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Nature contact and children's attention

Submission date	Recruitment status	[ ] Prospectively registered
05/07/2017	No longer recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
18/07/2017	Completed	[X] Results
Last Edited	**Condition category**	[ ] Individual participant data
24/12/2019	Mental and Behavioural Disorders	

Plain English summary of protocol

Background and study aims
Children spend less time in nature than ever before and there is concern that this negatively impacts children's cognitive (mental) abilities, particularly their ability to direct their attention. Theories such as the Attention Restoration Theory (ART) suggest that contact with nature may replenish endogenous attention (directed, voluntary attention). There is a lack of research on how contact with nature is associated with attention in children. The aim of this study is to evaluate if children who are exposed to natural environments during a 30 minute reflective walk would be better at endogenous attention.

Who can participate?
Children aged eight to 15 years old who are able to complete a 30 minute walk.

What does the study involve?
Prior to treatment, participants in both groups complete the Combined Attention Systems Task (CAST), a series of game-based tasks on a computer to measure attention. Participants are allocated to one of two groups. Those in the first week complete a 30 minute walk through a busy downtown neighbourhood. Those in the second group complete a 30-40 minute walk through a relatively pristine urban forest. After the walk, participants complete the CAST again.

What are the possible benefits and risks of participating?
There are no direct benefits with participating however participants may benefit from 30 minutes of moderate-to-vigorous physical activity which is known to promote healthy development in children and adolescents. Participants are at risk of boredom, fatigue, and frustration. These risks are reduced by providing breaks to participants during testing or at any time at the request of the participant. Participants are allowed to remove themselves from the study at any time.

Where is the study run from?
This study is run by Dalhousie University (Canada) and takes place in an urban or forested environment.

When is the study starting and how long is it expected to run for?
July 2012 to June 2014

Who is funding the study?
Social Sciences and Humanities Research Council of Canada (Canada)

Who is the main contact?
Dr Shannon Johnson

Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Protocol serial number
2012-2698

Study information

Scientific Title
Dose-dependent effects of virtual environments on attention

Study objectives
Children who were exposed to natural environments during a 30-minute reflective walk would demonstrate specific improvements in endogenous attention.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Dalhousie University Social Sciences and Humanities Research Ethics Board, 21/08/2012

Primary study design
Interventional

Study design
Interventional single-centre study

Study type(s)
Other

Health condition(s) or problem(s) studied
Exogenous and endogenous attention

Interventions
Participants are assigned to one of two study conditions, either the urban walk or the nature walk. Participants blindly assigned themselves to study condition as they are informed that there were two possible locations to which they could be assigned and then where asked to select a participation date, following which the testing location prescheduled for that date was revealed.

Condition 1 (Urban Walk): Participants engage in a guided walk of a typical urban environment for 30 minutes (around 1.25 miles).

Condition 2 (Natural Walk): Participants engage in a guided walk of a typical urban forested-park environment for 40 minutes (around 1.25 miles)

Participants fill out a demographic and history questionnaire as well as the connectedness to nature scale questionnaire in advance of exposure to either condition. The CAST (Combined Attention Systems Task) is administered to all participants before and after exposure to either condition.

There is no further follow-up to this study.

Intervention Type
Other

Primary outcome(s)
Endogenous and Exogenous attention are measured using the Combined Attention Systems Task (CAST) at baseline and immediately post-treatment.

Key secondary outcome(s)
1. Intelligence quotient (IQ) is measured using the Wechsler Abbreviated Scale of Intelligence (WASI) at baseline
2. Association with nature is measured using Connectedness to nature scale (CNS) at baseline

Completion date
30/06/2014

Eligibility

Key inclusion criteria
1. Aged between 8-15 years
2. IQ: >=80
3. Normal or corrected-to-normal vision
4. No history of psychiatric/psychological diagnoses
5. No history of severe head injury
6. No significant neurological disorders affecting the central nervous system

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Child

Lower age limit
8 Years

Upper age limit
15 Years

Sex
All

Total final enrolment
60

Key exclusion criteria
1. Inability to walk for 30 minutes

Date of first enrolment
01/10/2012

Date of final enrolment
01/10/2013

Locations

Countries of recruitment
Canada

Study participating centre
Dalhousie University
Department of Psychology and Neuroscience
1355 Oxford Road
Halifax
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Sponsor information

Organisation
Dalhousie University

ROR
https://ror.org/01e6qks80

Funder(s)

Funder type
Research council

Funder Name
Social Sciences and Humanities Research Council of Canada

Alternative Name(s)
Conseil de recherches en sciences humaines, Social Sciences and Humanities Research Council, sshrc_crsh, Conseil de recherches en sciences humaines du Canada, Social Sciences and Humanities Research Council - sshrc crsh, Social Sciences and Humanities Research Council (SSHRC), Conseil de recherches en sciences humaines (CRSH), SSHRC, SSHRC-CRSH

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Canada

Results and Publications

Individual participant data (IPD) sharing plan
The (de-identified) datasets generated during and/or analysed during the current study are/will be available upon request from Dr. Shannon Johnson (shannon.johnson@dal.ca)

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	05/12/2019	24/12/2019	Yes	No