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What Role Do Food and Beverage Prices Have in Childhood Obesity?

by Jessica Todd



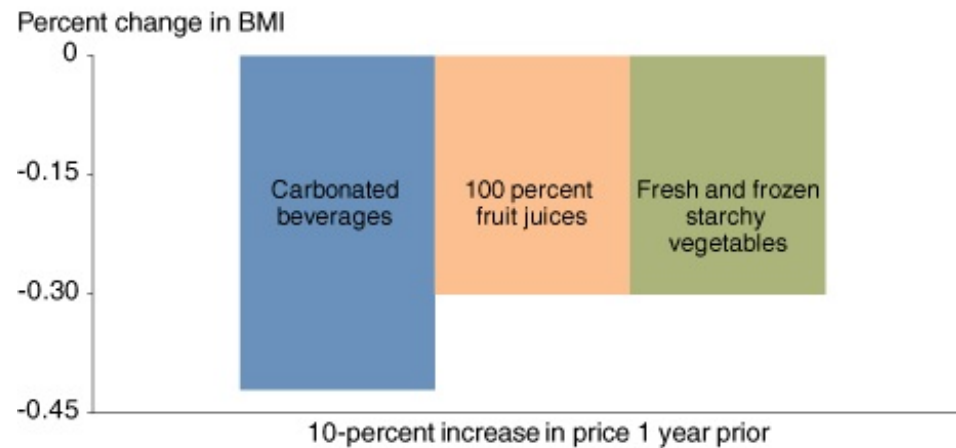
Tackling childhood obesity has become a national priority. Some public health advocates point to lower priced, high-calorie foods as one of the culprits behind the rising prevalence of overweight. They claim that lower prices for high-calorie foods encourage households to buy and consume more of these items, which can lead to increases in weight. They also believe lower prices for low-calorie foods may boost purchases of these foods and lead to reductions in total calories consumed.

To estimate the effect of prices for various high- and low-calorie foods on children's weight, ERS researchers linked data on children's body mass indices (BMI, a measure of weight adjusted for height) from a nationally representative survey of children in kindergarten in the 1998-99 school year to prices for eight foods and beverages in the ERS Quarterly Food-at-Home Price Database. The children had their heights and weights measured over time as they progressed from kindergarten through eighth grade. After accounting for the effects of unobserved characteristics that may also affect BMI, the researchers calculated the relationship between prices and children's BMI for the eight items. They then used these relationships to estimate the effect on children's BMI if prices for these items increased by 10 percent.

Price increases for some high-calorie foods and beverages were found to have small but statistically significant effects on children's BMI, and in the direction expected. A 10-percent increase in the price of carbonated beverages lowered BMI 0.42 percent over a year, while the same increase in the price of 100-percent juices and starchy vegetables lowered BMI 0.3 percent over a year.

While the effects of the price increases are small, comparing them with the expected average growth in children's BMI over a year reveals a possibly large effect over time. Unlike adults, children growing normally should see increases in BMI as they age. According to Centers for Disease Control and Prevention growth charts, the BMI of a boy at the median will increase from 15.4 to 23.0 between age 6 and 20, a gain of 50 percent, while that of a girl will increase 43 percent (from 15.2 at age 6 to 21.7 at age 20). Average BMI growth for a boy at the 85th percentile for BMI (the cutoff for overweight) between age 8 and 9 is about 2.8 percent, while that for a girl is 3.3 percent. Thus, a 0.3-percent increase in BMI is about 11 percent of annual BMI growth for a boy and 9 percent for a girl.

Price increases for carbonated beverages, juices, and starchy vegetables slightly reduce children's body mass indices (BMIs)

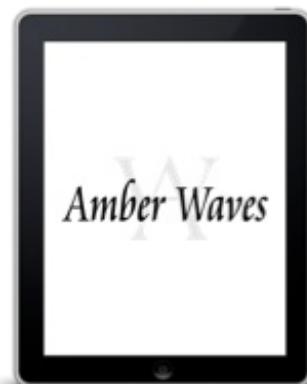


Note: All estimates are statistically significant at $p < 0.05$.

Source: USDA, Economic Research Service estimates using data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998 and ERS's Quarterly Food-at-Home Price Database.

This article is drawn from...

[The Effect of Food and Beverage Prices on Children's Weights](#), by Minh Wendt and Jessica Todd, USDA, Economic Research Service, June 2011



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