

Deep Brain Stimulation for Parkinson's Disease

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There is a long history of surgical treatment for Parkinson's disease (PD). Formerly, ablative stereotactic procedures such as thalamotomy or pallidotomy were performed. Currently, deep brain stimulation (DBS) is the most promising surgical treatment option for patients with medically refractory PD. DBS modulates neurological function of the target region using implanted medical devices to deliver electrical stimulation to the brain. Currently, the most common target of DBS for PD is the subthalamic nucleus (STN). The appropriate surgical candidate for STN-DBS suffers from motor complications from levodopa such as fluctuations and dyskinesia. STN-DBS significantly improves motor function in the medication-off state, motor fluctuations and dyskinesia with reduction of dopaminergic medication. Long-term outcomes are favorable for cardinal motor symptoms such as tremor, rigidity, and bradykinesia. However, refractory axial symptoms concerning speech, swallowing, gait and postural stability gradually deteriorated with progression of disease. New strategy to treat these axial symptoms is the future subject.