

Study finds that yo-yo dieting does not thwart weight loss efforts or alter metabolism long term

August 14 2012

Yo-yo dieting – the repetitive loss and regain of body weight, also called weight cycling – is prevalent in the Western world, affecting an estimated 10 percent to 40 percent of the population. The degree to which weight cycling may impact metabolism or thwart a person's ability to lose weight in the long run has been unclear – until now.

A new study by researchers at Fred Hutchinson Cancer Research Center, published online in the journal *Metabolism*, for the first time has shown that a history of yo-yo dieting does not negatively affect metabolism or the ability to lose weight long term.

"A history of unsuccessful weight loss should not dissuade an individual from future attempts to shed pounds or diminish the role of a healthy diet and regular physical activity in successful weight management," said the study's senior author Anne McTiernan, M.D., Ph.D., a member of the Hutchinson Center's Public Health Sciences Division.

Two-thirds of the U.S. population is currently overweight or obese and it is estimated that nearly half of American women are currently dieting to lose weight. Obesity is a known risk factor for many cancers as well as heart disease and diabetes. A relationship between body fat and the production of certain hormones and inflammatory markers is thought to contribute to increased cancer risk.

"We know there's an association between obesity, sedentary behavior and increased risk of certain cancers," McTiernan said. "The World Health Organization estimates that a quarter to a third of cancers could be prevented with maintenance of normal weight and keeping a physically active lifestyle."

The study was based on data from 439 overweight-to-obese, sedentary Seattle-area women, ages 50 to 75, who were randomly assigned to one of four groups: reduced-calorie diet only, exercise only (mainly brisk walking), reduced-calorie diet plus exercise and a control group that received no intervention. At the end of the yearlong study, participants on the diet-only and diet-plus-exercise arms lost an average of 10 percent of their starting weight, which was the goal of the intervention.

The analysis aimed to determine whether women with a history of moderate or severe weight cycling were at a disadvantage compared to non-weight-cyclers when it came to losing weight. Of the study participants overall, 18 percent (77 women) met the criteria for severe weight cycling (having reported losing 20 or more pounds on three or more occasions) and 24 percent (103 women) met the criteria for moderate weight cycling (having reported losing 10 or more pounds on three or more occasions).

Although severe weight cyclers were, on average, nearly 20 pounds heavier than non-cyclers at the start of the study, at the end of the study the researchers found no significant differences between those who yo-yo dieted and those who didn't with regard to the ability to successfully participate in diet and/or exercise programs. The cyclers also did not differ from the non-cyclers with regard to the impact of diet or diet-plus-exercise on weight loss, percentage of body fat and lean muscle mass gained or lost. Other physiological factors such as blood pressure, insulin sensitivity, and blood concentrations of hormones such as leptin (which helps make one feel full) and adiponectin (which helps regulate glucose

levels) also did not differ significantly among those whose weight fluctuated and those whose did not.

These finding may represent a first in the scientific community. "To our knowledge, no previous studies have examined the effect of prior weight cycling on the body composition, metabolic and hormonal changes induced by a comprehensive lifestyle intervention in free-living women," the authors wrote.

Provided by Fred Hutchinson Cancer Research Center

Citation: Study finds that yo-yo dieting does not thwart weight loss efforts or alter metabolism long term (2012, August 14) retrieved 12 September 2024 from <https://medicalxpress.com/news/2012-08-yo-yo-dieting-thwart-weight-loss.html>

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