



Neurology of South Jersey

## **EMG and Nerve Condition Study (NCS)**

An EMG and Nerve Condition Study (NCS) is a direct extension of the neurologic portion of the physical examination. The examination can be helpful in evaluating the causes of numbness, tingling, pain, weakness, fatigue, and muscle cramping. These tests are used to study nerve and muscle function.

An electrodiagnostic medicine consultant undergoes special training in electrodiagnostic medicine procedures. The knowledge and expertise gained from such specialized medical training maximizes the ability of the consultant to consider appropriate differential diagnoses in planning and performing the electrodiagnostic examination. This expertise enables the consultant to assist referring physicians in establishing diagnoses, determining prognoses, and assisting in proper management.

The examination usually takes 20 to 60 minutes. There are no restrictions on activity before or after the testing, and there are no lasting after-effects. An NCS is performed by a physician or a trained technologist under the direct supervision of a physician. The needle EMG examination is performed by a physician with special training in this area.

### **NCS**

Nerve conduction studies test how well signals travel along a nerve and can help find the cause of abnormal nerve function. Signals are made to travel along the nerve by applying small electric pulses to the nerve at one site, and recording the response at a different place along the nerve. The small electric pulses cause a short, mild, tingling feeling. The nerve response is picked up by a recording instrument and is then measured by the physician or technologist performing the test. Several nerves may need to be tested depending on the type of problem.

### **Needle examination (EMG or Electromyogram)**

During the needle EMG portion of the examination, the physician inserts a small needle into a muscle to record the electrical activity of the muscle. The muscle's electrical activity is fed into the recording instrument, and the physician analyzes it by looking at a signal on the scope and listening to the sounds the activity makes through the speaker. This test can help determine if there are abnormalities in the muscle or the nerve going to the muscle.

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