



How to Talk to Patients About Treating Migraine with Neuromodulation

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So many migraine patients are desperate for drug-free migraine pain relief and prevention — because they can't tolerate the side effects of prescription medication, because they want to reduce their medication intake, or because their symptoms just don't respond to medication. For these patients, I recommend external trigeminal nerve stimulation. This type of neuromodulation treatment is clinically proven to stop or reduce migraine pain during an attack and, with compliant daily use, to reduce the frequency of migraine days. However, it's essential for patients to understand how to use neuromodulation the right way. Here's what I tell my patients when they're getting started with the therapy.

² Westwood, S.J., Conti, A.A., Tang, W. et al. *Clinical and cognitive effects of external trigeminal nerve stimulation (eTNS) in neurological and psychiatric disorders: a systematic review and meta-analysis*. *Mol Psychiatry* **28**, 4025–4043 (2023). <https://doi.org/10.1038/s41380-023-02227-4>

1. Neuromodulation is a long-term therapy for migraine, not a quick fix.

When a patient is in the middle of a migraine attack, they wish for a treatment that takes away the pain right away. For most people, however, a neuromodulation device is not a therapy that you can take out of the box for the first time, apply to your skin and instantly be headache-free.

When a patient begins using neuromodulation, they're starting a therapy that gradually changes how their nerves respond to migraine headaches. It is important for people to learn how to use the device and become familiar with how the treatments feel, as each person with migraine may experience the treatment differently.

It's also important to have realistic expectations for improvement over time. Seeing significant improvement is going to take time, patience and consistency.

2. Give yourself time to adjust to using neuromodulation.

I advise patients to think about their neuromodulation migraine therapy in phases. The initial phase of the therapy should include becoming familiar with how and when to apply and operate the device. When first using the device, patients should focus on finding a stimulation intensity that provides a strong sensation of stimulation but is not painful. The next phase involves building consistency with treatments and tracking changes in migraine frequency and severity.

When used as a migraine preventative treatment, neuromodulation therapy should be used consistently to gradually desensitize the nerves. Occasional or intermittent use may not have the same benefit. To improve treatment adherence, talk to patients about why daily use is essential. Suggest ways to help a patient remember their preventative treatment, such as tying their neuromodulation session to another daily habit.



3. Don't try to power through any discomfort.

Many of my patients have a high tolerance for discomfort because they've lived with migraine pain for so long. "Oh, I can tolerate the treatment," they assure me, and so they begin their neuromodulation migraine therapy at the maximum intensity setting.

I recommend that most patients start at a lower intensity level when first using a neuromodulation device: enough to feel a strong, non-painful stimulus for the entire duration of the intended treatment. No matter an individual's tolerance for migraine pain, it takes time to adjust to neurostimulation.

For example, an eTNS device stimulates the trigeminal nerve, which is a sensitive and superficial nerve situated close to the skin of the forehead. Patients will get the best results from starting off at lower intensities, where there is a strong, non-painful stimulation.

Over time, patients may acclimate to the stimulation intensity and they may passively allow the stimulation intensity to increase as tolerated on subsequent treatment sessions. Using high-stimulation intensities too early may increase the risk of adverse effects, such as painful stimulation, which can negatively impact treatment adherence and efficacy.

4. It's OK if you can't reach the maximum treatment intensity.

I don't advise that all users try to reach full stimulation intensity, especially when new to using a neuromodulation therapy device. Every person has a specific sweet spot: a level of intensity that's comfortable to tolerate and effective for migraine. If a patient's headache pain responds to a specific stimulation intensity, then I recommend sticking to that level in their treatment. For most patients, the goal is migraine pain freedom and migraine prevention, not using the highest stimulation intensity possible.

5. Track your migraine treatments, attacks, triggers and symptoms.

Once patients have adjusted to the sensation and figured out how to make neuromodulation part of their daily routine, then they can move to the next phase: tracking the efficacy of their treatment. I encourage patients to keep a detailed migraine diary and be as specific as they can when describing how a migraine attack responded to treatment.

6. Don't give up on your neuromodulation migraine treatment.

Some patients use neuromodulation therapy once and then put it down. They may not like the way it feels, or they may not see the rapid results they had hoped for. Remember that neuromodulation migraine treatment is not a one-time application. It's a long-term program to help prevent and reduce migraine pain.

Clinical studies have shown that the side effects of using a neuromodulation device for migraine are few, minor and fully reversible with cessation of device use. If a patient experiences adverse effects when using neuromodulation, we advise them to reach out to their healthcare provider for guidance.