

## **The Vercise™ Deep Brain Stimulation System: An innovative device designed to improve motor symptoms for a better life with Parkinson's disease, dystonia, and tremor**

From the very beginning, Boston Scientific has been committed to innovation. The Vercise Deep Brain Stimulation (DBS) Technology is unlike any other, having its roots in cochlear implant technology, which delivers accurate targeting and precise control of therapy to treat movement disorder symptoms and improve patient quality of life.

### **How DBS Works**

The Vercise DBS System consists of a stimulator (also referred to as an implantable pulse generator, or IPG) similar to a pacemaker. The stimulator produces small electrical signals that travel along thin wires called leads, which are connected to the stimulator. The stimulator is placed under the skin just below the collar bone, while the leads are positioned in a specific part of the brain. The mild electrical impulses that stimulate a specific region of the brain may help regulate signaling, resulting in the improvement of movement disorder symptoms. Although DBS is not a cure, it may help improve day-to-day experiences.

**The Vercise DBS system provides unique features designed to benefit physicians and patients.**

#### **1. Accurate Targeting and Precise Control**

The Vercise System is the first and only DBS solution with Multiple Independent Current Control (MICC). MICC is designed for fine control of stimulation position and shape to deliver very precise electrical signals through steerable current delivery.

- With a dedicated power source for each of the electrodes (up to 16) on the lead, the Vercise DBS System enables highly accurate targeting to minimize the side effects of unwanted stimulation and maintain therapy over time.
- MICC generates precise control to refine the size and shape of the stimulation field, designed to customize therapy for individual patients.
- Using Multiple Independent Current Control, instead of voltage control, the Vercise DBS system is designed to maintain therapy over time by automatically adjusting to impedance changes.

## 2. Patient Focus

In addition to its effective therapy, the Vercise DBS System provides an IPG with the smallest footprint, gentle contours and a durable 25-year battery life— all of which are designed to enhance the patients' quality of life.

- With the smallest IPG footprint and a shape with gentle contours, the Vercise IPG is designed for patient comfort.
- Vercise DBS uses a powerful rechargeable battery technology with longevity up to 25 years. With a prolonged battery life, patients are less likely to endure the worry or risks associated with battery replacement surgery or surgical interventions.
- In addition, the battery life of the Vercise DBS System may enable stimulation optimized to patient needs.
- The Vercise battery contains Zero-Volt™ technology, a specialized battery chemistry which can be fully discharged for long periods of time without substantial loss in capacity or battery failure – even when the patient forgets to recharge.
- Under the current programming paradigm, clinicians must strike a balance between optimal patient settings and battery longevity. With the Vercise DBS System's battery longevity, clinicians can optimize stimulation by setting the parameters to patient's needs rather than setting them to extend IPG battery life.

The Vercise™ charging system and remote are completely cordless and wireless, designed for patient comfort and ease of use.

- The charger is worn via a lightweight, over the shoulder charging collar, allowing patients to be active while charging.
- The Vercise remote control has a 45cm communication range and is designed to make quick and comfortable adjustments to your stimulator.

## 3. Quality

At Boston Scientific we believe that best-in-class quality is essential to long-term viability of DBS therapy. Through substantial investments in R&D and quality, our engineers invented unique features designed to deliver unmatched reliability and convenience in a simple, rechargeable device.

- The Vercise™ lead has a robust multilumen construction with the best of an eight contact span and spacing which may lead to improved durability and longevity of all system components, thus minimizing the risk of replacement procedures.

## **The VANTAGE Clinical Trial demonstrates 62.4% improvement of motor function in PD<sup>1</sup>**

VANTAGE is a monitored, prospective, multi-center, non-randomized, open-label interventional trial which evaluated the new Vercise DBS System by Boston Scientific in Parkinson's disease (PD). The objective of the VANTAGE study is to document patient outcomes including effectiveness, safety and health economic data of bilateral stimulation of the Subthalamic Nucleus (STN) using the implantable Vercise DBS System for the treatment of levodopa-responsive, moderate to severe idiopathic Parkinson's disease. Preliminary results demonstrate:

- The Vercise DBS system showed significant improved motor function of 62.4% ( $p < 0.0001$ ), as assessed by the Unified Parkinson's disease Rating Scale Part III (UPDRS III) at 6 months post first lead implant as compared with baseline.
- Additional endpoints suggest potential improvement in ON time, Activities of Daily Living, and Quality of Life for PD subjects at 6 months.
- Vercise's rechargeable battery and charging system was well tolerated by subjects.
- At 6 months post lead implant, approximately 75% of programs had current fractionalized over two or more contacts.

## **Guide™ Deep Brain Stimulation Visualization System: Tailoring stimulation therapy with 3D technology**

GUIDE DBS is the world's first deep brain stimulation (DBS) visualization system based on more than a decade of research and science and validated in more than 30 peer-reviewed publications. GUIDE DBS provides clinicians with 3D visualization information that simulates stimulation output, which may reduce programming time and enable more precise targeting of therapy. With GUIDE DBS, physicians are able to visualize the relative position of lead location and utilize stimulation field models within the brain.

Combined with the Vercise DBS System, innovative GUIDE DBS technology has been developed to provide the most advanced deep brain stimulation technology to neurologists, neurosurgeons and patients. By visualizing the advanced stimulation options of the Vercise DBS System, clinicians can provide more tailored stimulation therapy to help meet patient needs.

For more information, please visit [www.bostonscientific.eu](http://www.bostonscientific.eu)

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## References

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<sup>1</sup>Timmerman L., Alesch, A., et.al. VANTAGE trial: A prospective, multi-center trial evaluating Deep Brain Stimulation with a new multiple-source, constant-current rechargeable system (Vercise™) in Parkinson's disease. Movement Disorder Society, Poster June 2013.

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*The Vercise™ Deep Brain Stimulation (DBS) System is indicated for use in unilateral or bilateral stimulation of the subthalamic nucleus (STN) or internal globus pallidus (GPI) for treatment of levodopa-responsive Parkinson's disease which is not adequately controlled with medication and also for treatment of intractable primary and secondary Dystonia, for persons 7 years of age and older.*

*Thalamic stimulation using the Boston Scientific Vercise™ DBS System is indicated for the suppression of tremor not adequately controlled by medications in patients diagnosed with Essential Tremor or Parkinson's disease.*

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