

〈特別講演〉

Reactions to Perfume Ingredients in Relation to Exposure Patterns

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Abstract

The fragrance industry is deeply interested in knowing which of its raw materials possess a potential to cause allergic contact dermatitis and perhaps more importantly, if they are strong or weak sensitizers. The frequency of positive patch test reactions in patients of dermatological clinics or the results of predictive tests in human volunteers or laboratory animals give some indication of this but at first sight their findings often seem to be contradictory. One major reason could be that consumers are not equally exposed to all fragrance ingredients and therefore the population shows a higher frequency of clinical reactions to materials to which it is more exposed.

The present study attempts to explore methods of evaluating the degree to which the population is exposed to some fragrance ingredients. Present exposure levels can be computed from a large number of perfume formulae in current use. This is achieved by measuring concentrations of each ingredient in different types of consumer product and taking into account the typical household consumption of each product-type as well as the amount of skin contact that is likely to occur under conditions of normal use. Another source of exposure data is from industry estimates of ingredient-usage in different product-types. This can be computed in a similar way as data from formulae.

In this trial study, both sources of data give consistent exposure figures and allow us to put clinical results into a different perspective. On the basis of limited data from European and North American clinics we have been able to arrange a number of fragrance ingredients in a rank-order according to their apparent sensitizing-potency. This order is in remarkable agreement with the findings of predictive studies on both human volunteers and guinea pigs. We therefore conclude that clinical and predictive test data are not necessarily contradictory and that both can be of use in assessing the sensitization potential of fragrance ingredients.