

# Achilles tendon rupture protocol

## Functional bracing protocol:

| <i>Stage</i> | <i>Device</i>       | <i>Position</i>                                                   | <i>Weight bearing status</i> | <i>Duration</i> |
|--------------|---------------------|-------------------------------------------------------------------|------------------------------|-----------------|
| 1            | Cast                | Full equinus                                                      | Non weight bearing           | 1-2 weeks       |
| 2            | Vacoped boot        | Locked plantar flexion (30°)<br>Patient referred to physiotherapy | Full weight bearing          | 3 weeks         |
| 3            | Vacoped boot        | Dynamic plantar flexion (15 - 30°)                                | Full weight bearing          | 3 weeks         |
| 4            | Vacoped boot        | Dynamic plantar flexion (0 - 30°)<br>Physiotherapy to start       | Full weight bearing          | 3 weeks         |
| 5            | Supportive footwear | Provide a single heel lift                                        | Full weight bearing          | 2 weeks         |

**NB – Boot must be worn at ALL times**

## Typical progress / targets:

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### *Phase 1 (Rest phase)*

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#### Goals

- Protect tendon, mobilise touch toe weight bearing safely on crutches
- Minimise pain and swelling
- Rest and recovery

#### Stage 1: Weeks 0-2 (Equinus cast)

- Toe touch weight bearing using crutches
- Try to keep your hips, knees and toes moving fully to prevent stiffness

- No physiotherapy or range of movement exercises for ankle
- You must keep the equinus plaster cast on at all times (day and night)
- Rest and elevate leg as much as possible
- Pain control

## Stage 2: Week 2-5 (Vacoped boot locked plantarflexion)

### Goals

- You can fully weight bear in the Vacoped boot locked in 30 degrees plantarflexion as pain allows using crutches
- Vacoped boot to be worn at all times
- Swelling control
- Maintain core, upper limb, hip and knee strength

### Physiotherapy

- You can fully weight bear in the Vacoped boot with crutches as discomfort allows
- Try to keep your hips, knees and toes moving fully to prevent stiffness
- Rest and elevate leg as much as possible

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## *Phase 2 (Muscle strength and range of movement)*

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## Stage 3: Week 5 – 8 (Dynamised Vacoped boot 15-30°):

### Goals

- You can fully weight bear in the Vacoped boot, using crutches as required for balance
- The Vacoped boot should be worn at all times, except for hygiene. You should not put weight on your foot out of the boot at any time. If worried, leave boot on and cover with waterproof cover for showering
- Protect healing tendon tissue
- Minimise pain and swelling

- **Maintain core, upper limb, hip and knee strength**

## Physiotherapy

- You can fully weight bear in boot with crutches as discomfort allows
- Try to keep your hips, knees and toes moving fully to prevent stiffness

## Stage 4: Week 8-11 (Dynamised Vacoped boot 0-30°):

### Goals

- You can fully weight bear in the Vacoped boot, using crutches as required for balance
- The Vacoped boot should be worn at all times, except for hygiene. You should not put weight on your foot out of the boot at any time. If worried, leave boot on and cover with waterproof cover for showering
- Protect healing tendon tissue
- Start physiotherapy
- Under the supervision of your physiotherapist, you may start active ankle movements through the available range of plantarflexion (toes pointing down) within the limits of the boot settings
- Minimise pain and swelling

### Physiotherapy

- Under the supervision of your physiotherapist, gently point your toes within the limits set by the Vacoped boot
- Try to turn your foot in and out within the limits of the boot
- Your physiotherapist will teach you some gentle strengthening exercises with light Theraband for pointing your toes down (plantarflexion) and turning your foot in and out (inversion and eversion)
- You can actively pull your foot up towards you (dorsiflexion) using your muscles until gentle tension is felt in your Achilles tendon (do not pull your foot up towards you past 90°). Do not force this movement or use anything to passively pull your foot up towards you past a 90° angle

Your physiotherapist will teach you some proprioception / balance work to be completed in your boot

- You can start some strengthening work for your hip and knee with the boot on e.g. using a static bike. Push with your heels and not your toes
- Try to keep your hips, knees and toes moving fully to prevent stiffness
- Swelling control

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### *Phase 3 (Strength and Control)*

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#### Stage 5: Week 11-13 (Transition out of the Vacoped)

##### **Goals**

- **The Nurse-led Clinic will remove the Vacoped boot and you will change to a flat shoe with single heel raise for 2-4 weeks. The boot can be worn in vulnerable environments, if necessary. Remember to take a shoe to this clinic appointment.**
- **You may need to restart walking using crutches initially, until you are able to walk without a limp. Avoid hyperextension of the knee (pushing your knee back excessively) to compensate for lack of ankle movement**
- **Wean yourself from your crutches as able. Avoid activities which involve extreme flexion of the ankle combined with active plantarflexion (pointing down of toes) i.e. take care on walking up and down stairs**
- **Try to achieve full movement at your ankle**
- **You can start gentle ankle strengthening exercises**

##### Physiotherapy

- Try to walk as normally as possible without a limp
- You can start a gentle calf stretch in standing but do not push this into a strong stretch. Allow your ability to pull your toes up towards you (dorsiflexion) to match the other side to return naturally
- Continue to practice ankle movements passively and actively, avoiding excessive stretch
- Continue active resisted theraband exercises; pointing toes down (plantarflexion) through full range i.e. from a right angle position to pushing toes down fully; pulling toes up (dorsiflexion) to a right angle position. Do not push further
- Continue to practice resisted movements turning your foot in and out (inversion / eversion) as far as is possible
- You can use an exercise bike to help keep yourself strong (low resistance)
- You can perform seated heel raises i.e. with your knee bent

- Aim to climbing stairs normally
- Progress walking to small up slopes and down slopes
- Swimming and gentle stretches whilst in the water are beneficial. You may be referred for hydrotherapy if your physiotherapist feels that this is necessary

Continue with proprioception / balance exercises – double leg out of boot, single leg in boot initially, progressing to out of boot as balance improves NB: Your tendon is still very vulnerable and you need to be diligent with activities of daily living and exercises. Any sudden loading of the Achilles tendon (e.g. trip, step up stairs etc.) may result in a re-rupture.

## Stage 6: Weeks 13-18 (Wearing good supportive footwear)

### Goals

- Aim to be able to have good balance control when wearing normal good supportive footwear
- Continue to progressively strengthen your leg, foot and ankle
- Aim for normal dorsiflexion range (pulling toes up towards you) , no need to push to extreme

### Physiotherapy

- Your physiotherapy will be tailored and monitored by your physiotherapist dependent on your needs

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## *Phase 4 (Sport preparation)*

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## Stage 7: Weeks 18-26

### Goals

- Aim for ankle strength to near full strength
- Aim for restoration of a normal walking pattern
- Aim to be wearing normal shoes. You may initially need a shoe with small heel
- Continue to be careful on stairs and uneven, rough ground
- Aim to be able to have good balance control when wearing normal, good supportive footwear

### Physiotherapy

- You can continue to perform stretches for your calf muscles but do not push this beyond neutral (i.e. not on the edge of a step). There should not be a strong stretch felt in your calf
- Aim for restoration of a normal walking pattern
- You may start jogging on a trampette, gradually progressing to jogging on flat ground with guidance from your physiotherapist
- You may progress jogging to running, including change of direction work / cutting, fast acceleration / deceleration with guidance from your physiotherapist as control and strength allows

Start to include sports specific rehabilitation type exercises under guidance from your physiotherapist NB: Pain after exercise should subside to a normal level by the following morning and there should be no increase in pain on a week to week basis. If the pain persists exercises should be altered to a level that allows the pain to subside to a normal level by the following morning.

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### *Phase 5 (Return to full function)*

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Stage 8: Weeks >26

#### **Goals**

- **Return to full function**
- **Return to sport (dependent on sport) as able**

#### Physiotherapy

- You can start to stretch and exercise your calf beyond neutral (i.e. on edge of step)
  - You can complete sports specific exercises including dynamic drills e.g. hopping, skipping.
- NB: There is risk of re-rupture if jumping down from a height