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Hip, Knee, Shoulder & Sports Medicine Surgery

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**HIGH TIBIAL OSTEOTOMY REHABILITATION PROTOCOL**

Phase	Restrictions	Therapeutic Exercises
Phase 1: Weeks 0-2 Goals: Reduce swelling and edema, minimize pain, retard muscle atrophy, protect the surgical repair, range of motion restoration	-Flat Foot Touch Down Weight Bearing x6 weeks -Range of motion 0-90 degrees -T-Scope and Crutches x6 weeks -Focus on knee extension to equal 0 degrees by 2 weeks s/p	-Range of motion 0-90 degrees -Edema Control -Pain management -Patellar glides in all directions -Quad sets, straight leg raises, hip ab/adduction strengthening -Hamstring and calf stretching -Ankle pumps, full ankle range of motion - Modalities PRN
Phase 2: Weeks 2-6 Goals: Reduce swelling and edema, minimize pain, retard muscle atrophy, protect the surgical repair, range of motion restoration	-Flat Foot Touch Down Weight Bearing x6 weeks -Range of motion 0-90 degrees -T-Scope and Crutches x6 weeks -Focus on knee flexion to equal 90 degrees by 4 weeks s/p	-Range of motion 0-90 degrees -Soft tissue mobilization, patellar glides -Quad sets, straight leg raises, hip ab/adduction strengthening, core strengthening -Gluteal strengthening: clams, reverse clams, side lying hip abduction, prone hip extension -Modalities PRN
Phase 3: Weeks 6-12 Goals: Full range of motion, minimal pain, increase resistance exercises, restore normal gait pattern, protect graft fixation	-Progress to 50% Weight Bearing x6 weeks -Range of motion progression as indicated -Unlock T-Scope to new degree of flexion each week as the patient progresses (0-90, 0-100, 0-110, etc.) -Discontinue T-Scope once full range of motion is achieved (at least 120 degrees)	-Begin progress to full passive, active, and active assisted range of motion by 10 degrees per week until full range of motion is achieved -Progress gluteal strengthening -Progress quad strengthening -Aquatic therapy with emphasis on gait normalization -Hamstring stretches -Stationary biking without resistance once full range of motion is achieved (operative leg along for the ride)

<p>Phase 4: Weeks 12-16</p> <p>Goals: Proper gait mechanics, improve lower extremity strength, full range of motion, neuromuscular control</p>	<p>-Progress Weight Bearing by 25% per week until Full Weight Bearing is achieved</p> <p>-Full Weight Bearing and wean from crutches</p> <p>-Discontinue T-Scope</p>	<p>-Progress strengthening program</p> <p>-Begin closed chain strengthening: toe raises, mini squats, PNF with resistance</p> <p>-Progressive resistance exercises (1-5lbs)</p> <p>-Balance exercises</p> <p>-Hamstring curls</p> <p>-Stationary biking with increasing resistance as tolerated</p>
<p>Phase 5: Months 4-6</p> <p>Goals: Full pain-free range of motion, no evidence of patellofemoral joint irritation, strength and proprioception restoration, power progression</p>	<p>-Strengthening progression</p> <p>-No range of motion or weight bearing restrictions</p> <p>-Glute med and max isometric strength to reach >80% of the contralateral limb</p> <p>Criteria for progression:</p> <p>-No valgus collapse</p> <p>-No femoral adduction/IR rotation pelvic drop or excessive trunk lean when performing single leg endurance tasks</p>	<p>-Continue and progress previous flexibility and strengthening activities</p> <p>-Functional walk/jog/run progression</p> <p>-Forward and backward running progression (½, ¾, full speed)</p> <p>-Progress lower extremity strengthening: squats, single leg (elevated split squat, TRX)</p> <p>-Progress dynamic balance</p> <p>-Increase aerobic conditioning (elliptical, swimming, biking)</p>
<p>Phase 6: Months 6+</p> <p>Goals: Completion of appropriate functional progression, strength maintenance, patient education</p>	<p>-N/A</p> <p>Criteria for discharge:</p> <p>-Surgeon clearance</p> <p>-Hamstring strength index >90% as compared to contralateral limb</p> <p>-Quadriceps strength index >90% compared to contralateral limb</p> <p>-Y-Balance anterior reach < 4cm</p> <p>-No complaints of pain or instability</p>	<p>-Functional progression including but not limited to:</p> <ul style="list-style-type: none"> • Cutting, crossover, carioca, etc. • Plyometric exercises as appropriate to patient goals: med ball work, sled drills • Agility drills: shuffles, ladder footwork, cone drills, z-cuts, w-cuts, multi-planar sport specific drills