

Study reveals exercise is more critical than diet to maintain weight loss

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A new study from the University of Colorado Anschutz Health and Wellness Center (AHWC) at the CU Anschutz Medical Campus revealed physical activity does more to maintain substantial weight loss

than diet.

The study, published in the March issue of *Obesity*, was selected as the Editor's Choice article.

"This study addresses the difficult question of why so many people struggle to keep [weight](#) off over a long period. By providing evidence that a group of successful weight-loss maintainers engages in high levels of physical activity to prevent weight regain—rather than chronically restricting their energy intake—is a step forward to clarifying the relationship between exercise and weight-loss maintenance," said Danielle Ostendorf, Ph.D., a postdoctoral fellow at the CU Anschutz Health and Wellness Center.

The findings reveal that successful weight-loss maintainers rely on physical activity to remain in [energy balance](#) (rather than chronic restriction of dietary intake) to avoid weight regain. In the study, successful weight-loss maintainers are individuals who maintain a reduced [body weight](#) of 30 pounds or more for over a year.

Key findings include:

- The total calories burned (and consumed) each day by weight-loss maintainers was significantly higher (300 kcal/day) compared with that in individuals with normal [body](#) weight controls but was not significantly different from that in the individuals with overweight/[obesity](#).
- Notably, of the total calories burned, the amount burned in physical activity by weight-loss maintainers was significantly higher (180 kcal/day) compared with that in both individuals of normal body weight and individuals with overweight/obesity. Despite the higher energy cost of moving a larger body mass incurred by individuals with overweight/obesity, weight-loss

maintainers were burning more energy in physical activity, suggesting they were moving more.

- This is supported by the fact that the weight-loss maintainer group also demonstrated significantly higher levels of steps per day (12,000 steps per day) compared to participants at a normal body weight (9,000 steps per day) and participants with overweight/obesity (6,500 steps per day).

"Our findings suggest that this group of successful weight-loss maintainers are consuming a similar number of calories per day as individuals with overweight and obesity but appear to avoid weight regain by compensating for this with high levels of physical activity," said Victoria A. Catenacci, MD, a weight management physician and researcher at CU Anschutz Medical Campus.

The study looked at successful weight-loss maintainers compared to two other groups: controls with normal body weight (Body Mass Index (BMI) similar to the current BMI of the weight-loss maintainers); and controls with overweight/obesity (whose current BMI was similar to the pre-weight-loss BMI of the maintainers). The weight-loss maintainers had a body weight of around 150 pounds, which was similar to the normal weight controls, while the controls with overweight and obesity had a body weight of around 213 pounds.

This study is one of the few to measure total daily energy expenditure in weight-reduced individuals using the gold standard doubly labeled water method. This method allows researchers to precisely determine an individual's energy expenditure through collecting urine samples over one to two weeks after people are given a dose of doubly labeled water. Doubly labeled water is water in which both the hydrogen and the oxygen atoms have been replaced (i.e. labeled) with an uncommon isotope of these elements for tracing purposes.

The measure of total daily energy expenditure from doubly labeled water also provides an estimate of energy intake when people are weight stable, as they were in this study. Prior studies used questionnaires or diet diaries to measure [energy intake](#), which have significant limitations.

The researchers also measured each individual's resting metabolic rate in order to understand how much of the total daily energy expenditure is from energy expended at rest versus [energy](#) expended during physical activity. Prior studies used self-reported measures or activity monitors to measure physical activity, which are techniques that cannot provide the same accuracy.

The findings are consistent with results from the longitudinal study of "The Biggest Loser" contestants, where [physical activity energy expenditure](#) was strongly correlated with weight loss and weight gain after six years.

Provided by CU Anschutz Medical Campus

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