

Extractable latex allergens and proteins in disposable medical gloves and other rubber products.

J. Allergy Clin. Immunol. 199;93:836-842.

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Background: IgE-mediated sensitization to rubber proteins is being reported with increasing frequency in health care workers. To explore the importance of various sources of allergen exposure, we measured the total rubber allergen and protein levels in extracts of disposable rubber gloves and compared the allergen levels with those in extracts of other medical and consumer rubber products.

Methods: Rubber allergens were measured by inhibition immunoassay with a rubber glove extract as the solid-phase allergen and pooled plasma from five rubber-sensitized health care workers as the IgE antibody source. Proteins were measured by Ninhydrin assay.

Results: Among 71 lots of gloves tested, the extractable allergen and protein levels were significantly correlated and were appreciably higher in powdered gloves than in powder-free gloves. Allergen levels varied 3000-fold among gloves from different manufacturers and were higher in examination gloves than in surgical or chemotherapy gloves. Measurable allergen was found in 11 of 24 lots of "hypoallergenic" gloves tested. Allergen levels in toy balloons were comparable to those in powdered gloves; much lower allergen levels were measured in condoms and anesthesia rebreathing bags.

Conclusions: The allergen content of disposable rubber gloves varies widely and is higher in powdered gloves than in powder-free gloves and higher in examination gloves than in surgical gloves. Hypoallergenic gloves may contain substantial amounts of IgE-binding proteins. Gloves and toy balloons appear to be more important sources of rubber allergens than the other rubber products tested.