

BPA exposure effects may last for generations

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Exposure to low doses of Bisphenol A (BPA) during gestation had immediate and long-lasting, trans-generational effects on the brain and social behaviors in mice, according to a recent study accepted for publication in the journal *Endocrinology*, a publication of The Endocrine Society.

BPA is a man-made chemical present in a variety of products including [food containers](#), receipt paper and [dental sealants](#) and is now widely detected in human urine and blood. Public health concerns have been fueled by findings that BPA exposure can influence [brain development](#). In mice, prenatal exposure to BPA is associated with increased anxiety, aggression and cognitive impairments.

"We have demonstrated for the first time to our knowledge that BPA has trans-generational actions on social behavior and neural expression," said Emilie Rissman, PhD, of the University of Virginia School of Medicine and lead author of the study. "Since exposure to BPA changes social interactions in mice at a dose within the reported human levels, it is possible that this compound has trans-generational actions on human behavior. If we banned BPA tomorrow, pulled all products with BPA in them, and cleaned up all landfills tomorrow it is possible, if the mice data generalize to humans, that we will still have effects of this compound for many generations."

In this study, [female mice](#) received chow with or without BPA before mating and throughout gestation. [Plasma levels](#) of BPA in supplemented

female mice were in a range similar to those measured in humans. Juveniles in the first generation exposed to BPA in utero displayed fewer social interactions as compared with [control mice](#). The changes in genes were most dramatic in the first generation (the offspring of the mice that were exposed to BPA in utero), but some of these gene changes persisted into the fourth generation.

"BPA is a ubiquitous chemical, it is in the air, water, our food, and our bodies," said Rissman. "It is a man-made chemical, and is not naturally occurring in any plant or animal. The fact that it can change gene expression in mice, and that these changes are heritable, is cause for us to be concerned about what this may mean for human health."

More information: The article, "Gestational exposure to Bisphenol A produces trans-generational changes in behaviors and gene expression," appears in the XX 2012 issue of *Endocrinology*.

Provided by The Endocrine Society

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