Obesity and built environment: Does the association hold longitudinally?

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Aim: Mostly cross-sectional but few longitudinal studies have linked aspects of the built environment to obesity. This study investigated whether characteristics of one’s local food environment and public open space (POS) predicted change in central obesity over 10 years of follow up.

Method: Biomedical cohort data collected across three waves between 2000 and 2010 were used to assess change in central obesity (≥94cm (males)/≥80cm (females)). Built environmental features within 1000m road distance of participants’ residence were obtained using a Geographic Information System. Food environment was operationalised as the number of fast-food restaurants, and unhealthful and healthful food stores. POS was characterised by the number, median size, and greenness of such areas. Analyses were conducted on participants with at least two clinical measurements and who had not moved before the second wave of data collection (n=2796). Binary growth models accounting for spatial clustering and participants’ age, gender, education and income were used to estimate associations between baseline residential area characteristics and 10-year change in obesity status across the three waves of follow up.

Results: No evidence was found of associations between participants’ local food environment or POS, and change in central obesity over 10 years.

Conclusion: These results do not support a longitudinal association between the built environment and central obesity. Research considering the dynamic nature of the built environment and assessing how both the environment and obesity co-vary over time is necessary, however, before ruling out built environmental effects on changes in obesity status.