

New study suggests target steps per day for reduced risk of heart failure

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The science is clear that movement is good for our bodies as we age. But just how much physical activity is beneficial for people over 60? A new study from the University at Buffalo provides an answer, and it's not

10,000 steps per day.

In fact, the study—published Feb. 21 in *JAMA Cardiology*—of nearly 6,000 U.S. women aged 63–99 reports that, on average, 3,600 steps per day at a normal pace was associated with a 26% lower risk of developing heart failure.

The [observational study](#) from the Women's Health Initiative specifically looked at accelerometer-measured [physical activity](#), sedentary time and heart failure risk. There were 407 heart failure cases—confirmed by physicians—identified during a mean follow-up of 7.5 years.

The risk of developing heart failure was, on average, 12% and 16% lower for each 70 minutes per day spent in light intensity activities and each 30 minutes per day spent in moderate-to-vigorous intensity, respectively. To the contrary, each hour-and-a-half of sedentary time was associated, on average, with a 17% higher risk of experiencing heart failure.

"In ambulatory [older women](#), higher amounts of usual daily light and moderate intensity activities were associated with lower risk of developing heart failure with preserved [ejection fraction](#) independent of demographic and clinical factors associated with heart failure risk," says the study's lead author Michael J. LaMonte, Ph.D., research professor of epidemiology and [environmental health](#) in UB's School of Public Health and Health Professions.

"Accumulating 3,000 steps per day might be a reasonable target that would be consistent with the amount of daily activity performed by women in this study."

Study participants wore an accelerometer on their hip for up to seven consecutive days, except for when in water. Light physical activity

included usual daily activities like self-care, chores around the house and caregiving, while moderate to vigorous activity involved walking at a normal pace, climbing the stairs or doing yard work.

The study is unique in that it looked at two subtypes of heart failure, the most common of which is heart failure with preserved ejection fraction, often abbreviated as HFpEF. A similar pattern of lower risk with more light and moderate intensity daily activity, and higher risk with prolonged sedentary time, was seen for HFpEF.

"This is a major, unique finding of our study because there is very little published data on physical activity and HFpEF, so we are providing new information upon which other studies can build," LaMonte says.

"More importantly, HFpEF is the most common form of heart failure seen in older women and among racial and ethnic minority groups, and at present there are few established treatment options, which makes primary prevention all the more relevant for HFpEF. The potential for light intensity activities of daily life to contribute to the prevention of HFpEF in older women is an exciting and promising result for future studies to evaluate in other groups, including older men," LaMonte adds.

The team's evaluation of the number of steps per day as an approach to quantifying and translating the favorable results for physical activity was also novel, says LaMonte.

Encouraging older adults to be more active as part of healthy aging is sound advice well-supported by scientific evidence.

"However, conveying how much activity is always a challenge to incorporate as part of clinical and public health recommendations," says LaMonte. "Steps per day is easily understood and can be measured by a variety of consumer-level wearable devices to help people monitor their

physical activity levels."

In this study, the risk of heart failure, including HFpEF, became significantly lower at around 2,500 steps per day. When standardized to 3,600 steps per day (1 standard deviation unit), there was a 25–30% lower risk of heart failure and HFpEF.

The study's findings come at a time when the U.S. government is examining its physical activity guidelines for older adults, particularly a target number of steps per day. The steps per day associated with lower heart failure risk cited in the study are far fewer than the often recommended 10,000 steps for health and wellness.

For perspective, the average number of steps per day among women in the study was 3,588. The average among U.S. women of similar age is 2,340.

"It appeared that intensity of stepping did not influence the lower risk of heart failure as results were comparable for light intensity steps and for more vigorous steps," says LaMonte.

"Our results showing [heart failure](#) prevention in older women might be enhanced through walking around 3,000 steps or so per day at usual pace is very relevant given the current emphasis at the federal level on identifying an amount of daily physical activity that can be referenced against steps per day for cardiovascular health and resilience to incorporate in future public health guidelines."

Researchers from the University of California San Diego, University of North Carolina at Chapel Hill, Fred Hutchinson Cancer Center, Stanford University, and Brown University contributed to the study.

More information: Accelerometer-Measured Physical Activity,

Sedentary Time, and Heart Failure Risk in Women Aged 63 to 99 Years, *JAMA Cardiology* (2024). [DOI: 10.1001/jamacardio.2023.5692](https://doi.org/10.1001/jamacardio.2023.5692)

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