

Deep Brain Stimulators

What is a deep brain stimulator (DBS)?

The device consists of an electrode and a battery. The electrode is placed into the brain through an incision in the skull. It is attached to a battery placed in the chest just below the collar bone. DBS is used to treat Parkinson's disease, essential tremor, and dystonia. The entire system is placed under the skin. People will not be able to see your electrodes or battery. Depending on your body build, there may be a small bulge under the skin where the battery is placed.

How do I know if I am a good candidate for DBS?

You will meet with members of the movement disorders team. The team includes a neurologist, neurosurgeon, physical therapist, and neuropsychologist. The team will meet to review your condition and let you know if DBS will help you.

How do I get ready for this surgery?

You will have a physical exam within 30 days prior to your surgery. This can take place at the hospital or with your primary care provider. This exam is to make sure you are healthy and ready for surgery. At this exam, your provider will review your current medicines.

We will ask you to let us videotape you during clinic visits. The videos will be used to compare the changes before and after DBS placement.

If you wish to talk with someone who has been through this surgery, let us know. We will give your name and phone number to a patient who has had DBS.

You may be asked to take part in research studies. They will explain this to you during your visit. You may choose to take part or not.

Plan to shampoo with an antibacterial soap the night before and the morning of surgery. This decreases the risk of infection. Do not eat or drink after midnight.

You will get a letter in the mail, with the dates of your surgeries. It will also include instructions on which medicines to take before your surgeries. Stop taking aspirin and products which contain ibuprofen (such as ibuprofen, Advil[®], and Motrin[®]) one week before your surgery date. Please refer to your booklet, "Having Surgery at UW Hospital" for general instructions.

What is the surgery schedule?

The DBS is done in three steps. In the first step, four small incisions are made on your scalp and bone. Markers or screws are placed in your skull to help the surgeon plan for your surgery. We ask that you have your entire head shaved prior to this surgery. Please use clippers at zero guard. Do not use a razor as that could nick or cut the skin. You will have IV sedation for this procedure. You will have a brain CT after the markers are in place, while sedated.

During the second surgery (10 days later), you are asleep with IV sedation. In the operating room (OR), your head will be cleaned with an antiseptic soap. Drapes will be put on your head to keep the area sterile. The sedation is reversed and you will be awake when the electrode(s) is placed deep in your brain. The brain itself does not have any pain sensors and you will not feel anything. That is what allows us to do

awake brain surgery. During this time, the doctor and staff will ask you questions to make certain the electrode is in the right place. You will be given more IV sedation when it is time to close the incision so you will not feel any pain. If you feel any discomfort during this time, tell staff and they can help to make you more comfortable.

You will most likely go home the next day. You will need to plan to have someone with you at home the first 24-48 hours. If you are having electrodes placed on both sides of your brain, this may be done at 2 different times. Your doctor will explain the schedule best for you.

During the third step (one week after the electrode is placed), the battery will be placed in your chest. You will be asleep for this and it will take 1-2 hours. First an incision will be made in your chest. The incision behind your ear will be re-opened. The doctor will insert the battery into your chest, bring the wire behind your ear down your neck to your chest, and connect the two devices. Once this is done, all parts will be under the skin.

You will go home after this surgery, and you will need a driver for this. Turning on the device along with programming is done one month after the DBS lead placement. This allows for swelling to go down.

What can I do after surgery?

Activity

You may begin walking as soon as you feel that you can. Walk often, and have someone help you. It is best to build your strength by taking frequent, short walks. Going for walks can be as simple as walking laps around a kitchen table, or up and down a hallway in your home. It is very important to move often, and increase as you are able. If

you were in an exercise program before surgery, you can start again in 6 weeks.

Household Chores

At home, you will need to rely on friends/family to help with household chores. Slowly increase the amount you do. You are at higher risk to fall when you are over tired or in pain. Being on pain medicine will increase your risk for falls.

Until you see your doctor at your follow-up visit:

- No heavy lifting (no more than a gallon of milk), sports, running, etc.
- Do not use heavy or high-speed machinery.
- No ladder or high places.
- No swimming, hot tubs, or tub baths.

Driving/Travel

Do not drive until cleared by your doctor. Avoid flying for 2-4 weeks. If you plan air travel within six weeks, please discuss this with your doctor.

Work

You and your doctor will decide when you are ready to go back to work. Most people need 4-6 weeks to heal. This varies based on the type of surgery you had, how you are feeling and the type of work you do.

Incision Care

Please follow the instructions in your discharge packet for incision care. Look at your incision daily. Keep it clean and dry. When it is OK to get your incision wet, please use a mild shampoo such as baby shampoo. Do not rub the incision. Pat dry. Avoid using a conditioner, dandruff shampoo, or any combined shampoo/conditioner products for 3 months. These products can slow healing by causing a build-up of dry skin. If you are not able to

shower, be sure to clean the incision daily with mild soap and water. Do not apply creams.

After your sutures are removed, you should still avoid dandruff shampoo and conditioners for 3 months. Do not get a perm or color your hair. Protect the area from sun and cold.

Some incisions have sutures that will dissolve on their own. These may look like clear fishing line. They will slowly fall out in about 2 – 3 weeks. This incision requires the same care as described above.

You may have numbness, itching or slight scabbing at the site. This is normal. It may take months for the numbness to go away.

Pain

As your pain improves, you should decrease the amount of opioid pain medicine you take. Your discharge medicines include other medicines that you may take for postoperative pain.

Reasons to Call Your Neurosurgeon

- Severe or increasing headaches
- Changes in your vision
- Constant nausea or vomiting
- Increased sleepiness
- Change in behavior
- Problems with walking or balance
- Any drainage from your incision or any signs of infection

Signs of Infection

- Increased redness, swelling.
- Drainage.
- Marked increase in pain.
- Fever greater than 100°F.

Reasons to Call Your Neurologist

- Increased involuntary movements (dyskinesia)
- Hallucinations
- Confusion or memory loss.
- Increased tremor
- Decreased balance or increase in falls

When will the DBS be turned on?

You will be seen by the DBS programmer in the neurology clinic one month after your electrode is placed. They will work closely with you to assess how you respond to the DBS. It may take several programming visits over a few months before you notice an improvement in your symptoms.

You will be given a patient programmer at the time of your battery placement. It is the size of a small remote control. This allows you to turn the battery on and off if needed. The DBS team may also allow you to make minor changes to the program.

Will my medicines be changed after surgery?

Each person has a different response to DBS. Your neurologist, DBS programmer, and clinic nurse will work with you closely. They will help to decide what changes need to be made in your medicines. You may be able to decrease the amount of medicine that you take. This will depend on your symptoms and how much they improve with DBS.

Are there things I should not do after I have the DBS?

The new DBS systems allow you to have an MRI or CT scan. You may also have an ECG. The battery will need to be turned off but will be turned right back on. You will not need to turn off DBS for x-rays. You will need to take antibiotics before having any dental work done for the first six

months after your DBS is placed. Tell your dentist that you have an implanted device.

Be cautious with any security screening and scanning devices. It is best that you avoid being scanned or "wanded." You may need to be hand patted by security instead.

Surgery or other procedures will need the DBS to be turned off. You will be shown how this is done using your patient programmer. You will need to check with your neurosurgeon before the procedure, to see if you need antibiotics.

How often does my battery need to be replaced?

Non-rechargeable batteries will need to be replaced every 2-5 years. Rechargeable batteries last 9-15 years. This is a short surgery that does not require invasive brain surgery. You come to the hospital and usually go home later the same day.

Phone Numbers

Neurosurgery clinic **(608) 263-7502**

Neurology clinic **(608) 263-5442**

If you live out of the area **1-800-323-8942**.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 5/2018. University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#5858.