Stress response and cognitive performance modulation in classroom versus natural environments

Stress response and cognitive performance modulation in classroom versus natural environments: A quasi-experimental pilot study with children

Stress during childhood can have mental and somatic health influences that track throughout life. Previous research attributes stress-reducing effects to natural environments, but has mainly focused on adults and often following leisurely relaxation in natural environments. This pilot study explores the impact of natural environments on stress response during rest and mental load and cognitive performance in 47 children aged 10–12 years in a school context. Heart rate variability measures indexing tonic, event, and phasic vagal tone and attention scores were compared across classroom and natural environments. Tonic vagal tone was higher in the natural environment than the classrooms, but no differences were found in event or phasic vagal tone or cognitive performance measures. These findings suggest a situational aspect of the conditions under which natural environments may give rise to stress-buffering influences. Further research is warranted to understand the potential benefits in a real-life context, in particular with respect to the underpinning mechanisms and effects of accumulated exposure over time in settings where children spend large proportions of time in natural environments.

General information
Publication status: Published
Organisations: Department of Applied Mathematics and Computer Science, Cognitive Systems, Novo Nordisk A/S, University of Copenhagen
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Number of pages: 15
Publication date: 1 Jun 2018
Peer-reviewed: Yes

Publication information
Journal: International Journal of Environmental Research and Public Health
Volume: 15
Issue number: 6
Article number: 1098
ISSN (Print): 1661-7827
Ratings:
BFI (2018): BFI-level 1
Scopus rating (2018): CiteScore 2.81 SJR 0.818 SNIP 1.129
Web of Science (2018): Impact factor 2.468
Web of Science (2018): Indexed yes
Original language: English
Keywords: Affect, Autonomic nervous system, Concentration, Education outside the classroom, Green space
Electronic versions:
ijerph_15_01098_v2.pdf
DOIs:
10.3390/ijerph15061098
Source: Scopus
Source ID: 85047761676
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review