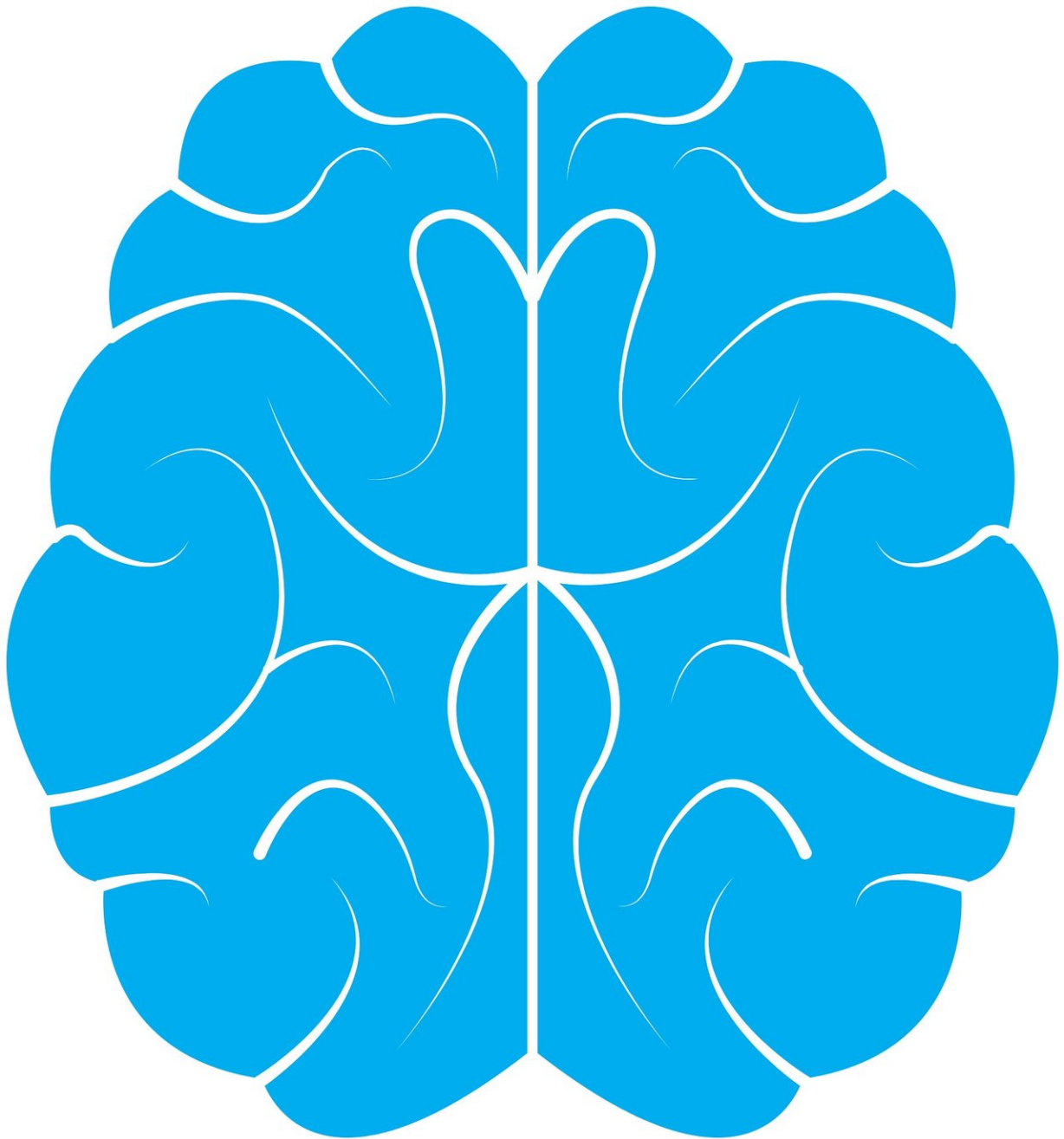


Alzheimer's treatment holds promise for primary progressive aphasia patients

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Northwestern Medicine scientists have discovered that an existing therapy frequently used to treat Alzheimer's disease might also work on patients with Primary Progressive Aphasia (PPA), a type of dementia that destroys language and currently has no treatment.

Currently, Alzheimer's patients are treated with a class of drugs called cholinesterase inhibitors, which lessen Alzheimer's symptoms by preventing the breakdown of acetylcholine, a chemical messenger that contributes to learning and memory.

This study found for the first time that individuals with PPA undergo the same loss of cholinergic neurons and axons in the forebrain as individuals with Alzheimer's and, therefore, might also benefit from these cholinesterase inhibitors.

"The findings provide the basic scientific foundation to spur a clinical trial to test the treatment on patients with PPA," said senior author Changiz Geula.

Geula is research professor of the Mesulam Center for Cognitive Neurology and Alzheimer's Disease and cell and [molecular biology](#) at Northwestern University Feinberg School of Medicine.

The study will be published in the March 6 online issue of *Neurology*, the medical journal of the American Academy of Neurology.

In individuals with PPA, brain regions responsible for language, located

in the left hemisphere in the majority of the population, are damaged first. Patients with PPA progressively continue to lose their ability to talk, read, write or understand what they hear. In Alzheimer's, [brain regions](#) controlling memory are attacked first.

"PPA is a devastating dementia," Geula said. "Patients are essentially intact in all other areas except their language for many years, and they feel this loss acutely."

There are several types of PPA. This study focused on the type that shows a typical Alzheimer's pathology—the plaques and tangles—in the brain. But these patients tend to be excluded from Alzheimer's-related clinical trials and are less likely to be prescribed cholinesterase inhibitors.

"That's why our study is so important for patients," Geula said. "No one knew before that this cholinergic system is devastated in [patients](#) with PPA associated with Alzheimer's but we've now demonstrated that and have justified the need for [clinical trials](#) with this therapy."

Chemical brain scans called [positron emission tomography](#) (PET) can determine if there is Alzheimer's Disease pathology in someone's brain while they are alive. This makes it possible to see if someone has the type of PPA associated with Alzheimer's disease or not.

The Mesulam Center for Cognitive Neurology and Alzheimer's Disease is one of few worldwide with a significant focus on PPA clinical diagnoses and research. To conduct the study, the scientists used brains of individuals who suffered from PPA and had the pathological diagnosis of Alzheimer pathology in the brain postmortem. Their brains were compared to those of cognitively normal individuals. Scientists stained sections of the brain to microscopically view the damage in the cholinergic system of the [brain](#).

Provided by Northwestern University

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