

Deep brain stimulation showing promise for patients with mild Alzheimer's disease over 65

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Dr. Andres Lozano of Krembil Neuroscience Centre at Toronto Western says 'we are encouraged by these findings.' Credit: The Globe and Mail

An age group analysis of data from the ADvance trial has shown that participants over the age of 65 continue to derive the most benefit from Deep Brain Stimulation of the fornix (DBS-f), as observed in the data from the phase 2 findings (12—24 months) of the Phase II trial.

The findings, published today in the *Journal of Alzheimer's Disease*, by a team of researchers led by Dr. Andres Lozano at Toronto Western Hospital's (TW) Krembil Neuroscience Centre (KNC), are the potential beginnings of a patient profile for DBS-f treatment for Alzheimer's disease. The neurology and psychology aspects of the trial in Toronto were led by TW neurologist Dr. Peter Tang-wai and neuropsychologist Dr. Mary-Pat McAndrews respectively.

To further explore the benefits for this demographic, the research team is soon launching a Phase III, multi-centre international trial that will study the effects of DBS-f in 140 patients over age 65.

"We are encouraged by these findings as they continue to help us identify who will benefit most from DBS to treat Alzheimer's disease and learn more about this illness," says Dr. Andres Lozano, neurosurgeon and the principal investigator of the study. "With so few treatments available and the incidence of Alzheimer's only expected to increase, we really need to fully explore all treatments that seem to be of benefit to patients."

These latest results were captured from the second year of data of the ADvance trial whose first-year data was published in 2016. In that trial, forty-two patients with mild Alzheimer's disease were enrolled in a randomized, double-blind multicentre phase II clinical trial and implanted with DBS electrodes directed at the fornix—a bundle of nerve fibres in the brain that carry signals from the hippocampus—and followed for a total of two years.

In the first 12 months of the trial, to better measure the impact of electrical stimulation in the brain, patients were randomly assigned to either the "on" or "off" stimulation group after their procedure and monitored. Once this phase of follow up was complete, all [patients](#) then had their electrodes turned on, and were followed for another 12 months.

In the second 12-month phase, researchers noted similar observations they had seen in the first phase: that, although there were no differences overall in cognitive outcomes between study participants who had their device turned on right after surgery and those who had it turned on after 12 months, those 65 years of age and older appeared to experience a slower progression of Alzheimer's than those under that age, regardless of when their device was turned on.

"The next [phase](#) of our research will help determine whether this observed benefit is something we continue to see in this age group," says Lozano who is also University Professor and Chairman, Department of Neurosurgery, University of Toronto. "If it does, this could potentially give us a treatment for mild, late-onset Alzheimer's [disease](#)."

Provided by University Health Network

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