



[DiscoverDBS.com/PD](https://www.Medtronic.com/DBS.com/PD)

Discover DBS for
Parkinson's disease

Medtronic deep brain stimulation (DBS) therapy





Learn more

Visit [DiscoverDBS.com/PD](https://www.Medtronic.com/DBS.com/PD)

We're here to help you discover more about deep brain stimulation (DBS) and to get you the information you need to determine if Medtronic DBS therapy is right for you.



Scan QR code or go to www.Medtronic.com/PDsignup to sign up to receive DBS information.



Gary, receiving DBS therapy, and his wife, Patricia

DBS can mean a **new lease on life**

Losing control of your movements due to Parkinson's can leave you feeling like you're missing out on important parts of your relationships, or worse—like you're losing part of yourself.

By managing some of the movement symptoms of Parkinson's, DBS therapy may help you regain control again. Restoring capabilities can bring a renewed sense of self and reconnection with the world around you.

*For 5 years
I couldn't turn a screwdriver*



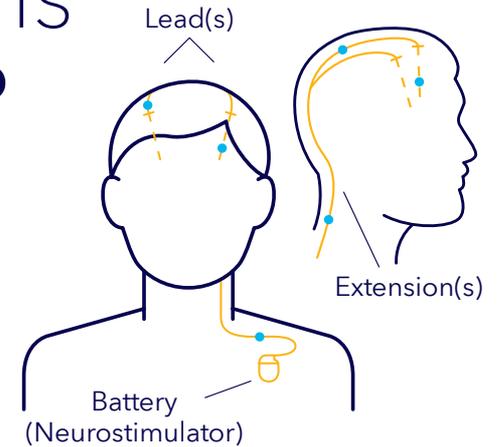
Actual patient not pictured



DBS HELPS IN SMALL WAYS EVERY DAY

Gary, receiving DBS therapy

What is **DBS?**



Deep brain stimulation (DBS) therapy delivers controlled electrical stimulation to targeted areas in the brain that controls movement. The stimulation blocks some of the brain signals that cause the movement symptoms of Parkinson's disease.

A small pacemaker-like device (neurostimulator), placed under the skin in the chest, sends electrical stimulation through extensions to very thin wires (leads) that are placed in specific areas of the brain.

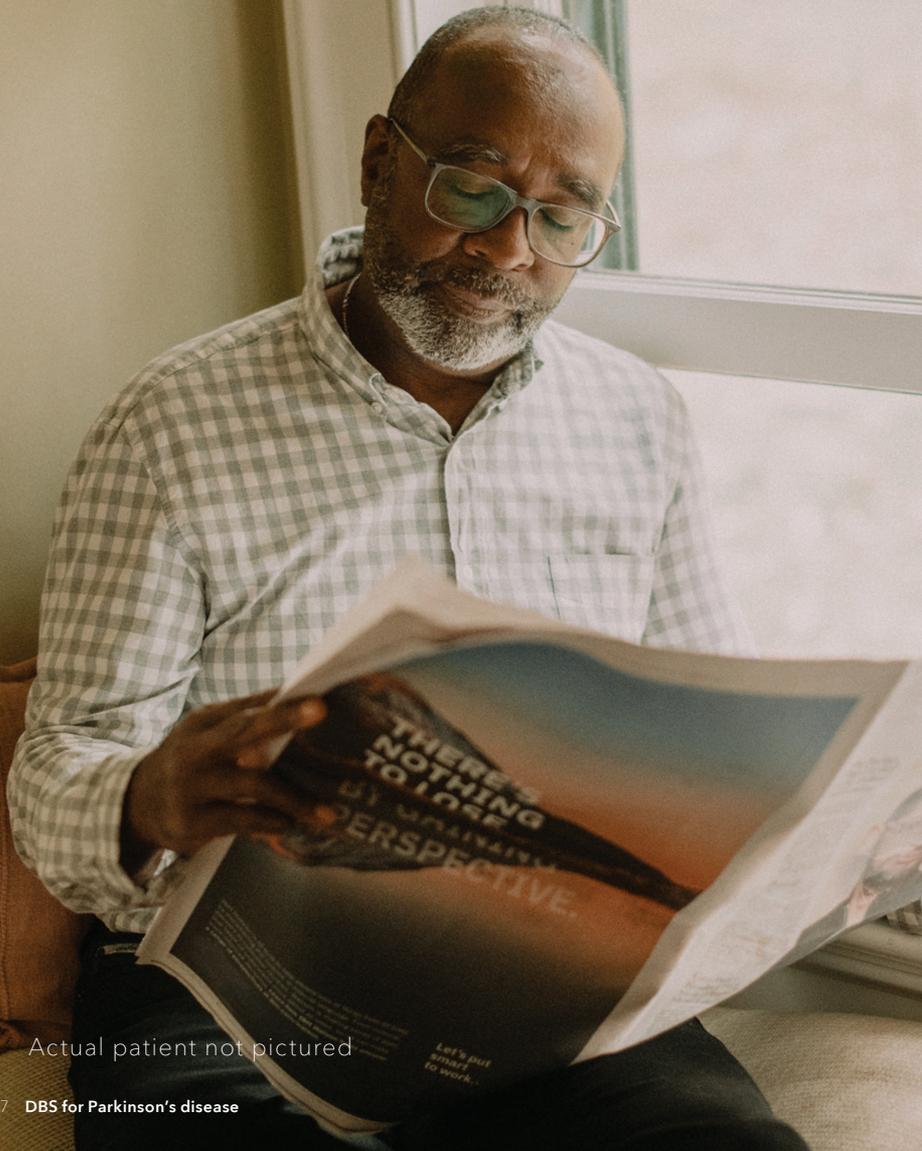
When medications aren't as effective as they used to be, DBS therapy may help control some of the movement symptoms of

Parkinson's: tremor (shaking), slowed movement (bradykinesia), and stiffness (rigidity).

Parkinson's disease and the brain signals causing movement symptoms can be different for each person. Today, Medtronic DBS with BrainSense™ technology† has the ability to continuously capture and record signals from the brain. This advanced sensing feature is used to help clinicians personalize and adapt DBS therapy to your individual needs and maximize the time you feel your best.

† The sensing feature of the Percept™ PC system and Percept™ RC system is intended for use in patients receiving DBS where chronically recorded bioelectric data may provide useful, objective information regarding patient clinical status. The majority of patients with Parkinson's disease have an identifiable signal.

How DBS can help



Actual patient not pictured

More good hours of movement control

Each day, DBS therapy provides additional hours of good movement control ("on" time) without unintended movements (dyskinesia), compared to medication alone.^{1,2}

Less medication

Medtronic DBS therapy may reduce Parkinson's medication.^{2,3} This may reduce medication-related side effects like unintended movements (dyskinesia), while simplifying your medication routine, with fewer pills or less frequent doses.

Better mornings

DBS delivers therapy 24 hours a day—it doesn't wear off while you sleep. It's already working the moment you wake up.

Low maintenance

The DBS system requires no daily cleaning or refilling.

A better quality of life

In combination with medication, DBS therapy has helped people with Parkinson's enjoy increased activities and an improved quality of daily life, compared to those taking medication alone.²

Keeps your treatment options open

Unlike some surgeries for Parkinson's, DBS therapy is reversible. The system can be turned off or removed, in most cases, and won't limit your future treatment options.

High satisfaction

See stories of real people with Parkinson's and the relief they've experienced with Medtronic DBS therapy at [DiscoverDBS.com/PD](https://www.DiscoverDBS.com/PD)

Is DBS for me?



DBS therapy is a personal decision—one you and your doctor should make together. In general, you may be a candidate for DBS if you:

- ✓ Have had Parkinson's for 4+ years
 - ✓ Have had movement symptoms and/or medication side effects for 4+ months
 - ✓ Respond well to Levodopa
 - ✓ Have movement symptoms not adequately controlled by medication
- DBS therapy is also appropriate for people who have had movement symptoms for a longer period, and there is no upper age limit.

Only your doctor can determine if DBS therapy is right for you. Make an appointment with a movement disorder neurologist to get an evaluation.

Find a DBS specialist in your area:
[medtronic.com/db doctors](https://www.medtronic.com/db doctors)

DBS has arrested my husband's tremors and has given us a brighter future together!

DBS therapy is not for everyone. Not everyone will receive the same results. For further information, please call Medtronic at 1-(800) 328-0810 and consult the Medtronic website at [medtronic.com/pdsafety](https://www.medtronic.com/pdsafety). A prescription is required.

A decision that **won't wait**

Don't think of DBS therapy as a "last resort." If you wait until your medications no longer help, DBS may no longer be an option. So talk with your doctor about it now, so you can be ready for DBS at the right time for you. It's never too soon to learn more.



*For 8 years,
I could barely play*

Gary, receiving DBS therapy



Parkinson's offers you a window of opportunity when DBS therapy may be effective.

1

Appearance of symptoms

Oral medications are controlling symptoms.

Learn more and ask your doctor when DBS might be right for you.

2

Window of opportunity

Oral medications are still working, but not as well.

Talk with your doctor about DBS—today.

3

Late-stage Parkinson's

Symptoms no longer respond to oral medications. **DBS is no longer an option.**



Rick, receiving DBS therapy

What to expect

Evaluation

Your neurologist—typically a movement disorder specialist—will evaluate you to see if DBS therapy is a good option for you. This may include medical history, lab work, MRI and neuropsychological tests.

About the procedure

DBS surgery consists of two parts:

- Implanting the leads (very thin wires) in the brain and placing the extensions.
- Placing the pacemaker-like device, called a neurostimulator, under the skin of the chest.

The two parts are often done on different days scheduled 1-2 weeks apart. The DBS procedure may vary by institution.

Programming & follow-up

A few weeks after surgery, your doctor will turn on the neurostimulator and adjust stimulation settings to best control your symptoms while minimizing side effects. It may take a few programming sessions to find the stimulation levels that work best for you—so don't get discouraged if it takes some time. You will attend periodic check-ups with your doctor to monitor your symptoms, optimize stimulation and check the battery level of your device to determine when it's time to replace your neurostimulator.

Talk with your doctor

Look for a neurologist who specializes in treating Parkinson's. The right doctor will understand not only your treatment options, but also you as a person, and be your guide.

While some general neurologists are also experienced in treating Parkinson's, a movement disorder specialist has extra training, and knows the full range of treatment options.

No matter which doctor you choose, be honest about your symptoms and how your treatment is working. Ask about other options, and don't hesitate to get another opinion.



Lisa, receiving DBS therapy

Find a DBS specialist in your area:
[medtronic.com/db doctors](https://www.medtronic.com/db doctors)

Use the questions and symptom tracker on the following pages to help guide a conversation with your doctor.



Are you experiencing symptoms?

How troublesome are your "off" periods?

When medication is not helping enough and you are experiencing symptoms

Check all that apply

- I barely notice I'm "off"
- I can't do some things I want to do
- I have difficulty, but I can do all I want to do
- I can't do most things I want to do

How troublesome is your dyskinesia?

Involuntary excessive movements

Check all that apply

- I don't have any
- They interfere with some activities
- I barely notice them, but others do
- They interfere with most activities

What are your most troublesome side effects?

Check all that apply

- Sleepiness
- Confusion or other thinking problems
- Nausea
- Lightheadedness upon standing
- Hallucinations
- Behavior or personality changes

Other: _____



Track your symptoms to help your doctor

A well-kept Symptom Tracker provides a clear picture of your medication use, when you are feeling well, and when you are not.

Instructions

Track your symptoms for three full days, and then bring the completed Symptom Tracker to your doctor.

Before you start

Next to the name of the drugs listed, write the strength of the pills you take (in mg). Look at the container label if necessary. Use "other" row for Parkinson's drugs not listed.

Every hour

- Mark with an "X" the row that best describes your overall motor control.
- When you take medications, write down how many pills you took.
- In the notes section, write any troublesome side effects you experience.

Symptom control categories

Record your symptom control every hour in one of four categories:

- Asleep
- "On" Time with unintended movements (dyskinesia)—Periods when medication is giving you good symptom control but is causing troublesome, involuntary, excessive movements
- "On" Time without unintended movements (dyskinesia)—Periods when medication is giving you good motor control
- "Off" Time—Periods when medication is not helping enough and you are experiencing troublesome symptoms like tremor (shaking), slowed movement (bradykinesia), or stiffness (rigidity)

Daily Symptom Tracker

Day 1																			
	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
Asleep																			
"On" Time with troublesome dyskinesia																			
"On" Time without troublesome dyskinesia																			
"Off" Time																			
Parkinson's Medications (tablet strength in mg)																			
Parcopa®, Rytary®, Sinemet® Carbidopa/Levodopa™ (mg)																			
Stalevo® Levodopa/ Entacapone™ (mg)																			
Symmetrel® Amantadine HCL™ (mg)																			
Azilect® Rasagiline™ (mg)																			
Requip® Ropinirole HCL™ (mg)																			
Mirapex® Pramipexole DIHCL™ (mg)																			
Comtan® Entacapone™ (mg)																			
Artane® Trihexphenidyl™ (mg)																			
Other: _____																			
Other: _____																			

Notes (e.g., troubling side effects):

Daily Symptom Tracker

Day 2																			
	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
Asleep																			
"On" Time with troublesome dyskinesia																			
"On" Time without troublesome dyskinesia																			
"Off" Time																			
Parkinson's Medications (tablet strength in mg)																			
Parcopa®, Rytary®, Sinemet® Carbidopa/Levodopa™ (mg)																			
Stalevo® Levodopa/ Entacapone™ (mg)																			
Symmetrel® Amantadine HCL™ (mg)																			
Azilect® Rasagiline™ (mg)																			
Requip® Ropinirole HCL™ (mg)																			
Mirapex® Pramipexole DIHCL™ (mg)																			
Comtan® Entacapone™ (mg)																			
Artane® Trihexphenidyl™ (mg)																			
Other: _____																			
Other: _____																			

Notes (e.g., troubling side effects):

Daily Symptom Tracker

Day 3																			
	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
Asleep																			
"On" Time with troublesome dyskinesia																			
"On" Time without troublesome dyskinesia																			
"Off" Time																			
Parkinson's Medications (tablet strength in mg)																			
Parcopa®, Rytary®, Sinemet® Carbidopa/Levodopa™ (mg)																			
Stalevo® Levodopa/ Entacapone™ (mg)																			
Symmetrel® Amantadine HCL™ (mg)																			
Azilect® Rasagiline™ (mg)																			
Requip® Ropinirole HCL™ (mg)																			
Mirapex® Pramipexole DIHCL™ (mg)																			
Comtan® Entacapone™ (mg)																			
Artane® Trihexphenidyl™ (mg)																			
Other: _____																			
Other: _____																			

Notes (e.g., troubling side effects):



Medtronic DBS **Adapting to you**

Medtronic has engineered the most advanced deep brain stimulation (DBS) system that is adaptable to your individual needs. The Percept™ family is available with BrainSense™ technology to provide a more complete picture of your day-to-day brain activities so your clinician can adapt your stimulation and personalize your therapy.

Over 180,000⁴ people worldwide have received Medtronic DBS therapy across our indications.

Lisa, receiving DBS therapy



DBS device considerations

Once you've made the decision to get DBS therapy, you'll work with your doctor to select the DBS device that's right for you. Here are a few questions to consider.

How will my DBS therapy be personalized for me?

All DBS systems can be programmed, but not all are adaptable using sensing technology. Medtronic DBS offers BrainSense™ technology to capture and record real-time brain signals related to your symptoms. This sensing capability allows your clinician to see your brain activities at the exact time you experienced symptoms (even when symptoms occur outside of an office visit). With this information, your stimulation can be personalized and adapted by your clinician to optimize therapy and minimize side effects.

Recharge-free or rechargeable?

Medtronic DBS offers both recharge-free (Percept™ PC) and rechargeable (Percept™ RC) options to meet your needs. The Percept™ PC provides a low maintenance battery with an expected 5 years of service life† without ever having to recharge. For those who don't mind periodically recharging their neurostimulator, the Percept™ RC provides at least 15 years of service life with consistent stimulation and fast recharge performance. Talk with your doctor to determine which option is right for you.

Can I get an MRI with my DBS device?

Not all DBS systems can have stimulation remain on during a magnetic resonance imaging (MRI) scan. Medtronic DBS with Percept™ neurostimulators are compatible with 1.5T and 3T MRI scans for when you need high-quality imaging and DBS stimulation can remain on during a MRI.‡

†  Under specific conditions. Refer to product labeling for full list of conditions: <https://manuals.medtronic.com/manuals/mri/region>

‡ For median energy use in DBS for PD patients, with moderate (up to 2 months per year) BrainSense™ technology usage.

Percept™ family with BrainSense™ technology



Designed to meet your needs today and tomorrow:

- Equipped with **BrainSense™ technology** to enable clinicians to personalize and adapt therapy to your individual needs.
- **Access to 1.5T and 3T MRI with ability for DBS therapy to remain on** during an MRI scan.†
- **Ready for future advancements** when software updates become available.
- **Designed small for comfort**—with the thinnest recharge-free and rechargeable DBS neurostimulators available.‡
- Choice of **recharge-free** (PC) or **rechargeable** (RC) battery options

Percept™ PC neurostimulator

Recharge-free

- Experience a low maintenance battery with an expected 5 years of service life§ without ever having to recharge.



Percept™ RC neurostimulator

Rechargeable

- Count on at least 15 years of service life with consistent stimulation and fast recharge performance.



Talk with your doctor to determine which option is right for you.

† Percept™ RC as compared to Boston Scientific Vercise Genus™ R16 (MP92328632-05 REV B) and Abbott Liberta RC™ DBS Implantable pulse generator (ARTEN600308953 A). Percept™ PC as compared to Boston Scientific Vercise Genus™ P16 (MP92328632-05 REV B) and Abbott Infinity™ S/7 IPG (ARTEN600150429 B).

‡ Under specific conditions. Refer to product labeling for full list of conditions: <https://manuals.medtronic.com/manuals/mri/region>

§ For median energy use in DBS for PD patients, with moderate (up to 2 months per year) BrainSense™ technology usage.

Brief Statement: Medtronic DBS therapy for Parkinson's Disease and Tremor
Patients should always discuss the potential risks and benefits with a physician.

Medtronic DBS Therapy for Parkinson's Disease: Deep brain stimulation (DBS) helps control the movement symptoms of Parkinson's disease, including tremor, slowed movement, and stiffness. You may be a candidate for this therapy if you have had levodopa-responsive Parkinson's for at least 4 years and at least 4 months of movement symptoms not well controlled by medications or medication side effect such as unintended movements (dyskinesia).

Medtronic DBS Therapy for Tremor: Deep brain stimulation (DBS) delivers electrical stimulation to an area in the brain to help treat essential tremor. Electrical stimulation is only delivered to one side of the body and is used to treat tremor in one arm of the body. You may be a candidate for this therapy if you have essential tremor not adequately controlled by medications and the tremor is disabling.

Placing the DBS system requires brain surgery, which can have serious and sometimes fatal complications including bleeding inside the brain, stroke, seizures, and infection. Once implanted, infection may occur, parts may wear through your skin, and the lead and/or extension connector may move. Medtronic DBS Therapy could stop suddenly because of mechanical or electrical problems. Any of these situations may require additional surgery or cause symptoms to return or worsen. Medtronic DBS Therapy may cause new or worsening neurological or psychiatric symptoms.

In patients receiving Medtronic DBS Therapy, new onset or worsening depression, suicidal thoughts, suicide attempts, and suicide have been reported.

This therapy is not for everyone. Implantation of a DBS system is contraindicated (not allowed) for patients who will be exposed to diathermy (deep heat treatment) or transcranial magnetic stimulation. Magnetic Resonance Imaging (MRI) should only be performed as described in the product labeling. The DBS system may interact with other medical devices and other sources of electromagnetic interference which may result in serious patient injury or death, system damage or changes to the neurostimulator or to stimulation.

A prescription is required. Not everyone who receives DBS Therapy will receive the same results.

Rev 02/22



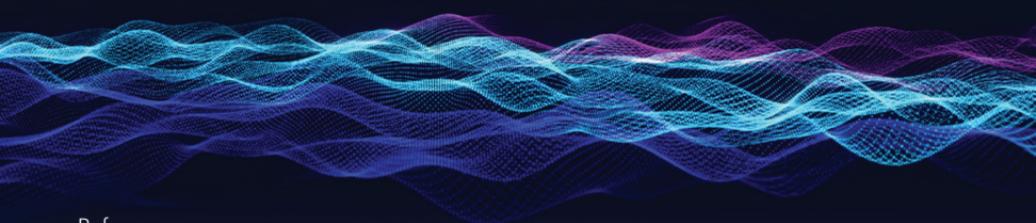
*To Everyone at Medtronic. Thank you for all of your hard work.
Because of all of you, I have my life back.*

– Lisa, receiving DBS therapy

Ask for **Medtronic DBS**

– powered by BrainSense™ technology that enables clinicians to personalize and adapt therapy to your individual needs.

Medtronic is your dedicated and proven partner to support you through your DBS journey.



References

1. 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.
2. Schuepbach WMM, Rau J, Knudsen K, et al: Neurostimulation for Parkinson's disease with early motor complications. *N Engl J Med*. February 14, 2013;368:610-22 7.
3. Follett KA, Weaver FM, Stern M, et al. Pallidal versus subthalamic deep-brain stimulation for Parkinson's disease. *N Engl J Med*. 2010;362:2077.
4. Medtronic data on file.

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