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Fragrance allergy and dermatitis on the hands

Summary

This Ph.D.-thesis investigated allergy to a fragrance and hand eczema focusing on experimental real-life exposure conditions. Study I: 67 of 658 patch tested patients with hand eczema had at least one positive patch test to a selection of fragrances found in household products and more often at least one positive patch test to other allergens in the European standard series and a positive fragrance history (questionnaire). Study II focused preferably on the second most frequent single fragrance from Study I, and included patch test positive participants previously diagnosed with hand eczema. A finger from each hand was immersed once a day for up to 4 weeks in a solution with or without the fragrance. The dose was low and high for 2 weeks, respectively; imitating the diluted/undiluted product. Laser Doppler supported the finding of no association between immersion of a finger in the fragrance solution and development of clinically visible eczema on the finger. Study III focused on citral, the most frequently patch test positive single fragrance from Study I, comparing those with a positive and an irritative patch test. The former more often had positive patch tests to other fragrances, but not more often a positive fragrance history (questionnaire). It was hypothesized that citral is an allergen and an irritant. Study IV found 15 of 20 participants to have at least one day of patch test reading with more positive tests on the forearm tested with a fragrance (hydroxycitronellal) + irritant sodium lauryl sulphate and no days with more positive on the forearm tested with fragrance. Laser Doppler supported it. In this thesis experimental exposure simulating real-life exposure found no association between immersing a finger in a fragrance solution and the development of eczema on that finger, but other allergens, several allergens or irritancy and allergy could be subjects for future studies.