



Hamstring Injury - the Athlete's Nightmare

by Susan Findlay

Continuing our series examining the common conditions that a sports & remedial massage therapist will come across on a regular basis, Susan Findlay of the NLSSM looks at hamstring grade 1 strain, the cause, effect and treatment.

It is frequently a runners' injury, whether it is during a game of football, tennis or long distance running. Hamstring strains tend to happen in the gait cycle during the terminal swing phase and heel strike, this is when the hamstrings produce the greatest eccentric force to decelerate the leg.

Similarly, sudden over-stretching, or an extreme contraction of the muscles, can cause damage to the belly or at the musculotendinous junction. Other examples include a combination of deceleration, acceleration, pushing off, jumping, turning, side stepping etc.

The causes of strain can be attributed to; inadequate warm-up, being exposed to prolonged periods of cold, decreased flexibility, overuse syndrome, muscle imbalance, biomechanics, scar tissue present from a previous injury, as well as an athlete who is fatigued.



TREATING WITH THE LEG IN THIS POSITION, IS AN EFFECTIVE WAY OF MASSAGING MUSCLES AND ENCOURAGING LYMPHATIC DRAINAGE.

SIDE LYING IS VERY USEFUL FOR ADDRESSING FASCIAL LINES AS WELL AS APPLYING ACTIVE AND PASSIVE STR TREATMENT TECHNIQUES.



Strains can be classified within 3 different grades

GRADE 1

Mild or 1st degree strain

Minimal tear to the tissue, no local oedema, bruising & heat are minimal or not present. The person can continue with the activity experiencing a nominal amount of discomfort

GRADE 2

Moderate or 2nd degree strain

A greater number of fibres have been torn. There may be evidence of heat, local oedema, and bruising. A gap may be palpable at the site of injury. A snapping sound is sometimes heard at the time of injury. This person has difficulty going back to the activity they were doing.

GRADE 3

Severe or 3rd degree strain

This is a complete rupture of the musculotendinous unit (or an avulsion fracture), often the muscle shortens and bunches up, leaving a palpable gap. A snapping noise will be heard at the time of injury. Evidence of heat, haematoma, bruising and local oedema. The person cannot continue with the activity, there is a severe loss of muscle function.

Rehabilitation takes into account these three classifications and well as the stage in which the injury presents itself; acute, subacute, chronic, and acute chronic. In all grades of strains, if it is acute, first aid principles apply such as R.I.C.E. and referral as appropriate. Grade 3 strains often require surgical repair.

GRADE 1

Strain

Typically most clients "work through" these minor episodes of mild strains, which can accumulate and lead to bigger problems in the future if they are not addressed adequately in the first instance.

Testing

When a client comes in with a minor strain, as well as taking a thorough case history, it is also advisable to do a postural assessment and note any muscle imbalances.

Observe for any gait changes, with a mild strain there might be a limp, sometimes not. Isometric contraction can produce a mild local pain.

Testing for ROM (Range of Motion) would appear normal or near normal. Flexion could compress the strained muscle and thereby cause some discomfort. Test the affected plane of motion last, when the muscle reaches a stretched position, a mild pain or discomfort will be felt.

Acute Stage Treatment

First aid treatment, R.I.C.E (rest, ice, compression and elevation) is implemented.

Massage above the site to encourage flushing of the injured tissue above the area.

Reduce protective muscle spasm, but care must be taken to not significantly change this mechanism as it is there to give it stability.

Sub Acute Stage

Palmar and fingertip kneading is useful to increase circulation and decrease adhesions. If friction is chosen as a choice of treatment, be careful to not to over-treat.

Maintain ROM, using passive relaxed stretches. Remedial techniques such as MET (Muscle Energy Technique), STR (Soft Tissue Release), and Activated Isolated Stretching would be appropriate.

Always flush out the area with effleurage and petrissage.

Chronic Stage

If a condition keeps repeating itself, the reasons for it occurring need to be addressed. Questions could be; is it a training or a equipment problem, a biomechanical dysfunction, are there compensatory factors affecting muscle balance related to the original condition not having been resolved sufficiently?

Acute Chronic

In an acute chronic condition, the acute aspect of the condition needs to be treated first before addressing the underlying reasons for it being chronic.

Other Rehabilitative Considerations

In all stages the remedial exercises should include gradual training programs that include strengthening and stretching to work to the onset of pain only.

Stretch shortened muscles within a pain free active ROM, gradually increasing the strength within this range.

In a grade 1 strain, the client can return to the activity with support such as strapping and taping, or an elastic support bandage after a couple of days.

Conclusion

The signs and symptoms of a grade 1 strain might not appear to be significant to most, but they are an indication of possible underlying problems and can build up to present themselves as a Grade 2 or 3 strain in the future.

Hence, it is important to acknowledge pain, and address the reasons for it.

HAMSTRING ROM TESTING, SUPPORT LIMB, TESTING AFFECTED PLANE OF MOTION LAST.



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