

How Packaged Food Makes Girls Hyper

A chemical found in many plastics affects brain development in the womb

By Aimee Cunningham | March 16, 2012



Image: Getty Images

The chemical **bisphenol A, known as BPA**, has become familiar in the past decade, notably to parents searching for BPA-free bottles for their infants. Animal studies have found that **BPA, which resembles the sex hormone estrogen, harms health**. The **growing brain is an especially worrisome target: estrogen is known to be important in fetal brain development in rodents**. Now a study suggests that **prenatal, but not childhood, exposure to BPA is connected to anxiety, depression and difficulty controlling behaviors in three-year-olds, especially girls**.

More than **90 percent of Americans have detectable amounts of BPA in their urine**; for most people, the major source of exposure is diet. BPA is a component of the **resins that line cans of food and the plastics in some food packaging and drink containers**, and the chemical leaches into the edible contents. Other sources of BPA exposure include water-supply pipes and some paper receipts.

Epidemiologist Joe M. Braun of Harvard University and his colleagues studied 240 women and their children in the Cincinnati area. The researchers collected **urine samples from the mothers twice during pregnancy and within 24 hours of birth** and from the children at ages one, two and three. **BPA was detectable in 97 percent of the samples**. They also surveyed parents about their kids' behavior and executive functions—a term for the mental processes involved in self-control and emotional regulation.

The researchers **found that the more BPA children were exposed to in the womb, the more anxious, depressed and hyperactive they were at three years old** and the more difficulty they had controlling their emotions and inhibiting behaviors. The effects were **most severe in girls**. The team did not find a connection between the children's behavior and their exposure to BPA after they were born, they report in the November 2011 issue of *Pediatrics*.

Determining the precise mechanisms behind BPA's effect on behavior **will require more work**, Braun observes. *BPA interferes with estrogen; in the brain, this action could affect the migration and survival of neurons, for example.* "It is fair to say there is reasonable concern over BPA toxicity," Braun says.

Luckily, **reducing dietary exposure is possible**. As reported last July in *Environmental Health Perspectives*, 20 participants **swapped their normal diet, which included canned and packaged foods, for a "fresh foods" diet, which did not**. The **dietary switch reduced the participants' BPA levels by 66 percent after three days**.