

Golf, walking and Nordic walking may enhance cognitive function in older adults

October 16 2023



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Playing a single 18-hole round of golf or completing 6 km of either Nordic walking or regular walking may significantly improve immediate cognitive function in older individuals, according to [a recent study](#)

published in *BMJ Open Sport & Exercise Medicine*.

An international team of researchers from the University of Eastern Finland, the University of Edinburgh and ETH Zürich aimed to explore the immediate effects of three distinct cognitively demanding [aerobic exercises](#) on cognition and related biological responses in older, [healthy adults](#).

The study involved 25 healthy older golfers, aged 65 and above, who participated in three different acute bouts of aerobic [exercise](#): an 18-hole golf round, a 6 km Nordic walking session, and a 6 km regular walking session. Each exercise was conducted in a real-life environment, with participants maintaining their typical pace, corresponding to brisk walking.

Cognitive function was assessed using the Trail-Making Test (TMT) A and B, a widely used tool for evaluating cognitive function in older adults. The TMT-A test measures lower cognitive functions, such as attention and processing speed, while the TMT-B test measures more demanding executive functions such as task-switching ability.

Additionally, [blood samples](#) were collected to measure brain-derived [neurotrophic factor](#) (BDNF) and cathepsin B (CTSB) levels. Both have been suggested to reflect the benefits of exercise in the brain.

Participants also wore fitness monitoring devices to record exercise-specific data like distance, duration, pace, energy expenditure and steps. An ECG sensor with a chest strap was used to monitor heart rate.

The study showed that a single session of any of the three exercises—18 holes of golf, 6 km of Nordic walking or 6 km of regular walking—improved lower cognitive functions measured with the TMT-A test in older adults, although no significant effects were seen on the levels of BDNF and CTSB. Furthermore, Nordic walking and regular walking were associated with enhanced [executive functions](#) measured

with the TMT-B test.

Previous research has indicated the potential cognitive benefits of acute bouts of aerobic exercise, with factors like exercise intensity, duration and type influencing the extent of improvement.

"These findings underscore the value of age-appropriate aerobic exercise, such as golf, Nordic walking and regular walking, in maintaining and enhancing cognitive function among [older adults](#). Previous research has shown that exercise also holds promise as a potential strategy for those experiencing cognitive decline," says Julia Kettinen, the first author of the article and a Doctoral Researcher in Sports and Exercise Medicine at the Institute of Biomedicine, University of Eastern Finland.

More information: Julia Kettinen et al, Cognitive and biomarker responses in healthy older adults to a 18-hole golf round and different walking types: a randomised cross-over study, *BMJ Open Sport & Exercise Medicine* (2023). [DOI: 10.1136/bmjsem-2023-001629](https://doi.org/10.1136/bmjsem-2023-001629)

Provided by University of Eastern Finland

Citation: Golf, walking and Nordic walking may enhance cognitive function in older adults (2023, October 16) retrieved 29 April 2024 from <https://medicalxpress.com/news/2023-10-golf-nordic-cognitive-function-older.html>

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