

## Airborne allergens can cause eczema

### Background

Eczema or atopic dermatitis is an inflammatory skin disease that tends to involve the skin creases, such as the folds of the elbows or the knees. It is intensely itchy and can relapse and remit over time. It is common, affecting about 10% of children at some time during their childhood. Onset is usually in childhood, with at least 85% of patients with eczema developing it before 5 years of age.

### Treatment

Most patients with eczema are treated by their general practitioner. More severe cases (about 6% of children with eczema) may need to be referred to a dermatology specialist. Management of eczema involves hydrating topical treatment, with anti-inflammatory treatment (topical corticosteroids and calcineurin inhibitors) for flares. Avoidance of specific and nonspecific provoking factors is also important. Worsening eczema may be due to microbial colonization and superinfection, which responds to treatment with antimicrobial or antiseptic treatment. Systemic anti-inflammatory treatment for severe, refractory cases may be needed in rare cases. A minority of atopic patients with eczema may benefit from house dust mite specific immunotherapy.

### Pathogenesis

Eczema can be **atopic**, associated with allergy, or **non-atopic**, due to an intrinsic problem with the skin. Non-atopic dermatitis is more common in preschool children and adults. In atopic children under 3 years of age, sensitisation to food allergens is common. Above 3 years of age, sensitisation to aeroallergens becomes more common. At a cellular level, aeroallergen specific IgE antibodies and allergen specific T cells have been identified in the skin.

Aeroallergens can exacerbate eczema either by inhalation, or by direct contact with the skin. This is particularly so in children over 10 years of age. House dust mite is the most common allergen, but cat dander and pollen have also been incriminated. Interestingly, owning a dog may be protective against the development of eczema. Clinical studies have only validated house dust mite as a clear trigger for eczema. Eczema improves in environments with low house dust mite levels. Intranasal application of aeroallergens can exacerbate atopic dermatitis and environmental avoidance of house dust mite improves skin symptoms. Up to 1/3 of patients with eczema and a positive allergy test to

house dust mite report that their eczema becomes worse when exposed to dust. Patients who test strongly positive to house dust mite tend to have more severe eczema. In fact, house dust mite sensitivity is more common in patients with eczema, than in patients with asthma.

### **What should I do if I have eczema?**

To establish whether or not aeroallergens are playing a part in your eczema requires a sequential allergy work-up. If your eczema flares up during the grass or tree pollen season or following contact with animals, then aeroallergens are more likely to be a problem for you. Allergy tests, either skin prick tests or measurement of specific IgE, are useful to detect sensitisation to aeroallergens and to establish whether or not you are atopic. If this is the case, specific allergen avoidance, guided by the results of your allergy tests, in addition to your topical eczema treatment, should improve your eczema. A minority of atopic patients with eczema may benefit from house dust mite specific immunotherapy.

Dr Susan Leech runs the Children's Allergy Clinic at Kings' College Hospital, London. Referrals can be made via your general practitioner.

[www.kch.nhs.uk/service/a-z/paediatric-allergy](http://www.kch.nhs.uk/service/a-z/paediatric-allergy)