

# Research Summaries: BPA and Asthma



Based on the published work

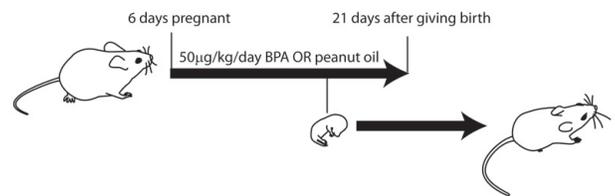
## The Effects of Maternal Exposure to Bisphenol A on Allergic Lung Inflammation into Adulthood

Stephen M. Bauer, Anirban Roy, Jason Emo, Timothy J. Chapman, Steve N. Georas, B. Paige Lawrence  
*Toxicological Sciences* 130(1), 82-93 (2012)

**What's it about?** Bisphenol A (BPA) is present in just about everyone. Detectable levels of BPA are found in 93% of people in the US and the most likely source is eating foods that were contaminated with BPA through packaging, especially canned foods. In this study, researchers asked the question, "Does an adult whose mother was exposed to BPA have more trouble with allergic asthma than an adult whose mother was not exposed to BPA?"

**Why does it matter?** Allergic asthma is the most common form of asthma, and has been on the rise since the 1970s. A person who has an asthma attack after being exposed to a specific allergen, like cats or pollens, has allergic asthma. These people can sometimes control their asthma by avoiding the allergen or using medication, but it still a serious health problem. Studies that look at rates of asthma in people who worked in industries that used BPA have found increased asthma and other allergic symptoms, but those studies don't tell us whether or not BPA caused those problems. The goal of this study was to find out whether or not exposure to BPA in the womb can cause allergic asthma to be worse for a baby, using mice as a model system.

**How was it done?** Pregnant mice were either fed 50 micrograms of BPA per kilogram of weight (experimental) or peanut oil (control). The U.S. Federal guidelines on BPA say this is the upper limit for safe human exposure, so these mice were given doses of BPA that are similar to what some humans might experience. Mothers were fed BPA from the time they were 6 days pregnant to 21 days after giving birth. Continuing to feed the mothers BPA for three weeks after birth ensured that the young drank milk that had BPA as well. When the pups grew to be adults (6-8 weeks old), they were sensitized to an allergen. After sensitization, they were treated with the allergen to mimic an allergic asthma attack.



**What did they find?** There were small differences on the molecular level, but nothing significantly different in airway constriction between control and experimental mice offspring. A very constricted, or "hyper-responsive," airway is what makes breathing difficult for someone having an asthma attack.

**So...what does this mean?** Mouse mothers who were fed BPA had offspring that, when they were adults, didn't fare any worse when exposed to an allergen than the offspring of mothers who were fed peanut oil and no BPA. But, the researchers noted that in other studies where the offspring were sensitized to allergens very soon after birth and whose mothers were given higher levels of BPA, the offspring were hyper-responsive to allergen challenge. This study only looked at allergic asthma. Other ongoing research investigates whether or not BPA affects obesity, reproduction, and other health conditions. More studies will be needed to clarify whether and, if so, how a mother's exposure to BPA affects her offspring.

Do you want to reduce the amount of BPA in your body? Even though this study suggests that federally allowable amounts of BPA are not harmful to the lungs of a developing baby, other research suggests BPA might have other health effects. In this case, The National Institute of Environmental Health makes the following suggestions:

- Don't microwave polycarbonate plastic food containers. These are labeled with the recycling codes 3 or 7 and may contain BPA
- Reduce your use of canned foods, cook with fresh or frozen foods instead.
- When possible, opt for glass, porcelain or stainless steel containers, particularly for hot food or liquids.

For more information go to [http://www.niehs.nih.gov/health/assets/docs\\_a\\_e/endocrine-disruptors-2010.pdf](http://www.niehs.nih.gov/health/assets/docs_a_e/endocrine-disruptors-2010.pdf)

Produced by the University of Rochester Medical Center, Environmental Health Sciences Center's Community Outreach and Education Core  
Last revised 5/28.13