

For immediate release

CHILD Study researchers awarded \$9.1M toward search for asthma clues in dirty diapers

HAMILTON, ON (23 January 2018) Genome Canada, in collaboration with other partners, is awarding over \$9 million to a team of top Canadian researchers who will look for clues to the causes of childhood asthma in babies' dirty diapers.

The researchers are looking for a way to predict which babies will go on to have asthma, based on the microorganisms living in their intestines (their gut microbiome). Knowing this, in turn, may enable the development of new strategies to prevent asthma from developing in the first place.

Dr. Stuart Turvey, an AllerGen investigator, the Aubrey J. Tingle Professor of Pediatric Immunology at The University of British Columbia (UBC), and Director of Clinical Research at BC Children's Hospital, heads the four-year project. The \$4.5M funding from Genome Canada, combined with contributions from the Canadian Institutes of Health Research (CIHR) and other partners to total \$9.1M, was [announced today](#) by federal Science Minister the Honourable Kirsty Duncan.

"Lungs are for life, but we don't think about them much," comments Dr. Turvey. "Yet even small babies and children can have serious lung diseases like asthma. Asthma is the most common chronic disease of childhood, affecting one in seven Canadian children. It is the number one reason for children to be admitted to hospital and to miss school. It is also expensive: the cost of asthma is estimated at over \$2 billion per year in Canada."

Dr. Turvey and other members of the project team have previously shown that babies lacking certain microbes in their gut tend to develop asthma. They will now use powerful new genomic technologies to analyze stool samples from babies, to better pinpoint the microbes at play, and to investigate ways of replacing these microbes in the intestines of babies who lack them as a form of preventative treatment.

"Who knew that clues to childhood asthma could be found in dirty diapers?" adds Dr. Turvey.

The project is enabled by a ground-breaking Canadian research platform: AllerGen's CHILD Study birth cohort, which has been following 3,500 Canadian children and their families from pre-birth to school-age—participating children are now between five and eight years of age. Through home visits, questionnaires and clinical assessments tracking the children as they grow, CHILD has acquired an unprecedented pool of biological samples—like stool, blood and breastmilk—as well as lifestyle, health, environmental and other information from participating family members.

By analyzing CHILd Study samples and data, and cross-referencing them against the health outcomes of each child, researchers have already made major discoveries about the early-life origins of asthma, allergies, obesity, and other chronic health issues. Dr. Turvey is Co-Director of the CHILd Study and leader of the CHILd Study site in Vancouver.

“This new funding will allow us to use CHILd data to build a catalogue of the gut microbes associated with asthma—particularly the ‘missing’ microbes in infants who later develop asthma—and to develop a screening tool to identify infants at the highest risk of asthma,” adds CHILd Study Director Dr. Padmaja Subbarao (Hospital for Sick Children), a co-leader of the Genome Canada grant. “We are truly delighted to be recognized with this award, which will ultimately help us to improve the lives of Canadian children.”

Additional co-leaders on the Genome Canada funded project, titled “Childhood Asthma and the Microbiome—Precision Health for Life: The Canadian Healthy Infant Longitudinal Development (CHILd) Study,” are Drs Michael Kobor and B. Brett Finlay, both at UBC.

Other members of the research team include: Drs Allan Becker and Meghan Azad (University of Manitoba); Dr. Fiona Brinkman (Simon Fraser University); Prof. Timothy Caulfield and Dr. Piush Mandhane (University of Alberta); Dr. Sara Mostafavi (UBC); Drs Anna Goldenberg and Theo Moraes (SickKids Hospital); Dr. Wendy Lou (University of Toronto); and Dr. Malcolm Sears (McMaster University).

About the CHILd Study and AllerGen NCE

Funded by the Canadian Institutes of Health Research (CIHR) and the Allergy, Genes and Environment (AllerGen) Network, the [CHILd Study](#) is collecting a vast range of health, lifestyle and environmental exposure information from 3,500 mothers and children from pregnancy to age five years and beyond.

The CHILd Study spans four provinces (BC, AB, MB and ON), involving over 40 multidisciplinary researchers, students and research staff. St. Joseph’s Healthcare Hamilton hosts the CHILd Study’s National Coordinating Centre.

[AllerGen NCE Inc.](#) is a national research network dedicated to improving the quality of life of people living with allergic and related immune diseases. Funded by Innovation, Science and Economic Development Canada through the federal Networks of Centres of Excellence (NCE) Program, the Network is hosted at McMaster University in Hamilton, ON. [Watch the CHILd Study videos.](#)

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