

# New findings indicate additional benefits of exercise to breast cancer survivors

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USC researchers hope to reduce the risk of heart disease in breast cancer survivors. Credit: iStock

Can exercise reduce the risk of heart disease in women with breast cancer?

That's what Kyuwan Lee Ph.D. '19 investigated as a part of study led by Christina Dieli-Conwright, "Effects of Aerobic and Resistance Exercise on Metabolic Syndrome, Sarcopenic Obesity, and Circulating Biomarkers in Overweight or Obese Survivors of Breast Cancer: A Randomized Controlled Trial."

Their findings, published in the *Journal of the American Medical Association*, Oncology, used the Framingham Risk Score—a scoring system used to determine someone's chances of developing cardiovascular disease—to test breast [cancer](#) patients' chances of developing the disease over 10 years.

"Breast cancer patients are exposed to a higher risk of cardiovascular complications during and after [cancer treatment](#) from chemotherapy and radiation therapy," Lee said, referring to the negative health concerns induced by cancer-related treatments and exacerbated by obesity and sedentary lifestyles.

"I am hoping to reduce the risk of heart disease for [breast cancer patients](#) by testing optimal exercise programs during and after their cancer treatment."

Assistant Professor of Research Dieli-Conwright served as Lee's mentor on this study, using funding awarded by the National Cancer Institute.

### **Exercise and breast cancer survivors: Treatment's surprising risk**

The team conducted a randomized clinical trial that included 100 sedentary, obese women breast cancer stage I-III survivors.

The women participated in three weekly supervised one-on-one exercise sessions for 16 weeks: 80-minute sessions of resistance and [aerobic exercise](#) for two days and 50 minutes of aerobic exercise on the third

day. This intervention meets the exercise guidelines set forth by the American Cancer Society for cancer survivors.

"The main goal of this study was to use secondary analysis to test if exercise can reduce the risk for heart disease in this population," Lee said.

The study found that patients who participated in a 16-week exercise program had a significantly reduced risk of developing [cardiovascular disease](#) over their sedentary counterparts.

"The main cause of mortality in women diagnosed with early-stage [breast cancer](#) is heart disease," Lee said, noting that prescribed exercise is not considered standard care currently.

"We hope that this study shows the importance of exercise in reducing the [risk of heart disease](#) to emphasize the need to integrate exercise into clinical practice for cancer patients."

### **Exercise and breast cancer survivors: What next?**

The findings are only the beginning for Lee. In his next phase, he plans to study prevention of cardiovascular dysfunction in cancer patients undergoing cardio-toxic chemotherapy, which uses drugs whose side effects can cause irreversible damage to the heart muscles.

Lee plans to continue investigating exercise's effects on a variety of novel cardiovascular biomarkers in different types of cancer patients. He aims to identify the optimal exercise prescription for improving cardiovascular health in patients with cancer.

"I had a hard time watching my father undergo his cancer treatment," Lee explained. "But he overcame the side effects with exercise. That

inspired me to study how [exercise](#) can impact other patients."

**More information:** Christina M. Dieli-Conwright et al. Effects of Aerobic and Resistance Exercise on Metabolic Syndrome, Sarcopenic Obesity, and Circulating Biomarkers in Overweight or Obese Survivors of Breast Cancer: A Randomized Controlled Trial, *Journal of Clinical Oncology* (2018). [DOI: 10.1200/JCO.2017.75.7526](https://doi.org/10.1200/JCO.2017.75.7526)

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