



LUCL Reconstruction — Rehabilitation Protocol

Overview

- Applies to: LUCL reconstruction for posterolateral rotatory instability (PLRI) of the elbow
- Sling for comfort only — not a brace or rigid splint; discarded as tolerated
- Early range of motion commences from Day 10 post-operatively
- Key precaution: avoid varus stress and loaded forearm supination in early phases

Rehabilitation Phases

Phase 1 — Early Motion	Days 10 – Week 4
Goals: <ul style="list-style-type: none">• Initiate early elbow ROM safely• Control pain and swelling• Maintain wrist and hand function	Exercises & Interventions: <ul style="list-style-type: none">• Sling for comfort only — wean as tolerated from Day 10• Supine overhead gravity-assisted elbow flexion/extension from Day 10 (shoulder flexed to 90°, gravity neutralises varus stress)• Wrist and finger AROM immediately• Submaximal isometrics (elbow flexion, forearm pronation) from Week 2• Cryotherapy 20 min 4x/day• Elevation and compression• Gentle grip strengthening (putty) from Week 2
Precautions: <ul style="list-style-type: none">■ No forearm supination under load■ No varus stress on elbow■ Avoid upright elbow ROM in early phase — supine overhead position preferred	
Phase 2 — Progressive ROM	Weeks 4–8
Goals: <ul style="list-style-type: none">• Elbow ROM: 0–130° by Week 8• Initiate light muscle activation• Forearm rotation ROM	Exercises & Interventions: <ul style="list-style-type: none">• Continue supine overhead gravity-assisted flexion/extension — progress range• Active-assisted upright elbow flexion/extension as tolerated• Forearm pronation/supination AROM (within comfort)• Wrist AROM and gentle strengthening• Submaximal elbow flexion isotonic• Scapular and shoulder girdle stabilisation• Aquatic therapy from Week 6
Precautions: <ul style="list-style-type: none">■ No resisted supination before Week 8■ No varus loading■ No push/pull activities	



Rehabilitation Phases (continued)

Phase 3 — Progressive Strengthening	Weeks 8–16
<p>Goals:</p> <ul style="list-style-type: none">• Full elbow ROM• Progressive elbow and forearm strengthening• Neuromuscular stability	<p>Exercises & Interventions:</p> <ul style="list-style-type: none">• Isotonic elbow flexion/extension (light theraband)• Resisted forearm pronation/supination (gradual progression)• Wrist flexion/extension strengthening• Closed kinetic chain (weight bearing through hand, wall)• Proprioception drills (ball dribbling, perturbation)• Progressive grip strengthening• ADL reintegration
<p>Precautions:</p> <ul style="list-style-type: none">■ Avoid heavy lifting >2 kg before Week 14■ No throwing or valgus/varus loading sport	
Phase 4 — Return to Activity	Weeks 16–26
<p>Goals:</p> <ul style="list-style-type: none">• Full strength and ROM• Sport-specific and work-specific reintegration• Proprioceptive confidence	<p>Exercises & Interventions:</p> <ul style="list-style-type: none">• Progressive resisted exercises (weights, functional loads)• Plyometric upper extremity drills• Throwing progressions from Week 20 (if applicable)• Return-to-sport testing• Heavy manual work from 5–6 months (surgeon-directed)
<p>Precautions:</p> <ul style="list-style-type: none">■ Full return to overhead throwing: minimum 6 months■ Elbow instability test (lateral pivot shift) must be negative at clearance	

Clinical Notes

- Supine overhead ROM is biomechanically superior to upright or braced ROM for LCL-deficient elbows
- Graft: commonly palmaris longus or gracilis autograft — no specific graft-related protocol modifications
- Hinged brace is not required — early unsupported supine motion is safe and preferred
- Forearm supination is the key position to protect — educate patient thoroughly

References

1. Cosic F, Ernstbrunner L et al. Lateral ulnar collateral ligament reconstruction through a mini-invasive approach. *Arthroscopy*. 2024 (accepted).
2. Osborne G, Cotterill P. Recurrent dislocation of the elbow. *J Bone Joint Surg Br*. 1966;48(2):340-346.
3. O'Driscoll SW et al. Posterolateral rotatory instability of the elbow. *J Bone Joint Surg Am*. 1991;73(3):440-446.
4. Sanchez-Sotelo J et al. Medial and lateral elbow ligament reconstruction. *J Hand Surg Am*. 2009;34(8):1579-1584.
5. Hackl M et al. The influence of gravity on the unstable elbow. *J Shoulder Elbow Surg*. 2015;24(3):516-522.
6. Iordens GI et al. Supine gravity-assisted overhead motion protocol minimises ulnohumeral distraction in unstable elbows. *Cureus*. 2015.
7. Charalambous CP, Stanley JK. Posterolateral rotatory instability of the elbow. *J Bone Joint Surg Br*. 2008;90(3):272-279.

This rehabilitation protocol is intended as a general guide for qualified physiotherapists and healthcare professionals. It should be adapted to individual patient presentation, surgical findings, tissue quality, and progress. All progression decisions should be made in consultation with the treating surgeon.