

Connection of children to nature brings less distress, hyperactivity and behavioral problems

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The Play&Grow program connects preschool children to nature. Credit: @The University of Hong Kong

The city lifestyle has been criticised as a key reason that children are disconnected from nature. This has led to an unhealthy lifestyle in regard

to active play and eating habits. Even worse, many young children do not feel well psychologically—they are often stressed and depressed. Sixteen percent of preschoolers in Hong Kong and up to 22 percent in China show signs of mental health problems.

Recent research shows that spending time in nature may bring [health benefits](#), and many environmental programmes around the world are trying to decrease conditions of nature-deficit and child-nature disconnectedness in order to improve children's health. For example, the WHO, in order to monitor implementation of the Parma Declaration commitment to providing every child with access to [green spaces](#) to play and undertake physical activity, has set a 300-meter target. Interestingly, 90 percent of the Hong Kong population lives within 400 metres of such areas. However, despite the extensive, adjacent greenness, families are not using these areas.

"We noticed a tendency where parents are avoiding nature. They perceive it as dirty and dangerous, and their children, unfortunately, pick up these attitudes. In addition, the green areas are often unwelcoming with signs like 'Keep off the grass,'" said Dr. Tanja Sobko from the School of Biological Sciences of the University of Hong Kong. Until now, it has not been possible to measure connectedness to nature in [preschool children](#), mostly due to the fact that they are too young to answer for themselves.

A new 16-item parent questionnaire (CNI-PPC) to measure connectedness to nature in very [young children](#) has been developed by Dr. Sobko and her collaborator Prof Gavin Brown, Director of the Quantitative Data Analysis and Research Unit at the University of Auckland. The questionnaire identified four areas that reflect the child-nature relationship: enjoyment of nature, empathy for nature, responsibility toward nature, and awareness of nature.



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The study consisted of two parts: the initial interviews with the families and the subsequent development of the questionnaire. Altogether, 493 families with children aged between two and five participated in the study. Finally, the new questionnaire was tested against the Strengths and Difficulties Questionnaire, a well-established measurement of psychological well-being and children's behaviour problems. The results revealed that parents who saw their child had a closer connection with nature had less distress, less hyperactivity, fewer behavioural and emotional difficulties, and improved pro-social behaviour. Interestingly, children who took greater responsibility toward nature had fewer peer difficulties. The results suggest links between the outdoor environment

and well-being in preschool children.

The study is part of Dr. Sobko's research-based programme Play&Grow, which is the first in Hong Kong to promote healthy eating and active playtime with preschool [children](#) by connecting them to nature. Launched in 2016, it has so far included almost 1000 families from all over Hong Kong. (<https://foodnaturelab.org/page/>).

The findings have been published in multidisciplinary Open Access journal *PLOS ONE*. The new scale has already attracted international attention and is being adopted by universities worldwide, including Western Australia and Deakin Universities. In addition, the HKU-developed Play&Grow programme will be conducted in Australia.

More information: Tanja Sobko et al, Measuring connectedness to nature in preschool children in an urban setting and its relation to psychological functioning, *PLOS ONE* (2018). [DOI: 10.1371/journal.pone.0207057](https://doi.org/10.1371/journal.pone.0207057)

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