

Percutaneous Tibial Nerve Stimulation and Implantable Tibial Neuromodulation

Voices for **PFD**



Percutaneous tibial nerve stimulation (PTNS) is a therapy performed in the office to treat conditions that affect the bladder. Examples of these conditions are frequent and urgent urination, urgency urinary leakage, waking up during the night to urinate, and incomplete bladder emptying. PTNS is an option for patients who do not respond to initial treatments.

What is percutaneous tibial nerve stimulation?

PTNS is a procedure performed in the office with a very thin needle, like an acupuncture needle, inserted in an area near the ankle to activate the tibial nerve. The needle is connected to a battery for 30 minutes. There might be some discomfort with the procedure but it is well tolerated. The treatment is performed once a week, up to 12 weeks. Patients will need maintenance treatments monthly and can discuss options with their health care professional.

How does percutaneous tibial nerve stimulation work?

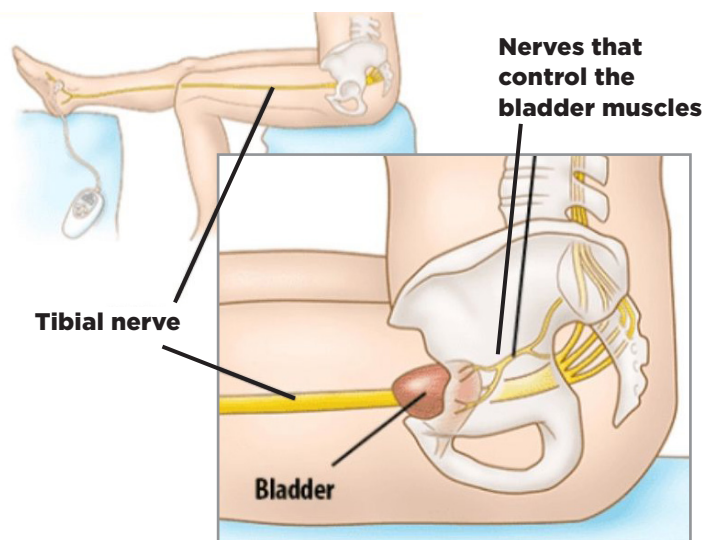
Bladder function requires nerve communication between the bladder and the brain. The procedure helps to stimulate these nerves for improved communication. The tibial nerve travels back up to nerves that affect bladder function. Stimulating the tibial nerve allows the bladder nerves to be stimulated as well. Up to 50-75% of patients will have improvement of urinary symptoms. Patients with pacemakers or pregnant patients should consult with a specialist prior to this procedure.

How is the procedure performed?

Patients come to the office and are placed in a comfortable sitting position with one leg elevated. A small pad, which is connected to a battery, is placed on the leg or foot. Then a very thin needle is gently placed at the inner ankle. The needle is then connected to the battery and the patient feels a tapping sensation at the foot. Once the correct power level is confirmed, stimulation is continued for 30 minutes. The battery is turned off and the needle and pad are removed at the end of the treatment session.

Are there any side effects?

Side effects may include unpleasant feeling at the ankle, skin irritation, or light bleeding with removal of the needle. These side effects are extremely rare.



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LEARN THE TERMS

Tibial nerve: A nerve in the ankle that communicates with a group of nerve in the bladder

Urinary frequency: Feeling of having to use the restroom often in the day and night

Urinary urgency: Strong sense of needing to urinate

Incomplete bladder emptying: Feeling like you are not emptying your bladder after urinating

Urge urinary incontinence: Feeling of a strong sense to urinate and leaking/loss of urine prior to using the restroom

Nocturia: Waking up at night with urgency to urinate

Percutaneous Tibial Nerve Stimulation and Implantable Tibial Neuromodulation

What is implantable tibial neuromodulation?

Implantable tibial neuromodulation (ITN) is a new technology. Similar to PTNS, it stimulates the tibial nerve in the ankle. However, unlike PTNS, the ITN device is permanently placed under the skin near the ankle. The procedure can be done in the office or in a surgical center. If the device has to be removed, it would require a minor procedure. An advantage of placing the device under the skin is that stimulation can be performed at home without an office visit. Insurance coverage and availability may vary based on geographic regions. Please ask your clinician for more information.

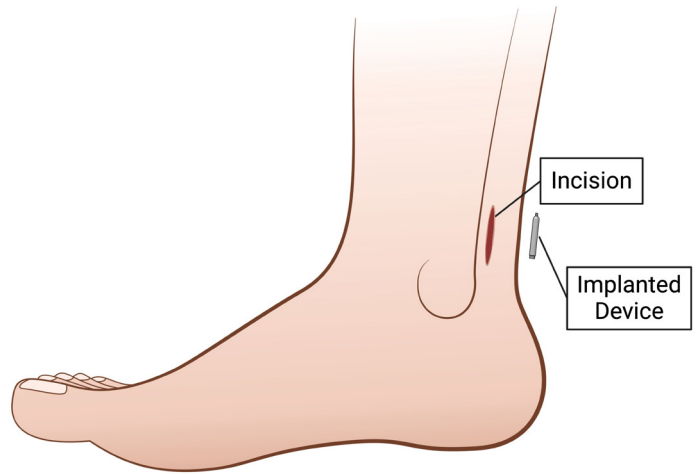
Are there any side effects with ITN?

Side effects may include unpleasant feeling at the ankle, skin irritation, or infection.

Who is not a good candidate for the implantable tibial neuromodulation?

Patients who are pregnant or have any of the following conditions should not receive treatment:

- Have high risk of infection
- Have had surgery at the ankle
- Have open ankle wounds and/or skin sores
- Have any implant at the ankle
- Have severe swelling of the ankles
- Have nerve damage or numbness at the ankle
- Have a history of vascular disease



Area of placement of device. Copyright 2025 American Urogynecologic Society. Created with permission in <https://BioRender.com>

Key Takeaways

1. Percutaneous tibial nerve stimulation is an office treatment to treat urinary frequency, urgency, nocturia, urge urinary incontinence, and incomplete bladder emptying.
2. PTNS requires patients to come to the office once a week for up to 12 consecutive weeks for improvement in symptoms and then continue follow up, typically monthly, to maintain symptom improvements. The treatments are performed for 30 minutes at each visit.
3. PTNS has low risk but requires commitment to regular office visits.
4. Implantable tibial neuromodulation is a new treatment allowing patients to receive stimulation in the comfort of their home through a permanent implanted device at the ankle.