

Diet and Exercise Might Reverse Aging in the Brain

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It's no secret that a healthy diet and plenty of exercise are key to good health, as study after study continues to show. But the latest analysis puts some hard numbers on just how big a benefit they can have on the brain, by possibly reversing some of the effects of aging.

In a study published in the journal *Neurology*, researchers led by James Blumenthal, professor in psychiatry at Duke University Medical Center, found that even among a group of older people who already show signs of thinking problems, exercising regularly over six months and eating more healthfully can improve their performance on cognitive tests.

The 160 people in the study, who were all over 55, began the study showing thinking skills that were similar to people in

their 90s: 28 years older, on average, than they actually were. The volunteers were divided into four groups. One group participated in an aerobic exercise program, another was assigned a low-sodium diet, a third was asked to exercise and change their diet at the same time, and a fourth control group was provided educational sessions about how to improve their brain health.

The group that exercised and changed its diet at the same time showed the greatest improvements in cognitive tests after six months. They improved their test scores by nine years, to resemble those of people 84 years old. The control group showed a continued decline in their brain test scores, and the researchers did not see a significant benefit from either exercise or change in diet alone.

“The bottom line is that it’s not too late to derive benefits from exercise, even in this group of people who have evidence of cognitive impairments,” says Blumenthal.

All of the men and women in the study were sedentary when they started the study, and while they showed signs of

cognitive decline, they did not have dementia. They also had at least one heart-disease related risk factor. Researchers know that heart health, and how well blood circulates throughout the body and brain, is important to maintaining cognitive skills, since the brain relies on oxygen-rich blood to fuel its activities.

Blumenthal was impressed that improving diet and exercise was helpful even in this group that was at risk of developing cognitive problems and potentially even dementia. “This is not necessarily a cure, but there is currently no pharmaceutical intervention for preventing dementia,” he says. “So a starting point of improving lifestyle with exercise and perhaps diet in this group of people can have important implications down the road for their overall wellbeing.”

The exercise program included three months of supervised physical activity at the research facility, in which the people exercised to about 70% of their peak heart rates on a treadmill or stationary bike three times a week. For the last three months of the study, people exercised at home using a regimen created by the researchers around convenience,

whether it was joining a gym, using their own exercise equipment at home or walking vigorously in their neighborhood. The diet group adhered to the Dietary Approaches to Stop Hypertension (DASH) which emphasizes reducing salt and increasing fiber to control blood pressure and improve heart health.

While the groups that changed their diet or exercise alone did not show significant improvements in their cognitive functioning, Blumenthal says that may be because the study was too small to record a change.

The fact that the group following both the exercise and diet programs showed the greatest benefit suggests that the two interventions may work together to improve brain health, Blumenthal says. “We saw evidence that exercise and the diet together are better than nothing,” he says. “We showed you can get improvements in function that can reduce and certainly improve neurocognitive function, and possibly even postpone development of dementia late in life.”

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