

ISSUE 4 A: Treating Injuries B: The Knee (Focus Area)

Running the London Marathon is a challenge on so many different levels. It's not just about the obstacles you face on the day of the run. As the event day gets ever-closer, the training becomes more physically challenging, but also starts to test you psychologically and emotionally too. By this stage, you have already put in a lot of hard work. With each mile you run in training your determination to complete the challenge at the end of April grows ever greater. So one of the most emotionally challenging setbacks at this stage, can be developing an injury.

Naturally, you will want to get over this obstacle and get back to training as soon as possible. But we need to add a word of caution. Running with an injury can have serious long-term implications to your health. The old adage of 'no pain, no gain' does not apply to injuries! So don't be a martyr to your cause or you may have to [defer to next year](#).

That said, many minor injuries incurred in the coming weeks can still be effectively treated before race day. If you are unlucky enough to get injured, below is an explanation of some of the most common treatment methods and why they are so effective.



Injury Treatment

Diagnosis

The first step to treating an injury is getting it properly diagnosed, either by **your GP** or a professional sports injury specialist (such as a **physiotherapist, sports & remedial therapist or osteopath**). The sooner the injury is treated and the symptoms addressed, the quicker the rehabilitation process can start, and the more effective the treatment will be.

PRICE Protocol

The term 'PRICE' is an acronym for a procedure that is regularly used to treat more minor injuries such as strains and sprains, as well as closed fractures. The individual letters stand for **protection, rest, ice, compression and elevation**.

The objective of PRICE is to reducing swelling, alleviating pain and speeding up recovery.

Protection: For many years this protocol was referred to simply as the **RICE method**. The recent addition of the "protection" element was made as a common-sense measure. Aimed simply at avoiding aggravating the injury further, it refers to the use of props such as crutches, walking canes, splints, braces or slings. The objective is to immobilise or reduce activity in the affected area.

Rest: This is a crucial element needed to allow time for the body's natural healing process to kick in. Depending on the extent of the injury, however, the recommendation may vary between complete rest or active rest. Some movement is often beneficial. Gentle and pain-free movement can often help to restore range of movement in a joint. And regular [isometric exercises](#) can often help maintain muscle tone and guard against [muscle atrophy](#) (when muscles waste away from lack of use).

Ice: Crushed ice wrapped in a paper towel, or frozen peas wrapped in a thin tablecloth, can act as a makeshift icepack for applying to injuries to reduce swelling. The ice is usually applied for 10-15 minutes at a time roughly once every two hours. Applying at intervals in this manner is considered more effective than a long and continuous application.

Compression: This involves wrapping the injured area in an elastic bandage. Again, the goal is to reduce swelling. It is imperative that the bandage is not too tight because that can actually increase swelling and reduce blood circulation! You'll know if the bandage is too tight because you'll probably experience numbness or tingling sensations in, or around, the affected area.

Elevation: This involves raising the injured area above the level of the heart. The goal is to prevent the pooling of fluid at the site of the injury and, again, to help reduce swelling. Elevation is most effective 24-48 hours directly following the onset of the injury.

The need to **reduce swelling** seems intuitively the right thing to do. However, inflammation is part of the body's natural immune response to injury. There is growing [evidence](#) from within the Sports Science community that there are benefits to allowing some level of inflammation to persist in some instances.

This brief outline of the PRICE protocol is intended as a guide for treating more minor complaints. If you are unsure as to how to deal with an inflamed injury, it is always advisable to seek professional guidance.



Heat and Cold Treatment

As mentioned, cold treatment is a good way to help combat inflammation. This is especially so in the 48 hours immediately following an acute injury. Cold treatments work by decreasing blood flow.

However, in many situations it can be beneficial to promote blood flow by dilating blood vessels. In this instance, **heat treatment** can help. It also has the useful side-effect of helping to relax sore and tightened muscles. Often, electric heat pads or heat wraps are used for treatment, but a hot water bottle can substitute as an easier alternative.



Typically, heat treatment is used for stiff tendons and conditions such as osteoarthritis. It can be used during a warm-up to help alleviate stiffness in muscles. It has also been used to help relieve muscle spasms (especially in the lower back), as well as helping with some strains, sprains and tendonitis.

As if to further complicate the matter, there is a type of therapy that alternates between the **use of both hot and cold** treatments. As a simple explanation, it is a good way to trick the body into boosting circulation but also helps to release extra nutrients into the muscle. This can be very beneficial in speeding up muscle repair. Combined hot and cold treatment is therefore a popular treatment in helping to reduce the impact of [DOMS](#) (delayed onset of muscle soreness).

Knowing whether to use hot, cold or both types of treatment can sometimes be confusing. If in any doubt about what works best in your specific circumstances, contact us directly, or your own GP/specialist for further clarification.



Sports Massage

Unlike many “relaxing” forms of massage, Sports Massage tends to be firmer and deeper. It has some broad health benefits such as improving blood pressure, lymph flow and circulation. But crucially, it gets right to the heart of the issue when rehabilitating muscles and joints from injury.

The underlying goal is to counteract the stress and tension that can build up in soft tissue during strenuous exercise. It is a sophisticated and specialist modality that borrows many techniques from Physiotherapy and Osteopathy. Treatments within the remit of Sports Massage include soft tissue release, neuromuscular interventions, fascial and positional release.

Used in combination, the above-mentioned treatments can help reduce pain and tension, stretch and restore connective tissue and help relax over-active muscles. Sports Massage is not appropriate for all running related injuries, but it can be hugely beneficial in the vast majority of cases.

Issue 4: Focus Area – Knee Injuries

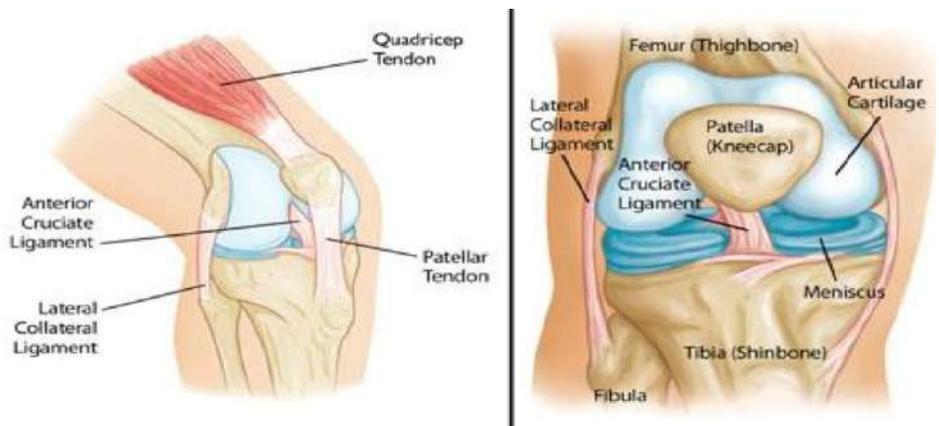
Unfortunately, the [most common](#) injuries in recreational distant runners are to the knee.

The problem is that the forces exerted on your body when running are probably far greater than you might think. Astonishingly, the force on your knee can be as much as **4.5 to 7.5 times your body weight**. Poor balance and poor posture can increase the load to the knee and increase the risk of injury. This makes novice runners even more susceptible to knee problems.

Anatomy of the knee

Comprising bones, cartilage, ligaments and tendons, the knee is the **largest joint in the body**. It is formed at the point where the femur, tibia (shin bone), fibula and patella (kneecap) meet. The knee is made up of:

- articular **cartilage** that covers the ends of your femur and shin bone, thigh bone and the back of your kneecap (patella),
- four **ligaments** including your anterior cruciate ligament (ACL) and posterior cruciate ligament (PCL), which hold your bones together
- two Menisci **cartilage discs** that act as “shock absorbers” and help to stabilise your knee, and
- the **tendons** that connect your muscles to your bone.



It is also a complex joint. Although primarily a hinge joint, it does allow a small amount of rotation and side to side movement in some positions. This complexity adds stability to the joint, but somewhat like an upmarket car, this also means there are more parts that can go wrong. Damage to the structures inside or outside the knee joint can result in fractures, dislocations, sprains, or tears.

Patella Femoral Syndrome (Runner's knee)

The most common knee condition is called **Patella Femoral Syndrome (PFS)**, and is so prevalent amongst runner's that it is commonly referred to as **Runner's knee**.

In PFS, the patella rubs against the inner or outer of the femur, rather than gliding straight down the middle. As a result, the patellofemoral joint become inflamed. If the condition progresses the articular cartilage of the patella soften and breaks down causing chronic pain and inflammation.

Symptoms: Typically, you experience a pain at the back of the kneecap. The pain is often more pronounced if you are running, walking upstairs, running uphill or bending the knee.

Cause: It happens when the kneecap is misaligned and rubs against the femur. This alignment issue is usually created by muscle imbalance around the knee. Tightness in the [IT band](#) can lead the kneecap to be pulled outward. Weak hip and thigh muscles can also add to the problem.

Prevention: As always, good quality running shoes will help minimise impact. Keeping your weight under control will help reduce the burden on your knee. Warming up thoroughly is essential. And increasing your running load in small incremental steps will help reduce the risk of runner's knee. Release tension in quads using a foam roller regularly. And stretch your IT band!

Treatment: PRICE protocol (see above). In addition, do some stretch and strengthening exercises for the [quadriceps](#). Book a **sports massage** and use the foam roller daily on the quads. If necessary, use arch supports or orthotics in your running shoes.

Patella Tendonitis (Tendinopathy)

This less common knee injury is due to **overuse and ageing** of your knees. It results from the patella tendon being overstressed, causing pain, stiffness and loss of strength in the knee.

ACL and PCL injuries

An ACL or PCL tear is caused by **overstretching the knee's ligament**. It can occur when a runner stops suddenly, changes direction rapidly, whilst slowing down, landing incorrectly or has a direct collision.

You sometimes hear or feel a pop in the knee, your knee may swell, feel unstable and become too painful to bear weight.

Kneecap Bursitis

Bursitis is an inflammation of your bursa (cushioning sacs between bones and soft tissues to reduce friction) in the front of your kneecap. Your bursa can become irritated and swell and then put pressure on your adjacent knee parts. It can be caused by repetitive friction on the area, muscle tightness, or from a sudden injury to the knee.

Medial Meniscus Tear

A meniscus tear is a tear to the cartilage in your knee joint causing pain on the inside of your knee. The most common cause is twisting of your knee when your foot is on the ground. It can also occur through direct impact in contact sports and in older athletes through gradual degeneration.

Treatment options for less common knee problems caused by running

Generally, rest, ice, exercise to strengthen and stretch your muscles, knee tape or brace, and getting better footwear are the best treatments recommended for knee injuries. However, treatment does depend on the knee problem and its severity. Your physiotherapist, osteopath or doctor will be able to advise you on the best treatment.

Some knee pain conditions will need surgery. This may include fractures, ligament tears such as ACL tear, malalignment of the patella or, damage to the cartilage under your kneecap.



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Next Issue

In the next issue we take a detailed look at **nutrition** and **hydration**. We discuss how to fuel the body, especially for those longer runs. In addition, we will give insights into possible injuries that can affect the **upper leg**.