

## A new focus on plastic ingredient in bottles and cans

You may never have heard of a chemical called bisphenol A (BPA), but odds are it's circulating in your body. It was in 93 percent of 2,517 Americans age 6 and over, tested by the U.S. Centers for Disease Control and Prevention in a study that was recently released.

How much exposure is acceptable is at the heart of a new debate over BPA, which is used in the manufacture of polycarbonate plastics, such as clear, hard water bottles and baby bottles. The chemical is also used in the making of resin coatings for the linings of cans.

### INDUSTRY INFLUENCE

A new report is expected by summer from the U.S. National Toxicology Program, and a congressional committee inquiry is under way into risks of BPA in canned infant formula and how much influence the plastics industry has had over previous research and conclusions.

With widespread use in cans and many plastic containers, the chemical enters the body when it leaches from those containers into food and beverages, although usually at very low levels. That can happen especially when products are heated. Whether this exposure poses significant risks to human health has been hotly debated. Steven Hentges of the American Chemistry Council, an industry trade group, takes the position that "the weight of scientific evidence clearly supports the safety of BPA."

The current daily upper limit of BPA that the U.S. Environmental Protection Agency calculates is safe is 50 micrograms per kilogram of body weight, but that standard is based on experiments conducted in the 1980s, before a flood of new studies emerged suggesting that serious health risks could result from much lower doses based on experiments in laboratory animals and in human cells. Some studies showed adverse health effects from exposures of only 0.025 microgram per kilogram of body weight per day, yet a polycarbonate bottle with room-temperature water can leach 2 micrograms of BPA per liter. A 3-month-old baby drinking formula from a polycarbonate bottle may be exposed to as much as 11 micrograms per kilogram of body weight daily. The European Food Safety Authority recently concluded that the 50-microgram safety standard is sufficient. But a panel of 38 experts from around the world convened by the National Institutes of Health (NIH) disagreed. Their review of hundreds of studies over the past decade suggested a connection between exposure to BPA at levels typical in the U.S. and increased rates of breast and prostate cancer, reproductive system abnormalities, and, for exposure in the womb, problems such as attention deficit hyperactivity disorder, obesity, and diabetes.

The report says people in developed countries typically have "measurable blood, tissue, and urine levels of BPA that exceed the levels produced by doses used in the 'low-dose' animal experiments." Infants and fetuses may be especially vulnerable to any health effects from BPA, according to John Bucher, Ph.D., associate director of the NIH's National Toxicology Program. The program is re-evaluating all scientific data on BPA to issue a final report for peer review in June. Canadian health authorities are also conducting a review.

The U.S. House Committee on Energy and Commerce is looking into the safety of infant formula cans lined with products containing BPA and is examining whether the proponents of BPA have paid consulting groups to engineer science that reaches predetermined conclusions. A 2006 review published in the peer-reviewed journal *Environmental Research* showed that of 119 government-funded studies conducted as of July 2005, 109 found harmful effects from low-dose exposure in animals. By contrast, 11 industry-funded studies said that BPA causes no harm.

When *Consumer Reports* asked the Food and Drug Administration what studies it reviewed to justify its recent statement that "studies do not indicate a safety concern at the current exposure level" for infants or adults exposed to BPA in the lining of food and beverage cans, the two studies cited in the agency's response were conducted by the chemical industry.

### WHAT YOU CAN DO

While studies are under way, if you're concerned, here's what you can do:

Identify which containers might have the chemical. Polycarbonate is usually clear rather than cloudy, although it may be colored. If the container carries a recycling code, it will be marked with the number 7 or the letters "PC," or both. No. 7 bottles made with BPA-free polyethersulfone (PES) won't have the PC marking. Other BPA-free plastic alternatives include polyethylene, which may be marked with recycling codes 1 (PET) or 2 (HDPE), and polypropylene, 5 (PP).

For baby bottles, glass or BPA-free plastics such as polyethylene are the safest choices, as *Consumer Reports* has advised in the past.

For those who reuse water bottles frequently and want to avoid BPA, consider polyethylene, stainless steel, or aluminum with BPA-free liners



**BPA** The chemical bisphenol A is used in clear plastics like the bottle at left, but not in opaque plastics.



PETE

**Poly(ethylene terephthalate)**: Soda bottles, water bottles, vinegar bottles, medicine containers, backing for photography film.

**Why PETE and not PET?**



HDPE

**High-density Polyethylene**: Containers for: laundry/dish detergent, fabric softeners, bleach, milk, shampoo, conditioner, motor oil. Newer bullet proof vests, various toys.



V

**Poly(vinyl chloride)**: Pipes, shower curtains, meat wraps, cooking oil bottles, baby bottle nipples, shrink wrap, clear medical tubing, **vinyl dashboards** and seat covers, coffee containers.



LDPE

**Low-density Polyethylene**: Wrapping films, grocery bags, sandwich bags.



PP

**Polypropylene**: Tupperware®, syrup bottles, yogurt tubs, diapers, outdoor carpet.



PS

**Polystyrene**: Coffee cups, disposable cutlery and cups (clear and colored), bakery shells, meat trays, "cheap" hubcaps, packing peanuts, styrofoam insulation.



OTHER

The hotdog of plastics! Products labeled as "other" are made of any combination of 1-6 or another, less commonly used plastic.