

Lifelong exercise holds key to cognitive well-being

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A study by researchers at King's College London highlights a link between lifelong exercise and improved brain function in later life.

The study found that regular intensive lifelong exercise as a child and adult improved cognitive functioning at the age of 50 and that even exercise of a lower frequency could offer benefits for cognitive well-being.

Dr Alex Dregan, Lecturer in Translational Epidemiology and Public Health at King's College London, believes the findings support the need for a lifelong approach when seeking to improve cognitive well-being and thinks the results are especially pertinent given recent concerns over the growth of an ageing population in the UK. He said: 'As exercise represents a key component of [lifestyle interventions](#) to prevent

[cognitive decline](#), cardiovascular disease, diabetes and cancer, [public health interventions](#) to promote lifelong exercise have the potential to reduce the personal and social burden associated with these conditions in late adult years.'

Published today in the journal *Psychological Medicine*, the study was funded by the National Institute for Health Research (NIHR) Biomedical Research Centre at Guy's and St Thomas' NHS Foundation Trust and King's College London, and is one of the first longitudinal investigations to measure the effects of lifelong exercise on the brain.

Using information from the UK National Child Development Study, researchers examined levels of exercise between the ages of 11 and 50 in more than 9,000 individuals. The data was collected through face-to-face interviews at the ages of 11, 16, 33, 42, 46 and 50, reducing the possibility of inaccurate retrospective accounts of exercise as a child. Participants undertook two measures of [cognitive performance](#), including memory and executive functioning, which were then combined into a third, overall 'cognitive index' score. The [memory task](#) involved learning ten unrelated words before immediate and delayed recall was tested. Executive functioning was assessed by asking participants to name as many animals as possible in one minute, which examined verbal fluency, and to cross-through specified letters in a series (letter cancellation), which measured attention, mental speed and visual scanning.

The study found that participants who exercised weekly as a child and as an adult performed better on tests of memory, learning, attention and reasoning at the age of 50 than those who exercised two to three times per month or less.

The preservation of cognitive functioning into later adult years represents a major public health concern, and as such, the [government](#)

[recommends](#) that adults aged 19-64 should exercise for at least 150 minutes per week. Previous research has focused on the achievement of recommended levels and has scarcely explored the benefits of lower levels of exercise. The study carried out by King's indicates that even exercise of a frequency lower than recommended levels may also contribute to better [cognitive functioning](#).

Dr Dregan said: 'It's widely acknowledged that a healthy body equals a healthy mind. However, not everyone is willing or able to take part in the recommended 150 minutes of physical activity per week. For these people any level of physical activity may benefit their cognitive well-being in the long-term and this is something that needs to be explored further.'

'Setting lower exercise targets at the beginning and gradually increasing their frequency and intensity could be a more effective method for improving levels of exercise within the wider population.'

Researchers found that the greatest benefit emerged from participating in lifelong intensive exercise, even after accounting for exercise frequency. Dr Dregan said: 'It appears that intensive exercise may offer benefits for brain functioning in later life over and above those resulting from regular yet less intense exercise.'

He added: 'Clinical trials are required to further explore the benefits of exercise for cognitive well-being among older adults, whilst examining the effects of [exercise](#) with varying levels of frequency and intensity.'

Provided by King's College London

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