



YOUR GUIDE TO

ACHILLES TENDON DISORDERS

MUSCULOSKELETAL

Contents

What is the Achilles Tendon?	3
What is Achilles Tendonitis/Tendonosis?	3
What causes Achilles Tendonitis/Tendonosis?	4
What treatment can I receive?	5
What exercises should I do?	6
Exercises	7

Introduction

Please take note of the following before starting any of the exercises in this guide:

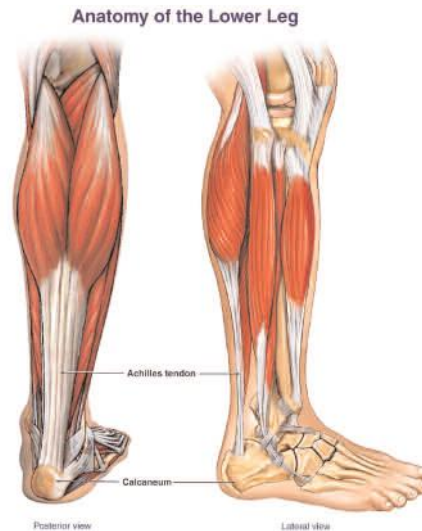
- The information contained in this guide is intended to assist in managing your recovery.
- This guide is based on the latest medical research in the field and contains the best advice available to the best of our knowledge.
- This guide is complimentary to other medical services and is not intended as a substitute for a health care provider's consultation. Never disregard medical advice or delay in seeking advice because of something you have read in this guide.

● Many people have found quick and lasting relief from their pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

When consulting your health professional, it is wise to take this guide with you to show them.

What is the Achilles Tendon?

A **tendon** is a band of tissue that connects a muscle or group of muscles to the bone. The **Achilles tendon** is the largest tendon in the body, and is the common tendon of the calf muscles (Gastrocnemius, Soleus and Plantaris), connecting the calf muscles to the heel bone (Calcaneus). The function of the Achilles tendon is to transmit the force produced by the calf muscles to the foot & to propel the body forward during walking & running. It is vulnerable to injury because of its poor blood supply and the combination of forces to which it is subjected.



What is Achilles Tendonitis/Tendonosis?

Achilles tendonitis is an inflammation of the Achilles tendon, which can cause severe pain and swelling, usually in the area just above the ankle (this is the area of the tendon that receives the least blood supply). This inflammation is typically short-lived but over time the condition usually progresses to a degeneration of the tendon known as **Achilles tendonosis**. With Achilles tendonosis, the tendon loses its organised structure and is likely to develop small tears, which the body continually tries to repair. If the repair process is

slower than the injury process (or development of small tears) a chronic degeneration can result, where the tendon gets thicker and harder with calcium deposits forming, resulting in nodules. This chronic degeneration, with or without pain may result in rupture of the tendon. Achilles tendon rupture usually occurs at a point 4-5 cm above the heel bone due to the poor blood supply and reduced healing properties in this area. Rupture can occur at any age but is more common in athletes involved in explosive movements and individuals

over 20 years of age. It can be a full thickness rupture or partial rupture, with imaging studies (x-ray, ultrasound, MRI) being helpful in confirming the diagnosis. Due to the complexity of this injury and the

importance of a good rehabilitation programme to regain full function, it is important that you have a full assessment and get an accurate diagnosis.

What Causes Achilles Tendonitis/Tendonosis?

- Achilles tendonitis and tendonosis are usually caused by a **sudden increase of repetitive activity** (overuse) involving the Achilles tendon. Such activity puts too much stress on the tendon too quickly, leading to the degeneration described above, with pain and inflammation resulting.
- **Athletes** are at high risk for developing disorders of the Achilles tendon but these disorders are also common in those individuals whose jobs involve stresses being placed on the ankles and feet.
- **Running up hills** results in the Achilles tendon being stretched more than normal on every stride. This is fine for a while but will mean the tendon will fatigue quicker than normal.
- **Over pronation** (flattening of the arch of the foot) can place an increased strain on the Achilles

tendon when walking and running. As the foot rolls in (flattens) the lower leg rotates inwards, which also twists the Achilles tendon, placing twisting stresses as well as stress along the length of the tendon.

- **Wearing high heels** consistently can shorten the muscle and tendon. This will place abnormal strain on the Achilles tendon when flat or running shoes are worn with a greater stretch being placed on the tendon than it is used to.
- Although Achilles tendonitis and tendonosis affects people of all ages, **increasing age** does have a role to play in increasing the risk of injury. This is due to the further reduction in blood supply to the already poorly supplied tendon as well as other age related factors.
- **Leg length discrepancy** (one leg is longer than the other)

What Treatment Can I receive?

Treatments may include ice, compression, taping, deep friction massage, and a gradual strengthening exercise programme. Treatment approaches for Achilles Tendonitis and Tendonosis should be selected on the basis of how long the injury has been present and the degree of damage to the tendon. In the early stages when there is sudden (acute) inflammation, the following options may be recommended

- **Relative Rest:** Temporarily stopping the activity that causes the pain is essential to allow healing to the injured tendon. Depending on the severity of the injury this may involve immobilisation through the use of a cast or removable walking boot to reduce the forces through the tendon and promote healing

- **Ice the affected area** Apply ice packs to the affected area for 15 to 20 minutes at a time, four times a day for several days. To protect your skin, wrap the ice packs in a thin towel. It also may help to massage the tendon with ice for five minutes at a time, two to three times a day as this will help to reduce the pain. It is important to be aware of the risk of burns when using ice and to never place the ice directly on the skin. Also check the area regularly.

- **Medications:** Nonsteroidal anti-inflammatory drugs, may be helpful in reducing the pain and inflammation in the early stages of the condition.

- **Physiotherapy** Treatment may include ice, compression, taping, deep friction massage, and a gradual stretching and strengthening exercise programme. Physiotherapy and rehabilitation are also an important treatment option in patients with chronic tendonosis as well as the post surgical management of a tendon rupture. Your physiotherapist may also refer you to a podiatrist if they identify during the assessment that biomechanical factors could be contributing to your injury.

How do I prevent recurrences?

To avoid future problems with Achilles tendonitis/tendonosis, try the following:

- Continue with the rehabilitation programme in this pack which is focused on stretching and strengthening the muscles of your lower leg. Compliance with the rehabilitation programme given to you in this pack or by your physiotherapist will help to ensure full recovery and prevent future problems.
- Follow a good stretching routine focusing on the calf muscles before exercising or walking.
- Use heel lifts and cushions in your shoes. It is important to consult with

your physiotherapist or other allied health professional before using these to determine their relevance to you.

- Ease back into exercise slowly, allowing time for the tendon to heal.
- Wear shoes that stabilize your feet during motion and are specific to the activity you are partaking in. Limit the time spent in shoes with high heels and ensure that your trainers are correct for your foot type before commencing any physical activities. If the pain persists, it is advisable that you consult an allied health professional, as Achilles tendonosis may require cast immobilization or surgery in extreme cases.

What exercises should I do?

It is important that you are aware that this is a general exercise programme for Achilles Tendonitis/Tendonosis, which can be adjusted depending on advice that you have been given by your health professional on assessment.

INSTRUCTIONS

- Keep all exercises in your pain free limits. **Trying to work in painful ranges will only prolong your recovery.**
- If you experience pain during any of the exercises, decrease the intensity of the exercises by:

- decreasing the number of sets
- decreasing the number of repetitions
- decreasing the range of movement
- decreasing the resistance
- Do all exercises slowly and breathe normally.
- Progress gradually according to your own level of comfort.
- Following exercise, stiffness or fatigue may result but should not last longer than 24 hrs. The symptoms of your injury should not be aggravated.

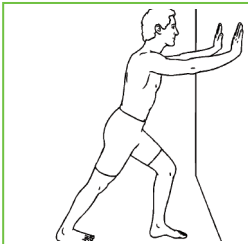
Exercises phase 1

Ensure that you read the above instructions carefully before starting

this exercise programme. **Always work in pain free ranges of movement**

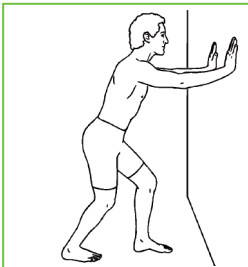
STRETCHING EXERCISES

- Hold each stretch for 30 seconds and repeat 2-3 times on each side
- Do not stretch into pain. You should feel a comfortable pull with the stretches but not pain.
- Do not bounce the stretch.



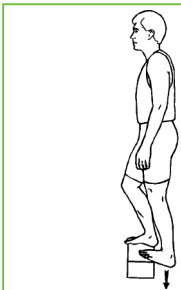
GASTROCNEMIUS STRETCH

Leaning against a wall, keep the back leg straight, with the heel on the floor and foot pointing in a straight line to the wall. Lean into the wall until a stretch is felt in the middle to upper calf.



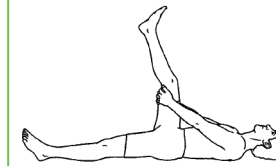
SOLEUS STRETCH

Leaning against a wall, keep the back leg slightly bent, with the heel on the floor and foot pointing in a straight line to the wall. Lean into the wall until a stretch is felt in the lower calf.



PLANTAR FASCIA STRETCH

Stand with the ball of one foot on a stair. Slowly reach for the bottom of the step with your heel until a stretch is felt through the arch of your foot.



HAMSTRING STRETCH

Lying on your back, one leg straight and one knee bent. Raise the bent leg up towards your chest until your knee is in line with your hip. Now straighten the knee. You should feel a stretch at the back of your leg. You can use a towel if necessary to aid you in lifting your leg for the stretch.

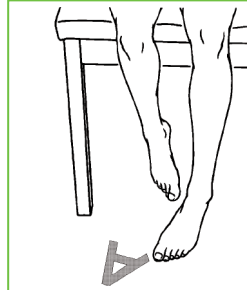


QUADRICEPS

Lying on your right side, your right arm extended up to cushion your head, use your left hand to grasp your left ankle as you bend your left knee backwards. You should feel the stretch along the front of your thigh. Repeat this twice on your right before rolling over to stretch your left leg. It is important to keep the other leg bent at both the hip and the knee, so as not to hyperextend your back.

STRENGTH AND RANGE OF MOVEMENT EXERCISES

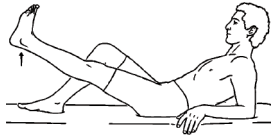
- Do each exercise within your pain free range of movement
- Make sure that you control the movement in both directions



ANKLE ALPHABET

Sitting on the floor (or over the edge of the bed) with one leg bent, the other outstretched in front of you and your arms supporting your back by bringing them close to your body. Now raise the other leg off the floor, keeping the knee straight and leg still, paint the alphabet in the air with your toes using capital letters and going slowly to get full range of movement in your ankle.

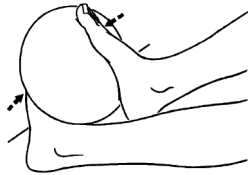
Exercises phase 1 (continued)



STRAIGHT LEG RAISES

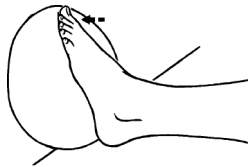
Sit on the floor with one knee bent and your arms supporting your back by bringing them close to your body. Now raise the other leg 20cm off the floor, keeping the knee straight. Lift up and down in a slow, controlled manner. Relax and repeat 2 sets of 10 reps on each leg.

- 1) Toes pointing straight upwards
- 2) Toes pointing outwards.



STATIC DORSIFLEXION WITH PILLOW

Place a rolled pillow on top of injured foot with opposite foot on top and squeeze feet together. Hold for 10 seconds and repeat 10 times



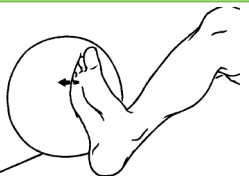
STATIC PLANTAR FLEXION WITH PILLOW

Place a rolled pillow against the wall, and press your foot into the pillow. Hold for 10 seconds and repeat 10 times



STATIC INVERSION WITH PILLOW

With rolled pillow between feet, press inner border of feet into pillow. Hold for 10 seconds and repeat 10 times.



STATIC EVERSION WITH PILLOW

Place a rolled pillow against the wall and press the outer border of foot into pillow. Hold for 10 seconds and repeat 10 times.



STANDING HEEL RAISE

Whilst standing, raise up onto your toes in the following manner: First onto your big toe, then onto your middle toes and lastly onto your little toe. This sequence equals one repetition. Repeat sequence 10 times.



STANDING TOE RAISE

Supporting yourself against a wall, raise up onto your heels (i.e. raise your toes off the floor) in the following manner: firstly onto the inside of your heel, then onto the middle of your heel and lastly onto the outside of your heel. This sequence equals one repetition. Repeat sequence 10 times.



STORK STANDING

- Balance on one leg for 30 seconds and repeat with the other leg.
- Repeat the above with your eyes closed. Progress the above to standing on an unsteady surface, e.g. a cushion or a narrow piece of wood.



TOWEL CRUNCHES

Sitting on a chair with your feet on the end of a towel on the floor. Keeping your heels on the floor, use your toes to crunch the towel up. Keep doing this until you reach the other end of the towel and then start again. Repeat this for 3-5 towel lengths. (Progress by adding weight on the towel and then using one foot at a time).

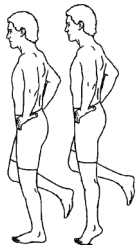
Exercises phase 2

Do not start this phase of exercise until the above exercises are pain free and you are able to do them with control. The final exercise of this phase is slightly harder than the rest and you may have to build up to be able to do this. Ensure that you have been doing the rest of the exercises pain free for at least a week before

trying to progress to hopping or running drills. Start with the hopping drill using both feet and then progress to single leg and running. **Make sure you do not try and progress yourself too quickly and that all exercise are done in a pain free range of motion.** Continue with the stretching exercises as in Phase 1

STRENGTH EXERCISES

- Complete 2 sets of 10-15 reps of each exercise
- Make sure that you control the movement in both directions
- Always work in a pain free range of movement. Even if this requires you to start with a reduced range of movement. This should improve as you progress in strength and stability



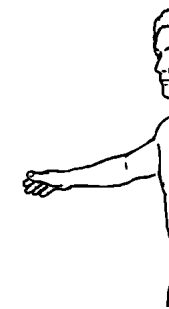
SINGLE LEG HEEL RISE

Standing on one leg, supporting yourself against a wall, raise up onto your toes in the following manner: First onto your big toe, then onto the middle of your foot and then onto your little toe. This sequence counts as one repetition. Control the movement in both directions



STANDING TOE RAISE

Standing with your weight now on your heels, raise your toes off the ground in the same sequence as the calf raises, i.e. middle of your heel, outside and inside. This sequence counts as one repetition. Control the movement in both directions



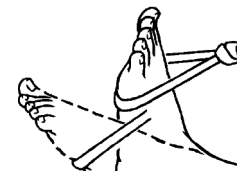
STORK STAND PICK UP

Standing on one leg, with your weight on your heel, bend down to pick up a weight off the floor with the opposite hand, ensuring that your weight stays on your heel, and that your knee goes down in line with your second toe. Also ensure that your knee and not your back does the bending work. Up and down is one repetition. You can start by placing the weight on a chair and progress to picking it up off the floor.



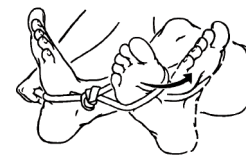
DORSIFLEXION WITH BAND

With the tubing anchored to a fixed object, pull the foot towards your face. Return slowly to your starting position.



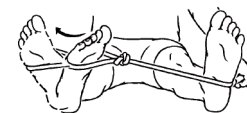
PLANTAR FLEXION WITH BAND

Whilst holding one end of the tubing and the other tied around your foot, press the foot downwards. Return slowly to your starting position.



INVERSION WITH BAND

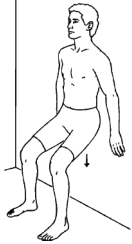
Cross your leg with the ankle you are exercising underneath. Anchor the tubing around the upper foot, slowly turn the lower foot inward.



EVERSION WITH BAND

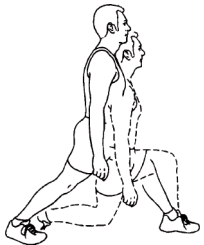
With the tubing around one ankle, slowly turn the foot outwards.

Exercises phase 2 (continued)



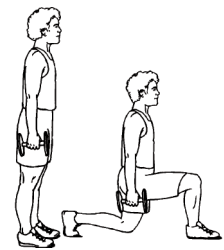
WALL SLIDES

Stand leaning up against a wall, your feet a little away from the wall and pointing slightly outwards. Push your back against the wall. Slowly lower your body into a seated position and hold this position for 5-10 seconds. Ensure your knees are at 90° and don't go over your toes. Complete 10 repetitions.



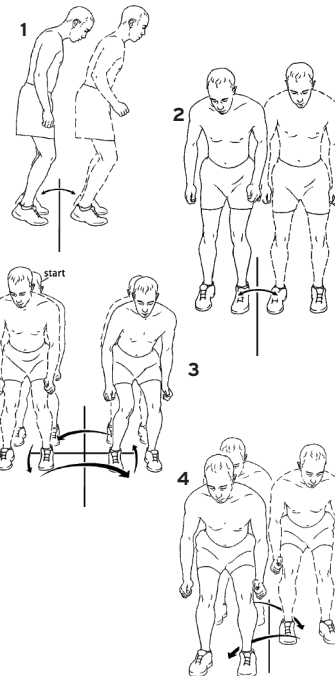
STATIC LUNGES

Place one foot in front of the other. Bend both knees together until you have a 90° bend in both. Ensure that your front knee does not go over your front foot when bending to 90°. Return to the starting position. Perform 1 set of 10 reps per leg (complete all 10 reps with the one foot forward before changing and starting with the other leg in front). Progress this by stepping into the lunge and back to start position. Again ensure a 90/90 bend in your knees as you lunge forwards



MINI SQUATS

Stand with your feet shoulder width apart and hold onto a chair in front of you. Now bend the knees slightly, performing a small squat, hold for 5 sec. and then straighten the legs. Repeat this 10 times.



HOPPING

Hop from one point to another in the following sequences

1. Forward and backward
2. Side to side
3. Jump in a square
4. Jump diagonally forwards and backwards across a central imaginary line

Repeat each sequence 10 times per leg.

RUNNING DRILLS

these can also be performed to ensure that the Achilles tendon is pain free with different speeds of running i.e. sprints, stop/start, forwards/ backwards, side stepping etc. Try and simulate the activity you will be performing in this stage

Contact us

This guide is designed to assist you in the self-management of your injury/condition.

We are here to assist your recovery in the shortest but safest possible time. If you have any uncertainties or queries regarding the information, please do not hesitate to contact us on:

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