

67th Annual Scientific Meeting of the Korean Society of Cardiology
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Session Schedule: Vascular Research 1: Exercise Cardio-Oncology Rehabilitation to Manage Cardiovascular Outcomes in Cancer Patients and Survivors

Talk Title: “Cardiac Rehabilitation: A New Horizon in Cardio-Oncology,” by Barry A. Franklin, PhD, Corewell East – William Beaumont University Hospital, Oakland University William Beaumont School of Medicine, Royal Oak, Michigan, USA

Abstract

Physical activity (PA) plays an important role in the prevention and treatment of cancer, which is among the leading causes of death worldwide. In a pooled analysis of 1.44 million individuals, higher levels of leisure-time PA were associated with a lower risk of 13 of 26 cancers evaluated. Additionally, independent scientific review committees established by the US Department of Health and Human Services and the American College of Sports Medicine came to similar conclusions in that there is strong evidence to support the benefits of regular PA for the prevention of 7 types of cancer including breast, colon, endometrial, kidney, bladder, esophageal, and stomach. Accumulating evidence also suggests that cardiorespiratory fitness (CRF), expressed as mL O₂/kg/min or metabolic equivalents (METs; 1 MET = 3.5 mL O₂/kg/min) is inversely associated with the incidence of cancer. After cancer diagnosis, CRF may also impact survival. In one systematic review, individuals diagnosed with cancer that had the highest CRF had a 45% reduced risk of cancer mortality compared with those with the lowest CRF. In aggregate, these data suggest that regular moderate-to-vigorous lifestyle PA and increased CRF are associated with reduced cancer risk and better survival outcomes among individuals diagnosed with cancer.

Cancer survivors are also at increased risk of morbidity and mortality from other chronic diseases, most notably cardiovascular disease (CVD). This increased risk of CVD may result from cancer-related therapies, both direct and indirect (deconditioning, weight gain), and a concomitant worsening of the risk factor profile. Recently, the American Heart Association introduced the concept of cardio-oncology rehabilitation, which emphasizes that individuals treated for cancer represent a cohort at increased CVD risk who may benefit from adjunctive exercise-based rehabilitation. A systematic review and meta-analysis of 6 studies including 281 cancer survivors who completed cardiovascular rehabilitation showed average improvements in CRF, corresponding to 2.6 mL O₂/kg/min. In related work, researchers evaluated the benefits of exercise interventions for cancer survivors through an analysis of 51 relevant systematic reviews and meta-analyses. The investigators concluded that there was strong evidence for including exercise interventions as part of “every individual’s cancer care plan.”

Selected references

1. Gilchrist SC, Barac A, Ades PA, et al. Cardio-Oncology rehabilitation to manage cardiovascular outcomes in cancer patients and survivors: A scientific statement from the American Heart Association. *Circulation* 2019;139:e997-e1012.

2. Franklin BA, Wedig IJ, Sallis RE, et al. Physical activity and cardiorespiratory fitness as modulators of health outcomes: A compelling research-based case presented to the medical community. *Mayo Clin Proc* 2023;98(2):316-331.