SIMULATION OF DEEP BRAIN STIMULATION

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Scientific Goals

Conventional 4 contact DBS Leads

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Scientific Goals

A Randomized Trial of Deep-Brain Stimulation for Parkinson’s Disease


The NEUROMODULATION
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A

-10  0  10  20  30  40  50

Change from Baseline (%)

PDQ-39 Summary Index  Mobility  Activities of Daily Living  Emotional Well-Being  Stigma  Bodily Discomfort  Social Support  Cognition  Communication

P=0.02  P<0.001  P<0.001  P<0.001  P<0.001  P=0.009  P=0.60  P=0.44  P=0.25

Neurostimulation  Medication
### Scientific Goals

**A Randomized Trial of Deep-Brain Stimulation for Parkinson’s Disease**


### Table 3. Changes in Primary and Secondary End Points from Baseline to Six Months.*

<table>
<thead>
<tr>
<th>End Point</th>
<th>Change from Baseline to 6 Mo</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neurostimulation Group</td>
<td>Medication Group</td>
</tr>
<tr>
<td></td>
<td>no. of patients</td>
<td>mean ±SD (95% CI)</td>
</tr>
<tr>
<td>PDQ-39 summary index</td>
<td>71</td>
<td>9.5±15.3 (5.9 to 13.1)</td>
</tr>
<tr>
<td>UPDRS-III, without medication</td>
<td>71</td>
<td>19.6±15.1 (16.1 to 23.2)</td>
</tr>
<tr>
<td>UPDRS-III, with medication</td>
<td>71</td>
<td>4.0±10.1 (1.7 to 6.4)</td>
</tr>
</tbody>
</table>
Role of CIBC To Date

**DBS Lead Locations (60 bilateral patients)**


**UPDRS Motor**

Volume of Tissue Activated (VTA)

Future Role of CIBC

Close the Loop: Test Model Predictions

- Integrate stimulation target locations into ImageVis3D Mobile for clinical decision support
- Enable mapping between anatomical nuclei and brain circuits