Peripheral Neuropathy Caused by Chemotherapy or Anti-Cancer Medicine

What is Peripheral Neuropathy?
Peripheral neuropathy (nerve changes) happens when there is irritation or injury to peripheral nerves. Symptoms are caused by damage to the nerves that are outside the brain and spinal cord. These nerves are called peripheral nerves. These changes most often happen to the nerves in your fingers, hands, arms, toes, feet, and legs.

There are different types of peripheral nerves in your body. These include: sensory, motor and autonomic. Sensory nerves help you feel pain, touch, temperature, position, and vibration. Motor nerves help you move and maintain muscle tone. Autonomic nerves help control the function of some of your body’s organs such as your bladder or bowel. Chemotherapy and anti-cancer medicines may cause changes to these nerves.

Symptoms of Peripheral Neuropathy
The symptoms of peripheral neuropathy depend on the nerves that are affected. **Tell your doctor or nurse right away if you notice any of these changes:**

- Pain (it may be there all the time, come and go or feel like a stabbing pain)
- Numbness, loss of feeling or tingling (pins and needles), heaviness or weakness in your hands and feet
- Cold, prickly, pinching or burning feeling
- Trouble using your fingers to button shirts or tie shoes
- Changes in your balance or movement which can make it hard for you to lift your feet high enough to walk safely
- Stomach pain, cramps or diarrhea

This handout is for informational purposes only. Talk with your doctor or health care team if you have any questions about your care.

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- Constipation
- Problems passing urine
- Sensitivity to hot or cold temperatures
- Discomfort when touching something (even if the object you touch is not usually painful)
- Muscle cramps
- Loss of being able to tell where your hands or feet are when moving
- Dizziness or changes in blood pressure when you change position (such as standing up after lying down)

Chemotherapy Drugs and Peripheral Neuropathy

Chemotherapy drugs that may cause peripheral neuropathy are listed below. There are no proven ways to prevent nerve changes caused by chemotherapy treatment. Peripheral neuropathy caused by chemotherapy may or may not improve over time after treatment ends.

Chemotherapy drugs that can cause peripheral neuropathy include:

- Cisplatin
- Carboplatin
- Paclitaxel (Taxol)
- Docetaxel (Taxotere)
- Paclitaxel-Albumin-bound (Abraxane)
- Ixabepilone (Ixempra)
- Brentuximab vedotin (Adcetris)
- Ado-trastuzumab emtansine (Kadcyla)
- Eribulin (Halaven)
- Vincristine (Oncovin)
- Vinblastine (Velban)
- Bortezomib (Velcade)
- Thalidomide (Thalomid)
- Oxaliplatin (Eloxatin)
- Lenalidomide (Revlimid)
- Cytarabine
- Pomalidomide (Pomalyst)

Symptoms with Common Chemotherapy Drugs

Here is information about common chemotherapy drugs and the nerve changes they may cause.

- **Cisplatin** can cause the following symptoms:
  - Unable to tell where your hands and feet are located (this is called position sense).
  - Feet slip out of shoes or slippers that are not tied or do not come up over the top of your foot.
  - Unable to feel the floor under your feet when you walk.
  - Feel as if your bare feet have socks on them.
• **Paclitaxel, Vincristine, Vinblastine and Oxaliplatin** can decrease your ability to feel the shape of an object in your hand.

• **Paclitaxel and Vincristine** may decrease your ability to tell the difference between hot or cold temperatures.

• **Oxaliplatin** can make your jaw feel tight or make you feel like you are unable to catch your breath. These signs can be worse when you come in contact with cold air or drink cold liquids.

• **Bortezomib and Thalidomide** can cause changes in the feeling you have in your toes, feet, fingers and hands.

If you are going to take a chemotherapy drug that can cause peripheral neuropathy, your doctor or nurse will ask you questions about your past and current illnesses. This is done to find out if you have had symptoms of peripheral neuropathy in the past. If you have had peripheral neuropathy before, you may find that symptoms start sooner and are more severe during chemotherapy treatment.

### Treatment for Peripheral Neuropathy

• Medicines may help reduce pain in the feet, legs and arms. They usually do not bring back loss of feeling. Talk to your doctor about your pain and ways to manage it.

• To reduce your risk of infection, check your feet each day for any cuts and sores. Call your doctor for directions on how to take care of your feet if this happens.

• Your doctor will check to see if changes can be made to your current cancer treatment to help you feel better such as lowering a medicine dose, changing how often you get a cancer treatment or possibly taking a break from treatment. Benefits and risks of these treatment changes will be explained to you.

• Diet changes, dietary supplements, massage, acupuncture or relaxation techniques (such as meditation or guided imagery) may be suggested.

• Physical therapy can provide exercises and activities to help with walking, balance, coordination and pain. These treatments can lower your risk of falls and help prevent injuries.

• Occupational therapists can show easier ways to do daily activities that may have become difficult, such as how to use special equipment to help put on clothes.
For more information on Peripheral Neuropathy Caused by Chemotherapy or Anti-Cancer Medicine, we encourage you to visit our video library at http://cancer.osu.edu/patientedvideos.