

## LAY ABSTRACT

**TITLE:** Body dissatisfaction widens the racial disparities of Benzophenone-3, a chemical biomarker of personal care and consumer product usage

**JOURNAL:** Environment International. 2025 Jun 9:202:109557

**AUTHORS:** Vy Kim Nguyen<sup>1,2\*</sup>, Samuel Zimmerman<sup>3</sup>, Justin Colacino<sup>2,4,5</sup>, Olivier Jolliet<sup>6</sup>, Chirag J Patel<sup>1</sup>

\* Corresponding author: [vy\\_nguyen@hms.harvard.edu](mailto:vy_nguyen@hms.harvard.edu) and [nguyenvy@umich.edu](mailto:nguyenvy@umich.edu)

### INSTITUTIONS:

1 Department of Biomedical Informatics, Harvard Medical School, Harvard University, Boston, MA, USA

2 Department of Environmental Health Sciences, School of Public Health, University of Michigan, Ann Arbor, MI, USA

3 Broad Institute of MIT and Harvard, Cambridge, MA, USA

4 Department of Nutritional Sciences, School of Public Health, University of Michigan, Ann Arbor, MI, USA

5 Program in the Environment, School of Environment and Sustainability and College of Literature, Sciences, and the Arts, University of Michigan, Ann Arbor, MI, USA

6 Technical University of Denmark, Lyngby, Denmark

This is attributed to the CEECR grant: UG3CA267907

## LAY ABSTRACT

How someone feels about their body may impact how often they use certain personal care products. Benzophenone-3 (BP3) is a common chemical found in products like sunscreen and makeup. Due to its ability to absorb and stabilize ultraviolet (UV) light, it is used as an ingredient to minimize damage from sun exposure. However, high amounts of BP3 in the body can be harmful. Studies have linked BP3 exposures to increased risks of breast and ovarian cancer.

In this study, the researchers looked at how body dissatisfaction impacts levels of BP3 in the body. They used data for over 3,000 women in the US, including BP3 measurements in the body, self-reported race/ethnicity, and perceptions of body weight (whether they felt overweight or about the right weight). Body dissatisfaction was related to higher BP3 levels in Hispanic and non-White women. Body dissatisfaction was also linked to lower sunscreen use.

This study tells us that women with body dissatisfaction are inadvertently exposing themselves to BP3, likely due to their desire to meet beauty standards and use of other

beauty products that contain BP3 beyond just sunscreen. We still need more studies on motivation for personal care product use and impact on chemical exposures. Knowing more about our motivations can help us to create interventions that help us lower environmental exposures that increase our cancer risks.