Shin Pain

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Simple Taping Techniques for Common Running Injuries

Shin pain is a common complaint in many individuals, mainly athletes. Many may call this injury "shin splints" but this does not explain the cause.

Shin pain can involve one of three abnormalities;

1) Bone stress, which can lead to a stress fracture

2) Inflammation, develops at the muscles insertions (tendon). Most common is the tibialis posterior and Soleus attachments to the medial (inside) border of the tibia.

3) Increased intracompartment pressure, the fascia surrounding the muscles become swollen and painful.

All three can occur together.

Muscles affected

The main muscles affected are Tibialis Posterior, Tibialis Anterior and Soleus.

Onset

This injury tends to come on gradually due to overuse, it can happen at the beginning of the season for certain sports (track athletes). A marked increase in training, changes in training surfaces, new exercises and new/old or wrong trainers can all contribute to the onset.

Symptoms

Pain is usually felt at the beginning of exercise, it may then ease and your session completed without pain but pain and stiffness may return after or the next day. Most will feel a burning sensation during activity, followed by an ache at rest. A sharp pain maybe felt if trying to re-start a weight-bearing activity once pain is present. If pain is sharp and gets worse with exercise stop, it maybe a stress fracture, get it checked out.

This injury can last from 6 weeks to years if not treated by finding the cause. You should use the following treatment advice to help shorten this time.

Treatment

To relieve symptoms once present you can perform gentle mobility exercise for the foot and ankle, ice massage is a nice pain relief after exercise, and taping could be used during training to help with the pulling sensation. Massage by a qualified therapist is very beneficial and they can then show you how to perform self massage correctly so you learn how to control the recovery of injury yourself.

In mild cases your running training should drop about 30 % and built back up slowly, if it is a more severe case drop to about 50% and use pool running or cycling to keep cv fitness and endurance. All other types of training should be fine to keep going, but monitor closely.

To **prevent the problem** the problem you need to develop good ankle strength with a variety of motion planes. When running your foot does not always land straight in front, especially when on uneven surface so its good to mimic this in rehabilitation.

Here is a link to a video showing a taping technique for medial shin pain. http://youtu.be/SgUtmVQDdc0

Exercises

Toe raises and heel raises - Resting against a wall raise your toes off the ground as far as you can towards your shin, keeping you heels on the ground. When lowering don't let your forefoot quite touch the ground, repeat 15 times. Heel raises raise your heels off the ground by pushing into the balls of your feet.

To advance

You can try a single leg heel raise. Place one foot against the wall and fully support self on the other.

Try heel walks and tow walks with the toes pointing forward, outward and inward. You can increase to the speed or add in a little skip but make sure you are on a soft surface like sand.

Bounces - Jumping up on the spot. when you jump up pull your toes up towards your shins before landing, bend your knees on landing.

These exercises can be placed in your warm-up to help with prevention.

Try using a wobble board to help strengthen your lower leg muscles and improve balance and co-ordination.

Biomechanical faults leading to shin pain
A rigid foot can increase the pressure on the bone as shock absorption is limited.

Excessive pronation (flat arch) causes the compartments to contract harder and longer to resist pronation after heel strike. On toe-off they then work hard to contract to accelerate supination. With fatigue they will fail to provide shock absorption (can cause lateral shin pain).

Illustration 1: Foot posture correction using orthotics

Tight calf muscles increase the tendency to pronate as dorsiflexion is limited. When dorsiflexion is limited the body will adapt by placing weight through the arch to reach the range of motion needed to disperse forces. However this will lead to the problem above. Orthotics can help to keep the correct alignment and for many resolves issues immediately.

Pro-Am Sports Injury Clinic can recommend a great podiatrist to get custom made orthotics in the Scarborough area.

Other Injuries to look for

Stress fracture

This is of gradual onset aggravated by exercise. Sometimes called 'crescendo pain. It can begin as an annoying irritation and becoming a throbbing torment as an individual continues to run. There is usually little numbness, weakness, or swelling, pain is usually not present when an athlete is at rest. Often, the bone will hurt when it is tapped near the damaged area, and occasionally a hard nodule will appear on the surface of the bone at the trouble site.

A bone scan or MRI scan can confirm diagnosis and professional athletes may require a CT scan to see whether there is a fracture line and make a better prognosis. A fracture will be painful during any weight bearing activity, it will not ease off as it would for inflammatory shin pain. Stress fractures also may be 'warning signals' for an underlying nutritional or hormonal problem.

Inflammatory shin pain

Pain is usually along the medial border or at the front of the shin and will reduce with warming up. Training can usually be completed but pain will return after and the following morning. In severe episodes training will need to stop for 3-5 days before gradually introducing again. Pool training should be done during this time. This can become a chronic problem if just left to get better on its own.

Compartment syndrome

The fascia surrounding the muscles become inflamed which can lead to fibrosis and reduced elasticity. The muscles attempt to expand during exercise but are unable to do so causing a feeling of tightness or bursting sensation. Pain increases with exercise usually felt as a burning sensation. Pain will usually be accompanied by the two tell tale symptoms of a compartment syndrome - numbness and weakness. Numbness occurs because the excess pressure within a compartment hampers the activity of sensory nerves carrying messages to the brain. As a result, the runner with compartment syndrome may lose feeling in the 'web' of the foot - between the first and second toes, or the insensitivity may extend up the foot toward the ankle. Weakness is experienced because motor nerves carrying impulses towards the muscles are also damaged by the high pressures within the compartment. If a compartment in the front of the leg is involved, a runner may have trouble dorsiflexing the ankle, and the foot may seem to flop loosely. In a posterior-compartment problem involving muscles in the back of the leg, there is often weakness when an individual tries to 'toe off'. Soft tissue treatment can be used to try and loosen the fascia before going down the route of specialist treatment.

Be certain to avoid dramatic changes in the frequency, volume, or intensity of your training; always gradually progress to more difficult levels of work

References

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