

Achilles tendinopathy



Physiotherapy Department

Name of Patient:

Date:

Name of Physiotherapist:

Telephone: 01483 464153

This leaflet has been designed to provide information about the condition Achilles tendinopathy and guidance (in) of its treatment. It is not exhaustive and you should have a full assessment by a physiotherapist who will then devise an appropriate treatment programme with you.

What is the Achilles tendon?

The Achilles tendon is situated at the back of the lower leg, connecting the calf muscles (Gastrocnemius and Soleus) to the heel bone. It is the thickest and strongest tendon in the body. When the calf muscles work, they pull on the Achilles tendon, causing the foot to point down and helping you rise up on your toes. Hence, the Achilles plays an important role in walking and running.

Achilles tendonitis or tendinopathy?

Achilles tendinopathy used to be known as Achilles tendonitis. The suffix 'itis' from the word tendonitis suggests that there is an inflammation.

Recent studies have shown that there are no signs of inflammation but in fact there are degenerative changes with the tendon.

What is Achilles tendinopathy?

Achilles tendinopathy is a condition that causes pain, swelling, stiffness and weakness of the Achilles tendon. A tendinopathy occurs when the tendon is unable to adapt to strain being placed upon it. This can cause repeated tiny injuries (known as microtrauma/microdamage) within the tendon fibres. After each injury, the tendon attempts to heal in response to the strain, but fails to do so. This means that over time, damage to the Achilles tendon builds up and Achilles tendinopathy can develop.

What can cause Achilles tendinopathy?

There are many things that affect the load being put through the tendon. It is not simply the result of exercising too much. These are examples of factors that can lead to Achilles tendon micro-trauma:-

- Overuse of the Achilles tendon. This can be a problem for dancers or people who run regularly or play a lot of sports that involve jumping
- Having tight hamstrings (back of thigh) and calf muscles; (this will cause an early heel off and 'tip-toe' like walking/running)
- Training errors: sudden increase in the intensity and frequency of your training (mileage, speed and type of activity)
- Training or exercising on hard or sloped surfaces
- Training or exercising wearing inappropriate/ poor footwear
- Having a high-arched foot or flat foot
- Being overweight
- Poor endurance of the calf muscles
- Poor core stability around hip/knee

What are the signs and symptoms?

The most common symptoms associated with Achilles tendinopathy are:

- **(Morning) stiffness:** Stiffness around the tendon on rising in the morning or after prolonged rest which usually resolves after a few minutes of walking. Sometimes stiffness may last longer
- **Tenderness:** The tendon above your heel may be very tender to touch and may develop swelling/painful lump
- **Variable pain:** Pain can settle during exercise but after resting may increase. Over time, as the problem worsens, you may have pain after exercise and finally pain during exercise

What can I do to help ease the pain?

Ice can be applied to reduce irritation and ease pain. Check your skin regularly to ensure you do not develop ice burns. Apply ice wrapped in a damp towel to the tendon for 20 minutes, 3-4 times a day or after exercise. Do not rest the ankle on top of the ice; lie on your side or front and apply on top.

Only use ice if you do not have any circulatory disorders or poor sensation.

Rest

Rest and time off from sporting activities is important if you have Achilles tendinopathy. At first, stop any high-impact activities or sports (such as running). Maintain fitness using different forms of exercise e.g. Swimming, cycling, aquarobic or closed kinetic chain exercises where your foot is fixed on a surface (your physiotherapist will explain this further).

Painkillers

Painkillers such as paracetamol or ibuprofen may help to relieve pain. Ibuprofen is from a group of drugs called non-steroidal anti-inflammatory drugs (NSAIDs).

Note: check with your doctor or pharmacist before taking them to make sure they are suitable for you.

Diagnosis of Achilles tendinopathy

Your GP or physiotherapist will ask you about your symptoms and examine you. He or she will also ask you about your medical history. Once the cause of the injury is identified and the diagnosis is made you will be given advice and appropriate treatment.

Advice and treatment:

■ Decreasing pain and swelling

Gel heel cups can be bought from pharmacies and will aid shock absorption by taking the stress off the tendon. Do not leave them in your shoes forever, because the calf muscles will shorten and the increased strain will be placed on the Achilles tendon in the future.

Your physiotherapist may refer you to the surgical appliances department for insoles. If you have already had these fitted please bring them in for inspection.

Ensure you have supportive, well-cushioned trainers for sporting activities.

■ Increasing flexibility

Concentrate on improving the flexibility of the calf muscles (Gastrocnemius and Soleus). This will reduce the strain on the Achilles tendon.

■ Night splint

Night splints may be of benefit to maintain the length of the Achilles tendon overnight.

Your Physiotherapist will discuss these with you. They should be worn for 1-3 months to gain improvement in symptoms.



■ Eccentric exercise programme

An eccentric exercise programme is designed to physically stimulate the cells in the tendon to initiate the tissue repair process.

Your exercises:

It will take between 3 to 6 months to significantly improve your symptoms with the exercises outlined below. In some cases it may happen more quickly. Approximately 70% of patients with Achilles tendinopathy return to sports at approximately 3 months.

The eccentric exercise programme is the 'gold standard' for treatment of this condition. It is however estimated that between 10% and 30% of patients will not respond to this treatment.

Only do the stretches that are ticked as advised by your physiotherapist.



1. Gastrocnemius (superficial calf muscle) stretch

We recommend a stretch on an incline/a wedge or a slant board as this stretch is a **safer** option compared to a similar stretch off the edge of the step. You can incorporate it into your daily schedule/chores i.e: when brushing teeth, cooking, ironing etc.

Stand on an incline (a board placed against the step), a slant board or a handmade wedge/slope.

Keep your back muscles relaxed and posture straight. You should feel a gentle stretch, usually just below the knee in the calf at the back of the leg. If your incline is too steep, you will lose balance and strain your calf muscles or aggravate your knee joint.

Hold for 3 minutes

Repeat at least 3 times a day however every 4 hours is recommended in the first 6 weeks

Adjustable incline, plastic boards are available to purchase from our Physiotherapy department or through on-line websites.



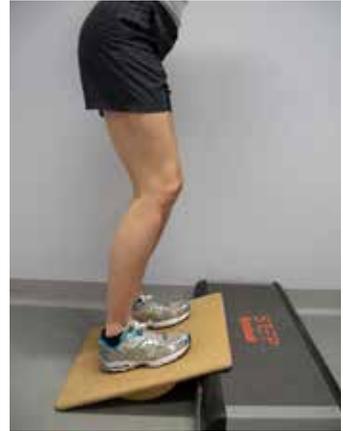


2a. Soleus (deep calf muscle) stretch

Stand on the incline board as for the previous stretch.

Hold for 30 seconds

Repeat 3 times, 3 times a day



3. Advanced Combined Gastrocnemius and Hamstrings stretch

If your hamstrings muscles are tight as well, your physiotherapist will progress the exercise as shown below. This stretch is designed to stretch your calf and hamstring muscles. **Do not attempt this exercise if you have back pain.**

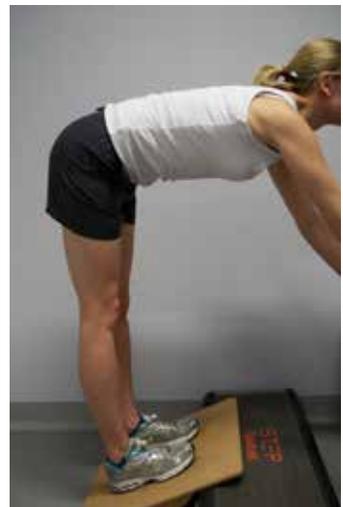
Stand on an incline board at the bottom of the stairs or in front of a table. Bend at the hips and walk your hands down the stairs in front of you or rest your hands on the table keeping your back straight. Feel the stretch throughout the back of your legs.

Make sure the stretch is comfortable enough for you to sustain it.

Hold for 30 seconds

Repeat 3 times, 3 times a day

You could do this stretch at the end of each 1 minute of Gastrocnemius stretch





4. Gastrocnemius Eccentric loading

Your physiotherapist will teach you an eccentric loading exercises.

You will be progressed through the eccentric loading exercise programme stages over the next 3 months or longer.

Stage 1

Stand with both your feet on the floor holding onto a worktop.

Rise on your tip toes with both feet. Keep your knees straight.

Transfer the weight of your body onto the painful leg (keep standing on your toes). Your other leg should be off the ground.

Slowly lower your heel so that it reaches the floor again.

Place the good leg on the floor and raise yourself onto your toes again.

Repeat 'this cycle' of movements 15 times x 3 sets of them (45 together)

Repeat twice a day

Adding a load

After 3 days put a rucksack on your shoulders and add **1kg** weight into it. Continue the above exercise with the extra weight. Increase the load by **1kg every 3rd day** up to **10% of your body weight** (i.e.: if you weigh 60kg-up to 6kg load in a rucksack).

Example:

Monday: 1kg weight in a rucksack

Tuesday: repeat exercises with 1 kg weight

Wednesday: 2kg weight

Thursday: repeat with 2kg

Friday: 3kg weight

Saturday: repeat with 3kg

Sunday: 4kg....and so on

(N.B.: if you don't have free weights, 1kg = 1litre water bottle)

You may feel some pain in your calf muscles and discomfort in your Achilles tendon whilst performing this exercise. This is considered normal.

Once you have reached the desired load, continue for 2 weeks. Then remove all weight from rucksack after 2 weeks.

Proceed to **Stage 2**

Stage 2

Copy the process from **Stage 1** but instead on standing on the floor, stand on 3-4 cm board/hard cover book. You should stand with your heels being over the edge of the board/hard cover book.

Please note: in **Stage 1d** your heel of the weight bearing leg (affected) should reach the floor.

Repeat the process as per: **Adding a load Stage1**

After 2 weeks of continuous exercises with the maximum load, remove the weight from your rucksack and progress to **Stage 3**

Stage 3

- a) Stand with both your feet on the bottom step looking up the staircase, holding onto the rail. Shuffle backwards so that your heels are off the step
- b) Rise on your tip toes with both feet. Keep your knees straight.
- c) Transfer the weight of your body onto the painful leg (keep standing on your toes).
- d) Slowly lower your heel so that it drops below the level of your toes.
- e) Add the good leg onto the step and raise yourself onto your toes again.
- f) Repeat 3 sets of 15 repetitions (45 in total, twice a day)



Repeat a process as per: **Adding load in Stage 1**

This **eccentric loading programme** is for guidance only. Your physiotherapist may modify it further for your individual needs.

If your symptoms are persistent after at least 3-4 months of physiotherapy and completion of the eccentric loading programme, you may be referred to the 'one stop' Heel Pain Clinic.

You may need to have further tests to look at the Achilles tendon. These can include:

- an ultrasound scan
- an MRI (magnetic resonance imaging) scan

Reference source(s):

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Murali, K, Maffulli N, 2007. "Eccentric calf muscle training in non-athletic patients with Achilles tendinopathy". Journal of Science and Medicine in Sport, 10, 52-58

Porter D, Barrill E, Oneacre K, May BD 2002. "The effects of duration and frequency of Achilles tendon stretching on dorsiflexion and outcome in painful heel syndrome: a randomised, blinded, control study". Foot Ankle Int.; 23:619–624.

Notes

Contact details

For further information, please do not hesitate to contact the Physiotherapy Department

Physiotherapy Services

Royal Surrey County Hospital NHS Foundation Trust
Egerton Road, Guildford, Surrey GU2 7XX

Telephone: 01483 464153

PALS and Advocacy contact details

Contact details of independent advocacy services can be provided by our Patient Advice and Liaison Service (PALS) who are located on the right hand side as you enter the main reception area. PALS are also your first point of contact for health related issues, questions or concerns surrounding RSCH patient services.

Telephone: 01483 402757

Email: rsc-tr.pals@nhs.net

Opening hours: 9.00am–3.00pm, Monday to Friday

If you would like information documents in large print, on tape or in another language or form please contact PALS.

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Author: Iwona Kolodziejczyk

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