

Webinar Highlights

PFAS, Phenols, and Parabens: Links to Hormone-Mediated Cancers

A number of cancers are hormone-mediated. These include prostate, breast, ovarian, endometrial, testicular, and thyroid cancer, as well as melanoma. Many industrial chemicals found in consumer products and in the environment are endocrine disruptors, and could influence risk of hormone-mediated cancers.

In this webinar, Dr. Max Aung presented the results of a recent study that examined the relationship between certain chemicals and previous diagnosis of hormone-mediated cancers.

Featured Speaker: Max Aung, MPH, PhD, Assistant Professor in the Division of Environmental Health at the University of Southern California, speaking October 19, 2023.

This fact sheet has been created by CHE based on information presented in an EDC Strategies Partnership webinar. The webinar was done in partnership with the UCSF EaRTH Center. Selected quotes in bold are from the webinar speaker(s). For the full set of resources provided by the webinar presenters, see the [webinar page](#), where you'll also find associated slides and resources.

The Problem

Hormone-mediated cancers, such as prostate and breast cancer, are projected to become the cancers with the highest incidences of new cases. Increasing evidence points to environmental pollution as a risk factor for these cancers. The study presented by Aung looked for associations between these cancers and specific chemical pollution exposures.

The study used data from the National Health and Nutrition Examination Survey (NHANES) for the period 2005-2018. The study examined levels of phenols, parabens, and PFAS chemicals in blood and urine of NHANES participants. The study also looked at whether those participants had previously reported being diagnosed with a hormone-mediated

cancer. By analyzing the data, the study found a relationship between exposure to the chemicals and increased likelihood of a past cancer diagnosis.

Key findings:

- In women, a positive association was found between several biomarkers of PFAS exposure and melanoma.
- Positive associations were found between certain PFAS and ovarian and uterine cancers.
- Positive associations were found between certain phenols and ovarian cancer and melanoma.

Aung also highlighted [a report from the Natural Resources Defense Council](#) (NRDC) showing that PFAS contamination in water is an environmental justice issue. The report shows that PFAS contamination in drinking water in California disproportionately impacts communities already overburdened with cumulative exposure to other types of pollution.

Recommendations

This study points to the need for greater surveillance of certain chemical exposures and regulatory action to reduce or eliminate these exposures.

A limitation of the study was that it was only able to examine exposures that occurred after the cancer diagnosis. However, the results can be used to determine which chemicals to prioritize in future studies.

To Find Out More

- Watch the October 19, 2023 webinar: [PFAS, Phenols, and Parabens: Links to Hormone-Mediated Cancers](#)
- Read the presentation slides: [PFAS, Phenols, and Parabens: Links to Hormone-Mediated Cancers](#)
- Read the study: [Exploratory profiles of phenols, parabens, and per- and poly-fluoroalkyl substances among NHANES study participants in association with previous cancer diagnoses](#)

About the Speaker



Max Aung, MPH, PhD is an Assistant Professor who leads a [translational environmental health research laboratory](#) in the Division of Environmental Health at the University of Southern California. He is also a JPB Environmental Health Fellow through Harvard University. Dr. Aung is an alumnus of the Agents of Change in Environmental Justice Fellowship as well as the Robert Wood Johnson Foundation Health Policy Research Scholars Fellowship. His research focuses on applying data science frameworks to understand potential mechanisms linking chemical mixtures to health across the life course and pursue environmental justice. He specifically integrates multiple hierarchies of exogenous and endogenous biomarkers, including biomonitored toxicant exposures, targeted bioactive lipids, and untargeted lipidomics and metabolomics. His current funded projects focus on integrating these biomarkers in diverse prospective cohorts to better understand mechanisms linking the human exposome to maternal health outcomes, child development, and mental health.