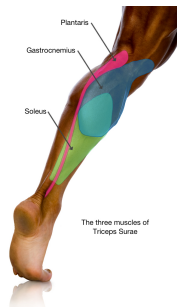


Triceps Surae (calf) strain

tips for best management



Calf injuries usually occur as a result of either a sudden contraction or over stretching of the calf muscle, often at sport during jumping activities, with quick changes of direction or when taking off from a stationary position. Managed well, calf injuries need not lead to significant time off work & good rehabilitation can have an athlete back to their sport quickly without unnecessary time away from cardiovascular exercise.

1. Diagnosing the grade of the injury:

Muscle strains are generally categorised as grade 1 through 3 according to their severity.

- **Grade 1** injuries involve over stretching and micro-tearing of only a few individual muscle fibres with minimal to no loss of strength or range of motion.¹ Patients will present with minimal bruising or oedema & can perform a single leg heel raise with minor discomfort. They will usually require a 2-3 week rehabilitation period.
- **Grade 2** tears are categorised by a partial tear of the muscle involving many muscle fibres with associated loss of strength and range of motion.¹ Patients may present with a palpable defect in the muscle belly or at the musculotendinous junction. Usually these will require a 3-6 week rehabilitation period.
- **Grade 3** tears involve complete rupture across the entire cross section of the muscle resulting in a complete loss of muscle function.¹ An inability to plantarflex the ankle is indicative of complete achilles rupture. The Thompson test, which has a sensitivity of 0.96 and a specificity of 0.93², will confirm this. Surgery can be required in these injuries and the rehabilitation period will likely be greater than 12 weeks.³

Imaging is usually not required, as clinical diagnosis is sufficient in most cases. Doppler ultrasound should be utilised to rule out the possibility of deep vein thrombosis if the patient presents with risk factors (eg previous venous thromboembolisms, prolonged immobility, oestrogens⁴) & does not progress as expected in their rehabilitation.

2. Advice for initial treatment

For the first 72 hours following injury apply the RICE principles to control inflammation. Paracetamol analgesics can be prescribed at this stage if ice does not provide adequate pain relief, however it is important to avoid the use of NSAID's in the first 72 hours due to the risk of increased bleeding from anti-platelet effects.³

A very short period of immobilisation (no longer than a few days) will allow scar tissue to gain the required strength to prevent contraction induced re-tear.¹ Crutches may be required to achieve this if the patient is unable to walk with a normal gait or weight bear comfortably. The use of heel wedges and compression taping to offload the calf muscle is also a good option for achieving comfort in gait.

Following immobilisation, active movement within the limits of pain is encouraged, as well as progressive strengthening of the muscle. Stretching in the first 5 days following injury is contraindicated as it can cause disruption to the collagen fibre repair process.¹



We have a wide range of gait aids and assistive devices to ensure the patient is comfortable through all stages of their rehabilitation.



case study:

A 45 year-young, netballer presented to central coast foot & ankle physiotherapy the morning after injuring her right calf playing netball. She recalled a snapping sensation in her calf with a change of direction and feeling as though she had been hit in the back of the leg by a cricket ball. Main findings were tenderness on palpation at the medial gastrocnemius, inability to weight bear on her right leg due to pain, and limited range of ankle dorsiflexion. Doppler ultrasound was utilised to rule out thromboembolism due to a recent history of DVT in the right calf. Diagnosis made was grade 2 Gastrocnemius strain.

Crutches were issued to unload the calf for a period of three days. She graduated to walking in her joggers, with heel wedges ensuring a comfortable walking gait.

Ankle range of motion exercises commenced immediately, followed by plantarflexion strengthening against the resistance of a theraband on day 3 post-injury. The strengthening exercises progressed as pain permitted from double leg heel raises to eccentric loading & then single leg heel raises. After this, plyometric activities were introduced such as jumping, skipping and hopping. Sport specific agility exercises completed the rehabilitation and she was back on the court in 6 weeks.

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Carl Morey has recently joined ocean view physiotherapy.

Carl graduated from the University of Melbourne's Doctor of Physiotherapy degree in 2015. Carl has gained excellent experience in treating sports injuries through working with local football and AFL clubs in Melbourne, as well as clinical placements with Northampton Town Football Club in the UK and Olympic Park Sports Medicine in Melbourne.

Carl is passionate about ensuring people have a thorough understanding of their condition so they feel empowered to achieve a complete recovery.

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references:

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