

Mushroom Compounds Offer Hope for Alzheimer's Disease

Double-blinded study shows promising results in prevention

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Alzheimer's Disease (AD) is the fifth leading cause of death in elderly adults according to researchers in Taiwan. The progressive disease can heavily deteriorate the life and independence of an individual, sometimes just years after showing the first symptoms.

Now, those same researchers are investigating whether a specific species of mushroom might offer hope. The mushroom, known to scientists as *Hericium erinaceus*, is commonly known as The Lion's Mane Mushroom. Lion's Mane is a gourmet edible mushroom that possesses neuroprotective properties. These could help prevent or improve the symptoms of Alzheimer's disease.

While many studies conducted on cell cultures and mice show promise in the treatment of Alzheimer's with *Hericium erinaceus*, a limited number of extensive clinical trials have been performed. The research team led by I-Chen Li from the Biotech Research Institute in Taoyuan City, Taiwan conducted a study to test the efficacy of these mushrooms for patients with mild Alzheimer's disease. They [published their study](#) in June 2020 in the section "Alzheimer's Disease and Related Dementias" from the peer-reviewed scientific journal [Frontiers in Aging Neuroscience](#).

This 49-week double-blind study used 2 parallel groups; one was fed three 5 mg/g capsules with *Hericium erinaceus* extract per day while the placebo group received identical-looking placebo capsules. Throughout the study period, data from ophthalmic examinations, biomarker collection, neuroimaging, and cognitive tests were collected to measure the effects of the treatment.

The researchers saw the potential in *Hericium erinaceus* because two important, low-molecular weight chemicals had previously been isolated and studied from this mushroom. These relatively hydrophobic compounds, Hericenones and Erinacines, have been proven to stimulate nerve growth factor synthesis, an important biochemical for the growth of nerve

cells.

The team used Erinacines in particular because evidence suggests that they are capable of easily passing the blood-brain barrier. What makes Erinacines interesting is that they are not actually produced in large quantities by the mushroom fruiting bodies but instead they are produced in the mycelium, the underground white “roots” of the fungus. For this reason, researchers made an extract from the cultivated mycelium of *Hericium erinaceus* that contained high quantities of Erinacines.

The results of this study show that subjects with mild Alzheimer’s Disease consuming *Hericium erinaceus* capsules showed improvement in their cognitive abilities. Patients receiving the mushroom capsules had remarkably high scores in cognitive tests and neutral examinations. The authors of the study believe that this may be associated with the improvement of blood biomarkers and the reduced structural deterioration in certain parts of the brain.

This is good news for many individuals personally affected by Alzheimer’s disease. Unlike other major diseases, which have shown progress in the development of novel therapies, no new treatment for Alzheimer’s disease has been approved since 2003. Researchers suggest that this is because of the challenging nature of this disease which may cause damage for years before the onset of symptoms.

In addition to showing promise as a natural way to help treat or prevent mild cases of Alzheimer’s disease, *Hericium erinaceus* could also improve our understanding of neurology and cognitive health. By understanding how *Hericium erinaceus* reacts in the body, researchers hope to gain deeper insights into the cryptic workings of the brain and how to develop new medicines to fight this illness.

The study is available online.

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Timo Mendez is an environmental scientist, naturalist, and writer. His work mostly focuses on topics related to mushrooms and organic gardening.

Sources

Li, I., et al. “Prevention of early Alzheimer’s disease by erinacine A-enriched *Hericium erinaceus* mycelia pilot double-blind placebo-controlled study.” *Frontiers in Aging Neuroscience* 12 (2020): 155. <https://doi.org/10.3389/fnagi.2020.00155>

Featured image: *Hericium erinaceus* mushroom growing from old rotting trunk. Source: [NCBioteacher WikiCommons](#).

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