

Increasing glutathione levels lowers Alzheimer's pathology and improves cognitive decline

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Australian researchers have shown that a dietary supplement that increases the levels of a powerful antioxidant in the brain may represent a novel strategy for the treatment and/or prevention of cognitive impairment and debilitating neurodegenerative diseases such as Alzheimer's disease.

Findings of the study were recently published in *Neurochemistry International*.

A team of researchers from UNSW Sydney's Centre for Healthy Brain Ageing (CHeBA), and the School of Biotechnology and Biomolecular Sciences (BABS), has shown that dietary supplementation with glutathione precursor γ -glutamylcysteine (γ -GC), marketed as Glyteine™, reduced [oxidative stress](#), neuroinflammation and amyloid pathology in the brains of transgenic mice, a murine model to study Alzheimer's disease. The study also found significant cognitive improvements in the mice as determined using the

Morris water maze, a test often used to test memory in mice.

The study identifies for the first time that γ -GC as a glutathione-elevating strategy in an Alzheimer's disease mouse model and is likely to have clinical relevance.

Lead author and Leader of CHeBA's Brain Ageing Research Laboratory, Dr. Nady Braidy, said: "Cellular depletion of glutathione has been linked to cognitive decline and the development of Alzheimer's pathology. Supplementation with γ -GC can transiently augment cellular glutathione levels by bypassing the regulation of glutathione homeostasis."

More information: Yue Liu et al.

Supplementation with γ -glutamylcysteine (γ -GC) lessens oxidative stress, brain inflammation and amyloid pathology and improves spatial memory in a murine model of AD, *Neurochemistry International* (2020). [DOI: 10.1016/j.neuint.2020.104931](#)

Provided by CHeBA

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