

Physical activity and health

Introduction

Health is an important government concern, especially considering the cost of running the NHS, which in 2008/09 was £96 billion in England and Wales, and is expected to rise to around £110 billion in 2010/11 (NHS Counter Fraud, 2009). Urban areas in particular have various stresses which exacerbate the physical health issues already present in the general population. For example, respiratory disorders and obesity are both negatively affected by aspects of urban and peri-urban life. These include high levels of vehicle emissions, high population densities, poor housing and a lack of good quality green spaces. It is well established that regular exercise, including walking, can reduce the negative effects of many major health threats such as obesity, type 2 diabetes, coronary heart disease and respiratory disorders.

On the whole, evidence suggests that there is a positive relationship between green space and general population health, and studies indicate that better health can be linked to green space, regardless of socio-economic status. There is an increasing number of initiatives focused on using green spaces for formal and informal exercise programmes. Green infrastructure can also be used to encourage active travel, with integrated walking and cycling networks which promote cardiovascular health. However, there is also evidence to suggest that the benefits of green space are unevenly distributed throughout society and certain groups, such as those living in deprived areas, ethnic minorities, the elderly, women and people with disabilities do not experience the same levels of benefits (Weldon *et al.*, 2007; Fairburn *et al.*, 2005).

Benefits

Benefits include reductions in obesity, type 2 diabetes, premature mortality, hospital admissions, GP consultations and referrals, and better general health.

Economic evidence

- Lack of physical exercise is costing the NHS 2 to 3% of its budget (Nicolson-Lord, 2003, cited in Brown and Grant, 2005: 334), equating to around £2-3 billion per annum.
- The Department of Health (cited in CABE, 2009) estimates the cost to the NHS of obesity and related diseases in England to be £4.2 billion per year, with this figure forecast to more than double by 2050.

- The Walking the Way to Health Initiative (WHI) has helped to create over 500 local health walk schemes. Natural England and the Department of Health are investing £11.3 million in expanding the scheme and Natural England (2009a) estimate that the value of the expanded WHI scheme over the three-year period, beginning in 2009, would be:
 - 2817 Quality Adjusted Life Years (QALYs) delivered at a cost of £4008.98 per QALY
 - Savings to the health service of £81,167,864 (based on life-cost averted).

Evidence linked to physical activity and health

- Various epidemiological studies, utilising self-reported data, have demonstrated a positive relationship between green space and population health (de Vries *et al.*, 2003; Maas *et al.*, 2006; Mitchell and Popham, 2007).
- Mitchell and Popham (2008) corroborate these findings. Their study tested the hypothesis that income-related health inequalities would be lower in populations living in greener areas and found that 'the inequality in all-cause and circulatory disease mortality related to income deprivation is lower in populations who live in the greenest areas than in those who have less exposure to green space' . However, the association varied according to the combination of income deprivation and urbanity.
- In a comprehensive review of studies linking parks and recreation and physical activity, Kaczynski and Henderson (2007: 315) found that living closer to parks or recreational/leisure facilities was generally associated with increased physical activity.
- Cohen *et al.* (2007: 513) studied the relationship between minority communities and eight parks in Los Angeles and found that parks 'play a critical role in facilitating physical activity in minority communities'.
- An American study (Zlot and Schmid, 2005) found that communities with parks had significantly higher levels of walking and cycling for transportation.

Practical considerations

Access is a key factor to consider in relation to green space, however, proximity to green space alone cannot explain levels of usage. Green spaces also need to be accessible (i.e. have good, affordable public transport links, good access points away from busy roads). The green infrastructure approach is an important element of tackling accessibility since it is a networking approach, concerned with the connectivity of green spaces, which can aid movement through landscape.

The facilities available within green spaces also impact upon usage. For example, green spaces with a variety of attractive attributes such as landscaped features, ponds, trees and lakes can encourage higher levels of use (Giles-Corti *et al.*, 2005). Green spaces also need to facilitate diverse uses since single-use spaces, such as sports fields, do not encourage undedicated use (Croucher *et al.*, 2007). Where one green space site cannot accommodate all users or serve a full range of purposes, the green infrastructure approach can prove vital because it can enhance the wider spread of green space provision in an area as a whole (Urban Green Spaces Task Force, 2002).

Weldon *et al.* (2007) observed that barriers to accessing green space include: lack of knowledge, motivation, lack of time, and physical fitness; feeling unwelcome; and conflicts of use. They recommended that community engagement and engagement with hard to reach groups (such as ethnic minorities, those with disabilities, the elderly, youth, and women) are vital to improve access and address the barriers to using green spaces.

- In addition, a capacity building approach, whereby local people take greater 'ownership' of green spaces can help improve the state and use of green space, especially amongst young people.

Physical activity levels are mediated by a variety of factors, including self-motivation and efficacy, and many people visit green spaces to undertake more passive activities which may offer other benefits, such as mental well-being and social interaction (Croucher *et al.*, 2007), covered in other Evidence Notes: Psychological health and mental well-being, and Social interaction, inclusion and community cohesion.

All these barriers need to be tackled head-on and be given the consideration they deserve by planners, designers and managers of green spaces.

Links to climate change

The main link between green space/green infrastructure, health, physical activity and climate change is the potential reduction in CO₂ emissions gained through active travel and the utilisation of green infrastructure as a walking and cycling network.

Tools

Public Benefits Recording System (PBRs)

<http://www.pbrs.org.uk/>

PBRS is a tool originally conceived by the Forestry Commission and the Northwest Regional Development Agency to help with the selection of derelict land sites for regeneration in the Newlands land reclamation scheme. The PBRS uses GIS to identify synergies between social, environmental and economic needs and opportunities, strategies and investments to ensure value added results.

Public Health Guidance 8 – Promoting and creating built or natural environments that encourage and support physical activity.

<http://www.nice.org.uk/nicemedia/pdf/PH008Guidancev2.pdf>

This publication provides an overview of evidence on physical activity and the urban environment and offers recommendations for policy and practice using brief case studies from cities around Europe.

RPTI Good Practice Note 5: Delivering healthy communities

http://www.rtpi.org.uk/download/6443/GPN5_final.pdf

A guidance note from the Royal Town Planning Institute which points out that the delivery of attractive, healthy, safe residential areas are key objectives of spatial planning. It promotes an approach which integrates public health and spatial planning processes so that neighbourhoods which provide opportunities for active lifestyles can be created.

Social Return on Investment (SROI)

- http://www.sroi-uk.org/component/option,com_docman/task,doc_view/gid,53/Itemid,38/
- <http://www.greenspacescotland.org.uk/upload/File/Greenlink%20SROI%20Final%20report%205%20October%202009.pdf>

SROI is a framework for measuring and communicating a broad concept of value, incorporating social, environmental and economic costs and benefits. The framework concentrates on change and measures outcomes using monetary values to represent them. Nevertheless, SROI is about value, as opposed to money; monetary figures are simply used because they are a widely accepted way of conveying value.

Promoting physical activity and active living in urban environments – the role of local governments

This booklet is primarily written for local governments and other officials in local government, and is also directed at policy-makers and leaders in health services, education, workplaces, mass media, sports and recreation – all of whom have important roles in ensuring that people are active in cities.

<http://www.euro.who.int/document/e89498.pdf>

Case studies

Active England, the woodland projects

[http://www.forestry.gov.uk/pdf/active_england_final_report.pdf/\\$FILE/active_england_final_report.pdf](http://www.forestry.gov.uk/pdf/active_england_final_report.pdf/$FILE/active_england_final_report.pdf)

Chopwell Wood health project

<http://www.forestresearch.gov.uk/fr/INFD-6HCDBW>

Green Gym

<http://www2.btcv.org.uk/display/greengym>

Mile End Park, London

www.cabe.org.uk/case-studies/mile-end-park

Natural England: Our Natural Health Service

<http://www.naturalengland.org.uk/ourwork/enjoying/health/ournaturalhealthservice/default.aspx>

Paths for All Partnership

<http://www.pathsforall.org.uk/>

Smarter Choices, Smarter Places, Barrhead

<http://www.eastrenfrewshire.gov.uk/betterbarrhead/smarterchoices.htm>

Walking the Way to Health

<http://www.whi.org.uk/>

Knowledge gaps

Unfortunately, there is little evidence to show whether different types of green space have different impacts on health, nor is there any tangible explanation of the mechanisms or means through which green space impacts positively on population health. The particular or unique role or benefit of green space in terms of exercise promotion programmes has not been demonstrated, although there are indications that the attractiveness of green spaces does present increased incentive to continue exercising (Ashley and Bartlett, 2001). More multidisciplinary studies which integrate qualitative and quantitative indicators could provide a better understanding of the role of green spaces in the health of urban communities as well more longitudinal studies (O'Brien *et al.*, 2010). In terms of economic evidence, more evaluation of activity programmes is needed, including costs of the programmes, measures of drop out rates and health outcomes (CJC Consulting *et al.*, 2005). In addition, there is a lack of evidence on the time profile of risks when exercise is continued or discontinued and the relative risks to different age groups (CJC Consulting *et al.*, 2005).

Citations of national policies/priorities

At least five a week: evidence of the impact of physical activity and its relationship to health 2004

http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4080981.pdf

Choosing Health: Making healthy choices easier 2004

http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4120792.pdf

Health Challenge England – next steps for Choosing Health 2006

http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_414_0333.pdf

Be active, be healthy: a plan for getting the nation moving 2009

http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_094359.pdf

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