

EMG and NCV Testing

Your doctor has ordered electromyography (EMG) and nerve conduction velocity (NCV) testing to help evaluate and treat problems related to your nerves or muscles. The following information should answer most of your questions about the test. If you need more information, feel free to ask us anything before, during or after the test. Just relax, and you'll do fine.

What does EMG mean?

EMG simply means measuring the electrical activity of the muscles. Normal muscles give off a certain size, shape and sound of electrical signal. Muscles that have a damaged nerve simply give off very different electrical signals. Therefore, analyzing the abnormal electrical signals in your muscles will help your doctor locate the specific site, nature and extent of nerve damage, if any.

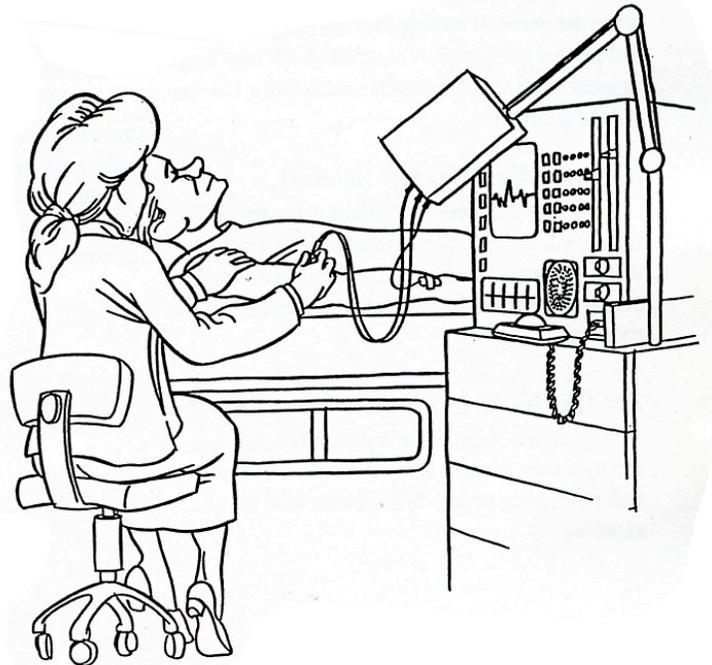
What problems are diagnosed by EMG?

Essentially, EMG is used to diagnose any problem relating to nerves in the spine, arms or legs. These conditions usually cause pain, numbness, tingling or muscle weakness in part of the body. Examples of some of these conditions include:

- Pinched nerves in the neck or back, from disc problems or arthritis
- Compressed nerves in the wrist (carpal tunnel syndrome, at the elbow, knee or other areas
- Neuropathies, such as the numbness in the hands and feet, due to diabetes

How is an EMG done?

While you are lying in a comfortable position on the table, a tiny needle is inserted into your affected muscle. Electrical signals are recorded at rest and as you slightly flex the muscle. A series of different muscles will be tested.



What is the NCV test?

NCV testing is almost always done along with the EMG exam. In fact, when doctors say “EMG”, it is short for EMG and NCV testing together. This test evaluates nerves by measuring how fast the electrical impulse travels through them. Certain nerve diseases cause electrical signals to be transmitted more slowly than normal. Again, this test helps your doctor determine the site, nature and extent of any nerve damage.

How is the NCV test done?

While you are resting on the table, several small recording wires will be taped to your hand or foot. A small electric stimulator will be placed on the skin close to the wires, and an electrical impulse will be given. The signal, after traveling down the nerve, is recorded by the electrode wires and printed on a graph. The small shock may tingle or make your muscles twitch momentarily, but this is not harmful.

Is the needle EMG test painful?

There is some discomfort when the needle is inserted, but not so much that sedatives or anesthesia is needed. Being calm with relaxed muscles during the test will help lessen any possible discomfort.

Are the shocks in the NCV test painful?

Again, there is some discomfort, but it is mostly a brief tingling sensation. Once the test is underway, most people find it easier than they expected.

How do I prepare for the test?

You may eat regularly and take all normal medications prior to the test. Do not apply any lotions, creams or oils that morning, as these materials make it difficult for the tape to adhere to your skin.

What can I expect after the test?

You may experience some small areas of muscular soreness, but most people have no difficulty returning to their regular daily activities, including work. Results of the test will be shared with you, either immediately after the test or when you return to see your orthopaedic doctor.