

POSTERIOR TIBIAL NERVE STIMULATION

Percutaneous tibial nerve stimulation (PTNS) , also referred to as posterior tibial nerve stimulation, is the least invasive forms of neuromodulation used to treat overactive bladder (OAB) and the associated symptoms of urinary urgency, urinary frequency and urge incontinence. These urinary symptoms may also occur with interstitial cystitis and following a post-radical prostatectomy. Outside the United States, PTNS is also used to treat fecal incontinence.

PTNS can be used as a primary therapy. However, treatment for Overactive Bladder and Fecal Incontinence begins with conservative therapies including pharmacology. There are a variety of OAB drugs available that generally produce similar overall efficacy and side-effects.[1] Nearly 80% of patients discontinue use (mean of 4.8 months) of drugs within the first year[2] with as high as 17% of discontinuation being due to adverse side-effects.[3] Neuromodulation is emerging as an effective modality to treat patients who are not successful with conservative methods and its demonstrated efficacy has been the topic of multiple publications.[4][5]

Procedure - A patient sits comfortably with the treatment leg elevated. A fine needle electrode is inserted into the lower, inner aspect of the leg, slightly cephalad to the medial malleolus. As the goal is to send stimulation through the tibial nerve, it is important to have the needle electrode near (but not on) the tibial nerve. A surface electrode (grounding pad) is placed over the medial aspect of the calcaneus on the same leg. The needle electrode is then connected to an external pulse generator which delivers an adjustable electrical pulse that travels to the sacral plexus via the tibial nerve. Among other functions, the sacral nerve plexus regulates bladder and pelvic floor function.

With correct placement of the needle electrode and level of electrical impulse, there is often an involuntary toe flex or fan, or an extension of the entire foot. However, for some patients, the correct placement and stimulation may only result in a mild sensation in the ankle area or across the sole of the foot.

The treatment protocol requires once-a-week treatments for 12 weeks, 30 minutes per session. Many patients begin to see improvements by the 6th treatment. Patients who respond to treatment may require occasional treatments (~ once every 3 weeks) to sustain improvements.

PTNS is a low-risk procedure. The most common side-effects with PTNS treatment are temporary and minor, resulting from the placement of the needle electrode. They include minor bleeding, mild pain and skin inflammation.

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