

MIND diet study shows short-term impact on cognition

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New research shows the importance of long-term commitment to the MIND diet for reaping the greatest benefit to brain health.

"The benefits within the new study's three-year clinical trial weren't as impressive as we've seen with the MIND [diet observational studies](#) in the past, but there were improvements in cognition in the short-term, consistent with the longer-term observational data," said lead study author Lisa Barnes, Ph.D., associate director of the Alzheimer's Disease Research Center at RUSH.

Results from the study, published in *The New England Journal of Medicine*, showed that within a three-year period, there was no significant statistical difference in change in cognition for participants in the MIND diet group compared to the usual diet control group; both groups were coached to reduce calories by 250 kilocalories per day. But there was a significant improvement during the first two years of the study.

"What we saw was improvement in cognition in both groups, but the MIND diet intervention group had a slightly better improvement in cognition, although not significantly better," Barnes said. "Both groups lost approximately 5 kilograms over three years, suggesting that it could have been weight loss that benefited cognition in this trial."

'Exciting' improvement

This is the first randomized clinical trial designed to test the effects of a diet thought to be protective for brain health, on the decline of cognitive abilities among a large group of individuals 65 years or older who did not have cognitive impairment. The MIND diet has been ranked among the top five diets by U.S. News & World Report annually for the last six years.

"There is established research that shows that a person's diet affects health," Barnes said. "The participants in this study had to have sub-optimal diets as determined by a score of 8 or less on a diet screening

instrument before the study even began. It is reasonable to think that either they were going to maintain their cognition or decrease the rate of cognitive decline in the future."

"It was exciting to see that there was improvement in cognition over the first year or so, but it could have been due to practice effects on the cognitive tests, and we saw it for the control diet as well, which focused on just caloric restriction."

Previous research by the late Martha Clare Morris, ScD, showed that there was a slower rate of decline among those who ate specific foods. Morris was a nutritional epidemiologist at RUSH and the original principal investigator of the MIND diet study that involved two clinical sites, RUSH in Chicago and Harvard School of Public Health in Boston.

In 2015, Morris and her colleagues at RUSH and Harvard University developed the MIND diet—which is short for Mediterranean-DASH Intervention for Neurodegenerative Delay—in preparation for the trial. The diet is based on the most compelling research on the foods and nutrients that affect brain health. As the name suggests, the MIND diet is a hybrid of the Mediterranean and DASH (Dietary Approaches to Stop Hypertension) diets. Both diets have been found to reduce the risk of cardiovascular conditions, such as hypertension, diabetes, heart attack and stroke. In two studies published in 2015, Morris and colleagues found that the MIND diet could slow cognitive decline and lower a person's risk of developing Alzheimer's disease significantly, even if the diet was not followed meticulously.

Study tracked 604 participants over three years

The latest trial of the MIND Diet for Prevention of Cognitive Decline in Older Persons, was a randomized, Phase III trial that enrolled 604 people who were overweight and had a suboptimal diet and a family history of

Alzheimer's disease. The trial compared two different diet interventions, both of which included dietary counseling with mild calorie restriction of 250 calories per day for weight loss.

Participants of both groups had individualized diet guidelines developed by dietitians, and they received regular phone and in-person consultations, as well as occasional group sessions over the three-year life of the study. Participants were seen five times during the three years to evaluate their mental abilities, blood pressure, diet, physical activity, health conditions and medication use.

"Both groups of participants got a lot of support and accountability by trained registered dietitians," said Jennifer Ventrelle, assistant professor in the Departments of Preventive Medicine and Clinical Nutrition and lead dietitian on the MIND diet trial at RUSH.

"The good news is that this helped all participants improve on average, but unfortunately hindered the ability to detect significant differences between the two groups in this relatively short period of time. Current and future research plans to look at people coached to follow the diet in this format compared to individuals following a usual diet in a format closer to usual care such as brief clinical encounters or a self-guided program with less support."

"By the end of the study, the average weight loss was approximately 5.5% of initial body weight for all participants, exceeding the study target of 3%, the amount recognized as clinically significant to prevent or improve adverse health outcomes," Ventrelle said.

"The average MIND score at the end of three years for the MIND group was 11.0 and 8.3 for the control group, placing both groups in a therapeutic range to slow cognitive decline and lower a risk for Alzheimer's disease, according to previous studies. The significant

weight loss and improved MIND scores suggest that the control group also improved their diet and may suggest that following the MIND diet at a score of at least 8.3, coupled with at least a 250 calorie reduction to produce [weight loss](#), may improve cognition. More research is needed to confirm this."

Fish, chicken, berries, nuts and leafy greens

The MIND diet has 14 dietary components, including nine "brain-healthy food groups"—such as chicken and fish, green leafy vegetables and berries, and nuts—and five unhealthy groups: red meat, butter and stick margarine, full fat cheese, pastries and sweets, and fried foods.

"Randomized trials are gold standards for establishing a cause-and-effect relationship between diet and incidence of Alzheimer's disease," Barnes said.

"These individuals were healthy at the start of the trial and had no [cognitive impairment](#), and their cognition got slightly better over time," Barnes said. "Why there was no difference between the two diet groups at the end of the trial could be a result of many factors including that the control group had a relatively healthy diet. Moving forward, we will look at specific food groups and their associations with biomarkers that were measured in the blood to see if certain nutrients and food groups are more important than others since the two groups were pretty healthy from a dietary perspective at the start."

More information: Lisa L. Barnes et al, Trial of the MIND Diet for Prevention of Cognitive Decline in Older Persons, *New England Journal of Medicine* (2023). [DOI: 10.1056/NEJMoa2302368](https://doi.org/10.1056/NEJMoa2302368)

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