

This rehabilitation program is designed to return the individual to their full activities as quickly and safely as possible following a patellar/quadriceps tendon reconstruction. Modifications to this guideline may be necessary dependent on physician specific instruction or other procedures performed. This evidence-based patellar/quadriceps tendon reconstruction guideline is criterion-based; time frames and visits in each phase will vary depending on many factors. The therapist may modify the program appropriately depending on the individual's goals for activity following patellar/quadriceps tendon reconstruction.

This guideline is intended to provide the treating clinician a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/treatment findings, individual progress, and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

**General Guidelines/Precautions:**

- Monitor of patellofemoral irritation and arthrofibrotic knee
- Avoid aggressive knee flexion during first 6 weeks.

Phase	Suggested Interventions	Goals/Milestones for Progression
<p><b>Phase I</b></p> <p>Week 0-3</p>	<p><i>WB Status:</i></p> <ul style="list-style-type: none"> <li>• WBAT, brace locked in full extension; sleep in locked brace</li> </ul> <p><i>Therapy:</i></p> <ul style="list-style-type: none"> <li>• Begin supine exercises including: Ankle pumps, isometric quad sets, hamstring sets, heel slides with passive knee extension (0-45°); hip abd/adductions; at end of week one initiate gravity eliminated SLR flexion (ASSISTED)</li> <li>• Gait Training for stairs and ambulation as needed</li> <li>• Pain and edema control, modalities PRN</li> </ul>	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> <li>1. Skin healing</li> <li>2. Control pain and swelling</li> <li>3. Knee ROM 0-45 degrees</li> </ol>

<p><b>Phase II</b></p> <p>Weeks 3-6</p>	<p><i>WB Status:</i></p> <ul style="list-style-type: none"> <li>Continue WBAT, brace locked in full extension.</li> </ul> <p><i>Therapy:</i></p> <ul style="list-style-type: none"> <li>Begin extension stretching with prone hangs and heel props</li> <li>Nustep, assistance from upper extremities for knee extension.</li> <li>Patellar mobilizations</li> <li>Gait training</li> <li>4-way hip strengthening</li> <li>Balance and proprioception: wt shifting, single leg stance</li> <li>initiate mini squats (0-45 degrees)</li> <li>active knee extension 90 to 30 degrees</li> <li>Multi angle isometrics – knee extension</li> <li>Initiate pool exercise program if incision is fully healed</li> </ul>	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> <li>Healing</li> <li>Pain and edema control, modalities PRN</li> <li>Full wt bearing by 6 weeks</li> </ol> <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> <li>Knee flexion ROM 0-90°</li> <li>Good patellar mobility</li> <li>SLR without extensor lag</li> <li>Pain-free WBAT AT 0° extension</li> </ol>
<p><b>Phase III</b></p> <p>Weeks 6-12</p>	<p><i>WB Status:</i></p> <ul style="list-style-type: none"> <li>WBAT, brace unlocked, begin with crutches and progress out as able.</li> </ul> <p><i>Criteria to discontinue brace:</i></p> <ul style="list-style-type: none"> <li>Good quad control (20 SLR without lag) and cleared by surgeon</li> </ul> <p><i>Therapy additions:</i></p> <ul style="list-style-type: none"> <li>Restore knee flexion ROM to 0-125°</li> <li>Stationary bike</li> <li>Forward step ups</li> <li>Knee extension 0-90°</li> <li>Mini squats to 70 degrees knee flexion</li> <li>Leg press</li> <li>Wall squats</li> <li>Front lunges</li> <li>Lateral lunges</li> <li>Calf raises</li> </ul>	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> <li>Full ROM 0-125°</li> <li>Normalize gait without assistive device</li> <li>Able to ascend 8" step</li> </ol> <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> <li>Normal Gait pattern</li> <li>Pain control</li> <li>Edema managed</li> <li>Full knee flexion</li> </ol>

	<ul style="list-style-type: none"> <li>• Hamstring curls (restricted ROM)</li> <li>• Core strengthening</li> <li>• BAPS</li> <li>• Proprioception drills</li> </ul>	
<p><b>Phase IV</b></p> <p>Weeks 12-16</p>	<p><i>WB Status:</i></p> <ul style="list-style-type: none"> <li>• Full; patient should exhibit normalized gait</li> </ul> <p><i>Exercise additions:</i></p> <ul style="list-style-type: none"> <li>• Descending stairs, working up to 8"</li> <li>• Lateral step ups</li> <li>• Backward lunges</li> <li>• Walking program</li> <li>• Advance squat training</li> <li>• Advance closed chain program</li> <li>• Elliptical Training</li> <li>• Agility Training</li> </ul>	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> <li>1. Return to normal ADL's</li> <li>2. Able to descend 8" step</li> </ol> <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> <li>1. Able to control descent of 8" step</li> </ol>
<p><b>Phase V</b></p> <p>Weeks 16-20</p>	<p><i>Exercise additions:</i></p> <ul style="list-style-type: none"> <li>• Plyometric program</li> <li>• Forward running</li> <li>• Agility and sport specific training</li> <li>• High level proprioception drills</li> <li>• Impact control exercises begin 2 feet to 2 feet, then 1 foot to other foot, then affected foot to affected foot.</li> </ul>	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> <li>1. Restore strength and ROM</li> <li>2. Pain-free Running</li> <li>3. Improve tensile strength properties of patellar/quad tendon</li> </ol> <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> <li>1. 85% limb symmetry with hop test and isokinetic testing</li> </ol>
<p><b>Phase VI</b></p> <p>Weeks 20+</p>	<p><i>Exercise additions for high level sport specific training:</i></p> <ul style="list-style-type: none"> <li>• Twisting jumps</li> <li>• Backwards running up to 20-30% incline</li> <li>• Lateral hops over cones, blocks, etc.</li> <li>• Single leg jumps up to 6 inch box</li> <li>• Figure 8 running</li> <li>• Zigzag cutting (45 degree angles)</li> <li>• Lateral shuffles with resistance</li> <li>• Single leg plyometrics</li> </ul>	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> <li>1. Return to prior level of function.</li> </ol> <p><i>Criteria to Return to Play</i></p> <ol style="list-style-type: none"> <li>1. Pass return to play testing             <ol style="list-style-type: none"> <li>a. Physician Approval</li> <li>b. Full ROM</li> <li>c. No pain or swelling</li> <li>d. Normal running</li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>• Sport specific training including full speed running, cutting, and stopping.</li> <li>• Return to play testing if returning to sport</li> </ul>	<ul style="list-style-type: none"> <li>e. Adequate drop jump mechanics</li> <li>f. Adequate lateral shuffle mechanics</li> <li>g. Adequate cutting mechanics</li> </ul>
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