



ELBOW RECONSTRUCTIVE SURGERY & SPORTS MEDICINE PROTOCOL

Ulnar Collateral Ligament (UCL) Reconstruction

Clinical Rationale & Pathophysiology: Anatomical reconstruction of the anterior bundle of the ulnar collateral ligament (UCL) utilizing tendon graft (e.g. palmaris longus) with docking/suspensory fixation. Protects healing graft from excessive valgus torque and terminal extension stress while systematically rebuilding kinetic chain throwing capacity.

CRITICAL PRECAUTIONS & IMMOBILIZATION RULES

- Hinged elbow brace required for 6 weeks; locked at 90° for weeks 1-2, then progressive 10°-15° weekly unlocks.
- **STRICTLY NO VALGUS STRESS OR AGGRESSIVE EXTERNAL ROTATION WITH SHOULDER ABDUCTED** for 8 weeks.
- Protect donor tendon harvest site (forearm/hamstring) and monitor ulnar nerve sensory distribution.
- Strictly no throwing or resisted throwing motions until phased Interval Throwing Program initiated at Phase IV.

Phase I: Protection & Controlled Motion Arc (Weeks 0 - 4)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Protect medial graft docking tunnels & suture fixation• Minimize medial joint edema & ulnar nerve irritation• Achieve 30°-100° protected motion arc by week 4• Maintain distal grip and shoulder kinetic mobility	<ul style="list-style-type: none">• Hinged brace worn at all times; unlocked 30°-90° (wk 2), 20°-105° (wk 4)• Active wrist, finger, and grip strengthening (putty/soft ball)• Passive/active-assisted elbow flexion and extension within brace limits• Shoulder active ROM (0° abduction only: shrugs, retractions, pendulum)• Avoid any valgus stress during transfers, dressing, or therapy

Phase II: Restoring Functional Arc & Kinetic Chain Integration (Weeks 4 - 8)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Advance motion: 15°-115° by week 6; full ROM (0°-135°) by week 8• Wean from hinged brace at week 6• Restore full rotator cuff, scapular, core, and hip strength• Normalize soft tissue mobility and scar healing	<ul style="list-style-type: none">• Progress to active unassisted ROM all planes; gentle terminal extension• Rotator cuff and periscapular strengthening with arm strictly at side• Light isometric wrist flexion, extension, and forearm pronation/supination• Lumbar, pelvic, and hip kinetic chain conditioning for throwers• Stationary cycling and lower body cardiovascular training

Phase III: Progressive Resistance & Thrower's Ten Program (Weeks 8 - 16)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Restore full upper extremity muscular strength and endurance• Eliminate motion deficits and elbow extension lag• Initiate dynamic medial elbow joint stabilization	<ul style="list-style-type: none">• Initiate Thrower's Ten or Advanced Thrower's Ten exercise regimen• Progressive resisted dumbbell curls, triceps pushdowns, wrist curls• Two-handed plyometric drills (chest pass, overhead soccer throw) at wk 12• Eccentric flexor-pronator loading to support medial joint stability

Phase IV: Interval Throwing Program & Athletic Return (Months 4 - 9/12+)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Progressive high-velocity valgus stress adaptation• Complete structured Interval Throwing Program (ITP)• Full unrestricted return to competitive throwing and athletic activities	<ul style="list-style-type: none">• Phased Interval Throwing Program: flat ground 45 ft -> 60 ft -> 90 ft -> 120 ft -> 180 ft• Pitching mechanics evaluation, video analysis, and scapular biomechanics• Graduated mound progression with pitch count tracking (months 9-12)• Final surgeon clearance following objective kinetic chain testing