CONDITION

Common peroneal nerve dysfunction

Learn how common peroneal nerve dysfunction can cause foot drop, leg or foot numbness, and walking problems, and how it is diagnosed and treated.

WHAT IT IS
Impaired common peroneal nerve function

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Foot drop, leg or foot numbness, pain, walking problems

WHAT CAUSES IT
Nerve compression, stretching or injury

HOW IT IS DIAGNOSED
Nerve conduction studies and electromyography

MAIN TREATMENT
Pressure relief, physical therapy and bracing

CAN IT BE CURED?
Sometimes, mild pressure injuries may improve

IS IT AN EMERGENCY?
Sometimes, sudden weakness with stroke signs

LONG-TERM OUTLOOK
Recovery varies; severe injuries may leave lasting weakness

Overview

Common peroneal nerve dysfunction is a problem affecting the common peroneal nerve, also called the common fibular nerve. This nerve helps control muscles that lift the foot and toes. It also carries sensation from parts of the outer lower leg and the top of the foot.

The nerve travels from the lower part of the sciatic nerve, passes behind the knee, and curves around the outside of the upper fibula. The fibula is the smaller bone on the outer side of the lower leg. At this location, the nerve lies close to the skin and has little protection. Pressure, stretching, injury, or another disorder can therefore damage it.

The common peroneal nerve divides into two main branches. The deep branch helps lift the foot and toes. The superficial branch helps turn the foot outward and provides sensation over much of the top of the foot.

A typical movement problem is foot drop , meaning difficulty lifting the front of the foot. Foot drop can change how a person walks and increase the risk of tripping. Common peroneal nerve dysfunction can also cause numbness, tingling, pain, or weakness.

The term describes impaired nerve function rather than one specific cause. Similar symptoms can come from a pinched nerve in the lower back, a more widespread nerve disorder, or a problem involving the brain or spinal cord. An appropriate evaluation helps identify where the nerve problem is located and what may be causing it.

Symptoms

Symptoms depend on which nerve fibers are affected and how severe the injury is. They may begin suddenly after an injury or develop gradually from repeated or prolonged pressure.

Possible symptoms include:

The small area of skin between the first and second toes may be especially affected when the deep peroneal branch is involved. The sole of the foot is generally supplied by other nerves, so numbness there may point to a different or broader problem.

Foot drop is not a diagnosis by itself. It can result from common peroneal nerve dysfunction, an L5 nerve root problem in the lower back, sciatic nerve injury, muscle disease, or a central nervous system condition. New foot drop should be medically assessed, especially when it appears suddenly or is getting worse.

Call emergency services if sudden leg weakness occurs with facial drooping, arm weakness, difficulty speaking, severe loss of balance, or another possible stroke symptom. Emergency assessment is also appropriate for weakness accompanied by new loss of bladder or bowel control, numbness around the groin, or severe back pain.

- Difficulty lifting the front of the foot or toes
- The toes catching on the floor while walking
- A high-stepping walk used to keep the foot from dragging
- Slapping of the foot against the ground with each step
- Weakness when turning the foot outward
- Numbness or reduced sensation over the outer lower leg or top of the foot
- Tingling, burning, aching, or electric-shock-like pain
- Muscle loss in the front or outer part of the lower leg when dysfunction is severe or long-lasting

Causes and risk factors

Compression near the fibular head, the bony area just below the outside of the knee, is a common mechanism. Pressure can reduce blood flow to the nerve and disrupt the nerve fibers' ability to send signals.

Situations that may compress or stretch the nerve include:

Injury around the knee or upper fibula can directly damage the nerve. Examples include a fibular fracture, knee dislocation, ligament injury, or deep cut. The nerve can also be affected during knee, hip, or leg surgery.

A cyst, tumor, or other growth near the nerve may cause compression. A ganglion cyst, which is a fluid-filled lump arising near a joint, can occasionally develop near the upper tibiofibular joint and press on the nerve.

Diabetes and other conditions that cause peripheral neuropathy may make nerves more vulnerable to compression. Peripheral neuropathy means damage to nerves outside the brain and spinal cord. Inflammatory disorders, blood vessel problems, and certain infections can also affect a nerve, although these are less typical causes of an isolated common peroneal problem.

Sometimes no definite cause is found. Identifying possible pressure, injury, weight change, or underlying illness can still guide management and help prevent further damage.

- Frequently crossing the legs
- Prolonged squatting, kneeling, or staying in one position
- Extended bed rest or unconsciousness
- Tight casts, splints, braces, or bandages
- Surgical positioning, particularly during a long procedure
- Rapid or substantial weight loss, which may reduce the tissue cushioning the nerve
- Habitual pressure against the outside of the knee

Diagnosis

A clinician will ask when the symptoms started, whether they are changing, and whether there was an injury, operation, prolonged period of immobility, or pressure near the knee. The evaluation may also cover back pain, weight change, diabetes, medication use, and symptoms elsewhere in the body.

During the examination, the clinician may test:

Testing foot inversion, which means turning the sole inward, can help distinguish common peroneal nerve dysfunction from an L5 nerve root problem. This distinction is not based on one finding alone.

Nerve conduction studies measure how quickly and strongly electrical signals travel through a nerve. Electromyography , often called EMG, records electrical activity in selected muscles. Together, these tests can help locate the injury, estimate its severity, and identify whether another nerve or nerve root is involved. The timing of testing matters because some electrical changes take time to appear.

Imaging is selected according to the suspected cause. An X-ray may be used after an injury. Ultrasound or magnetic resonance imaging, known as MRI, may show swelling, a cyst, a mass, or another source of compression. MRI of the lower back may be considered when symptoms suggest a spinal nerve root problem.

Blood tests are not needed for every person. They may be used when the history or examination suggests diabetes, a vitamin deficiency, inflammation, or another medical condition affecting the nerves.

- Ankle and toe lifting
- Outward and inward movement of the foot
- Reflexes and muscle strength
- Sensation in different parts of the leg and foot
- Walking pattern, balance, and ability to walk on the heels
- Tenderness or tingling when the nerve near the fibular head is gently tapped

Treatment and management

Treatment depends on the cause, severity, duration, and whether the nerve remains compressed. The main goals are to protect the nerve, improve walking safety, preserve joint movement, and address the underlying problem.

Removing pressure is often an early step. This may involve avoiding leg crossing, prolonged squatting, or pressure against the outside of the knee. A clinician should examine any cast, splint, or brace that feels tight or causes increasing numbness, pain, or weakness. Medical devices should not be removed or altered without appropriate guidance unless emergency instructions say otherwise.

Physical therapy can help maintain ankle flexibility, strengthen muscles that still work, and improve balance and walking. Stretching may reduce the risk of the ankle becoming fixed in a

toes-down position. A therapist can also recommend safe exercises and show how to avoid falls.

An ankle-foot orthosis , or AFO, is a brace that supports the ankle and holds the foot in a safer position during walking. It may reduce toe dragging and improve stability. Proper fit is important because a poorly fitting brace can cause pressure or skin injury, especially when sensation is reduced.

A cane or other walking aid may be useful for some people. Practical steps such as clearing loose rugs, improving lighting, using handrails, and wearing supportive shoes can also lower the risk of falls.

Pain treatment depends on the type and severity of discomfort and on a person's other health conditions. Nonprescription or prescription medicines may be considered, but they do not remove mechanical compression or repair a severed nerve. A healthcare professional or pharmacist can help assess medicine-related risks and interactions.

Surgery may be considered when the nerve has been cut, a mass is pressing on it, or severe compression does not improve with appropriate nonsurgical care. Possible procedures include releasing tissue around the nerve, removing a cyst or mass, repairing the nerve, or using a nerve or tendon transfer in selected cases. The choice and timing depend on examination findings, electrical testing, imaging, and the expected chance of recovery.

Recovery varies. Mild pressure-related injuries may improve after the pressure is removed, while severe injuries can take much longer or leave lasting weakness. Nerves heal slowly, and improvement may continue over months. Follow-up examinations and sometimes repeat nerve testing help show whether recovery is occurring.

Complications

Foot drop can make the toes catch on the ground, increasing the risk of trips and falls. Changes in walking may also place added strain on the ankle, knee, hip, or lower back.

Reduced sensation can make it harder to notice rubbing, blisters, burns, or other injuries on the foot. Persistent weakness may lead to muscle shrinkage. Without stretching or support, the ankle may become stiff or develop a fixed position called a contracture.

Some people have ongoing nerve pain or incomplete recovery. The likelihood depends on the cause, how severely the nerve was damaged, and whether ongoing compression can be corrected.

Follow up

Routine follow-up is used to monitor strength, sensation, walking, brace fit, skin condition, and ankle flexibility. A clinician may adjust therapy or recommend additional testing if recovery is slower than expected.

Seek prompt medical advice for new foot drop, worsening weakness, spreading numbness, repeated falls, or increasing pain. Contact the treating team if a cast or brace causes pressure sores, skin discoloration, marked swelling, or increased numbness.

Emergency care is appropriate for:

People with reduced foot sensation should inspect the skin regularly. Areas under a brace and around the toes, heel, and outer edge of the foot deserve particular attention. New wounds or signs of infection should be assessed rather than ignored.

- Sudden leg weakness with signs of stroke, such as facial drooping or speech difficulty
- New bladder or bowel control problems, numbness around the groin, or severe back pain
- Rapidly increasing pain and swelling after an injury or under a cast
- A foot that becomes cold, pale, blue, or difficult to move
- A deep wound or major injury near the outside of the knee

Sources

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