

Childhood Obesity Linked to Limited Food Options

Children living in neighborhoods with low access to grocery stores early in life, even before birth, were at increased risk for obesity later.

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Childhood obesity is a growing public health problem, affecting about 1 in 5 children nationwide, according to the Centers for Disease Control and Prevention. Limited access to grocery stores and healthy foods may be one reason. Several studies have found links between obesity and neighborhood food access among people of varying ages. But few studies have assessed the impact of food insufficiency during the earliest stages of life, when interventions might have the greatest impact.

A research team led by Dr. Izzuddin M. Aris of Harvard University set out to assess the potential long-term impact of poor food access during early life stages, including the weeks before birth. The scientists drew on nationwide data gathered between 1994 and 2003 as part of the NIH-supported Environmental influences on Child Health Outcomes (ECHO) consortium.

The researchers focused on data from more than 28,000 children (48% female, 52% male). About 23% of them had been in low-income, low-food access neighborhoods before birth, at about 34 weeks of pregnancy. And about 24% of the children were living in similarly disadvantaged neighborhoods at a young age, before age 5. Neighborhoods with low food access were defined as those in which the nearest supermarket was more than a half-mile away in urban areas, or more than 10 miles away in rural regions.

The researchers calculated each child's body mass index (BMI) over time, from birth to age 15. BMI is a ratio of weight to height. For children and adolescents, BMI can be adjusted based on age, gender, and expected growth and weight patterns. This is known as the BMI z score. Results appeared in [JAMA Pediatrics](#) on September 16, 2024.

Overall, the scientists found that early-life residence in neighborhoods with limited food access was associated with a greater than 50% higher risk of obesity (defined as BMI at or above the 95th percentile for age and sex) or severe obesity (BMI at or above 120% of the 95th percentile) later in life. The risks were similar whether the children had been living in food-restricted neighborhoods before birth or during childhood. BMI z scores were elevated at ages 5, 10, and 15 among those with limited food access early in life. The association was strongest among those who had lived in

food-limited regions during both pregnancy and early childhood.

The researchers also assessed the data by adjusting for numerous factors. These included differing distances to supermarkets and considering vehicle ownership, which might increase access to healthy foods. Even with these adjustments, the increased risks for obesity and higher child BMI remained into adolescence.

“Living in neighborhoods with access to healthy foods during these stages may be an important factor in preventing the development of obesity later in childhood and adolescence,” Aris says. “Our findings support the need for further research on strategies to improve access to healthy food in early life.”

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