

Physical activity may protect against new episodes of depression

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Increased levels of physical activity can significantly reduce the odds of depression, even among people who are genetically predisposed to the condition, according to a new study from researchers at Massachusetts

General Hospital (MGH). In a paper published in the journal *Depression and Anxiety*, the team reported that individuals who engaged in at least several hours of exercise each week were less likely to be diagnosed with a new episode of depression, even in the face of high genetic risk for the disorder.

Drawing on genomic and electronic [health](#) record data from nearly 8,000 participants in the Partners Healthcare Biobank, the new study is the first to show how physical activity can influence depression despite [genetic risk](#). Researchers followed patients who filled out a survey about their lifestyle habits (including physical activity) when they enrolled in the Biobank. They then mined millions of electronic health record data points over the next two years and identified people who received diagnoses related to depression. They also calculated genetic risk scores for each participant, combining information across the entire genome into a single score that reflects a person's inherited risk for depression.

What they found was that people with higher genetic risk were more likely to be diagnosed with depression over the next two years. Significantly, though, people who were more physically active at baseline were less likely to develop depression, even after accounting for genetic risk. In addition, higher levels of physical activity were protective for people even with the highest [genetic risk scores](#) for depression.

"Our findings strongly suggest that, when it comes to depression, genes are not destiny and that being physically active has the potential to neutralize the added risk of future episodes in individuals who are genetically vulnerable," says Karmel Choi, Ph.D., of MGH and the Harvard T.H. Chan School of Public Health, and lead author of the study. "On average, about 35 additional minutes of physical activity each day may help people to reduce their risk and protect against future depression episodes."

The researchers found that both high-intensity forms of activity, such as [aerobic exercise](#), dance and exercise machines, and lower-intensity forms, including yoga and stretching, were linked to decreased odds of depression. Overall, individuals could see a 17 percent reduction in odds of a new episode of depression for each added four-hour block of activity per week.

Depression represents the leading cause of disability worldwide. Despite its massive health burden, strategies to combat depression remain limited and the public's understanding of robust and modifiable protective factors is incomplete. "We provide promising evidence that [primary care](#) and mental health providers can use to counsel and make recommendations to patients that here is something meaningful they can do to lower their risk even if they have a family history of depression," says Choi.

Senior author Jordan Smoller MD, added, "In general our field has been lacking actionable ways of preventing depression and other mental health conditions. I think this research shows the value of real-world healthcare data and genomics to provide answers that can help us to reduce the burden of these diseases."

Beyond [physical activity](#), the MGH team continues to leverage the Partners Biobank and other large-scale studies to explore modifiable ways that individuals might reduce their risk of depression. "We believe there may be many factors could be part of an overall strategy for improving resilience and preventing depression," emphasizes Choi. "The magnitude of [depression](#) around the world underscores the need for effective strategies that can impact as many people as possible."

Provided by Massachusetts General Hospital

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