

Sitting Too Much Ages You By 8 Years



But exercise can counteract it, a new study finds

[Sitting too much](#) during the day has been linked to a [host of diseases](#), from obesity to heart problems and diabetes, as well as early death. It's not hard to understand why: being inactive can contribute to weight gain, which in turn is a risk factor for heart attack, stroke, hypertension and unhealthy blood sugar levels.

On top of everything else, sitting has detrimental effects on cells at the biological level, according to a new report published in the *American Journal of Epidemiology*.

In the new study, scientists led by Aladdin Shadyab, a post-doctoral fellow in family medicine and public health at the University of California San Diego, traced sitting's impact on the chromosomes. They took blood samples from nearly 1,500 older women enrolled in the Women's Health Initiative, a long-term study of chronic diseases in post-menopausal women, and focused on the telomeres: the tips of the tightly packed DNA in every cell. Previous studies have found that as cells divide and age, they lose bits of the telomeres, so the length of this region can be a marker for how old a cell (and indirectly the person the cells belong to) is. The researchers compared telomere length to how much the women exercised, to see if physical activity affected aging.

Earlier studies have also looked at [telomere length and exercise](#). But they relied on asking people to report on their activity levels, a process that's often inaccurate. Shadyab instead relied on more objective recordings of physical activity from accelerometers that the women wore for one week. Initially, he did not find any relationship between telomere length and physical activity levels. But when he focused on the women who did not meet the recommended 30 minutes of moderate-to-vigorous physical activity daily, he began to see some interesting trends.

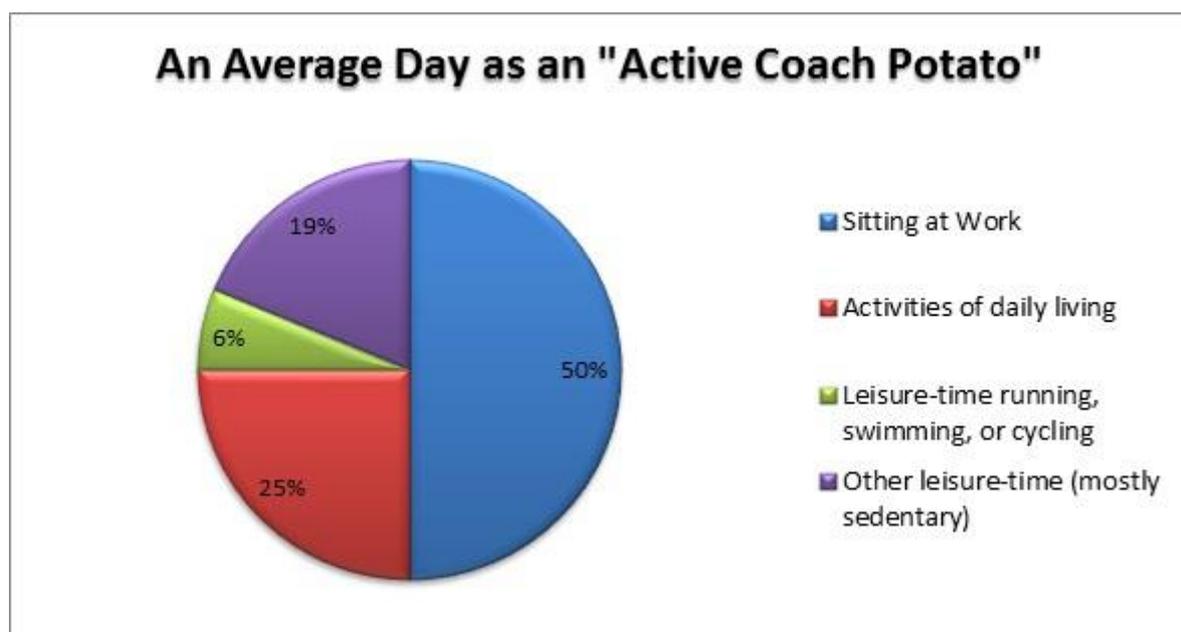
Among women who didn't get the daily half hour of exercise, those who spent more time sedentary (about 10 hours or more) had shorter telomeres than those who spent less time sitting everyday. The amount of shortening added up to about eight years of aging, the scientists estimated—meaning that inactive women who spent more time sitting were about eight years older, on average, than those who were inactive but spent less time sedentary.

Women who got the recommended amount of daily exercise showed no association between how much time they spent sitting and their telomere length, suggesting that physical activity might counteract the shortening that occurs with aging.

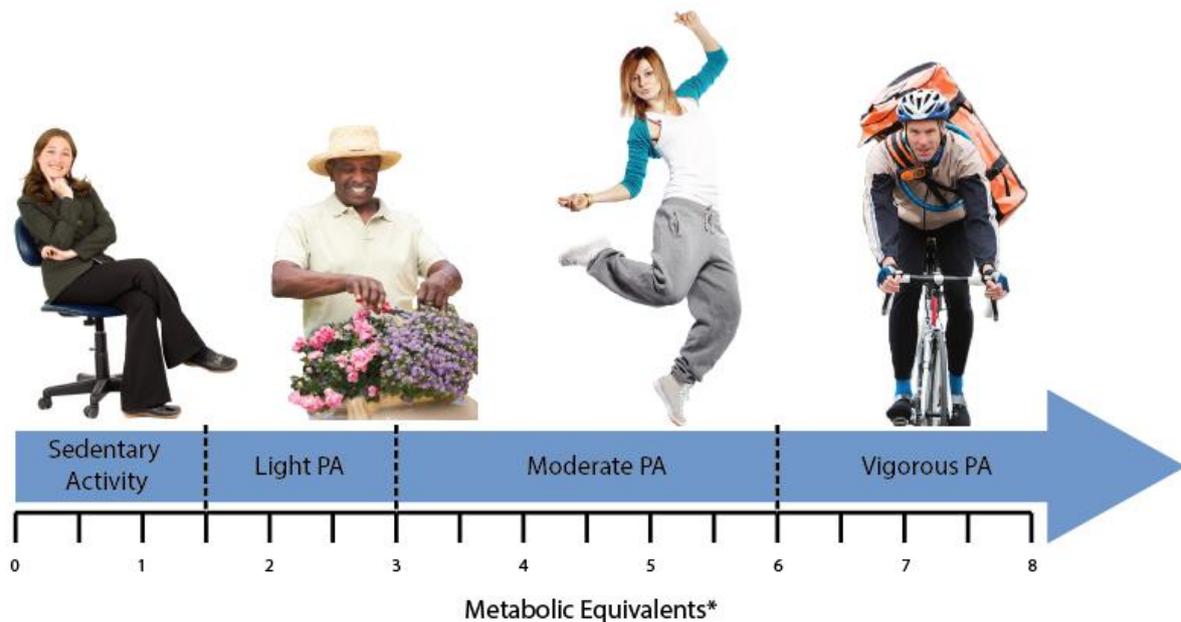
“Our results suggest that the combination of being sedentary and not engaging in enough physical activity to prevent the telomeres from shortening leads to the shorter telomere length,” says Shadyab. “Women who did not meet the physical activity guideline and were sedentary for at least 10 hours a day were biologically older; their cells are aging faster than those of women who were less sedentary.”

Exactly how much physical activity is needed to negate the aging effects of sitting on the cells isn't clear yet. But Shadyab's study shows that sedentary behavior has potentially aging effects on the cells, and exercise may be one way to combat that aging process.

<https://www.youtube.com/watch?v=1ZYbU82GVz4>



What Are The Negative Effects Of Sitting?



With everything at our fingertips, there are less and less reasons to get up and move around, right? Wrong. Sitting too much has been linked to a number of diseases. Sitting around for long periods of time has been strongly associated with worsening mental health, increased risk of death from heart disease and other diseases, and increased risk of disabilities. However, does too much sitting cause poor health, or is it the other way around? What we do know is that even an hour's jog may not reverse the effects of eight hours of sitting all day.

A study in the American Journal of Preventive Medicine reported that older women who sat more than 11 hours per day were at the highest risk for heart events like heart attack, heart disease, and overall increased death rates. One theory proposed is that sitting for long periods of times causes the muscles to burn less fat. It can also cause the blood to flow more slothfully.

A study from Indiana University suggested that during a three-hour period of sitting around, the enlargement of the arteries, as a result of amplified blood flow of the main artery in the legs, was impaired by as much as 50% after just one hour. They also found that individuals who walked for 5 minutes after each hour of sitting had a consistent and stable artery function through the three-hour period.

Another study by Dunstan, et al, compared adults who spent less than two hours a day in front of the TV or another screen-based entertainment to those who spent four or more

hours in front of a screen during recreational hours. The researchers found the following sitting risks:

- Individuals who were in front of the screen excessively had nearly a 50% increased risk of death from any cause.
- Individuals who spent four hours in front of the screen had approximately a 125% increased risk of heart-related events like chest pain (angina) or heart attack.

It should be understood that sitting in front of the television is not the only worry. Sitting behind a desk at work or driving for long periods of time have the potential to yield the same kind of results. Studies have also shown that sitting may not make you less hungry. This can possibly lead to overeating, which when combined with a lack of substantial physical activity, may affect one's health adversely.

Additional Resources:

Dunstan, D. W., Barr, E. L. M., Healy, G. N., Salmon, J., Shaw, J. E., Balkau, B., ... & Owen, N. (2010). Television viewing time and mortality the Australian diabetes, obesity and lifestyle study (AusDiab). *Circulation*, 121(3), 384-391.

Levine JA, et al. Move a Little, Lose a Lot. New York, N.Y.: Crown Publishing Group; 2009:26.

Matthews, C. E., George, S. M., Moore, S. C., Bowles, H. R., Blair, A., Park, Y., ... & Schatzkin, A. (2012). Amount of time spent in sedentary behaviors and cause-specific mortality in US adults. *The American journal of clinical nutrition*, ajcn-019620.

Stamatakis, E., Hamer, M., & Dunstan, D. W. (2011). Screen-Based Entertainment Time, All-Cause Mortality, and Cardiovascular Events Population-Based Study With Ongoing Mortality and Hospital Events Follow-Up. *Journal of the American College of Cardiology*, 57(3), 292-299.

Thosar, S. S., Bielko, S. L., Mather, K. J., Johnston, J. D., & Wallace, J. P. (2014). Effect of Prolonged Sitting and Breaks in Sitting Time on Endothelial Function. *Medicine and science in sports and exercise*.

Helpful Peer-Reviewed Medical Articles:

Owen, N., Healy, G. N., Matthews, C. E., & Dunstan, D. W. (2010). Too much sitting: the population-health science of sedentary behavior. *Exercise and sport sciences reviews*, 38(3), 105.

Van Uffelen, J. G., Wong, J., Chau, J. Y., van der Ploeg, H. P., Riphagen, I., Gilson, N. D., ... & Gardiner, P. A. (2010). Occupational sitting and health risks: a systematic review. *American journal of preventive medicine*, 39(4), 379-388.

Dunstan, D. W., Howard, B., Healy, G. N., & Owen, N. (2012). Too much sitting—a health hazard. *Diabetes research and clinical practice*, 97(3), 368-376.

Owen, N., Bauman, A., & Brown, W. (2009). Too much sitting: a novel and important predictor of chronic disease risk?. *British journal of sports medicine*, 43(2), 81-83.

Hamilton, M. T., Healy, G. N., Dunstan, D. W., Zderic, T. W., & Owen, N. (2008). Too little exercise and too much sitting: inactivity physiology and the need for new recommendations on sedentary behavior. *Current cardiovascular risk reports*, 2(4), 292-298.

Thorp, A. A., Owen, N., Neuhaus, M., & Dunstan, D. W. (2011). Sedentary behaviors and subsequent health outcomes in adults: a systematic review of longitudinal studies, 1996–2011. *American journal of preventive medicine*, 41(2), 207-215.

Gilson, N. D., Burton, N. W., Van Uffelen, J. G., & Brown, W. J. (2011). Occupational sitting time: employees' perceptions of health risks and intervention strategies. *Health Promotion Journal of Australia*, 22(1), 38-43.

Physical Activity: 65 minutes/day
Sedentary Time: 8 hours/day
Sedentary Breaks: Frequent

Physical Activity: 65 minutes/day
Sedentary Time: 8 hours/day
Sedentary Breaks: Infrequent



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