

FOCUS ON BISPHENOL A

Statement of Health and Environmental Organizations on Endocrine Disrupting Chemicals



Environmental Health Institute of Canada
Institut de santé environnementale du Canada

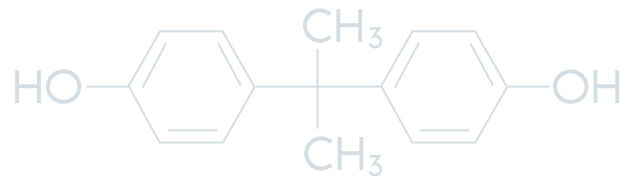


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FOCUS ON BISPHENOL A (BPA)

Statement of Health and Environmental Organizations on Endocrine Disrupting Chemicals

Health and environmental groups working on child health issues and chronic disease prevention are deeply concerned about the pervasive, multiple exposures to chemicals known and suspected of disrupting endocrine (hormone) function. We are particularly concerned about ongoing, low-level exposures to Bisphenol A (BPA), a synthetic chemical widely used in common products, including hard plastic water bottles and some dishware, and the lining of nearly all food and beverage cans.¹ New data from the Government of Canada reveal that 91 percent of Canadians have detectable levels of BPA in their urine, with levels highest among children.² Findings from animal research and a limited amount of human data (as summarized below) suggest that such exposures – particularly during the vulnerable stages of fetal and early childhood development – may be contributing to the burden of chronic disease in Canada.

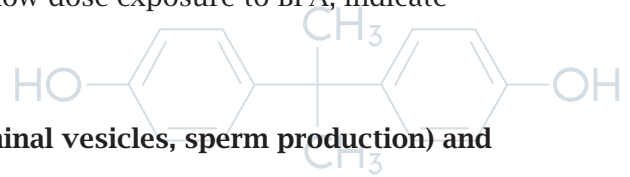
BPA is known to disrupt normal endocrine function^{3,4} and is associated with multiple health outcomes, most notably when exposure occurs during highly sensitive periods of fetal or early postnatal development. Human biomonitoring data confirm that the developing fetus and child are disproportionately exposed, with levels of BPA in children consistently higher than in adults.^{5,6} Fetal BPA exposure has been measured at levels five times higher than in maternal blood.⁷ Studies in rodents and humans show that BPA can cross the placental barrier.^{8,9}

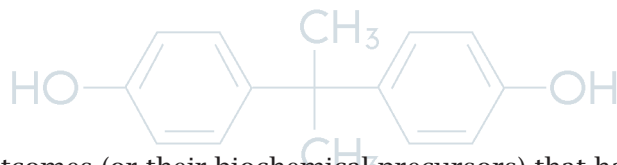
Experts in endocrinology state¹⁰ that existing evidence links exposure to endocrine disrupting chemicals with adverse reproductive outcomes (infertility, birth defects, and breast, prostate and other cancers). They also point to emerging evidence that endocrine disrupting chemicals can exert a range of endocrine/hormonal effects, including effects on the thyroid, the neuro-endocrine system, and conditions with links to obesity including altered metabolism and insulin and glucose homeostasis. It is also well established that disruption of the complex and dynamic processes of fetal and infant development can harm children's health and lead to lifelong impacts on health and intellectual capacity.^{11,12,13,14,15}

Given that the endocrine system is responsible for choreographing the complex development of the brain and other bodily systems, we believe that avoiding/reducing exposures to chemicals that can interfere with this critical signaling should become an integral part of broader societal efforts to prevent chronic disease and promote lifelong health.

We acknowledge that any disease is the result of multiple factors and that environmental exposures are one among many factors that influence health. We also acknowledge the need for more human data, about BPA and the ongoing scientific controversy¹⁶ about endocrine disruption effects of BPA at low levels of exposure. However, we are concerned that limited human data, but robust and solid evidence from a large number of animal studies of prenatal or early life low-dose exposure to BPA, indicate associations with the following conditions:

- **Breast,^{17,18,19} prostate^{20,21,22} and testicular^{23,24,25} cancers;**
- **In males, altered reproductive organs (prostate, testes, seminal vesicles, sperm production) and lower testosterone levels;**
- **In females, altered reproductive organs (mammary gland, germ cells in the ovary) and accelerated puberty;**
- **Changes in fertility in both sexes;²⁶**
- **Altered metabolism of sugars and fats;²⁷**
- **Neurodevelopmental and behavioural impacts, including impaired learning, increased aggressiveness and hyperactivity.^{28,29,30,31}**



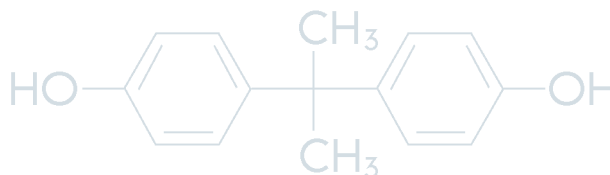


Many of the health outcomes (or their biochemical precursors) that have been observed in laboratory animal research on BPA parallel the most common and/or increasing chronic health conditions affecting the human population of Canada. In particular, breast and prostate are the two most common forms of cancer among adults in Canada, and testicular cancer is the fastest rising cancer in young men.³² Alteration of the body's ability to metabolize sugars and fats is a potential risk factor for obesity^{33,34} and metabolic syndrome³⁵ in humans, which in turn can increase the risk for diabetes, cancer, heart disease and Alzheimer's disease. Animal research also points to the potential for BPA exposure to compromise the developing immune system,³⁶ with potential implications for the development of asthma.^{37,38}

An often-repeated lesson of environmental policy is the importance of taking action when the stakes are high, even in the face of incomplete evidence. In light of the mounting evidence of plausible links between early exposures to endocrine disrupting chemicals, including BPA, and adverse consequences for lifelong health, and considering the potential for serious, wide-ranging harm if exposures are allowed to continue unchecked, we, the undersigned, call upon government leaders in Canada to:

- (1) **Build on Canada's world-leading steps of declaring BPA toxic under the *Canadian Environmental Protection Act* and banning BPA in baby bottles, and continue to demonstrate global leadership by committing to further reducing food- and drink-related population exposures to BPA**, in our role as host country for the World Health Organization/Food and Agricultural Organization (WHO/FAO) expert meeting on BPA in November 2010;
- (2) Where safer alternatives already exist, **take immediate action to eliminate the use of BPA in food and beverage containers and dishware;**
- (3) **Expedite the identification, evaluation and adoption of safer alternatives to BPA for food can linings**, through regulatory and non-regulatory means, including investment in green chemistry³⁹ to design chemical products and processes that reduce or eliminate the use and generation of substances that are hazardous to human health or the environment;
- (4) **Significantly modernize and strengthen the way in which chemicals are tested and regulated in Canada** such that we do not allow widespread exposures to chemicals that have been shown to disrupt endocrine function in living beings;
- (5) **Include mandatory product labeling of known endocrine disruptors and other toxic substances in consumer products** in the proposed revisions to the *Hazardous Products Act* (Bill C-36, the Canada Consumer Product Safety Act) to empower individuals to make informed purchasing decisions, and to foster the marketing of safer, greener products. Consumers have a right to know what chemical substances are present in the products they buy.

We applaud the efforts of leading companies and scientists to find and use alternatives to BPA for food can linings and other food-use and consumer products, and we encourage others to join in these efforts. We call on scientific researchers to continue their efforts to investigate BPA and other endocrine disrupting substances in order to better understand links to leading chronic diseases.



SIGNATORY ORGANIZATIONS:

Canadian Association of Physicians
for the Environment
Canadian Child Care Federation
Canadian Environmental Law Association
Environmental Health Clinic –
Women's College Hospital
Environmental Health Institute of Canada
Health Nexus

Learning Disabilities Association of Canada
Ontario College of Family Physicians
Ontario Public Health Association
Pollution Probe
South Riverdale Community Health Centre
The Lung Association - Ontario
Toronto Public Health



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