

Are your hamstrings a pain in the bum?

Pain, aches and general discomfort in the back (posterior) of the thigh can arise from many different problems. One of the most frequently implicated structures when things go wrong is the hamstring muscle.

The hamstring muscles are a group of three muscles located at the back of the thigh: the biceps femoris, the semi-membranosus and the semi-tendinosus. These muscles are extensors of the hip joint and flexors of the knee. In addition these muscles act to rotate the leg when the knee is flexed, helping to stabilise the pelvis on the thigh.

Because the hamstring muscles act over two joints they are particularly vulnerable to injury. This is especially true when sprinting, as the muscle are stretched at the hip and knee, while at the same time bracing the leg ready for the point of heel strike. Injury can also come when running up hill, especially if the surface is loose or slippery, or damage can arise from direct trauma eg. a kick to the back of the thigh.

Damage to muscles ranges from minor tears of a few fibres, to total rupture of the muscle. Any injury to a muscle will result in pain and inflammation, which should be controlled by using RISE: **Rest**, **Ice** (up to 10minutes 3 –4 times a day) **Support** (“Tubigrip” etc) and **Elevation**. This regime should be maintained for 72 hours. Do not massage the muscle in this early phase as you may cause more bleeding in to the muscle. Do protect the injured area from further trauma when ever possible.

Acute injuries to the hamstring muscles can be so dramatic that the participant is stretchered off the sports field, or limps pathetically out of the race. Training in the immediate short term is simply not possible because of the pain, but following the RISE regime should help to ensure a speedy return to full training. Post-trauma an exercise regime should work on both strength and flexibility. Begin by using mid-range isometric contractions before moving on to more dynamic concentric-eccentric contractions. Wait for 2 weeks after the injury before introducing gentle hamstring stretches.

More problematic for the sportsman and woman are chronic posterior thigh problems. These symptoms hang around for months or even years if not addressed correctly. Very often the symptoms are beyond the simple self-help category, but knowledge of what is going on will aid quicker recovery. It is important that your therapist has explained to you as fully as possible what they feel is going on because the cause and/or treatment of each of these conditions may vary:

- **Hamstring strain** Sudden sharp pain, usually localised to point of injury. Treat with “RISE”, electrotherapy and exercises for strength and mobility.
- **Hamstring syndrome** Pain in posterior thigh and buttock without obvious traumatic origin. Tight, fibrotic muscles put pressure on a nerve, leading to referred pain along part or all of the course of that nerve. Extreme cases may require surgery. Deep friction massage with stretching for less marked cases.
- **Posterior compartment syndrome** Increased intra-compartmental pressure results in ischaemic pain. Can be acute due to haematoma from heavy blow or kick, or chronic from overuse. Pain is worse with activity, eases with rest. Acute cases may require surgery, chronic cases respond to stretching exercises and massage.
- **Bursitis** Irritation of a bursa in the buttock, usually from direct trauma, presents with gradually increasing pain with certain actions, which then eases with rest. Treated with stretching to gluteal and hamstring muscles, and protection from further trauma. Steroid injections may be recommended.

- **Lower lumbar and sacro-iliac joint problems** Low back dysfunction will refer pain in to the posterior thigh either by exerting a stretch on the muscles, or by putting tension or pressure on to the sciatic nerve. The sufferer will usually have low back pain as well as thigh pain, but not always. Treatment is best pursued through osteopathy, chiropractic or physiotherapy. Severe disc problems may require surgery.
- **Piriformis syndrome** or any other restriction on along the passage of the nerve. Spasm of this muscle in the buttock irritates the sciatic nerve and prevents its free movement, as does scaring and inflammation along the nerve. Treatment is aimed at releasing the nerve and loosening off the piriformis muscle.

To avoid the conditions listed above (and if you are recovering from any of them) good warming- up before exercise, controlled training (not over-training) and stretching down will help. You and your therapist should be assessing muscle tone in both hamstring muscles and quadriceps (antagonistic muscles) looking at strength, but also checking the “stretchiness” in the posterior muscle groups, from the plantar surface of the foot, up through the calf muscles to the hamstrings, gluteals and lumbar musculature. Lumbar spine, hip, knee and even ankle and foot function can all impact upon hamstring health.

Be patient with your body (and therapist!) as, for example, chronic scar tissue in the hamstring muscles can take 3 months of deep friction work and stretching to ease. But perseverance will bring about rewards in improved performance and less pain.

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