

Deep Brain Stimulation for Parkinson's Disease – What You Need to Know

The best treatment options for Parkinson's disease (PD) vary with the individual patient, and change over the course of the disease. The mainstays of treatment throughout the disease are drugs such as levodopa that compensate for lost dopamine in the brain. But as the disease progresses, levodopa usually becomes less effective, requiring higher and more frequent doses to maintain effective control of symptoms. People with PD may develop increasing amounts of "off" time (periods during the day when levodopa and their other drug treatments are not offering benefit), and dyskinesias (uncontrolled movements during the time of peak benefit from a dose of levodopa). At this stage of the disease, deep brain stimulation (DBS) may provide an important treatment option to reduce off time and dyskinesias, and potentially improving quality of life.

What is DBS?

DBS is a surgical procedure in which thin electrodes are implanted into parts of the brain that control movement. The electrodes deliver tiny electrical pulses to these brain regions. This allows the brain to maintain normal movement activity with a lower

dose of levodopa. The electrodes are connected by a wire to a pulse generator that is implanted under the skin in the chest. The electrodes and the wire are also under the skin, so that no part is visible externally.

What Benefits May DBS Offer?

DBS is not a cure for PD, but it may help control motor symptoms while allowing a reduction in levodopa dose. This can help reduce dyskinesias and reduce "off" time. DBS does not usually increase the peak benefits derived from a dose of levodopa—the best levodopa response before DBS is a good indicator of the best response after DBS. But it can help extend the amount of "on" time without dyskinesias, which may significantly increase quality of life.

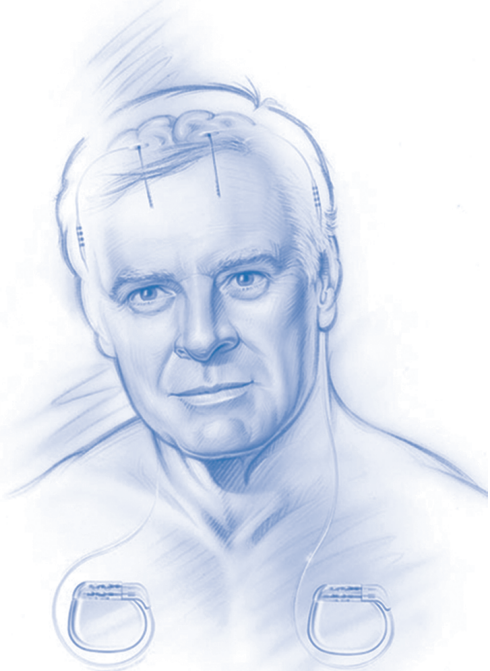
DBS does not provide most patients benefit for their non-motor symptoms, such as depression, sleep disturbance, or anxiety. DBS also does not usually improve postural instability or walking problems. If a symptom you have does not respond to levodopa, it is not likely to respond to DBS.

What Are the Risks of DBS?

DBS is a surgical procedure. As with any surgery there are some risks associated with it. Some of the risks of DBS include infection and bleeding. Your neurosurgeon may discuss some additional risks with you. Studies have shown that any risks are relatively small, but they should be kept in mind when considering DBS.

Am I a Good Candidate for DBS?

Before considering DBS, it is very important to be evaluated by a movement disorder specialist (a neurologist who is highly trained in treating PD). Often, medication adjustments and other treatment changes can offer significant benefits and may delay the need for surgery.



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DBS is not for everyone. It is approved by the United States Food and Drug Administration for those with PD of at least four years' duration. Those with the best outcomes are those whose symptoms respond strongly to levodopa. In addition, the best surgical candidates are those who are younger (patients over 70 tend to have higher rates of complications), without dementia, and have no other major medical conditions.

What Happens During DBS?

Most DBS procedures are performed with the patient awake under local anesthesia, with their head immobilized in a rigid frame, so that the surgical team can monitor patient response to the electrode placement as it occurs. A few centers are now offering image-guided placement, in which the surgery is performed under general anesthesia without the frame. The pulse generator is usually implanted during a second surgery, scheduled about a week after the first.

What Happens After the Procedure?

You will likely remain in the hospital for one or two nights following your first surgery (electrode placement). You will probably go home the same day following your second surgery (pulse generator). The stimulator is turned on several weeks later. Adjustment of the stimulator may take repeated visits over several weeks or even longer. Adjusting the stimulation settings after surgery is a critical part of optimizing the treatment, and is the key to obtaining the most benefit.

Resources

APDA provides information, education, and support to those impacted by Parkinson's disease and funds scientific research into the causes, prevention, treatments and ultimately the cure. We provide a nationwide network of programs, activities, and events to facilitate a better quality of life for the Parkinson's community. Through our website, www.apdaparkinson.org, you can find the full range of resources we offer, as well as links to other important sources of information and support.