

## Cocoa and chocolate

### **Cocoa flavanols might help to treat age-related cognitive impairment but, based on a new study, not Alzheimer's itself**

Researchers have suspected for years that the cocoa in chocolate could have health benefits, particularly because of chemicals that it can contain called flavanols. A recent clinical trial highlighted [in the New York Times](#) suggests that those benefits might extend to the aging brain, although only to a limited extent.

In this new trial[1], healthy adults between 50-69 years of age agreed to be randomized to consume either a lot of cocoa flavanols or very little for 3 months. Researchers then measured blood flow in specific areas of the brain and tested the participants on two very specific cognitive tasks. These cognitive tasks were specifically chosen because scientists have reason to believe that each task is particularly dependent on a specific area of the hippocampus of the brain.

The first cognitive task activates the dentate gyrus of the hippocampus, an area that is particularly vulnerable to aging itself. After 3 months of treatment, the adults with high flavanol intake performed substantially better on this task and the blood flow to their dentate gyrus increased, suggesting that the cocoa flavanols had increased the activity of the dentate gyrus and treated one aspect of the cognitive impairment that commonly occurs with aging.

The second cognitive task activates the entorhinal cortex, a brain area next to the hippocampus that is the first to show signs of damage from Alzheimer's disease. After 3 months of treatment, this task was totally unaffected by the high flavanol intake. Similarly, blood flow to the entorhinal cortex was unaffected, suggesting that high flavanol intake for three months had no effect on the cognitive tasks and the brain area that is most susceptible to early Alzheimer's disease.

In other words, this small double-blind randomized trial suggests that cocoa high in flavanols can help to treat one aspect of the cognitive impairment that is common with aging itself. Other aspects of cognitive aging, like processing speed, were not tested. The trial does not suggest that cocoa flavanols will protect against Alzheimer's itself.

If you're considering giving high-flavanol cocoa a try, bear in mind two things:

First, flavanol levels in chocolate and cocoa vary extensively. Milk chocolate has less cocoa than dark chocolate, so it has less flavanols as well. But dark chocolate won't have many flavanols either if the cocoa was "dutch" (i.e. processed with alkali), a common processing step that makes cocoa darker and less acidic.

Second, other clinical trials have also looked at whether normal cocoa or flavanol-enriched cocoa can improve cognitive function. Unfortunately, at least 2 of these trials observed no benefit. On the other hand, the question deserves a full report on Cognitive Vitality, so stay tuned!

### References

1. Brickman, A.M., et al., Enhancing dentate gyrus function with dietary flavanols improves cognition in older adults. *Nat Neurosci*, 2014.