MARATHON NEWSLETTER

Prepared by:

PEREA CLINIC
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ISSUE 3 A: Injury Prevention B: Lower Leg (Focus Area)

Injuries to runners are often a little like credit card bills to the irresponsible shopper. If you ignore the early warning signs, the long-term costs can be far worse. And just as a prudent investor must plan to protect their assets, a runner must have a strategy to take care of their number one asset: their body.

Simply pounding the pavement for mile after mile is a recipe for disaster. Taking a broader view of how to look after your body during training will significantly reduce your risk of injury. Your training plan should factor in **stretching**, **warm-ups** and **cool downs**, **strength** work and much more besides. But before we take a more detailed look at your regime, let's have a think about how you currently use your **body** while running.

Your Body

Posture

As we've mentioned before, the forces acting on the body whilst running are significant. Any postural imbalances in the body further exacerbate these forces and heighten your risk of injury. It's like hammering a nail without lining it up properly. It soon gets damaged and bent out of shape. It's the same with the body when subjected to mile after mile of impact from running!

And although you may be unable to totally perfect your posture before race day, there are plenty of straightforward interventions that can help you redress any imbalances before then.

First, you can get your posture formally analysed. It's always better to see a posture specialist (call us if you don't know anyone), as an experienced **physiotherapist** or **osteopath** wil help you counteract some of your imbalances. You can also consider activities such as yoga and Pilates, which help you develop your core-strength and flexibility. Both will have a positive impact on your posture. In any event, it helps to keep these running tips in mind:

- Keep your **head and chest** up and pointing forward
- Keep your **elbows** close to your side and relax your **shoulders**.

As you run, mentally remind yourself of these postural cues to boost efficiency, and consequently put less stress on your body.

Gait Analysis

Your **gait** is your 'manner of walking', although in this case, it refers to way in which you run. The key element of a gait analysis focuses on what happens to your foot as it strikes the floor with each step.

The vast majority of runners '**overpronate**' as they run. This basically means that the foot rolls excessively inward as it lands. This increases the chance of common injuries such as shin splints, plantar fasciitis and knee problems. Specialist 'stability' running shoes help compensate for this and can be instrumental in guarding against injury. As the body puts too much stress on the lower leg muscles, it causes them to fatigue and the tendon to become inflamed.

Supination (or under-pronation) is a less common gait issue. It also leads to injuries of the lower limbs and joints but doesn't usually require a specialist running shoe.

It is important to give your physio, masseuse or osteopath the results of your gait analysis. They can work on muscle tension or joint restrictions that are exaggerating any problems. This may not reverse your gait issues altogether, but should prevent it from getting any worse, and will reduce the risk of injury.

Body conditioning:

A marathon is an endurance event, and relies almost entirely on **aerobic conditioning**. However, to maintain stamina and guard against injury, some **body conditioning** is advisable. There are some key running exercises you can do to help you in your quest.

The best exercises to include are functional exercises and ones that help you retain good posture. Good examples include lunges, squats, the body plank and leg lifts. Again, seek out guidance on how to perform these exercises if you are unsure. But whatever you do, don't overlook strength exercises in your pursuit of aerobic fitness.

Your Training Routine

The Warm Up…

As tempting as it might be to head straight out of the door and get on with your run, you must force yourself **never** to skip your warm-up. The warm-up is vital in instigating the physiological responses the body needs to cope with the demands of a run.

As the name suggests, a warm-up causes the body's muscles to heat up, which is important because it allows them to stretch further. In addition, it increases blood flow and thus provides more oxygen to the muscles. And perhaps most vitally, a good warm-up prepares the heart for the more vigorous activity to follow.

As a bare minimum, the warm-up should include at least two or three minutes of faster paced walking, some slow jogging or striding and some **dynamic flexibility exercises**. Unlike "static" stretching, where you hold a muscle in an elongated, fixed position for a period of time (which is more beneficial **after** your run), dynamic stretching uses **controlled movements** to improve your range of motion. This loosens your muscles and increases your heart rate, body temperature, and blood flow to help you run more efficiently. Use small movements for the first few reps, and increase the range of motion as you go. As dynamic stretching is most effective when it's sport-specific, you should target muscles used for running in your pre-run routine.

If you are not yet familiar with **dynamic flexibility**, take the time to learn the basic principles from a Personal Trainer or Physiotherapist. Modern sports science recommends this form of stretching as part of your running preparation, as is very effective for improving performance.

…and the Cool Down

You often see novice runners sprint the last section of a training run and then hunch over their knees as they eagerly check their watch to see how fast they have gone. Is this you?! If so, unfortunately you are increasing your risk of injury. Ensuring that you cool down **progressively and adequately** is important from a physiological perspective. It is the first step in helping the body recover for the next run.

One of the easiest ways to ensure you cool down properly is to ease off (rather than speed up!) towards the end of your run. Decelerate into a slow jog, then walk for two or three minutes.

This allows your heart rate to normalise gradually and aids venous return, which in turn helps prevent blood pooling. You want to avoid blood pooling at all costs, because it can cause havoc with your veins. A gradual cool-down will also help you to restore a normal breathing pattern and help you to avoid faintness or dizziness.

Be sure to include **static stretches** as part of the cool-down process. These should cover all the most important muscles used in running, including the calves, thighs, hamstrings, glutes, lower back, the IT band and the adductors. If you are inexperienced in stretching these muscles, seek out expert advice by contacting us or your own sports therapist.

Massage:

You will probably be familiar by now with the phenomenon that your muscles feel sorer the day *after* the run than immediately after the run itself. The technical name for this DOMS (**delayed onset of muscle soreness**). Important research from 2017 demonstrates that massage can play an important part in **alleviating DOMS and improving muscle performance**. People who receive massage also '*experience measurable changes in their body's immune and endocrine response'*. This is central to guarding against infection and the breakdown of muscle tissue that can be caused by viruses. In essence, a proper sports massage will **speed up recovery** and allow you to run pain-free more quickly. Massage reduces muscles tension and helps to increase range of movement, so you can move more freely.

Mindset:

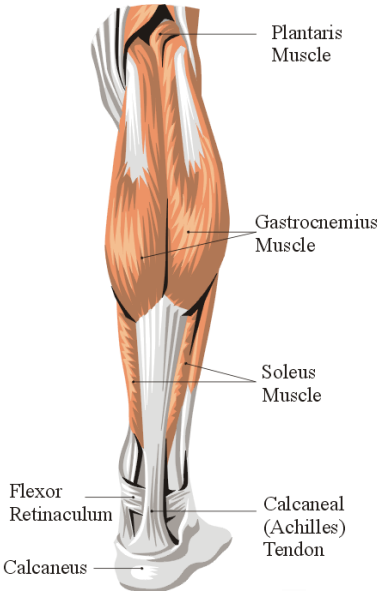
There are many steps you can take to help prevent injury. But all are predicated on and enhanced by having the right mindset. You need to be dedicated enough to train regularly and sufficiently, but sensible and cautious enough to rest when appropriate. You need the discipline to consistently do both a proper warm-up and cool down. Putting your health first is a winning mentality.

Issue 3: Focus Area – Lower leg Injuries

Most people probably know that the knee has the highest incidence of injury in runners. But not many realise that the **next most vulnerable area** is the lower leg. It is partly because of the wide range of injuries that can occur between the ankle and the knee. We look at some of the most common below, including calf strain, Achilles tendonitis, and shin splints.

Anatomy of the calf muscles

The calf consists of two main muscles. **Gastrocnemius** forms the belly of the calf. And the **soleus** muscle sits beneath it. The calf is attached to the heel by the Achilles tendon. This is a long fibrous tendon with notoriously poor blood supply.



Calf Strain (pulled calf muscle)

Symptoms: A feeling of sharp pain, tightness or weakness in the calf. Often accompanied by mild swelling. Occasional spasms, and more pronounced pain when standing or walking.

Cause: Overstretching or tearing of either of the two muscles of the calf. Often caused by accelerating during running or changes in direction. Often due to a lack of flexibility or poor conditioning, overexertion and fatigue, or not warming up properly before running.

Prevention: Making sure that you thoroughly warm up and cool-down as per our recommendations set out above. Also, ensure that all increases in training load are progressive and incremental.

Treatment: As usual, at first instance, use the **RICE** method. **Rest**, and stop running. Apply **Ice** (or a bag of frozen peas or similar) to reduce swelling. Wrap the ankle in a soft cloth and apply to the calf for about 8-10 minutes. Repeat about every 2 hours until the swelling goes down. Likewise, use an elasticated support bandage for **compression**, which also reduces swelling. **Elevating** the calf above the heart (when possible) will also help. Only once the immediate damage has healed, typically after at least a few days, should you get a massage (and from a qualified sports therapist rather than a "spa"-type masseuse). Don't return to running until the calf is completely free from pain and swelling. Recovery time depends on the severity of the injury. For a mild strain, it takes three to six weeks with basic home care. For more severe strains, recovery can take several months, and physical therapy (or even surgical repair) may be necessary.

Achilles Tendonitis

Symptoms: Dull ache or sharp pain on the tendon when pushing of from the foot. Tenderness/stiffness in the tendon that lessens as you warm up. Creaking sound when you touch or move your Achilles tendon.

Cause: This is a chronic injury that builds over time. Often caused by increasing mileage or running speed too quickly. Can also be brought on by hill running or hill repeats.

Prevention: As for calf strain (see above). In addition, it is really important to include **bent knee calf stretches** as part of your post-stretch routine.

Treatment: Achilles tendonitis needs more rest than many other injuries; usually a minimum of two weeks, but longer for more serious cases. To help restore it properly it is advisable to do specific strengthening exercises prior to recommencing running. Standing or seated calf lowering is very beneficial. We recommend consulting a physiotherapist to ensure full rehabilitation.

Shin Splints

Symptoms: Pain felt over the inside of the tibia (shin bone), often dull and aching. Worsens during running. Often accompanied by tenderness and swelling around the area.

Cause: Although causes can vary, the main cause in runners is the repetitive stress on the anterior tibialis muscle. This stress leads to an inflammation on the bone attachment site of the tibia.

Prevention: Ensure you have the right footwear. Vary the types of surface you run on (hard surfaces exacerbate shin splints), and allow adequate rest for tired and sore muscles.

Treatment: Rest (normally for up to two weeks), ice compression and massage. It is often possible to cross-train during recovery with activities such as swimming, yoga or Pilates.

Next Issue:

In Issue Four of the newsletter we look more in-depth at the different types of treatment, and focus in on injuries to the knee.