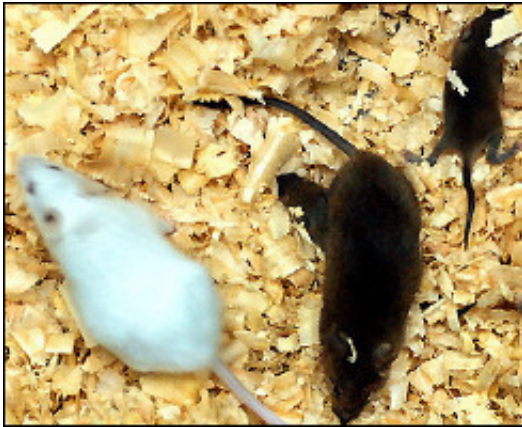


Natural compound and exercise boost memory in mice

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May help protect against cognitive decline in aging

A natural compound found in blueberries, tea, grapes, and cocoa enhances memory in mice, according to newly published research. This effect increased further when mice also exercised regularly.

"This finding is an important advance because it identifies a single natural chemical with memory-enhancing effects, suggesting that it may be possible to optimize brain function by combining exercise and dietary supplementation," says Mark Mattson, PhD, at the National Institute on Aging.

The compound, epicatechin, is one of a group of chemicals known as

flavonols and has been shown previously to improve cardiovascular function in people and increase blood flow in the brain. Flavonols are found in some chocolate. Henriette van Praag, PhD, of the Salk Institute, and colleagues there and at Mars, Inc., showed that the combination of exercise and a diet with epicatechin also promoted structural and functional changes in the dentate gyrus, a part of the brain involved in the formation of learning and memory. The findings, published in the May 30 issue of *The Journal of Neuroscience*, suggest that a diet rich in flavonols may help reduce the incidence or severity of neurodegenerative disease or cognitive disorders related to aging.

Van Praag and her team compared mice fed a typical diet with those fed a diet supplemented with epicatechin. Half the mice in each group were allowed to run on a wheel for two hours each day. After a month, the mice were trained to find a platform hidden in a pool of water. Those that both exercised and ate the epicatechin diet remembered the location of the platform longer than the other mice.

When studying their brains, van Praag and her colleagues found that these mice had greater blood vessel growth in the dentate gyrus and had developed more mature nerve cells, suggesting an enhanced ability of the cells to communicate. Further analysis showed that the epicatechin and exercise combination had a beneficial effect on the expression of genes important for learning and memory, and decreased the activity of genes playing a role in inflammation and neurodegeneration.

The researchers found that sedentary mice fed epicatechin showed enhanced memory, blood vessel growth, and gene activity, but these benefits were even more evident in mice that also exercised.

Source: Society for Neuroscience

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