

Percutaneous Tibial Nerve Stimulation (PTNS)

A Guide for Women

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What is PTNS?

Bladder function is regulated by a group of nerves called the sacral nerves plexus, which also control the function of the lower end of the bowel - the rectum. By stimulating these nerves through gentle electrical impulses (neurostimulation), your bladder (and/or rectal) activity can be changed in favour of function rather than malfunction. One way to do this is with PTNS, an outpatient treatment for a number of conditions affecting the bladder and the bowel such as: overactive bladder (OAB) symptoms, which include urinary frequency (passing urine frequently), urgency (having to rush to the toilet to pass urine), urge incontinence (leaking urine when experiencing urgency) and nocturia (waking up at night to pass urine); voiding dysfunction (VD) of the non-obstructive type (difficulty in emptying the bladder satisfactorily) and fecal incontinence (FI) which refers to suboptimal control over passing wind and feces. All these conditions can limit patients' activities and affect their quality of life.

PTNS involves stimulating a nerve that shares the same root as the nerve supply of the bladder and the rectum. This is done using a thin acupuncture-like needle inserted through the skin above the ankle, and has been shown to help treat the above three conditions (OAB, VD and FI) with variable success.

Why do I need this treatment?

If you suffer from overactive bladder symptoms, PTNS is offered when other more conservative measures have not worked for you. You will have been offered fluid intake advice, reduced your caffeine intake, tried bladder retraining and pelvic floor exercise, been given lifestyle advice and been offered a trial of medications that can suppress urinary urgency. As PTNS is a relatively new treatment, we do not yet know enough about how well it works to use it routinely for all patients. PTNS can be offered when alternative treatments such as botulinum toxin or sacral nerve stimulation are either unsuitable for you or not acceptable to you.

If you suffer from fecal incontinence, PTNS may be recommended if pelvic floor muscle training and medications did not help and other interventions were not suitable or acceptable.

If you suffer from mild non-obstructive voiding dysfunction, PTNS might be useful to reduce the need for catheterization (clean intermittent self-catheterization) when other interventions are not suitable. The evidence of the effectiveness of PTNS in treating OAB is stronger than its effectiveness in treating FI or VD.

What does the treatment involve?

You will be rested in a comfortable semi-sitting position. A thin, slender acupuncture-like needle will be inserted above the inner side of your ankle. Treatment can be on either leg, though one works better than the other for some patients. An adhesive pad will be applied to the foot to complete the circuit. It is important to insert the needle at the right location and adjust the strength of stimulation. The nurse will check this by asking questions about your sensation and observing your toe movements. The treatment session lasts half an hour. You will need to sit during this time and not move your leg. We advise you to bring something to distract you, such as personal music, a magazine or a book. You will need 12 sessions, typically one week apart, which will last about 3 months without interruption. Most patients will need top up sessions after the initial 3 months course at variable intervals. Because patients may experience the sensation of PTNS treatment in different ways, it is difficult to say what the treatment will feel like to you, but it is typically well tolerated.



How effective is this treatment?

Research has shown that around two out of three patients who have PTNS for OAB experience significant improvement in their symptoms. However, it may take up to 8 weeks before you see any change. It is important to complete all 12 sessions before evaluating the impact of this treatment and deciding whether it is appropriate to continue or not. Many experience relapse over time and may benefit from top up sessions.

Are there any risks or side effects?

You may experience very minor irritation, redness and/or bleeding where the needle has been inserted and there may be a slight aching around the ankle after the treatment. You might experience short lived tummy discomfort or toe numbness. These symptoms are very short lived and will usually go away within a few hours. Extremely rarely haematoma (collection of blood under the skin) or nerve injury can happen. The main limitation of this technique is the need to attend for 12 weekly sessions without interruption. If you miss one session, treatment can be continued. If you miss more than one session, a fresh count will usually need to start again.

Are there any alternatives?

Yes; there are, however this will need to be in line with the local protocol at your hospital and after discussion with your specialist and other doctors through a multidisciplinary approach.

Other treatments for OAB may include:

- Botulinum toxin A injection into the bladder wall: This requires only one treatment, hence it is less disruptive. It can be done under local anaesthesia. There is a small risk of difficulty in passing urine afterwards, thus requiring catheterization. The effect usually lasts for 6-9 months and the treatment can be repeated when the effect wears off.
- Sacral Nerve Stimulation: This technique entails direct stimulation of the sacral nerves which control bladder and bowel function. It is a more invasive procedure and it requires general anaesthesia. It is usually done in two steps and it requires life-long follow up. The evidence for effectiveness of this technique is stronger than that for PTNS in the long term.

- Clam cystoplasty: This operation entails expanding the bladder using a bowel segment. The aim of this is to reduce the effect of bladder muscle contractions. It is a major operation that requires life-long catheterization and follow up and is performed as a last resort.

Other treatments for voiding dysfunction include:

- Clean intermittent self-catheterization: You will be taught how to do this by the nurse and will need to do this 1-4 times a day depending on your fluid intake and your bladder's ability (or lack of it) to empty itself.
- Permanent catheterization: This can be via the urethra (water pipe) or via a small hole made into the lower part of the tummy (suprapubic catheterization). The catheter will need to be changed by the nurse every 6-12 weeks.
- Both catheterisation options are associated with a risk of recurrent cystitis (bladder infections).
- Sacral Nerve Stimulation: This technique entails direct stimulation of the sacral nerves which control bladder and bowel function. It is a more invasive procedure and it requires general anesthesia. It is usually done in two steps and it requires life-long follow up.

Other treatments for fecal incontinence include:

- Sacral Nerve Stimulation: see above description.
- A permanent colostomy: An operation to divert the end of the bowel to exit via a stoma in the tummy wall which is then covered by a bag that sticks to the skin and can be changed regularly when full.
- Other operations to reconstruct the anal sphincter.

For more advice and information check out our leaflets at <http://www.iuga.org/?patientinfo>.