

CAN WE PREVENT ALLERGIES?

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For the past few decades, allergic diseases have been rising at an alarming rate. Asthma and eczema have more than doubled in prevalence, while food allergy has multiplied fivefold in the past two decades. Medications have reduced allergic symptoms, but have been unable to contain the allergy epidemic. Recent research reports, however, herald promising progress on the prevention of allergies.

The surge in allergic disease has fueled research into the basics of immunology as well as translational and clinical studies of allergic diseases. That research has identified a variety of potential environmental and lifestyle causes of allergic disease, including an excessively clean environment, air pollution, overuse of antibiotics, stress, diet and lack of exercise. We have not, however, identified a single, overriding cause of the allergy epidemic. It appears that the industrialized Western lifestyle is the culprit. Allergic diseases are relatively rare in undeveloped regions of the world and their emergence coincides with industrial development.

Events early in children's lives, when their immune systems are still developing, play a crucial role. We used to think that infants should avoid potentially allergenic foods during the first few years of their lives. A landmark study, however, recently found that early introduction of peanuts into an infant's diet dramatically reduces the risk of developing peanut allergy. Other, less rigorous studies have also suggested beneficial effects of early introduction of other foods, including egg, milk and wheat. These data indicate a window of opportunity during infancy to prevent food allergy.

That window of opportunity may extend to other allergies. Allergic diseases follow a natural progression, called the atopic march. Eczema, or atopic dermatitis, is often the first allergic disease to develop in infants, followed by food allergies, asthma and hay fever. Development of eczema

greatly increases the risk that additional allergies will develop in subsequent years.

An emerging concept in immunology suggests that introduction of an allergen through the mouth and digestive tract promotes the development of tolerance, while introduction through atopic skin may be sensitizing and cause allergies. New studies at National Jewish Health and other research centers have demonstrated that penetration

of environmental allergens through the damaged skin barrier of eczema patients may drive the development of additional allergies.

Building on that research, investigators recently reported that infants at high risk for eczema who

were treated daily with simple skin moisturizers beginning at birth developed eczema less often than did infants who received no special care. If we can prevent eczema by protecting the skin, that may reduce the risk of other allergic diseases as well.

The good news for parents, then, is that research is generating solid evidence about steps they can take to reduce the risk of allergies developing in their children. Parents should consider applying a daily moisturizer to an infant's skin, because doing so may prevent the development of eczema and other allergies. They also no longer need to avoid peanuts, tree nuts, soy, wheat, milk, eggs and shellfish during a child's first years of life. In fact, they should consider feeding their children those foods unless a child has experienced food-allergy symptoms or is considered at risk for food allergies. In those cases, parents should consult their pediatricians about introducing those foods. Finally, it seems, we are turning a corner in the allergy epidemic.



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