

Webinar Highlights

Phthalates and Plasticizers in Fast Food

Phthalates are a class of industrial chemicals used in plastic-based products, including food packaging and food processing equipment. Phthalates are known endocrine-disrupting chemicals (EDCs) and are linked to a long list of health problems in humans. Building on previous work linking fast food consumption to concentrations of phthalates measured in humans, a study by Edwards et al. (2021) quantified the concentrations of phthalates and replacement plasticizers in foods and gloves from U.S. fast food restaurants. During this webinar, Dr. Edwards discussed the study's main findings.

Featured Speaker: Lariah Edwards, PhD, Environmental Health Scientist, speaking February 17, 2022.

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The Problem

In 2014, the petrochemical industry produced 12 billion pounds of phthalates. Phthalates are used in many products, such as plastics, adhesives, and fragrances. These chemicals can contaminate food on the farm, in processing, in packaging, and during food preparation.

Since 2017, the Consumer Product Safety Commission (CPSC) has prohibited the use of certain phthalates in toys. The CPSC determined that the ingestion of these phthalates could have harmful health effects on children. Unlike the CPSC, FDA allows these chemicals to be used in food contact materials.

“The policy around phthalates just doesn’t make sense.”

Health effects. Phthalates have been strongly linked to negative health impacts, including neurodevelopmental harm, birth defects, learning disabilities, and infertility. The exposure of pregnant women and children to these chemicals is especially concerning.

The study. The study by Edwards et al. tested 64 food items from six fast food chains for contamination from 11 plasticizers. The study also tested three pairs of gloves from three fast food chains. Chemicals found in the food were analyzed using gas chromatography/mass spectrometry. The study looked for eight specific ortho-phthalates and three replacement plasticizers.

Key findings:

- Every food item sampled tested positive for phthalates.
- Several samples also tested positive for replacement plasticizers.

Replacement plasticizers were found in the gloves and in the food of the restaurants where those gloves were used. Replacement plasticizers are newer chemicals used to replace phthalates. Replacement plasticizers are believed to be safer alternatives for phthalates, but the health impacts of these substitute chemicals are largely unknown. This study also reviewed available toxicity data for the replacement plasticizers to understand their potential toxicity. The study found that these chemicals interfered with the activity of several important gene receptors, such as the estrogen receptor ER α . This suggests that these chemicals may have serious, unknown health effects.

Generally, the foods containing meats had higher concentrations of these chemicals. Previous studies have also reported higher concentrations of these chemicals in meat and dairy products.

Dr. Edwards highlighted that the contamination of fast food with these chemicals raises health equity concerns. Previous studies have shown that some predominantly Black neighborhoods have fewer grocery stores and a higher density of fast food restaurants. As a result, the people living in those neighborhoods have to rely more on fast food in their diets. This likely contributes to racial/ethnic disparities in chemical exposure.

Recommendations

The U.S. Environmental Protection Agency (EPA) is currently evaluating the safety and health effects of phthalates. However, it is not clear if EPA will consider health impacts specifically from food exposure. **“Diet is the predominant way that most people are exposed to phthalates.”** Therefore, scientists and advocates hope that EPA will consider exposure through food.

- Stronger regulatory action could help reduce exposure to these chemicals, particularly regulation of food-contact materials.

- More study is needed to understand the health effects of replacement plasticizers.
- On the personal level, consumers can try to limit their exposure by cooking more at home.

“Cooking at home not only offers better nutritional value but it also can reduce your exposure to environmental chemicals, particularly phthalates.”

To Find Out More

- Watch the February 17, 2022 webinar: [Phthalates and Plasticizers in Fast Food](#)
- Read the webinar slides: [Phthalates and Plasticizers in Fast Food](#)
- Read the full study: [Phthalate and novel plasticizer concentrations in food items from U.S. fast food chains: a preliminary analysis](#)
- Watch a webinar about phthalates and FDA regulation: [FDA's Missed Opportunities to Tackle Endocrine Disrupting Chemicals in Food](#)
- Watch another webinar about phthalates in food: [Protecting Brain Development in Children: Phthalates in Food & the Critical Need for Policy Reform](#)

About the Speaker



Lariah Edwards, PhD, is an environmental health scientist with years of experience critically evaluating toxicological and epidemiological data for the purpose of understanding health effects associated with exposure to environmental chemicals. Currently, Edwards is an Associate Research Scientist in the Department of Environmental Health Sciences at Columbia University Mailman School of Public Health. She is also an Assistant Director of the Agents of Change in Environmental Justice Fellowship. Dr. Edwards' research focuses on understanding the health effects of and addressing exposure disparities to hormone-altering chemicals commonly found in consumer and personal care products.