

Study finds cosmetic products contain endocrine disruptors

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Some of the cosmetic products analysed by the scientists in this study. Credit: University of Granada

Researchers from the University of Granada and the San Cecilio de Granada Teaching Hospital confirm that endocrine disruptors—chemical substances that may mimic or block the action of hormones—are present in some cosmetic products

The use of some cosmetic and beauty products (such as facemasks, lipsticks, face creams, nail polish, hair dyes, creams, hairspray, and hair mousse) could be related to an increased likelihood of developing endometriosis, due to certain chemical ingredients that mimic or block the action of hormones (known as [endocrine disruptors](#)).

This is one of the conclusions of a study conducted by researchers from the University of Granada (UGR) and the San Cecilio de Granada Teaching Hospital, published in the journal *Environmental Research*. The work forms part of a wider research project called EndEA.

Endometriosis is a very common gynecological disease: it is estimated that one in 10 women of reproductive age could suffer from it. It is characterized by abnormal growth of endometrial tissue (which normally lines the inside of the uterus). This tissue extends into various areas of the abdomen and pelvis, causing a wide range of symptoms including intense chronic pain in the pelvic region, intestinal problems, and infertility, notably decreasing the quality of life of these women.

This disease is also notoriously difficult to diagnose (it requires a surgical intervention to definitively confirm it), which can cause a significant delay in diagnosis—estimated at 10 years, on average, from the onset of symptoms. In addition, the lack of a definitive treatment to cure endometriosis makes it a chronic disease that can render daily life a challenge.

The role of hormones

The researchers responsible for this project, the gynecologist Olga Ocón from the San Cecilio de Granada Teaching Hospital and UGR lecturer Francisco Artacho, explain: "Although the exact causes of its appearance are not known, a diverse range of factors are suspected of being involved, including genetic, epigenetic, and environmental causes, with hormones appearing to play a key role."

For this reason, the presence of [chemical substances](#), known as endocrine disruptors, in many everyday products is of particular concern. These substances are capable of mimicking or blocking the natural action of hormones and could therefore be contributing to the increase in the number of women diagnosed with endometriosis in recent years, as has been shown for other pathologies such as breast cancer, obesity, or diabetes.

These endocrine disruptors include parabens and benzophenones, both of which are widely used in the cosmetics and beauty products industry and which are part of the so-called "exposome." This relatively new term encompasses all the non-genetic environmental factors to which human beings are exposed from birth onward that contribute to the risk of illness and disease.

Against this backdrop, these researchers are now studying the role that endocrine disruptors may play in the development of endometriosis. Their work is part of the EndEA research project funded by the Carlos III Health Institute (pertaining to the Spanish Ministry of Science and Innovation) and the Antonio Chamorro-Alejandro Otero Research Chair.

As part of their investigations, the scientists quantified internal levels of parabens and benzophenones among 124 women (with and without endometriosis), from public hospitals in Granada. They also gathered detailed information on each woman's use of cosmetics and [beauty products](#).

The results obtained, which are part of the doctoral thesis being developed by researcher Francisco M. Peinado, showed a clear link between greater use of various types of cosmetics (facemasks, lipsticks, face creams, footcare products, [hair dyes](#), creams, hairspray, and hair mousse) and higher internal levels of parabens and benzophenones. Ocón and Artacho note that they also found that "the internal levels of some of these endocrine disruptors were related to the risk of endometriosis."

As Francisco Peinado observes, given its difficult diagnosis and the fact that there is still no treatment that definitively cures [endometriosis](#), it is important to establish preventive measures aimed at reducing exposure to these compounds, by switching to products free from endocrine disruptors or using them less frequently.

These results build on the previous findings published in another recent study by the same researchers, which showed that one specific endocrine disruptor, bisphenol A, could also be involved in the development of this disease.

More information: F.M. Peinado et al. Cosmetic and personal care product use, urinary levels of parabens and benzophenones, and risk of endometriosis: results from the EndEA study, *Environmental Research* (2020). [DOI: 10.1016/j.envres.2020.110342](#)

Provided by University of Granada

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