

## Flow Of Empty Calories Into Children's Food Supply Must Be Reduced

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With over 23 million children and adolescents in the US overweight or obese, the risks for many chronic diseases continue to increase. An article in the October issue of the *Journal of the American Dietetic Association* examines the diets of American youth and finds some disturbing results.

"The epidemic of obesity among children and adolescents is now widely regarded as one of the most important public health problems in the US," commented Jill Reedy, PhD, MPH, RD, and Susan M. Krebs-Smith, PhD, MPH, RD, both of the Division of Cancer Control and Population Sciences, National Cancer Institute, Bethesda, MD. "Most experts agree that the solution will involve changes in both diet and physical activity, in order to affect energy balance. For diet, this means a reduction in energy from current consumption levels...This paper identifies the major sources of overall energy and empty calories, providing context for dietary guidance that could specifically focus on limiting calories from these sources and for changes in the food environment. Product reformulation alone is not sufficient-the flow of empty calories into the food supply must be reduced."

For 2-18 year olds, the top sources of energy were grain desserts, pizza, and soda. Sugar-sweetened beverages (soda and fruit drinks combined) provided almost 10% of total calories consumed. Nearly 40% of total calories consumed by 2-18 year olds were in the form of empty calories from solid fat and from added sugars. Half of empty calories came from six foods: soda, fruit drinks, dairy desserts, grain desserts, pizza, and whole milk.

Researchers examined data from the National Health and Nutrition Examination Survey (NHANES), a nationally representative survey with a complex multistage, stratified probability sample. Trained interviewers conducted in-person 24-hour dietary recalls with all eligible persons, using automated data collection systems that included multiple passes. Calories from solid fats and added sugars were calculated from the USDA MyPyramid Equivalent Database (MPED). Empty calories were defined as the sum of energy from solid fats and added sugars.

Children of different ages get their energy from different sources. For example, the top five sources of energy for 2-3 year olds included whole milk, fruit juice, reduced-fat milk, and pasta and pasta dishes. Pasta and reduced-fat milk were also among the top five sources of energy for 4-8 year olds. Top contributors of energy also varied by race/ethnicity. For example, major contributors for 2- to 18-year-old non-Hispanic blacks included fruit drinks and pasta and pasta dishes, while Mexican Americans' top sources included Mexican mixed dishes and whole milk. Non-Hispanic blacks and whites consumed more energy from sugar-sweetened beverages (combining soda and fruit drinks) than from milk (combining all milks), whereas Mexican Americans consumed more energy from milk than from sugar-sweetened beverages.

In an accompanying commentary, Rae-Ellen W. Kavey, MD, MPH, University of Rochester Medical Center, Department of Pediatrics, Division of Cardiology, Rochester, NY, discusses the role of sugar-sweetened beverages in the development of obesity in childhood.

Dr. Kavey writes, "High added sugar consumption which occurs most commonly in the form of sugar-sweetened beverages is associated with a constellation of cardiovascular risk factors, both independently, and through the development of obesity. Multiple studies have shown that presence of these risk factors in childhood is associated with accelerated atherosclerosis and early cardiovascular disease. Randomized trials of nutritionist-guided interventions show us that diet change can be accomplished and is associated with important cardiovascular benefits. This combined body of evidence suggests that reducing consumption of sugar-sweetened beverages should be considered a critical dietary approach to reducing cardiovascular risk in childhood."

A study of how school vending machines can influence the dietary choices of students is presented in the same issue. Researchers from the CDC and the Florida Department of Health found that the availability of vending machines in middle schools was associated with buying snacks or beverages from vending machines instead of buying school lunches. They also found that although healthier choices were available in school vending machines, the most common choices by students were less healthy snacks and beverages.

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"Dietary Sources of Energy, Solid Fats, and Added Sugars Among Children and Adolescents in the United States" by Jill Reedy, PhD, MPH, RD, and Susan M. Krebs-Smith, PhD, MPH, RD.

"How Sweet It Is: Sugar Sweetened Beverage Consumption, Obesity, and Cardiovascular Risk in Childhood" by Rae-Ellen W. Kavey, MD, MPH.

"The Impact of the Availability of School Vending Machines on Eating Behavior During Lunch: The Youth Physical Activity and Nutrition Survey" by Sohyun Park, PhD, MS, William M. Sappenfield, MD, MPH, Youjie Huang, MD, DrPh, Bettylou Sherry, PhD, RD, and Diana M. Bensyl, PhD, MA.

All appear in the *Journal of the American Dietetic Association*, Volume 110 Issue 10 (October 2010) published by Elsevier.

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