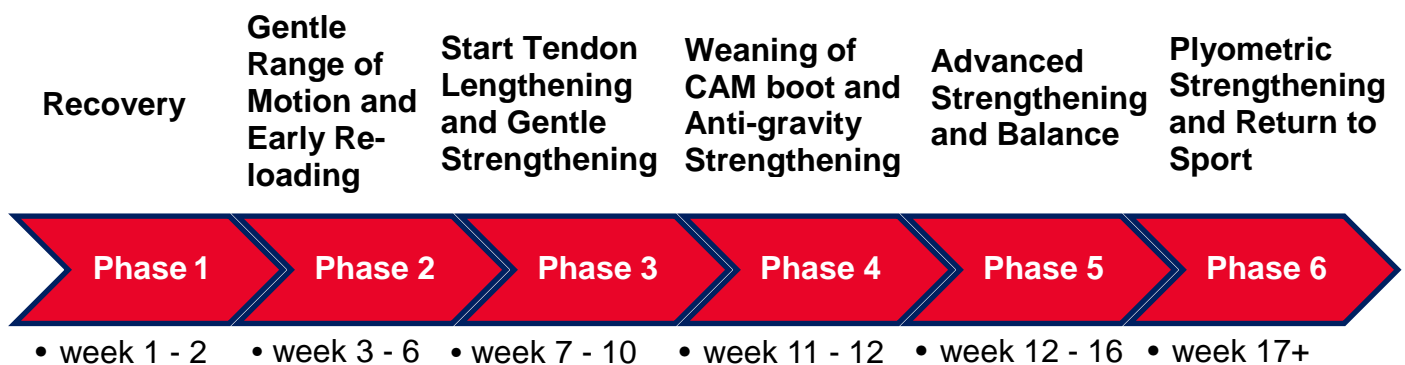


Non-operative Protocol for Achilles Tendon Rupture



- This document outlines rehabilitation goals, precautions and exercises for non-operative rehabilitation of Achilles tendon rupture.
- The phases are listed as time blocks, however progression should be guided by your treating physiotherapist. This may occasionally be earlier or later than listed, depending when the goals of the current phase are achieved.



Disclaimer:

This leaflet provides some exercises to assist with rehabilitation of your injury. While it contains the recommended exercises, it does not contain all the available exercises or information and does not take the place of talking to your orthopaedic surgeon or physiotherapist.

All exercises have risks and benefits. Your surgeon has weighed the risks of you undertaking these exercises against the expected benefits. If you have any concerns about any of these exercises, ask your surgeon or physiotherapist.

Do not continue the exercises if:

- You experience increasing pain (some discomfort is common)
- Your condition has deteriorated in any way since you last consulted your surgeon or physiotherapist
- You have a new injury or condition and have not consulted your treating doctor about continuing these exercises.

These exercises should only be undertaken by patients who are currently being treated by an orthopaedic surgeon at The Royal Melbourne Hospital.

If you do not understand how to perform an exercise then do not do it. Do not do more than the prescribed number of each exercise without first talking to your orthopaedic surgeon or physiotherapist.

Patients should be aware that the suggested exercises are not guaranteed to provide any improvement in your condition but may assist rehabilitation if undertaken in accordance with these instructions and your orthopaedic surgeon or physiotherapist's advice. Exercises are undertaken at your risk.

Keep this brochure as you may need to read it again.

Phase 1: Recovery (weeks 1 and 2)

Goals

- Protect the tendon as it heals
- Control pain and swelling
- Maintain full movement in your toes

Precautions / Management

- Your ankle will be immobilised in a plaster cast (front slab) with toes pointing down - **keep this on at all times**
- **Do not put weight on your injured leg** (non-weight bearing). Keep it off the ground by using crutches or a frame to walk

Phase 1 Exercises

Elevation - When resting keep your foot elevated on 3 - 4 pillows

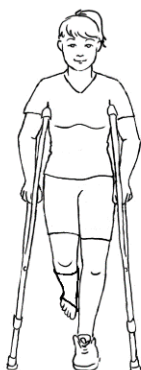


Toe Range of Motion - Bend your toes forwards and backwards

Repeat 3 x 10 every hour that you are awake



Walking - No weight bearing on the affected leg. Use crutches



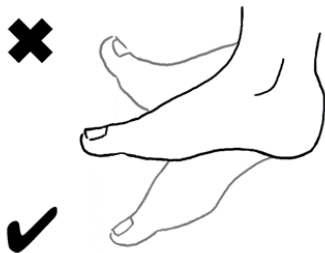
Phase 2: Gentle Range and Early Re-loading (week 3 - 6)

Goals

- Protect the tendon
- Regain safe ankle movement
- Start to weight bear on the injured leg using a CAM boot
- Prevent muscle wasting and deconditioning of the affected leg (Maintenance Program)

Precautions / Management

- **Do not bend the foot up beyond 90 degrees** towards the leg at any time – this will damage the healing of the tendon



CAM boot

- A CAM boot will be fitted after 1 - 2 weeks, with 3 - 4 heel lifts to keep the tendon in a shortened position
- **Wear your CAM boot at all times**, except when doing the exercises (as below) and for hygiene
- You can also wear an elastic compression stocking (tubigrip) to help control swelling

Walking

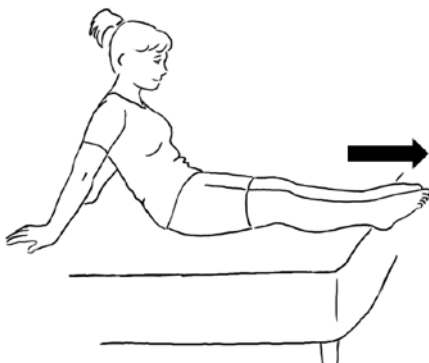
- Using crutches, start to put weight on the injured leg when walking
 - **Week 3** - 25% body weight
 - **Week 4** - 50% body weight
 - **Week 5** - 75% body weight
 - **Week 6** - 100% body weight
- If you have a set of analogue bathroom scales you can measure how much weight you are putting through your leg. If not **use pain and swelling as a guide**. If these increase when walking, put less weight

Phase 2 Exercises

Remove the CAM boot and perform these exercises 2 - 3 times per day.

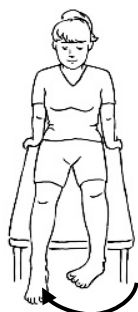
Ankle Plantarflexion - Point your feet down, toes towards the floor, then relax. **Make sure you don't bring toes back towards you beyond a 90 degree angle**

Repeat 3 x 10

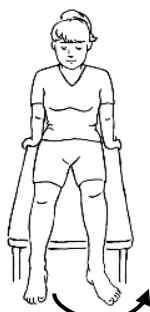


Ankle Inversion and Eversion - Sitting with your foot and toes relaxed, hanging down, raise inner border of foot, and then rotate towards the outer border of the foot

Repeat 3 x 10



a) Ankle Inversion



b) Ankle Eversion

Phase 2 Maintenance Program

Perform these exercises once daily in the CAM boot.

Single Leg Calf Raise - Stand on **the unaffected leg** holding something for support. Rise up onto your tip toes then slowly lower

Repeat 3 x 10



Hip Extension - Stand on **the unaffected leg** holding something for support. Keep your back straight and move the injured leg straight back behind you

Repeat 3 x 10



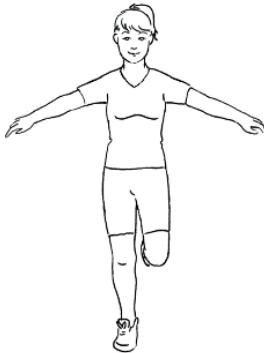
Hip Abduction - Stand on **the unaffected leg** holding something for support. Keep your back straight and take the injured leg straight out to the side

Repeat 3 x 10



Single Leg Balance - Stand on **the unaffected leg** near to something you can use for support. Practice balancing keeping the injured leg off the ground

Repeat 3 x 30 seconds



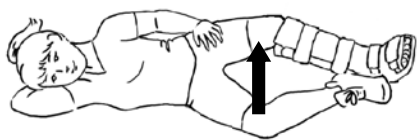
Seated Knee Extension - Sitting in a chair, straighten the knee of the injured leg and tighten your thigh muscle. Hold for 5 seconds then relax

Repeat 3 x 10



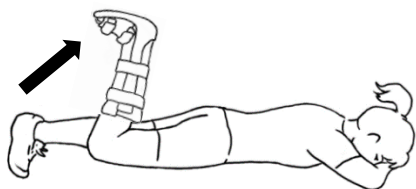
Clams - Lying on your side with the injured leg on top, knees slightly bent, slowly lift up the top knee keeping the ankles together. Do not twist your pelvis

Repeat 3 x 10



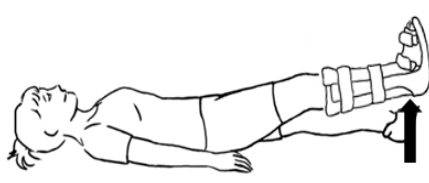
Hamstring Curl - Lie on your tummy and bend the heel of the injured leg towards your bottom

Repeat 3 x 10



Active Straight Leg Raise - Lie on your back. Lift the injured leg up approximately 10cm off the bed. Hold for 5 seconds keeping your knee straight then relax

Repeat 3 x 10



Hip Flexion - Lie on your back. Bend the injured leg at the hip, bringing the knee toward your chest

Repeat 3 x 10



Add these exercises at the start of week 5

Heel Slide - Sitting with your **boot off**, slide the heel of the injured leg along ground towards you, but **only as far back as in line with your knee (90 degrees)**. Then slide forward again

Repeat 3 x 10



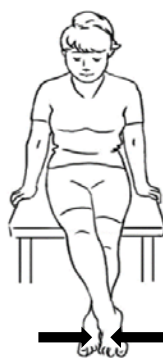
Isometric Inversion and Eversion - Sitting with your legs over the side of the bed or couch (**boot off**):

- Ankle Inversion - Press the inner borders of your big toes together
- Ankle Eversion - Press the outer borders of your feet together

Hold for 5 - 10 seconds. Repeat 5 times each



a) Ankle Inversion



b) Ankle Eversion

Balance Exercises - Stand close to something you can hold for support. Keep your feet together **(boot on)** and try to maintain your balance

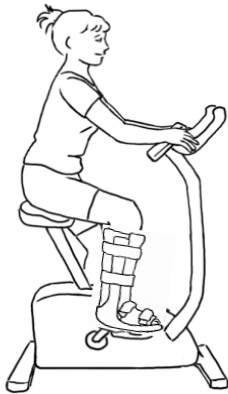
Repeat 3 x 30 seconds

To increase the challenge try with your eyes closed



Stationary Bike - Commence cycling on exercise bike **(boot on)**. **Keep you bottom on the bike seat**

Ride for 5 - 10 minutes and increase as tolerated



Phase 3: Start Tendon Lengthening and Strengthening (week 7 - 10)

Goals

- Protect tendon
- Continue to regain ankle movement
- Begin light tendon lengthening and strengthening exercises

Precautions / Management

- **Do not bend the foot up beyond 90 degrees** when exercising – this could damage the healing of the tendon
- Commence hydrotherapy as directed by your physiotherapist

Walking

- Weight bear as tolerated in **CAM boot**
- Wean off crutches

Heel Lifts

- **Remove one** heel lift from the CAM boot every 2 - 3 days until there are none left
- If you experience a **significant increase in pain or swelling** replace the heel raise. Once this pain and swelling has settled recommence the removal of the heel raises

Phase 3 Exercises

Add these new exercises to your current program with the boot off.

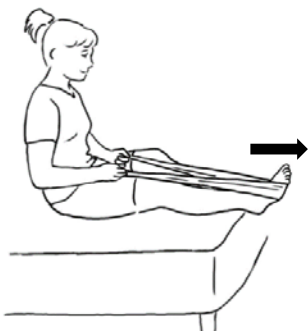
Seated Calf Raises - Sitting in a chair raise your heels up keeping your toes on the floor, then lower

Repeat 3 x 10



Ankle Plantarflexion with an Exercise Band - Sitting with an exercise band around the ball of your foot, point your toes towards the floor pushing into the band. Slowly relax back to the start position

Repeat 3 x 10



Ankle Inversion with an Exercise Band - Sitting with an exercise band around the ball of your foot, turn your foot inwards against the exercise band as if to look at the sole of your foot

Repeat 3 x 10



Ankle Eversion with Exercise Band - Sitting with an exercise band around the ball of your foot, turn your foot outwards against the exercise band

Repeat 3 x 10



Gentle Calf Stretch - Sitting with an exercise band around the ball of your foot, gently pull back on the band until the ankle reaches 90 degrees, or until you feel a stretch. **Do not stretch your ankle past 90 degrees**

Hold for 30 seconds, repeat 3 times



Phase 4: Weaning of CAM boot and Anti-Gravity Strengthening (weeks 11 and 12)

Goals

- Return to walking
- Increase anti-gravity calf strength

Precautions / Management

- Take care with exercises and daily tasks - the tendon remains vulnerable to sudden loading (e.g. tripping or unguarded movement)
- Begin gentle stretching of the ankle if **pain free. Do not stretch with force**
- Begin balance exercises
- From **week 11** (once you have weaned out of the CAM boot), start to increase your walking. Start on flat ground (or if using a treadmill, no incline)

CAM boot / Shoes

- At the start of **week 11** wean off the CAM boot over 2 - 5 days
- Wear supportive shoes with a small heel



Begin Anti-gravity Strengthening

- Do not stretch the ankle beyond 90 degrees during strengthening i.e. exercise on flat ground only and not over a step
- Gradually increase resistance as pain and swelling allow
- Your therapist may progress you to Phase 5 earlier than 12 weeks if strength gains are adequate

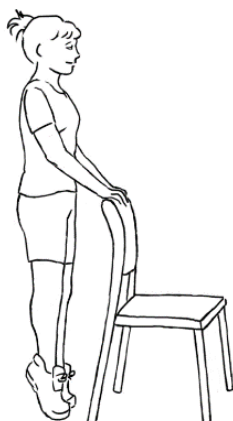
Phase 4 Exercises

Progress to phase 4 exercises as guided by your physiotherapist. Perform once daily.

Double Leg Calf Raises - Standing on flat ground, slowly rise up onto your tip toes with both feet then slowly lower back down

Repeat 3 x 10

To increase the challenge increase the percentage of body-weight on the affected leg. You can use bathroom scales to monitor this



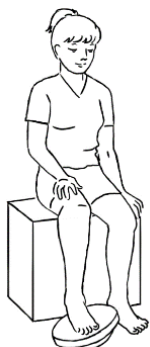
Seated Calf Raises - Sitting in a chair with a small weight on your knee, raise your heels up and down slowly

Repeat 3 x 10



Proprioception Exercise - Sitting with your injured foot on a wobble board (or basketball), move your ankle carefully in all directions

Repeat 3 x 30 seconds



Balance Exercise - Feet Together - Standing close to something you can hold on to with your feet together. Try to keep your balance without holding on

Repeat 3 x 30 seconds

To increase the challenge, try with your eyes closed



Phase 5: Advanced Strengthening and Balance (week 13 - 16)

Goals

- Regain full calf strength and muscle bulk
- Walk with a normal walking pattern - increase walking distance and speed. Aim for 30 minutes 5 times per week

Precautions / Management

- No explosive-type exercises e.g. jumping / running
- Progress strength and balance exercises
- If using a treadmill, start to add small inclines or declines if comfortable

Phase 5 Exercises

Progress to phase 5 exercises as guided by your physiotherapist. Perform once daily.

Single Leg Calf Raise - **Only when able to perform double leg calf raises easily**, progress to single leg standing on the injured leg

Repeat 3 x 10



Proprioceptive Exercises - stand near something you can hold on to

- Stand with your injured leg on a wobble board (or basketball) move your foot around in circles both directions
- Progress to two feet on the wobble board (or a folded up towel, yoga mat or pillow at home)

Repeat 3 x 30 seconds



a) Basic Proprioceptive Exercise



b) Advanced Proprioceptive Exercise

Phase 6: Plyometric Strengthening and Return to Sport (week 17 onwards)

Goals

- Return to jogging and running
- Strength through full ankle range of motion
- Return to sport at **6 months**

Management

- Continue to gradually increase the resistance with strengthening exercises into full range of motion
- Start dynamic exercises such as plyometric or sport specific exercises as guided by your physiotherapist

Phase 6 Exercises

Your physiotherapist will assess when you are ready to add the below exercises. Perform 2 - 3 times per week.

Calf Raises off Step - Start with your heels off the edge of a step. Slowly rise up onto your tip toes then slowly lower down allowing your heels to drop below step level (90 degrees)

Repeat 3 x 10



Sport Specific Exercise - Your physiotherapist will help plan exercises and drills specific to your sporting activity or gym requirements



Jumping (Plyometric) Exercises - Squat down keeping hips, knees and ankles in good alignment. Hold for 1 second then jump straight up. Focus on landing softly with good hip and knee control

Repeat 3 x 30 seconds



To increase the challenge:

- Side jumps
- Box jumps with increasing height
- Jump with rotation – 90° and 180°
- Double leg jump landing on single leg
- Lunge jumps
- Hopping
- Triple jump
- Zig Zag – double leg or single leg

Running Drills - Jog or run in a straight line running on flat ground. Focus on knee control. Start with 5 - 10 minutes then increase time as tolerated



To increase the challenge:

- Increase speed and/or distance
- Add incline/decline hill work
- Move in a different direction: forwards, backwards, sideways
- Add bounding or change speed
- Leaping
- Running with quick change in direction e.g. plant and cut

When can I ...

Sleep without the boot on?

- After **8 weeks**.

Return to driving?

- Automatic car:
 - Left leg injured: **immediately** / when comfortable.
 - Right leg injured: After **11 - 12 weeks**, once you are able to weight bear 100% out of the CAM boot.
- Manual car:
 - After **11 - 12 weeks**, once you are able to weight bear 100% out of the CAM boot.

Return to work?

- Sedentary employment (e.g. desk/seated job): **1 - 2 weeks** - after the CAM boot is fitted, and when comfortable.
- Work that involved standing on your feet most of the day (e.g. retail work): after **6 weeks**, when you are able to fully weight bear in the CAM boot.
- Manual labour work (e.g. construction): after **11 - 12 weeks** once you have weaned the CAM boot.

Return to jogging/running?

- **Week 17+** as guided by your physiotherapist and provided there is **not a significant increase in tendon pain** during or after the jogging activity.

Return to sport?

- After **6 months**, provided range, strength and plyometric power milestones are met.

Contact:

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Allied Health
(03) 9342 7440

