

Shin Pain

What is shin pain?

Shin pain is experienced on the front of the lower leg, below the knee and above the ankle. It can hurt directly over the shinbone (tibia) or over the muscles that are on the inner or outer side of the tibia. Shin pain is often referred to as shin splints, but not all shin pain is necessarily caused by shin splints.

The pain may come from irritation of the muscles and the tissues that connect the muscles to bone, from a stress reaction/fracture, or from increased pressure around the muscles in the lower leg. The following are different types of shin conditions.

- **Medial stress syndrome (shin splints):** Occurs when the muscles that attach to the inner side of the shinbone are inflamed. A similar process can occur over the outer side of the leg.
- **Stress reaction/fracture:** Stress reaction is inflammation in the bone and may be a precursor to a stress fracture. A stress fracture is a hairline crack in one of the lower leg bones, the tibia or fibula.
- **Compartment syndrome:** The muscles in the lower leg are surrounded by connective tissue into compartments. When a certain compartment is overused the muscles will become painful.

Signs and Symptoms

Symptoms include pain over the front, inner, or outer parts of your lower leg. Pain may occur during exercise, at rest, or both.

- **Shin splints symptoms:** pain and tenderness in a broad area along the edge of the shinbone and surrounding muscles will occur. This pain is typically worse at the beginning of activity and shortly after running, but may worsen to the point that it is too painful to begin workouts at all.
- **Stress fractures symptoms:** Pain directly over the shinbone. It will hurt to touch the part of the bone that is fractured. Stress fractures of the fibula will cause pain on the outer side of the lower leg. This pain is typically minor at the beginning of activity and worsens with increased activity/movement.
- **Compartment syndrome symptoms:** The muscles in the lower leg will be painful. This pain also tends to get worse the longer an athlete is active or running. Blood vessels and nerves in the lower leg may become irritated if the muscles in this compartment swell during exercise, causing the foot to become weak, numb or cold.

How do we treat shin pain?

Treatment your healthcare team suggests could include:

- **Ice:** Applying ice packs to the shin for 30 minutes every 3 to 4 hours for 2 or 3 days or until the pain goes away.

- **Ice massage:** Freeze water in a Styrofoam cup, then peel the top of the cup away to expose the ice and hold onto the bottom of the cup while you rub ice over shin for 5 to 10 minutes.
- **Medicine:** Anti-inflammatory medicine may be recommended and prescribed by your health care provider.
- **Supportive shoes:** Wearing the proper shoes recommended for your sport is a very important part of the treatment. In rare cases, arch supports (orthotics) may be recommended to help correct over-pronation (when the arch of the foot collapses).
- **Rest:** This is extremely important and the length of rest depends on the severity of the condition. Casting and crutches may also be a part of treatment if there is a stress fracture.
- **Rehabilitation exercises:** Physical therapists will guide the patient through what steps should be taken to ensure a successful return to sports and will recommend other activities to help the patient during recovery.
- **Surgery:** Occasionally surgery is needed for young athletes with compartment syndrome. The tissues which form the covering of the compartments are opened up to reduce the pressure in the compartments. Rarely, tibial stress fractures also need surgery.

Everyone recovers from an injury at a different rate. Return to activities will be determined by how each particular child's leg recovers. In general, the longer symptoms are present before treatment is started, the longer it will take to get better. The goal of rehabilitation is to get young athletes back to their normal activities as soon as it's safely possible. Returning too soon you may worsen injuries.

Who gets it, and can it be prevented?

The most common cause of all of these conditions in young athletes is being overactive. These shin conditions are most common in runners who increase their mileage or intensity of their running, or change the surface on which they are running.

Other contributing factors to the development of these conditions include tight muscles in the lower leg and ankle, failure to warm-up properly before physical activity, improper shoe wear, cigarette smoking and use of certain medications.

Keys to prevention include gradual return to activities, proper shoe wear, proper stretching and warm-up before play, running on softer surfaces, recognizing symptoms and stopping activity if pain comes back.

References:

Children's Hospital Colorado Sports Medicine Program for young athletes
American Academy of Pediatrics
American Medical Society of Sports Medicine