

References

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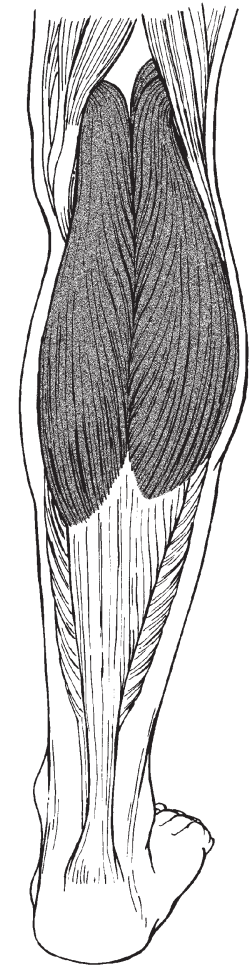
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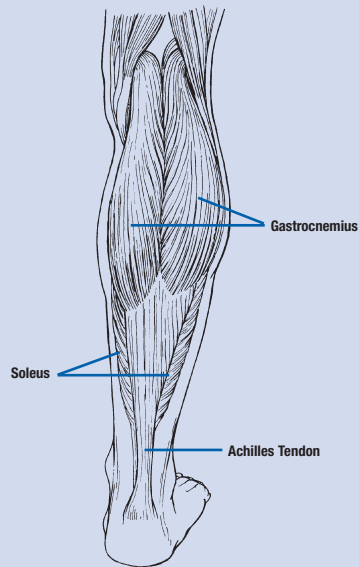
Gastrocnemius (Calf) Strain



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Introduction

The Gastrocnemius is commonly injured in sports which require quick acceleration from a stationary position and quick halts in movement such as tennis and squash.



Functional Anatomy

The Gastrocnemius is one of the superficial muscles of the lower leg. Often referred to as the Calf muscle, it is located behind the tibia (shin bone) and works across both the knee and ankle joints. It extends from the base of the femur (thigh bone) behind the knee, to the calcaneus (heel bone). The muscle inserts into the Achilles Tendon along with other muscles. The muscle's main roles are to plantar flex the foot (point toes away from yourself) and to assist in flexing (bending) the knee.

Causes of Injury

The Gastrocnemius is commonly injured in sports which require quick acceleration from a stationary position and quick halts in movement such as Tennis or Squash. In many such cases the injury is caused through sudden eccentric overstretch (ie the muscle is contracted yet lengthening forcibly and abruptly). An example of this is when an athlete runs onto a kerb and the ankle drops suddenly into dorsiflexion (point toes toward yourself).

Signs & Symptoms

Gastrocnemius strains are graded according to their severity. Their severity will impact upon the amount of time taken to return to sport. Strains to the Gastrocnemius are graded into three categories, like other muscular strains (see table).

Grade	Symptoms	Average time to return to sport
1	Sharp pain (during or after activity), may be unable to continue activity	10-12 days
2	Unable to continue activity	16 - 21 days
3	Severe pain at junction between achilles tendon and belly of the muscle	Approx 6 months if surgery is required

Initial Treatment

The immediate treatment of any soft tissue injury consists of the RICER protocol – rest, ice, compression, elevation and referral. The RICER protocol should be followed for 48 - 72 hours. The aim is to reduce the bleeding and damage in the muscle. The leg should be rested in an elevated position with an ice pack applied for 20 minutes every two hours (never apply ice directly to the skin). A compression bandage should be applied to limit bleeding and swelling in the injured area.

The No HARM protocol should also be applied - no heat, no alcohol, no running or activity, and no massage. All these will lead to increased swelling and bleeding in the injured area.

After the first 72 hours have been spent resting, more active treatment and rehabilitation can be started. In addition to RICER and No HARM, a first aid treatment for a low grade Gastrocnemius strain may also include gentle stretching.

A torn or strained Gastrocnemius is a painful condition that should be addressed carefully to avoid recurrence of the injury.

Rehabilitation

As pain decreases, gentle exercise and stretching can usually begin in addition to physiotherapy treatment. Rehabilitation should be conducted with caution and under the supervision of a sports medicine professional due to the risk of injury recurrence. Recovery can often be quite a slow process.

Prevention

Stretching and muscle strengthening may assist in the prevention of injury or recurrence of the injury. Activities such as calf raises are typically used in these circumstances. This may gradually include weights or additional resistance over time.