York and Scarborough Teaching Hospitals
NHS Foundation Trust

Neuromodulation Procedure

- Spinal Cord Stimulation (SCS)
- Dorsal Root Ganglion Stimulation (DRG)

Information for patients, relatives and carers

Leaflet 1 of 3

ⓘ For more information, please contact:
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Introduction

This leaflet explains the meaning of neuromodulation, when and for whom it may be used and the different types available. It summarises the process and outlines the risks and benefits of undergoing this treatment.

Who is neuromodulation for?

Neuromodulation is a pain management device used for the management of neuropathic pain. (Pain caused by nerve damage). Neuromodulation can be used for people experiencing some common pain conditions, such as:

- Back surgery syndrome
- Complex Regional Pain Syndrome (CRPS)
- Chronic neuropathic pain

What is neuromodulation?

Neuromodulation literally means “altering the way nerves transmit signals”. This can be done in two ways. One way is to use a chemical procedure – prescribing pain killers – but these cannot always be focused on the nerves responsible for causing pain and can have side effects.

A neuromodulating implant uses electrical impulses to alter painful nerve transmission. This aims to prevent messages reaching the brain which are responsible for the experience of pain.

There are two types of spinal cord implant that we provide:

- Spinal Cord Stimulation (SCS)
- Dorsal Root Ganglion Stimulation (DRGS)

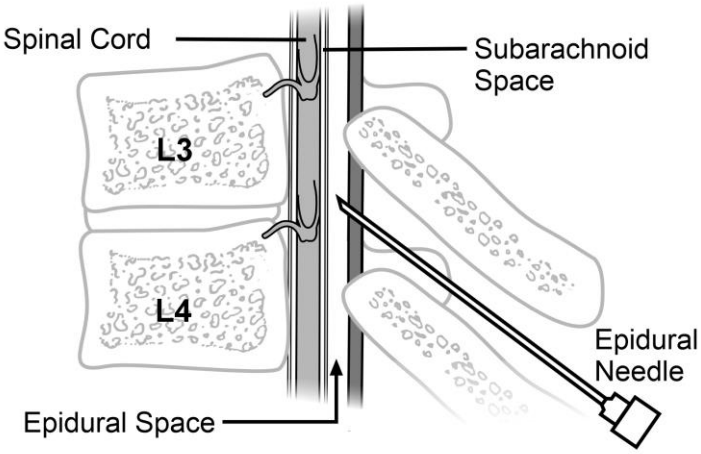
How does it work?

SCS and DRGS are medical devices that have a lead which is connected to a controlling battery. A lead is placed near your spinal cord in the epidural space (the potential space between the dura mater and spine) and is attached to a small battery that lies under your skin.

The battery sends the electrical impulses to the lead. These impulses interfere with the pain signals travelling up and down your spinal cord. This alters your pain experience and leads to an improved quality of life.

What does the procedure involve?

The procedure takes place in the operating theatre. A thin tube (cannula) will be placed in your vein or body cavity so that you can have antibiotics and any medication you may need. You will be monitored throughout the procedure. Diagram of Spinal cord:



You will lie on your front for the procedure and the theatre team will ensure you are as comfortable as you can be. Antiseptic will be applied to your back to minimise the risk of infection. A local anaesthetic will be injected to numb the skin.

An X-ray machine will be positioned over your back and will be used throughout the procedure to guide the needle into the epidural space during the operation. The SCS lead is introduced into the epidural space.

Spinal Cord Stimulator Battery (IPG)

Spinal Cord Stimulator Percutaneous Lead

The lead will then be guided using X-ray into the correct position. Depending on the specific device that has been chosen for you, the lead can then be switched into a specific mode so that you can feel a mild painless tingling.

Battery and Lead Image used with kind permission from NEVRO CORP.

The aim is to ensure that you can feel this in the same area as your pain. Once confirmed, this tingling mode is switched off and the lead is fixed in place and connected to the battery. The battery will be implanted into a pocket created just under the skin in the upper part of your buttock. These wounds will be closed with clips and stiches. You will continue to receive doses of local anaesthetic while the procedure is taking place, to ensure you are comfortable as possible throughout the procedure.

Anticoagulation medication

You should tell us if you are taking any blood thinning medication such as Warfarin, Clopidogrel and other anticoagulant medications. These may need to be stopped before the procedure.

The risks

As with all medical procedures, there are risks and possible complications.

Very common complications (one in 10 people) include:

- Failure to relieve pain
- Flare-up of pain
- Seroma (fluid build-up around implant)

Common complications (one in 100 people) include:

- Bleeding from the wound site
- Superficial infection around the wound
- Dizziness
- Severe headache

Uncommon (one in 1000 people) include:

- Rejection of implant by the body

Rare (one in 10,000 people) include:

- Nerve damage
- Epidural bleeding (haematoma)
- Epidural abscess/spinal infection

Very rare (one in 100,000 people) include:

- Limb paralysis
- Arachnoiditis
- Death

Complications of a general anaesthetic if appropriate to the procedure.

What happens afterwards?

Following the procedure there is a small chance you may need to stay in hospital overnight. The device will be programmed and started after the operation. The SCS team will explain the settings and your role in this.

The sites of the operation will be sore afterwards. You can take your usual pain killers for this.

You will be discharged home with advice about aftercare and will be given a date for a follow-up appointment. You will be given any helpful telephone numbers that may be required over the next few days.

Tell us what you think of this leaflet

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact:
The Pain Management Clinic, 1st Floor Outpatients, York Hospital, Wigginton Road, York, YO31 8HE
Telephone: 01904 725395 or 725397
Email: yhs-tr.Info.PainClinic@nhs.net

Teaching, training and research

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

Patient Advice and Liaison Service (PALS)

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services.

PALS can be contacted on 01904 726262, or email yhs-tr.patientexperienceteam@nhs.net.

An answer phone is available out of hours.

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Please telephone or email if you require this information in a different language or format, for example Braille, large print or audio.

如果你要求本資 不同的 或 式提供，電 或發電

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