

Spotlight on Bisphenol A

June, 2008. Many consumers are wondering about the safety of plastic containers and other products after reports that a chemical used to make baby bottles, water bottles and food containers is facing increasing scrutiny by health officials in Canada and the United States. The substance is bisphenol-a, or BPA, widely used in the making of the hard, clear and nearly unbreakable plastic called polycarbonate. Studies and tests show that trace amounts of BPA are leaching from polycarbonate containers into foods and liquids.

The chemical is used to manufacture some clear plastic baby bottles, food-storage containers, clear plastic pitchers used for filtered water, and refillable water bottles and it is almost universally used for the lining of soft-drink and food cans. BPA is not found in softer, more flexible plastics such as single-serving water bottles. The Food and Drug Administration and the Centers for Disease Control say that they are studying the chemical.



The New York Times on April 22, 2008 ran a story on the potential harm from this chemical: *Hard Plastic is Raising Hard Questions*. And an article posted on the NY Times web site on April 24 noted, "The plastics and coatings made with BPA have many attractive properties. They are, among other things, particularly good at not absorbing flavors or changing the flavor of items stored in them. Polycarbonate looks and feels like glass but is light and difficult to break. As a result, about 6.6 billion pounds of BPA is produced worldwide each year. BPA's potential to disrupt the hormonal system, however, has increasingly made its use in plastics for food purposes controversial. Animal tests have raised questions about the safety of BPA, but the chemical industry says those findings have, in some cases, not been duplicated, and it disputes their relevance to human health. But in April 2008, the United States Department of Health and Human Services' National Toxicology Program issued a draft report citing "some concern for neural and behavioral effects in fetuses, infants, and children at current human exposures." The government of Canada has listed BPA as a toxic substance under its environmental protection act. Because of that listing, it has introduced regulations that will ban selling, advertising, manufacturing or importing baby bottles made with BPA-related plastics. It will also work with

industry to minimize or eliminate BPA-based linings in cans used for infant formula. The Canadian review, however, found “negligible risk” from BPA to those older than 18 months. Despite that, most of Canada’s largest retailers swiftly removed all food-related BPA products from their shelves. No significant studies have suggested that other, widespread uses of BPA, which include everything from sunglasses to computer cases, pose any health risk. “

To date, the United States Food and Drug Administration and the Centers for Disease Control have not issued any consumer recommendations regarding this chemical. However, a report by the CDC indicates that BPA is widespread, even in the human body. Results published in 2007 from urine samples from 2,517 people aged 6 years and older showed:

- BPA was detected in urine of nearly 93% of people tested
- Females had significantly higher levels of BPA in their urine than males. Children had the highest levels, followed by teens and adults.
- Non-Hispanic blacks and non-Hispanic whites had higher levels of BPA than Mexican Americans.
- People with the lowest household incomes had higher levels of BPA than people in the highest income bracket.

How much BPA are we exposed to?

BPA migrates into food from polycarbonate plastic bottles or the epoxy resin coatings that line canned food. The typical adult ingests an estimated 1 microgram of BPA for every kilogram (2.2 pounds) of body weight. Babies who use polycarbonate bottles and formula from cans get more, an estimated 10 micrograms per kilogram of body weight. A microgram represents a trace amount. The CDC survey results that exposure to BPA is ubiquitous.

How do I know if the plastic containers in my home contain BPA?

Any product made of hard, clear plastic is probably made from polycarbonate unless the manufacturer specifically states that it’s BPA-free. One way to check is to look for the triangle stamp on or near the bottom: polycarbonate plastics should have the numeral 7 in the triangle, sometimes with the letters PC. Unfortunately, 7 is a catchall “other” category for a variety of plastics. In my own kitchen, I found just one product with a 7 plastic fruit cups my daughter takes to school. But the plastic is soft and pliable, so it is probably not made with BPA. I also found refillable water bottles without a stamp. Because they are hard, shatterproof and clear, it’s reasonable to assume they are made from polycarbonate.

What about canned food and drinks?

While much of the focus is on plastic bottles, most human exposure occurs through the lining of canned foods. Canned beverages appear to contain less of the chemical than canned foods like soup, pasta, fruits and vegetables, which are often processed at high temperatures. Virtually every canned product, even those labeled organic, has a liner with BPA. One brand, Eden Organic Baked Beans, says it uses a BPA-free can.

How do I lower my exposure?

Switch to frozen or fresh vegetables. Use glass, porcelain and stainless-steel containers, particularly for hot foods and liquids. If you don't want to use a glass baby bottle, several companies, including the popular brand Born Free, now sell BPA-free baby bottles and sippy cups. For formula-fed babies, you can switch to powdered formula rather than liquid. Although many plastic products claim to be microwave safe, some scientists warn against putting any plastic in the microwave.

For more information:

- **Centers for Disease Control and Prevention**
http://www.cdc.gov/exposurereport/pdf/factsheet_bisphenol.pdf
- **National Toxicology Program** www.niehs.nih.gov/health/docs/bpa-factsheet.pdf
- **U.S. Food and Drug Administration**
<http://www.fda.gov/Food/FoodIngredientsPackaging/ucm166145.htm>

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