

Peripheral neuropathy, which involves damage to distant nerves (e.g., to hands and/or feet), can be a side effect of cancer treatment. Peripheral neuropathy also can be caused by several other things, including diabetes, vitamin B deficiencies and carpal tunnel syndrome. When peripheral neuropathy results from chemotherapies used to treat cancer, it is known as chemotherapy-induced peripheral neuropathy or CIPN.

Individuals who experience chemotherapy-induced peripheral neuropathy (CIPN) are affected in many different ways. Symptoms may be overlooked if individuals do not realize they may be caused by chemotherapy. As a result, it is particularly important to describe any new or unusual symptoms you experience during your treatment to your healthcare team. That way, the symptoms can be properly evaluated and together you can make informed decisions about the best course of care.

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Many patients find the following websites provide helpful information about chemotherapy-induced peripheral neuropathy (CIPN):

- ▶ American Cancer Society
www.cancer.org/acs/groups/cid/documents/webcontent/002908-pdf.pdf
- ▶ American Society of Clinical Oncology
www.cancer.net/navigating-cancer-care/side-effects/peripheral-neuropathy
- ▶ LIVESTRONG: Neuropathy
www.livestrong.org/we-can-help/finishing-treatment/neuropathy/
- ▶ National Cancer Institute
www.cancer.gov/aboutnci/ncicancerbulletin/archive/2010/022310/page6
- ▶ The Foundation for Peripheral Neuropathy: What is Peripheral Neuropathy
<https://www.foundationforpn.org/livingwithperipheralneuropathy/>
- ▶ The Neuropathy Association: About Peripheral Neuropathy
www.neuropathy.org/site/PageServer?pagename=About_Facts

Reference

Toftagen C. Patient perceptions associated with chemotherapy-induced peripheral neuropathy. *Clin J Oncol Nurs*. 2010;14(3):E22-8.

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5 FACTS

You Should Know About Chemotherapy-Induced Peripheral Neuropathy



Here are **5 FACTS** you should know about chemotherapy-induced peripheral neuropathy:

1 CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY (CIPN) SYMPTOMS VARY WIDELY BUT MOST OFTEN ARE SENSORY-RELATED.

They primarily affect the hands, arms, feet and legs. Usually, symptoms are the same on both sides of the body, affecting both hands and/or both feet. They tend to start in the toes or fingers, and move up the ankles and legs or hands and arms. The symptoms may be mild and have little effect on daily life. Or, they may be more severe and significantly interfere with daily activities.



2 PATIENTS DESCRIBE NEUROPATHY SYMPTOMS IN MANY DIFFERENT WAYS.

These include:

- **Unusual sensations** – Tingling, numbness, skin crawling, itching, pins and needles, wetness, itching, abnormal feeling that keeps you awake at night, discomfort in hands, feeling weak all over, muscle soreness, ringing in ears.
- **Pain** – Shooting, burning, sharp, stabbing, electric shock-like, cramps.
- **Sensitivity changes** – Extreme sensitivity to cold or heat at tips of fingers or balls of feet, can't stand having hand rubbed, sensitivity to bed sheets, pressure sensitivity, sensitivity that makes it difficult to fall back asleep, uncomfortable wearing regular shoes, feeling like you're wearing gloves or stockings even if your skin is bare, lessened ability to sense pressure, touch, heat or cold.

- **Difficulties** – Losing your balance, stumbling, tripping, shuffling, shaking or trembling. Having trouble buttoning buttons, feeling the shape of small objects, walking, distinguishing between hot and cold water, holding a pen, opening a jar, climbing stairs, clasping a necklace.

"I don't have any feeling, so I lose my balance."

"If I go to pick up a screwdriver, I don't know it's there. I have to watch and make sure I have it."

3 IF YOU EXPERIENCE ANY NEW OR UNUSUAL SYMPTOMS DURING YOUR TREATMENT, IT IS VERY IMPORTANT TO TELL YOUR HEALTHCARE PROVIDER BECAUSE THEY COULD INDICATE NEUROPATHY.

Since every individual can be affected differently, and neuropathy can be difficult to recognize, your healthcare provider needs to evaluate any possible symptoms. Your healthcare providers depend on you to let them know about any new or unusual concerns you have, even if it's difficult to be specific. For example, observations such as "I have a weird feeling in my fingers and toes" or "my feet feel stiff" provide helpful information to your healthcare team. It may be useful to keep notes or a diary when you feel a symptom, since it can be easy to forget by the next visit.



Your symptoms may affect work, hobbies and other activities. It is important to discuss these symptoms with your health care providers so, together, you can make appropriate care decisions.

"Driving feels weird, too. I can barely feel the pedals."

3 NEUROPATHY IS A RELATIVELY COMMON SIDE EFFECT OF MANY CANCER MEDICATIONS.

Many, but not all, drugs that are often used to treat cancer can cause neuropathy.

Drugs that are more often linked to neuropathy, and therefore may require attentiveness, include:

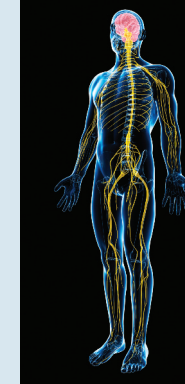
- Platinum drugs such as cisplatin (Platinol®), carboplatin (Paraplatin®) and oxaliplatin (Eloxatin®)
- Taxanes such as paclitaxel (Taxol® and Abraxane®), docetaxel (Taxotere®) and cabazitaxel (Jevtana®)
- Vinca alkaloids such as vinorelbine (Navelbine®)

The likelihood of neuropathy can be affected not only by the type of drug, but also by the dosage and duration. Higher doses are more likely to cause neuropathy. Also, neuropathy may not occur until later in treatment after multiple doses.

WHAT ARE PERIPHERAL NERVES?

Peripheral nerves transmit information between your brain and spinal cord and the rest of your body. Peripheral neuropathy symptoms depend on the type of nerves affected:

- ▶ **Motor nerves** control voluntary muscle movement such as walking or reaching for an object, so damage to these nerves can cause muscle weakness or difficulty moving.
- ▶ **Sensory nerves** relay information about the environment such as temperature, touch, pain and pressure. Damage to sensory nerves can result in abnormal sensations and pain.
- ▶ **Autonomic nerves** control "automatic" or involuntary body functions such as heart rate, blood pressure and digestion. Damage to autonomic nerves can result in constipation, dizziness, breathing problems and other issues.



5 THE SOONER NEUROPATHY IS RECOGNIZED AND ADDRESSED, THE BETTER YOUR CHANCE OF AVOIDING LONG-TERM PROBLEMS.

It is most effective to address neuropathy symptoms before they become severe or possibly irreversible. If you think you are experiencing neuropathy symptoms, it is important to tell your healthcare team about them at your regular visit before your next planned chemotherapy dose.



You and your provider can talk about possible options for reducing or managing symptoms, such as adjusting your dose or infusion schedule.

Sometimes treatment may be stopped when the neuropathy reaches a certain level and then started again once symptoms improve. It is very common for care teams to modify treatment plans, once they see how patients respond to treatment and better understand an individual's activities and personal preferences. Together, you and your provider need to discuss how to best balance the risk and impact of neuropathy on your quality of life as you make decisions about your cancer treatment plan.

Your healthcare team can also suggest possible treatments you may wish to try to relieve symptoms. Many research trials are underway to identify neuropathy treatments. One antidepressant (duloxetine) has been proven to help relieve symptoms. Other drugs considered to have strong potential, but not yet proven, include tricyclic antidepressants, gabapentin and a pain-relieving topical gel (containing baclofen, amitriptyline and ketamine). Many patients also find relief from a variety of complementary or alternative treatments, which have not yet been proven. These include: Vitamin B, ginseng, dietary amino acid supplements, fish oil, acupuncture, yoga and/or neurostimulation techniques.