

Very Accelerated Achilles tendon rupture protocol with Achilles Midsubstance Speedbridge

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	2 weeks
2	Vacoped boot	Dynamic plantar flexion (15 - 30°) with <i>FLAT SOLE</i> Patient referred to physiotherapy	Full weight bearing	2 weeks
3	Vacoped boot	Dynamic plantar flexion (0 - 30°)	Full weight bearing	2 weeks
4	Wean out of Vacoped boot	Supportive shoes with a heel lift	Full weight bearing	2 weeks
5	Supportive footwear	Supportive shoes with a heel lift	Full weight bearing	4 weeks

Typical progress / targets:

Phase 1 (Rest phase)

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)

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- 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 2-4 (Dynamic plantar flexion (15 - 30°) with FLAT SOLE

Goals

- **You can fully weight bear in the Vacoped boot with dynamic plantar flexion 15-30 degrees with the flat sole as pain allows using crutches**
- **The Vacoped boot should be worn at all times, except for hygiene and for physiotherapy exercises. 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. Vacoped boot can be taken off for physio exercises and hygiene**
- **Swelling control**
- **Maintain core, upper limb, hip and knee strength**
- **Thetis Achilles night splint can be used at night time**
- **Start physiotherapy**

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
- Active ankle dorsiflexion exercises can begin. Do not go past neutral. Active plantar flexion exercises can also be commenced.

Phase 2 (Muscle strength and range of movement)

Stage 3: Week 4 – 6 (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 and for physiotherapy exercises. 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
- 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

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
- Low resistance cycling, no movement beyond neutral.
- Gentle strengthening exercises with light Theraband for pointing your toes down (plantarflexion) and turning your foot in and out (inversion and eversion)

Stage 4: Week 6-8 (Wean out of boot over a 2 week period):

Goals

- You can fully weight bear in the Vacoped boot, using crutches as required for balance
- Start small distance inside the home when weaning out of the boot, using the boot for longer journeys. As you gain confidence, and with the help of the physiotherapist, the distances and time out of the boot can be increased. The boot can be worn in vulnerable environments, if necessary.
- You may need to restart walking using crutches initially, until you are able to walk without a limp. Wean yourself from your crutches as able.
- Protect healing tendon tissue – no jumping or running or explosive movements/exercise
- Minimise pain and swelling

Physiotherapy

- Wear out of boot over a 2 week period
- TA concentric exercises out of the boot (double stance).

Your physiotherapist will teach you some proprioception / balance work. This can be done out of the boot

- Strengthening work for your hip and knee
- Try to keep your hips, knees and toes moving fully to prevent stiffness
- Swelling control

Phase 3 (Strength and Control)

Stage 5: Week 8 onwards (Stengthening)

Goals

- Avoid hyperextension of the knee (pushing your knee back excessively) to compensate for lack of ankle movement**
- Avoid activities which involve jumping/landing/explosive movements and exercise i.e. take care on walking up and down stairs**
- You can start ankle strengthening exercises**
- 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**

Physiotherapy

- Try to walk as normally as possible without a limp
- 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)
- Start single sided concentric heal raises
- Aim to climbing stairs normally

- Progress walking to small up slopes and down slopes
- Swimming and gentle stretches whilst in the water are beneficial.

Continue with proprioception / balance exercises –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 12 onwards (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
- 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
- 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

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.