

## OVERACTIVE BLADDER TREATMENT: PTNS, SNM AND BOTOX®

### Introduction

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Overactive bladder is a group of urinary symptoms that include frequency, urgency and urge incontinence. Basically, it is a feeling of needing to go to the toilet very often, day and night, often with a sudden strong urge and loss of control if you do not get there in time. When lifestyle changes and medications aren't enough, your urologist may offer some minimally invasive treatment options, especially if the symptoms are distressing, interfering with daily activities and work, or there is significant leakage and you have to use pads or pull-ups all the time.

### What are the alternatives?

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There are three main procedures used in managing OAB. The first two options, SNM and PTNS involve bladder nerve stimulation using electrical pulses, either directly into the sacrum (lower back) or indirectly up the leg through the tibial nerve that runs next to the bladder nerves. The third option involves injecting small amounts of Botox® directly in the bladder to relax the muscle and reduce irritability. There is a 50% chance of improvement with PTNS, and 80% chance of success with Botox® or SNM. Medicare rebates are available for all three treatment options.

**Percutaneous nerve stimulation (PTNS)** is done by placing a small acupuncture needle near the ankle. Electrical impulses are sent to the tibial nerve that runs from the ankle up the leg to the sacrum (lower back), where the sacral nerves that control the bladder are located. These pulses help to modify the signals that control bladder function.

### **Sacral neuromodulation (SNM)**

A pacemaker (pulse generator with battery) is implanted in the gluteal (buttock) area and transmits electrical pulses to the sacral nerve. These pulses regulate nerve signals and rhythm so the bladder is able to function normally. The pulses are controlled by a handheld controller that communicates with the generator through a magnet. The controller is used to adjust the voltage and swap between programs to find the most effective settings. The device is MRI-compatible. The pacemaker battery needs to be changed every 5-7 years, unless you opt for a rechargeable one. If your bladder does not empty fully (high residual) or you have co-existing bowel symptoms and faecal leakage, SNM will treat those problems as well.

**Bladder botulinum toxin (Botox®)** injections can be used to relax the bladder muscle and reduce OAB symptoms and leakage. If it works, you will notice a difference within the first 1-2 weeks. The effects last 6-12 months, and repeat treatments are given when the symptoms return.

Living with OAB <https://www.youtube.com/watch?v=sUU3WYkGplU&t=12s>  
Taking control of OAB <https://www.youtube.com/watch?v=60dbSctANHY&t=211s>  
PTNS (2:47 mins) <https://www.youtube.com/watch?v=-YpwjTcehVA>  
Medtronic® SNM (5:13 mins) <https://www.youtube.com/watch?v=Evega3-rZdE>  
Botox® (1:51 mins) <https://www.youtube.com/watch?v=z2Ce086x0j0>

### What do these procedures involve?

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**Percutaneous nerve stimulation (PTNS)** is performed in the office by transmitted electrical impulses to the sacral nerve through a needle placed near the ankle. In the initial phase, 12 treatments are administered weekly over 3 months. If successful, 5 further treatments are given over 3 months as a tapering phase. Finally, the treatment is given once a month on a maintenance schedule.

**Sacral neuromodulation (SNM)** is a two-phase procedure that is performed in hospital under sedation or general anaesthetic. In the first operation, a test electrode is placed and an external device is used to deliver the electrical pulses. This allows Dr Ooi to run a trial to assess how well it works. The second operation is then performed to insert a permanent electrode attached to the pulse generator and battery. Patients may choose to skip the test phase and proceed directly to the implant in a single operation for the following reasons (1) Alternative treatment options are limited if lifestyle changes and medications have not worked; (2) SNM has an 80-90% success rate in carefully selected patients; (3) The test phase is too short to try all the different programs that can be used; (4) Only one hospitalisation and theatre session is required, hence reducing out-of-pocket costs, risks and complications

**Bladder botulinum toxin (Botox®)** is performed by passing a fine needle into the bladder through a cystoscope and injecting tiny amounts of Botox® into the bladder muscle. The injections are done under local or general anaesthesia as a day procedure.

### What are the risks of surgery?

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All operations have risks, which are listed below:

#### **PTNS**

Minor discomfort or swelling for 24 hours at the needle site near the ankle

#### **SNM**

Infection

Device malfunction or lack of effect, requiring surgical removal

#### **Botox**

Minor stinging, burning and discomfort for 1-3 days

Urinary retention 6% requiring self-catheterisation

### What should I do before surgery?

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- Do not eat, drink, or chew gum for 6 hours before surgery
- If you are on blood thinning medication, discuss this with Dr Ooi
- If you are obese, losing weight makes surgery easier and improves outcomes
- If you smoke, quitting makes anaesthesia safer and reduces complication rates

### Discharge information

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Botox is performed as a day procedure, whilst SNM is done with an overnight stay in hospital. You can drive after 24 hours if you are feeling fine and return to work without restrictions. Please contact the rooms, hospital ward or nurse manager if you have any concerns, such as excessive pain, fevers, chills, wound problems, difficulty passing urine or feel unwell.