

In just six months, exercise may help those with thinking problems

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Combining aerobic and resistance training may offer the most benefits for women during and after chemotherapy for breast cancer, according to a new U of A study. The research also showed that women who included resistance training in their workouts were more likely to stick with regular exercise after their cancer treatment.. Credit: CC0 Public Domain

Getting the heart pumping with aerobic exercise, like walking or cycling for 35 minutes three times a week, may improve thinking skills in older adults with cognitive impairments, according to a study published in the December 19, 2018, online issue of *Neurology*, the medical journal of the American Academy of Neurology. After six months of exercise, study participants' scores on thinking tests improved by the equivalent of reversing nearly nine years of aging.

The study looked at people who had cognitive impairments without dementia, which is defined as having difficulty concentrating, making decisions, or remembering, but not severe enough to be diagnosed with dementia.

The study found that [exercise](#) improved thinking skills called [executive function](#). Executive function is a person's ability to regulate their own behavior, pay attention, organize and achieve goals. The study found no improvement in memory.

"The results are encouraging in that in just six months, by adding regular exercise to their lives, people who have cognitive impairments without dementia may improve their ability to plan and complete certain cognitive tasks," said study author James A. Blumenthal, Ph.D., of Duke University Medical Center in Durham, N.C.

The study involved 160 people with an [average age](#) of 65 and risk factors for heart disease, such as hypertension, who did not have dementia but reported problems with thinking skills. All participants were identified as having cognitive impairments without dementia and were sedentary at the start of the study.

Researchers examined the effects of both exercise and diet, specifically the Dietary Approaches to Stop Hypertension (DASH) diet, which is a low sodium, [high fiber diet](#) rich in fruits and vegetables, beans, nuts, low

fat dairy products, whole grains, and lean meats. The DASH diet was designed specifically for individuals with high blood pressure.

Participants were randomly assigned to one of four groups: [aerobic exercise](#) alone; DASH diet alone; both aerobic exercise and the DASH diet; or [health education](#), which consisted of educational phone calls once every one or two weeks. People assigned to the exercise groups exercised three times a week for 45 minutes each session which included 10 minutes of warm-up exercises and 35 minutes of aerobic exercise, such as walking, jogging, or cycling on a stationary bicycle.

At both the beginning and end of the six-month study, researchers evaluated participants' thinking and memory abilities with standardized cognitive testing, cardiorespiratory fitness with treadmill stress testing, and heart disease risk factors with screenings for blood pressure, blood glucose and lipids. They also used questionnaires and food diaries to measure how closely the participants followed the DASH diet.

Researchers found that participants who exercised showed significant improvements in thinking skills when compared to those who did not exercise. Those who took part in both the exercise and diet had average scores of nearly 47 points on the overall tests of executive thinking skills, compared to an average score of about 42 points for those with exercise and diet alone and about 38 points for those who just received health education. There was no improvement in participants who only consumed the DASH diet, although those who exercised and consumed the DASH diet had greater improvements compared to health education controls.

To illustrate, Blumenthal explained that at the start of the study, the participants had average scores for select subtests of executive function for people who were age 93, which was 28 years older than their actual chronological age. After six months, participants who exercised and

followed the DASH diet saw their average executive function scores correspond with people who were age 84, a nine-year improvement. For those who received only health education, their performance on executive function tests worsened by a half year from their scores at the start of the study.

Although this may suggest added benefit of the DASH diet when combined with exercise, Blumenthal says a limitation of the study was that the number of participants was relatively small and these findings should be interpreted with caution.

"More research is still needed with larger samples, over longer periods of time to examine whether improvements to thinking abilities continue and if those improvements may be best achieved through multiple lifestyle approaches like exercise and [diet](#)," Blumenthal said.

Provided by American Academy of Neurology

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