

Medial Epicondyle ORIF

CLINICAL PRACTICE GUIDELINE

Background

Medial epicondyle fractures account for a significant portion of all elbow fractures, both acute and chronic, in the adolescent population. Indication for a medial epicondyle ORIF is a fracture with a large displacement (typically >5 mm) of the bone. Rehabilitation following an ORIF will progress more slowly over the first 6 weeks to allow bone healing. Literature has shown a high rate of bony union following surgery (93%). Consultation with the surgeon as well as a review of the operative report should be completed prior to initiation of rehabilitation.

Disclaimer

Progression is time and criterion-based, dependent on bone and soft tissue healing, patient demographics and clinician evaluation. Contact Ohio State Sports Medicine at 614-293-2385 if questions arise.

Summary of Recommendations

Risk Factors	<ul style="list-style-type: none"> • Subsequent surgeries • Lack of adherence to surgical precautions • Secondary comorbidities
Precautions	<ul style="list-style-type: none"> • Brace and ROM limitations • Splint for 10-14 days at 90 degrees of elbow flexion • Light soft tissue mobilization, not directly on the scar, to improve blood flow and reduce edema • No elbow joint mobilizations for 6 weeks • No wrist flexor or pronator strengthening for 6 weeks • No aggressive wrist flexor or pronator stretching for 6 weeks • No valgus stress to the medial elbow for 6 weeks (consider with PROM and strengthening of shoulder) • No weight bearing on involved extremity for 8 weeks • No lifting >5 lbs for 8 weeks (could be longer if other surgical interventions performed)
Potential Complications	<ul style="list-style-type: none"> • Nonunion • Nerve palsy • Joint stiffness
Corrective Interventions	<ul style="list-style-type: none"> • Cryotherapy for pain and inflammation • Manual Therapy
Functional Outcome Measures	<ul style="list-style-type: none"> • Disability of Arm Shoulder and Hand (DASH) Questionnaire • Kerlan-Jobe Orthopaedic Clinic (KJOC) Questionnaire
Criteria for discharge	<ul style="list-style-type: none"> • >90% with patient-reported outcome • Full AROM, strength, and able to demonstrate pain-free, sports specific movements without compensatory movements



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Phase I: Immediate Post-Op (0-2 weeks)

Goals	<ul style="list-style-type: none"> • Protection of incision • Allow for bone healing • Decrease pain and inflammation • Patient education: bone healing time, activity modification, swelling management, HEP • No elbow AROM, incisions clean and dry, immobilization per physician instructions
Restore Passive Shoulder and Elbow ROM	<ul style="list-style-type: none"> • Splint for 10-14 days at 90 degrees of elbow flexion • Gradual, pain-free elbow PROM <ul style="list-style-type: none"> - 2 to 3 times per day at home to combat elbow stiffness • Shoulder strengthening (sub-maximal isometrics EXCEPT flexion due to closed fist/gripping and ER) • Scapular retraction or clocks in S/L • Trunk ROM/core strengthening (No weight bearing on elbow or carrying/lifting) • Lower extremity strengthening and balance <ul style="list-style-type: none"> - Squats, lunges, heel taps, single leg stance, shuttle presses, side stepping • Vaso for pain and swelling control
Home Exercise Program	<ul style="list-style-type: none"> • Posture education • Elbow immobilized per physician instructions • Scapular control exercises (side lying clocks, seated retractions, scapular PNF) • No active elbow OR wrist extension, flexion, pronation, supination
Criterion to Progress to Phase II	<ul style="list-style-type: none"> • Protect the repair/incision site • Minimal pain • Minimal to no edema



Phase II: PROM progression to AROM (2-6 weeks)

Goals	<ul style="list-style-type: none"> • Slow progression of elbow extension and flexion ROM (Do not push aggressively) • Manage pain and inflammation • Promote tissue and bone healing • No soft tissue mobilization or cross friction massage directly on the scar for 6 weeks • No elbow joint mobilizations for 6 weeks • No wrist flexion or pronator strengthening for 6 weeks • No wrist flexor or pronator stretching for 6 weeks • No valgus stress to elbow for 6 weeks • Vaso and E-stim for pain and edema control
Interventions	<ul style="list-style-type: none"> • Hinged brace from weeks 2-6 <ul style="list-style-type: none"> ○ Week 2-3: 30 deg - 100 deg range ○ Week 3-4: 20 deg -110 deg range ○ Week 4-5: 10 deg -120 deg range ○ Week 5-6: 0 deg-130 deg range • Gentle PROM of elbow and wrist (Do not push ROM into pain) Muscular end feel: traditional stretching Capsular/firm end feel: low load, long duration • Progress to elbow AROM at 4 weeks • Ulnar nerve mobility if needed (avoid valgus stress to elbow with nerve glide) • Shoulder strengthening (wrist weights for S/L ER and prone scap series) • Light rhythmic stabilizations proximal to elbow • Continue trunk/core strengthening, LE strengthening, and balance (no holding medicine balls/weight OR weight bearing with involved arm) • Shoulder PROM (DO NOT APPLY PRESSURE DISTAL TO ELBOW FOR ER/IR; USE HUMERUS)
Criterion to Progress to Phase III	<ul style="list-style-type: none"> • Shoulder total arc of motion (ER+IR at 90 degrees of abduction) dominant + non-dominant • Full PROM of elbow (refer back to physician if not achieved) • Pain free with exercise • No swelling



Phase III: Intermediate Phase (6-12 weeks)

Goals	<ul style="list-style-type: none"> • Gradual increase to WNL elbow and forearm ROM in all planes • Pain free with all exercises • NO swelling • Initiate light strengthening of wrist and elbow musculature • Promote proper scapular control and mobility • Improve overall conditioning and strength
Post-op Weeks 6-8	<ul style="list-style-type: none"> • Unlock brace to full motion at 6 weeks • Wean from brace at 8 weeks • Focus on elbow extension and flexion AROM • Initiate pain-free wrist and elbow strengthening at 6 weeks **Delay if flexor-pronator mass is repaired (check with surgeon) • Continue balance, lower extremity strengthening, and core strengthening (<5 lbs of weight) • Continue shoulder ROM and strengthening (no valgus stress on the elbow) <ul style="list-style-type: none"> - Ex: s/l ER, rows, rhythmic stabilizations, horizontal abduction • Scapular stability and control exercises (side-lying, prone) • Criteria to progress to next phase: <ul style="list-style-type: none"> - Pain free with all exercises - Full AROM of elbow - Symmetrical hip ROM - 5/5 lower extremity strength (MMT) - 50 degrees of seated thoracic rotation each direction - Shoulder total arc of motion dominant = non-dominant - 4/5-5/5 MMT of involved shoulder musculature
Post-op Weeks 8-12	<ul style="list-style-type: none"> • Wean from brace at week 8 • Plyometric progression can be initiated at week 10 (1 week double arm, 1 week single arm) • Example interventions <ul style="list-style-type: none"> - Prone 90/90 ER, prone quick drops - Rhythmic stabilization - PNF patterns - <u>Double arm plyometrics</u>: Medicine ball chest pass, chops - <u>Single arm plyometrics</u>: 90/90 ball on wall/tramp, manual plyo's • Throwing mechanics/Towel drills <u>initiated same week as single arm plyometrics</u> (need to be pain-free) • Weight bearing on involved arm at week 8 • Running at week 8
Criterion to Progress to Phase IV	<ul style="list-style-type: none"> • Pain-free, full AROM of shoulder and elbow • 5/5 MMT or within 10% of uninvolved side with HHD for shoulder /rotator cuff strength • 5/5 MMT or within 10% of uninvolved side with HHD for scapulothoracic musculature



Phase IV: Return to Sport Activity (weeks 12+)

Goals	<ul style="list-style-type: none">• Progress back to sport level conditioning
Exercises 12+	<ul style="list-style-type: none">• Continue lower extremity and core interventions as needed• Continue plyometrics and towel drills as necessary• Criteria for return to throwing program<ul style="list-style-type: none">- Physician clearance- 5/5 MMT or within 10% of uninvolved with HHD- Full AROM- Pain-free towel drills and plyometric drills• Initiate return to throwing program<ul style="list-style-type: none">- Light throw into wall for mechanics- Educate on return to throwing progression (give print-out from sports medicine website: https://wexnermedical.osu.edu/sports-medicine/education/medical-professionals/rehabilitation-protocols)- Highlights: therapist monitor mechanics, start at 50% effort, crow hop when reaching distance of 90 ft or more

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