



Connecticut Nurses' Association
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**TESTIMONY RE: H. B. No. 6572 (RAISED) AN ACT CONCERNING
BISPHENOL-A IN CHILDREN'S PRODUCTS AND FOOD PRODUCTS AND
PROHIBITING CERTAIN ALTERNATIVE SUBSTANCES
Environment Committee Hearing
March 2, 2009**

Good morning Senator Meyer, Representative Roy and members of the Environment Committee.

Thank-you for the opportunity to provide testimony on behalf of the Connecticut Nurses' Association (CNA), the professional organization for registered nurses in Connecticut. I am Polly T. Barey, RN, MS, a nurse with many years of experience in public health, home health care and mental health. I am also a member of the Connecticut Nurses' Association's Government Relations Committee. I speak in strong support of H.B.6572, An Act Concerning Bisphenol-A in Children's Products and Food Products and Prohibiting Certain Alternative Substances.

Since WW II, thousands of chemicals have been developed with few investigated for being poisonous or toxic to humans before they were marketed. They've brought good but also harm. Harm that we couldn't necessarily see. Harm that we couldn't read about and make a choice. Harm that has been building. Harm that has been quantified over the last few years and can be now decreased with the use of safer alternatives.

We've assumed – incorrectly - that what's on the market is safe because we've assumed that some government agency must be responsible for letting us know if a product is not safe. Or, that there would be labels to let us know what chemicals are in these products.

What this bill will achieve is a phase out of one of these chemicals of concern: Bisphenol-A (BPA), a synthetic estrogen and known hormone / endocrine disrupter. The

bill will also prohibit replacement with other toxic hazards which will reduce exposures to our most vulnerable populations – children and women of child bearing age.

Why do we need to do this?

- Our federal government's lack of oversight and outdated laws and regulations related to toxic chemicals have left the public exposed to harmful substances, as well as not keeping up with the science available on toxicity.
- Outdated U.S. standards for exposure to toxic chemicals are based on a core assumption – high dose testing procedures adequately predict low-dose effects. Our body of knowledge has challenged this as we have learned more about low-dose effects. Even with these new scientific studies – using low doses - the standard has not changed.
- As of August, 2008, 189 government-funded, low-dose studies found harm from bisphenol A. At the same time, 14 low-dose studies funded by chemical corporations found harm no harm. The National Toxicology Program has expressed concern about brain, behavior, and prostate effects at current exposure levels. (<http://www.niehs.nih.gov/news/releases/2008/bisphenol-a.cfm>)
- In the last few decades BPA has become widely used. At about two million tons used worldwide each year it is one of the highest-volume synthetic chemicals in the world. More than 90% of Americans have BPA in their bodies.
- Unsuspecting women can ingest BPA from cans with BPA resin liners which leach BPA and cause in-utero exposures. According to the Environmental Working Group (EWG), cans are the primary source of human exposure to the chemical.
- **Health effects:**
 - Over 180 studies on low dose exposure to BPA have linked the substance to many diseases of modern life including (see Table 1)
 - Impaired brain development
 - Insulin resistance and altered blood glucose levels
 - Early onset of sexual maturation in females
 - Behavior changes including aggression, hyperactivity, decreased maternal behavior, and altered socio-sexual behaviors
 - Increased susceptibility to drug addiction
 - Aneuploidy (causes 10-20% of all birth defects, including Down Syndrome)
 - Altered immune function
 - Low sperm count
 - Prostate and breast cancers

The costs associated with health effects

The costs of the health effects of the diseases associated with BPA are enormous. The affected person, their family, the community and our society are all burdened. Research by Landrigan, et al in 1997 (*Environmental Pollutants and Disease in American Children: Estimate of Morbidity, Mortality, and Costs for Lead Poisoning, Asthma,*

Cancer, and Developmental Disabilities) puts the annual charges per child with newly incident cancer of pediatric cancer of environmental origin in 1998 dollars at \$509,000. When lost wages of parent were added in for 5 lost days per 7 child hospital days, the total reaches \$583,000. Lifetime cost data was available for the U.S. for 1997 was put at \$72.4 billion for mental retardation, and \$7.6 billion for autism. These are staggering cost figures but they don't take into account the emotional and physical pieces of caring for a child with developmental disabilities.

Act now!

We can no longer wait to act especially with safer alternative available. We need to prevent the growing adverse effects to Connecticut's residents and the costs of preventable diseases. There is an answer - bans and phase outs of BPA and move to safer alternatives which is already happening with companies like:

- Similac (Abbott Labs) has two BPA-free infant formula products (both liquid and powder) on store shelves which do not contain any BPA – the 32oz “ready to go liquid” formula and the dry infant formula packets; several others have committed to making BPA-free as soon as possible.
- Playtex, Dr. Brown's, Evenflo, and a long list of other companies have BPA-free baby bottles available at competitive prices
- Eden Foods' canned bean products now come packaged in BPA-free cans
- U.S. retailers phasing out BPA – Wal-Mart, CVS, Kmart, Toys”R”Us and others

Thank you for your consideration. Based on the current literature and evidence related to the risks of BPA exposures, we urge the committee to act favorably on this bill.

Addenda

From the Environmental Working Group (<http://www.ewg.org>) bisphenol A In the chemical family: Bisphenol A & BADGE

Bisphenol a (BPA), a synthetic estrogen used to harden polycarbonate plastics and epoxy resin, is the focus of a growing number of research studies and legislative actions, reflecting mounting scientific evidence that it causes serious and sometimes irreversible damage to health, even at the low doses to which people are routinely exposed. An estimated 6 billion pounds of BPA are produced globally annually, generating about \$6 billion in sales. It is fabricated into thousands of products made of hard, clear polycarbonate plastics and tough epoxy resins, including safety equipment, eyeglasses, computer and cell phone casings, water and beverage bottles and epoxy paint and coatings. But BPA-based plastics break down readily, particularly when heated or washed with strong detergent.

In laboratory tests, trace BPA exposure been shown to disrupt the endocrine system and trigger a wide variety of disorders, including chromosomal and reproductive system abnormalities, impaired brain and neurological functions, cancer, cardiovascular system damage, adult-onset diabetes, early puberty, obesity and resistance to chemotherapy. Environmental Working Group <http://www.ewg.org/node/23297>

A Survey of Bisphenol A in U. S. Canned Foods *March 5, 2007*

Summary. Independent laboratory tests found a toxic food-can lining ingredient associated with birth defects of the male and female reproductive systems in over half of 97 cans of name-brand fruit, vegetables, soda, and other commonly eaten canned goods. The study was spearheaded by the Environmental Working Group (EWG) and targeted the chemical bisphenol A (BPA), a plastic and resin ingredient used to line metal food and drink cans. There are no government safety standards limiting the amount of BPA in canned food.

EWG's tests found:

- Of all foods tested, chicken soup, infant formula, and ravioli had BPA levels of highest concern. Just one to three servings of foods with these concentrations could expose a woman or child to BPA at levels that caused serious adverse effects in animal tests.
- For 1 in 10 cans of all food tested, and 1 in 3 cans of infant formula, a single serving contained enough BPA to expose a woman or infant to BPA levels more than 200 times the government's traditional safe level of exposure for industrial chemicals. The government typically mandates a 1,000- to 3,000-fold margin of safety between human exposures and levels found to harm lab animals, but these servings contained levels of BPA less than 5 times lower than doses that harmed lab animals.

Children are not little adults

(from *Policy Implications Based on the Scientific Consensus Statement on Environmental Agents Association with Neurodevelopmental Disorders*, 9/16/08 which is derived from and accompanies the *Scientific Consensus Statement on Environmental Agents Associated with Neurodevelopmental Disorders 2/08* – <http://www.iceh.org/LDDI.html>)

- Environmental exposures start early: preconception, during gestation (*in utero* exposures), via breast milk, via infant formula and then through contact with the environment.
- For their body weight, children eat and breathe more than adults, thus a small exposure may translate into a big dose.
- Their organ systems, particularly the nervous system, are developing and are thus more susceptible to the effects of chemicals.
- Young children are prone to hand-to-mouth behaviors that expose them to higher levels of ambient chemicals
- Children must rely on adults to ensure that they develop in an environment in which they can reach and maintain their full potential.

Bisphenol A and Risk of Metabolic Disorders

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In this issue of *JAMA*, Lang and colleagues¹ report the results of the first major epidemiologic study to examine the health effects associated with the ubiquitous estrogenic chemical bisphenol A (BPA). This compound is the base chemical (monomer) used to make polycarbonate plastic food and beverage containers, the resin lining of cans, and dental sealants; it also is found in "carbonless" paper used for receipts as well as a wide range of other common household products. Based on their analysis of data from the National Health and Nutrition Examination Survey 2003-2004, Lang et al report a significant relationship between urine concentrations of BPA and cardiovascular disease, type 2 diabetes, and liver-enzyme abnormalities in a representative sample of the adult US population. This report, suggesting links between BPA and some of the most significant and economically burdensome human diseases, is based . . . **Author Affiliations:** Division of Biological Sciences, University of Missouri, Columbia (Dr vom Saal); Environmental Health Sciences, Charlottesville, Virginia (Dr Myers).

Table 1. Association between Human Health Trends and Adverse Health Effects in Laboratory Animals at Human Exposure Levels

<u>BPA effects in mice & rats</u>		<u>Human health trends</u>
Prostate hyperplasia & cancer Mammary hyperplasia & cancer	Cancer	Prostate cancer increase Breast cancer increase
Abnormal urethra/obstruction Sperm count decrease Early puberty in females Ovarian cysts/uterine fibroids Abnormal oocyte chromosomes	Male and female reproductive system	Hypospadias Sperm count decrease Early sexual maturation PCOS/uterine fibroids Miscarriage
Body weight increase Insulin resistance	Metabolic disease	Obesity increase Type 2 diabetes
Hyperactivity/impaired learning Abnormal play behavior Abnormal socio-sexual behavior	Brain and behavior	ADHD Autism