



## Orthopedic Associates OF PORT HURON

### **What is an EMG?**

Electromyography is a test that assesses the health of muscles and the nerves controlling the muscles.

#### ***How is the test performed?***

For an EMG, a needle electrode is inserted through the skin into the muscle. The electrical activity detected by this electrode is displayed on an oscilloscope, and may be heard through a speaker.

After placement of the electrodes, you may be asked to contract the muscle (for example, by bending your arm). The presence, size, and shape of the waveform – the action potential – produced on the oscilloscope prove information about the ability of the muscle to respond when the nerves are stimulated.

A nerve conduction velocity test is usually performed in conjunction with an EMG in order to test the speed of the message transmission through the nerve.

#### ***Why is the test performed?***

EMG is most often used when people have symptoms of weakness and examination shows impaired muscle strength. It can help to differentiate primary muscle conditions from muscle weakness caused by neurological disorders.

#### ***What is a normal test?***

Muscle tissue is normally electrically silent at rest. Once the insertion activity (caused by the trauma of needle insertion) quiets down, there should be no action potential on the oscilloscope. When the muscle is voluntarily contracted, action potentials begin to appear. As contraction is increased, more and more muscle fibers produce action potentials until a disorderly group of action potentials of varying rates and amplitudes (complete recruitment and interference pattern) appears with full contraction.

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[940 River Centre Drive, Port Huron, Michigan 48061-5031](#)  
[\(810\)985-4900 or 1-888-OAPH-911](#)  
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***How will the test feel?***

There may be some discomfort with insertion of the electrodes (similar to an intramuscular injection). Afterward, the muscle may feel tender or bruised for a few days.

***How can I prepare for the test?***

No special preparation is usually necessary. To ensure accurate readings, avoid using any creams or lotions on the day of the test.

If you have any question regarding this or any other information, please contact our [Physical Medicine and Spine Care Center at Orthopedic Associates](#), (810)985-4900.

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