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BPA: Research Findings Suggest Avoiding this Food Additive

Overview

Bisphenol-A (BPA), a known endocrine-disrupting chemical, is widely used in the production of polycarbonate plastics and epoxy resins. BPA has been classified by the U.S. Food and Drug Administration (FDA) as a food additive because it comes into contact with food; food producers and packagers use the chemical in the inner lining of canned food and plastic food and drink containers. Developed in 1891 as a synthetic estrogen, BPA came into widespread use in the 1950's when scientists realized it could be used to make and strengthen polycarbonate plastic and some epoxy resins to line food and beverage cans. In recent years BPA has been found in scientific testing to leach into food by way of cans (canned food), the lids of canning jars, and plastic food and drink containers, including baby bottles and toddler sippy-cups. BPA has been detected in infant formula and baby food, as well as dental fillings and some thermal paper cash register/ATM receipts.

BPA linked with adverse health consequences

Primarily used as an industrial food packaging chemical, BPA has been found to leach into the food and has been linked in numerous peer-reviewed scientific studies to a variety of adverse health outcomes. Like other food chemicals of concern, BPA makes an appearance on U.S. grocery shelves with no packaging warnings to consumers—a fact that scientists and food safety advocates have taken issue with because numerous peer-reviewed studies conducted by independent scientists have linked exposure to BPA to a variety of adverse health consequences. Among the health outcomes that have been linked with BPA are an increased risk for endocrine-related cancers including breast cancer and prostate cancer, spikes in blood pressure, heart disease, abnormalities in liver function, low sperm counts in men, metabolic abnormalities, weight gain and increased serum cholesterol levels, neurological damage/altered brain development including a link with schizophrenia, puberty advances, disruptions, and abnormalities, insulin resistance and diabetes, adverse reproductive and developmental effects including recurrent miscarriages, and gynecomastia (a male breast disease that causes abnormal breast growth in boys and men). Perinatal exposure to BPA has recently been linked to an increased risk of food intolerance in adulthood.

BPA Exposure

BPA appears to be pervasive in the bodies of people living in the U.S. Researchers at the Centers for Disease Control and Prevention found BPA to be present in the urine of 95 percent of Americans tested, and other studies have detected BPA in the breast milk of nursing mothers, and with prenatal exposure, where testing detected BPA in the biological fluids and placenta, as well as the urine and umbilical cords of newborns.

BPA and the FDA

A number of countries have banned BPA and over the years, and following public pressure from U.S. consumers and food safety advocates, in July 2012 the FDA finally banned BPA from infant and toddler foods and food containers in the U.S. But when it comes to the rest of us, BPA is yet another food additive in which the FDA has failed to take action that many experts argue would potentially protect the health and safety of consumers (a recent study by the Environmental Working Group found that one in 10 cans of food in U.S. grocery stores contained BPA levels more than 200 times the government's recommended level of exposure to industrial chemicals).

“A three-year investigation found that FDA regulators deferred to industry scientists in the FDA's original assessment of BPA as safe, allowing scientists paid by chemical makers to write entire sections of the FDA's review...”

The FDA originally relied on two studies to determine BPA's safety, both of which were funded by the advocacy group that represents the chemical makers.”

~Milwaukee Journal Sentinel

In 2010 the National Resources Defense Council (NRDC) filed a lawsuit against the U.S. Food and Drug Administration for its failure to act on a 2008 Citizens Regulatory Petition to ban the use of Bisphenol-A (BPA) in food packaging, food containers, and other materials likely to come into contact with food. Among other things, the petition argued that BPA exposure has been associated in primate and other empirical animal studies with a wide range of adverse effects, including reproductive defects, chromosomal damage, nervous system harm, increased rates of breast and prostate cancer, and

metabolic changes including obesity and insulin resistance (a condition that commonly precedes the development of diabetes) and studies in human tissue link BPA exposure with breast cancer and diabetes.

In response to continued pressure from scientists and food safety advocacy organizations to ban BPA from all U.S. food packaging, in 2013 the FDA conducted their own study—a study that has been strongly criticized by scholarly scientific researchers as being highly flawed.

“In late February, 2014 a group of FDA scientists published a study claiming that low-level exposure to the common plastic additive bisphenol-A (BPA) was safe. The media, the plastics industry, and FDA officials touted it as evidence that long-standing concerns about the health effects of BPA were unfounded.

But an elite group of researchers who had been working with FDA on a related project were outraged that the agency would release a paper suggesting the chemical was harmless when preliminary data from their collaborative project indicated that the opposite was true.”

~Mother Jones

There were some serious methodological problems with the FDA's study, the first being that the breed of rat (Sprague-Dawley), has been shown to be all but immune to the effects of synthetic hormones—including synthetic estrogens like BPA. Additionally, there was this little matter of study contamination—according to officials from both the FDA and the National Institutes of Health (NIH), during the study the laboratory and the control subjects used in the FDA's BPA animal study had become contaminated. All of the animal test subjects—including the supposedly unexposed control

group—were exposed to BPA, thus creating a failed study and rendering no clear cut results about the safety of BPA.

*"It's basic science. If your controls are contaminated,
you've got a failed experiment and the data should be discarded."*

*~ Dr. Gail Prins, Professor of Physiology, University of Illinois at Chicago, commenting on the
FDA 2013 BPA study*

In early 2014 the FDA released the results of its study to determine safety levels of BPA. A number of prominent scientific researchers and scholars, including some working on FDA-funded research to determine the safety of certain food chemicals, went public and harshly criticized the FDA study as seriously flawed due in part because the control subjects in the study were contaminated. Nonetheless, the FDA used the results of the study as justification to continue the use of BPA as a food additive in the U.S. food supply, and to outspoken critics of their flawed study? They did what they always do in such cases—they simply ignored them and officially went on record as refusing to discuss the study.

*"The way the FDA presented its findings is so disingenuous.
It borders on scientific misconduct."*

~Scientist reviewing the 2013 FDA study on BPA

In response to the FDA's failure to act, in July 2014 three members of the U.S. Congress seeking to ban BPA released their Ban Poisonous Additives Act which would deem food to be adulterated if the packaging is made with BPA or may otherwise release BPA into food. The bill would also require the FDA to examine the effects of BPA on workers who may be exposed to the chemical during the manufacturing process. While the bill has garnered numerous sponsors and supporters, including a number of public health and food safety advocacy organizations, it remains to be seen if it will ever pass.

BPA Exposure and Risk Higher than Once Thought, say Researchers

A recent scholarly scientific study has suggested that exposure to bisphenol-A (BPA) is actually *much greater* than previously thought. Researchers heading up the study have urged the federal government to act quickly to regulate the chemical that is widespread in food-storage containers and many household products. The peer-reviewed scientific study also warned that BPA exposure is likely coming from many sources—including some still unknown.

“The results of this study provide convincing evidence that BPA is dangerous and that further evidence of human harm should not be required for regulatory action to reduce human exposure to BPA.”
~Dr. Frederick vom Saal, researcher, professor of biological sciences, University of Missouri

Recap of Potential BPA Threats to Well-Being

Research has demonstrated that the chemical is an endocrine disrupter that may be a factor in infertility, certain cancers, immune disorders and obesity, among other serious health conditions. With

nearly 8 billion pounds manufactured each year, BPA is one of the highest-volume chemicals ever produced. The Centers for Disease Control and Prevention estimate that the compound is present in the bodies of over 90 percent of the U.S. population.

Scientists disagree on the level of BPA required to cause adverse reactions, but even small amounts have been shown to cause changes in neurological growth and behavioral problems such as hyperactivity, ADHD, dyslexia, and other learning disorders. Animal studies have linked serious alterations to brain development caused by the estrogen-like chemicals of BPA, triggering pre-cancerous changes in the mammary glands and damaging the uterus. BPA has also been shown to affect the female reproductive system in other dire manifestations including fibroids, endometriosis, cystic ovaries and cancers. In the U.S. and Japan researchers have detected BPA in fetal amniotic fluid and umbilical cords of newborns.

While some non-industry funded studies have reported no significant effects of low doses of BPA, recent scientific research—including two studies funded by the National Institute of Health (NIH)—have found links to male sexual dysfunction, weight gain/obesity, diabetes, prostate and breast cancer. It also appears that the level of BPA absorption in the body is susceptible to the synergistic effects of other chemicals U.S. consumers are commonly exposed to. A new study that included expert scientific researcher on BPA Frederick vom Saal, Ph.D., suggests that levels of the endocrine-disrupting chemical BPA can actually spike in our bodies when we are exposed to a chemical cocktail that includes a combination of BPA (such as from handling cash register receipts) along with chemicals like Triclosan from hand sanitizers and chemical additives in commercially processed foods like French Fries (potatoes used in fast food and conventional restaurants are commonly treated with synthetic chemicals such as pesticides, including those that contain MSG, as well as sulfites to maintain freshness).

Avoiding BPA

Despite the widespread use and presence of bisphenol-A in the U.S. there are precautions consumers can take to reduce the level of their exposure to this chemical of concern:

-Avoid eating food from cans unless they are marked, “BPA-Free”. This includes canned fruits, vegetables, soups, and meals. Especially troublesome are high acidic fruits like canned tomatoes and tomato-base products (such as sauces, soups, etc.) in which the acidity can cause increased levels of BPA to leach into the food. To avoid this food additive it is best to choose fresh and frozen fruit and vegetables (and to reduce pesticide exposure, organic whenever possible). As for soups and meals it is always best to make your own versions (there are plenty of free recipes online and used cookbooks are available online as well) using fresh, whole ingredients and then refrigerate or freeze the extras until you are ready for them.

-Avoid drinks in plastic bottles unless they are marked, “BPA-Free”.

-Never leave water/drinks in plastic bottles in the hot sun.

-Never microwave your food in plastic containers. Research has demonstrated that BPA and other toxic chemicals from the plastic container can seep into your food during the microwave process. Always use a glass plate or bowl to microwave your food.

-Purchase “BPA-Free” lids for your Mason jars

-Discuss BPA-Free alternatives for fillings with your dentist

-Avoid touching receipts from electronic cash registers and ATMs unless you know they are BPA-Free

-Purchase a “BPA-Free” portable drinking bottle (preferably with a stainless steel interior rather than plastic) and don't reuse the bottles you purchase water or drinks in

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