

Potential endocrine disruptors in cosmetics and body care products

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Background: Cosmetic products (CP) are formulations applied to the skin or hair for cleansing, beautifying, or protecting, and must be safe for human health when used as intended. Some chemical substances present in CP appear to act as endocrine disruptors, as they interfere with the hormonal system by mimicking, blocking or altering natural hormones. This can lead to metabolic, reproductive and neurological disorders. The European Medicines Agency (EMA) has identified 28 chemicals in CP that may act as endocrine disruptors, highlighting the need for further evaluation of their effects. These substances include benzophenone-3, kojic acid, 4-methylbenzylidene camphor, propylparaben, triclosan, resorcinol, octocrylene, triclocarban, butylated hydroxytoluene, benzophenone, homosalate, benzyl salicylate, genistein, daidzein, butylparaben, tert-butylhydroxyanisole, ethylhexyl methoxycinnamate, benzophenone-1, benzophenone-2, benzophenone-4, benzophenone-5, methylparaben, cyclopentasiloxane, cyclomethicone, salicylic acid, butylphenyl methylpropanol, triphenyl phosphate and deltamethrin. **Objective:** This systematic review aimed to identify review articles addressing the potential endocrine-disrupting chemicals (EDCs) listed by the EMA in cosmetics. **Methodology:** A bibliographic search was conducted on January 27, 2025, in PubMed, using the search strategy: “substance name” (for the 28 chemicals) AND “endocrine disrupt*” AND “cosmetic.” The search was limited to review articles. **Results:** The search identified 219 review articles on EDCs, 15 of which focused on CP. The most studied chemicals in cosmetics were preservatives, such as triclosan (n=4), and UV filters, such as benzophenones (n=2). Of the 28 substances listed by the EMA, reviews were found for only 8: benzophenone-3, propylparaben, triclosan, octocrylene, homosalate, ethylhexyl methoxycinnamate, methylparaben and cyclopentasiloxane. **Conclusions:** These preliminary results confirm the existence of secondary literature on EDCs in CP, primarily focusing on preservatives and sunscreens. However, many of the substances identified by the EMA have not been thoroughly reviewed. Further exploration of recent original research is needed to expand the existing scientific knowledge, underscoring the importance of ongoing literature updates.

Keywords: Endocrine disruptors; Cosmetic products; Chemical safety; Hormonal interference.

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