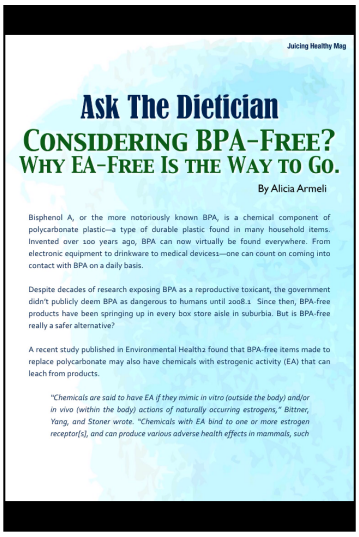

Ask the Dietician: Considering BPA-Free? Why EA-Free Is the Way to Go.

By Alicia Armeli

Bisphenol A, or the more notoriously known BPA, is a chemical component of polycarbonate plastic—a type of durable plastic found in many household items. Invented over 100 years ago, BPA can now virtually be found everywhere. From electronic equipment to drinkware to medical devices[1]—one can count on coming into contact with BPA on a daily basis.

Despite decades of research exposing BPA as a reproductive toxicant, the government didn't publicly deem BPA as dangerous to humans until 2008.[1] Since then, BPA-free products have been springing up in every box store aisle in suburbia. But is BPA-free really a safer alternative?

A recent study published in *Environmental Health*[2] found that BPA-free items made to replace polycarbonate may also have chemicals with estrogenic activity (EA) that can leach from products.

"Chemicals are said to have EA if they mimic in vitro (outside the body) and/or in vivo (within the body) actions of naturally occurring estrogens," Bittner, Yang, and Stoner wrote. "Chemicals with EA bind to one or more estrogen receptor[s], and can produce various adverse health effects in mammals, such as early menarche, reduced sperm counts and other altered functions of reproductive organs, obesity, and increased rates of some cancers."

The authors emphasized, "Fetal, infant and juvenile mammals have been reported to be especially sensitive to low doses of chemicals."

The study analyzed 50 BPA-free products purchased from retail outlet stores. Items included baby bottles, food storage containers, drinkware, packaging material, medical supplies, and labware. The items were of popular brands such as Camelbak, Nalgene, Dr. Weil, Born Free, AVENT, Costar, Crate and Barrel, Green-to-Grow, and LocknLock.

Some of the items were then stressed to mimic short- and long-term effects of everyday uses such as microwaving, boiling, disinfecting, or UV exposure. The items were then treated with salt or alcohol-based solutions thereby measuring to what degree estrogenic chemicals leached from the items. Human breast and ovarian cell lines were treated with the solutions to test the estrogenic effects of these chemicals.

Results of the study showed that many of the stressed and unstressed items leached chemicals that prompted estrogenic activity—surprisingly, even items made for use by infants. However, what's interesting to note is that this wasn't the case for all the plastics tested. Some BPA-free products didn't release estrogenic chemicals in detectable amounts.

"This hazard assessment survey showed that many BPA-free polycarbonate replacement products still leached chemicals having significant levels of EA, as did BPA-containing

counterparts they were meant to replace. **That is, BPA-free did not mean EA-free**," the authors concluded. "However, this study also showed that some polycarbonate-replacement products did not leach chemicals having significant levels of EA. That is, EA-free products could be made in commercial quantities at prices that compete with polycarbonate-replacement products that were not BPA-free."

But how can you, as the consumer, know which products are safe to buy?

To help sift through the myriad of products that may or may not be potential endocrine disruptors, companies like PlastiPure thoroughly test and evaluate products for safety so consumers can feel more at ease. When shopping, look for the PlastiPure-Safe® EA-Free stamp, which shows the manufacturer has complied with higher safety levels and meets or exceeds EA-free standards.[3]

However, if you're like me—old school and striving to be plastic-free, investing in glassware and stainless steel containers means, at the end of the day, there's one less thing to worry about.

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