

PATIENT INFORMATION SHEET

INFORMATION REGARDING NON-OPERATIVE AND OPERATIVE MANAGEMENT OF A RUPTURED ACHILLES TENDON

You have sustained a rupture of your achilles tendon. This is a relatively common injury which can be quite debilitating, whether treated with surgical repair or managed non-operatively. The achilles tendon is the main tendon connecting your calf muscle to your heel. The calf muscle is an important muscle for push-off strength in your leg and standing on your toes.

When you rupture the achilles tendon, there is loss of continuity between the calf muscle and the foot. Patients have described an acute achilles tendon rupture to feel like a sudden snap or even a gunshot in the back of the heel.

For most experienced clinicians, x-ray or ultrasound is not required to diagnosed an achilles tendon rupture as the clinical signs are normally diagnostic. If the clinical examination is inconclusive, you may be referred for an x-ray, ultrasound or MRI scan depending on the case.

Sometimes certain types of medication such as antibiotics, steroids (either prednisone or anabolic steroids, methotrexate or a steroid injection can increase the risk of achilles tendon rupture. Please let your surgeon know if you take/have taken any of these medications or if you take any medication that thins your blood such as aspirin, Plavix, warfarin, Pradaxa etc.



There are two methods of treating an achilles tendon rupture: operatively and non-operatively.

An operation involves a general or spinal anaesthetic. A tourniquet is applied to your leg to stop the blood flow around the operative site. An incision generally ranging from 3cm to 6cm in length is made over the back of the heel in the area of the achilles tendon. The tendon edges are opposed and sutured together with intra-substance sutures and reinforced with a smaller suture. The paratenon, or soft tissue envelope around the tendon, is then repaired if possible and the skin closed with sutures. You will wake up in a plaster cast with your foot pointed down. You will be non-weight bearing for two weeks, then transition to a boot and will start to weight bear with a heel raise in the boot for a further four weeks. Six weeks following surgery, you will see your surgeon and will gradually decrease your heel raise by 1cm each fortnight. The aim is to gradually stretch the tendon and have a neutral ankle three months following surgery. You will see a physiotherapist two weeks post-operatively once the wounds have healed to commence a rehabilitation program.

Non-operative management involves weight bearing immediately in a boot with a 3cm heel raise. You will commence physiotherapy once you have seen your surgeon and a decision has been made for non-operative management. You will weight bear in the boot with a heel raise for six weeks following the date of the rupture, and increase. You will see your surgeon again six weeks after your injury and the heel raise will be reduced by 1cm each fortnight. The aim is to gradually stretch the tendon and have a neutral ankle three months following surgery.

If you have not been placed in either a boot with a heel raise or a cast in plantarflexion (ie toes pointing down) within 24 hours following your injury, the success rate of non-operative management decreases as the tendon can be lengthened and may heal in the lengthened position. Your surgeon will ask you at what stage either a boot or a cast was applied as this is important to help determine which treatment method would be more appropriate.



Cast in plantarflexion

If you are a smoker, **is strongly advised that you stop smoking immediately** to improve the rate of tendon healing and reduce the risk of infection should you wish to pursue surgical repair. If you do smoke, or have uncontrolled diabetes, your surgeon may suggest surgical repair is not appropriate as the risk of infection is very high.

There are risks and benefits to both treatment options which have been summarised below:

Surgical repair

Risks:

Infection

In some studies the infection risk and/or wound problems following surgical repair of the achilles tendon has been reported as high as 25%. In the setting of very severe infection that is at risk to your life, unable to be controlled with surgical debridement or antibiotics, there is a very small risk of an amputation.

Sural nerve injury

The sural nerve runs around the back of the ankle and is at risk during the procedure, although all measures are taken to avoid damage to it. The nerve supplies the sensation to the sole of the foot and injury may result in permanent numbness to part or all of the sole of the foot.

Blood clots

You need to be non-weight bearing immediately following surgery to allow the wounds to heal. This can result in pooling of blood to the lower limb which can cause blood clots to your legs which can travel to your lungs. You are at increased risk of blood clots if you take the oral contraceptive pill, have a history (or your family has a history) of clotting disorders, have had a previous

blood clot or you are a smoker. Very rarely a blood clot can cause severe breathing problems or even death.

Scarring

You will have a scar at the back of the heel. Sometimes the scar can become thickened or raised and can irritate the ankle in certain types of shoes, for example high heels that cut into the back of the ankle. The achilles tendon is often thickened and has a different appearance to the other side.

Reduced range of motion

To repair the achilles tendon, it needs to be shortened slightly as the damaged tendon is pulled together. In most cases, this stretches out with time but you may notice a reduced range of motion of your ankle compared to the other side. Very rarely, in the setting of severe shortening and scarring, you may require a lengthening procedure of the achilles tendon.

Surgical repair

Benefits:

Reduced re-rupture rate

It has been demonstrated that patients who undergo surgical repair of the achilles tendon reduce their re-rupture rate to approximately 3%.

Increased push-off strength

Some studies have demonstrated a small increase in push-off strength (approximately 10-15%) with an open achilles tendon repair six months following surgery. There was no difference in push-off strength two years following surgery compared to non-operative management.

Reduced risk of functional lengthening

Surgery essentially shortens the tendon. Functional lengthening can occur when the tendon is elongated, reducing the elasticity of the tendon causing pain and weakness in the calf muscle.

Non-operative management

Risks:

Re-rupture

The re-rupture rate for non-operatively managed achilles tendon is approximately 7%. The re-rupture rate for an operatively managed achilles tendon is approximately 3%.

Functional lengthening

If you are treated non-operatively, there is a chance that the tendon could heal in a lengthened position. If this occurs, you can have reduced push-off strength and a sense of fatigue in the calf. Treatment for this condition is an FHL tendon transfer, where a tendon to the big toe is used to replace the achilles tendon. This procedure is normally well tolerated but is a bigger procedure than an acute repair of the achilles tendon.

Loss of push-off strength

Some studies have demonstrated a small decrease in push-off strength (approximately 10-15%) with non-operatively managed achilles tendon rupture six months following the injury. Most studies demonstrate no difference in push-off strength two years following surgery compared to non-operative management.

Benefits:

Avoidance of surgical complications

Non-operative management means that you avoid the risks of surgery as mentioned above. You also avoid the risk of a general or spinal anaesthetic.

Early mobilisation

You will be able to weight bear earlier as there are no wounds that may require a period of non-weight bearing to heal. This slightly decreases your rehabilitation time and reduces (but does not eliminate) the risks of blood clots to your legs or lungs.

In either treatment method, approximately 85% of patients with a ruptured achilles tendon return to sports around 6 months following their injury.

Your surgeon will discuss operative and non-operative treatment options with you. The decision to repair a ruptured achilles tendon can be controversial and is often hotly debated at orthopaedic meetings! If you would like to see another surgeon for a second opinion we are more than happy to recommend another surgeon or refer you on to a surgeon at your request.

POST-INJURY REHABILITATION

NON-OPERATIVE MANAGEMENT OF RUPTURED ACHILLES TENDON

Recovery phase

0-2 weeks post injury

Plaster backslab with your toe pointed down or CAM boot with heel raise

Commence weight bearing in the boot with a heel raise once you have seen your surgeon and the diagnosis of achilles tendon rupture has been confirmed

You may need crutches for support

Can come out of the boot for showers but need to keep toe pointed down when the boot is off

Transition phase

2 – 6 weeks post injury

Continue to CAM boot with 3cm heel raise

Weight bear as tolerated in boot and gradually wean off crutches

Knee/hip exercises in boot

Boot to be worn while sleeping

Single leg exercise bike

Return to activity phase

6 to 10 weeks post injury

Remove 1cm heel raise per fortnight

Continue to weight bear as tolerated in boot

Can come out of boot for gentle non-weight bearing range of motion exercises of the ankle

Can start swimming provided pushing off the wall and diving is avoided

Prevention phase

10-12 weeks post injury and onwards

Remove heel lift altogether

Exercises:

- Dorsiflexion stretching (slowly)
- Graduated resistance exercises
- Incision mobilisation
- Fitness/cardiovascular exercises to include weight bearing eg cycling, elliptical machine, walking, swimming
- Closed chain exercises and functional activities

12 weeks post-operatively and onwards

Remove boot altogether

Exercises:

- Commence open chain exercises and functional activities
- Progress range of motion, strength and proprioception
- Commence plyometric training
- Commence sports specific retraining

POST-OPERATIVE REHABILITATION ACHILLES TENDON SURGICAL REPAIR

Recovery phase

0-2 weeks post-operatively

Plaster backslab or CAM boot

Non-weight bearing – to allow wounds to heal and swelling to subside

Transition phase

2 – 6 weeks post-operatively

Transition to CAM boot with 3cm heel raise

Weight bear as tolerated in boot

Knee/hip exercises in boot

Boot to be worn while sleeping

Return to activity phase

6 to 10 weeks post-operatively

Remove 1cm heel raise per fortnight

Continue to weight bear as tolerated in boot

Can come out of boot for gentle non-weight bearing range of motion exercises of the ankle

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