

Having nerve conduction studies and electromyography (EMG)

This leaflet explains about nerve conduction studies and electromyography. If you have any questions or concerns, please do not hesitate to speak to a doctor or nurse caring for you.

What is an EMG?

The term EMG (electromyography) is often used by clinicians to refer to both EMG and nerve conduction studies. Electromyography measures the electrical activity of your muscles. Nerve conduction studies measure the electrical function of nerves in your limbs. Depending on your symptoms, you may need both or only one of the procedures described in this leaflet.

What are the benefits of an EMG?

EMG and nerve conduction studies can help doctors diagnose disorders of nerves, muscles, or the link between nerves and muscles (called the neuromuscular junction). It can help to pinpoint the area that is causing your symptoms and the nature of the problem.

Are there any alternatives?

There are no alternative tests to find out this information.

What do I need to do to prepare for the test(s)?

You must let us know before your appointment if you have:

- a cardiac pacemaker or implantable cardioverter defibrillator (also called 'ICD')
- or
- any other implanted device for which you have had batteries inserted under your skin.

Please telephone **020 7188 3954**, email **gst-tr.neurophysiologyGSTT@nhs.net** or write to the Department of Clinical Neurophysiology and let us know the name and contact details of the hospital where your pacemaker is routinely checked. The full address for our department is on your appointment letter.

Please bring any information you have about your pacemaker or other device when you come for your appointment.

It is helpful if you **wear loose-fitting clothes for the test**. This means you will not need to undress. If your legs need to be examined, you will be asked to take off your shoes and socks/stockings/tights.

Skin moisturisers and body lotions (including fake tans) interfere with the test, so please wash off all moisturisers from your hands, arms and legs before attending for your test appointment. This is important to make sure your test results are accurate.

Medication

If you are taking **warfarin, or any of the newer anticoagulant medications (for example rivaroxaban or apixaban)**, please bring any alert cards you have been given. If you are taking warfarin please bring your INR booklet with the test dates and results, if possible.

In addition, if you are taking anti-platelet medication (such as aspirin, clopidogrel, prasugrel or ticagrelor) please could you bring your list of medications and their doses.

If you have recently had botox (botulinum toxin) injections for medical or cosmetic reasons, you will need to let the doctor know before the start of the test. These injections may affect the tests, so it is important that we know so we do not misinterpret the findings.

What happens during the procedure?

Electromyography (EMG)

The clinical neurophysiologist (doctor specialising in the electrical function of the brain or nerves) will put a fine sterile needle electrode (like an acupuncture needle) into your muscles. This will detect the electrical signals that muscles produce. The muscle activity is displayed on a computer. This test looks for signs of a disorder of your muscles, or their nerve supply. The doctor will decide how many of your muscles need to be examined, depending on your symptoms and what they find as the test is carried out.

Nerve conduction studies

This involves using small electrical currents to stimulate your nerves, usually in your arms and/or legs. This is usually done by attaching pads to your skin and connecting them to the EMG computer. Your nerve responses are recorded and analysed to give us information on how your nerves are working.

Depending on the complexity of the problem, having both tests should take between **30 and 90 minutes**. Most tests are completed within an hour.

Will I feel any pain?

Both procedures may feel slightly uncomfortable, but should not be painful.

Are there any risks associated with the procedures?

Nerve conduction studies do not have any side effects.

After EMG, your muscles into which the needle was placed may ache a little for the next day or so. It is extremely rare to have any problems, but if there is any persistent redness or swelling, you should contact your GP. This could be the sign of an infection and can be easily treated.

The electrode needles are disposable, so each electrode is only ever used on one patient. This means that they cannot transmit infection from another person to another.

What happens after the test?

You will be able to return home or to work immediately after the test.

When will I get the results?

The results of the tests need to be analysed. A full report will be sent to the doctor who asked for the test (usually within 1-2 weeks of the test). The doctor should arrange with you when and how you will receive the results.

Contact us

If you have any questions or concerns about either test please telephone the Neurophysiology Department on **020 7188 3954** (9am to 5pm, Monday to Friday). Alternatively, speak to the neurophysiologist at the time of your test.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.guysandstthomas.nhs.uk/leaflets

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

t: 020 7188 8748 9am to 5pm, Monday to Friday

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) **e:** pals@gstt.nhs.uk

t: 020 7188 3514 (complaints) **e:** complaints2@gstt.nhs.uk

Language and accessible support services

If you need an interpreter or information about your care in a different language or format, please get in touch:

t: 020 7188 8815 **e:** languagesupport@gstt.nhs.uk

NHS 111

Offers medical help and advice from fully trained advisers supported by experienced nurses and paramedics. Available over the phone 24 hours a day.

t: 111

NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

w: www.nhs.uk

Leaflet number: 1714/VER2

Date published: June 2017

Review date: October 2019