

LATERAL ULNAR COLLATERAL LIGAMENT RECONSTRUCTION

Background

Lateral ulnar collateral ligament reconstruction (LUCLr) is primarily utilized to address recurrent symptomatic posterolateral rotatory instability. This often occurs during a fall on outstretched hand (FOOSH) injury in which the proximal ulna and radial head subluxate posterolateral. This protocol has been created in conjunction with select OSU surgeons who perform this procedure. Please review surgeon's note to identify technique utilized and identify any specific surgeon precautions.

Disclaimer

Progression is time and criterion-based, dependent on soft tissue healing, patient demographics and clinician evaluation. If you are working with an Ohio State Sports Medicine patient and questions arise, please contact the author by calling our office at (614) 293-2385.

Summary of Guideline

Precautions	Brace use for 6 weeks Avoid varus stress during daily activity (i.e. internal rotation / reaching behind low back) Avoid full elbow extension with supination for 6 weeks No lifting with affected extremity for 6 weeks
Outcome Tools	Quick DASH KJOC
Strength Testing	Hand Held Dynamometry for scapular and rotator cuff musculature no earlier than 12 weeks (>80% compared to contralateral shoulder)
Range of Motion	Shoulder Total Arc of Motion <5 degrees different from contralateral shoulder Full, pain-free elbow ROM (throwers commonly lack full extension, goal is pre-injury ROM)
Criteria to initiate plyometrics	Time: no earlier than 10 weeks Pain-free ADL's and strengthening interventions Strength \geq 4/5 MMT OR \geq 80% of uninvolved shoulder ROM as noted above Proper scapular control during interventions
Criteria for return to sport	Clearance from physician Completion of strengthening and plyometrics Successful completion of throwing program Time: 6+ months



Phase 1 – Immediate Post-Op Phase

Goals

- 1) Protect healing tissue
- 2) Decrease pain/inflammation

WEEKS 1-2	Wound Care	Sterile gauze used at incision site. Check brace for rubbing or irritation.
	Brace	Hinged elbow brace 30 degrees – full flexion
	ROM	Wrist and Hand AROM (extension, flexion, ulnar and radial deviation) Shoulder PROM and AROM, avoid varus stress at elbow AROM pronation / supination with elbow at 90 degrees
	Strength	Scapular retraction Scapular clocks with manual resistance
	Modalities	Cryotherapy and E-stim for swelling control at elbow
	Precautions	Avoid varus stress during daily activity No lifting with affected extremity for 6 weeks

WEEKS

3-5	Brace	Still wearing hinged elbow brace for protection Increase extension block 10 degrees per week until full ROM at week 6
	ROM	Elbow AAROM and AROM with forearm neutral, working toward full AROM Continue shoulder ROM activities all planes
	Strength	Shoulder isometrics progressing to isotonics while avoiding varus stress Wrist flexor isometrics in neutral position
	Core and Lower Extremity	Thoracic spine mobility drills Progress core strength without WB or elbow stress – no holding med balls

Phase 2 – Intermediate Phase

WEEKS 6-9	Brace	Discharge hinged brace per MD orders Air cast brace while in public and during initial strength exercises
	ROM	Low load long duration stretching if lacking elbow extension Full elbow PROM and AROM Shoulder total arc of motion (ER+IR) dominant = non-dominant
	Strength	Use ankle weights around wrist vs dumbbells/bands if able May begin ADLs with affected extremity Isometric strengthening of hand, wrist, and elbow (in air cast) Digiflex, putty exercises, gripping Progressive resistance exercises for shoulder, rotator cuff and periscapular musculature Continue lower extremity and core strengthening
	Manual Therapy	Scar massage, soft tissue to forearm and arm musculature as needed Joint mobilizations as needed at end-range



WEEKS 10-12	ROM	Finalize elbow and shoulder ROM with more aggressive stretching techniques as needed
	Strength	Progress elbow and forearm strength – dumbbells, manual resistance Rhythmic stabilization, neuromuscular control exercises in varying planes Initiate concentric and eccentric exercises Begin CKC activity – quadruped or hands on table initially, progress as able

Phase 3 – Advanced Strengthening Phase

Goals

- 1) Full elbow ROM maintained
- 2) Progression of UE strength without exacerbation
- 3) Good muscular control with manual exercises
- 4) General conditioning progression tolerated

WEEKS 12+ weeks	Strength	PNF patterns and rhythmic stabilization into overhead positions No restrictions - progressive strengthening program
	Plyometrics	Double arm plyometrics no earlier than 10 weeks (refer to shared drive for plyometric program) Progress to single arm plyometrics into higher ranges Towel drills

Updated By: Kyle Smith, PT, DPT, OCS; LeAnn Gaerke, OTR/L, CHT

Reviewers: Greg Hock, PT, DPT, OCS

Revision date: June 2023

References:

Camp CL, Sanchez-Sotelo J, Shields MN, O'Driscoll SW. Lateral Ulnar Collateral Ligament Reconstruction for Posterolateral Rotatory Instability of the Elbow. *Arthrosc Tech*. 2017 Aug; 6(4): 1101-1105. Doi: 10.1016/j.eats.2017.03.029. PMID: 29354404

Fares A, Kusnezov N, Dunn JC. Lateral Ulnar Collateral Ligament Reconstruction for Posterolateral Rotatory Instability of the Elbow: A Systematic Review. *HAND*. 2022;17(2):373-379. Doi: 10.1177/1558944720917763