Neuropathy

What is neuropathy?

Neuropathy – sometimes called peripheral neuropathy – is a condition that occurs after peripheral nerve damage. Neuropathy may affect a single nerve or several.

The nervous system is divided into central and peripheral parts:

- The brain and spinal cord make up the central nervous system.
- The peripheral nervous system includes the nerves that leave the brain and the nerve roots that come off the spinal cord and go to the internal organs, limbs and skin.

Diseases, injuries and toxins, such as chemotherapy, can cause neuropathy in cancer survivors. The damage may lead to changes in sensation or muscle function and can be mild or severe. Cancer survivors may experience this condition as tingling or numbness in certain areas of the body, especially the hands and feet. These sensations range from mild to painful.

Neuropathy can be an upsetting, and sometimes scary, condition for survivors. If you begin to notice symptoms, talk to your health care team immediately.

What causes neuropathy?

Neuropathy is a common disorder, affecting about 1 to 2 percent of Americans.

Some causes include:

- Diabetes mellitus (sugar diabetes) – the most common cause of neuropathy in the industrialized world
- Infections (such as leprosy, syphilis, HIV and some forms of hepatitis)
- Nutritional deficiency (particularly of thiamine)
- Inherited disorders of metabolism and other diseases passed down through families
- Alcohol
- Pesticides
- Drugs used in cancer treatment, particularly the platinum compounds, the taxanes, the vinca alkaloids and thalidomide
- Hypothyroidism
- Renal failure
- Extreme stress (such as the stress of living with a chronic illness)
- Radiation therapy (effects may be delayed for many years)
- Some cancer tumors are associated with neuropathy as a remote effect.

What are the symptoms of neuropathy?

The types and severity of neuropathy symptoms vary greatly. Determining the amount of peripheral nerve injury just by the amount of symptoms produced is difficult. Symptoms are almost always greatest at night. Common signs and symptoms of peripheral neuropathy include:

- Fatigue
- Weakness
- Clumsiness
- Loss of balance, particularly in the dark
- Dizziness, especially when getting up from a bed or a chair
- Numbness, especially of hands or feet
- Cramps, commonly in the calf muscles
- Pain, often burning or shooting in quality
- Sexual dysfunction
- Sensitivity to temperature
- Muscle wasting in the hands and feet
- Loss of reflexes
- Smooth, dry and red skin of hands and feet

Which cancer survivors are at risk?

Neuropathy can affect almost any cancer survivor, but the following are high risk conditions.

- Cancer types
    - Lung
    - Breast
    - Ovarian
    - Prostate
    - Myeloma
    - Lymphoma and Hodgkin's disease
    - Testicular
- Having one or more of the following characteristics may increase the chances of developing neuropathy.
    - Advanced age
    - A family history of neuropathy (familial, diabetes)
    - Malnourishment
    - Excessive use of alcohol
- Some medications, including chemotherapy medications, also increase risk. Discuss your medication-related risk with your health care team.

- Chemotherapy medications that increase your neuropathy risk include:
  - Platinum
  - Taxanes
  - Vinca alkaloids
  - Thalidomide
  - Cytosine arabinoside
  - Misonidazole
  - Interferon

Can a survivor experience neuropathy during, immediately after and/or years after treatment?

Neuropathy related to cancer may develop in the course of treatment (such as with vinca alkaloids) or shortly after. More often, neuropathy has a delayed onset, with symptoms developing weeks or months after therapy has ended. Nerve injury from radiation therapy may be quite delayed, with symptoms occurring in some instances years after treatment.

Peripheral neuropathy symptoms are often ignored by both patients and health care professionals and frequently are not recognized as being related to peripheral nerve damage. For lung cancer, neuropathy may be the earliest sign of the cancer. Report any symptoms to your health care team right away.

Can neuropathy be cured?

The peripheral nerves have a great ability to heal. Even though it may take months, most patients recover. However, in some situations, neuropathy is difficult to cure. Nerve injury caused by radiation often does not recover well. Neuropathy caused by platinum chemotherapy is also difficult to cure — recovery may take 18 months to five years or longer. During recovery of platinum-induced neuropathy, patients may suffer increased symptoms. Unfortunately, some patients with platinum neuropathy never recover.

Even if your neuropathy cannot be cured, you may benefit from treatments to relieve your symptoms and from rehabilitation designed to help you maintain your physical abilities.

What are the treatments for neuropathy?

The treatment for peripheral neuropathy depends on the cause.

Recovery can be helped by:

- Adequate nutrition (foods rich in thiamine, protein and antioxidants)
- Controlling and correcting contributing conditions such as diabetes or hypothyroidism
- Pain medications
- Physical therapy

Medications being researched in clinical trials show promise in helping peripheral nerves to heal.

How will a cancer survivor's life change if s/he has neuropathy?

Pain and other symptoms of neuropathy can be mild or severe. Each survivor's experience will be different. However, with appropriate treatment, the effects of neuropathy can be limited. Medications, lifestyle changes, rehabilitation and other treatments can be used.

- Neuropathy can make standing for long periods or walking without assistance difficult.
- Balance can be affected, increasing the risk of falling.
- Activities like buttoning and tying laces or ties can be difficult.
- Survivors may be sensitive to heat or cold. Survivors with this sensitivity should avoid extreme temperatures if possible and use protective clothing and hats when needed.
- Neuropathy may cause a lack of pain sensation. Survivors should pay careful attention to the skin on their hands and feet because they could receive a wound or a break in the skin and not feel it.
- If neuropathy affects your ability to feel the foot pedals of your car, you should not drive unless your car is adapted for hand controls. Neuropathy can slow your reaction time in moving your foot from the accelerator to the break pedal and may cause an accident. Losing your ability to drive is upsetting. You may feel you are losing your independence. However, consider the increased risk to your safety and to the safety of others on the road. Talk to your health care team about your symptoms.

Physical and occupational therapists can provide suggestions and special equipment to make daily tasks safe and easier to manage. The suggestions may include night lights, grab bars and other home safety measures to help reduce the risk of falling. Therapists can assist survivors with physical exercises that can help them maintain physical abilities.

Pain from neuropathy can greatly affect your daily activities and quality of life. For some, the pain and changes required to manage it can lead to physical and mental stress. Watch for signs of depression and talk to your health care team or a mental health care professional about managing your feelings.

Good communication with your health care team about your symptoms and the changes they are bringing to your life is important. The team can help you manage these changes and provide referrals to other helpful resources.

Works Cited

Lance Armstrong Foundation Survivorship Topics
www.livestrong.org