



### What's is PTNS?

Percutaneous Tibial Neurostimulation (PTNS) is a procedure in which a 34 gauge needle is inserted into the tibial nerve pocket of a patient, connected to the NURO™ device (see figure 1) by Medtronic, turned on to send electrical pulses to the afferent fibers of the tibial nerve, to help patients with overactive bladder (OAB) improve their quality of life.



Figure 1



Figure 2

### What is happening in the treatment?

The patient is in a comfortable position with lower extremity slightly externally rotated to expose medial malleolus. The area is prepped with an alcohol swab and a 34 gauge needle is inserted to the tibial nerve pocket. To find the tibial nerve pocket use three finger widths superior to the medial malleolus, using the middle of the three fingers, move that finger one finger width medial to its starting position. The needle will be inserted with a 60 degree angle toward the toes with two aggressive taps. A motor or sensory response is to be validated or seen before the NURO™ system is attached and turned on. All materials needed are shown in figure 2. After a motor or sensory response is noted, the intensity is turned on. This will vary per patient. Figure 4 shows afferent and efferent pathways with bladder reflex.

Treatments are 30 minutes sessions, once a week for a recommended 12 week period followed by a maintenance program of once a month for three months.

No patient has reported a negative feeling during insertion process.

### Voids in 24 Hour Pre Treatment and at Current Treatment

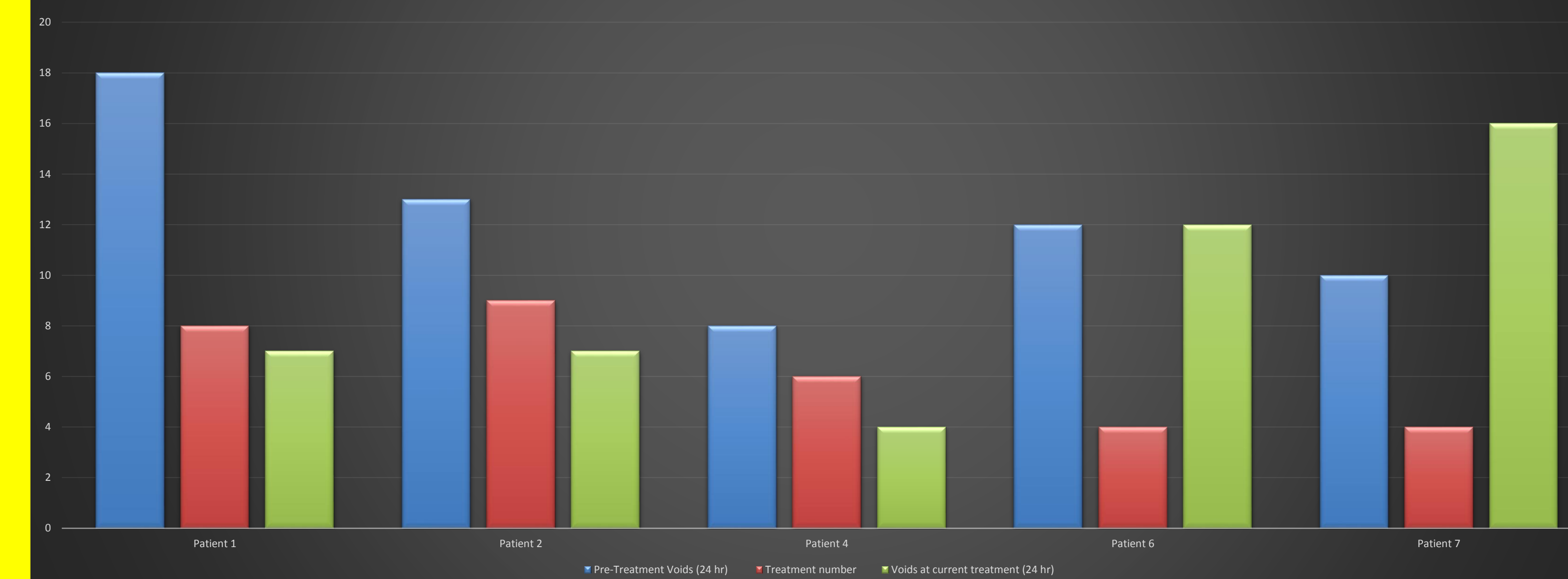


Figure 5

### Who is using this for treatment?

Currently at Parklane West, there are seven patients being treated for OAB under the NURO™ system. Two males and five females.

**Patient 1:** Male History- diabetes, R BKA, OAB X 2 years, tried a regimen medications. # of voids in a 24 hour period before treatment- 16-18  
Intensity settings by treatment: 2,3,2,2,2,2,3,3

**Patient 2:** Female History- HTN, history of falls, DM2, neuropathy, Alzheimer's stage 1, L TKR, R THA, h/o nephrectomy. Voids per night before treatment 6  
Intensity settings by treatment: 3,3,5,7, 4,4,1, 2

**Patient 3:** Female History:- Stage 3 dementia, ESRD, systolic CHF, HTN, GERD, anemia, DM2, h/o CVA. # of voids in a 24 hour period: 8+  
Intensities by treatment: 3,3,3,4,3

**Patient 4:** Female History- HTN, leukemia, lupus, hernia. Patient complaint: leaky bladder before each void and having to get up 4+ times in the night.  
Intensities by treatment: 2,8,8,5,3,2

**Patient 5:** Male History- Stage 6 dementia, OAB X 4 years, tried toileting schedule with caregiver, DM2, repeated falls. Patient unable to tell caregiver he needs to void.  
Intensities by treatment: 3,3,5,2,4,4,8,1

**Patient 6:** Female History:- R TKA X 3 years ago, vision problems, leaky bladder with dribbling  
Intensities by treatment: 8,1,6, 1

**Patient 7:** Female History:- A-fib, aortic valve stenosis, hypothyroidism, breast cancer, unsteady gait, normal pressure hydrocephalus.  
Intensities by treatment session: 8,8,4,3

All intensities measured in MHz.

Who should not use this treatment for OAB?

- Patients with Pacemakers
- Patients with defibrillators
- Patients who are prone to bleeding
- Patients who are pregnant

### Does it REALLY work?

**Patient 1**-Started with 16-18 voids a day. After 8 sessions was voiding 7 times in a 24 hour period, sleeping 4 hours at night, before treatment was 1-2 hours of sleep in-between voids.

**Patient 2**-Voiding 3-4 times per night, after 3<sup>rd</sup> session reported 1 time per night, continues to report she feels safer getting to the bathroom as she does not have to rush anymore. Used multiple layers in her brief, and now just uses the brief.

**Patient 3**- Voids 4-5 times, but gets a signal and is able to make it to bathroom, currently working with PT to develop a walk to bathroom program, reported drier briefs

**Patient 4**- Now gets up 1-2 times per night, able to sleep longer before having to get up to void.

**Patient 5**- Receives signal to notify caregiver he has to void. Able to safely make it to toilet, sits for a bit before urination is started. Less urine amount by weight on pads and brief in morning according to caregiver.

**Patient 6**- Too early in treatment to see a noticeable change, but reports not making it worse

**Patient 7**- After 4 sessions reports double the amount of voids, held off week 5

Example of worksheet given to each patient is pictured in Figure 3. Results shown in Figure 5.

Figure 3

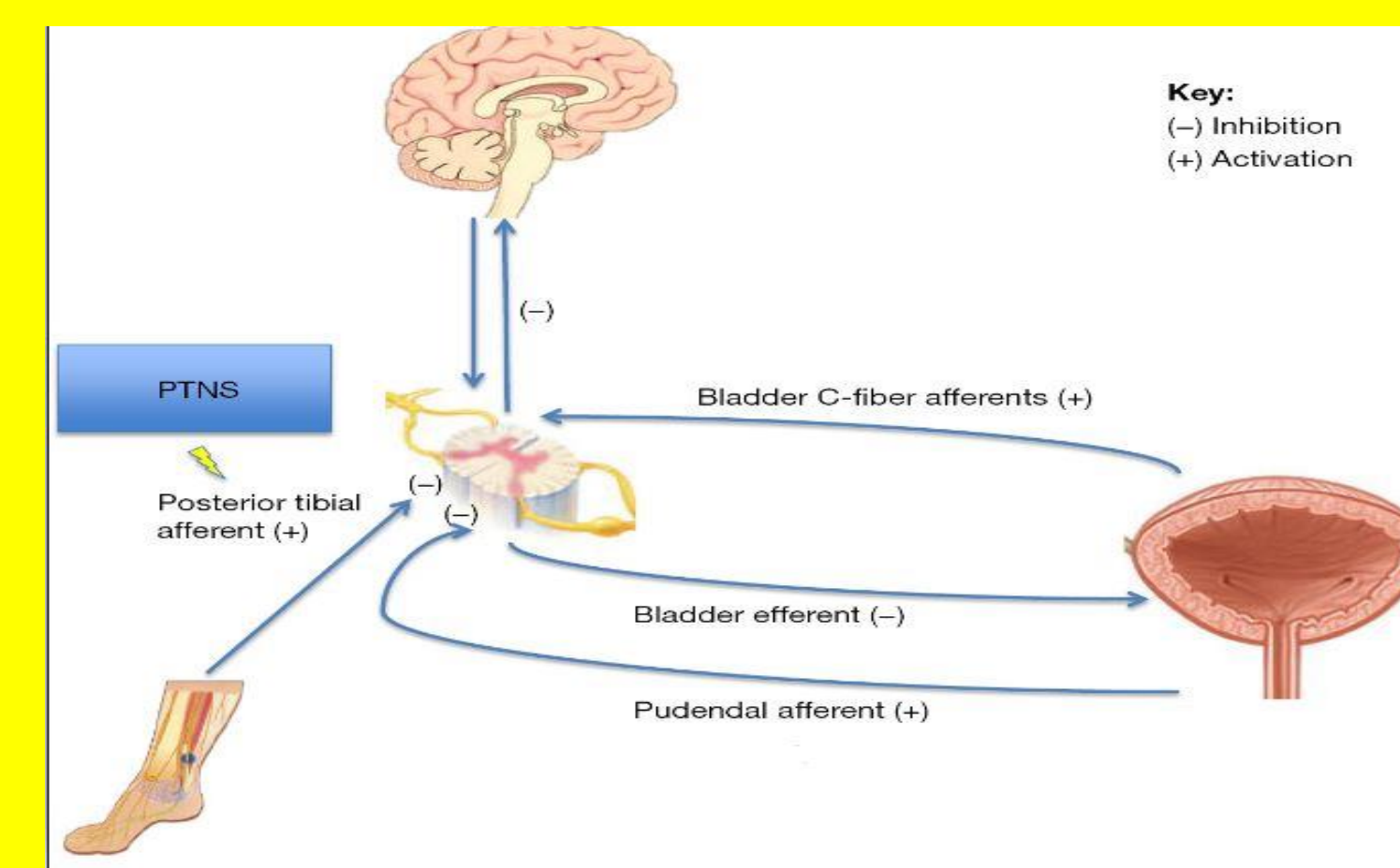


Figure 4

### Think about the benefit and business...?

**From the patients point of view:** More sleep at night, less voiding during the day, treatment does not hurt, "in fact I can nap while the treatment is being done." "I make it to the toilet before I start using the bathroom." "I can tell my husband is not going as much in the night by the weight of his brief and pad."

**From the clinician point of view:** Reduces skin breakdown, reduces risk for infection, reduces fall risk as signal to void comes more quickly and allows more time for patient to safely get to a bathroom, encourages patient to be more active in community. Allows MDs to focus on more patients now that it is accepted under PT scope of practice.

**From the business point of view:** Recently introduced in the scope of practice of Physical Therapists, supports ICD 10 codes N32.81 (OAB), R35.0 (urinary frequency), R39.15 (urgency of urination), and N39.41 (urge incontinence), with CPT code 64566. It is charged as a 30 minute code with a Medicare National Average reimbursement of \$130. Increases productivity of physical therapist as it is an unattended procedure, therefore increasing productivity of team and facility as a whole. Potential to reduce costs associated with UTIs, skin breakdown, falls etc.

### Conclusions / Further Research

-So far at Parklane West, patients are reporting less frequent trips to the bathroom, drier briefs, receiving a signal to urinate, and nursing staff is able to focus on other tasks with less brief changes

- Early on in the treat process, waiting for long term effects over years.
- Further research would include PTNS followed by immediate pelvic floor training to increase benefits?
- Further research regarding the benefits of PTNS and reducing fall risk
- Do some neurological conditions have an opposite effect?

### Contact

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### References

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- 2) "Overactive Bladder Diagnosis and Treatment of Overactive Bladder in Adults: AUA/SUFU Guideline (2012)." *American Urological Association*, 2014, [www.AUAnet.org/OAB](http://www.AUAnet.org/OAB).
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