Scientists show how many steps to take each day to reduce the risk of premature death

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An international study led by the University of Granada has identified for the first time the optimal number of steps at which most people obtain the greatest benefits, and also shows that the pace at which you

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The idea that you should take 10,000 steps a day originated in Japan in the 1960s, but had no scientific basis. Researchers have now shown that, if we focus on the risk of dying from cardiovascular disease, most of the benefits are seen at around 7,000 steps

An international study led by the University of Granada (UGR) has provided the first scientific proof for how many steps you need to take per day to significantly reduce the risk of premature death: 8,000. Given the average length of a human stride (76 centimeters for men and 67 centimeters for women), taking 8,000 steps is equivalent to walking approximately 6.4 kilometers a day.

Researchers have also shown that the pace at which we walk has additional benefits, and that it is better to walk fast than slow. With regard to the risk of dying from cardiovascular disease, most of the benefits are seen at around 7,000 steps.

The study, published in *Journal of the American College of Cardiology*, identifies for the first time the optimal number of steps at which most people obtain the greatest benefits, and also shows that the pace at which you walk provides additional benefits.

The research was carried out in collaboration between researchers from the Netherlands (Radboud University Medical Center), Spain (Universities of Granada and Castilla-La Mancha) and the United States (Iowa State University).

"Traditionally, many people thought that you had to reach about 10,000 steps a day to obtain health benefits—an idea that came out of Japan in the 1960s but had no basis in science," explains the lead author of the study, Francisco B. Ortega, a professor at the UGR's Department of

Physical Education and Sports.

No scientific basis

For instance, the first pedometer marketed to the general public was the "10,000 steps meter" (a literal translation), but the figure had no scientific basis. "We've shown for the first time that the more steps you take, the better, and that there is no excessive number of steps that has been proven to be harmful to health," says Ortega, who also points out that reaching 7,000-9,000 steps a day is a sensible health goal for most people.

The researchers conducted a systematic literature review and meta-analysis of data from twelve international studies involving more than 110,000 participants.

The results of this study are in line with other recent studies, which show that health benefits are obtained at less than 10,000 steps. "What makes our study different is that, for the first time, we set clear step targets," explains Esmée Bakker, currently a Marie Curie Postdoctoral Research Fellow at the University of Granada and one of the lead authors of the study.

"In this study, we show that measurable benefits can be obtained with small increases in the number of steps per day, and that for people with low levels of physical activity, every additional 500 steps improves their health. This is good news because not everyone can walk almost 9,000 steps a day, at least not at first, so you can set small, reachable goals and gradually make progress and increase the number of steps per day," the researchers note.

The study revealed no difference between men and women. It also found that faster walking is associated with a reduced risk of mortality,

regardless of the total number of steps per day. Additionally, according to Bakker, "it doesn't matter how you count your steps, whether you wear a smartwatch, a wrist-based activity tracker or a smartphone in your pocket: the step targets are the same".

Physical activity recommendations—steps

So, should we stop walking when we reach around nine thousand steps? "Absolutely not", insists Francisco B. Ortega. "More steps are never bad. Our study showed that even as many as 16,000 steps a day does not pose a risk; on the contrary, there are additional benefits compared to walking 7,000-9,000 steps a day, but the differences in risk reduction are small."

"Furthermore, the step target should be age appropriate, with younger people being able to set a higher target than older people. It is also important to note that our study only looked at the effect on the risk of all-cause mortality and cardiovascular disease. There are other studies and a large body of scientific evidence that show that doing moderate and even vigorous physical activity is associated with many health benefits, including improvements in sleep quality and mental health, among many others."

"Our study gives people clear and easily measurable goals," Bakker continues. "The (inter)national physical activity recommendations advise adults to get 150-300 minutes of moderate-intensity exercise per week. But most people don't know what exercises count as moderate intensity, making it difficult to verify their compliance with this exercise standard. Counting steps is much simpler, especially since most people have a smartphone or smartwatch these days."

"Herein lies the importance of our study: to provide simple and concrete targets for the number of daily steps that people can easily measure with their phones and smartwatches or wristbands, and thereby contribute to

people's health," the authors conclude.

More information: Niels A. Stens et al, Relationship of Daily Step Counts to All-Cause Mortality and Cardiovascular Events, *Journal of the American College of Cardiology* (2023). DOI: 10.1016/j.jacc.2023.07.029

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