

When vegetables are closer in price to chips, people eat healthier, study finds

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When healthier food, like vegetables and dairy products, is pricier compared to unhealthy items, like salty snacks and sugary sweets, Americans are significantly less likely to have a high-quality diet, a new Drexel University study found.

The research, led by David Kern, PhD, an adjunct faculty member at Drexel's Dornsife School of Public Health, and Amy Auchincloss, PhD, an associate professor in the school, sought to find out the real effect that price difference has on the quality of diets in the United States.

"We found that, on average, healthier perishable foods were nearly twice as expensive as unhealthy packaged foods: 60 cents vs. 31 cents per serving, respectively," said Kern, lead author of the study in the *International Journal of Environmental Research and Public Health*. "As the gap between neighborhood prices of healthier and healthier foods got wider, study participants had lower odds of having a healthier [diet](#)."

For example, the study found that for every 14

percent increase in the healthy-to-unhealthy price ratio (the standard deviation in this study), the odds of having a healthy diet dropped by 24 percent. This was even after controlling for personal characteristics, like age, sex, income, education and other factors.

"We are consuming way too many sugary foods like cookies, candies and pastries, and sugary drinks, like soda and fruit drinks," Auchincloss said.

"Nearly 40 percent of U.S. adults are obese and less than 20 percent attain recommendations for fruits and vegetables. Cheap prices of unhealthy foods relative to [healthier foods](#) may be contributing to obesity and low-quality diet."

To delve into price impacts, Kern and Auchincloss used cross-sectional data from 2,765 participants in the Multi-Ethnic Study of Atherosclerosis (MESA). Participants were recruited from six urban areas in the U.S.: New York, Chicago, St. Paul, Los Angeles, Baltimore and Winston-Salem in North Carolina. Each participant's diet data was linked to [food prices](#) at supermarkets in their neighborhood.

Grocery prices were broken down into categories of "healthier" and "unhealthy." Healthier foods included:

- Dairy products—milk, yogurt and cottage cheese
- Fruits and vegetables—frozen vegetables and orange juice, since fresh produce prices were not attainable

Meanwhile, among the [unhealthy foods](#) were:

- Soda
- Sweets—chocolate candy and cookies
- Salty snacks—potato chips

The researchers used the Healthy Eating Index-2010 (HEI-2010), developed by the United States Department of Agriculture, to assess the

study participants' dietary quality.

"A well-balanced diet of fruits, veggies, whole grains, low-fat milk and lean protein, with a minimal consumption of sodium and sugary foods and drinks—like soda and junk [food](#)—would receive an optimal score on the HEI-2010," Kern said.

The adverse impact of increasing healthy food prices compared to unhealthy food prices was particularly strong for people in the middle ranges of income/wealth in the study, and those with higher education.

"We originally expected to find the largest impact among individuals in the lowest wealth/income group. However, given the price gap that we found, healthy food may be too expensive for the lowest socioeconomic status group even at its most affordable," Kern said. "So the impact of the price ratio is weaker for this group."

A lot of research in public health has been devoted to changing food environments for the purpose of encouraging healthier eating. This is one of the few studies that takes a hard look at prices between foods, compares them, and tries to link them back to their dietary implications.

Kern and Auchincloss believe more work needs to be done in this arena. In fact, they recently did work ([published in *Preventive Medicine*](#)) that found the price ratio of healthy-to-unhealthy food had a significant association with insulin resistance.

"Prospective studies that examine interventions effecting food prices—such as taxes on soda and junk food or subsidies for fruits and vegetables—would be vital to understand how food [prices](#) influence purchasing decisions and subsequent diet quality," Kern concluded.

"Improving diet quality in the U.S., especially for the most vulnerable populations, is a large [public health](#) concern and future research could help address this issue."

More information: David M. Kern et al, Neighborhood Prices of Healthier and Unhealthier Foods and Associations with Diet Quality: Evidence from the Multi-Ethnic Study of Atherosclerosis,

International Journal of Environmental Research and Public Health (2017). [DOI: 10.3390/ijerph14111394](#)

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