Aerobic and strength training exercise combined can support better brain health in your 80s and 90s, new study finds

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People in the oldest stage of life who regularly engage in aerobic activities and strength training exercises perform better on cognitive tests

than those who are either sedentary or participate only in aerobic exercise. That is the key finding of our new study, published in the journal *GeroScience*.

We assessed 184 cognitively healthy people ranging in age from 85 to 99. Each participant reported their exercise habits and underwent a comprehensive battery of neuropsychological tests that were designed to evaluate various dimensions of cognitive function.

We found that those who incorporated both aerobic exercises, such as swimming and cycling, and strength exercises like weightlifting into their routines—regardless of intensity and duration—had better mental agility, quicker thinking and greater ability to shift or adapt their thinking.

Using a well-known cognitive screening tool called the Montreal Cognitive Assessment that provides a balanced view of many aspects of cognition, we found that people who didn't engage in any physical exercise scored lower than those who did both cardio and strength training. This difference was slight but significant even when controlling for other factors like education and how much people exercised. In addition, the group that did both types of exercises did better in specific cognitive activities, like symbol coding, beyond just the screening results.

It's important to note that while our study establishes a correlation between a mix of aerobic and strength training exercises and higher cognitive test scores, the design of the study did not enable us to determine a causal relationship.

Nonetheless, the results suggest that a varied exercise routine is associated with improved cognitive functioning in people who are in their late 80s and beyond. We conducted the study as part of a large,

multisite collaboration with the McKnight Brain Research Foundation, which has institutes at the University of Florida, the University of Miami, the University of Arizona and the University of Alabama-Birmingham.

The aging of the global population makes cognitive health a pressing issue. The number of people diagnosed with Alzheimer's disease in the U.S. is projected to reach almost 14 million by 2060, up from just over 6 million as of 2020. Our findings not only offer hope for healthier aging but also present a practical approach to maintaining or even enhancing cognitive health in the last decades of life.

These results are not just numbers; they represent real-world thinking abilities that can affect the quality of life for those entering their golden years.

The fact that nearly 70% of our study participants were already engaging in some physical exercise prior to signing up for our study challenges the stereotype that old age and physical inactivity must go hand in hand.

Our findings provide an evidence base for health care providers to consider recommending a mixed regimen of aerobic and strength exercises as part of their patients' wellness plans. Studies show that when cognitive decline is slowed, people spend less on medical care and experience a higher quality of life.

Some of the next questions we hope to answer include: What types of aerobic and strength exercises are most effective for cognitive health? Is walking as effective as jogging? Does lifting weights have the same impact as resistance band exercises? And how much exercise is needed to see noticeable cognitive benefits?

Another critical question is the potential of exercise as a treatment for

neurocognitive disorders among older people. Our results suggest that physical activity is a preventive measure. But could it also be an active treatment for cognitive decline? This is an exciting development and one that is opening up all sorts of new possibilities for helping people live fully across their entire life span.

More information: Brian Duy Ho et al, Associations between physical exercise type, fluid intelligence, executive function, and processing speed in the oldest-old (85 +), *GeroScience* (2023). DOI: 10.1007/s11357-023-00885-4

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