

Why you won't lose weight with exercise alone

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This is an image of a weight scale. Credit: CDC/Debora Cartagena

Exercise by itself isn't always enough to take off the weight. Now, evidence reported in the Cell Press journal *Current Biology* on January 28 helps to explain why that is: our bodies adapt to higher activity levels, so that people don't necessarily burn extra calories even if they exercise more.

The results suggest it's time to rethink the effect of [physical activity](#) on daily energy expenditure, the researchers say. They are also a reminder of the importance of diet and exercise in supporting weight loss goals.

"Exercise is really important for your health," says Herman Pontzer of City University of New York. "That's the first thing I mention to anyone asking about the implications of this work for exercise. There is tons of evidence that exercise is important for keeping our bodies and minds healthy, and this work does nothing to change that message. What our work adds is that we also need to focus on diet, particularly when it comes to managing our weight and preventing or reversing unhealthy weight gain."

People who start exercise programs to lose weight often see a decline in [weight loss](#) (or even a reversal) after a few months. Large comparative studies have also shown that people with very active lifestyles have similar daily energy expenditure to people in more sedentary populations.

Pontzer says this really hit home for him when he was working among the Hadza, a population of traditional hunter-gatherers in northern Tanzania.

"The Hadza are incredibly active, walking long distances each day and doing a lot of hard physical work as part of their everyday life," Pontzer says. "Despite these high [activity levels](#), we found that they had similar daily energy expenditures to people living more sedentary, modernized lifestyles in the United States and Europe. That was a real surprise, and it got me thinking about the link between activity and energy expenditure."

To explore this question further in the new study, Pontzer and his colleagues measured the daily energy expenditure and activity levels of more than 300 men and women over the course of a week.

In the data they collected, they saw a weak but measurable effect of physical activity on daily energy expenditure. But, further analysis showed that this pattern only held among subjects on the lower half of the physical activity spectrum. People with moderate activity levels had somewhat higher daily energy expenditures—about 200 calories higher—than the most sedentary people. But people who fell above moderate activity levels saw no effect of their extra work in terms of [energy expenditure](#).

"The most physically active people expended the same amount of calories each day as people who were only moderately active," Pontzer says.

The researchers say it's time to stop assuming that more physical activity always means more calories. There might be a "sweet spot" for physical activity—too little and we're unhealthy, but too much and the body makes big adjustments in order to adapt.

Pontzer and his colleagues now plan to study how the body responds to changes in activity level. They'll start by looking for other changes—for example, in immune function or the reproductive system—that might explain how the body adapts to greater physical demands without consuming extra calories.

More information: *Current Biology*, Pontzer et al.: "Constrained Total Energy Expenditure and Metabolic Adaptation to Physical Activity in Adult Humans" [dx.doi.org/10.1016/j.cub.2015.12.046](https://doi.org/10.1016/j.cub.2015.12.046)

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