

Preventative Exercises for Shin Splints

The role of the shins and common reasons for injury

The “shins” are actually a group of muscles and bones that make up the front, lower part of your leg. For runners, the most well-known muscle in shin area is called the tibialis anterior, which is responsible for dorsiflexing and inverting your foot. The primary bone runners are concerned with is the tibia, although the fibia can present problems as well.

The role of the shin bone during running is to help absorb and dissipate the impact generated with each foot fall.

Much like a beam on a bridge or in a skyscraper bows slightly when it's supporting a lot of weight, your tibia bends backwards slightly on impact with the ground, putting compressive forces on the medial side of the bone.

In healthy runners, the stress a bone experiences after a long, hard run is not a problem. The body responds to the stress on the bone by remodeling the tibia to be stronger and thicker. This is why shin problems are more common in less experienced runners: their bone has not yet adapted to the stresses of a high-impact activity like running.

How to strengthen and prevent injuries

The outdated theory on preventing shin splints was that tightness or weakness of the shin muscles caused them to tug at their insertion point, irritating the periosteum, a thin, skin-like structure that envelopes the tibia itself.

This is why you may read about doing shin strengthening exercises with a theraband as a common treatment for shin splints.

Unfortunately, because this outdated view is not the real cause of shin splints, strengthening the tibialis anterior will only help prevent shin splints slightly – mostly because it's such a small muscle and its primary function is dorsiflexion of the ankle, not shock absorption.

In reality, improving calf strength, abductor strength and pelvic stability are a better approach to preventing shin splints.

The calves are the largest muscle group in the lower leg (more on them later) and strengthening them will help you stabilize the tibia with each impact. Moreover, the size of your calves is directly related to the size and strength of your tibia since the tibia “grows” in response to the muscles around it.

Likewise, several studies have demonstrated a [strong connection between hip abductor strength and shin splints](#). Specifically, studies have shown that runners with shin splints had significantly worse hip abduction strength and had significantly more motion in their torso and hips when they landed and pushed off compared to healthy runners

Therefore, the most effective strengthening exercises for strengthening your shins and preventing shin splints are going to be calf raises and hip abductor strengthening exercises.

Shin splint prevention routine

Clams x 15 each leg

Donkey kicks x 15 each leg

Hip thrusts x 15 each leg

Calf raises x 15 each leg

Clams



Instructions:

Keep the pelvis perpendicular to the floor rather than rolling backwards, which is a way to cheat this exercise. Work up to 20 repetitions and for additional difficulty, wrap a theraband around your knees. It is not OK to substitute this exercise for the multi hip machine at the gym!

Donkey kicks



Instructions:

Keep your abs tight and your back flat. Imagine placing a broomstick on your back and keeping it in place throughout the entire movement. Perform 15-25 repetitions per leg.

Hip thrusts



Instructions:

At the top of the movement your body should be in a straight line from your knee to your head. Beginners can thrust on both legs while advanced runners can rest their foot on a medicine ball or swiss ball for added difficulty in balance. Perform 15-25 repetitions each leg.

Calf raises

