

Hamstrung by a hamstring pull?

Written by John Tomberlin

Sunday, 17 April 2011 16:52 - Last Updated Sunday, 17 April 2011 17:14

What is a hamstring pull?

The term “hamstring” comes from an old English term for the crooked part of the leg near the knee.

Old world butchers would commonly hang pigs for slaughter by their hamstrings (I once had a college coach threaten me with that punishment when I dropped a potential interception in the annual Orange and Blue scrimmage at the University of Illinois). In medieval times, knights in battle would target the hamstring area to weaken their enemies and prevent them from running away. Parents and coaches may recall Bill Murray’s character (Karl in Caddy-Shack 1980) giving advice to Chevy Chase’s character (Ty Webb) on how to negatively influence your opponent’s golf game by cutting their hamstrings! It seems difficult for any athlete who has suffered a hamstring injury to hide from the disability that comes with the injury and the common reinjury that often follows.

Hamstring Anatomy: The hamstring muscles are on the back of the thigh, originating from the ischial tuberosity (the part of your pelvis that you sit on) and “string” all the way down to below the back of your knee. Here is a web-link to view the anatomy and types of hamstring strains that can commonly occur:

<http://video.about.com/sportsmedicine/Pulled-Hamstring.htm>

<http://video.about.com/sportsmedicine/Pulled-Hamstring.htm>

The hamstrings bend your knee, extend your hip (move it backwards), and if inflexible, have a tendency to tip your pelvis back (tucking your bottom under) when your knee is straight in an upright standing position.

Hamstring Injury: Any athlete, especially those involved in ballistic or explosive movement activities, can suffer a hamstring strain injury. A minor injury can feel like a small rip of your shorts; a severe injury can force an athlete to fall to the ground in agony.

Hamstrung by a hamstring pull?

Written by John Tomberlin

Sunday, 17 April 2011 16:52 - Last Updated Sunday, 17 April 2011 17:14

Specialists commonly agree that there are three grades of hamstring injuries:

Grade I: Mild injury to the muscle(s). No swelling or bruising evident. Minimal loss of function, that may include a motion restriction and weakness due to pain. There can be soreness to touch at the site of injury.

Grade II: Moderate injury to the muscle(s). Swelling and bruising may be evident. Moderate loss of function that include a loss of motion and strength not only due to pain but due to some tearing of fibers of the hamstring unit. Moderate soreness to touch at injury site and a small defect may be palpable in the hamstring muscle fibers.

Grade III: Severe injury to the muscle(s). Severe swelling and bruising evident. Severe loss of function present, with a severe loss of motion and strength. Most athletes will need crutches to walk with this injury. There will be a significant palpable defect due to the tearing of many of the muscle fibers.

Medical Imaging: Imaging of the injury can be helpful to determine the extent of the hamstring injury, but in most cases are not needed in a Grade I injury. The less expensive option is Real Time Ultrasound Imaging (RTUS), and the more expensive option is the Magnetic Resonance Imaging (MRI). Your physician will determine whether or not these options are needed to diagnose your hamstring injury; the key factor will be whether the images will impact the course of your treatment and return to sports.

Hamstring muscle strains can be extremely challenging for athletes, coaches, parents, and the sports medicine specialists who treat them because of the high incidence of injury, slow healing, persistent symptoms and high risk of recurrence. There can be many factors contributing to injury, including poor flexibility of the hip region, weak gluts (muscles in your butt), muscle imbalance involving strong quadriceps (front of your thigh) and weak hamstrings, and poor conditioning. There is up to a 33 percent risk of reinjury (in high school athletes who suffer a hamstring strain injury) within the first two weeks of returning to sports; the reinjury is usually

Hamstrung by a hamstring pull?

Written by John Tomberlin

Sunday, 17 April 2011 16:52 - Last Updated Sunday, 17 April 2011 17:14

more severe than the original injury. Recent research suggests that the factors traditionally used to determine the athlete's readiness to return to sports may be flawed, resulting in an all too common premature return, contributing to the high risk of reinjury for another hamstring strain.

A lingering hamstring strain not only inhibits performance but becomes a weak-link in the way an athlete moves, making them more susceptible to chronic strain of the hamstring and/or increase the risk of suffering a more severe injury in the future. Research evidence tells us that the hamstring strain injury may irritate the sciatic nerve, which lies in close proximity to the hamstring muscles on the back of the thigh. It is imperative that your sports medicine specialist determine whether or not the hamstring strain involves the sciatic nerve, as this will change the treatment approach. There is also new research evidence to support better diagnostic criteria based on the location and severity of the hamstring strain. This will guide the length of treatment time, allowing for full rehabilitation, and cut down on risk of reinjury.

Young athletes often suffer an "avulsion" injury, where the hamstring injury includes a pulling off a piece of the bone on the pelvis (near the growth plate), high up the leg near the buttock. Rarely, like the injury to Ken Griffey Jr. (major league baseball), older athletes may suffer a similar injury that may require surgery.

Even the most highly trained athletes can suffer a hamstring strain injury. I was covering the Jr. Olympics Track and Field Championships some years ago and witnessed one of America's top 17 year-old sprinters set a world record in the 200 meters, only to stumble just after the finish line when he awkwardly decelerated to avoid another sprinter. He fell to the track in severe pain and was not able to walk away as we helped him onto a medical stretcher. He suffered a Grade III injury (tear) including a rare stretch injury to his sciatic nerve that prevented him from ever reaching world record form again. It was notable that the athlete had a long history of chronic problems with hamstrings strain injuries and chronic low back pain.

Key tips for care of hamstring strain injury:

See your school athletic trainer as soon as possible. Determining the severity of your hamstring injury sets the course for your treatment approach and aids decision-making about how long it will take to return to sports. You may also need to see your sports medicine specialist (physical therapist) for a faster recovery.

Hamstrung by a hamstring pull?

Written by John Tomberlin

Sunday, 17 April 2011 16:52 - Last Updated Sunday, 17 April 2011 17:14

Avoid stretching your hamstring too soon! This is the most common mistake athletes make when they suffer a hamstring strain injury. Unfortunately, if you are too aggressive with stretching prior to healing taking place, you will set back the timetable for your safe return and increase your risk of reinjury.

Keep all of the muscles of your hip area flexible. There is some new evidence that having poor flexibility of the muscles on the front of your thigh (hip flexors and quadriceps) contribute to a higher risk of a hamstring injury.

Keep your gluts working properly. If you have a history of low back problems, you may unknowingly have insufficient glut strength, also increasing your risk of a future hamstring injury.

You will need to learn newer functional types of exercise that emphasize negative work (eccentric training) for your hamstrings, as well as functional exercises with physio balls and balance devices, while learning to decelerate (stop) and accelerate (go) again in multiple directions.

To Learn More on this topic: The University of Wisconsin Sports Medicine Department is involved in cutting edge research in the area of hamstring strain injuries. If you are interested in viewing the most current concepts on diagnosis, rehabilitation, and injury prevention of hamstring strain injuries, check out this web-article: http://www.jospt.org/issues/articleID.2394,type.2/article_detail.asp

[ospt.org/issues/articleID.2394,type.2/article_detail.asp](http://www.jospt.org/issues/articleID.2394,type.2/article_detail.asp)

Click on the link, and go to the pdf link to view the full article. This article is intended for sports medicine specialists, but coaches, parents and athletes can benefit from learning more about these new approaches to the age old hamstring "pull".

About the author: John has worked with high school athletes in the Cedar Rapids Metro area since 1995. He was a four-sport athlete in high school and a high school coach for two years in Illinois. John has more than 25 years of experience working with athletes as a physical therapist and a certified strength and conditioning specialist. He has worked with professional athletes in the NFL, MLB and on the PGA and LPGA tours. John has also worked with elite amateur athletes in alpine skiing, figure skating, and track and field.