

# Flame retardants may be toxic to children

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Chemicals called polybrominated diphenyl ethers (PBDEs) have been used for decades to reduce fires in everyday products such as baby strollers, carpeting and electronics. A new study to be presented on Monday, May 6, at the Pediatric Academic Societies (PAS) annual meeting shows that prenatal exposure to the flame retardants is associated with lower intelligence and hyperactivity in early childhood.

"In animal studies, PBDEs can disrupt [thyroid hormone](#) and cause hyperactivity and learning problems," said lead author Aimin Chen, MD, PhD, assistant professor in the Department of Environmental Health at University of Cincinnati College of Medicine. "Our study adds to several other human studies to highlight the need to reduce exposure to PBDEs in pregnant women."

Dr. Chen and his colleagues collected blood samples from 309 pregnant women enrolled in a study at Cincinnati Children's Hospital Medical Center to measure PBDE levels. They also performed intelligence and behavior tests on the women's children annually until they were 5 years old.

"We found [maternal exposure](#) to PBDEs, a group of [brominated flame retardants](#) mostly withdrawn from the U.S. market in 2004, was associated with deficits in child cognition at age 5 years and hyperactivity at ages 2-5 years," Dr. Chen said. A 10-fold increase in maternal PBDEs was associated with about a 4 point IQ deficit in 5-year-old children.

Even though PBDEs, except Deca-BDEs, are not used as a flame retardant in the United States anymore, they are found on many consumer products bought several years ago. In addition, the chemicals are not easily biodegradable, so they remain in human tissues and are transferred to the developing fetus.

"Because PBDEs exist in the home and office environment as they are contained in old furniture, carpet pads, foams and electronics, the study raises further concern about their toxicity in developing children," Dr. Chen concluded.

**More information:** To view the abstract, "Cognitive Deficits and Behavior Problems in Children with Prenatal PBDE Exposure," go to [www.abstracts2view.com/pas/view ... hp?nu=PAS13L1\\_3550.8](http://www.abstracts2view.com/pas/view...hp?nu=PAS13L1_3550.8)

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