

Sacral Neuromodulation

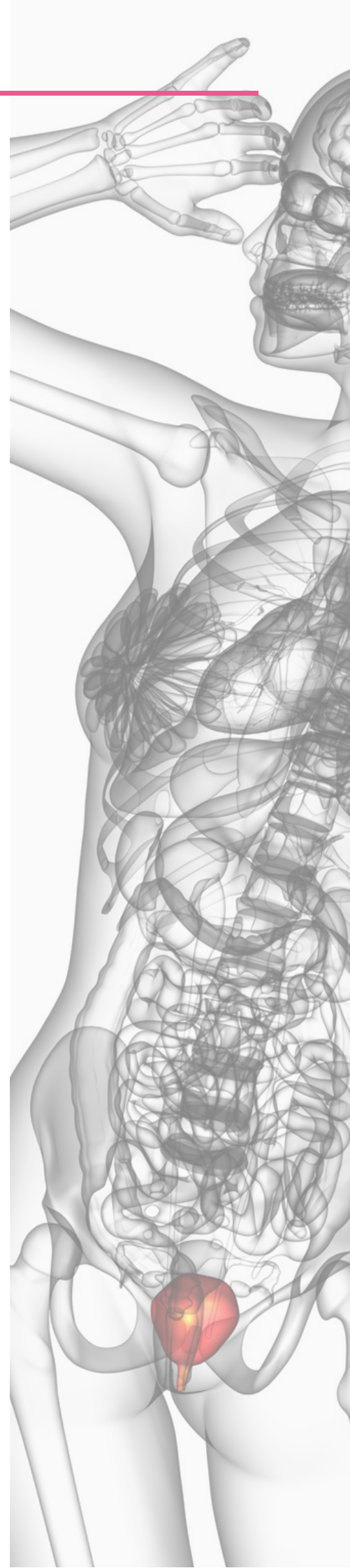
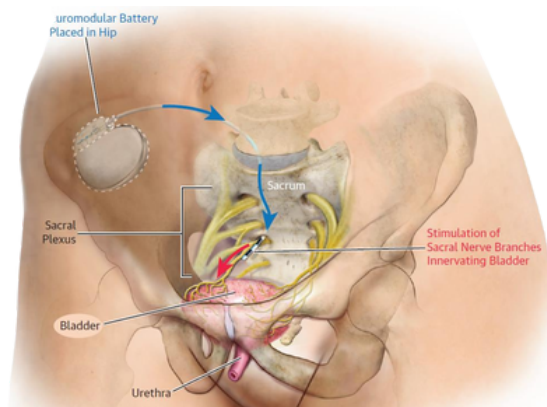
THE UROGYNÆCOLOGICAL SOCIETY OF AUSTRALASIA

Aim

To improve the symptoms of overactive bladder (the frequent and urgent need to pass urine which can be associated with leakage of urine). Sacral neuromodulation (SNM) is a procedure that is used to treat women when their symptoms do not improve with bladder training and oral medications. Research shows that over 80% of women get significant improvement or cure with SNM and 70% of women remain satisfied at five years. Sacral neuromodulation is thought to work by restoring normal signaling between the brain and the bladder via a device which generates continuous electrical pulses. The other commonly used treatment for women with medication-resistant overactive bladder is injections of botulinum toxin into the bladder. The main advantages of SNM are that the procedure involves a trial before commitment to the permanent device and that there is no risk of needing to self-catheterise. The main disadvantage of SNM compared to botulinum is that around 10% of patients require a second operation within 5 years due to device problems or infection. Additionally, some older devices are not MRI compatible, however, new implants are now MRI compatible.

Surgical technique

The procedure is minimally invasive and involves two stages. Firstly, a temporary device is used to determine if the procedure will improve your symptoms. After a trial period of at least two weeks, the permanent device will be implanted if the trial has been successful as in the diagram below. Both stages are performed in an operating theatre using local anesthesia and either sedation or a general anaesthesia (fully asleep). The first procedure involves placing a permanent electrode near to the sacral nerve through a tiny incision in your back. This electrode is then tunneled under your skin and brought out through another small incision and connected to the temporary device. You will be taught how to adjust the pulses being sent from the device and you will be able to assess whether your symptoms are improving. A bladder diary can be useful for this purpose. Stage 1 or trial SNS is a “trial before you buy” test to evaluate if the bladder symptoms resolve.



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If, following the trial stimulation there is a greater than 50% reduction in your urgency, frequency and urge incontinence we would then proceed to Stage 2, which is implantation of the permanent pacemaker for your bladder. This involves disconnecting the temporary device and then connecting a permanent pulse generator which is implanted under your skin on one side of your back or bottom. The batteries in this device usually last five to seven years before needing to be replaced. To be effective the device needs to be turned on continuously: if you turn your device off, your symptoms will return. If the trial is unsuccessful, you will require a small procedure to remove the electrode. Surgery will be covered with antibiotics to decrease the risk of infection and blood-thinning agents may be used to decrease the risk of clots forming in the postoperative phase.

Serious complications are rare with this type of surgery. However, no surgery is without risk and the main potential complications are listed below.

- Failure rate of 10-20%
- Infection at site of lead or device implantation of 5-10% which will require removal of the device
- Pain at site of lead or device implantation (usually temporary) of 10-15%
- Lead migration leading to the device becoming ineffective of 5%
- Reoperation for device problems or infection of 10-20% within 5 years
- Clotting in the legs or lungs in 1%.

In Hospital

In most instances this is usually performed as a day procedure. However, because the procedure is performed either under sedation or general anaesthesia, you will not be able to drive yourself home. Skin sutures are absorbable and do not need to be removed.

Recovery

This procedure is relatively minor however you may experience discomfort or pain at the operation site (your lower back) during the first week post-operatively. During your trial period you will be taught how to turn your device on and off and how to titrate the intensity of the pulses for maximum effect. It will be helpful for you to keep a bladder diary during this time so that you can decide with your doctor whether to proceed with implantation of the permanent device.

This statement has been developed by the Urogynaecological Society of Australasia (UGSA).

Disclaimer: This information is intended to provide general advice to practitioners. This information should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances.

