How Packaged Food Makes Girls Hyper

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

By Aimee Cunningham | March 16, 2012

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.**