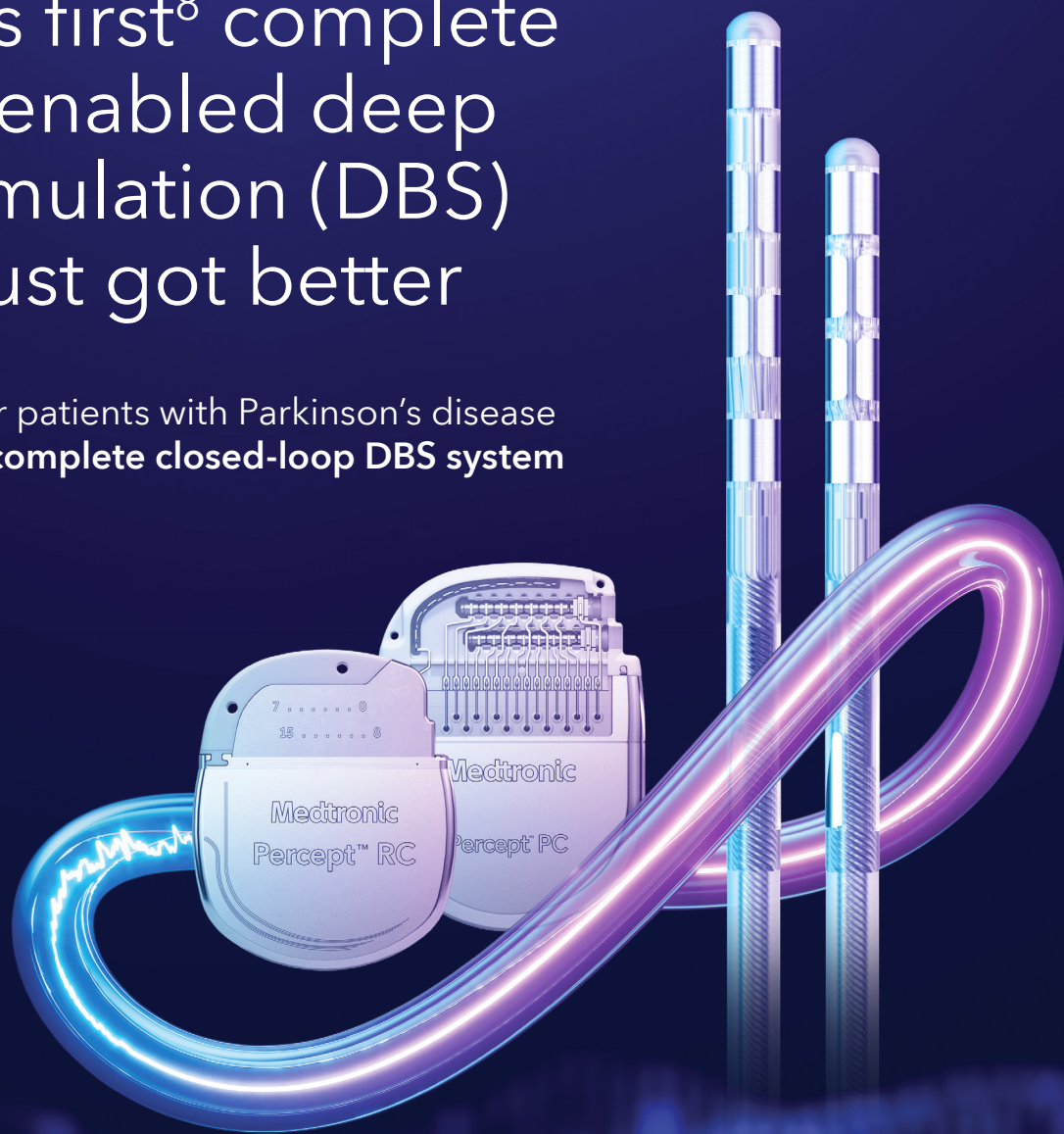




Percept™ family with adaptive BrainSense™ technology

Canada's first<sup>8</sup> complete sensing-enabled deep brain stimulation (DBS) system just got better

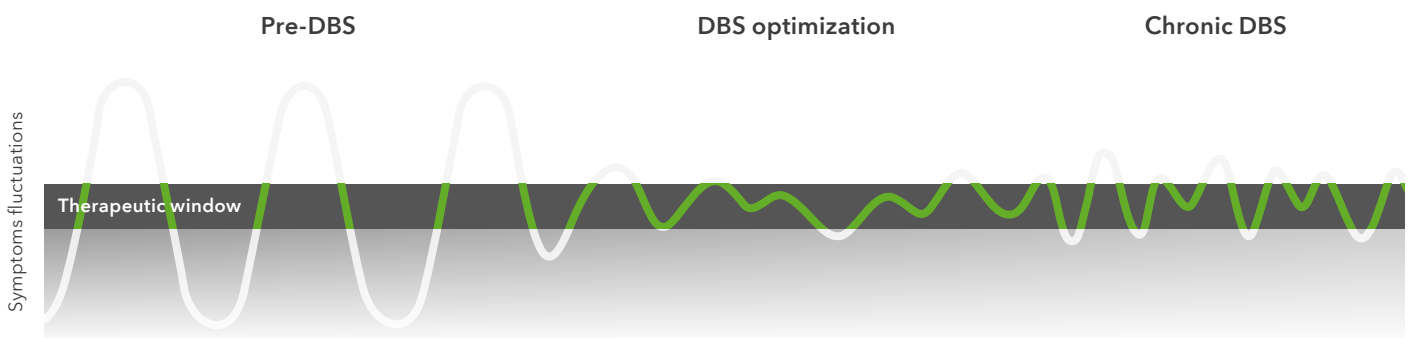
The **future** of care for patients with Parkinson's disease with **Canada's first<sup>8</sup> complete closed-loop DBS system**



# Every patient's journey with Parkinson's disease is different.

Managing each patient's disease can be complicated and time consuming.<sup>1,2</sup>

## Motor symptom fluctuations over time



### Initial challenges

DBS programming can take time. It's not always easy to locate the sensing "sweet spot" on the lead.

### Ongoing challenges

Once DBS therapy begins, a patient's motor symptoms can fluctuate throughout the day due to various factors, including the effects of medications. Additionally, physicians typically spend only a few hours each year with each patient during clinic visits, making it challenging to capture a comprehensive view of their condition.

# Why BrainSense™ technology?

The Percept™ family with BrainSense™ technology is a complete sensing-enabled DBS system offering insights into a patient's condition inside and outside of the clinic throughout the patient journey.

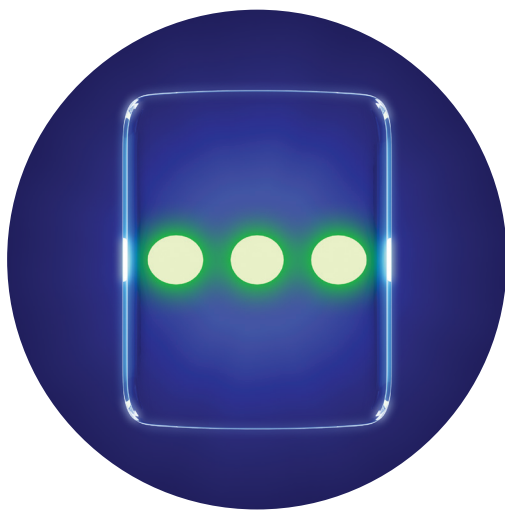
## BrainSense™ suite of tools

The BrainSense™ suite of tools offers decision-making support to select and optimize programming configurations and to maximize therapeutic results.

Experience the cutting-edge advancements exclusive to the Medtronic Percept™ family of devices:

## BrainSense™ Electrode Identifier

The BrainSense™ Electrode Identifier feature **guides you to the sensing "sweet spot"**† on the lead, providing a starting point for DBS programming and identification of initial contacts for stimulation delivery.



## BrainSense™ and Adaptive DBS

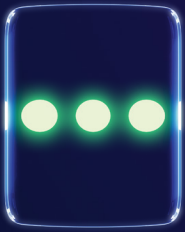
aDBS uses BrainSense™ technology to **automatically adjust** therapeutic stimulation to **maximize motor symptom control** throughout the day and night.‡



† "Sweet spot" is a term used to describe the electrode contact or stimulation location that provides optimal therapeutic benefit for an individual patient. The optimal contact and response may vary by patient.

‡ Improved motor symptom control results were based on post hoc analysis averaging overall patient aDBS on time results compared to cDBS. Results presented for dual threshold aDBS. N=40. Based on results from an open-label comparison.

# Conduct an initial programming – **faster**, compared to monopolar review<sup>†,3</sup>



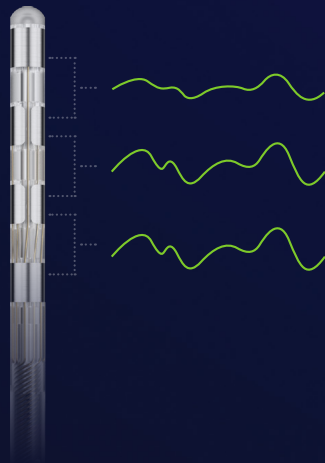
Electrode Identifier guides you to the “sweet spot” on the lead



Select an initial contact in **<2 minutes**<sup>†,3</sup>

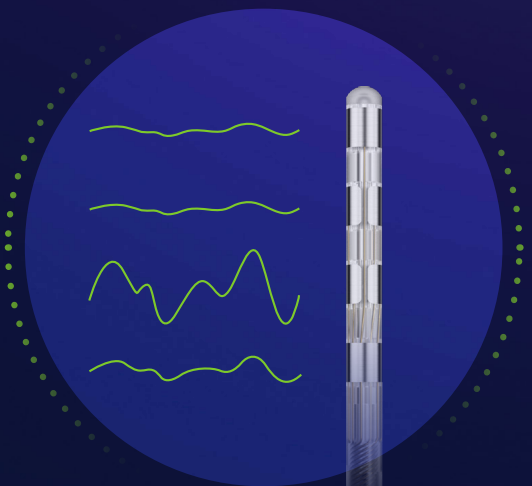
## Bipolar sensing with BrainSense™ Survey (now called Electrode Survey)

BrainSense™ Electrode Survey uses bipolar recordings, which are taken from 2 electrodes on the same lead.

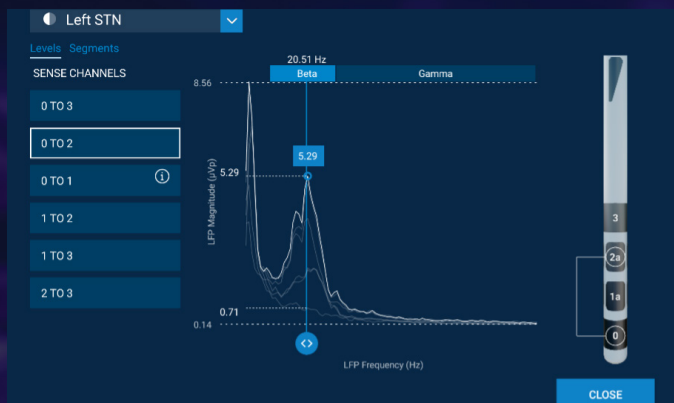


## Advancing DBS technology with BrainSense™ Electrode Identifier (monopolar sensing)

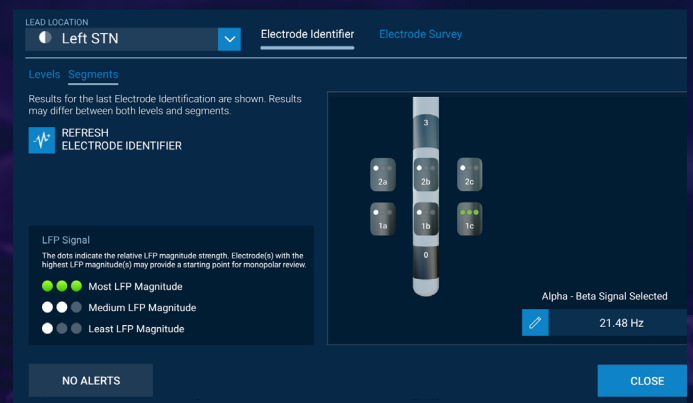
**BrainSense™ Electrode Identifier:** Monopolar recordings are taken from a **specific electrode on the lead** by using a distal reference (top electrode of the opposite lead).



## Electrode Survey



## BrainSense™ Electrode Identifier

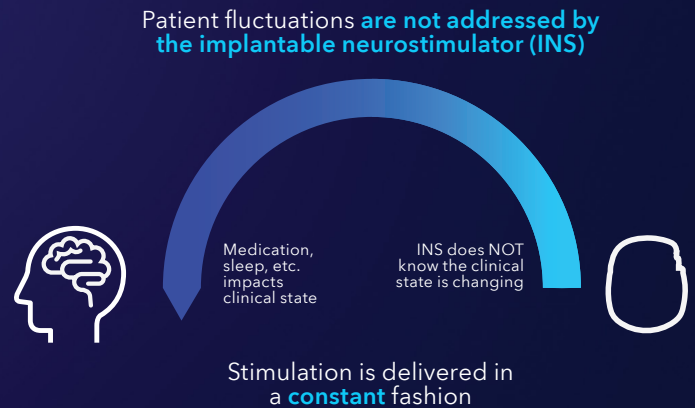


<sup>†</sup> At initial programming, compared to standard monopolar review for Parkinson’s disease. Results based on bench testing, may not be indicative of clinical experience.

# Improved motor symptom control, on average, with **BrainSense™** and **Adaptive DBS** compared to cDBS†

## Open-loop cDBS therapy

While open-loop DBS therapy – also called continuous DBS (cDBS) – is a proven therapy for treating symptoms of Parkinson's disease (tremor, bradykinesia, rigidity), patients may continue to exhibit fluctuations in their motor symptoms.<sup>1,4-6</sup>

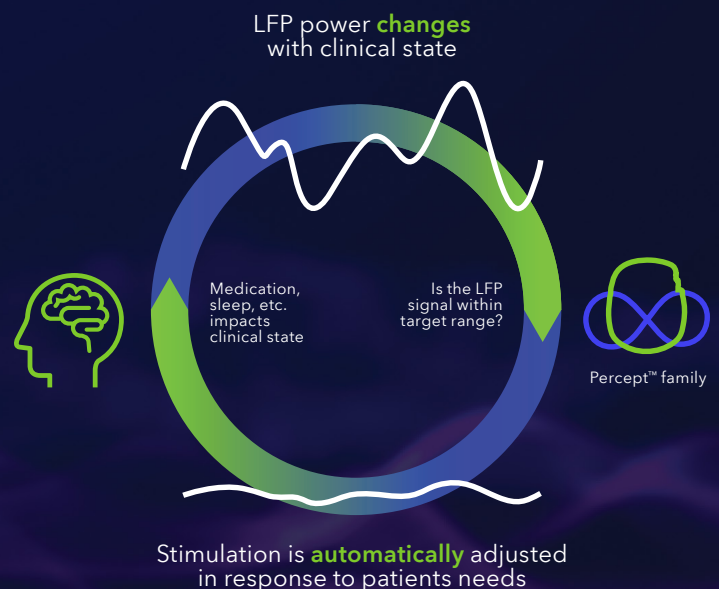


# Percept™ family with BrainSense™ and Adaptive DBS – the **only closed-loop DBS system available**

## BrainSense™ and Adaptive DBS closed-loop therapy

### Addressing motor symptom fluctuations of Parkinson's disease

BrainSense™ and Adaptive DBS continuously adapts to a patient's unique neurophysiological signals, allowing for a more consistent and personalized therapy throughout the day.



† Improved motor symptom control results were based on post hoc analysis averaging overall patient aDBS on time results compared to cDBS. Results presented for dual threshold aDBS. N=40. Based on results from an open-label comparison.

# Breaking new ground in Parkinson's disease research

## ADAPT-PD clinical trial<sup>7</sup>

The ADAPT-PD clinical trial's intent was to determine safety and effectiveness of the adaptive feature within a clinical workflow and with the practicality and efficiency desired by clinicians managing Parkinson's disease.

Additionally, the trial helped to inform the overall user experience and workflow optimization to simplify BrainSense™ and Adaptive DBS programming.

ADAPT-PD clinical trial is the **first** to study:

- **Chronic aDBS study** (>1 year)
- **aDBS in subthalamic nucleus (STN) & internal globus pallidus (GPi)**
- **Comparison of two aDBS modes** (single and dual thresholds)
- **aDBS with directional stimulation**

ADAPT-PD trial: comparable cDBS efficacy to two previous randomized control trials + an increase, on average, in "On" time compared to cDBS



## aDBS Setup and adjustment phase

All but one stimulation-related adverse event resolved with reprogramming.

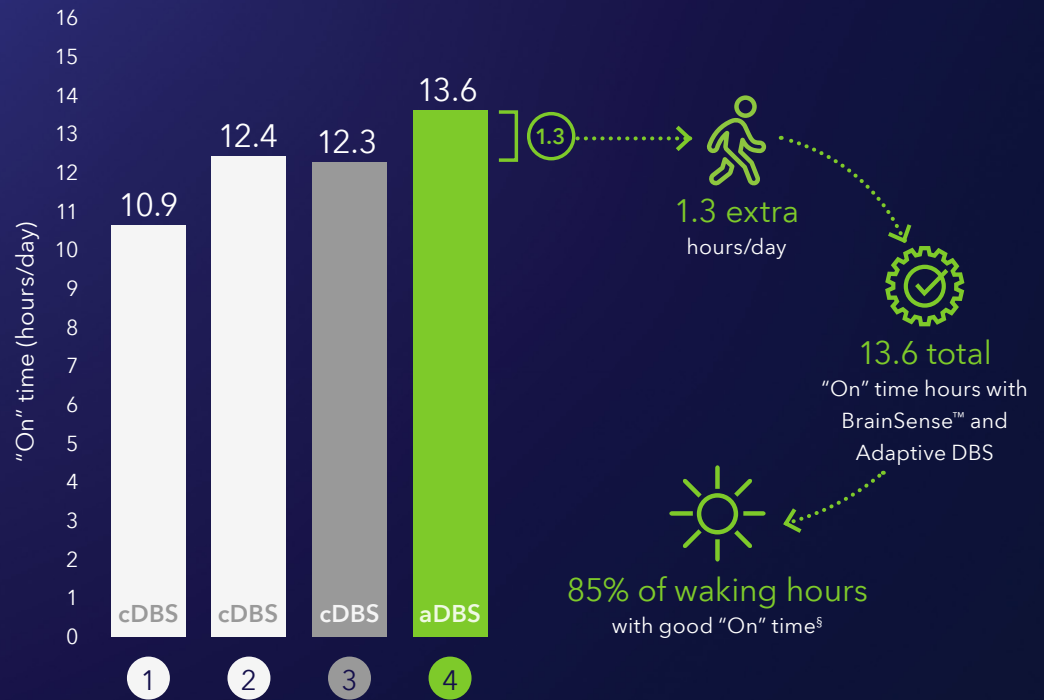


## Enrollment through long-term follow-up

No serious adverse device events (N = 44).

# Historical view of "On" time without troublesome dyskinesia<sup>†,‡,4,5</sup>

- 1 Weaver et al., 2009 (N = 121) compared best medical therapy to cDBS at 6 mo follow-up postoperatively
- 2 Schuepbach et al., 2013 (N = 105) compared best medical therapy to cDBS at 24 mo<sup>§</sup>
- 3 Medtronic cDBS ADAPT-PD (n = 40) Prospective open-label, outcomes at 1 mo
- 4 Medtronic aDBS ADAPT-PD in Dual Threshold Mode (n = 40) Prospective open-label, outcomes at 1 mo



BrainSense™ and Adaptive DBS means patients living with Parkinson's have more ways<sup>9</sup> to manage their symptoms

98% preferred BrainSense™ Adaptive DBS over traditional DBS after using for 30 days<sup>†7</sup>

<sup>†</sup> Study sizes, designs, and populations vary. Patients in the Medtronic ADAPT-PD study were previously implanted and on stable cDBS. Patients in other studies were newly implanted. The figure legend provides additional study details.  
<sup>‡</sup> Compared to continuous DBS (cDBS). Results presented for dual threshold aDBS, n = 40. Based on results from an open-label trial.  
<sup>§</sup> 16 hours. Study data in 45 patients, 40 patients evaluated on Dual Threshold mode.  
<sup>¶</sup> 0.6 hours/day more "On" time without troublesome dyskinesias with single threshold (n = 35)  
<sup>∇</sup> In Schuepbach et al. 2013, "On" time without troublesome dyskinesia when cDBS is active has been calculated by the addition of the baseline value of 10.3 ± 0.5 and the change from baseline to 24 months value of 2.1 ± 0.5.

# How does it work?

BrainSense™ and Adaptive DBS automates a patient's stimulation therapy within clinician-defined parameters, including minimum and maximum stimulation amplitude limits, and local field potential (LFP) thresholds.

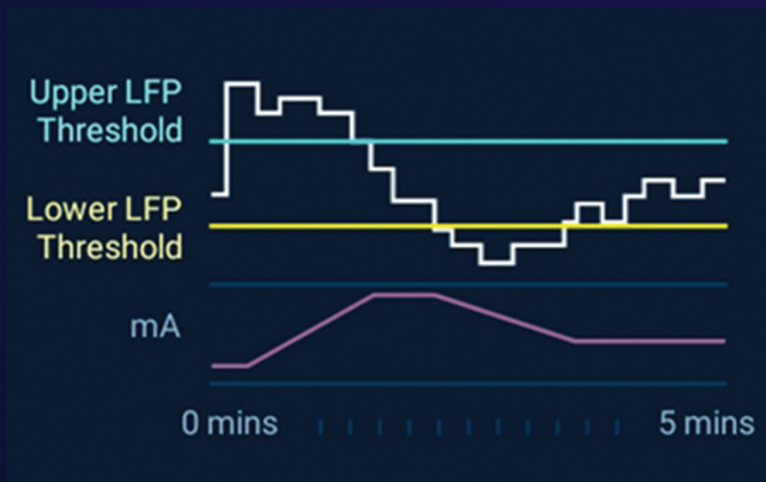
## Choose between two threshold modes

To help further personalize your patient's DBS therapy, BrainSense™ and Adaptive DBS uses an automated algorithm that can be powered by two threshold modes: single threshold mode or dual threshold mode.

The neurostimulator responds to patient needs with varied stimulation based on your selected mode of either single or dual threshold mode.

### Dual threshold

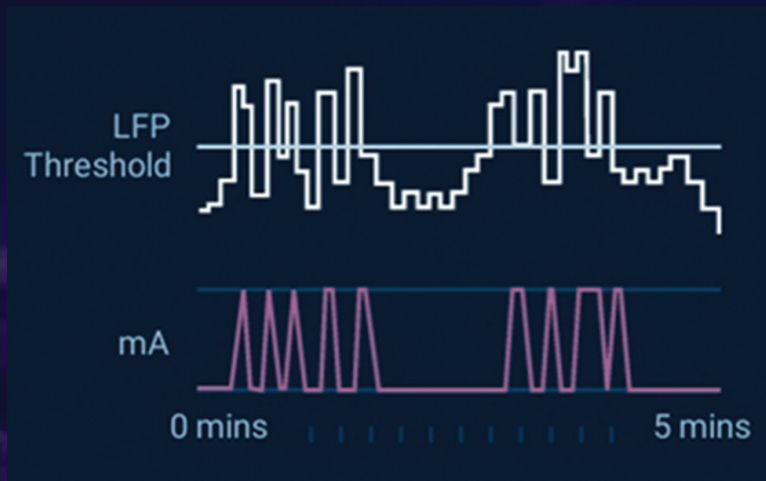
Slower (minutes)  
adaptation of  
therapy



Setting two  
thresholds

### Single threshold

Rapid (milliseconds)  
adaptation of  
therapy



Setting one  
threshold

## ⋮ aDBS is feasible and tolerable



LFP signal present to set up aDBS in 84%<sup>9</sup> (57/68) of patients at enrollment at On-medication



aDBS tolerable and successfully set up in 87%<sup>9</sup> (45/52) of patients

## ⋮ aDBS is effective

### Primary objective met: Effectiveness

Dual Threshold aDBS proportion of success was 91% (n = 40); and Single Threshold aDBS proportion of success was 79% (n = 35).<sup>9</sup>

### Primary endpoint success criteria:

No worse than -2 hour loss of "On" time<sup>9</sup> without troublesome dyskinesia during aDBS relative to cDBS.

Dual Threshold

91%

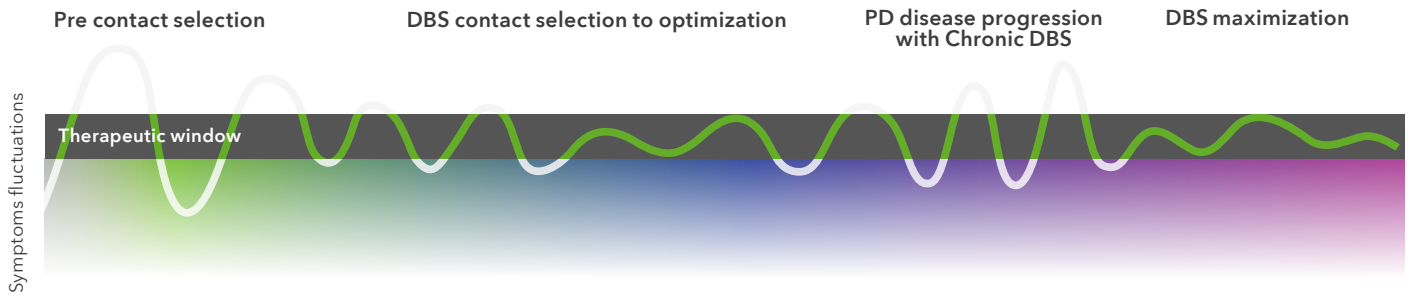
participants<sup>9</sup>

Single Threshold

79%

participants<sup>9</sup>

# Adapting to patients' dynamic needs over time



**Select** and **Optimize** DBS with Electrode Identifier and Enhanced BrainSense™ tools - **only with Medtronic**<sup>8</sup>

**Maximize** DBS therapy with Medtronic's BrainSense™ and Adaptive DBS<sup>†</sup>

## Select

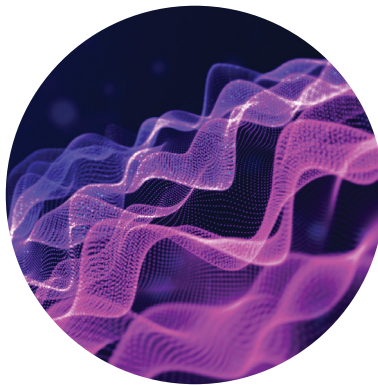
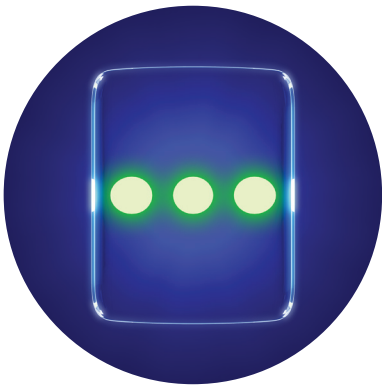
## Optimize

## Maximize

**New**  
BrainSense™  
Electrode Identifier

**Enhanced**  
BrainSense™ Streaming,  
Thresholds, Timeline,  
and Events

**New**  
BrainSense™ and  
Adaptive DBS



<sup>†</sup> Improved motor symptom control results were based on post hoc analysis averaging overall patient aDBS on time results compared to cDBS. Results presented for dual threshold aDBS. N=40. Based on results from an open-label comparison.

# Percept™ family with BrainSense™ technology

The Percept™ family with BrainSense™ technology is Canada's first<sup>8</sup> sensing-enabled, fully closed-loop DBS system. It empowers you to tailor DBS therapy to meet your patients' evolving needs over time.

Designed to address both current and future clinical challenges, the Percept™ family with exclusive BrainSense™ technology offers:



**Personalized**  
decision-making  
support



**Increased**  
in-clinic  
efficiency<sup>†,3</sup>



**Improved**  
motor symptom  
control, on  
average<sup>‡</sup>



**Designed**  
for software  
upgradeability  
- no need for  
device exchanges

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## Engineered to adapt



**Visit**  
**Medtronic BrainSense**



**Visit**  
**Medtronic Academy**

<sup>†</sup> At initial programming, compared to standard monopolar review for Parkinson's disease. Results based on bench testing, may not be indicative of clinical experience.

<sup>‡</sup> Improved motor symptom control results were based on post hoc analysis averaging overall patient aDBS on time results compared to cDBS. Results presented for dual threshold aDBS. N=40. Based on results from an open-label comparison.

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5. Weaver FM, Follett K, Stern M, et al. Bilateral deep brain stimulation vs best medical therapy for patients with advanced Parkinson disease: a randomized controlled trial. *JAMA*. 2009;301(1):63-73. <https://pubmed.ncbi.nlm.nih.gov/19126811>.doi:10.1001/jama.2008.929.
6. Deuschel G, Schade-Brittinger C, Krack P, et al. A randomized trial of deep-brain stimulation for Parkinson's Disease. *N Engl J Med* 2006;355:896-908.
7. Bronte-Stewart HM, Beudel M, Ostrem JL, et al. Long-Term Personalized Adaptive Deep Brain Stimulation in Parkinson Disease: A Nonrandomized Clinical Trial. *JAMA Neurol*. Published online September 22, 2025. doi:10.1001/jamaneurol.2025.2781.
8. Medtronic data on file.
9. Bronte-Stewart HM, Beudel M, Ostrem JL, et al. Long-Term Personalized Adaptive Deep Brain Stimulation in Parkinson Disease: A Nonrandomized Clinical Trial. *JAMA Neurol*. 2025;82(11):1171–1180. doi:10.1001/jamaneurol.2025.2781

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[medtronic.ca](https://www.medtronic.ca)

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