

Research tracking the health impact of environmental exposures for thousands of babies

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Simon Fraser University health scientist Tim Takaro and researchers from AllerGen's Canadian Healthy Infant Longitudinal Development (CHILD) Study have extensively assessed indoor and outdoor environmental exposures for 3,217 Canadian babies. It is an unprecedented accomplishment for any birth cohort.

Takaro is the lead author of a paper just published in the *Journal of Exposure Science and Environmental Epidemiology*, outlining which [environmental factors](#) were assessed, how this was accomplished and how the data might be analyzed. The data collected is for the first year of the multi-year study.

The CHILD Study is examining how a child's [environment](#) during pregnancy and in the first few years of life can interact with genetics to affect the risk of developing several chronic conditions or diseases. They include allergies, asthma and diabetes.

AllerGen and the Canadian Institutes of Health Research (CIHR) are funding the study.

For this initial report, investigators inspected carefully the homes of more than 3,000 babies. They analyzed exposure to dust, mould, furry pets, chemicals and cleaning products, cooking emissions, second-hand smoke, and traffic-related air pollution. It's the first study of its kind to

analyze the [home environment](#) of such a large number of study participants in such detail. It's also unprecedented in its ability to link the home environment with epigenetic changes and the potential role of the microbiome. That's the combined genetic material of the microorganisms in a particular environment.

"Asthma is the most common chronic childhood disease and many cases may be preventable," says Takaro, a physician-scientist trained in occupational and environmental medicine, public health and toxicology. "The CHILD Study is helping us to gain a better understanding of the link between environment and health, which may help us to intervene early in life to prevent asthma from occurring. The size of the study and the rigour with which we assess environmental exposure will increase our capacity to detect associations between environmental factors and [health](#) outcomes."

Adds Malcolm Sears, a professor at McMaster University and director of the CHILD Study: "This is one of the largest studies in the world to look in depth at how genes and the environment interact to impact the development of allergies, asthma and other chronic diseases. We believe the study's findings will influence public policy, parenting decisions, purchasing behaviours, and even urban planning."

More information: "The Canadian Healthy Infant Longitudinal Development (CHILD) birth cohort study: assessment of environmental exposures" *Journal of Exposure Science and Environmental Epidemiology* advance online publication 25 March 2015; [DOI: 10.1038/jes.2015.7](https://doi.org/10.1038/jes.2015.7)

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