Antioxidant therapy shows early promise for preventing, perhaps reversing, Alzheimer's disease

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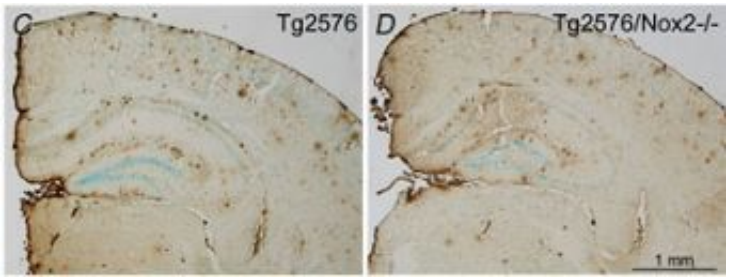

Amyloid plaques in the brain of the mice with Alzheimer's disease. The plaques are the brown spots distributed throughout the brain.

Curbing harmful processes in the brain's vasculature set off by the enzyme NADPH oxidase may reverse some of the cognitive decline associated with Alzheimer's disease, according to new findings published in a recent issue of the *Proceedings of the National Academy of Sciences*.

Identifying the enzyme's role in dementia could translate into a new drug target for Alzheimer's disease in humans.

Costantino Iadecola, the George C. Cotzias Distinguished Professor of Neurology and Neuroscience at Weill Cornell Medical College and chief of the Division of Neurobiology at NewYork-Presbyterian Hospital/Weill Cornell Medical Center, led the research, which found

that after the enzyme was genetically "switched off," mice with a type of dementia mimicking Alzheimer's regained important cognitive abilities.

The amount of Alzheimer's-linked amyloid plaques in the brains of the mice remained unchanged, indicating that NADPH oxidase, which produce toxic free radicals, independently influences the progression of dementia.

The researchers also genetically engineered mice that produced a mutated form of NADPH enzyme that did not produce the toxic free radicals. The result: The formerly "demented" mice regained their healthy, exploratory behaviors, just as non-demented mice do. According to the authors, the findings suggest that neurological damage from Alzheimer's may not be permanent and might even be reversed through antioxidant treatment.

Source: Cornell University