CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY (CIPN) POCKET GUIDE

FAST FACTS

- Chemotherapy most often affects the nerves that run to the legs, feet, hands, and arms.
- Nerve toxicity is the second most common cancer treatment-induced side effect.¹

WHAT IS PERIPHERAL NEUROPATHY?

Peripheral neuropathy (PN) is numbness, tingling and pain in the hands, feet, fingers and toes. It is often caused by cancer treatment. You pronounce it "purr-IF-err-ull nurr-AW-path-ee." It is also called CIPN for "chemotherapy-induced peripheral neuropathy."

WHAT CAUSES PN AND HOW CAN I AVOID IT?

If you need certain types of chemotherapy drugs to treat your cancer, PN is possible. These drugs include:

- The platinum drugs, such as cisplatin and oxaliplatin.
- The taxanes, such as paclitaxel and docetaxel.
- The vinca alkaloid drugs, such as vincristine, vinblastine, and vinorelbine.
- Drugs used to treat myeloma, such as bortezomib or thalidomide.

If you need one of these drugs and develop CIPN, talk with your doctor. They may lower the recommended dose or even stop treatment with that drug. Adjusting the dose or treatment schedule can reduce your neuropathy.²

Cool down to prevent CIPN

Cooling your hands and feet before and during your chemotherapy infusion may help prevent CIPN. You can use frozen socks and gloves or buy special cooling equipment. Talk with your doctor or other health care provider about cooling during treatment.³

Compression, or wearing gloves that are too small, may also help prevent CIPN. Talk to your doctor about this option.⁴

Acupuncture for CIPN

Several small studies have reported that acupuncture at specific points slowed down the progression or severity of CIPN when performed soon after chemotherapy.^{5,6} Ask your oncology team if acupuncture is available at your hospital or clinic. Acupuncture combined with reflexology, a specialized form of massage focused on the feet, also helped some patients in another small study.⁷

Other ways to manage PN

Several treatments can help with PN and the secondary effects of neuropathy, such as balance problems. Treatments to talk with your doctor about include:

- Physical and occupational therapy to help with movement, balance, and everyday challenges in fine motor function, such as gripping and lifting objects.
- Yoga or tai chi to help improve your balance.
- Mindfulness training to keep track of where you are walking, how you set your feet down, and more.

Managing pain from PN

PN is not just about numbness and tingling. You may also experience pain, which may be a burning sensation, or even pain from a gentle touch or other stimulus that you would not normally expect to hurt. You may also have difficulty walking normally or feeling your toes.

If you have painful CIPN, duloxetine (Cymbalta) is the only medication recommended so far by the American Society of Clinical Oncology.⁸ This is based on a modestly positive result in one randomized controlled trial. Other possible treatments include:

- Applying a combination of numbing cream and capsaicin cream.
- Using CBD (cannabidiol) cream.
- Using a "scrambler" device.
- Acupuncture.

Unfortunately, not many large, well-controlled studies have been done to evaluate treatment options, and larger studies are needed to confirm the benefits of these treatments. However, these treatments may have benefits for some individuals.

Exercise and diet can make a significant difference in your overall well-being, and reducing inflammation in your body with diet and supplements may also help. Download our free guide to optimizing your healing even when you live with pain. Please review and discuss any supplements you are taking or considering taking with your oncologist.

FAQs about PN

Do all cancer treatments cause CIPN?

No. These nerve problems are typically caused by specific types of chemotherapy. The most common chemotherapy drugs that cause CIPN are listed at the start of this Patient Pocket Guide ("What causes PN and how can I avoid it?").

Can my doctor tell me for certain whether my treatment will cause CIPN?

Because CIPN is most common with specific chemotherapy drugs, your doctor should be able to tell you if this side effect is likely.

You can also discuss things you might do to prevent or reduce CIPN. There are no medications to prevent it. But you may prevent or reduce symptoms by wearing cooling socks and gloves during treatment, having acupuncture after treatment, or receiving a reduced dose of chemo if you experience severe neuropathy.

Can I take pain medications or supplements for CIPN?

Yes. Pain medications (both over the counter and by prescription) can help with pain, including CIPN.9 Your doctor should be able to help you decide on the right ones to use. Although less studied, some natural products may be helpful for certain types of CIPN.10 Ask your doctor to investigate the appropriateness of these compounds for you.

Does CIPN ever go away?

Sometimes. It depends on many factors, including the chemotherapy drugs used in your treatment, your personal health, and more. About eight out of every 10 people who have

chemotherapy with taxanes and oxaliplatin therapy have CIPN six months to two years after treatment. With CIPN from other chemotherapy drugs, your symptoms are likely to improve with time.

Doctors know that certain chemotherapy drugs are very likely to cause CIPN, but we do not yet know very much about effective ways to treat this side effect. When talking with your doctor about your treatment plan, it's important to balance consideration of side effects with a discussion of how much the treatment is likely to benefit you.

Signs of CIPN won't change my chemotherapy plan, right? I have to stick with it even if I do develop nerve problems.

Not necessarily. Talk with your doctor about what you do for a living, your hobbies and interests, how severe the CIPN is, and anything else you think is important for them to know. They may be able to adjust your treatment to reduce the chances or side effects of PN.

Tell your doctor and health care team about any side effects you experience. Ask how they can help and what you can do to relieve symptoms.

My notes and questions

References

- Windebank AJ, Grisold W. Chemotherapy-induced neuropathy. J Peripher Nerv Syst. 2008;13(1):27-46.
- Staff NP, Grisold A, Grisold W, Windebank AJ. Chemotherapy-induced peripheral neuropathy: A current review. Ann Neurol. 2017;81(6):772-781. doi:10.1002/ana.24951
- Sphar BG, Bowe C, Dains JE. The Impact of Peripheral Cooling on Chemotherapy-Induced Peripheral Neuropathy: An Integrative Review. J Adv Pract Oncol 2020;11(8):845-857. doi:10.6004/jadpro.2020.11.8.5
- Kanbayashi Y, Sakaguchi K, Ishikawa T, et al. Comparison of the efficacy of cryotherapy and compression therapy for preventing nanoparticle albuminbound paclitaxel-induced peripheral neuropathy: A prospective self-controlled trial. Breast 2020;49:219-224. doi:10.1016/j.breast.2019.12.011
- Li K, Giustini D, Seely D. A systematic review of acupuncture for chemotherapyinduced peripheral neuropathy. Curr Oncol 2019;26(2):e147-e154. doi:10.3747/co.26.4261
- Bao T, Patil S, Chen C, et al. Effect of acupuncture vs sham procedure on chemotherapy-induced peripheral neuropathy symptoms: A randomized clinical trial. JAMA Netw Open 2020;3(3):e200681. doi:10.1001/ jamanetworkopen.2020.0681
- Ben-Horin I, Kahan P, Ryvo L, Inbar M, Lev-Ari S, Geva R. Acupuncture and Reflexology for Chemotherapy-Induced Peripheral Neuropathy in Breast Cancer. Integr Cancer Ther 2017;16(3):258-262. doi:10.1177/1534735417690254
- Loprinzi CL, Lacchetti C, Bleeker J, et al. Prevention and management of chemotherapy-induced peripheral neuropathy in survivors of adult cancers: ASCO Guideline Update. J Clin Oncol 2020;38(28):3325-3348. doi:10.1200/ JCO.20.01399
- Kaley TJ, Deangelis LM. Therapy of chemotherapy-induced peripheral neuropathy. Br J Haematol 2009;145(1):3-14. doi:10.1111 /j.1365-2141.2008.07558.
- Dinicola S, Fuso A, Cucina A, et al. Natural products alpha-lipoic acid and acetyl-L-carnitine - in the treatment of chemotherapy-induced peripheral neuropathy. Eur Rev Med Pharmacol Sci 2018;22(14):4739-4754. doi:10.26355/eurrev_201807_15534
- 11. Boyette-Davis JA, Cata JP, Driver LC, Novy DM, Bruel BM, Mooring DL, Wendelschafer-Crabb G, Kennedy WR, Dougherty PM. Persistent chemoneuropathy in patients receiving the plant alkaloids paclitaxel and vincristine. Cancer Chemother Pharmacol 2013; 71:619–626.
- Schroder S, Beckmann K, Franconi G, Meyer-Hamme G, Friedemann T, Greten HJ, Rostock M, Efferth T. Can medical herbs stimulate regeneration or neuroprotection and treat neuropathic pain in chemotherapy-induced peripheral neuropathy? Evid Based Complement Alternat Med 2013; 2013:423713.
- 13. Binder A, Stengel M, Maag R, Wasner G, Schoch R, Moosig F, Schommer B, Baron R. Pain in oxaliplatin-induced neuropathy-sensitization in the peripheral and central nociceptive system. Eur J Cancer 2007; 43:2658–2663.

