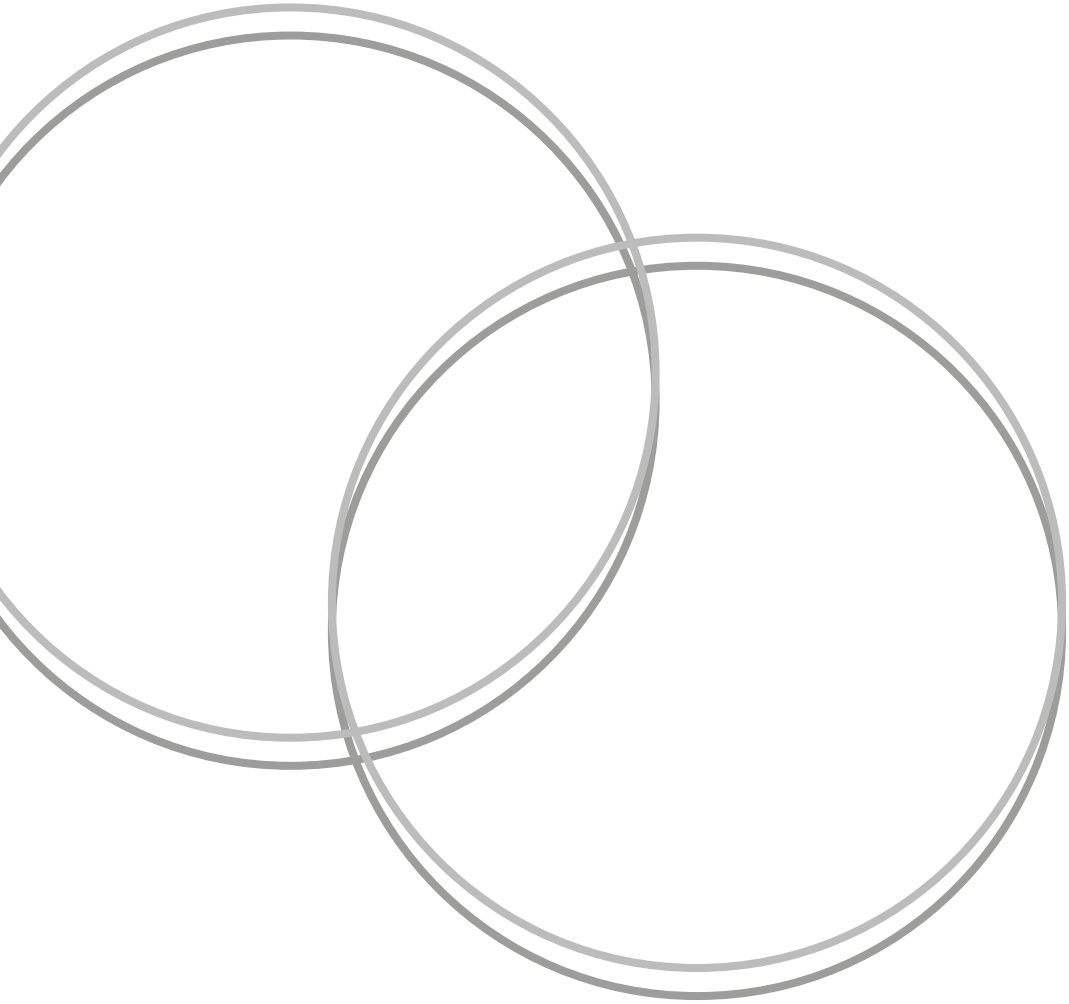
Oxford University Hospitals
NHS Foundation Trust

Pain management

Lumbar multifidus stimulation

Information for patients



Introduction to lumbar multifidus stimulation

We have seen you in clinic as you have had lower back pain for a long period of time. Lumbar multifidus stimulation has been offered to you as a treatment for your pain. This leaflet tells you about this treatment, and gives you the information to decide whether this treatment might be the right thing for you. If you wish to know more about this treatment, and it is not covered in this leaflet, please contact us. The contact details can be found on the last page of the leaflet.

What is lumbar multifidus stimulation?

Lower back pain can arise from stress and injury to structures in the spine. One of the structures important for stabilisation is a muscle called the multifidus muscle, which runs on either side of the spine. Muscles are activated by signals in nerves connected to them, and in some patients, the multifidus muscle becomes weaker over time due to a reduction in these nerve signals. As the muscle becomes weaker, it offers less support to the spine, which can cause chronic lower back pain.

With lumbar multifidus stimulation, the specific nerves running to the multifidus muscle are targeted with electrical stimulation. When these nerves are stimulated, they activate the multifidus muscle, with the aim of strengthening the muscle and improving lower back pain.

The stimulation is delivered via two electrodes which sit either side of the spine in the lower back. The electrodes are connected to a battery, which powers the system. The entire system is implanted under the skin.

What are the benefits of lumbar multifidus stimulation?

Lumbar multifidus stimulation is a restorative treatment, which means that benefits might not be apparent immediately after surgery. It takes time for the function of the multifidus muscle to improve. With regular stimulation you might experience an improvement in your lower back pain and quality of life. You might be able to reduce the amount of pain medication you can take.

Lumbar multifidus stimulation is a new treatment, and Oxford is one of several centres around the United Kingdom that can offer it to patients. Trials have shown a statistically significant improvement in back pain, function, and quality of life following stimulation for patients deemed appropriate to receive this therapy.

How is the operation performed?

You will be seen in the pre-operative assessment clinic to ensure you are fit for surgery and that there are no medical reasons why we should not proceed. You will be asked to stop taking any blood thinning medication before surgery (do not stop taking any medication until you have been told how and when to do so).

You will need to fast before the procedure. You should not eat or drink for 6 hours before surgery. The procedure is performed as a day case, and you do not need to stay in hospital overnight afterwards. You will be asked to bring someone in with you who can take you home safely afterwards.

The neurostimulator will be implanted in an operating theatre environment usings X-rays to help guide the electrodes to the correct area on either side of the spine. You are given some sedation to make you feel comfortable (but not usually a general anaesthetic). Local anaesthetic is used around where the electrodes are inserted and where the battery is implanted. The battery is typically implanted under the skin in the upper buttock/lower back area. The site of implant will be discussed with you before surgery. Once the electrodes are implanted, they are connected to the battery and the incisions are closed, usually with dissolvable stitches and glue.

Are there any possible complications?

As with all types of surgery, there are risks of complications. These complications include:

- Infection: This occurs at a rate of about one case in thirty. If the system becomes infected, it is necessary remove in its entirety to allow the infection to be treated. Typically, the system can be re-implanted after 6 months.
- Bleeding.
- Failure to relieve pain or an increase in pain.
- Pain related to the incision and pain around the battery site which may persist.
- Hardware complications - breakage and/or migration of electrodes.
- Need for future surgery to remove the device if it is not effective.

What should I expect after the procedure?

It is common to feel minor discomfort around the incisions and battery site after the procedure. This may require a short course of simple pain killers. The incisions are waterproof as they are covered with glue. You can get them wet straight after surgery, but they should not be soaked in water (i.e., bathing/swimming) for 6 to 8 weeks. If there is any swelling/redness or discharge from the wounds you should contact the neuromodulation team directly rather than your GP. You should keep active but avoid twisting/bending/lifting/stretching movements for the first 6 weeks. This will allow healing and will reduce the risk of the electrodes becoming misplaced/broken.

The device will not be switched on when it is implanted. You will be seen 2 weeks after surgery for a check of the wounds and the device will be activated at this point. You will be shown how to use the device and how to carry out stimulation sessions.

Patients are advised to carry out two 30 minute sessions per day, once in the morning and once in the evening. Most patients feel an improvement in their ability to perform activities in 6 to 16 weeks. Patients report their back pain beginning to improve shortly after they notice an improvement in function. Data from trials suggests this improvement in function and pain can continue over time and are lasting.

What does Lumbar Multifidus Stimulation feel like?

Most patients report the stimulation feels like a pleasant series of deep muscle contractions in the lower back region, akin to a deep muscle massage.

Frequently asked questions

Will I be able to drive?

You must not drive with your stimulator on. This ensures that you can be in fully control the of vehicle, without any distractions.

Can I travel on an aeroplane?

Yes, your system should not be affected by flying. At airport security you must show your device identification card and request a hand search. Security personnel may use a handheld wand but ask them not to hold the wand near the stimulator battery for any longer than is needed.

Can I have an MRI scan?

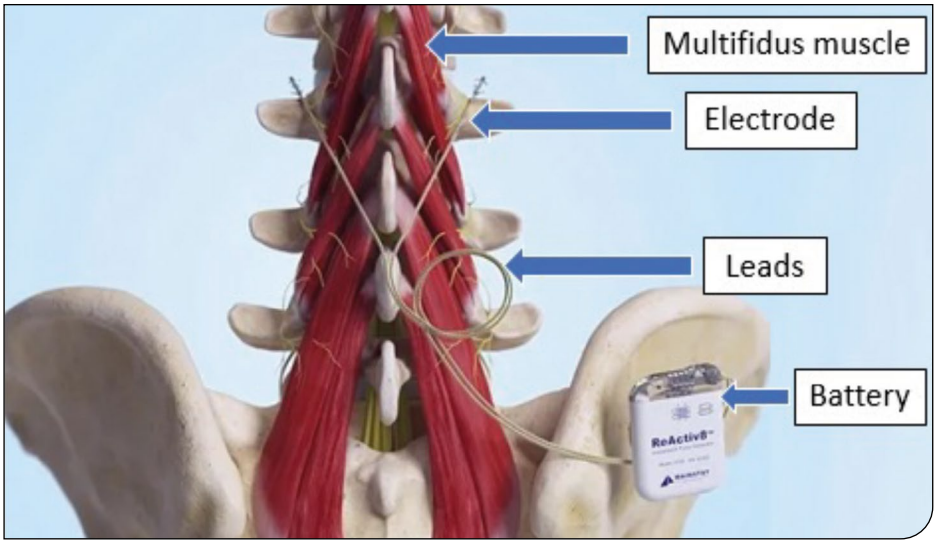
Safety of MRI with a multifidus stimulation system has not been evaluated. Patients who have been implanted with multifidus stimulation system cannot have an MRI scan. Should an MRI be required, the system will need to be surgically removed first. The MRI safety may be changed in the future, subject to further industry tests.

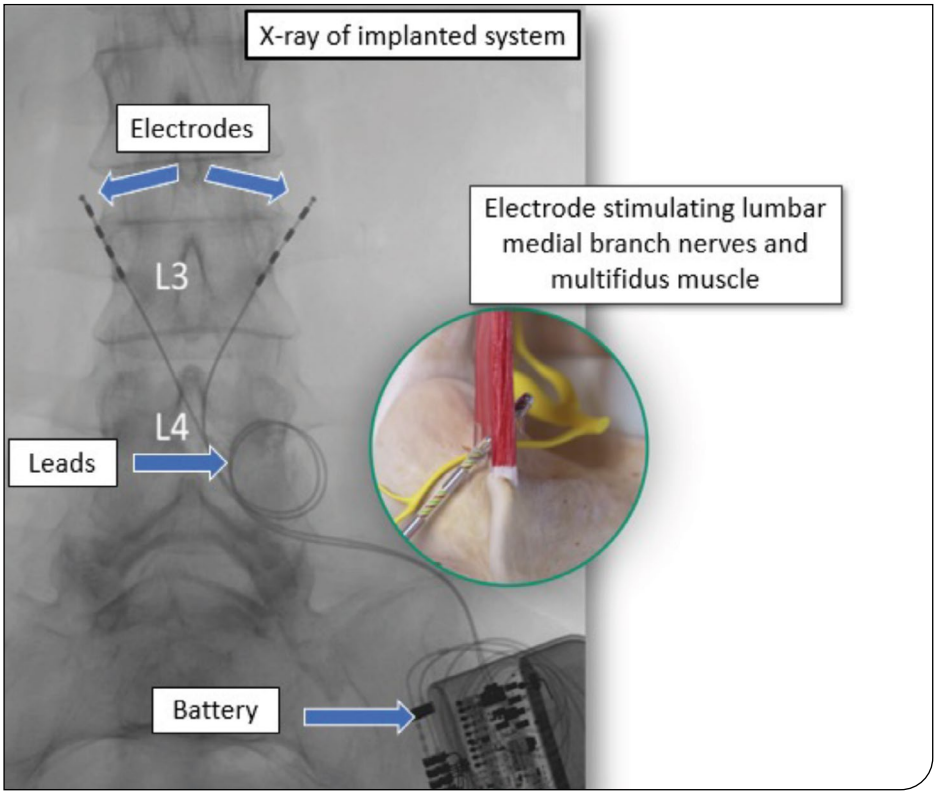
Contact details

Neuromodulation nurses

Telephone: 01865 231 876

Email: neuromodulation@ouh.nhs.uk


Multifidus muscle
Electrode
Leads
Battery


X-ray of implanted system
Electrodes
L3
L4
Leads
Electrode stimulating lumbar medial branch nerves and multifidus muscle
Battery

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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