

THALAMOTOMY:

It involves the precise destruction of a very small area in another part of the brain. It is usually performed on one side, and may reduce the intensity of tremor anywhere significantly.

PALLIDOTOMY:

It involves the precise destruction of a very small area in a deep part of the brain. It may cause improvement of involuntary muscle movements as well.

WHO IS NOT A GOOD CANDIDATE FOR SURGERY?

- Patients with advanced liver, kidney and heart disease, lung conditions, severe dementia, depression or cancer are not considered good candidates for these surgical procedures.
- Patients that are above 70 years of age.
- Patients with poor response to levodopa.

WHAT ARE THE POSSIBLE COMPLICATIONS OF SURGERY?

The most serious potential risk of the surgical procedures is bleeding in the brain/stroke, the average risk of which is very small. The other serious risk is infection, which may occur in about 4% of patients or less.

HOW OFTEN DOES A PATIENT HAVE TO SEE A NEUROLOGIST?

Patients are seen in follow-up visits several times in the first 6 months after surgery and adjustments are required less frequently after 6 months. Deep brain stimulation treatment improves quality of life but does not arrest the progression of Parkinson's disease.



DID YOU KNOW?

The number of Parkinson's patients will double by 2040. Millions of Parkinson's patients are suffering from poverty and...

- Cannot afford to buy their medications
- Cannot afford to purchase a cane, walker, or a wheelchair
- Cannot obtain educational literature about Parkinson's in their language
- Are not able to afford to consult a neurologist and remain undiagnosed and untreated

OUR SERVICES

World Parkinson's Program is the only organization which provides the following unique services to Parkinson's patients around the world:

- Parkinson's medications to those patients who can't afford to buy them
- Canes, walkers & wheelchairs to prevent falls
- Parkinson's educational brochures in many languages
- Free electronic educational newsletter
- Chapters of World Parkinson's Program in various parts of the world

JOIN THE FIGHT AGAINST PARKINSON'S TO DONATE, VISIT PDPROGRAM.ORG

This information is not a substitute of medical advice. Consult your Physician before applying this information.

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Frequently asked questions about

SURGERY FOR PARKINSON'S DISEASE



ENGLISH - 19



www.pdprogram.org

"Those who fight Parkinson's with knowledge always find solutions"- Dr. Rana

Parkinson's disease is a progressive neurodegenerative condition characterized by tremors, slowness of movements, stiffness, and balance problems. In addition, Parkinson's has many non-motor symptoms such as memory or cognitive issues, speech and swallowing problems, depression, and sleep difficulties. It affects almost 10 million individuals around the world.

WHAT ARE THE TREATMENT OPTIONS AVAILABLE FOR PARKINSON'S PATIENTS?

Medications are the main treatment modality for Parkinson's disease. Physical rehabilitation, speech therapy, have objective benefits. However, levodopa is the main drug which is used for the treatment of Parkinson's disease. With long-term usage of levodopa, patients show fluctuations along with involuntary muscle movements. This may become a treatment challenge. Adjustment of medications and addition of further drugs may help in improving motor fluctuations. However, as the disease progresses, it may impact the quality of life for patients. Patients who respond to levodopa and have refractory motor fluctuations may benefit from surgery.

WHEN IS SURGERY NEEDED IN PARKINSON'S PATIENT?

Surgery in Parkinson's may be considered when medications fail to completely control symptoms or cause severe or disabling side effects. Surgery does not affect or stop the progression of the disease and medication are usually still needed after the surgery. However, the dose and frequency may be reduced, which means having fewer side effects.

WHAT ARE THE PREREQUISITES OF SURGERY?

When deciding to have a surgery, the following general guidelines are followed:

- Patient needs to be seen by a neurologist who specializes in movement and body disorders and Parkinson's. The movement disorder specialist will perform a detailed assessment of the patient which may require multiple visits.
- MRI scan of brain before surgery.
- Chest X-ray, EKG, and blood tests are also performed along with general medical examination called pre op assessment.
- Psychological Assessment: A series of tests called neuropsychological battery are performed which tests patient's memory and thinking. This is done to make sure that the symptoms are due to Parkinson's and not due to other underlying diseases.
- Levodopa challenge test: This test is performed to further confirm the response to levodopa. This test is positive when the patient's symptoms worsen when levodopa is stopped and improve when levodopa is given.
- All dopaminergic medications are stopped at least 12 hours before the procedure because medication can interfere with microelectrode recording and the clinical assessment before surgery.

WHAT ARE THE TYPES OF SURGICAL METHODS COMMONLY USED IN PARKINSON'S PATIENTS?

- Deep Brain stimulation of subthalamic nucleus
- Thalamotomy or Pallidotomy

DEEP BRAIN STIMULATION (DBS):

It's the most common type of surgery for treating most cases of advanced Parkinson's. DBS surgery involves placing metal electrodes into brain targets by attaching them to a computerized pulse generator, which is implanted under the skin in the chest (much like a heart pacemaker). All parts of the stimulator system are internal; there are no wires coming out through the skin. DBS does not destroy brain tissue.

There are many possible target sites in the brain that may be selected for placement of stimulating electrodes. Generally, these areas are the subthalamic nucleus, globus pallidus, and thalamus. Surgery involves implantation of the brain electrodes performed with the patient awake, using only local anesthetic and occasional sedation. To maximize the precision of the surgery, a brain mapping procedure in which fine microelectrodes are used to record brain cell activity in the region of the intended target is done. Once the permanent DBS electrode is inserted and tested, the patient then receives a general anesthetic to be completely asleep for the placement of the pulse generator in the chest and the tunneling of the connector wire between the brain electrode and the pulse generator.

Deep brain stimulation improves the quality of life but does not arrest the underlying progression of Parkinson's disease.