European Centre for Environment & Human Health

European Regional Development Fund
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convergence for economic transformation

NHS National Institute for Health Research

The Coast and Health: Building an Evidence Base

Some research findings from the ‘Blue Gym’ project at the European Centre for Environment and Human Health

Ian Alcock

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University of Exeter Medical School

1) Blue history

2) Blue preferences

3) Blue neighbourhoods

4) Blue visits

5) Blue exercise

1) Blue history

2) Blue preferences

3) Blue neighbourhoods

4) Blue visits

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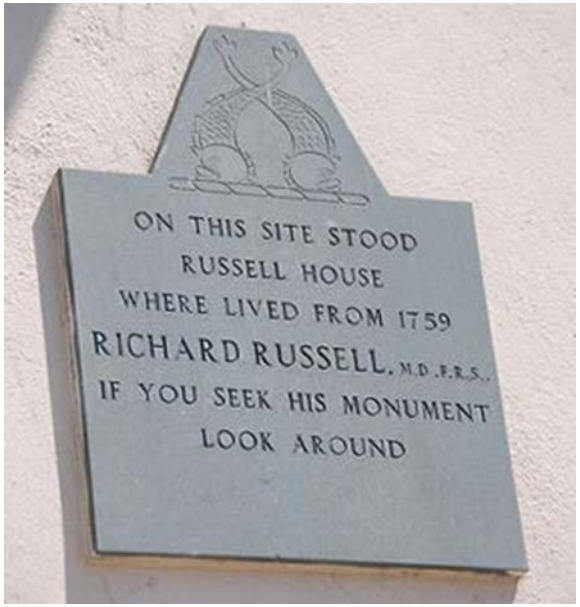
Early approaches 4

Dr Richard Russell
(1687– 1759)

Royal Sea Bathing Hospital -
Margate (Est.1791)

Early approaches 5



260 Million trips to the English coast a year

A proposed programme of research 6

THE LANCET] [JULY 14, 1934 115

NOTES, COMMENTS, AND ABSTRACTS

CONVALESCENCE ON THE COAST *

ACCELERATING AND RETARDING CLIMATES

By R. Fortescue Fox, M.D., F.R.C.P.

more than 7¾ millions of visitors in 1933, and the number of sea baths taken at 30 bathing resorts is stated at nearly 6 millions. To provide this popular bathing for pleasure, recreation, and sport the number of swimming pools and sunbathing terraces is constantly increasing. So world-wide a social develop-ment has come to stay.

1934

ANYONE
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SPECIAL ARTICLES

CONVALESCENCE ON THE COAST *

By R. Fortescue Fox, M.D., F.R.C.P.

AND

Wyndham E. B. Lloyd, M.R.C.S., D.P.H.

for a long time, and even to the present day to a large extent, the prerogative of the rich. The delicate children and invalids of the great cities, and still more the crowded and debilitated factory workers, seldom saw the sea or the country.

The great movement for the establishment of

1938

THE value of medical treatment
first seriously brought to the notice
by Dr. Richard Russell of London
as a result of his advocacy and tha
and Fothergill, the practice of
established in England before the e
at many seaside resorts. The I
Infirmary at Margate, founded in
world pioneer for marine hospitals,
by the Royal Northern Sea Bath
Scarborough in 1812. In the er
invigorating effects of sea-air and

Journal of Coastal Research	25	4	838–856	West Palm Beach, Florida	July 2009

The Healing Sea: A Sustainable Coastal Ocean Resource: Thalassotherapy

Roger H. Charlier[†] and Marie-Claire P. Chaineux[‡]

[†]Free University of Brussels (VUB)
Brussels, Belgium

[‡]Institute for Development, Research,
and Enquiry in Coastal Zone Studies
(IDRECS)
Chicago, IL, U.S.A.–Brussels, Belgium

ABSTRACT

CHARLIER, R.H. and CHAINEUX, M.-C.P., 2009. The healing sea: a sustainable coastal ocean resource: Thalassotherapy. *Journal of Coastal Research*, 25(4), 838–856. West Palm Beach (Florida), ISSN 0749-0208.

Thalassotherapy is perhaps less an alternative medicine than a treatment for specific ailments. It has witnessed ups and downs. A centuries-old, if not millennia-old, approach, it has gained many adepts in the medical profession and left many a patient delighted with its results. Thalassotherapy has many aspects in common with thermalism that, similarly, gained its *lettres de noblesse* over the centuries. This paper examines the roles that thalassotherapy has played and currently plays and surveys the European centers that have gained a solid reputation for thalassotherapy. It concomitantly considers its parallel therapy—thermalism—and takes a look at other related alternative or complementary treatments. The economic impact of thalassotherapy and its related activities has increased.

ADDITIONAL INDEX WORDS: *Acupuncture, algae, economics, muds, thermalism.*

The Coast and Health: Building an Evidence Base

Michael Depledge

Mathew White

Ben Wheeler

+ Ian Alcock, Kat Ashbullby, Deborah Cracknell, Karin Tanja-Dijkstra, Lewis Elliot, Bonny Hartley, Lora Fleming, Ian Frampton, Steve Graham, Amanda Hignett, Rebecca Jenkin, Sabine Pahl, Will Stahl-Timmins, Shanker Venkatasubramanian, Abigail Weeks, Kayleigh Wyles.

1) Blue history

2) Blue preferences

3) Blue neighbourhoods

4) Blue visits

5) Blue exercise

European Centre for Environment & Human Health

Lab experiments: Preference and Willingness to pay 9

Built

Green

Blue

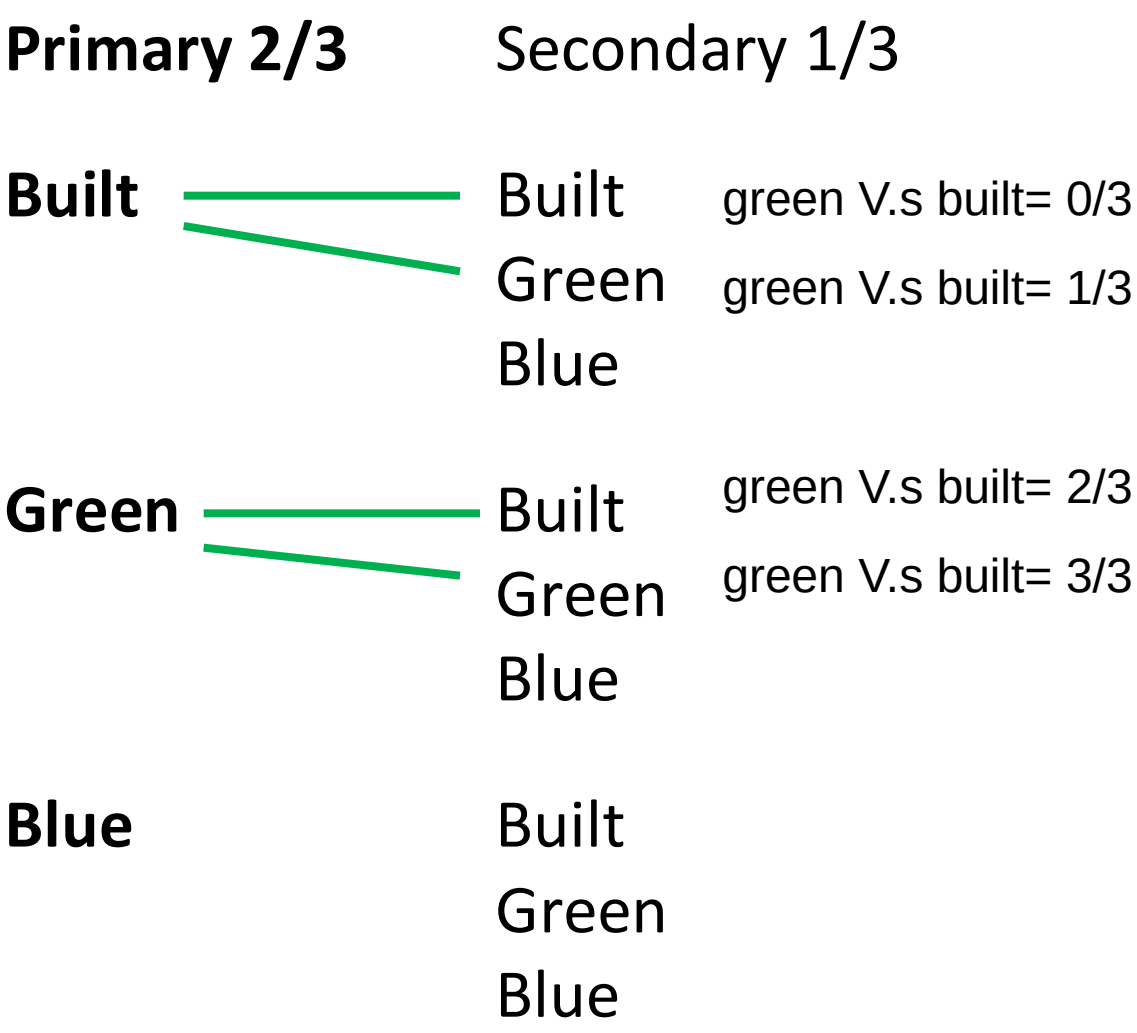
120 images controlling for:

a) Proportion of environment
b) Content (people/animals etc.)

Primary 2/3	Secondary 1/3
Built	Built
	Green
	Blue
Green	Built
	Green
	Blue
Blue	Built
	Green
	Blue

White, M.P., Smith, A., Humphryes, K., Pahl, S., Snelling, D. & Depledge, M. (2010) *Journal of Environmental Psychology*, *30*, 482-493.

Lab experiments: Preference and Willingness to pay 10



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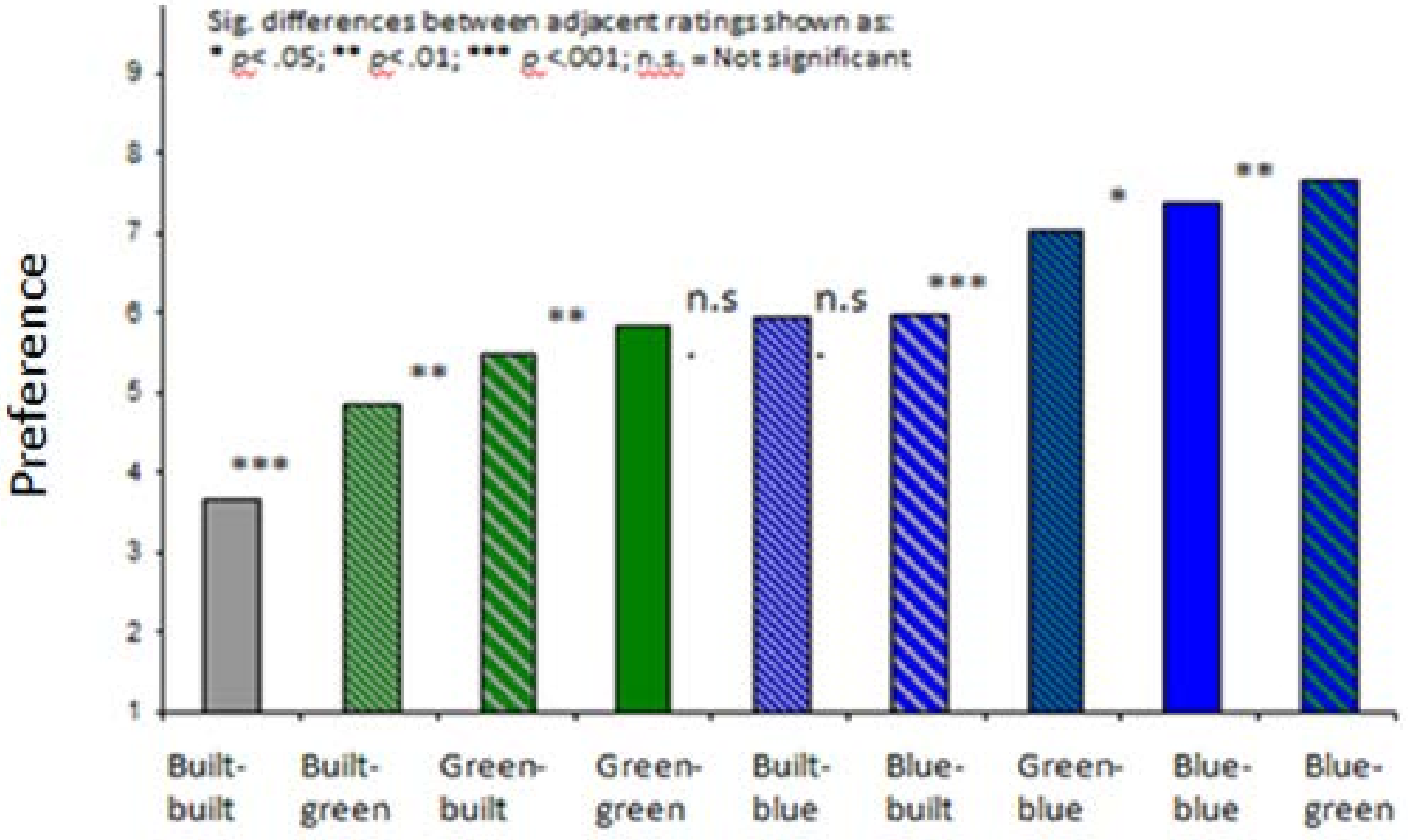
Lab experiments: Preference and Willingness to pay 11

Primary 2/3	Secondary 1/3	
Built	Built	
	Green	
	Blue	
Green	Built	
	Green	blue V.s green= 0/3
	Blue	blue V.s green= 1/3
Blue	Built	
	Green	blue V.s green= 2/3
	Blue	blue V.s green= 3/3

White, M.P., Smith, A., Humphryes, K., Pahl, S., Snelling, D. & Depledge, M. (2010) *Journal of Environmental Psychology*, *30*, 482-493.

Lab experiments: Preference and Willingness to pay 12



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Lab experiments: Willingness to pay for hotel view 13

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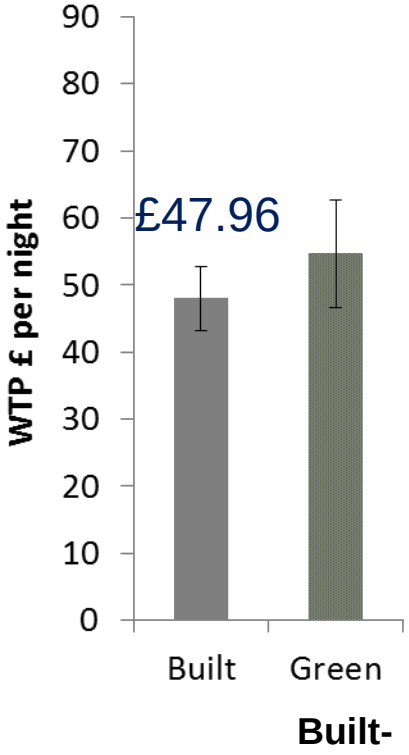

Error bars = SDs

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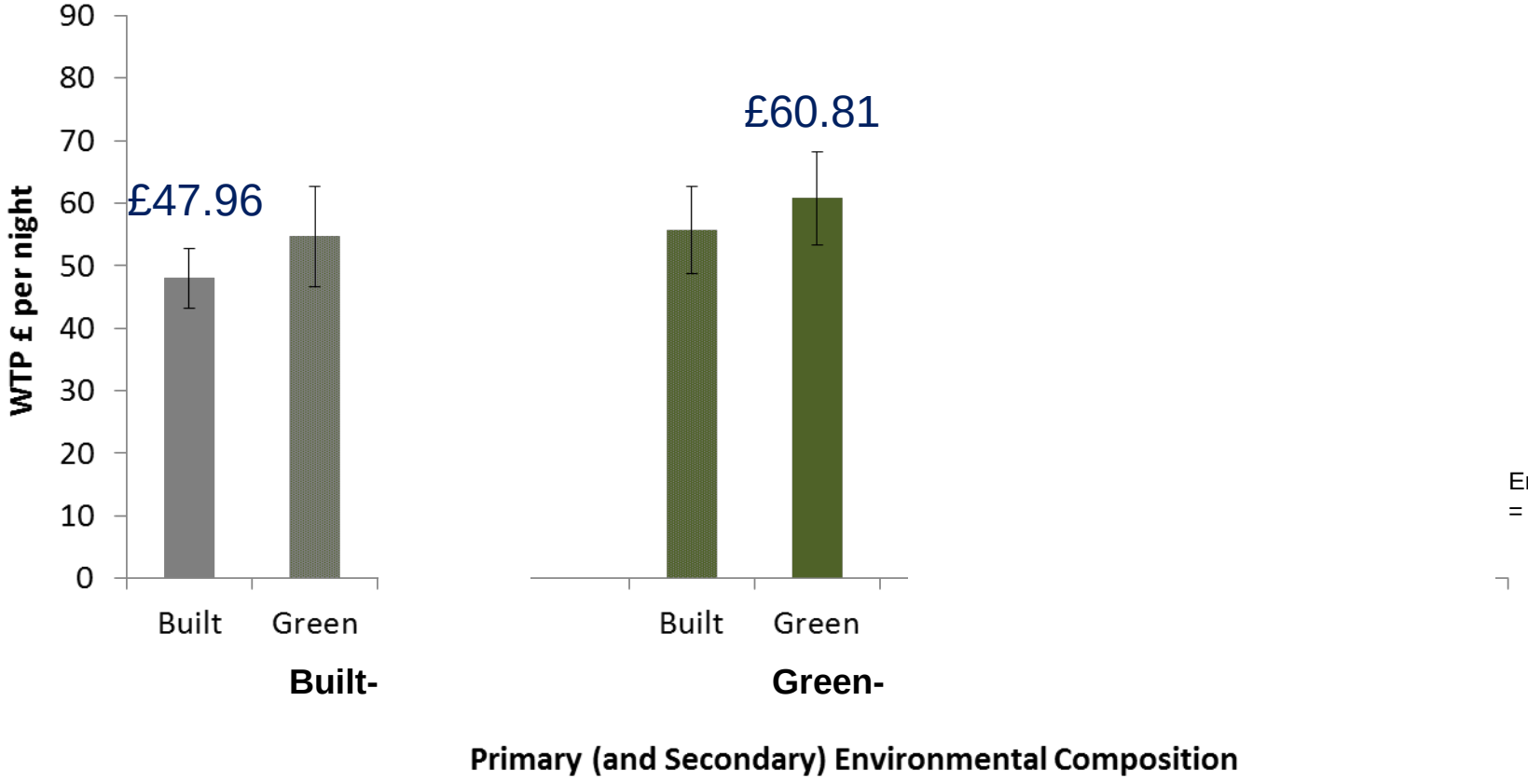

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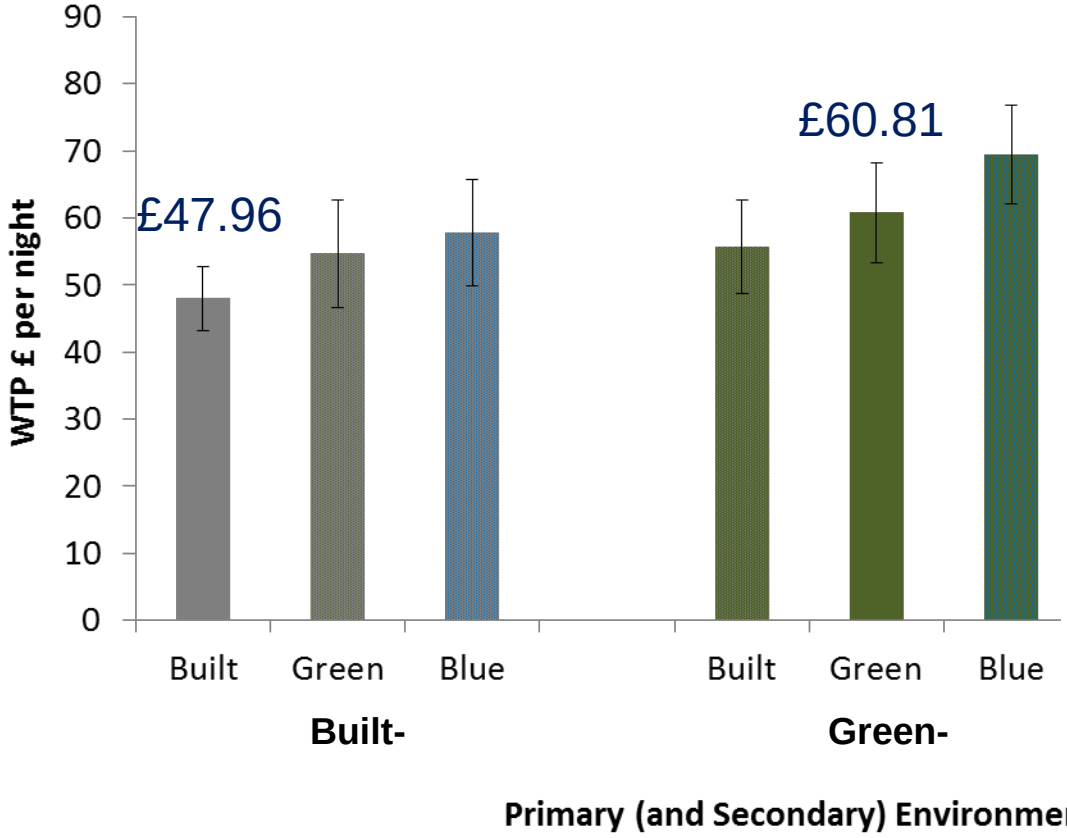

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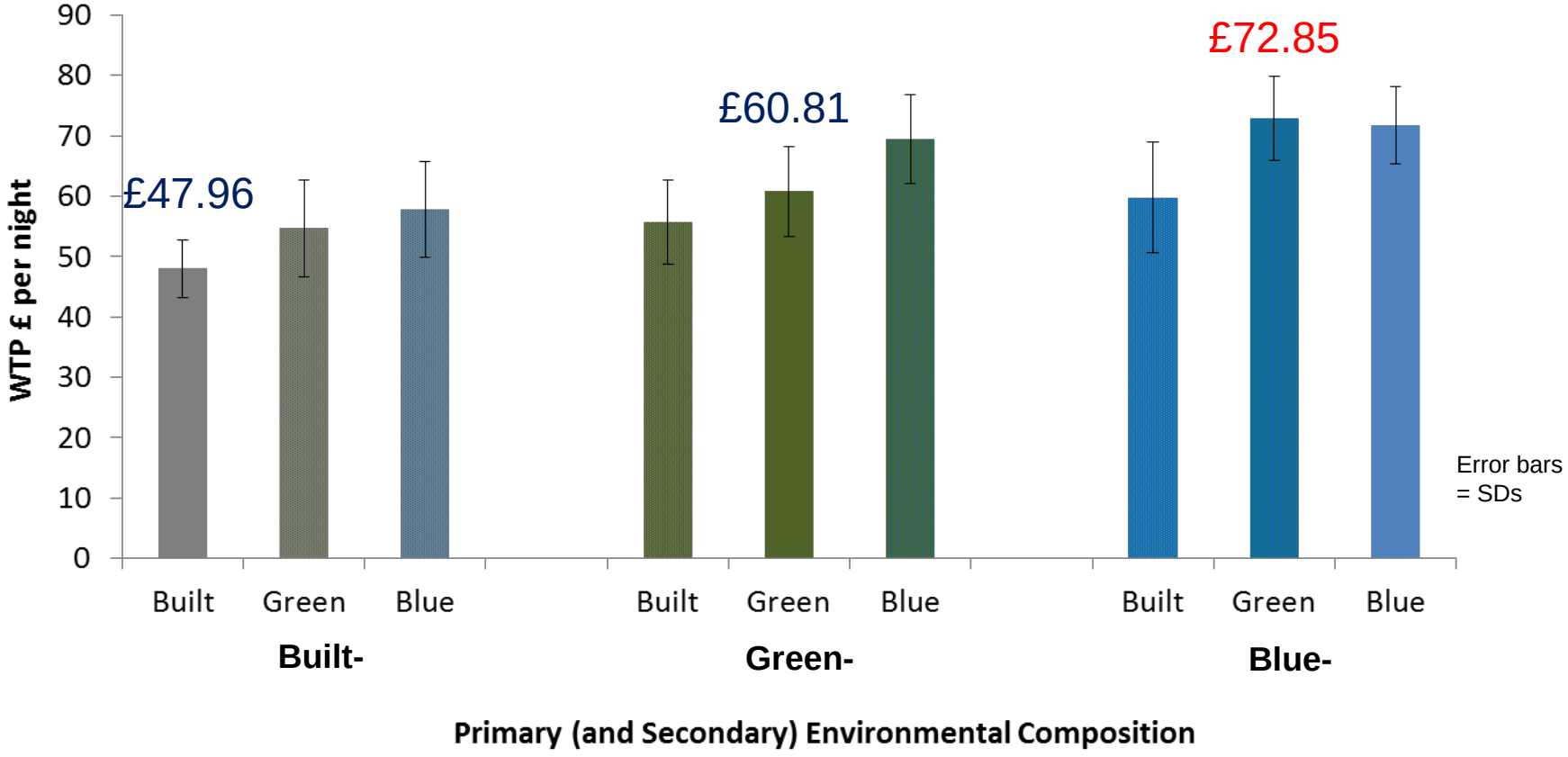

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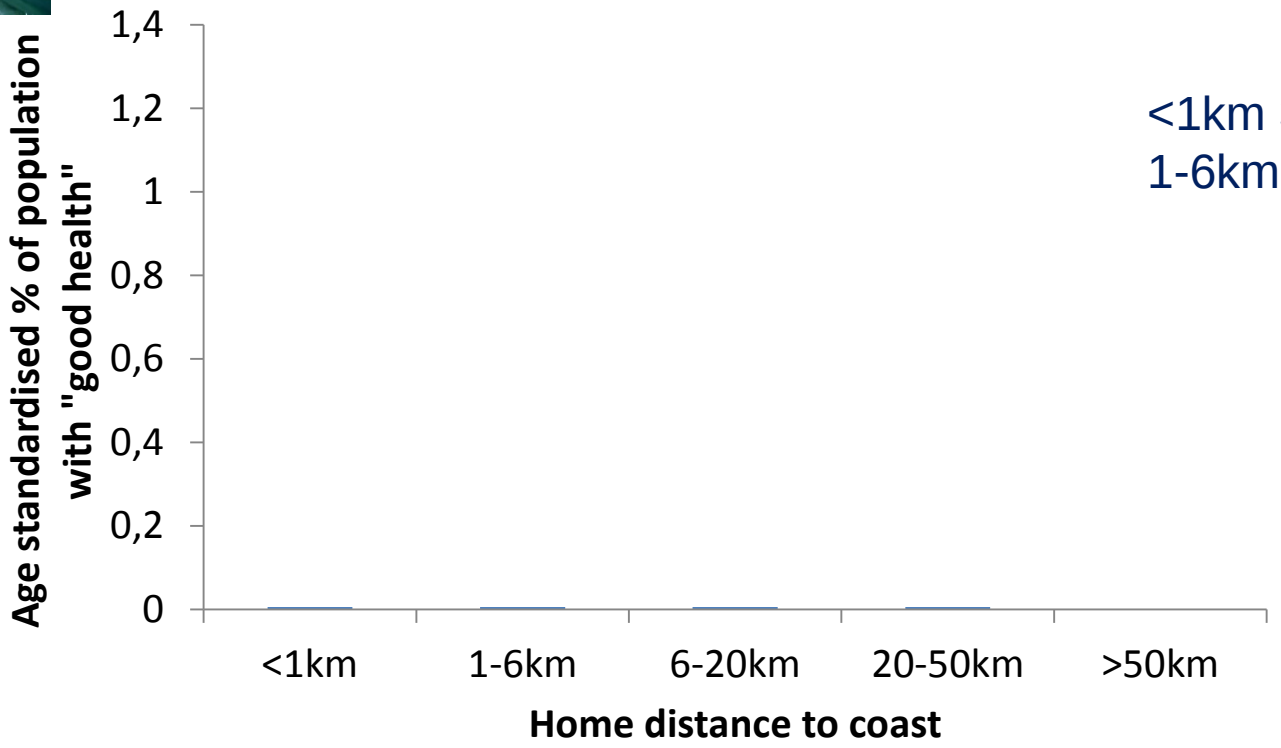
Self-reported health
Census Data (England, n = 48 million)



<1km 3 million
1-6km 8 million

Error bars:
95% CI

Controlling for area Level: Income, Employment, Education, Crime,

Wheeler, White, Stahl-Timmins & Depledge (2012). Does living by the coast improve health and wellbeing? *Health & Place*, *18*, 1198-1201.

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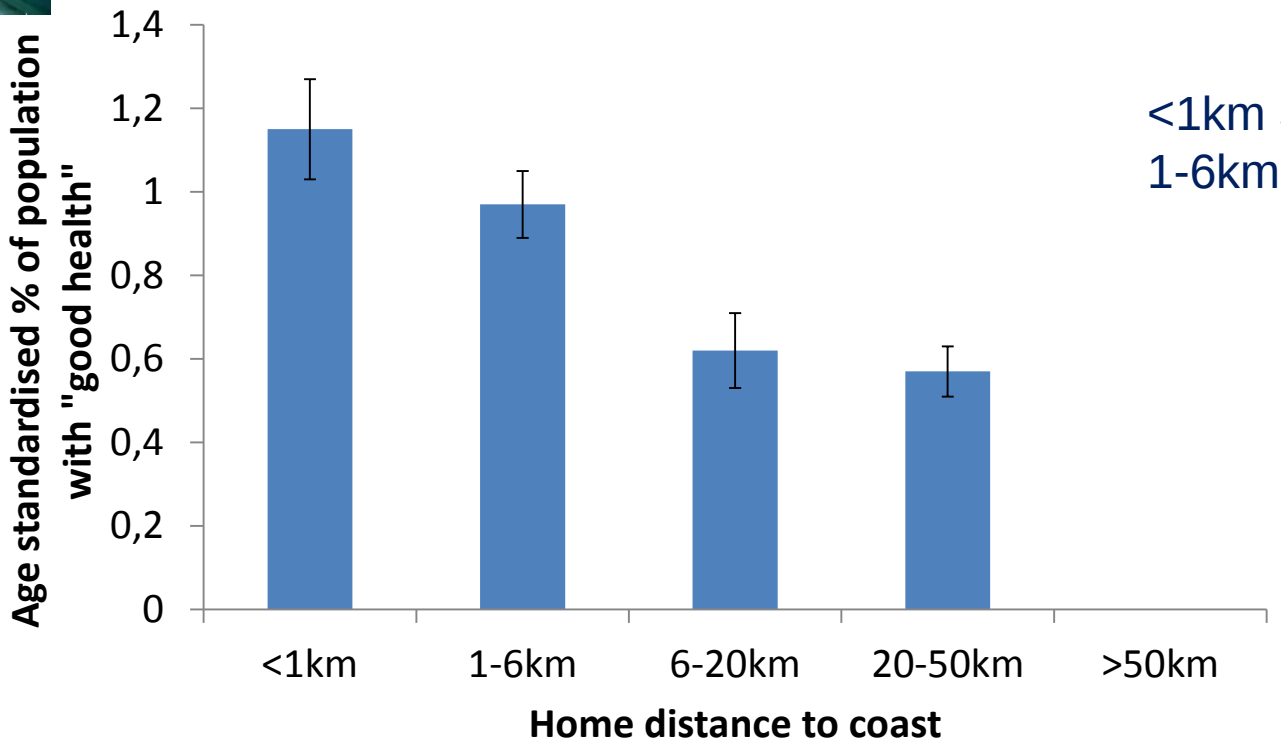

<1km 3 million
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95% CI

- The effects are strongest in poorer communities

Controlling for area Level: Income, Employment, Education, Crime,

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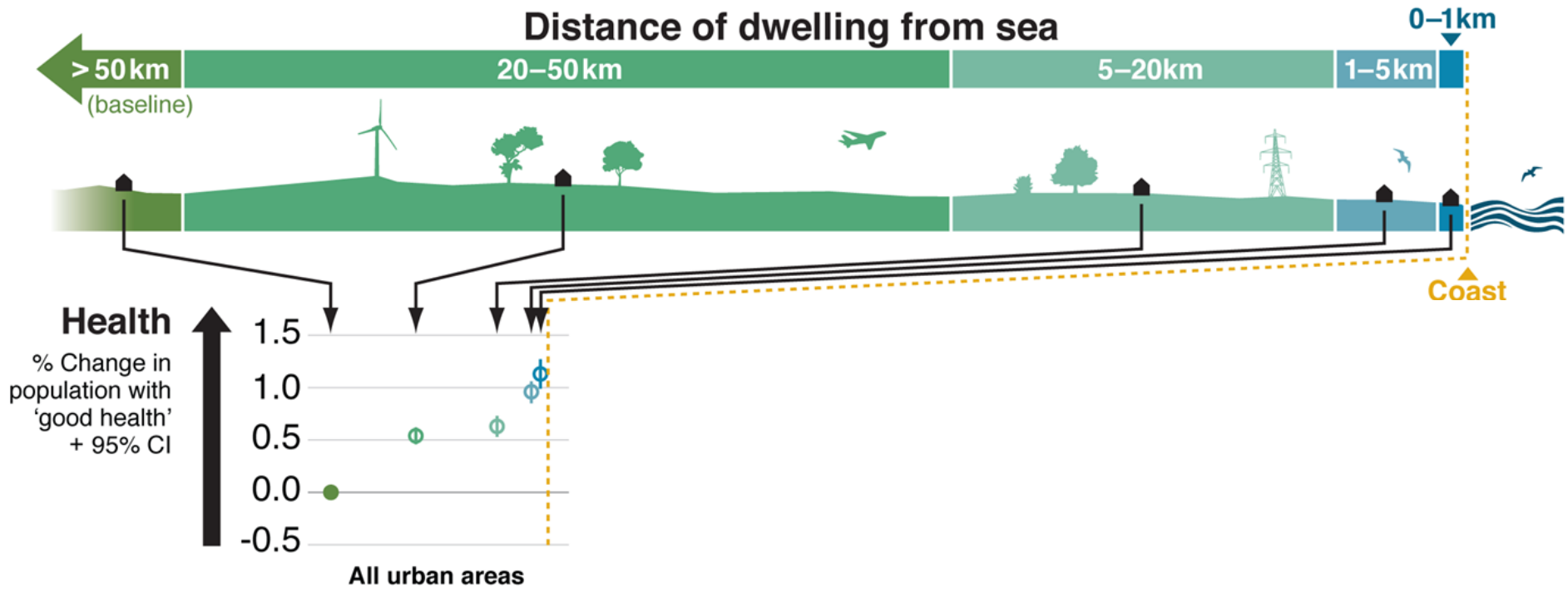
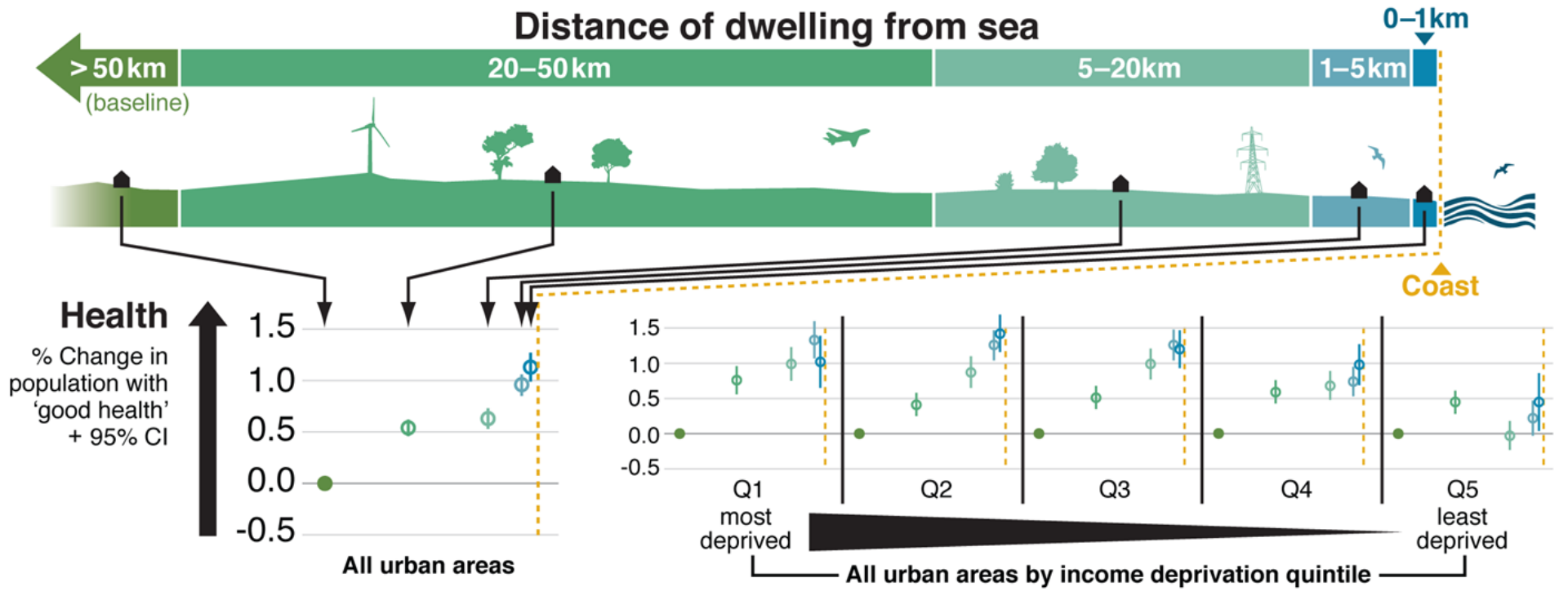

Distance of dwelling from sea
0–1km
> 50 km
(baseline)
20–50 km
5–20km
1–5km
Coast
Health
% Change in population with 'good health' + 95% CI
1.5
1.0
0.5
0.0
-0.5
All urban areas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1.5
1.0
0.5
0.0
-0.5
All urban areas
Q1
most deprived
Q2
Q3
Q4
Q5
least deprived
All urban areas by income deprivation quintile

British Household Panel Survey (1991-2008)

Self-reported
Mental health, GHQ
(n. individuals 15,361;
n observations 114,133)
and Overall health
(n. individuals 15,471;
n observations 109,844)

Compared to living
5-50 km from coast

Moves>2,000

Controlling for area Level: Income, Employment, Education, Crime, & Individual level, age, SES, Income, employment status, marital status, house type and size, commute distance

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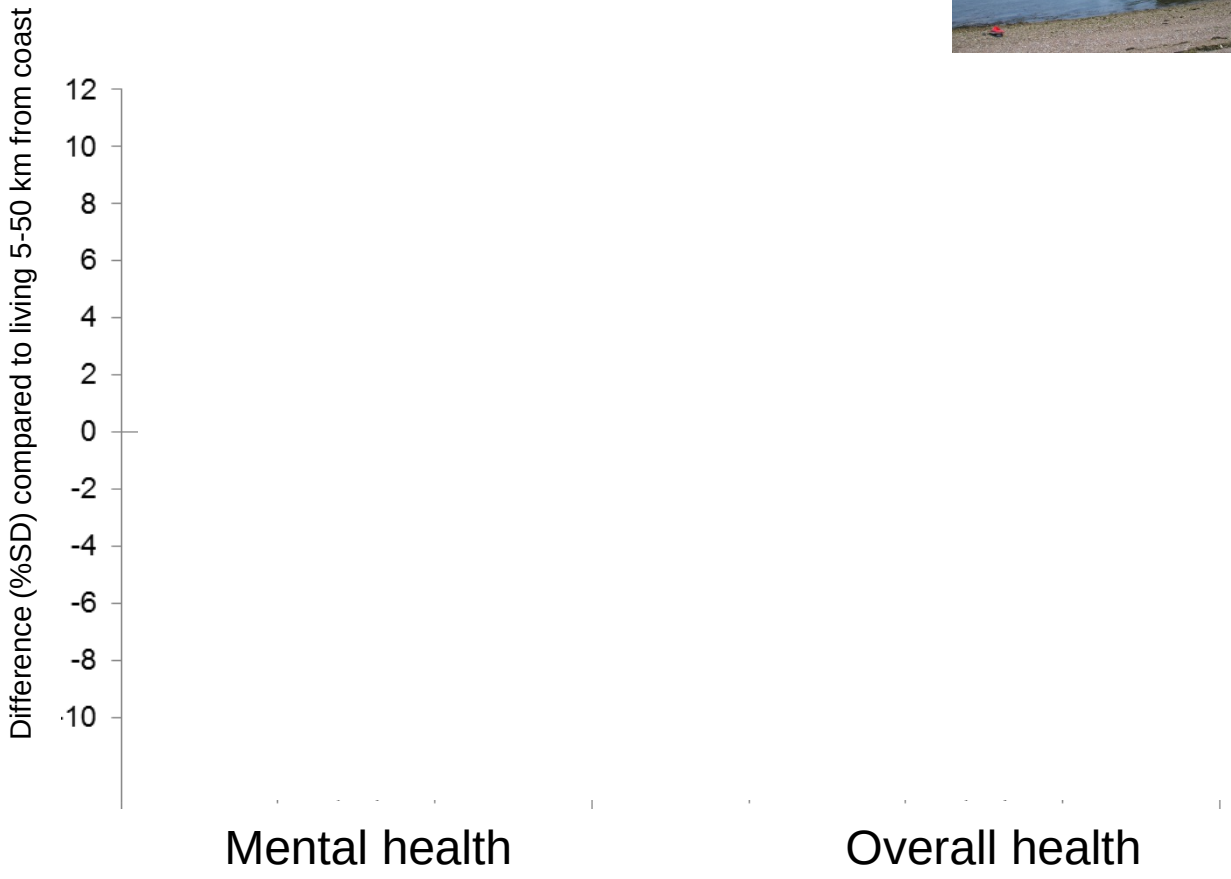

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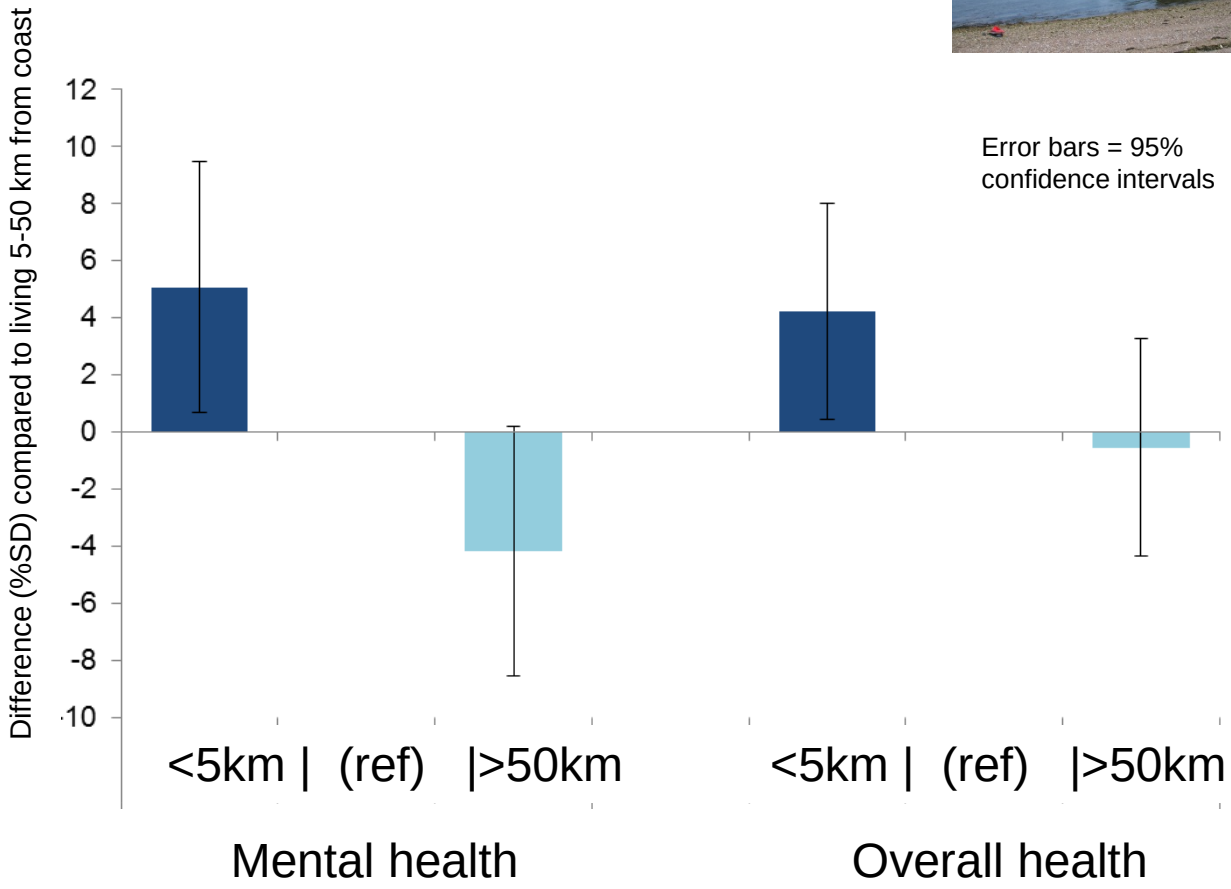

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1) Blue history

2) Blue preferences

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MENE visit locations 26

MENE Subset (n = 4,255) asked about experiences

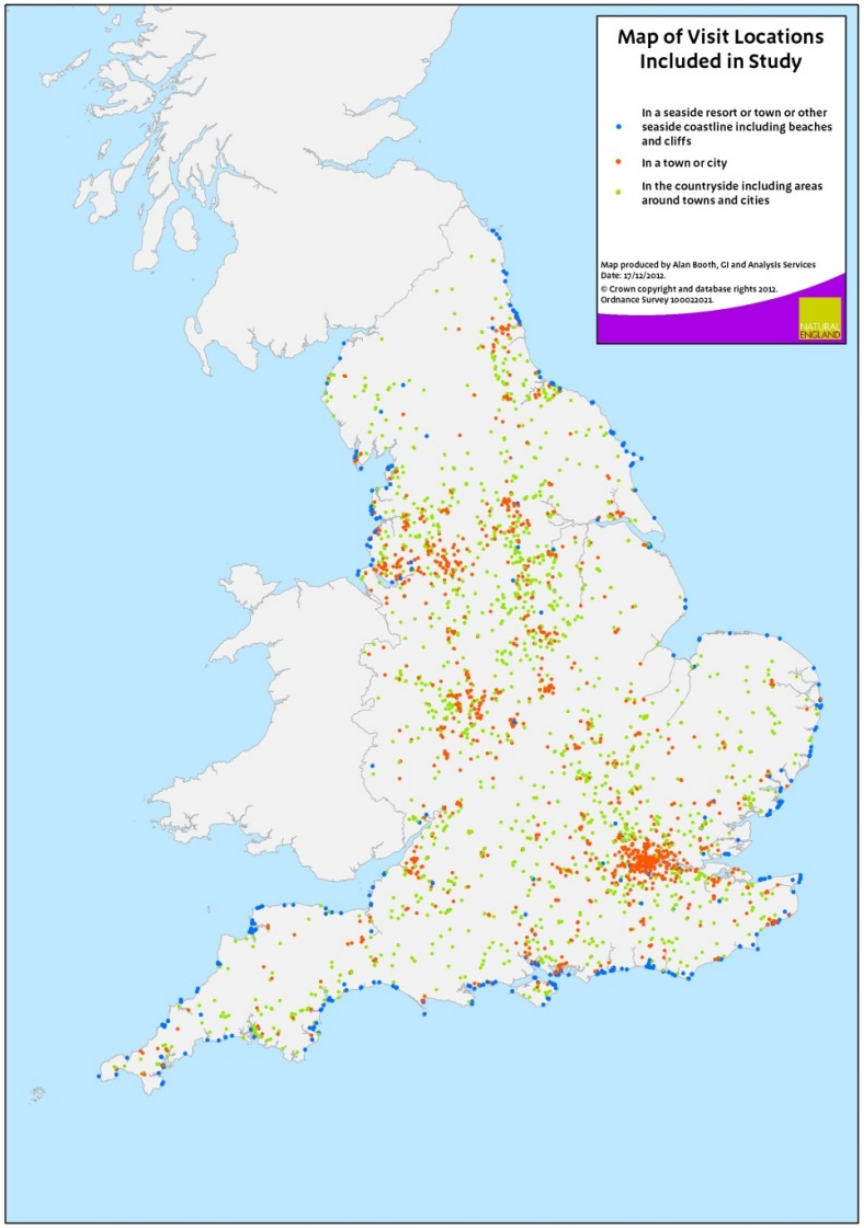
Stress reduction: To what extent did they feel…

1) Relaxed
2) Calm
3) Refreshed
4) Revitalised

…after the visit?

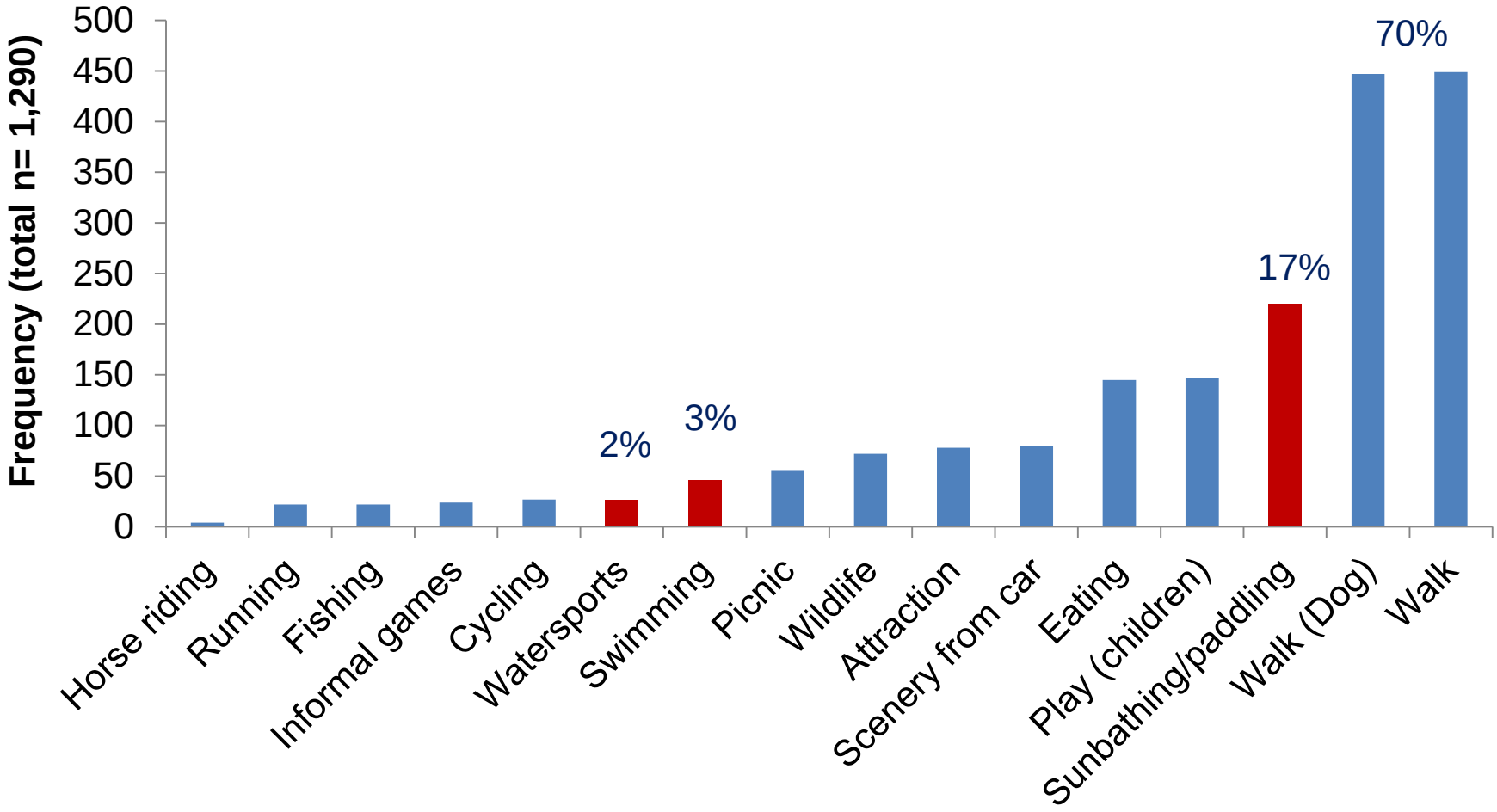
Modelled stress reduction against visit location

Controlled for Who (Age, gender, SES) & What (activities, duration, who with, distance travelled etc.)



NATURAL ENGLAND

MENE Coastal activities n = 1,290



- Mostly go for a walk (few get wet)

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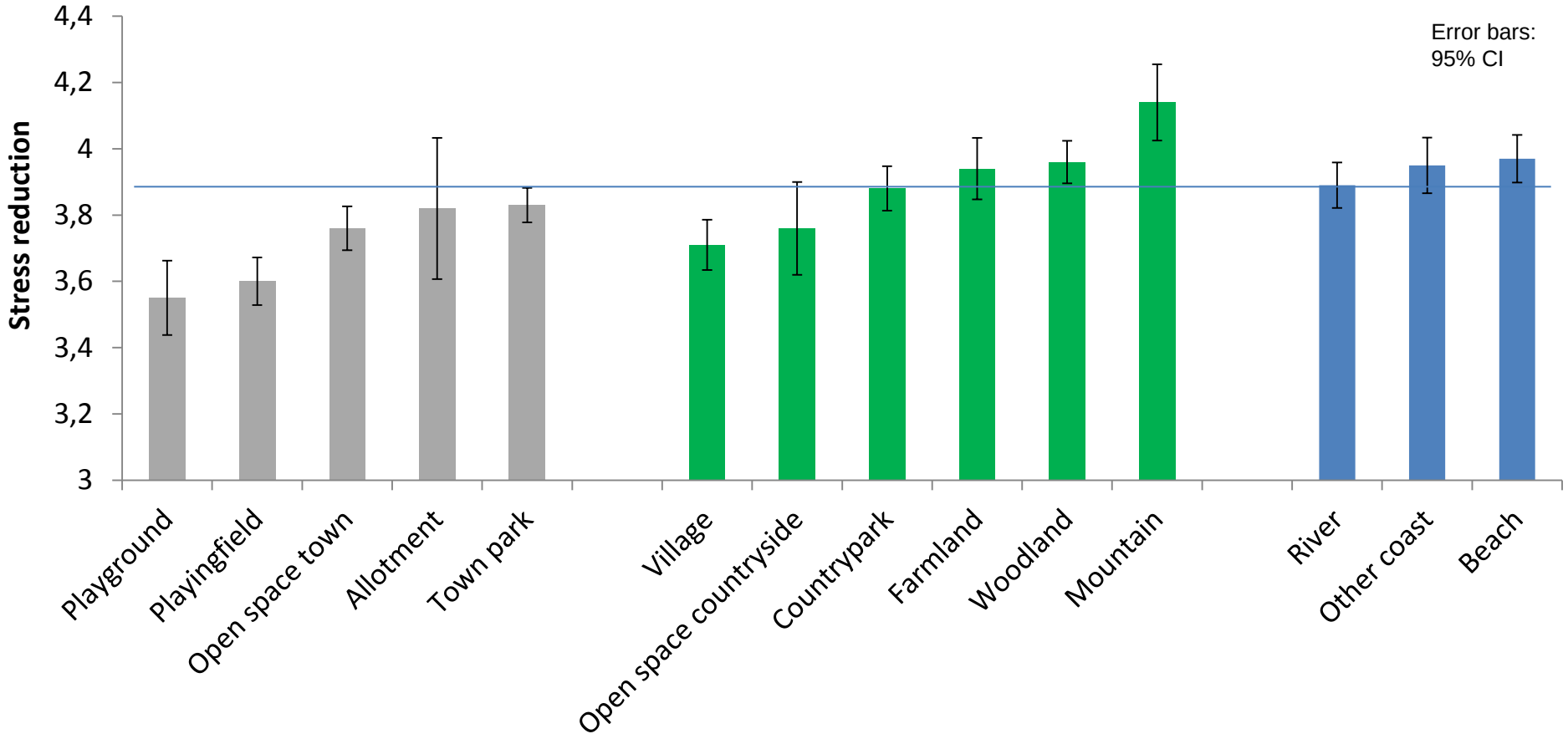
Stress reduction in blue space 28



- Coastal (& woodland/upland) visits are relatively more stress reducing

White, Pahl, Ashbullby, Herbert & Depledge (2013). Journal of Environmental Psychology, *35*, 40-51

1) Blue history

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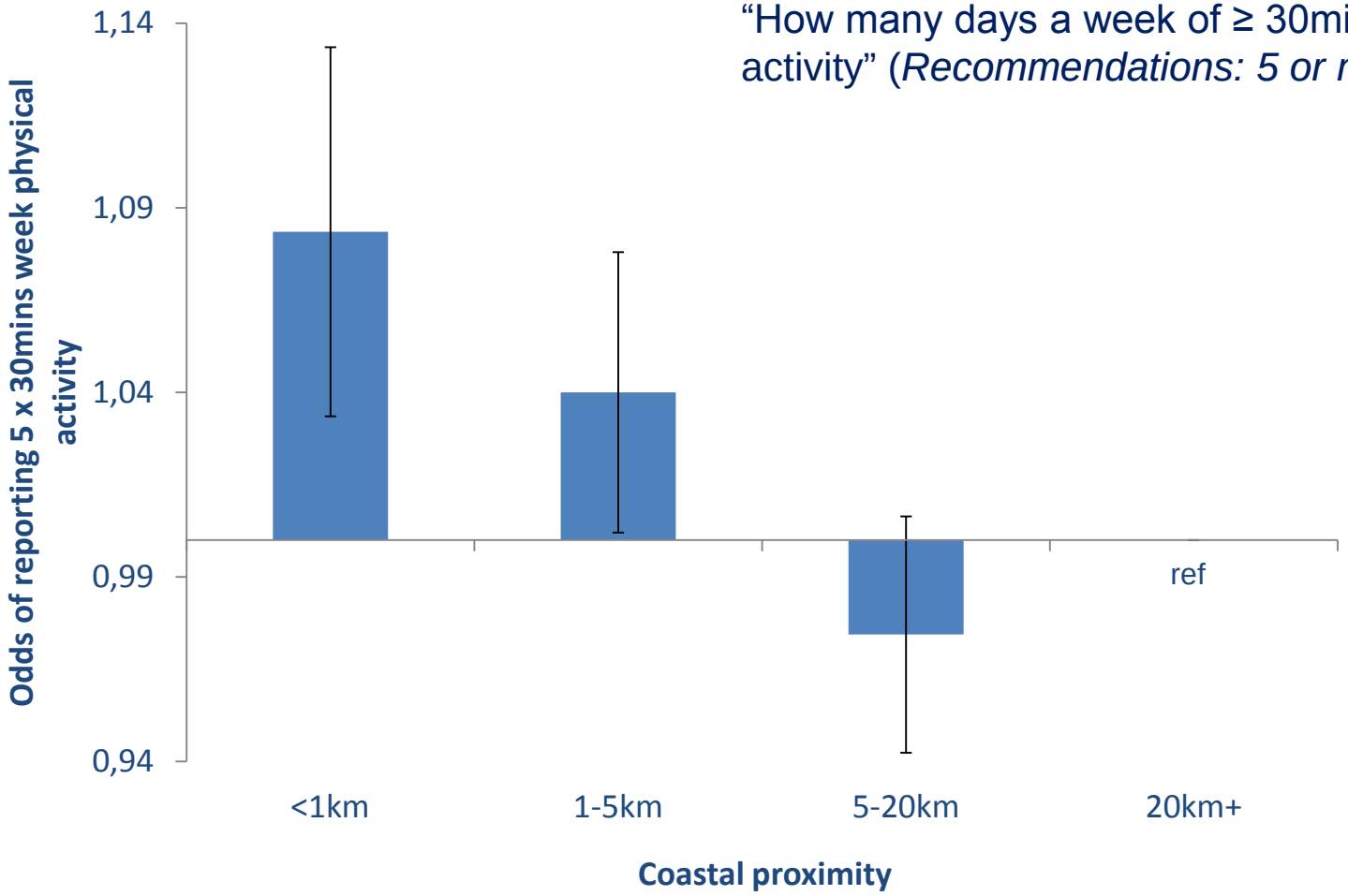
Do people who live near the coast exercise more? 31

NATURAL ENGLAND

"How many days a week of ≥ 30mins physical activity" (*Recommendations: 5 or more*)



N = 183,755, controlling for area green space, & deprivation (IMD) + individual age, gender, SES, marital status, employment status, children, ethnicity, disability, car ownership, dog ownership, year and season.

White, Wheeler, Herbert, Alcock & Depledge (Under review). Coastal proximity and physical activity in England

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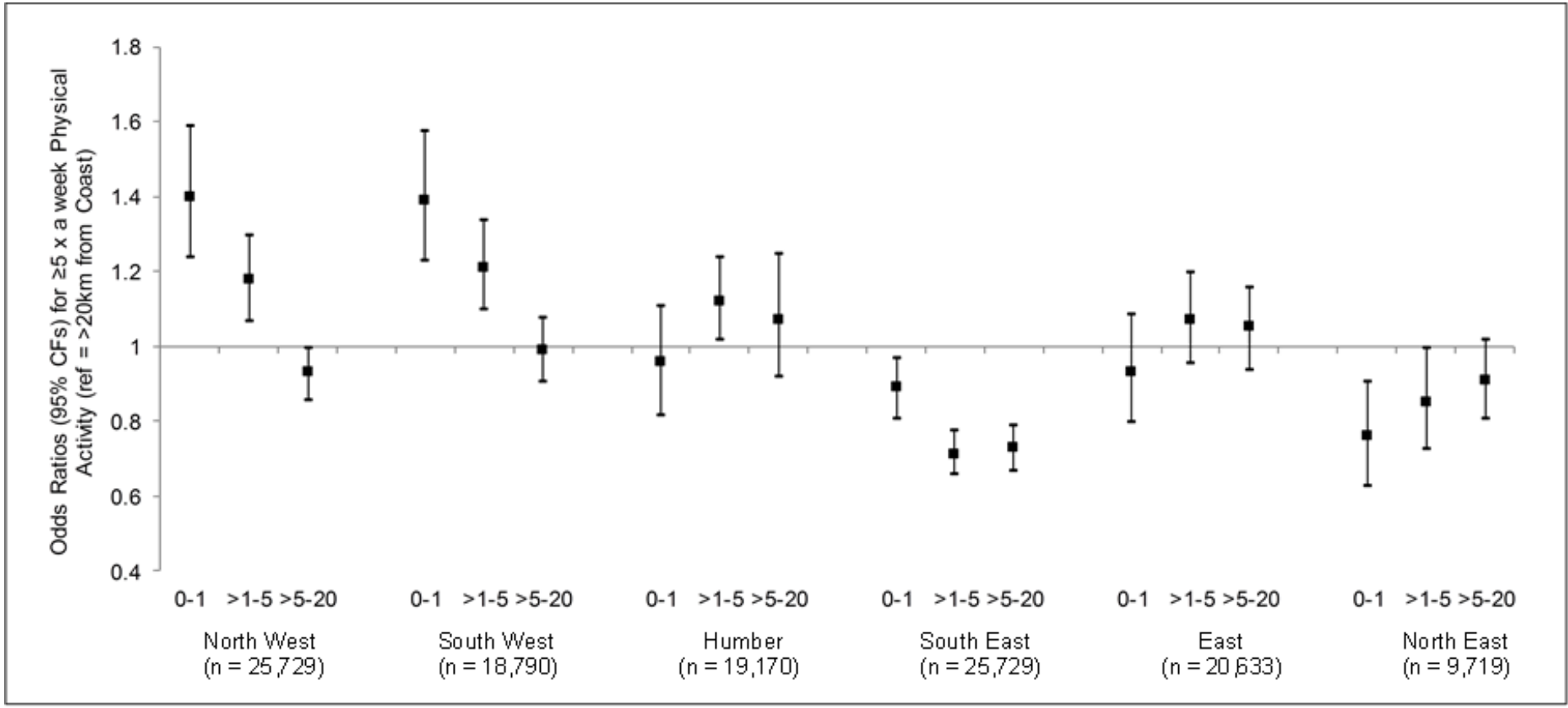
Do people who live near the coast exercise more? 32



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20+km = ref category & no London or East/West Midlands

White, Wheeler, Herbert, Alcock & Depledge (2014) Coastal proximity and physical activity: Is the coast an under-appreciated public health resource? Preventive Medicine 69, 135-140.

1) Blue history

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1) Tapping into a rich seam of history (using latest “exploration” techniques)

2) People like blue space

3) They’re healthier when they live near it

4) Maybe because they tend to exercise more (and for longer?)