

New insight into the possible risk factors associated with food allergies

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A study by researchers at the University of Southampton and Southampton General Hospital, is the first to assess the prevalence of two different types of food hypersensitivity and the risk factors associated with them.

Food hypersensitivity is the umbrella term used to describe any condition where there is a reaction to a food. People are tested by measuring levels of a protein in the blood - immunoglobulin E (IgE) - which is linked to [allergic reactions](#). The reactions are split into two groups, IgE-mediated, which cause a range of immediate symptoms such as skin rashes, vomiting, respiratory issues and, in some cases, potentially life-threatening reactions, and non-IgE mediated.

Non-IgE mediated reactions occur around four to 28 hours after an incident and may cause stomach complaints such as diarrhoea or constipation among other problems.

The study, published in the journal *Clinical and Translational Allergy*, recruited 1140 pregnant women from the UK and the children were followed up until two years of age.

Risk factors differed between IgE mediated and non-IgE mediated reactions. For IgE mediated [food allergy](#), eczema and rhinitis increased the risk of development but for non-IgE mediated food allergy, increased risk was associated with having a pet in the house and the age at which solid food was introduced to an infant.

Dr Kate Grimshaw, senior research fellow at the University of Southampton and specialist paediatric dietitian at Southampton Children's Hospital, said: "This study has offered us an interesting insight into what affects food allergies in children. Factors such as eczema and rhinitis are associated with food allergy, possibly due to a certain gene defect that prevents the skin barrier from forming correctly, leading to possible exposure of the immune system to allergens. Pet ownership may increase the likelihood of gut reactions to food, perhaps by altering the gut flora, which can affect how the digestive system works.

"However, we also found that a healthy diet was found to be protective for both types of reaction. This is probably because fruit and vegetables contain vitamins and other nutrients that boost the immune system."

The study also showed that over half of the children who reacted to milk did not have an IgE mediated allergy, whereas for the vast majority of children who reacted to egg and peanut, their reaction was IgE mediated.

Dr Grimshaw said that the different reactions need to be treated differently by healthcare professionals.

She said: "We see lots of families who want the blood test to see if their child is allergic but these tests are only useful for IgE mediated food reactions and therefore are not useful in diagnosing non IgE mediated food allergies. IgE mediated and non-IgE mediated should be considered as two separate conditions and treated accordingly. We have shown that they have distinct differences in reactions and the risks factors associated with them. Therefore it is important that health care professionals recognise that a child may be reacting to a food despite tests results being negative."

The research, a UK based cohort called PIFA (prevalence of infant food

allergy) led by Professor Graham Roberts, of the University of Southampton, and funded by the UK Food Standards Agency, was part of a wider EU study, called the EuroPrevall project, which assessed more than 9,000 babies from nine European countries.

Professor Roberts and his team plan to reassess all 1,140 children who participated in PIFA at school-age to discover what happens to allergies that started in early childhood and find out which older children develop allergies and asthma.

Families who took part are asked to get in touch with the study team as soon as possible as the deadline to take part is at the end of March. For more information on participation call 023 8120 6160023 8120 6160, email iFAAM@southampton.ac.uk or visit

www.southampton.ac.uk/ifaam

More information: Kate E. C. Grimshaw et al. Incidence and risk factors for food hypersensitivity in UK infants: results from a birth cohort study, *Clinical and Translational Allergy* (2016). [DOI: 10.1186/s13601-016-0089-8](https://doi.org/10.1186/s13601-016-0089-8)

Provided by University of Southampton

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