Indoor-outdoor allergens: Exposure and avoidance

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INFLUENCE OF HOUSING FACTORS ON HOUSE DUST MITE DER P1 LEVELS
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We determined the influence of housing factors on Der p1 levels in Southampton houses. Dust was collected from 63 living rooms and 235 mattresses in the house by standardized methods. Der p1 content of the dust was measured by ELISA. Results: The weight of dust collected was unrelated to the level of Der p1 (p>0.32). Mean household mattressDer p1 levels at t=0 were significantly correlated (r=0.343, p<0.011) with der living room Der p1 levels (r=0.512, p<0.0001). Mean mattress Der p1 levels were significantly negatively correlated with age of the house (r=0.286, p<0.001), but were unaffected by frequency or type of cleaning of mattress or linen. Mean mattress Der p1 levels were significantly lower if the occupants always slept with the window open (5.54 v 15.05 µg/g, p=0.008).

Conclusion: Within house factors significantly affect the level of Der p1 in the house. New houses do not have increased levels of Der p1, indeed Der p1 levels were highest in older houses. The simplest stratagem to decrease mattress Der p1 levels is to sleep with the bedroom window open all year round.

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DOES VACUUMING OR A PLACEBO MATTRESS-COVER EFFECT THE Der-PI-1 LEVEL IN MATTRESSES?
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Introduction: The question of this study is whether in house dust mite allergic studies the sampling of dust from a vacuum-cleaner or placebo mattress-covers used in the control group have a decreasing effect on the amount of Der-p-1. Methods: Dust samples were taken from 82 uncovered mattresses, using a Philips 1400 W vacuum-cleaner. In order to study the effect of vacuuming, 4-8 weeks later a second sample of uncovered mattresses was taken. During 8 to 12 weeks 31 of them were covered with a placebo mattress-cover (Gore) and 24 with a mattress-cover which is impermeable to the house dust mite. Then dust samples were taken again.

Results: The mean values of Der-p-1 (µg/g) of the samples vacuumed on the uncovered mattresses at t=0 and t=4-8 weeks are shown in the left part of the figure, including the standard error of the mean. The mean values of Der-p-1 (µg/g) of the samples before and after covering the mattresses for 8-12 weeks are shown in the right part of the figure.

A paired t-test over the log transformed data showed no significant difference in the level of Der-p-1 (µg/g) or Der-p-1 (µg/m²) between the first and second vacuuming samples on the uncovered mattresses. The correlation was high (r=0.8). The amount of dust (g) however decreased significantly. A significant decrease in both Der-p-1 (µg/g) and in Der-p-1/m² was found in the mattresses covered with impermeable mattress-covers. In the placebo mattress-covers the level of Der-p-1 did not decrease significantly. Both groups had a significant decrease in the amount of dust after covering.

Conclusion: Vacuuming and placebo mattress-covers do not significantly effect the Der-p-1 level in samples which are taken several weeks later.