

Care Strategies for Peripheral Neuropathy

Peripheral neuropathy can sometimes be prevented, but most often, taking steps to ease symptoms is the only solution.

By Matthew D. Hansen, DPT, MPT, BSPTS

NERVE PAIN CAN cause burning, stabbing, aching, shooting pain and/or tingling/prickling sensations. Nerves act as the transmitters (or highways) for pain signals back to the central nervous system, and they play a role in all peripheral pain, even when the pain doesn't originate from the nerve itself.

Neuropathy is a disease or dysfunction of the nerves. Depending on whether sensory, motor and/or autonomic nerves are involved, peripheral neuropathy may manifest itself as pain, numbness, weakness, altered temperature regulation and/or other symptoms in the upper and lower extremities on either or both sides of the body. Those who suffer from peripheral neuropathy often experience a decline in independence that can result in feelings of dejection and forcibly cause them to give up activities they once found enjoyable. And, while peripheral neuropathy can be prevented in some instances, sometimes the only option is to properly care for the disease and prevent it from getting worse.

Preventing Neuropathy

Until epidemiologists or geneticists can definitively identify the cause and eradicate some of the most devastating diseases related to neuropathy, care rather than prevention is the best solution. That being said, preventive practices can be taken to reduce the duration, severity and/or functional impact of neuropathies.

For those living with a primary immunodeficiency, neuropathies are typically a secondary symptom and not directly related to the underlying condition. Therefore, direct prevention is possible, and oftentimes the neuropathy may be reversed if identified and treated before permanent

damage occurs. As is true for reducing the risks of most medical problems, safe and healthy living is key: regular exercise, not smoking or being overexposed to environmental toxins, and consuming a nutritious diet that avoids high salt, alcohol, saturated fat, sugar and other inflammatory foods.

Obesity, high blood pressure and diabetes are often closely related conditions that all increase the risk of neuropathy, whether they occur together or in isolation. If a patient has diabetes, it is particularly important that blood glucose levels be controlled. However, artificial sweeteners should be used in moderation due to their potential for increasing the sensitivity of nerves and making symptoms of neuropathy worse.

In addition to nutritional risk factors, both traumatic injuries and more insidious compression or repetitive high-impact injuries may lead to neuropathy. Maintaining neuromuscular flexibility, but not overstretching, will help to avoid neural compression/entrapment such as occurs with carpal tunnel. Repetitive stress neuropathies are particularly common in the feet. If persons are obese or otherwise at increased risk of developing this type of neuropathy, it's best they participate in reduced weight-bearing exercises such as stationary biking or swimming instead of high-impact choices that involve running or jumping.

Regardless of the underlying cause, early detection and care of neuropathy is vital due to the peripheral nerves' limited ability to regenerate. Patients should disclose all symptoms and concerns early and thoroughly with their doctor who can determine what diagnostic testing may be necessary to make an appropriate referral.



Caring for Neuropathy

The main treatment goals for neuropathy are to manage the underlying condition and to relieve its symptoms. Effective care must oftentimes be multifaceted and is presented here by category.

Preventive care against injury. Those suffering from a sensory neuropathy in the hands and/or feet may experience hyposensitivity or complete numbness in one or more extremities. Consequently, it is not unusual for them to be less aware of harmful stimuli in their environment, including obstacles in their pathway when other senses are impaired. For example, someone with impaired proprioception (sense of body position) due to lower extremity neuropathy is even more dependent on their sense of vision for balance, and may be more susceptible to tripping and falling when getting up in the dark to go to the bathroom during the middle of the night. Decreased sensation in the feet also makes people more prone to injury because they may not feel something as seemingly innocent as a pebble in their shoe or the ensuing wound and infection that may develop. Those with an upper extremity neuropathy may not be able to tell their hand is on a hot stove or in scalding water.

If neuropathy is caused by a nutritional deficit, addressing the deficiency may be enough to resolve symptoms.

The following are several self-care and home safety measures that can help to prevent injury and harm:

- Perform regular foot checks for blisters, cuts, etc.
- Wear soft cotton socks that are not too tight, use shoes with a padded heel, avoid high heels or going barefoot and trim toenails regularly.
- Keep pathways free of obstacles, and utilize night lights.
- Install grab bars in the bathroom, and use bath mats.
- Check water temperature with a thermometer or elbow and not with a hand or foot.

If neuropathy is caused by a nutritional deficit, addressing

the deficiency may be enough to resolve symptoms. If neuropathy is caused by use of a specific medication, switching to an alternative drug, as prescribed by a physician, may be the answer. Still, with some causes, neuropathic damage may be permanent.

Exercise and rehabilitation. Many sensory neuropathies have the potential to resolve over time; however, there are steps that can be taken to help reduce pain. In fact, something as seemingly simple as getting up and moving every 20 minutes to 30 minutes can help decrease pain by maintaining blood flow to the nerves and preventing muscle and nerve contractures. An easy walk, yoga or tai chi are good starting activities that can provide physical and mental benefits.

Arranging for an ergonomic and safety assessment of work and living spaces, followed by making recommended changes, may also make a difference. This type of evaluation can be performed by one of several specially trained professionals, including an occupational or physical therapist. Skilled therapy or chiropractic intervention can also help reduce pain via guided exercise, desensitization techniques, manual intervention or use of other therapies. One modality that has been shown to offer relief for some is transcutaneous electronic nerve stimulation (TENS). The theory behind TENS is that painful signals running through the nerves can be disrupted from their pathway to the brain by passing a gentle current through electrodes placed on the skin.

When symptoms interfere with function, a therapist can help to compensate for lost skills by teaching new ones and/or prescribing adaptive equipment. A therapist may also recommend a sling or splint to protect surrounding tissue in the affected area and to help maintain range of motion, or fit and train the patient to use a cane, walker or wheelchair, even for temporary use.

With motor neuropathy, it's important to protect the body's joints and muscle structures from unnecessary stress. Strengthening exercises help to maintain affected muscles, but it's critical they be prescribed by a professional who understands motor neuropathy and the patient's specific condition. Strengthening and balance exercises also increase safety by fortifying the muscles in nonaffected surrounding areas.

Medical intervention. Neuropathic medications include typical over-the-counter pain medications, including acetaminophen and nonsteroidal anti-inflammatory drugs (e.g., ibuprofen, aspirin and naproxen), as well as drugs primarily developed and used to control other medical conditions. For

example, anti-seizure medications such as pregabalin and gabapentin, along with several antidepressant drug classes, have been shown to help relieve chronic pain. Topical applications of lidocaine or capsaicin cream (which contains the active chemical compound found in chili peppers) also have analgesic qualities. When more conservative measures fail, a physician may decide to perform a nerve block by injecting an anesthetic directly into the nerve. Pain killers that contain opioids (e.g., oxycodone, fentanyl, codeine and morphine) are now usually used only when other treatments are unsuccessful due to their capacity to lead to dependence and addiction.

Other medical treatments for neuropathy include intravenous immune globulin (IVIG) and plasmapheresis (plasma exchange). IVIG is used to infuse the body with additional antibodies when the immune system is low. Plasmapheresis is a blood transfusion that is designed to remove hazardous antibodies from the blood that attack nerve cells leading to neuropathy in individuals with autoimmune disease.

Finally, surgical treatment may be recommended as a last resort or if it can be determined the neuropathy stems from resolvable pressure or compression on the nerve.

Alternative interventions. Although not as much scientific research has been performed for the following treatments as for pharmaceutical intervention, they have all benefited from growing interest and anecdotal support.

- Medical marijuana: A review funded by the Veterans Administration of 13 clinical trials concluded, “Limited evidence suggests that cannabis may alleviate neuropathic pain in some patients, but insufficient evidence exists for other types of chronic pain.” The authors also determined that additional studies on its safety and long-term efficacy were needed.¹ With more states legalizing medical marijuana, there is sure to be more research to follow.

- Relaxation techniques: Many techniques have developed over the centuries to help adherents release inner tension and refocus the body and mind. Some of those practices include meditation, self-hypnosis, visualization, biofeedback, progressive muscle relaxation, conscious breathing and/or yoga.

- Natural supplements: At least a dozen different vitamins and herbs have been promoted for their ability to relieve nerve pain. These include vitamins A and B, St. John’s wort, kava kava, ginseng, alpha-lipoic acid, acetyl-L-carnitine, N-acetyl cysteine, curcumin (found in turmeric and ginger), fish oil and some essential oils (e.g., Roman lavender and chamomile). Natural supplements may still have side effects,

as well as possible interactions with prescribed medications, so their consideration should be discussed with a physician prior to use.

- Acupuncture, acupressure and reiki: According to Far Eastern tradition, these techniques promote healing by balancing the flow of energy through the body. Though scientific research regarding their effectiveness in the treatment of neuropathy is conflicting, their techniques have been adopted or adapted by Western medicine, often with different theories for their use and effectiveness (e.g., dry needling vs. acupuncture).

Many techniques have developed over the centuries to help adherents release inner tension and refocus the body and mind.

Relief Is Possible

Prevention, when possible, is always the best medicine. However, when it’s not, sufferers of peripheral neuropathy should never give up hope. Instead, by taking time to share their symptoms with their doctor, learn about their condition and systematically and thoroughly attempt different treatment options, patients should eventually find some relief if not resolution from their neuropathy. In the case of chronic and/or progressive conditions, at the very least, patients can learn through skilled assistance how to continue and function at their new normal. ■

MATTHEW DAVID HANSEN, DPT, MPT, BSPTS, is a practicing physical therapist in Utah and president of an allied healthcare staffing and consulting agency named SOMA Health, LLC. He completed his formal education at the University of Utah, Salt Lake City, and has additional training in exercise and sports science, motor development and neurological and pediatric physical therapy.

Reference

1. Nugent, SM, Morasco, BJ, O’Neil, ME, Freeman, M, Low, A, Kondo, K, et al. The Effects of Cannabis Among Adults with Chronic Pain and an Overview of General Harms: A Systematic Review. *Annals of Internal Medicine*, 2017; 167:319–331. doi: 10.7326/M17-0155. Accessed at annals.org/aim/fullarticle/2648595/effects-cannabis-among-adults-chronic-pain-overview-general-harms-systematic.