

Study finds that 20–25 minutes of daily physical activity may offset death risk from prolonged sitting

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Clocking up just 20–25 minutes of physical activity every day may be enough to offset the heightened risk of death from a highly sedentary lifestyle, suggests research published online in the *British Journal of Sports Medicine*.

But higher daily tallies of physical activity are linked to a lower risk, irrespective of the amount of time spent seated every day, the findings show.

In developed nations, adults spend an average of 9 to 10 hours every day sitting down—mostly during working hours. A highly sedentary lifestyle is associated with a heightened risk of [death](#), explain the researchers.

Much of the previously published research on the benefits of physical activity to counter prolonged sitting time have relied on aggregated data, which inevitably results in a broad brush approach, they suggest. To try and overcome this, the researchers pooled individual participant data from four groups of people fitted with activity trackers to find out whether physical activity might modify the association between [sedentary time](#) and death, and vice versa, and what amount of physical activity and sitting time might influence risk.

They included Individual participant data from collected between 2003 and 2019 from the Norwegian Tromsø Study 2015–16; the Swedish Healthy Ageing Initiative (HAI) 2012–19; the Norwegian National Physical Activity Survey (NNPAS) 2008–09; and the US National Health and Nutrition Examination Survey (NHANES) 2003–06.

Just short of 12,000 people aged at least 50 were included in the analysis. They had a minimum of 4 days of 10 daily hours of activity tracker records, had been monitored for at least 2 years, and had provided details of potentially influential factors: their sex, [educational level](#), weight, height, smoking history, alcohol intake, and whether they had current and/or previous cardiovascular disease, cancer and/or diabetes.

In all, 5,943 people spent fewer than 10.5 hours sitting down every day; 6,042 clocked up 10.5 or more sedentary hours.

Linkage with death registries showed that during an average period of 5 years, 805 (7%) people died, 357 (6%) of whom spent under 10.5 hours sitting down every day, and 448 of whom clocked up 10.5 hours or more.

The analysis of the activity tracker data showed that being sedentary for more than 12 hours a day was associated with a 38% heightened risk of death compared with a daily tally of 8 hours—but only among those totaling up fewer than 22 daily minutes of moderate to [vigorous physical activity](#).

More than 22 daily minutes of moderate to vigorous physical activity was associated with a lower risk of death.

While a higher amount of moderate to vigorous physical activity was associated with a lower risk of death, irrespective of the amount of sedentary time, the association between sedentary time and death was largely influenced by the amount of moderate to vigorous physical activity. For example, an extra 10 minutes a day was associated with a 15% lower risk of death in those spending fewer than 10.5 sedentary hours, and a 35% lower risk among those spending more than 10.5 sedentary hours, every day.

Light-intensity physical activity was only associated with a lower risk of death among highly sedentary people (12+ daily hours).

This is an observational study, and as such, can't establish cause and effect. The researchers also acknowledge that they weren't able to repeat measures of physical activity and sedentary hours, so precluding any changes in either over time.

Potentially influential factors, such as diet, mobility issues, and [general health](#) weren't accounted for either. Furthermore, [activity trackers](#) may

not correctly classify all activity types and their corresponding intensity—cycling, resistance exercises, gardening, for example.

Nevertheless, the researchers conclude, "Small amounts of MVPA [moderate to vigorous physical activity] may be an effective strategy to ameliorate the mortality risk from high sedentary time, where accumulating more than 22 mins of MVPA eliminates the risk of high sedentary time. Efforts to promote [physical activity](#) may have substantial health benefits for individuals."

More information: Device-measured physical activity, sedentary time, and risk of all-cause mortality: an individual participant data analysis of four prospective cohort studies, *British Journal of Sports Medicine* (2023). [DOI: 10.1136/bjsports-2022-106568](https://doi.org/10.1136/bjsports-2022-106568)

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