Introduction: The question of this study is whether in house dust mite studies the sampling of dust using a vacuum-cleaner or placebo mattress-covers does decrease Der-p-1-concentrations and if these effects are still present after 5 months. This was done in a single-blind randomized controlled 22-week trial with 23 subjects. Baseline dust-samples were taken of the bare mattress of all 23 subjects. Subjects were then randomly divided in two groups (intervention group (N = 10) and placebo (N = 13) group). In the intervention group, mattress, duvet and pillow covers (GoreB, which were impermeable to the house dust mite were covered to the bedding. In the placebo group mattress covers, which were permeable to the house dust mite were used. The mattresses were covered directly after the baseline dust-sample. During the following 22 weeks 3 dust-samples were taken (at 10, 16 and 22 weeks). Dust samples were collected with a vacuum-cleaner (Phillips Turbo Exclusive TCE56, 1400 W). Mattresses were vacuumed with an intensity of 5 minutes/m². The results are shown in the following figure:

The Der-p-1 was significantly reduced in the sanitation group (p<0.05), while it remained the same in the placebo group. We can conclude that mattress-covers are able to achieve a low allergen level in bedding, even after prolonged use. This is not only clinically important for allergic patients, but also for clinical trials, in which low allergen levels are desired.

**2471**

DOES VACUUMING OR A PLACEBO MATTRESS-COVER EFFECT THE DER-P-1 LEVEL IN MATTRESSES?


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**RESULTS:** The weight of dust collected was unrelated to the level of Der-p-1. Mean household mattress Der-p-1 level was significantly correlated with living room Der-p-1 level (r=0.512, p<0.0001). Mean mattress Der-p-1 level was significantly negatively correlated with age of the house (r=-0.343, p=0.0001), and Der-p-1 levels were significantly lower in houses built post 1970 (mean 6.70 v 17.22 µg/g, p<0.0001). Mean mattress or living room Der-p-1 levels were unaffected by social class, the number of rooms in the house, the crowding index or householder reported dampness in the house. Neither double glazing nor central heating significantly affected mean Der-p-1 levels. Mattress Der-p-1 levels were significantly correlated with the age of mattress (r=0.286, p<0.0001), but were unaffected by frequency or type of cleaning of mattress or linen. Mean mattress Der-p-1 levels were significantly lower if the occupants always slept with the window open (9.54 v 15.05 µg/g, p<0.0001).

**Conclusion:** Within house factors significantly affect the level of Der-p-1 in the house. New houses do not have increased levels of Der-p-1. The simplest stratagem to decrease mattress Der-p-1 levels is to sleep with the bedroom window open all year round.

**2472**

LONG-TERM EFFECTS OF MATTRESS-COVERS ON HOUSE DUST MITTE (DER-P-1)

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House dust mite (HDM) plays an important role in allergic asthma. The use of special mattress-covers might decrease the HDM-concentration in the mattress, but the effects of these covers on HDM-concentrations at the long term are still questionable. It is very important to know whether mattress-covers do decrease Der-p-1-concentrations and if so, whether these effects still exist after several months. Therefore, the aim of this study was to assess, whether mattress-covers decrease Der-p-1-concentrations and if these effects are still present after 5 months. This was done in a single-blind randomized controlled 22-week trial with 23 subjects. Baseline dust-samples were taken of the bare mattress of all 23 subjects. Subjects were then randomly divided in two groups (intervention group (N = 10) and placebo (N = 13) group). In the intervention group, mattress, duvet and pillow covers were used. The mattresses were covered directly after the baseline dust-sample. During the following 22 weeks 3 dust-samples were taken (at 10, 16 and 22 weeks). Dust samples were collected with a vacuum-cleaner (Phillips Turbo Exclusive TCE56, 1400 W). Mattresses were vacuumed with an intensity of 5 minutes/m². The results are shown in the following figure:

![Graph showing the effect of sanitation and placebo on Der-p-1 levels over time](image_url)

The Der-p-1 was significantly reduced in the sanitation group (p<0.05), while it remained the same in the placebo group. We can conclude that mattress-covers are able to achieve a low allergen level in bedding, even after prolonged use. This is not only clinically important for allergic patients, but also for clinical trials, in which low allergen levels are desired.

The aim of this study was to evaluate if peripheral blood eosinophils or serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance. 18 asthmatics (10 females and 8 males with an age range of 14 to 41 years, median age 22 years) admitted to the Hochgebirgsklinik Davos-Wolfgang were studied. Due to the altitude of 1600 m above sea level and specific climatic conditions Davos has an environment virtually free of house dust mite (HDM). Serum ECP can serve as a marker to document allergen avoidance.