SHIN SPLINTS: RAMP UP YOUR FOOT CONTROL TO RAMP DOWN YOUR SHIN PAIN

If you have been dealing with aches and pains on the inside of your shin, it’s time to stop chasing your symptoms and fix the cause. “Shin splints” is the lay term used to describe what we in the medical community call “posterior tibial stress syndrome.” Let’s decode this term.

Muscles work by pulling two parts together. One lever is connected to another lever at a pivot point. During a bicep curl, your bicep contracts concentrically to pull your forearm up to your shoulder. A concentric contraction means the working muscle is shortening. When muscles work eccentrically, they move the levers by lengthening. An example of this is the “negative” phase of a lift, like when you lower the weight very slowly in that same bicep curl. Your bicep is working hard to lower the weight in a controlled manner. Eccentric control is actually very stressful to muscles. If you are like most runners, you might not be interested in bulking up your biceps, but you need to understand eccentric muscle contraction to solve your shin splint problem.

When the foot makes contact with the ground, it’s the job of the tibialis posterior muscle to work eccentrically to slow the foot as it twists down to the ground (pronation). In the case of the bicep curl, it’s easy to see how your rigid upper arm and your rigid forearm pivot on each other at your elbow. But the foot and ankle are more complex levers. The tibialis posterior attaches to your rigid shin (tibia) on one side, but on the other side there is not just one bone, but 26 individual bones that make up your foot. If that set of bones is well controlled, the tibialis posterior can work eccentrically to smoothly lower your foot to the ground. But if you show up with poor foot coordination and control, one end of the lever (your foot) is very unstable and likely to collapse. This compromises the tibialis posterior and
its tendon. Muscles and tendons don’t like to be in lengthened positions where they are under more strain, become weaker, and can’t generate the eccentric control to guide your foot safely down to the floor. So your shin hurts.

What’s the Fix?

In this all-too-common scenario, the posterior tibialis is the victim, not the cause of the problem. It’s being asked to do more than it can handle, and more than it ever should. The poorly controlled foot is to blame.

That bag of bones needs to become a stable platform. Foot control is 100% dependent on your forefoot control, specifically the big toe. With a stable big toe, your forefoot is stabilized, which creates a stable platform for your rearfoot, which means your tibialis posterior can stop trying to do the work of other muscles. Simply put, if you want to unload the muscles in your shins, you need to improve the control and coordination in your feet.

To learn more about this and other problems that plague runners, please check out my book *Running Rewired*. But if you want to start improving your foot control now, check out these exercises to build a strong and stable foot.

By Jay Dicharry  
*MPT, SCS*
EXERCISES:

Foot Control Test / Toe Yoga

Stand on both feet, but focus on only one foot at a time. Raise your big toe while leaving the four little toes flat on the ground, then drive your big toe straight down (without curling it) and elevate the other toes.

As you push your big toe down the arch of your foot will rise up slightly. Make sure you can drive the big toe down without collapsing the position of your arch and ankle to cheat the movement.
Foot Control Test / Toe Yoga - Image 2
If you can’t perform this test correctly, practice this movement, which I call Toe Yoga, as a corrective exercise.

**If you found that you collapsed your arch to get your big toe down:**
Place the heel of your shoe perpendicular to the inside of your ankle to provide a visual to ensure you learn to move the big toe without cheating your foot and ankle position. Practice this movement until you learn the pattern.
If you have trouble raising your big toe:
We need to clean up your control. Position a ruler under your big toe so that the end of the ruler is beneath the ball of your foot. Raise the end of the ruler so that it lifts your toe upward. Hold the free end of the ruler so it provides a little resistance, and push your toe straight down, isolating the muscles around the big toe. Imagine you are pushing the toe and ruler through the floor. If you see the joint inside the big toe bending, you are cheating the movement with a muscle in your shin. Deliberate practice will create specific control of the big toe for improved balance and foot control.

This movement builds a tripod (see illustration below) for better foot control. You learn how to distribute pressure among the inside ball of the foot, outside ball of the foot, and big toe for a solid forefoot. When you notice instability on one leg, it's common to focus on the wobble, which leads to frustration and more instability. Instead, focus on the solution. Building this tripod will build a better foundation for all of the single-leg exercises in this program and for your run.
Single-Leg Shoulder Press

- Stand on one leg, with a relatively light weight (8–10 lbs.) in the opposite hand.

- Dial in your posture, driving your big toe down to set up your forefoot tripod from the inside to the outside of the ball of your foot, and extending to the end of the big toe.

- Press the weight overhead and bring it back down. The added weight creates more instability for you to control with the forefoot.

- As your arm goes overhead, keep your weight centered over the midfoot to avoid leaning back through your heel.

- Do 15 reps on each side.
TIPS

• Use a water bottle or milk jug if you don’t have access to weights.

• If you arch your low back when reaching overhead, try to drop the ribs down in front to keep a neutral spine.
**Tippy Twist**

- Place your hands on your hips and balance on one leg, focusing on a strong tripod through the forefoot.

- Maintain a neutral spine and keep your hips level as you bend forward, extending the non supporting leg behind you.

- Twist your hips in toward the floor, then out and up toward the ceiling. Keep your weight balanced across the middle of your foot as you pivot from the hip.

- Return to level hips and the pelvis forward to come back up to starting position. That's one full rep.

- Perform 2 sets of 10 reps on each foot.
TIPS

• If you wobble in your foot, focus on grounding the big toe to solidify the inside of the tripod.

• You learn balance through successful movement. It’s better to twist the hip through a smaller range with good control than to try to twist too far and fall each time.
Foot Screws

- Stand on both feet, keeping equal pressure across the tripod of each forefoot.

- Twist the rearfoot slightly out while keeping the big toe grounded, then raise your heels an inch or so.

- Staying up on your toes, let the rearfoot twist inward.

- Press the big toe into the floor to push your arch up and screw the heel into the outward position.

- Lower the foot to the floor and relax. This is one full rep. Keep the movement specific and controlled.

- Perform 20 reps.
TIPS

- This is not a balance exercise, so feel free to hold onto a stationary object to make the movement more controlled and stable.

- The goal is to maximize the twist between the rearfoot and forefoot while keeping the big toe on the floor, not maximizing the height of your calf raise.