

**Hours of Operation**

Monday–Thursday,  
8 a.m.–5 p.m.

Friday,  
8 a.m.–4 p.m.

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## Nerve Conduction Study and Electromyogram (EMG)

### About Your Study

Your doctor has recommended that you have two diagnostic tests: 1) nerve conduction study and 2) electromyogram (EMG). These are safe, accurate tests involving the use of special equipment that can detect and measure the electrical activity of muscles and nerves. Images of these impulses are displayed as wave patterns on a computer screen, and the sounds of the electrical activity are heard through audio speakers. The wave patterns and sounds provide important information about the condition and functioning of various muscles and nerves.

### Evaluating Electrical Activity of Muscles and Nerves

Muscles are made up of very specialized cells that can contract and relax to produce movement. Nerves are bundles of fibers that carry electrical impulses transmitted to the muscles to signal them to contract or relax.

The EMG is a study of the electrical activity of the muscles. Nerve conduction studies measure the time it takes for electrical impulses to travel along the nerve paths to the muscles, and the time it takes for the muscles to respond to the signals. Injury to nerves or muscles, as well as certain illnesses, can disrupt transmission of electrical signals. Test results indicate whether there has been an interruption or other changes in the electrical activity of the nerves and muscles and can help to make a diagnosis.

### Before Your Test: Preparation

- On the morning of your test, bathe or shower, washing your arms and legs well to remove body oils. Do NOT use any bath oil or moisturizing creams or lotions on your arms or legs.
- Take medications according to your regular schedule unless otherwise advised by the physician.
- Eat normal meals before the test. You may even eat right up to the time of the study.
- Make a list of all medications (prescription and nonprescription) that you take regularly. Please be sure to bring this list with you.

### On the Day of Your Test

- When you arrive you will be taken to the neurology laboratory. You will be given a hospital gown to change into for the test.

- The doctor or technologist will take a brief medical history (including your list of medications) and will ask you questions about the problem(s) you are having.
- If you have any questions about the test, please do not hesitate to ask at this time.

## **During the Exam**

### **Part I: Nerve Conduction Study**

- You will be lying down so that you will be relaxed and comfortable.
- Several areas of skin on your arms and/or legs will be cleansed with a special solution to remove any remaining oils.
- A number of small pads, called electrodes, will be placed at different points on your skin using a special gel or paste to help them adhere. The electrodes will be connected by wire leads to the recorder that traces the electrical activity in the nerves.

The computer measures and records the speed of the impulses and response time of the muscle. The procedure is repeated at several different places on your arms and/or legs and may take up to 40 minutes.

### **Part II: Electromyogram (EMG)**

- You will remain lying down for this portion of the study.
- Several small electrodes will be placed on different areas of skin on your arms and/or legs. The electrodes will be connected by wire leads to the recorder.
- A very thin sterile needle called an *electrode needle* will be gently inserted into the muscle. Measurements will be recorded while the muscle is at rest.
- The doctor will then ask you to contract the muscle (and will tell you exactly how to do this) while further measurements are recorded. The procedure is repeated as other muscles are tested. You may feel some temporary discomfort while the needle is inserted. However, most people tolerate the discomfort very well. This portion of the test may take up to 20 minutes.