



Boston
Scientific

Giving
your life
back to you

VERCISE™
Deep Brain Stimulation System



What are movement disorders?

Movement disorders are neurological conditions that affect the body's ability to control or initiate movement.

Movement disorders can cause difficulties performing everyday tasks, even down to dressing, drinking a cup of coffee or using a pen. Three of the most common movement disorders are Parkinson's disease, dystonia, and essential tremor.

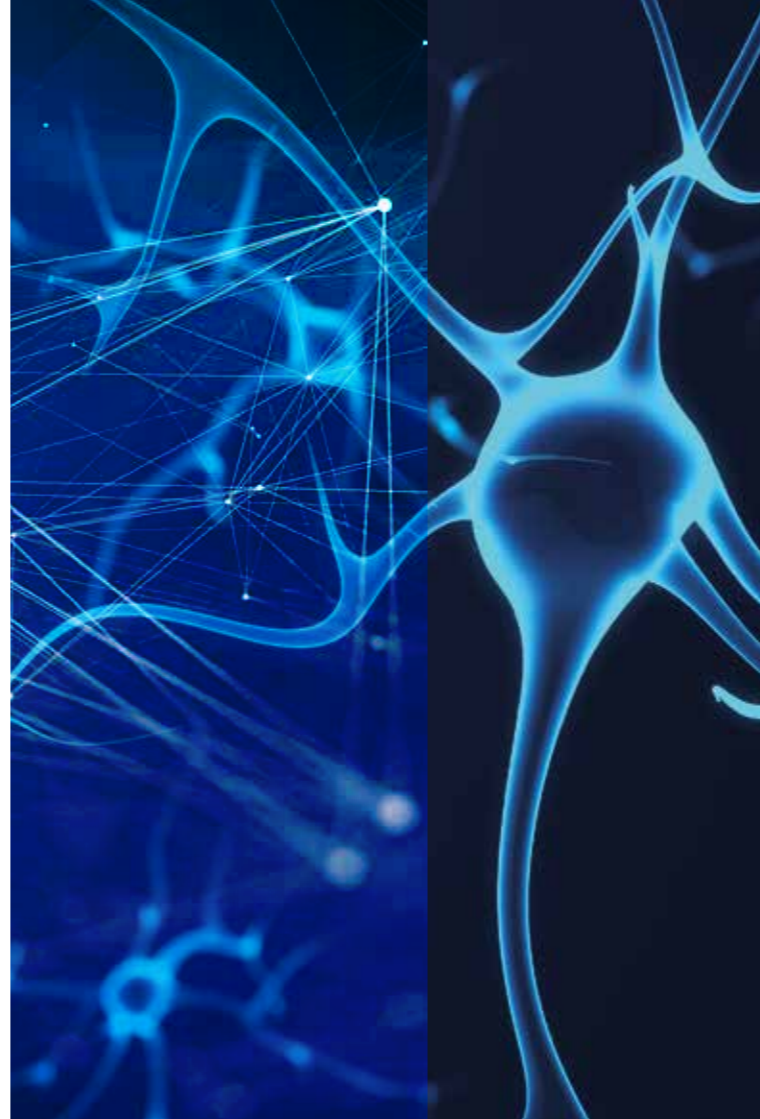


Parkinson's disease, dystonia and essential tremor at a glance

Parkinson's disease is caused by a deficiency of dopamine-producing cells. Dopamine is a substance that is used in the brain to transmit signals, and the shortage of dopamine causes the symptoms of Parkinson's disease to appear. Symptoms can vary, however many people living with Parkinson's disease experience trouble moving or walking, involuntary shaking of parts of the body, rigidity, slowness or trouble articulating.

Dystonia is a condition that causes sustained muscle contractions triggering twisting and repetitive movements or unintended postures which can also be painful. Dystonia can affect a specific area of the body or be more widespread throughout several muscle groups. Those muscle contractions may also lead to difficulties performing day-to-day activities.

Essential tremor is an involuntary and rhythmic shaking in various parts of the body that occurs with movement, although manifestation in the hands is most common.



What is Deep Brain Stimulation and how could it help me?

Deep Brain Stimulation (DBS) is a treatment that can **help significantly improve some of the symptoms of movement disorders** such as Parkinson's disease, dystonia, and essential tremor.

DBS uses a small medical device that is implanted into your body, with leads implanted into the brain, which stimulates specific areas of the brain.

DBS is not a cure, but the stimulation may help improve many of the day-to-day symptoms and may also result in fewer medications to take each day or reduced dosages of your medications.

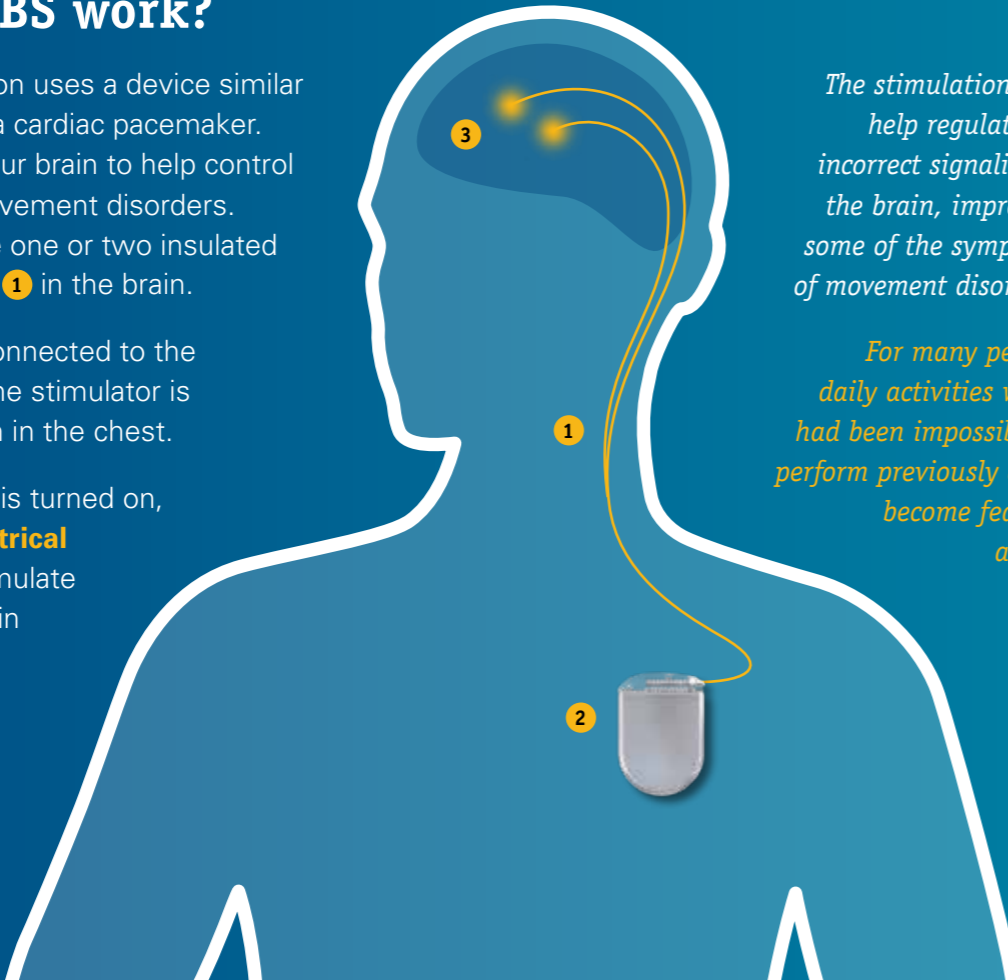
Because your medication may be reduced, you could also have a reduction in some of the medication-related side effects such as motor fluctuations (ON-OFF condition) and involuntary movements, also referred to as dyskinesia. For patients with dystonia, essential tremor or Parkinson's disease, DBS therapy may reduce some of the primary symptoms and **improve daily life**.

How does DBS work?

Deep Brain Stimulation uses a device similar in size and shape to a cardiac pacemaker. It sends signals to your brain to help control the symptoms of movement disorders. Your doctor will place one or two insulated wires called “**leads**” ① in the brain.

The leads are then connected to the **stimulator** ②, and the stimulator is placed under the skin in the chest.

When the stimulator is turned on, it produces mild **electrical impulses** ③ that stimulate a specific target within the brain.



The stimulation may help regulate the incorrect signaling in the brain, improving some of the symptoms of movement disorders.

For many people, daily activities which had been impossible to perform previously could become feasible again.

The Vercise™ Deep Brain Stimulation Systems Portfolio

Designed to help you live life again

Patients come first, always

From start to finish, we designed our products with patients in mind. And we're with you every step of the way.

Comfort is at the core of Vercise™

Our ultra-lightweight, thin battery was designed with smooth and gently rounded edges to maximize your comfort and reduce visibility after implantation.

Nothing but the best for you

All our systems come with industry-leading technology, enabling your doctor to deliver your therapy with precision, tailored to your individual needs and with the flexibility to adapt your treatment as needed.



You have choices ... and technology matters!

Only Boston Scientific brings you directional stimulation with a technology that set a new standard in DBS, Multiple Independent Current Control (MICC).

The Vercise Directional System* is designed to give your doctor **control over the size and shape of your stimulation field** in the brain for **maximum precision**.

Why does that matter? Only the areas of your brain responsible for coordinating movement are stimulated, and the physician can steer away from regions associated with potential side effects.

This ability to direct the therapy to the area of your brain responsible for coordinating movement – and steer it away from regions associated with side effects – may result in a more precise therapy.



What does Multiple Independent Current Control mean for me?

Multiple Independent Current Control (MICC) is a long name for a simple and elegant idea.

Doctors use MICC to control the placement and intensity of your DBS therapy with precision.

As a movement disorder patient, this means that as the needs of your condition change, your DBS system from Boston Scientific gives you and your doctor the options you need, when you need them.

How Tony's DBS journey led him to take the trip of his life

"Only a few years ago I would have not been able to imagine the opportunities and improved quality of life that I now have in my daily life."

At age 38, Tony was in the prime of life: a husband and father, he was also head of his own department in a medium-sized company. When Parkinson's disease was diagnosed his life changed dramatically, leading to retirement at 45 and eventual dependence on a wheelchair.

But Tony wasn't ready to give up. After discovering his suitability for DBS, he not only chose DBS surgery to turn his life back around, but he also made a promise: to cross the Alps and visit the grave of his namesake Saint Anthony of Padua. Two years later, Tony celebrated his 50th birthday by making the 500 km journey from his home in Altoetting, Germany to Padua, Italy – all on his trusty bicycle.

Tony now enjoys everyday activities like swimming and spending quality time with his family, as well as raising awareness about Parkinson's disease and the therapy options available.*



Tony Seidl
Parkinson's Disease Patient



500 km



10 things

... you need to know about
Deep Brain Stimulation



1. Is DBS safe?

Two decades of DBS treatment have shown both the short- and long-term safety of DBS. It is now a well-established treatment, with over 100,000¹ patients already treated for a variety of illnesses. DBS surgery should be carried out by an experienced neurosurgeon working as part of an interdisciplinary team.

As with any surgical procedure, there are risks involved and potential side effects vary from patient to patient. However, these are often temporary and stimulation can be adjusted to reduce or reverse these. You should discuss potential risks and side effects with your physician.

2. Could I be a candidate for DBS?

For Parkinson's patients, ideal candidates are those who have responded positively to levodopa treatment but are unable to control the motor symptoms of their disease with medica-

tion alone. The ideal dystonic patient candidate should be at least 7 years old and no longer be achieving sufficient dystonia symptom relief with medications alone.

However, every individual is unique. You should discuss with your neurologist and other physicians with whom you work closely whether DBS is a suitable therapy option for you.

3. Can I stop my medication after DBS surgery?

DBS does not aim to replace medication but rather to achieve the best results in combination with medication. Successful DBS surgery can sometimes lead to a decrease in medication, which in turn can potentially reduce the side effects of medication.

4. How long will my DBS system last?

How long your system lasts depends on which device you choose. Results will also

vary depending on the individual settings your condition may require. The Vercise Genus™ R16 system is rechargeable and designed to last up to 25 years. The non-rechargeable Vercise Genus™ P16 system may last on average for 3–5 years.



Vercise Genus™ R16 System

- rechargeable
- lasts up to 25 years

Vercise Genus™ P16 System

- non-rechargeable
- lasts about 3–5 years

5. How quickly can I recover after surgery?

Most patients can go home a few days after surgery. You are advised to avoid any strenuous activity like heavy lifting for the first few weeks. It can take several weeks for you to return to normal activities and you may also feel some initial pain or discomfort at the incision sites. Your physician can give you detailed information about managing your medication and daily activities during this time.

DBS treatment aims as much as possible to help you return to the activities in life that are important to you, as far as your unique condition and the treatment allows.

6. Is it possible to have an MRI with a DBS implant?

The Vercise Genus™ is MRI compatible. However, you should consult with your physician to check your individual MRI eligibility.*



7. Can I still have a DBS implant if I already have a pacemaker?

Although a DBS implant is typically placed in the same location as a pacemaker, a DBS implant that is connected to extension leads can also be inserted either on the right side of your chest or alternatively under the skin of the abdomen.

8. What does it feel like when my DBS device is switched on?

During the initial programming stage while the placement and levels are being adjusted, you may experience a tingling sensation. This helps pinpoint the ideal settings to ensure the best treatment for your individual needs.

Afterwards, most individuals are hardly aware of the device. At most, you may notice a slight tingling in your arm or leg, or mild tension in facial muscles, but this often subsides.

9. Does the DBS device make a noise?

No, the DBS device is completely silent.

10. Will other people be able to notice my DBS device?

Since both the DBS stimulator and the wires are placed under the skin, they are often hardly noticeable from the outside. The incision leaves a small scar. For thin patients, the

stimulator site will be slightly raised and the wire may appear like a slightly larger vein, but this should not be noticeable through clothing.



DBS may help you return to some of the activities you love most

DBS may help you to control some of the disabling symptoms of your condition. You may be able to return to some of the daily activities you were able to enjoy before, and **improve your overall quality of life.***

Here are just some of the things individuals may be able to do after DBS surgery:

*Socializing with friends and family Travel
Driving Cooking Aerobics and yoga
Walking the dogs Playing golf Swimming
Playing a musical instrument Dancing*



Talk through what's right for you

DBS is designed to help you potentially return to doing some of your favorite things in life.

However, make sure to always **talk to your doctor** about what activities are right for you, as well as any precautions you should take with your DBS device.

Where can I go to learn more?

For more information, go to
<http://www.bostonscientific.com/en-EU/home.html>



References

¹ Lozano and Lipsman. (2013). Probing and regulating dysfunctional circuits using deep brain stimulation. *Neuron*. 77(3): 406–24.

Indications for Use

The Boston Scientific DBS Systems are indicated for use in the following:

- Unilateral or bilateral stimulation of the subthalamic nucleus (STN) or internal globus pallidus (GPI) for levodopa-responsive Parkinson's disease that is not adequately controlled with medication.
- Unilateral or bilateral stimulation of the subthalamic nucleus (STN) or internal globus pallidus (GPI) for intractable primary and secondary dystonia, for persons 7 years of age and older.
- Thalamic stimulation for the suppression of tremor not adequately controlled by medications in patients diagnosed with essential tremor or Parkinson's disease.

When the Device Should Not be Used (Contraindications): The DBS Systems are not for patients who will have any form of diathermy either as a treatment or as part of a surgical procedure, are unable to operate the system, and are poor surgical risks.

Patients implanted with the Vercise™ DBS Leads-only (before IPG implant) and Vercise Genus™ DBS System with Image Ready™ MRI Technology will be able to have an MRI examination when specific conditions are met. These conditions are specified in the ImageReady MRI Guidelines for Boston Scientific DBS Systems.

Warnings: Patients implanted with BSC DBS Systems without ImageReady MRI Technology should not be exposed to Magnetic Resonance Imaging (MRI). Patient exposure to MRI can cause dislodgement of implanted components, damage to the device electronics, and unpredictable levels of stimulation, distortion of the MRI image, and/or personal injury or even death. As a Deep Brain Stimulation patient, you should not have diathermy as either a treatment for a medical condition or as part of a surgical procedure. You should not modify

your system or be exposed to high stimulation levels. Strong electromagnetic fields, such as power generators or theft detections systems, can potentially turn the stimulator off, or cause uncomfortable changes in stimulation. The system should not be charged while sleeping. The Deep Brain Stimulation System may interfere with the operation of implanted sensing stimulators such as pacemakers or implanted cardiac defibrillators. Advise your physician that you have a Deep Brain Stimulator before going through with other implantable device therapies so that medical decisions can be made and appropriate measures taken. Patients should operate motorized vehicles or potentially dangerous machinery with caution. Your doctor may be able to provide additional information on the Boston Scientific Deep Brain Stimulator systems. It is unknown if the device may cause complications with pregnancy and/or hurt an unborn baby.

For a copy of the Boston Scientific Deep Brain Stimulation System Information for Patients, including indications for use, contraindications, warnings, precautions, and possible side effects, or if you have a specific question or issue, please contact your healthcare professional.

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NM-519701-AC Printed in Germany by medicalvision.



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