

ELBOW MEDIAL COLLATERAL LIGAMENT RECONSTRUCTION GUIDELINES

The following elbow MCL reconstruction guidelines were developed by Hospital for Special Surgery Rehabilitation and are categorized into five phases with the ultimate goal for returning the overhead athlete to full competition. Classification and progression are both criteria-based and time based due to the healing constraints of the human body. The first phase is focused on post-operative recovery and healing. Phases two and three are focused on building foundational strength and stability which will allow the athlete to progress to phase four which includes plyometric exercises. With the completion of phase four the athlete will be able to start the final phase which includes interval sports programs. Cardiovascular endurance, hip, core and lower extremity strength should be addressed throughout recovery. The clinician should use their skilled judgement and decision making as the athlete advances as all progression may not be linear.

BRACE INSTRUCTIONS

Week 1 Posterior splint and sling: _____

Weeks 2-3 Flexion: 60°, Extension 30°: _____

Week 4 Flexion: 90°, Extension 30°: _____

Week 5 Flexion: 90°, Extension 15°: _____

Week 6 Brace D/C per MD: _____



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Phase 1: Post-Operative Recovery (Weeks 1-4)

PRECAUTIONS	<ul style="list-style-type: none">▪ Avoid pain provoking activities▪ Avoid any painful exercises▪ Monitor healing for signs and symptoms of infection
ASSESSMENT	<ul style="list-style-type: none">▪ Quick Disabilities of Arm, Shoulder & Hand (Quick DASH)▪ American Shoulder and Elbow Surgeons Shoulder Score (ASES)▪ Kerlan-Jobe Orthopaedic Clinic Overhead Athlete Shoulder and Elbow Score (KJOC)▪ Numeric Pain Rating Scale (NPRS)▪ Static scapular assessment (Kibbler Grading)▪ Cervical mobility▪ Distal mobility
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none">▪ Gripping and hand AROM▪ Elbow AROM in brace (no further than brace allows)▪ Wrist AROM: flexion/extension immediate post-op▪ Scapular protraction/retraction, scapular isometrics
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none">▪ Reduced irritability▪ 15°-90° elbow AROM
EMPHASIZE	<ul style="list-style-type: none">▪ Reduction of tissue irritability▪ Protection of graft site▪ Prevention of muscle atrophy▪ Full wrist/hand mobility

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Phase 2: Intermediate (Weeks 5-6)

PRECAUTIONS	<ul style="list-style-type: none">▪ Avoid valgus stress▪ Avoid aggressive PROM: do not force motion▪ Avoid any painful exercises
ASSESSMENT	<ul style="list-style-type: none">▪ Quick DASH▪ ASES▪ KJOC▪ NPRS▪ Static/dynamic scapular assessment (Kibbler grading)▪ Elbow P/AROM▪ Hand and wrist AROM▪ Scapula assessment: position, rhythm▪ Scar and soft tissue mobility
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none">▪ Continue elbow AROM▪ Begin pain-free isometrics<ul style="list-style-type: none">○ Bicep isometrics/Tricep isometrics○ Deltoid▪ Wrist activation: minimize muscle atrophy<ul style="list-style-type: none">○ Flexion/extension○ Pronation/supination▪ AROM shoulder<ul style="list-style-type: none">○ Full can○ Lateral raises○ Elbow flexion/extension▪ Manual scapula stabilization with proximal resistance▪ Assess and treat graft site if needed (hamstring or palmaris)
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none">▪ ROM: 15°-115°▪ Reduced tissue irritability
EMPHASIZE	<ul style="list-style-type: none">▪ Elbow AROM 15°-115°▪ Reduction of tissue irritability▪ Maintenance of shoulder flexibility

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Phase 3: Advanced (Weeks 7-11)

PRECAUTIONS	<ul style="list-style-type: none">▪ Minimize valgus stress▪ Avoid aggressive PROM by clinician▪ Avoid painful exercise▪ No external rotation/internal rotation (ER/IR) isotonic exercises for 8 weeks
ASSESSMENT	<ul style="list-style-type: none">▪ Quick DASH▪ ASES▪ KJOC▪ NPRS▪ Static/dynamic scapular assessment (Kibbler grading)▪ Elbow P/AROM▪ Hand and wrist AROM▪ Scapula assessment: position, rhythm▪ MMT as appropriate▪ Scar and soft tissue mobility
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none">▪ Continue AROM▪ Low intensity/long duration stretch for extension ONLY if needed▪ Isotonic exercises for scapula, shoulder, elbow, forearm, wrist▪ Begin all shoulder tubing exercises at 6 weeks except for ER/IR▪ Begin ER/IR at 8 weeks▪ UE ergometry (if ROM allows)▪ Neuromuscular drills▪ Throwers Ten exercises▪ Progress to Advanced Throwers Ten exercises▪ Modalities as needed▪ Serratus activation
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none">▪ Full shoulder and elbow ROM▪ Pain-free at rest and during exercise▪ All upper extremity strength 5/5
EMPHASIZE	<ul style="list-style-type: none">▪ Restoration of full AROM/PROM▪ Upper extremity strength 5/5▪ UE endurance

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Phase 4: Plyometric Progression (Weeks 12-15)

PRECAUTIONS	<ul style="list-style-type: none">▪ Pain-free plyometrics
ASSESSMENT	<ul style="list-style-type: none">▪ Quick DASH▪ ASES▪ KJOC▪ NPRS▪ Static/dynamic scapular assessment (Kibbler grading)▪ Elbow P/AROM▪ Hand and wrist AROM▪ Scapula assessment: position, rhythm▪ MMT as appropriate▪ Scar and soft tissue mobility
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none">▪ Continue to advance and progress all thrower's ten exercises▪ Plyometric progression (over 4 week period)<ul style="list-style-type: none">○ Double hand chest pass (week 12)○ Double hand overhead soccer pass (week 12)○ Double hand chops (week 13)○ Single hand IR at 0° abduction (week 13)○ Eccentric catch (week 14)○ Single hand 90/90 IR (week 14)▪ Endurance progression<ul style="list-style-type: none">○ Double hand overhead wall taps○ Single arm 90/90 wall taps○ Single arm 12 o'clock to 3 o'clock wall taps○ Exercise blade in multiple positions
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none">▪ Complete all plyometrics without symptoms▪ Normal upper body extremity strength, mobility and flexibility
EMPHASIZE	<ul style="list-style-type: none">▪ Restoration of full strength and flexibility▪ Restoration of normal neuromuscular function▪ Preparation for return to sport specific activity

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Phase 5: Advanced (Weeks 16+)

PRECAUTIONS	<ul style="list-style-type: none">▪ All progressions should be pain-free▪ Monitor for loss of strength and flexibility
ASSESSMENT	<ul style="list-style-type: none">▪ Quick DASH▪ ASES▪ KJOC▪ NPRS▪ Static/dynamic scapular assessment (Kibbler grading)▪ Elbow P/AROM▪ Hand and wrist AROM▪ Scapula assessment: position, rhythm▪ MMT as appropriate▪ Scar and soft tissue mobility
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none">▪ Initiate interval sports program▪ Begin interval throwing at 4 months per MD clearance▪ Begin hitting program at 5 months▪ Continue with all upper and lower extremity mobility/flexibility exercises▪ Continue with advanced shoulder and scapular strengthening exercises▪ Monitor workload
CRITERIA FOR RETURN TO PARTICIPATION	<ul style="list-style-type: none">▪ Pain-free progression through interval sports program▪ Independent with all arm care exercises▪ Assess need for Video Throwing Analysis program
EMPHASIZE	<ul style="list-style-type: none">▪ Initiation of interval sports programs▪ Return to sport participation