

# SHIN SPLINTS

## AND HOW TO PREVENT THEM

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### One of the most common overuse injuries is shin splints, but what exactly does the term “shin splints” mean?

Clinicians typically diagnosis shin splints as medial tibial stress syndrome (MTSS), or in layman’s terms: pain along the inside border of the shin bone caused from activity-related pain.

A few other terms for shin splints may include: soleus syndrome, tibial stress syndrome, and periostitis. Shin splints can account from 4-35%, or even up to 50%, of running injuries in certain active populations.

Since the true cause of shin splints is unknown, however, there are a few theories of how they occur. This is including (but not limited to): inflammation of the surrounding tissue of the shin bone (periosteum), tenderness or injury to the surrounding musculature or tendons (e.g. soleus, tibialis posterior, tibialis anterior), reactions to repetitive stress or high weight loads causing bending of the tibia or increased strain, traction on the periosteum by an imbalance of lower leg musculature, and decreased bone density. Some risk factors that have been linked to shin splints include:

- **High body mass index**
- **Flat feet**
- **Being a female**
- **Inexperience in running**
- **Previous history of shin splints**
- **Changing running surfaces**

### So now that we know the potential causes of shin splints, how can we prevent them?

Although research has not come up with a perfect prevention program for shin splints, there are a few training strategies that have promise to work. First and foremost, however, is footwear. Insuring that your feet have proper arch support,

cushioning, and/or durability to withstand the forces that are being placed on your body can be a tremendous help in preventing over-use injuries. Also, the mileage and overall wear-and-tear on the footwear may be an important factor, as older shoes lose support and harmful stresses can impact the lower body leading to injury. Cleats or turf shoes may not have the

best arch support. It is recommended to have your feet evaluated by a specialist as you may require insoles or custom orthotics.

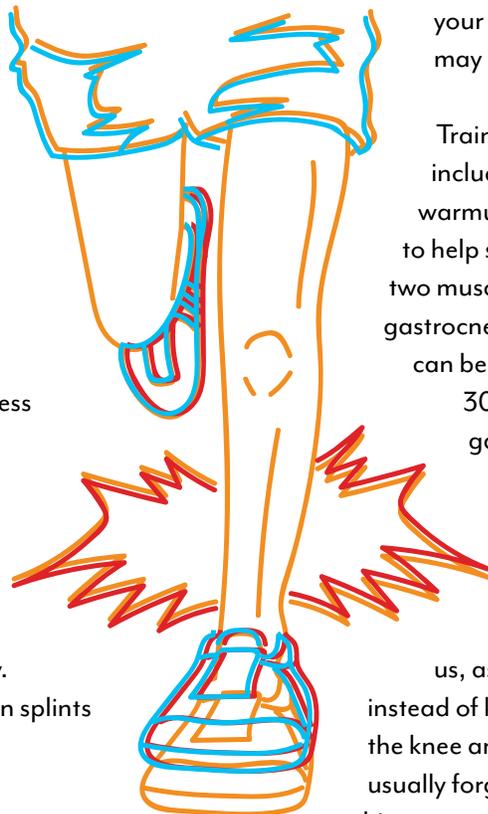
Training strategies in preventing shin splints include appropriate stretching and dynamic warmup exercises. Stretches that have shown to help shin splints would be stretching the two muscles that make up that calf muscle: the gastrocnemius and soleus. All of the stretches can be completed by performing 3 sets of 30 second hold; 3-5 times per day. The gastrocnemius can be stretched by

leaning up against a wall in a lunge stance, while keeping the heel of the back leg on the ground, and with the back knee straight, lean into the wall. To stretch the sole-

us, assume the same lunge position, but instead of keeping the back leg straight, bend at the knee and lean. The soleus is the muscle that is usually forgotten when the calf is stretched, and this can create unequal stresses on the tibia or shin

bone. Another muscle to stretch may be the tibialis posterior, this muscle can get overworked at times when there is not enough arch support. This muscle can be stretched best barefoot and by sitting in a figure 4 position with the ankle resting on top of the opposite knee, next grab the inside of the heel in one hand and push the heel down towards the floor, at the same time with the other hand grab the top of the foot and push towards the floor as well, you should feel the stretch along the inside of the shin bone.

FIFA 11+ is one dynamic warmup or training program that has been measured to have a decrease in injury risk rates by 35%. Additionally, teams that have added FIFA 11+ into their train-



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ing have shown to have between 30% and 70% fewer players with injuries. FIFA 11+ has training that include stabilization of the core, eccentric movements for the thigh muscles, proprioceptive exercises, and proper postural alignment with dynamic stabilization and plyometric training. The only equipment used would be a soccer ball, and the program can be completed in 10-15 minutes when athletes are properly trained with the movements. Some of the specific exercises that would prevent shin splints would be the single leg stance, squats with either toe raise, walking lunges, or one-leg squats, jumping, and running exercises.

While there is no “gold standard” in 100% prevention of shin splints, proper footwear, stretching, and a dynamic warm-up with FIFA 11+, has been shown to have positive results in preventing overuse injuries. Additionally, having adequate rest time, not over training, and training on appropriate surfaces may also help to prevent shin splints from arising. Overall, by staying in tuned with your body and preparing well for practices and completions by stretching and warming-up in a balanced fashion are appropriate ways to prevent shin splints.

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