

Prolonged Sedentary Behavior Linked to Higher Cancer Mortality

Breaking up long periods of sitting with physical activity could potentially reduce the risk of cancer incidence and death.

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Uninterrupted periods of physical inactivity—such as sitting for hours at a stretch—are associated with increased risk of cancer death, according to study findings published in [PLOS Medicine](#). The good news is that replacing some sedentary time with even brief or light [movement breaks](#) could lower mortality.

“Cancer risk associated with sedentary behavior is specific to prolonged sedentary behavior,” the study authors concluded. “Replacing prolonged sedentary behavior with physical activity is associated with lower cancer risk.”

A [growing body of research](#) shows that physical activity is linked to lower risk of developing cancer and better outcomes among patients and survivors. While prolonged inactivity is a known health hazard, its role in cancer outcomes is not fully understood. Most guidelines focus on total physically active time, but some people who get the [recommended 150 minutes](#) of moderate-intensity activity per week still spend hours a day sitting at their office jobs.

Ziyi Zhou, PhD, of the University of Glasgow, and colleagues explored differences between prolonged and interrupted sedentary behavior in relation to cancer outcomes. They looked at cancer incidence and mortality overall and for 23 different malignancies, adjusting for demographic, socioeconomic and lifestyle factors.

The analysis included 91,292 UK Biobank participants in England, Scotland and Wales who tracked their physical activity using a wrist accelerometer for seven days. More than half (56%) were women, almost all were white and the average age was 56 years. People who already had a history of cancer were excluded. Over a median follow-up period of about 12 years, nearly 14% developed cancer, and about 2% died of cancer.

The researchers found that each additional hour of uninterrupted sedentary behavior was associated with a 10% higher risk of overall cancer mortality. Prolonged sedentary behavior was also associated with a small but statistically significant increase in cancer incidence. In contrast, replacing one hour of uninterrupted sedentary time with light physical activity was associated with

a 12% lower risk of cancer death, and replacing 30 minutes per day with moderate activity was linked to an 8% reduction. Even adding just five minutes of vigorous activity was associated with a 22% reduction. Similar patterns were seen for obesity-related cancers, diabetes-related malignancies and breast, lung and oral cancers, leukemia and non-Hodgkin lymphoma.

Discussing their findings, the researchers noted that prolonged sedentary behavior promotes chronic inflammation and suppresses immune function, while short bouts of activity can improve metabolic response. Although they saw clear associations between more movement and better cancer outcomes, this study could not show whether breaking up prolonged stretches of sedentary time was a direct cause of reduced cancer incidence or mortality. What's more, greater sedentary time was associated with other cancer risk factors, such as economic deprivation, higher red meat consumption and lower fruit and vegetable consumption.

"These findings suggest that not only the total amount of sedentary time, but also how sedentary time is accumulated, may be important for cancer risk," the study authors wrote. "Reducing long, uninterrupted periods of sedentary behavior and replacing them with physical activity, even those with light intensity, may be a practical target for future interventions."

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