



# Green space access, green space use, physical activity and overweight: a research summary.

---

**Original research by Melvyn Hillsdon<sup>1</sup>, Andy Jones<sup>2</sup> & Emma Coombes<sup>2</sup> for Natural England**

- 1. Department Exercise and Health Sciences, University of Bristol**
- 2. School of Environmental Sciences, University of East Anglia**

(Papers from this research will appear in journals later this year.)

***Research Summary by David Stone, Natural England.***

## **Background**

Regular physical activity reduces the risk of cardiovascular disease, non-insulin dependent diabetes mellitus, some forms of cancer and obesity, and is also associated with improved mental well-being. Despite the well recognised benefits of regular physical activity, only 40% of men and 28% of women in England, in 2006, met the public health recommendation of at least 30 minutes of moderate intensity physical activity for five days per week.

The NICE guidance on Physical Activity and the Environment<sup>1</sup> highlighted the need for research to build our knowledge of how the environment influences our physical activity so that environmental management will deliver positive outcomes for health.

The characteristics of a person's living and working environment influences their physical activity. Recent research has suggested that the provision of open spaces, such as parks and other green spaces, for recreation may provide an important health resource especially in urban areas. Indeed, recent studies in England have shown that the amount of green space in an area is generally associated with better health including reduced mortality<sup>2</sup>.

Current green space research tends to focus on the proximity and accessibility of physical activity facilities and public open space. Overall, the evidence indicates that improving access to good quality green space in urban areas may be a promising means of increasing physical activity. However, uncertainty exists regarding the relationship between green space access, the frequency of green space use and physical activity. Furthermore, the extent to which relationships between green space and physical activity vary by population sub-group is unknown, and as the bulk of the literature is from the US or Australia. Natural England commissioned a research team from University of Bristol and University of East Anglia to undertake independent studies on this relationship in the UK.

---

<sup>1</sup> NICE (2008) 'PH8: Physical activity and the environment', NICE, London

<sup>2</sup> Mitchell, R. and Popham, F. (2008) 'Effect of exposure to natural environment on health inequalities: an observational population study', *The Lancet*, vol 372, pp1655–1660.

Two studies were produced with the aim of providing new evidence on the association between both perceived and objectively measured access to green space, frequency of green space use, physical activity levels, and the probability of being overweight or obese by combining information from the Bristol Quality of Life in your Neighbourhood Survey, with a comprehensive database of green space locations and characteristics within the city.

## Summary of main findings

The main findings of both the perceived and objectively measured Bristol green space access studies for respondents to the Neighbourhood Survey are shown below.

- Just over half of men and women thought it was very easy to get a green space, although older adults, respondents who were less educated, and those living in deprived neighbourhoods were less likely to say so.
- A third of respondents said that they used green spaces at least weekly. Frequency of green space use declined with increasing age and worsening deprivation.
- The chances of reporting at least weekly green space use were increased when people believed they had easy access to green space and reported green spaces and their neighbourhood as safe.
- People who reported easy green space access and at least weekly use were also more likely to report physical activity at recommended levels.
- Using objectively measured access to green space, 55% of people were living within 300 metres of one.
- Examining objectively measured access by green space type showed that: 30% of respondents lived within 300m of Informal and Natural green spaces and less than 10% lived within 300m of Young People's and Sports green spaces. Mean distances were 2207m for Young People's, 1758m for Formal, 1082m for Sports, 570m for Natural, and 481m for Informal green space types.
- For all green space types, except for Young People's, visit frequency declined with increasing distance.
- After taking account of potential confounding, distance to formal green spaces was inversely associated with levels of physical activity.
- The Odds Ratio of being overweight or obese by distance to formal green spaces was 1.27 for the quartile of people living furthest away (>2250m) compared to the quartile living closest (<830m) to formal green spaces.
- Overall though, when health status and other demographic factors were taken account of distance to any type of green space was not significantly associated with overweight or obesity. Nevertheless, associations were attenuated but persistent.

## Conclusions

People who perceive easy access to safe green spaces report higher green space use, more regular physical activity and lower risk of obesity. Therefore, access to safe and convenient green space is likely to be an important environmental factor in public health efforts aimed to promote physical activity and reduce obesity.

When access was measured objectively trends were apparent whereby more frequent green space users were more physical active and less likely to be overweight or obese. The robustness of these associations was tested by controlling for a wide range of neighbourhood characteristics. Subsequent associations were mostly attenuated but persistent, except for those with bodyweight which generally disappeared. This may reflect the particularly varied nature of the personal, societal, and environmental influences on weight. These studies have provided new evidence that good access to urban green spaces is associated with higher use, higher physical activity levels, and a lower likelihood of being overweight or obese.

Ends