

Case Study

Calf Muscle Pain



Calf (Gastrocnemius) Muscle Pain

Practitioner Nick Haley – Podiatrist
 Doug Claridge - Physiotherapist

Practice [Feet n Motion Podiatry](#), Christchurch, NZ
 [Russley Physiotherapy](#), Christchurch, NZ

Patient Pete Manson



Current Situation

- Pete first presented to Doug at Russley Physiotherapy complaining of pain in his calf muscle.
- Pete is an ex-rugby player who now plays social touch. Pete has also just started running again to increase his fitness, however he has had issues with his calf muscles for years. Every time he increases his activity, he ends up with pain similar to a pulled calf muscle. Pete's pain is now starting to linger with diffuse tenderness along the muscle belly and surrounding structures.
- This is frustrating for Pete, and he wants to get the issue sorted once and for all.
- Doug recognized some of Pete's problems were stemming from his feet, so as part of his treatment he referred him Nick Haley Podiatrist.



Assessment

Lower limb muscle balance

- A full lower limb muscle balance assessment is carried out to determine what factors are contributing to the patients pain.
- Doug found major weakness in Pete's gluteal muscles. You need strong gluteal muscles to stabilise your hips and create efficient propulsion when running. This weakness means Pete is relying on his calf muscles for propulsion, and causing over use.



Assessment

Balance test

- The patient stands on one leg and establishes balance. In this position the foot and leg alignment are similar to that when walking.
- Here it is evident Pete's foot overpronates slightly, which causes his big toe to grip to stabilise his foot. This stresses the flexor hallucis longus muscle, which runs along the shin near the calf muscle, causing Pete's calf pain. You can also see Pete's knee drops in – a combination of poor foot alignment and weak gluteal muscles.



Assessment

Podiatry assessment - Jacks test

- This clinical test assesses the tension in the plantar fascia associated with heel lift and propulsion, the windlass mechanism. It also indicates whether or not any joint changes are occurring in the big toe joint.
- Pete had some restrictions here which also could have influenced his flexor hallucis longus muscle to overload causing pain.



Assessment

Podiatry assessment

- Manual muscle testing of the flexor hallucis longus, produced a similar pain to what Pete experiences when running.
- Generalised biomechanical testing of the foot revealed a plantar flexed 1st ray, this also can put more strain through the flexor hallucis longus muscle.
- It was also noted during gait analysis that his gluteus medius muscles were weak.



Diagnosis

- Together Nick and Doug diagnosed Pete with medial tibial stress syndrome, some flexor hallucis longus muscle belly inflammation, with tibialis posterior involvement.
- All of these muscles attach along side the calf muscle into the shin bone which is why Pete mainly felt this in his calf muscle area.
- In addition Pete has weakness in his gluteal muscles.



Causes

- Poor footwear – Pete’s shoes were worn and did not provide him with enough support. He liked how they looked but they were not suitable for his foot type.
- Sudden increase in training – rather than building up his running slowly Pete dived right in, overloading his muscles and attributing to his injury.
- Weak and tight calf (gastrocnemius) muscles.
- Sharp and heavy heel strike when running.



Treatment

- For this injury to recover fully Pete needs to back off from running to allow the initial inflammation to settle. He is fine to walk, swim or cycle in the meantime.
- Initially Doug used taping to settle Pete's flexor hallucis longus pain. To view the taping technique go to [FormthoticsTM on YouTube](#)
- Pete's current running shoes were inappropriate so the team at Smiths Sport Shoes Christchurch fitted him with a pair of Adidas Supernova's.



Treatment

- Nick Haley fitted Pete with Original Dual Hard FormthoticsTM, with some reduction in the rear foot control.
- A kinetic wedge was added to allow 1st ray alignment to be the same as other toe joints, reducing stress through the flexor hallucis longus tendon.
- Stretches and strengthening for Pete's weak gluteal and calf muscles were also issued.
- Running technique coaching was also provided by Nick to prevent future injury. This can be viewed at FormthoticsTM on [YouTube](#)

