# Health Effect: Endocrine Disruption

# About Endocrine Disruption

Endocrine Disrupting Compounds (EDCs) are chemicals that mimic or interfere with the body's hormones (or endocrine system). Low doses of EDC's, especially during critical stages of development, can increase the risk of adverse health effects including cancers, neurodevelopmental and neurodegenerative diseases, metabolic disorders, asthma, and immune disorders.

EDCs can mimic, antagonize, or complexly disrupt the hormonal pathways responsible for breast development. Emerging research suggests many EDCs work in multiple ways.

EDC's can affect the body by directly interacting with hormone receptors, which are proteins that bind with specific hormones. Normally, naturally occurring hormones communicate in cells this way, in order to orchestrate and coordinate everything from metabolism to sexual development. When outside chemicals bind with the same receptors, they interfere with this normal communication. EDC's can also interact with other proteins that are very similar to estrogen-receptors, called estrogen-related receptors or ERRs. Estrogen does not bind with ERRs, but some EDCs like bisphenol A (BPA) and diethylstilbestrol (DES) can interact with these proteins. Some EDCs also interact with molecules in the body that regulate cell growth and division, affect the metabolism (break-down) of hormones, and cause epigenetic changes.

## What Chemicals in Personal Care Products are linked to this concern?

(https://www.safecosmetics.org/chemicals/benzophenone/)

## Benzophenone & Related Compounds (https://www.safecosmetics.org/chemicals/benzophenone/)

Benzophenone is used in personal care products such as lip balm and nail polish to protect the products from UV light. Derivatives of benzophenone, such as benzophenone-2 (BP2) and oxybenzone (benzophenone-3 or BP3) are common ingredients in sunscreen. Benzophenone is persistent, bioaccumulative and toxic (PBT).[1][2] These chemicals are linked to cancer, endocrine disruption, and organ system toxicity.

(https://www.safecosmetics.org/chemicals/butylated-compounds/)

## Butylated Compounds (https://www.safecosmetics.org/chemicals/butylated-compounds/)

Butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT) are used as preservatives in a variety of personal care products. Both of these chemicals are also used as preservatives in foods. These chemicals are linked to several health concerns including endocrine disruption and organ-system toxicity.

(https://www.safecosmetics.org/chemicals/known-carcinogens/)

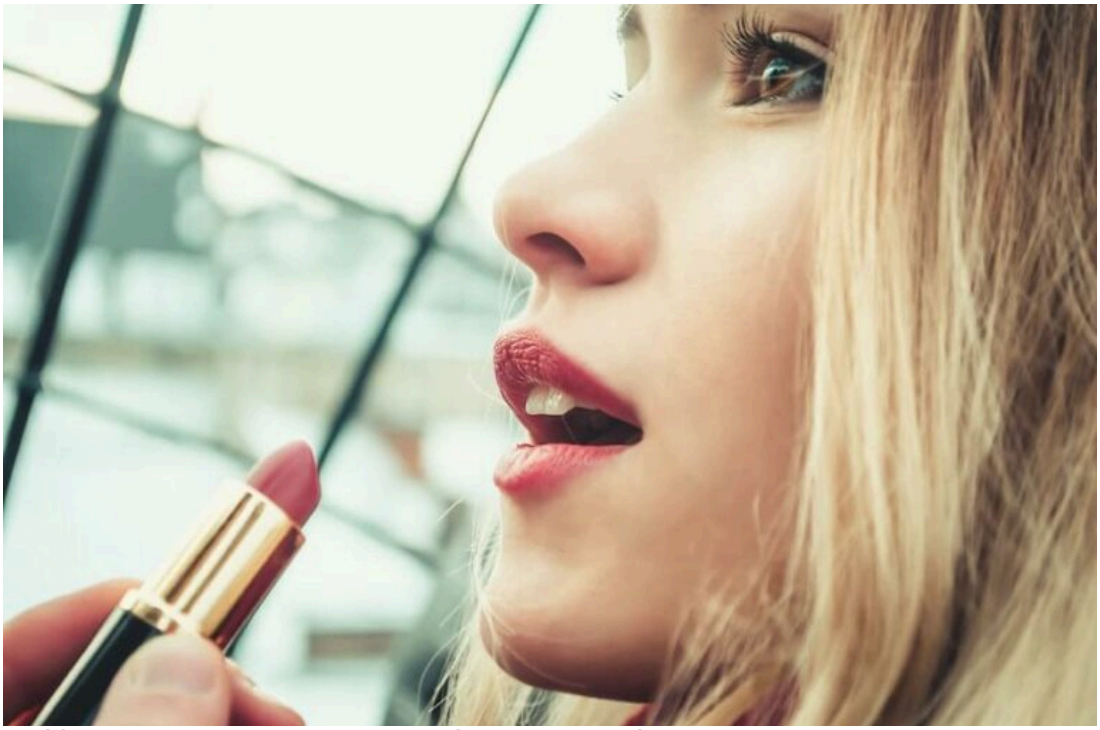
## Carcinogens in Cosmetics (https://www.safecosmetics.org/chemicals/known-carcinogens/)

The laws governing cosmetics and personal care products are so limited that known cancer-causing chemicals, or carcinogens, are legally allowed in personal care products. Some carcinogens, such as formaldehyde and formaldehyde-releasing preservatives, are common in personal care products, while others are less common, but still occasionally present.

(https://www.safecosmetics.org/chemicals/homosalate/)

**Homosalate (https://www.safecosmetics.org/chemicals/homosalate/)**

Homosalate is a widely used chemical in sunscreens and skin care products with SPF. Homosalate is a potential endocrine disruptor and studies in cells suggest it may impact hormones. In addition to direct health concerns following homosalate exposure, the chemical may also enhance the absorption of pesticides in the body.



(https://www.safecosmetics.org/chemicals/lead-and-other-heavy-metals/)

## Lead And Other Heavy Metals (https://www.safecosmetics.org/chemicals/lead-and-other-heavy-metals/)

Heavy metals like lead, arsenic, mercury, aluminum, zinc, chromium and iron are found in a wide variety of personal care products including lipstick, whitening toothpaste, eyeliner and nail color.

(https://www.safecosmetics.org/chemicals/nitrosamines/)

## Nitrosamines (https://www.safecosmetics.org/chemicals/nitrosamines/)

Nitrosamines are impurities that can show up in a wide array of cosmetics ingredients—including diethanolamine (DEA) and triethanolamine (TEA)—and products.

(https://www.safecosmetics.org/chemicals/octinoxate/)

**Octinoxate (https://www.safecosmetics.org/chemicals/octinoxate/)**

Octinoxate, also called Octyl methoxycinnamate or (OMC), is a UV filter. It can be absorbed rapidly through skin.

(https://www.safecosmetics.org/chemicals/paba/)

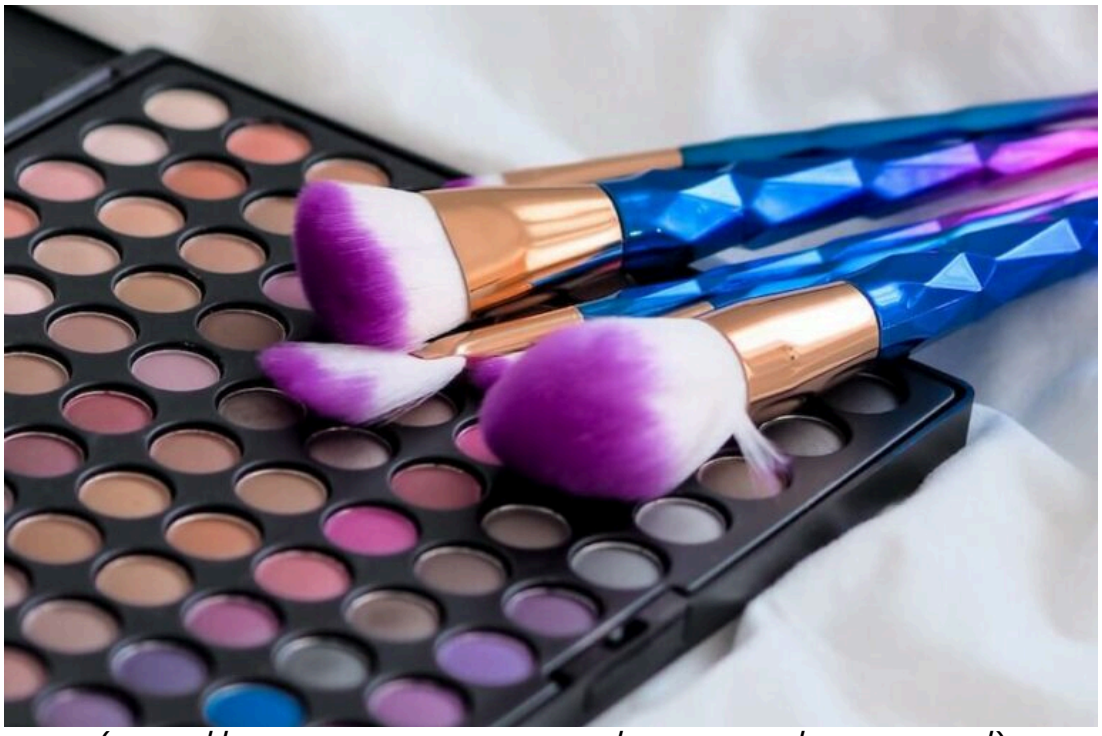
## PABA (https://www.safecosmetics.org/chemicals/paba/)

PABA and PABA derivatives are commonly used in sunscreens as ultraviolet B (UVB) filters. PABA use has declined over the years, but its derivatives are still around today. PABA may alter thyroid activity[1],[2],[3] and PABA derivatives may have additional endocrine disrupting properties.[4],[5],[6]

(https://www.safecosmetics.org/chemicals/parabens/)

## Parabens (https://www.safecosmetics.org/chemicals/parabens/)

Parabens are preservatives used in a wide variety of personal care products and foods to prevent the growth of microbes. These endocrine-disrupting chemicals can be absorbed through skin, blood and the digestive system.[1]



(https://www.safecosmetics.org/chemicals/phthalates/)

**Phthalates (https://www.safecosmetics.org/chemicals/phthalates/)**

Pronounced THAL-ates, these chemicals, which are linked to endocrine disruption, developmental and reproductive toxicity, and cancer, have been banned from cosmetics in the European Union, but still remain prevalent in U.S. products.

(https://www.safecosmetics.org/chemicals/polytetrafluoroethylene/)

## Polytetrafluoroethylene (PTFE, Aka Teflon®) (https://www.safecosmetics.org/chemicals/polytetrafluoroethylene/)

Teflon® in your makeup? Yuck. This non-stick ingredient and other fluorinated compounds have been associated with delayed menstruation, later breast development and cancer.

(https://www.safecosmetics.org/chemicals/preservatives/)

## Preservatives (https://www.safecosmetics.org/chemicals/preservatives/)

Preservatives may be used in cosmetics to prevent the growth of harmful bacteria and mold. Parabens and formaldehyde-releasing preservatives are commonly used preservatives in cosmetic and personal care products.

(https://www.safecosmetics.org/chemicals/resorcinol/)

**Resorcinol (https://www.safecosmetics.org/chemicals/resorcinol/)**

Resorcinol is commonly used in hair dyes and acne medication. In higher doses it is toxic and can disrupt the function of the central nervous system and lead to respiratory problems. It has also been shown to disrupt the endocrine system, specifically thyroid function.

(https://www.safecosmetics.org/chemicals/synthetic-musks/)

## Synthetic Musks (https://www.safecosmetics.org/chemicals/synthetic-musks/)

Synthetic musks are chemicals used in personal care product fragrances. They are rarely listed on the label, since fragrance ingredients are often not disclosed.

(https://www.safecosmetics.org/chemicals/triclosan/)

## Triclosan (https://www.safecosmetics.org/chemicals/triclosan/)

Triclosan and triclocarban are commonly used antimicrobial agents found in many soaps and detergents.[1] The Center for Disease Control and Prevention has identified triclosan in the urine of 75 percent people tested.[2]

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1388 Sutter Street, Suite 901
San Francisco, CA 94109-5400