

High levels of potentially toxic flame retardants in California pregnant women

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A new study finds that pregnant women in Northern California have the highest PBDE flame retardant exposures reported to date among pregnant women worldwide. It also describes some of the first evidence from humans that certain flame retardants may interfere with thyroid hormone signaling during pregnancy, which is critical to fetal brain development. The study, described as one of the most extensive to date on flame retardant exposures in pregnant women, appears in the ACS journal *Environmental Science & Technology*.

Ami Zota and colleagues note that the flame retardant chemicals, known as polybrominated diphenyl ethers (PBDEs), have been widely used in furniture foam, plastics, carpets, consumer electronics, wire insulation, and other products since the 1970s. Although California banned manufacture and import of certain PBDEs in 2004, human exposure continues from old products, house dust, food, and other sources. Studies suggest that PBDE exposure during pregnancy may disrupt thyroid function, with adverse effects on normal development of the fetus's brain that persist throughout life, and also have adverse effects on the mother.

In their study of 25 second-trimester pregnant women in California, the researchers found the highest-ever levels of certain PBDEs among pregnant women worldwide. The high exposure most likely was the unintended consequence of California's furniture flammability standards, which manufacturers have met since 1975 by adding PBDE's to foam in upholstered furniture, Zota and colleagues said. While

preliminary, the study also found a link between PBDE levels and levels of thyroid-stimulating hormone, a substance produced in the brain, that helps regulate activity of the thyroid gland.

More information: “Polybrominated diphenyl ethers (PBDEs), hydroxylated PBDEs (OH-PBDEs), and measures of thyroid function in second trimester pregnant women in California” *Environmental Science & Technology*.

Provided by American Chemical Society

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