

In-house test kits help motivate parents to reduce allergens in their homes

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In-home test kits, coupled with patient education, help parents reduce allergen levels in their homes, according to scientists from the National Institutes of Health. The researchers found that parents may become more motivated to participate in allergen reduction interventions, when they can actually see results for themselves.

The scientists specifically looked at [dust mites](#), microscopic relatives of the spider, that live in [dust](#) on mattresses, bedding, upholstered furniture, carpets, curtains, and other soft furnishings. Dust mites contain allergens known to trigger symptoms in people who are allergic to them, and especially those with asthma.

"This is the first study to demonstrate that the use of an in-home test kit can lead to a reduction in dust mite allergen levels in the home," said Darryl Zeldin, M.D., scientific director at the National Institute of Environmental Health Sciences (NIEHS), part of NIH, and a study author. "It's important to know what motivates people to adapt certain behaviors or attitudes, so we can develop more effective asthma prevention strategies."

Sixty households in North Carolina, who had children aged 5-15 with dust mite allergies, were enrolled in the study. Visits were made to all homes at the beginning, middle, and end of the study, to collect [dust samples](#) and have parents respond to questionnaires about their dust mite reduction behaviors. Samples were collected from children's bedroom floors and beds, and living room floors.

Half of the households received commercially available test kits at set intervals of one, two, five, and eight months, along with educational materials about reducing dust mites. The other half received only educational brochures about reducing dust mites at the same set intervals. The study lasted 12 months.

Households who received the test kits had a consistent reduction in dust mite allergens over the course of the study. There was a threefold increase in the number of test kits showing undetectable levels of dust mite allergens over the study period.

Of the participants using the kits, 68 percent were surprised by how high their dust mite exposure was when first tested. These individuals also tended to strongly agree that the test kit results motivated them to adopt behaviors that led to a greater reduction in dust mites. For example, 63 percent of [test kit](#) participants reported using special allergen-proof pillow covers by the end of the study, compared to only 33 percent in the educational materials only group. Other changes in behaviors included using allergen-proof mattress covers, washing sheets weekly in hot water, vacuuming with HEPA filters, and removing stuffed animals.

"Parents of asthmatic children have an extra long list of things to do to keep their kids healthy," said Paivi Salo, Ph.D., NIEHS researcher involved in the study. "We wanted to see if having an easy-to-use kit, where parents could actually monitor allergen levels, would help parents start and maintain allergen reduction strategies, and our results suggest that it actually did."

More information: Winn AK, Salo PM, Klein C, Sever ML, Harris SF, Johndrow D, Crockett PW, Cohn RD, Zeldin DC. 2015. Efficacy of an in-home test kit in reducing dust mite allergen levels: results of a randomized controlled pilot study. *J Asthma*; [DOI: 10.3109/02770903.2015.1072721](#) [Online 26 August 2015].

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