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Neck and Back Pain:

When you need tests for your nerves and muscles— and when you don't

If you have neck or back pain, your doctor may order electrodiagnostic tests to check your nerves and muscles. These tests can help your doctor find nerve or muscle damage. But in some cases, the tests aren't needed.

In this report, the American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) advises when these tests are needed, and when they aren't.

When you might need a test.

Neck or back pain can cause numbness, tingling, pain, or weakness in your arm or leg. This is usually the result of a pinched or irritated nerve.

In most cases, these symptoms go away on their own. But if they are severe or continue for a while, you may need an electrodiagnostic test. These tests can:

- Help find the cause of your problem.
- Show your doctor how serious the problem is.



Kinds of tests.

- **EMG** (electromyography): This test is used to find the cause of muscle weakness. A small, thin needle is inserted into muscles in your arm or leg.
- **NCS** (nerve conduction study): This is a test to see if your nerves are working correctly. It is usually given along with an EMG. During an NCS, electrodes are placed on the skin of your arm or leg. These send small electrical shocks to your nerves. The test measures how your nerves respond.
- **Dermatomal SEP**: This test uses electrodes and small electric shocks to look for pinched nerves.

The tests have risks.

All three tests are safe, but they do have some downsides and risks.

For EMG:

- Discomfort where the needles are inserted.
- Muscle soreness or bruising.
- A very small risk of infection.

For NCS or SEP:

- Nervousness before the tests.
- Discomfort from the electric shocks.

The tests can be expensive.

These tests can be costly. Without insurance:

- An EMG or NCS may cost from \$150 to \$500 for each arm or leg.
- A SEP may cost much more than \$350.

There are situations when you might not need the tests:

- **Back or neck pain after a car accident.** You may not need an EMG—unless you have pain, tingling, weakness, or numbness in your arm or leg.
- **Testing each arm or leg.** You rarely need to get an EMG test on each arm or leg.
- **A pinched nerve in the neck or back.** Some studies suggest that a dermatomal SEP gives information that is not accurate. The test has not been proven to help, so your insurance may not cover it. Also, if you have a pinched nerve, don't get an NCS without an EMG. An NCS without an EMG can lead to the wrong diagnosis.

This report is for you to use when talking with your healthcare provider. It is not a substitute for medical advice and treatment. Use of this report is at your own risk.

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