

What are Nerve Conduction Studies (NCS) and Electromyography (EMG)?

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What are nerve conduction studies (NCS) and electromyography (EMG)?

Nerve conduction studies

These are tests of the nerves mainly in hands, arms or legs and occasionally elsewhere in the body. The studies are performed by passing small electrical currents through the skin and recording the natural electrical signals from the nerve or over the muscle. This is usually done by stickers/pads attached to the skin and needles are not used. The electrical pulses produce a strange tingling sensation which can be a little uncomfortable but not painful. Your muscles may have brief uncontrollable twitches as the nerve is being stimulated.

Why is it done?

Nerve conduction studies are performed to:

- ❖ Detect and evaluate damage to the peripheral nervous system, which includes the nerves leading away from the brain and spinal cord and smaller nerves that branch out from those nerves. Nerve conduction studies are often used to help diagnose nerve disorders.
- ❖ Identify the location of abnormal sensations such as numbness, tingling or pain.

This test takes about 30 minutes. There are no after-effects and you will be able to go home straight after the test. The results of the investigation need to be analysed afterwards and a full report will be sent to the referring Consultant.

Depending on the results found the doctor may proceed to carry out EMG studies as detailed below.

Electromyography

An EMG measures the electrical impulses of muscles at rest and on contraction. This is normally done with a fine needle inserted into the muscle. Once the electrode is in place the electrical activity in that muscle is recorded while the muscle is at rest. Then the doctor asks you to tense (contract) the muscle with gradually increasing force while the electrical activity is being recorded.

Why is it done?

EMG is done to:-

- ❖ Diagnose diseases that damage muscle tissue, nerves or the junctions between nerve and muscles.
- ❖ Evaluate the cause of weakness, paralysis, involuntary muscle twitching or other symptoms.

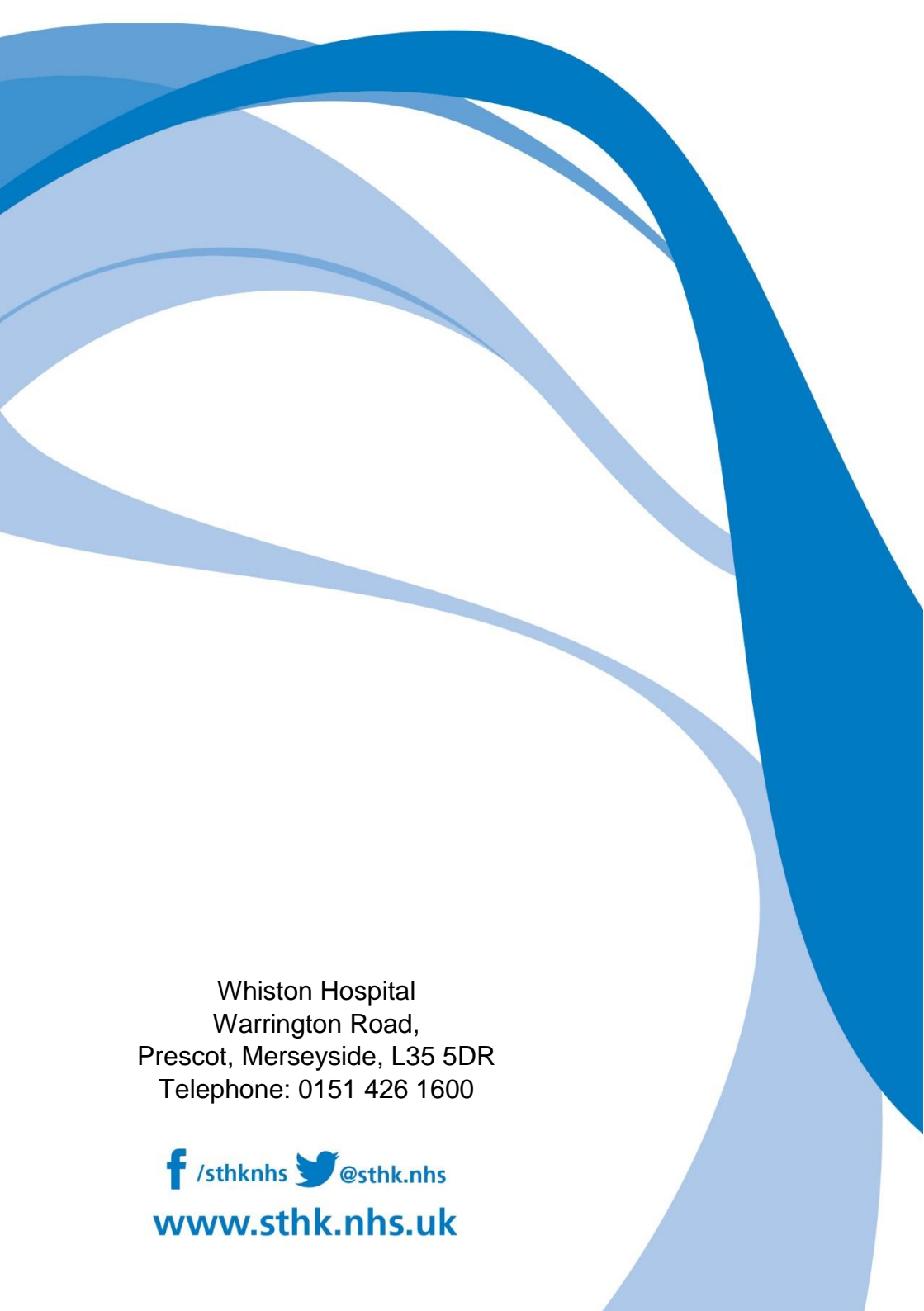
What preparation is needed?

It is helpful if the hands and feet are as warm as possible. Loose fitting clothes are also helpful as it gives easier access to the upper and lower limbs.

There are no after-effects and you will be able to drive after wards.

Contraindications

If you have an implanted device i.e. pacemaker or defibrillator you must inform the doctor/technician prior to the test.



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