
Jennifer Przybyla, Molly L. Kile, Ellen Smit, and E. Andres Houseman

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Background.

Animal toxicity tests and epidemiological studies suggest that exposure to PBDEs can alter attention behavior, yet few studies have examined their association with diagnosis of attention deficit hyperactivity disorder (ADHD) in adolescents.

Methods.

Logistic regression was used to examine the cross-sectional association between ADHD and lipid and non-lipid adjusted blood serum concentrations of 2',4-tribromodiphenyl ether (BDE-28), 2,2', 4,4'-tetrabromodiphenylether (BDE-47), 2,2', 4,4', 5-pentabromodiphenyl ether (BDE-99), 2,2', 4,4', 5,5'-pentabromodiphenyl ether (BDE-100), 2,2', 4,4', 5,5'-hexabromodiphenyl ether (BDE-153), serum PBDEs, above/below the 75th percentile of serum PBDEs, and tertiles of serum PBDE in 12–15-year-olds (N = 292) using the National Health and Nutrition Examination Survey (NHANES) 2003-2004.

Results.

The ADHD weighted prevalence was 13.57%. The weighted adjusted odds ratios (AOR) and 95% confidence interval (CI) between ADHD diagnosis and lipid adjusted BDE-28, BDE-47, BDE-99, BDE-100, BDE-153, serum total PBDE, serum PBDE concentrations above the 75th percentile, and serum PBDE concentrations in the second or third tertile were 1.16 (95% CI: 0.51, 2.67), 1.36 (95% CI: 0.72, 2.56), 1.51 (95% CI: 0.70, 3.25), 1.53 (95% CI: 0.73, 3.23), 1.43 (95% CI: 0.57, 3.56), 1.41 (0.71, 2.83), 0.59 (0.10, 3.56), 6.16 (1.19, 31.90), and 0.99 (0.23, 4.29).

Conclusions.

We observed no association between serum PBDE concentrations and ADHD in US youths.