

HAMSTRING STRAIN



What is it?

A hamstring strain is a common injury seen with running, jumping, kicking activities, water skiing, dance, weight lifting and ice skating. Injury may occur at any point along the hamstring muscles, the muscles at the back of the thighs, from their connections at the hips to their connections at the knees. These injuries can be mild, moderate, or severe. The cause of a hamstring strain is overloading the muscle, typically during activity. Risk factors include older age, higher levels of competition, previous history of hamstring strain, strength imbalances, poor flexibility, muscle fatigue and inadequate warm-up.

Symptoms

Athletes typically experience a sudden pain at the back of the thigh. It may be sharp, and the area may be swollen, bruised, and/or tender to touch. Some athletes may complain of stiffness and weakness in the involved leg as well, with difficulty walking or stretching the involved side.

Sports Medicine Evaluation and Treatment

A sports medicine physician will examine the entire leg, looking for swelling, pain and bruising. Range of motion and strength testing will also be done. Occasionally, if the athlete's pain is in a specific area of concern, the physician will order an x-ray to look at the place where the muscle connects to the bone. An ultrasound or magnetic resonance imaging ("MRI," a form of imaging to look at the muscles, ligaments and tendons) may also be performed to visualize the extent of the injury.

Treatment is initially aimed at reducing swelling and pain with rest, ice, compression and elevation. As the hamstring heals, athletes can expect a slow progression of flexibility training, conditioning and strengthening exercises. These may include pool activities or stationary bike workouts, progressing to sport specific drills and workouts. Surgical repair is necessary in very few cases.

Injury Prevention

In order to prevent hamstring injury, proper warm-ups should be encouraged, as well as maintaining flexible and strong hamstrings, quadriceps (the muscles in front of the thigh) and hip flexors (the muscles that help bend the hip forward). An athlete should not return to play earlier than needed, as the risk of re-injuring the muscle is high; this can lead to a delay in recovery or a more severe injury.

Return to Play

In general, athletes may return to play when they have regained pain-free range of motion, strength has returned and they can perform sport-specific activities without difficulty.

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References

- Bracker M. *Five-Minute Sports Medicine Consult*. Lippincott Williams & Wilkins; 2012.
 Casa D, O'Connor F, Davis B, St. Pierre P, Sallis R, Wilder R. *ACSM's Sports Medicine: A Comprehensive Review*. American College of Sports Medicine; 2013.
 Madden C, McCarty E, Putukian M, Young C. *Netter's Sports Medicine*. Saunders Elsevier; 2010.

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