Torbay and South Devon
NHS Foundation Trust

PATIENT INFORMATION

Transcutaneous Tibial Nerve Stimulation for Overactive Bladder

Physiotherapy Advice

What is Transcutaneous Tibial Nerve Stimulation (TTNS)?

Transcutaneous Tibial Nerve Stimulation (TTNS) is a non-invasive treatment method for an overactive bladder which can be done from the comfort of your own home with a Transcutaneous Electrical Nerve Stimulation (TENS) device.

An overactive bladder is when you feel the need to go to the toilet quickly. You may notice that you leak urine if you do not get to the toilet fast enough. Due to this you may notice that you are going to the toilet more regularly during the day and possibly being woken at night by your bladder to pass urine.

How it works

Two surface electrode pads are attached to the inside aspect of your lower leg, these electrodes are then attached to a hand-held machine called a Transcutaneous Electrical Nerve Stimulation (TENS) device, which sends small electrical impulses to the electrode pads, which you may feel as a tingling sensation. This will stimulate your posterior tibial nerve, which is a sensory-motor nerve originating from the base of your spine (L_4-S_3). Stimulating this nerve is a form of neuromodulation, as this nerve shares the same nerve root in your spine as the bladder which has been shown in recent research to reduce overactive bladder symptoms. By helping to calm down the bladder, it will help you to increase the bladder storage capacity and reduce the sensation of urgency.

Who can use TTNS?

This treatment method is indicated for women who have been diagnosed by a health professional with an overactive bladder / urinary urgency / urinary urgency incontinence

Your Pelvic Health Physiotherapist may discuss this type of treatment with you when other conservative treatment methods have been unsuccessful. You may have previously been given fluid advice, a personalised pelvic floor muscle training program, smoking cessation advice and your GP / urogynecologist may have tried a trial of medications that can calm down your bladder.

Who cannot use TTNS?

- If you have varicose veins on the inside aspect of your lower leg (where the electrodes are applied)
- If you have a change in your sensation on the inside aspect of your lower leg (where the electrodes are applied)
- If you are pregnant / if you are trying to get pregnant
- If you have a urinary tract infection – however, once this is treated and resolved you can re discuss this treatment option with a health professional
- If you have been diagnosed with Vulvovaginitis
- If you have a malignancy
- If you have had urogynaecology surgery within the last 3 months
- If you have a pacemaker or implanted cardiac defibrillator
- If you have had any previous surgery on your lower leg where metal work has been used, such as; screws, wires, implants or metal plates have been inserted (do not place the electrode pads over any metal work)
- If you are epileptic (further discussions are needed with your GP/specialists)
- If you have an open wound on the inside aspect of your lower leg (do not place the electrode pads on or near any open wounds)

Side effects

You may get some mild cramping or pain over the inside aspect of your lower leg and into your foot, or some skin irritation from the electrode pads. If you develop a skin reaction to the electrode pads, stop the treatment and liaise with a health professional.

Setting up your TENS machine

Before starting read the manufacture guidelines for your TENs machine and familiarise yourself with your device. As well as your TENs machine you will need at least two re-usable self-adhesive electrode pads which are applied directly to your skin. If after one session you notice any skin irritation from the electrode pad, please stop the treatment and liaise with a health professional.

Recent research recommends completing a 12-session treatment programme, with 1 – 2 sessions per week, each treatment session should be for 30 minutes. If needed / indicated, you can also do additional top up sessions after this.

We would advise that you remain sitting in a comfortable position during the 30 minutes of your treatment session.

Where to place the self-adhesive electrode pads

1. Place the first electrode pad 2cm behind the ankle bone on the inside aspect of your leg
2. Place the second electrode pad 3 – 5 cm higher (towards the knee) ensuring that you keep the electrode pad in line with your first pad

3. Connect the wires to the pads. Connect the electrode behind the ankle to the black lead and the electrode further up the leg to the red lead

What settings to use

Setting	Continuous (C)
Pulse frequency (measured in Hz / Hertz) this indicates the amount of individual pulses per second	20Hz
Pulse Width / Duration (measured in microseconds)	200 microseconds
Pulse Amplitude (measured in milliamps / mA)	10-20 mA

At the end of each treatment session turn the machine off, unplug the wires (carefully tidy these away as they can be fragile), take the electrode pads off your skin and place them back where they came from so that you can use them again for your next treatment session.

Follow the manufacture guidelines in regard to cleaning and storing your TENS machine and the electrode pads.

References

www.nhs.uk/conditions/transcutaneous-electrical-nerve-stimulation-tens/

Self-management of overactive bladder at home using transcutaneous tibial nerve stimulation: a qualitative study of women's experiences | BMC Women's Health | Full Text (biomedcentral.com)

Efficacy of percutaneous and transcutaneous tibial nerve stimulation in women with idiopathic overactive bladder: A prospective randomised controlled trial - ScienceDirect

Treatment for overactive bladder: A meta-analysis of transcu... : Medicine (lww.com)