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Linking environment and health data to investigate the association between access to unhealthy food and child BMI

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Introduction

Modelling the daily exposure environment provides evidence for policy and practice. However, the dose-response relationship between exposure to food environments and obesity has not been widely investigated. This study investigated whether increased retail food environment (RFE) exposure in children was associated with a larger body mass index (BMI).

Objectives and Approach

Individually tailored environmental exposures were calculated in a GIS for home and school locations, and modelled walking routes to and from school. Exposures were linked to individual level health data in the SAIL databank for a cohort of individuals aged 11-13 years from south Wales who had BMI measurements. A fully adjusted multilevel regression model was fitted to investigate the association of RFE exposure with BMI. Based on the distance individuals lived from school, we investigated differences between children who have the potential to walk to school ("walkers" lived 4.8km).

Results

Home exposure and exposure along the walk to school was significantly greater for children living in deprived catchments, compared with children living in affluent school catchments (t = -5.25, p

Conclusion/Implications

Increased BMI was associated with greater RFE exposure along the walk home from school. The findings suggest that the walk home from school should be the focus for developing interventions and policies to discourage unhealthy eating. Research should be undertaken to better understand child purchasing habits.

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