I suffer from shin splints, what should I do?

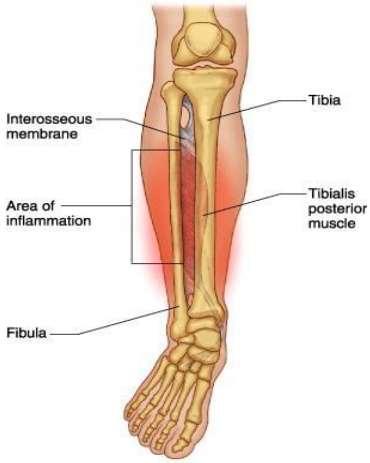
Shin splints refer to pain in the shins - the front lower legs. It is an inflammatory condition of the front part of the shin bone. The pain is brought on by activity, more commonly in sports that involve running, with shin splints being reported to account for 12% to 18% of all running injuries (1).

Shin splints have two main causes:

-Exerting excessive pressure on the lower leg muscles
-Excessive impact on the muscle

Pain is usually felt early on during the physical activity, dies down somewhat, and then returns later on, sometimes during the same exercise session; this may occur during a long run. The pain can gradually become so bad that the activity has to be abandoned altogether.

What are the signs and symptoms of shin splints?



In most cases you will have a dull, aching pain in the front part of the lower leg. For some, the pain and discomfort emerge only during exercise, while for others it comes after the physical activity is over. Pain can also be there all the time.
The pain can be on either side of the shinbone, or in the muscle itself - this depends on the cause.

Signs and symptoms related to shin splints may include:

- Pain along the inner part of the lower leg
- Tenderness along the inner part of the lower leg
- Moderate swelling in the lower leg
- Feet may feel numb and weak, because swollen muscles irritate the nerves

What are the causes of shin splints?

The main cause of shin splints is too much force on the shin bone and connective tissues that attach the bone to surrounding muscle. The excessive force is usually caused by:

- Too much running
- Running with poor technique or poor biomechanics
- Running downhill
- Running on a slanted surfaces or uneven terrain
- Running with inappropriate shoes, including proper shoes than have worn out
- Taking part in sports that include bursts of speed and sudden stops

An increase in activity, intensity or period of exertion can easily lead to shin splints, if the muscles and tendons struggle to absorb the impact of the shock force, especially when they are tired or weak.
Females have a higher risk of complications from shin splints, e.g. stress fractures, especially if their bone density is diminished, as may occur in osteoporosis.
People with flat feet or rigid arches have a higher risk of developing shin splints.

Prevention of further injury

A serious mistake is to try to "run through the pain" if it is a shin pain. This type of pain usually means there is injury to the bone and/or surrounding tissue. Forcing it more may worsen the injury and make the pain more intense and longer lasting. Shin splints are often shown to coexist with a stress fracture and so it is important to get a proper diagnosis from a Chartered Physiotherapist (Wilder & Sethi 2004). You may be referred on for further investigations such as an MRI or X-Ray to rule out a potential stress fracture which can be serious if left un-attended. The easiest way to initially minimize further damage is to stop or minimize the activities that cause your shin splints to come on.

How to treat shin splints – Following the POLICE (2) acronym for injury management

Ice is an easy and effective way to help reduce your pain and swelling in your lower leg. It can reduce bleeding within the muscle and prevent tissue damage, making the recovery process quicker. You may notice that during the initial phase your shin or calf may seem warm or hot. Use ice packs with a ***thin towel layer*** **between the ice-pack and your skin** (never put ice directly on the skin) for 20 minutes at a
time. In the early stages of healing (within 48 hours of injury), you can apply an ice pack in 20 minute increments every 2-4 hours.
Anti-inflammatory medication (if prescribed by your pharmacist or GP) and natural substances e.g. arnica may also help to reduce the pain and swelling.

Compression

Compression is a key component in any injury rehab and prevention. Compression is believed to reduce muscle vibration and micro trauma to muscle tissues, brings more oxygen and nutrients to your shin and calf muscles, flushes out lactic acid and waste in the blood stream and keeps out swelling in joints, especially preventing blood from pooling in your foot. As your symptoms improve, your Chartered Physiotherapist will recommend whether a compression sock or sleeve, bandage, supportive taping or an elastic calf support is most appropriate.

Elevation

During the healing phase of your shin splints, it is important to keep your foot elevated above your heart (where possible) to allow for gravity to help drain your calf and lower leg swelling.

If you follow these steps in protecting your injured leg appropriately, the inflamed tissues can be given a chance to successfully heal.

Physiotherapy

Following a biomechanical assessment from a Chartered Physiotherapist, they will advise you on correct footwear and training and can provide a number of treatment options which will aid recovery from shin splints and future rehabilitation depending on your specific requirements.

These include;

- Stretching
- Foam rolling
- Specific strengthening exercises
- Massage
- Trigger point release
- Dry needling
- Orthotic prescription
- Advice on footwear and training

How to avoid shin splints

- Use proper fitting shoes with good support
- Make sure the insoles are shock-absorbing. If you have flat feet, good insoles are vital
- Avoid hard surfaces, uneven terrain, or slanted slopes
- Increase your intensity gradually
- Make sure you warm up properly before doing exercise

Dangers of Shin Splints

It is very important you go and see your Physiotherapist if you suspect you may have shin splints as it may be a different, more serious condition. Several conditions can cause shin pain, including stress fractures, tendinitis, and chronic exertional compartment syndrome.

- If your shin splints are not responsive to treatment, your physiotherapist may want to make sure you do not have a *stress fracture*. A stress fracture is a small crack(s) in the tibia caused by stress and overuse. Imaging tests such an X-ray or MRI can help do diagnose this condition and will often show stress fractures in the tibia.
- Tendons attach muscles to bones. *Tendinitis* occurs when tendons become inflamed. This can be painful like shin splints, especially if there is a partial tear of the involved tendon. An MRI can help diagnose tendinitis.
- An uncommon condition called chronic *exertional compartment syndrome* causes symptoms like shin splints. Compartment syndrome is a painful condition that occurs when pressure within the muscles builds to dangerous levels. In chronic exertional compartment syndrome, this is brought on by exercise. Pain usually resolves soon after the activity stops.

References:

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