

Shin Splints

The term "shin splints" has been widely used as a catch-all term referring to a collection of different conditions that cause leg pain. Shin splints are caused by chronic strain, overuse, and micro trauma of the soleus (calf) muscle at its origin on the shinbone (posteromedial tibia) or deep inflammation of the periosteum, which is the connective tissue that covers the bone, of the tibia beneath the posterior tibialis muscle. Shin splints generally occur from overuse or improper training. Shin splints usually occurs in people who begin a new running or jumping activity or conditioned runners who change or increase their speed or distance or change their type of shoe or running terrain. Shin splints also affects individuals who have flat feet because the mechanics of the foot increase stress on the soleus muscle. A patient with shin splints has pain at the inner portion of the tibia in the middle of the lower leg and in the surrounding soft tissue which improves with rest or is nonexistent with everyday activity. With a stress fracture, the patient usually experiences pain that does not go away with rest. The pain often persists with walking and increases when walking up steps or during similar moderate activity. The patient often complains of pain at night. A "one-leg hop test" is a functional test often used to distinguish between shin splints and a stress fracture. A patient with shin splints can hop at least 10 times on the affected leg; however, a patient with a stress fracture cannot hop without severe pain. However, the only true test to rule out a stress fracture is x-rays. Plain x-rays may not show a fracture line or a healing stress fracture until several weeks after injury, so a bone scan, computed tomography (CT) scan or magnetic resonance imaging (MRI) scan may be used instead. To relieve the pain caused by shin splints, ice massage and Achilles tendon stretching are performed 3 to 4 times a day. Nonsteroidal anti-inflammatories such as ibuprofen are recommended to relieve inflammation and pain. Gentle stretching of the leg muscles that includes the calf, heel cord, and hamstring is essential before and after exercising to treat shin splints. Any anatomic foot variation, such as a pronated (a foot with a low arch) flat foot, should be corrected with a semi rigid foot orthosis (shoe insert). Runners should use a running shoe that provides shock absorption and has a firm heel support. Gentle flexibility and strengthening exercises for the muscles involved should also be added to the workout. The key treatment for shin splints is rest from the activity that causes the pain. Once the pain has subsided, less stressful exercise can begin. For example, for the first week, biking and swimming can be substituted for running. Then the patient can start training again at about half the previous level of intensity (half the distance or pace). The exercise intensity should be gradually increased to the desired level

over 3 to 6 weeks. Recurrence of pain is a signal that the level of activity has been resumed too fast. Proper training and stretching is paramount in preventing shin splints. Runners should stretch daily, add muscle strengthening exercises to their training regimen, and advance distances slowly. A general rule of thumb is advancing total mileage approximately 10% per week.