

8 – Calf Strain



Strain or tear to either **gastrocnemius** or the **soleus** muscles which together make up the calf muscles. Symptoms include a sudden sharp pain at the back of the lower leg. A calf strain can range in severity from mild where you can continue exercise although in some discomfort right up to a full tear of the muscle resulting in lots of pain and in ability to walk.

Calf injuries usually occur through a sudden pushing off force or an over stretching of the calf muscles such as in jumping or changing direction quickly other causes include overuse, training while tired, hill running, track running especially (speed work), incorrectly fitted running shoes or worn out running shoes.

Grade 1

A minor tear with **up to 10%** of the muscle fibres effected. You will feel a twinge of pain in the back of the lower leg. It may be possible to carry on running, playing in mild discomfort. There is likely to be tightness and aching in the calf muscles **two to five** days after injury.

Grade 2

Grade 2 symptoms will be more severe than a grade one with **up to 90%** of the muscle fibres torn. A sharp pain at the back of the lower leg will be felt with significant pain walking. There is likely to be swelling in the calf muscle with mild to moderate bruising. Pain will be felt on resisted plantar flexion or pushing the foot downwards against resistance. There may be tightness and aching in the calf muscle for a **up to 10 days or even more**.

Grade 3

There will be severe immediate pain at the back of the lower leg. You will be unable to continue and unable to walk. There will be considerable bruising and swelling appearing and the muscle will not contract. In the case of a full rupture, often there is deformity where the muscle can be seen to be bunched up towards the top of the calf. A grade three is a tear, or complete rupture of the

muscle and loss of function **several months** may be required to restore to activity.

If you have a sore calf

You need to do this!



R.I.C.E. (Rest, **Ice**, Compression & Elevation) is essential; initial 5-7 days.

Cold therapy should be applied as soon as possible to help to quickly stop any internal bleeding. Ice can be applied for 10 to 15 minutes every hour initially reducing frequency as pain and swelling goes down and after any activity.

Use a compression bandage, or calf guard/sleeve. A compression bandage can be applied immediately to help stop swelling but it should only be applied for 10 minutes at a time as restricting blood flow completely to the tissues could cause more damage.



Get some heel pads, raise the heel and shorten the calf muscle hence taking some of the strain off it. It is a good idea to put heel pads in both shoes or one leg will be longer than the other creating an imbalance and possibly leading to other injuries including back.

STRETCHING AND MOVEMENT



Active stretching is used in the early stages of a calf injury as it applies only a gentle stretch to the muscle. Muscles work in pairs and by contracting the muscles in the front of the lower leg, the muscles at the back must relax.

Stretch the gastrocnemius, sit on the floor or a chair with the leg straight out in front of you. Pull the toes and foot back towards you, hold for a couple of seconds and relax. Repeat this up to 20 times.

To stretch the soleus muscle, sit with the knees bent and feet on the floor. Raise the toes and foot up towards you, keeping the heel on the floor. Hold for a couple of seconds, relax and repeat 20 times.

Gastrocnemius stretch



To stretch the big gastrocnemius muscle the back leg must be kept straight. Stand with the leg to be stretched at the back and hands on a wall at shoulder height. Bend the front knee and lean forwards, keeping the back knee straight and pushing the heel down into the floor.

When you can feel a stretch, hold for 20 seconds. If the stretch eases, lean further forwards until you can feel it again. But do not push too far in the early stages. Perform 3 repetitions and repeat this 3-5 times a day.

Soleus muscle stretch



To stretch the deeper soleus muscle the knee of the leg to be stretched needs to be bent. This is because the soleus muscle attaches below the knee and bending the knee allows the gastrocnemius muscle to relax leaving the soleus on stretch.

Lean against a wall with the leg to be stretched at the back. Bend the knee keeping the heel in contact with the ground until a stretch is felt. Hold for 15 to 20 seconds and repeat three times. If a stretch is not felt then another method is to place the ball of foot against the wall and bend the front knee until a stretch is felt.

Stretching on a step



As flexibility increases or if you have particularly flexible calf muscles it may be better to stretch using a step. Lower the heel - off the step dropping down until a stretch is felt.

Hold for 15 to 20 seconds for 3 repetitions and repeat 3 to 5 times a day. The soleus muscle can be stretched similarly but with the knee of the leg to be stretched kept bent.

Recovery and exercises

- Squats to tip toes
- Roll on tip toes slowly stretching out calf muscle
- Calf stretch – slow controlled
- Toe raises (use step, bench or chair)
- Run with compression socks/tights short term – will help lock/hold the muscles during exercise.

Movement is now critical to improvement in calf muscles and a blend of strengthening can be introduced such as “leg press”.



In the short term ensure you have 5 to 10 minute easy warm up and stretch any muscles that feel particularly tight. Always stretch down at end of exercise.