Connect Innovation

# WHEN TO CONSIDER AN UPGRADE?

Patients implanted with a DBS device may preset with different kinds of complications that create the need for an upgrade. These problems can range from an increased risk of infection [7,8] (due to age or high-energy stimulation settings) to bothersome side-effects related to stimulation.[9] Upgrades to Vercise devices are safe and well tolerated by patients.[10,11] Use the following visual as a basic guide to help make a decision.

| Potential Problem | SIDE-EFFECTS INCREASED | | | THERAPEUTIC EFFECT DECREASED | | |
|---|---|---|---|---|---|---|
| upgrade based on **Vercise programming options** | Short Pulse Width | Multiple Frequencies | Anodic Stimulation | Vertical Current Steering | MICC Technology | GUIDE™ XT |

| Potential Problem | DEVICE CLEARLY VISIBLE | HIGH ENERGY USAGE | PATIENT AGE | CHARGING COMPLIANCE |
|---|---|---|---|---|
| upgrade based on **Vercise mechanical features** | GENUS™ R16 10.7 mm – 20.1 cc | GENUS™ P16 11.6 mm – 34.9 cc | GENUS™ R16 25 yrs* | GENUS™ P16 7 Ah – 3.5 yrs | GENUS™ R16 Zero Volt™ Technology |

* In many cases, the Stimulator battery should provide at least 25 years of service. Battery life is dependent on the stimulation settings and conditions.


1 April 2020 – Footprint defined as volume + thickness. Data on file at Boston Scientific Corporation. Compared to all EU commercially available DBS IPG's from 2010 onwards.
2 NetRM data BSC Battery reliability NM; 21 failures from August 2010 – January 2017.
3 Boston Scientific DBS Clinical Compendium NM-519001-AA_JAN18
4 Medtronic Activa PC 37601 Multi-program Neurostimulator Manual.
5 Vercise GENUS Implant Manual. Based upon Modeling calculationss for standard settings of 130Hz, 60µs and 3mA.
6 NM-206909- Battery Sell Sheet_Final.pdf
7 Pepper et al., 2013. The Risk of Hardware Infection in Deep Brain Stimulation Surgery Is Greater at Impulse Generator Replacement than at the Primary Procedure. Stereotactic and Functional Neurosurgery 91:1, 56-65.
8 Helmers et al., 2016. EP 49. Complications in impulse generator exchange surgery for deep brain stimulation: A single center, retrospective study. Clinical Neurophysiology, 127(9), e197.
9 Soh et al., 2019. Hybrid deep brain stimulation system to manage stimulation-induced side effects in essential tremor patients. Parkinsonism Relat Disord. 58:85-86.
10 Wolf et al., 2020. Implementation of New Technology in Patients with Chronic Deep Brain Stimulation: Switching from Non-Rechargeable Constant Voltage to Rechargeable Constant Current Stimulation. Stereotact Funct Neurosurg 2019;97:362-368. doi: 10.1159/000505076.
11 Wirth et al., 2020. Feasibility of changing for a rechargeable constant current neurostimulator in Parkinson's disease. doi.org/10.1016/j.neurol.2020.02.007.


MR Conditional

Vercise GENUS™ devices is designed to be MR conditional.
More info available on BSC ImageReady™ MRI Guidelines www.bostonscientific.com/manuals

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Product available in the European Economic Area (EEA) only. Please check availability with your local sales representative or customer service.

CAUTION: The law restricts these devices to sale by or on the order of a physician. Indications, contraindications, warnings and instructions for use can be found in the product labelling supplied with each device. Products shown for INFORMATION purposes only and may not be approved or for sale in certain countries. This material not intended for use in France.


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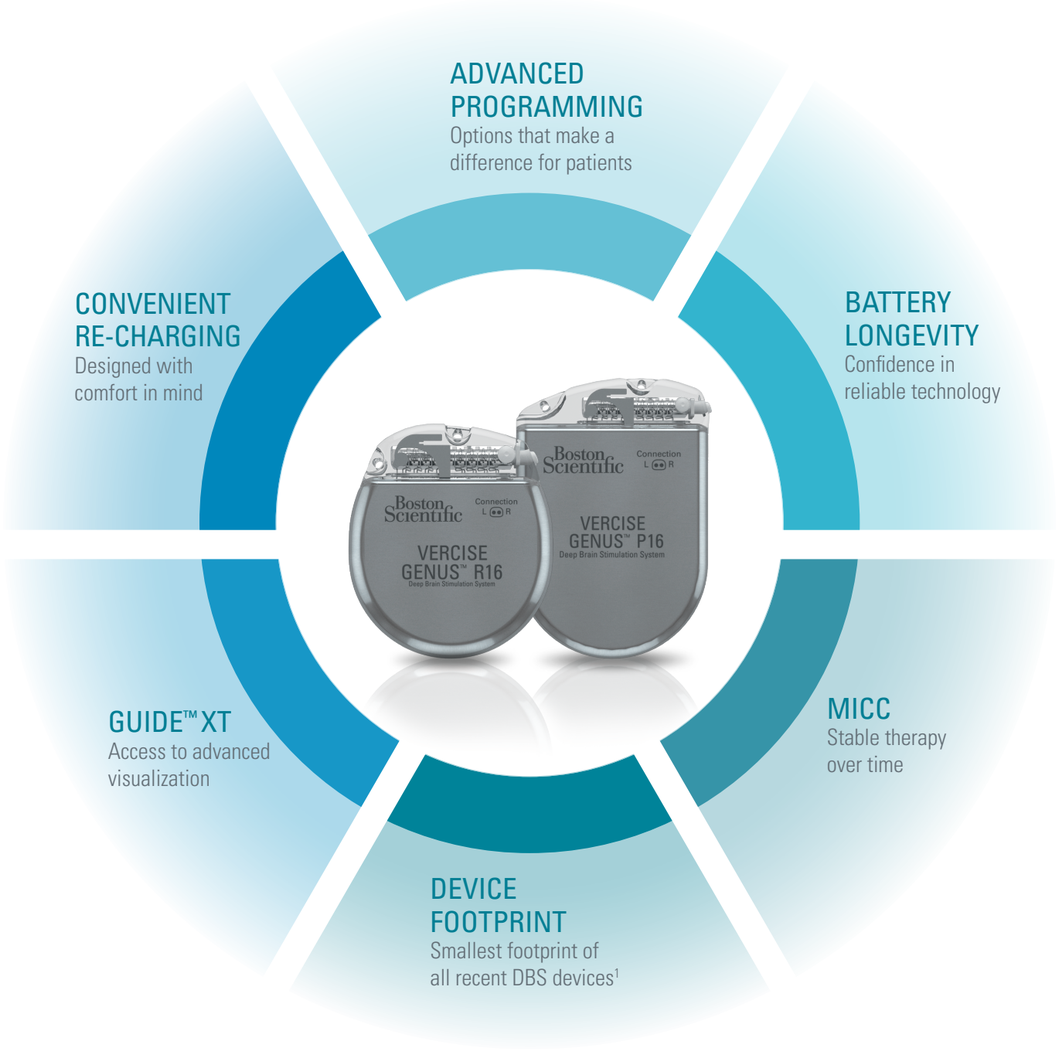
# MANY REASONS TO CHOOSE
## A DEVICE TO MATCH PATIENT NEEDS




### BOSTON SCIENTIFIC'S JOURNEY IN DBS

We have a different background compared to other manufacturers in DBS. Our cochlear technology inheritance allowed us to advance the therapy, co-developed with physicians to match patients' needs. In addition, we are committed to continue to move DBS therapy forward with educational programs, awareness and clinical collaboration.

### COMMITMENT TO QUALITY

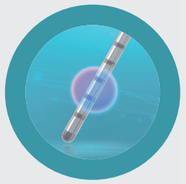
Our DBS devices are designed in California (USA) and manufactured in Clonmel (Ireland). Extensive mechanical and electrical testing is performed before each device leaves this state-of-the-art production facility. Every device continues to be monitored after it is released for distribution; 127.450 batteries in the field continue to operate at a very low confirmed failure rate (0,00016%).[2]

### ADVANCED PROGRAMMING
Options that make a difference for patients

When the underlying disease progresses, Bluetooth programming enables additional options such as Short Pulse Width, Multiple Frequencies, Anodic Stimulation and Current Steering (Virtual Contacts) can help to manage patient symptoms.[3]

### BATTERY LONGEVITY
Confidence in reliable technology

Vercise GENUS™ Rechargeable Battery Technology is labelled for 25 years* with no obsolesce.[2]
Vercise GENUS™ PC High Density Battery Technology offers a large battery capacity and is labelled for 3.5 years.[4,5]

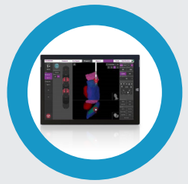


### MICC
Stable therapy over time

Multiple Independent Current Control (MICC) allows you to explicitly define how much current is allocated to DBS contacts. With unparalleled precision offered by MICC, a current controlled device will deliver stable therapy over time despite changes in impedances.

### DEVICE FOOTPRINT
Smallest footprint of all recent DBS devices[1]

The thin lightweight battery was designed with smooth and gently rounded edges to maximize a patient comfort and reduce battery visibility after implantation.



### GUIDE™ XT
Access to advanced visualization

Guide™ XT is the first Boston Scientific visualization solution co-developed with medical software leader Brainlab. With Guide™ XT, clinicians finally see the impact of Stimulation in the patient's own anatomy.

### CONVENIENT RE-CHARGING
Designed with comfort in mind

Vercise GENUS Zero Volt™ Technology (Titanium Negative Electrode) allows for fast impedance checks and prevents damage to the battery in case of complete depletion.[6]
Wireless chargers available as a neck collar or as a belt (for abdominal placements) to conveniently continue daily activities.