



Reducing health inequalities: can green space do what politics can't?



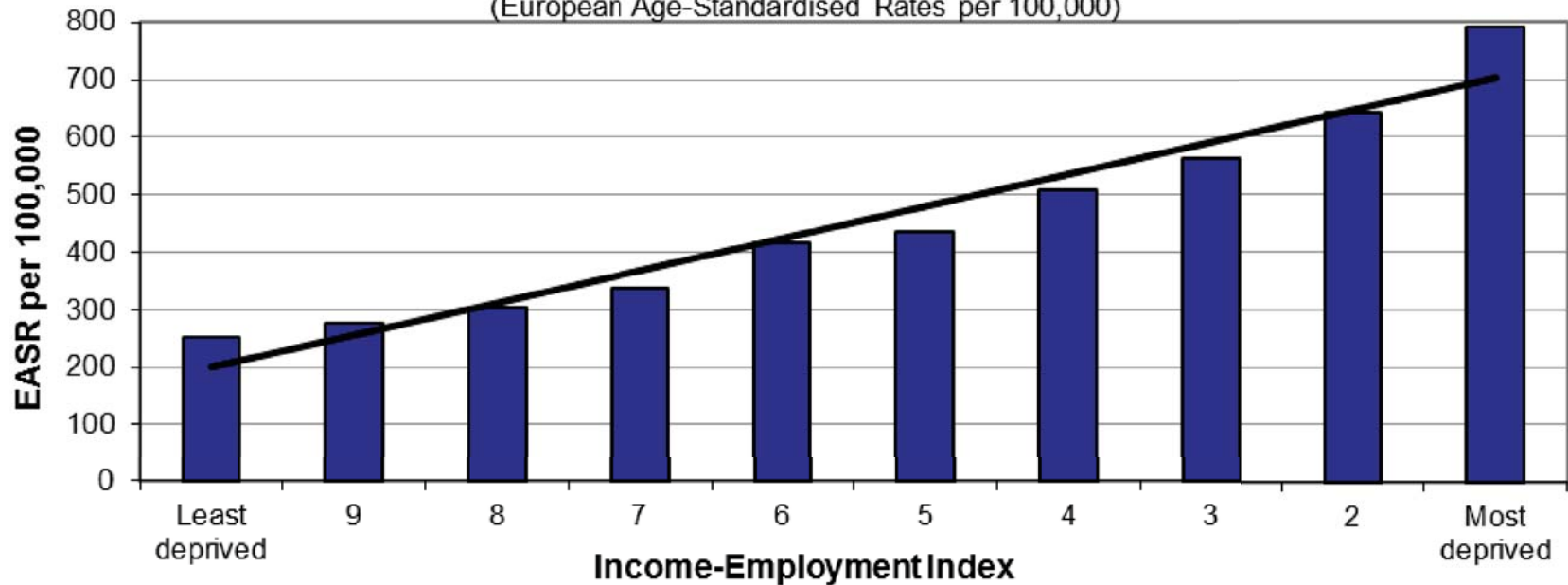
Prof Rich Mitchell

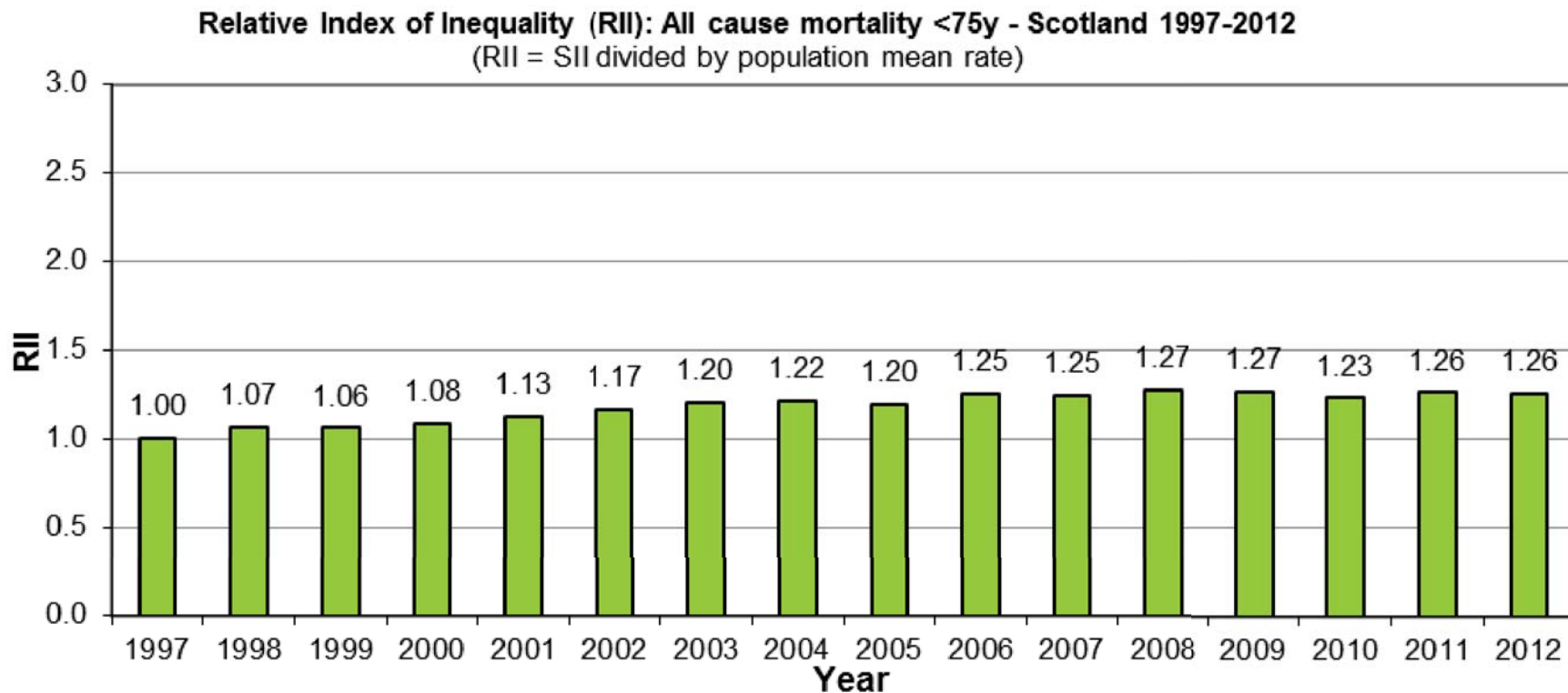
Socio-economic inequalities in health persist in many countries and settings around the world, including Scotland



**All cause mortality amongst those aged <75y by Income-Employment Index:
Scotland 2012**

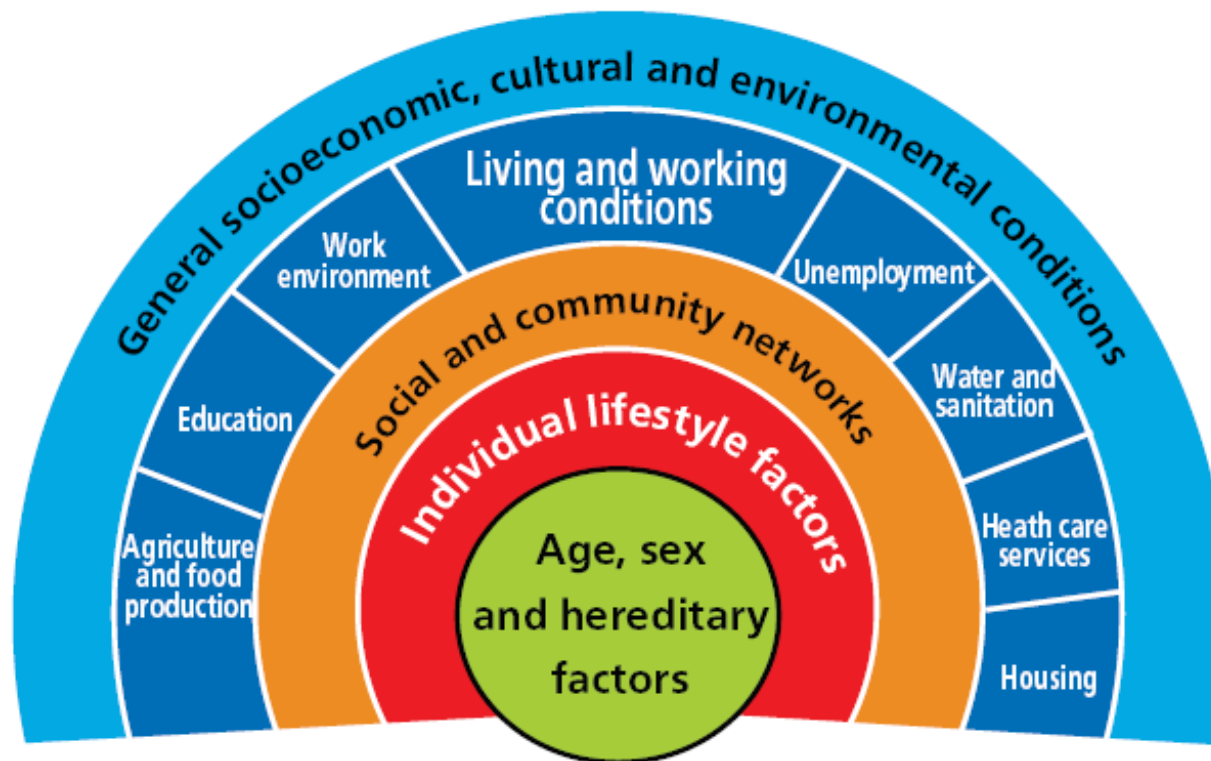
(European Age-Standardised Rates per 100,000)





Determinants of health (inequalities)

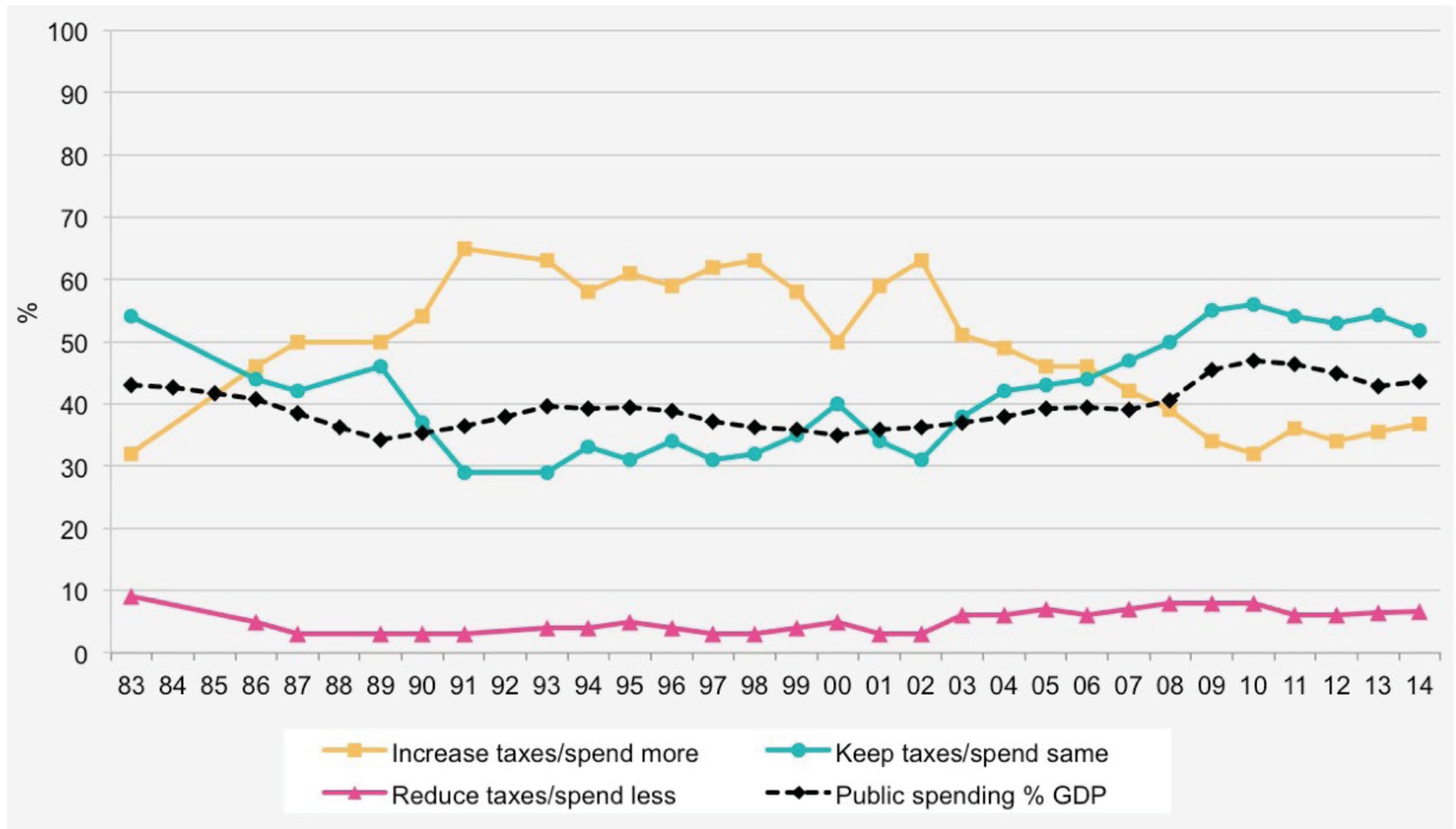
Dahlgren G, Whitehead M. Policies and strategies to promote social equity in health. Copenhagen: World Health Organization, 1992.



“Elimination and prevention of inequalities in all-cause mortality will only be achieved if the underlying differences in income, wealth and power across society are reduced.”

Scott S et al What would it take to eradicate health inequalities? Testing the fundamental causes theory of health inequalities in Scotland. NHS Health Scotland, Glasgow, 2013

Figure 1. Attitudes to taxation and spending on health, education and social benefits, 1983–2014, and public spending as a percentage of GDP



We hypothesise that some places are *equigenic*; features of their social, physical or service environments act to break or weaken the usual conversion of economic inequality to health inequality. We are interested in finding, defining and using the notion of *equigenesis*

Can natural environments be equigenic?

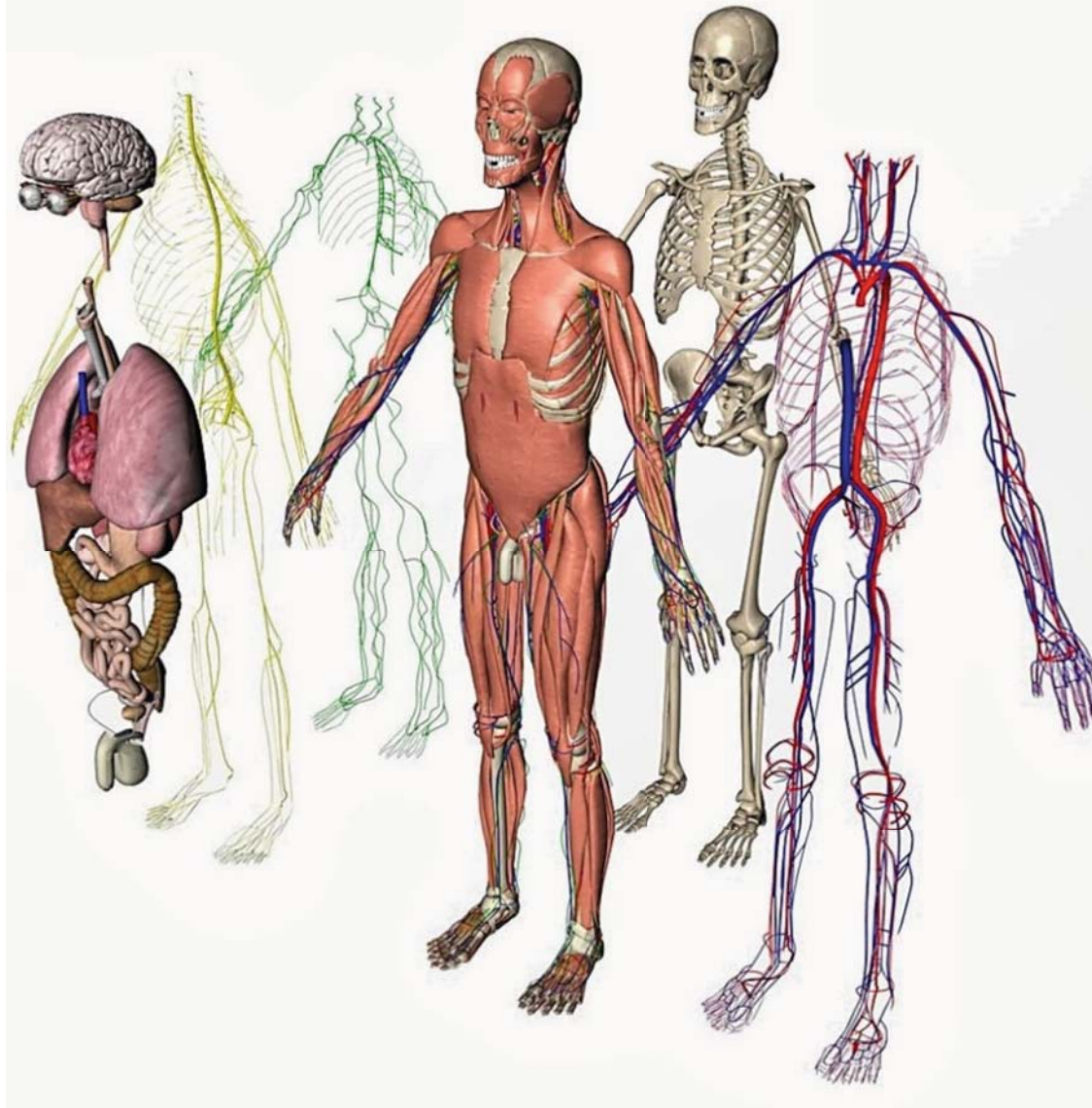
Physical activity

Social contact

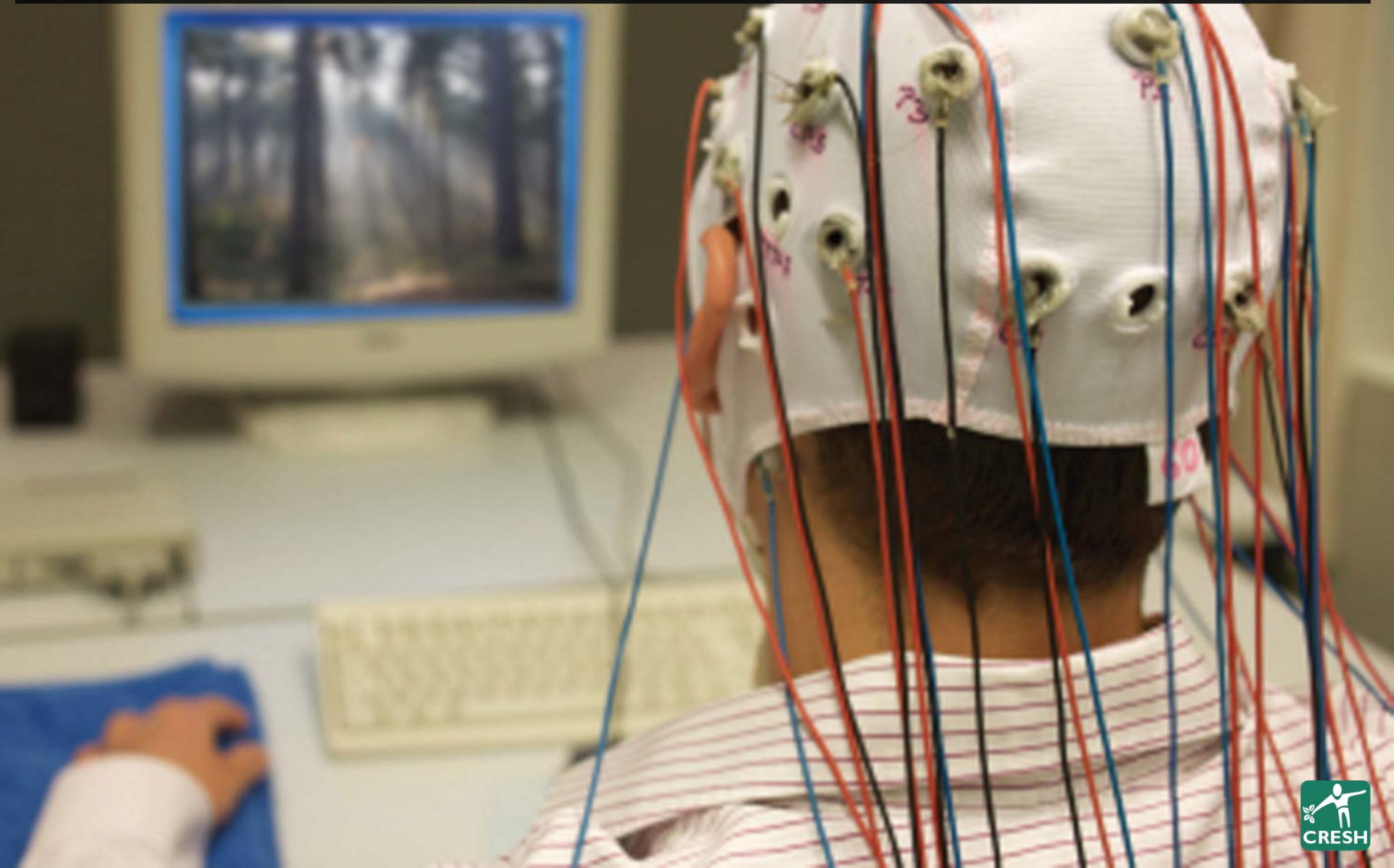
Restoration



Restoration is a physiological & psychological effect, driven by the brain's perception of nature



The evidence for a restorative effect comes primarily from lab and field experiments.



Experimental evidence: field



Park B, Tsunetsugu Y, Kasetani T, Kagawa T, Miyazaki Y. The physiological effects of Shinrin-yoku (taking in the forest atmosphere or forest bathing): evidence from field experiments in 24 forests across Japan. *Environmental Health and Preventive Medicine* 2010; 15(1):18-26.

Experimental evidence: field

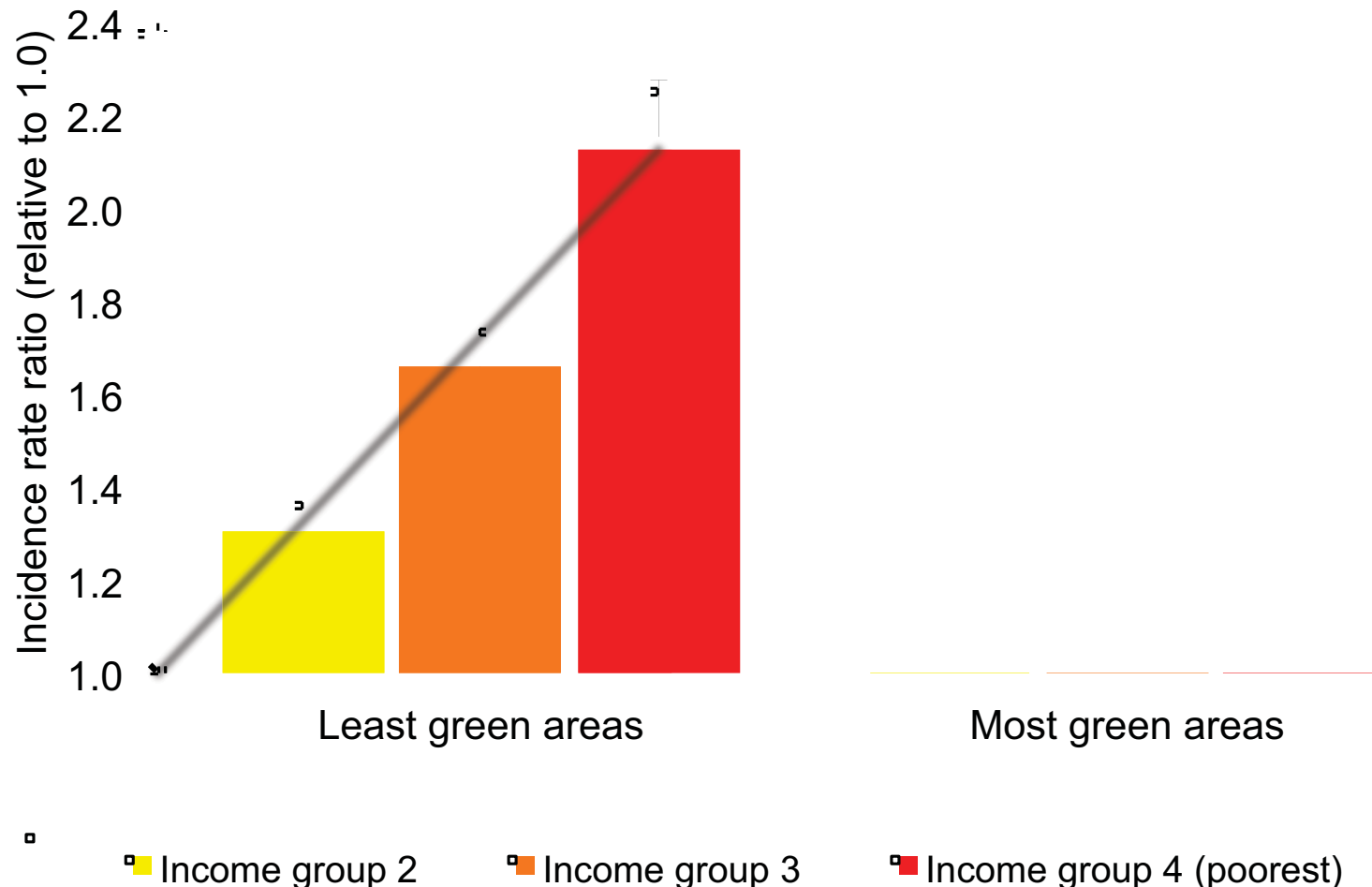


(c) Walking in the City Area

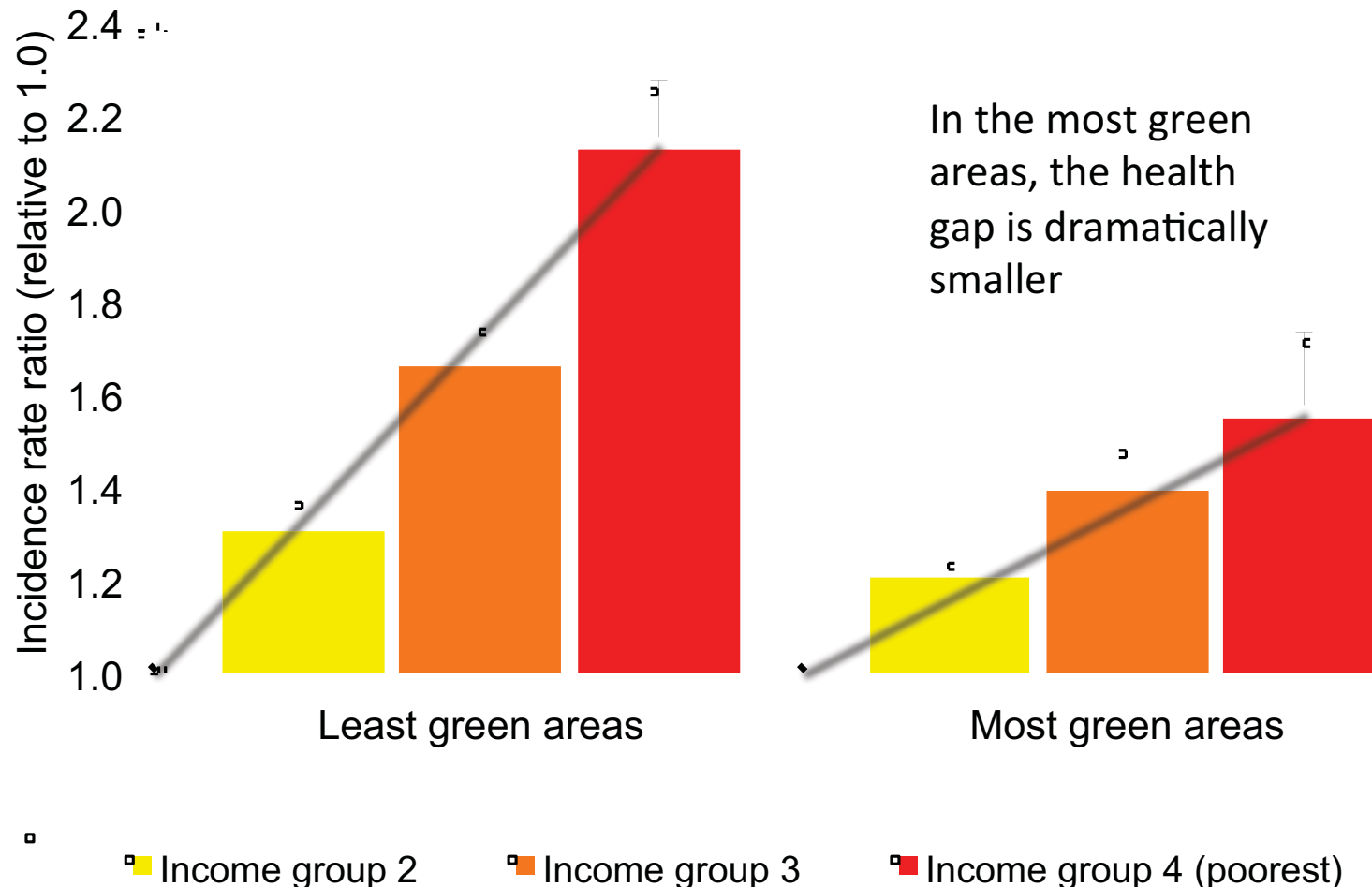


(d) Watching the Landscape in the City Area

Income-related health inequality may be smaller in greener neighbourhoods.



Income-related health inequality may be smaller in greener neighbourhoods.





We worry about analyses like these.

What kind of people tend to have better access to green space, and what **other features** of neighbourhoods with good / poor access to green spaces might influence results?

New analyses based on $n=21,294$ people living in urban areas of 34 countries across Europe.



Mitchell et al. Neighborhood Environments and Socioeconomic Inequalities in Mental Well-Being *American journal of preventive medicine* (2015).

We know about the following

An individual's age, sex, education, employment status and any impediment to their daily living

Problems in the neighbourhood with noise, air quality, crime/vandalism, litter, traffic congestion

Ease of access to postal services, banking services, public transport, cinema/theatre/culture, green/recreational areas

Various measures of financial situation, including reported financial strain.

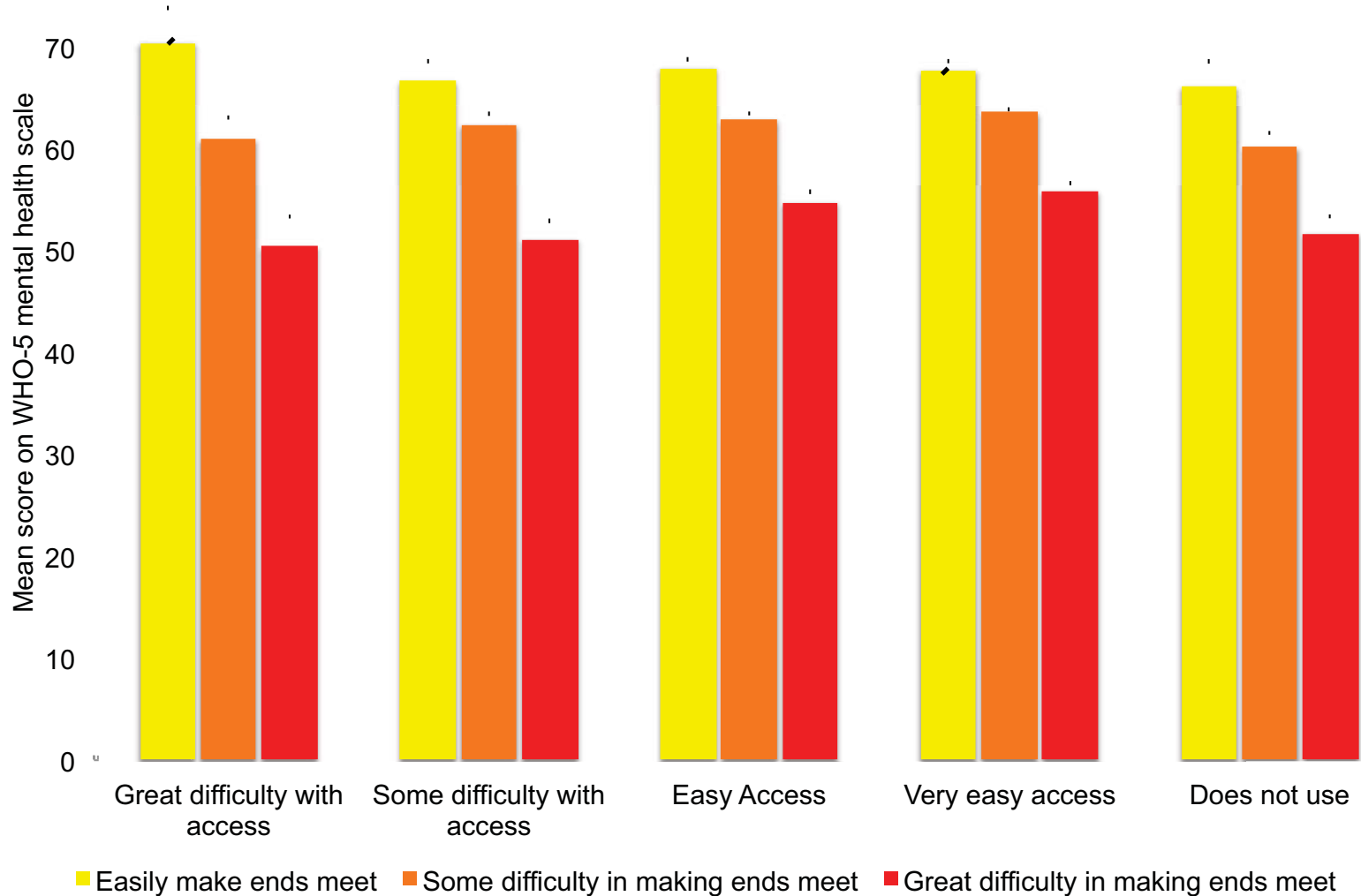


Is your household able to make ends meet? Easily? With some difficulty? With great difficulty?

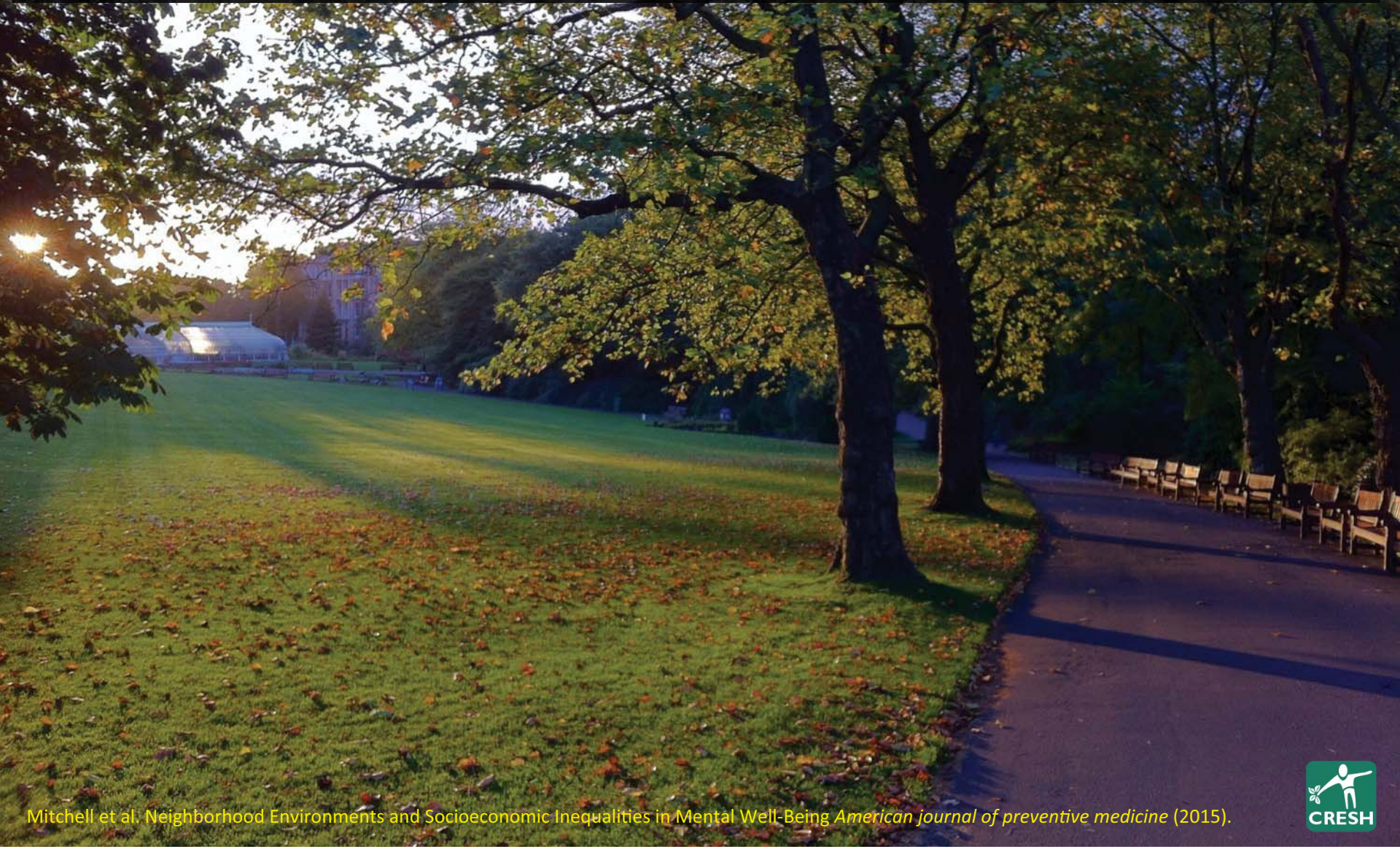


	<i>Over the last two weeks</i>	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
1	I have felt cheerful and in good spirits	<input type="text"/> 5	<input type="text"/> 4	<input type="text"/> 3	<input type="text"/> 2	<input type="text"/> 1	<input type="text"/> 0
2	I have felt calm and relaxed	<input type="text"/> 5	<input type="text"/> 4	<input type="text"/> 3	<input type="text"/> 2	<input type="text"/> 1	<input type="text"/> 0
3	I have felt active and vigorous	<input type="text"/> 5	<input type="text"/> 4	<input type="text"/> 3	<input type="text"/> 2	<input type="text"/> 1	<input type="text"/> 0
4	I woke up feeling fresh and rested	<input type="text"/> 5	<input type="text"/> 4	<input type="text"/> 3	<input type="text"/> 2	<input type="text"/> 1	<input type="text"/> 0
5	My daily life has been filled with things that interest me	<input type="text"/> 5	<input type="text"/> 4	<input type="text"/> 3	<input type="text"/> 2	<input type="text"/> 1	<input type="text"/> 0

Income-related mental health inequality was smaller among those with better access to green / recreational areas

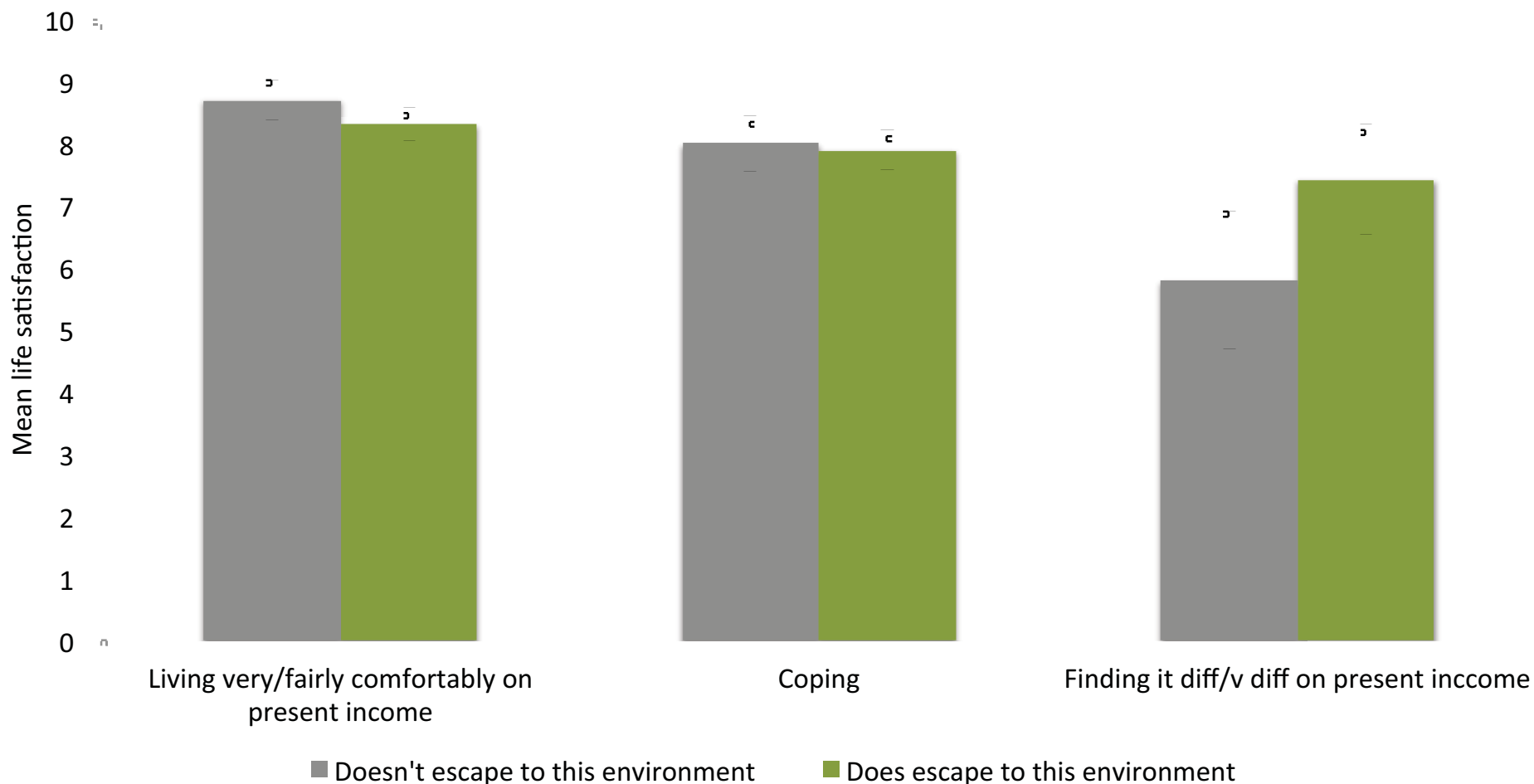


Access to green space / recreational areas was the ONLY feature of the neighbourhood which significantly 'affected' inequalities in mental health.



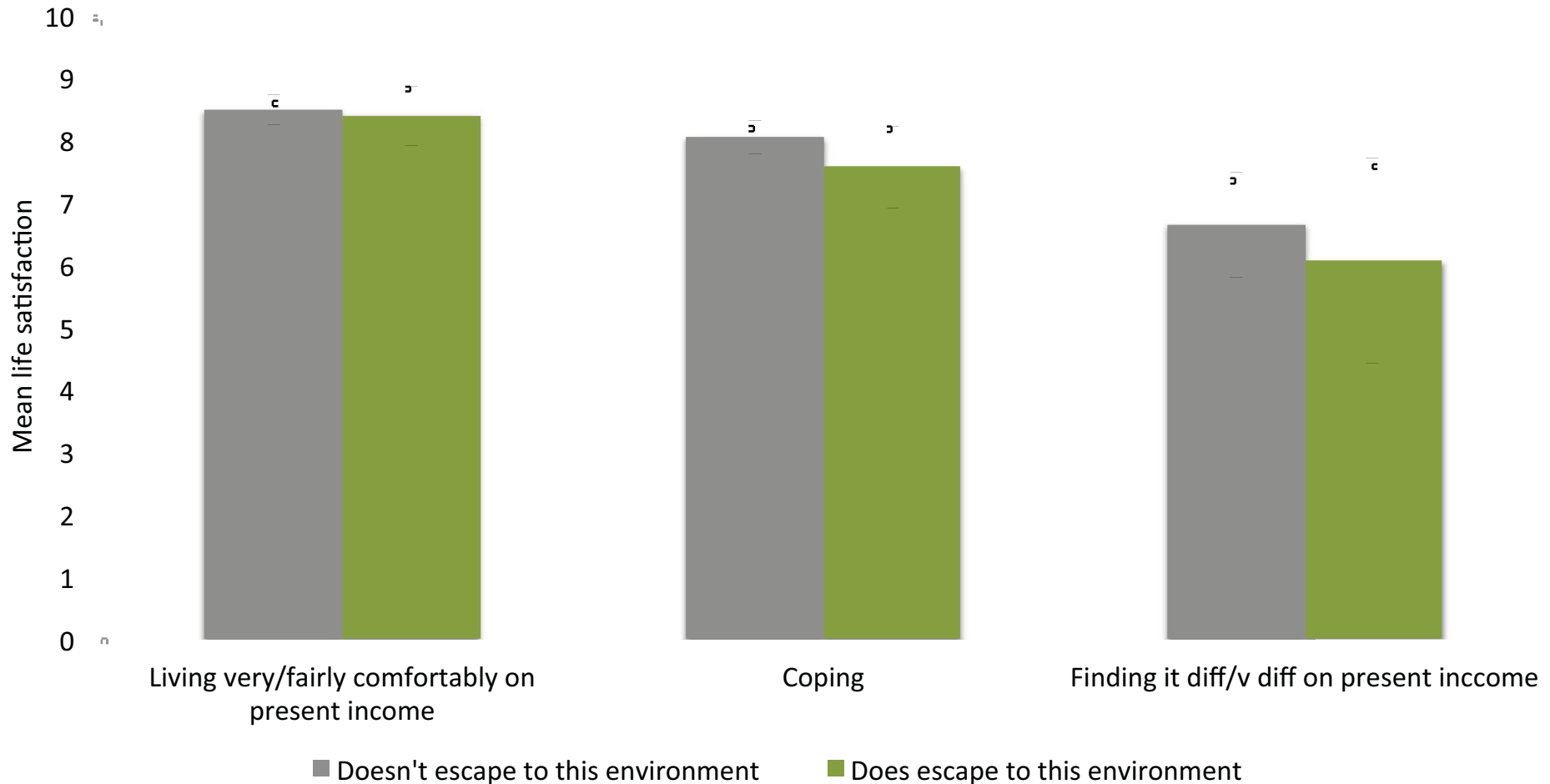
Does 'escape' to nature hold more benefit for those under more stress / more deprived? (NB equalised access)

a) Woods, beach or countryside



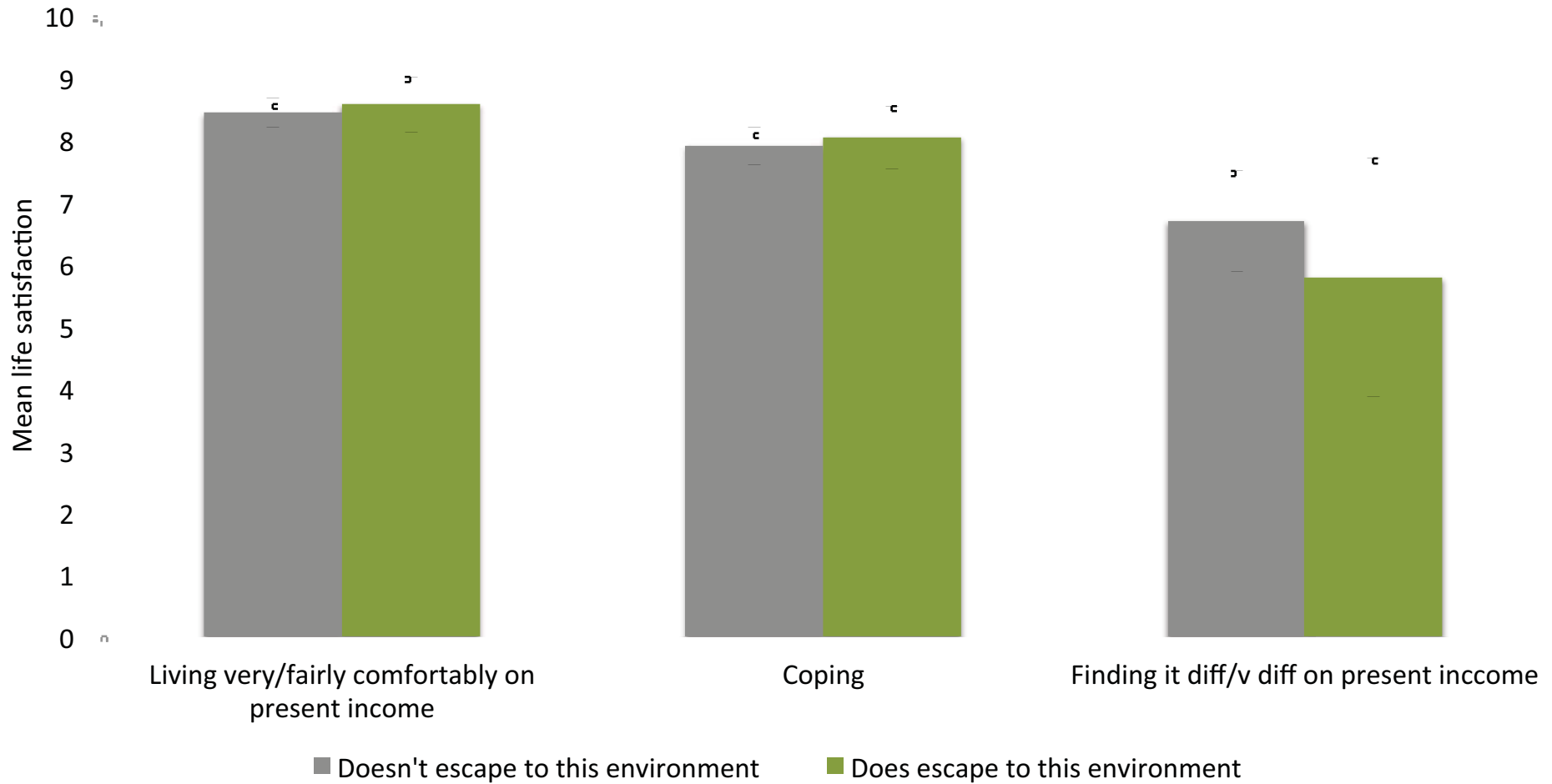
Do other environments have this equalising 'effect'? No.

c) A gym, swimming pool or sports club



Not even the pub

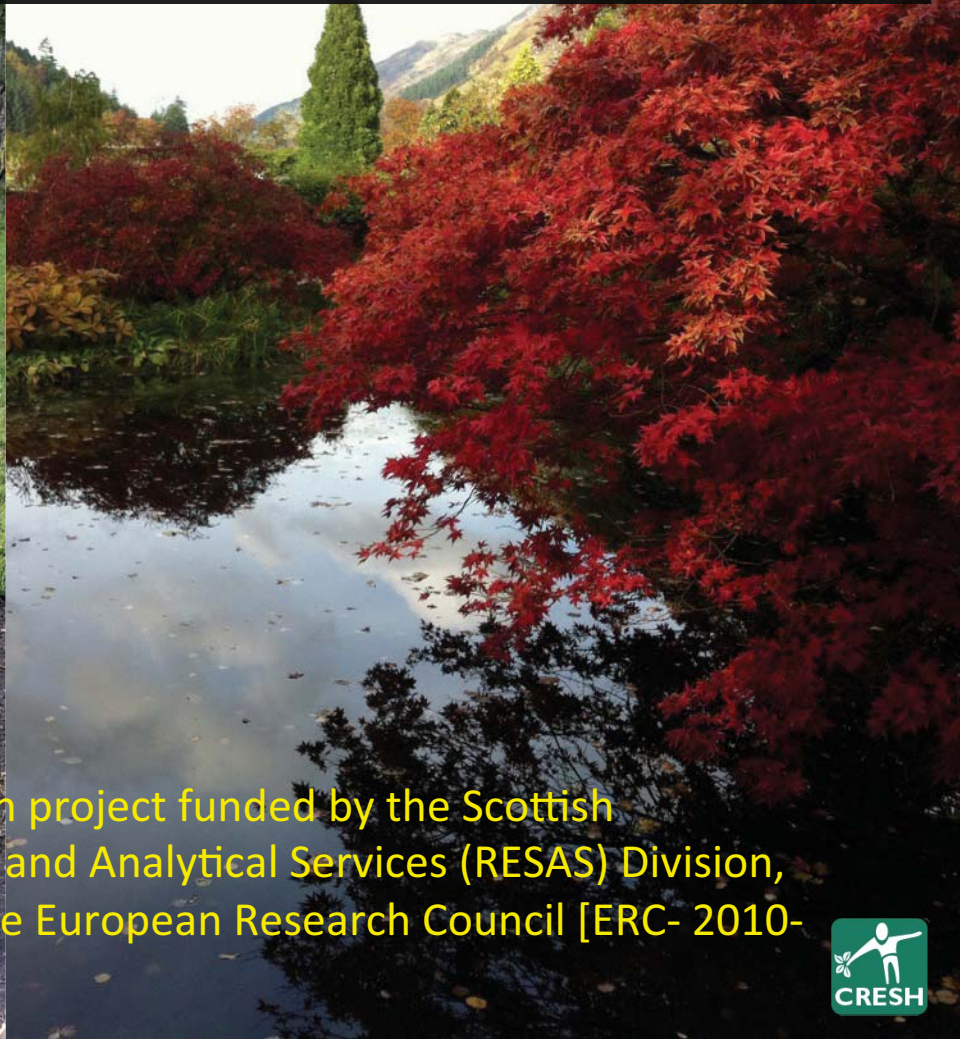
d) The pub



How do we use this information? Evidence that childhood experience is important in determining who uses these environments in adulthood.



We (and others) are finding that health inequalities are narrower among those with good access to green spaces. It seems to be because they benefit poorer people more. We must develop and use this knowledge.



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