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Yes, sitting too long can kill you, even if you exercise

By Susan Scutti, CNN

🕒 Updated 3:57 PM ET, Tue September 12, 2017



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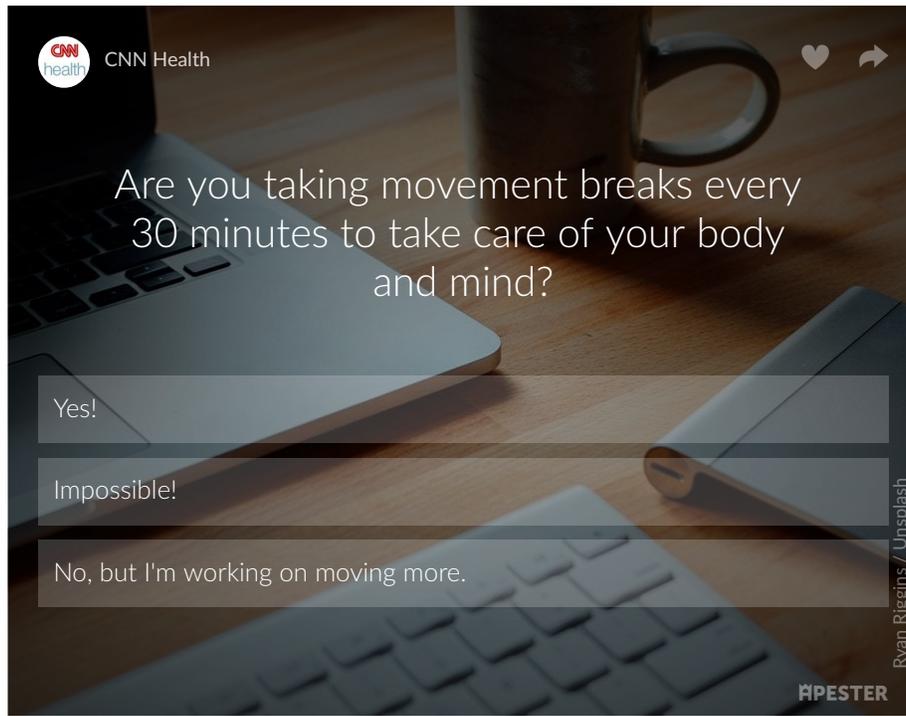
As total sedentary time increased, so did early death by any cause

Negative effects of sitting were not lessened by age, sex, race, BMI or even exercise habits

(CNN) — Take a movement break every 30 minutes, say experts. No matter how much you exercise, sitting for excessively long periods of time is a risk factor for early death, a [new study](#) published Monday in *Annals of Internal Medicine* found.

There's a direct relationship between time spent sitting and your risk of early mortality of any cause, researchers said, based on a study of nearly 8,000 adults. As your total sitting time increases, so does your risk of an early death.

The positive news: People who sat for less than 30 minutes at a time had the lowest risk of early death.



"Sit less, move more" is what the American Heart Association encourages all of us to do. But this simplistic guideline doesn't quite cut it, said Keith Diaz, lead author of the new study and an associate research scientist in the Columbia University Department of Medicine.

"This would be like telling someone to just 'exercise' without telling them how," Diaz wrote in an email.

Exercise guidelines are precise, he explained. For example, the US Centers for Disease Control and Prevention [recommends adults](#) do moderate-intensity aerobic exercise for two hours and 30 minutes every week, plus muscle strengthening activities on two or more days a week.



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"We need similar guidelines for sitting," said Diaz.

"We think a more specific guideline could read something like, 'For every 30 consecutive minutes of sitting, stand up and move/walk for five minutes at brisk pace to reduce the health risks from sitting,' " he said, adding the study "puts us a step closer to such guidelines," but more research is needed to verify the findings.

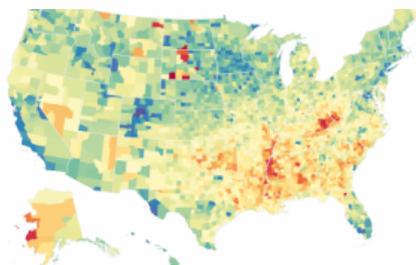
Ageing means more sitting

To understand the relationship between sedentary behavior and early death, Diaz and his colleagues at Columbia, NewYork-Presbyterian/Weill Cornell Medical Center and other institutions turned to the REasons for Geographic and Racial Differences in Stroke ([REGARDS](#)) project, a study sponsored by the National Institutes of Health.

"The REGARDS study was originally designed to examine why blacks (and particularly blacks in the Southern US) have a greater risk for stroke than whites," said Diaz. He and his co-researchers tracked for an average of four years 7,985 black and white adult participants, age 45 or older, who had signed on to participate in the REGARDS project.



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attention to moving."

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To measure sedentary time for these adults, the research team used hip-mounted accelerometers. During the study period, the team recorded 340 total deaths considered "all-cause mortality" -- any death, regardless of cause.

Analyzing the data, the team found that sedentary behavior, on average, accounted for about 12.3 hours of an average 16-hour waking day.

"As we age, and our physical and mental function declines, we become more and more sedentary," wrote Diaz.

Previous studies of adults have found daily sitting time to average just nine to 10 hours per day. The higher average in his own study is likely "due to the fact we studied a middle- and older-aged population," Diaz wrote. "It could also be partly due to the fact that we used an activity monitor to track sedentary time rather than using self-report."

Measuring duration, the researchers clocked participants sitting, on average, for 11.4 minutes at a stretch.

As total sedentary time increased, so did early death by any cause, the results indicated. And the same was true for longer sitting stretches. Overall then, participants' risk of death grew in tandem with total sitting time and sitting stretch duration -- no matter their age, sex, race, body mass index or exercise habits.

"We found that there wasn't a threshold or cutoff where one's risk for death dramatically increased," said Diaz, explaining that risk of death increased with more sitting. "To give you a specific number, those who sat for more than 13 hours per day had a 2-fold (or 200%) greater risk of death compared to those who sat for less than about 11 hours per day."

"Bout duration is a little trickier," said Diaz. Still, he said, the study results indicate that those who frequently sat in stretches less than 30 minutes had a 55% lower risk of death compared to people who usually sat for more than 30 minutes at a stretch.

Finally, people who frequently sat for more than 90 minutes at a stretch had a nearly two-fold greater risk of death than those who almost always sat for less than 90 minutes at a stretch, he said.

Underlying reasons 'unclear'

How sedentary behavior impacts our health in negative ways is "unclear and complex," wrote Dr. David A. Alter, an associate professor at the University of Toronto in Ontario, in an [editorial](#) published with the study. Alter, who did not contribute to Diaz' research, said some scientists theorize that more sitting leads to reductions in insulin sensitivity, while others believe net calorie expenditures decline as sitting increases.

The study was not designed to reveal why sitting increases the risk of early death, noted Alter, who described the study as "methodologically rigorous," and its findings "robust."

Arguably, he said, the study's most important contribution involved disentangling two sedentary behaviors: total daily sedentary time and uninterrupted sedentary bout duration.

"Persons with uninterrupted sedentary bouts of 30 minutes or more had the highest risk for death if total sedentary time also exceeded 12.5 hours per day," noted Alter. "Conversely, in those whose daily sedentary volumes were low, uninterrupted bout lengths had little if any associated effects on mortality."

By teasing out these two threads, the findings show excessive sitting is bad and even worse if it is accumulated in lengthy, uninterrupted bouts throughout the day, noted Alter.

Dr. Suzanne Steinbaum, director of women's heart health at Lenox Hill Hospital in New York said, "The more we sit the worse it is. The longer the duration of sitting, the more negative the impact on our cardiovascular health."

Steinbaum, who was not involved in the study, said moving around every 30 minutes is recommended.

"The first time we do this, the positive effects are immediate," she said. "We need to pay more

attention to moving."

Asked if, say, a standing desk might be helpful for those who work desk jobs, Diaz said "there is limited evidence to suggest that standing is a healthier alternative to sitting."

"So if you have a job or lifestyle where you have to sit for prolonged periods, the best suggestion I can make is to take a movement break every half hour," said Diaz. "Our findings suggest this one behavior change could reduce your risk of death."