Childproofing for Environmental Health

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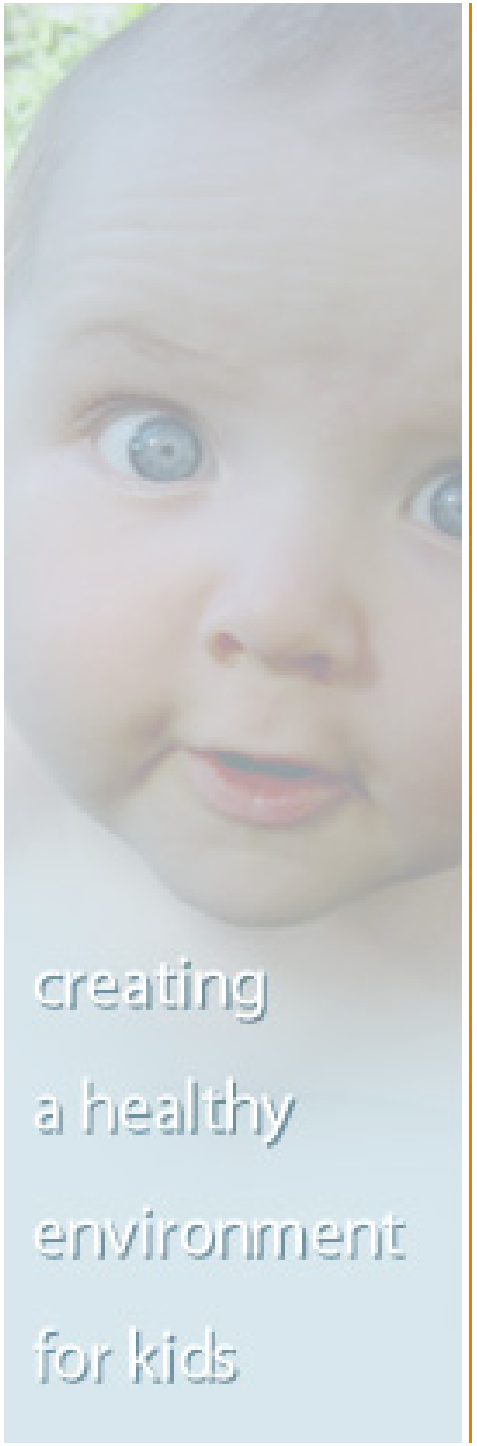
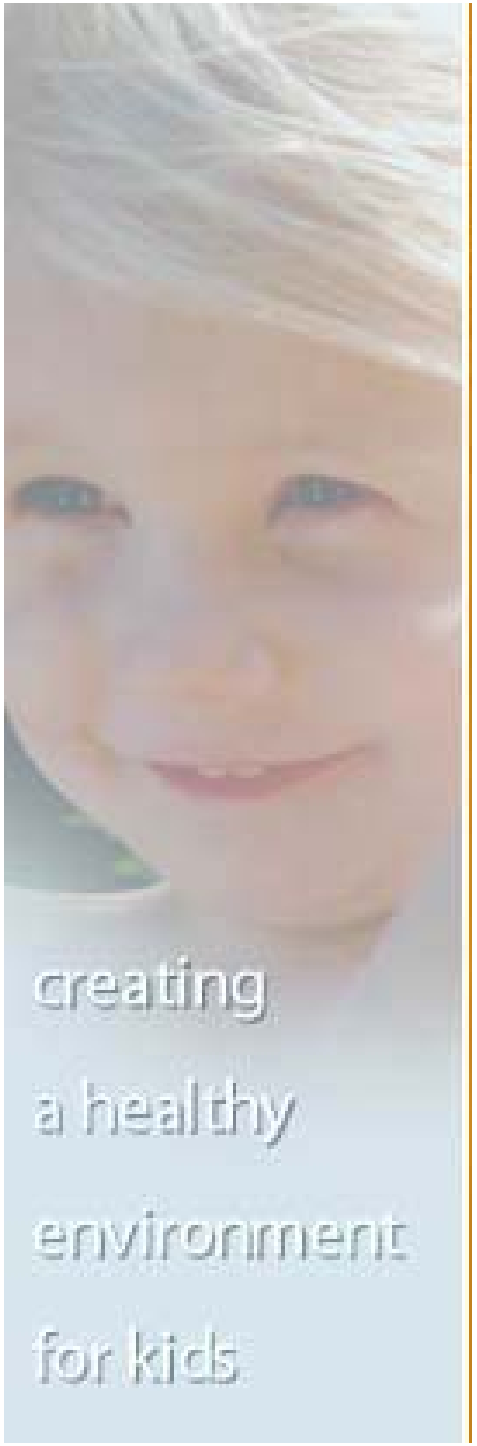


Children: not “Little Adults”

- Developmental differences
- Behavioural differences
- Greater exposure
- Greater uptake of contaminants
- Longer “shelf-life”

Unique Behaviours

- Frequent hand-to-mouth behaviour
- Mouthing of objects
- Pica
- Crawling, lying on floor
- Curiosity, exploratory behaviour
- Risk behaviour



Unique Exposures

- **In the Womb** – time of greatest vulnerability and placenta is not a barrier
  - Mother's body burden shared by fetus
  - Methylmercury magnifies across the placenta
- **Breastfeeding** – The first and still the BEST food for babies. Helps build infant immune and digestive system; aids brain development; many health benefits for mother.
  - Contains trace levels of:
    - industrial chemicals
    - banned pesticides
    - flame retardants
    - metals
  - Comes from the mother's body, therefore breastfeeding babies, not their parents, are at the very top of the food chain.

Critical Windows of Vulnerability

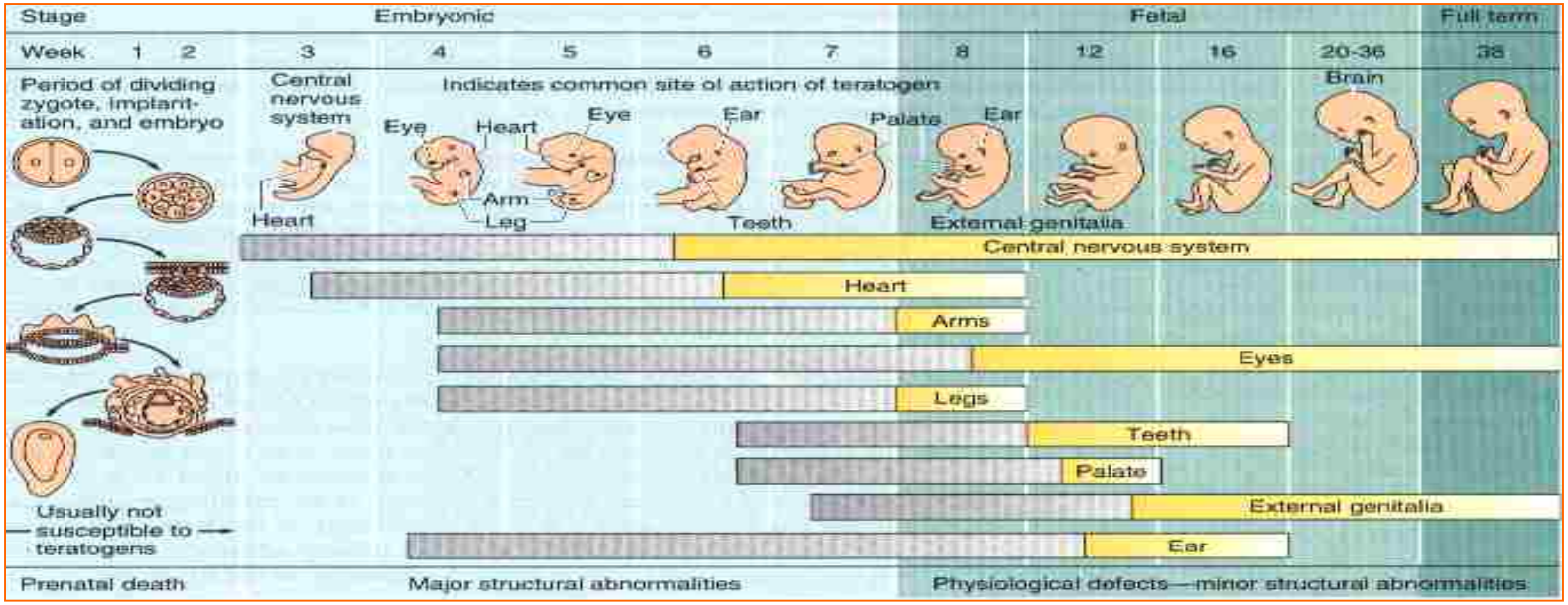


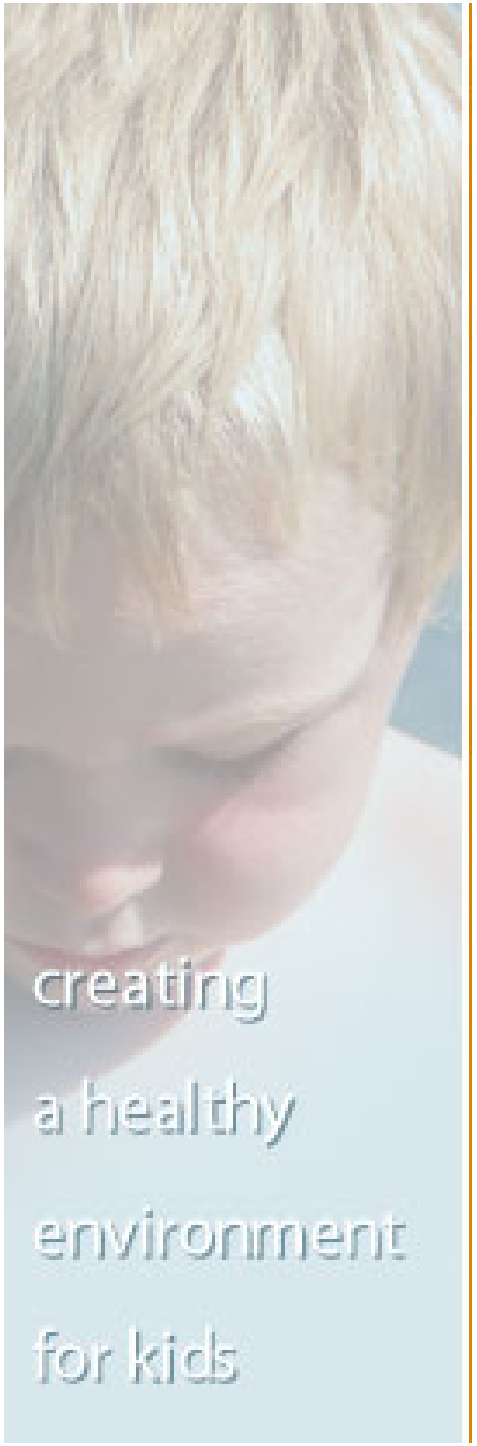
Figure originally from Moore & Persaud, 1973

Developing body systems and organs are highly susceptible to harm (e.g. brain, lungs)

Immature systems don't de-toxify as readily

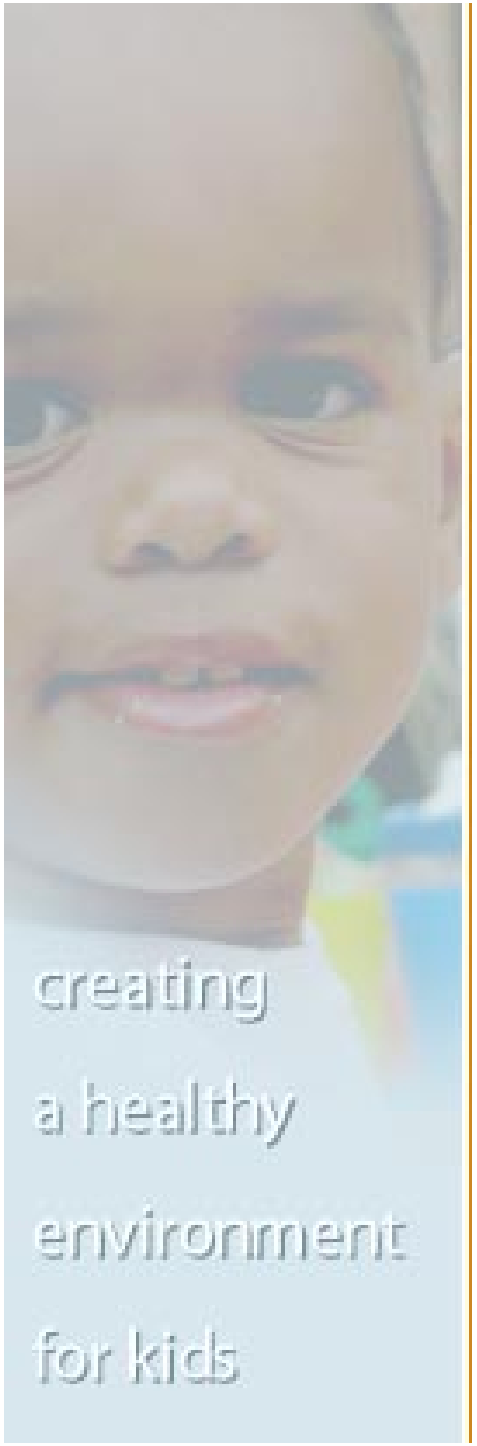
Additional Risk Factors

- Poverty
- Poor Nutrition
- Genetic Differences
- Cultural Differences
- Complacency, “dread” and lack of information
- [Inadequate regulation and massive backlog of untested substances]

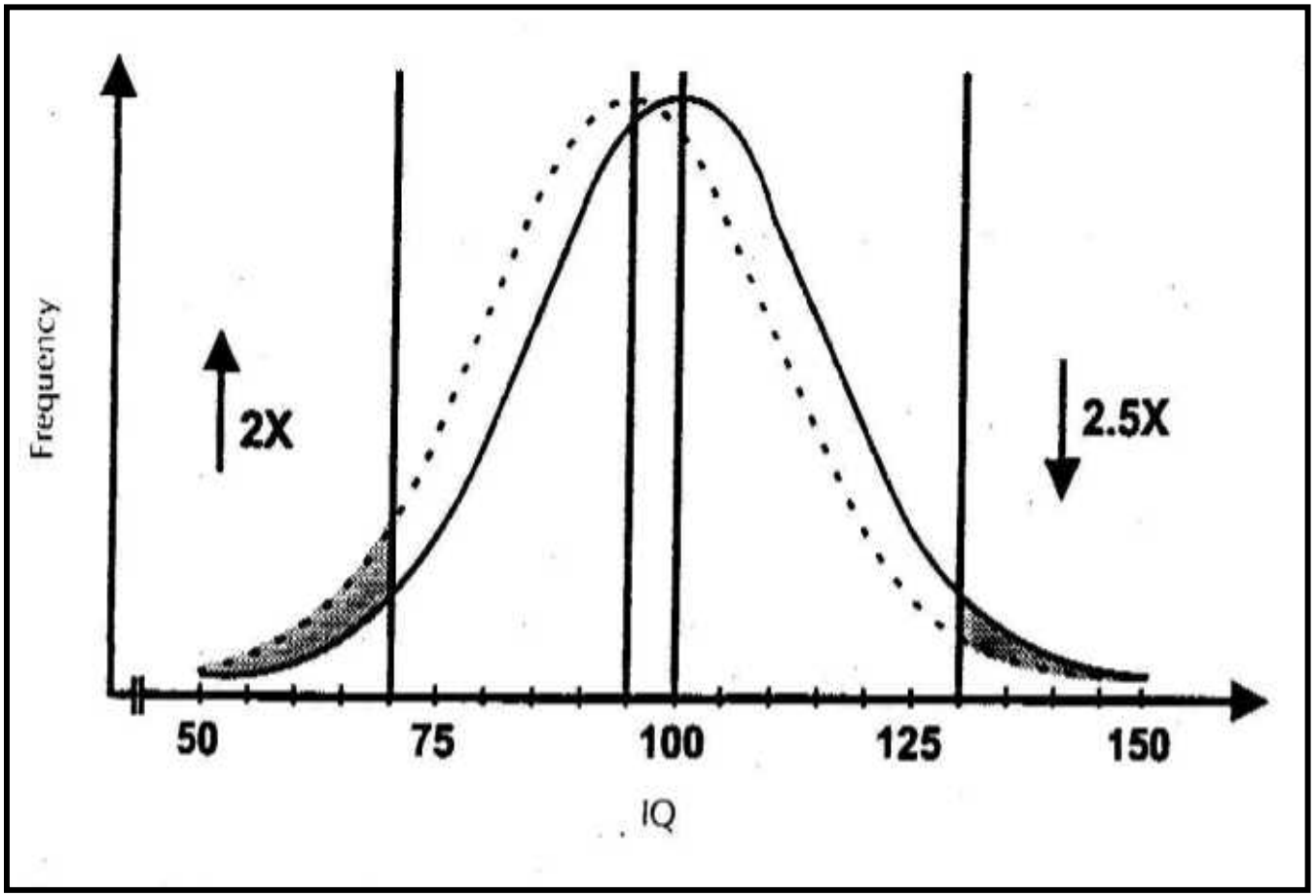


Pollutant exposures are linked to increased risks of….

- Asthma, respiratory problems
- Learning, behaviour problems
- Developmental effects
- Childhood cancers
- Birth defects, stillbirth, miscarriages
- Reproductive, endocrine effects
- Immune system effects

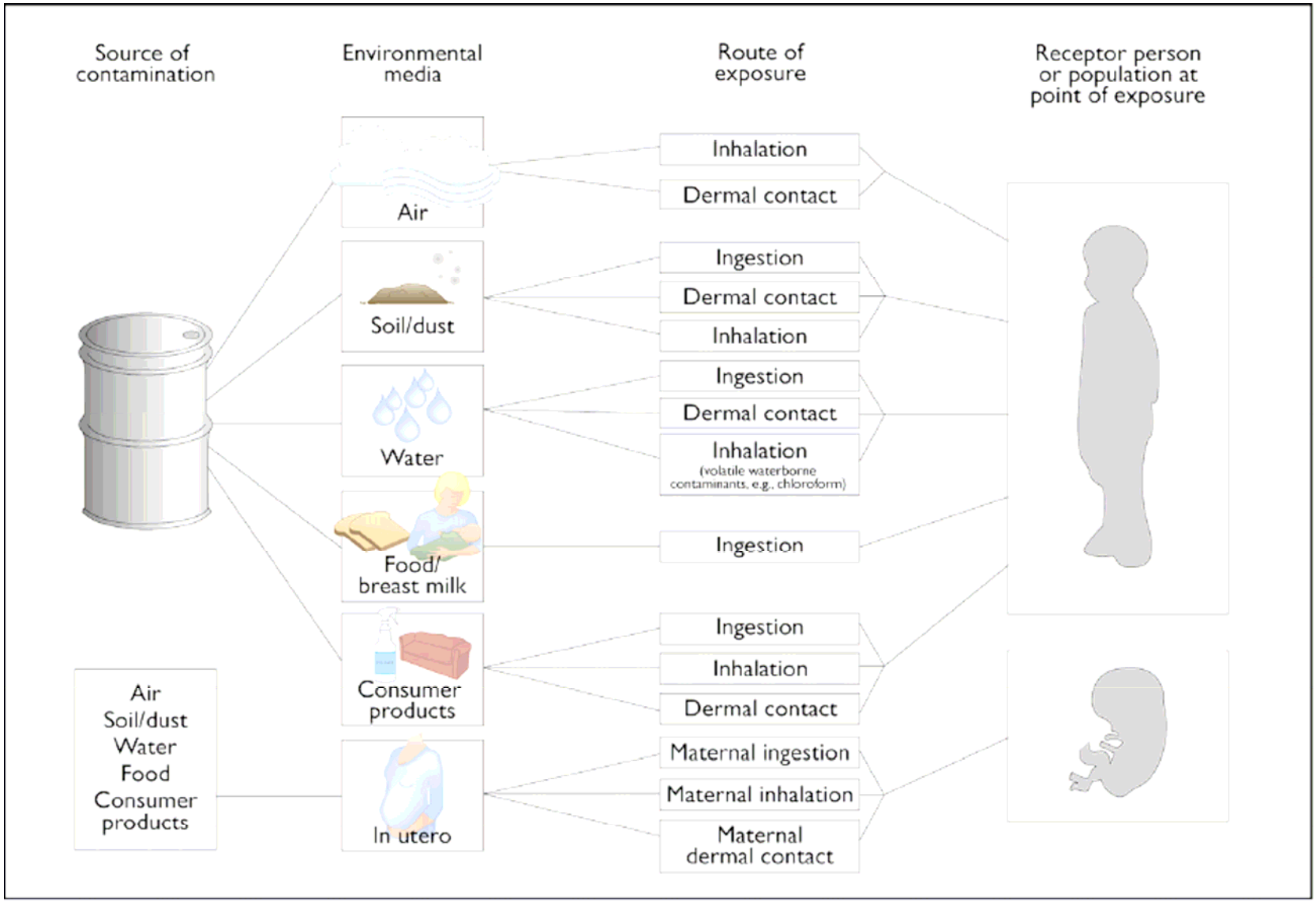


Impacts Across a Population



Source: Rice (1998),
as adapted from Weiss (1990)

Major Pathways of Exposure

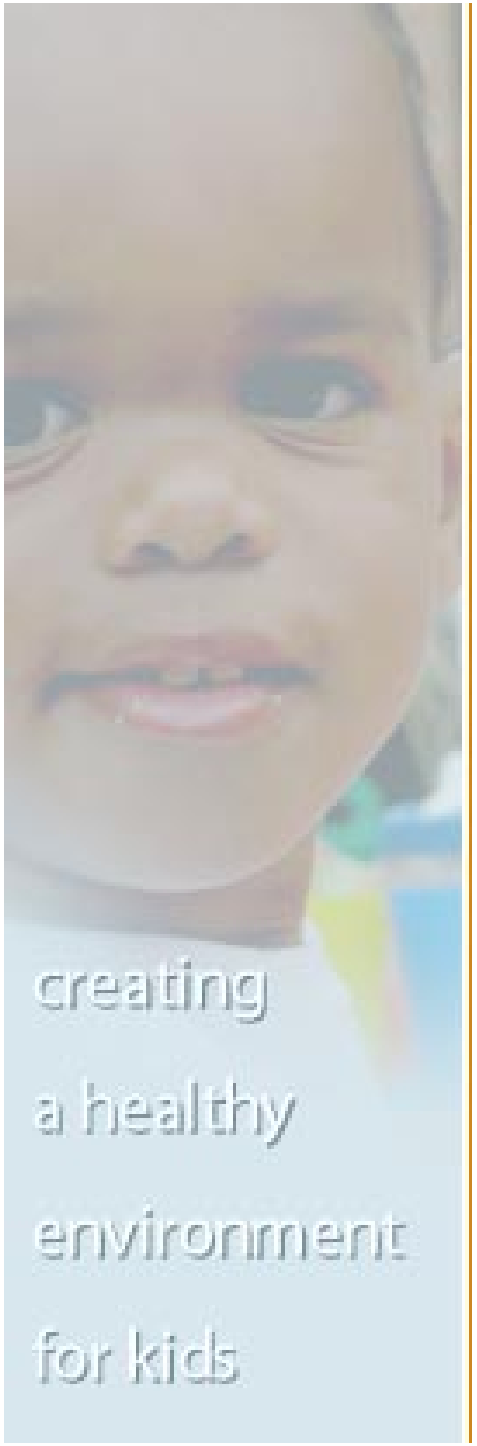


Greatest Exposure?

- Data are poor but three major areas emerging:
  - Air (indoors and outdoors)
  - Food
  - Consumer products (largely indoors)
- Exposure-effect connection – greatest information gap.

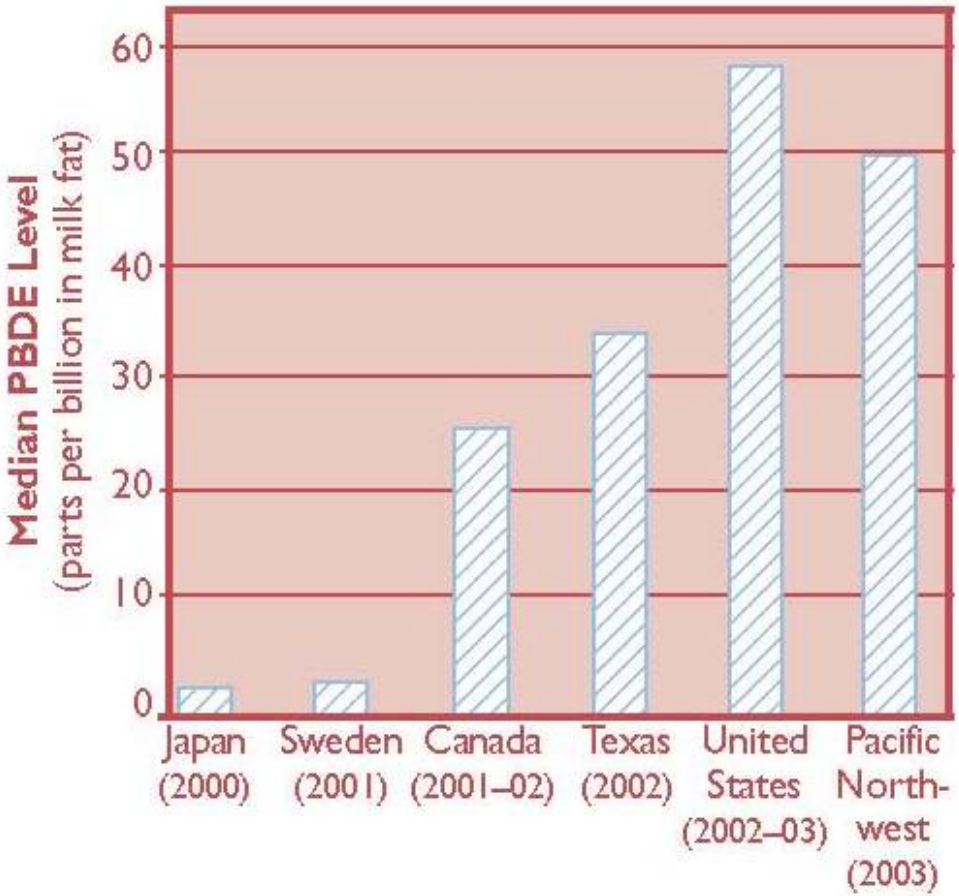
"*We are conducting a vast toxicological experiment in which our children and our children's children are the experimental subjects*"

Dr. Herbert Needleman
Pediatrician and Psychiatrist
University of Pittsburgh

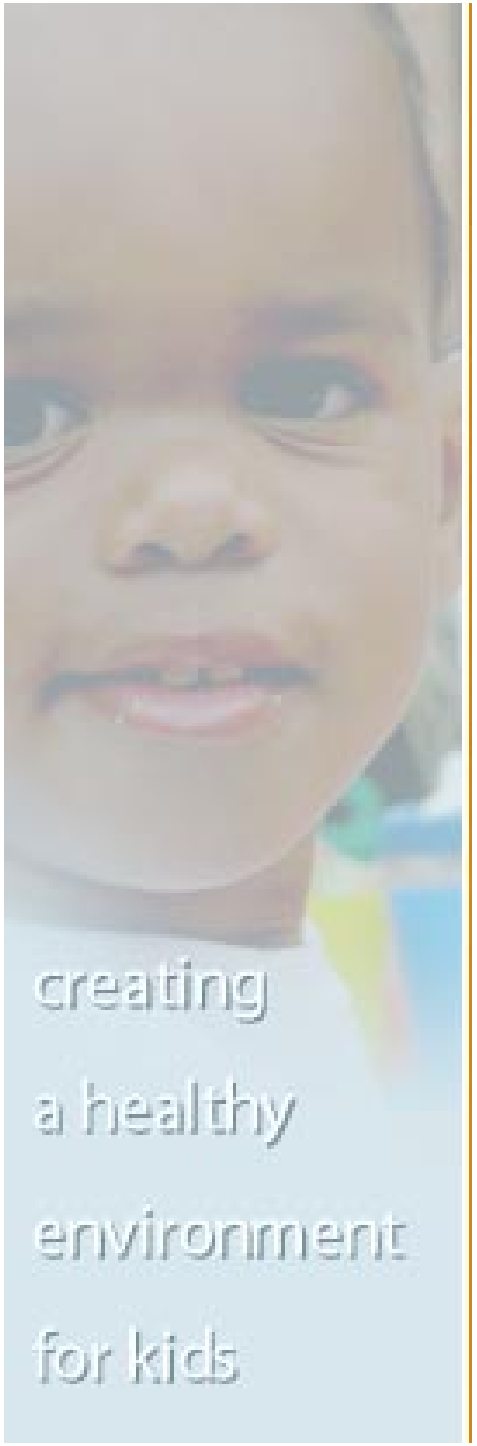


PBDEs in Breast Milk

Figure 12: International Levels of PBDEs in Breast Milk

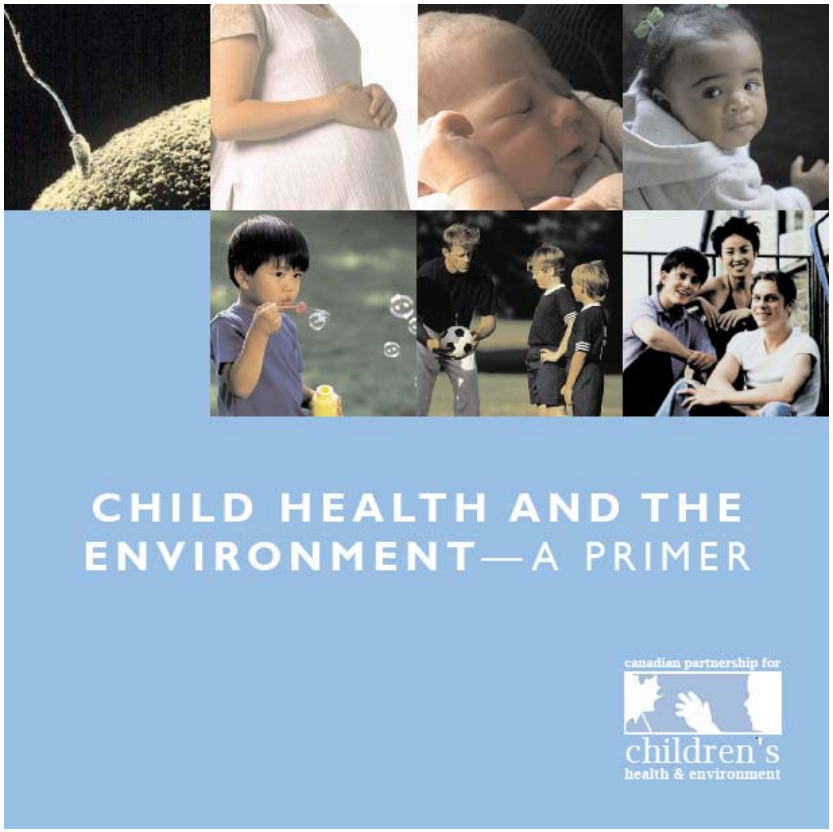


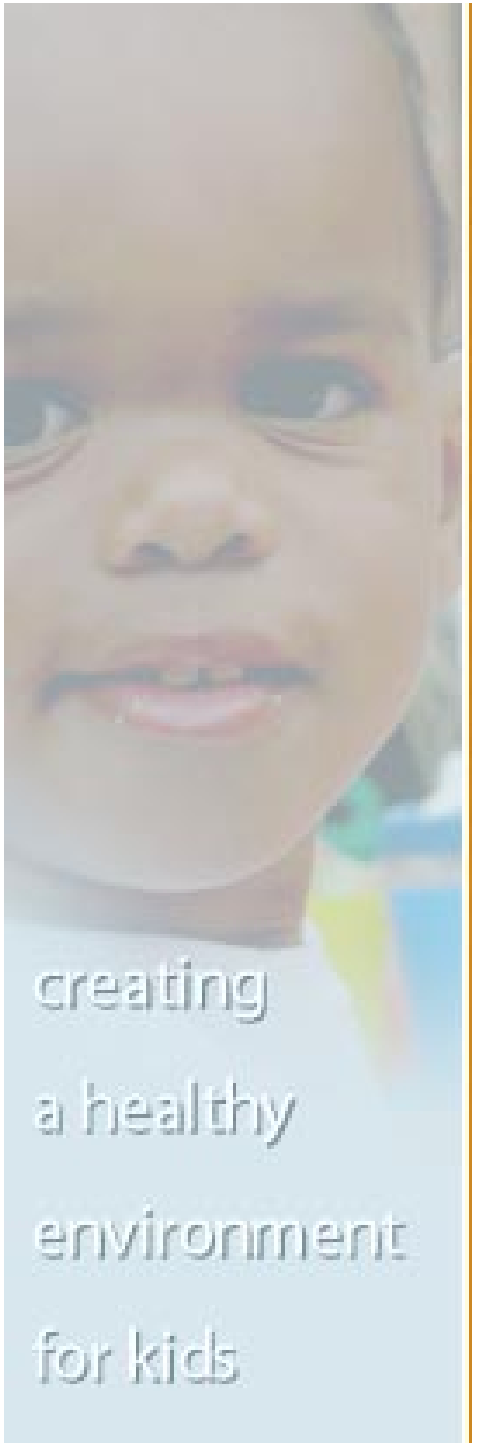
Source: Northwest Environment Watch, 2004.



What Can Individuals Do?

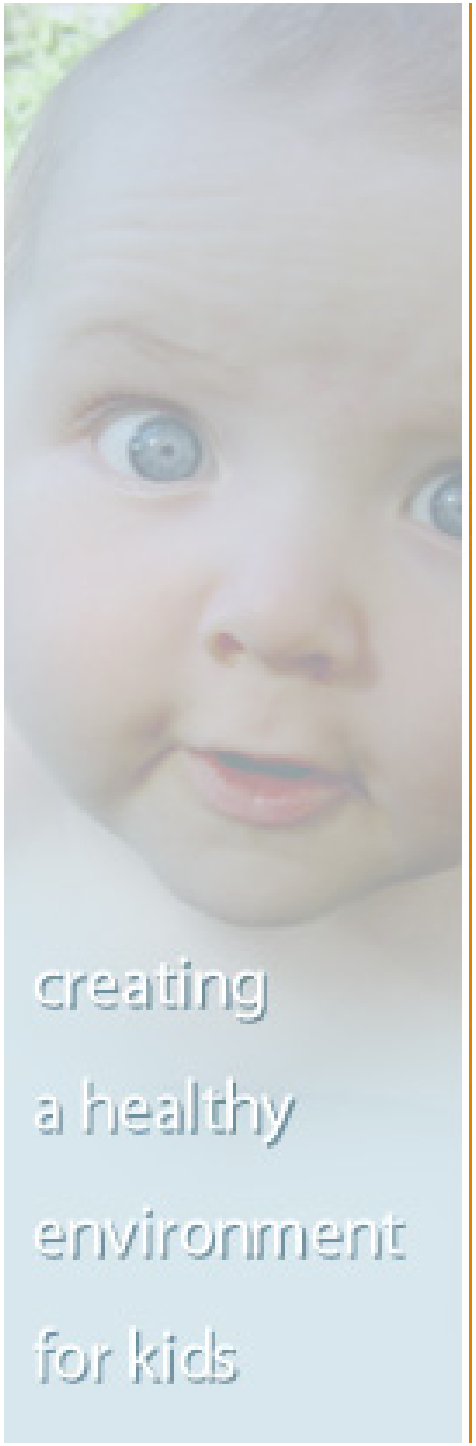
- In tandem with increasing research and necessary regulatory reforms, individuals and families can take precautionary action
- Primer – for health care providers, child care practitioners, policy makers and parents





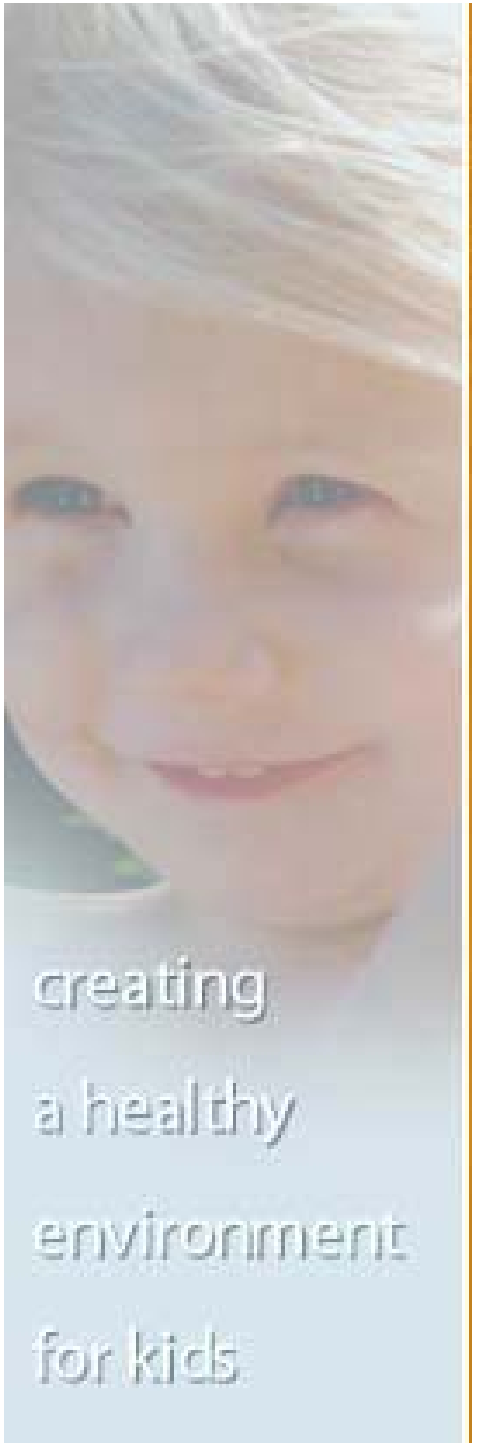
Childproofing for Environmental Health

- Childproofing concept can be expanded to include environmental risks
  - Longer time period (preconception to end of adolescence)
  - Wider range of potentially hazardous exposures
  - Tips provided throughout Primer and according to a "Top Ten" list of strategies in Chapter 6



Playing it Safe - brochure

- Brief summary of health and exposure concerns
- Focused on practical actions
- Chosen according to knowledge of where and when exposures likely create the greatest risk
  - Before conception
  - During pregnancy
  - While cleaning, feeding, playing and renovating/decorating
- Greater detail provided in the Primer



Acknowledgements and Next Steps

- Thanks to CPCHE partners and colleagues and Best Start
- Next Steps for CPCHE:
  - More outreach activities – public speaking and workshops
  - Service Providers manual for Best Start (Ont.) and as part of three year program funded by Health Canada's Health Promotion Fund
  - More content posted to: www.healthyenvironmentforkids.ca
  - Research and Policy Agenda