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Letter to the editor

Standardization of house-dust sampling

Procedures for collecting and processing dust samples were standardized at the first (2) and second (4) international conferences on mite allergens and asthma. The recommended procedure is to collect dust by vacuuming for a given time. To avoid mixing of dust from one site with dust from another, one must change the vacuum cleaner bag or filter after each collection. Despite this precaution, dust remaining in the tube could mix with the next sample. The purpose of this study was to investigate this possibility.

Methods

To determine whether sample contamination by dust remaining in the vacuum cleaner tube occurred, we collected samples on beds and rugs in 11 bedrooms. Vacuuming was performed by the same technician using the same vacuum cleaner (Hoover S 3708, 900 W). In each bedroom, four samples were collected by vacuuming for 2 min/m^2 in the following order:

- first sample: first half of the rug
- second sample: first half of the mattress (divided lengthwise)
- third sample: second half of the rug
- fourth sample: second half of the mattress.

Assuming that house-dust mite (HDM) antigen content is lower on rugs than on mattresses, we proposed that if residual dust remaining in the tube contaminated the next sample, then the antigenic level of the second half of the rug (third sample) should be higher than that of the first half of the rug (first sample).

Dust processing was performed as recommended by Platts-Mills & de Weck (2). HDM antigen content was assessed by ELISA with monoclonal antibodies (1, 3). The concentration of *Der p* I and *Der f* I was determined by comparing the optical density of the sample at 492 nm with a standard curve. Results were expressed in micrograms of group I antigen levels, defined as the sum of *Der p* I and *Der f* I per gram of house dust.

Table 1. Group I antigen levels (mean±SD), µg/g dust

Rugs			Mattresses		
First half		Second half	First half		Second half
10.5±5.5	NS	9.6±5.3	29.5±29.8	NS	29.0±26.1

Results and comments

As expected, group I antigen levels were higher ($P<0.05$) in mattresses than rugs (Table 1). Antigenic levels measured on the first and second halves of the rug were similar. These findings show that it is unlikely that contamination by dust remaining in the tube was negligible.

Thus, changing bags seems to be sufficient to prevent contamination when several samples are collected from places with heterogeneous HDM antigenic levels.

References

1. Platts-Mills TAE, Heyman PW, Chapman MD, Hayden ML, Wilkins SR. Cross-reacting and species-specific determinants on a major allergen from *Dermatophagoides pteronyssinus* and *D. farinae*: development of a radioimmunoassay for antigen P1 equivalent in house dust and dust mites extracts. J Allergy Clin Immunol 1986: 78: 398–407.
2. Platts-Mills TAE, de Weck AL. Dust mite allergens and asthma – a worldwide problem. J Allergy Clin Immunol 1989: 83: 416–27.
3. Platts-Mills TAE, Chapman MD. Dust mites: immunology, allergic disease and environmental control. J Allergy Clin Immunol 1987: 80: 755–74.
4. Platts-Mills TAE, Thomas WR, Aalberse RC, Vervloet D, Chapman MD. Dust mite allergens and asthma: report of a second international workshop. J Allergy Clin Immunol 1992: 89: 1046–60.

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