IDENTIFYING & MANAGING NIGGLES & STRAINS

As many of us have inevitably experienced, running is not an activity without risk. At one time or another we would have all experienced pain somewhere in our bodies that is a result of the associated loads of our running. Most reported injuries related to running are overuse in nature, or in other words *gradual onset* injuries. These overuse injuries are caused by repeated micro-trauma to the body due to the repetitious movements made when running. These overuse injuries occur in the absence of a single identifiable or traumatic event. Unlike acute injuries such as a hamstring or calf muscle tear, overuse injuries do not necessarily result in the immediate cessation of running. It is indeed possible with the majority of overuse injuries to continue to train and to even compete.

WRITTEN BY **BRAD BEER**

A recent study published in the *Australian Journal of Physiotherapy* revealed that a staggering number of runners continue to train and compete even while suffering from overuse injuries[1].

In the study 1000+ runners were surveyed across five different recreational running events of 5-10km. The aim of the study was to determine the prevalence of musculoskeletal pain in recreational runners immediately before a race. Of the respondents, 227 (22%) reported musculoskeletal pain before the race. When broken down by gender it was found that the prevalence of pain was 20% among the 796 male respondents and 27% among the 253 female respondents. Simply put, this equated to 1 in 5 runners participating in recreational running events whilst suffering from musculoskeletal pain due to an overuse injury.

The results of this study highlight one of two things; either the runners were choosing to run through the pain or the runners were not recognising the symptoms as being consistent with a developing overuse injury, and were therefore running ignorant of the risks of worsening the injury.

These findings can be extrapolated to the running population at large, as many recreational runners are likely running through pain and, in doing so, are developing and worsening their overuse injury. When a runner is equipped with even a small amount of insight and knowledge about injury management I believe that runners can markedly mitigate the likelihood of having their initial low level musculoskeletal pain (aches and niggles) develop into nasty full-blown overuse injuries.

The first step is being able to identify 'niggles and strains' and to know when they need attention and preventive interventions to stop them worsening.

Identifying the Different Types of Musculoskeletal Pain

In simple terms, every time we run our body tissues; bones, ligaments, tendons, muscles, succumb to micro-trauma from the stresses of running (or any exercise for that matter). Our bodies have an innate healing ability to repair the micro trauma. When the repair of the tissues keeps pace with the breakdown of the tissues we can experience pain and injury free running. If, however, the breakdown of the tissues begins to outpace our body's tissue repair mechanisms then we are on the way to developing an overuse injury.

In running, this process will manifest as injury to the bones of our lower limbs (e.g. stress fractures and shin splints), the tendons in our legs and feet (e.g. tendinitis, tears and tendinopathy). In the aforementioned study it was found that the most common sites of injuries in order of most to least prevalent were: knee, foot/ankle, spine and hip pain.

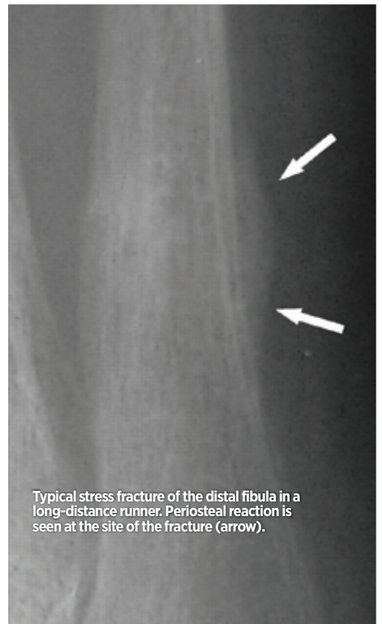
There are several patterns and signs to look for that will assist you to determine the severity and the nature of any pain you may experience due to running. With this knowledge you will be in a better position to act in an appropriate manner so as not to further exacerbate your pain.

The key things to consider about your running-related pain are:

The overall pain trend

Ask yourself if the pain getting worse, staying the same or getting better? If the pain is worsening than it is wise to seek professional medical assistance, as clearly doing the same thing in training will not curb the pain, but only lead to further exacerbation and an increased recovery time. Pain that is not worsening or getting better often also needs medical attention. As a general rule of thumb, the longer you run with pain, the longer it will take before you are able to run pain free.

> "It is important to remember that pain is always an indicator that something is wrong."



Typical stress fracture of the distal fibula in a long-distance runner. Periosteal reaction is seen at the site of the fracture (arrow).

An approximate guide to injury recovery is that it will take you the equivalent number of weeks, months or years that you have carried an injury for, until you can return to fully-functional pain-free running. For example, if you ran with achilles tendon pain for 16 weeks, it will take you approximately 16 weeks to run pain free at 100% if the appropriate treatment and rehabilitation protocol is administered. Please note that this is a guide only and it is possible to halve injury rehabilitation times with the appropriate interventions and a sound return to running protocol.

The last of the three overall trends is that of an injury that is 'improving on its own'. These injuries may or may not need interventions. Runners are often unsure of whether to get this type of injury seen to by a health professional. I always encourage runners who have carried a 'niggle' for greater than 2 weeks, to be treated by a health professional. I would encourage this even if the pain is slowly subsiding. Letting the pain settle on its own will not normally correct the underlying causative factors that produced the pain in the first instance and it is extremely common for this type of pain to reoccur at often inappropriate times such as before an event!

Does the pain feel worse after running?

If your pain gets worse with running and in direct proportion to the amount of running you are doing, then this logically indicates that running is likely to be the sole driver or cause of the pain. Pain that worsens after activity can often be related to injury of the bones or joints, whereas pain that is worse before or at the

start of running that subsides or lessens 'once warm', is often consistent with tendon-specific injuries. An example of this would be patellar (knee) tendon pain that is sore for the first 10 minutes of running only to subside in intensity after 40 minutes of running. It should be noted that as tendon injuries worsen the pain will begin to be experienced at the end of running also. If the injury is in its earlier stages of development, then the above is a good guide.

Is the pain now present before running and no longer present only after running?

This signifies that the injury has progressed in severity from when pain occurred only after running. This pattern points to a worsening of the injury in the sense that the degree of tissue (bone, tendon, muscle or joint) irritation is worse and the damage process from the training has outpaced the body's natural repair (or healing) capacity. When the time course for recovery between sessions lessens to the point that you cannot start a run pain free, then it is a clear indication that the injury is worsening. A prime example is stress reaction injuries of the foot, which initially recover well between sessions, but as the bone gets more and more loaded and 'stressed' it fails to repair itself between sessions. This manifests itself with the runner immediately experiencing pain from the outset of a run. If the cycle of insufficient repair to the bone or other tissues between sessions continues stress reactions of the foot may lead to stress fractures and tendon injuries will also typically worsen.

Are you experiencing evening pain?

Pain experienced in the evening is a key indicator that the injury is either severe or on its way to being severe and should not be ignored. There is however a major difference between pains in the evening that is also there when you wake up (e.g. a sore achilles when you get up to go to the bathroom) as opposed to pain that wakes you up. Pain that wakes you up requires medical intervention as soon as possible. Evening pain related to the joints can often indicate some degree of internal joint disruption, particularly with regards to the knee; for example cartilage, meniscus or internal ligament injury. One of the reasons that we experience pain in the evenings is because we experience a drop in our body's cortisol levels throughout the evening. Cortisol serves as a natural anti- inflammatory agent. Hence, when cortisol levels drop so does the natural anti-inflammatory effect it has on any inflammation present in our bodies. The result is less blocking of the inflammation and an associated rise in pain levels associated with the inflammation.

The running time required to bring on the pain shortens

Obviously the earlier the pain comes on during a run the more irritated the injured tissues are and the more severe the injury is. When your pain is experienced only at the end of a run, this is obviously a better sign than the pain being present at the start of a run, or throughout the run.

Pain that does not respond to rest alone

Often two or three days of not running and rest can allow the body to repair the beginnings of injured tissues. If however the body does not have time to repair the injured tissue and the runner continues to run with little or no rest periods, then an injury may begin to develop.

Managing Musculoskeletal Pain

Now that we can more easily identify the trends that are consistent with an emerging and existing injury, it is helpful to have some basic understanding of how to best manage our overuse injury.

Regular use of ice baths can prevent niggles from turning into nasty full-blown overuse injuries.

> "As a general rule of thumb, the longer you run with pain, the longer it will take before you are able to run pain free."

Astute management is typically multi-faceted, but may include:

- First aid principles such as ice, heat and topical creams. A golden rule is to never use heat on an acute injury inside the first 48 hours. Incorrectly applying heat will cause further bleeding and swelling and an extended recovery time. Ice in comparison will mitigate the resultant swelling, pain and bleeding if used within the first 48hrs. Never ice for greater than 20 minutes at a time, as interestingly, this will have a similar effect to heat treatment. For overuse injuries runners can often choose to use either heat or ice, whatever is most comfortable. This is often based on the seasons and the runner's geographical location!
- Allowing the body and tissues adequate time to repair between sessions. This may involve cross -training or rest from running as trialled by the athlete, or prescribed by the coach or health professional.
- Self-treatment strategies. This may include tissue therapy that can be performed at home to stretch, strengthen and activate various muscles and tissues associated with an injury site. This may include using foam rollers, trigger point therapy tools and stretching and strengthening exercises.
- Specific rehabilitation overseen and prescribed by a health professional (eg physio, podiatrist or sports doctor). Any professional intervention should address the contributory or causative injury factors to be effective.
- Adjustment of training volume and return to running protocols. This can be self-directed or prescribed by a coach or health professional.

It is important to remember that pain is always an indicator that something is wrong. Think of pain as not being your enemy but rather you ally, which if given attention will assist you in your quest to keep on the running track doing what you love!

REFERENCES

1. A.D.Lopes, L.O. Pena Costa, B.Saragiotto, T.P.Yamato, F. Adami, E. Verhagen. *Musculoskeletal pain is prevalent among recreational runners who are about to compete: an observational study of 1049 runners.* J. Of Physiotherapy, Vol 57 (3), pp179-182.

Pharmaceutical medications might help alleviate some of your pain symptoms, but often don't treat the cause of the injury.