



# PATELLAR TENDINOSIS REHABILITATION GUIDELINES

Dr. Ed Tingstad

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PHASE 1: Weeks 1-2		
<b>Goals</b>	<input type="checkbox"/> Promote tendon healing <input type="checkbox"/> Diminish pain and inflammation <input type="checkbox"/> Improve quadriceps strength <input type="checkbox"/> Enhance flexibility <input type="checkbox"/> Control functional stresses	
<b>Modalities</b>	<input type="checkbox"/> Hot packs applied to knee <input type="checkbox"/> Ultrasound to patellar tendon <input type="checkbox"/> Laser <input type="checkbox"/> Transverse massage <input type="checkbox"/> Application of pain stimulation to patellar tendon: 10 minutes	
<b>Exercises</b>	ROM	<input type="checkbox"/> Aggressive stretching
	MUSCLE ACTIVATION	Quadriceps strengthening program: Level 1 <input type="checkbox"/> E-Stim to quadriceps <input type="checkbox"/> Quad sets <input type="checkbox"/> SLR flexion <input type="checkbox"/> Hip adduction/abduction <input type="checkbox"/> Vertical squats (tilt board) <input type="checkbox"/> Hip flexion/extension <input type="checkbox"/> Toe-calf raises <input type="checkbox"/> Bicycle 15-20 minutes

## Clinical Muscular Electro-Stimulator (E-Stim 180)

- Specific Parameters
  - Frequency: 2500 HZ
  - Pulse Width: 200 MS
  - Rate: 50 HZ
  - Ramp: 1 sec
  - Waveform: Russian
  - 60 pulses per seconds
  - Duty cycle 10 on 10 off
  - Treatment time: 10 minutes
    - After 3 minutes, palpate tendon, should be less painful and become numb, if not, move electrodes



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## PHASE 2: Motion and Quadriceps Control (Weeks 3-6)

<p><b>Goals</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Gradual increase stress to patellar tendon</li> <li><input type="checkbox"/> Enhance quadriceps strength</li> <li><input type="checkbox"/> Improve flexibility</li> <li><input type="checkbox"/> Gradual increase functional activities</li> </ul>	
<p><b>Modalities</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Hot packs applied to knee or warm whirlpool</li> <li><input type="checkbox"/> Ultrasound to patellar tendon</li> <li><input type="checkbox"/> Laser</li> <li><input type="checkbox"/> Transverse massage</li> <li><input type="checkbox"/> Application of pain stimulation to patellar tendon: 10 minutes</li> </ul>	
<p><b>Exercises</b></p>	<p>ROM</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Aggressive stretching</li> </ul>
	<p>STRENGTHENING</p>	<p>Quadriceps strengthening program: Level 1</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bicycle warm up 15 minutes</li> <li><input type="checkbox"/> Leg press 0-90 degrees and 45-100 degrees</li> <li><input type="checkbox"/> Hip adduction and abduction</li> <li><input type="checkbox"/> Hip flexion and extension</li> <li><input type="checkbox"/> Wall squats</li> <li><input type="checkbox"/> Lateral step-up</li> <li><input type="checkbox"/> Front lunges</li> <li><input type="checkbox"/> Knee extension (eccentrics)</li> <li><input type="checkbox"/> Hamstring curls</li> <li><input type="checkbox"/> Stairmaster</li> </ul>



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PHASE 3		
<b>Goals</b>	<input type="checkbox"/> Gradually increase applied loads <input type="checkbox"/> Functional training <input type="checkbox"/> Enhance lower extremity strength <input type="checkbox"/> Improve flexibility	
<b>Modalities</b>	<input type="checkbox"/> Hot packs <input type="checkbox"/> Ultrasound <input type="checkbox"/> Laser <input type="checkbox"/> Transverse massage	
<b>Exercises</b>	ROM	<input type="checkbox"/> Aggressive stretching
	STRENGTHENING	<input type="checkbox"/> Leg press <input type="checkbox"/> Hip machine <input type="checkbox"/> Wall squats <input type="checkbox"/> Tilt board squats <input type="checkbox"/> Lateral step ups <input type="checkbox"/> Plyometric program <input type="checkbox"/> Initiate two legged jumps <input type="checkbox"/> Progress to one legged jumps
	CARDIOVASCULAR	<input type="checkbox"/> Progress to running program: backward, lateral, forward

PHASE 4		
<b>Goals</b>	<input type="checkbox"/> Sport specific training <input type="checkbox"/> Return to sport	
<b>Exercises</b>	STRENGTHENING	<input type="checkbox"/> Sport specific exercises <input type="checkbox"/> Increase cardiovascular endurance

\*Adapted from ASMI with permission