

Nerve Conduction Studies Information Sheet

What are Conduction Studies? (NCS)

A nerve conduction study (NCS) is a test commonly used to evaluate the function of the motor and sensory nerves of the human body. Nerves allow messages to pass as electrical impulses between the brain and the body or vice versa. There are two types of nerves – motor and sensory. Motor nerves take messages from the brain and spinal cord to the muscles for movement. Sensory nerves take messages from the skin, muscles and joints to the brain and allow us to detect pain, movement and temperature. This test allows us to record the electrical activity of the nerves and determine whether they are working normally.

What are NCS used for?

NCS are used to test how both sensory and motor nerves are working in different parts of the body. They are performed for a wide variety of reasons. They can diagnose problems with peripheral nerves, help look for the cause of tingling, pain or numbness in arms or legs, or diagnose conditions such as carpal tunnel, peripheral neuropathy etc.

What does the test involve?

The test will take up to 60 minutes. Adhesive electrodes are applied to the skin and the nerves are artificially stimulated with small pulses of electricity to activate the nerves in the arms and/or legs. This is a safe procedure and does not harm the nerves in any way but it is uncomfortable. Occasionally we also need to use a very fine needle (like an acupuncture needle), which will go into some of your muscles to test the electrical activity there. This part of the test is called electromyography (EMG) and can help diagnose medical conditions that may affect the muscles directly, or look for causes of paralysis or weakness.

What should I do to prepare for my test?

On the day, make sure the skin of your arms and legs is clean. Do not apply moisturiser or creams because this will interfere with the test. It is best to wear a loose fitting top and pants to allow access to just above the knees and elbows. On occasion it may be necessary to do testing close to the shoulder or hip and your top or pants may need to be removed. If you are taking blood thinners, please let the doctor know. This will not stop the test being done but we will take extra precautions to avoid bleeding. If you are taking a medication called Mestinon (pyridostigmine) then you should discuss with your neurologist about stopping this at least 24 hours prior to the test.

Will I get results on the day?

Usually you will get at least preliminary results on the day of your test. These will be discussed in more detail by your referring neurologist in combination with other tests that may have been arranged.