

Correspondence

The effects of temperature and buffer on the extraction of Der p 1 from dust

To the Editor:

Many laboratories worldwide are measuring Der p 1, the major group 1 allergen of the house dust mite *Dermatophagoides pteronyssinus*, as a risk factor for asthma.¹ Recently, a worldwide quality control program has demonstrated interlaboratory differences in Der p 1 measurement,² which could be due in part to the use of different extraction temperatures. The aim of this study was to determine the effects of type of buffer, time of extraction, and extraction temperature on Der p 1 concentrations in dust.

Dust samples were collected by vacuuming 10 houses in Wellington, New Zealand. Fine-sifted (425 μ m) portions (100 mg) of each household dust sample were extracted with 1.0 ml each of phosphate-buffered saline (PBS) pH 8.0, borate-buffered saline (BBS) pH 7.4, and ammonium bicarbonate buffer (ABB) pH 7.0 at both 4° C and room temperature (24° C) for 2 hours and overnight (16 to 18 hours). The extracted samples were centrifuged for 10 minutes at 4000 rpm, and the supernatant was stored at -20° C before analysis for Der p 1 content by a double monoclonal antibody ELISA method.³ Statistical analysis was carried out by analysis of variance on log-transformed Der p 1 data.

Time of extraction had no effect on Der p 1 levels irrespective of buffer type or temperature ($p = 0.72$). Table I shows that extraction at 4° C resulted in lower Der p 1 levels irrespective of buffer type ($p < 0.0001$). The mean reduction in Der p 1 levels extracted at 4° C compared with 24° C was 57.9% (95% confidence interval: 55.4-60.4) and was uniform across the whole range of Der p 1 concentrations (9.6 to 279.3 μ g/gm).

Der p 1 levels in BBS extracts were approximately twice the amount found in either PBS or ABB extracts at both temperatures. Neither altering the pH between 7.0 and 8.5 nor halving or doubling the ionic strength of both PBS or BBS had any effect on Der p 1 levels (unpublished observations).

This study has demonstrated that both extraction temperature and buffer type influence levels of Der p 1 measured in dust. When Der p 1 levels measured by different laboratories are compared, extraction conditions should be taken into consideration. A consensus should be reached between laboratories on the recommended protocol for extracting dust samples for Der p 1 analysis. Multicenter studies of indoor allergens should consider either the use of a single reference laboratory or standardization of laboratory protocols between the different centers and should adopt appropriate quality control programs.

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TABLE I. Geometric mean levels of Der p 1 under different extraction conditions

	Der p 1 μ g/gm (95% CI)
PBS at 24° C	34.02 (22.03-52.48)
PBS at 4° C	14.23 (9.75-20.80)
BBS at 24° C	62.84 (41.59-95.06)
BBS at 4° C	27.07 (18.49-39.63)
ABB at 24° C	39.91 (26.06-61.09)
ABB at 4° C	15.32 (10.50-22.39)

CI, Confidence interval.

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Habit reversal technique and eczema

To the Editor:

S.P. has severe eczema. He is 7 years old. I advised him to scratch another area of his body that was not affected by eczema. I had learned this technique from other patients with eczema, and indeed, the results can be dramatic. The eczematous lesion is somehow less pruritic when patients scratch another area of skin. Studies have documented similar habit reversal techniques that use a *competing response practice* in which subjects literally clenched their fists.¹

Well, S.P. took the mind-body treatment one step further. Instead of scratching his face and head, he got hold of a ball about the same size as his head and scratched that! He told me that this extension of habit reversal reduces the pruritus on his face. The link between emotional reactions with relationships and eczema has been repeatedly explored,² so the possibility of devising a mental trick to stop the itch is certainly appropriate.

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