

# For ovarian cancer survivors, exercise can lift spirits

13 May 2021, by Matt Kristoffersen



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A new study from researchers at the Yale School of Public Health suggests that regular exercise plays a significant role in reducing depression among ovarian cancer survivors.

In the study, a team of YSPH scientists led by Melinda Irwin, Ph.D., the Susan Dwight Bliss Professor of Epidemiology, tracked symptoms of depression in 144 ovarian cancer survivors over six months. With an [exercise goal](#) of 150 minutes per week, they found, on average, that increased [exercise](#) was associated with an 18% reduction in [depressive symptoms](#). The study was recently published in *Gynecologic Oncology*.

The results are the first to evaluate the mood-boosting effects of physical activity for survivors of ovarian cancer. When judged with similar studies on survivors of other types of cancers, the research adds more compelling evidence in favor of exercise's restorative properties for a broad range of survivors.

"Our results indicate that not only is a six-month home-based exercise intervention in ovarian

cancer survivors feasible but also has a significant effect on improving depressive symptomatology," said Brenda Cartmel, Ph.D., lead author of the paper and a senior research scientist at the Yale School of Public Health. "Our findings can be used to inform future studies or programs dedicated to improving the lives of ovarian cancer survivors."

The women in the study were counseled on increasing their physical activity to the recommended amount of at least 150 minutes of moderate-intensity exercise per week. They were additionally expected to record their daily progress in logbooks. To gauge the women's depressive symptoms, researchers used a reliable screening tool known as the Center for Epidemiological Studies Depression Scale.

The data shows that the intervention had a major impact on the women. At the start of the study, 31% of the women randomized to the exercise intervention reported symptoms of depression. That dropped to 17% of the women after six months—and there was no change among women in the control group.

Irwin's team also measured [blood levels](#) of a chemical known as Brain-Derived Neurotrophic Factor (BDNF) in the women. Recent research has linked this chemical with depression in humans, and animal studies have even shown that it decreases with exercise. But the study did not report a significant change in BDNF in the exercise group nor control group. Still, they found, exercise can be a key factor in maintaining a high quality of life after being diagnosed with ovarian cancer.

In the United States, ovarian cancer is the leading cause of death for cancers of the female reproductive system and the fifth-leading cause of cancer-related death in women, with more than 22,000 incident cases and 14,000 deaths every year. More effective therapies for ovarian cancer have been developed that increase the length of

survival. However, no effective screening test exists for the early detection of ovarian cancer, and the majority of cases are still detected at a late stage, when the prognosis remains poor.

"Given the lack of a screening test, resulting in late stage at diagnosis, interventions shown to prevent or treat [depression](#) are needed. Few trials of exercise have been conducted in [women](#) with ovarian [cancer](#)," Irwin said. "We found the participants were able to exercise at recommended levels, which, in turn, improved depressive symptoms."

**More information:** Brenda Cartmel et al. Randomized trial of exercise on depressive symptomatology and brain derived neurotrophic factor (BDNF) in ovarian cancer survivors: The Women's Activity and Lifestyle Study in Connecticut (WALC), *Gynecologic Oncology* (2021). [DOI: 10.1016/j.ygyno.2021.02.036](#)

Provided by Yale University

APA citation: For ovarian cancer survivors, exercise can lift spirits (2021, May 13) retrieved 27 July 2022 from <https://medicalxpress.com/news/2021-05-ovarian-cancer-survivors-spirits.html>

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