PAINLESS

PATIENT FACTSHEET

TITLE

Neuromodulation Stimulator Implants for Regional Pain

SUMMARY

Neuromodulation or 'stimulator' implants have been used for a very long time to treat complex, treatment-resistant pain. This factsheet explains how and why you may consider this procedure, as well as the potential risks and recovery requirements.

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NEUROMODULATION STIMULATORS

Regional pain refers to any persistent pain condition involving specific regions of the body, outside of the spine. It includes conditions such as complex regional pain syndrome (CRPS), peripheral neuropathy, headaches or abdominal pain. There are various procedural approaches that may be used as part of a multidisciplinary treatment plan to treat regional pain conditions.

Stimulators – also called neuromodulation devices – have been used to address spinal pain for a long time. They may also be used for persistent regional pain. In the past, stimulators had a low success rate. However, newer devices, which offer a range of modes, appear to be more successful, reducing pain for more than two-thirds of the people who use them.

Neuromodulation stimulators work by delivering high-frequency electrical pulses to the dorsal root ganglion (DRG). The DRG is part of your nervous system in an area close to the spine. The DRG plays a key role in modulating pain signals. Stimulation of the DRG can interrupt pain signals, preventing them from traveling through to the brain and thereby reducing your pain.

Due to the higher risks involved with implanted devices, stimulators are generally recommended only as a last resort for patients who have undergone previous procedures, surgeries and lifestyle changes with limited success at achieving pain relief.

The devices themselves are expensive – approximately $40,000 AUD per device. They also require frequent adjustment, by either the wireless programmer or, in some cases, manually in surgery.

STEP BY STEP

Receiving a neuromodulation implant is a two-step procedure. First, you undergo a trial procedure. This allows you to experience neuromodulation and determine whether it is effective at lessening your pain, before investing in a device.

PART A: TRIAL STIMULATION

You are placed under light anaesthetic sedation. Small incisions are made and the leads are placed using specialised needles. The leads are connected to a temporary external stimulator which delivers high-frequency stimulation to the area where you are experiencing pain. The external stimulator is disconnected and the leads are removed. Once the procedure is complete you are moved to the recovery room. Once you are awake, we measure your pain levels to determine the success of the stimulator. If the trial is successful, a stimulation implant procedure can be considered.

PART B: IMPLANTATION OF PERMANENT SYSTEM

You are placed under light anaesthetic sedation. Small incisions are made to place the leads. The positioning of the leads will depend on where you experience pain. A small pocket is made under the skin, usually in the gluteal area. There, the implantable pulse generator (IPG) battery is placed. Once the procedure is complete, you are moved to the recovery room. Post-procedure, you will receive a wireless programmer which you can use to adjust the stimulation.

RISKS & SIDE EFFECTS

High-frequency 10,000 Hz stimulation and burst stimulation are now used more frequently than tonic stimulation. Tonic stimulation – the older model – used lower frequencies, causing people to feel tingling sensations in the area of pain relief. While high-frequency stimulation isn't typically associated with sensations in the stimulation area.