

# Patellar/Quadriceps Tendon Reconstruction

GUIDELINE

REAHB SERVICES



## Purpose:

This guideline 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 with 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.

## Precautions:

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

PHASE	SUGGESTED INTERVENTIONS	MILESTONES FOR PROGRESSION
<b>Phase I</b> Weeks 0-3	<b>WB Status:</b> <ul style="list-style-type: none"><li>• WBAT, brace locked in full extension</li><li>• Sleep in locked brace</li></ul> <b>Therapy:</b> <ul style="list-style-type: none"><li>• Begin supine exercises including:<ul style="list-style-type: none"><li>– Ankle pumps</li><li>– Isometric quad sets</li><li>– Hamstring sets</li><li>– Heel slides with passive knee extension (0-45°)</li><li>– Hip abduction/adductions</li><li>– At end of week 1, initiate gravity eliminated SLR flexion (assisted)</li></ul></li><li>• Gait training for stairs and ambulation as needed</li><li>• Pain and edema control, as needed</li></ul>	<b>Goals:</b> <ul style="list-style-type: none"><li>• Skin healing</li><li>• Control pain and swelling</li><li>• Knee ROM 0-45°</li></ul>
<b>Phase II</b> Weeks 3-6	<b>WB Status:</b> <ul style="list-style-type: none"><li>• WBAT, brace locked in full extension for standing, walking, sleeping<ul style="list-style-type: none"><li>– Brace worn at night until 6 weeks unless cleared by physician</li><li>– Brace unlocked for sitting (only unlocked to available PROM)</li></ul></li></ul>	<b>Goals:</b> <ul style="list-style-type: none"><li>• Healing</li><li>• Pain and edema control, modalities PRN</li><li>• FWB by 6 weeks</li></ul>



	<p><b>Therapy:</b></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: weight shifting, single leg stance</li> <li>• Initiate mini squats (0-45°)</li> <li>• Knee flexion PROM starting at 50°             <ul style="list-style-type: none"> <li>— Light overpressure only for PROM</li> <li>— Progressing 10°/week until 90° is achieved</li> </ul> </li> <li>• Active knee extension 90 to 30°</li> <li>• Multi-angle isometrics – knee extension</li> <li>• Initiate pool exercise program if incision is fully healed</li> <li>• Calf raises</li> </ul>	<p><b>Criteria to Advance:</b></p> <ul 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> </ul>
<p><b>Phase III</b> Weeks 6-12</p>	<p><b>WB Status:</b></p> <ul style="list-style-type: none"> <li>• WBAT, brace unlocked, begin with crutches and progress out as able</li> <li>• No weight bearing with flexion &gt;90° until after 8 weeks</li> <li>• No maximal voluntary contraction of quadriceps (no MMT or handheld dynamometer testing)</li> </ul> <p><b>Criteria to Discontinue Brace:</b></p> <ul style="list-style-type: none"> <li>• Good quad control (20 SLR without lag) and cleared by surgeon</li> </ul> <p><b>Therapy:</b></p> <ul style="list-style-type: none"> <li>• Restore knee flexion ROM to 0-125°             <ul style="list-style-type: none"> <li>— Avoid aggressive quad stretching</li> </ul> </li> <li>• Stationary bike</li> <li>• Forward step ups</li> <li>• Knee extension 0-90°</li> <li>• Mini squats to 70° knee flexion</li> <li>• Leg press with 2 legs</li> <li>• Wall squats</li> <li>• Front and lateral lunges</li> <li>• Hamstring curls (restricted ROM)</li> <li>• Core strengthening</li> </ul>	<p><b>Goals:</b></p> <ul 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> </ul> <p><b>Criteria to Advance:</b></p> <ul style="list-style-type: none"> <li>• Normal Gait pattern</li> <li>• Pain control</li> <li>• Edema managed</li> <li>• Full knee flexion</li> </ul>

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	<ul style="list-style-type: none"> <li>• BAPS</li> <li>• Proprioception drills</li> </ul>	
<b>Phase IV</b> Weeks 12-16	<b>WB Status:</b> <ul style="list-style-type: none"> <li>• Full</li> <li>• Patient should exhibit normalized gait</li> </ul> <b>Therapy:</b> <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 and closed chain program</li> <li>• Elliptical Training</li> <li>• Agility Training</li> </ul>	<b>Goals:</b> <ul style="list-style-type: none"> <li>• Return to normal ADLs</li> <li>• Able to descend 8" step</li> </ul> <b>Criteria to Advance:</b> <ul style="list-style-type: none"> <li>• Able to control descent of 8" step</li> </ul>
<b>Phase V</b> Weeks 16-20	<b>Therapy:</b> <ul style="list-style-type: none"> <li>• Plyometric program</li> <li>• Forward running</li> <li>• Knee extension machine</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>	<b>Goals:</b> <ul style="list-style-type: none"> <li>• Restore strength and ROM</li> <li>• Pain-free running</li> <li>• Improve tensile strength properties of patellar/quad tendon</li> </ul> <b>Criteria to Advance:</b> <ul style="list-style-type: none"> <li>• 85% limb symmetry with hop test and isokinetic testing</li> </ul>
<b>Phase VI</b> Weeks 20+	<b>Therapy:</b> <ul style="list-style-type: none"> <li>• Twisting jumps</li> <li>• Backwards walking up to 20-30% incline</li> <li>• Lateral hops over cones, blocks, etc.</li> <li>• Single leg jumps up to 6" box</li> <li>• Figure 8 running</li> <li>• Zigzag cutting (45° angles)</li> <li>• Lateral shuffles with resistance</li> <li>• Single leg plyometrics</li> <li>• Sport-specific training including full speed running, cutting, and stopping</li> <li>• Return to play testing if returning to sport</li> </ul>	<b>Goals:</b> <ul style="list-style-type: none"> <li>• Return to prior level of function</li> </ul> <b>Return to Sport:</b> <ul style="list-style-type: none"> <li>• Pass return to play testing                         <ul style="list-style-type: none"> <li>— Physician Approval</li> <li>— Full ROM</li> <li>— No pain or swelling</li> <li>— Normal running</li> <li>— Adequate drop jump mechanics</li> <li>— Adequate lateral shuffle mechanics</li> <li>— Adequate cutting mechanics</li> </ul> </li> </ul>