# Deep Brain Stimulation (DBS)

## Understanding Your Brain and Central Nervous System

Brain 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).

## Deep Brain Stimulation (DBS)

Movement disorders (Parkinson's disease, tremors, chorea, dystonia) 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.

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

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

You will meet with your neurologist to decide how to best treat your movement disorder symptoms. 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. To do this, you will need to have tests, including magnetic resonance imaging (MRI).

If you decide to have DBS and it is a safe option for you, you will need 2 different surgeries:

- brain surgery
- chest surgery.

## Brain Surgery

This is surgery to place the electrodes in your brain.

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

### Before brain surgery

- Follow your health care provider's instructions 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 to the hospital.
- Your health care team will give you a head frame to keep your head from moving.
- You will have a MRI or CT (computed tomography) scan to help identify the best location for the electrodes.

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### During brain surgery

- 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 brain surgery

- You will have a MRI or CT scan to make sure the electrodes are in the right place.
- You will stay in the hospital for 1 night.
- You will receive instructions about:
  - activity
  - lifting restrictions
  - medicine
  - incision care.

## Chest Surgery

This is surgery to place the neurostimulator in your chest and connect the wire leads to the electrodes.

You will be asleep during surgery. You will have chest surgery 1 to 2 weeks after your brain surgery.

### Before chest surgery

- Follow your health care provider's instructions 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 chest surgery

- You will receive medicine through your intravenous (IV) line to help you relax.
- Your surgeon will make a cut (incision) just below your collarbone and place the neurostimulator.
- Your surgeon will attach the neurostimulator to the leads. The leads are then attached to the electrodes in your brain.
- Your surgeon will test the neurostimulator to check that it is working properly.
- Your surgeon will close the incision and put a dressing over it.

### After chest surgery

- You will be discharged the same day.
- You will receive instructions about:
  - activity
  - lifting restrictions
  - medicine
  - incision care.

## DBS Programming

You will need DBS programming to 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 chest surgery. You will have about 2 to 4 programming visits during the first 6 months after your chest surgery.




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