

What Is Charcot Foot?

Charcot foot is a sudden softening of the bones in the foot that can occur in people who have significant nerve damage (neuropathy). The bones are weakened enough to fracture, and with continued walking the foot eventually changes shape. As the disorder progresses, the arch collapses and the foot takes on a convex shape, giving it a rocker-bottom appearance, making it very difficult to walk.

Charcot foot is a very serious condition that can lead to severe deformity, disability, and even amputation. Because of its seriousness, it is important that patients with diabetes—a disease often associated with neuropathy—take preventive measures and seek immediate care if signs or symptoms appear.

Symptoms

The symptoms of Charcot foot can appear after a sudden trauma or even a minor repetitive trauma (such as a long walk). A sudden trauma includes such mishaps as dropping something on the foot, or a sprain or fracture of the foot. The symptoms of Charcot foot are similar to those of infection. Although Charcot foot and infection are different conditions, both are serious problems requiring medical treatment.

Charcot foot symptoms may include:

- Warmth to the touch (the foot feels warmer than the other)
- Redness in the foot
- Swelling in the area
- Pain or soreness

What Causes Charcot Foot?

Charcot foot develops as a result of neuropathy, which decreases sensation and the ability to feel temperature, pain, or trauma. When neuropathy is severe, there is a total lack of feeling in the feet. Because of neuropathy, the pain of an injury goes unnoticed and the patient continues to walk—making the injury worse.

People with neuropathy (especially those who have had it for a long time) are at risk for developing Charcot foot. In addition, neuropathic patients with a tight Achilles tendon have been shown to have a tendency to develop Charcot foot.

Diagnosis

Early diagnosis of Charcot foot is extremely important for successful

treatment. To arrive at a diagnosis, the surgeon will examine the foot and ankle and ask about events that may have occurred prior to the symptoms.

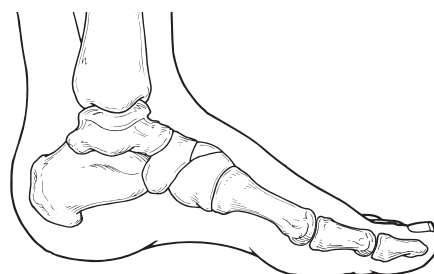
X-rays are also essential for diagnosis. In some cases, other imaging studies and lab tests may be ordered. Once treatment begins, x-rays are taken periodically to aid in evaluating the status of the condition.

Treatment

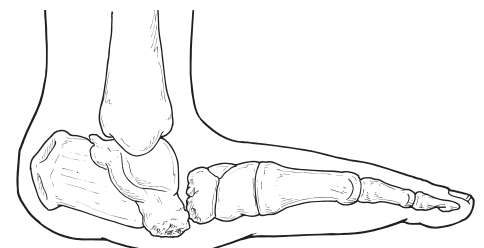
It is extremely important to follow the surgeon's treatment plan for Charcot foot. Failure to do so can lead to the loss of a toe, foot, leg, or life.

Treatment for Charcot foot consists of:

- **Immobilization.** Because the foot and ankle are so fragile during the early stage of Charcot, they must be protected so the soft bones can repair themselves. Complete non-weightbearing is necessary to keep the foot from further collapsing. The patient will not be able to walk on the affected foot until the surgeon



Normal Foot



Charcot Foot

determines it is safe to do so.

During this period, the patient may be fitted with a cast, removable boot, or brace, and may be required to use crutches or a wheelchair. It may take the bones several months to heal, although it can take considerably longer in some patients.

- **Custom shoes and bracing.** Shoes with special inserts may be needed after the bones have healed to enable the patient to return to daily activities—as well as help prevent recurrence of Charcot foot, development of ulcers, and possibly amputation. In cases with significant deformity, bracing is also required.


- **Activity modification.** A modification in activity level may be needed to avoid repetitive trauma to both feet. A patient with Charcot in one foot is more likely to develop it in the other foot, so measures must be taken to *protect both feet*.
- **Surgery.** In some cases, surgery may be required. The foot and ankle surgeon will determine the surgical procedure best suited for the patient based on the severity of the deformity and the patient's physical condition.

Preventive Care

The patient can play a vital role in preventing Charcot foot and its com-

plications by following these measures:

- Diabetes patients should keep blood sugar levels under control. This has been shown to reduce the progression of nerve damage in the feet.
- Get regular check-ups from a foot and ankle surgeon.
- Check *both* feet every day—and see a surgeon immediately if there are signs of Charcot foot.
- Be careful to avoid injury, such as bumping the foot or overdoing an exercise program.
- Follow the surgeon's instructions for long-term treatment to prevent recurrences, ulcers, and amputation. ▲



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**American College of
Foot and Ankle Surgeons**

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