

From Russia with glove: latex sensitization in Russian and eastern European hospital workers

Allergy to natural rubber latex is the most common cause of occupational allergy among health care workers in the United States. In questionnaire-only surveys, up to 53% of responding health care workers self-report some type of reaction to rubber gloves.¹ In surveys involving both questionnaires and either latex skin testing or immunoassays for latex-specific immunoglobulin (Ig)E antibodies, 0.5%² to 5%³ to 17%^{4,5} of various hospital employee groups in Western Europe and North America have been documented as latex-sensitive. The variation in reported prevalence rates is attributable to use of different skin test materials, small sample populations, use of selected populations, and the confounding effect of sensitization to crossreacting allergens. In addition, comparison of results from different studies is often difficult because of failure to differentiate *latex sensitization* (positive latex skin test or elevated latex-specific IgE antibody in the absence of clinical symptoms) from *latex allergy* (evidence of latex sensitization plus compelling clinical history or positive latex challenge test).

In this issue of the *Annals*, Nolte et al⁶ report results of latex skin tests and questionnaire surveys of 901 workers at 15 collaborating hospitals in Russia and eastern Europe. The overall prevalence rate of latex sensitization was 5.4%, but the prevalence rates at individual centers were variable, ranging up to 14%. The overall prevalence of latex allergy was 1.9%. These rates are generally lower than rates measured in health care worker cohorts in the United States. However, many study details are not provided. The study population was not stratified by occupation (physician, nurse, laboratory technician, housekeeper, etc) or by extent of personal use of latex gloves. We do not know if the persons who performed the skin testing were allergists or were familiar with the testing techniques. Blood was not collected for measurement of latex-specific IgE antibodies, as an additional check for latex sensitization. We do not know if the questionnaire used had been validated by previous studies. In addition, some of the questionnaire findings were incongruous. For example, 27 persons reported previous anaphylactic reactions to latex, yet 20 of these individuals had negative latex skin tests. The authors speculate that regional differences in the latex sensitization prevalence rates are attributable to differences in availability of crossreacting tropical fruit in the study locales, yet no data are offered regarding individual consumption of these foods.

Considering these shortcomings, why would this report be of interest or importance to readers in the United States? First, and most importantly, the study provides comparative data from regions where medical care delivery and availability of resources differ markedly from those in the United States. Second, the present work was performed using three dilutions of a standardized latex skin test reagent. No systemic reactions were induced by the skin testing. This finding reinforces the safety profile of standardized latex diagnostic reagents documented in previous studies,⁷ but, unfortunately, a commercial standardized latex skin test reagent remains unavailable in the United States. Allergists frequently perform puncture skin testing with extracts of finished rubber products, usually latex gloves, but these gloves vary widely in their allergen contents, and systemic reactions have been reported with use of these unstandardized preparations.⁸ Third, and perhaps of greatest investigative interest, is the comment that at these Russian and eastern European hospitals, latex gloves are frequently washed and re-used. Such washing would be expected to remove residual latex allergens in the gloves, especially allergens adsorbed to glove donning powders. If, as proposed, the investigators perform followup investigations of the prevalence of latex allergy and usage of latex gloves, it would be important to measure the latex allergen contents of both unused and washed latex gloves at each study site. It is conceivable that unused latex gloves available in these countries contain little latex allergen to begin with, and that repeated washing is less important in reducing the allergen content of the glove. In our own cross-sectional study of extractable latex allergen in multiple brands of latex gloves,⁹ we found that the latex allergen level did not correlate with the cost of the glove, the attractiveness of the packaging, or the country where the gloves were manufactured.

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