

# CONTACT POINTS

CONTACT DERMATITIS 2010; 63: 289–299

JOHN WILEY & SONS A/S 2010

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## Flare-up of dermatitis following patch testing is more common in polysensitized patients

*Contact Dermatitis* 2010; 63: 289–290

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**Key words:** flare-up of dermatitis; multiple contact allergies; patch test; polysensitization; side-effect.

### Introduction

Diagnostic patch testing of dermatitis patients entails a minor risk of side-effects, including subjective complaints such as headaches and tiredness, and itchy skin under the tape. The skin may become even itchier after the tape and chemicals have been removed (1). A positive test may show redness, bumps, mild swelling or even formation of small blisters. As contact dermatitis involves the immune system, patch testing may result in a recall reaction. The immune system 'remembers' where the skin previously reacted to a particular chemical. For example, a person with allergic hand dermatitis caused by a preservative in a topical product may notice that the hand dermatitis worsens when the preservative is placed under occlusion on the person's back. The memory response is a reliable sign that the culprit chemical has been identified.

The relationship between number of contact allergies and flare-up of dermatitis during patch testing has not previously been investigated. Recently, polysensitization has been defined as the occurrence of three or more contact allergies to unrelated chemicals (2, 3).

### Objective

The aim of this retrospective study is to analyse whether patients with multiple allergies have an increased risk of flare-up of dermatitis following patch testing.

### Methods

Over a 21-month period, 780 patients were patch tested at the Department of Dermatology, Odense University Hospital. A total of 744 patients completed a questionnaire with a single question: 'Have you experienced a flare-up of your dermatitis during patch testing?'. The questionnaires were filled out by the patient on the day of the final reading of the patch tests (day 5–7). Each patient's total number of positive allergic reactions was retrieved from our database. Furthermore, the patient records of those with alleged flare-up were reviewed with the aim of verifying the information.

All patients were patch tested with TRUE Test® (MEKOS Laboratories A/S, Hillerød, Denmark) panel 1 and 2 supplemented with other baseline series allergens (Chemotechnique®, Vellinge, Sweden) in Finn Chambers® on Scanpor® tape (SmartPractice®, Phoenix, AZ, USA). The patch tests were applied to the upper back for 2 days and read on days 3 and 5–7 according to the recommendations of the International Contact Dermatitis Research Group (4). Only patients with positive reactions (+ → ++++) were included in the analyses. The effects of chemically related substances (e.g. formaldehyde and formaldehyde releasers, mixes and constituents of mixes) tested individually were grouped and counted as one contact allergy in order to fulfil the criteria for polysensitization.

### Results

The 744 patients (463 women and 281 men) were aged between 3 and 93 years. Three hundred and thirty of 744 (44%) patients had one or more

positive allergic patch test reactions. On the basis of the questionnaires, 54 of 330 patients claimed to have experienced a flare-up of their dermatitis during patch testing. In 20 cases, the flare-up was verified by the attending dermatologist in the written records. Two hundred and seventy-six patients with positive reactions to one or more allergens had not noticed a flare-up reaction. Twenty-two of 54 patients (41%) with a flare-up had multiple allergies, and 9/20 patients (45%) with a verified flare-up had multiple allergies. A total of 63/276 patients (23%) without flare-up had multiple allergies. Thus, flare-up of dermatitis was significantly more common in patients with multiple contact allergies than in patients with single/double contact allergies with regard to both claimed and verified flare-up reactions (Fisher's exact test  $P < 0.05$ ).

### Discussion

The results confirm that patients with multiple allergies are more prone to developing a flare-up of dermatitis in other skin areas during diagnostic patch testing. A plausible explanation for this finding is that patients suffering from multiple allergies have more reactive skin and a lower threshold for flare-up of their allergic contact dermatitis.

Conflicts of interest: Klaus E. Andersen is an Advisor to MEKOS Laboratories A/S.

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