

Can exercise lower the risk of developing Parkinson's disease?

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Getting regular exercise such as cycling, walking, gardening, cleaning and participating in sports may decrease the risk of developing Parkinson's disease, according to new research published in the May 17, 2023, online issue of *Neurology*. The study found female participants

who exercised the most had a 25% lower rate of Parkinson's disease when compared to those who exercised the least. The study does not prove that exercise lowers the risk of developing Parkinson's disease. It only shows an association.

"Exercise is a low-cost way to improve health overall, so our study sought to determine if it may be linked to a lower risk of developing Parkinson's disease, a debilitating disease that has no cure," said study author Alexis Elbaz, MD, Ph.D., of the Inserm Research Center in Paris, France. "Our results provide evidence for planning interventions to prevent Parkinson's disease."

The study included 95,354 [female participants](#), mostly teachers with an average age of 49, who did not have Parkinson's disease at the start of the study. Researchers followed participants for three decades, during which 1,074 participants developed Parkinson's disease.

Over the course of the study, participants completed up to six questionnaires about the types and amounts of physical activity they were getting. They were asked how far they walked and how many flights of stairs they climbed daily, how many hours they spent on [household activities](#) as well as how much time they spent doing moderate recreational activities such as gardening and more vigorous activities such as sports.

Researchers assigned each activity a score based on the metabolic equivalent of a task (METs), a way to quantify energy expenditure. For each activity, METs were multiplied by their frequency and duration to obtain a physical activity score of METs-hours per week. For example, a more intense form of exercise like cycling was six METs, while less intense forms of exercise such as walking and cleaning were three METs. The average physical activity level for participants was 45 METs-hours per week at the start of the study.

Participants were divided into four equal groups of just over 24,000 people each. At the start of the study, those in the highest group had an average physical activity score of 71 METs-hours per week. Those in the lowest group had an average score of 27 METs-hours per week.

Among the participants in the highest exercise group, there were 246 cases of Parkinson's disease or 0.55 cases per 1,000 person-years compared to 286 cases or 0.73 per 1,000 person-years among participants in the lowest exercise group. Person-years represent both the number of people in the study and the amount of time each person spends in the study.

After adjusting for factors such as place of residence, age of first period and menopausal status, and smoking, researchers found those in the highest exercise group had a 25% lower rate of developing Parkinson's disease than those in the lowest exercise group when physical activity was assessed up to 10 years before diagnosis; the association remained when physical activity was assessed up to 15 or 20 years before diagnosis. Results were similar after adjusting for diet or [medical conditions](#) such as high blood pressure, diabetes and cardiovascular disease.

Researchers also found that 10 years before diagnosis, physical activity declined at a faster rate in those with Parkinson's disease than in those without, likely due to early symptoms of Parkinson's disease.

"With our large study, not only did we find that female participants who exercise the most have a lower rate of developing Parkinson's disease, we also showed that early symptoms of Parkinson's disease were unlikely to explain these findings, and instead that exercise is beneficial and may help delay or prevent this disease," said Elbaz. "Our results support the creation of [exercise](#) programs to help lower the risk of Parkinson's disease."

A limitation of the study was that participants were mostly health-conscious educators who volunteered to participate in a long-term study, so results may be different for the general population.

More information: *Neurology* (2023).

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