can use the arm below the elbow e.g. using computer, reading

#### **Rehabilitation**

- Avoid combined abduction / external rotation and any forced end range stretches
- Cryotherapy as needed
- Elbow, wrist and hand exercises.
- Encourage use of hand in sling for light unloaded, pain-free activities. Patients that use the hand of the operated arm during the immobilization phase have better outcomes in terms of pain and function.
- Closed kinetic chain exercises – low load on the shoulder and ensuring congruency scapula on thorax; e.g. table slides, walking away from the table.
- Active assisted / active supported mobilization within the limits of pain
- Submaximal isometrics (<30% MVC) rotator cuff
- Active scapula exercises e.g. shoulder shrug

### **Intermediate phase (4-8 weeks)**

#### **Histology**

Inflammatory and repair phase has passed and healing progressed to remodelling phase.

The application of low-level force during this time frame aids in orientation of fibres within collagen matrix and enhances tensile strength of repair.

#### **Goals**

1. Preserve integrity of repair. Patients who progress quickly with minimum symptoms must be educated to avoid early loading.
2. Improve functional range of movement including full elevation
3. Re-educate cuff recruitment and scapula control through range
4. Improve neuromuscular control by re-educating sensorimotor / proprioceptive function
5. Emphasize normal patterns of movement

#### **Rehabilitation**

- Avoid combined abduction / external rotation
- Avoid forced end range stretches
- Avoid lifting / loading until 12 weeks
- Gentle mobilization of capsular restriction if necessary
- Progress cuff and scapula recruitment through range. Any exercise prescription should emphasize on good cuff and scapula control. Active assisted exercises progressing to active exercises-utilise short lever, supine and closed kinetic chain. Avoid long lever open chain exercises until 12 weeks
- Progress kinetic chain integration
- Increase function, emphasis on correct movement pattern

- Closed kinetic chain work to enhance co-contraction

## **Late stage 8-12 weeks**

### **Histology**

Tendon to bone healing should be able to endure the initiation of strengthening exercises

### **Goals**

1. Restore full active range of movement
2. Establish optimal neuromuscular control
3. Restore optimal cuff and scapula control through range and under load
4. Optimise functional upper limb strength and endurance
5. Return to full work / sport and recreational activities

### **Rehabilitation**

- Regain optimal range of motion including combined positions
- Through range strengthening of rotator cuff and scapular stabilisers
- Enhance neuromuscular control through range
- Closed kinetic chain exercises with increased load
- Functional strengthening and endurance exercises

## **Phase 4 – advanced strengthening (12-16 weeks)**

### **Histology**

Remodeling phase is close to completion and the repaired rotator cuff tissue is relatively mature, therefore able to withstand greater stresses.

### **Goal**

- Return to work / sport with optimal control and strength

### **Rehabilitation**

- Progression of strength training with optimal control and movement pattern
- Sport specific training
- Endurance training and fatigue resistance
- Promote concept of prevention

## **Return to sport**

The interval sports programme should only begin after the patient has been cleared by the surgeon and has achieved symmetric motion and strength, normal scapulothoracic kinematics and has no complaints of pain at rest or with activities. Sport specific training exercises should only be commenced when the patient is fully rested and after a 5-10 minute cardiovascular warm-up. The programme should be performed three times per week with at least one rest day in between sessions. A maintenance exercise programme focusing on cardiovascular endurance and flexibility along with scapulothoracic, rotator cuff, lower extremity and core strength should be performed on alternate days.

## **Functional Milestones**

- Driving -depends on side and whether automatic generally after 4-6 weeks when patient has adequate control
- Swimming 12-16 weeks
- Golf 16 weeks

## **Reference**

Oliver A van der Meijden et al (2012) Rehabilitation after arthroscopic rotator cuff repair: Current concepts review and evidence-based guidelines. International Journal of Sports Physical Therapy 7(2): 197-218