



**Testimony in Support of the Tris-Free Children and Babies Act  
and the Chemicals in Children's Products Act**

**Before the New York State Assembly Committees on Environmental Conservation  
and Health**

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On behalf of NRDC (Natural Resources Defense Council), which has 1.2 million members and activists, nearly 120,000 of whom are from New York, we are testifying to urge your support for the Tris-Free Children and Babies Act and the Chemicals in Children's Products Act. Both acts will protect our most vulnerable from exposure to toxic chemicals in their everyday products.

Flame retardant chemicals are a common component of household items including electronics, building materials, and items which contain foam, such as furniture and some children's products. Though their use is well-intentioned, their ubiquity has resulted in widespread contamination of our bodies which is threatening our most vulnerable populations.

Pounds of these chemicals are found in our furniture and baby products. They leak out into dust, pets, humans, and the environment. U.S. house dust has been found to be highly contaminated with flame retardant chemicals.<sup>1</sup> As a result of inhaling or ingesting this dust Americans carry in their bodies some of the highest levels found anywhere in the world.<sup>2</sup>

Because infants and toddlers spend most of their time close to the ground where dust settles and because it is normal for young children to put their hands into their mouths at any opportunity, it isn't surprising that toddlers have been found to have some of the highest levels of exposure, some three times the levels that are found in their mothers.<sup>3</sup>

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<sup>1</sup> Stapleton, H. M., J. G. Allen, et al. (2008). "Alternate and New Brominated Flame Retardants Detected in U.S. House Dust." *Environ. Sci. Technol.* 42(18): 6910-6916.

<sup>2</sup> Zota, A. R., R. A. Rudel, et al. (2008). "Elevated House Dust and Serum Concentrations of PBDEs in California: Unintended Consequences of Furniture Flammability Standards?" *Environ. Sci. Technol.* 42(21): 8158-8164.

<sup>3</sup> Eskenazi, B., L. Fenster, et al. (2011). "A Comparison of PBDE Serum Concentrations in Mexican and Mexican-American Children Living in California." *Environ Health Perspect* 119(10).

Infants and children are uniquely vulnerable to chemical exposures because of the tremendous amount of growth they undergo. For example a newborn doubles their weight during the first five to six months and by their first birthday will weigh three times their birth weight. During this period of rapid growth, the body is exceedingly sensitive to chemical exposures. Children are also vulnerable because on a pound for pound basis they ingest more food and liquids than an adult, and because their detoxification systems are not yet mature. These factors all combine to result in relatively higher exposures to toxic chemicals in young children during critical periods of organ development.

There is shockingly little information available on the toxicity of most of these chemicals. Most of the laboratory animal studies done on flame retardants have been focused on the group of flame retardants, PBDEs. These chemicals have been shown to disrupt thyroid hormone<sup>4</sup>, and since this hormone is so important for development of the brain, it isn't surprising that PBDES have been shown to cause damage to the developing brain resulting in hyperactivity and memory problems<sup>5</sup>. A recent study in animals has linked toxic flame retardants to a type of autism. Animal exposure to PBDEs is also found to cause reproductive harm such as lower sperm counts.<sup>6</sup>

More troubling is that many of the health outcomes once described in only animal studies are now being found in studies of human populations. Recent studies have found women with higher levels of PBDEs in their blood take longer to get pregnant<sup>7</sup> and have smaller babies<sup>8</sup>. Children exposed in the womb have a lower IQ and attention problems<sup>9</sup>. Other studies have linked flame retardants to male infertility<sup>10</sup>, male birth defects<sup>11</sup>, and early puberty in girls<sup>12</sup>.

Although the PBDEs have been or are being phased out of use, exposures continue from older products still in our homes and now we are seeing other toxic chemicals being used as replacements. One example where one toxic flame retardant has been replaced by another is the use of chlorinated Tris or TDCPP.

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<sup>4</sup> Chevrier, J., K. G. Harley, et al. (2011). "Prenatal Exposure to Polybrominated Diphenyl Ether Flame Retardants and Neonatal Thyroid-Stimulating Hormone Levels in the CHAMACOS Study." American Journal of Epidemiology 174(10): 1166-1174.

<sup>5</sup> Costa, L. G. and G. Giordano (2007). "Developmental neurotoxicity of polybrominated diphenyl ether (PBDE) flame retardants." Neurotoxicology 28(6): 1047-1067.

<sup>6</sup> Kuriyama, S. N., C. E. Talsness, et al. (2005). "Developmental exposure to low dose PBDE 99: effects on male fertility and neurobehavior in rat offspring." Environ Health Perspect 113(2): 149-154.

<sup>7</sup> Harley, K. G., A. R. Marks, et al. (2010). "PBDE Concentrations in Women's Serum and Fecundability." Environ Health Perspect 118(5): 699-704.

<sup>8</sup> Harley, K. G., J. Chevrier, et al. (2011). "Association of Prenatal Exposure to Polybrominated Diphenyl Ethers and Infant Birth Weight." American Journal of Epidemiology 174(8): 885-892.

<sup>9</sup> Herbstman, J. B., A. Sjodin, et al. (2010). "Prenatal exposure to PBDEs and neurodevelopment." Environ Health Perspect 118(5): 712-719.

<sup>10</sup> Meeker, J. D. and H. M. Stapleton (2009). "House Dust Concentrations of Organophosphate Flame Retardants in Relation to Hormone Levels and Semen Quality Parameters." Environ Health Perspect 118(3): 318-323.

<sup>11</sup> Main, K. M., H. Kiviranta, et al. (2007). "Flame retardants in placenta and breast milk and cryptorchidism in newborn boys." Environ Health Perspect 115(10): 1519-1526.

<sup>12</sup> Chen, A., E. Chung, et al. (2011). "Serum PBDEs and age at menarche in adolescent girls: Analysis of the National Health and Nutrition Examination Survey 2003–2004." Environ Res 111(6): 831-837.

TDCPP was banned as a flame retardant from children's pajamas in the 1970s because it caused an unacceptably high number of cancerous tumors. However, it was not banned from use in other products and is now being used as a replacement for PBDEs in furniture and children's products, including infant strollers and nursing pillows.

Why is this exposure any more acceptable than exposure from pajamas?

A study done last year<sup>13</sup> found 80% of children's products that were tested contain flame retardant chemicals with names that resemble alphabet soup – TCEP, TDCPP, PBDEs, TCPP, TBPH, and TPP. The products tested included nursing pillows, car seats, changing table pads, sleep positioners, infant carriers and strollers. In all, 8 different types of flame retardant mixtures were identified and some products contained more than one class of flame retardant chemical.

Do baby products really pose a fire threat?

Is a nursing pillow in danger of catching on fire?

Probably not.

There is no proven fire safety benefit to having these chemicals in children's products. We are taking tremendous risks with our children, ourselves and our environment for no measurable benefit in fire protection.

The State of California has recognized that some infant products are not fire hazards and has exempted strollers, nursing pillows and infant carriers from having to comply with their flammability standard, TB 117. And California has announced they will exempt another 14 children's products from having to comply with this standard in their updated standard TB 117-2012 standard due to be released sometime this month.

NRDC strongly supports the Tris-Free Children and Babies Act and the Chemicals in Children's Products Act and urges your continued support of these measures.

Respectfully submitted,



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<sup>13</sup> Stapleton, H. M., S. Klosterhaus, et al. (2011). "Identification of Flame Retardants in Polyurethane Foam Collected from Baby Products." *Environ Sci Technol* 45(12): 5323-5331.