

Associations between nearby nature and human health

EWUU/i4PH Preserving Health, break-out session, 07/12/2023

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Intro



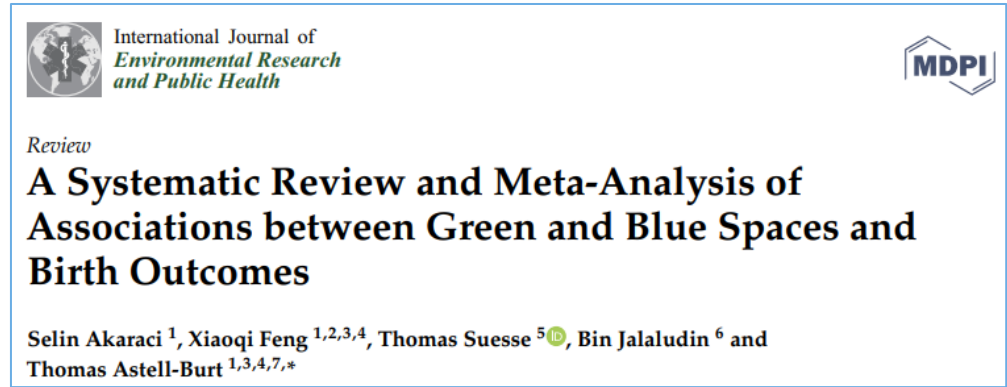
[Nature Rx part 1 hyperlink](https://youtu.be/Bf5TgVRGND4)
<https://youtu.be/Bf5TgVRGND4>

Topics

- Associations between (nearby) nature and human health
 - and potential mechanisms by which they come about
- The importance of nearness
 - and incidental contacts with nature
- Differences in access to nature and its importance
 - especially socioeconomically

Association between nearby nature and health 1

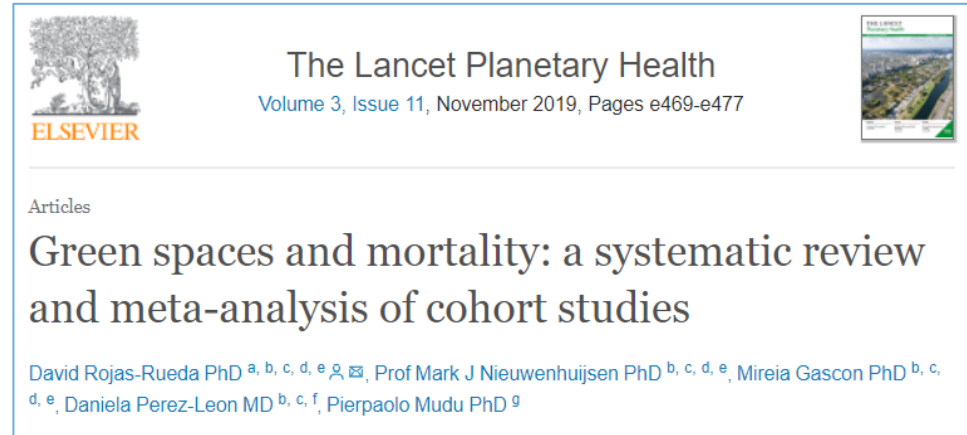
- Already starts at birth:



- Systematic review by Akaraci et al. (2020):
 - Greener residential surroundings of mother are associated with higher birth weight of babies
 - And lower probability of baby being small for gestational age

Association between nearby nature and health 2

- And continues till death:



- Systematic review by Rojas-Rueda (2019):
 - In a greener residential environments is the risk of premature death smaller

Associations between nearby nature and health 3

And between birth and death beneficial associations for, among others:

- Social-emotional development of children (Vanaken & Danckaerts, 2018)
- Being overweight by children (Fyfe-Johnson et al., 2021)
- Being overweight by adults (Luo et al., 2020)
- Diabetes (De la Fuente et al., 2020)
- Mental health and well-being (Li et al., 2021)
- Cardiovascular disorders (Yuan et al., 2021)

The issue of causality of observed associations

- Thus, nearby nature is beneficially associated with many health outcomes.
- But are the observed associations causal in nature, with nearby nature being the driving force?
 - will greening residential environments help?
- Excluding alternative explanations/possibility of reversed causality
 - A poor health status might lead people to move to a less green (more urban) residential environment

Potential pathways requiring nearness/contact

- Reducing heat stress, esp. needed in cities
- Reducing chronic stress, improving mood
- Facilitating social contacts and social cohesion
- Providing microbes that improve immune system functioning
- Inviting physical activity
- Providing phytoncides that activate the immune system
- Improving air quality, esp. with regard to fine dust

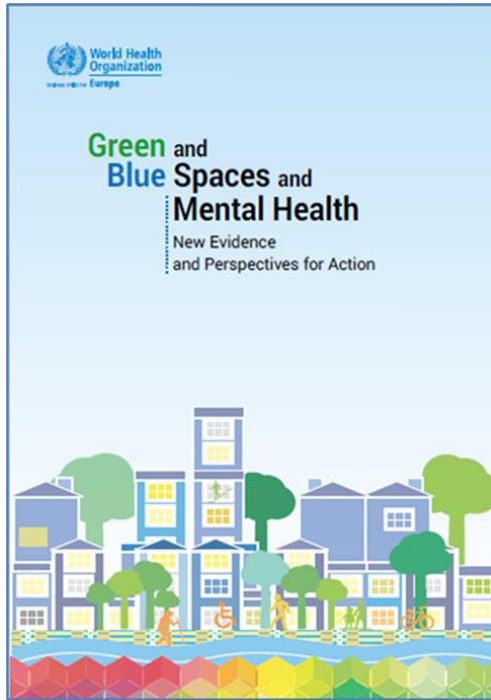


Purposeful visits vs. casual encounters



Types of green and blue space and mental health

- Systematic evidence mapping by Expert Working Group




PEOPLE
AND
NATURE

BRITISH
ECOLOGICAL
SOCIETY

REVIEW AND SYNTHESIS |  Open Access |  

How do different types and characteristics of green space impact mental health? A scoping review

F. Beute, M. R. Marselle , A. Olszewska-Guizzo, M. B. Andreucci, A. Lammel, Z. G. Davies, J. Glanville, H. Keune, L. O'Brien, R. Remmen, A. Russo, S. de Vries

First published: 07 September 2023 | <https://doi.org/10.1002/pan3.10529>

Importance of **nearness** during COVID-19

The image is a collage of various journal covers and article titles. The most prominent elements are:

- Environmental Research**: A journal cover with a tree illustration and the Elsevier logo.
- Landscape and Urban Planning**: A journal cover with a landscape photo and the Elsevier logo. Below the title, it says "Volume 211, July 2021, 104092".
- Environment International**: A journal cover with a landscape photo and the Elsevier logo. Below the title, it says "Volume 154, September 2021, 106664".
- Article Title**: "Exposure to nature and mental health outcomes during COVID-19 lockdown. A comparison between Portugal and Spain".
- Author**: "Wouter Denitz".
- Journal Logos**: Several covers for "ECOLOGICAL APPLICATIONS" (Ecological Society of America), "environmental research", "Landscape and Urban Planning", and "Environment International".
- Other Text**: "Article", "A room", "men", "Doe", "out", "mer", "qua", "dur", "19 o", "Wouter", "Denitz".

Reducing socioeconomic health disparities

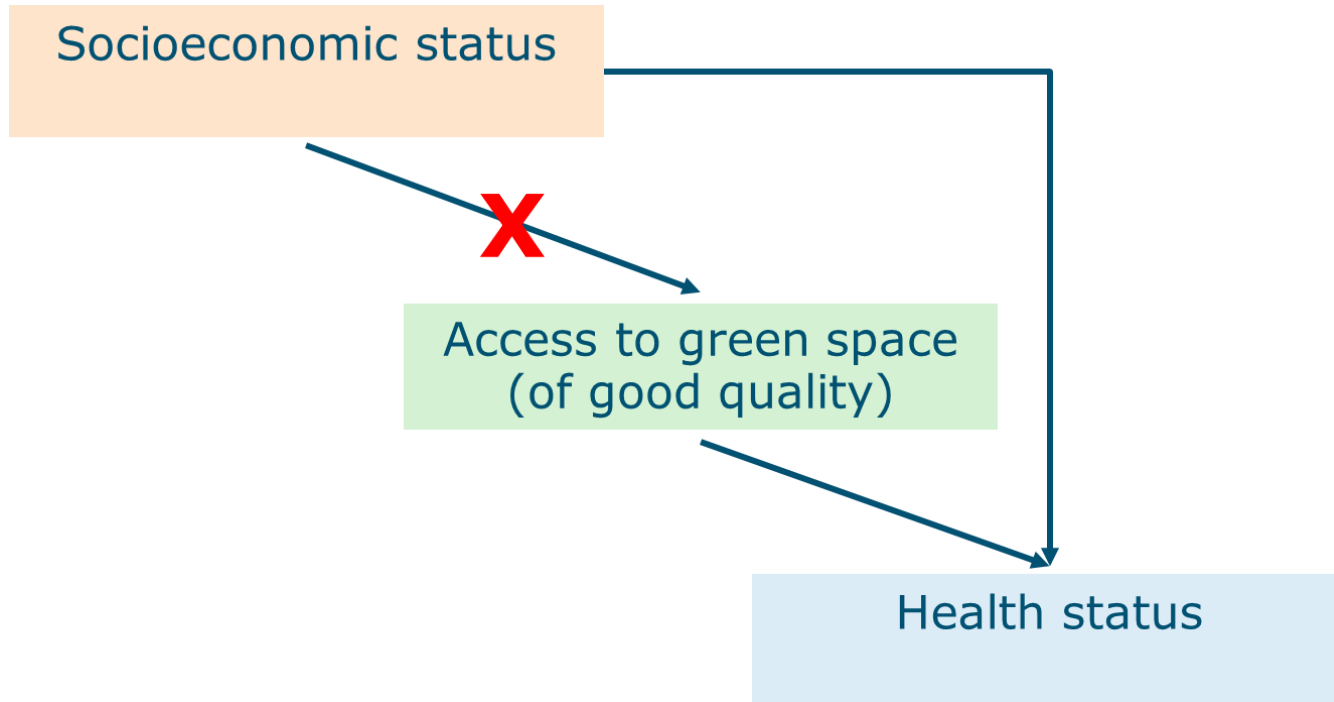
Large socioeconomic health disparities, even in the rather egalitarian Netherlands:

- 7 years shorter life expectancy
- 15 years shorter healthy life expectancy

A low socioeconomic status (SES) is associated with poorer access:

- less often access to private green space (domestic garden)
- lower amount of nearby (semi-)public green space per capita

Can breaking the link between SES and access to green space help to reduce socioeconomic health disparities?

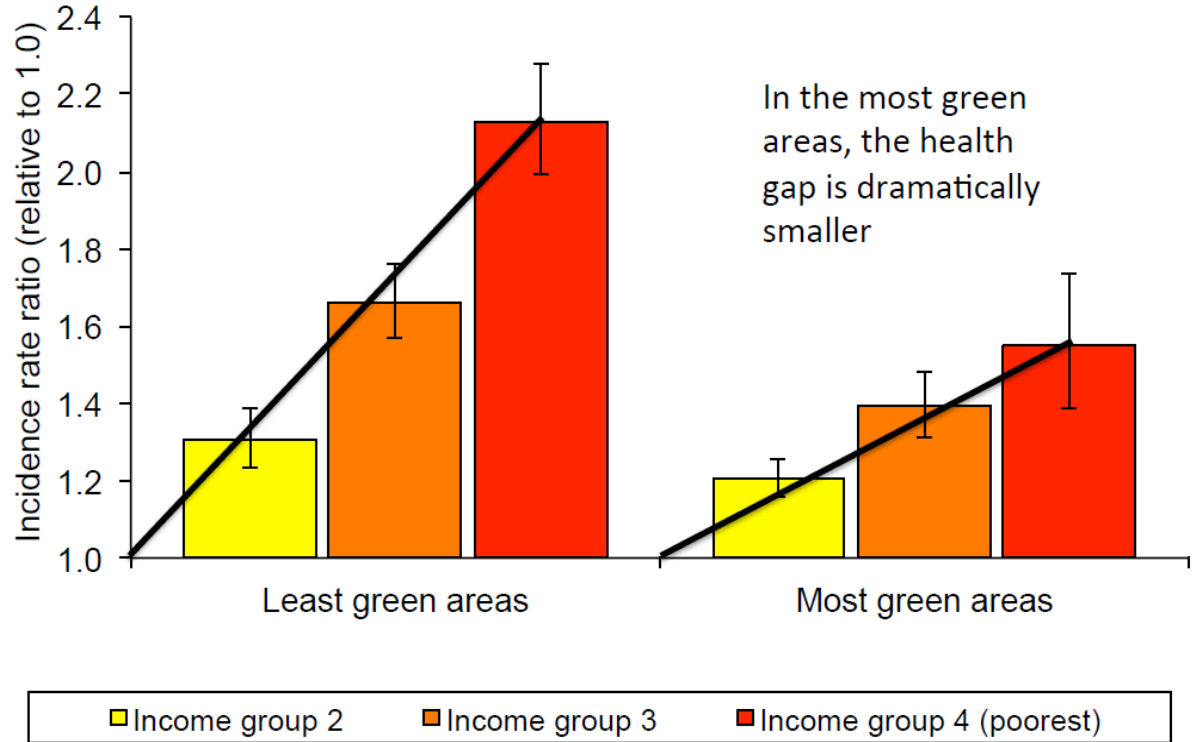


Nearby nature more important for low SES

THE LANCET
Volume 372, Issue 9650, 8–14 November 2008, Pages 1655–1660

Articles
Effect of exposure to natural environment on health inequalities: an observational population study

Dr Richard Mitchell PhD ^{a, R, B}, Frank Popham PhD ^b



Systematic review (Rigolon et al., 2021)



International Journal of
*Environmental Research
and Public Health*



Review

Green Space and Health Equity: A Systematic Review on the Potential of Green Space to Reduce Health Disparities

Alessandro Rigolon ^{1,*}, Matthew H. E. M. Browning ², Olivia McAnirlin ² and Hyunseo (Violet) Yoon ³

- Conclusion: the beneficial association between residential green space and health is stronger among poorer segments of the population
 - Especially so when it comes to public green space
 - This phenomenon is stronger in Europe than in North America

Conclusions

- Nearby nature is beneficially associated with many health outcomes
- The pathway is not always clear, but there are several plausible candidates
 - such as heat stress, mental stress, social cohesion
- Which type of nature works best is not very clear, but nearness is important
 - amount of exposure likely to be more important than high quality exposure (however defined)
- Providing low SES neighbourhoods with green space of at least reasonable quality may help to reduce socioeconomic health disparities

*Thanks for
your attention!*

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