

## **Shin splints: Fact or fiction?**

Written by John Tomberlin

Sunday, 20 March 2011 21:09 - Last Updated Tuesday, 22 March 2011 03:49

---

High school track practices just started, and you notice a moderate aching on the inside of your shin, a couple of inches above your ankle.

This ache started after training, lasted a couple of hours and then seemed to go away. The ache reappeared after the next practice. Yesterday, training intensity increased, and the ache lasted until bedtime and you noticed it hurt while walking to class the next morning.

Unfortunately, after today's practice, you could hardly walk and went to see the school trainer for some ice. The trainer examined your shin and told you that you had a case of "shin splints."

You were advised to ice your shin and take some ibuprofen at home. The trainer encouraged you to return tomorrow before track practice to be re-evaluated.

You iced your shin, limped home and took some ibuprofen. The next morning you felt a lot better, so you decided not to go back to the trainer. Unfortunately, you couldn't finish training two days later and went back to see the athletic trainer.

### **What are "shin splints"?**

In 1913, Dr. Charles P. Hutchins, a physician and former Big Ten football coach, first described pain along the medial shin as "spike soreness." He defined spike soreness as a problem track runners develop when training with spikes that leads to a condition he called "lameness of the shin."

Eventually, almost any problem in this area of the lower leg became known as "shin splints," and this term was adopted by the American Medical Association in 1966 in its book on standard names of sport injuries.

## Shin splints: Fact or fiction?

Written by John Tomberlin

Sunday, 20 March 2011 21:09 - Last Updated Tuesday, 22 March 2011 03:49

---

Now, fast-forward to 2011, where the term “shin splints” is still used. But what does it really mean?

Sports medicine science now tells us that there are **four common types** of injuries in athletes that occur as exercise-related shin pain (shin splints).

### 1. Medial Tibial Stress Syndrome (MTSS)

Most experts now agree that MTSS involves the soleus muscle, a deep part of the calf musculature on the lower leg. The covering of this muscle (called fascia) becomes irritated along the medial border of the shin (tibia bone) where the soleus muscle attaches.

When the problem first shows up, athletes usually complain of pain following a sudden change in training or overuse. MTSS can become chronic and lead to bone density changes or even a stress fracture if not identified early and treated. MTSS should be detectable on physical examination by a sports medicine professional.

**Recovery:** Athletes with this diagnosis, when caught early, usually can return to training and competition with appropriate sports medicine treatment.

### 2. Stress Fractures (SF)

Stress fractures (SF) of the medial shin (tibia bone) are more common in female than male athletes. SF in the early stages can be indistinguishable from MTSS (see above). Complaints of night pain are common.

SF results from chronic overuse and can be considered a “fatigue” fracture of the bone that takes place over time due to repetitive stresses from training (usually running).

## Shin splints: Fact or fiction?

Written by John Tomberlin

Sunday, 20 March 2011 21:09 - Last Updated Tuesday, 22 March 2011 03:49

---

SF cannot be definitively diagnosed on physical examination by a sports medicine professional. However, a triple-phase bone scan is the gold standard for imaging study of stress fractures because a true fracture may never show up on an X-ray.

The bone scan image can differentiate between an MTSS (diffuse uptake along the shin) versus a SF (focal uptake at a specific point along the shin).

**Recovery:** Athletes will need a period of extended rest for this problem and may have to wear an orthopedic boot to take stress off the area. Recovery may take anywhere from six to 12 weeks or more, so early detection is key.

### 3. Tendinopathy

There are two types of injury involving the tendons: tendonitis (inflammation) or tendinosis (cell death). Early detection and treatment of tendonitis is paramount to avoiding progression to chronic tendinosis, where the cell death can lead to degenerative tearing of the tendon.

A sports medicine professional should be able to diagnose the tendonitis on physical examination, which usually occurs in the Achilles tendon or the posterior tibialis tendon. Medical imaging, such as ultrasound (less expensive) and MRI (more expensive), are helpful to determine whether a tendinosis has set in or if a tear is present.

**Recovery:** Early sports medicine intervention will help an athlete to get over the tendonitis and return to sports. If the problem progresses to tendinosis, medical interventions such as PRP injections or surgical debridement may become necessary.

### 4. Chronic Exertional Compartment Syndrome (CECS)

CECS involves the buildup of pressure in the compartments that separate muscle groups in the lower leg. This can be caused by an acute injury that leads to bleeding into the compartment

## Shin splints: Fact or fiction?

Written by John Tomberlin

Sunday, 20 March 2011 21:09 - Last Updated Tuesday, 22 March 2011 03:49

---

and an abnormal buildup of pressure, causing pain and sometimes nerve compression.

CECS also can be a chronic, gradual buildup of pressure that can be caused by overuse. The definitive testing for the chronic problem is a compartmental pressure test. This test involves identifying abnormal compartment pressures with pressure-sensitive thin wires placed into the muscle compartment while the athlete is exercising.

**Recovery:** Surgical decompression called fasciotomy is the definitive treatment for CECS to relieve the abnormal pressure in the compartment. It may take up to 12 weeks for the athlete to recover from this procedure.

### Risk factors for shin splints

Some experts claim that athletes with flat feet and poor muscle control are most at risk. Others claim that inflexible athletes with high arches are most at risk.

Any athlete can suffer from medial shin pain due to overtraining. Runners seem to have the most problems, but any athlete can be susceptible to shin splints. Experts say the most consistent risk factor for getting shin splints is a history of having shin splints.

### Tips for athletes

When the first symptoms of medial shin pain arise, athletes should start with these tips:

- Ice the area after training and see your athletic trainer ASAP.
- Consult your parents/physician about taking medicine to reduce inflammation.
- Talk to your coach about short-term modifications to your training.
- Consult a sports medicine professional about proper footwear.
- Seek the advice of a sports medicine professional for a specific diagnosis ASAP.

## Shin splints: Fact or fiction?

Written by John Tomberlin

Sunday, 20 March 2011 21:09 - Last Updated Tuesday, 22 March 2011 03:49

---

Finally, try to avoid the pitfalls of the folk-lore mantra, “No pain, no gain,” or you may find yourself on the sidelines. Early identification of the specific type of “shin splint” problem that you have is the key to determining appropriate treatment and getting you back in the game!

### To learn more

Here are two web-friendly resources for further reading:

- Shin splints: <http://www.livestrong.com/shin-splints/>
- Exercise-related pain: More than “shin splints” <http://www.lowerextremityreview.com/article/exercise-related-leg-pain-more-than-shin-splints>

**Editor's note:** John Tomberlin has worked with high school athletes in the Cedar Rapids Metro area since 1995. He was a four-sport athlete in high school and a high school coach for two years in Illinois. John has more than 25 years of experience working with athletes as a physical therapist and a certified strength and conditioning specialist. He has worked with professional athletes in the NFL, MLB and on the PGA and LPGA tours. John also has worked with elite amateur athletes in alpine skiing, figure skating, and track and field.