ask the physio Q&A

John Foster
MCSP, MACPSM, Dip Phys, PGDip H. Sci.
Consultant Physiotherapist, Running Injuries Specialist, Performance Rehabilitation
Sports Medicine Department, Sports Surgery Clinic

I am finding a lot of tightness in my hamstrings, especially after my weekly long run. I have not done much stretching up to now and I wonder should I be doing some at this late stage of my training.

The feeling of hamstring tightness after long runs is normally due to delayed onset muscle soreness (DOMS). This is a combination of mild muscle breakdown and the build-up of metabolites in the muscle. The hamstrings are involved in decelerating the swing leg, stabilising the pelvis and propelling the body forward. If the hamstrings are weak and then overused for any of these functions they will be sore. We have two choices, strengthen the muscles or change technique to reduce hamstring overload.

Stretching may feel as if it is 'hitting the spot' but there is little evidence that this reduces the symptoms of DOMS. Stretching your hamstrings after running may provide some transient relief but this is normally short-lived and due to a neuro-modulatory effect. Some gentle post-run stretching will certainly do no harm and may just take the edge off your discomfort.

Slow static stretching before running should be avoided as this may lead to a temporary weakening of the muscle, resulting in more discomfort afterwards. You could try some gentle hamstring strengthening exercises twice per week to help prevent the DOMS developing in the first place.

My favourite functional hamstring exercises are high step-ups, lunges and Romanian dead lifts. Try 3 sets of 5 reps to start.

A slight increase in muscle soreness may result for a few weeks then this normally resolves. Romanian dead lifts should result in lengthening of the muscle at the same time as it strengthens if performed correctly so we don't overly focus on stretching. The most immediate way to reduce hamstring overload is to change technique; this requires an expert eye but can result in super quick results.

I have developed pain on the outside of my right knee. It does not stop me from running, but it is uncomfortable. Should I continue to ignore this pain that has been with me for about three weeks?

Most runners experience niggles from time to time. Normally these niggles pass with a little easing of training as the body adapts to new stresses. If symptoms worsen or persist for more than a few weeks it is best to seek an opinion from a qualified health professional familiar with running injuries. This includes physiotherapists, sports medicine doctors and sports rehabilitators.

Knee pain is the most common runners' complaint and there are several possible diagnoses. These include ITB friction syndrome, patello-femoral pain, patella tendinopathy, and fat pad irritation to name a few. The treatment is dependent on accurate diagnosis and should not be left too long as these conditions often worsen if ignored.

The most common cause for lateral knee pain in runners is irritation of the fat pad under the iliotobial band (ITB). This pad is rich with nerve endings so even mild irritation can cause considerable pain as fibres of the ITB rub over it when running. Contrary to popular belief the ITB cannot be stretched so those foam rollers don't really help much. The exact role of the ITB is unknown but it is thought to be involved in stabilisation of both the pelvis and the knee.

We often see ITB friction syndrome in those with reduced pelvic and knee stability so exercises should involve functional strengthening of stability muscles and retraining of movement patterns. Often only a few simple exercises and running technique changes are required to reduce pressure on the fat pad and alleviate symptoms. Reducing excessive pelvic anterior tilt and hip extension are a few technique changes which may help. If time to the marathon is wearing short without resolution of symptoms the fat pad can be injected with a local anaesthetic by a sports medicine doctor. Your running should be enjoyed, not endured.

I have heard some of the runners in my training group talking about taking ice baths after training. Is there any value in this coming up to the marathon – maybe after a long run?

Ice baths and cold water Immersion (CWI) are commonly used by professional athletes to reduce Delayed Onset Muscle Soreness (DOMS). A variety of techniques are reported with periods of intermittent 30-second immersion up to a continuous 10-minute immersion. There is some evidence that this is beneficial in reducing soreness which then allows the athlete to train earlier than otherwise following a hard session, however some studies report no benefits.

There is also some evidence that ice baths impair the parasympathetic nervous system which is necessary for full recovery after hard sessions. Immediate effects of CWI are an increase in heart rate, blood pressure, respiration and metabolism. There is also evidence of increases in peripheral catecholamine concentration, oxidative stress and a possible increase in free-radicals.

What we can say is that CWI induces significant physiological and biochemical changes but the rationale for using CWI in recovery still remains unclear. It appears that some post-exercise soreness may be necessary for adaptions to training to occur. If we reduce this soreness too much then we may reduce the effectiveness of the training in the first place. If the athlete has an intense period of training with several runs in succession then we use ice baths to facilitate training.

If soreness is not excessive and training is lighter or there is a rest day after your long run, it may be best for nature to take its course. If you are still training hard to achieve a time then you may find some benefit. Initially start with one-minute immersion, one minute out for six minutes, then build up to 10 minutes. Do not use if you have peripheral circulation problems!