



TREATMENT OF SHIN SPLINTS



St. Vincent
Sports Performance

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Medial tibial stress syndrome, more commonly known as shin splints, is a general term used to describe pain in the anterior/medial portion of the lower leg. This injury is common in running and jumping athletes such as gymnasts. The injury is a result of repetitive stress applied to the tissues of the lower leg due to over training, poor mechanics, or simply a muscular or strength imbalance. Symptoms are pain along the medial aspect of the tibia and can be tender to touch either over the bone or muscle. Pain is generally worse during activity, especially running and jumping, and immediately after. Swelling may be present.

Other conditions common to the lower leg include stress fractures or compartment syndromes. If lower leg pain becomes sharp and debilitating it should be evaluated by an athletic trainer or medical doctor in order to provide the appropriate course of treatment. A stress fracture is suspected when the pain is localized to one specific area that can be pointed to with one finger. Symptoms of compartment syndrome are severe pain/swelling that may or may not give the skin a shiny appearance, and causes numbness or tingling down into the foot.

First aid:

The athlete will often feel relief by icing the shins following activity. Using an ice bag or ice cup will give the athlete the relief of ice as well as help to flush out any swelling that has accumulated in the shin and loosen tight tissue. To make an ice bag, fill a small paper cup with water and freeze. Take out of the freezer and peel back the paper. Rub the ice over the injured area in a circular motion, applying some pressure. Do this for 15 minutes following activity, or for 7 minutes prior to activity.

Rehab tools:

The goal of rehabilitation for any injury is to correct deficiencies in mechanics of movement of the injured area as well as the whole chain of movement. The athletic trainers approach here falls into two categories: stretching and strengthening.



- Calf stretch: Will take a significant amount of strain off of the anterior portion of the leg. Proper calf stretching must be done with the heel on the ground in two positions: with the knee straight and with it bent. An angle stretch board is very effective. Stretch before and after workouts, 3 times each for 30-60 seconds.



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- **Foam roll:** Using a dense foam roll or tennis ball for massage is very effective to help loosen tight muscles. Roll over both the calves and the muscles on the front of the leg. Do this 3 times for 15-60 seconds for each tight area.



- **Eccentric calf:** This strengthening technique is essentially a modified calf raise. After rising onto the toes, lower very slowly back to the floor. Do 3 sets of 10.



- **Towel scrunches:** Strengthens the muscles of the foot and lower leg. With the heel on the floor, scrunch towel toward you then push it away. Wet the towel or add a light dumbbell to the end of the towel to increase resistance. Repeat 10 times.



- **Heel and toe walking:** Strengthens the muscles of the foot and lower leg, improves balance. Walk for 30-60 seconds on heels, alternate to toes, 10 times each.



- **Elastic band ankle strengthening:** Elastic band exercises are important to increase foot/ankle stability and strength. Tie a band to a pole and have the athlete pull from out to in (inversion) and from in to out (eversion). This should be done slowly and repeated for 3 sets of 10 to 15 reps.



- **Balance exercises:** Balance on one leg with the knee/hip slightly flexed and the core activated. Begin on the floor then progress to a stability pad or mat to increase difficulty. Hold until failure or the muscles fatigue and repeat 3 times.

- **Plyometrics:** Once the pain has dissipated, plyometric exercises are the next step in maintaining strength and improving mechanics. These exercises are about jumping

but the emphasis is on proper landing technique with the athlete absorbing the landing at the feet, ankles, knees, hips and core. This should come natural for the gymnast!

Taping techniques

The rehabilitation process can take from days to weeks



depending on the severity of the injury. During this process it is often helpful to try any number of taping techniques to help reduce the pain during athletic activity. The drawback to the use of tape in gymnastics is that the tape has a slick surface. To counteract this, athletic trainers will often use a very light layer of adhesive spray or coban, a self adhesive tape like they apply after you have given blood, over the initial tape job.



- Arch tape: This is particularly effective when the person has fallen arches or poor foot and lower leg strength and neuromuscular control. If arch taping is effective, then it may be helpful to consider orthotics for the time spent out of the gym.



- Leukotape navicular: Works to reposition the foot to reduce stress throughout the whole chain of motion.



- Kinesiotape: Less likely to impede motion due to the elasticity of the tape.

There are several approaches to the treatment of shin splints but they all have one common goal: to reduce pain by correcting deficiencies detected during the injury evaluation. The stretches, corrective exercises, and taping along with ice massage and deep tissue release will help to alleviate shin splints. It is very important to remember that everything is connected! The exercises listed here work the ankle and lower leg but the knees, hips and core must be just as strong to maintain efficient movement. Even with the tips listed here, if moderate pain is present for greater than one week, pain in an isolated one inch area for about three days, or numbness and tingling that persists for a day, please seek medical care.

