

Does deep brain stimulation for Parkinson's increase risk of dementia?

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There's good news for people with Parkinson's disease. A new study shows that deep brain stimulation may not increase the risk of developing dementia. The study is published in the July 1, 2020, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

For people with advanced Parkinson's disease, [deep brain stimulation](#) has been shown to be more effective than medication in controlling their movement problems. But research has been mixed on whether the treatment can increase the risk of developing [dementia](#).

For deep [brain](#) stimulation, electrodes are placed in certain areas of the brain to control abnormal movements. The electrodes are connected to a device placed under the skin in the upper chest. The device controls the [electrical impulses](#).

"These results are very encouraging for people with Parkinson's and their families that they can take advantage of the benefits of deep brain stimulation without worrying about it increasing the likelihood of developing dementia," said study author Elena Moro, MD, of Grenoble Alpes University in Grenoble, France, and a Fellow of the American Academy of Neurology.

The study involved 175 people with Parkinson's disease with an average age of 56 who had deep brain stimulation. They had Parkinson's for an average of 12 years when they had the stimulator implanted. Researchers

then checked the people after one year, five years and 10 years to see how many people had developed dementia.

After one year, four people had developed dementia, or 2.3%. After five years, 142 people were available for testing and 12 people had dementia, or 8.5%. At 10 years, 104 people were still available for testing and 31 people had dementia, or 29.8%. The overall incidence rate was 35.6 per 1,000 person-years.

"These rates are not higher than those reported in the general population of people with Parkinson's," said Moro. "The few studies that are available with similar disease duration have reported higher rates of dementia. Other studies of people with Parkinson's who are taking medication for their symptoms show an incidence rate for dementia that varies from 50 to 100 per 1,000 person-years."

Moro said the younger average age in her study may help explain the lower rate of dementia. Also, people with moderate to severe memory or thinking problems are not eligible to have deep brain stimulation, so the group may have been less likely overall to develop dementia than a general group of people with Parkinson's disease.

The study also looked at factors that were associated with a higher risk of dementia. Researchers found that men, older people, people who had hallucinations, people with a low score on thinking tests before surgery, and those who had a cerebral hemorrhage during the surgery to implant the deep brain stimulator were more likely to develop dementia.

"Knowing these predictors may help us to select people who would respond best to deep brain stimulation and who might have a greater risk of having a poor cognitive outcome," Moro said.

A limitation of the study was that a high percentage of people did not

finish the study; researchers were not able to locate them or they did not respond to requests from the researchers. This could result in underestimating the overall incidence of dementia.

Provided by American Academy of Neurology

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