

## Charcot foot operations help diabetes patients walk normally again

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A growing number of diabetics are being diagnosed with a debilitating foot deformity called Charcot foot.

Charcot [foot](#) often confines [patients](#) to wheelchairs, and in severe cases can require amputation.

Charcot foot patients from around the country come to Loyola University Medical Center orthopaedic surgeon Michael Pinzur, MD, for a [surgical treatment](#) that enables 91 percent of his patients to walk normally again. The technique secures foot bones with an external frame, made of stainless steel and aircraft-grade aluminum.

Dr. Pinzur has performed more than 560 Charcot foot operations with the external fixation device, which is believed to be the most such procedures performed by any surgeon in the world.

Charcot foot typically occurs in [morbidly obese](#) diabetics who have neuropathy (nerve damage), which impairs the ability to feel foot pain. Charcot foot usually develops following a minor injury, such as a sprain or stress fracture. Because the patient doesn't feel the injury, he or she continues to walk, making the injury worse. Bones fracture, joints collapse and the foot becomes deformed. The patient walks on the side of the foot and develops pressure sores. Bones can become infected.

In the United States, 29.1 million people (9.3 percent of the population) have diabetes, according to the Centers for Disease Control and

Prevention. The growing number of diabetics, combined with the obesity epidemic, is increasing the incidence of Charcot foot. Excess weight increases the risk of [diabetic neuropathy](#). Obesity also increases the risk that patients with diabetic neuropathy will develop Charcot foot.

There has been an alarming increase in morbid obesity among diabetics. About 62 percent of U.S. adults with Type 2 diabetes are obese, and 21 percent are morbidly obese, according to a study in the *Journal of Diabetes and its Complications*.

Traditional surgical techniques, in which bones are held in place by internal plates and screws, don't work with a subset of morbidly obese Charcot patients. Their bones, already weakened by complications of Charcot foot, could collapse under the patient's heavy weight.

A common treatment in such cases is to put the patient in a cast. But bones can heal in deformed positions. And, it is difficult or impossible for obese patients to walk on one leg when the other leg is in a cast. Patients typically have to use wheelchairs for as long as nine months. And after the cast comes off, they must wear a cumbersome leg brace.

Dr. Pinzur has done more than any other surgeon to popularize an alternative technique that uses a device called an Ilizarov circular external fixator. The device contains three rings that surround the foot and lower calf. The rings have stainless-steel pins that extend to the foot and secure the bones after surgery.

Following surgery, the device remains on the patient for 10 to 12 weeks. During that time, patients often are able to walk or at least bear some weight. After the fixation device is removed, the patient wears a walking cast for 4 to 6 weeks. The patient then progresses to a removable boot and finally to diabetic shoes.

"Charcot foot is a debilitating condition that is very challenging to treat," Dr. Pinzur said. "But with the proper surgical treatment, the vast majority of patients will be able to walk normally again."

Dr. Pinzur is a professor in the Department of Orthopaedic Surgery and Rehabilitation of Loyola University Chicago Stritch School of Medicine. In addition to diabetic foot problems, Dr. Pinzur's specialties include foot and ankle disorders, amputation, fracture healing problems and limb alignment problems.

Provided by Loyola University Health System

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