

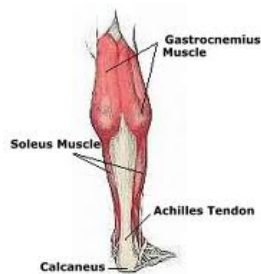
Calf Injuries

For information on all types of injuries visit:
<http://www.cssphysio.com.au/forpatients.html>



Gastrocs - Calf Tears

The *gastrocnemius* (gastrocs) is the biggest of the calf muscles, and one of the strongest in the body. It arises from just above the knee, in two main attachment points on the *femur*. From there it forms two 'heads' of the gastrocs, the medial and lateral head. These large and powerful components that make up the outer calf muscle, blend together half way down the lower leg, to form the outer part of the Achilles tendon. The other (deeper) part of the Achilles is formed from the soleus muscle (see section on Soleus strains).



Gastrocs tears are almost always to the medial head. This is probably because it is the larger and more powerful of the two heads. It may also be related to the muscle fibre shape, or the fact that power generation for push-off starts from the medial side of the foot. Tearing is usually within the muscle fibres or where the muscle blends into the tendon.

Risk Factors

The risk of suffering a gastrocs strain increases with:

1. Tightness. Tighter muscles are more susceptible. Regularly wearing high-heels is one common cause.
2. Lack of warm-up for sport.
3. Poor biomechanics of the foot and leg. Flat or high arches can be problematic.



- Lack of muscle control or joint stiffness higher up in the *kinetic chain* can overload the calf.
4. Age. These injuries are more common in middle-aged players. In younger athletes, gastrocs has a high percentage of *fast twitch* muscle fibres. Over time many of these fibres transform to *slow twitch*. This means the muscle will be more vulnerable with sports that involve fast movements.
 5. Previous injury. Gastrocs injury is one of the most likely to recur. Scar tissue can form

Injury

Gastrocs is one of the most commonly injured muscles in the body. An acute tear occurs due to sudden overstretching. This often happens when taking off suddenly or lunging, such as when rushing to play a shot in tennis or squash. The tear may be felt as a sudden sharp



pain. Many people describe a sensation as if having been kicked. There is sometimes a popping sound. The calf will often swell, and may feel very tight and tense for a few days. While many calf injuries are diagnosed as tears to the *plantaris* (the "monkey muscle" - left), this is rare (less than 2% of all calf injuries).

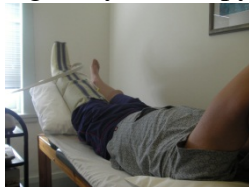
during healing, and a recurrence of injury often occurs around this scar. Insufficient recovery or inadequate rehab after injury increases the risk.

Treatment

As with all soft-tissue sporting injuries, this starts with R.I.C.E. – click:

http://www.cssphysio.com.au/pdfs/0-R_I_C_E_-_Procedure.pdf

Crutches are occasionally needed for a few days if there is severe pain with walking. Physiotherapy may involve compression therapy, electrotherapy, and gentle exercise. This will include active range of movement and pain-free



Standing calf stretch

stretching. Resisted exercises are usually commenced in the first few days, and progressed over time. Other exercises for strength and general fitness are begun as soon as possible.

Massage away from the area of injury can be commenced early, and over the

injured area when healing is well under way.

Eccentric exercises are an important part of later rehab. A 'sport specific training programme' needs to be introduced at least a week before



return to full training. It is essential that the muscle is trained to cope with the demands of sport. This will include the ability to perform movements through full range, the ability to sprint, accelerate and decelerate, and to rapidly change direction.

Return to Sport

The degree of injury can vary considerably, but most gastrocs strains will recover relatively quickly. Return to sport should be between 2 to 4 weeks. With a bad tear it is possible to rupture a significant proportion of the muscle fibres, and recovery may take 3 months. Surgery is rarely necessary

For information on all types of injuries visit:
<http://www.cssphysio.com.au/forpatients.html>



Concord Sport & Spine Physiotherapy
202 Concord Road
Concord West, NSW 2138
Sydney, Australia.
Ph (02) 97361092

Copyright © Paul Monaro. All Rights Reserved.