Natural Molecule Shows Benefit in Clinical Trial for Parkinson's Disease

February 11, 2026

PHILADELPHIA, PA - February 11, 2026 - PRESSADVANTAGE -

Researchers at Thomas Jefferson University have found that N-acetylcysteine (NAC) is a natural molecule that replenishes the body's own antioxidant system and now shows potential benefit as part of the management for patients with Parkinson's disease, according to a study published last week in the journal Parkinsonism and Related Disorders. The study found improvements in functional connectivity within critical areas of the brain affected by Parkinson's. Another encouraging result was that these brain changes correlated with notable improvement in clinical symptoms of the disease.

The study was performed by the Department of Integrative Medicine and Nutritional Sciences, as well as the Departments of Neurology and Radiology, at Thomas Jefferson University.

Current treatments for Parkinson's disease are generally limited to temporarily replacing dopamine in the brain along with some medications designed to slow the progression of the disease. The destruction of dopamine nerve cells in Parkinson's disease appears to result in large part due to oxidative stress, and this stress also lowers levels of glutathione, a chemical produced by the brain to counteract oxidative stress.

NAC is an oral supplement that can be obtained at most nutrition stores, and also comes in an intravenous form which is used to protect the liver in acetaminophen overdose. Several initial studies have shown that NAC administration increases glutathione levels in the brain, but it has not been tested in regard to improving functional connectivity between dopamine areas and other parts of the brain.

"This study reveals a potentially new avenue for managing Parkinson's patients and shows that n-acetylcysteine may have a unique physiological effect that alters the disease process and enables dopamine neurons to recover functional connectivity with other parts of the brain," said senior author on the paper Daniel Monti, M.D., M.B.A., Chairman of the Department of Integrative Medicine and Nutritional Sciences and Director of the Marcus Institute of Integrative Health at Thomas Jefferson University.

In this study, Parkinson's patients who continued their current standard of care treatment were placed into two groups. The first group received a combination of oral and intravenous NAC for three months. These patients received 50mg/kg NAC intravenously once per week and 600mg NAC orally twice per day on the non-IV days. The second group, the control patients, received only their standard of care Parkinson's treatment.

Patients were evaluated initially before starting the NAC and then after six months of receiving the NAC, while the control patients were simply evaluated initially and six months later. The evaluation consisted of standard clinical measures such as the Unified Parkinson's Disease Rating Scale, a survey administered by doctors to help determine the stage of disease, and a brain MRI scan to assess how different parts of the brain connect to each other. Compared to controls, the patients receiving NAC had significant changes in functional connectivity within dopamine areas of the brain that are the target of Parkinson's disease, and also had improvements in their UPDRS score of about 20 percent.

"We have not previously seen an intervention for Parkinson's Disease have this kind of effect on the brain," said first author and neuro-imaging expert Andrew Newberg, M.D., Professor and Director of Research in the Department of Integrative Medicine and Nutritional Sciences. The investigators hope that this research will open up new avenues of treatment for Parkinson's disease patients.

There are no conflicts of interest. The study was funded by a gift from the Marcus Foundation.

Article reference: Monti DA, Zabrecky G, Kremens D, Liang TW, Wintering NA, Vedaei F, Navarreto E, Gupta M, Steinmetz A, Bazzan AJ, Mohammed F, Newberg AB. N-Acetylcysteine is associated with changes in functional connectivity in patients with Parkinson's disease. Parkinsonism Relat Disord. 2026 Jan 27;144:108216. doi: 10.1016/j.parkreldis.2026.108216. Epub ahead of print. PMID: 41619526.

For more information, contact Irene Contreras at 267-303-2984 or irene.contreras@jefferson.edu.

About Jefferson Health

Jefferson is reimagining health care and higher education to create unparalleled value throughout Pennsylvania and New Jersey. Thomas Jefferson University, home of Sidney Kimmel Medical College, comprises 10 colleges and three schools offering more than 200 programs to more than 8,300 students. Jefferson Health is nationally ranked as one of the top 15 not-for-profit health care systems in the country and serves patients at 33 hospital campuses and more than 700 outpatient and urgent care locations throughout the region.

###

For more information about Jefferson Health, contact the company here:Jefferson HealthIrene Contreras267-303-2984irene.contreras@jefferson.edu111 South 11th Street, Philadelphia, PA 19107

Jefferson Health

Jefferson Health is reimagining health care and higher education to create unparalleled value throughout Pennsylvania and New Jersey. Jefferson Health is nationally ranked as one of the top 15 not-for-profit health care systems in the country.

Website: https://www.jeffersonhealth.org/home

Email: irene.contreras@jefferson.edu

Phone: 267-303-2984