References warning of possible adverse effects of long term oral theophylline on cognition and school performance in children. His concern mostly concentrates on the interference with learning and clinical importance of the results of these early studies which have, indeed, generated considerable controversy on this issue. We feel it fair to say that these reports in the introduction of our paper, since our study was certainly encouraged by their findings. We would not have attempted to carry out the study without these reports. Our paper makes no attempt to judge the validity of these reports. However, we would like to stress the following points again in order not to leave readers with a wrong message from our study. We are not claiming that there is a definite causal relationship between exposure to theophylline and the lower cognitive performance of children. Further studies are needed to prove or disprove this relationship.

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Concentrations of the domestic house dust mite allergen Der p1 after treatment with solidified benzyl benzoate (Acarosan) or liquid nitrogen

We are not entirely surprised by the failure of liquid nitrogen treatment to reduce house dust mite antigen levels within treated homes as reported in the study by Dr S Kalra and colleagues (January 1993;48:10-13). We conducted a double blind placebo controlled trial with liquid nitrogen on the homes of 30 asthmatic children with dust mite allergy confirmed both on skin testing and by specific IgE determination. The 15 homes in the active arm of the trial were treated with liquid nitrogen in a protocol similar to that of Kalra and colleagues—that is, the child’s bedroom and sitting room were treated—but we did not treat other areas of the house. After treatment a high pressure vacuum cleaner was used in an attempt to remove dead mites and their excreta. Dummy treatment consisted of treating a small area of bedroom carpet near the door (so that ‘smoke’ could be seen under the door), followed by high pressure vacuum cleaning.

There was no effect on the quantity of Der p1 antigen trapped in petri dishes exposed in the bedroom before and at intervals after the treatment and, not unexpectedly, there was no effect on asthma symptom scores, peak expiratory flows, bronchial reactivity to methacholine, or levels of specific IgE. Despite this disappointing result, we have received numerous reports from individual patients of the success of this treatment which is available commercially in Aberdeen. Based on this anecdotal evidence, we have the impression (which we now propose to investigate in a further trial) that certain technical factors might be important in determining the success of the treatment. Firstly, despite the expense involved, all soft furnishings must be soaked thoroughly—in particular the mattress must be washed, until it is dry. Secondly, if the treatment is followed by vacuum cleaning, this should be vented to the outside air in such a way that the dust cannot be blown above the floor. Thirdly, repeated treatments appear to give additional benefit by ensuring that mites do not recolonize the rooms before allergen traces of their previous occupation have gone. So, a process which takes several months. Finally, few children react to only a single allergen, and it is important to focus this relatively expensive treatment on individuals whose spectrum of allergy is limited either to house dust mite alone, or to house dust mite plus seasonal or other allergens to which they will not be exposed continually.

Although on the basis of our trial work we cannot recommend the use of liquid nitrogen in the management of children with allergy to the house dust mite, we believe that investigation of this treatment should be continued. It has already given encouraging results in the homes of adults in whom it resulted in a marked reduction in bronchial hyperreactivity.


Author’s reply. It is encouraging that Drs Ninan and colleagues have obtained similar results to our own with liquid nitrogen treatment in their large study. Whilst research must continue, we are not enthusiastic about the principles of acaricidal treatment. If a new drug for asthma were introduced into clinical practice, it would have to be proven to be efficacious and safe in long term use. Acaricides have become widely available and heavily marketed in spite of satisfying neither of these criteria. Nevertheless, they are still being bought by our patients. We question whether this is the correct approach. House dust mites are a domestic infestation directly analogous to mosquitoes in tropical countries. Malaria control incorporates barriers—that is, mosquito nets—and changing the natural habitat—that is, draining the swamp. Insecticides are only tentatively effective.

Ultimately we are going to have to address the question of how we are going to change our domestic environment to make it less conducive to mite infestation. This involves controlling vascular dollars and asthma which gave negative results when published in abstract form which has not yet been published as a full paper.

We do not believe that acaricides have a significant effect in reducing mite allergen exposure when used as currently recommended by the manufacturers.

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