

Muscle Strains

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Illustrated by Sierra Simmons

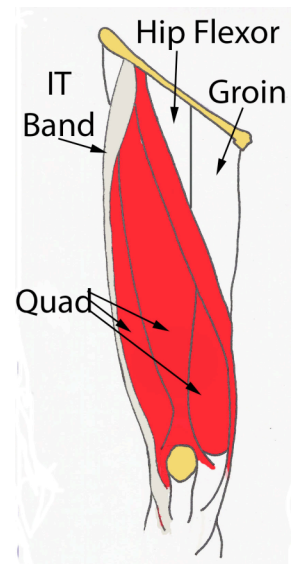
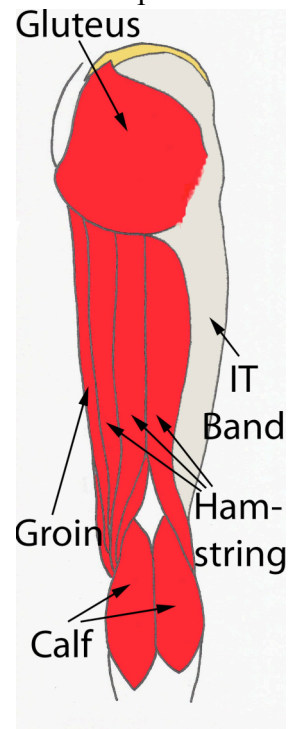
Muscle strains (also called pulls or tears) are common Ultimate injuries during the cold months. Both the cold weather and the increase in training during that time make muscles more vulnerable to strains. Here we will discuss the mechanism, diagnosis, management, rehabilitation, and prevention of acute muscle strains. This column is not meant to replace medical evaluation for your health problems. Always seek medical help for worrisome or persistent symptoms.

Strains most often result from abrupt, forceful muscle action such as acceleration, deceleration, or when changing directions suddenly. Sometimes strains occur when a contracted muscle is abruptly lengthened by an external force, such as contact from an opponent during cutting, jumping, or landing.

Muscle strains are graded by severity. In the least severe strains (Grade 1), there is muscle tightening over a few steps. The strain is initially not very painful, but there is some pain with stretching the next day. Grade 2 strains occur with a single motion and may have an accompanying snap or pop. The muscle contracts (spasms) immediately to protect the injured area. These strains have immediate and lasting pain. Grade 3 strains are tears completely through the muscle. They happen in a single motion often with an audible snap or pop. The athlete immediately stops play and has severe pain and muscle spasm. Swelling and limitation of motion usually parallels the severity of the injury.

Acute management of muscle strains is aimed at decreasing swelling and muscle spasm. Once you've pulled a muscle, stop playing - you will worsen it by continuing to play. Very light stretching can help decrease the pain and spasm, but excessive stretching can make the injury worse. Just after the injury, the athlete can usually point to the exact area that the strain occurred. Simply wrapping the muscle is not enough to prevent swelling; that area must be focally compressed. Take a pair of socks and place one on top of the other, fold them in half, and place them over the point of pain. Then use an ace wrap over the socks. Keep the area wrapped constantly for 24 hours except when icing. Apply ice for 20 minutes repeatedly for 24 hours.

During rehabilitation, strength and flexibility must be improved simultaneously. Strength training is frequently ignored and is often the cause of re-injury. After a strain, the surrounding muscles compensate, and the injured muscle weakens from disuse. A weak muscle easily fatigues and tightens to protect itself. Tight muscles are more vulnerable to tearing thus leading to re-injury. This phenomenon also explains why many



muscle strains occur the day after a really hard workout; fatigued muscles become tight leaving them more vulnerable to strains.

Rehabilitation begins with range-of-motion exercises and isometric exercises. These can be started 24 hours after the injury. Warm the muscle with massage or a heating pad. Then stretch the muscle just to the point of discomfort and hold it for 20 seconds. Release for 10 seconds and repeat 5 times. Repeat this regimen every two hours until the muscle has full range-of-motion. At the same time begin isometric exercises: contract the injured muscle for 5 seconds (ie. straighten your leg against a stationary object to contract your quad) , then rest for 5 seconds. Repeat 5 times every two hours. Start lifting with light weights. Stretch before and afterwards. Work up in weights until the injured limb has the same strength as the other limb. At the same time, start jogging with short steps and work up successively to running with longer steps.

During rehabilitation it is helpful to remember these two aphorisms of sports medicine: “It takes longer to get well than it did to get hurt” and “athletic participation is not a substitute for proper rehabilitation.” When returning to Ultimate, make sure you warm-up properly, wear a wrap or brace to keep warm, and start by jogging during your Ultimate drills. Do not make any quick direction or speed changes until you have worked up to full speed gradually over several practices.

Prevent strained muscles with a proper warm-up in combination with strength, endurance, and flexibility training. As mentioned above, muscle strains are more common in colder weather and when your muscles are fatigued from a hard workout. Cold causes muscles to contract in order to preserve warmth in the core of your body. Thus it is imperative to warm-up properly and stay warm on the sidelines during games and practice. Warm-up routines should leave you feeling warm and with loose muscles. If its cold out remember to run a few accelerators in the endzone to warm-up your muscles before you start the point.

References

- Garrick and Webb. Sports Injuries. 1999
Rouzier, Pierre. Patient Advisor. 2004