

Even occasional use of spray cleaners may cause asthma in adults

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Using household cleaning sprays and air fresheners as little as once a week can raise the risk of developing asthma in adults, say researchers in Europe. Such products have been associated with increased asthma rates in cleaning professionals, but a similar effect in nonprofessional users has never before been shown.

“Frequent use of household cleaning sprays may be an important risk factor for adult asthma,” wrote lead author Jan-Paul Zock, Ph.D., of the Centre for Research in Environmental Epidemiology at the Municipal Institute of Medical Research in Barcelona, Spain.

The epidemiological study, the first to investigate the effects of cleaning products on occasional users rather than occupational users, appeared in the second issue for October of the American Thoracic Society's *American Journal of Respiratory and Critical Care Medicine*.

The investigators used baseline data from the first phase of the European Community Respiratory Health Survey (ECRHS I), one of the world's largest epidemiologic studies of airway disease, and interviews conducted in the follow-up phase, ECRHS II. Altogether, the study included more than 3,500 subjects across 22 centers in 10 European countries. Subjects were assessed for current asthma, current wheeze, physician-diagnosed asthma and allergy at follow-up, which took place an average of nine years after their first assessment. They were also asked to report the number of times per week they used cleaning products.

Two-thirds of the study population who reported doing the bulk of cleaning were women, about six percent of whom had asthma at the time of follow-up. Fewer than ten percent of them were full-time homemakers.

The risk of developing asthma increased with frequency of cleaning and number of different sprays used, but on average was about thirty to fifty percent higher in people regularly exposed to cleaning sprays than in others. The researchers found that cleaning sprays, especially air fresheners, furniture cleaners and glass-cleaners, had a particularly strong effect.

“Our findings are consistent with occupational epidemiological studies in which increased asthma risk was related to professional use of sprays among both domestic and non-domestic cleaning women,” wrote Dr. Zock. “This indicates a relevant contribution of spray use to the burden of asthma in adults who do the cleaning in their homes.”

The design of the study was not intended to determine the biological mechanism behind the increase in asthma with exposure to cleaning sprays, but Dr. Zock and colleagues propose a number of hypotheses, including the possibility that asthma is partially irritant-induced, that sprays contain sensitizers that are specific to asthma, and/or that an inflammatory response is involved in asthma development. “There is a need for researchers to conduct further studies to elucidate both the extent and mechanism of the respiratory toxicity associated with such products,” noted Dr. Zock.

Despite the uncertainty of the biological mechanism, the findings have important clinical relevance. “Clinicians should be aware of the potential for cleaning products used in the home to cause respiratory symptoms and possibly asthma,” wrote Kenneth D. Rosenman, M.D., professor at Michigan State University, in an editorial in the same issue of the journal.

The research may have also significant implications for public health. “The relative risk rates of developing adult asthma in relation to exposure to cleaning products could account for as much as 15

percent, or one in seven of adult asthma cases,”
wrote Dr. Zock.

Source: American Thoracic Society

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