

# Patellar Tendinopathy

**Patellar Tendinopathy** is a common condition causing pain below the kneecap due to tendon degeneration, often from overuse in sports like volleyball, basketball, and soccer. Knee malalignment can worsen the condition.

Key Rehabilitation Points:

- **Avoid aggravating activities** until rehabilitation helps them become tolerable again.
- **Decrease tone** in overused muscle around the knee to improve alignment.
- **Strengthen the patellar tendon** to handle loads and impact.

Exercise Principles:

1. **Mobilize Overused Tissue:** Use self-massage and stretching to reduce muscle tension.
2. **Eccentric Loading:** Gradually load the tendon to rebuild strength.
3. **Gradual Return to Activity:** Increase activity levels by **10% per week** without worsening symptoms.

Exercises are most effective when guided by a qualified professional, such as a physiotherapist, athletic therapist, or strength and conditioning coach. If you have any concerns, it's always a good idea to consult with an expert.

Level 1 Function:

Potential inclusion criteria:

- Uncomfortable to pressure through outside of thigh and hip
- Unable to touch heel to buttocks, unable to cross leg (with foot on opposite knee) and bring knee to 90° (level with floor)
- Build tolerance to tissue loading prior to strengthening for 10 days.

Goals:

- Improve tolerance to tissue stretching
- Able to foam roll with mild discomfort 5 min daily

Requirement for progression:

- 10 days of diligent adherence to program

Aerobic Exercise:

Avoiding running, and jumping. Continue to exercise with non-weightbearing exercises like swimming and cycling if tolerated well.

1. Thigh Release (Foam Roller)

Sets: 1 | Intensity: 3/10 discomfort | Duration: 1 min - 5 min per sensitive area | Frequency: daily

Execution:

- Position foam roll beneath hip, as shown.
- Roll along the foam, towards your knee.
- Whenever you find a sore spot, pause for as long as you can, to stretch this area out.

**Note:**This exercise is normally quite uncomfortable. If it gets to be too much, give yourself a break.



Start Position



Roll out along foam

2. Gluteus Release (Foam Roller)

Sets: 1 | Intensity: 3/10 discomfort | Duration: 1 min - 5 min per sensitive area | Frequency: daily

Execution:

- Roll your buttock muscles out on the foam roll.
- Stop on tight portions of the muscle to allow them to release.



Roll buttock muscles on foam roll



Stop over tight muscles

### 3. Deep Gluteal Stretch | Table

Sets: 3

Hold: 30 seconds

Intensity: 4/10 discomfort

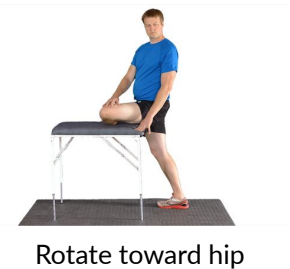
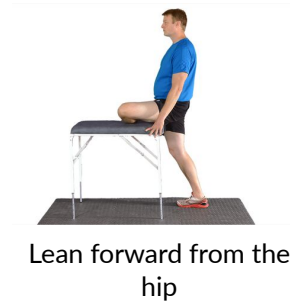
Frequency: Daily

#### Preparation:

- Position leg up on table as shown

#### Execution:

- Lean forward from the hip
- Rotate toward hip



### 4. Quadriceps Stretch (Box)

Sets: 3

Hold: 30 seconds

Intensity: 4/10 discomfort

Frequency: Daily

#### Preparation:

- Kneel on the ground with back foot on box or step as shown
- Rotate your pelvis slightly backward, flattening your lower back

#### Execution:

- Lean back slightly to feel a stretch



### 5. Iliopsoas Stretch | In-line Lunge

Sets: 3

Hold: 30 seconds

Intensity: 4/10 discomfort

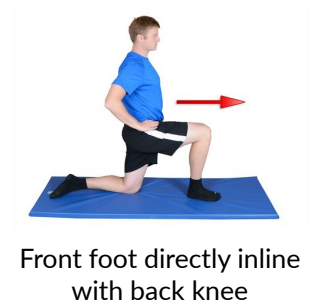
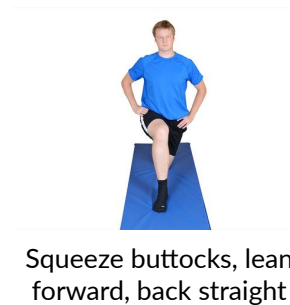
Frequency: Daily

#### Preparation:

- Kneel on the ground, uninvolved leg forwards.
- Front foot is directly inline with the back knee.
- Tuck your tail bone under (flattening your lower back)

#### Execution:

- Lean forwards, while maintaining straight posture and keeping your head up.
- Avoid arching your lower back.



## 6. Hip Abduction Sidelying- Bottom Leg Bent

**Sets:** 3-4 | **Reps:** 8-15 | **Hold:** 1-2 seconds |  
**Frequency:** Alternate days

### Preparation:

- Lie on side, bottom leg bent

### Execution:

- Raise top leg from the hip
- Do not arch back



Lie on side



Raise top leg from the hip

Level 2 Function

Requirement for inclusion:

- Completion of level 1 goals
- Able to tolerate 5 reps 3 sets without significantly increase knee pain.

Requirement for progression:









- Tolerating max reps and sets without significant increase in knee pain.

Aerobic Exercise:

- Avoiding running, and jumping. Continue to exercise with non-weightbearing exercises like swimming and cycling if tolerated well.

Goals:

- Increase tolerance to load and strengthen patellar tendon.

<b>1. Step Up   Gluteal Focus</b>	<b>Sets:</b> 3-4	<b>Reps:</b> 8-15	<b>Hold:</b> 1-2 seconds	<b>Frequency:</b> Alternate days
<b>Preparation:</b> <ul style="list-style-type: none"> <li>• Stand in front of a step</li> </ul>				
<b>Execution:</b> <ul style="list-style-type: none"> <li>• Place foot on step</li> <li>• Lean forward, keep chest up</li> <li>• Step tall, driving with the midfoot</li> <li>• Keep your knee aligned over your foot</li> </ul>	<div>  <p>Lean forward, keep chest up</p>  <p>Step tall, driving with the midfoot</p>   <p>Knee aligned over foot</p> </div>			
<b>2. Squat   Heels Raised</b>	<b>Sets:</b> 3-4	<b>Reps:</b> 5	<b>Hold:</b> 5-10 seconds	<b>Frequency:</b> Alternate days
<b>Preparation:</b> <ul style="list-style-type: none"> <li>• Stand with good posture</li> <li>• Heels are raised on a small box, book, etc</li> </ul>				
<b>Execution:</b> <ul style="list-style-type: none"> <li>• Perform a squatting motion initiating by bending at the hip</li> <li>• Rise up by straightening at the hip</li> </ul>	<div>  <p>Start position - Heels raised</p>  <p>Squat - Keep back straight</p>  <p>Front view</p>  <p>Knees aligned over toes, bend at hips</p> </div>			

3. Chair Squat (Chair)

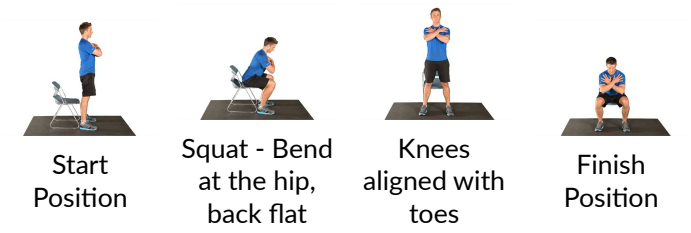
Sets: 3-4 | Reps: 8-15 | Hold: 1-2 seconds | Frequency: Alternate days

Preparation:

- Stand in front of a chair or bench, feet shoulder width apart

Execution:

- Perform a squat by bending at the hip
- Stop when your bum touches the chair or bench
- Rise up by straightening at the hip



4. Clamshell

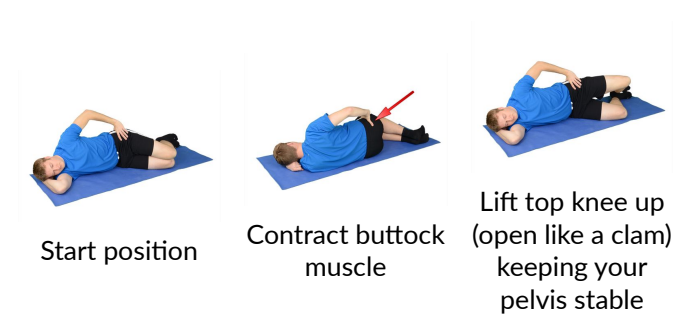
Sets: 3 | Reps: 8-15 | Frequency: alternate days

Preparation:

- Lie on your side with your hips at 45 degrees and your knees at 90 degrees
- Position your hand on your front hip and buttock muscles

Execution:

- Lift your top knee keeping your feet together
- Keep your pelvis stable while you lift your leg



5. Bridge | Arms Flat

Sets: 3 | Reps: 8-15 | Frequency: alternate days

Preparation:

- Lie flat on your back with your arms straight beside you
- Bend knees with your feet flat on the floor

Execution:

- Lift your hips up in the air to make a bridge
- Lower down in a controlled manner



Level 3 Function

Potential inclusion criteria:

- Completion of level 2

Requirement for progression:








- Tolerating max reps and sets without significant increase in knee pain.

Aerobic Exercise:

- Avoiding running, and jumping. Continue to exercise with non-weightbearing exercises like swimming and cycling if tolerated well.

Goals:

- Increase tolerance to load through hips, achieve hip and knee alignment in single leg stance. Able to tolerant full body weight load through range through patellar tendon.

<div>1. Bridge   Single Leg</div> <div> <div>Sets: 3</div> <div>Reps: 8-15</div> <div>Frequency: 3x per week</div> </div> <div> <div>Preparation:</div> <ul style="list-style-type: none"> <li>• Lie flat on your back with your arms laying flat next to you</li> <li>• Bend one knee with your foot flat</li> <li>• Keep the other leg straight off of the ground</li> </ul> <div> <div>Execution:</div> <ul style="list-style-type: none"> <li>• Lift your hips up to make a bridge using one leg only</li> <li>• Lower down in a controlled manner</li> </ul> </div> </div>	<div>  <div>Start Position</div> </div> <div>  <div>Keep other leg straight off of the ground</div> </div> <div>  <div>Lift hips using one leg only</div> </div>
<div> <div>2. Squat   Proper Alignment</div> <div> <div>Sets: 3</div> <div>Reps: 5-8</div> <div>Tempo: 5 second lowering phase</div> <div>Frequency: 3x weekly</div> </div> <div> <div>Depth: As deep as good technique can achieve</div> </div> </div> <div> <div>Tips to Remember:</div> <div>When going from sit to stand, squatting, jumping <b>avoid</b>:</div> <ul style="list-style-type: none"> <li>• Knees falling inwards</li> <li>• Rounded lower back</li> <li>• Bending forward excessively at the trunk and ankles</li> </ul> </div>	<div>  <div>Incorrect knee alignment</div> </div> <div>  <div>Correct alignment - front view</div> </div> <div>  <div>Incorrect back</div> </div> <div>  <div>Correct alignment - side view</div> </div>

3. Single Leg Squat (Chair)

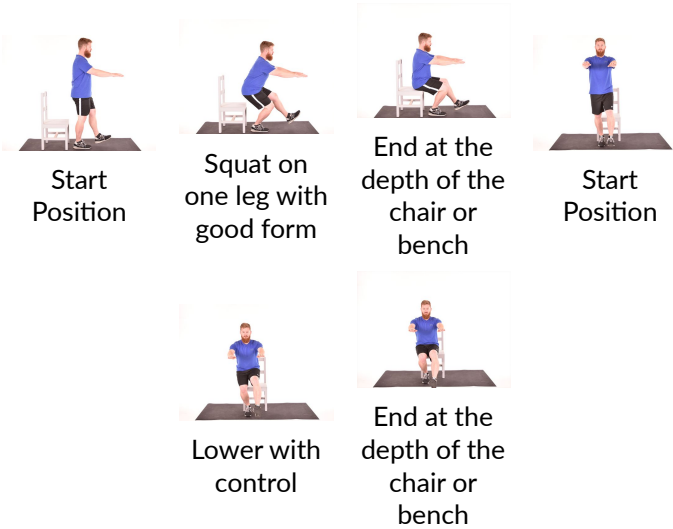
Sets: 3

Reps: 5-8

Tempo: 5 sec lowering phase

Frequency: 3x weekly

- Preparation:
- Stand on one foot in front of a chair or bench as shown
- Execution:
- Perform a single leg squat to the depth of the chair or bench
  - Use both legs to return to standing



4. Clamshell (Band)

Sets: 3

Reps: 8-15

Frequency: 3x per week

- Preparation:
- Lie on your side with your hips at 45° and your knees at 90°
  - Band around you knees
- Execution:
- Open your top knee up against the resistance of the band keeping your feet together
  - Lower knee back down with control





## Return to activity and RISE ABOVE GOALS

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The return to activity and sport-specific training should be tailored to each individual, as recovery and progression will vary based on factors like the severity of symptoms, fitness level, and the demands of the sport. It's crucial to consult with experts, including a physiotherapist, coach, athletic therapist, or strength and conditioning coach, who can provide personalized guidance and ensure a safe and effective recovery plan.

Their expertise will help you progress at a pace that's right for you while minimizing the risk of reinjury and ensuring proper technique as you return to activity.