

Lower Cancer Risk is Linked to Breaking up Long Periods of Sitting

A large study published found that long, uninterrupted bouts of sitting were more strongly associated with [cancer](#) risk than sedentary time interrupted by even light physical activity.



Study

The researchers analyzed data from 91,292 [UK Biobank](#) participants (56% women), aged 37 to 73 years, who wore wrist accelerometers continuously for seven days to objectively measure their activity patterns. Participants were then followed for a median of 12.4 years to examine associations between sedentary behavior and cancer outcomes.

To distinguish different [sitting patterns](#), sedentary behavior was classified as prolonged when a bout lasted at least 30 minutes and at least 90% of that time was spent sedentary. All other sedentary bouts were classified as interrupted. Older participants generally accumulated more total sedentary time than younger participants.

Differences in lifestyle characteristics also emerged across sedentary behavior patterns. Participants with higher levels of both total and prolonged sedentary time were more likely to experience greater socioeconomic deprivation, have higher [educational attainment](#), and consume red and processed meat more frequently. In contrast, those who accumulated more interrupted sedentary time tended to eat slightly more fruit and vegetables and slightly less red meat.

Over the follow-up period, participants in the highest quartile of total sedentary time had higher rates of cancer mortality, obesity-related cancers, and type 2 diabetes-related cancers than those in the lowest quartile. Higher rates were also observed for several individual cancers, including esophageal, kidney, liver, colorectal, [lung](#), and prostate cancers.

Findings

Overall, spending more time sedentary was associated with a greater risk of cancer. Each additional hour of total sedentary time was associated with a 12% higher risk of cancer death, alongside a 6%–7% higher risk of obesity-related and [type 2 diabetes](#)-related cancers.

However, separating sedentary time into prolonged and interrupted patterns revealed an important difference. The increased risks were driven entirely by prolonged, uninterrupted sitting:

Each additional hour of prolonged sedentary behavior was associated with a 9% higher risk of [cancer death](#) and a 5% higher risk of obesity-related and type 2 diabetes-related cancers.

By contrast, sedentary time accumulated in shorter, interrupted bouts showed the opposite pattern. Each additional hour of interrupted sedentary behavior was associated with an approximately 18%–19% lower risk of cancer death and around a 10% lower risk of [obesity](#)-related and type 2 diabetes-related cancers. These apparent benefits were greatest among participants with lower overall levels of interrupted sedentary behavior, then leveled off at higher levels.

The researchers also observed similar patterns across several individual [cancer types](#), with prolonged sedentary behavior generally associated with higher risks and interrupted sedentary behavior with lower risks.

When one hour of prolonged sedentary behavior was replaced with physical activity, the associated cancer death risk was 12% lower for light activity. With 30 minutes of moderate physical activity instead, the associated risk was 8% lower. The largest reduction in associated risk was observed when five minutes of vigorous physical activity replaced prolonged sedentary activity, although this association was statistically significant for cancer incidence outcomes rather than [cancer mortality](#).

Similar substitution patterns were observed across several composite and [site-specific cancer](#) outcomes, although not all associations reached statistical significance.

Replacing prolonged [sedentary time](#) with even light physical activity was associated with significantly lower cancer risks in the prolonged sedentary behavior subgroup, suggesting a potential intervention target for future studies.

This is among the earliest studies to suggest that replacing prolonged sedentary behavior with [physical activity](#) is associated with lower cancer risks.

Possible mechanisms include improved metabolism and lower inflammation, as well as better immune function, with physical activity in interrupted sedentary behavior. In addition, the authors cite other studies that suggest harmful patterns of fat deposition in the heart and liver, for instance, with sedentary lifestyles, as well as impaired glucose and insulin regulation. Persistently [high insulin levels](#) can promote cell proliferation and have been linked to several cancers.

The researchers also found no [evidence](#) that these associations differed according to general or central obesity, suggesting the observed relationships were broadly similar across obesity groups.

Conclusion

The study used objective measures of activity and sedentary behavior, while categorizing [sedentary behavior](#) into prolonged and interrupted types for the purpose of analyzing associations with overall and individual cancer risks.

However, the observational nature of the study precludes causal interpretation. The UK Biobank participants are volunteers and may not represent the general population. [Healthy volunteer](#) bias

was found to be likely. Moreover, the study covered only a limited period of activity, which may not reflect long-term sedentary behavior. Additionally, it did not identify the type of sedentary behavior involved, such as viewing television or driving, or sitting at work.

Overall, the findings suggest that cancer risks associated with sedentary behavior may depend not only on how much time people spend sitting, but also on how that sedentary time is accumulated. Long, [uninterrupted bouts](#) of sitting were consistently associated with higher cancer risks, while replacing some of this time with physical activity was associated with lower cancer-related risks.

Although the observed effect sizes were modest, the authors note that they could still have meaningful implications at the [population level](#) given how common sedentary behavior is. However, because this was an observational study, the findings cannot establish cause and effect, and intervention studies will be needed to confirm whether reducing prolonged sedentary behavior directly lowers cancer risk.

Source:

<https://www.news-medical.net/news/20260707/Breaking-up-long-periods-of-sitting-is-linked-to-lower-cancer-risk.aspx>