

## Electrode re-implantation helps some Parkinson's disease patients

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A study of seven patients with Parkinson's disease suggests that those who have poor results following implantation of electrodes to stimulate the brain may benefit from additional surgery to correct the electrode placement, according to a report in the May issue of *Archives of Neurology*.

Implanting electrodes that stimulate the subthalamic nucleus, a region deep in the brain potentially related to impulsivity, is effective in reducing medication doses and improving the symptoms of Parkinson's disease, according to background information in the article. With this treatment, medication doses are often reduced by 50 percent to 65 percent, and scores on scales measuring motor function (generally impaired in Parkinson's disease) typically improve by 40 percent to 70 percent. However, sometimes the surgery is less effective.

“The principal cause of these poor results arises from imprecision of electrode placement, leading to non-stimulation of the target as required,” the authors write. “Misplacement of the electrode by only a few millimeters may have occurred.”

Mathieu Anheim, M.D., of the University Hospital A. Michallon, Strasbourg, France, and colleagues studied seven consecutive patients age 49 to 70 with Parkinson's disease who, despite electrode implantation, continued to experience severe symptoms. The patients were operated on again and the electrodes were re-implanted 12 to 23 months after the original surgery. Motor scores and medication doses

were assessed one year after the second procedure.

All patients except for one displayed improvement after the second surgery. When they were not on medication, treatment improved the patient's motor scores by 26.7 percent following the first operation and 59.4 percent following the second procedure. Their dose of levodopa, a medication treating Parkinson's disease, decreased from 1,202 milligrams to 534 milligrams. The average distance between the electrodes and the target point of stimulation—a location in the subthalamic nucleus identified by evaluating electrode placement in patients whose surgery was successful—decreased from 5.4 to 2 millimeters. The shorter this distance, the greater the patient's improvement in motor scores.

Source: JAMA and Archives Journals

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