

Food insecurity, food assistance, and weight status in US youth: New evidence from NHANES 2007-08

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Objective: A growing body of research has shown associations between obesity and food insecurity, and obesity and food assistance participation. Only limited research has addressed the relationship between obesity and food assistance participation, accounting for food security status, in youth. We hypothesize that food assistance participation is a risk factor for obesity in youth, and food security modifies this relationship.

Methods: The sample included 1,321 children (aged 4-17 years) in families $\leq 200\%$ of the federal poverty line from the 2007-2008 National Health and Nutrition Examination Survey. Food insecurity was based the US Department of Agriculture protocol. Food assistance participation was assessed for three prominent programs. Body fatness was classified by age- and sex-specific BMI percentile, BMI z-score, and waist circumference percentile. Regression models estimated the association between food assistance participation and weight status.

Results: In a nationally representative sample of low-income children, we found a significant association between food assistance participation and increased body fatness among food secure boys and girls, but not among food insecure children. Food secure girls participating in food assistance had BMI z-scores 0.24-0.30 standard deviations higher than non-participating girls. Food secure boys participating in food assistance had 2.37-2.54 times the odds of high waist circumference as non-participating boys.

Conclusions: Food secure boys and girls participating in food assistance have increased measures of body fatness compared to non-participating food secure children. This finding was contrary to previous research. Providing healthy food assistance that improves diet quality without contributing to excessive calorie intake may yield particularly important public health benefits.

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