

## LAY ABSTRACT

**TITLE:** Oxybenzone Alters Mammary Gland Morphology in Mice Exposed During Pregnancy and Lactation.

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An increasing number of studies of rodents and humans suggest that adult females are affected by exposures to endocrine disrupting chemicals (EDCs). We and others have predicted that exposures to EDCs during pregnancy could have permanent effects on the exposed mother. Here, we examined the long-term effects of exposure to oxybenzone, an EDC found in sunscreen and personal care products, on the mammary gland of mice exposed during pregnancy and lactation (breast-feeding). Female mice were fed different amounts of oxybenzone daily throughout pregnancy, after giving birth, and until the mouse babies stopped breast-feeding. After the mouse babies stopped breast-feeding, oxybenzone exposures were stopped, and the mothers were observed for 5 additional weeks. Female mice that were never pregnant were also included as a comparison group. After 5 weeks of being untreated, mammary glands were collected from the mothers and the never-pregnant females. We found that exposure to oxybenzone resulted in permanent changes to the tissue of the mammary gland. A significant increase in cell proliferation was also observed in the females exposed to the highest level of oxybenzone daily, further suggesting that exposures during pregnancy and breast feeding can have long-term effects on the mother. These findings suggest that oxybenzone, at doses relevant to human exposures, produces long-lasting alterations to the physical characteristics and functions of the mammary gland. Further studies are needed to determine if exposure to this chemical during pregnancy and breast-feeding will interfere with the known protection that pregnancy provides against breast cancer.