

**Jared T. Lee, MD**

Hip, Knee, Shoulder &amp; Sports Medicine Surgery

The Steadman Clinic – Aspen

401 Castle Creek Rd, Suite 2100, Aspen, CO 81611

Practice Manager: Elizabeth Fioretti, M.Ed., LAT, ATC

(970) 456-2798

**TIBIAL INTRAMEDULLARY NAILING 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	-Non weight bearing, may rest the splint on the ground -Remain in splint until 2 weeks s/p	-Full knee range of motion as tolerated -Wall slides -Seated knee flexion/extension -Patellar mobilizations -Extension mobilization -Isometric quadriceps contractions, straight leg raises, clams, ball squeezes -Hamstring sets -Sit and reach with towel -Stationary bike with well leg
Phase 2: Weeks 2-6  Goals: Reduce swelling and edema, minimize pain, retard muscle atrophy, protect the surgical repair, range of motion restoration	-Transition into walker boot -Partial weight bearing 50% with crutches as tolerated	-Continue previous exercises -Ankle pumps -Passive and active ankle range of motion as tolerated -Rowing with well leg -UBE for cardiovascular fitness -Scar massage, dry needling, IASTM as tolerated
Phase 3: Weeks 6-12  Goals: Full range of motion, minimal pain, increase resistance exercises, restore normal gait pattern, protect graft fixation	-Progress to full weight bearing in the boot without crutches as tolerated -Once full weight bearing in boot is achieved and pain free, begin 1–2-week boot wean based on patient tolerance -Once boots wean is achieved: patient may weight bear as tolerated -No heavy impact activity	-Continue previous exercises  Week 8: Toe and heel raises, balance series -Bike with both legs, no resistance to start, then progress to resistance -Aqua jogging -Treadmill walking at 7% incline -Elliptical trainer -Rowing with both legs -Stair stepper

<p>Phase 4: Weeks 12-16</p> <p>Goals: Proper gait mechanics, improve lower extremity strength, full range of motion, neuromuscular control, proprioception restoration, power progression, patient education</p>	<ul style="list-style-type: none"> <li>-Full weight bearing</li> <li>-Full range of motion</li> </ul> <p><b>Criteria for discharge:</b></p> <ul style="list-style-type: none"> <li>-Surgeon clearance</li> <li>-Hamstring strength index &gt;90% as compared to contralateral limb</li> <li>-Quadriceps strength index &gt;90% compared to contralateral limb</li> <li>-Y-Balance anterior reach &lt; 4cm</li> <li>-No complaints of pain or instability</li> <li>-No valgus collapse</li> <li>-No femoral adduction/IR pelvic drop of excessive trunk lean when performing single leg endurance tasks</li> </ul>	<ul style="list-style-type: none"> <li>-Progress strengthening program</li> <li>-Double leg knee bends</li> <li>-Double leg bridges</li> <li>-Reverse lunges with static hold</li> <li>-Balance squats</li> <li>-Single leg deadlift</li> <li>-Leg press</li> <li>-Forward and backward running progression (½, ¾, full speed)</li> <li>-Progress dynamic balance</li> <li>-Cutting, crossover, carioca, etc.</li> <li>-Plyometric exercises as appropriate to patient goals: med ball work, sled drills</li> <li>-Agility drills: shuffles, ladder footwork, cone drills, z-cuts, w-cuts, multi-planar sports specific drills</li> <li>-Patient may golf, hike, bike, snowshoe</li> </ul> <p>Week 16:</p> <ul style="list-style-type: none"> <li>-Patient my return to skiing, basketball, tennis, football, soccer, etc. with clearance</li> </ul>
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