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Daily cheese, wine intake linked to better reasoning, problem-solving later in life

By Allie Ciaramella
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In the first large-scale analysis connecting specific long-term eating habits to cognitive activity in people's later years, U.S. researchers tied daily consumption of cheese and red wine to higher levels of fluid intelligence.

The correlations, which were particularly strong when it comes to fromage, suggest a need for randomized clinical trials to determine whether diet modifications based on the findings could truly help the brain in significant ways, said the authors of the study published in the *Journal of Alzheimer's Disease* on Nov. 24.

"Diet and the choices that we make not just overall, not just for a constellation of foods, but individual whole foods may have some kind of demonstrable effect on our brains," said Auriel Willette, principal investigator on the study and an Iowa State University professor in food science and human nutrition.

With research grant funding from the Chicago-based Alzheimer's Association, Willette's team sought to understand how long-term food consumption affects fluid

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intelligence, or a person's capacity for abstract reasoning and problem-solving without background information, among adults who were and were not at risk for the degenerative brain disease.

"From the outset, our goal was trying to see if we could effectively distinguish between those two because if we could, it might be worthwhile to make specific recommendations for certain individuals," Willette said.

He summarized: "Cheese is always good, red wine is always good, salt is bad unless you know you don't have any risk for Alzheimer's disease."

For the study, researchers drew on UK Biobank database information about nearly 1,800 people aged 46 to 77 when the study was completed. Over the course of a decade, participants took a fluid intelligence test and two follow-up assessments, while also answering questions about their consumption of different beverages and foods such as tea and coffee, beer and liquor, fresh and dried fruit, raw and cooked vegetables and a variety of meats.

"Certainly, when I first learned about the result I thought, 'Wait, cheese? Really?'" Willette admitted. "For certain groups of people, there's pretty big difference in terms of their cognitive performance."

For example, if you don't have a family history of Alzheimer's and you eat cheese daily, your mean score is an eight out of 12, he explained. If you never eat cheese at all, your score is around a six.

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"To me that's kind of striking, but there are definitely some much more modest kinds of effects throughout this paper," Willette said. "Overall it is suggestive enough where yes, it would be good for people to confirm this, yes, I think it might be worthwhile to try a proof-of-concept clinical trial — because I don't know who would say no to cheese and wine."

The findings also appear to confirm the old adage that a glass of wine with dinner could have health benefits, Willette said: Modest, daily consumption seemed to relate to higher test scores.

"For people who had a genetic risk, apparently one could do this with red wine, beer, liquor; the finding was there just for any adult beverage … For people without that particular risk, though, we saw that relationship just with red wine," Willette said. "The last thing that we wanted to suggest to people was, 'Yeah, drink on a daily basis, and the more you drink the better your brain is going to be!' That was definitely not the case."

The authors also concluded that excessive consumption of salt relates to lower scores for people already at risk of Alzheimer's. Reducing salt intake has been advised for people with cardiovascular and various other kinds of diseases.

"If you have a genetic risk for Alzheimer's disease, cutting back on salt might be worthwhile," Willette said. "But we did not see that relationship for people who didn't have that genetic risk."

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There have been numerous examinations of the cognitive impact of certain diets such as that of the Mediterranean, which has been associated with slower cognitive decline and reduced incidence of Alzheimer's; the DASH diet, which emphasizes vegetables, fruits and low-fat dairy; and the MIND diet, which combines elements of the former two.

In a study published last year, scientists from the National Institutes of Health, whose National Institute on Aging also supported Willette's project, explored whether a Mediterranean diet is associated with altered cognitive function. They found lower risk of cognitive impairment but not a slower decline in cognitive function, and fish intake was linked to higher cognitive function.

Now, Willette's team hopes to expand its work on diet and the brain. Looking at more detailed dietary data regarding what people ate in the last 24 hours, co-author Brandon Klinedinst is analyzing impact on memory and processing speed.

Researchers are also curious as to whether consuming cheese and red wine, for example, is associated with structural or other benefits in the frontal lobe, which governs fluid intelligence activity.

The study "Genetic Factors of Alzheimer's Disease Modulate How Diet is Associated with Long-Term Cognitive Trajectories: A UK Biobank Study," published Nov. 24 in the Journal of Alzheimer's Disease, was authored by Brandon S. Klinedinst, Iowa State University,

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