

The research centre for inclusive
access to outdoor environments



Using local neighbourhood environments to support health

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THE UNIVERSITY *of* EDINBURGH
Edinburgh College of Art

Inclusive Design for Getting Outdoors

I'DGO Consortium



**OPENspace, University of Edinburgh and
Heriot-Watt University**



**WISE (Wellbeing in Sustainable Environments)
University of Warwick**



**SURFACE Inclusive Design Research Centre +
Centre for Rehabilitation and Human Performance
Research, University of Salford**

Engineering and Physical Science Research Council

EPSRC

EQUAL Programme: Extending Quality Life for older and disabled people

INCLUSIVE DESIGN FOR GETTING OUTDOORS

Why do older people need to get outdoors?

Our first I'DGO study: older people living in an environment that makes it easy and enjoyable to go outdoors were more likely to be **physically active, healthier and more satisfied with life.**



Attractors and Barriers to getting out

Outdoor environments provide opportunities for **physical activity, contact with nature** and **social interaction**.

But in-depth interviews of 200 people aged 65+ in a range of locations in Oxfordshire, Gloucestershire and Greater Manchester showed that at least half faced problems in getting outdoors due to barriers in the environment and lack of supportive facilities



What older people told us they prefer - detailed aspects of street design



Light traffic on walking routes



Permeable buffer zones between busy roads and footways e.g. trees, grass verge



Wide, flat, smooth, non-slip footways



- Separate from cycleways
- Clear colour and textural contrast to walls and kerbs
- Clean and well maintained
- Plain and non-reflective

Tarmac or asphalt preferred - smooth, even, not slippery, safer from tripping, comfortable to walk on

Easy transition at level changes (1)



- Ramps to be used for level changes
- Steps as an alternative (some people prefer steps)
- Steps and ramps clearly marked and well lit with handrails and non-slip, non-glare surfaces



Easy transition at level changes (2)



- Provision of dropped kerb important
- Tactile dropped kerb needs further research



“really uncomfortable”

“I don’t feel safe, I feel I may trip”

Unobstructed walkways



- Obstructions from poorly maintained paving seen as hazardous



- Cars parked on pavement are major problem

Controlled crossing points



- Crossings with lights preferred (easy and safe)
- Audible and visual signal provided
- Short crossing distance important

Detailed design issues

Buildings, facilities and street furniture should clearly communicate their uses

– not a case of traditional versus modern but clarity of design



Clear, simple, easily visible and understandable signage



Frequent, warm, supportive seating, well maintained and safe



Sturdy public seating with back rests and preferably arm rests -
“Arm rests are good for getting up and down”

In warm, soft materials, e.g. wood



Bus stops and shelters



- Weather protection
- Seating
- Personal safety
- Seeing the bus

Sufficient, well maintained, safe and open, ground level toilets – not these!



Neighbourhood open space – streets, parks etc.

OPENspace research - postal questionnaire (n=268)

How do perceived quality and accessibility of neighbourhood open spaces affect patterns of activity?

■ **PLEASANTNESS**

LACK OF NUISANCE



■ **RECREATIONAL WALKING**

■ **GOOD PATHS TO OPEN SPACE**

GOOD FACILITIES



■ **UTILITARIAN WALKING**

What features facilitate recreational walking in outdoor spaces?

Pleasantness of open space



- clean and well-maintained
- attractive trees and plants
- good for children's play
- good for chatting with people

Using logistic regression, pleasantness of open space was a significant predictor of time spent walking for recreation (OR = 1.41, 95% CI = 1.01–1.98)

What features facilitate recreational walking in outdoor spaces?

Lack of nuisance – no vandalism, dog fouling, problem youths

Young people: “They probably won’t harm you, but they look so threatening. They march up the road and ride the bicycles up and down the pavement.”



Using logistic regression, nuisance in local open space was a significant predictor of time spent walking for recreation (OR = 0.71, 95% CI= 0.55–0.91).

What features facilitate utilitarian walking?



Perceived quality of paths to local open spaces

- paths easy to walk on
- enjoyable to walk on
- no obstacles to getting to open space

Using logistic regression, good paths to reach local open spaces are significantly associated with total outdoor time (OR=1.57, 95% CI=1.13-2.19) and walking for transport (OR=1.38, 95% CI=1.1.77)

What features facilitate utilitarian walking?



Good facilities at destinations

- enough seats to rest on in open space
- cafes, toilets, shelters, etc

Using logistic regression, the presence of good facilities in local space is significantly associated with total outdoor time (OR=1.57, 95% CI=1.14-2.15) and time walking for transport (OR=1.34, 95% CI=1.1.78)

Does where you live make a difference?

Do you live **within 10 minutes' walk of a local open space?**

Participants who live within 10 minutes' walk of a local open space were twice as likely to achieve the recommended levels of **healthy walking** (2.5 hours/week) compared with those whose local open space is further away.

(OR = 0.46, 95% CI= 0.24–0.88)

Participants living within 10 minutes' walk of a local open space were more than twice as likely to be **satisfied with life** compared with those whose local open space is further away.

(OR = 2.17, 95% CI= 1.16-4.06)



Does where you live make a difference?

Do you have **good paths** on the way to your local open space?

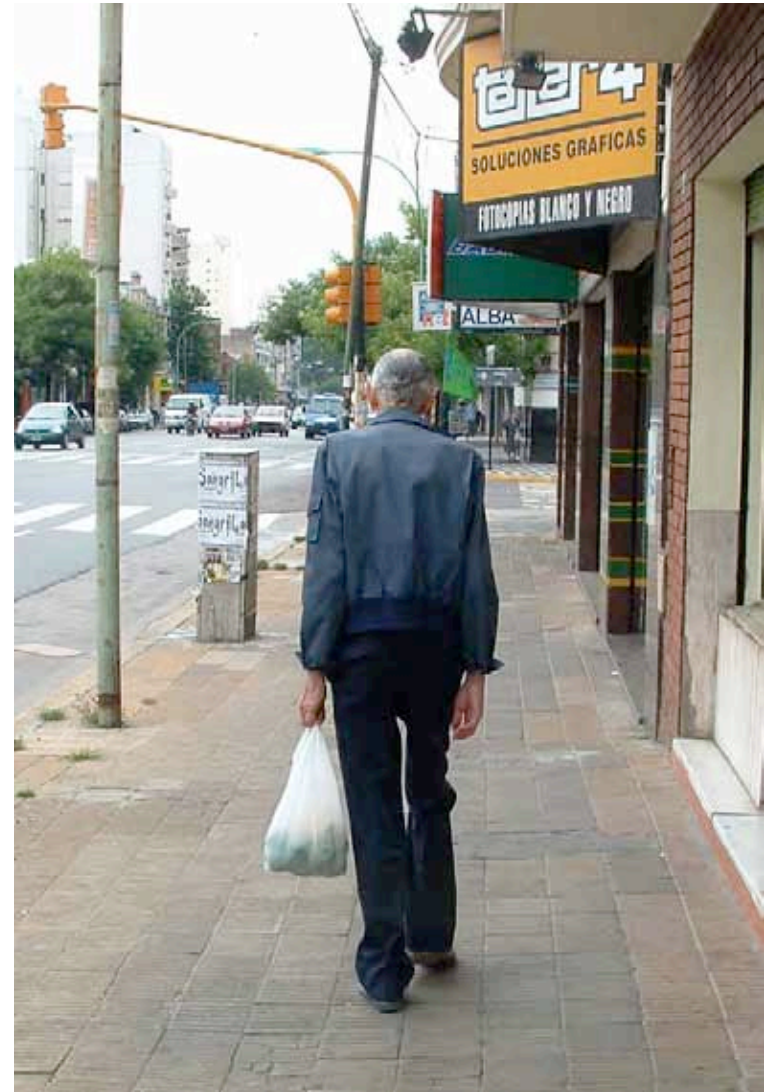
Such participants were twice as likely to achieve the recommended levels of healthy walking activity (2.5 hours/week) as those with poor quality paths.

(OR = 1.96, 95% CI= 1.03–3.74)

Do you live in **sheltered accommodation or a care home?**

Participants living in sheltered accommodation or a care home were nearly three times less likely to get outdoors for >5 hours per week than people living in their own homes.

(OR = 0.36, 95% CI= 0.18–0.72)



Choice-based Conjoint Questionnaire: Examples

❖ QUESTION 1 ❖

<input type="checkbox"/> Park 1	
High quality pavement to the park	No seats en route
Medium traffic	Few seats in the park

<input type="checkbox"/> Park 2	
Low quality pavement to the park	Some seats en route
Heavy traffic (including lorries)	Many seats in the park

Which park would you prefer as your local one?

❖ QUESTION 2 ❖

<input type="checkbox"/> Park 1	
Takes 10 to 15 minutes' walk to get to	Dense trees and plants
Café and toilets	Signs of vandalism

<input type="checkbox"/> Park 2	
Takes 5 to 10 minutes' walk to get to	No trees and few plants
Toilets only	No particular nuisance

Potential trade-off scenarios among diverse open space features



1. Trees versus traffic

Participants would rather have an open space with few trees (both along paths and in the park) but light traffic than one with heavy traffic and lots of trees.

2. Trees versus facilities

Participants were willing to trade facilities (such as cafe and/or toilets) in order to have tree-lined paths and dense trees and plants in their local open spaces.

3. Aesthetically pleasing versus well-maintained open spaces

Participants would tolerate a poorly maintained open space in order to have an aesthetically pleasing one (i.e., dense trees/plants, water features, wildlife).

Phase 2 study 2007-2011

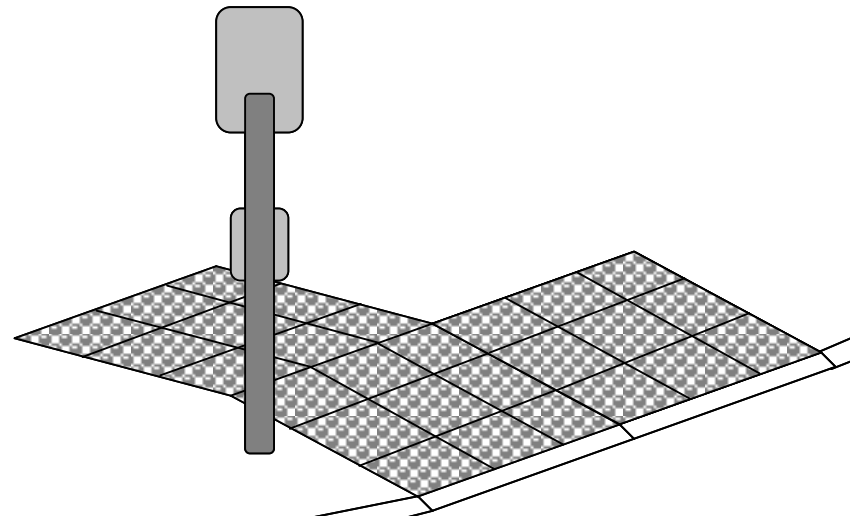


I'DGO TOO: Inclusive Design for Getting Outdoors 2
EPSRC EQUAL Programme 5

Evaluating Tactile Paving



Department for Transport Guidelines



“feels as if you are going to twist your ankle on it”

“makes me feel unsafe, I feel I might trip & it hurts my feet”

“I prefer to walk around it”





Real world observations and interviews

INCLUSIVE DESIGN FOR GETTING OUTDOORS

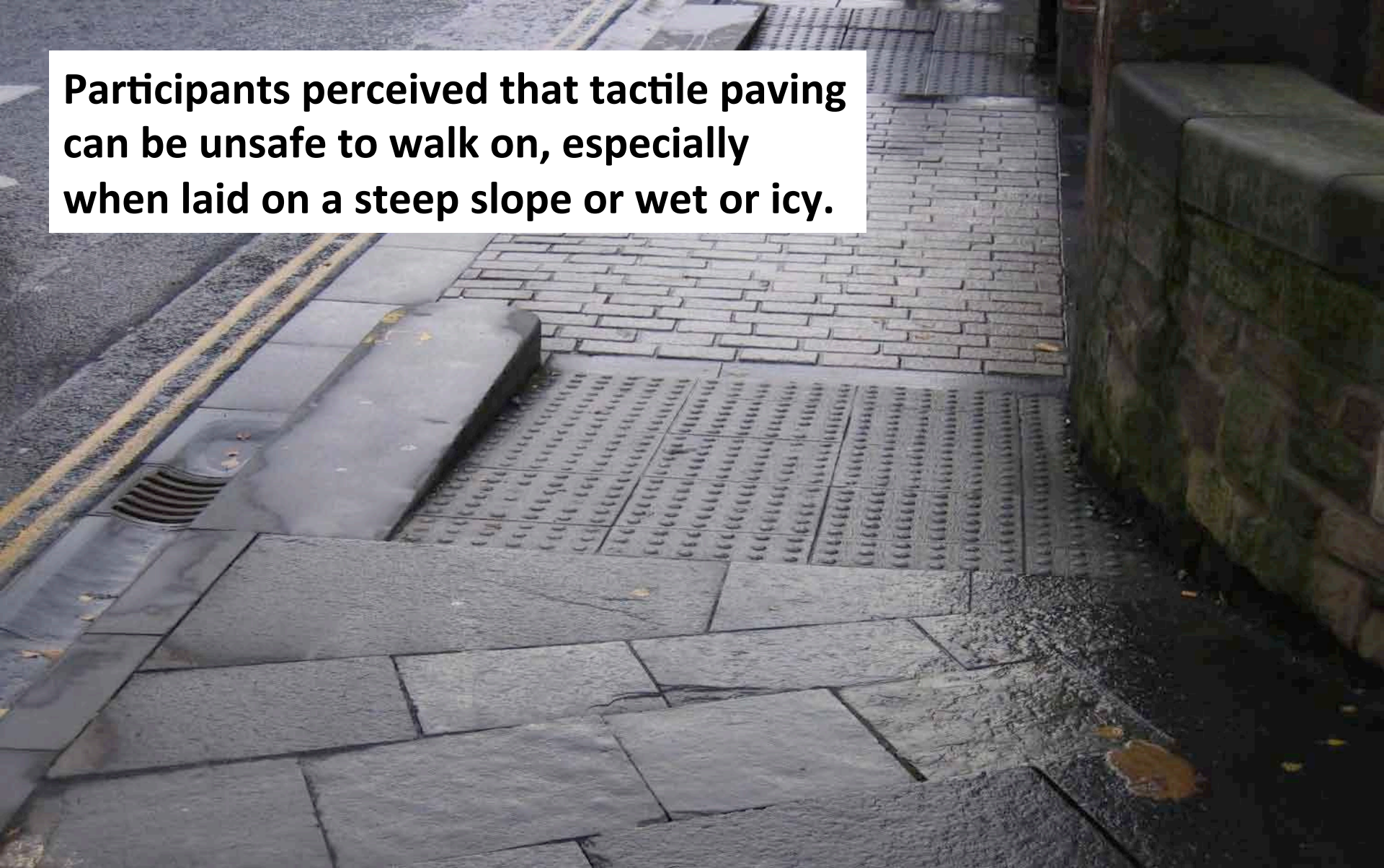
Few older participants were aware what the different types of tactile paving and road crossings signify and this is exacerbated by incorrect provision, siting and laying.



**None of 30 sites we studied
met colour/tonal contrast
guidance.**



Participants perceived that tactile paving can be unsafe to walk on, especially when laid on a steep slope or wet or icy.



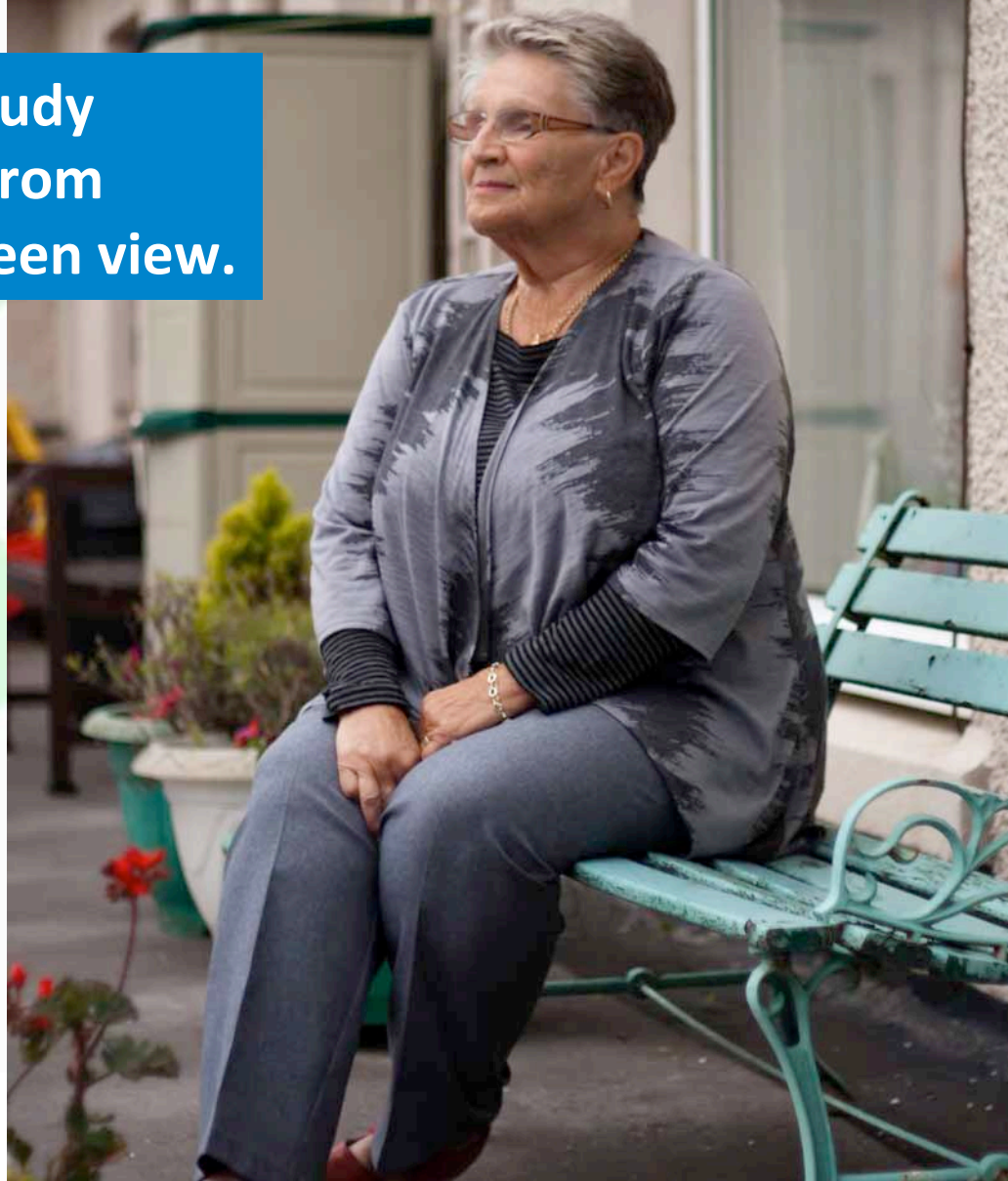
Participants told us that they know *how* to cross the road, but they need to know *when* to cross the road safely.



In 21st C. developments, residential outdoor space (ROS) tends to be less green than it was pre-2000.



The greatest impact on ROS study participants' wellbeing came from having their own patio or a green view.



The more types of ROS participants had, whether owned or shared, the greater their satisfaction.



**We found that front gardens, in particular,
are valued as a place for social interaction.**



‘DIY’ Streets and shared spaces



‘DIY Streets’ - a Sustrans project that aims to reach consensus amongst all residents about how the design of the street could change

Specifically aimed at reducing the speed and volume of traffic on their street

Residents are encouraged to use streets in different ways, e.g. for social activities and children’s play

Sites



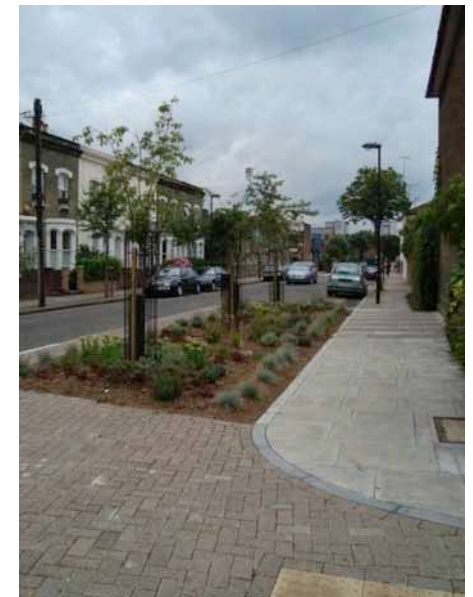
**DIY: Penn Street at Hartley Street-
Manchester**



DIY: Passhouses Road -Sheffield



DIY: Castle St - Port Talbot



**DIY: Monsell Road at Romilly
Road – Islington, London**

London, Islington - Monsell Road at Romilly Road

2008



2010



Proposed changes

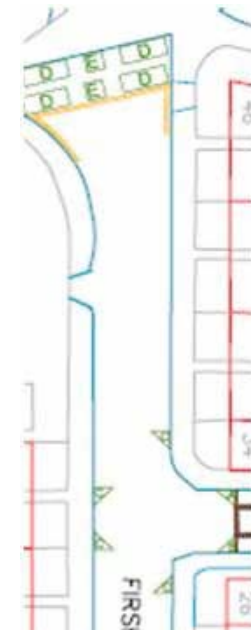
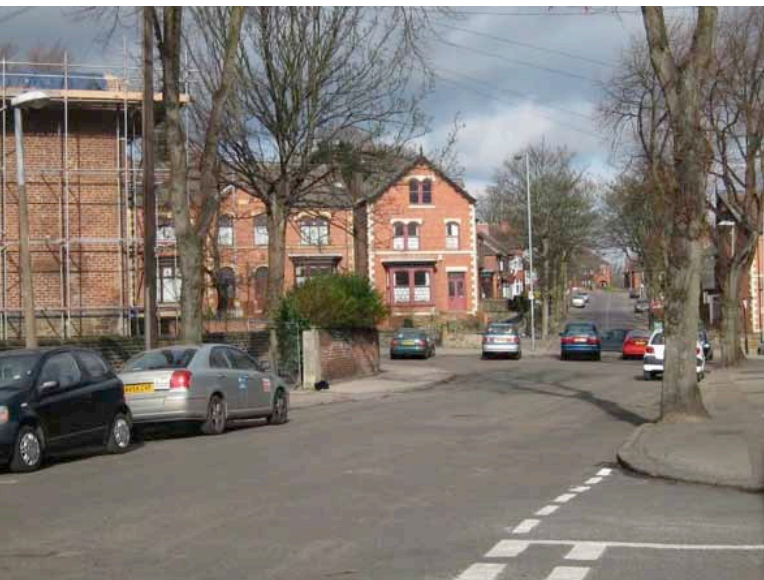
Sheffield - Passhouses Road & End of Firshill Road



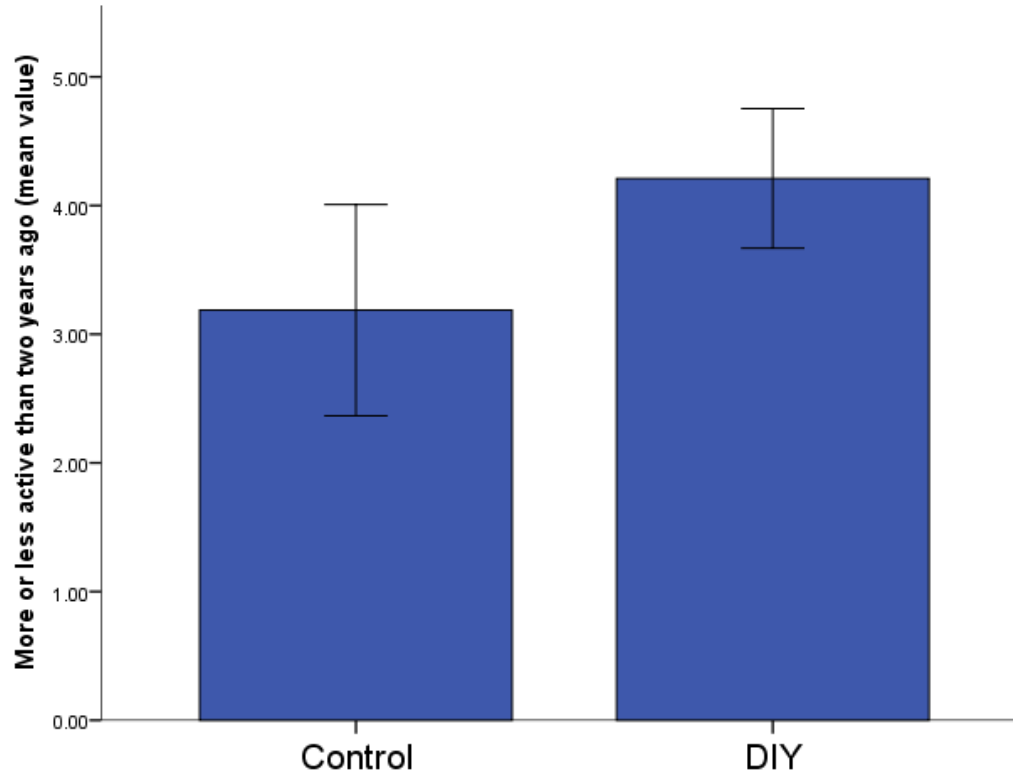
2008



2010

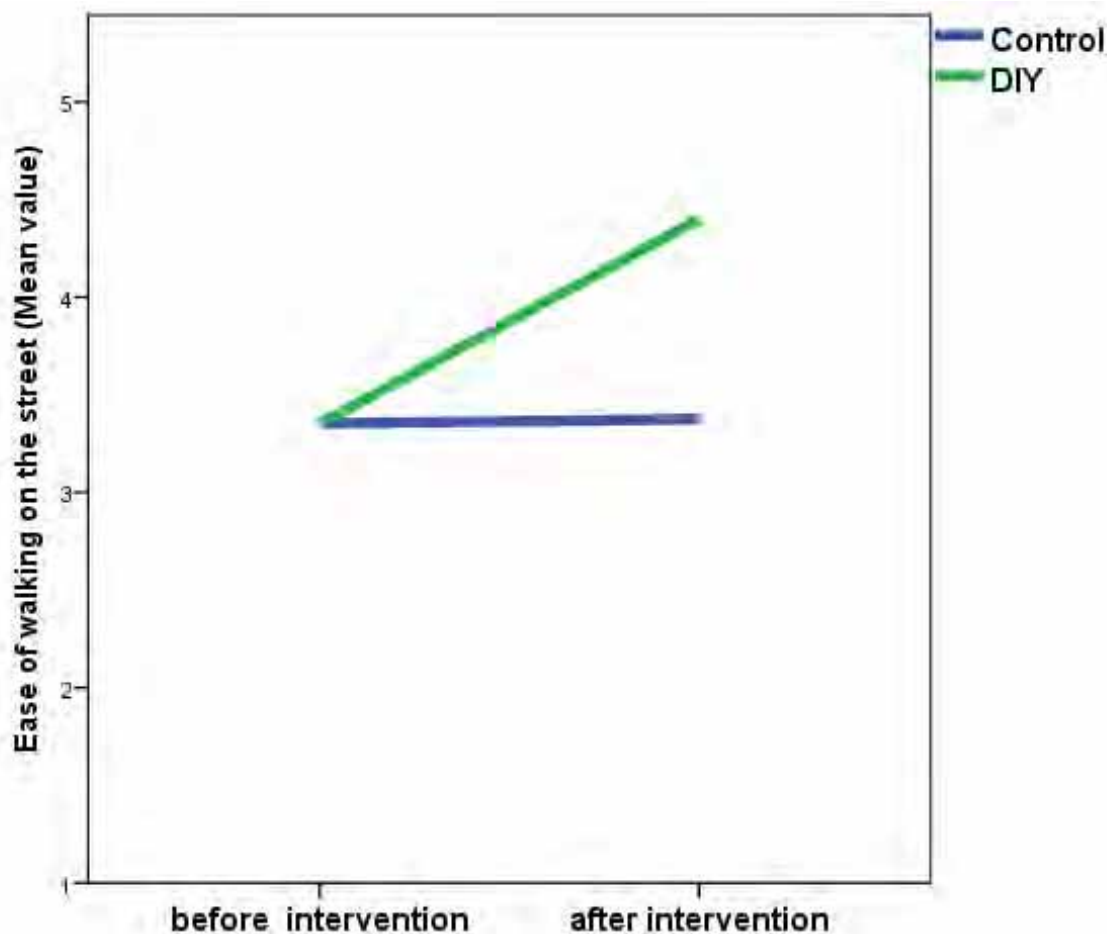


Differences between DIY and Control sites in 2010/11 (n=36)



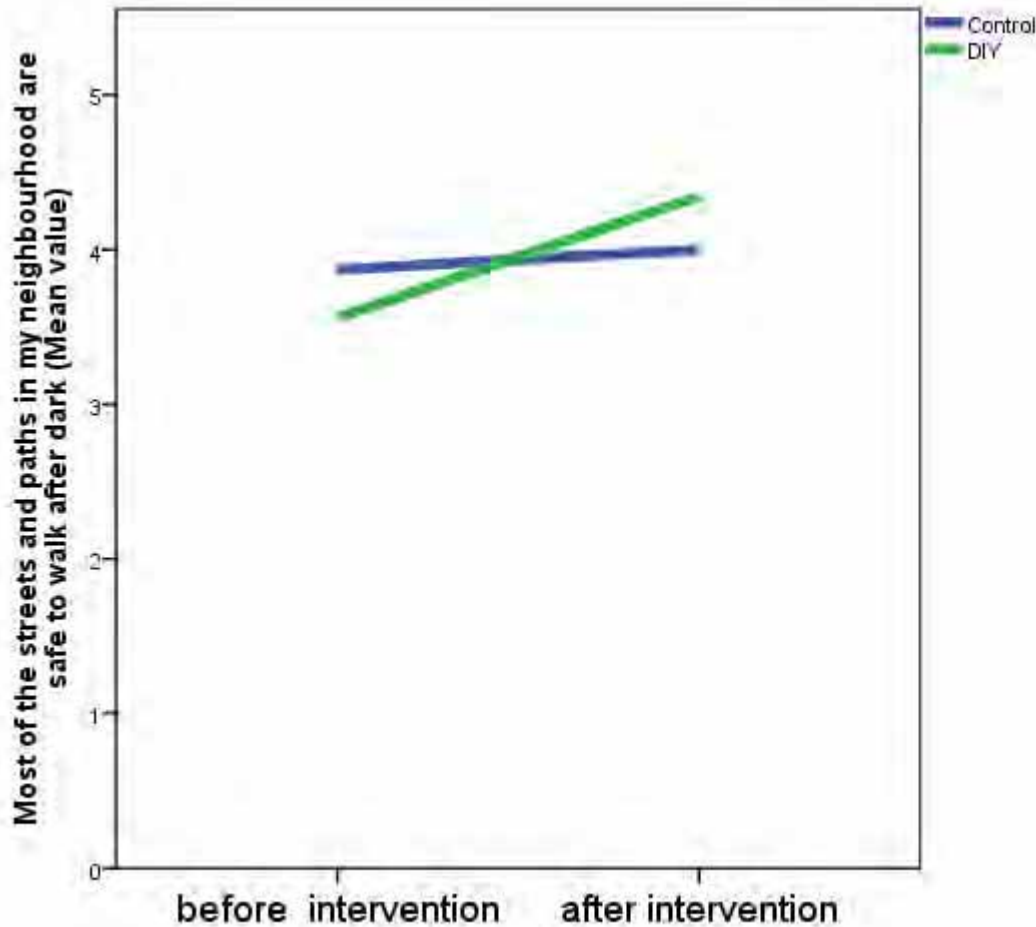
Those in DIY streets *say they are more active* than two years ago, significantly more so than those in control streets ($p=0.04$)

'It is easy for me to walk on my street' (n=36)



Change in DIY sites is significantly different from control sites ($n=36$; $p=0.03$)

'Most neighbourhood streets and paths are safe to walk after dark' (n=61)



© Ruddington Photos

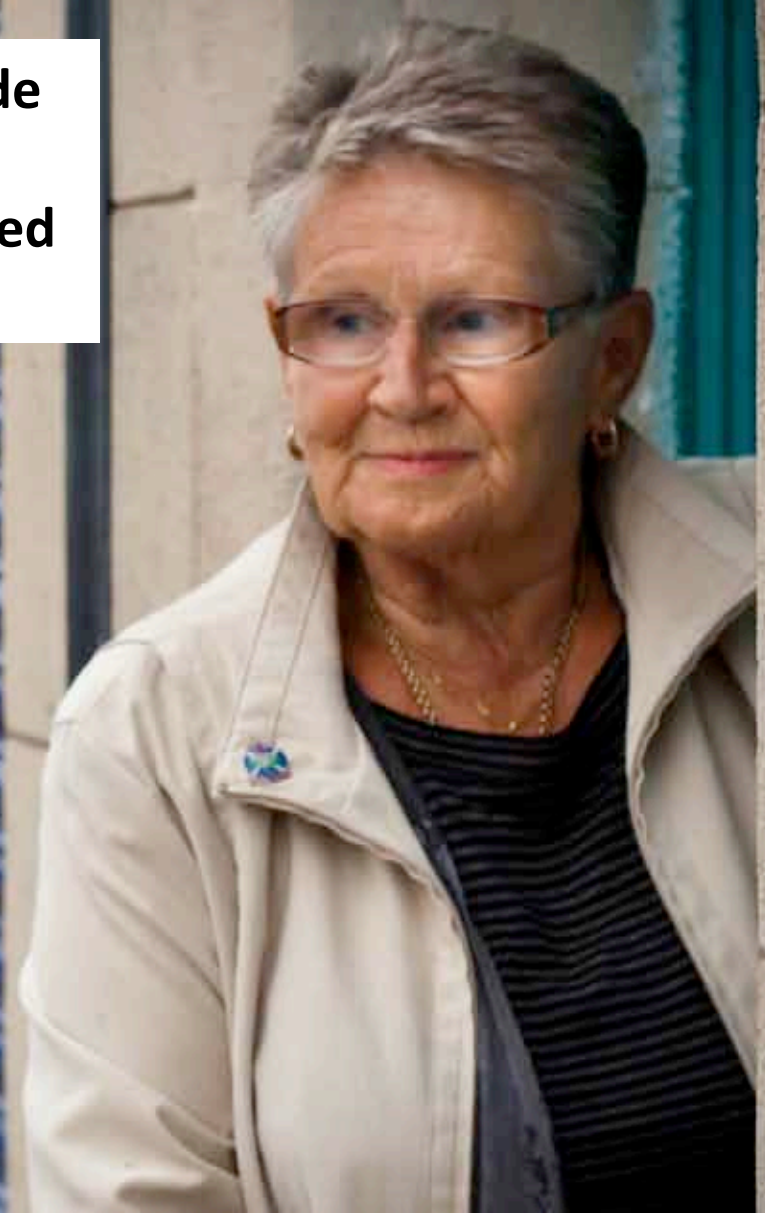
Change in DIY sites is significant ($n=29$; $p=0.04$)

Some older residents responded positively to measures aimed at reducing the dominance of cars.



Image courtesy of Sustrans

For others, not being able to park outside their house, for example, was a disincentive to going out at all and limited social contact.



Over a three-year period, 'DIY' changes did not appear to have as much of an impact on wellbeing, social engagement and quality of life as environmental factors on a wider scale...



... many of these relate to local open spaces, such as parks, and safe and enjoyable routes to them; both paths and cycleways.

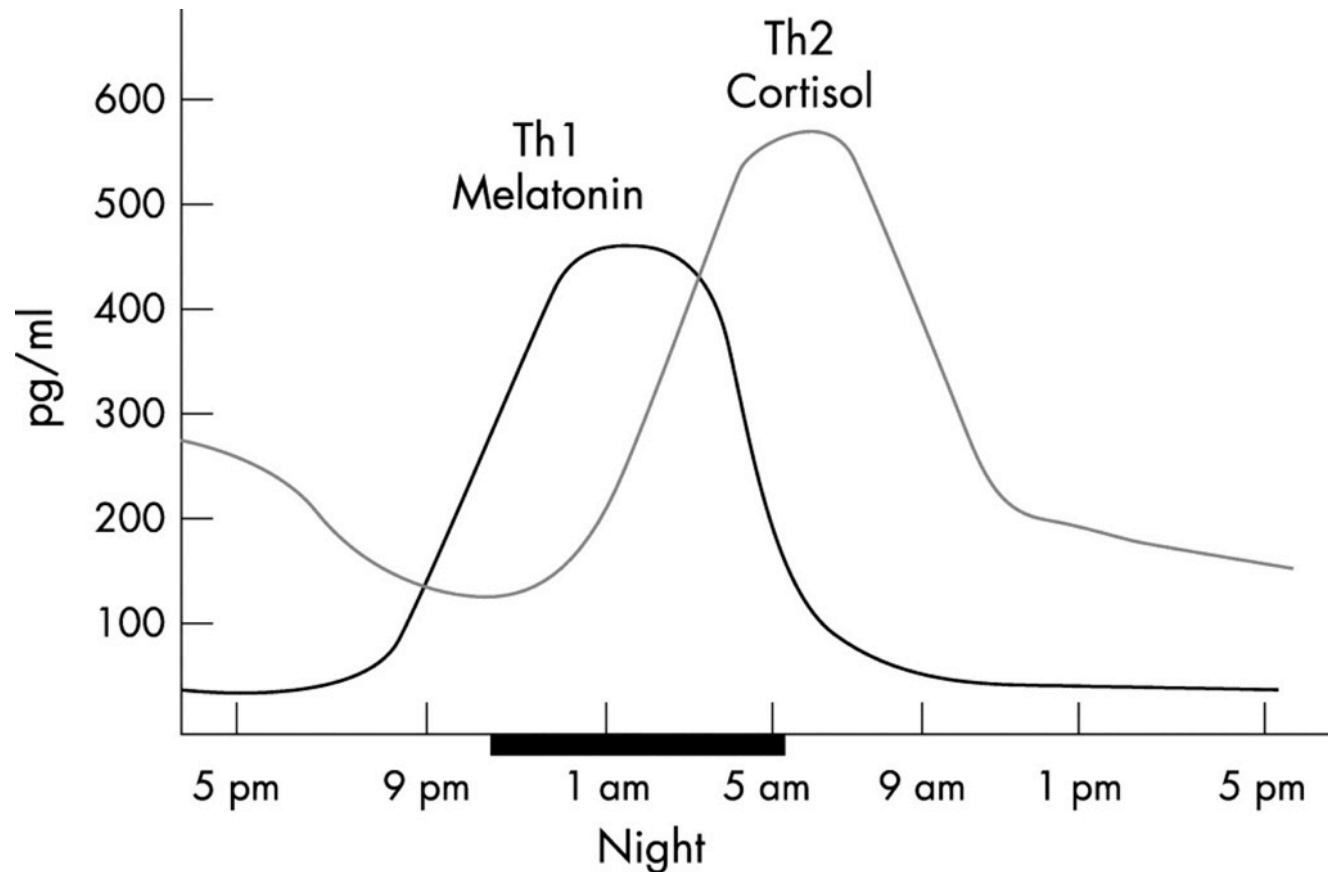


Nonetheless, if supported by their environment, most people aged 80+ living in the community can expect to continue to go outdoors daily, engage in a range of activities and maintain quality of life into oldest age.



What might lie behind some of the beneficial effects of getting outdoors?

Circadian rhythms

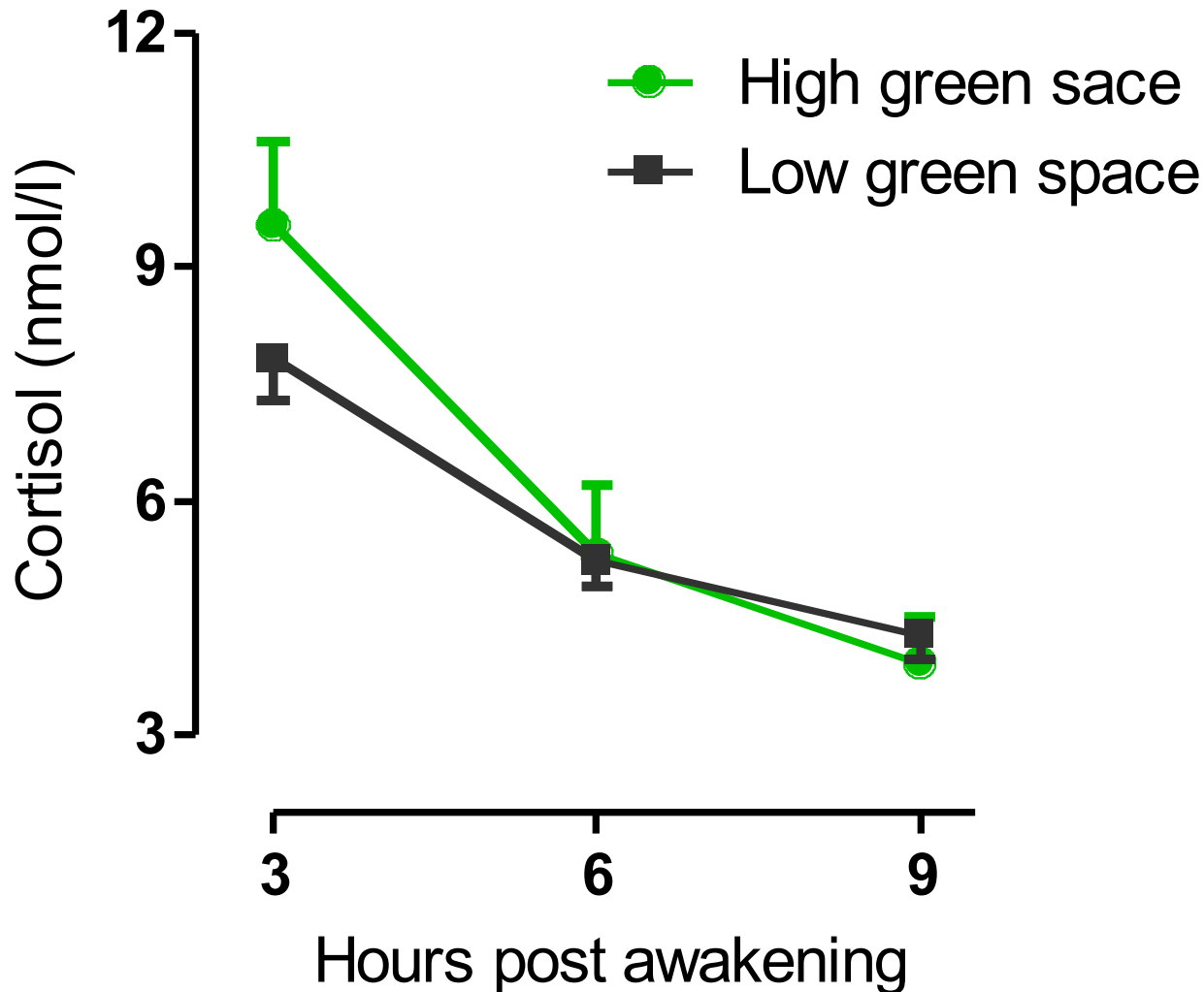


In a study for the Scottish Government, we looked at relationships between the amount of nearby green space and stress levels for residents of deprived urban areas

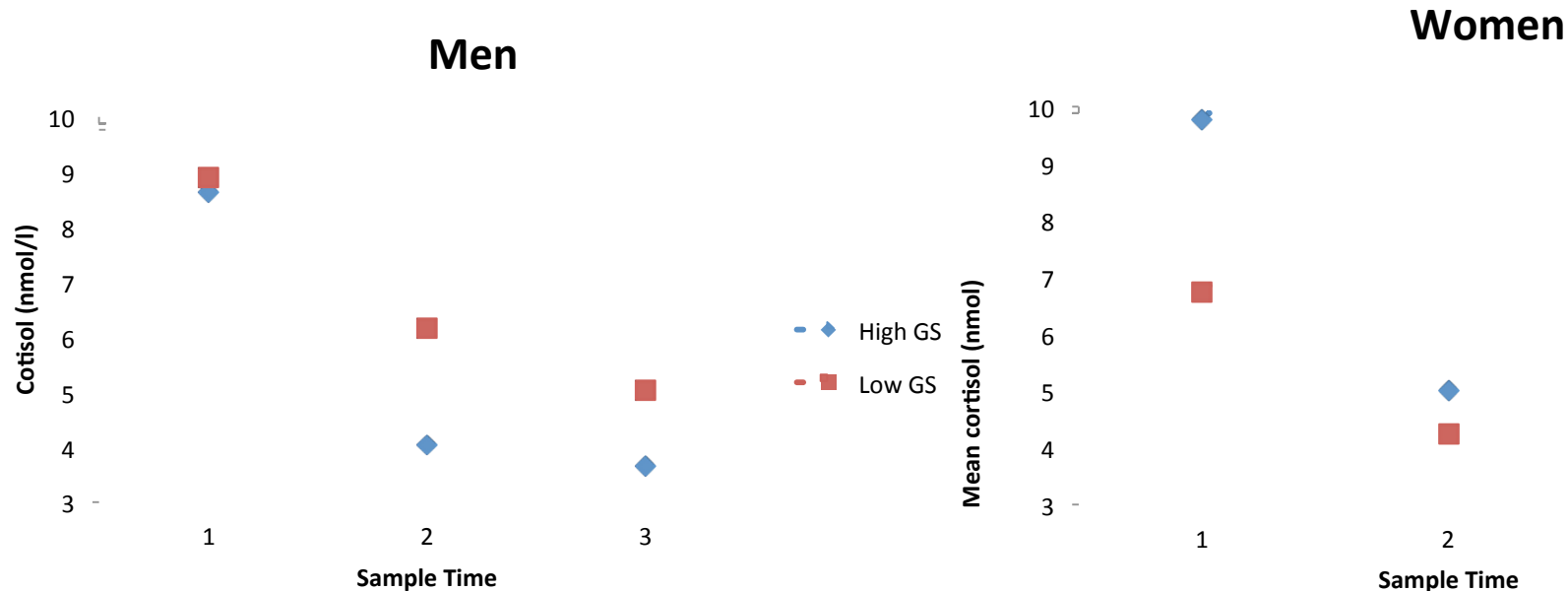


A collaboration with the Universities of Heriot-Watt, Glasgow & Westminster, the James Hutton Institute & Biomathematics & Statistics Scotland.

We could predict healthy cortisol slopes by the amount of green space in the local area



Men's and women's cortisol slope (indicating stress patterns) differed relation to green space



Men and women have similar patterns in high green space (blue line) *but* different in low green space (red line): men are classically stressed, females are more exhausted.

Woodlands as restorative places:

“You can just go away by yourself. You can just disappear and nobody can see you...you can’t do that in the city, you can’t just keep walking, walking, walking”

“I find it’s quiet, it gets you away from everyday life. You just go away and be in a world of your own sometimes... if you’re angry at anything, just go away and get yourself all calmed down.”

Unemployed men and women from urban areas in Central Scotland



Open Space and Social Inclusion: Local Woodland Use in Central Scotland, Edinburgh: Forestry Commission, 2004

The importance of childhood experience:

In addition to being important for *healthy physical, mental, cognitive, emotional and social development*, childhood play in natural settings appears to have a long-term and positive effect on attitudes, well-being and behaviour









Evaluating a government pilot study on children, looking at:

- obesity;
- unintentional injuries;
- asthma;
- mental health and wellbeing.

Good Places Better Health for Scotland's Children

Prepared by the Evaluation Group
of Good Places Better Health

4.0 OUR VISION

A Scotland where

Homes are warm and dry with good quality space for children to play indoors and outdoors

Children play, explore and relax outdoors in streets, parks, green places, open spaces and have contact with nature in their everyday lives

The presence of children outdoors is welcomed, supported and valued by parents and the wider community

Neighbourhoods are well maintained, safe, appealing, support healthy food choices and have a strong sense of community



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For more information visit our websites



www.openspace.eca.ac.uk
www.idgo.ac.uk

