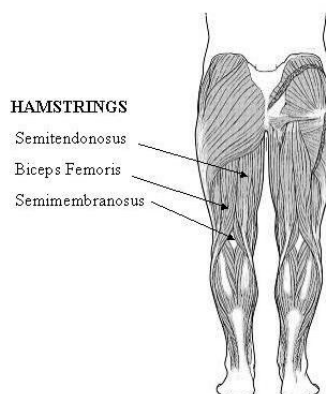


Hamstring Injuries

Anatomy:

The hamstrings are on the posterior (back) portion on the thigh and are made up of three muscles; semimembranosus, semitendinosus and biceps femoris. The hamstrings originate on the ischial tuberosity (the bones you sit on in your rear) and attach just over the knee. These muscles help to flex the knee and extend the hip.



Causes:

This is typically a non-contact injury that occurs all of a sudden. Hamstring strains can occur when an athlete reaches out just a little too far for a kick, to put their foot on the base or to increase their stride at the finish line to cross first. The underlying cause for the injury can be inadequate flexibility of the hamstrings, inadequate strength or endurance of the hamstrings with either a side-to-side weakness or an imbalance between the hamstrings and the knee extensors, muscle fatigue, insufficient warm-up time, poor running technique, and return to activity before complete healing has occurred.

Signs & Symptoms:

The most common symptom reported by the athlete is a popping felt in the hamstring when the injury occurred. They will have pain in the posterior thigh, tenderness with touch over the injured area, some may have swelling and bruising, a “knot” may be felt at the injury site, pain with passive extension of the knee and the hip flexed at 90°, which stretches the muscle, and pain with resisted knee flexion, which activates the muscle.

Prognosis:

Hamstring injuries are common problems that may result in significant loss of on-field time for many athletes because these injuries tend to heal slowly. Once injury occurs, the athlete is at high risk for recurrence without proper rest and rehabilitation.

Treatment:

Unfortunately this is not a quick healing injury. The athlete should follow the acronym R.I.C.E. To get rid of the swelling and slow the bruising, you need to stay off the leg, ice it throughout the day, place a compression wrap around the thigh, which will also keep the muscle warm and help it feel protected, and lastly, elevate the leg.

Gentle stretching will also be important. The muscle is going to tighten up as a response to injury, but you don't want to stretch too much in the beginning. In therapy the athlete will then begin working on muscles strengthening, balance and increased stretching. As the hamstring begins to heal, sport specific movements will be re-introduced to get the athlete ready for game situations.

Rehabilitation Exercises:

Single knee to chest stretch

Pull knee into chest and apply a gentle force down and back through knee. Hold 15 seconds. Repeat 10 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Hip Extension (prone):

Tighten muscles on front of thigh, then lift leg, keeping knee locked. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Hip Abduction (Side-Lying)

Tighten muscles on front of thigh, then lift leg, keeping knee locked. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

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Tighten muscles on front of thigh, then lift leg, keeping knee locked. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Knee Flexion (Standing)

Bend knee as far as possible. Repeat 10-20 times per set. Do 1-2 sets per session.
Do 1-2 sessions per day.

Wall Slide

Leaning on wall, slowly lower buttocks until thighs are parallel to floor. Hold 10-20 seconds. Tighten thigh muscles and return. Repeat 10 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Hamstring Stretch (Supine)

Supporting thigh behind knee, slowly straighten knee until stretch is felt in back of thigh. Hold 15-20 seconds. Repeat 5 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Hamstring Stretch (Sitting)

With leg straight, tuck other foot near groin. Reach down until stretch is felt in back of thigh. Keep back straight. Hold 15-20 seconds. Repeat 5 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Step-Up

Stand on stair step or stool. Slowly bend affected leg, lowering other foot to floor. Return by straightening front leg. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Hip Abductor – Resisted

With band looped around both legs above knees, push thighs apart. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Squat

Stand with feet shoulder width apart and squat deeply, head and chest up. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Forward Lunge

Standing with feet shoulder width apart and stomach tight, step forward, alternating legs each time. Repeat 10-20 times per set. Do 1-2 sets per session. Do 1-2 sessions per day.

Prevention:

For athletes who tend to be tight in the hamstring or low back muscles, regular sports massages will help keep the muscles loose and flexible. Also a low back and leg strengthening program with focus on dynamic flexibility, single leg activity and strength, and proper hamstring and quadriceps strength will be key.