

Study: Adding color to your plate may lower risk of cognitive decline

July 29 2021



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A new study shows that people who eat a diet that includes at least half a serving per day of foods high in flavonoids like strawberries, oranges, peppers and apples may have a 20% lower risk of cognitive decline. The

research is published in the July 28, 2021, online issue of *Neurology*. The study looked at several types of flavonoids, and found that flavones and anthocyanins may have the most protective effect.

Flavonoids are naturally occurring compounds found in plants and are considered powerful antioxidants. It is thought that having too few antioxidants may play a role in cognitive decline as you age.

"There is mounting evidence suggesting flavonoids are powerhouses when it comes to preventing your thinking skills from declining as you get older," said study author Walter Willett, MD, DrPH, of Harvard University in Boston, Mass. "Our results are exciting because they show that making simple changes to your [diet](#) could help prevent cognitive decline."

The study looked at 49,493 women with an average age of 48 and 27,842 men with an average age of 51 at the start of the study. Over 20 years of follow up, people completed several questionnaires about how often they ate various foods. Their intake of different types of flavonoids was calculated by multiplying the [flavonoid](#) content of each food by its frequency. Study participants evaluated their own cognitive abilities twice during the study, using questions like, "Do you have more trouble than usual remembering recent events?" and "Do you have more trouble than usual remembering a short list of items?" This assessment captures early memory problems when people's memory has worsened enough for them to notice, but not necessarily enough to be detected on a screening test.

The people in the group that represented the highest 20% of flavonoid consumers, on average, had about 600 milligrams (mg) in their diets each day, compared to the people in the lowest 20% of flavonoid consumers, who had about 150 mg in their diets each day. Strawberries, for example, have about 180 mg of flavonoids per 100 gram serving,

while apples have about 113.

After adjusting for factors like age and total caloric intake, people who consumed more flavonoids in their diets reported lower risk of cognitive decline. The group of highest flavonoid consumers had 20% less risk of self-reported cognitive decline than the people in the lowest group.

Researchers also looked at individual flavonoids. Flavones, found in some spices and yellow or orange fruits and vegetables, had the strongest protective qualities, and were associated with a 38% reduction in risk of cognitive decline, which is the equivalent of being three to four years younger in age. Peppers have about 5 mg of flavones per 100 gram serving. Anthocyanins, found in blueberries, blackberries and cherries, were associated with a 24% reduced risk of [cognitive decline](#). Blueberries have about 164 mg of anthocyanins per 100 gram serving.

"The people in our study who did the best over time ate an average of at least half a serving per day of foods like [orange juice](#), oranges, peppers, celery, grapefruits, grapefruit juice, apples and pears," Willett said.

"While it is possible other phytochemicals are at work here, a colorful diet rich in flavonoids—and specifically flavones and anthocyanins—seems to be a good bet for promoting long-term brain health. And it's never too late to start, because we saw those protective relationships whether people were consuming the flavonoids in their diet 20 years ago, or if they started incorporating them more recently."

A limitation of the study is that participants reported on their diets and may not recall perfectly what they ate or how much.

The study was supported by the National Institutes of Health.

More information: Tian-Shin Yeh et al, Long-term Dietary Flavonoid Intake and Subjective Cognitive Decline in US Men and Women,

Neurology (2021). DOI: 10.1212/WNL.00000000000012454

Provided by American Academy of Neurology

Citation: Study: Adding color to your plate may lower risk of cognitive decline (2021, July 29)
retrieved 29 April 2024 from

<https://medicalxpress.com/news/2021-07-adding-plate-cognitive-decline.html>

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