

Exercise improves cardiorespiratory fitness during and after chemotherapy

October 18 2022



Credit: Pixabay/CC0 Public Domain

During chemotherapy, physical exercise intervention is safe, improves long-term cardiorespiratory fitness, and alleviates some of the adverse effects of cancer treatment, according to a study published in *JACC*:

CardioOncology. If exercise isn't feasible during chemotherapy, the individual can participate in an exercise program afterward to recover the same level of function.

Cardiorespiratory fitness, measured by peak oxygen uptake (VO_{2peak}), is regarded as one of the most significant independent predictors of cardiovascular health. During [cancer treatment](#), VO_{2peak} declines up to 25%. Cancer treatment often leads to adverse effects that impair the patient's health related quality of life (HRQoL), including reduced cardiorespiratory fitness, increased fatigue and [cardiovascular morbidity](#). Physical activity is proven to mitigate these risks. Exercise therapy is associated with increased cardiorespiratory fitness, improved VO_{2peak} , and a decline in cardiovascular morbidity, cancer mortality, and overall mortality.

"The benefit of exercise for cancer patients is widely acknowledged. However, there is insufficient evidence on the optimal timing of exercise intervention for improving long-term cardiorespiratory fitness in patients with cancer," said Annemiek M.E. Walenkamp, MD, Ph.D., senior author of the study and a medical oncologist at the Department of Medical Oncology, University Medical Center Groningen in Groningen, the Netherlands.

In the ACT trial, the researchers examined the efficacy of exercise intervention during [chemotherapy](#) compared with after treatment for improving long-term cardiorespiratory fitness. Adult patients recently diagnosed with [breast cancer](#), colon cancer, testicular cancer, or B-cell non-Hodgkin lymphoma who were scheduled to receive curative chemotherapy were eligible for the study.

Between February 2013 and November 2018, participants in the trial were randomized to a 24-week exercise intervention initiated either during or after chemotherapy. Types of exercise included moderate to

vigorous effort on a stationary bicycle, resistance training using weight machines and free weights, and badminton. The primary endpoint was the difference in VO₂peak one year after the intervention. The secondary endpoints were VO₂peak after completion of chemotherapy and intervention, muscle strength, HRQoL, fatigue, [physical activity](#), and self-efficacy at all time points.

The researchers found that directly after chemotherapy, the group that initiated exercise therapy during treatment reported less fatigue and more physical activity and declined less in VO₂peak, HRQoL, and muscle strength. Three months after chemotherapy, the group that began exercising after treatment showed similar values to the group that exercised during. Both groups were back to their baseline [cardiorespiratory fitness](#) one year after completing the exercise intervention, irrespective of timing.

"These findings suggest that the most optimal timing of physical exercise is during chemotherapy. However, initiating a physical exercise program after chemotherapy is a viable alternative when exercising during chemotherapy is not possible," Walenkamp said. "We hope our findings motivate health care providers to guide patients to engage in [exercise](#) interventions during anti-cancer treatment."

More information: Gabriela G.F. van der Schoot et al, Optimal Timing of a Physical Exercise Intervention to Improve Cardiorespiratory Fitness: During or After Chemotherapy, *JACC: CardioOncology* (2022). [DOI: 10.1016/j.jacc.2022.07.006](https://doi.org/10.1016/j.jacc.2022.07.006)

Provided by American College of Cardiology

Citation: Exercise improves cardiorespiratory fitness during and after chemotherapy (2022,

October 18) retrieved 29 January 2024 from

<https://medicalxpress.com/news/2022-10-cardiorespiratory-chemotherapy.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.