

ULNAR COLLATERAL LIGAMENT RECONSTRUCTION GUIDELINE

Disclaimer

- Progression is time and criterion-based, depending on soft tissue healing, patient demographics, and clinician evaluation.
- For questions, contact Dr. Sujan Gogu's clinic.

Phase I- Post operation

Goals:

1. Safeguard the healing tissue
2. Reduce pain and inflammation
3. Minimize muscle loss

Week 1

Care for Wound	Use sterile gauze at the incision site. Check brace for any rubbing or irritation.
Compression Garment	Use at elbow with physician's approval
Posterior Splint	Maintain at 90 degrees
Range of Motion (ROM)	Perform active wrist extension/flexion
Hamstring Flexibility	Focus on if gracilis tendon graft is used
Shoulder Strength	Emphasize gripping exercises
Shoulder Isometrics	Exclude internal and external rotation
Scapular Clocks	Perform with manual resistance
Trunk/Core	Include thoracic extension, side lying thoracic rotation, pelvic tilts (supine, seated, standing, single leg stance as tolerated)
Lower Extremity Strength	Include hamstring eccentrics, hip abduction exercises (side steps, single leg abduction, clamshells), and hip extension exercises (glute sets, bridges, hip extension)
Breathing Exercises	Teach and practice proper breathing patterns without using accessory muscles
Balance	Progressively practice safe exercises in kneeling, half

	kneeling, and single leg positions
Posture	Educate on maintaining proper posture throughout each session
Modalities	Use cryotherapy and electrical stimulation (E-stim) for swelling control at the elbow and graft site
Lower Extremity	Use stationary bike without upper body support

Week 2 and Week 3

Brace	Week 2: Adjusted to 30-90 degrees Week 3: Adjusted to 10-120 degrees
Elbow ROM	Week 2: Increase to 5 – 125 degrees if pain-free Week 3: Maintain 5 – 125 degrees, progressing if pain-free
Strength	Week 2: Perform light rhythmic stabilization at end range of elbow extension Week 3: Perform light rhythmic stabilization at end range of elbow extension
T-Band	Week 2 & 3: Engage in scapular retraction exercises
Trunk/Core	Week 2: Maintain previous exercises and mobility, progress cautiously without bearing weight or stressing the elbow, avoid holding medicine balls or weights Week 3: Focus on exercises that avoid stress on the upper extremities
Lower Extremity	Week 2: Continue previous activities with safe progressions Week 3: Begin cautiously, hold back if gracilis graft was used
Modalities	Use cryotherapy and light compression

Criterion of progression to next phase:

1. Achieve recommended range of motion (ROM).
2. Experience low and manageable pain levels.
3. Maintain consistently low swelling.

Phase II- Intermediate Phase Goals

Goals:

1. Manage pain and reduce inflammation.
2. Gradually achieve full range of motion (WNL - within normal limits).
3. Facilitate tissue healing.
4. Develop strong scapular control through exercises.
5. Attain 5/5 shoulder strength using manual muscle testing (MMT), or achieve equal strength between dominant and non-dominant sides using hand-held dynamometry (HHD).
6. Advance overall conditioning, including strengthening of lower extremities.

Week 4 and Week 5

Brace	Adjusted to 10-110 degrees
Stretching	Use low load, long-duration stretches with the forearm in a neutral position if elbow extension is limited
Strength Training	Begin with ankle weights around wrists for exercises instead of dumbbells or bands
Elbow and Wrist Exercises	Perform dumbbell exercises for flexion, extension, pronation, and supination. Use light T-band for elbow flexion and extension
Shoulder Strengthening	Include rotator cuff exercises with ankle weights
Manual Therapy	Perform scar massage
Conditioning	Start using the elliptical or stepper for aerobics. Begin leg press and mini lunges (if using a gracilis graft)
Core Strengthening	Continue without planks
Restrictions	Avoid upper body resistance training and holding weights in hands

Week 6 -Week 8

Range of Motion	Achieve full active and passive range of motion (AROM/PROM) and discontinue the brace
Joint Mobilizations	Perform as needed at end range with distraction
Shoulder Range	Attain total arc of motion (internal rotation + external rotation at 90 degrees): dominant side equals non-dominant side
Elbow Strength	Perform progressive resistive exercises (PREs) with dumbbells and manual resistance
Core Strengthening	Engage in Swiss ball push-up plus exercises with straight elbows
Shoulder Exercises	Include side lying external rotation with dumbbells or ankle weights, Thera band exercises for internal rotation, external rotation, and horizontal abduction (avoiding valgus stress to the elbow)
Manual Resistance Exercises	Perform concentric and eccentric exercises such as prone row, horizontal abduction in neutral, external rotation, internal rotation, and flexion at 105 degrees with thumb up position.
PNF (Proprioceptive Neuromuscular Facilitation)	Use D2 pattern with rhythmic stabilization at multiple angles, focusing on holding at the elbow.
Aerobics	Consider initiating running on safe surfaces (hold if a gracilis graft was used)
Week 8	<ul style="list-style-type: none"> ➤ Perform seated row and lat pull-down exercises. ➤ Engage in prone rowing combined with external rotation. ➤ Execute prone quick drops involving flexion, external rotation, and horizontal abduction. ➤ Use Thera-band exercises at a 90-degree angle and with the shoulder abducted at 0 degrees for external and internal rotation ➤ Focus on slow movements to avoid stressing the elbow

	<ul style="list-style-type: none"> ➤ Rhythmic stabilization and D2 pattern PNF exercises in a 90-degree position ➤ Hamstring exercises in an open chain
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Criterion of progression to next phase:

1. Achieve full elbow active range of motion.
2. Attain equal total arc of motion between the uninvolved and involved sides.
3. Demonstrate 5/5 strength with manual muscle testing (MMT) or achieve equivalent strength using a Hand Held Dynamometer (HHD) for the involved shoulder:
 - ER & IR in neutral
 - Horizontal abduction
 - Flexion
 - Full can/scaption
 - Extension
 - Overhead flexion
4. Maintain an external rotation to internal rotation ratio of 67%.
5. Achieve 5/5 strength or equivalent between dominant and non-dominant sides using MMT or HHD for lower extremity strength in all planes of hips, knees and ankle
6. Attain equal ankle dorsiflexion bilaterally (ideally 10 degrees).
7. Achieve 50 degrees of thoracic spine rotation bilaterally in a seated position.

Phase 3 – Advanced Strengthening Phase Goals:

1. Maintain full elbow range of motion (ROM).
2. Progress upper extremity (UE) strength without aggravating symptoms.
3. Develop excellent muscular control through manual exercises.
4. Gradually advance overall conditioning that is well tolerated.

Week 9- Week 16

Week 9	Normalize elbow ROM, facilitate extension with ER of humerus (avoid valgus stress at elbow)
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	Elbow: Initiate eccentric flexion/extension exercises, progress concentric strengthening
	Shoulder: Continue concentric strengthening program
	Manual Resistance: D2 PNF pattern with resistance proximal to elbow
	Impulse: External rotation and horizontal abduction in 90/90 position
	Bodyblade: External rotation, internal rotation, and through throwing motion in 90/90 position
	Rhythmic Stabilization: At 90/90 position and through D2 PNF pattern
	Core Strengthening: Prone pike stabilization with forearms in neutral position
	Jogging: Begin on flat ground (if gracilis graft used)
	Lower Extremity Strengthening: Continue progression
Week 10	Strength: Continue with above exercises and progress weight training (avoid pec flys and push-ups)
	Bodyblade: Internal/external rotation at 0 degrees shoulder abduction, flexion and scaption at 90 degrees
	Impulse: Internal/external rotation at 0 degrees shoulder abduction
	Plyometrics: Double arm ball toss starting at chest height with 2-3kg ball.
Week 11	Plyometrics: Continue double arm plyometrics, overhead soccer throw, wall dribbles, ball chops, free throws
Week 12	Strength: Single arm plyometrics, over-the-shoulder deceleration with 1kg ball, closed chain shoulder exercises
Week 13	Plyometrics: T-band ER/IR quick contractions, 90/90 wall dribbles
Week 14	Functional Exercise: 15 ft baseball throws for mechanics, elbow elevation exercises.
Week 16	<p>Strength: Continue upper extremity (UE) and core strengthening.</p> <p>Plyometrics: Progress UE plyometric activities.</p> <p>Isokinetic Testing: Perform IR/ER testing at different degrees/sec velocities.</p>

Phase 4 – Functional Activity Phase

Goals:

1. Continue strengthening program.
2. Maintain full upper extremity (UE) range of motion (ROM).
3. Achieve acceptable results in isokinetic tests for external and internal rotators:
4. Ensure shoulder strength from non-dominant to dominant side is 90%.
5. Maintain external rotator strength at 65% of internal rotators.

Week 18

Functional Activities	<ul style="list-style-type: none">➤ Initiate throwing progression under monitored mechanics, avoiding medial elbow stress (requires physician clearance).➤ Maintain elbow elevation above shoulder height.➤ Incorporate curl hop for throws of 90 feet and longer.➤ Ensure proper deceleration with sufficient back and trunk flexion range of motion
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