

Weekend Doctor

By **DR. THOMAS F. VAIL**

I've talked in previous articles about fractures of the foot and what causes them and how to treat them. But my patients often ask me if I fracture or injure another part of my body, such as my back, legs or hip, can this be of concern for damage to my feet?

Fractures or injuries in other parts of the body can definitely affect the nerves in the foot and cause vascular problems.

Fractures happen when there's more force applied to the bone than the bone can absorb. These breaks in bones can occur from falls, trauma or a direct blow. With children heading back to school, sports related fractures are a common occurrence.

Fractures are not limited, though, to trauma or over-use injuries. Over time, a person with osteoporosis may also experience stress fractures, especially in their back.

Any type of fracture can cause an injury to the nerves and develop into a vascular problem.

For the lower extremity, the two major nerves that one is primarily concerned with after a traumatic injury are the tibial nerve and common peroneal nerve.

These two nerves originate from the sciatic nerve. The sciatic nerve is the big nerve running from the lower back, through the buttocks, and down to the lower limbs.

If the sciatic nerve is injured, symptoms are pain, weakness, tingling or numbness from the lower back to the lower leg.

If the tibial nerve is injured at the leg below the knee level and above the ankle, the patient will experience a loss in motor function and sensory to the calf muscles and the sole of the foot.

If the tibial nerve injury is below or at the ankle level, the patient will lose the ability to move the foot down (plantar flexion), rotate the foot (inversion), curl the toe up (flexion) and, of course, sensory loss at the sole of the foot as well.

The peroneal nerve is a branch of the sciatic nerve, which supplies movement and sensation to the lower leg, foot and toes. Common peroneal nerve dysfunction is a type of peripheral neuropathy, damage to nerves outside the brain or spinal cord. This condition can affect people of any age.

If the common peroneal nerve is injured, the patient will experience a decrease in sensation, numbness or tingling on the top of the foot or the outer part of the upper or lower leg, foot drop, "slapping" gait, dragging toes, and weakness of the ankles or feet.

Dysfunction of a single nerve, such as the common peroneal nerve, is called a mononeuropathy.

Mononeuropathy means the nerve damage occurred in one area. However, certain body-wide conditions may also cause single nerve injuries.

Damage to the nerve destroys the myelin sheath that covers the axon, a branch of the nerve cell. Or it may destroy the whole nerve cell. There is a loss of feeling, muscle control, muscle tone, and eventual loss of muscle mass because the nerves aren't stimulating the muscles.

Common causes of damage to the peroneal nerve include the following:

- Trauma or injury to the knee.
- Fracture of the fibula, a bone of the lower leg.
- Use of a tight plaster cast or other long-term constriction of the lower leg.
- Crossing the legs regularly.
- Regularly wearing high boots.
- Pressure to the knee from positions during deep sleep or coma.
- Injury during knee surgery or from being placed in an awkward position during anesthesia.

As mentioned above, a fracture can cause a vascular injury. Signs of vascular injury in the lower extremity are pulsatile bleeding, bruising, absent distal pulses, and a cold and pale limb.

If you experience any of the symptoms above with or without a known injury, please make an appointment to visit your podiatrist to be evaluated for nerve dysfunction or injury.



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