

Scientists call for further research on parabens

By Katie Bird

9/19/2007 - The movement of parabens across the skin barrier significantly increases with repeated applications of the chemicals, according to new research.

The research, published in this month's *Experimental Dermatology*, suggests that parabens cross the skin barrier in increased quantities after repeated applications, leading to fears over their accumulation in the skin and the eventual passage of the chemicals into body tissues.

The chemical preservatives appear in the majority of cosmetics products, however fears have been raised regarding their safety, with some studies claiming they may be implicated in incidences of breast cancer.

The researchers, led by Sawsan El Hussein from the University of Franche-Comté, Besancon, France, are now calling for increased research into the effects of repeated, long-term application. Fragments of human skin excised from women undergoing surgical procedures, and a commercial cosmetics body lotion containing four different parabens were used in the experiment.

The team performed two sets of experiments. The first investigated the effect of one-time application of the lotion onto the skin, and the second looked at the effect of repeated applications throughout a 24 hour period, mimicking the use of several paraben-containing cosmetics during an average day.

Franz diffusion cells were used to calculate the passage of parabens across the epidermis and dermis.

Concentrations of the chemicals in the receptor fluid were then calculated in order to illustrate the quantity of the chemicals that had permeated the skin.

In the first set of experiments, 45 mg of product was applied to the skin surface, and measurements of penetration were made 12, 24 and 36 hours after application.

The concentration of parabens in the receptor fluid was highest 24 hours after the first application, showing a slight delay in the movement of the chemicals across the skin.

In the second set of experiments three applications of the product were made at 12 hour intervals, immediately before the second application, immediately before the third application and 12 hours after the final application.

In the second case, the concentrations of the chemicals in the receptor fluid continued to increase after each application. The researchers found that larger quantities of the parabens had permeated the skin after the third application than after the first.

This suggests that with repeated applications increased quantities of parabens move across the skin barrier, the scientists claim.

Parabens are very common in cosmetics products. The researchers argue that during an average day a consumer may come into contact with many of these formulations, which in turn may be applied more than once during the day.

This repeated exposure, argue the authors, means there should be further research into the passage of these chemicals across the epidermis and dermis layers, particularly in respect to the number of applications over a long period of time.

At present the number of paraben free products is growing, as the natural market increases, providing consumers with some choice to avoid parabens if they feel it necessary.

In contrast much of the industry defends the use of parabens as effective, inexpensive and safe preservatives, and the Food and Drug Administration states that '*at the present time there is no reason for consumers to be concerned about the use of cosmetics containing parabens*'.

Source; *Experimental Dermatology*

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"Assessment of principal parabens used in cosmetics after their passage through human-epidermis layers (ex-vivo study)"

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