

EAT Study: early introduction of allergenic foods to induce tolerance

Research programme [Food allergy and intolerance research --](#)

Study duration January 2008 to August 2015

Project code FS231063 (T07051)

Planned completion August 2015

Conducted by Kings College, London

Background

The EAT Study was commissioned to investigate when is the best time to introduce allergenic foods into the infant diet in order to minimise the risk of development of later allergic disease, including food allergy.

Whilst it is widely accepted that breast milk is best for feeding babies, it is currently unclear whether excluding allergenic foods from the diet before six months of age, is the best way to prevent the development of food allergy and other allergic diseases such as eczema and asthma.

The results from this study will be extremely important in helping to answer the question of whether regular consumption of allergenic foods alongside continued breastfeeding in early life could be a preventative strategy for food allergy.

Research Approach

The key objective of this randomised controlled intervention study was to investigate whether the early introduction of six allergenic foods (milk, peanut, sesame, fish, egg, wheat) into the infant weaning diet, alongside continued breastfeeding, reduced the number of children developing food allergies and other allergic diseases (such as eczema) in childhood.

The EAT study recruited 1,303 mothers and their infants onto the study. All mothers on the study were to breastfeed exclusively until their infants were three months of age at which point they were randomly split into two groups.

One group (the Standard Introduction Group) followed standard UK government advice and were asked to exclusively breastfeed for around six months, after which introduction of allergenic foods was a matter of parental choice.

The second group (the Early Introduction Group) was asked to introduce six allergenic foods from the age of three months alongside continued breastfeeding with the help of a dietician and support from the study team.

It was important that breast milk remained an important part of all infants' diet during the first year of life, so all mothers in the study were encouraged to breast feed for at least six months regardless of study group.

All infants were closely monitored until three years of age when the impact of the intervention on food allergy and other secondary allergy endpoints (such as eczema and asthma) were assessed and compared between the two study groups.

Results

The EAT Study has found that introducing allergenic foods into the infant diet from three months may be effective in food allergy prevention when sufficient amounts of allergenic foods are consumed.

Overall, food allergy was lower in the group introduced to allergenic foods early but the difference was not statistically significant. Early introduction of all the foods was not easy but it was safe. Among the infants who did manage to consume the recommended quantity of the allergenic foods there was a two-thirds reduction in overall food allergy.

For those who fed their infant the recommended amount of peanut there was a significant reduction in peanut allergy, 2.5% in the standard introduction group compared to no cases in the early introduction group . (0%).

There was also a significant reduction for egg allergy- 5.5% in the standard introduction group compared to 1.4% in the early introduction group.

The EAT study suggests that cooked egg can be a safe way to introduce egg into infants' diets before six months of age which contrasts with previous studies which have used raw egg powder.

The study found that the prevention of food allergy could be achieved with weekly consumption of small amounts of allergenic food- about 1½ teaspoons of peanut butter and one small boiled egg.

Breastfeeding rates were the same in both groups with over 96% of infants still being breastfed at six months of age and over 50% in both groups at one year of age.

A final report summary can be found at the link below or [read the full final report on the New England Journal of Medicine website](#) (report due to be available from 8pm Friday 4 March 2016).

[See the EAT Study website.](#)

Summary and full report

[Enquiring About Tolerance \(EAT\) Study](#) (61.57 KB)

England and Northern Ireland

[A randomized controlled trial of early introduction of allergenic foods to induce tolerance in infants](#) (10.26 MB)

Additional information

Advice on breastfeeding and weaning your baby can be found on the NHS Choices Website: [NHS Choices website](#)

Note: Whole peanuts or nuts are not to be given to children under 5 years of age, because they could choke on them.

Published Papers

1. Perkin MR, Logan K, et al. Randomized trial of the early introduction of allergenic foods in breastfed infants. *New England Journal of Medicine*, 2016 DOI: 10.1056/NEJMoa1514210 [Epub ahead of print]
2. Perkin MR*, Logan K*, Marrs T et al. Enquiring About Tolerance (EAT) Study – Feasibility of an early allergenic food introduction regimen. *J Allergy Clin Immunol* 2016 Feb 16. Doi:10.1016/j.jaci.2015.12.1322 [Epub ahead of print] *joint first authors
3. Flohr C, England K, Radulovic S, et al. Filaggrin loss-of-function mutations are associated with early-onset eczema, eczema severity and transepidermal water loss at 3 months of age. *Br J Dermatol* 2010; 163: 1333-6. (NIHR funding was involved in part of this work)
4. Flohr C, Perkin M, Logan K, et al. Atopic dermatitis and disease severity are the main risk factors for food sensitization in exclusively breastfed infants. *J Invest Dermatol* 2014; 134: 345-50. (NIHR funding was involved in part of this work)
5. Perkin MR, Craven J, Logan K et al. The association between domestic water hardness, chlorine and atopic dermatitis risk in early life: A population based cross-sectional study. *J Allergy Clin Immunol* 2016 Mar 16. DOI <http://dx.doi.org/10.1016/j.jaci.2016.03.031> [Epub ahead of print]