



Bisphenol A (BPA)

What is BPA?

BPA is a high production volume chemical used primarily in the production of polycarbonate plastics and epoxy resins.

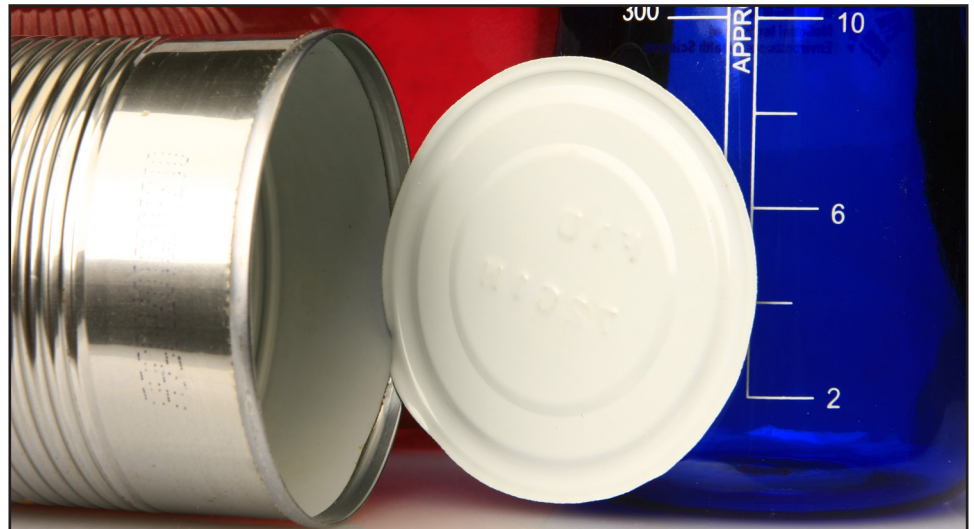
Where is BPA found?

Polycarbonate plastics have many applications including use in some food and drink packaging, e.g., water and infant bottles, compact discs, impact-resistant safety equipment, and medical devices. Epoxy resins are used as lacquers to coat metal products such as food cans, bottle tops, and water supply pipes. Some dental sealants and composites may also contribute to BPA exposure.

How does BPA get into the body?

The primary source of exposure to BPA for most people is through the diet. While air, dust, and water are other possible sources of exposure, BPA in food and beverages accounts for the majority of daily human exposure.

More research is clearly needed to understand exactly how these findings relate to human health and development, but at this point we can't dismiss the possibility that the effects we're seeing in animals may occur in humans.



BPA can leach into food from the protective internal epoxy resin lining of canned foods and from consumer products such as polycarbonate tableware, food storage containers, water bottles, and baby bottles. The degree to which BPA leaches from polycarbonate bottles into liquid may depend more on the temperature of the liquid or bottle, than the age of the container.

Why are people concerned about BPA?

One reason people may be concerned about BPA is because human exposure to BPA is widespread. The 2003-2004 National Health and Nutrition Examination Survey (NHANES) conducted by the Centers for Disease Control and Prevention (CDC) found detectable levels of BPA in 93% of 2517 urine samples from people six years and older. The CDC NHANES data are considered representative of exposures in the United States. Another reason for concern, especially for parents, may be because some animal studies report effects in fetuses and newborns exposed to BPA.

Why did the National Toxicology Program (NTP) evaluate BPA?

The NTP Center for the Evaluation of Risks to Human Reproduction (CERHR) conducted the BPA evaluation. BPA was selected for evaluation because of the following factors:

- Widespread human exposure from use and occurrence in the environment
- Growing public concern
- Amount of BPA produced
- Extensive database of animal studies on reproductive and developmental effects

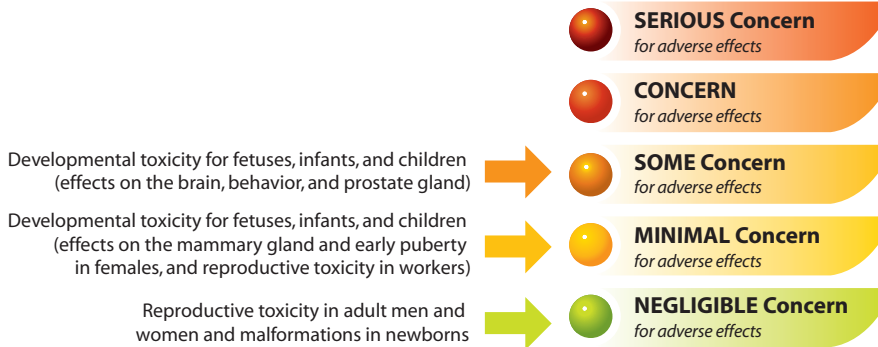
What did the NTP conclude about BPA?

The NTP has "*some concern*" for effects on the brain, behavior, and prostate gland in fetuses, infants, and children at current human exposures to BPA.

The NTP has "*minimal concern*" for effects on the mammary gland and an earlier age for puberty for females, in fetuses, infants, and children at current human exposures to BPA.



NTP conclusions regarding the possibilities that human development or reproduction might be adversely affected by exposure to bisphenol A. The NTP uses a five-level scale of concern:



The NTP has “negligible concern” that exposure of pregnant women to BPA will result in fetal or neonatal mortality, birth defects, or reduced birth weight and growth in their offspring.

The NTP has “negligible concern” that exposure to BPA will cause reproductive effects in non-occupationally exposed adults and “minimal concern” for workers exposed to higher levels in occupational settings.

Explain the levels of concern used by the NTP. What does “some concern” mean?

“Some concern” represents the mid-point of a five-level scale of concern used by the NTP. The likelihood of an adverse effect resulting from human exposure is expressed as a level of concern. The levels from highest to lowest are:

- Serious Concern
- Concern
- Some Concern
- Minimal Concern
- Negligible Concern

In the case of BPA, the NTP expressed “some concern” for potential exposures to the fetus, infants and children. There are insufficient data from studies in humans to reach a conclusion on reproductive or developmental hazards presented by current exposures to BPA, but there is

limited evidence of developmental changes occurring in some animal studies at doses that are experienced by humans. It is uncertain if similar changes would occur in humans, but the possibility of adverse health effects cannot be dismissed.

The NTP conclusions are based on the weight of scientific evidence, and integrate toxicity and exposure information.

How will the NTP conclusions be used?

The NTP shares the results widely. For example, The [NTP-CERHR Monograph](#), which includes the NTP Brief on BPA, the Expert Panel Report, and the public comments on the Panel Report, are added to the NTP/CERHR and NIEHS web sites, and distributed to federal and state agencies and interested individuals and organizations. It is also indexed in PubMed.

What can I do to prevent exposure to BPA?

If you are concerned, you can make personal choices to reduce exposure:

- Don’t microwave polycarbonate plastic food containers. BPA is strong and durable, but over time it may break down from repeated use at high temperatures.
- Avoid plastic containers with the #7 on the bottom http://www.recyclenow.org/r_plastics.html



- Don’t wash polycarbonate plastic containers in the dishwasher with harsh detergents.
- Reduce your use of canned foods. Eat fresh or frozen foods.
- When possible, opt for glass, porcelain or stainless steel containers, particularly for hot food or liquids.
- Use infant formula bottles that are BPA free and look for toys that are labeled BPA-free.



Where can I go for more information?

For more information on what federal agencies are doing related to BPA, visit the following web sites and search for “BPA.”

U.S. Food and Drug Administration:
<http://www.fda.gov/>

Centers for Disease Control and Prevention:
<http://www.cdc.gov/>

U.S. Environmental Protection Agency
<http://www.epa.gov/>

Consumer Product Safety Commission:
<http://www.cpsc.gov/>

National Institute of Environmental Health Sciences:
<http://www.niehs.nih.gov>

National Toxicology Program:
<http://ntp.niehs.nih.gov>