

ULNAR COLLATERAL LIGAMENT RECONSTRUCTION GUIDELINE

Functional Outcome Measure

KJOC (Appendix 1) should be completed at initial evaluation and at all identified times through guideline,

Phase 1 – Immediate Post-Op Phase

Goals

- 1) Protect healing tissue
- 2) Decrease pain/inflammation
- 3) Limit muscle atrophy

WEEK 1 DAYS 1-7	Wound Care	Sterile gauze used at incision site. Check brace for rubbing or irritation. Compression garment at elbow to be used with physician's authorization
	Posterior Splint	At 90 Degrees
	ROM	Wrist AROM ext/flex Hamstring flexibility if gracilis tendon graft utilized.
	Shoulder Strength	Gripping Shoulder Isometrics EXCEPT Internal Rotation AND External Rotation Scapular Clocks with manual resistance
	Trunk/Core	Thoracic Extension Side lying Thoracic Rotation Pelvic Tilts – supine, seated, standing, single leg stance as able
	Lower Extremity	Hamstring Strength – eccentrics Hip Abduction – side steps, SL abduction, clamshells Hip Extension – glute sets, bridges, hip extension
	Breathing Exercises	Teach proper breathing patterns- no accessory breathing Progress from supine to functional positions
	Balance	Progressive, safe exercises in kneeling, half kneeling, and single leg
	Posture	Education on proper posture throughout each session
	Modalities	Cryotherapy and E-stim for swelling control at elbow and graft site.
	Lower Extremity	Stationary bike without upper body support

WEEK 2	Brace	30-90 degrees
	ROM	Elbow- 5 – 125 degrees. May progress if no pain or pinch is reported.
	Strength	Light rhythmic stabilization at end range of elbow extension T-Band – Scapular retraction exercise
	Trunk/Core	Continue previous exercises/mobility Progress as able without weight bearing or stress on elbow No holding med balls/weights
	Lower Extremity	Continue previous activities with safe progressions
	Modalities	Cryotherapy and light compression



WEEK 3	Brace	10-120 degrees
	ROM	Elbow- 5 – 125 degrees. May progress if no pain or pinch is reported.
	Strength	Light rhythmic stabilization at end range of elbow extension T-Band – Scapular retraction exercise
	Conditioning	Begin light cycling- avoid gracilis graft irritation. Core strengthening avoiding any upper extremity stress. May begin lower extremity strengthening (hold if gracilis graft used)

Criteria to progress to Phase 2

- 1) Meet ROM guidelines
- 2) Low, controlled pain
- 3) Consistently low swelling

Phase 2 – Intermediate Phase

Goals

- 1) Control pain and inflammation
- 2) Gradual increase in ROM to WNL
- 3) Promote healing of tissue
- 4) Good scapular control with exercises
- 5) 5/5 shoulder strength with MMT or dominant = non-dominant with HHD
- 6) Progress general conditioning, including lower extremity strength work

WEEKS 4-5	Brace	10-110 degrees Low load long duration stretch, maintaining forearm in a neutral position, if elbow extension is lacking. Shoulder internal rotation flexibility as indicated
	Strength	Use ankle weights around wrist vs dumbbells/bands if able Initiate light resistance exercises Wrist dumb bells – flexion/ extension/ pronation/ supination. Elbow dumb bells and light T-band - flexion and extension. Over pressure and rhythmic stabilization to be utilized with end range elbow extension strengthening. Shoulder program for rotator cuff strengthening – use ankle weights ▪ Prone Series – row/ extension/ flexion/ horizontal abduction ▪ Standing - flexion/ abduction/ scaption ▪ IR and ER ISOMETRICS in neutral ▪ Protraction supine – manual resistance proximal to the elbow ▪ UBE – low resistance ▪ Hand/gripping exercises to be continued.
	Manual Therapy	Scar massage
	Conditioning	Initiate Elliptical and /or stepper for aerobics Begin leg press and mini lunges (gracilis graft) Continue Core strengthening program – no planks No upper body resistance training No lifting plate weights or holding dumbbells in hands



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WEEKS 6-7	ROM	Full AROM/PROM – discharge brace Joint mobilizations as needed at end range with distraction Shoulder Total Arc of Motion (IR+ER at 90): dominant = non dominant
	Strength	Elbow PRE's – dumb bells and manual resistance Push up plus on Swiss ball, elbows remain straight Side lying External Rotation with dumbbells/ankle weights Thera band exercises - Shoulder internal rotation/ external rotation/ horizontal abduction. – AVOID VALGUS STRESS TO THE ELBOW Manual resistance exercises (concentric and eccentric) Prone row/horizontal abduction in neutral/ external rotation/ internal rotation/ flexion at 105 deg. thumb up position. PNF- D2 pattern (hold at elbow) rhythmic stabilization at multiple angles.
	Aerobics	Running may be initiated on safe surfaces. (hold if gracilis graft used)

WEEK 8	Strength	Seated row and lat pull Prone row with external rotation Prone quick drops – flexion/ external rotation/ horizontal abduction Thera-band at 90/90- external rotation/ internal rotation (perform slowly avoiding valgus stress at the elbow) Rhythmic Stabilization - 90/90 position and D2 PNF- holding at elbow Begin hamstring open chain exercises (gracilis graft used) Thera Band at 0 degrees shoulder abduction – IR and ER
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Criteria to advance to Phase 3

- 1) Full Elbow AROM
- 2) Total Arc of Motion: uninvolved = involved
- 3) 5/5 MMT strength OR Hand Held Dynamometer of involved shoulder
 - a. Shoulder external rotation in neutral
 - b. Shoulder internal rotation in neutral
 - c. Shoulder horizontal abduction
 - d. Shoulder flexion
 - e. Shoulder full can/scaption
 - f. Shoulder extension
 - g. Shoulder overhead flexion
- 4) Ext Rotation/Int Rotation to 67% ratio
- 5) Lower Extremity Strength 5/5 or HHD dominant=non dominant
 - a. Hips all planes
 - b. Knee all planes
 - c. Ankle all planes
- 6) Ankle Dorsiflexion
 - a. Equal bilaterally (ideal 10 degrees)
- 7) Thoracic Spine AROM
 - a. 50 degrees rotation bilaterally in seated position



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

WEEK 9	ROM	Normalize elbow ROM- external rotation of humerus to facilitate elbow extension- do not press at wrist (avoid valgus stress at elbow)
	Strength	Elbow – initiate eccentric flexion/ extension exercises and continue concentric strengthening progression Shoulder – continue concentric strengthening program Manual resistance D2 PNF pattern with resistance proximal to the elbow. Impulse – 90/90 position external rotation and horizontal abduction. Body blade – 90/90 position external rotation/ internal rotation/ and through the throwing motion. Rhythmic Stabilization – at 90/90 position and through the D2 PNF pattern.
	Core Strengthening	Prone pike stabilization with forearms held in a neutral position. May begin jogging on flat ground (gracilis graft used) Continue lower extremity strengthening progression
WEEKS 10-16	Strength	Continue strengthening as above. Weight training program to be progressed (avoid pec fly's and push ups)
WEEK 10	Bodyblade	internal/external rotation at 0 degrees shoulder abduction flexion and scaption at 90 degrees shoulder abduction
	Impulse	internal/external rotation at 0 degrees shoulder abduction
	Plyometrics	Double arm ball toss – start at chest height 2-3kg ball
WEEK 11	Plyometrics	Continue double arm plyometrics Overhead Soccer Throw Wall dribbles – semi circle Ball chops Free throws- 3kg ball (100-200 reps) against a wall
WEEK 12	Strength	Single arm plyometrics Initiate over-the-shoulder deceleration exercise with 1kg ball Begin closed chain shoulder stability exercises



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WEEK 13	Plyometrics	T-band ER/IR quick contractions. 90/90 wall dribbles
WEEK 14	Functional Exercise	15 ft baseball throws into wall for mechanics Elbow elevation above the shoulder for over the top throwing mechanics. Finish throw with ample deceleration ROM from the shoulder back and trunk
WEEK 16	Strength	Continue UE strengthening program Continue core strengthening
	Plyometrics	Continue progression of UE plyometric activities
	Isokinetic Testing	IR/ER testing to be performed at 90, 180 and 300 deg./sec.

Phase 4 – Functional Activity Phase

Goals

- 1) Continuation of strengthening program
- 2) Full UE ROM maintained
- 3) Acceptable Isokinetic test results for external/internal rotators
 - a. Shoulder non-dominant to dominant side strength to be 90%
 - b. Shoulder external rotators to be 65% of internal rotators.

WEEK 18	Functional Activities	Begin throwing progression with monitored mechanics avoiding medial elbow stress. – Requires physician clearance to initiate • Maintain elbow elevation above shoulder height. • Curl hop to be used when initiating throws of 90 ft and greater. • Deceleration to include good back and trunk flexion ROM
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