

KNEE TENDONITIS

Loading Program



SCAN FOR THE
ONLINE VERSION



Stanford
MEDICINE

Key Principles

A tendon gets stronger by being loaded, so **this is a guided loading program rather than rest alone**. It is important to reduce training volume combined with the right exercises. The goal is to progressively rebuild the tendon's capacity to handle force.

Use a pain rule to guide everything. **Keep pain at or below 3 out of 10 while you exercise**, and it should settle by the next morning. Some discomfort is expected and acceptable. Pain that lingers into the following day means the load was too much.

This program moves in stages rather than on a calendar. **You advance when your knee is ready**, not when a certain number of weeks have passed. Most people spend several weeks in each stage.



You will start with a physical therapist, who will teach you these exercises, set your starting loads, and make sure your technique is right. This sheet is your reference for continuing the program on your own between visits and after you finish formal therapy.

What you need:

- ☐ Sturdy chair near a wall
- ☐ Weights or gym access
- ☐ Decline board or wedge (optional)

What to Expect



Stages are not on a calendar. Most people spend several weeks in each one.



Moving Up a Stage

Two things must both be true before advancing:

- ☒ You have been doing the current stage for at least one week.
- ☒ A single-leg squat on the affected leg produces pain of **3 out of 10 or less**.

Your therapist will use these same criteria, and once you are on your own this is how you check yourself.

Other Things That May Help

None of these replace the loading program, but they can help with symptoms along the way.



A patellar strap or taping can reduce pain during and after activity. Useful for getting through training.



Anti-inflammatory medication (NSAIDs) or acetaminophen for symptoms if tolerated.



Ice or heat for symptom relief. Use whichever feels better, with a thin cloth between the ice or heat and your skin.



Shockwave therapy is sometimes used when progress stalls. The evidence is mixed.



Reducing training volume rather than stopping entirely. Complete rest reduces pain short term but the tendon loses capacity, so symptoms usually return when you resume.

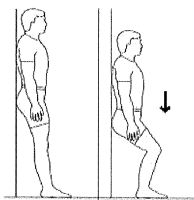


A cortisone injection is generally avoided here. It works in the short term but symptoms return by around six months, and injecting into a tendon carries a risk of rupture.

1 STAGE 1 Isometric Holds

With your therapist + At home

Start here. Holding a position under load reduces tendon pain in many patients and builds tolerance without much movement. Do these 4 to 5 days per week.

**1 Wall sit hold****5 holds of 45 seconds · 1 to 2 minutes rest between**

Sit against a wall with the knees bent to about 60 degrees and hold. It should feel hard by the end of each hold. Progress by moving the feet further out, holding a weight, or shifting more weight onto the affected leg.

2 Seated knee extension hold**5 holds of 45 seconds · 1 to 2 minutes rest between**

Sitting with the knee bent to about 60 degrees, push the front of the lower leg against a wall or another immovable object and hold.

Alternative - A leg extension machine set so the pad will not move.

2 STAGE 2 Slow Heavy Strengthening

With your therapist + At home

How to do it

The goal of this stage is to strengthen the tendon. Do these 3 days per week on non-consecutive days. Every repetition is slow: 3 seconds lowering and 3 seconds lifting. Move through a range of about 0 to 90 degrees of knee bend.

How heavy

Your therapist will set your starting weights. The pattern is that repetitions come down and weight goes up as you progress: **week 1 at 15 repetitions, weeks 2 to 3 at 12, weeks 4 to 5 at 10, weeks 6 to 8 at 8, and weeks 9 to 12 at 6.** Four sets of each exercise. At every stage the last few repetitions should be difficult but not painful beyond 3 out of 10.

Repetitions per set

Weight goes up as repetitions come down →

15

Week 1

12

Weeks 2–3

10

Weeks 4–5

8

Weeks 6–8

6

Weeks 9–12

**3 Squat****4 sets · 3 days per week · 3 seconds down, 3 seconds up**

Using a barbell, dumbbells, or a machine, squat to about 90 degrees of knee bend and return. Keep the tempo deliberately slow.

Alternative - A bodyweight squat holding a weight at the chest if you do not have access to a gym.

**4 Leg press****4 sets · 3 days per week · 3 seconds down, 3 seconds up**

Press through the same 0 to 90 degree range with the same slow tempo. This is often the easiest of the three to load heavily and control.

**5 Decline squat****3 sets of 15 · optional addition**

Standing on a decline board or wedge with the heels higher than the toes, squat down slowly on the affected leg and come back up using both legs. This loads the patellar tendon more directly than a flat squat. Add weight in a backpack as it becomes easier.

3 STAGE 3 Jumping and Landing

With your therapist + At home

Once heavy slow work is comfortable, the tendon needs to relearn how to store and release energy. Do these every 2 to 3 days because the tendon needs recovery time between sessions. Your therapist will progress you from small hops in place toward jumping, bounding, and landing from a height. Keep the same pain rule.

1 Small hops in place**2** Jumping**3** Bounding**4** Landing from a height

📅 Every 2 to 3 days

4 STAGE 4 Back to Sport

On your own after therapy clearance

**Returning to sport**

Add your sport back gradually and keep doing the Stage 1 isometric holds on the days in between. When you can get through everything your sport demands at 3 out of 10 pain or less, you are ready to return to competition.

**Once you are back**

After you return, keep the Stage 2 strengthening going 3 days per week and use the isometric holds as a warm-up before training or a game. **Do these exercises consistently to continue the benefit.**

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