





There are three main types of peripheral nerves:

- **Motor nerves** help us move
- **Sensory nerves** help us use our senses (for instance, hearing, smell, taste, and

touch).

- **Autonomic nerves** help control our automatic body functions such as breathing and digestion

Peripheral neuropathy can affect any of these nerves. The type of symptoms it might cause will depend on the type of nerves damaged.

## What are the symptoms of peripheral neuropathy (PN)?

Peripheral neuropathy can feel like:

- Tingling (or a “pins and needles” feeling)
- Burning or warm feeling
- Numbness
- Weakness
- Discomfort or pain
- Less ability to feel hot and cold
- Cramps (in your feet)

## What causes peripheral neuropathy (PN)?

Some of the most common causes of peripheral neuropathy are medicines used to treat cancer. When this happens, it is called **chemotherapy-induced peripheral neuropathy (CIPN)**. The risk of CIPN depends on the type of chemotherapy and dose given, and increases with each cycle of chemotherapy. CIPN can make it hard to get around and do things you used to do.

Peripheral neuropathy can cause severe pain and can affect things like the way you walk, write, button your shirt, or pick up coins. Peripheral neuropathy can last for weeks, months, or even years after treatment is done. If it gets worse, it can also cause changes in your heart rate and blood pressure, falls, trouble breathing, and not being able to move on your own. It's important to let your cancer care team know if your symptoms get worse.

Peripheral neuropathy also can be caused by things other than chemotherapy, such as:

- Other cancer treatments, like surgery or radiation
- Tumors pressing on nerves

- Infections that affect the nerves
- Spinal cord injuries
- Diabetes
- Drinking too much alcohol
- Shingles infection
- Low vitamin B levels
- Some autoimmune disorders
- HIV (human immunodeficiency virus) infection
- Poor circulation (peripheral vascular disease)

It's important to know what's causing peripheral neuropathy so that the right treatment can be given. The information on this page is about peripheral neuropathy (PN) as a side effect of chemotherapy.

## **What medicines are most likely to cause chemotherapy-induced peripheral neuropathy (CIPN)?**

Certain cancer medicines are more likely to cause CIPN. Some of the more common ones include:

### **Chemotherapy**

- Platinum drugs like cisplatin, carboplatin, and oxaliplatin
- Taxanes, including paclitaxel (Taxol), docetaxel (Taxotere), and cabazitaxel (Jevtana)
- Plant alkaloids, such as vinblastine (Velban), vincristine (Oncovin), vinorelbine (Navelbine), and etoposide (VP-16)

## Can peripheral neuropathy (PN) be prevented?

There are some therapies that have been used to prevent or limit the effects of peripheral neuropathy caused by chemotherapy, but more research is needed to prove they are effective.

During chemo infusions, some experts recommend:

- **Cold therapy (Cryotherapy):** This involves cooling down your hands and feet during your chemo infusions. This is often done by freezing ice packs that fit into special socks and mittens or gloves.
- **Compression therapy:** This involves wearing tight gloves to compress (squeeze) your fingertips during your chemo infusions. This is often done by wearing two pairs of tight-fitting disposable nitrile or latex gloves.

These therapies may help by reducing circulation in the hands and feet while chemo is being given, which may lower the amount of chemo drugs reaching these areas. More research is needed to prove these methods are effective and to determine the best ways to apply cold or compression.

**Exercising at least twice a week**, including strength, balance, and general movement exercises, might also lower your risk for neuropathy. Exercise may improve circulation to support nerve health and help keep you stronger and healthier during treatment. But again, more research is needed to understand how exercise might help prevent CIPN.

These methods can be used alone or together. Ask your cancer care team about options that might be best for you.

## Managing peripheral neuropathy (PN)

During treatment, your cancer care team will ask you about your symptoms and watch you to see if the PN is getting worse. Your team may need to delay your treatment, use smaller doses of the chemo drugs, or stop treatment with the drug that is causing the PN until your symptoms get better. These actions must be started right away to prevent long-term damage that might get worse over time.

## Can peripheral neuropathy be treated?

Peripheral neuropathy isn't always preventable, but there are ways to help to manage your symptoms. Treatment can often help ease symptoms of PN. Sometimes these

symptoms go away shortly after treatment is done, but sometimes they last much longer. Severe PN may lessen over time but may not go away completely.

Treatment focuses on relieving the discomfort that can come with PN. Some of the medicines used include:

- **Patches or creams with numbing medicine** that can be put right on the painful area (for example, lidocaine patches or capsaicin cream).
- **Gabapentin** (Neurontin) is an anticonvulsant medicine used to treat seizures and nerve pain.
- **Opioids<sup>1</sup> or narcotics** are used to treat severe pain.

Duloxetine (Cymbalta) is used to treat severe pain.

cutters, and other sharp objects.

- Protect your hands by wearing gloves when you clean, work outdoors, or do repairs.
- Take care of your feet. Look at them once a day to see if you have any injuries or open sores.
- Always wear shoes that cover your whole foot when walking, even at home. Be sure that shoes aren't too tight. Talk to your cancer care team about shoes or special inserts that can help protect your feet.
- Use handrails, a cane, or a walker (assistive devices) to support yourself and keep your balance.
- Use night lights or flashlights when getting up in the dark.

neuropathy.

Talk to your cancer care team:



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