

In-service for Caregivers



Peripheral Neuropathy

What is Peripheral Neuropathy?

Peripheral Neuropathy is a problem with the functioning of the nerves outside of the brain and spinal cord. Peripheral neuropathy describes damage to the peripheral nervous system, which transmits information from the brain and spinal cord to every other part of the body. Peripheral neuropathy can result from such problems as traumatic injuries, infections, metabolic problems and exposure to toxins. One of the most common causes is diabetes.

More than 100 types of peripheral neuropathy have been identified, each with its own characteristic set of symptoms, pattern of development, and prognosis. Impaired function and symptoms depend on the type of nerves that are damaged.

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What you will learn

After finishing this in-service you will be able to:

Understand the definition of peripheral neuropathy,

Understand nerve functions and the effects of nerve damage,

Recognize the symptoms of peripheral neuropathy,

Treatment and prognosis,

Help people with peripheral neuropathy,

Offer other resources for people who suffer from peripheral neuropathy.

Instructions for the Learner

If you are studying the in-service on your own, please:

Read through all the attached materials. You may find it useful to have a highlighting marker nearby as you read. Highlight any information that is new to you or that you feel is especially important.

If you have questions about anything you read, please ask your CDPC Support Coordinator.

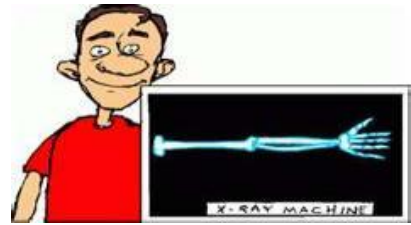
- Take the quiz. Think about each statement and select the best answer.
- You will need to pass the quiz with an 80% score.
- Print your name and the date and then sign your name.
- Keep the in-service information for yourself and turn in the quiz page to Consumer Direct Personal Care.

THANK YOU

Peripheral Neuropathy, continued from page 1 . . .

Types of nerves damaged:

Motor nerves – are responsible for all voluntary skeletal movements such as moving the leg or arm. Motor nerves carry impulses from the brain to the skeletal muscles and tissues. This in turn creates voluntary movement.



Sensory nerves – relate to the sensation and the perception of a stimulus to the body and the direct effect on the body by incoming nerve impulses from the sense organs to the nerve centers.

Autonomic nerves – part of the nervous system that regulates key functions of the body, including the activity of the heart muscle, the smooth muscles, such as intestinal track, and the body's glands.

← More than 100 types of peripheral neuropathy have been identified, each with its own characteristic set of symptoms, pattern of development, and prognosis. →

Some Causes of Peripheral neuropathy

A number of factors can cause neuropathy including;

Trauma or pressure on the nerve. Traumas, such as motor vehicle accidents, falls or sports injuries, can sever or damage peripheral nerves. Nerve pressure can result from using a cast or crutches, spending a long time in an unnatural position, or repeating a motion many times such as typing, (also known as carpal tunnel syndrome).



Diabetes. When damage occurs to several nerves, the cause frequently is diabetes. At least half of all people with diabetes develop some type of neuropathy.

Vitamin deficiencies. B vitamins – B-1, B-6 and B-12 – are particularly important to nerve health. Vitamin E and niacin also are crucial to nerve health.



Alcoholism. Many alcoholics develop peripheral neuropathy because they have poor dietary habits, leading to vitamin deficiencies.

Infections. Certain viral or bacterial infections can cause peripheral neuropathy, including Lyme disease, Shingles (herpes-zoster), Epstein-Barr, Hepatitis C, and HIV/AIDS.



Autoimmune diseases. These include lupus, rheumatoid arthritis, and Guillain-Barre syndrome.

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Causes continued from page 2 . . .

Other diseases. Kidney disease, liver disease and an underactive thyroid (hypothyroidism) also can cause peripheral neuropathy.

Inherited disorders. Examples include Charcot-Marie-Tooth disease (a genetic disease of nerves characterized by progressive weakening of muscle, particularly of the limbs) and amyloid polyneuropathy (involving complex proteins deposited in tissues).



Tumors. Growths can form directly on the nerves, or tumors can exert pressure on surrounding nerves. Both cancerous and non cancerous tumors can contribute to peripheral neuropathy.



Exposure to toxins / poisons. These may include some toxic substances such as heavy metals, gold compounds, lead, arsenic and mercury. Some medications, especially those used to treat cancer (chemotherapy), can contribute to peripheral neuropathy.

Symptoms of peripheral neuropathy

Some people may experience temporary numbness, tingling and pricking sensations, sensitivity to touch, or muscle weakness. Others may suffer more extreme symptoms, including burning pain (especially at night), sharp, jabbing or electric-like pain, muscle wasting, paralysis, and organ or gland dysfunction. There can also be extreme sensitivity to touch (even light touch), lack of coordination, bowel or bladder problems.

Treatment



No medical treatments exist that can cure inherited peripheral neuropathy. However, there are therapies for many other forms.

In general, adopting healthy habits - such as maintaining optimal weight, avoiding exposure to toxins, following a physician-supervised exercise program, eating a balanced diet, correcting vitamin deficiencies, and limiting or avoiding alcohol consumption - can reduce the physical and emotional effects of peripheral neuropathy.

Systemic diseases, or conditions that affect the whole body, frequently require more complex treatments.

Prognosis

In **acute** neuropathy, which is brief and severe, neuropathy symptoms appear suddenly, progress rapidly, and resolve slowly as damaged nerves heal. An example of *acute neuropathy* is Guillain-Barre syndrome, a disorder attacks part of the peripheral



in which the body's immune system nervous system.

In **chronic** forms, which last a long time, symptoms begin subtly and progress slowly. Some people may have periods of relief followed by relapse. Others may reach a plateau stage where symptoms stay the same for many months or years. Some chronic neuropathies worsen over time, but very few forms prove fatal or deadly unless complicated by other diseases. Occasionally the neuropathy is a symptom of another disorder.

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How can you help people with peripheral neuropathy?

Encourage your client to take care of their feet, especially if they have diabetes. Check the feet often for blisters, cuts or calluses. Tight shoes and socks can worsen pain and tingling and may lead to sores that won't heal. Encourage client to wear soft, loose cotton socks and padded shoes.

A semicircular hoop, available in medical supply stores, may be used to keep bedcovers off hot or sensitive feet.



Ask your client if their doctor has prescribed an exercise routine.



Regular exercise may reduce neuropathy pain and can help control blood sugar levels. If a physician has prescribed exercise you may be asked to assist the client with exercising. Be positive and encouraging and praise your client during exercises.

Cigarette smoking can affect circulation and increase the risk of foot problems that could lead to amputation. Encourage clients to quite smoking or seek smoking cessation resources.

Encourage client to eat healthy meals. If your client is at high risk of neuropathy or has a chronic medical condition, healthy eating is important to ensure that they get essential vitamins and minerals. The best food sources for B-12 are meats, fish, eggs, low-fat dairy foods, and fortified cereals. Include a lot of fruit, vegetables and whole grains in the diet.



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How you can help, continued . . .

Massage the hands and feet. BE CAUTIOUS of sensitivity or pain in hands and feet. If you can massage the hands and feet, it will help to improve circulation and stimulate nerves. It may temporarily relieve pain. Peripheral neuropathy will affect most diabetics' hands and feet and may cause numbness or pain. Other signs of peripheral neuropathy in diabetics include foot-drop and bladder incontinence (or urgency). Watch the diabetic for personal safety because decreased sensation can mask injuries.



Be aware of the psychological well-being of your client. Peripheral neuropathy and its associated primary conditions can cause anxiety and depression. It can interfere with social relationships, activities of daily living, employment issues, sleep disturbances, recreational activities and feelings of self-worth.



Watch your client's positioning and do not let client prolong pressure by crossing knees or leaning on elbows for long periods of time. This type of pressure can cause new nerve damage.

What research is being done?

*Research literature from National institute of Neurological Disorders and Stroke
National Institutes of Health, Bethesda, MD*

The National Institute of Neurological Disorders and Stroke (NINDS) and other institutes of the National Institutes of Health (NIH) conduct research related to peripheral neuropathies in laboratories at the NIH and also support additional research through grants to major medical institutions across the country. Current research projects funded by the NINDS involve investigations of genetic factors associated with inherited neuropathies, studies of biological mechanisms involved in



diabetes-associated neuropathies, and investigations exploring how the immune system contributes to peripheral nerve damage. Neuropathic pain is a primary target of NINDS-sponsored studies aimed at developing more effective therapies for symptoms of peripheral neuropathy. Some scientists hope to identify substances that will block the chemicals in the brain that generate pain signals, while others are investigating the pathways by which pain signals reach the brain.

RESOURCES

Neuropathy Association

60 East 42nd Street, Suite 942

New York, NY 10165-0999

<http://www.neuropathy.org>

Tel: 212-692-0662

Foundation for Peripheral Neuropathy

485 Half Day Road, Suite 200

Buffalo Grove, IL 60089

<http://www.foundationforpn.org>

Tel: 877-883-9942

Fax: 847-883-9960

American Chronic Pain Association (ACPA)

P.O. Box 850

Rocklin, CA 95677-0850

<http://www.theacpa.org>

American Diabetes Association

1701 North Beauregard Street

Alexandria, VA 22311

<http://www.diabetes.org>

Tel: 800-342-2383

Muscular Dystrophy Association

3300 East Sunrise Drive

Tucson, AZ 85718-3208

<http://mdausa.org>

Tel: 800-572-1717

American Pain Foundation

201 North Charles Street

Suite 710

Baltimore, MD 21201-4111

<http://www.painfoundation.org>

Tel: 888-615-7246

Fax: 410-385-1832

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Peripheral Neuropathy Quiz

Please complete the quiz below. Fill in your name, date and have the Consumer sign on the left side of this page.

EMPLOYEE NAME
PLEASE PRINT:

DATE:

I understand the
information presented
in this in-service.

I have completed this
in-service and answered
the questions in the
quiz correctly.

EMPLOYEE
SIGNATURE:

CONSUMER / PR
SIGNATURE:

CDPC USE ONLY
Score:

Hours:
Self:
Group:

1. Peripheral Neuropathy is a problem with the functioning of the nerves outside of the _____ and _____ .
2. Types of damaged nerves in peripheral neuropathy are:
circle all that apply:
 - a. Motor nerves
 - b. Sensory nerves
 - c. Bad nerves
 - d. Autonomic nerves
3. Two causes of peripheral neuropathy are:
circle all that apply:
 - a. Trauma or pressure on the nerve
 - b. Too much singing
 - c. Diabetes
 - d. Vitamin deficiencies
 - e. Too much walking

Circle one answer:

4. People with peripheral neuropathy will experience numbness, tingling and sensitivity to touch.
True **False**
5. Medical treatments to cure inherited peripheral neuropathy do not exist.
True **False**
6. Acute neuropathy is:
 - a. Short term in duration
 - b. Long term in duration
7. Chronic forms of neuropathy are:
 - a. Short term in duration
 - b. Long term in duration
8. You can help your client with peripheral neuropathy by:
 - a. Taking care of their feet
 - b. Encourage smokers to quite
 - c. Encourage healthy eating
 - d. Massaging hands and feet
 - e. All of the above

Circle one answer:

9. A person with peripheral neuropathy is not affected by prolonged durations of positioning with knees crossed.
True **False**
10. A person with peripheral neuropathy may be depressed.
True **False**