

Increased physical fitness may offset cognitive deterioration in dementia

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Credit: MabelAmber/Flickr

Physical fitness is associated with better cognitive performance in older adults with dementia, according to a new study from UCL.

The positive effects were found to be independent of past levels of exercise and illness duration, suggesting it's never too late to benefit from good levels of physical [fitness](#), even after the onset of [dementia](#).

For the study, published today in *Frontiers in Public Health*, researchers used a range of different cognitive tests including verbal fluency and memory tasks, alongside questionnaires on physical fitness and lifestyle to examine 30 adults with dementia and 40 adults without. Participants were over 65 and living in England.

The researchers found that physical activities such as lifting things, ability to balance, taking a brisk walk or stairs instead of lifts improved the ability to plan, organise and remember things—which are cognitive functions known to deteriorate with dementia.

"Our paper provides empirical support for the cognitive benefits of interventions promoting physical fitness for individuals with dementia. We understand that living with dementia poses many challenges to individuals and their families and the idea of improving their physical fitness may seem like an unachievable target. However, we encourage increased physical fitness in any way, even what may seem like minor steps," said the lead author of the study, Alice Hollamby (UCL Epidemiology & Public Health).

"Even just helping out around the house or in the garden, taking a short walk or swim, lifting things from a seated position could play a big part in slowing the progression of dementia."

The research suggests that a possible explanation for why adults who demonstrated increased levels of fitness performed better on cognitive tests is because [physical activity](#) stimulates blood circulation in frontal-striatal circuits (neural pathways that connect frontal lobe regions with the basal ganglia in the brain) helping to improve cognitive function.

Previous animal studies have also suggested that aerobic exercise increases the blood level supply and the growth of new neurons in the brain leading to enhanced cognitive performance.

Co-author on the paper Dr. Eddy J. Davelaar (Department of Psychological Sciences, University of Birkbeck,) said: "We all know that we should embrace a healthy lifestyle to strengthen our physical and mental well-being. However, this is not to say that when one develops dementia, all hope is lost. Our findings suggest that prior levels of physical activity did not influence the association between [cognitive performance](#) and physical fitness. This means it is never too late to start.

"In addition, when reclassifying all participants according to health status and physical fitness level, most of the people with dementia and high fitness levels were misclassified as cognitively healthy. We are looking at extending this work to incorporate additional measures of physical and cognitive fitness, as well as the impact of age-appropriate interventions."

The researchers highlighted that dementia and cognitive impairment cost the UK economy approximately £26 billion per year. The number of people with dementia in England and Wales has been projected to increase by 57% from 2016 to 2040, primarily because of extended life expectancy. Finding ways to slow its severity and progression could have life-changing effects for the 800,000 people estimated to be living with dementia in the UK.

Senior author of the study, Dr. Dorina Cadar (UCL Epidemiology & Public Health) added: "Dementia is such a cruel disease which causes confusion and disorientation to the sufferer and enormous distress to their families and loved ones. Our study has helped to identify risk factors that could modify the rate of cognitive deterioration and disease progression. It is very interesting to observe that the level of [physical fitness](#) could hamper the progress of [cognitive deterioration](#) in

individuals with different stages of dementia. This gives us hope that ensuring a reasonable level of physical activity and optimal fitness could bring extra years of cognitive spark to those with dementia."

More information: Alice Hollamby et al. Increased Physical Fitness Is Associated with Higher Executive Functioning in People with Dementia, *Frontiers in Public Health* (2017). [DOI: 10.3389/fpubh.2017.00346](https://doi.org/10.3389/fpubh.2017.00346)

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