



PARKINSON'S DISEASE NEWS

<http://www.viartis.net/parkinsons.disease/news.htm>

5th June 2018 - New research

ADAPTIVE DEEP BRAIN STIMULATION FOR PARKINSON'S DISEASE

Deep Brain Stimulation is the most effective form of surgery for Parkinson's Disease. It involves the use of electrodes that are implanted into the brain and connected to a small electrical device called a pulse generator that can be externally programmed. DBS uses a surgically implanted, battery-operated medical device, which is similar to a heart pacemaker and approximately the size of a stopwatch. For more information go to :

<https://www.ninds.nih.gov/Disorders/All-Disorders/Deep-Brain-Stimulation-Parkinsons-Disease-Information-Page>

The existing method of DBS is delivered continuously. Adjustments to the patient's changing symptoms must be made manually by a trained clinician. Consequently, patients may be subjected to energy intensive settings when they are not needed, thereby resulting in adverse effects such as dyskinesia. One solution is 'adaptive' DBS, in which stimulation is constantly modified naturally based on neural signals that vary according to the severity of muscular symptoms signs or adverse effects.



An assessment was carried out that utilized brain sensing to control the stimulation amplitude. By this means the feasibility of 'adaptive deep brain stimulation' was demonstrated in two patients with Parkinson's Disease. In in-clinic testing, energy savings were substantial (38%-45%), and therapeutic efficacy was maintained. This is the first demonstration of adaptive DBS in Parkinson's Disease using a fully implanted device and neural sensing.

Reference : Journal of Neural Engineering [2018] 15 (4) : 046006 (N.C.Swann, C.de Hemptinne, M.C.Thompson, S.Miocinovic, A.M.Miller, R.Gilron, J.L.Ostrem, H.J.Chizeck, P.A.Starr) Complete abstract : <http://www.ncbi.nlm.nih.gov/pubmed/29741160>

<http://www.viartis.net/parkinsons.disease/news/180605.pdf>

mail@viartis.net

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