

# Eczema may play a key role in the development of food allergy in infants, study suggests

19 July 2013

A breakdown of the skin barrier and inflammation in the skin that occurs in eczema could play a key role in triggering food sensitivity in babies, a new study reveals. Scientists say this finding indicates that food allergies may develop via immune cells in the skin rather than the gut, highlighting eczema as a potential target for preventing food allergy in children.

A link between [eczema](#) and food allergy has been known for some time, but researchers from King's College London and the University of Dundee say this study, published in the *Journal of Investigative Dermatology*, adds to growing evidence of the skin barrier's role in this process.

Almost 1 in 12 children in the UK have a food allergy and 1 in 5 suffer from eczema. Both diseases have a significant impact on patients and their families, often requiring treatment and in severe cases hospitalisation.

Previous studies show that people with a skin barrier defect such as eczema do not have adequate protection against [environmental allergens](#). In this study, funded by the Food Standards Agency, Medical Research Council, and the National Institute for Health Research (NIHR), researchers found that infants with an impaired skin barrier, especially if they also have eczema, are over six times more likely than healthy infants to be sensitised to a variety of foods such as egg, cow's milk and peanut.

The researchers at King's and Dundee analysed over 600 three-month-old babies from the EAT (Enquiring About Tolerance) Study who were exclusively breastfed from birth. They examined the infants for eczema, tested how much water the skin was able to retain, and screened for gene mutations associated with eczema. They then

carried out skin prick tests to see whether the infants were also sensitised to the six commonest [allergenic foods](#). They found that egg white was the most common allergen, followed by cow's milk, and peanut. They observed that the more severe the eczema, the stronger the correlation to food sensitivity, independent of genetic factors. The researchers cautioned, however, that food sensitivity does not always lead to clinical allergy and further follow up of the EAT Study children is currently underway.

As the infants involved in the study were exclusively breast-fed, and therefore had not ingested any solid foods yet, this suggests that active immune cells in the skin, rather than the gut, may play a crucial role in food sensitisation. It is thought that the breakdown of the skin barrier in eczema leaves active immune cells found in skin exposed to environmental allergens – in this case food proteins – which then triggers an allergic immune response.

Dr Carsten Flohr, NIHR Clinician Scientist and Senior Lecturer at King's College London and Consultant at St John's Institute of Dermatology at St Thomas' Hospital, said: "This is a very exciting study, providing further evidence that an impaired skin barrier and eczema could play a key role in triggering [food sensitivity](#) in babies, which could ultimately lead to the development of food allergies.

"This work takes what we thought we knew about eczema and [food allergy](#) and flips it on its head – we thought that food allergies are triggered from the inside out, but our work shows that in some children it could be from the outside in, via the skin. The skin barrier plays a crucial role in protecting us from allergens in our environment, and we can see here that when that barrier is compromised, especially in eczema, it seems to leave the skin's

[immune cells](#) exposed to these allergens.

"It opens up the possibility that if we can repair the skin barrier and prevent eczema effectively then we might also be able to reduce the risk of [food](#) allergies."

Provided by King's College London

APA citation: Eczema may play a key role in the development of food allergy in infants, study suggests (2013, July 19) retrieved 8 June 2022 from <https://medicalxpress.com/news/2013-07-eczema-key-role-food-allergy.html>

*This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.*