INPLASY

INPLASY2024110103
doi: 10.37766/inplasy2024.11.0103
Received: 23 November 2024
Published: 24 November 2024

A protocol for a systematic review on the impact of natural environments on neuroplasticity

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ADMINISTRATIVE INFORMATION

Support - Cambridge Trust and University of Cambridge.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024110103

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 November 2024 and was last updated on 24 November 2024.

INTRODUCTION

Review question / Objective What is the impact of exposure to natural environments on neuroplasticity?

Condition being studied The human brain's adaptive plasticity outcomes in response to natural environments.

METHODS

Search strategy PubMed, Scopus, Web of Science.

Participant or population Human subjects with no restrictions to age, gender or health conditions.

Intervention Exposure of participants to natural environments or elements of natural environments in built environments.

Comparator In comparison with built environments (built, architecture, interior) If applicable, but not mandatory.

Study designs to be included Original research: Longitudinal, cross-sectional, trials...etc.

Eligibility criteria Other than the PICOS section, to be English language articles.

Information sources Using electronic databases (PubMed, Scopus, Web of Science) to look for original research articles only.

Main outcome(s) Neuroplastic changes in the brain such as but not limited to the hippocampus, cortex, amygdala, brain volume, grey matter, white matter...etc.

Quality assessment / Risk of bias analysis PEDro scale and (ROBINS-I) tool each for the respective study type.

Strategy of data synthesis Narrative synthesis.

Subgroup analysis Table summary.

Sensitivity analysis Table summary.

Language restriction English.

Country(ies) involved United Kingdom.

Keywords Neuroplasticity; Brain volume; Natural environment; urban green; green space; greenness; residential greenness; tree cover density; biophilia; biophilic design; green architecture.

Contributions of each author

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