

YOUR VALUES  
YOUR PREFERENCES  
YOUR CHOICE

Allina Health 

# Should You Have Deep Brain Stimulation?



# Understanding Deep Brain Stimulation

## Your Brain and Central Nervous System

Nerve cells (neurons) communicate with your body by sending and receiving signals. These signals control your speech, movement, thinking process and senses (hearing, sight and touch). The central nervous system is made up of billions of neurons in your body.

## Deep Brain Stimulation (DBS)

Movement disorders (Parkinson's disease, tremors) are the result of abnormal changes in your brain cells and brain chemicals. These changes can affect your brain signals. This can affect your ability to move.

Parkinson's disease is caused by the loss of neurons that make dopamine. Essential tremor is a movement disorder that causes extreme shaking and uncontrolled movement.

DBS uses a small device called a battery pack. This device is implanted in your chest and sends electrical impulses through wire leads in your brain. This stimulation blocks abnormal signals that cause some movement disorder symptoms.

Some of these symptoms can be treated with DBS:

- tremors
- slowness
- stiffness.

Symptoms DBS cannot treat are:

- dementia
- depression
- constipation
- speech problems.

Your health care provider may suggest DBS if your medicine no longer controls your symptoms well. Using DBS and medicine may reduce some symptoms and give you more control of your movement.

## Preparing for DBS

Together, you and your neurologist will decide if DBS is a good option.

If you choose to have DBS, your neurologist will refer you to a movement disorder specialist. He or she will help determine if DBS is a safe option for you.

Before the procedure, you will need to have:

- magnetic resonance imaging (MRI)
- testing of thinking and memory (neuropsychological test)
- testing to see if symptoms will respond to DBS (Parkinson's disease only).

If you decide to have DBS and it is a safe option for you, you will need two procedures to:

- place of leads in your brain
- place the battery back in your chest.

# Your Treatment

## Stage 1: Procedure to Place the Leads

This is a procedure to place the leads in your brain.

You will be awake during the procedure. This helps your health care team find the best locations for the electrodes.

You will have a MRI or CT (computed tomography) scan to help find the best location for the electrodes.

### Before the procedure

- Follow your health care provider's directions about:
  - eating, drinking and tobacco use
  - taking prescription, over-the-counter medicines, herbals or natural products and vitamins.
  - items to bring with you to the hospital.

Do not take your Parkinson's or tremor medicines 24 hours before surgery.

### During the procedure

- Your surgeon will numb your scalp with medicine.
- The hair around the surgery area(s) may be clipped or shaved.
- Your surgeon will drill 1 or more small holes in your skull and place the electrodes in your brain.

### After the procedure

- You will have a MRI or CT scan to make sure the electrodes are in the right place.
- You will stay in the hospital overnight.
- You will receive instructions about:
  - activity
  - lifting restrictions
  - medicine
  - incision care.

# Your Treatment (continued)

## Stage 2: Procedure to Place the Battery Pack

This procedure is to place the device in your chest and connect the wire leads to the electrodes.

You will be asleep during the procedure. You will have the battery pack placed in your chest 1 to 2 weeks after your brain procedure.

### Before the procedure

- You can take your Parkinson's or tremor medicines on the day of the procedure.
- Follow your health care provider's directions about:
  - eating, drinking and tobacco use
  - taking prescription, over-the-counter medicines, herbals or natural products, and vitamins you currently use
  - items to bring with you for your visit.
- The area below your collarbone will be shaved, if needed.
- A nurse will start an intravenous (IV) line in your arm.

### During the procedure

- Your surgeon will:
  - make a cut (incision) just below your collarbone and place the device
  - attach the device to the leads in your brain
  - test the device to check that it is working properly and turn it off
  - close the incision.

### After the procedure

- You go home from the hospital the same day.
- You will receive instructions about:
  - activity
  - lifting restrictions
  - medicine
  - incision care.
- You will have your follow-up appointment with your surgeon 1 to 2 weeks after your procedure.

### DBS Programming

Programming will help decide the right amount of electrical stimulation for you. Your movement disorder specialist will adjust the settings using a remote control.

Programming begins 4 weeks after brain procedure. You will have about 2 to 4 programming visits during the first 6 months after your DBS.

You may need to have physical, occupational or speech therapy after you leave the hospital. Your neurologist will work with you to find out what is best for you.

# Benefits and Risks

Benefits	Important Part of My Decision	My Thoughts
Your movement and motor symptoms may get better. You may have more control of your movement after treatment.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The battery pack will be adjusted to your needs.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If you are taking medicine to manage symptoms, you may be able to take fewer after the procedure.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
You will not need to stay in the hospital after the battery pack is placed.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The procedure can be reversed and does not destroy small parts of the brain.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Risks	Important Part of My Decision	My Thoughts
You will have 2 procedures in 2 weeks. Each procedure has risks. Your health care provider will explain these.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Side effects may include headache, infection, stroke, bleeding, seizures, temporary pain and confusion after surgery.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
You may still have some symptoms of Parkinson's or tremors.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Fewer than 1 out of 10 people will have issues with their device, such as hardware erosion.	<input type="checkbox"/> Yes <input type="checkbox"/> No	

# My Preferences

Questions	My Thoughts
As you think about the possible risks, what are your fears or concerns?	
As you think about DBS, what are your hopes or goals?	
What matters to you most?	
Are you clear about the benefits and risks of DBS?	
Is there anything that may get in the way of you doing this?	

## My Decision at This Time

have the procedure    do not have the procedure

# Next Steps

## Questions for Your Health Care Provider

1. Is DBS safe for me?

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2. What are my risks after surgery?

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3. When should I consider starting DBS?

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4. How rare or common are the risks for DBS?

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5. How likely am I to benefit from DBS?

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6. Aside from DBS, what can I do to check for and prevent symptoms for my movement disorder from getting worse?

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7. When do I need to decide if I will have the procedures?

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8. What is the next step for me?

9. Other questions: \_\_\_\_\_

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