

Opening supermarket in food desert changes diet, study finds

November 2 2015

Opening a full-service grocery store in a neighborhood deemed to be a food desert may encourage nearby residents to improve their diet—but not because they use the new supermarket, according to a new RAND Corporation study.

Studying a Pittsburgh neighborhood where a [supermarket](#) opened after decades of absence, researchers found that residents reported eating fewer calories and less sugar, perceived better access to healthy foods and were more satisfied with their neighborhood after the store opened.

Yet, the changes in dietary intake among residents were not related to use of the new [grocery store](#), according to findings published in the November edition of the journal *Health Affairs*.

While the research team observed improvement in multiple components of residents' diet, consumption of fruits and vegetables actually declined after the supermarket opened. In addition, there was no significant change in the rates of overweight or obesity during the study period.

"We found multiple positive changes following the opening of the supermarket in a former food desert, yet the changes in diet were not related to use of the supermarket," said Tamara Dubowitz, lead author of the study and a senior policy researcher at RAND, a nonprofit research organization. "Our study is the first to provide evidence of dietary improvements and wellbeing changes in response to a new market."

"This supports federal efforts to help open grocery stores in food deserts, but also provides a very strong case for continued evaluation of this policy to understand exactly what the mechanisms might be."

The results are from the largest-ever study done to understand whether the characteristics of neighborhoods—including access to fresh fruits, vegetables and meats—makes its residents more or less healthy.

Two earlier studies—one in Philadelphia and one in New York—found that the opening of a supermarket in a food desert had little impact on the dietary habits of nearby residents. But both those studies had limitations including relatively small sample sizes and limited measurement of residents' diet and food purchasing.

Much attention has been focused on the perceived link between obesity and food deserts—neighborhoods with limited access to [healthy food](#) options. African Americans are four times more likely than whites to live in a neighborhood without a full-service supermarket, a finding some advocates suggest explains why African-American adults are 1.5 times more likely to be obese than white adults.

Since 2011, the U.S. federal government has invested more than \$500 million to assist the openings of full-service supermarkets in food deserts.

RAND researchers studied neighborhood dietary patterns before and after a full-service grocery store opened in Pittsburgh's Hill District, a predominately African-American neighborhood that had been without a supermarket for 30 years. The experiences in the neighborhood were compared to residents in the nearby Homewood neighborhood, another socio-demographically similar area also considered a food desert.

The 1,372 people enrolled in the study primarily were women and

overwhelmingly African-American. At the start of the study, most participants in both neighborhoods reported doing their major food shopping at a full-service supermarket outside of the neighborhood.

Study participants were surveyed prior to the opening of the new supermarket and between seven and 13 months following the opening, answering questions about their perceptions of access to healthy foods, where they shopped for food, transportation used for food shopping trips and recalling what they had eaten over the previous 24 hours. Participants' height and weight also were measured. Results from the full analysis are based on the 831 households that participated in both the baseline and follow-up data collection points.

After the new grocery store opened, residents of the Hill District reported better access to healthy foods and improved satisfaction with their neighborhood as a place to live. They also reported a significant decrease in total calories consumed per day, as well as cuts in consumption of solid fats, alcoholic beverages and added sugars.

"After the opening of the supermarket, we saw improvements in diet, perceived access to healthy foods, and satisfaction with their neighborhood as a place to live." Dubowitz said. "However, the only outcome that was directly related to use of the store was perceived access to healthy foods. Those residents who reported the most improved access to healthy foods also used the store more frequently."

The substantial changes in residents' satisfaction with their neighborhood suggest an avenue for additional research.

"If we are going to push the needle forward to improve population health we may need to explore how investing in neighborhoods might ultimately translate into improvements in the health and well-being of [residents](#)," Dubowitz said.

Unexpectedly, researchers found that the consumption of fruits, vegetables and whole grain foods declined in both of the neighborhoods studied. Body mass index (a ratio of weight to height) did not change in the neighborhood where the new supermarket opened, while the average BMI increased slightly in the comparison neighborhood.

Both [neighborhoods](#) had poor dietary quality at the outset of the project. Using measures of overall dietary quality, researchers found that dietary quality declined in the comparison neighborhood over the study period, and that—while there were select positive changes in the Hill District—overall [dietary quality](#) did not change significantly in the neighborhood where the new grocery store opened.

Provided by RAND Corporation

Citation: Opening supermarket in food desert changes diet, study finds (2015, November 2) retrieved 6 May 2024 from

<https://medicalxpress.com/news/2015-11-supermarket-food-diet.html>

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