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Managing Musculoskeletal Complaints:
Achilles Problems

Achilles tendon problems are extremely common, affecting 8-12% of people at some point in their lives. This number rises to 40% amongst people who play sport - particularly sports which include jumping/landing and lunging.

Over the years, the terms used to describe Achilles problems have changed as the medical understanding of the problems have also changed. Previously, your diagnosis would have started 'Achilles' - denoting the tendon – followed by a term denoting the problem. For example, Achilles tendonitis simply means tendon (tendon) inflammation (itis).

Recent research has led to the discovery that many patients with Achilles problems have very little inflammation, if any at all, so other terms are now used to describe the condition – such as Achilles tenosynovitis (inflammation of the sheath surrounding the muscle) or Achilles tendonopathy (meaning there is a build-up of small injuries or damage to the tendon rather than inflammation).

No matter what term is used, there are some things that are key.

Key facts

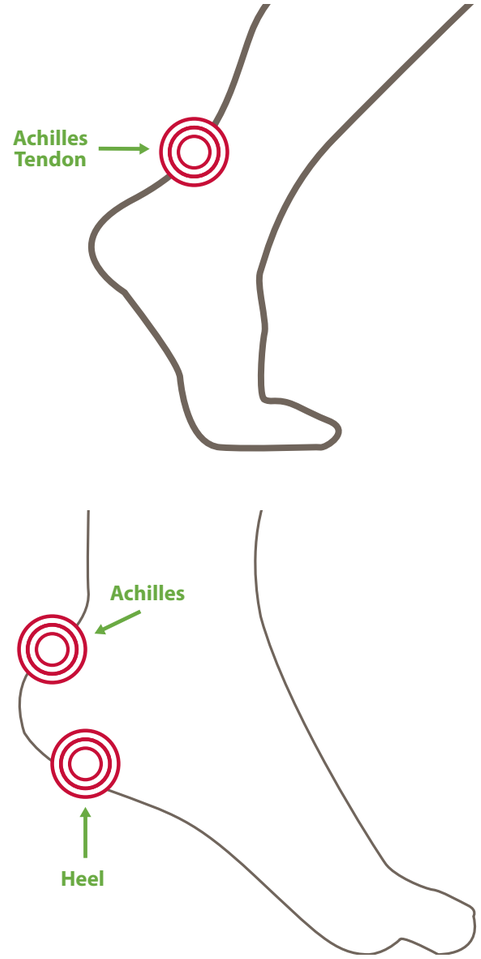
- Sudden force, such as jumping/landing, over stretching or lunging, can damage the tendon
- Achilles problems are most often from repetitive over use
- Simple exercises can be very effective
- Problems which are not addressed can become long term (chronic) and can take years to resolve, if full recovery is possible
- Strengthening the muscles eccentrically (lengthening the muscle under pressure) has been shown to be effective in reducing pain in nearly every type of injury
- Foot position and mechanics are key in repetitive overuse conditions
- Most people do not need crutches, a brace/pot or surgery

Diagnosing the underlying cause/s of Achilles pain can be difficult, however, most problems present as pain (may be an aching, burning or sharp sensation, or all three). This is usually increased with direct pressure (by squeezing the tendon). The pain is often accompanied by stiffness (which is normally worse in the morning), sometimes the affected area can feel hot to touch and, in some cases, there may be redness. Many people see an increase in tendon size (often referred to as swelling, although this is not necessarily true) and most people describe a lack of strength when climbing stairs or pushing off to run/jump/hop.

The Achilles tendon attaches the very strong calf muscles to the heel and is right up near the surface.

It also goes under the heel to the arch of the foot and can cause rear foot symptoms.

The powerful plantar muscles that push our foot down and allow us to flex the ankle also allow us to stand/walk/run/jump. They all attach to, and pass their strength through, the Achilles tendon into the heel bone (calcaneous). The uppermost muscle also goes over the knee (which can lead to symptoms at the back of the knee as well).



We use these muscles in many activities but some are worse for the Achilles than others.

Worst

Landing (e.g. jumping off a wall)

Jumping (e.g. skipping, hopping, jump shots in racquet sports etc.)

Running (hills are worst, up or down)

Stairs (up or down)

Carrying (heavier items/longer distances are harder)

Walking (hills are worst)

Standing (longer is worse)

Easiest

So the activities in which you get your symptoms normally equate to the severity of the problem (you can see the list reverses meaning - pain in easier activities = a worse problem).

Most Severe

Pain whilst standing

Pain when walking on flat surfaces

Pain when going up/down stairs

Pain when carrying objects

Pain whilst running

Pain when hopping or landing (normally in sports/exercise)

Least Severe

It is important to understand how severe your problem is as it can progress if not treated.

It should be emphasised that, in the absence of a direct injury, repetitive activities can culminate to cause problems, therefore eliminating one or more aggravating activity can significantly improve the problem.

Protection, Support and Pain Relief

Regardless of the cause and diagnosis of the problem, several things are known to help with Achilles tendon pain.

Pacing Sport/Exercise:

If you suffer pain during a sport like running, football, squash, golf etc, or during an exercise class, you should stop before the problem progresses.

If you can play sport or exercise without pain but it hurts more the next day, stop before the problem progresses.

Remember, even with direct injuries, Achilles problems are susceptible to repetitive stress. So if running hurts today and you continue to run, the problem will get worse and, in time, more activities will hurt, adding to the problem and accelerating the problem's regression.

If you don't stop the aggravating factor then the problem can progress into your day-to-day activities. Problems in daily activities are much harder to fix, so try to stop the progression early.

There are times where exposure to activities can only be reduced, not eliminated. A good example of this is activities of daily living and work.

Pacing in Daily Activities and Work.

Stairs – going both up and down can aggravate the tendon (going down is usually a problem first). Limit the number of times you use stairs where possible by using lifts, escalators, etc.

Hills - both up and down can be problematic. Try to limit the amount of hill walking you do.

Carrying - walking whilst carrying a weight puts more pressure through the Achilles and can increase symptoms. Reduce carried loads by splitting into smaller batches, or use a trolley/cart to transfer items without actually carrying them.

Pushing - can also be a problem. Try not to load a pram/pushchair or trolley to the point where the weight increases the pain.

Walking - if walking hurts then limit the distance you walk to minimise its impact. Use your common sense - if the symptoms increase, you have gone too far. Take regular breaks and sit down for at least one minute in every 20, more regularly if required.

Standing - if standing hurts, try to sit regularly to take the pressure off. If you have to stand for work, take regular breaks or sit whenever possible. Aim to sit for at least one minute per 40, or more depending on your symptoms.

Protection:

This is normally only needed in the worst cases where people have had a traumatic injury. In these circumstances protection may be the only option. An ankle brace or walking aids (normally crutches) can be prescribed. It must be emphasised these should only be used under supervision (as each has negative side effects). See a physiotherapist or doctor for advice.

Healing:

The healing of the Achilles tendon is often slow when compared to other injuries. This is mainly due to its poor blood supply. The most effective treatment method is eccentric exercises. Other activities - such as ice, massage and gentle stretching - can help to promote blood flow and also help healing.

Ice:

Ice can help with pain relief, reducing inflammation, and limiting the amount of heat in the Achilles (most Achilles tendons get hot after repetitive activities). Anything from the freezer can be used to apply ice to your Achilles. Frozen peas are the most popular as they mould to the area well, but ice cubes in a towel or an ice pack can also be used. DO NOT apply any ice directly to your skin (because ice can stick to skin). Apply the ice through your socks or use a towel wrapped around the ice instead. Ice should be applied to the Achilles for approximately 15-20 minutes not more than once in any hour. Apply as many times as possible until the symptoms of pain/ swelling/heat go away.

Controlling the pain:

Pain Killers: Many people find they need pain relief just to perform daily tasks and your pharmacist can offer advice on this. Try not to fully mask the pain though as you may well be doing more damage to the area. You should not use pain relief to allow yourself to play sports or perform hobbies.

Anti-inflammatories: Some Achilles problems don't involve a lot of inflammation and so anti-inflammatories just don't work. However, some problems do respond very well to this type of pain relief, although it is worth remembering that long term use can slow the healing process and so should be used judiciously.

Self Massage:

Simply use your thumbs to massage the affected area. Make sure to go parallel to the Achilles, not straight up and down.

Use sufficient pressure to feel an effect without creating too much pain (be aware that in some cases there may be pain even with just a light touch).

Be sensible; if it feels like you are pressing too hard, you probably are.

Perform for one to 20 minutes up to three times per day.

Ice Massage:

Ice and massage combined are often reported as most effective by patients.

Take an ice cube and hold it in a tissue (so it doesn't stick to your fingers).

Put some massage cream (you can use anything you are not allergic to - people use aqueous cream, E45, or even natural oils like sunflower or olive). This helps the cube move and stops it sticking to you.

The ice will numb the area so you may have to start gently so as to not elicit too much pain. But you can then increase the pressure to go deeper as the ice works.

Perform for five minutes, up to five times per day.

Exercises:

As with all exercises, some are harder than others and some suit some people and not others. The general rules for exercise are:

- Start with the easiest exercises and work your way up
- If an exercise hurts, STOP
- If you can do an exercise easily, move up a level
- Can't get the exercises to work for you? See a physiotherapist for specific advice!

Early Level (the easiest ones)

Stretching:

This can be effective if your Achilles/ankle is stiff. However, stretching is not effective in every case as many people do not have stiffness. Stretching is not known to make Achilles problems worse, and could improve them, so it can increase your chances of recovery.

- Gastrocnemius stretch:
- Stand in front of a wall and lean against it with your hands.
- Put the tight Achilles/ankle/calf back and keep the knee straight.
- Place your other leg nearer the wall and bend the knee.
- Keep your back leg straight and your heel on the floor.
- Lean forwards to feel the stretch in the back leg.

Hold for 30 seconds, relax and repeat five times, do the set five times per day. This is best performed first thing in the morning and last thing before bed.

Soleus stretch:

This is a variation of the above exercise but it stretches the lower muscle deep in the calf and is equally as useful.

- Stand in the step standing position.
- Put the tight Achilles/ankle/calf back but now keep the knee bent.
- Place your other leg nearer the wall and bend the knee.
- Now bend both knees keeping your heels on the floor until you feel the back one stretch

Hold for 30 seconds, relax and repeat five times, do the set five times per day. This is best performed first thing in the morning and last thing before bed.

Resisted Exercises (mid level):

The most popular resistance exercise for Achilles problems is an eccentric exercise, normally started on a step. This is popular because it works on almost every kind of Achilles problem.

Eccentric Achilles exercise

Using the bottom step, stand with the balls of your feet on the step, raise yourself using your good leg until you are on your tip toes. Then, taking about four seconds, slowly lower the heels, under tension, using the bad leg as much as possible. Use your good leg to help take as much of your weight as needed on the down phase.

Relax and repeat at least 15 times (a runner may need to do up to 80 per set to return to training), rest for 30 seconds. This should be repeated at least three times and up to 12 times a day until symptoms subside.

As you get stronger, reduce the use of your good leg on the down phase until your bad leg does all the work, but always use your good leg to lift up.

Some studies have shown this exercise can even be done if painful, but use your common sense! If you push into pain, up to four out of ten during the exercise is OK but any more, or if you suffer pain the next day, then stop.

Symptoms normally subside in 12 weeks but if your symptoms return, start the exercise again!

Other Resisted Exercises (advanced level):

There are many and varied exercises used for Achilles, most of which report variable results. As most of these exercises involve some eccentric (lowering under control) component, they may be effective where the step exercises cannot be performed, or where the step exercises are just not hard enough.

Band exercises:

Using a flexible rubber band (can be purchased per meter for under £5 each from many retailers).

Choose a resistance band that you can actually perform the exercise with (only works if you can move the foot) and that does not cause pain.

Lie down and, holding the band in your hands, hook the band around the foot. Pull the foot all the way up towards you, then press the foot slowly down (to point the toes) for a count of two. Slowly return to the starting position for a count of four.

Relax and repeat 15 times, then rest for 30 seconds, and repeat the whole exercise three to five times. Repeat daily until symptoms subside.

Calf Raise (machine)

These exercises require gym equipment but can build strength beyond the stair and band exercises.

There are three main types of this exercise:

Standing:

Put the balls of your feet on the foot plate then relax the heels down. Adjust the shoulder pads to your height (the shoulder pads should hit the front of your shoulders in this position, not be on top of them).

Put shoulders under the pads and push straight from your knees, not your back (keep back and knees straight from now). Now press through your feet to go up onto your tiptoes. Relax and repeat 15 times.

Do this twice to warm up, using a low weight first.

Then perform eight to 14 repetitions with a working weight - vary the resistance so it becomes difficult at about 12 reps. If you can get to 15, it is too light; if you can't get to eight it is too heavy. Repeat four times with 30 seconds rest between.

Repeat this exercise one to three times per week.

Sitting:

Put the balls of your feet on the foot plate and relax the heels down. Adjust the knee pads to your height (the pads should hit the front of your knees in this position, not be on top of them).

Push the knees under the pads and the weight will lift (this can take a good push). Now press through your feet to go up onto your tiptoes. Relax and repeat up to 15 times as a warm up. Do this twice using a low weight first.

Then perform eight to 14 repetitions with a working weight - vary the resistance so it becomes difficult at about 12 reps. If you can get to 15, it is too light; if you can't get to 8, it is too heavy. Repeat four times with 30 seconds rest between.

Repeat this exercise one to three times per week.

Leg Press:

Put the balls of your feet on the foot plate and relax the heels down. Push from the knees until they are straight (keep them straight from now on). Now press through your feet to go up onto your tiptoes. Relax and repeat 15 times to warm up. Do this twice using a low weight first.

Then perform eight to 14 repetitions with a working weight - vary the resistance so it becomes difficult at about 12 reps. If you can get to 15, it is too light; if you can't get to 8, it is too heavy. Repeat four times with 30 seconds rest between.

Repeat this exercise one to three times per week.

General Advice:

Being overweight (increased Body Mass Index) is a very significant contributing factor for Achilles problems. Reduce stress on the Achilles by losing weight. Please seek medical /professional advice if you feel that you need dietary advice. Undertake gentle reduced weight bearing activity to aid weight reduction. For example, swimming or walking waist deep in a swimming pool, or undertaking an upper limb workout while seated.

Shoes – Not everyone can have a choice of shoe because they have to wear specific footwear. A good example is safety shoes/boots at work. But some general principles apply to choosing footwear. Avoid heels - they may feel better but can increase stiffness and pain over time. Choose shoes that provide good support and shock absorption. Trainers or rubber soled shoes are good options. Choose footwear that does not put pressure on the painful area and avoid shoes which do not fasten securely to your feet such as flip-flops or sandals without a heel strap/support.

Specific footwear - some activities require specific forms of footwear which, if chosen incorrectly, can lead to problems in the foot. A specific example here would be running trainers, walking boots, or tennis, rugby or football boots. In activities where covering larger distances is involved, like those listed above, protecting your Achilles is vital. In these situations, specific footwear should be worn but there are different versions of each of these types of footwear.

From an injury prevention perspective, the most important thing to bear in mind with these types of footwear is whether you need any internal support for your foot (ie support within the shoe). There are three common foot types (postures) which shoe manufacturers make different internal arrangements for. Medically, they are known as 'posted' shoes. That means they have support built in for a particular foot posture. The most common foot posture is 'neutral', which means the shoe is set to the middle position.

But you may not have a neutral foot! Your foot may roll towards the inside as you walk and run, known as 'over pronating'. In this case, you would be better in an anti-pronation shoe or a medially posted shoe in medical terms (this is the second most popular foot posture). Fewer people roll out on their feet but it does happen. This is known as supinating. If you over supinate you would suit an anti-supination shoe or laterally posted shoe (fewer of these are produced).

So how would you know? Well, some people say you can tell by how your trainer wears down. Some people find out purely by trial and error (they find a running shoe they like). The easiest way is to go to a specialist trainer/shoe shop and go on a pressure sensing treadmill which will tell you what will best suit you. These machines are not in every shop, but they are readily available and are free to use in most stores (normally you will need an appointment). The ultimate way to correct your foot posture is to use a neutral shoe and insert an orthotic. It is recommended you do this under the supervision of a podiatrist who can give you off the shelf or custom made orthotics (custom are best but are most expensive).

You may need a consultation!

Achilles problems can be very difficult and debilitating. Correct advice and treatment can make an enormous difference. If you have persistent pain, contact Physio Med for advice and consultation.

When to seek immediate further advice:

- If the pain has persisted for more than 12 weeks even with exercises
- Inability to walk without pain
- Not able to bear weight
- Unable to point toes at all

Remember, if you try any of the things above and you feel they make you worse not better, contact us for individual advice!!!

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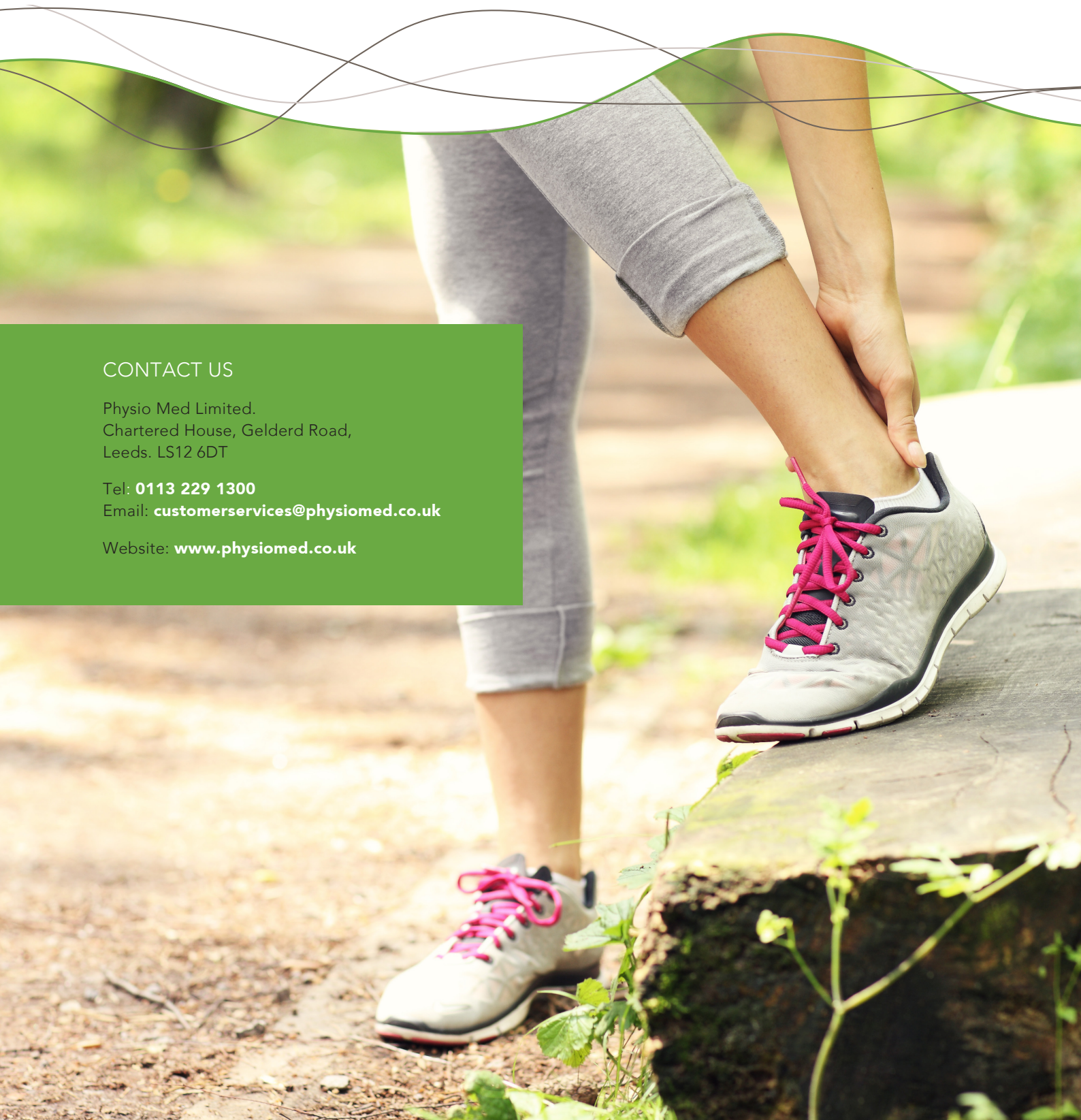

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