Hot chocolate may prevent memory decline

Description


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Scientists at Harvard Medical School suggest drinking two cups of hot chocolate a day may keep the brain healthy and prevent memory decline in older people by preserving blood flow in working areas of the brain. They write about their findings online in the August 7th issue of Neurology.

The team was investigating the effect of cocoa consumption on thinking and memory performance, as well as something called neurovascular coupling, where blood flow in the brain changes in response to local brain activity.

Farzaneh A. Sorond, lead author and member of the American Academy of Neurology, told the press:

> â€œAs different areas of the brain need more energy to complete their tasks, they also need greater blood flow. This relationship, called neurovascular coupling, may play an important role in diseases such as Alzheimerâ€™s.â€•

For their investigation, the team recruited 60 dementia-free older people of average age 73 and asked them to drink two cups of hot cocoa a day for 30 days.

Half the participants drank hot cocoa high in antioxidant flavanol, while the other half drank flavanol-poor hot cocoa. (There is substantial evidence that consuming cocoa flavanols helps circulation and

heart health.)

The participants were asked not to consume any other products containing chocolate during the study.

The team tested the participantsâ€™ memory and thinking skills before and after using a set of standard tests.

Using ultrasound, they also measured neurovascular coupling (the blood flow response to brain activity) as the participants completed the mental tests.

At the start of the study, 18 of the 60 participants had impaired neurovascular coupling. By the end of the study, it had improved by 8.3%.

These participants also improved their scores on a working memory speed test. At the start of the study, it took them 167 seconds to complete the test, while at the end they did it in 116 seconds.

In participants with regular neurovascular coupling at the start of the study, there was no change either in blood flow measures or working memory.

Magnetic Resonance Imaging (MRI) Scans

A subset of 24 participants also underwent MRI scans to look for tiny areas of damage in the white matter of the brain. These can occur when there is a restriction in blood flow.

The MRI scans showed that the participants with impaired neurovascular coupling were the ones most likely to have these tiny areas of brain damage.

There was no difference between the participants who drank flavanol-rich cocoa and the ones who drank flavanol-poor cocoa.

In their study paper, Sorond and colleagues conclude:

> â€œThere is a strong correlation between neurovascular coupling and cognitive function, and both can be improved by regular cocoa consumption in individuals with baseline impairments. Better neurovascular coupling is also associated with greater white matter structural integrity.â€•

In an editorial accompanying the teamâ€™s study report, Paul B. Rosenberg, an Alzheimerâ€™s expert at Johns Hopkins School of Medicine in Baltimore, MD, says the study is an important first step, but:

> â€œMore work is needed to prove a link between cocoa, blood flow problems and cognitive decline.â€•

A research review of 20 trials that was published in The Cochrane Library in 2012, found that consuming dark chocolate or cocoa may reduce blood pressure by a small amount.

Catharine Paddock PhD

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Date Created
August 6, 2015
Author
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