

## SPINAL CORD MONITORING DURING BACK SURGERY

This leaflet is designed to give you some information about the **spinal cord monitoring** your surgeon has asked us to perform during your spinal surgery.

During your operation we can monitor the tiny electrical signals along the spinal cord. This monitoring helps reduce the risks of spinal cord damage during the surgery, but cannot eliminate these risks entirely. You still need to take into consideration all the risks of the surgery as discussed with your surgeon.

### **Before the surgery**

We normally perform one test before your surgery to make sure you have responses we can monitor. The test is called a **sensory evoked potential (SEP)**. This test is usually performed the day before your operation and we will send you an appointment or phone the ward to arrange this.

### **Pre-Operative Sensory Evoked Potential Test (SEP).**

#### **How is it done?**

The pre-operative test takes half to one hour.

The person who performs your test attaches small disc electrodes to your head/ back and knees using a sticky paste. Small pieces of sticky paste will be left in your hair - these will wash out with shampoo.

During the test a nerve in your foot is stimulated. This causes an unusual prickling sensation and small twitches of your foot. It can be uncomfortable, but should not be painful and is well tolerated by most people. There are no after effects.

You will be asked to take off your shoes and socks/ tights/ stockings for this test. It is helpful if you wear loose fitting clothing as this will reduce the need for undressing.

### **The day of your operation**

Please ensure your hair is clean and dry as we will be putting recording electrodes on to your head for the surgery (we will do this once you are asleep under anaesthetic).

### **During the surgery.**

The following gives an outline of each test, however you will not be aware of these occurring as you will be asleep under anaesthetic.

- **SEPs** (Sensory Evoked Potentials) test the nerve pathways from the leg through the spinal cord to the brain. A foot stimulator is used at the ankles to stimulate a nerve in the foot and recordings are made at the knee, neck and head using small disc electrodes. We may also be able to record the response directly from the spinal cord with a spinal electrode (recording wire) which is inserted by the anaesthetist or surgeon into the space next to the spinal cord.

The SEP tests are performed at short intervals throughout the surgery. If there are any significant changes we inform the surgeon.

- **MEPs** (Motor Evoked Potentials) test the pathways from the brain to selected muscles in your legs and feet. We do this by stimulating part of the brain with electrical pulses through small needles placed just under the skin on the head and recording with needles placed under the skin near certain muscles in your legs and feet. These tests are performed at critical stages during your surgery.

#### **Are there any additional risks during surgery with the monitoring?**

- There is a very small risk of a seizure occurring when doing the MEP test. If you have had epileptic seizures in the past this may involve a slightly higher risk. We will need to evaluate on an individual basis if we should do MEP's in your case.
- The anaesthetist inserts a soft bite guard in your mouth to minimise the chance of jaw/ mouth injury as there is a chance of this occurring during the MEP test.
- Some minor bruising at the sites of the needle electrodes can occur.
- No known complications have ever occurred using the spinal electrode. However, if the spinal electrode is used, there is a theoretical risk of injury to the spinal cord. We do not need to use the spinal electrode in all surgeries.

#### **After the operation.**

All the electrodes will be removed before you wake up. In the sites where the needle electrodes had been inserted you may have a small amount of blood where they have been removed.

#### **Any questions?**

If you have any questions or concerns about the monitoring, please do not hesitate to contact our staff on **01603 287306** before your appointment or talk to us before the start of your test. The department is open **Monday-Friday 8am-4-30pm**. There is a voicemail service to leave a message if we are unavailable.

**Please fill out and sign the attached screening form and send it back to us as soon as possible.** This will help us plan your monitoring before the surgery.

