

Nerve Conduction Studies and EMG

This leaflet is designed to give you some information about the investigation for which you have been referred. Your doctor may have already explained what nerve conduction studies and an EMG involves, but you will probably still have some questions.

If after reading this leaflet you have any fears, queries or concerns, you will have the opportunity to discuss any of these issues on the day of the appointment with a healthcare professional prior to the start of the investigation.

WHAT ARE NERVE CONDUCTION STUDIES AND EMG?

These investigations are usually carried out to diagnose disorders of the peripheral nerves or muscle. The term EMG (electromyography) is often used by clinicians to refer to both nerve conduction studies and EMG. We usually perform nerve conduction studies, but depending on the problem you may also require an EMG.

BEFORE THE INVESTIGATION

You will also have received a questionnaire. It is essential that you return it as soon as possible and tell our staff at the beginning of your visit, if

- you have a cardiac pacemaker or an implanted cardioverter or cardiac defibrillator
- you are taking anticoagulants. These include tablets of warfarin, acenocoumarol (Sinthrome), phenindione or a novel oral anticoagulant apixaban (Eliquis), dabigatran (Pradaxa) or rivaroxaban (Xarelto) or injections of heparin, low molecular weight heparins such as dalteparin (Fragmin), enoxaparin (Clexane) or tinzaparin (Innohep)
- you are taking a drug that enhances neuromuscular transmission such as pyridostigmin (Mestinon) or neostigmine.

ON THE DAY OF THE INVESTIGATION

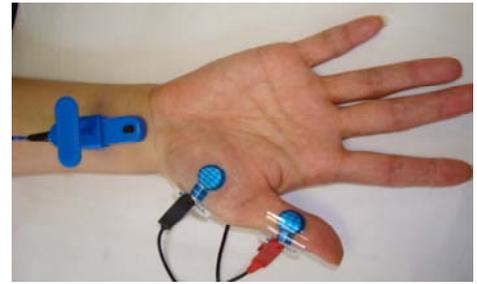
Please be on time and report to the reception. It is often helpful if you wear loose fitting clothes for the examination as this will reduce the need for undressing. We often need to get access up to your elbow and we may ask you to take off your shoes and socks, tights or stockings and to get access up to your knee. Some skin moisturisers, creams and make-up (if we need to investigate the face) can interfere with the investigation and are therefore best to avoid them on the day.

THE PROCEDURE OF THE INVESTIGATION

The investigation will be carried out by a physician or a clinical physiologist. They will explain every step of the procedure as they progress. Although some patients find the studies a little uncomfortable, they should not cause too much pain. If, however, you find any procedure too unpleasant or if you need a rest, let us know immediately. Any discomfort or pain will generally disappear within seconds once we stop the procedure. The physicians or clinical physiologists may ask you questions about your symptoms and medical history and perform a short focused physical examination.

Nerve conduction studies

We shall apply small electric pulses to stimulate the nerves, usually in the arms or legs. The reactions are recorded by surface electrodes that are attached to the skin and which can be easily removed afterwards. The electrical stimulation can be a little unpleasant, but should not cause too much discomfort and any sensation is very short.

**Electromyography (EMG)**

We shall insert a fine sterile electrode (like taking blood) through the skin into the muscles. We use the needle to record activity and do not give electrical pulses or injections through nor do we take a tissue sample. Each needle is only ever used on one person, but we use it for several muscles. It cannot transmit infection from another person to you. After an insertion we will ask you to move the muscle or relax it. The procedure may sound worse than it actually is and causes only minor discomfort.

**THE DURATION OF THE INVESTIGATION**

Depending on the problem, the physician or physiologist will decide how many and which nerves or muscles need to be examined. Very often, the need to investigate further nerves and muscles depends on the results as the investigation proceeds. Depending on the complexity of the problem, EMG and nerve conduction studies may take anywhere from 15 - 90 minutes. Most tests are completed within half an hour.

WHAT ARE THE RISKS?

Nerve conduction studies are non-invasive and there is no risk of side effects unless you have an implanted medical device. If you carry a pacemaker or a cardiac defibrillator we will take certain precautions. Even then the risk is very small and with proper precautions the malfunction of these devices has not been reported. Needle EMG can be a little painful and may produce small bruises. If you are taking an anticoagulant or have an increased risk of bleeding you need to tell us and we will adapt our investigation. If you have a predisposition to infections you need to tell us. With precautions, infections as a consequence of an EMG have not been reported.

AFTER THE INVESTIGATION

Nerve conduction studies do not have any side effects after their completion. After an EMG, the muscles into which the needle has been placed may ache a little for a few minutes. It is uncommon to have a visible bruise. The risk of infection is very low, but if there is any persistent redness or swelling, you should contact us. You will be able to return to your normal activities immediately after the investigation.

RESULTS OF THE INVESTIGATION

The results of the test will be sent to the referring consultant within a couple of days, but the healthcare professional performing the investigation will already be able to give you preliminary results. However, it is usually not appropriate for him or her to discuss the findings with you in any great detail because the interpretation may depend on the results of other investigations to which we often do not have access at the time of the neurophysiological study. It is generally therefore best that the results of the neurophysiological investigation are also discussed with your referring consultant.