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Contact dermatitis to latex is rare

*C. Gutgesell, R. Arnold, S. Bartels, T. Fuchs**

Immediate-type allergy to natural rubber latex (NRL) has been known for years. In particular cases, NRL is also supposed to induce allergic contact dermatitis. Experience in patch testing with NRL has yielded conflicting results ([1](#), [2](#)). Therefore, we performed a prospective study on a large population.

Over a period of 5 years, all patients of the department seen because of suspected allergic contact dermatitis were patch tested with an aqueous ammonia- and accelerator-free 2% NRL extract ([3](#)), with a protein content of 31.5 ng/ml (Allergopharma, Reinbek, Germany). The patches were applied with Finn chambers on Scanpor (Hermal, Reinbek, Germany). The time of exposure was 2 days. In the first phase of the study, a total of 231 consecutive patients (143 female, 88 male) was examined. Following this, in a second phase of the study, 2002 patients (1318 female, 684 male) were patch tested with an aqueous ammonia- and accelerator-free 4% NRL extract ([3](#)), with a protein content of 63 ng/ml (Allergopharma, Reinbek, Germany). Patches were applied with Finn chambers on Scanpor. The exposure time was 2 days, too. All 2233 patients (1461 female, 772 male, median age 41±14 years) were patch tested with the standard series (including rubber chemicals) of the German Contact Dermatitis Research Group (DKG). Tests were read 30 min after removal of the patches, as well as on days 3 and 4, in accordance with the recommendations of the DKG ([4](#)). In every case, immediate-type allergy to NRL was excluded by history and a negative prick test (Allergopharma). The readings were made according to EAACI recommendations ([5](#)).

In testing the 2% NRL extract, no positive reaction was observed in any of the 231 patients.

Among those 2002 patients exposed to 4% NRL extract, 15 patients showed questionably positive reactions (?) on or before the day 4 reading. In one patient, a single positive reaction (+) was documented at the day-3 reading exclusively. Fifty-eight patients (2.6%) were diagnosed as being sensitized to at least one rubber chemical (e.g., thiurams, dithiocarbamates).

Of the simultaneously prick-tested patients, 3.5% (94/2714) in the department exhibited immediate-type reactions to NRL. In none of these patients did the positive prick test develop into an eczematous reaction (readings 30 min and up to 48 h after testing).

In the first phase of the study, 231 patients were patch tested with an aqueous ammonia- and accelerator-free 2% NRL extract. Since no positive reactions occurred, it was assumed that the NRL concentration chosen had been too low. Therefore, in a second phase of the examination, the patients were patch tested with a 4% NRL extract. In none of the 15 patients with a questionable reaction nor in the one patient with a single positive reaction did the ensuing assessment indicate a clinical relevance of the findings. By history, none of the patients had eczematous lesions after contact with gloves or other rubber products. In doubtful selected cases, this was confirmed by a negative glove use test (7/16 patients).

According to our study, allergic contact dermatitis due to NRL proteins is rare. The ammonia- and accelerator-free extracts were deliberately chosen because it is known that, due to their ammonia contents, NRL latices can evoke irritative reactions under occlusion. Besides, they often embody preservatives such as thiurams, dithiocarbamates, or phenol-containing compounds, which can thus simulate contact dermatitis. Moreover, unknown chemical substances in crude latex, possibly even ones newly formed by chemical reactions, can lead to "false positive" reactions. Therefore, it has to be determined whether the reported delayed-type reactions to NRL (1, 6) were really caused by NRL proteins. Our data confirm the results of a smaller study of 608 patients (2). We conclude that allergic patch test reactions to NRL proteins are uncommon.

Ref

1. Wilkinson SM, Beck MH. Allergic contact dermatitis from latex rubber. *Br J Dermatol* 1996;**134**:910–914.
[CrossRef](#) [MEDLINE](#) [ISI Abstract](#) [CSA Abstract](#)
2. Wakelin SH, Jenkins RE, Rycroft RJ, McFadden JP, White IR. Patch testing with natural rubber latex. *Contact Dermatitis* 1999;**40**:89–93.
[MEDLINE](#) [ISI Abstract](#) [CSA Abstract](#)
3. Wahl R, Fuchs T. Serologische Diagnostik der Naturlatexallergie und molekulare Charakterisierung eines Naturlatexextraktes. *Allergologie* 1995;**18**:374–378.
[ISI Abstract](#)
4. Brehler R, Hellweg B. Beurteilung von Epikutantestreaktionen nach Empfehlungen der Deutschen Kontaktallergiegruppe (DKG). *Dtsch Dermatol* 1995;**43**:688–690.
5. Dreborg S. Skin tests for diagnosis of IgE-mediated allergy. *Allergy* 1989;**44 Suppl 10**:31–37.
6. Gottlob P, Gall H, Peter RU. Allergic contact dermatitis from natural rubber latex. *Contact Dermatitis* 2000;**42**:240.
[MEDLINE](#) [ISI Abstract](#)

This article is cited by the following articles in Blackwell Synergy and CrossRef

E. Nettis, M. C. Colanardi, A. Ferrannini. (2004) Type I latex allergy in health care workers with latex-induced contact urticaria syndrome: a follow-up study. *Allergy* **59**:7, 718-723

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E. Dehlink, C. Prandstetter, T. Eiwegger, B. Putschögl, R. Urbanek, Z. Szépfalusi
. (2004) Increased prevalence of latex-sensitization among children with chronic renal failure. *Allergy* **59**:7, 734-738

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Footnotes

No clinically relevant reaction was found in patch testing with NRL more than 2000 patients.

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