The Canadian Healthy Infant Longitudinal Development (CHILD) Study

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Canadian Healthy Infant Longitudinal Development (CHILD) Study

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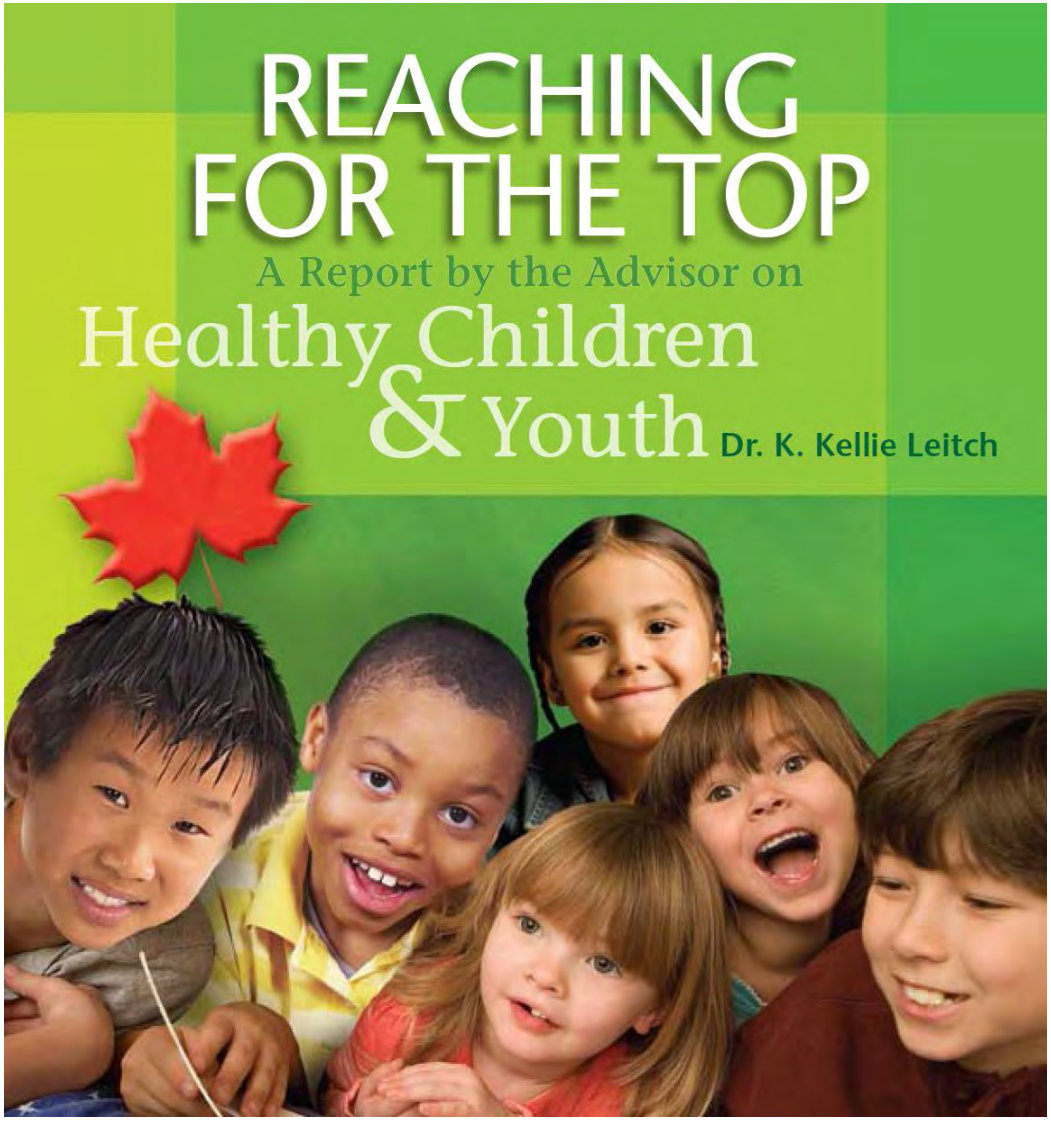


1. Developing a National Injury Prevention Strategy;
2. Reducing childhood obesity by establishing a Centre of Excellence on Childhood Obesity;
3. Improving mental health services for Canadian children and youth;
4. Undertaking a longitudinal cohort study to provide data on the health of Canadian children and youth to help understand environmental factors impacting children's health; and,
5. Establishing a National Office of Child and Youth Health with a permanent Advisor.

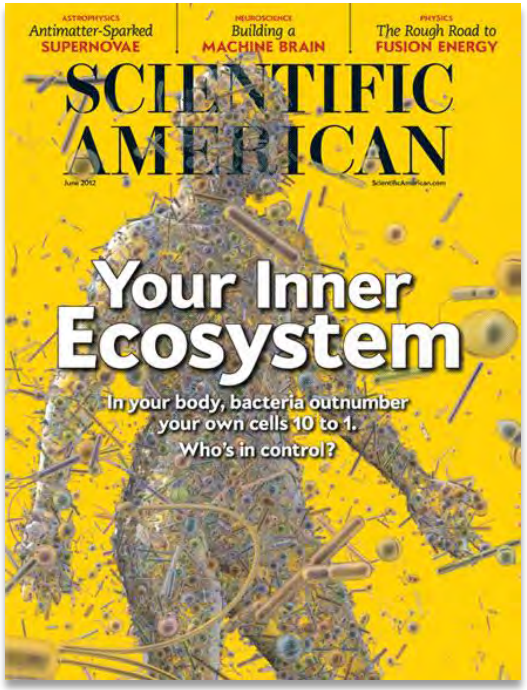
CHILD

CHILD Study

HELP CHILDREN GROW UP HEALTHY


Environment Special:
The oceans—why 70% of our planet is in danger
The Facebook Movie:
The secret history of social networking
TIME
How the first nine months shape the rest of your life
The new science of fetal origins
BY ANNIE MURPHY PAUL


Joe Klein: The CIA's Afghan Disaster
Yemen: The New Center Of Terror
Why the Recession Hasn't Been Cool To Teens
TIME
WHY YOUR DNA ISN'T YOUR DESTINY
The new science of epigenetics reveals how the choices you make can change your genes —and those of your kids
BY JOHN CLOUD


ASTROPHYSICS
Antimatter-Sparked SUPERNOVAE
NEUROSCIENCE
Building a MACHINE BRAIN
PHYSICS
The Rough Road to FUSION ENERGY
SCIENTIFIC AMERICAN
June 2012
ScientificAmerican.com
Your Inner Ecosystem
In your body, bacteria outnumber your own cells 10 to 1. Who's in control?


The first
100
days

Developmental origins of …

Allergies

1 in 4 Canadians have seasonal allergies

1 in 13 Canadians have food allergies

Canadian Allergy, Asthma and Immunology Foundation

2008-09 national food allergy prevalence survey (Soller *et al*, 2012)

Asthma

1 in 6 Canadian children have asthma

Public Health Agency of Canada (2007). Life and breath: Respiratory disease in Canada.

Obesity

1 in 3 Canadian children are overweight

Overweight and obesity in children and adolescents: Results from the 2009 to 2011 Canadian Health Measures Survey

The Canadian Healthy Infant Longitudinal Development (CHILD) Study

How do **genes** and the **environment** influence child health and development?

"Everything Affects Everything Else"

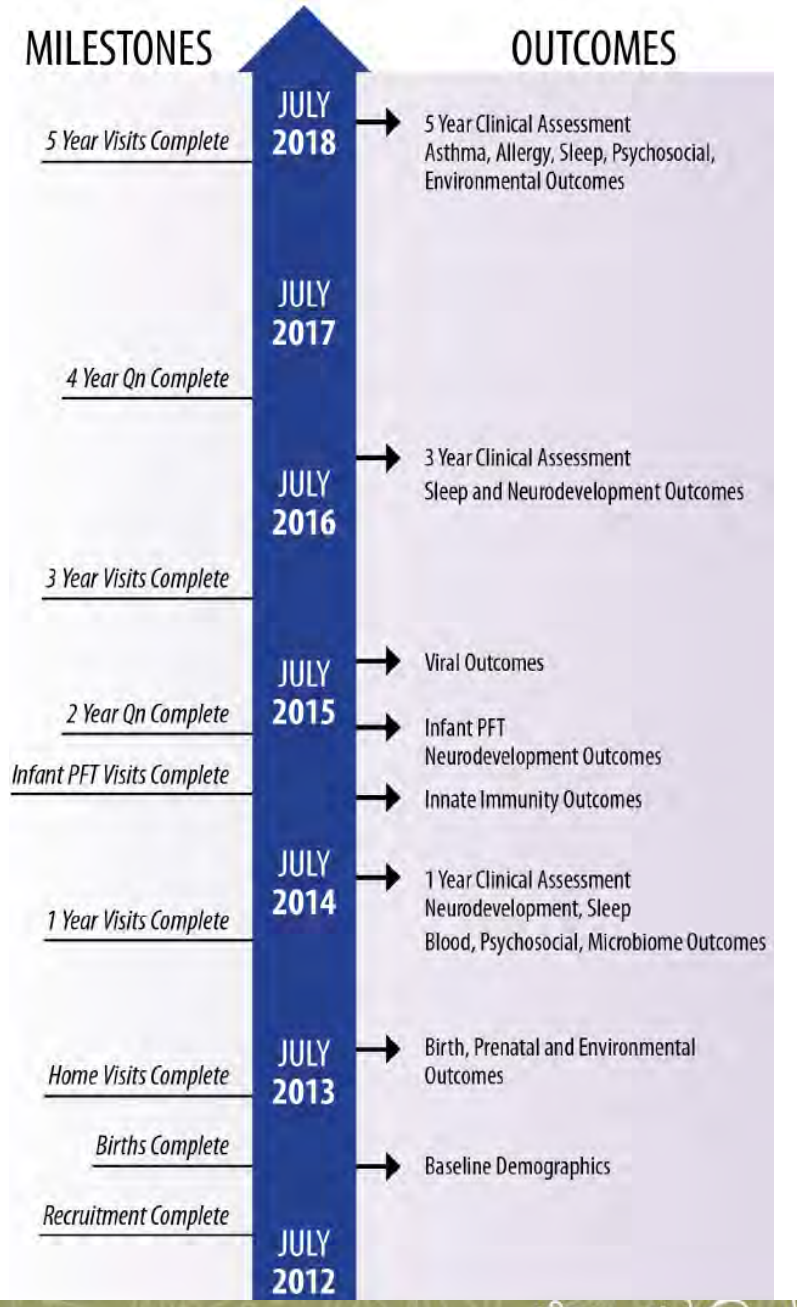
- @CCYHCTweets

CHILD Study

HELP CHILDREN GROW UP HEALTHY

$30M	Invested
500,000	Biological Samples Banked
200,000	Questionnaires Completed
3600	Families Participating
92%	Retention at 1 year
40	Senior Researchers
20+	Scientific Disciplines:

Air Quality	Infectious Disease	Physiology
Biostatistics	Molecular Biology	Population Health
Endocrinology	Neonatology	Psychology
Environmental Health	Neuroimmunology	Respirology
Epidemiology	Nutrition	Sociology
Genetics	Obstetrics	Toxicology
Immunology	Pediatrics	Microbioome



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Epidemiology	Nutrition	Sociology
Genetics	Obstetrics	Toxicology
Immunology	Pediatrics	Microbioome

unicef canada | ONE YOUTH

CHILD Knowledge Mobilization Stakeholder Advisory Committee

Healthy Child Manitoba
Putting children and families first
Manitoba

Food Allergy Canada

Canadian Society of Allergy and Clinical Immunology

unicef

trekk
Translating Emergency Knowledge for Kids

PHE Canada
Physical & Health Education Canada

ymc
YummyMummyClub.ca

Asthma.ca™
Asthma Canada

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

Pour chaque enfant
For every child
Canadian Institute of Child Health
Institut canadien de la santé infantile

TELUS | HEALTH

THESANDBOXPROJECT

CHILD Knowledge Mobilization Stakeholder Advisory Committee

"A beacon in Canada"

– Kellie Leitch

CHILD Knowledge Mobilization Stakeholder Advisory Committee

Mandate:

- Provide advice regarding strategies for **translating** CHILD findings into products and tools that benefit parents and communities
- Ensure that the knowledge and outputs emerging from the CHILD Study are **accessible and appropriate** for specific stakeholder/receptor groups
- Inform development of **messages** that demonstrate the value-added CHILD and support fundraising to enable data collection to continue
- Provide advice on **future research foci** relevant to stakeholders

New Members Welcome!

Lessons Learned from CHILD

Babies with eczema who are also sensitized to allergens more likely to develop asthma and food allergies; predictable by age one

Sears, *JACI*, November 2017

Study finds asthma and food allergies predictable as early as age one

A child uses a puffer in this file photo. (sarra22/Shutterstock.com)

Lessons Learned from CHILD

Owning a cat or dog may protect babies from allergies and obesity

Kozyrskyj, *Microbiome*, April 2017

Lessons Learned from CHILD

Artificial sweetener intake in pregnancy may increase babies' risk of obesity

Azad, *JAMA Pediatrics*, May 2016

TIME

HEALTH DIET/NUTRITION

The Case Against Artificial Sweeteners Is Getting Stronger

Alice Park @aliceparkny 8:00 AM ET

Eating more sugar substitutes during pregnancy is linked to overweight and obesity in kids, one study finds

They're supposed to be a way to have the proverbial cake and, literally, eat it too: all the sweet taste without the calories and the metabolic health problems that come with sugar.

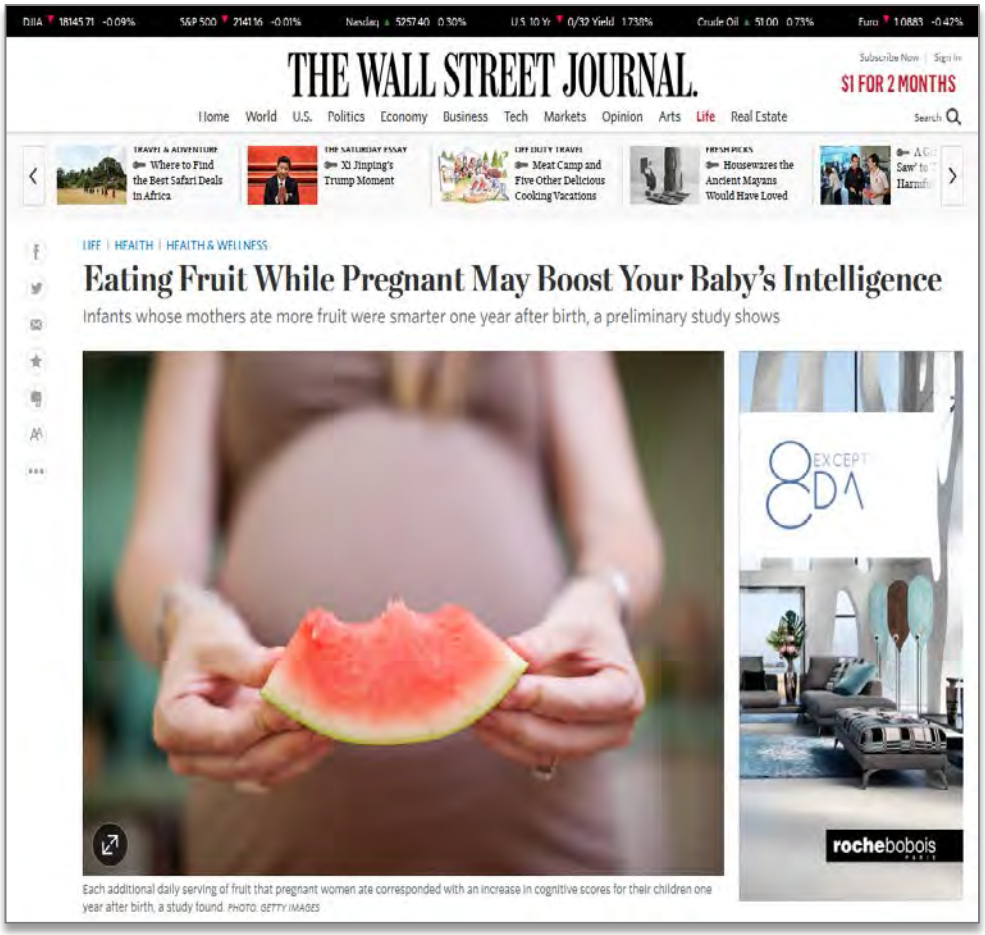
But it turns out that artificial sweeteners may be too good to be true, more and more studies are finding. The latest, which looked at moms-to-be who consumed more artificial sweeteners, found that even though they are low- or no-calorie, the compounds may contribute to overweight and obesity in their children after birth.

In a report published in *JAMA Pediatrics*, researchers

Lessons Learned from CHILD

Eating fruit during pregnancy boosts a baby's cognitive development

Mandhane, *EBioMedicine*, May 2016



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Eating Fruit While Pregnant May Boost Your Baby's Intelligence

Infants whose mothers ate more fruit were smarter one year after birth, a preliminary study shows

Each additional daily serving of fruit that pregnant women ate corresponded with an increase in cognitive scores for their children one year after birth, a study found. PHOTO: GETTY IMAGES

Lessons Learned from CHILD

Traffic pollution increases risk of allergies by one year of age

Brauer, *Environmental Health Perspectives*, May 2015

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Infant allergies linked to air pollution by new Canadian study

Vancouver babies more likely to have allergies, UBC study finds

CBC News Posted: May 04, 2015 12:06 PM PT | Last Updated: May 04, 2015 12:06 PM PT

A new study has linked allergies rates in infants to air pollution. (iStock)

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A new study shows that babies exposed to air pollution in their first year of life are more likely to develop allergies to food, mould, pets or pests.

The Canadian study, which surveyed more than 2,700 children in four cities across Canada, is the first to link air pollution and allergies in infants, according to Michael Brauer, the study's senior author.

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Lessons Learned from CHILD

Mothers' stress linked to reduced immune function in infants

Kang et al., *Brain, Behavior, and Immunity*, 2018

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@UNICEFCanada

Following

Happy #mothers healthy #babies! New research from @CHILDSTUDY has discovered a link between new mother's stress levels and babies' immune functions. Read the full blog here --> bit.ly/2EEAwQV

#ForEveryChild, health and joy.

Lessons Learned from CHILD

Exclusive breastfeeding in hospital = Longer breastfeeding duration

BIRTH

March 2018

Breastmilk hormones may help prevent obesity in infants

International Journal of Obesity

September 2017

Direct breastfeeding until 3 months = lower risk of asthma at 3 years

The Journal of Pediatrics

November 2017

ERJ open research

May 2017

Babies breastfed longer = less likely to wheeze = lower risk for asthma later on

Later introduction of allergenic foods = food allergy more likely

PAI Pediatric Allergy and Immunology

June 2017

CHILD Beyond Age 5…

Mental Health

School

Technology

Bullying	27
Social Transfers	29
Unhealthy Weight	29
Neonatal Mortality	31
Teen Suicide	31

Research SKETCHES

AllerGen
Allergy, Genes and Environment Network
Le réseau des allergies, des gènes et de l'environnement

Can Breastfeeding Help Protect Babies from Asthma?

New research shows that breastfed babies have a reduced rate of wheezing, putting them at a lower risk for asthma later on.

Primary Researchers

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Community Health Sciences, University of Manitoba

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Children's Hospital Research Institute of Manitoba
Pediatrics & Child Health, University of Manitoba

Citation

Azad MB, Vehling L, Lu Z, et al. Breastfeeding, maternal asthma, and wheezing in the first year of life: a longitudinal birth cohort study. European Respiratory Journal 2017; 0: 1602019.

Keywords

breastfeeding, wheezing, maternal asthma, CHILD Study, childhood asthma, infant formula, complementary foods, developmental origins of asthma, birth cohort

What is this research about?

Wheezing—a whistling sound in the chest—is one of the most common reasons infants are hospitalized or receive medical care. Remarkably, between 20% and 50% of infants experience at least one episode of wheezing in their first year of life.

Wheezing in early childhood is associated with an increased risk of asthma and reduced lung function later in life. Studies have suggested that breastfeeding helps to reduce this risk; however, much about this relationship is still unknown, particularly in the case of infants born to mothers with asthma.

Research on this topic has produced inconsistent results, possibly due to challenges in collecting precise information about breastfeeding and other factors that influence wheezing. This study accounted for these issues in its investigation of the association between breastfeeding and wheezing in Canadian children.

What did the researchers do?

The study included over 2,700 infants and their parents who are participating in the Canadian Healthy Infant Longitudinal Development (CHILD) Study.

CHILD Study parents provided detailed information about themselves and their babies, and completed standardized questionnaires about feeding practices and their baby's health and development, including a description of wheezing episodes at three, six and 12 months of age.

The researchers calculated a "rate of wheezing" for each infant by dividing the number of wheezing episodes by the number of follow-up months in the first year of the study.

The researchers also carefully examined the exclusivity and duration (length) of breastfeeding each infant received by three, six and 12 months of age. Breastfeeding was categorized as: exclusive (breast milk only); partial (breast milk supplemented with infant formula or solid food); or none.

Finally, the researchers linked the infants' wheezing data with the breastfeeding information.

CHILD Study
HELP CHILDREN GROW UP HEALTHY

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Developmental Origins of CHILD HEALTH & Disease

Meghan Azad, PhD

Breastfeeding

Mechanisms

- Gut Microbiota
- Epigenetics
- Metabolism
- Lung Function
- Immunity

Allergies, Asthma, Obesity…

Interventions

Milk Composition

- Microbiota
- Oligosaccharides
- Immune Factors
- Fatty Acids
- Hormones
- Vitamins

Maternal Factors

Modifiable: Obesity, Nutrition, Smoking, Birth Mode, **Pro/Antibiotics… Fixed:** Age, Ethnicity, Genetics, Allergies…

the Children's Hospital Research Institute of Manitoba

DEVOTION
Manitoba Developmental Origins of Chronic Diseases in Children Network