

Energy gap useful tool for successful weight loss maintenance strategy

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Americans continue to get heavier. Most weight control methods short of bariatric surgery are generally considered ineffective in preventing obesity or reducing weight. The term energy gap was coined to estimate the change in energy balance (intake and expenditure) behaviors required to achieve and sustain reduced body weight outcomes in individuals and populations. In a commentary published in the November 2009 issue of the *Journal of the American Dietetic Association*, researchers more precisely clarify the concept of the energy gap (or energy gaps) and discuss how the concept can be properly used as a tool to help understand and address obesity.

Investigators from the University of Colorado Denver and the Procter & Gamble Company, Mason, OH, discuss the two key factors related to the energy gap concept: prevention of excess weight gain and maintenance of achieved [weight loss](#). It is estimated that the energy gap for prevention of weight gain among those who have lost weight is about 100 kcal/day in adults and 100-150 kcal/day in children and adolescents. Any combination of increased energy expenditure and decreased [energy intake](#) of 100 kcal per day in adults and 100-150 kcal/day for children and adolescents could theoretically prevent weight regain in 90% of the US population. This suggests that this small changes approach could be very effective for preventing excessive weight gain in adults and children.

The energy gap to maintain weight loss is generally much larger, amounting to 200 kcal/day for a 100 kg person losing 10% of [body](#)

[weight](#) or 300 kcal/day for the same person losing 15% of body weight.

According to James O. Hill, PhD, "This analysis indicates that to create and maintain substantial weight loss (ie, obesity treatment), large behavioral changes are needed. This is in stark contrast to primary obesity prevention in which small behavioral changes can eliminate the small energy imbalance that occurs before the body has gained substantial weight. Because the body has not previously stored this 'new' excess energy, it does not defend against the behavioral strategies as happens when the body loses weight."

The energy gap concept is useful for individualizing behavioral strategies for [weight](#) loss maintenance. For example, if the energy gap for a given weight-loss maintenance is estimated to be 300 kcal/day, this can lead to a specific individually tailored goal for changing diet and physical activity rather than generic advice to eat less and exercise more. This could be 300 kcal/day of additional physical activity, a reduction of 300 kcal/day from usual energy intake, or a combination of tactics such as adding 150 kcal/day of [physical activity](#) and reducing 150 kcal/day from usual energy intake.

More information: The article is "Using the Energy Gap to Address Obesity: A Commentary" by James O. Hill, PhD; John C. Peters, PhD; and Holly R. Wyatt, MD. It appears in the [Journal of the American Dietetic Association](#), Volume 109, Issue 11 (November 2009), published by Elsevier.

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