

## Beware of swimming if you use deep brain stimulation for Parkinson's

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Immunohistochemistry for alpha-synuclein showing positive staining (brown) of an intraneural Lewy-body in the Substantia nigra in Parkinson's disease. Credit: Wikipedia

Researchers have identified nine cases of people who lost their ability to

swim after having a deep brain stimulation device implanted to control symptoms of Parkinson's disease. The new research is published in the November 27, 2019, online issue of *Neurology*, the medical journal of the American Academy of Neurology. All nine people had been good swimmers even after their Parkinson's disease diagnosis. But once they had deep brain stimulation surgery, researchers found while other movement symptoms improved, their swimming skills deteriorated.

"Until more research is done to determine why some people with deep [brain](#) stimulation can no longer swim, it is crucial that people be told now of the potential risk of drowning and the need for a carefully supervised assessment of their swimming skills before going into [deep water](#)," said author Daniel Waldvogel, MD, of the University of Zurich in Switzerland.

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](#).

Of the nine documented cases, three are highlighted in the research paper. Each person's movement symptoms improved after deep brain stimulation.

A 69-year-old man who was a good swimmer and lived on a lake jumped into the water after deep brain stimulation. Since his movement symptoms had improved, he thought would be able to swim. But he could not. He told researchers he would have drowned if he hadn't been rescued by a family member.

A 59-year-old woman who was a competitive swimmer and continued to swim after being diagnosed with Parkinson's disease was no longer able to swim after deep brain stimulation. Even after practice, she never

regained her former ability level.

A 61-year-old woman who swam in competitions crossing Lake Zurich, which is two miles wide, could barely swim two-tenths of a mile after deep brain stimulation. She complained of awkward posture when trying to swim.

Three of the nine people turned off their deep brain stimulation devices and were immediately able to swim. But because their other movement symptoms worsened, they switched on their devices again.

"Swimming is a highly coordinated [movement](#) that requires complicated arm and leg coordination," said Waldvogel. "Exactly how deep brain [stimulation](#) is interfering with this ability needs to be determined."

Waldvogel noted that the report includes only a few cases. More research is needed in large groups of people to determine the percentage of people with Parkinson's disease who lose their ability to swim with [deep brain stimulation](#).

"Even though these reports affected only a few people, we felt this potential risk was serious enough to alert others with Parkinson's disease, as well as their families and doctors," he said.

Provided by American Academy of Neurology

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