

## 10,000 Steps a Day Are Not Necessary for Better Health

A recent article in Popular Science Magazine revealed that the widely accepted activity goal of 10,000 steps per day has no scientific basis. This idea was popularized in Japan just prior to the 1964 Tokyo Olympics by a marketing campaign for a pedometer. The pedometer was arbitrarily named “Manpo-Kei”; in Japanese “man” means 10,000, “po” means steps, and “kei” means meter. And the name of the popular pedometer morphed into the totally unfounded notion that 10,000 steps should be a daily exercise goal- and anything less implies failure.



An extensive series of research studies have challenged this misconception. For example, a recent study in the journal *Circulation* reported that adding just 500 steps a day resulted in a 14% reduction of the risk of heart disease, stroke, and heart failure. And a recent report in the journal *Sports Medicine* concluded that as little as a two-to five-minute walk after a meal had a positive effect on heart health and a significant impact on insulin and blood sugar levels. So don't be discouraged by the idea that it is necessary to walk 10,000 steps to have any beneficial effect on your health; it simply isn't true.

The studies that try to quantify the benefits of being physically active use an established research design that samples the exercise behavior of a large number of people over a relatively short period of time- perhaps a week. Subjects may record their steps by wearing a pedometer (a device worn on the ankle that measures the number of steps by detecting vertical movement at the hip) or an accelerometer (a device that measures vibration or acceleration of motion and

converts it into measurable electrical signals), or they may be asked to complete a questionnaire or other self-report measure of their activity over the study period. Then the people in the studies are followed up for years or until their death, and their health outcomes or cause of death are correlated with their reported activity during the earlier study period. One study, for example, found that people who occasionally lifted weights were far less likely to become obese than those who never lifted. The largest study interviewed over 400,000 U.S. adults and linked their activity reports to the National Death Index. The Index includes over 100 million death records, and researchers are invited to link the cause of death of their individual study subjects to its death certificate information.

This type of research relies on three assumptions that are based on prior research:

1. The activity level measured during the test days is a relatively fair reflection of each person's general level of activity over time.
2. Despite a decline in fitness over time, people who were even moderately fit at some point in their lives had a much lower risk of death than people who were less fit.
3. Even though extended breaks from being active can significantly reduce a person's fitness, most exercisers' fitness levels remain above those who have been sedentary their whole lives.

Research shows conclusively that being sedentary is far more dangerous than physical activity, even in the very old. When studies compared the activity of "weekend warriors" - busy people who only exercised on the weekends-with people who had higher levels of activity spread over more days, they consistently found that there are substantial health benefits that result from being moderately active- even on only a couple of days a week. Both active groups had statistically similar health benefits, and there were no significant differences in mortality rates between weekend warriors and regularly active participants when compared with physically inactive people.

- One study of 8421 men with a mean age 66 who had no major chronic diseases found that weekend warriors had a 41.95% lower risk of dying compared with sedentary men.
- The huge national interview study of over 400,000 US adults found that the minimum effective dose of moderate or vigorous aerobic physical activity for significant mortality risk reduction was only 1 hour/week, with additional mortality risk reduction observed

when people were active up to 3 hours/week. There were only small additional decreases in mortality risk if people were active more than three hours per week.

- In a meta-analysis of 16 studies, the results suggested that just 30 to 60 minutes a week of muscle strengthening activities resulted in a risk reduction ranging from 10 to 20% for all-cause mortality, cardiovascular disease, and cancer.
- In one study of 3101 adults whose average age was 50.5 years, those who took at least 8000 steps 1-2 days a week had a 14.9% lower all-cause mortality risk compared with those who never reached 8000 daily steps.

Data scientist Carver Coleman opined that switching from a sedentary lifestyle to a workout schedule provides health benefits that are comparable to smoking vs not smoking. Exercise offers benefits not achievable through medication alone, and staying physically active helps to preserve functional fitness as you get older so you can more easily get out of a chair or open a jar.

Aerobic capacity, muscle quality, and agility naturally decline over time, but the process can be reversed at a rate that depends on your age and your level of fitness. The changes in cardiorespiratory fitness (CRF) necessary to impact mortality risk are relatively small; a sedentary person who embarks on a brisk walking program will increase their CRF. “Exercise snacks” throughout the day will help to keep your blood volume elevated and will improve your fitness.

Exercise releases chemicals in the brain (neurotransmitters) that give you a feeling of satisfaction, which motivates you to repeat the pleasurable activity. Your body will adapt to the stimulation you provide, and you will become accustomed to the good feelings that result from being active. It is clear that even infrequent, less intense physical activity is beneficial and can significantly reduce your risk of negative health outcomes. So just get moving, feel good, and forget about counting steps.