

Breast Cancer Survivors Who Work Out See Heart Benefits

— Lower risk of abnormal GLS even in moderately active survivors

by [Michal Ruprecht](#), Editorial Intern, MedPage Today
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Physical activity among long-term breast cancer survivors was associated with better global longitudinal strain (GLS), though not left ventricular ejection fraction (LVEF), data from a cohort study found.

Compared with inactive survivors, moderately active breast cancer survivors had a 35% lower risk of abnormal GLS (relative risk [RR] 0.65, 95% CI 0.45-0.94) while active survivors had a 39% lower risk (RR 0.61, 95% CI 0.43-0.87), reported Anne May, PhD, of Utrecht University in The Netherlands, and colleagues.

"Considering that subclinical cardiac dysfunction (i.e., impaired GLS) may precede adverse cardiovascular events, these results suggest that efforts to increase physical activity levels by, for example, offering a physical activity program may contribute to reducing cardiovascular morbidity in breast cancer survivors," they wrote in *JACC: CardioOncology*.

LVEF in normal ranges was not associated with physical activity across the different levels of activity, the team found.

In recent years, GLS has increasingly become recognized as an alternative to LVEF in determining systolic function. In the current study, GLS was less favorable among inactive breast cancer survivors (-17.1%) compared with moderately inactive (-18.4%), moderately active (-18.2%), or active (-18.5%) survivors. And the difference between active and inactive survivors was significant ($\beta = -1.31$, 95% CI -2.55 to -0.06).

"With technical advances in echocardiography, GLS can be reliably assessed and is recognized as superior to LVEF for detecting subclinical changes," Edith Pituskin, RN, MN(NP), PhD, of the University of Alberta in Edmonton, and colleagues, noted in an [accompanying editorial](#). "GLS reflects subendocardial fiber injury and detects subtle changes in wall motion despite normal LVEF. GLS and LVEF in cardio-oncology are typically evaluated in the active treatment setting."

Prior treatment with anthracyclines or left-sided radiotherapy did not affect the results, the editorialists highlighted.

"Radiation technologies have advanced significantly since the 2000s, now using computed tomographic planning, beam shaping, and breath-hold techniques to avoid

organs at risk," Pituskin's group noted. "It is possible that these traditional exposures have fewer long-term consequences in the modern treatment era."

May and co-authors used data from the [HARBOR study](#) of 559 breast cancer survivors who received care in The Netherlands (28 who were inactive, 127 moderately inactive, 154 moderately active, and 250 who were active). About half received anthracycline-based chemotherapy and more than 90% of participants also had breast/chest-wall irradiation. A small proportion of patients received trastuzumab (Herceptin), an anti-HER2 agent that has been [associated with cardiotoxic](#).

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Patients were treated typically in their 40s and 50s and followed for about 5 to 12 years. The median age at time of study participation was 55.5 years, and a median 10 years had passed since completing treatment. A questionnaire was used to assess physical activity over the prior year.

Cardiovascular disease risk factors were higher among the inactive group, but the findings should be interpreted with caution given the small sample size, the researchers noted.

Reverse causation could have played a role in the findings, where "impaired cardiac function has led to lower physical activity levels," May's group acknowledged. "Nonetheless, we speculate that the opposite is more likely to underlie the association observed."

Limitations of the study included that not all types of physical activity were recorded in the questionnaire used, so total daily energy expenditure could not be calculated. In addition, self-reported physical activity is prone to misclassification. But they noted that misclassification of physical activity could have led to underestimates of the association observed, as those with an inactive lifestyle may be more likely to over-report their activity.



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Disclosures

The study was funded by a grant from the Pink Ribbon/Dutch Cancer Society. May reported no conflicts of interest. Pituskin is a Tier 2 Canada Research Chair. Co-authors disclosed relationships (fees, grant support, or other) with AstraZeneca, Merck, Novartis, Roche, Seagen, Biovica, Siemens, and Abbvie.

Primary Source

JACC: CardioOncology

[Source Reference](#): Naaktgeboren WR, et al "Physical activity and cardiac function in long-term breast cancer survivors" *JACC: CardioOncol* 2022; DOI: 10.1016/j.jacc.2022.02.007.

Secondary Source

JACC: CardioOncology

[Source Reference](#): Kirkham AA, et al "Physical inactivity, adverse body composition, and cardiac function in breast cancer survivors" *JACC: CardioOncol* 2022; DOI: 10.1016/j.jacc.2022.03.001.

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