



YOUR GUIDE TO ACHILLES RUPTURE

MUSCULOSKELETAL

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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 Achilles Rupture 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 an Achilles Tendon Rupture?

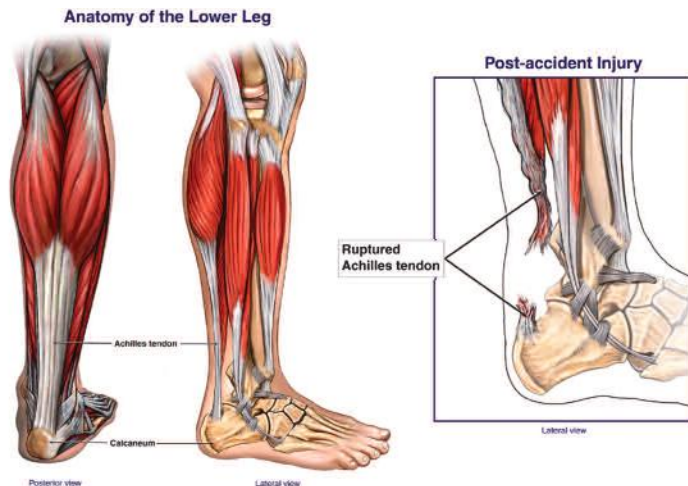
An **Achilles tendon rupture** is the partial or complete rupture (tear) of the tendon. Patients often report hearing a loud snap or pop followed by a sharp pain in the back of the lower leg that makes it impossible to walk properly. Most patients describe it as feeling like they have been kicked in the back of the leg. **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. You rely on it virtually every time you move your foot. **The Achilles tendon is**

vulnerable to injury because of its poor blood supply and the combination of forces to which it is subjected. Achilles tendon rupture occurs most commonly in men 30 to 50 years old. Most ruptures originate during strenuous physical activity, but **spontaneous rupture** can occur in the elderly. Usually the rupture occurs just above your heel bone as it is this region that has the poorest blood supply and is therefore the most susceptible to injury. Rupture can however occur anywhere along the tendon. An Achilles tendon rupture can often be hard to diagnose because some function frequently remains therefore imaging studies (x-ray, ultrasound, MRI) can be very helpful in confirming the diagnosis

CAUSES

- **Overuse:** Achilles tendonitis and tendonosis are usually caused by a sudden increase of repetitive activity involving the Achilles tendon. Such activity puts too much stress on the tendon too quickly, leading to small tears occurring in the tendon fibres. Due to this ongoing stress on the tendon, the body is unable to repair the injured tissue resulting in the structure of the tendon being altered. The tendon becomes thickened, hardened and weakened, which can all lead to a sudden rupture occurring
- **Activity involving stop - start footwork and explosive movements:** (i.e. playing tennis, basketball, long jump)
- **Running up hills and on hard surfaces:** This puts greater strain on the tendon

- **Poor stretching habits**
- **Tight calf muscles:** This can be exacerbated by wearing high heeled shoes regularly
- **Weak calf muscles:** Poor muscle strength puts extra strain on the tendon
- **Footwear:** Shoes that are worn out or inappropriate for the activity being performed may result in a chronic tendonosis and eventual rupture
- **Over pronation or flat feet:** People with excessive pronation (flattening of the arch) have a tendency to develop Achilles tendonitis and tendonosis due to the greater demands being placed on the tendon during walking. If untreated this could result in a tendon rupture



What treatment can I receive?

Treatment for Achilles tendon ruptures can be surgical or non-surgical.

SURGICAL

The usual treatment for a complete rupture of an Achilles tendon is surgery. The procedure generally involves making an incision in the back of your lower leg and stitching the torn tendon together. Depending on the condition of the torn tissue, the repair may be reinforced with other

tendons. You can expect to be in hospital for two days, in a non-weight bearing cast for six to twelve weeks and a total of eight weeks on crutches. To promote healing and to avoid stretching the surgical repair, your foot may initially be pointed slightly downward in the boot or brace, and then moved gradually to a neutral position. If you are very active and want to resume strenuous sports or recreational activities, surgical repair

is usually preferable. Surgery is generally very effective, and your risk of complications is typically quite low. Due to the speed of muscle atrophy (weakness) that occurs when a cast is applied, it is important to start with some basic range of movement exercises for the toes as well as isometric exercises against the cast to maintain some lower leg muscle strength. This will also promote circulation and prevent any other complications. It is however important to consult with your surgeon before beginning any exercises.

NONSURGICAL

This approach typically involves wearing a cast or walking boot, which allows the ends of your **torn tendon** to re-attach themselves on their own. This method can be effective, and it avoids the risks, such as **infection**, associated with surgery. However, the likelihood of **re-rupture** is higher with a nonsurgical approach, and recovery can take longer. If re-rupture occurs, surgical repair may be more difficult. If you are less active or have a chronic illness, you may wish to opt for non-surgical treatment, which precludes wound complications and exposure to anesthesia, and is less expensive.

PHYSIOTHERAPY AND EXERCISE REHABILITATION

After treatment, whether surgical or non-surgical, you'll go through a **rehabilitation** programme involving physical therapy exercises to

strengthen your leg muscles and **Achilles tendon**. Most people return to their former level of activity within four to six months. **Recovery** depends not only on the quality of the rehabilitation programme but also on your commitment to adhering to the rehabilitation programme and advice given by your health professional. When the cast is finally removed, the calf muscle in the injured leg will have suffered from **severe atrophy** (weakness and reduction in size), and will be nearly half the size of the healthy one. Range of motion in the ankle region will be severely reduced and it is essential that this is regained throughout the rehabilitation programme to ensure that previous levels of activity are attained.

The goal of rehab is simple; to regain range of motion in the tendon and strengthen the muscles on the front and back of the lower leg. The tightness in the tendon will prevent bringing the foot to a 90-degree angle to the leg. Before starting rehabilitation sessions after the removal of your cast, it is important that you consult with your surgeon to ensure that appropriate healing has occurred. Physiotherapy will start out slowly with heat therapy, electro-stimulation, stretching and massage. Then treatment is progressed with exercise to increase the range of motion, balance and strength. It will be slow and painful, but the mobility and strength should improve with each visit.

What exercises should I do?

It is important that you are aware that this is a general exercise programme for Achilles tendon Rupture, 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.

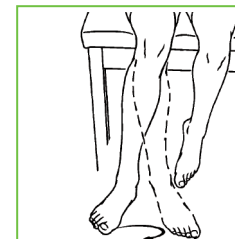
Exercises phase 1

Before starting this exercise programme ensure that you have consulted with your physiotherapist or allied health professional and they

are happy for you to continue. Read through the instructions above and **make sure that you work in a pain free range of movement**

MOBILITY EXERCISES

- **Perform 10-15 times in each direction.**
- **Work in a pain free range of movement, gradually increasing your range as you are able.**



ANKLE CIRCLES

Slowly rotate foot/ankle clockwise and counter-clockwise. Gradually increase range of motion. Avoid pain.

Exercises phase 1 (continued)

STRETCHING EXERCISES

- Repeat each of these stretches 2-3 times (on both sides)
- Hold each stretch for at least 30 seconds and do not bounce
- Do not take the stretch into pain, you should only feel a pull.



PLANTAR FASCITIS 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.



GASTROCNEMIUS STRETCH

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

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



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. A towel can be used to aid you in this stretch by wrapping it around your ankle.

STRENGTHENING EXERCISES

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



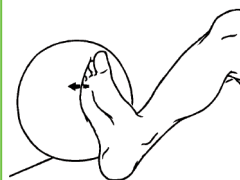
STATIC DORSIFLEXION

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



STATIC PLANTARFLEXION

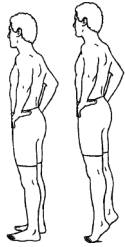
Place a rolled pillow against the wall, and press your foot into the pillow. Hold for 10 seconds and repeat 10 times. This exercise can also be done against a door frame.



STATIC EVERSION AND INVERSION

Place a rolled pillow against the wall and press the outer border of foot into pillow. Now place the pillow between the wall and the inner border of your foot and press in against the pillow. Hold for 10 seconds and repeat 10 times. This exercise can also be done against a door frame.

Exercises phase 1 (continued)



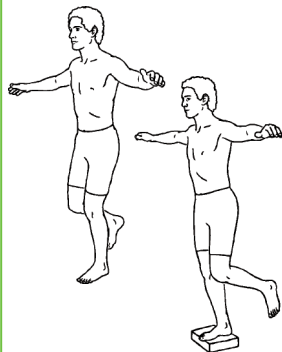
STANDING HEEL RAISE

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.

ICE

ICE

Place ice in a damp tea towel. Ice frequently during the day for approximately 10-15 minutes.

Exercises phase 2

Before starting with this phase of exercises it is important that you can complete the phase 1 exercises pain free and in a controlled manner.

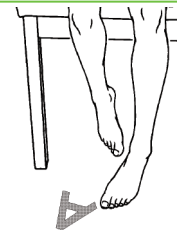
Make sure that you work in a pain free range of movement. This range of movement may be very limited to start off but should increase gradually

as you progress. Continue with the stretching exercises in Phase 1. Start with phase 2a and once these are pain free gradually progress to phase 2b. Consult with your physiotherapist before starting the hopping or running drills.

STRENGTH & MOBILITY EXERCISES

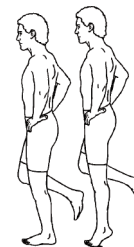
- Do 2-3 sets of 10-15 repetitions (on both sides) unless otherwise stated in the exercise.
- Do each exercise within your pain free zone.
- An elastic/theraband should be used for these exercises as shown in the pictures.

phase 2a



ANKLE ALPHABET

Using your ankle and foot, trace the letters of the alphabet. Perform the A to Z.



SINGLE LEG HEEL RAISE

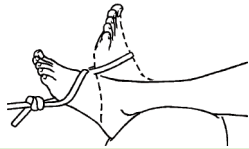
Standing on one leg, supporting yourself against a wall, raise up onto your toes in the following manner: First onto your big toe, then onto the middle of your foot and then onto your little toe. This sequence counts as one repetition. Control the movement in both directions

Exercises phase 2a (continued)



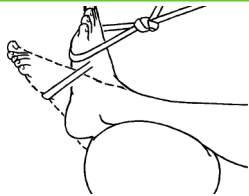
STANDING TOE RAISE

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.



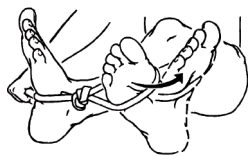
DORSIFLEXION WITH BAND

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



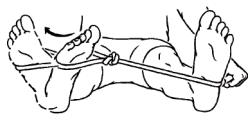
PLANTAR FLEXION WITH BAND

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



INVERSION WITH BAND

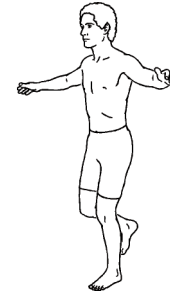
Cross your leg with the ankle you are exercising underneath. Anchor the tubing around the upper foot, slowly turn the lower foot inward.



EVERSION WITH BAND

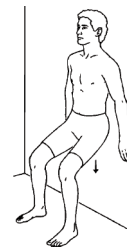
With the tubing around one ankle, slowly turn the foot outwards.

phase 2b



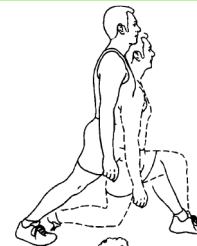
STORK STAND PICK-UP

Standing on one leg, with your weight on your heel, bend down to pick up a weight 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.



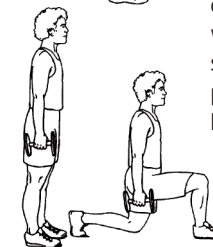
WALL SLIDES

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.

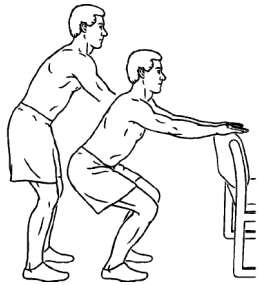


STATIC LUNGES

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

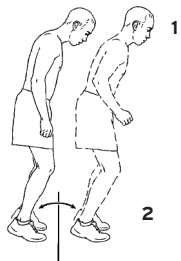


Exercises phase 2b (continued)



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.

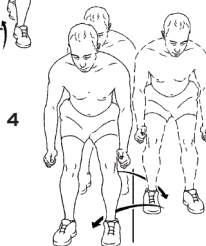
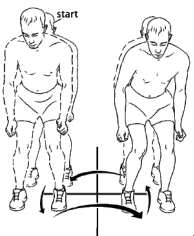


HOPPING

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:

Phone 017890400999 / 07870166861

www.mdphysiotherapy.co.uk