# What is Peripheral Neuropathy?

If you already have it, you basically know what peripheral neuropathy is. It just refers to the damage and breakdown of the nerve fibers in your peripheral nervous system.

While that sounds simple enough, it's quite complex, in part because your nerves are involved in literally everything your body does. And since nerves are involved in everything your body does, everything your body does can be affected by damaged nerves.

## What is the Peripheral Nervous System?

Understanding how peripheral neuropathy (often just called neuropathy) can affect everything your body does requires a brief look into what is the <u>peripheral nervous system</u>.

The nervous system is made up of two parts:

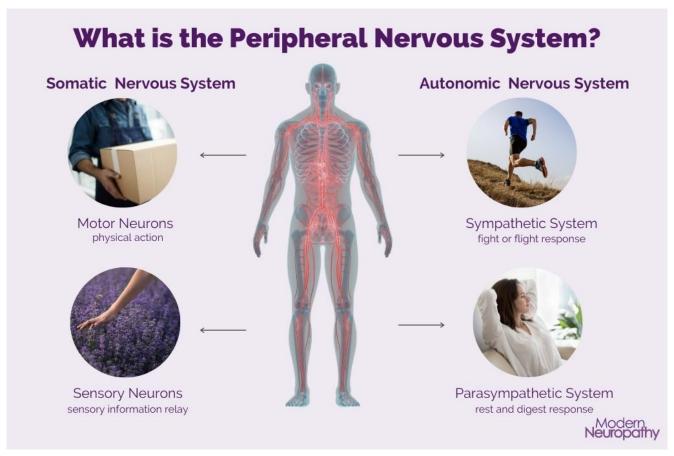
- 1. The **central nervous system** includes the brain and spinal cord.
- 2. The **peripheral nervous system** includes all of the nerves that branch out from the brain and spinal cord to the rest of the body, including muscles and organs.

Each system works together to control how information is communicated throughout the body.

#### The Somatic and Autonomic Nervous System

Going one step further, the peripheral nervous system is then broken down into two types.

- 1. The **somatic nervous system** carries motor and sensory information to and from the brain and spinal cord.
- 2. The <u>autonomic nervous system</u> combines the sympathetic (fight or flight) and parasympathetic (rest and digest) systems that control involuntary body functions, such as blood flow, breathing, heart rate, and digestion.



Peripheral neuropathy, then, can affect any part of this complex system, which is why the symptoms of neuropathy reported from one person to the next can be vastly different.

## What Happens When Nerves Get Damaged?

When neurons become damaged in any part of the peripheral nervous system, a disruption in communication occurs.

The National Institutes of Health explains that signals in damaged peripheral nerves are disrupted in essentially three

#### ways (1):

- 1. Like a broken wire, communication signals are lost.
- 2. Like bad cellular reception, communication is interrupted.
- 3. Like a weak internet signal to a television, communication is distorted.

The symptoms felt are a direct result of lost, interrupted, or distorted signals. Lost signals may feel like, for example, numbness, imbalance, or weakness.

Interrupted signals may cause inappropriate sensations, like pain, electrical pulses, and burning.

A distorted signal may result in odd phantom feelings, like walking on marbles or rain dripping on the skin that isn't really there.

Symptoms related to the <u>autonomic nervous</u> system may be less obvious, such as higher blood pressure, slowed digestion, and body temperature or vision changes.

The most commonly described and first noticed symptoms of neuropathy are those related to <u>sensory neuron damage</u>, such as:

- Numbness
- Tingling
- Pins and needles
- Burning
- Lightening-like electrical pulses
- Throbbing, sharp, or stabbing pain

Followed by symptoms related to motor neuron damage, such as:

Weakness

- Cramping
- Twitching
- Fatigue
- Loss of coordination
- Swelling or heaviness in lower limbs

## How Long Does It Take For Neuropathy to Develop?

Some peripheral neuropathies develop slowly — over months to years — while others develop more rapidly. The way your condition develops depends on what causes it and the type of nerve or nerves that are damaged.

Diabetes is the most common cause of neuropathy that develops over time as nerves slowly degrade with too much glucose in the blood. Chronic alcohol consumption is another cause of nerve damage that progresses slowly as toxicity builds in the body. Rapid nerve degeneration, on the other hand, is seen in cancer patients undergoing highly toxic chemotherapy treatment and in injuries or surgical procedures where nerves are compressed or cut.

### Can Nerve Damage Be Reversed?

The ability to reverse nerve damage depends on what is causing it. If the neuropathy is caused by a treatable condition, like type 2 diabetes, vitamin deficiency, or body toxicity, then reversing the condition can stop the neuropathy or prevent it from getting worse.

If the cause of neuropathy is unknown or untreatable, like a surgical cut, there are lifestyle changes and therapies that can improve the condition and symptoms, though the underlying damage may remain.

Currently, there is no medication or medical procedure to cure peripheral neuropathy. Rather, lifestyle changes that improve general health — eliminate chronic inflammation, improve nutrition, manage weight, reduce stress, get adequate exercise — allow the body to do what it is designed to do, heal itself.

Just like most tissues of the body, nerve tissue can regenerate, as long as enough healthy tissue remains.

Severity of damage, therefore, plays an important part in understanding the reversal of peripheral neuropathy and leads to many misunderstandings.

A mild to moderate case of neuropathy has a significantly better prognosis than severe neuropathy, especially severe neuropathy which has progressed over years.

#### Summary

Peripheral neuropathy is a condition that refers to nerve damage which has over 100 known causes. It can develop rapidly or over time, depending on the cause and the nerve or nerves affected. Symptoms felt depend on which types of nerve fiber is damaged. Reversal of peripheral neuropathy is dependent on the cause and severity.

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