

Chemotherapy-Induced Peripheral Neuropathy

Chemotherapy-Induced Peripheral Neuropathy (CIPN)

- CIPN is caused by damage from certain chemotherapy drugs to the distant peripheral nerves outside of the brain and spinal cord
- Not all chemotherapy drugs cause CIPN. Chemotherapy drugs that can cause CIPN include: taxanes (paclitaxel and docetaxel), platinum drugs (cisplatin and carboplatin), plant alkaloids (vinorelbine), eribulin, and antibody drug conjugates such as sacituzumab govitecan, fam-trastuzumab deruxtecan, or ado-trastuzumab emtansine.
- CIPN can impact the sensory nerves, motor nerves, or both. Numbness, pain or problems with balance is caused by sensory nerve damage. Difficulty with things like writing, buttoning, or gripping can be caused by motor nerve damage

Risk factors for CIPN

- Previously have received a chemotherapy that causes CIPN
- Older age
- History of diabetes
- Obesity
- Sedentary lifestyle
- Poor kidney function
- Current or past history of smoking

How does CIPN present?

- Typically hands and/or feet, in a stocking and/or glove distribution
 - Tingling (“pins and needles”)
 - Burning or warm feeling
 - Numbness
 - Weakness
 - Decreased sensation
 - Discomfort or pain
 - Diminished ability to feel hot/cold
 - Foot cramps
- Symptoms of CIPN can flare up soon after getting a chemotherapy infusion and calm down by the next infusion. CIPN can also symptoms can build up gradually and may get worse with each infusion.
- In some cases, CIPN symptoms can peak a few months after the last dose of chemotherapy.

Medications and Supplements for CIPN

- **Cymbalta** (Duloxetine) and **gabapentinoid** medications (gabapentin, pregabalin) are commonly prescribed to help manage CIPN
- Topical patches or creams of **numbing medicine** (lidocaine patches or capsaicin cream) can be applied to the painful area and might provide some relief.
- The supplement **alpha-lipoic acid** (600 mg by mouth once daily) has antioxidant properties that diminish oxidative stress and can possibly improve neuropathy and reduce pain.
- Talk to your providers before using any supplement since they may interact with your treatment

Frequently Asked Questions

Q: Can CIPN be prevented?

- A: Currently nothing is proven to prevent CIPN. Small studies looking at the use of frozen socks and gloves before, during and after paclitaxel infusion may help diminish CIPN, but larger studies are needed.

Q: How long does it take for CIPN to go away?

- A: Symptoms typically lessen over time after completion of chemotherapy, but in some cases, symptoms may be permanent. You might see your symptoms worsen for a few months before they get better.

Q: What can I do to manage CIPN?

- A: Management of CIPN is directed at reducing pain or discomfort related to CIPN. Some tips are included below

Tips to Manage CIPN

- **Avoid triggers** that may make your CIPN symptoms worse such as extremes in temperature. You may be less likely to sense extremes in temperature, so it is important to take care to keep hands warm in cold weather and avoid exposure to overly hot water. Set hot water heaters between 105° to 120°F to reduce scalding risk. Further protect your hands by wearing gloves when cleaning, working outdoors or when weather is cold.
- **Wear shoes** that cover your entire foot when walking if you experience sensory changes like numbness in your feet. Inspect your feet at least daily to check for injuries or open sores. Consider seeing a podiatrist who can recommend sturdy shoes or special inserts that can help protect your feet.
- **Physical and occupational therapists** can recommend exercise programs and adaptive devices (walkers or canes) to provide additional support as well as teach exercises to help with balance. Handrails and shower bars can also help with balance. Use night lights when getting up in the middle of the night.
- **Avoid alcohol**, which can cause nerve damage and can worsen existing CIPN.
- **Monitor blood sugars** if you live with diabetes. Uncontrolled diabetes can worsen peripheral neuropathy. Be sure to work with your health care providers to closely monitor and control your blood sugar.
- **Complementary medicine** like acupuncture may help with CIPN symptoms and appears to be reasonably safe with low potential for harm.
 - More information on our Integrative Therapies Program can be found here: <https://www.massgeneral.org/cancer-center/patient-and-family-resources/supportive-care/integrative-therapies/default>