

# Ankle Pain

## *Achilles Tendinopathy*

The Achilles tendon lies immediately behind your ankle and is responsible for helping to transfer forces from the ground to the rest of your body. It is an incredibly strong structure, and is able to lift many times your body weight. We use it when we run, dance, walk uphill, and jump. However, we rely on it so often that it can sometimes not recover properly after an injury or overuse, and can lead to chronic pain.

In addition to bracing, orthotics, massage, medications and physiotherapy, exercises play an important role in improving pain related to tendinopathies. More specifically, exercises focusing on **eccentric** strengthening have demonstrated good efficacy for a variety of tendinopathies, including for the Achilles tendon<sup>1</sup>. Eccentric strengthening exercises are those that apply resistance as the muscle-tendon unit lengthens. They are commonly referred to as “negatives” as they often involve lowering a weight, rather than lifting.

The following active rehabilitation program is designed with this in mind - targeting progressively increasing eccentric loading of the Achilles tendon. It is commonly referred to as a **“Heel Drop” program**. This program is to be performed seven days per week. Perform each exercises for three sets of 10-15 repetitions.

The **“Key Exercises”** should progress to **heavier and heavier resistance**. Each week, use a slightly heavier weight than the previous week. Some soreness is to be expected while you are doing these exercises. But if this increased pain lasts more than a day or two, consider going back to your previous weight.

*“Strength does not come from winning. Your struggles develop your strength.”*  
-- Arnold Schwarzenegger

## Need help?

### *Physiotherapy*

Your physical therapist and athletic trainers also play a critical role in the rehabilitation process by coaching you through the exercises and ensuring that they are being performed correctly. They can also provide symptomatic relief in the form of soft tissue modalities (active release, deep heat, TENS, etc.).

1) Marc T. Galloway, Andrea L. Lalley, Jason T. Shearn, The Role of Mechanical Loading in Tendon Development, Maintenance, Injury, and Repair. J Bone Joint Surg Am. 2013 Sep 4; 95(17): 1620–1628.

2) Alfredson H., Pietila T., Jonsson P., Lorentzon R. Heavy-load eccentric calf muscle training for the treatment of chronic achilles tendinosis. Am J Sports Med 1998; 26: 360-6

## Warm Up



1. Stand facing a wall with one leg behind you, the back heel on the ground and the back knee straight-you should feel a gentle stretch behind the lower leg.
2. Slowly perform back-and-forth movements with your back knee. You should feel a slightly firmer calf stretch as your knee bends.
3. Next, do left-and-right movements. You can also try circular movements with your knee as well.

1. Stand facing a wall with one leg behind you, the back heel on the ground and the back knee straight-you should feel a gentle stretch behind the lower leg.
2. Slowly perform back-and-forth movements with your torso and hips (keep your back knee straight). You should feel a slightly firmer calf stretch as your torso moves forwards. (This should feel as though you are doing wall push-ups)
3. Next, do left-and-right movements. You can also try circular movements as well.

## Key Exercises

### 1 Knee Straight - Slow



1. Stand with two feet on a step or stool (use a chair, table or railing for support, if needed) and raise yourself onto your toes.
2. Lift one foot off of the step.
3. Slowly lower yourself back down using other leg. You should finish with your heel as low as it can go (ideally, below the level of the step).

### 2 Knee Bent - Slow



1. Repeat the same exercise with the knee bent to 30-45 degrees.

### 3 Knee Straight/Bent - Fast (Drop and Catch)

1. Repeat **both** of the above exercises lowering yourself **rapidly** and using your calf muscles and achilles tendon to **stop abruptly** at the bottom. It should feel as a "drop and catch" movement.

### **Progression**

*As the exercise becomes easier with your own body weight, it is crucial to **continue to challenge your tendon with extra resistance**. Perform these exercises with a heavy backpack. You can customize the weight by adding heavy objects such as textbooks, dumbbells, rocks, etc.).*