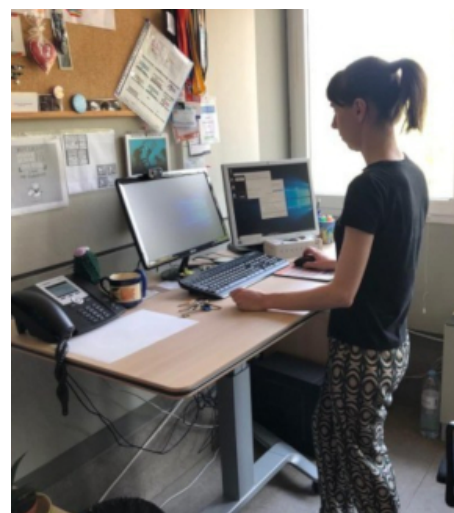


Spending time standing helps increase energy expenditure and combats effects of sedentary lifestyle

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Research news

- **A study conducted by scientists from the University of Granada and published in the journal PLOS ONE recommends that people spend more time standing, to increase energy expenditure and thus avoid the negative health problems associated with a sedentary lifestyle.**
- **The study also quantifies just how many extra calories we burn when we remain standing: 45 kilocalories more than in a sedentary state, every six hours.**



A study conducted by researchers from the University of Granada (UGR) recommends spending more time standing to increase energy expenditure and combat the negative health effects of a sedentary lifestyle. The research has also quantified exactly how many extra calories we burn when we remain standing: 45 kilocalories more, per six-hour period, than when lying or sitting.

One of the applications of the study, published in the journal PLOS ONE, could be the use of adjustable-height tables that enable people to work standing up—already a very common practice in the Nordic countries—and thus combat the negative effects of a sedentary working environment. These tables can be fully adjusted to suit the height of the user, depending on whether they want to sit or stand while working.

Francisco J. Amaro- Gahete, PhD Biomedicine student at the UGR's International School for Postgraduate Studies and member of the Department of Physiology, is the main author of the article. He notes: "We Spaniards spend between 8 and 10 hours sitting or lying down each day, not counting the hours we are asleep. Therefore, if we take steps to combat a sedentary lifestyle by making small lifestyle changes, such as spending more time standing, this could reduce the risk of developing diseases such

as obesity or Type 2 diabetes.”

In the published article, researchers describe how one effective way to address the effects of a sedentary lifestyle is to reduce the amount of time we spend sitting or lying down, and encourage us to stand more often. The article also presents the findings of the study regarding the energy expenditure for each of these three positions.

Two kinds of people: Energy savers and energy spenders

The scientists used a sample comprising 53 young adults, who were classified into two types, “savers” and “spenders” of energy, depending on the amount of energy expenditure they consumed when switching from sitting or lying to standing.

“Savers consume very little energy in their activities and, therefore, the difference between sitting/lying or standing is practically nil for them. But energy spenders burn approximately 10% more energy when they switch from sitting or lying to standing,” explains Amaro.

So what makes a person spend more or less energy? This is a question that researchers are still trying to answer, as it is related, for example, to the issue of why some people lose weight so easily and others find it so difficult.

The factor that appears to have the greatest effect is muscle mass. “People with more muscle mass expend more energy than people with less muscle mass,” observes the UGR researcher.

In light of the results, the authors recommend spending more time standing in the office as a good strategy to use up more energy and thus avoid storing it as fat.

“It is really important to change your position,” comments Jonatan Ruiz, another of the authors of the article. “If a person were to get up, take 10 steps, and sit down again, it appears that the effects of a sedentary lifestyle would be greatly reduced. Therefore, we must educate our school-age children and young people, as well as teachers, about the importance of avoiding spending long periods of time sitting down to considerably reduce the negative consequences of a sedentary lifestyle such as excess weight and obesity, or the risk of developing cardiovascular disease.”

BIBLIOGRAPHY:

Amaro-Gahete FJ, Sanchez-Delgado G, Alcantara JMA, Martinez- Tellez B, Acosta FM, Merchan-Ramirez E, Acosta FM, Merchan-Ramirez E, Löf M, Labayen I, Ruiz JR. (2019)

Energy expenditure differences across lying, sitting, and standing positions in young healthy adults. PLOS ONE 14 (6): e0217029.
<https://doi.org/10.1371/journal.pone.0217029>

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