

PERIPHERAL NEUROPATHY

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Peripheral neuropathy is a common neurological disorder. The term neuropathy means nerve damage. Nerves are present in all parts of the body. The nerves within the brain and spinal cord are referred to as the central nervous system. The nerves that travel from the spinal cord to the muscles, skin, and organs are called the peripheral nervous system. When these nerves are damaged, peripheral neuropathy results.

CAUSES

Nerves can be damaged in many ways. Certain diseases can cause peripheral neuropathy. In fact, diabetes mellitus is one of the most common causes. Other diseases that may cause peripheral neuropathy include acquired immunodeficiency syndrome and kidney disease. People with vascular or collagen (immunological) diseases, such as lupus, vasculitis, or sarcoidosis, and nutritional deficiencies, such as vitamin B12 deficiency, may have peripheral neuropathy. Certain medications, such as those used during chemotherapy, can cause toxic damage to the peripheral nerves. Chronic alcohol abuse and lead poisoning can lead to peripheral neuropathy.

Another cause of peripheral neuropathy is mechanical pressure on the nerve from compression, entrapment, or trauma. A common example of entrapment neuropathy is carpal tunnel syndrome. In carpal tunnel syndrome, nerves become trapped by one of the small bones of the wrist. Numbness, tingling, and pain in the hand and fingers may result. Prolonged use of crutches can cause a compression neuropathy of the nerves in the arm.

The elderly often experience a decreased sensation in their hands and feet. This is a benign, non-progressive neuropathy that usually does not impair function.

Diseases of the nervous system can cause peripheral neuropathy. These might include Guillain-Barré syndrome, which is an inflammatory disease, or Charcot-Marie-Tooth disease, which is a genetic disorder. Both of these diseases are rare.

SYMPTOMS

The symptoms of peripheral neuropathy depend on which nerves are affected. There are three types of peripheral nerves: sensory, motor, and autonomic. The sensory nerves carry information to the brain concerning sensations from the skin and organs of the

body. If peripheral neuropathy involves sensory nerves, the person might experience numbness and a loss of sensation in the arms, hands, legs, or feet. The individual may not be able to feel the ground while walking or sense the temperature of bath water. These people are at risk for injury as a result of the loss of sensation. Some people may experience paresthesias, or abnormal sensations, such as burning, tingling, or prickling. Paresthesias can be quite painful.

The motor nerves carry information to the muscles to allow for movement. When peripheral neuropathy involves motor nerves, people experience weakness in the muscles of the arms and legs. Movements such as walking or fine finger motions may be affected. If the nerve damage is prolonged or severe, the muscle may actually shrink, or atrophy, from not being stimulated by the nerve.

The autonomic nerves are not under conscious control. They regulate body functions such as bowel and bladder function and sweating. Autonomic neuropathy can impair these functions. It can also cause changes in the circulation to the hands and feet. The affected extremity may feel warm or cold to touch and the skin may become shiny and a deeper color. Autonomic neuropathy can also cause sexual impotence.

DIAGNOSIS

The first step in diagnosing peripheral neuropathy is a history and physical exam. Your doctor will check your reflexes and muscle strength. Your doctor will also check your sensation to pin prick, light touch, and vibration in your arms and legs. The doctor will ask about any pain or unusual sensations you are experiencing. If you have muscle weakness, a change in sensation, reflex changes, or pain, your doctor may order tests to diagnosis peripheral neuropathy and determine its cause. Blood tests such as a blood sugar, vitamin B12 level, and thyroid function may be ordered.

An electromyogram (EMG) is often performed. An EMG measures and records electrical activity that is produced by normal, active muscles. An EMG can be abnormal in many diseases, including peripheral neuropathy. During an EMG, small needles are inserted through the skin into muscles to detect and record electrical activity. There is no special preparation for an EMG. There is some discomfort when the

