

## **LAY ABSTRACT**

**TITLE:** Exploratory profiles of phenols, parabens, and per- and polyfluoroalkyl substances among NHANES study participants in association with previous cancer diagnoses

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The body depends on chemical messengers called hormones to perform different tasks. Some cancers may happen because there are problems with the body's hormones. Chemicals that may mess with the body's hormones are called endocrine-disrupting chemicals (EDCs). EDCs are in our environment, including in plastics, beauty products, and pesticides. EDCs can enter our body through the air, our skin, and food and water. Having more EDCs in the body can increase the risk of cancers that are caused by hormone problems.

This study used National Health and Nutrition Examination Survey (NHANES) data from 2005 to 2018. The team looked at EDCs that can alter hormones and lead to cancer.

They measured chemicals called PFAS, phenols, and parabens in blood and urine samples. They wanted to see if people in the dataset with higher amounts of these chemicals had cancer in the past.

The team found that women with higher amounts of PFAS, phenols, and parabens were more likely to have had melanoma, a type of skin cancer. Women with higher amounts of some of the PFAS, phenols and parabens were also more likely to have had ovarian cancer.

The team also found differences by race. White women with higher PFAS amounts were more likely to have had cancer. Black and Mexican American women with higher amounts of phenols and parabens were more likely to have had cancer. With this study, scientists are learning more about how EDCs relate to cancer, and disparities that exist in terms of EDCs in our environments.