

## Low flavonoid intake associated with Alzheimer's risk

A new study links a low intake of flavonoid-rich foods — such as berries, apples, and tea — with a higher risk of Alzheimer's disease. However, an increasing number of studies are suggesting that diet plays a role.

Several studies have shown that the [Mediterranean diet](#), in particular, is associated with a reduced risk of cognitive issues — including Alzheimer's.

Interestingly, the Mediterranean diet is high in flavonoids. These are naturally occurring chemicals present in various fruits and vegetables, as well as in plant-based beverages such as tea and wine.

Researchers from Tufts University's Human Nutrition Research Center on Aging in Medford, MA, have shown that a high long-term intake of flavonoid-rich foods — such as berries, apples, and tea — is associated with a reduced risk of developing Alzheimer's disease.

The results now appear in the [American Journal of Clinical Nutrition](#).

### **6 types of flavonoid**

The study looked at the intake of six different types of flavonoid among 2,801 people and took place over almost 20 years.

The researchers measured the flavonoid intake of the group using dietary questionnaires, which the participants filled out roughly every 4 years. The team also monitored the overall health of the group, including rates of

Alzheimer's disease and related dementias (ADRD) and Alzheimer's disease itself.

“Our study gives us a picture of how diet over time might be related to a person's cognitive decline, as we were able to look at flavonoid intake over many years prior to participants' dementia diagnoses,” explains senior study author Dr. Paul Jacques, a nutritional epidemiologist. Up to 4 times higher risk

Of the 2,801 participants, 193 developed ADRD and 158 developed Alzheimer's disease itself during the course of the study.

Analysis of the relationships in the data revealed that people who consumed low amounts of flavonoids were two to four times more likely to develop ADRD during the study period.

A low intake of anthocyanins, such as berries, was associated with a fourfold higher risk of ADRD, while a low intake of flavonols — such as apples, pears, and tea — was associated with twice the risk.

“Low intake” was equivalent to consuming no berries, just over one apple, and no tea in 1 month, while “high intake” was equivalent to consuming roughly 7.5 cups of berries, 8 apples or pears, and 19 cups of tea in 1 month.

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An apple a day...

It seems that “an apple a day” might really keep the doctor away. This is an exciting finding for scientists, as there is currently no cure for Alzheimer's disease. Prevention is therefore paramount.

**“With no effective drugs currently available for the treatment of Alzheimer's disease, preventing disease through a [healthful] diet is an important consideration,” explains Dr. Jacques.**

Importantly, it seems that a person can make these changes to their diet later in life, and they would still be effective. Therefore, the researchers say that it is not too late for people to start making changes to their diet, even if they are in their 50s.

“The risk of dementia really starts to increase over age 70, and the take-home message is, when you are approaching 50 or just beyond, you should start thinking about a [more healthful] diet if you haven’t already.”

– Dr. Paul Jacques

The changes are also not too difficult to implement. According to first study author Esra Shishtar, who worked on the study as a doctoral student at Tufts University, consuming one cup of tea per day or some berries two to three times per week would suffice. Study strengths and limitations

This study does not prove that a low flavonoid intake causes Alzheimer’s disease. It only shows an association.

It is also important to note that the study monitored flavonoid intake through self-reported data only, which may be subject to errors. However, the researchers do say that they excluded questionnaires from the years leading up to a dementia diagnosis.

Finally, all the participants were over the age of 50 and of European descent, which limits the generalizability of the study.