

CONTACT ALLERGY: A REVIEW OF CURRENT PROBLEMS FROM A CLINICAL PERSPECTIVE

By: Wolfgang Uter, Thomas Werfel, Ian R. White, and Jeanne D. Johnson

BACKGROUND

Chemical accelerators are traditionally used to accelerate the linkage of rubber molecules in natural or synthetic rubber. It's this accelerator group of chemicals, especially thiurams and carbamates, that induces the majority of the skin dermatitis reactions. Chemical contact allergy is a common problem that is defined as a Type IV Chemical allergy or Type IV delayed hypersensitivity reaction. The diagnosis of chemical contact allergy is made with conventional patch testing.¹

Chemical accelerators used in the manufacture of natural rubber latex (NRL) and synthetic medical gloves transform the original raw liquid rubber state into a very thin, strong elastic glove film and provides the following:

- Cross-linking of the glove material to strengthen the glove
- Integrity to the glove during use
- Elasticity
- Stabilization of the glove material for long-term storage

These chemicals, if not controlled, are recognized as a problem for healthcare workers, as reactions are occurring by exposure not only to natural rubber latex gloves, but also to many other types of rubber products.



OBJECTIVES AND METHODS

Available commercially-prepared patch testing consists of several hundred contact allergens from different manufactures worldwide. The availability of these commercial patch tests in the clinical setting and the expanding list of contact allergens may pose challenges in providing accurate diagnosis.

This study was based on the overview of available guidelines and current clinical practice identifying patch testing and clinical diagnosis methods to delayed hypersensitivity exposure to allergens. A systematic review using PubMed and Web Science identified non-duplications of 445 research papers. Based on the level of title, abstract, and key words, 291 publications were eventually included in this review. The authors also reviewed 3 guideline papers that partially fell outside the search period.

The main objective was to identify the prevalence and major allergens responsible for occupational skin dermatitis.

RESULTS

The baseline allergen series for conventional patch testing is continually expanding. Occupational skin dermatitis affects 27% of the population. The compiled findings of allergens reviewed in this study are listed as:



Plastic contact allergens



Preservatives in cosmetics, industrial and household products



Fragrances and flavours



Rubber contact allergens and black rubber mix



Metals (Chromium and Nickel)



Medical devices

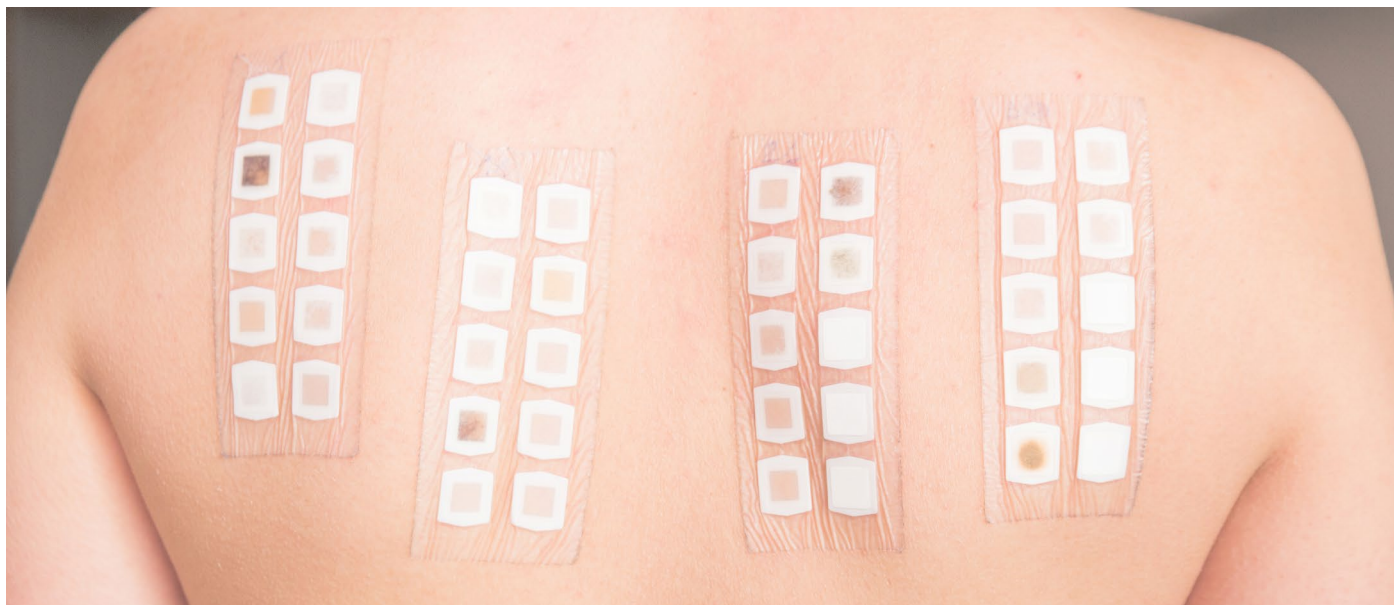
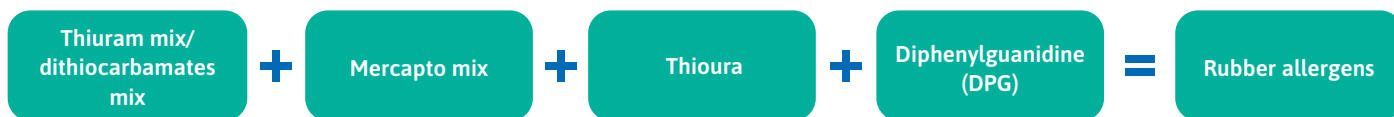


Pharmaceuticals devices



Textiles and leather contact allergens

The extensive list of allergens presents a challenge due to inadequate product labeling and repeated exposure. This repeated exposure can increase sensitivity to allergens in the general population, including healthcare workers. In addition to the obvious contact with glove-donned hands, rubber allergens have been identified as major contributors to occupational dermatitis observed in healthcare workers. These chemicals include but are not limited to:



CONCLUSION

There are several new contact allergens identified each year. New uses of well-known contact allergens may lead to further exposures and increase sensitization risks. The use of investigative patch testing combined with analytical chemistry will provide early recognition and diagnostic accuracy. The importance of recognizing contact allergies in clinical settings can provide insights into emerging trends or challenges faced by clinicians in diagnosing and managing these conditions.

APPLICATION FOR PRACTICE

1



Seek professional diagnosis to assist in treatment of allergic contact dermatitis

2



Stay aware of new exposure conditions

3



Avoid sensitizing allergens to prevent developing allergic contact dermatitis

Note: This clinical summary is written by clinicians at Ansell Healthcare Products, LLC. Please refer to the actual study for full text information.

Uter W, Werfel T, White IR, Johansen JD. Contact Allergy: A Review of Current Problems from a Clinical Perspective. *Int J Environ Res Public Health*. 2018;15(6):1108. Published 2018 May 29.

References:

1. Warburton KL, Uter W, Johannes Geier J, et al., Patch testing with rubber series in Europe: a critical review and recommendation, *Contact dermatitis*, 2017;76(4):195-203.

➔ For more information or additional clinical resources, please visit: www.ansell.com/AnsellCARES

Ansell, ® and ™ are owned by Ansell Limited or one of its affiliates. © 2024 Ansell Limited. All rights reserved.