CLICK PHYSIOTHERAPY

From the experts at Click Physiotherapy:

YOUR ULTIMATE GUIDE TO ACHILLES TENDINOPATHY

A personal invitation to help you become pain-free and achieve your fitness & life goals.

CALEB GRAY

contents

For Achilles Tendon Pain

CHAPTER 1

ACHILLES TENDINOPATHY: STRUCTURAL CHANGES

Achilles Tendon Anatomy

Your Achilles tendon is the largest tendon in your body. It attaches your calf muscle to the base of your heel. The tendon is made up hundreds of thin fibres, twisted together like a rope, called collagen.

This rope-like structure enables the tendon to resist strong tension from the calf muscle. These forces are largest with activities requiring force like running and jumping.

Function of Achilles Tendon

Every tendons main function is to join muscle to bone. There are many types of muscle, some small and some big which means every tendon is unique in the way it is designed and how it looks.

The Achilles tendon is special in that it also also acts like a spring. When it is stretched quickly, it will absorb then release that load creating more power.

The problem with this unique tendon, is that it can be vulnerable to injury when it's overloaded. Once injured, this tendon can be very challenging to rehabilitate due to it's constant use. Further through this article, we will break down the best way to overcome this injury.

What is Achilles Tendinopathy (historically called Achilles Tendonitis)?

An Achilles tendinopathy describes a process where your Achilles tendon will degenerate. The most obvious symptom you will experience is Achilles tendon pain.

The process is very complex, and we still don't know a lot about this condition. We used to think inflammation was the driver of pain. However this does not seem to be the case, except for very early stages of the condition.

The process of Achilles Tendinopathy is defined by changes in the tendon structure with fibres that used to run parallel now becoming tangled. There is increased growth of small blood vessels in the tendon, further weakening the structure. Changes can also be seen in the chemicals produced within the tendon.

Pain during this process is still hard to explain as the exact cause remains elusive. We know that the above structural changes occur, but they aren't responsible for pain. We do know that Tendinopathies are painful, it's just not well understood why exactly.

What Starts This Tendinopathy Process?

The biggest culprit behind Achilles tendinopathy is overtraining, or overloading the tendon.

People will often experience symptoms after an intense bout of doing something they wouldn't usually do. Some examples would be:

- Going for a long hike when you aren't regularly hiking
- Playing a game of soccer when the last game you played was 10 years ago
- A new year's resolution ending in you doing boot camp after not exercising for ages.

As you can see all the above examples demonstrate a change in load.

Tendons on average take approximately three months to adapt. This is due to a shortage in blood supply to help transport nutrients. So loading the tendon without allowing time to adapt can cause Achilles heel pain.

Risk Factors for Developing Tendon Pain

There are some known risk factors associated with the development of Achilles tendinopathy. Some of these risk factors include:

- Obesity
- High blood pressure
- Rapid changed to load
- Diabetes II
- Prolonged steroid use (usually people taking steroid medication for lung conditions)
- Family history of tendinopathy

Other factors that may also account for heel pain would include inappropriate footwear and being older in age (as our tendons won't adapt as readily).

How Long Until I Recover?

Recovery from Achilles tendinopathy really depends on which stage the tendon is in. If it is in the acute stage and it is appropriately treated, you can recover by 6-12 weeks.

If you have had the tendinopathy for longer than 6 weeks then recovery may take 3-6 months.

If you have had the tendon pain for years then it can take 6 months' or longer to heal. Keep in mind that at this stage, some of the structural changes can be irreparable. This makes your tendon more vulnerable to repeat episodes of Tendinopathy.

Your recovery also depends on the efforts you put into rehabilitation. All patients want to get better, but not all patients are willing to cut back on training, or normal activities for a time to let the tendon settle.

When it comes to recovery - exercising appropriately cannot be understated. We will cover this in great detail in Chapter 4.

CHAPTER 2

SYMPTOMS AND CONDITIONS ASSOCIATED WITH ACHILLES TENDINOPATHY

Types of Achilles Tendinopathy – Insertional vs Mid-substance

There are two distinct types of Achilles Tendinopathy. These different types of Tendinopathy will change the treatment and prognosis:

1. Insertional Tendinopathy

This type of Achilles tendon pain will be felt right on the heel.

It occurs at the point where the tendon attaches to the heel bone – called the enthesis.

Some medical professionals may refer to this as enthesitis, meaning inflammation where the tendon joins the bone.

2. Mid-substance Tendinopathy

This type of Achilles heel pain is right in the middle of your achilles tendon instead of at the heel.

You may see and feel a lump in your tendon and it will be thicker than the unaffected side.

This type of tendinopathy is easier to treat and we will discuss why further down.

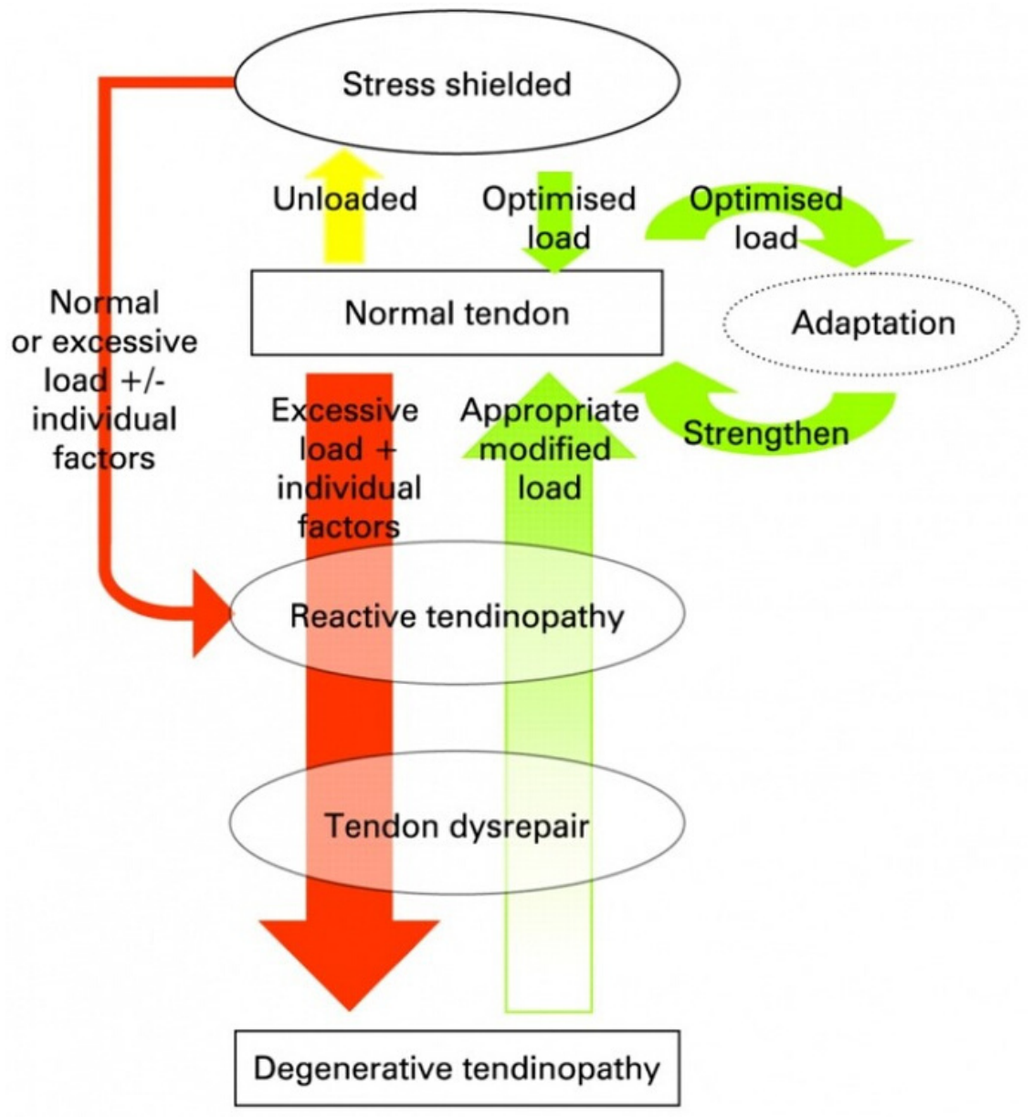
Stages of Tendinopathy

Cook and Purdham proposed a new way to look at tendinopathies. They suggested to break this diagnoses into three stages:

- Reactive Tendinopathy
- Tendon Dysrepair
- Degenerative Tendinopathy

These stages describe the symptoms you might experience from the very start of injury, to one you have been dealing with for years. Keep in mind, they are not distinct categories, but they describe the flow of an injury from the initial stage onwards.

The effects of the first two stages on the tendon structure are thought to be reversible. Once a tendinopathy is in the degenerative phase, the pain can be resolved, however the inner structure will remain slightly altered.



Reactive Tendinopathy

A Reactive Tendinopathy is the first stage of the condition and will present with swelling and thickening of the tendon. There is some ellongation of the collagen fibres, although integrity is maintained.

A reactive tendinopathy might be the pain you experience if you go for a hike with friends for the first time in five years. The heel may swell up and look red and sore.

This is the first sign of a tendon problem. So if the tendon is in this stage it would be within the first month or two. Sometimes reactive tendinopathies can simply resolve with rest and may not be an issue again.

Tendon Dysrepair

This is a progression of reactive Tendinopathy where the Achilles Tendon hasn't been de-loaded sufficiently. There are more changes on a cellular level with some collagen disorganisation.

A tendinopathy in stage two would be someone who hasn’t managed their reactive tendinopathy well. It may be a couple of months later, and they are still hiking regularly without giving the tendon a chance to heal.

They may even have less pain in this stage, as the stages of tendon degeneration deals more with the structure than pain itself. In saying this, if the tendon is in this phase you can easily aggravate the tendon and cause acute swelling with pain.

Degenerative

This is the final stage of Tendinopathy with changes to the tendon that are often irreversible. The collagen fibres are no longer parallel and there are areas of cell death in the tendon. Degenerative Tendinopathies are usually long-standing problems that haven’t been dealt with for years. They may not be as painful and can present as a sore heel after going on long walks.

As previously mentioned the structure may not be reversible at this stage of Tendinopathy. You can still have full symptomatic relief, however the tendon will not adapt as well as it used to. This means you may have to modify the once of hike every three years. If you have goals, take some time to build towards them instead of jumping straight in. This will help to protect a tendon that may be degenerative.

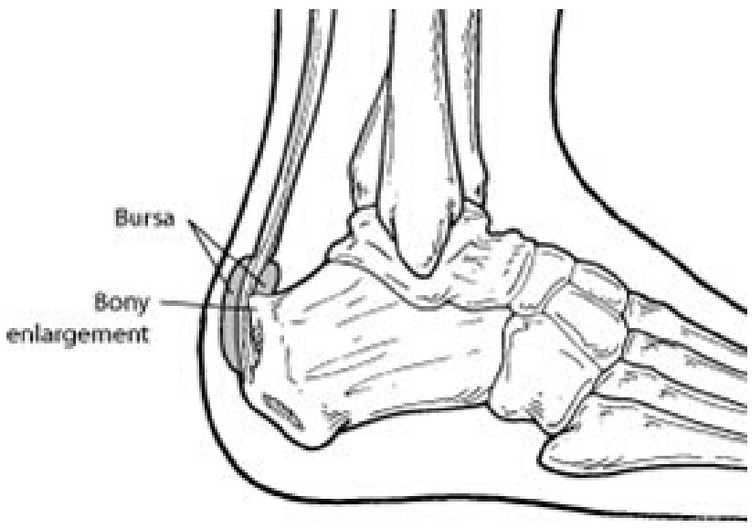
Symptoms of Achilles Tendinopathy

There are very specific symptoms with Achilles Tendinopathy. The pain you experience will be localised to either the back heel (insertional tendinopathy), or the middle of the Achilles tendon (mid-substance tendinopathy). This pain will usually come on after activity and can also be present when getting up after long periods of being still.

You may experience tightness in you calf muscle because of the heel pain. Back problems can also be common as you limp to try and accommodate the painful tendon. Some people also report burning sensations in the heel and foot.

If you have back pain first and then notice pain in the heel, it’s likely that this may be a result of a pinched nerve and not Achilles tendon pain. Think back to when your pain initially started. If you remember having symptoms first in the back, then this is the likely cause of heel pain. Heel pain coming from the back is often more vague in nature and may be associated with pins and needles of numbness.

WHAT CONDITIONS CAN BE ASSOCIATED WITH ACHILLES TENDINOPATHY



Haglunds Deformity

This is a condition where extra bone grows around the Achilles insertion into the heel. The bone growth itself isn't painful, however it will often compress the Achilles tendon causing irritation.

This can be diagnosed with a simple X-ray. First-line treatment for this condition is still Physiotherapy. If this treatment fails then surgery may be warranted to shave parts of the bone which is irritating the tendon.

Bursitis

Bursae are fluid-filled sacs which can be found all over the body. Their job is to prevent friction between two surfaces. Bursitis is an inflammation of the bursae, caused by either infection or mechanical overload.

Bursitis can be a side-effect of a raging tendinopathy, or the compression of the tendon against a Haglunds deformity. Often you will find that if the symptomatic tendon is rehabilitated, the bursitis will usually resolve on its own as well.

What conditions can be mistaken as Achilles Tendinopathy?

Posterior Ankle Impingement Syndrome

This condition is characterised by pain felt in the back of the ankle. In this condition, impingement occurs of either a bony structure or the soft tissue near the back of the ankle.

It may feel right behind the Achilles tendon, which is why this condition needs to be ruled out before diagnosing Achilles Tendinopathy.

This condition can be separated from an Achilles tendinopathy as pain is usually felt with the ankle fully bent forward. On ultrasound the Achilles tendon should be normal, and so this would indicate something else is causing the symptoms.

CHAPTER 3

LOAD MANAGEMENT: THE NEW NORM

What does rehabilitation of Achilles tendon pain involve?

The latest evidence suggests that exercise is the most effective method for the treatment of Achilles tendinopathy. However, rehabilitation is more than simply doing some exercises occasionally.

Rehabilitation must involve load management for the outcome to be successful.

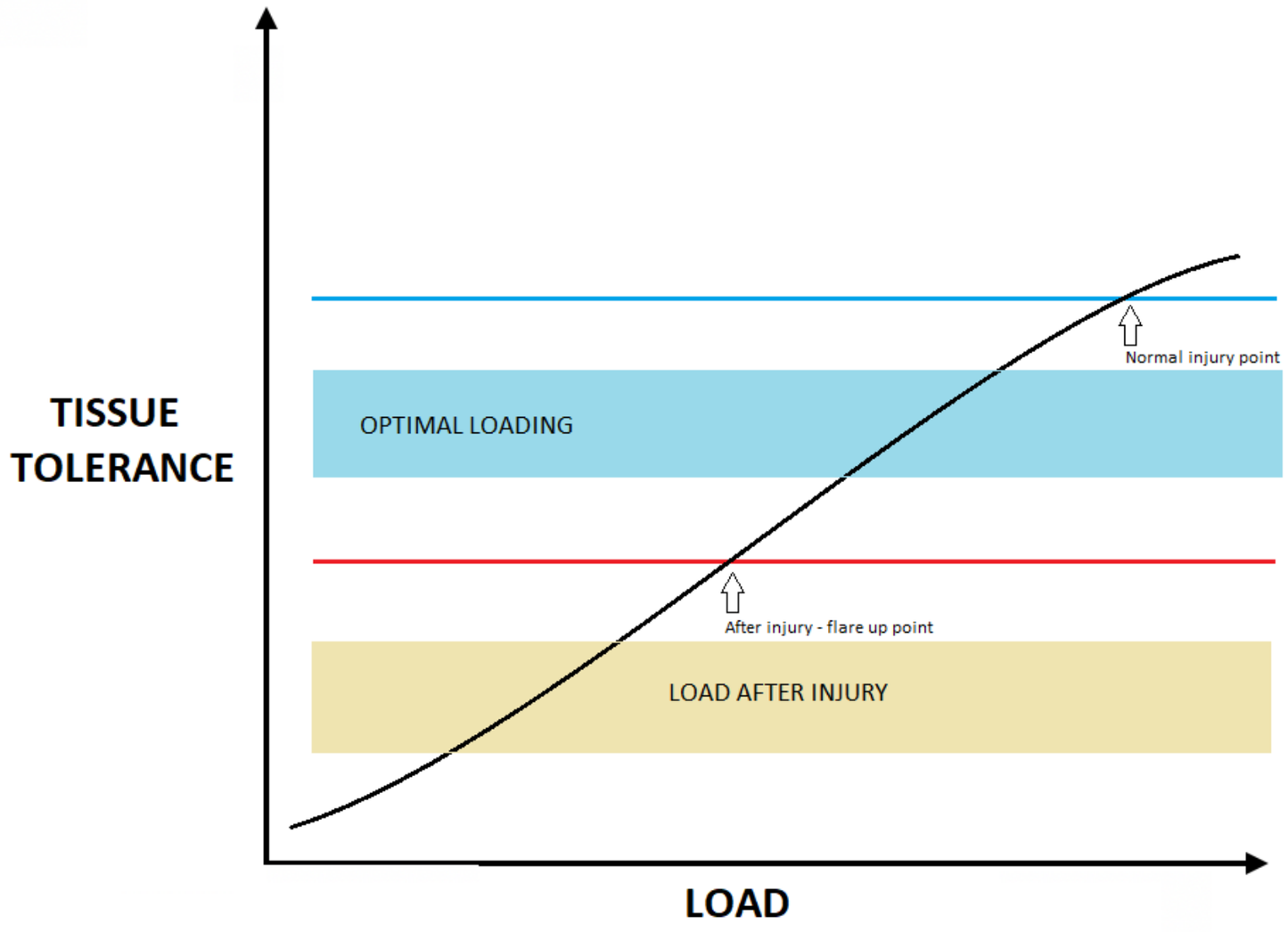
What is load management?

As the name suggests, load management is the principle of managing how much load your tendon is exposed to. Achilles Tendinopathy arises due to rapid changes in load outside of the tendons ability to adapt.

Load management is crucial in the rehabilitation process as it addressed the core issue of Tendinopathy. You can perform all the right exercises and still not see benefit if you don't change the activities which caused the pain.

For example, if your work involves going up and down ladders all day, this will need to be modified. You could climb the ladders using the middle of your foot instead of your toes, which would take load off the calf.

There is always an optimal amount of loading for the tendon. This optimal loading will produce tendon adaptation without causing harm from too much load. The below graph demonstrates how the optimal loading zone for your tendon will change after injury. You can see after injury the zone for loading is far lower than is was before injury. This means after an injury you can still load your tendon, but you won't be able to load it the same as before injury.



Most people will be oblivious to some of the activities which may be aggravating the Achilles tendon. The best advice we can give is to keep a diary of your pain. This is crucial because most times tendon pain is only felt a couple of hours after activity.

The diary will help you think back to what you were doing earlier that day, or the previous day. This will allow you to pinpoint certain activities which may be aggravating your Achilles tendon pain.

Whilst you are learning to manage the load on your Achilles tendon it is important to perform exercises to decrease pain and adapt the tendon to managing load again.

How Can I Get the Load Right?

Find a Baseline

This is one of the most common questions we receive in our practise.

And in truth it can be tough to work out.

The best advice is to start small and find your exercise baseline. You need some form of exercise that is working the tendon, but not flaring up any symptoms.

This could be a seated calf raise with a slight lean on your knees (see chapter 4).

The importance of having a baseline exercise can't be understated. This will be pivotal because the aim is to use this as a point of reference, and increase intensity from here.

You may start challenging the tendon more, and this is advised. However if you go too far, then you have a baseline exercise to revert back to instead of doing nothing.

Progress Steadily

Lots of patients will find an exercise that helps a little, but they will stay here for the next three months and won't recover. The idea of finding the right load is hard because your tendon is always adapting. That means you need to adapt as well, and your exercises need to increase in difficulty.

If you remain on the same exercise, your tendon wont be able to make the required adaptations. So after you find a baseline exercise, make sure you push yourself every week.

This could be increasing the number your do, or doing more sets in one day. It may mean that next week you go from a seated calf raise to a supported standing calf raise.

Keep in mind, every time you make an exercise more difficult, you need to back off the number of repetitions so you don't overload the tendon.

What if you Can't Progress?

There may be times where it feels you hit a wall and just cant seem to go further without aggravating your tendon pain. If this is the case it may be time to seek help as there could be other lower limb weakness that isn't being addressed with tendon loading.

Occasionally patients will have a tendinopathy and they will respond well to hip strengthening.

Be encouraged that this isn't the norm. But if you do feel you have hit a block, then reach out to us at Click Physiotherapy! We would be delighted to help you achieve your goals through video conference.

CHAPTER 4

PHYSIOTHERAPY TREATMENT

Initial Management of Achilles Tendinopathy

To begin you can utilise the PRICE method which is outlined on our knee bursitis page.

However we would advise that you skip the compression step, as tendons do not respond well to compression.

Types and Progression of exercises?

Throughout the course of your rehabilitation, exercises for Achilles tendon pain will change. Initially it is important to avoid stretches, especially with insertional Achilles tendinopathy, as these compress the tendon again your heel.

Early stage exercises are low-level and designed to simply allow your tendon to tolerate some load. These usually occur in the form of an isometric exercise.

An isometric exercise is contracting the muscle but not moving through any range. For example, going onto your toes and holding halfway up for 10 seconds would be an isometric exercise.

Early Phase Exercises

One of the easiest exercises you can perform in the initial stages of Tendinopathy is the following: In sitting, lean on your elbows and gently lift your heels just off the ground so the weight is in your toes. Hold with the heels off the ground for 10 seconds before returning to the starting position.

If this hurts, you would adjust how much pressure you put through your elbows as you rest on the knees. You can repeat this exercise at least 10 times.

Mid Phase Exercises

As your Achilles tendon becomes less painful, you can progress the heel raises to a standing position. In standing you would gently lift your heels approximately 1cm from the ground and hold for 10 seconds.

This is called an isometric contraction - where your muscle is working, but not moving through range.

To make this exercise easier, you can lean towards the unaffected side initially.

As the Achilles tendon pain eases off, continue to make this exercise more difficult. You can then attempt moving more weight to the injured side, until you can perform the exercise just on one leg.

After you have mastered the isometric holds, then go to full calf raises in standing.

End Phase Exercises

Performing single leg calf raises will not cut it for some people. If you are improving but still slightly symptomatic, you may need to add weight to the single leg calf raise. The easiest way to do that is to wear a backpack with some weights in to make the exercise more resisted. (Or you can use a weight bare like the picture on the right displays)

Once calf raises are mastered it’s time to begin adding jumping into your routine. This is important because it allows the tendon to tolerate being stretched and released like a rubber band.

You can start with small double leg jumps on firm ground. As you improve, jump higher and progress to single leg hops.

Eccentric Exercises for Achilles Tendon Pain

You may have heard of this type of exercise for tendon pain before. Eccentric exercises mean the muscle is under load but lengthening.

Imagine trying to hold something too heavy for you, your arms are working, but they slowly drop down under the weight. Your muscles would be working eccentrically in this scenario.

Eccentric exercises have been shown to be effective in treating Achilles tendinopathy. They used to be performed in isolation, however now research has proven other methods of exercise work just as well.

It is our recommendation that these exercises are still used, but put into the mid to late phase of your tendon rehabilitation.

How to perform an eccentric calf-raise

You want to be standing on the edge of a step so that your heels are hanging of the edge. Use your good foot to lift your heels right up so you are standing on your toes. Now, transfer your weight to the sore leg and slowly lower your heels, making sure your calves are working all the way down.

A good amount to aim for is 15 repetitions and three sets. Keep in mind you shouldn’t have pain that goes above about a 5/10.

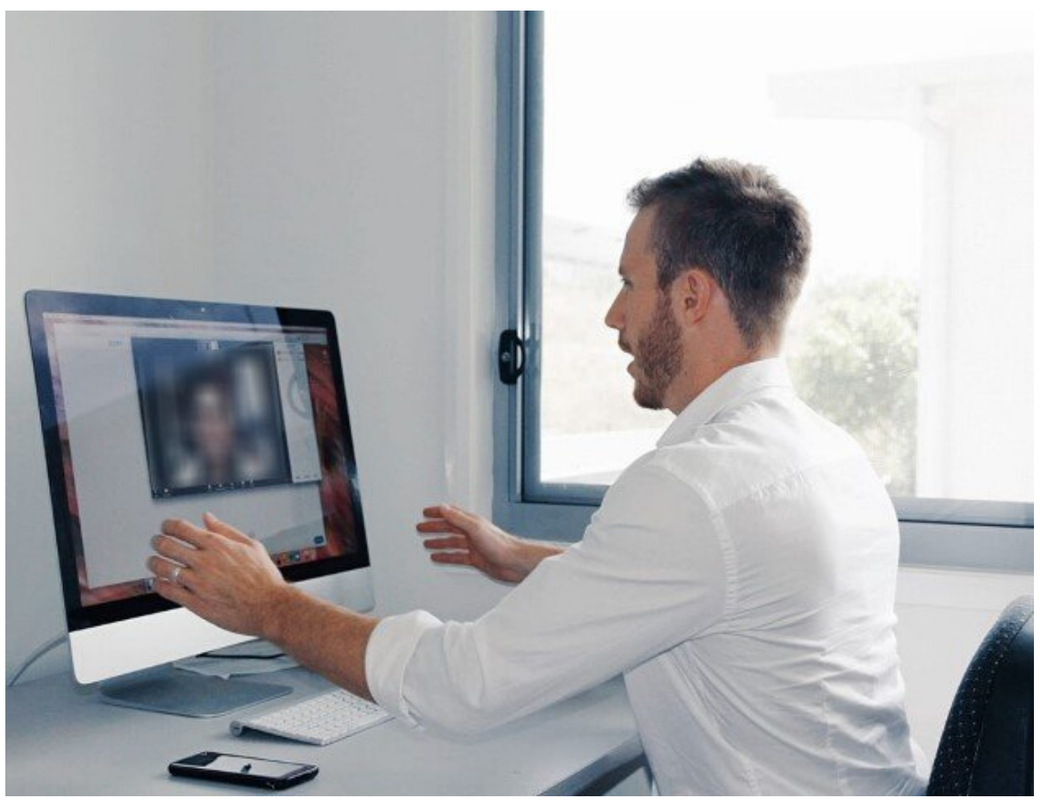
Exercises to avoid with Achilles tendon pain

Just as exercises can help your tendon pain – they can also flare a tendon up. Performing exercises your tendon isn't ready for can dramatically increase the pain.

If this happens to you, then try to find a baseline set of exercises that you can perform without aggravating any tendon pain.

Early on it is advisable to stay away from stretching, particularly with an insertional Achilles tendinopathy. This is because tendons hate being compressed. As you stretch the calf muscle, your tendon is pulled against the heel bone, causing compression at the site of injury.

If you feel that your calves are tight, it's ok to get massages. This can provide some short-term relief, however it will not be a long term fix.



Why Online Physiotherapy for rehabilitation of Achilles tendon pain?

Online physiotherapy is perfectly positioned to help people with Achilles tendon pain. This is because the main treatment is a rigid approach to load management and then a very specific exercise routine specifically targeting the stage of tendinopathy.

The diagnoses of Achilles tendinopathy can easily be made over video-conference with a skilled physiotherapist and treatment can be tailored. The benefit of online physiotherapy is in the follow-up. You will be able to message your physiotherapist whenever you have questions, and your rehabilitation program will be constantly updated depending on your needs.

For more information on why online physiotherapy is better for managing certain conditions please check out our blog on '7 reasons to choose online physiotherapy'.

Click here to book!

Achilles Tendinopathy Rehabilitation - DIY Online Course

Lots has changed in the managment of Achilles Tendionpathy over the years. From hands on therapy, our treatment has now progressed due to large amounts of research into the causes of tendinopathy.

Now our understanding has moved to progressive loading with specific exercises which are targetted and performed at the right time. The good news is that we have developed a self-paced Achilles tendinopathy online course that has the potential to get rid of your pain and restore the tendon function.

Our online course will offer exercise and advice that is designed to take you from start to finish. Why see a physiotherapist for this condition when you can treat it yourself with careful guidance through each step? Our course will come with high quality video instruction, and quality information so you will never be left in the dark.

Please click the link below to sign up for obligation-free information if you are interested in becoming pain-free. This course will be available shortly and by clicking this link you will have access to VIP pricing.

Click Here!!

CHAPTER 5

OTHER TREATMENT OPTIONS

Are there other conservative treatment options for Achilles tendon pain?

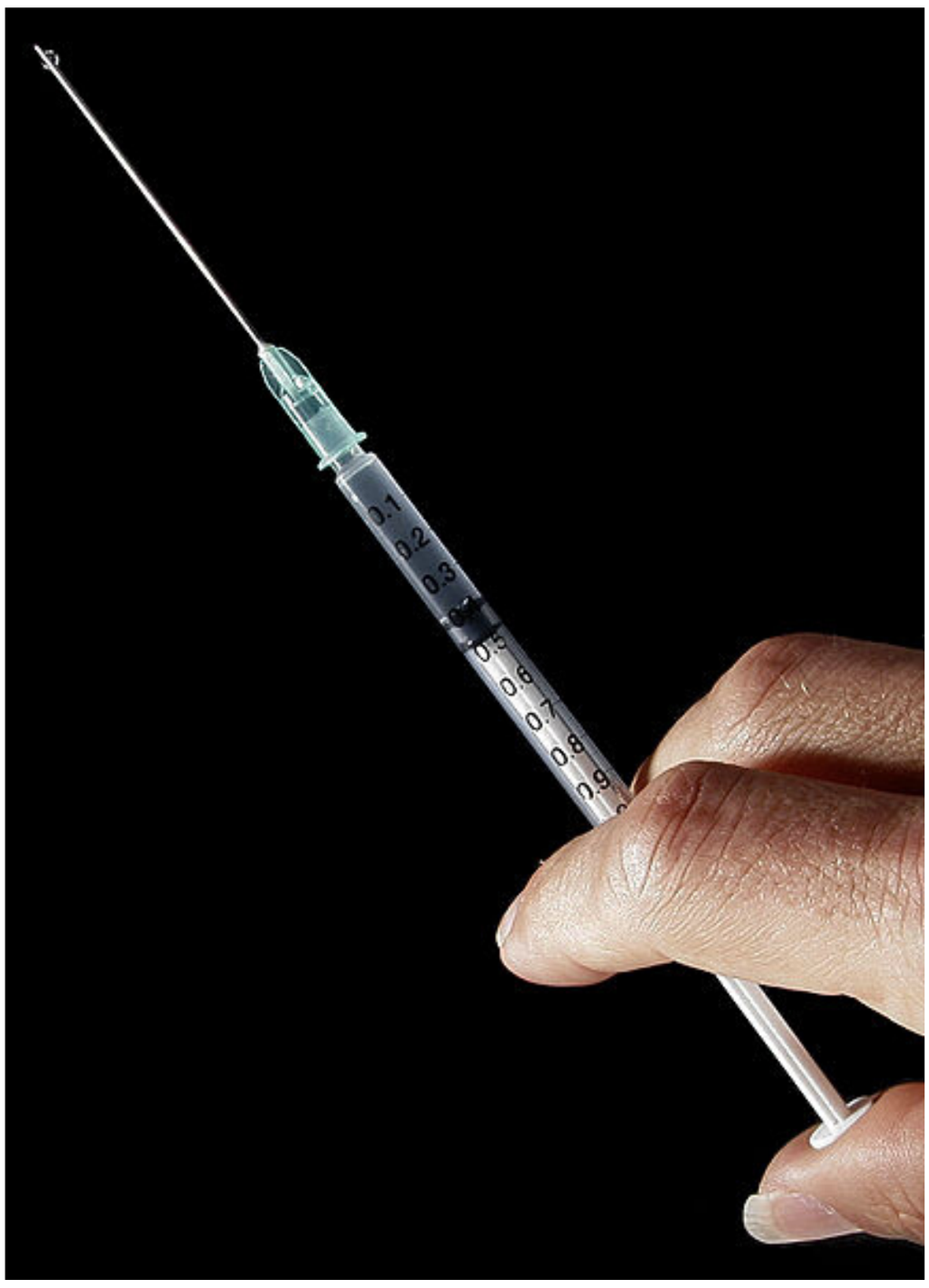
There have been many treatment options proposed over the years to combat tendinopathy. In the past ultrasound was thought to have an effect by causing deep heating to the tendon. This is now discouraged, as there is minimal evidence to back up its effectiveness.

A couple of alternate treatment options are listed below for your information:

Shockwave Therapy

Shockwave therapy has been extremely popular in the past couple of years for the treatment of tendinopathies. There is low-level evidence that this could be an effective treatment technique, however this does not work on everyone.

It is a valid alternative method to try if thorough conservative treatment failed. The reason is that Shockwave therapy is non-invasive and has some effects on tendon healing in lower limb conditions.



Cortisone (HCLA) & Platelet Rich Plasma Injections

These injections, involve injecting a local anaesthetic or blood products into the tendon in the hope of decreasing pain and inflammation and promoting healing.

They can be helpful in the short-term to relieve pain and symptoms, but are not helpful in resolving the condition entirely.

If you are struggling with pain, then it can be an option to consider. However, load-based exercise is still the cornerstone in the treatment of Achilles tendinopathy.

Keep in mind that repeated cortisone injections have been shown to weaken the tendon structure. Therefore, if one injection was not effective or only effective for a short term, it’s not advisable to continue with more of these injections.

Extrateninous High Volume Injection

The concept of this treatment is to place a large amount of needles in a small area and inject saline and local anaesthetic. The theory is that this will help to break apart small blood vessels and nerves, and helps to restart the healing process of the tendon.

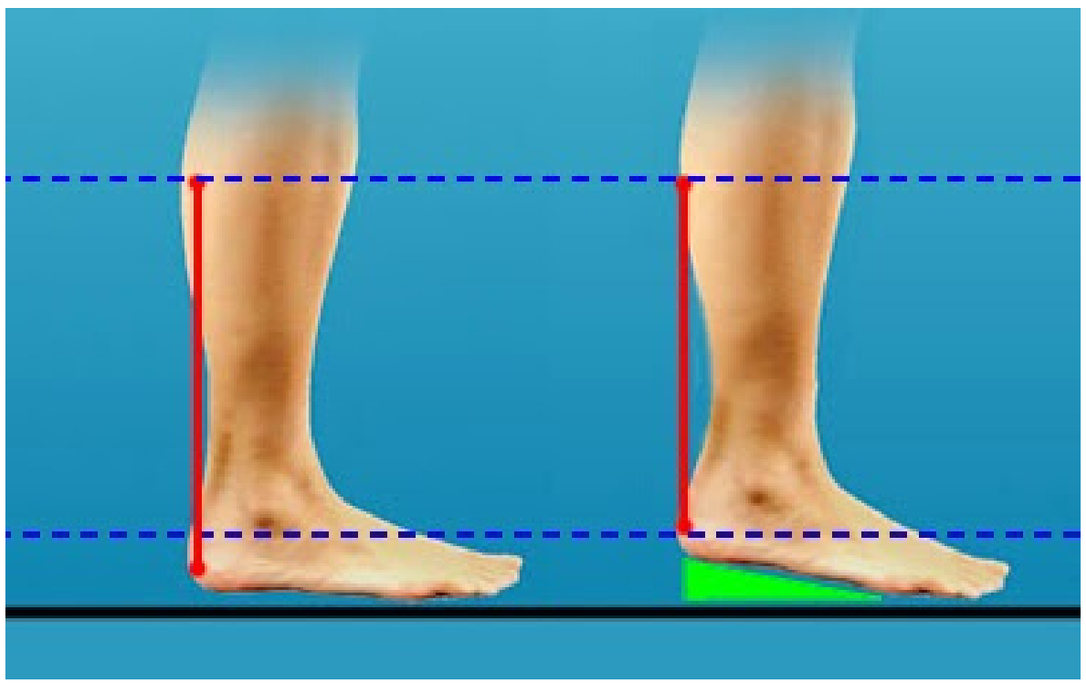
There has been some encouraging results in studies that have used this in conjunction with eccentric exerciess for Achilles Tendinopathy.

Heel Lifts for Achilles Tendinopathy

Heel lifts can have dramatic effects on Achilles tendon pain! Our recent article on heel lifts highlights the benefits of giving these little wedges a try.

There is evidence that heel lifts can help to change the load on the Achilles tendon. They shorten the distance between the heel and your calf muscle. This is true for walking and running.

Considering there are no side-effects and these wedges are very cheap, we would always recommend trialling them for Achilles Tendinopathy.



Surgery for Achilles Tendon Pain (Tendinitis)

Surgery is rarely offered from an Achilles tendinopathy without a full rupture of the tendon. If conservative management has failed, you doctor may refer you to an orthopaedic surgeon for a second opinion.

Some options for surgery is removal of any Hagland’s deformity or other bony prominence that might be compressing on the tendon.

The surgeon may opt to remove the bursae to relieve some compression on the tendon.

The surgeon will also cut in the direction of the tendon fibres to remove any adhesions that could hold the tendon together. This can help to reorientate the tendon fibres that get all tangled with the tendinopathy.

CHAPTER 6

COMPLICATIONS & PREVENTION

Complications of Achilles Tendon Pain

There are a few possible complications of Achilles tendon pain that isn't managed well. Most of these are avoidable with proper management of the condition.

Back and knee pain

Achilles tendon pain will cause you to limp as your walk, especially if it is severe. A prolonged limp can put more strain on the opposite knee and your lower back.

Some people will experience knee or low back pain even without a notable limp. This is probably due to the person subconsciously favouring the unaffected leg.

Prolonged symptoms – degenerative tendinopathy

As explained earlier, if symptoms aren't managed there is a possibility the tendon will not adapt to the load placed on it. If this is the case the tendon will work through the stages of reactive, then dysrepair and finally to the degenerative phase.

A degenerative tendinopathy is structurally different from a normal healthy tendon. It won't adapt as well to changes in load and you may notice ongoing pain with certain activities.

This doesn't mean that the healthy part of the tendon won't respond to good load management. So you can still be pain-free with a partly degenerate Achilles tendon.

Tendon rupture

When Achilles tendinopathy is left untreated, there is a greater chance of full rupture. This is where the Achilles tendon completely snaps, requiring prolonged immobilisation or surgery to fix it.

Prevention of Achilles tendon pain

Prevention of Achilles tendinopathy involves carefully monitoring the amount of load on the tendon. If you have a big event coming up, make sure you train for that event over several weeks, adjusting your load to match.

Keep in mind that tendons take 3 months to adapt to different loads. This means, you should train more than 3 months in advance of any major athletic or sporting event.

For the average weekend hiker, make sure your fitness is kept up. This will help to keep your tendons strong and used to changes in load.

The bottom line

Achilles tendinopathy can be very debilitating and will require specific rehabilitation to get the proper healing. People with pain for more than a few months should look at the amount of loading on the tendon and adjust as needed.

This condition will respond well to conservative management and rarely requires operative management.

For help with your Achilles tendinopathy, please book an online appointment at Click Physiotherapy to get pain-free quickly.

Click here to visit Click Physiotherapy

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