

Long-Term Obesity Risk Raised by Living in Food Deserts during Early Childhood

Study investigates associations between early childhood food accessibility, household income, child [body mass index](#) (BMI) trajectories, and adiposity risk.



Study

In the present study, researchers examine whether residing in low-income communities with limited access to food during early childhood is associated with child BMI trajectories and [adiposity risk](#). To this end, data were obtained from the United States Environmental Influences on Child Health Outcomes (ECHO) consortium participants between January 1, 1994, and March 31, 2023. All mother-child pairs provided a geocoded address during gestation or initial years of life and child BMI information.

The study exposures included residences in low-income communities with limited access to food. These communities have federal poverty rates of 20% or more and median family incomes of 80% or less than the statewide median [family income](#).

The nearest grocery in these communities was at least half a mile away in urban areas and 10 miles or more away in rural regions. Urban areas had over 2,500 inhabitants, whereas rural areas had less than 2,500. All definitions adhered to the [Food Access Research Atlas](#) (FARA) guidelines.

Primary outcome measures were BMI Z scores, obesity, and severe obesity up to 15 years of age. BMI values were calculated using the [World Health Organization](#) (WHO) criteria or the United States Centers for Disease Control and Prevention (CDC) reference. Sex- and age-specific BMIs exceeding the 95th percentile indicated obesity, whereas BMI values of 120% or greater than the 95th percentile reflected severe obesity.

Linear mixed-effects models were used to analyze and calculate risk ratios (RR). Study covariates included maternal age, race, ethnicity, education, number of individuals in a household, insurance status, [prenatal smoking](#) or exposure to secondhand smoke, parity, and the child's social sex and birth year. Maternal pre-pregnancy BMI, weight gain during pregnancy, gestational diabetes, and gestational hypertension or preeclampsia were also considered in the analysis.

Results

Among 28,359 children from 55 cohorts, 52% were male, 67% were white, and 79% were non-Hispanic. About 23% of children lived in households with low income and limited food accessibility during [gestation](#), 24% of whom resided in these homes during early childhood.

Among 17,620 mothers, 51% attained college-level education, and 67% had private insurance during pregnancy.

Living in homes with low income and inadequate access to food during [pregnancy](#) increased the risk of children born to these mothers exhibiting higher BMI values by five, ten, and 15 years of age. These children were also at an increased risk of obesity by five, ten, and 15 years of age, with RR values of 1.4, 1.7, and 2.1, respectively. The risk of severe obesity was also greater in these children by five, ten, and 15 years, with RR values of 1.2, 1.5, and 1.9, respectively.

The strongest associations were observed for children residing in communities with low family income and limited [food accessibility](#) during pregnancy and early childhood. Cumulative exposure to resource deprivation over time had a detrimental impact on the child's outcomes.

Similar results were observed for individuals living in communities with low household incomes and limited food availability during early childhood. When alternate definitions were used for low financial income and limited access to food, the results remained unchanged, even when additional adjustments were made for prenatal factors related to [child obesity](#).

Conclusion

Living in communities with low household income and inadequate food access during early childhood increases the risk of a higher BMI and adiposity during childhood. Pregnancy and early infancy are critical periods of exposure to neighborhood [food availability](#), thus implying that improving food access throughout these life stages may help reduce the risk of child obesity.

The study findings advocate for financial investments in early childhood food access, such as encouraging new supermarkets, establishing [healthy-choice pantries](#), and enhancing access to better food options in small retail venues. Future studies should investigate whether these efforts actually reduce childhood obesity rates.

Source:

<https://www.news-medical.net/news/20240922/Living-in-food-deserts-during-early-childhood-raises-long-term-obesity-risk.aspx>