

Our Exposure to Controversial Chemical May be Greater than Dose Considered Safe

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People are likely being exposed to the commonly used chemical bisphenol A (BPA) at levels much higher than the recommended safe daily dose, according to a new study in monkeys.

“BPA is now known to be a potent estrogen,” said Frederick vom Saal, PhD, a co-author of the new study and a professor of biological sciences at the University of Missouri-Columbia. “Human and animal studies indicate it could be related to diabetes, heart disease, liver abnormalities, miscarriage and other reproductive abnormalities, as well as prostate and [breast cancer](#).”

The U.S. Food and Drug Administration (FDA) declared BPA is safe based on estimates that people consume only small amounts each day from food. However, recent research indicated that U.S. adults are exposed to more BPA from multiple sources than previously thought, vom Saal said.

BPA is found in polycarbonate plastic food and beverage containers, such as water and infant bottles, as well as in the epoxy resin lining of cans and other sources. The chemical can leach into food and beverages, according to the National Institutes of Health, which funded the study by vom Saal and colleagues.

“Between 8 and 9 billion pounds of BPA are used in products every year,” vom Saal said.

In their study, he and his colleagues fed five female adult monkeys an oral dose of BPA (400 micrograms per kilogram of body weight). This amount is more than 400 times higher than the amount that the U.S. Food and Drug Administration (FDA) estimates that human adults are exposed to and 8 times higher than the estimated safe daily amount to consume, according to vom Saal.

Yet the blood levels of biologically active BPA over the next 24 hours were lower in the monkeys than the average levels found in people in the United States and other developed countries, vom Saal said. For levels to be higher in people when measured, their exposure dose must be greater than that given to the monkeys, he explained.

“These results suggest that the average person is likely exposed to a daily dose of BPA that far exceeds the current estimated safe daily intake dose,” vom Saal said.

He said that BPA exposure must come from many unknown sources, in addition to food and beverage containers. Like drugs, BPA acts in pulses, with each exposure creating a high-level pulse before it is cleared in the urine, according to vom Saal.

The researchers are continuing the study in more monkeys, but vom Saal said they do not expect to get different findings because the data in the first five animals were “very consistent.” The species of monkey that they used (rhesus) metabolizes BPA similar to humans, he added.

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