Characterizing Verbal Fluency Declines Associated with Unilateral DBS for Parkinson Disease

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AIMS of Study

AIM 1: To examine whether the decline in verbal fluency following DBS surgery for Parkinson’s disease

AIM 2: To investigate performance on component processes of verbal fluency (clustering, switching) both in response to the surgical procedure and to stimulation.

RESULTS

AIM 1: Are changes in overall letter fluency performance due to surgery or to stimulation?

Pre- vs Post-Surgery Comparison

ON vs Off DBS Stimulation Comparison

CONCLUSIONS

DBS-related declines in letter fluency cannot be attributed to stimulation.

Future studies should investigate potential surgical factors (e.g., disruption of white matter pathways, lesion effects) that may influence verbal fluency.

DBS does not seem to selectively affect the switching process within verbal fluency as PD controls also showed a similar decline.

It is important to use a PD control group when investigating DBS outcomes.

It may be necessary to reconsider previous findings of decreased switching associated with DBS, because they did not include control groups.