

Rehabilitation Guidelines for Ulnar Collateral Ligament Reconstruction (Palmaris Longus or Gracilis Graft)

This protocol is designed to assist clinicians in managing the post-operative care for patients undergoing Ulnar Collateral Ligament (UCL) Reconstruction, whether using a Palmaris Longus or Gracilis Graft. It is structured to be both time-dependent, based on tissue healing, and criterion-based, aligned with the patient's individual needs. Clinical decisions should be informed by examination findings, with adjustments made as necessary. The expected timelines for outcomes in this guideline may differ depending on the surgeon's preferences, any additional procedures, and potential complications. For guidance on progressing a post-operative patient, clinicians are encouraged to consult the referring surgeon.

The exercises and interventions included in this protocol are not meant to be comprehensive. Treatment should be tailored and adjusted based on patient progress and the clinical judgment of the healthcare provider.

Post-operative Considerations

Several factors can impact the rehabilitation outcomes following UCL reconstruction, including the type of graft used (Palmaris Longus or Gracilis) and any co-morbid conditions the patient may have. Close collaboration with the referring physician is strongly recommended.

Should you experience a fever, unusual drainage from the incision, significant redness or warmth around the surgical site, uncontrolled pain, or any other concerning symptoms, please contact your doctor immediately.

PHASE I: IMMEDIATE POST-OP PHASE (WEEKS 0-3 AFTER SURGERY)

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| Rehabilitation Goals | <ul style="list-style-type: none"> • Protect healing tissue • Reduce pain and inflammation • Protect graft site • Reduce muscle atrophy |
| Brace | <ul style="list-style-type: none"> • Week 1 - Immobilized in Posterior splint at 90 degrees of Elbow Flexion • Week 2: Hinged Brace: 25-100 degrees • Week 3: Hinged brace: 15-115 degrees • Elbow Post-op compression dressing for 5-7 days • Palmaris Longus Graft - Wrist post-op compression for 5-7 days |
| Precautions | <ul style="list-style-type: none"> • Non-weight bearing on repaired upper extremity. • AVOID active elbow flexion and forearm supination until Week 4 • NO LIFTING with repaired upper extremity until Week 8 |
| Interventions | <p><i>Manual therapy</i></p> <ul style="list-style-type: none"> • Soft tissue mobilization, retrograde massage for swelling <p><i>Modalities</i></p> <ul style="list-style-type: none"> • Ice and compression <p><i>Gripping Exercises:</i></p> <ul style="list-style-type: none"> • Squeeze towel, putty or foam with varying types of grips |

PHASE I: IMMEDIATE POST-OP PHASE
(WEEKS 0-3 AFTER SURGERY) CONTINUED

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| <p>Interventions</p> | <p><i>Isometrics</i></p> <ul style="list-style-type: none"> • Performed with brace on • Day 1 <ul style="list-style-type: none"> ◦ Shoulder: Flexion, ABD, IR - Avoid External Rotation Performed with arm at side, gently push against a wall or opposite hand ◦ Elbow Flexion Performed at 90 degrees elbow flexion • Day 7 <ul style="list-style-type: none"> ◦ Elbow Extension Performed at 90 degrees elbow flexion <p><i>Range of Motion</i></p> <ul style="list-style-type: none"> • Wrist AROM <ul style="list-style-type: none"> ◦ Flexion, ◦ Extension ◦ Radial deviation ◦ Ulnar deviation • Thumb opposition • Elbow PROM <ul style="list-style-type: none"> ◦ Flexion and extension ◦ Performed to tolerance, making sure the elbow is staying relaxed. • Shoulder AROM <ul style="list-style-type: none"> ◦ Performed with brace on ◦ Full Can • Elbow AROM: Begin day 14 • Low load, long duration stretching: <ul style="list-style-type: none"> ◦ Use when elbow extension range of motion is lacking ◦ Supine with towel roll under distal humerus. ◦ Add a light weight ◦ Must be pain-free ◦ Hold 10-15 minutes up to 4 times a day, totaling 60 minutes a day • Gracilis Graft - Knee ROM immediately post-op; Bike on week 3 |
| <p>Criteria to Progress</p> | <ul style="list-style-type: none"> • Elbow ROM: at least 15-115 degrees • At least 4/5 elbow MMT scores |

PHASE II: PROTECTION PHASE
(WEEKS 4-6 AFTER SURGERY)

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| <p>Rehabilitation Goals</p> | <ul style="list-style-type: none"> • Gradual increase to full ROM by week 6 • Promote healing of repaired tissue • Regain and improve muscular strength - slow integration of exercises • Restore full function of graft site |
| <p>Brace</p> | <ul style="list-style-type: none"> • Week 4: 0-125 degrees • Week 5: 0-135 degrees • Week 6: 0-145 degrees • Discontinue use of brace at week 6 if achieved full ROM, unless walking in crowds or slippery surfaces |
| <p>Precautions</p> | <ul style="list-style-type: none"> • No valgus stress to the graft • No ER strengthening until week 6 • Gracilis graft - Do not initiate progressive resistive hamstring strengthening until week 6 |

PHASE II: PROTECTION PHASE
(WEEKS 4-6 AFTER SURGERY) CONTINUED

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| <p>Criteria to Progress</p> | <p><i>Manual therapy</i></p> <ul style="list-style-type: none"> • Soft tissue and scar mobilization <p><i>Modalities</i></p> <ul style="list-style-type: none"> • Continue with ice and compression <p><i>Range of Motion</i></p> <ul style="list-style-type: none"> • Elbow PROM - Focus on restoration of full elbow extension <p><i>Strengthening</i></p> <ul style="list-style-type: none"> • Wrist and forearm strengthening: <ul style="list-style-type: none"> ◦ Curls/Extensions - Start with 1 lb. ◦ Pronation/Supination - Start with dowel • Biceps curl - Begin with 1lb • Triceps Extension • Scapula stabilization: Start at 1 lb <ul style="list-style-type: none"> ◦ Prone Row ◦ Prone Shoulder horizontal abduction ◦ Prone Shoulder extension • Resistance band <ul style="list-style-type: none"> ◦ Low rows ◦ Shoulder internal rotation (at side) • Standing scaption (start with 1lb, do not exceed 10 lbs.) <p>• Full Range of Motion</p> <p>• At least 70% of strength of wrist and shoulder of uninvolved arm - HHD, MMT or isokinetic testing</p> <p>• Good tolerance to all exercises with no pain</p> |
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PHASE III: STRENGTHENING PHASE
(WEEKS 6-12 AFTER SURGERY)

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| <p>Rehabilitation Goals</p> | |
| <p>Precautions</p> | <ul style="list-style-type: none"> • No Throwing • No valgus stress to the elbow |
| <p>Additional Intervention *Continue with Phase I-II interventions</p> | <p><i>Manual Therapy:</i></p> <ul style="list-style-type: none"> • Soft tissue mobilizations as needed <p><i>Range of motion</i></p> <ul style="list-style-type: none"> • Elbow PROM as needed <ul style="list-style-type: none"> ◦ Maintain full elbow extension <p><i>Strengthening</i></p> <ul style="list-style-type: none"> • Gracilis graft: Begin slow progression of hamstring strengthening • Forearm strengthening: <ul style="list-style-type: none"> ◦ Emphasis on flexion and pronation • Elbow Strengthening: <ul style="list-style-type: none"> ◦ Eccentric flexion and extension ◦ Varied resistance and speed of contractions - (start slow build to fast) • Thrower's 10 program: Begin at week 6 <ul style="list-style-type: none"> ◦ Initiate Advanced Thrower's 10 at Week 8 - as appropriate |

PHASE III: STRENGTHENING PHASE
(WEEKS 6-12 AFTER SURGERY) CONTINUED

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| <p>Additional Intervention *Continue with Phase I-II interventions</p> | <ul style="list-style-type: none"> • UBE • Rows • Lat pull down • PNF exercises <ul style="list-style-type: none"> ◦ Rhythmic stabilization/manual resistance: (side-lying ER and diagonals) |
| <p>Criteria to Progress</p> | <ul style="list-style-type: none"> • Maintain full pain-free ROM • At least 85% strength of uninvolved arm - HHD, or isokinetic testing • Good tolerance to all exercises with no pain |

PHASE IV: ADVANCED STRENGTHENING PHASE
(WEEKS 12-16 AFTER SURGERY)

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| <p>Rehabilitation Goals</p> | <ul style="list-style-type: none"> • Progress power/endurance • Normalize shoulder/forearm strength • Initiate plyometric exercises • Gradually initiate sports/functional exercises |
| <p>Precautions</p> | <ul style="list-style-type: none"> • No Throwing • No valgus stress to the elbow |
| <p>Additional Intervention *Continue with Phase II-III interventions</p> | <p><i>Strengthening</i></p> <ul style="list-style-type: none"> • Advanced throwers ten program • Body blade - ER/IR, push/pull • Seated bench press • Supine dumbbell bench press • Begin a hitting program (if applicable to sport) <ul style="list-style-type: none"> ◦ Initiate week 12 <p><i>Plyometric Program</i></p> <ul style="list-style-type: none"> • Week 12: <ul style="list-style-type: none"> ◦ 2-handed drills only: 6-8 lbs. (emphasis on full extension) • Chest pass • Side throw close to body • Week 14: <ul style="list-style-type: none"> ◦ 2 hands away from body • Side to side throws • Soccer throws • Side throws <ul style="list-style-type: none"> ◦ Begin 1-arm plyometrics • 1-handed stationary • Wall dribble: 1-2lb. medicine ball • Baseball throws into wall • Rhythmic stabilization in scapular plane with medicine ball on wall |
| <p>Criteria to Progress</p> | <ul style="list-style-type: none"> • Full, painless elbow/wrist ROM • Shoulder total ROM within 5° of non-throwing shoulder • > 40° horizontal adduction of throwing shoulder • < 15° Glenohumeral IR deficit • Elbow, shoulder and wrist strength with MMT, HHD or isokinetic: <ul style="list-style-type: none"> ◦ ER/IR ratio: 72-76% ◦ ER/ABD ratio: 68-73% ◦ Throwing shoulder IR: > 115% of non-throwing shoulder |

PHASE IV: ADVANCED STRENGTHENING PHASE

(WEEKS 12-16 AFTER SURGERY) CONTINUED

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| <p>Criteria to Progress</p> | <ul style="list-style-type: none"> o Throwing shoulder ER: > 95% of non-throwing shoulder o Elbow flexion/extension: 100-115% of non-throwing shoulder o Wrist flexion/extension: 100-115% of non-throwing shoulder • Functional test Scores: <ul style="list-style-type: none"> o Prone Drop ball test - 110% of non-throwing side o 1-arm balls against wall @ 90/90: • 2lb ball • 30 seconds with no pain • 115% of throwing side <ul style="list-style-type: none"> o Single arm step down test: • 8-inch • 30 seconds • Satisfactory score on Kerlan-Jobe Orthopedic Clinic shoulder and elbow score (KJOC) throwers assessment. • Physician Clearance |
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PHASE V: EARLY RETURN TO SPORT - UNRESTRICTED RETURN TO SPORT

(WEEKS 16+ AFTER SURGERY)

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| <p>Rehabilitation Goals</p> | <ul style="list-style-type: none"> • Increase strength, power and endurance • Safely initiate sport specific training program • Safely progress to full sport. |
| <p>Precautions</p> | <ul style="list-style-type: none"> • No Throwing • No valgus stress to the elbow |
| <p>Additional Intervention *Continue with Phase II-IV interventions</p> | <ul style="list-style-type: none"> • Interval Throwing Program: 16 weeks after surgery - unless indicated otherwise by surgeon • ***Refer to return-to-sport protocol/throwing protocol for further detail |
| <p>Criteria to Progress</p> | <ul style="list-style-type: none"> • Last stage, no additional criteria |

For further assistance or to schedule an appointment, please contact **iOrtho - The Orthopedic Institute** at **833-464-6784** or visit our website at **iorthomd.com** to text/email us. Our team is dedicated to providing personalized care and guidance throughout your rehabilitation journey.