Indiana University Health

IU Health Physicians Orthopedics & Sports Medicine

ULNAR COLLATERAL LIGAMENT (UCL) REPAIR

PHYSICAL THERAPY PROTOCOL

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Patient Name: _____ **Date of Surgery**: _____

___ Evaluate and Treat **___ Provide patient with home program**

Frequency: _____x/week x _____weeks

PHASE I (surgery to 3 weeks after surgery)

Appointments	• Rehbilitation appointments begin 10-14 days after surgery, after the first physician visit and continue 1 time per week
Rehabilitation Goals	• Protect healing tissues • Decrease pain and inflammation • Prevent muscular atrophy • Initiate elbow range of motion (ROM)
Precautions	• Week 1 = immobilized at 90° of elbow flexion in hard brace • Week 2 = functional hinged brace with ROM from 30°-100° • Week 3 = functional hinged brace with a ROM of 15°-110°
Range of Motion (ROM) Exercises	• Gentle active and active assistive ROM for the elbow and wrist • Gentle and gradual overpressure to meet ROM guidelines • Note: be sure to avoid valgus force or positioning during ROM exercises
Suggested therapeutic exercise	• Begin week 2 with sub-maximal isometrics for shoulder internal rotation (IR), shoulder abduction, biceps, wrist flexors and extensors • Hand gripping • Cervical spine and scapular active ROM
Cardiovascular Exercise	• Walking, stationery bike-brace on • No treadmill • Avoid running and jumping due to the distractive and compressive forces that can occur at landing

NOTE: Brace locked at 90 deg outside of PT and rehab efforts. Brace should be worn at all times locked at 90 deg (except for hygiene or PT).

PHASE II (begin after meeting Phase 1 criteria, usually 4-8 weeks after surgery)

Appointments	• Rehabilitation appointments are 1 time per week
Rehabilitation Goals	• Gradual increase in elbow ROM to near full ROM by week 9-10 • Protect reconstruction during continued healing • Improve muscular strength of the arm, shoulder and trunk
Precautions	• Week 4 = functional hinged brace with ROM from 10°-120° • Week 5 = functional hinged brace with ROM from 5°-130° • Week 6 = functional hinged brace with ROM from 0°-130° • Discontinue brace at 6-8 weeks except in unsafe environments (this time frame may vary from patient to patient per physician recommendation) • Avoid all valgus positions and minimize valgus stress to the elbow during all rehab exercises
Range of Motion (ROM) Exercises	• Gentle active and active assistive ROM for elbow and wrist • Passive range of motion (PROM) should be initiated in a very controlled and gentle fashion

Suggested Therapeutic Exercise	• Isotonics with light resistance for shoulder IR/external rotation (ER), shoulder abduction, elbow flexion/extension, pronation/supination, wrist flexion/extension (all in a protective elbow position-hand staying on the medial side of the elbow for all shoulder rotation exercises)
Cardiovascular Exercise	• Walking, stationery bike-brace on • No treadmill • Avoid running and jumping due to the distractive and compressive forces that can occur at landing

PHASE III (begin after meeting Phase II criteria, usually 9-12 weeks after surgery)

Appointments	• Rehabilitation appointments are once every 1-2 weeks
Rehabilitation Goals	• Increase overall strength and endurance • Achieve and maintain full elbow ROM • Transition to entry level plyometrics
Precautions	• There should be no pain while doing the strengthening exercises • Post-exercise soreness; should be less than 4/10 and return to baseline within 24-36 hours
Range of Motion (ROM) Exercises	• ROM should be full at post-operative week 10. If not, please consult with the physician prior to week 12 appointment
Suggested Therapeutic Exercises	• Progressive isotonics for shoulder and elbow strengthening with the arm <45° abduction positions, controlling speed of the movement and valgus force at the elbow • Initiate eccentric elbow flexion strengthening • Assess shoulder mobility and address any imbalances (such as posterior capsular tightness (which may prevent optimal throwing biomechanics in the next phase • Manual resistance diagonal patterns • Hip, lower extremity and core strengthening • Scapular strengthening and stabilization
Cardiovascular Exercise	• Walking, stationery bike-brace off • Continue to avoid running and jumping

PHASE IV (begin after meeting Phase III criteria, usually 13-20 weeks after surgery)

Appointments	• Rehabilitation appointments are once every 1-2 weeks
Rehabilitation Goals	• Maximize rotator cuff and scapular strength in throwing positions and postures • Initiate education on throwing mechanics • Transition to higher level plyometrics
Precautions	• There should be no pain while doing the strengthening exercises • Post-exercise soreness; should be less than 4/10 and return to baseline within 24-36 hours
Range of Motion (ROM) Exercises	• ROM should be full at this point. If not, please consult with the physician
Suggested Therapeutic Exercises	• Shoulder and elbow strengthening with the arm in > 45° abducted position, controlling speed of the movement and valgus force at the elbow • Initiate rhythmic stabilization drills for the elbow and shoulder in protected positions (at athlete's side) • Initiate plyometrics-2 hand drills only • Begin throwing mechanics education-including slow motion "air throws, posture and position check points • Hip, lower extremity and core strengthening • Scapular strengthening and stabilization
Cardiovascular Exercise	• Week 16; athlete may be running and sprinting at 75% speed, monitoring the environment to minimize the risk of falls

PHASE V (begin after meeting Phase IV criteria, usually 21-36 weeks after surgery)

Appointments	• Rehabilitation appointments are once every 2-3 weeks
Rehabilitation Goals	• Maximize dynamic neuromuscular control with shoulder and elbow stabilization • Develop biomechanically sound throwing mechanics • Maximize muscular endurance and strength of the muscles involved in throwing, including core, upper and lower extremity
Precautions	• There should be no pain while throwing or doing sport specific drills • Post-throwing soreness or post-sport specific drill soreness; should be less than 4/10 and return to baseline within 24-36 hours
Range of Motion (ROM) Exercises	• ROM should be full at this point. If not, please consult with the physician
Suggested Therapeutic Exercises	• Multi-joint, multi-planar strengthening program • Shoulder and elbow stabilization and proprioceptive drills • Plyometric progressions (over several weeks); transition from 2 arms in the sagittal plane, progressing to 1 arm sagittal plane to 2 arm rotational movements to 1 arm rotational movement • Initiate interval throwing program, progressing to a position specific throwing program around week 28 if the athlete has no pain or problems with the baseline throwing program • Initiate sport specific return program for golf, tennis, basketball or volleyball • Hip, lower extremity and core strengthening
Cardiovascular Exercise	• Training should be targeted toward sport specific energy systems

REFERENCES

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3. Cain EL, Dugas JR, Wolf RS, Andrews JR. Elbow injuries in throwing athletes: a current concepts review. Am J Sports Med. 2003; 31(4):621-635.
4. Conway JE, Jobe FW, Glousman RE, Pink M. Medial instability of the elbow in throwing athletes: surgical treatment by ulnar collateral ligament repair or reconstruction. J Bone Joint Surg Am. 1992; 74:67-83.
5. Ellenbecker TS, Wilk KE, Altchek DW, Andrews JR. Current concepts in rehabilitation following ulnar collateral ligament reconstruction. Sports Health. 2009; 1(4):301-313.
6. Flesig GS, Andrews JR, Dillman CJ, Escamilla RF. Kinetics of baseball pitching with implications about injury mechanisms. Am J Sports Med. 1995; 23:233-239.
7. Vitale MA, Ahmad CS. The outcome of elbow ulnar collateral ligament reconstruction in overhead athletes: a systematic review. Am J Sports Med. 2008; 36:1193-1205.

__ Other:

__ Modalities __ Electrical Stimulation __ Ultrasound
__ Heat before/after __ Ice before/after exercise

By signing this referral, I certify that I have examined this patient and physical therapy is medically necessary. This patient __ would __would not benefit from social services.

_____ Date:_____

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