

A person with long dark hair, seen from behind, wearing a dark jacket and a yellow canvas backpack. They are standing on a high vantage point, looking out over a vast, misty mountain landscape. The sun is low on the horizon, creating a soft, golden glow and lens flare effects. The text "Existing, not Living" is overlaid in white on the left side of the image.

Existing, not Living

A Therapy for Difficult to Treat Depression

A person with long dark hair, seen from behind, wearing a dark jacket and a tan canvas backpack. They are standing on a high vantage point, looking out over a vast mountain range under a dramatic sky with soft, golden light from the setting or rising sun. The mountains are layered, creating a sense of depth. The overall mood is contemplative and hopeful.

You are not alone.

Approximately **50%** of all patients with depression will experience a **chronic** or **recurrent** course of illness.



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Difficult to Treat Depression

VNS Therapy®

How does it work?

One of the greatest burdens

Depression generates **one of the greatest burdens of all diseases worldwide** and patients with chronic depression are expected to have a more difficult course of illness compared to those who achieve remission:



Increased risk of suicidality



Lower Quality of Life



Faster relapses & more recurrences



Shorter periods of wellness



Less productive



Increased hospitalizations



High healthcare utilization



Many co-morbidities



Treatment adherence problems



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-  **Treatment adherence problems**

Major depression generates one of the greatest burdens of all diseases worldwide and patients with chronic depression are expected to have a more difficult course of illness compared to those who achieve remission:

- **Increased risk of suicidality¹**
- **Lower quality of life²**
- **Faster relapses & more recurrences³**
- **Shorter period of wellness³**
- **Less productive⁴**
- **Increased absenteeism & presenteeism⁴**
- **Increased hospitalizations⁵**
- **High healthcare utilization⁵**
- **Many co-morbidities^{6,7}**
- **Treatment adherence problems⁷**

1. Fawcett J. Br J Psychiatry 1994;26:37-41.
 2. Mrazek DA et al. Psychiatr Serv 2014;65:977-87.
 3. Judd LL. Am J Psychiatry 2000;157:1501-04.
 4. Kessler RC et al. Am J Psychiatry 2006;163:1561-68.
 5. Lepine BA et al. Rev Bras Psiquiatr 2012;34:379-88.
 6. Benton T et al. Ann Clin Psychiatry 2007;19:289-303.
 7. Gaynes B et al. J Clin Psychiatry 2016;77:4-8.

When other treatments have not worked or have stopped working, isn't it time to consider **a unique approach** of treatment ?

A therapy
for Difficult to Treat Depression





When other treatments have not worked or have stopped working, isn't it time to consider **a unique approach** of treatment ?

A therapy
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- When other treatments have not worked or have stopped working, isn't it time to consider a unique approach of treatment?
- If you have tried different medications but still not had the long-term results you want, don't get discouraged. There are other options.

Difficult to Treat Depression

VNS Therapy®

How does it work?

VNS Therapy[®], a non pharmacological treatment:

- **Cumulative and sustained effect over time**
- **unique safety profile**
- **guaranteed compliance**
- **decreased risk of suicide compared with treatment-as-usual**
- **improved QOL compared with treatment-as-usual**





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VNS Therapy®, a non pharmacological treatment:

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1. Berry SM et al. Medical Devices 2013;6:17-35.
2. Aaronson ST et al. Am J Psychiatry 2017;174:640-8.
3. VNS Therapy® System Physician Manual-OUS-March 2018.
4. Conway CR et al. J Clin Psychiatry 2018;79:18m12178.

Difficult to Treat Depression

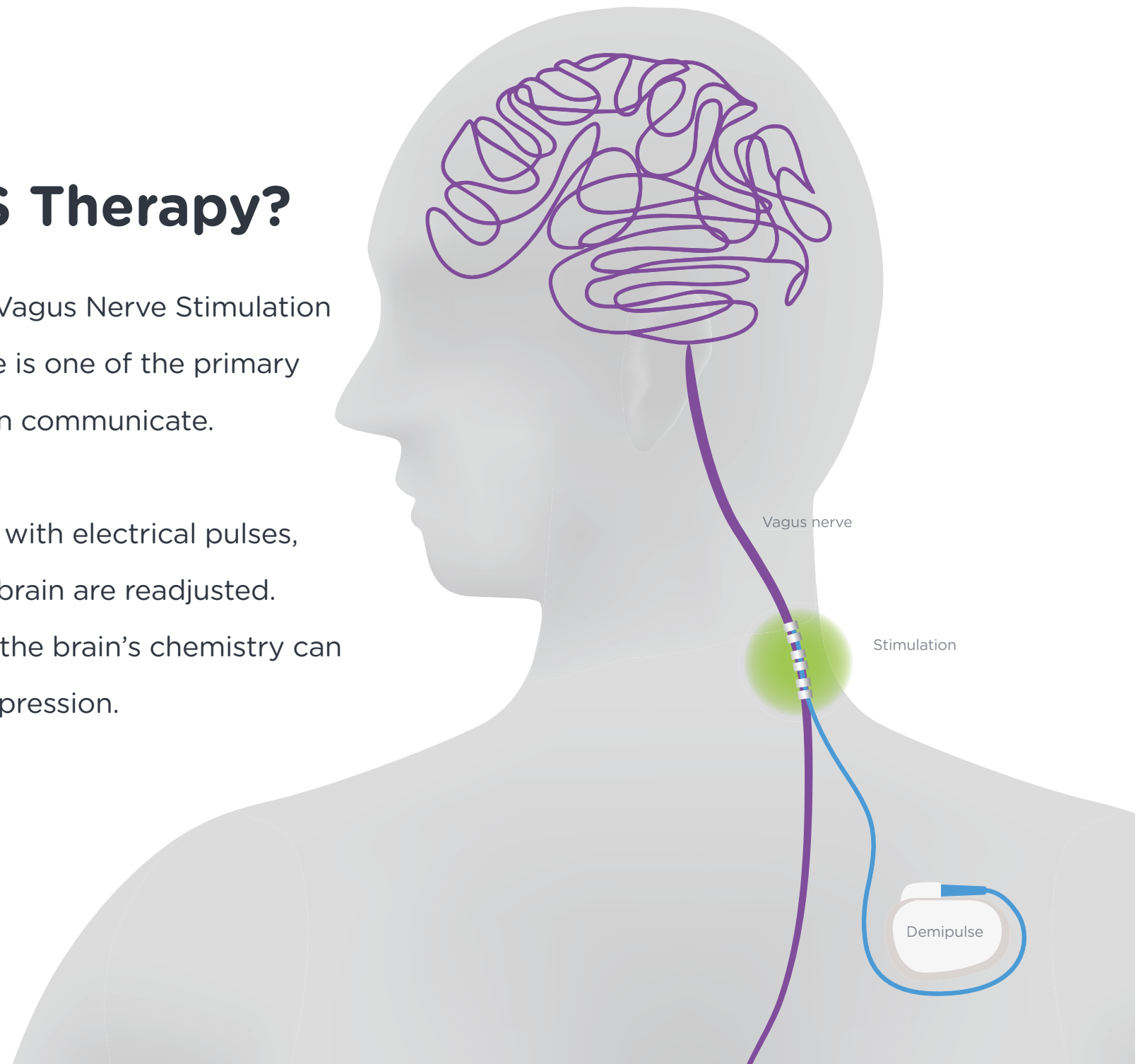
VNS Therapy®

How does it work?

What is VNS Therapy?

VNS Therapy stands for Vagus Nerve Stimulation Therapy. The vagus nerve is one of the primary ways your body and brain communicate.

By stimulating this nerve with electrical pulses, neurotransmitters in the brain are readjusted. The resulting changes in the brain's chemistry can significantly decrease depression.

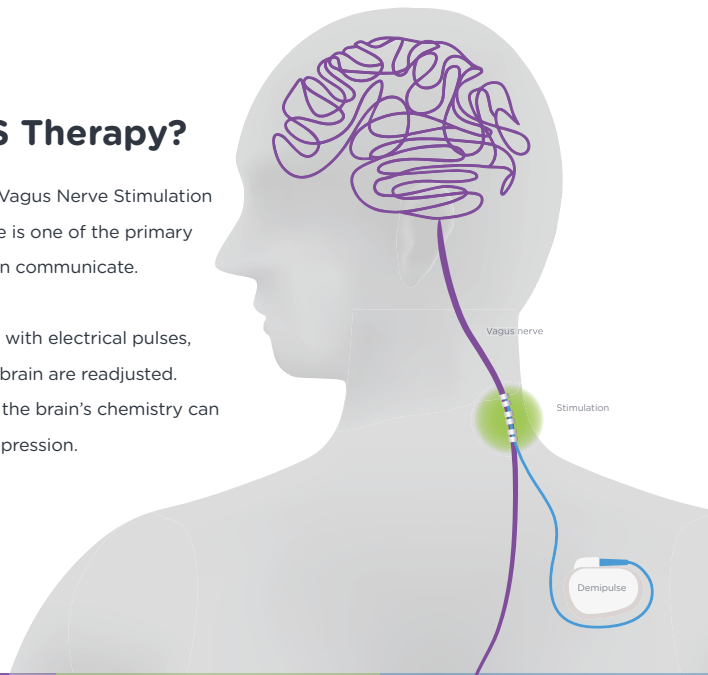




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Conway CR et al. Psychiatr Clin N Am 2018;41:395-407.
Conway CR et al. Brain Stimul 2013;6:788-97.

Difficult to Treat Depression

VNS Therapy®

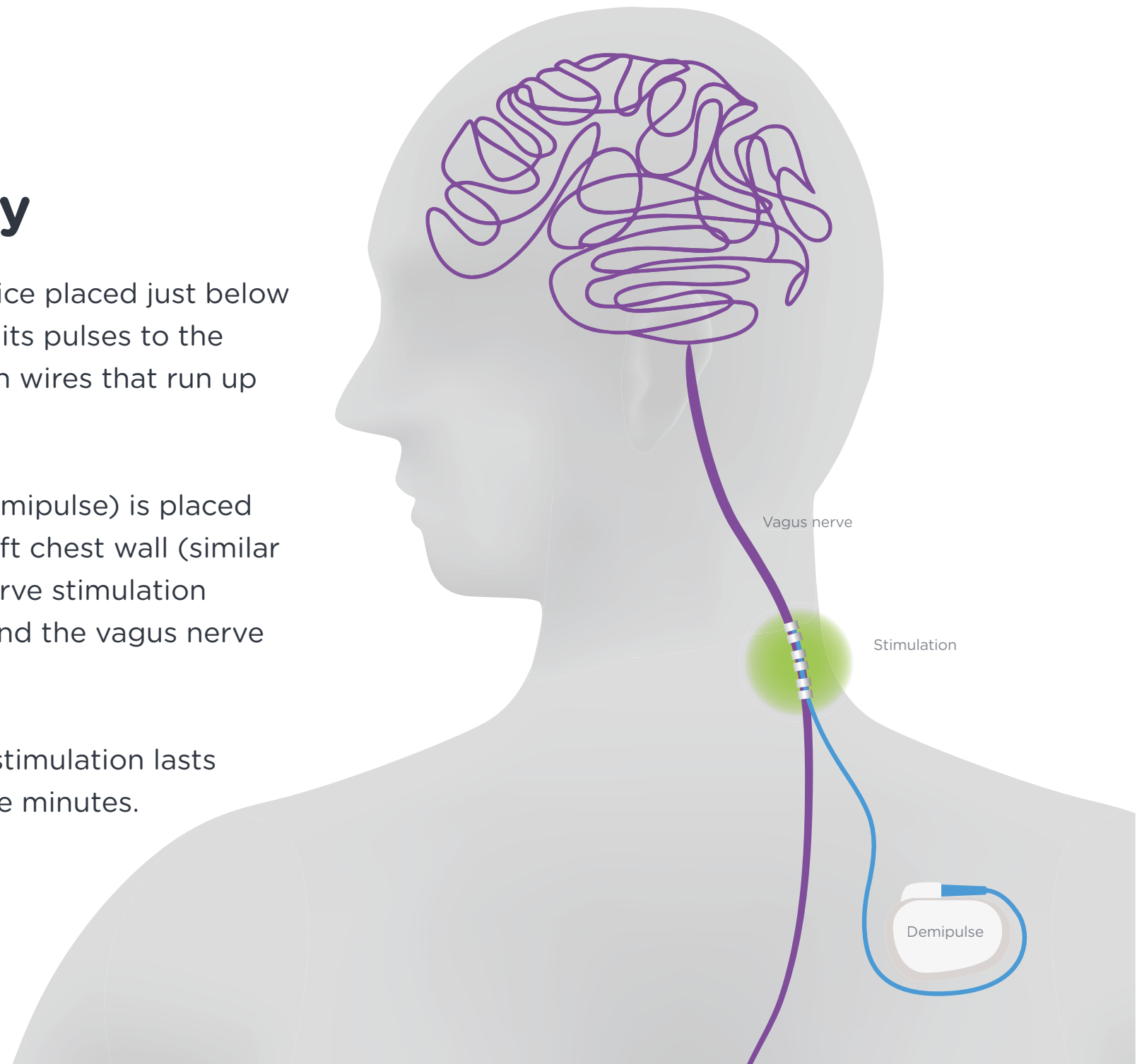
How does it work?

VNS Therapy

is a small implanted device placed just below the collarbone. It transmits pulses to the vagus nerve through thin wires that run up the neck.

The pulse generator (Demipulse) is placed subcutaneously in the left chest wall (similar to a pacemaker). The nerve stimulation electrode is placed around the vagus nerve (no brain involvement).

Typically, **VNS Therapy** stimulation lasts for 30 seconds every five minutes.



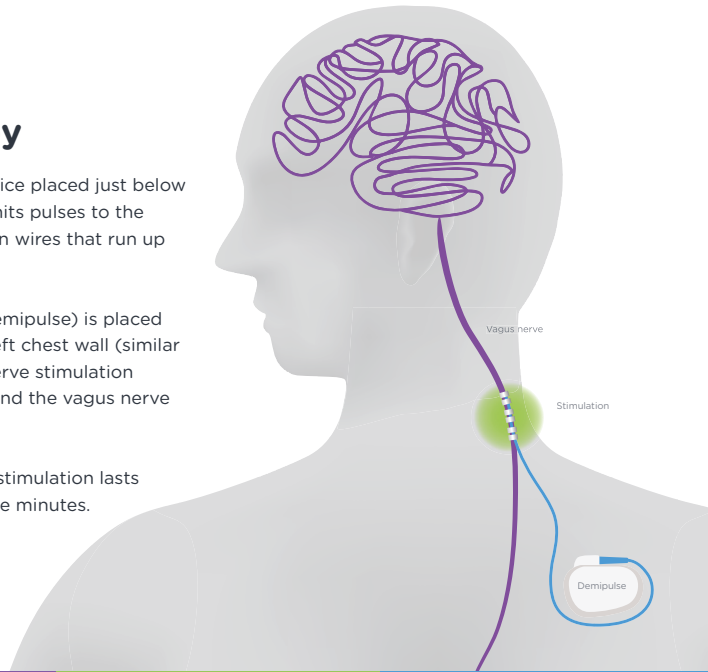


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The procedure



You will be brought into contact with the surgeon who will do the procedure.



The implant procedure is typically done under general anaesthesia and lasts about 1 to 2 hours.



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Difficult to Treat Depression

VNS Therapy®

How does it work?

After the procedure



After 2 weeks, your psychiatrist will activate and set up the neurostimulator. As of this moment, the **VNS Therapy** is active.



The most commonly reported side effects from stimulation include voice alteration, prickling feeling in the skin, shortness of breath, sore throat and increased coughing. These typically occur only during stimulation, and are well tolerated and noticed less as time goes on. The most commonly reported side effect from the implant procedure is infection.



The effect of **VNS Therapy** is not immediate, but over the course of weeks/months, you may notice a significant improvement of your symptoms.



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VNS THERAPY EUROPEAN INDICATION FOR USE The VNS Therapy System is indicated for the treatment of chronic or recurrent depression in patients that are in a treatment-resistant or treatment-intolerant major depressive episode.

CONTRAINDICATIONS

The VNS Therapy System cannot be used in patients after a bilateral or left cervical vagotomy. Do not use short-wave diathermy, microwave diathermy, or therapeutic ultrasound diathermy on patients implanted with the VNS Therapy System.

WARNINGS

All potential risks and adverse events are discussed in the VNS Therapy System physician's manuals. VNS Therapy may not be a cure for depression. Individual results will likely vary. Beneficial results might not become evident for months. Most patients will continue to require antidepressant medications and/or electroconvulsive therapy (ECT) in addition to VNS Therapy. Patients being treated with adjunctive VNS Therapy should be observed closely for clinical worsening and suicidality, especially at the time of VNS Therapy stimulation parameter changes or drug dose changes. Patients who have pre-existing swallowing, cardiac, or respiratory difficulties (including, but not limited to, obstructive sleep apnea and chronic pulmonary disease) should discuss with their physicians whether VNS Therapy is appropriate for them, since there is the possibility that stimulation might worsen their condition. Patients with the VNS Therapy System implanted should have MRI procedures performed only as described in the MRI Chapter of the Physician Manual.

ADVERSE EVENTS

The most commonly reported side effects from stimulation include hoarseness (voice alteration), paresthesia (prickling feeling in the skin), dyspnea (shortness of breath), sore throat and increased coughing. Other adverse events reported during clinical studies as statistically significant are ataxia (loss of the ability to coordinate muscular movement); dyspepsia (indigestion); hypesthesia (impaired sense of touch); insomnia (inability to sleep); laryngismus (throat, larynx spasms); nausea; pain; pharyngitis (inflammation of the pharynx, throat); and vomiting. These typically occur only during stimulation, and are well tolerated and noticed less as time goes on. The most commonly reported side effect from the implant procedure is infection.

For full safety information, please see our website at

<http://en.eu.livanova.cyberonics.com/healthcare-professionals/resources/product-training>.

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LivaNova
Health innovation that matters

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Living,
not just existing

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