So that's why we're allergic to sun creams

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What happens to sunscreens when they are exposed to sunlight? And how is the skin affected by the degradation products that form? This has been the subject of research at the University of Gothenburg and Chalmers University of Technology that will be presented at the upcoming dermatologist conference in Gothenburg.

A growing hole in the ozone layer and a change in sunbathing habits have brought an increase in the number of cases of skin cancer worldwide. One way of dealing with this has been to advocate sunscreens, though greater use of these products has triggered an increase in contact allergy and photocontact allergy to sun protection products.

"We know that sun creams pass through the skin into our bodies, but we don't know what effects they have on us," says Isabella Karlsson, doctoral student at the Department of Chemistry at the University of Gothenburg's Faculty of Science. "Many of them actually break down in the presence of sunlight. We therefore wanted to look at what can happen to the chemical sun protection agents when exposed to UV rays, and how the degradation products that form affect the skin."

In their study, the researchers have come up with an explanation of what happens during this process. "Arylglyoxales, one of the degradation products, turned out to be highly allergenic," says Karlsson. "Which could explain why some people are allergic to creams that contain dibenzoylmethanes, one of the UVA-absorbing substances in sun creams."

This has made for a better understanding of the mechanism behind photocontact allergy, which could lead to a product that does not cause allergy, and could determine which sun creams people are most likely to be sensitive to.

But their discovery is already having an impact. The healthcare system has long found it difficult to test patients with suspected photocontact allergy, but thanks to the study a new test is being developed. "We're just starting to work with various dermatology clinics on assessing the test," explains Karlsson. "So more patients will be able to find out whether they have photocontact allergy, which could help them in their everyday lives and reduce the burden on the healthcare system."

Provided by University of Gothenburg

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