

Exercise + sauna = better cardiovascular function

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New research suggests that adding a regular 15-minute sauna to an exercise routine may improve cardiovascular risk factors more than exercise alone. The study is the first randomized controlled trial to

explore the long-term combination of exercise and sauna bathing in a non-clinical population. It is published ahead of print in the *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*.

Previous research has found that heat exposure in the form of sauna bathing has been positively associated with cardiovascular function. However, most studies have been fairly short (between two and four weeks) and explore the response to heat therapy in athletes. Longer-term studies in people who are not as physically active have been lacking.

In this new study, the research team studied adult volunteers who were between the ages of 30 and 64 years old, had "deskbound" occupations, and exercised less than 30 minutes per week. All volunteers also had at least one risk factor for cardiovascular disease, such as high cholesterol, high blood pressure, obesity, smoking or family history of [coronary heart disease](#). The volunteers were randomly placed into three groups:

- One group participated in resistance and aerobic [exercise](#) three times a week for 50 minutes each time.
- One group participated in resistance and aerobic exercise three times a week for 50 minutes each time, followed by a 15-minute sauna.
- A control group did not participate in exercise or sauna bathing.

Sauna exposure began at 149 degrees F and was increased every two weeks by 9 degrees F for the eight week duration (149—158—167—176 degrees F). The participants were free to leave the sauna before 15 minutes if they were uncomfortable in the heat, but all of them completed each full sauna session.

After eight weeks of the intervention, the researchers found an increased maximum rate of [oxygen consumption](#)—a key marker of

cardiorespiratory function—in both exercise groups when compared with the control group. More importantly, the sauna group showed greater increases in the maximum rate of oxygen consumption and decreases in total cholesterol and systolic blood pressure levels than the exercise-only group.

"This study opens up opportunities to investigate shorter bouts of regular exercise in conjunction with sauna use and lends support for regular [sauna](#) bathing as a possible therapeutic alternative, particularly for those with compromised exercise capacities. Sauna bathing is a safe and simple lifestyle modification, and steps should be taken to make it more accessible worldwide," the researchers wrote.

"Sauna bathing could be effectively incorporated into a range of other compatible rehabilitation settings as well," said Earric Lee, of the University of Jyväskylä, Faculty of Sport and Health Sciences in Finland, and corresponding author of the study.

More information: Earric Lee et al, The effects of regular sauna bathing in conjunction with exercise on cardiovascular function: A multi-arm randomized controlled trial, *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* (2022). [DOI: 10.1152/ajpregu.00076.2022](https://doi.org/10.1152/ajpregu.00076.2022)

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