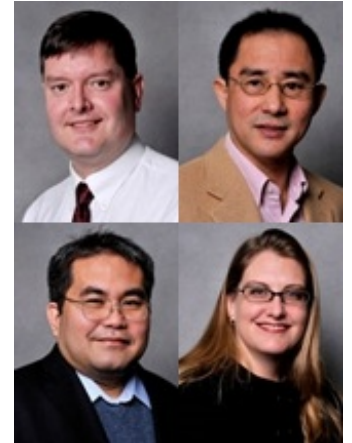


## Living in an urban food desert is a risk factor for weight gain during childhood.

*The past two decades have seen growing concerns over the rise of food deserts – areas where cheap and nutritious food is difficult to obtain. In new research which tracks childhood obesity rates, [Michael R. Thomsen](#), [Rodolfo M. Nayga, Jr.](#), [Pedro A. Alviola, IV](#) and [Heather L. Rouse](#) find that for elementary school children, living in a food desert is linked with a having a higher body mass index, especially for those in urban areas.*



Food deserts, low-income neighborhoods where residents lack access to supermarkets that provide a broad range of healthy foods, have caught the imagination of policymakers alarmed by the high rates of childhood obesity in the United States. Concerns about food deserts have factored into recent US agricultural and food policy legislation and have been a consistent theme in First Lady Obama’s “Let’s Move” campaign. However, evidence linking food deserts to excess weight gain has been mixed. In fact, an argument can be made that the emergence of large, efficient food retailers may be one factor contributing to weight gain. After all, in addition to healthy fruits and veggies, supermarkets offer an abundance of energy-dense, processed foods at low price points. In new research, we find evidence that life in a food desert is associated with a higher body mass index among elementary schoolchildren. These findings are important and suggest that food deserts are policy relevant when it comes to efforts to prevent childhood obesity.

Our study tracked public schoolchildren in Arkansas from kindergarten (age 5 to 6 years) through fourth grade (age 9-10 years). Childhood obesity rates in Arkansas are among the highest in the United States, but officials in the state have taken steps to address this problem, one of which was the implementation of annual body mass index (BMI) screenings of public schoolchildren beginning in the 2003-2004 school year. We used data from this screening program to shed new light on the food desert issue. First, we measured the distance between children’s residences and the nearest supermarket to determine whether each child lived in a food desert or non-desert. Next we measured differences in BMI that could be attributed to differences in food desert status. Because children could be observed repeatedly through time, we were able to control for length of exposure to food deserts or non-deserts and were also able to determine whether a child’s desert status changed as a result of a change in residential location or as a result of the entry or exit of a nearby supermarket.

**Figure 1 – Food deserts are areas where low-income residents lack access to supermarkets providing an affordable source of healthy foods such as fresh fruits and vegetables.**

For purposes of the study, stores classified as supermarkets were required to contain a fresh-produce department such as the one shown here. Food desert residences were more than one mile (1.6 km) from a supermarket in urban areas or 10 miles (16 km) from a supermarket in a rural area. Photo Credit: Stephen Ausmus, United States Department of Agriculture.

Our study provides robust evidence of a positive association between living in a food desert and higher childhood BMI. The strongest association was among children in urban areas. That said, we are unable to conclude definitively that lack of access to healthy foods is a causal factor in the increases in BMI observed among food-desert children. The problem is that food desert communities could help cause obesity in ways that simultaneously make them less profitable locations for supermarkets. For instance, supermarkets may not want to locate in neighborhoods perceived to be less safe. Such neighborhoods may also be less conducive to outside physical activity among children.

Nevertheless, the study provides evidence that living in a food desert is a risk factor for weight gain during childhood and so it is reasonable to consider an area's food desert status among the criteria used to prioritize interventions aimed at preventing childhood obesity. If there is a silver lining to this study, it is that the effects of living in a food desert were modest. Earlier findings on the effects of school-based nutrition and physical activity programs suggest that the benefits of these interventions are large enough to offset the weight gain that is associated with living in a food desert. Thus, it may be especially important to target schools with large numbers of children in food deserts for these kinds of intervention programs.

*Note: The study was funded by the Agriculture and Food Research Initiative Competitive Grant No. 2011-68001-30014 from the U.S. Department of Agriculture National Institute of Food and Agriculture. This work was also partly supported by the Arkansas Biosciences Institute.*

*Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture, Arkansas Biosciences Institute, USAPP– American Politics and Policy, nor of the London School of Economics.*

*This article is based on the paper, 'The Effect of Food Deserts on the Body Mass Index of Elementary Schoolchildren' in the American Journal of Agricultural Economics.*

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