



Hamstring Strain

Background:

The hamstrings are a group of muscles on the back of the thigh that allow the leg to curl at the knee. The hamstring muscles are vital in running and physical sports and are commonly injured because of the amount of work they do during this activity. When the muscle is stretched too much the muscle will strain and cause injury. A hamstring strain is also known as a “pulled” hamstring.



Cause:

Hamstring strains are most likely to occur when performing exercise that incorporates running, jumping, and starting and stopping movements. Hamstrings are most often strained in running activity when the front leg is straight and the foot is about to hit the ground. It is during this time that the hamstring muscles are in their most lengthened position and trying to create a great deal of force to slow down the lower half of the leg. An athlete will be more at risk to suffer from a hamstring strain if they do not warm-up properly before exercise, there is a strength and/or flexibility imbalance between the hamstrings and the quadriceps

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(front thigh) muscles, and if the athlete has a forward tilting pelvis (causes the hamstrings to be more lengthened).

Symptoms:

The onset of a hamstring strain is often times acute, the athlete will suddenly feel a stretching in their hamstrings and hear/feel a “pop” in the muscle. The athlete will experience pain while walking and moving their leg into a flexed and extended position, they will be tender over the area of injury, and some discoloration from bruising may be evident. Crutches may be needed to walk around in more severe cases.

Examination:

Upon meeting with the doctor for a suspected hamstring stain the patient will be put through a full examination. The doctor will take a history and ask questions regarding how the leg was injured and if there were any previous injuries to that leg. After the history is taken the doctor will examine the leg looking for any swelling, discoloration, and abnormalities. The doctor will also test the strength and range of motion in both legs to compare. An MRI may be utilized to confirm the doctor’s diagnosis or if the doctor believes that there is possibly more damage to the area.

Treatment:

Mild to moderate strains will usually heal on their own and not much treatment will have to be done to fix it. Using RICE (Rest, Ice, Compression, and Elevation) in combination with anti-inflammatory medications and physical therapy is the staple for healing mild to moderate hamstring strains. It is important to note that stretching of the hamstring muscles should be avoided for the first couple of days after injury. Remember, strained muscles are already stretched; the goal is to get the muscle to heal and not stretch further. Once pain allows, mild stretching of the injured muscle is permitted.

Athlete Recovery:

With mild to moderate hamstring strains, following the given treatment guidelines will give the athlete the best and quickest opportunity to return to sport. A time of two weeks to two months should be expected for these injuries to heal. Returning to sport before the injury is completely healed will predispose the athlete for further complications and possibly reinjury.

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Prevention:

Returning to sport before the injury is completely healed will predispose the athlete for further complications and possibly reinjury. Maintaining proper flexibility and strength in the hamstrings, slowly working back into exercise after a long break, and warming up before exercise will aid in preventing strains. If you feel any tightening in your hamstring muscles during sport participation it is recommended to avoid adding extra stress to the area. If possible, taking a day or two break from activity can aid in avoiding a hamstring strain and also save the athlete from missing more time away from participation in the long run.

Athletes At Risk:

Athletes that require sprinting and/or kicking a ball for their sports are at a much higher risk for developing a hamstring strain. Athletes that participate in Soccer, Football, and Track are predisposed for this injury because of the continuous stretching and contraction of the hamstring muscles. These athletes, and the like, should actively warm up and use the information on prevention to avoid this injury.

Professional Athletes With Hamstring Strains:

Knowshon Moreno (NFL), Miles Austin (NFL), Mark Teixeira (MLB), Derek Redmond (Olympic Sprinter)

Relevant Articles:

The Role of the Pelvis in Hamstring Injuries & Posterior Thigh Pain

<http://physicaltherapyweb.com/role-pelvis-hamstring-injuries-posterior-thigh-pain/>

The Trick to Hamstring Rehab

<http://www.runnersworld.com/injury-treatment/the-trick-to-hamstring-rehab>

Academic Journal Articles:

Hamstring Strain Injuries: Recommendations for Diagnosis, Rehabilitation and Injury Prevention

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2867336/>

Hamstring Strains: Basic Science and Clinical Research Applications for Preventing the Recurrent Injury

<http://uwnmb1.engr.wisc.edu/pubs/nsca.pdf>

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