

Common peroneal nerve dysfunction

Definition

Common peroneal nerve dysfunction is damage to the peroneal nerve leading to loss of movement or sensation in the foot and leg.

Alternative Names

Neuropathy - common peroneal nerve; Peroneal nerve injury; Peroneal nerve palsy; Fibular neuropathy

Causes

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.

Dysfunction of a single nerve, such as the common peroneal nerve, is called a mononeuropathy. Mononeuropathy means the nerve damage occurred in one area. Certain body-wide conditions can also cause single nerve injuries.

Damage to the nerve disrupts the myelin sheath that covers the axon (branch of the nerve cell). The axon can also be injured, which causes more severe symptoms.

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

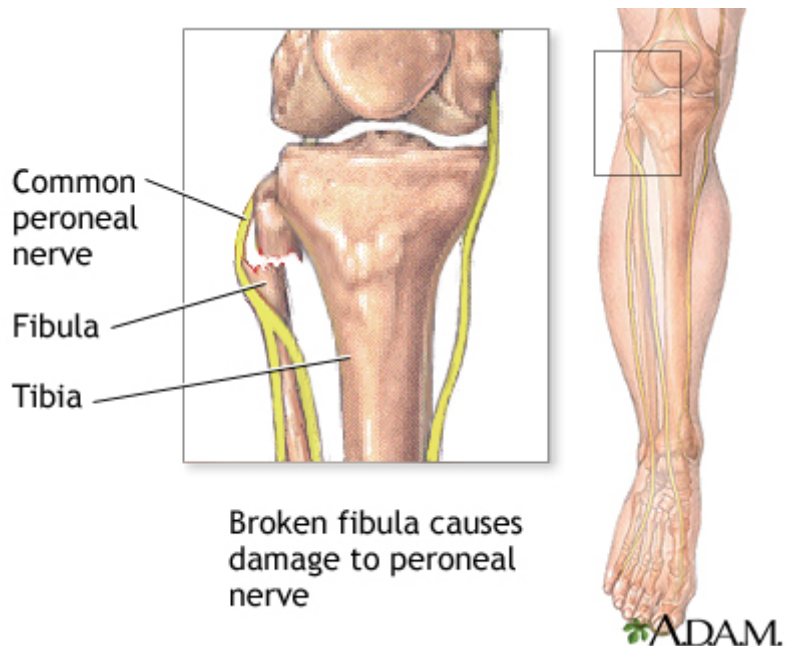
Common peroneal nerve injury is often seen in people:

- Who are very thin (for example, from anorexia nervosa)
- Who have certain autoimmune conditions, such as polyarteritis nodosa
- Who have nerve damage from other medical problems, such as diabetes or alcohol use
- Who have Charcot-Marie-Tooth disease, an inherited disorder that affects all of the nerves

Symptoms

When the nerve is injured and results in dysfunction, symptoms may include:

- Decreased sensation, numbness, or tingling in the top of the foot or the outer part of the upper or lower leg
- Foot that drops (unable to hold the foot up)
- "Slapping" gait (walking pattern in which each step makes a slapping noise)
- Toes drag while walking
- Walking problems



- Weakness of the ankles or feet
- Loss of muscle mass because the nerves aren't stimulating the muscles

Exams and Tests

The health care provider will perform a physical exam, which may show:

- Loss of muscle control in the lower legs and feet
- Atrophy of the foot or foreleg muscles
- Difficulty lifting up the foot and toes and making toe-out movements

Tests of nerve activity include:

- Electromyography (EMG, a test of electrical activity in muscles)
- Nerve conduction tests (to see how fast electrical signals move through a nerve)
- MRI
- Nerve ultrasound

Other tests may be done depending on the suspected cause of nerve dysfunction, and the person's symptoms and how they develop. Tests may include blood tests, x-rays and scans.

Treatment

Treatment aims to improve mobility and independence. Any illness or other cause of the neuropathy should be treated. Padding the knee may prevent further injury by crossing the legs, while also serving as a reminder to not cross your legs.

In some cases, corticosteroids injected into the area may reduce swelling and pressure on the nerve.

You may need surgery if:

- The disorder does not go away
- You have problems with movement
- There is evidence that the nerve axon is damaged

Surgery to relieve pressure on the nerve may reduce symptoms if the disorder is caused by pressure on the nerve. Surgery to remove tumors on the nerve may also help.

CONTROLLING SYMPTOMS

You may need over-the-counter or prescription pain relievers to control pain. Other medicines that may be used to reduce pain include gabapentin, carbamazepine, or tricyclic antidepressants, such as amitriptyline.

If your pain is severe, a pain specialist can help you explore all options for pain relief.

Physical therapy exercises may help you maintain muscle strength.

Orthopedic devices may improve your ability to walk and prevent contractures. These may include braces, splints, orthopedic shoes, or other equipment.

Vocational counseling, occupational therapy, or similar programs may help you maximize your mobility and independence.

Outlook (Prognosis)

Outcome depends on the cause of the problem. Successfully treating the cause may relieve the dysfunction, although it may take several months for the nerve to improve.

If nerve damage is severe, disability may be permanent. The nerve pain may be very uncomfortable. This disorder does not usually shorten a person's expected lifespan.

Possible Complications

Problems that may develop with this condition include:

- Decreased ability to walk
- Permanent decrease in sensation in the legs or feet
- Permanent weakness or paralysis in the legs or feet
- Side effects of medicines

When to Contact a Medical Professional

Call your health care provider if you have symptoms of common peroneal nerve dysfunction.

Prevention

Avoid crossing your legs or putting long-term pressure on the back or side of the knee. Treat injuries to the leg or knee right away.

If a cast, splint, dressing, or other pressure on the lower leg causes a tight feeling or numbness, call your provider.

References

Katirji B. Disorders of peripheral nerves. In: Daroff RB, Jankovic J, Mazziotta JC, Pomeroy SL, eds. *Bradley's Neurology in Clinical Practice*. 7th ed. Philadelphia, PA: Elsevier; 2016:chap 107.

King JC. Peroneal neuropathy. In: Frontera WR, Silver JK, Rizzo TD Jr, eds. *Essentials of Physical Medicine and Rehabilitation: Musculoskeletal Disorders, Pain, and Rehabilitation*. 3rd ed. Philadelphia, PA: Elsevier Saunders; 2015:chap 75.

Review Date: 8/7/2017

Reviewed By: Amit M. Shelat, DO, FACP, Attending Neurologist and Assistant Professor of Clinical Neurology, SUNY Stony Brook, School of Medicine, Stony Brook, NY. Review provided by VeriMed Healthcare Network. Also reviewed by David Zieve, MD, MHA, Medical Director, Brenda Conaway, Editorial Director, and the A.D.A.M. Editorial team.