



# Sports medicine

## Hamstring injuries in sports

### Prevention and treatment of hamstring injuries

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#### Anatomy of the hamstring

Your hamstring allows you to bend the knee and straighten your hip, essentially giving you the ability to walk, run and play sports.

Hamstrings are composed of three muscles in the back of the thigh: the

biceps femoris, the semimembranosus and the semitendinosus. These muscles originate from the portion of the pelvic bone, which bears your weight when you sit, and end at the back of the knee.

#### How injuries happen

Hamstring injuries can occur from sudden excessive contraction during sprinting or excessive stretching during hyperextension of the knee and flexion at the hip. The injury



can be a strain or a partial tear of the muscles. It can happen at the muscle-tendon junction or the tendon-bone junction, with most injuries occurring at the muscle-

tendon junction. Pain and tightness to the back of the thigh are the main symptoms for this injury. These symptoms are especially noticeable with weight bearing activities, such as walking, running and jumping.

#### Diagnosis

When an athlete with a hamstring injury is examined, passive stretching and resisted knee flexion reproduce the pain at the back of the thigh. The injury location will be tender to touch,

and swelling, tightness and bruising may be present. If the injury is severe, an obvious deformity may be present. X-rays may be taken, but will usually be normal because most hamstring injuries involve soft tissues.

#### Treatment

Some athletes may already be familiar with the treatment plan called RICE (rest, ice, compression and elevation), which is recommended for hamstring injuries. Depending on the pain level, crutches maybe needed to get around. Rarely is immobilization required, but may be needed for pain control.

Most hamstring injuries are treated conservatively with physical therapy. Modality treatments such as ultrasound, electric stimulation, heat and cold are used to decrease swelling and stiffness, and to promote healing. This is followed by gentle stretching and conditioning. The last treatment phase involves strengthening and endurance training in preparation for returning to sports.

Recovery varies depending on the severity of the injury. Some athletes may return to sports as early as two weeks following an injury, while it may take others more than two months. Ultimately, the athlete must have the ability to run, sprint, jump, kick and dribble to be able to return to soccer.

#### Prevention

Prevention is especially important for teenage athletes who may undergo growth spurts. They may experience a relative tightness of muscles in general, including the hamstrings. Eliminating the risk factors, such as tightness, fatigue and imbalance, is the best prevention. For this reason, prevention programs mainly focus on daily stretching, endurance training, and obtaining balance between the quadriceps and hamstrings.

Contact one of our sports medicine experts at 855-MD-SPORT to conduct a full evaluation if a sports-related injury occurs.