Strong and consistent evidence supports low-energy-density diets for weight loss

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A new report published online today in the *Journal of the Academy of Nutrition and Dietetics* systematically reviews and updates the evidence underlying the recommendation in the Dietary Guidelines for Americans 2010 to consume a diet low in energy density (ED). The report addresses the growing body of evidence linking ED, or the number of calories in a given amount of food, and body weight in adults as well as children and adolescents. The systematic review concluded that there is strong and consistent evidence in adults showing that consuming a diet higher in ED is associated with increased body weight, while consuming a diet that is relatively low in ED improves weight loss and weight maintenance. In children and adolescents, moderately strong evidence shows a relationship between higher ED diets and increased weight.

"The conclusions reached in our review strengthen the recommendations in the Dietary Guidelines to consume such foods as fruits, vegetables, whole grains, and lean animal protein sources, which are generally lower in ED, while lowering consumption of total fat, saturated fat, and added sugars, which increase ED of foods," says lead investigator Rafael Perez-Escamilla, PhD, of Yale University, and a member of the 2010 Dietary Guidelines Advisory Committee. "It also strengthens the focus on considering overall dietary patterns rather than simply targeting modifications to individual components of the diet."

Investigators evaluated 17 studies of dietary ED and body weight in adults. Seven were randomized controlled trials (RCT), one was a non-controlled trial, and 9 were cohort studies. These studies were conducted

in the United States, Brazil, Europe, France, Germany, The Netherlands, Denmark, and South Korea. Fifteen of the 17 studies offered evidence that linked diets lower in ED with improved weight loss or weight maintenance. In a number of the weight loss trials reviewed, lowering ED was most effective for promoting weight loss during the active intervention period, but some studies found that the benefit was not always sustained over time. The relationship between lower ED and improved weight maintenance, based on the cohort studies, was highly consistent.

Six prospective studies from the United States, United Kingdom, and Germany were included in the review of evidence on dietary ED and body weight in children and adolescents. Studies included normal weight and overweight boys and girls. The majority of studies showed a relationship between higher dietary ED and increased weight in children.

"While the mechanisms for the relationship between ED and weight have not been widely studied, it has been hypothesized that lowering ED can enhance satiety and contribute to reductions in calorie intake," explains Dr. Perez-Escamilla.

While the findings from this systematic review suggest that consuming diets lower in ED may be an effective strategy for managing body weight, Dr. Perez-Escamilla notes that there is a need for public health strategies to communicate what ED means and how it is associated with body weight. "Guidelines for how to estimate ED for different products based on food label information, how to decrease dietary ED, and how to sustain weight loss benefits using lower ED diets in the long term are needed," he concludes.

In an accompanying podcast Rafael Pérez-Escamilla, PhD, and Julie E Obbagy, PhD, RD, discuss the relationship between energy density and weight and its impact not only on adults, but also on children and

adolescents.

More information: The podcast is available at http://andjrnl.org/content/podcast.

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