

Consensus reached on use of Parkinson's treatment

October 13 2010, By Mark Wheeler

Since the late 1990s, deep brain stimulation (DBS) has proven to be a lifeline for some patients suffering from Parkinson's disease, a cruel neurological disorder that can cause lack of control over movement, poor balance and coordination, and rigidity, among other symptoms.

The procedure is used only for patients whose symptoms cannot be adequately controlled with medications. A [neurosurgeon](#) uses [magnetic resonance imaging](#) or computed tomography to identify the exact target within the [brain](#) where abnormal electrical nerve signals generate the disease's tremors and other symptoms, and a neurostimulator is then surgically implanted to deliver electrical stimulation to that area to block the signals.

The goal, ultimately, is to improve the patient's quality of life.

Yet despite its effectiveness, there has been no consensus on several aspects of the use DBS, including which patients make the best candidates, where the optimal location for the placement of electrodes is, and the role that still exists for surgical removal of the damaged areas of the brain.

To address these concerns, a more than 50 DBS experts — including world-renowned neurologists, clinicians and surgeons — pooled their experience with the procedure and reached a consensus. The goal of this "meeting of the minds" was to better inform Parkinson's patients and their families about the potential of DBS treatment and to better inform

the medical community in suggesting the procedure.

The results of their April 2009 meeting are presented in the current online edition of the journal *Archives of Neurology*.

"We know that very little accessible information is out there to help a Parkinson's patient make an informed decision as to whether he or she would be a good candidate for [deep brain stimulation](#)," said Jeff Bronstein, a UCLA professor of neurology and lead author of the report.

Surgical trials take a long time, he said, and what information is available on DBS appears in academic journals, is focused and limited, and is usually written by one group reflecting their biases.

Bronstein, who directs the UCLA Movement Disorder Program and is a member of the UCLA Brain Research Institute, said the results of the group's meeting will help clarify some of the issues about DBS treatment. Among their findings:

- The best candidates for DBS are those who can't tolerate the side effects of medications, who don't suffer from significant active cognitive or psychiatric problems, and who do suffer from tremors and/or motor fluctuations.
- DBS surgery is best performed by an experienced team and neurosurgeon with expertise in stereotactic neurosurgery — microsurgery deep within the brain that is based on a three-dimensional coordinate system using advanced neuroimaging.
- DBS, when used in the two most commonly treated areas of the brain — the subthalamic nuclei and the globus pallidus pars interna — is effective in addressing the motor symptoms of

Parkinson's, but treatment in the subthalamic nuclei may cause increased depression and other symptoms in some patients.

- Surgical removal of the area of the brain causing Parkinson's disease is still an effective alternative and should be considered in patients.
- Surgical complication rates vary widely, with infection being the most commonly reported complication of DBS.

Multiple authors were involved in the report; Bronstein, the lead author, reports no conflict of interest.

Provided by University of California Los Angeles

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