

Study Finds Chemical in Curry May Help Clear Plaques

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UCLA/VA researchers found that curcumin - a chemical found in curry and turmeric - may help the immune system clear the brain of amyloid beta, which form the plaques found in Alzheimer's disease.

Published in the Oct. 9 issue of the *Journal of Alzheimer's Disease*, the early laboratory findings may lead to a new approach in treating Alzheimer's disease by enhancing the natural function of the immune system using curcumin, known for its anti-inflammatory and anti-oxidant properties.

Using blood samples from six Alzheimer's disease patients and three healthy control patients, the researchers isolated cells called macrophages, which are the immune system's PacMen that travel through the brain and body, gobbling up waste products, including amyloid beta.

The team treated the macrophages with a drug derived from curcumin for 24 hours in a cell culture and then introduced amyloid beta. Treated macrophages from three out of six Alzheimer's disease patients showed improved uptake or ingestion of the waste product compared to the patients' macrophages not treated with curcumin. Macrophages from the healthy controls, which were already effectively clearing amyloid beta, showed no change when curcumin was added.

"Curcumin improved ingestion of amyloid beta by immune cells in 50 percent of patients with Alzheimer's disease. These initial findings demonstrate that curcumin may help boost the immune system of specific Alzheimer's disease patients," said Dr. Milan Fiala, study author and a researcher with the David Geffen School of Medicine at UCLA and the VA Greater Los Angeles Health Care System. "We are hopeful that these positive results in a test tube may translate to clinical use, but more studies need to be done before curcumin can be recommended."

The patients ranged in age from 65 to 84. Fiala noted that the patients whose immune cells responded were younger and had higher scores on a Mini-Mental State Examination suggesting that curcumin may help those with less advanced dementia. Some of the patients may have already had additional curcumin in their systems due to participation in another UCLA study, which may have impacted findings.

"Our next step will be to identify the factors that helped these immune cells respond," said Laura Zhang, a study author and a UCLA/VA research assistant in Fiala's lab.

Fiala noted that the method researchers used to test the immune cell response of macrophages may provide a novel way of evaluating the effectiveness of drugs in clearing amyloid beta from the brain and may help to individualize Alzheimer's disease treatment.

According to Fiala, macrophages are the soldiers of the innate immune system - the part of the immune system which is present at birth. Curcumin may support the body's natural immune fighting function in directly helping macrophages clean away amyloid-beta. The treatment of macrophages with curcumin is radically different from some of the vaccine approaches currently being studied.

The study was funded by the Alzheimer's Disease Association and private donors. The curcumin derived drug was provided by the Sabinsa Corporation, a company that manufactures phytonutrients and specialty chemicals for nutritional, pharmaceutical and food industries. Fiala participated in a speaking engagement for Sabinsa.

Source: UCLA

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