### Department of Neurosciences
#### Clinical Neurophysiology

### Patient Information

**Nerve Conduction Studies and Electromyography (EMG)**

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This leaflet is designed to give you some information about the investigation for which you have been referred. We hope it reassures you – we have an experienced team of experts who conduct these investigations.

If after reading this you have further questions or concerns you will have the opportunity to discuss them on the day of the appointment before the tests start.

**What are nerve conduction studies and EMG?**

They are tests of the peripheral nerves and muscles that are commonly used to diagnose problems of weakness or numbness. The term EMG (electromyography) is often used by clinicians to refer to both nerve conduction studies and EMG. There are many causes of weakness or numbness, so sometimes these tests need to be interpreted alongside scan results or other investigations. Not all of the conditions that have an abnormal EMG are serious.

**What happens before the investigation?**

There are no special precautions required. It is helpful if you wear loose fitting clothing as we generally need to examine your arms or legs. Please avoid moisturising creams for the day of the test as they can interfere with the recordings. A partner or family member is very welcome to accompany you during testing. There is no restriction on eating or drinking before, or after, the investigation.

**Contacts / Further information**

If you need any further information of have any other queries please contact the neurophysiology administrator on: 01223 217136
When do I get the results?

The results of the investigation are sent to your referring consultant within a few days. It is often possible to discuss preliminary results at the time of testing. However, in many instances the overall interpretation of the results needs to be performed by the consultant that referred you for the test, who will have access to other investigations such as scans or blood tests.

Special note: children and EMG

We commonly see children for nerve conduction and EMG assessment, including the youngest babies. Parents generally hold their child on their lap or sit with them, depending on their age. We commonly use distraction techniques and find that most children complete the test without difficulty. We have an expert team and are experienced in assessing children. Of course on occasion we make the test very brief or stop if required. The investigation takes place in a calm room, and we talk and discuss whilst performing the test, so can easily adapt what we are doing depending on the situation.

Please tell us about any of the following:

1. If you have a pacemaker or implanted cardioverter or cardiac defibrillator
2. If you are taking warfarin or heparin medication
3. If you have an increased risk of bleeding or infection

Generally we can still perform tests but we may need to modify what we do.

What will happen during testing?

Nerve conduction studies are generally performed first. Small sticky electrodes are stuck to the skin to measure the ability of your nerves to conduct electrical signals. A very short electrical pulse is applied to the nerve and the response is recorded. During this you feel a tapping sensation which is over very briefly. We record the size, shape and speed of responses from nerves that go to supply muscles and others from the skin.
Sometimes we also need to perform EMG. We insert a single very fine sterile electrode into the muscle to record the electrical activity when it contracts. We do not use electrical stimulation at all, the electrodes simply record. The electrode is very thin, like an acupuncture needle and is used only once so it cannot pass on any infection. You generally feel a scratch when the electrode is inserted but the wires are very small and the team are experienced in making this as painless as possible.

The whole consultation generally takes about 30 minutes, but testing takes a small fraction of this time.

**Are there any risks?**

There are no side effects or complications following routine nerve conduction studies. After an EMG the muscle may feel slightly itchy or ache for a few minutes, and you may notice a small bruise. It is a very safe procedure, and infections have not been reported. You can return to your normal activities immediately after the investigation. Should you be concerned about pain, swelling or bruising please contact us or your GP.