Oxford University Hospitals NHS
NHS Foundation Trust

Department of Physiotherapy
Department of Sport and Exercise Medicine

Achilles Tendinopathy: Advice and Management

Information for patients

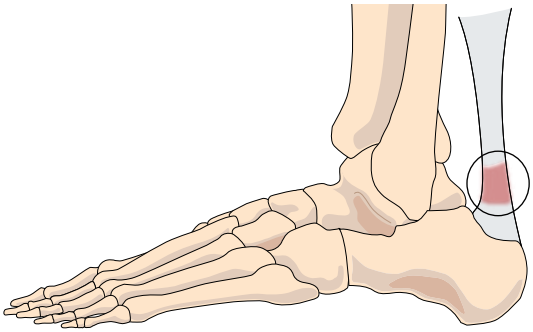
This booklet has been designed to help guide you through the management of your Achilles tendinopathy. It is important that you read this booklet, so that you have a better understanding of the condition and the treatment programme.

What is the Achilles tendon?

A tendon attaches muscles to bone. Your Achilles tendon is the biggest and strongest tendon in the body. It is found at the back of the lower leg, just above the heel bone. It attaches your two calf muscles (gastrocnemius and soleus) to the heel bone (calcaneus) and helps you go up onto tiptoes.

What is Achilles tendinopathy?

What causes Achilles tendinopathy is still not completely understood, but we know tendinopathy occurs when a tendon is unable to adapt to the strain being placed upon it. This leads to repeated small amounts of damage within the tendon fibres, and results in the tendon trying to heal itself in response to the strain. Sometimes you will hear this condition called Achilles tendinitis or tendinosis, but these terms are used by people to mean the same thing as tendinopathy.



How common is Achilles tendinopathy?

Achilles tendinopathy is a relatively common soft tissue injury that can affect both athletes and non-athletes. It is more common in people who take part in sports that mainly involve running; such as football, tennis, volleyball, badminton, and middle or long distance running. Achilles tendinopathy affects people of all ages and both men and women.

What are risk factors for developing Achilles tendinopathy?

Many things affect the load being put though the tendon. It is not simply the result of exercising too much.

General risks:

- Age: Achilles tendinopathy is most common from the age of 30 onwards.
- Gender: It is more common in men.
- Weight: If you have a higher than average body weight you are more at risk of developing Achilles tendinopathy.
- Diabetes: If you have diabetes you are at an increased risk of developing Achilles tendinopathy.
- Tight and/or weak calf muscles.
- Poor endurance strength of the calf muscles.
- Poor core stability around the hip/knee.
- Stiff joints in the foot.

Certain aspects of exercise and training can also increase your risk of developing Achilles tendinopathy.

Common training errors:

- Running too far.
- Running at a too high an intensity.

- Increasing running distances too soon.
- Lack of variation in training.
- Old or poor quality footwear.
- Too much hill running.

For training tips please refer to page 14.

Common symptoms associated with Achilles tendinopathy

The most common symptoms that people complain of if they develop Achilles tendinopathy are:

Morning stiffness: Many people complain of stiffness around the tendon when they get up in the morning. This usually eases after a few minutes of walking, but sometimes may last longer.

Tenderness over the Achilles tendon: Often the tendon is very tender to touch when gently squeezed. There may be a tender lump and/or audible clicking from the tendon when you move your ankle.

Variable pain: Some people can 'exercise' through the pain. This means that the pain settles during exercise but after resting it may then increase. Some people experience severe pain from their Achilles tendon which stops them from doing their sport.

X-rays and scans

We don't always need to carry out X-rays or scans (imaging) to be able to diagnose Achilles tendinopathy; it can usually be confirmed by your doctor or physiotherapist by using examination alone. If imaging is necessary, we are likely to use an ultrasound scan. This is a handheld 'pen' which we roll over your skin above your Achilles tendon. The ultrasound uses sound waves to create an image on a screen. This is a quick, safe and effective way of us being able to see your tendon. Magnetic Resonance Imaging (MRI) may also be used, but this is quite rare.

Treatment options

Ice: Applying ice wrapped in a damp tea towel to the tendon helps reduce pain. Apply for a maximum of 20 minutes, 4 times a day, or after exercise.

Simple painkillers: Paracetamol or anti-inflammatories such as ibuprofen or diclofenac.

Relative rest: You can help to maintain your fitness using different forms of exercise that rest your Achilles tendon, such as swimming, cycling, aqua jogging (running in water).

Stretching your calf muscles: (see page 11).

Eccentric exercise program: This particular type of controlled exercise helps your swollen Achilles tendon return to normal and forms the main component of the rehabilitation programme (see page 6).

Physiotherapy: This may involve several different treatment options including:

- manual techniques
- specific exercises
- stretches.

Other treatments can be considered if these treatments fail. If this happens, your physiotherapist or doctor will discuss them with you. Options include:

- podiatry referral for assessment for shoe inserts
- High Volume Injection (an injection of saline and anaesthetic into the area around the tendon)
- Autologous Blood Injection (an injection of your own blood into the damaged tendon, to encourage healing)
- dry needling (this is similar to acupuncture)
- GTN patches (glyceryl trinitrate)
- surgery.

Up-to-date evidence suggests that steroid injections are not the best treatment option; therefore we do not recommend their use.

Follow-up

The eccentric exercise programme is the 'gold standard' for treatment of this condition. You will usually be seen on a regular basis by your physiotherapist to support you with following this programme.

However, it is estimated that between 10% to 30% of people will not respond to this treatment. If this is the case for you, your physiotherapist will see whether there are any alternative treatments we can offer you. They may also refer you back to your GP or doctor for review.

Eccentric exercise programme

The eccentric exercise programme is designed to gradually increase the stress going through your tendon in a controlled way; this should gradually reduce swelling and pain. The eccentric exercises can take between 3 to 6 months to significantly improve your symptoms, but sometimes this can happen more quickly. Approximately 70% of people are able to return gradually to their sport or full activities at around 3 months. Unfortunately there are no overnight cures for this condition.

A reduction in morning stiffness is usually the first symptom to improve. Pain or tenderness on squeezing the tendon is usually the last symptom to go.

It is very important to note that during the eccentric exercise program you may experience an increase in pain, but this will reduce as you continue your rehabilitation

Guidelines for the eccentric exercise programme

There are some important guidelines to observe whilst performing the exercises.

- When you start the eccentric exercises, you are very likely to have an increase in your pain, especially when progressing to each new phase of the exercise program; this is normal and should soon settle. However, this pain should not go beyond what you perceive to be **4 out of 10** (based on a scale from '0' being no pain to '10' being worst pain imaginable).
- Whilst doing your eccentric exercises you should expect your pain levels to be 3-4 out of 10; if you experience less pain than this you can safely progress to the next stage of the eccentric exercise programme. However, if your pain level becomes more than 4 out of 10 you will need to reduce your repetitions or use the guidelines mentioned on page 5 for pain relief. Do this until your pain becomes less than 4 out of 10. You can then resume your set exercise programme.
- This programme should be done every day for at least 12 weeks. Although you may not feel any benefits from this exercise programme to start with it is important to persevere.
- If your morning stiffness in your ankle starts to last longer as a result of doing the exercises, you will need to reduce your repetitions until this settles down. If reducing your repetitions does not help, try resting for 2-5 days.

The Eccentric Exercise Programme

For each phase of this training programme exercises should be done daily, as described below, with both straight and bent legs, using a wall for stability if required.

Phase 1: Tiptoes on both legs, with legs straight

Stand on both feet with your legs straight. Use your GOOD leg to rise up onto tiptoes. Keeping both feet touching the floor, transfer your weight across to your BAD leg and lower yourself down, using your good leg to help if required. Repeat.

Aim for 3 sets of 15 repetitions

TWICE a day

Phase 1: Tiptoes on both legs, with knees bent

Stand on both feet with a slight bend in your knees. Use your GOOD leg to rise up onto tiptoes. Keeping both feet touching the floor, transfer your weight across to your BAD leg and lower yourself down, using your good leg to help if required. Repeat.

Aim for 3 sets of 15 repetitions

TWICE a day

Progress to phase 2 when these exercises become easier and you do not need to use your good leg for support when lowering yourself down.

Phase 2: Tiptoes on one leg, with leg straight

Stand on both feet with your legs straight. Use your GOOD leg to rise up onto tiptoes. Transfer your weight across to your BAD leg, lift your good leg up, and lower yourself down. Repeat.

Aim for 3 sets of 15 repetitions

TWICE a day

Phase 2: Tiptoes on one leg, with knee bent.

Stand on both feet with your knees slightly bent. Use your GOOD leg to rise up onto tiptoes. Transfer your weight across to your BAD leg, lift your good leg up, and lower yourself down. Repeat.

Aim for 3 sets of 15 repetitions

TWICE a day

Progress to phase 3 when these exercises become easier.

Phase 3: Heel drops over the edge of a step, with leg straight.

Stand on both feet with your heels over the edge of a step and your legs straight. Use your GOOD leg to rise up onto tiptoes. Transfer your weight across to your BAD leg and lower yourself down, (see picture below for the finishing foot position). Repeat.

Aim for 3 sets of 15 repetitions

TWICE a day

Phase 3: Heel drops over the edge of a step, with knee bent

Stand on both feet with your heels over the edge of a step and your knees slightly bent. Use your GOOD leg to rise up onto tiptoe. Transfer your weight across to your BAD leg and lower yourself down, (see picture for the finishing foot position). Repeat.

Aim for 3 sets of 15 repetitions

TWICE a day

To progress these phase 3 exercises you can wear a rucksack with books in it, to increase the weight and load through the tendon.

Stretches

These stretches help to lengthen the two muscles (soleus and gastrocnemius) that are connected by the Achilles tendon to your heel bone. This is important to reduce abnormal tightness across the tendon.

Stretching the soleus muscle

Using a wall for support, plant your foot flat on the floor behind you.

With your knee bent, lean forwards, reducing the angle between your foot and your shin, until you feel the stretch in the back of your calf muscle in the leg you have planted behind you.

Hold the stretch for 30 seconds to 1 minute

DO NOT let your heel come off the ground

Stretching the gastrocnemius muscle

Using a wall for support, plant your foot flat on the floor behind you.

With your leg straight, lean forwards, reducing the angle between your foot and your shin, until you feel the stretch in the back of your calf muscle in the leg you have planted behind you.

Hold the stretch for 30 seconds to 1 minute

DO NOT let your heel come off the ground

It is good to stretch these muscles in both legs, swapping leg positions as described above.

Frequently asked questions

Q. What does 'eccentric exercise' mean?

A. There are two types of muscle contraction, concentric and eccentric. Concentric muscle action is where a muscle shortens while doing work; for example, lifting a weight in your hand by bending your elbow shortens the bicep muscle. Eccentric muscle action is the opposite of concentric; for example, when lowering a weight in your hand by straightening your elbow you will notice the bicep muscle lengthening. This translates to the ankle, in that when you rise up on tiptoes the calf muscle shortens (concentric) and as you lower yourself down from tiptoes, the calf muscle lengthens (eccentric).

Q. Is there a risk that my tendon will rupture while doing my exercises?

A. There is no evidence that the tendon is at risk of rupture while doing these exercises.

Q. Will I be able to return to my sport?

A. If you respond to the eccentric programme then there is no reason why you cannot return to your sport without pain.

Q. When can I go back to my sport?

A. The return to your sport is guided by your symptoms and the type of sport you like to do. We advise a gradual return to your sport. You may have lost condition during your injury and recovery, which is why maintaining your cardiovascular fitness through other activities (such as swimming and cycling) is important. You should remember that the primary cause of a tendinopathy is commonly thought to be due to overuse and training errors.

Q. Can I still run during my rehabilitation phase?

A. There is no evidence that you will do yourself further harm if you return to running. You can run, providing you have little discomfort. However, your rehabilitation may take longer as running may aggravate your pain. You may want to consider alternative forms of exercise, such as swimming or cycling, to maintain your cardiovascular fitness.

Q. Will I always have to do my exercise programme?

A. Not normally. If you find your symptoms returning then it is advisable to return to your exercise programme. However, if your symptoms do not improve you will need to see your GP.

Q. What happens if I do not respond to the eccentric exercise programme?

A. It is estimated that between 10% to 30% of people will not respond to this treatment. If this is the case for you, your physiotherapist will see whether there are any alternative treatments we can offer you. They may also refer you back to your GP or doctor for review.

Q. Is surgery better than an eccentric programme?

A. Surgery tends to be the last resort when all other treatments have failed. It is not guaranteed to relieve your symptoms.

Helpful tips for training

- If you want to increase your running distance or time, only increase this by 10% each week.
- Renew your trainers every 300 to 500 miles. Consider having two pairs of trainers 'on the go' at the same time.
- Vary your training. Combine different speeds, distances and times during your training period. This will allow your tendon to adapt to the loads placed upon it.
- Plan your training regime. Access online help, such as the NHS Choices 'Couch to 5K'.

  Website: www.nhs.uk/Livewell/c25k/Pages/couch-to-5k.aspx
- Make training more fun. Vary your exercise in different ways to train other parts of your body. This is termed 'cross training' and is a valuable method of reducing injury, by distributing the loads placed upon your body.

  Here are some examples of cross training that you may find useful:

  - Swimming
  - Spin classes
  - Pilates
  - Circuits
  - Gym equipment
  - Rowing
  - Weight training
  - Aerobics
  - Alternative sport
  - Cycling

How to contact us

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Telephone: **01295 229 432**

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Telephone: **01865 221 540**

Nuffield Orthopaedic Centre
Physiotherapy Department
Telephone: **01865 741 155**

East Oxford Health Centre
Outpatient Physiotherapy Department
Telephone: **01865 264 970**

Useful websites

Physiotherapy:
www.ouh.nhs.uk/services/departments/therapies/therapy-rehabilitation/physio.aspx

Oxsport: www.ouh.nhs.uk/oxsport/default.aspx

If you have any problems or questions at any stage throughout your rehabilitation please do not hesitate to ask your Physiotherapist for advice.

If you have a specific requirement, need an interpreter, a document in Easy Read, another language, large print, Braille or audio version, please call **01865 221 473** or email **PALSJR@ouh.nhs.uk**

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