

WHAT ARE WE LOOKING AT ?

Your nerves can be likened to cables that transmit electrical impulses to drive muscles.

Electro-myography (EMG) measures the electrical activity in the muscles. When the muscle is damaged or the nerve cannot get to the muscle this test will be abnormal.

Nerve Conduction Studies (NCS) measure the speed at which the impulses travel down the nerve and also measure the strength of the impulse. If the nerve is damaged these will change. Sometimes the location of nerve damage can be identified.

WHY ARE YOU HAVING THESE TESTS ?

Electro-myography (EMG) is used to:

1. Diagnose the medical conditions that may affect the muscles directly, the links between the nerve and the muscle.(e.g. Muscular Dystrophy, Myasthenia Gravis)
2. Look for the cause of paralysis, weakness or involuntary twitching of the muscles.
3. To identify the origin of a problem affecting a group of muscles. These may be affected by a nerve or a location inside the spinal cord or brain.

Nerve Conduction Studies (NCS) are used to:

1. Diagnose problems with your peripheral nerves(the arms and the legs).
2. Look for the cause of symptoms such as numbness, tingling or pain in an arm or leg.
3. The common conditions that we are looking for are ; Carpal Tunnel Syndrome, Ulnar Neuropathy, Peripheral Neuropathy.

WHAT SHOULD YOU TELL US BEFORE THE TEST ?

If you are taking any medications, as some may interfere with the test. (e.g. muscle relaxants, anti cholinergic drugs).

If you have had any botox injections.

If you have a pacemaker

Any bleeding problems or taking any drugs that may cause easy bleeding(Warfarin or Heparin).

WHAT TO DO BEFORE THE TEST ?

Wear loose fitting clothes.

Try not to smoke for one day before the test.

Avoid alcohol for 24 hours before.

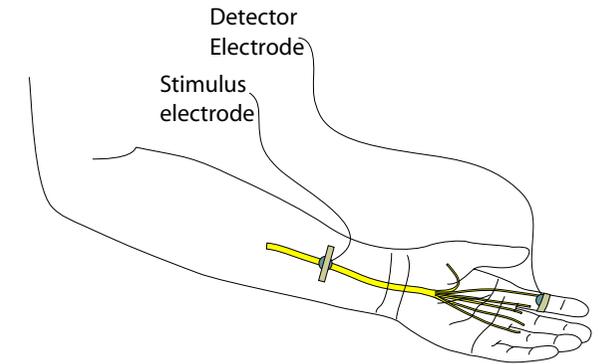
Do not drink caffeine based liquids prior to the tests other wise you can eat and drink as normal.

HOW ARE THEY PERFORMED ?

The test is performed by a doctor (Neurologist) and a technician. It may be in a doctors office or a special shielded room in a hospital. You will lie on a bed or sit in a chair to relax all the muscles and nerves.

Nerve Conduction Studies (NCS)

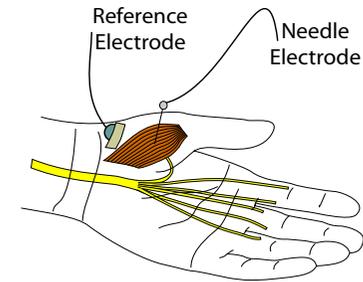
Small electrodes the size of a 5 cent piece are placed over the nerve to be stimulated and over the muscle that the nerve goes to. The nerve is then stimulated. Small electrical pulses are given to the nerve. These will activate the muscle which may twitch. The time it takes for the stimulus to reach the muscle is recorded on a machine(this is called the Conduction Velocity). The number of nerves tested will depend on the reason for the test. The common nerves are the median nerve looking for carpal tunnel syndrome(see leaflet) and the ulnar nerve looking for ulnar neuropathy(see leaflet). The test may take between 15 minutes and one hour.



The Nerve Conduction Electrodes

Electro-myography (EMG) is:

Two electrodes are used for this test. The first is a flat disc that is placed on the skin near the muscle to be sampled. The second is a thin needle pushed into the muscle that we want to test. Initially the muscle activity is measured at rest. The muscle is then tested in activity and you will be asked to contract (tense) the muscle. The activity is measured on a special machine. You may be able to hear the sounds of the contraction via a loudspeaker. Lots of different muscles may be sampled and individual muscles may be sampled at different locations. It may take some time to do the tests and it normally takes 45 minutes to 2.5 hours. The needle holes are cleaned and covered before going home. You may take some panadol if the sites are sore.



The EMG Electrodes

WHAT SHOULD YOU DO AFTER ?

You will be able to go home immediately after the test.

You do not need to take any special precautions.

If you notice any redness or infection around the needle sites it is important to go to your local doctor.

When will I get the results?

The results will be sent to your doctor and you should make sure that you have an appointment to go through them.

It will normally take a few days to get the results to your doctor. If the tests were ordered by your local doctor and they are abnormal he will either send you to a neurologist or neurosurgeon to discuss them further.

The results need to be interpreted by your doctor in the light of your symptoms and any examination findings.

You may need a further examination if the initial test shows something unexpected.

WHAT ARE THE RISKS?

The risks are very small

With the needle going in a blood vessel may get caught and this may give a small bleed causing a bruise in the muscle. This is transient and disappears after a little while.

The chance of infection from a needle is very small.

If you have a bleeding problem or are taking a medication to thin your blood then there is a risk of bleeding at the area. It is important to tell the doctor if you are on blood thinning tablets such as aspirin/warfarin /anti-inflammatory drugs.

YOU WILL BE ASKED TO SIGN A CONSENT FORM TO SAY THAT YOU UNDERSTAND THE RISKS . IF YOU ARE NOT SURE ASK BEFORE YOU SIGN.

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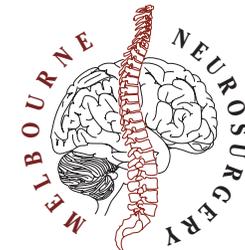
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PROCEDURE
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**NERVE
CONDUCTION STUDIES**

&

**ELECTROMYOGRAPHY
(EMG)**



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