



## PATELLAR OR QUADRICEPS TENDON REPAIR REHABILITATION GUIDE

PHASE	SUGGESTED INTERVENTIONS	TO ADVANCE TO NEXT PHASE
<p><b>PHASE I</b> <b>EDUCATIONAL</b> <b>PHASE</b></p>	<p><b>Goal:</b> -Exploration of the anatomy and existing pathology is essential in understanding the intricacies of patellar or quadriceps tendon repair. This knowledge serves as a foundation for crafting an effective post-operative rehabilitation schedule. The incorporation of appropriate bracing is crucial for providing support during the recovery process. Additionally, anticipating and recognizing expected progressions in the healing journey contributes to a comprehensive rehabilitation plan. It is imperative to diligently follow immediate post-operative instructions to optimize the outcomes of the patellar or quadriceps tendon repair procedure.</p> <p><b>Postoperative Instructions:</b> -To promote an optimal <b>Range of Motion</b>, engage in a series of targeted exercises. Begin with <i>ankle pumps</i>, which involve flexing and extending the ankle joint. Follow this with the <i>heel prop</i> technique for passive extension, providing gentle yet effective stretching. Additionally, incorporate <i>contralateral leg exercises</i> to further enhance overall flexibility and coordination. -Enhancing <b>Functional Mobility</b> involves a multifaceted approach. This includes <i>gait training</i> on level surfaces, stair training, transfer training, and the incorporation of activities of daily living (ADLs) with adaptive equipment as required. -When positioning in bed, it is advisable to utilize a towel roll under the ankle to encourage the extension of the knee. However, it is crucial to avoid placing anything under the operative knee, as this may impede the achievement of the goal of full extension.</p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Comprehensive grasp of post-operative activities, instructions, and the overall care plan.</li> </ol>
<p><b>PHASE II</b> <b>MAXIMUM</b> <b>PROTECTION</b> <b>PHASE</b> 0-6 WEEKS</p> <p style="text-align: center;">2-6 EXPECTED VISITS</p>	<p><b>Goal:</b> -During the initial stages of rehabilitation, it is imperative to steer clear of activities that involve active knee extension, biking, and any exercises that require active range of motion (AROM). Instead, focus on weight-bearing activities while utilizing a locked brace to ensure full extension. Concurrently, employ crutches as necessary, and the gradual reduction of crutch dependence should align with the preferences outlined by the surgeon. This cautious approach aims to facilitate a controlled progression in rehabilitation, prioritizing the safety and efficacy of the recovery process.</p> <p><b>ROM:</b> -Limit it to Passive Range of Motion (PROM) from 0-90 degrees during weeks 3-6, with strong fixation and approval from the physician. Progress as able and within approved guidelines.</p> <p>- Apply edema-controlling treatments - Utilize modalities as indicated.</p> <p style="color: #c85135; font-style: italic;">*Ask a healthcare provider for recommended exercises during this phase</p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Establish an environment conducive to the proper healing of the repair site.</li> <li>2. Implement measures to prevent post-operative complications.</li> <li>3. Implement effective post-operative pain control strategies.</li> <li>4. Work towards achieving independent ambulation with full weight-bearing.</li> <li>5. Aim for independence in the execution of the home exercise program.</li> </ol>

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<p><b>PHASE III</b> <b>PROTECTED MOTION PHASE</b> 6-10 WEEKS</p> <p>4-9 EXPECTED VISITS</p>	<p><b>Goal:</b> -Sustain consistency with the established exercise program while incrementally adjusting the brace to allow for a 90-degree range in gait. This adjustment should align with the gradual advancement of quadriceps strength. It is crucial to steer clear of activities such as running or engaging in ballistic movements during this phase.</p> <p><b>ROM:</b> -Incorporate a series of gentle knee flexion exercises into your routine to promote flexibility and mobility in the knee joint. These exercises can include controlled leg swings, seated knee bends, and passive knee flexion.</p> <p>*Apply edema-controlling treatments - Utilize modalities as indicated.</p> <p>*Consider gentle patellar mobilizations as indicated during manual therapy sessions.</p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Mitigate complications through gentle protected motion, emphasizing symmetrical hyperextension to approximately 130 degrees flexion.</li> <li>2. Reduce post-operative swelling and inflammation, targeting no to trace effusion.</li> <li>3. Re-educate and initiate quad control, focusing on active Straight Leg Raises (SLR) without extension lag.</li> <li>4. Gradually wean from the brace and establish a proper gait pattern.</li> <li>5. Initiate closed chain strength and proprioceptive training within the range of 0-40 degrees of flexion.</li> </ol>
<p><b>PHASE IV</b> <b>MOBILITY &amp; MUSCLE ACTIVATION PHASE</b> 10-12 WEEKS</p> <p>6-12 EXPECTED VISITS</p>	<p><b>Goal:</b> -Continue with the prescribed strengthening exercises to maintain and enhance muscular strength. As gait normalizes and quadriceps control improves, consider gradually phasing out the brace during weight-bearing activities. This transition should be guided by the normalization of your gait pattern and the improvement in quadriceps control. Additionally, incorporate modalities to effectively manage pain and inflammation, if present, ensuring a comprehensive approach to your rehabilitation. This strategy aims to optimize both strength development and the restoration of functional movement, promoting a well-rounded and successful recovery.</p> <p><b>ROM:</b> -Advance Range of Motion (ROM) exercises to full Active Range of Motion (AROM). -Introduce a cautious prone quadriceps stretch.</p> <p><i>*Ask healthcare provider for recommended exercises during this phase</i></p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Progress the Range of Motion (ROM) program toward near full motion, encompassing full extension to 130 degrees flexion.</li> <li>2. Implement measures for controlling forces on the extensor mechanism.</li> <li>3. Achieve normalized level ground ambulation.</li> <li>4. Establish normalized single-leg static balance with proper proximal control, avoiding valgus and hip medial rotation.</li> </ol>
<p><b>PHASE V</b> <b>ADVANCED STRENGTHENING &amp; EXTENSION CONTROL PHASE</b> 20-24 WEEKS</p> <p>13-17 EXPECTED VISITS</p>	<p><b>Goal:</b> -Continue advancing the previous stages recommendations. Consistency with assigned exercises is instrumental in promoting strength, flexibility, and overall recovery for the patellar or quadriceps tendon.</p> <p><b>ROM:</b> -Advance the Range of Motion (ROM), focusing on the progression of closed and open chain quad strengthening within the range of 0-90 degrees.</p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Achieve restoration of full pain-free Passive Range of Motion (PROM) and Active Range of Motion (AROM), comparable to the contralateral knee, with complete resolution of post-operative effusion.</li> <li>2. Demonstrate normal, pain-free engagement in Activities of Daily Living (ADLs).</li> <li>3. Attain improved quad strength.</li> <li>3. Establish normalized gluteal strength.</li> </ol>

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<p><b>PHASE VI</b>  <b>PRECISION PERFORMANCE</b>  <b>PHASE</b>  <b>6-8 MONTHS</b></p> <p><b>18-22</b>  <b>EXPECTED VISITS</b></p>	<p><b>ROM:</b>            -Gradually transition into a running program with structured training, adhering to the guidelines outlined in the Return to Running protocol. Emphasize the improvement and normalization of running form, while concurrently enhancing shock absorption capabilities. Progress the strengthening regimen for both open and closed chain exercises, targeting the entire lower extremity (LE) chain with a focus on single limb strengthening. As strength and control levels evolve, gradually advance to higher-level activities, and incorporate sport-specific exercises. This phased approach ensures a systematic progression, allowing for the development of strength, stability, and skill proficiency in a controlled manner throughout the rehabilitation process.</p> <p><i>*Advance to a running program with training, referring to the Return to Running guidelines, focusing on improving and normalizing form as well as enhancing shock absorption.</i></p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Tolerate single-leg plyometrics and advance to higher-level functional movements.</li> <li>2. Achieve pain-free running.</li> </ol>
<p><b>PHASE VII</b>  <b>RETURN TO FULL ACTIVITY</b>  <b>PHASE</b>  <b>8-12+ MONTHS</b></p> <p><b>22-26</b>  <b>EXPECTED VISITS</b></p>	<p><b>ROM:</b>            -Gradual progression to full strength in activity and desired sport. Seeing good competitive performance with no pain.</p> <p><i>*Contact physician if there is still pain</i></p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Regain full strength and return to sport, pain-free.</li> </ol>