



# ACJ STABILISATION / RECONSTRUCTION – (TIGHTROPE & LARS)

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## ACJ Stabilisation / Reconstruction – (Tightrope & LARS)

Sling	From Day 1	Restrictions	Strengthening
For 6 weeks	C-spine, Elbow, Wrist and hand AROM. Gripping exercise and scapular retraction.	No active flexion for 4 weeks as deltoid detached during surgery.	Patient guided – scapular retraction exercises and gripping from day 1. Then isometrics at 4 weeks.

Factors that may affect progression rate:

- Tissue Quality inc bone health
- Age
- Diabetes
- Smoking and Alcohol status

Treatment Note: Follow up outpatient's physiotherapy usually at 2 weeks post op. When considering dose of prescribed exercise consider aim of the exercise and the individual patient – consider they may need to build up to desired dose and manipulating the F.I.T.T principles. Consider avoiding initial muscle activity of those originating or inserting into the ACJ such as deltoid, UFT, SCM and pec major.

Phase 1 (Day 1 - 6 weeks) Initial in hospital and on discharge exercises <sup>1,2</sup>

**Aims/Goals:** Protect repair including deltoid. Encourage ROM to avoid joint restriction. Encourage and maintain global neuromuscular activity.

**Avoid:** Active Flexion during the first 4 weeks and avoid ROM above 90 degrees. Avoid lifting anything heavier than 1-2lbs, weight bearing on the arm or allowing downward traction on the arm e.g. carrying bags

Exercise:	Dose:
<b>PROM</b> <ul style="list-style-type: none"> <li>• Passive to 90 degrees (1-6/52)</li> <li>• Pendular exercises in the sling</li> </ul>	
<b>AROM</b> <ul style="list-style-type: none"> <li>• Active assisted ER and IR to chest wall with the elbow tucked to the hip.</li> <li>• Cervical spine, Elbow, Wrist &amp; Hand, wrist and elbow ROM with arm supported</li> <li>• Start active assisted flexion at 4 weeks to 90 degrees.</li> </ul>	



<p><b>Strengthening</b></p> <ul style="list-style-type: none"> <li>• Gripping a towel/small ball/ pair of socks.</li> <li>• Scapular retraction (As patient can tolerate)</li> </ul> <p>At 4 weeks – Submaximal isometrics of RC and deltoids – (patient guided)</p>	
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<p><b>Treatment Note:</b></p> <ul style="list-style-type: none"> <li>• Reminder on importance of pain control.</li> <li>• Use of ice pack</li> <li>• Sling to be worn for 6/52 – this can be removed for exercise, washing, dressing and eating.</li> <li>• Stitches to be removed at 2/52 post op at GP practice</li> <li>• Driving usually possible 4-6/52 - dependant on patient function and safety and specific post op instructions. Patients should always check with the DVLA and insurance company.</li> <li>• No active flexion for 4 weeks as deltoid detached during surgery.</li> <li>• Patient can still engage with lower limb rehab and strengthening of the non-operated side to facilitate recovery<sup>3</sup>.</li> </ul>
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**Phase 2 (6 weeks-12 weeks)**

**Aims/Goals:** Full ROM in the GHJ. Encourage and maintain global neuromuscular activity.

**Avoid:** Gradually build up loading within patient capabilities including weight bearing closed chain exercises.

Exercise:	Dose:
<p>PROM – AROM guided by patient tolerance through full range of motion in the shoulder.</p>	
<p><b>Stretching / Lengthening</b></p> <ul style="list-style-type: none"> <li>• Assess muscle / soft tissue length of Pecs, UFT, Scalenes and posterior cuff / capsule.</li> <li>• Consider role of static stretching or eccentric loading to encourage lengthening of the soft tissues.</li> <li>• Use of adjuncts such as breathing control, relaxation, self TrP, heat etc if appropriate.</li> </ul>	
<p><b>Strengthening</b></p>	



<ul style="list-style-type: none"><li>• Gradual loading directed through you clinical assessment – consider RC, Scap, C-spine etc.</li></ul>	
<p>Proprioception and weightbearing</p> <ul style="list-style-type: none"><li>• Consider role of weightbearing through the arm moving from closed chain to open chain exercises.</li><li>• Start loaded proprioception work for the shoulder as able (hands on a table with weight transfer from side to side (progressive loading as able)</li><li>• Consider progression using gym-ball (either control in standing or using the gym-ball to control the weight load on the upper limb when the patient is on their hands and knees.</li><li>• From 6 weeks progressing through weight bearing with press up progressions (Against the wall, against the wall with feet further away, against a table, on to hands and knees and to full (if appropriate)</li></ul>	

Treatment Note: Follow up with clinic with upper limb team at 6-8 weeks post op.

### Phase 3 (12 weeks +)

**Aims/Goals:** 3 months: full active ROM and starting sport specific rehab based on the individual needs of the patient.

**Avoid:** Overload beyond patient capacity. Gradually build up loading within patient capabilities including weight bearing closed chain exercises. Avoid return to contact sport until 6/12.

Treatment Note: Aim for function specific rehabilitation considering manipulating training principled for power and endurance. Loaded cuff strengthening and kinetic chain rehabilitation if appropriate. This will be patient specific and gradually increase weightbearing / loading through the upper limb. With return to sports which may have a contact / impact element and build this into your rehabilitation as a graduated / graded process. Introduce graduated loading with hands above the head.



## **Appendix: Procedure Summary**

### **Surgilig/LARS ligament**

Open reconstruction of coraco-clavicular ligaments. Surgical dissection involves partial disruption of the attachment of the anterior deltoid to the clavicle, which is sutured back at the end. A synthetic ligament is looped around the base of the coracoid and over the top of the clavicle and secured with a screw (Surgilig) or brought through tunnels in/around the clavicle (LARS ligament).

#### **Notes:**

- This is appropriate for both acute and chronic disruptions as the implant encourages tissue ingrowth and becomes a “biological” fixation over time, i.e. replicates the original coraco-clavicular ligaments.
- The fixation itself is very strong but initial rehab is geared towards protecting the repair of the deltoid attachment.

#### **Reference List**

1. Muccioli, G., Manning, C., Wright, P., Grassi, A., Zaffagnini, S. & Funk, L. (2014). Acromioclavicular joint reconstruction with the LARS ligament in professional versus non-profession athletes. *Knee surgery, sports traumatology, arthroscopy*, 24, 1-8. Doi: 10.1007/s00167-014-3231-y.
2. Tamaoki, M.J.S., Lenza, M., Matsunaga, F.T, Belloti, J.C, Matsumoto, M.H. & Faloppa. F. (2019). Surgical versus conservative interventions for the treating acromioclavicular dislocation of the shoulder in adults. *Cochrane database of systematic reviews*, 10. 1-60. Doi:10.1002/14651858.CD007429.pub3.
3. Farthering, P. (2009). Cross-education of strength depends on limb dominance: implication for theory and application. *Exercise and Sports Science Reviews*, 37(4), 179-187. Doi:10.1097/JES.0b013e.