

MEDIAL TIBIAL STRESS SYNDROME (MTSS)

What is medial tibial stress syndrome?

Sometimes known as shin splints, medial tibial stress syndrome is the injury most commonly associated with shin splints, but closely related problems include periostitis, stress fractures, and chronic or acute compartment syndrome.

Werner p.102

MTSS is an overuse injury or repetitive-stress injury of the shin area. Various stress reactions of the tibia and surrounding musculature occur when the body is unable to heal properly in response to repetitive muscle contractions and tibial strain.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2848339/>

Who gets medial tibial stress syndrome?

MTSS has been reported to occur frequently in military recruits, distance runners, dancers, football players and gymnasts.

http://www.physioroom.com/injuries/calf_and_shin/shin_splints_full.php

It can be caused by a number of factors that are mainly biomechanical (abnormal movement patterns) and errors in training. The most common causes are;



Figure 1 Hyperpronation of subtalar joint. a Medial, b anterior views. Courtesy: Courtney Sullivan

- Overpronation of the feet
- Oversupination of the feet
- Inadequate footwear

- Increasing training too quickly
- Running on hard surfaces
- Decreased flexibility at the ankle joint

What are the signs and symptoms?

- Pains over the inside lower half of the leg
- Pain at the start of exercise which often eases as the session continues
- Pain often returns after activity and may be at its worse the next morning.
- Sometimes some swelling
- Lumps and bumps may be felt when feeling the inside of the shinbone
- Pain when the toes or foot are bent downwards
- Redness over the inside of the shin (not always present).

<http://www.sportsinjuryclinic.net/sport-injuries/ankle-achilles-shin-pain/shin-splints>

How is medial tibial stress syndrome treated?

- Rest to allow the injury to heal
- Apply ice or cold therapy in the early stages, particularly when it is very painful. Cold therapy reduces pain and inflammation
- Shin splint stretches should be done to stretch the muscles of the lower leg. In particular the tibialis posterior that is associated with shin splints.

This fact sheet is designed to provide you with information on medial tibial stress syndrome. It is not intended to replace the need for a consultation with your doctor. All clients are strongly advised to check with their doctor about any specific questions or concerns they may have. Every effort has been taken to ensure that the information in this pamphlet is correct at the time of printing.

FACT SHEET

- Maintain fitness with other non-weight bearing exercises such as swimming, cycling or running in water.
- Apply heat and use a heat retainer or shin and calf support after the initial acute stage and particularly before training. This can provide support and compression to the lower leg helping to reduce the strain on the muscles. It will also retain the natural heat that causes blood vessels to dilate and increases the flow of blood to the tissues to aid healing.
- Visit a sports injury clinic for treatment and rehabilitation.

<http://www.sportsinjuryclinic.net/sport-injuries/ankle-achilles-shin-pain/shin-splints>

Are there any complications?

Although often not serious, it can be quite disabling and progress to more serious complications if not treated properly.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2848339/>

Pain from MTSS may force the individual to walk on the outside of the foot, placing additional stress on other muscles and tendons. Abnormal walking patterns (gait) can lead to back strain. Changes in posture or gait can also cause inflammation and arthritic changes in nearby joints (e.g., back, hip, knee, ankle). Untreated MTSS and uncorrected biomechanical malalignments in the legs and feet may result in stress fractures and even true fractures, potentially endangering normal function in affected legs.

<http://www.mdguidelines.com/shin-splints/complications>

How can I avoid getting medial tibial stress syndrome?

- Stretches to the calves
- Wear shock-absorbing insoles in shoes, with appropriate support. This helps reduce the shock on the lower leg.
- Gradual increase in activity and non-weight bearing training
- Strengthening exercises to core, gluteals, abductors muscles and ankle joints.

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