

Ratio of appetite-regulating hormones marker of successful dieters

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A pre-diet measurement of two hormones related to weight regulation can help predict which dieters will be more likely to maintain their weight loss and who will not, according to a new study. The results will be presented Sunday at The Endocrine Society's 94th Annual Meeting in Houston.

With [obesity rates](#) in many countries steadily climbing, more people are turning to diets to lose weight. But, for many people, maintaining the [weight loss](#) can be extremely difficult, leading to a frustrating cycle of weight loss and gain.

"The current study shows for the first time a clinically useful marker to identify, at an early time, patients who have difficulties in maintaining their body weight," said study author Ana B. Crujeiras, Ph.D., doctor at University Hospital of Santiago de Compostela (CHUS) and Biomedical Network Research Center in Physiopathology of obesity and Nutrition (CIBERObn) in Santiago de Compostela, Spain. "This difficulty is one of the most significant obstacles for obesity therapy, and currently there are no [biological markers](#) that effectively demonstrate clinical usefulness in predicting weight-loss regain."

To address this problem, investigators analyzed the role of two hormones related to appetite regulation. [Leptin](#) is made by the cells found in fat tissue, and [ghrelin](#) is mainly manufactured by cells in the stomach. Previous research by Crujeiras and co-investigators showed that patients who later regained weight had higher leptin and lower ghrelin levels before starting a restricted-calorie diet.

In the current study, investigators found the pre-diet leptin/ghrelin ratio to be two times higher among study participants who later regained weight than among those who did not. Additionally, they identified cut-off points, which predicted more than 60 percent of patients who would later regain 10 percent or more of the weight they initially lost.

"Calculating the leptin/ghrelin ratio prior to the participation in a weight-reduction program might provide the opportunity to individualize weight-loss therapeutic programs according to patients' needs, counteracting the weight-regain rate, and, as a consequence, achieving successful management of obesity," Crujeiras said.

Among women, the leptin/ghrelin ratio identified 70 percent of participants who later regained weight. Among men, the rate was even higher at 95 percent. Women, however, were less likely than men to be incorrectly identified as future weight gainers.

Eighty-eight overweight or obese patients, with a body mass index greater than 25, enrolled in the eight-week study. They were 44 percent female, their average age was 35 years, and all were white.

After an initial fast, participants' blood levels of leptin and ghrelin were measured. They then followed a reduced calorie diet for eight weeks. At the six-month follow-up, 40 [dieters](#) had regained the weight they had lost, while the remaining 48 had not.

Provided by The Endocrine Society

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