

# Electrodiagnostic Testing for Neuropathy



## Electrodiagnostic Testing:

- Used to diagnose nerve damage which is called peripheral neuropathy<sup>1</sup>
- May last 20-90 minutes<sup>2</sup>

## EMG:

- Measures electrical activity in muscles and nerves that control them<sup>3,4</sup>
- One of several tests that may be necessary<sup>5</sup>

## NCS:

- Measures strength and speed of electrical impulses that travel along nerves of the nervous system<sup>1,3</sup>
- A weaker, slower response implies nerve damage<sup>1,3</sup>

## What is an electrodiagnostic study?

Electrodiagnostic studies, such as electromyography (EMG) and nerve conduction study (NCS), help healthcare providers evaluate the reasons behind nerve damage, which is called peripheral neuropathy. These studies are among several tools that your healthcare provider may use to identify the causes and severity of nerve damage.<sup>1,5</sup>

## What is electromyography?

EMG is a test that measures and studies electrical activity in muscles of the body and the nerves that control them. EMG is used to detect abnormalities in the electrical activity of selected muscles while at rest and during voluntary contraction.<sup>3,4,6</sup>

## What is a nerve conduction study?

A NCS measures the strength and speed of electrical impulses that travel through nerves to the muscles of the body. A weaker, slower response implies nerve damage.<sup>1,3</sup>

## Who performs the EMG or NCS?

Electrodiagnostic tests are performed by healthcare providers who are trained to interpret the results according to current medical practice. These healthcare providers may specialize in the diagnosis of neurological and musculoskeletal disorders.<sup>7</sup>

## Why am I having this test?

Your healthcare provider believes you may have the signs and symptoms of a nerve disorder that affects muscles in the peripheral nervous system.<sup>3</sup>

## How should I prepare for the test?

Prior to the test, tell the healthcare provider performing the EMG if you are taking aspirin, blood thinners (such as warfarin), have a pacemaker, or have hemophilia. On the day of the test, take a bath or shower to remove oil from your skin and do not use body lotion. If you have neuromuscular disease such as myasthenia gravis, ask your EMG provider if you should take any medications before the test.<sup>2</sup>

## What will happen during the EMG?

This test may last 20-90 minutes, depending on your symptoms and the number of limbs (arms and legs) that are affected.<sup>2</sup>

Before the test begins, you may have your limb(s) bathed in warm water or warmed with moist heat packs, an infrared lamp, or another method.<sup>1</sup>

To perform the test, electrodes are applied to the skin, and a thin needle electrode will be inserted into the muscle.<sup>6</sup>

During the test, nerves will be stimulated and electrical activity will be recorded. You may be asked to relax and tense your limb.<sup>6</sup>

You may feel a stick when the needle is inserted and slight discomfort during test.<sup>3</sup>

## What will happen during the NCS?

The NCS test may take 20-90 minutes to complete.<sup>2</sup>

During the test, nerve function is tested by placing electrodes over a particular nerve, while a bipolar stimulator (which may be a hand-held device) will be placed on the skin over the end of that nerve.<sup>1,8</sup>

## Will this test explain what is wrong with me?

An EMG or NCS, along with a physical exam, laboratory tests, MRI, and/or medical history, may help your healthcare provider understand why you are experiencing neuropathy symptoms, such as muscle weakness.<sup>5</sup>

Your healthcare provider also may request a blood sample or order other tests to fully understand your peripheral neuropathy and provide an accurate diagnosis.<sup>5</sup>

## When will I get the results?

Results of the EMG or NCS will be available as soon as they are interpreted by the healthcare provider who conducted the study or when they are sent to your healthcare provider. Ask your healthcare provider when you will learn the results of the test.

## Will insurance cover the test?

Your healthcare provider's office may be able to help you find out whether insurance will pay for the EMG and if pre-approval is needed for the EMG.

Talk to your healthcare provider's office staff if you need help communicating with the insurance company.

## How do I learn more?

For more information about neuropathy or electrodiagnostic testing, visit the websites of the **Neuropathy Action Foundation** at [www.neuropathyaction.org](http://www.neuropathyaction.org) and **The Neuropathy Association** at [www.neuropathy.org](http://www.neuropathy.org).

To watch a video of an EMG, visit the **American Association of Neuromuscular & Electrodiagnostic Medicine** website at [www.aanem.org/Education/Patient-Resources.aspx](http://www.aanem.org/Education/Patient-Resources.aspx).

Shire does not control the content of third-party websites.

### References

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