Gastrocnemius Strain/Tear

A calf strain is a tear within one or both of the muscles along the back part of the lower leg. It most likely becomes injured in the middle of the calf muscle belly, but strains or tears can occur anywhere from the Achilles tendon to the attachment of the tendon at the knee. This injury is known as a calf stain to the layperson, but gastrocnemius strain is a more precise diagnosis and is simply one of the two calf muscles.

Symptoms of a strain tend to vary significantly but often include a sudden, sharp pain at the back part of the leg. The muscles will be tender to the touch where injury has occurred. Bruising and swelling might occur. Depending on the severity of the injury, the athlete might be able to continue in some pain or they might not be able to walk due to severe pain.

Calf strains are typically graded, I II and III. Grade I tears/strains are the least severe and typically the person will be able to walk on it, while Grade III are the most severe and it will be impossible to run on it, and walking will be with a limp.

Gastrocnemius Strain/Tear Anatomy

This muscle is located along the back side of the calf. The upper part of the muscle is attached to back part of the knee, while the lower end is inserted onto the back part of the heel by means of the Achilles tendon. The gastrocnemius is a critical knee and ankle muscle. It plays a pivotal role in being able to maintain the proper mechanics of the knee along with any weight-bearing activities like running, walking and even climbing stairs. If the muscles becomes overloaded or strained, pain can end up occurring in the back of the calf or the knee.

How to Treat a Gastrocnemius Strain/Tear:

1. **Cold Therapy**
   As soon as possible, make sure to apply ice to help stop any internal bleeding. Apply ice for five to 10 minutes at a time three to five times per day. In doing so, you will help to reduce the pain as the swelling in the area decreases.

2. **Compression Bandage**
   Compression bandages can be immediately applied to help stop any swelling going on, but you only want to apply them for 10 minutes at a time. If you restrict the blood flow to your tissues, you might end up causing further damage.

3. **Heel Lift**
   Wearing a heel pad or lift helps to raise the heel and shorten calf muscles, which helps to alleviate the strain on it. It might be wise to place the pads in both of your shoes, or you might find that one of your legs will be longer than the other, which will create an imbalance and lead to other injuries, such as that of your back.

Tips:

- Your therapist has to be careful with massaging the calf due to the risk of blood clots, so massage may not be possible in the early stages of the injury. Instead focus on getting the inflammation out using ice/heat, and applying any compression.
- Electrotherapy such as ultrasound and LASER can speed up tissue repair and reduce inflammation.
- A Grade I tear is minor, with only 10 percent of the muscle fibers being involved. Grade II tears account for anywhere from 10 to 90 percent of muscles being involved. Grade III tears are upwards of 90 percent torn, if not fully ruptured.
- In Grade III strains, pain will be severe and immediate at the back part of the lower leg.
- In the event of a rupture, a deformity exists where the muscles can be seen bunched toward the calf. The most common place for a rupture is the Achilles tendon and this is extremely painful. You will be unable to walk and have great difficulty bending your foot.
- In Grade I strains, there is likely to be tightness or an aching within the calf muscles in the two to five days after the injury.
- Sharp pains at the back of the legs are often felt with intense pain whenever walking.