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Nordic walking improves functional capacity in people with heart disease

Novel study in the Canadian Journal of Cardiology demonstrates that Nordic walking provides better long-term improvement of functional capacity than other forms of exercise in cardiovascular rehabilitation

Philadelphia, June 15, 2022 – Researchers identified a greater increase in functional capacity, the ability to perform activities of daily living, as a result of Nordic walking in patients with coronary heart disease compared to standard high-intensity interval training and moderate-to-vigorous intensity continuous training. The [results](#) of their randomized clinical trial are published in the [Canadian Journal of Cardiology](#).

Cardiovascular rehabilitation and exercise training programs following major cardiovascular events are associated with considerable improvements in functional capacity and cardiorespiratory fitness, as well as mental health. However, some individuals do not enjoy monotonous forms of exercise, such as walking and stationary cycling, and therefore may stop exercising once their cardiovascular rehabilitation program is completed. Researchers explored more diverse exercise options that might appeal to more people to determine whether they could get more individuals to continue to exercise and what benefits might be achieved.

Growing evidence suggests that non-conventional exercise interventions, such as high-intensity interval training and Nordic walking are more effective than traditional exercise approaches in improving functional capacity measured by a six-minute walk test – an important predictor of cardiovascular events in patients with coronary artery disease. Nordic walking is an enhanced form of walking exercise that uses specifically designed poles to further engage both the upper and lower body muscles.

“Patients with coronary artery disease frequently demonstrate diminished functional capacity, low quality of life and increased the risk of subsequent cardiovascular events and mortality,” explained lead investigator Jennifer L. Reed, PhD, Exercise Physiology and Cardiovascular Health Lab, Division of Cardiac Prevention and Rehabilitation, University of Ottawa Heart Institute; Faculty of Medicine; and School of Human Kinetics, Faculty of Health Sciences, University of Ottawa, Ottawa, ON, Canada.

Investigators compared the prolonged effects of 12-week rehabilitation with 1) high-intensity interval training; 2) moderate-to-vigorous intensity continuous training; and 3) Nordic walking, on functional capacity, quality of life and depression symptoms in patients with coronary artery disease. One hundred

and thirty patients were randomized to a 12-week training in one of these three groups followed by a 14-week observation phase.

While all exercise programs improved depression symptoms and quality of life, the improvement in functional capacity was greatest after Nordic walking (+19%) when compared to high-intensity interval training (+13%) and moderate-to-vigorous intensity continuous training (+12%).

“This is a key finding because lower functional capacity predicts higher risk of future cardiovascular events in people with coronary artery disease,” noted Dr. Reed. “Nordic walking engages core, upper and lower body muscles while reducing loading stress at the knee, which may have resulted in greater improvements in functional capacity.”



Caption: Nordic walking engages core, upper and lower body muscles while reducing loading stress at the knee, which may explain greater improvements in functional capacity compared to other forms of exercise (Credit: iStock.com/Lya_Cattel).

“No previous study has directly compared the long-term effects of high-intensity interval training, moderate-to-vigorous intensity continuous training and Nordic walking,” commented Tasuku Terada, PhD, Exercise Physiology and Cardiovascular Health Lab, Division of Cardiac Prevention and Rehabilitation, University of Ottawa Heart Institute, Ottawa, ON, Canada.

“This study is novel in that it simultaneously compared the sustained effects (i.e., 14 weeks after the completion of cardiovascular rehabilitation) of different exercise programs that can readily be incorporated into daily exercise. When prescribing exercise for patients with coronary artery disease, patients’ preference should be considered. Our findings can impact patient care by providing alternative exercise options based on their interests and needs,” he concluded.

In an [accompanying editorial](#), Carl J. Lavie, MD, Department of Cardiovascular Diseases, John Ochsner Heart and Vascular Institute, Ochsner Clinical School, the University of Queensland School of Medicine,

New Orleans, LA, USA, and colleagues noted that the addition of Nordic walking to a cardiovascular rehabilitation program could provide an ideal progression from standard moderate intensity continuous training or traditional walking, especially for deconditioned patients who may not tolerate high intensity exercise, or for patients in whom high-intensity interval training may be contraindicated.

“The addition of Nordic poles to moderate to vigorous intensity walking is a simple, accessible option to enhance improvements in walking capacity, increase energy expenditure, engage upper body musculature, and improve other functional parameters such as posture, gait, and balance,” commented Dr. Lavie.

“Providing a variety of exercise options enhances patient enjoyment and progression, which is important for adherence and maintenance. Exercise modalities should be prescribed with consideration of patient goals, preferences, and capabilities,” he advised.

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Notes for editors

The article is “Sustained Effects of Different Exercise Modalities on Physical and Mental Health in Patients with Coronary Artery Disease: A Randomized Clinical Trial,” by Tasuku Terada, PhD; Lisa M. Cotie, PhD; Heather Tulloch, PhD; Matheus Mistura, MSc; Sol Vidal-Almela, MSc; Carley D. O’Neill, PhD; Robert D. Reid, PhD; Andrew Pipe, MD; and Jennifer L. Reed, PhD (<https://doi.org/10.1016/j.cjca.2022.03.017>).

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The editorial is “Exercise Modalities and Intensity to Improve Functional Capacity and Psychological/Mental Health in Cardiac Rehabilitation: A Role for Nordic Walking?” by Jenna L. Taylor, PhD; Dejana Popovic, MD; and Carl J. Lavie, MD (<https://doi.org/10.1016/j.cjca.2022.03.020>).

Both articles appear online ahead of the *Canadian Journal of Cardiology*, volume 38 issue 8 (August 2022) published by [Elsevier](#).

Full text of the articles is available to credentialed journalists upon request. Contact Eileen Leahy at +1 732 238 3628 or cjcmedia@elsevier.com to obtain copies. Journalists wishing to speak to the study’s authors should contact Leigh B. Morris, Communications Officer, University of Ottawa Heart Institute, at +1 613-696-7000 ext. 19051 or lmorris@ottawaheart.ca. To reach the editorial’s authors for comment, contact Carl J. Lavie, MD, at +1 504-842-6821, +1 613 316 6409 (mobile), or clavie@ochsner.org.

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About the Editor-in-Chief

Editor-in-Chief Stanley Nattel, MD, is Paul-David Chair in Cardiovascular Electrophysiology and Professor of Medicine at the University of Montreal and Director of the Electrophysiology Research Program at the Montreal Heart Institute Research Center.

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