Painful Diabetic Neuropathy

DIABETES QUALIFIED

Diabetic Neuropathy is common. Nearly 50% of people with diabetes develop a form of diabetic neuropathy over time[1]. Around a third of people with diabetic neuropathy complain of painful symptoms, which usually start in the feet and legs[2]. These symptoms can be described as numbness, tingling, burning sensation, sudden sharp pains or cramps. Painful diabetic neuropathy affects quality of life and increases risk of amputations by up 16x[3].

Features of PDN can include:

- Intermittent or continuous symptoms of pain described as burning, stabbing, tingling, numb, hot, cold or itching in a distal-to-proximal 'glove-and-stocking' distribution, usually beginning in the feet.
- Pain is typically symmetrical and worsens at night.
- Abnormal sensory perception, such as reduced or heightened perception of hot, cold, touch or pin-prick sensation, or allodynia, may be present on examination[4].

While not everyone who develops Diabetic Neuropathy will be affected in the same way, living with a chronic pain condition, such as painful diabetic neuropathy (PDN), can be a frustrating and debilitating experience that refrains patients from attending to even the most basic activities.

To minimise the risk of developing PDN, or to provide some symptomatic relief, patients are recommended to:

1. Optimise their general health, by keeping blood glucose levels, lipids and blood pressure as close to their target range as possible.
2. Check their feet daily at home and get annual foot checks with a health professional.
3. Seeing a Pain Specialist to help explore treatment options, this can include medications or 10khz Spinal Cord Stimulation.

DIABETES QUALIFIED

WHAT IS SPINAL CORD STIMULATION?

Spinal cord stimulation (SCS), also known as neurostimulation, can be an effective alternative or adjunct treatment to other therapies that have failed to manage chronic pain on their own.[5,6]

SCS has been used for around for over 50 years and is a minimally invasive and reversible treatment for chronic pain. Over 34,000 patients undergo SCS procedures each year worldwide.[7]

Research has shown that 86% of people who used 10khz Spinal Cord Stimulation experienced long-term pain relief. More than 60% of people with painful diabetic neuropathy reported neurological improvements such as less numbness, burning, tingling sensations and 10khz Spinal Cord Stimulation was found to improve sleep due to reduced pain.[8]

There are two stages: a trial to confirm the efficacy and followed by the implant procedure. Both procedures are minimally invasive and reversible.

1. During a trial, you will receive a temporary, external neurostimulation system for 1- 2 weeks. This gives you an opportunity to assess the effectiveness of the spinal cord stimulation without making a long-term commitment.

2. The implant procedure involves a short minimally invasive procedure where a small battery is implanted, like a pacemaker. Generally, this requires you to spend one night in hospital. The neurostimulator battery is inserted just under the skin through a small incision in the upper buttock. The long-term lead is implanted in the epidural space of the spinal cord and delivers electrical pulses via a tiny lead (wire) to nerves in the spinal cord. Pain signals are blocked by the electrical pulses before they reach the brain. The treatment is reversible, which means that it can be discontinued and surgically removed.

DIABETES QUALIFIED

WHO IS A SUITABLE CANDIDATE FOR SPINAL CORD STIMULATION AS A TREATMENT OF PAINFUL DIABETIC NEUROPATHY?

Nevro HFX™ for PDN, a Senza spinal cord stimulation system that uses 10 kHz Therapy to treat pain from diabetic neuropathy. Patient selection is critical, 10kHz therapy is indicated for people with diabetes, with a HbA1c ≤10%, who are diagnosed with Painful Diabetic Neuropathy (PDN) not related to peripheral vascular disease and refractory to conventional medical management (have tried and failed 2 or more commonly prescribed PDN medications). The person with PDN will need to be deemed medically suitable for the procedure and report a lower limb pain intensity of 5cm or more on a 10 cm Visual Analogue Scale (VAS).[8]

A careful assessment by a multidisciplinary team, such as at one of the many pain management centres in Australia, and discussion of the patient's expectations and goals, will help identify appropriate candidates for spinal cord stimulation.

WHEN SHOULD IT NOT BE USED?

SCS may not be appropriate for patients who:

- did not receive effective pain relief during a trial stimulation phase
- are poor candidates for the planned surgical procedure because of concurrent medical conditions and/or
- are not able to operate the SCS system.

For further information on Spinal Cord Stimulation or if you have any questions, please contact your local Nevro representative or check out **www.HFXforPDN.com/healthcare-providers**.

Patients are recommended to visit: **https://www.hfxforpdn.com/en-au/** for more information.

Reference

1. Yang, M. et al. Suboptimal Treatment of Diabetic Peripheral Neuropathic Pain in the United States. Pain Medicine. 2015,16: 2075 - 2083.
2. Abbott, C. et al. Prevalence and Characteristics of Painful Diabetic Neuropathy in a Large Community-Based Diabetic Population in the U.K. Diabetes Care, Oct. 2011.
3. Kiyani, Musa et Al, 'Painful diabetic peripheral neuropathy, Health care costs and complications from 2010 to 2015. Neurology, Feb 2020.
4. Callaghan B., Cheng H., Stables C., Smith A., Feldman E. (2012a) Diabetic neuropathy: clinical manifestations and current treatments. *Lancet Neurol* 11: 521–534.
5. Chan CW, Peng P. *Failed Back Surgery Syndrome*. Pain Medicine. 2011 Apr;12(4):577-606. 5
6. Manchikanti, L, Boswell MV, et al. *Comprehensive review of therapeutic interventions in managing chronic spinal pain*. Pain Physician. 2009 Jul-Aug;12(4):E123-98
7. International Neuromodulations Society. https://www.neuromodulation.com/spinal-cord-stimulation - accessed Dec 2021
8. Petersen, E, et. al. Durability of high-frequency 10 kHz spinal cord stimulation for patients with painful diabetic neuropathy refractory to conventional treatments. Diabetes Care, November 2021.