

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

This protocol is intended to guide clinicians through the post-operative course for Ulnar Collateral Ligament Reconstruction (Palmaris Longus Graft, Gracilis Graft). This protocol is time based (dependent on tissue healing) as well as criterion based. Specific intervention should be based on the needs of the individual and should consider exam findings and clinical decision making. The timeframes for expected outcomes contained within this guideline may vary based on surgeon's preference, additional procedures performed, and/or complications. If a clinician requires assistance in the progression of a post-operative patient, they should consult with the referring surgeon.

The interventions included within this protocol are not intended to be an inclusive list of exercises. Therapeutic interventions should be included and modified based on the progress of the patient and under the discretion of the clinician.

Considerations for the Post-operative

Many different factors influence the post-operative UCL reconstruction rehabilitation outcomes, including whether a palmaris longus or gracilis graft was performed and individual co-morbidities. It is recommended that clinicians collaborate closely with the referring physician.

If you develop a fever, excessive drainage from incision, severe heat and/or redness along incision, uncontrolled pain, or any other symptoms that concern you please call your doctor.

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

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 • <i>Palmaris Longus Graft</i> – Wrist post-op compression for 5-7 days
Precautions	<ul style="list-style-type: none"> • Shoulder External rotation isometrics • Valgus stress to the Elbow
Intervention	<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 <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 <ul style="list-style-type: none"> ▪ Performed with arm at side, gently push against a wall or opposite hand ○ Elbow Flexion <ul style="list-style-type: none"> ▪ Performed at 90 degrees elbow flexion • Day 7 <ul style="list-style-type: none"> ○ Elbow Extension <ul style="list-style-type: none"> ▪ 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
Criteria to Progress	<ul style="list-style-type: none"> • Elbow ROM: at least 15-115 degrees • At least 4/5 elbow MMT scores

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

Rehabilitation Goals	<ul style="list-style-type: none"> • Gradual increase to full ROM by week 6 • Promote healing of repaired tissue • Regain and improve muscular strength – <i>slow integration of exercises</i> • Restore full function of graft site
Brace	<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
Precautions	<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
Additional Intervention <i>*Continue with Phase I interventions</i>	<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.)
Criteria to Progress	<ul style="list-style-type: none"> • Full Range of Motion • At least 70% of strength of wrist and shoulder of uninvolved arm – HHD, MMT or isokinetic testing • Good tolerance to all exercises with no pain

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

Rehabilitation Goals	<ul style="list-style-type: none"> • Increase strength/endurance/power • Maintain full elbow ROM especially extension
Precautions	<ul style="list-style-type: none"> • No Throwing • No valgus stress to the elbow
Additional Intervention <i>*Continue with Phase I-II Interventions</i>	<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 • UBE • Rows • Lat pull down • PNF exercises <ul style="list-style-type: none"> ○ Rhythmic stabilization/manual resistance: (side-lying ER and diagonals)
Criteria to Progress	<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 (12-16 WEEKS AFTER SURGERY)

Rehabilitation Goals	<ul style="list-style-type: none"> • Progress power/endurance • Normalize shoulder/forearm strength
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	<ul style="list-style-type: none"> • Initiate plyometric exercises • Gradually initiate sports/functional exercises
Precautions	<ul style="list-style-type: none"> • No Throwing • No valgus stress to elbow
Additional Intervention <i>*Continue with Phase II-III interventions as appropriate</i>	<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"> • <u>Week 12:</u> <ul style="list-style-type: none"> ○ 2-handed drills only: 6-8 lbs. (emphasis on full extension) <ul style="list-style-type: none"> • Chest pass • Side throw close to body • <u>Week 14:</u> <ul style="list-style-type: none"> ○ 2 hands away from body <ul style="list-style-type: none"> • Side to side throws • Soccer throws • Side throws ○ Begin 1-arm plyometrics <ul style="list-style-type: none"> • 1-handed stationary • Wall dribble: 1-2lb. medicine ball • Baseball throws into wall • Rhythmic stabilization in scapular plane with medicine ball on wall
Criteria to Progress	<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 ○ Throwing shoulder ER: ≥ 95% of non-throwing shoulder ○ Elbow flexion/extension: 100-115% of non-throwing shoulder ○ Wrist flexion/extension: 100-115% of non-throwing shoulder • Functional test Scores: <ul style="list-style-type: none"> ○ Prone Drop ball test – 110% of non-throwing side ○ 1-arm balls against wall @ 90/90: <ul style="list-style-type: none"> • 2lb ball • 30 seconds with no pain • 115% of throwing side ○ Single arm step down test: <ul style="list-style-type: none"> • 8-inch • 30 seconds • Satisfactory score on Kerlan-Jobe Orthopedic Clinic shoulder and elbow score (KJOC) throwers assessment. • Physician Clearance

PHASE V: EARLY RETURN TO SPORT - UNRESTRICTED RETURN TO SPORT (16+ WEEKS AFTER SURGERY)

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

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Contact	Please email MGHSportsPhysicalTherapy@partners.org with questions specific to this protocol
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References:

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