Salina Regional Orthopedic Clinic
Salina Regional Health Center

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Rehabilitation Guidelines for Elbow Ulnar Collateral Ligament (UCL) Reconstruction

PHASE I (surgery to 3 weeks after surgery)

Appointments	• Rehabilitation appointments begin 5-7 days after surgery 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

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 I 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 Exercise	• **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**

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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 Exercise	• **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 Exercise	• 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