

Authors' affiliations:

E. von Mutius, Munich, Germany

There is strong evidence that the prevalence of asthma, hay fever, and atopic eczema is on the increase in affluent western societies (1). Numerous studies have shown not only an increase in reported symptoms and diagnoses of these disorders over time, but also an increase of airway hyperresponsiveness as an objective marker strongly associated with asthma. Environmental rather than genetic factors may have caused this rise.

Several environmental factors have received widespread attention in recent years such as the level of indoor allergen exposure, the exposure to noxious pollutants both indoors and outdoors, and social factors. Exposure to outdoor air pollutants has been incriminated as a potential risk factor for the development of asthma and allergies. Recent evidence, however, suggests that frequent cough, bronchitis, and upper respiratory tract infections, rather than asthma and allergies, are associated with outdoor air pollution (1).

Various surveys have repeatedly and consistently shown that family size, more precisely the number of siblings of a given index child, is a strong protective determinant of hay fever, atopy, and asthma (2). Since this effect was stronger for older than for younger siblings, it has been hypothesized that exposure to infectious diseases early in life may protect against the development of atopic conditions (3). In fact, several epidemiologic surveys have corroborated this notion. Matricardi et al. in Italy (4) have demonstrated that a positive serology for hepatitis A is inversely related to atopy and the occurrence of atopic diseases in military students. Moreover, in a longitudinal birth cohort study, nonwheezing lower respiratory tract illnesses between birth and the third birthday were inversely related to the subsequent development of atopy (5).

Interestingly, the results of several recent studies performed in Germany, Switzerland, Austria, and Finland

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suggest consistently that children raised on farms are at significantly lower risk of developing hay fever, atopic sensitization, and asthma than their peers of the same rural area but not raised on a farm (6). Traditional lifestyles,

including differences in dietary habits and in microbial load through exposure to livestock and poultry, and different amount of allergen exposure, might explain these findings.

References

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