



Questions About Bisphenol?

Bisphenol A (BPA) is a key building block of polycarbonate plastic. Polycarbonate plastic is a lightweight, high-performance plastic that possesses a unique balance of toughness, optical clarity, high heat resistance and excellent electrical resistance. Because of these attributes, polycarbonate is used in a wide variety of common products including digital media (e.g., CDs, DVDs), electrical and electronic equipment, automobiles, sports safety equipment, reusable food and drink containers, and many other products. Common examples of products that come into contact with food include reusable 5-gallon water bottles, baby bottles, tableware such as plates and cups, and containers for storing food and reheating in a microwave oven.

Concern over the use of these plastics has arisen over the detection of small amounts of BPA being found in food stored in some plastic containers. It is suspected that BPA may be an endocrine disruptor. The theory of endocrine disruption posits that low-dose exposure to chemicals that interact with hormone receptors can interfere with reproduction, development, and other hormonally mediated processes. Furthermore, since hormones are typically present in the body in relatively tiny concentrations, the theory holds that exposure to relatively small amounts of externally absorbed hormonally active substances can disrupt the proper functioning of the body's endocrine system. Thus, an endocrine disruptor might be able to elicit adverse effects at a much lower dose than a typical toxic action. The timing of exposure is also presumed to be critical, since different hormone pathways are active during different stages of development. While endocrine disruption in humans by pollutant chemicals remains largely undemonstrated, the underlying science is sound and the potential for such effects is real. The interrelationship between exposures to chemicals and health effects is rather complex. It is hard to definitively link a particular chemical with a specific health effect, and exposed adults may not show any ill effects

In recent years a number of researchers from government agencies, academia and industry worldwide have studied the potential for low levels of BPA to migrate from polycarbonate products into foods and beverages. The study data and analyses show that potential human exposure to BPA from polycarbonate products in contact with foods and beverages is very low and poses no known risk to human health. The use of polycarbonate plastic for food contact applications continues to be recognized as safe by the U.S. Food and Drug Administration.

In 2000, the U.S. National Toxicology Program (NTP) conducted an independent scientific peer review of the evidence for and against "low-dose endocrine disruptor" effects ([NTP Report, 2001](#)). This review was co-sponsored by the U.S. Environmental Protection Agency and the U.S. National Institute of Environmental Health Sciences. The Subpanel concluded:

"As a group these studies are very consistent, the conclusions are supported by appropriate statistical analyses, and the Statistics Subpanel confirmed the lack of BPA effects for the studies..." and "Collectively, these studies found no evidence for a low-dose effect of BPA,

despite the considerable strength and statistical power they represent, which the subpanel considered especially noteworthy." U.S. National Toxicology Program

In their overall conclusion, the Bisphenol A Subpanel stated:

"There is credible evidence that low doses of BPA can cause effects on specific endpoints. However, due to the inability of other credible studies in several different laboratories to observe low dose effects of BPA, and the consistency of these negative studies, the Subpanel is not persuaded that a low dose effect of BPA has been conclusively established as a general or reproducible finding. In addition, for those studies in which low dose effects have been observed, the mechanism(s) is uncertain (i.e., hormone related or otherwise) and the biological relevance is unclear."

In March of 2007, a class action lawsuit was filed in California charging that manufacturers and retailers of plastic baby bottles failed to warn consumers that their products contained Bisphenol A, a chemical that they allege poses developmental and health risks to infants and children. The Canadian government is said to be ready to declare BPA as a toxic chemical.

Conclusion

At this point it is known that endocrine disruptors can affect biological processes. Current well designed studies indicate that the level of BPA found in food containers is well below any known effect level. That being said, individuals who are concerned may want to reconsider use of plastic containers to store baby food and formula since this is the population of highest risk for any toxin.

April 21, 2008