

# Will moving into social and affordable housing in East Village, London, UK, increase family physical activity levels? Evaluation of a natural experiment

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## Abstract

**Background** Few natural experiments have assessed the effect of the built environment on physical activity. The 2012 London Olympic Games Athletes' Village (renamed East Village) will provide social, intermediate, and market-rent accommodation. This development offers a unique opportunity to assess the effect of a rapidly changing built environment designed to encourage health and active living on the physical activity patterns of residents.

**Methods** A 2-year controlled longitudinal study of 1200 families (each including at least one adult and one child) will be carried out to establish whether physical activity levels in families relocating into East Village show a sustained increase compared with families living outside East Village. Families applying to live in the social, affordable, and market-rent accommodation in East Village will be recruited at application. Participants will have assessments of objectively measured physical activity (with ActiGraph monitors, ActiGraph, FL, USA) and body composition in their present place of residence and will be reassessed 1 year later, either in East Village (intervention group) or in their original place of residence (control group). Multilevel models will assess differences in change in physical activity between intervention and control groups, allowing for individual and household level factors, and other sociodemographic confounding factors (ascertained by electronic questionnaire).

**Findings** We will assess whether differences in physical activity among intervention and control groups relate to use of the local environment, and (if so) which environmental components. The study is predicated on a 70% follow-up rate and is powered to detect a 5% increase in the number of daily steps (and other activity and adiposity outcomes); this represents the lower limit of potentially worthwhile increases in physical activity. To date, 1121 participants have been recruited from 386 social and 322 intermediate households; 69% (487/710) and 84% (346/411), respectively, have recorded at least 4 days (>540 min) of physical activity data. Baseline recruitment will be complete by early 2015.

**Interpretation** This study offers an important opportunity for a natural experiment. Behavioural theories, particularly social learning theory, which can underpin potential benefits of a changed built environment, will be explored. Although the opportunity is unique, the results might also be generalisable to other urban building projects and should inform future evidence-based urban planning.

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## Contributors

All authors read and agree with the abstract's results and conclusions. CGO, ARR, AE, ARC, AP, DL, SC, BG-C, DGC, and PHW designed the study and raised funding. BR, ARR, and CGO collected data, did experiments for the study, and enrolled participants. BR, VK, ARR, and CGO undertook data management. VK and BR analysed the data. CGO wrote the first draft of the abstract, to which all authors contributed. CGO is responsible for data integrity.

## Declaration of interests

We declare no competing interests.

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