



Side-Effect Management: Managing Peripheral Neuropathy (Nerve Damage)

Your nervous system has two parts: the central nervous system and the peripheral nervous system. The central nervous system includes the brain and the spinal cord. The peripheral nervous system is the network of nerves that branch out from the brain and spinal cord into other parts of the body. The peripheral nerves send information between the brain and other parts of the body to assist with feeling, movement and body functions, such as regulating heart rate. Peripheral neuropathy is a condition that occurs when there is damage to the peripheral nerves.

SYMPTOMS OF PERIPHERAL NEUROPATHY

Symptoms of peripheral neuropathy can range from mild discomfort to debilitating pain. Symptoms depend on which type of nerves are affected. The three types of peripheral nerves are

1. Sensory nerves, which help you feel pain, heat and cold
2. Motor nerves, which help your muscles move (such as the muscles in your arms and legs)
3. Autonomic nerves, which act unconsciously to control body functions like heart rate, digestion, and breathing

If you experience any of the symptoms of peripheral neuropathy, tell your doctor immediately. Symptoms are likely to get worse if not addressed quickly.

Sensory nerve damage is often injury to the nerves in the hands, feet, arms and legs. You may feel

- Tingling (“pins and needles”), pain or numbness
- Burning or a warm feeling
- Sensitivity to touch
- Difficulty feeling hot and cold
- Less pain or no pain from a cut or a sore

Motor nerve damage may cause

- Weak or sore muscles, which may lead to difficulty walking, loss of balance or tripping easily
- Difficulty using your hands and arms for tasks such as buttoning a shirt, opening jars or texting
- Difficulty swallowing or breathing (if chest or throat muscles are affected)

Autonomic nerve damage may cause

- Constipation or diarrhea
- Trouble urinating
- Dizziness (caused by low blood pressure)
- Irregular heartbeat
- Changes in sweating—either sweating too much or too little

WHAT CAN CAUSE PERIPHERAL NEUROPATHY?

Some cancer treatments can damage peripheral nerves. When chemotherapy causes peripheral neuropathy, it is called chemotherapy-induced peripheral neuropathy. This does not affect every patient, and symptoms can differ depending on the drug, dosage and other pre-existing health conditions.

Examples of drugs that may cause peripheral neuropathy include:

- Bortezomib (Velcade®)
- Carfilzomib (Kyprolis®)
- Cisplatin (Platinol®)
- Cytarabine (Cytosar-U®, ara-C)
- Etoposide (Etopophos®, VePesid®)
- Interferon
- Ixazomib (Ninlaro®)
- Lenalidomide (Revlimid®)
- Methotrexate (Trexall®)
- Pomalidomide (Pomalyst®)
- Thalidomide (Thalomid®)
- Brentuximab vedotin (Adcetris®)
- Vincristine (Oncovin®)
- Vincristine sulfate liposome injection (Marqibo®)

Radiation therapy can damage peripheral nerves, although it may take years for symptoms to appear. Tumors pressing on nerves can also cause nerve damage.

Peripheral neuropathy can also be caused or made worse by the following conditions:

- Myeloma
- Diabetes
- Shingles
- Infections that affect the nerves
- Nerve compression caused by vertebral fractures
- Vitamin deficiencies, particularly not enough folate or vitamin B12
- Autoimmune diseases such as lupus and rheumatoid arthritis
- HIV or AIDS
- Hypothyroidism (low thyroid hormone levels)
- Peripheral vascular disease (poor circulation)
- Excessive alcohol use

If you have any of these conditions or symptoms of peripheral neuropathy before starting cancer treatment, tell your doctor.

MANAGING PERIPHERAL NEUROPATHY

During treatment, tell your doctor if you experience any symptoms of peripheral neuropathy. If your peripheral neuropathy is caused by cancer treatment, your doctor may use smaller doses of the drug or stop treatment until your symptoms improve to prevent long-term nerve damage.

Peripheral neuropathy caused by chemotherapy may gradually improve after you complete treatment. Many people recover fully after a few months, but recovery could take years. In some cases, the symptoms may persist.

If peripheral neuropathy is caused or worsened by another health issue, such as diabetes or thyroid problems, addressing the underlying health issue can help improve symptoms.

While there are currently no treatments to cure peripheral neuropathy, there are treatments that can help manage symptoms, including

- Physical therapy to improve balance and strength
- Occupational therapy to improve fine motor skills
- Medication such as pain medications, antidepressants, anti-seizure medications, muscle relaxers or steroids to help relieve pain and discomfort
- Creams or patches of numbing medicine that can be put directly on painful areas
- Regular exercise. Talk with your doctor before starting an exercise program.
- Massage, acupuncture and relaxation techniques
- Dietary supplements such as a B12 vitamin and folic acid. Ask your doctor before taking any supplements because they may interfere with treatment.

SAFETY MEASURES TO AVOID INJURY

Due to decreased feeling in your hands and feet, you may be at increased risk for injuries. To help prevent injury

- Keep all rooms, hallways and stairways well lit.
- Install handrails on both sides of stairways.
- Remove small area rugs and any other clutter that you could trip over or slip on.
- Install grab bars in the shower or hand grips in the tub and lay down skid-free mats.
- Check bath water is below 110°F (use a thermometer); set water heater temperature lower.
- Clean up spilled water or liquids immediately.
- Do not wear tight shoes or clothes.
- Avoid extreme temperatures.

- Use non-breakable dishes.
- Be careful when using knives, scissors, box cutters and other sharp objects.
- Use pot holders while cooking and rubber gloves when washing dishes.
- If you drive, make sure you can fully feel the steering wheel and gas and brake pedals, and that you can quickly move your foot from the gas to the brake.
- Use a cane or walker if you have trouble with balance.

Questions To Ask Your Healthcare Team

- **Is peripheral neuropathy a possible side effect of my cancer treatment?**
- **What symptoms should I look for?**
- **What can be done to prevent or manage peripheral neuropathy?**
- **What treatments would you recommend for pain caused by peripheral neuropathy?**
- **Are there certain activities I should avoid?**

GET ONE-ON-ONE SUPPORT.

The Leukemia & Lymphoma Society team consists of master's level oncology social workers, nurses and health educators who are available by phone Monday–Friday, 9 a.m. to 9 p.m. (ET).

INFORMATION SPECIALISTS

- Call **800.955.4572**
- Visit www.LLS.org/InformationSpecialists

CLINICAL TRIAL NURSE NAVIGATORS

- Call **800.955.4572**
- Visit www.LLS.org/CTSC

Acknowledgement

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