

Shin Pain: When Should You Worry?

There is a lot more to running than just putting one foot in front of the other. In a normal running gait, a multitude of muscles, joints, tendons and ligaments work together to provide a fluid movement. But sometimes mechanical changes can cause injury and contribute to pain. One such pain occurs in the tibia, also known as the shin bone. It is important to understand whether this pain is something to be concerned about or if you can run through it on a daily basis.

Two of the most common injuries are medial tibial stress syndrome (MTSS) and stress reactions/fractures. Knowing how to distinguish between these two diagnoses is important because a stress reaction/fracture can be a serious injury.

First, you need to understand the tibia. One of the two long bones between your knee and ankle, the tibia is the bone that you can feel along the front and inside of the leg. The other bone is the fibula, which runs along the outside of the leg. The tibia absorbs around 90 percent of body weight when you walk or run. The fibula takes the remaining 10 percent. When you run, your body weight transmits through the tibia bone with every step. This increased force can cause injury.

MTSS, more commonly known as shin splints, causes pain in the shin. There is a lot of discussion and a few theories on why this pain occurs. One thought is that pain develops due to repetitive pulling on the covering around the tibia (periosteum) from the muscles that attach to the tibia. The other is that the forces on the tibia cause a bending of the bone and contribute to the pain. MTSS is usually a diffuse pain that runs along the length of the tibia. The pain is usually not there at the beginning of a run but presents itself a few miles into the run and continues to intensify as distance increases. The pain usually ceases when you stop running. There is usually no notable swelling.

MTSS can occur due to a quick increase in training (speed/intensity), abnormal running gait, improper shoe wear or foot alignment and altered muscle mechanics in the legs, among other reasons. Treatments include ice, anti-inflammatories, stretching, strengthening, physical therapy and running gait analysis. You can run through the pain if it is not severe, but if it is consistent, intensifies, affects running and doesn't resolve with treatment, you should be evaluated to prevent further injury and to ensure that the pain is not due to a stress reaction/fracture.

The more concerning diagnosis of tibial pain is a stress reaction/fracture. A stress reaction is an injury to the bone itself. Swelling within the bone can lead to a stress fracture. Stress reactions/fractures are usually more contained to an isolated area on the tibia. The pain may occur with normal daily activities, even outside of running. It significantly intensifies at the very beginning of a run and may not subside when you stop running. There also may be swelling and a palpable bump along the tibia.

A stress reaction is a lot like bending a paperclip. When you bend a paperclip, the metal will become hot and “stressed.” If you bend it too much, it will break. It’s the same with a stress fracture. If not treated properly or quickly, a stress reaction/fracture can sideline a runner for months or more. These injuries may occur because of improper training, abnormal mechanics in the legs, improper shoe wear, low vitamin D levels and decreased bone health. If you suspect you have a stress reaction/fracture, you should see a medical provider. Evaluation and treatment will ensure that the injury doesn’t progress and that healing is not delayed.

Initial treatment for a stress reaction/fracture is immobilization in a walker boot, non-weight bearing with crutches (sometimes), evaluation for bone health and medications. Depending on the severity of the injury, treatment may last from a few weeks to a few months. After the injury is resolved, one of the most important things is to determine why the injury occurred in the first place so you can prevent it from happening again.

Shin pain can be debilitating. It is important to recognize the symptoms. If your pain does not resolve itself after a few days of rest, you should consider a medical evaluation. With proper treatment, you can get back to running pain free as soon as possible.