Healthy Children for the Next Generation



Engaging Policymakers in Children's Environmental Health

New Brunswick Collaborative Effort on Children's Environmental Health

Our Objectives Today

- To describe the *issue* of children's environmental health
- To describe *some New Brunswick indicators*
- To look at the *environmental burden of disease*
- To describe the *work of the New Brunswick Collaborative* on Children's Environmental Health and in particular, Team Policy
- To call policymakers to *Action*

The Collaborative's Objective: Healthy New Brunswick Children



What is "Environmental Health"?

- Environmental health comprises "those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social, and psychosocial factors in the environment".
- It also refers to "the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations".

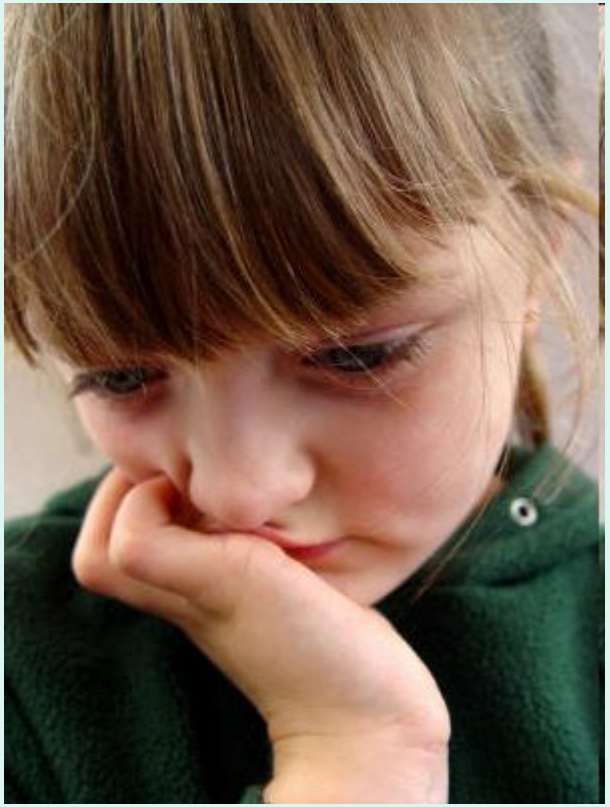
~ World Health Organization, 2007

What is "*Children's* Environmental Health"?

The scope of "childhood":

- developmental stages from conception through adolescence
- pre-conception exposures for both parents

The Issue



The health of all children living in Canada is at risk from environmental hazards.

~ Canadian Partnership for Children's Health and Environment, 2005.

The Hazards

- **Air pollution** (indoor and outdoor)
- **Contaminants** in food, and hazardous chemicals found in consumer products, packaging and house dust
- **Poverty,** a known risk factor leading to greater exposure of children to environmental contaminants.

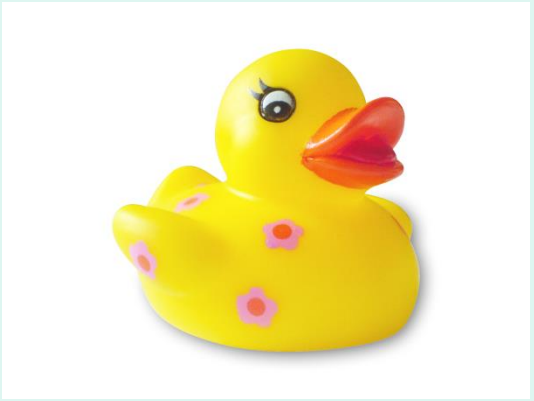


Chemicals in our Bodies

- Chemicals that have been in production since the mid-20th Century have made their way into our bodies.

- What do we mean by “our body burden of chemicals”?





Household, agricultural and industrial chemicals (or their breakdown products) that are found in our bodies.

How Much Body Burden?

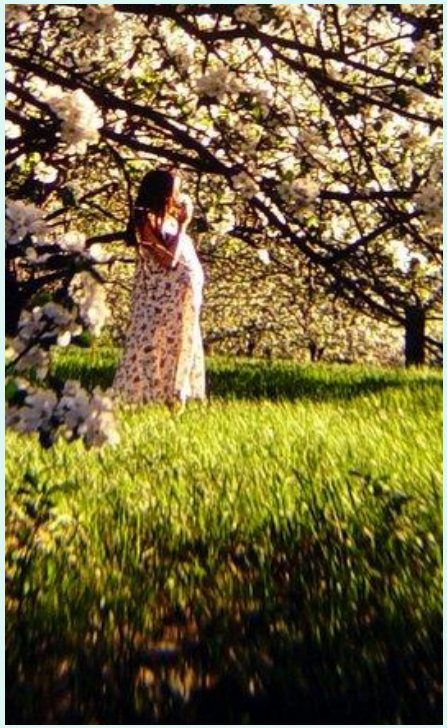
From Canada's biomonitoring program:

- Canadian and American body burdens are similar, e.g., 100% of Americans had detectable levels of pesticide residues in their bodies.
- Bisphenol A was measured in 91% of Canadians, with higher levels in children.
- Children who eat organic food have been found to have lower pesticide body burdens than those eating a conventional diet.

Children's Exposures are Proportionally Greater Than Adults'

Adult's Exposure Pathways

- Air
- Water
- Soil
- Food
- Consumer Products



Child's Exposure Pathways

- Air
- Water
- Soil
- Food

+

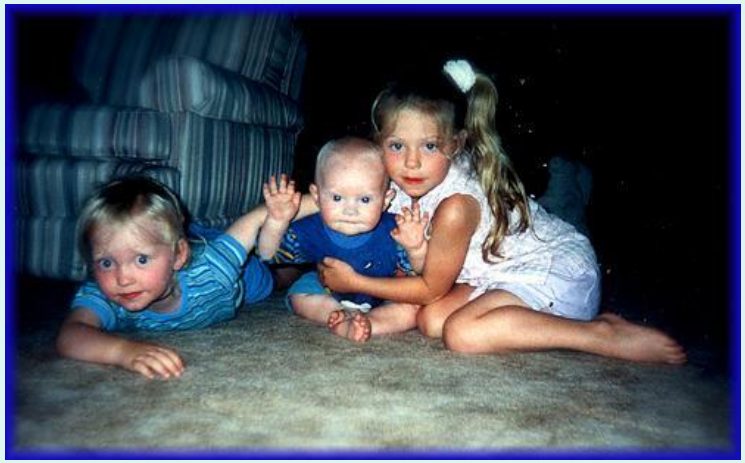
- Placenta
- Breast milk
- Non-food consumer products, such as toys, children's jewelry, carpets, floor surfaces, etc.,



Children's Exposures are Greater

. . . Continued

- **body mass** (kg for kg of body weight, a child will drink more water, eat more food and breathe more air than an adult)
- **physiology** (e.g., breathing is more rapid, ability to metabolize and excrete contaminants is less developed than in adults)
- **behaviours** (children tend to be more active, explore their environment orally, and play lower to the ground where contaminants settle)



The Child's First Environment



Exposures in early life and prior to conception are key determinants of Baby's health.

Critical Windows of Vulnerability

Source: Loren Vanderlinden, Toronto Public Health

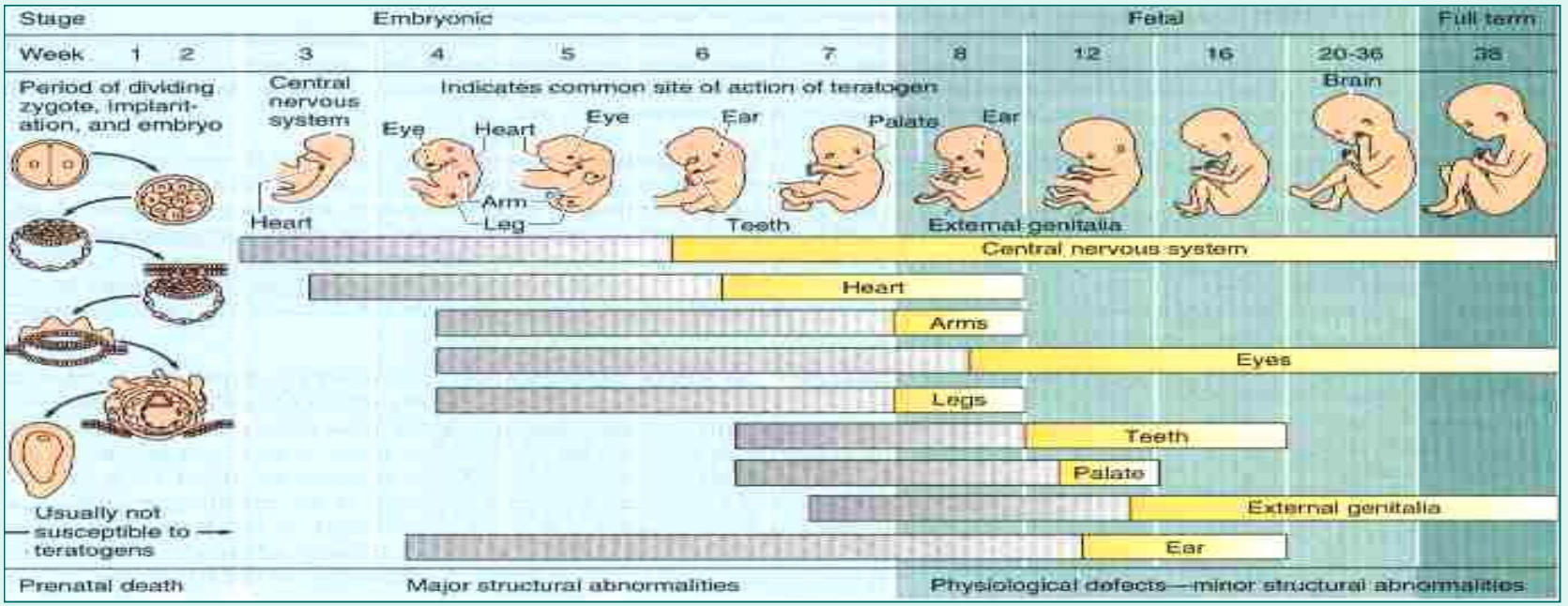


Figure originally from Moore & Persaud, 1973

- **Developing body systems and organs are highly susceptible to harm (e.g. brain, lungs)**
- **More toxins enter the body**
- **Immature systems don't de-toxify as readily**

The Health Issues

- Certain childhood disorders with links to environmental hazards are on the rise:
  - Asthma
  - Learning and behavioural disorders (neurodevelopmental effects)
  - Obesity
  - Several cancers in children and young adults
  - Wide range of conditions related to endocrine disrupting chemicals*

New Brunswick: Some Indicators of Children's Environmental Health

Asthma

Learning Disabilities/ Neurodevelopmental Effects

Obesity

Childhood Asthma

New Brunswick

- In 2005, asthma affected an estimated 10,000 children between the ages of 4 and 11 years.
- New Brunswick had the second highest hospitalization rate for asthma next to PEI.

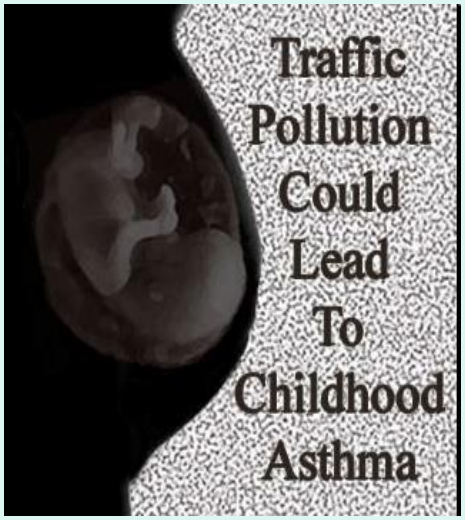


Asthma: Research Evidence

- “The percentage of children with asthma has doubled over the past two decades, and is now the number one cause of school absenteeism attributed to chronic conditions.” (U.S. Physicians for Social Responsibility)



- An association has been found between traffic-related air pollution outside children’s homes and the development of asthma. (Gehring et al 2010; Gauderman et al., 2005; McConnell et al., 2006).



Learning Disabilities/ Neurodevelopmental Effects

- Approximately 10-12% of Canadian children have some degree of cognitive deficit and learning disability (Canadian Institute of Child Health).
- Autism: Today almost 91 per 10,000 children are diagnosed with autism, compared to 4.5 per 10,000 only 20 years ago.



Learning Disabilities: Research Evidence

Scientific Consensus Statement on Environmental Agents Associated with Neurodevelopmental Disorders

Given established scientific knowledge, protecting children from neurotoxic exposures from the earliest stages of fetal development is clearly an essential public health measure.

Environmental agents that we are confident cause learning and developmental disabilities in humans include: alcohol, lead, mercury, PCBs, PBDEs, manganese, arsenic, solvents, PAHs, pesticides and nicotine/environmental tobacco smoke.

Obesity





- In 2009, 28.1% of the youth (ages 12 – 17) in New Brunswick were overweight or obese .
- Obesity is linked with the increased prevalence of diabetes in children.
- The prevalence of diagnosed diabetes in New Brunswick’s children and adolescents is on the rise.

Obesity:
Emerging Research Evidence

- There is good qualitative evidence that links maternal smoking, arsenic, and persistent organic pollutants (POPs) to **obesity** (Galleo, 2010).



The Environmental Burden of Disease – Canada*

Significant diseases in Canada that have links to environmental factors

- Asthma
- COPD
- Lung cancer
- Other cancers
- Neuro-developmental disorders (includes learning disabilities)
- Cardiovascular diseases

* Based on national exposure and WHO Canada statistics

Reference: WHO. Public Health and the Environment. 2009. *Country profiles of environmental burden of disease by WHO regions.*

The Environmental Burden of Disease – Canada

In Canada:

- There are **36,800 deaths** that are preventable through healthier environments.

- **13%** of Canada's total burden of disease is preventable through healthier environments.

Reference: WHO. Public Health and the Environment. 2009. *Country profiles of environmental burden of disease by WHO regions.*

The Environmental Burden of Disease – New Brunswick



New Brunswick Collaborative Effort on Children's Environmental Health

Some Hard Questions

- Can we sustain our healthcare system when more and more children are experiencing the negative effects of environmental pollution and chemicals?

- Can we sustain our education system when an increasing number of children require special education plans and expensive resources?

Looking for Solutions

What can be done?

What We Know For Sure



Children world-wide are entitled to grow and live in healthy environments.

~ UN Convention on the Rights of the Child

Harm from environmental exposures is *largely preventable.*

International Work

- **World Health Organization**

  Global Plan of Action for Children's Health and the Environment: 2010-2015 (Draft)

- **Europe**

  The Children's Environment and Health Action Plan for Europe (2004)

- **United Kingdom**

  A Children's Environment and Health Strategy for the UK (2009)

Canadian Work

- *First Steps in Lifelong Health: A Vision and Strategy for Children's Health and Environment in Canada* (2008)



Canada's Regulatory Environment

- Canadian legislation governing chemical substances in food, water, drugs, pesticides, and consumer products:
  - ***Canadian Environmental Protection Act (CEPA)***
  - ***Pest Control Products Act***
  - ***Food and Drugs Act***
  - ***Hazardous Products Act***



Canada's Regulatory Environment
(cont'd)

GAP

As yet, there is no centre of responsibility within the federal government for addressing the impact of chemicals on the health of Canadians.



New Brunswick's Work

Province of New Brunswick

- Established a Healthy Environments Unit within the Department of Health, Public Health Services (2010)
- Implemented a number of Acts and Policies protecting health from environmental agents:
  - Pesticides Control Act (2010);
  - Smoke-free Places Act (2004);
  - Clean Air Act (1997);
  - Clean Water Act (1989);
  - Anti-idling Policy for government vehicles (2007)

New Brunswick Environmental Network

- Established the NB Collaborative Effort on Children's Environmental Health (2005)

New Brunswick Collaborative on Children's Environmental Health

Working collaboratively to reduce children's exposures to environmental contaminants

The Collaborative Model: A network of networks

Various Action Teams have achieved results in these areas:

- education for families and professionals
- research
- policy and legislation
- consumer products

Team Policy

Team Policy is working toward:

- A Bill of Rights for Children's Environmental Health
- A mechanism to apply a 'children's environmental health lens' to policy and legislation
- Specific legislative, regulatory or policy initiatives to reduce children's exposures

Bill of Rights

Primary Policy Goal

To work toward becoming an equitable and sustainable society in which all New Brunswick children breathe clean air, both indoors and out, consume safe food and drinking water, and are protected from the risks posed by environmental contaminants, such as those found in many consumer products.

Suggested Strategy

Support the N.B. Environmental Bill of Rights, which recognizes the particular vulnerabilities of children to environmental risks and acknowledges the link between health and environment.

NB Environmental Law Society
www.sade-els.org

Children's Environmental Health Lens

Primary Policy Goal

To establish Children's Environmental Health as a central organizing principle for healthy public policy.



Suggested Strategy

Apply a 'children's environmental health lens' to all relevant legislative, regulatory or policy initiatives, and recommend appropriate action, through an existing mechanism such as:

- an interdepartmental committee (e.g., the Interdepartmental Deputy Ministers' Committee on Wellness)

Reduction of Children's Exposure to Contaminants

Primary Policy Goal

Promote precautionary policies and programs to prevent and reduce harmful environmental exposures during fetal and early childhood development.



Suggested Strategies

- Incorporate a 'population health impact assessment' along with an environmental impact assessment as a requirement for development projects.
- Quantify the environmental burden of disease for NB children.
- Develop stronger regulations that will reduce exposures.

Call to Action: Policymakers



- Support the enactment of the NB Environmental Bill of Rights.
- Apply a ‘children’s environmental health lens’ to all relevant legislative, regulatory or policy initiatives.
- Develop a multi-sectoral action plan to reduce children’s exposure to harmful chemicals.

Acknowledgements

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- US Collaborative on Health and Environment www.healthandenvironment.org: Toxics Database, Climate Change and Children's Health
- David R. Boyd, Dodging the Toxic Bullet
- Rick Smith and Bruce Lourie, Slow Death by Rubber Duck: Hoe the Toxic Chemistry of Everyday Life Affects Our Health

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We appreciate the opportunity to present this important issue to you.

Do you have questions?

