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TITLE PAGE

Title: Dietary management of patients with eczema – cross-sectional survey of dietitians in the United Kingdom.

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To the Editor,

The association between food allergy and eczema is well recognised.[1] Food allergy is more prevalent in patients with eczema, compared to the general population, and may exacerbate symptoms, but is not thought to be the underlying cause of eczema for most patients.[2] Yet, clinicians often feel pressurised by patients with eczema or their parents to investigate food

allergy, particularly in those perceived to be unresponsive to standard medical management. Investigations for IgE-mediated and non-IgE mediated food allergy may be instigated to guide dietary exclusion(s) and reduce symptom exacerbation. However, the unwarranted exclusion of foods can compromise nutritional status, and can put sensitised individuals at risk of severe IgE-mediated allergic reactions.[3] Dietitians are often asked to provide dietary advice to patients with eczema, but there is currently no universal approach to the testing and dietary management of patients with eczema and possible food allergy.

We sought to establish current practices among UK dietitians regarding the testing and dietary management of eczema patients. Of particular interest was the basis for dietary exclusion advice, how foods to be excluded were determined, the duration of exclusion and reintroduction of foods, and the favoured approach when more than one food was suspected to be exacerbating eczema symptoms.

Ethical approval was obtained from the University of Bristol Research Ethics Committee (ref: 115504). A short survey, consisting of multiple-choice questions was uploaded to the GDPR compliant survey host, onlinesurveys.ac.uk. It was designed and modified by the research team, comprising two dietitians, GP and nurse, all with a research interest in the topic. Around 300 dietitians practicing in the UK who treat children and/or adults with eczema were invited through the Food Allergy Specialist, the Paediatric and the Freelance Groups of the British Dietetic Association, to complete the survey. Informed consent was implied with voluntary progression past the initial information page. The anonymised responses were analysed and reported descriptively.

Between February and March 2021, 49 dietitians (representing a response of ~16%) completed the survey. Whilst some respondents were general/community dietitians, the majority (over 85%) were specialist Allergy or Paediatric dietitians. The majority were also qualified for over 10 years, and over 90% of respondents treated children.

Firstly, respondents were asked questions specific to children or adults. When asked if food allergy tests (skin prick tests (SPT) and/or specific IgE blood tests) are used to determine if a food allergy is triggering eczema symptoms over 80% of all dietitians responded '*sometimes*'.

Respondents also agreed that having a clinical history of food allergy is the main indication for

tests (children: 84.4%; adults: 100%) and over 70% agreed that foods tested are usually determined by the patient's clinical history. Cow's milk, hen's egg, wheat, and peanut were identified as four foods most often tested.

Thereafter, questions about the results of allergy testing were not specific to children or adults with eczema (Table 1). When asked about acting on positive food allergy tests, the majority of dietitians responded that they would only exclude foods with positive test results *and* a history suggestive of an allergy and more than half would advise a 4-week exclusion period, although an exclusion period of more than 6 weeks was advised by some. Regarding reintroduction after a period of exclusion, the most common response was to wait for repeated testing, whereas only less than a quarter favoured reintroduction at home after the specified period. When managing patients with positive tests to more than one food, the favoured approach was to exclude all suspected foods and re-introduce each food one-by-one, with the remainder mostly opting to sequentially exclude and, one-by-one, reintroduce each food.

Asked specifically about acting on negative tests, or if no test has been undertaken in patients for whom food was suspected to be exacerbating eczema symptoms, most respondents said they would exclude all foods suspected from the history with re-introduction of each food, one-by-one. In this situation, dietitians were more likely to suggest soy should be excluded rather than peanut, and an exclusion period of 4-6 weeks.

Finally, almost 80% of respondents would sometimes advise breastfeeding mothers of infants with eczema, to exclude food from their diet whether the allergy tests were positive or not, with an exclusion period of either 2-4 weeks or 4-6 weeks (Table 2).

Our survey, whilst small and informally recruited, is the first of its kind to explore the approach to food allergy testing and dietary exclusion for patients with eczema by dietitians. Allergy tests are commonly used to determine which foods should be excluded in patients with eczema who have a history suggestive of a food allergy. Foods most likely to be tested/excluded, are included in the 8 most common food allergies.[4] However, our results suggest that even in those patients with negative food allergy tests, dietitians might still advise exclusion of foods. There was less consistency in the period of exclusion or approach to reintroduction.

Patients with eczema are often sensitised but tolerant to several foods, and whilst it seems reasonable to exclude these foods on a trial basis, it is vital that this is undertaken on a short-term basis. Prolonged exclusion diets can compromise nutrition, growth, impact quality of life and patients can develop IgE mediated food allergy through prolonged exclusion of foods, especially milk and egg.[5] Similarly, the lack of clinical trial evidence supporting evidence of maternal dietary exclusion for infant symptoms has been acknowledged, alongside potential harms of unnecessary dietary exclusions for mothers who breastfeed.[6] It is therefore reassuring to find that most dietitians in our survey, would only advise maternal dietary exclusion sometimes, and to patients generally, if the history and test results were consistent with a food allergy. The responses regarding the period for reintroduction highlighted the influence of the clinical history and severity of the reaction on their decision.

Given the vital role dietitians have in supporting patient nutrition, these results provide a platform for further research for dietary management of eczema patients. It is vital that rigorous studies are undertaken to determine the rationale for, consequences and management of, food allergy testing in patients with eczema.

Key messages:

- We surveyed registered dietitians in the United Kingdom about using dietary exclusion to manage eczema.
- Exclusion diets for eczema are commonly recommended, based on history and allergy test if available.
- Better evidence is needed to guide practice, since prolonged exclusion diets can be harmful.

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Accepted Article

Table 1: Dietary advice for patients with eczema according to food allergy testing

Eczema and positive allergy test to ≥ 1 food	n (%)
<i>When to advise dietary exclusion?</i>	
Exclude all foods with positive result*	4 (8.2)
Only exclude foods with positive test and a history suggestive of allergy	38 (77.6)
Other	7 (14.3)
<i>What advice if more than one food is to be excluded?*</i>	
Exclude all suspected foods with re-introduction of each food, one-by one	39 (81.3)
Sequentially exclude and reintroduce each food, one at a time	7 (14.6)
Other	7 (14.6)
<i>How long to exclude each food for?</i>	
2 weeks	3 (6.1)
4 weeks	24 (48.9)
6 weeks	7 (14.3)
More than 6 weeks	12 (24.5)
Did not answer	3 (6.1)
<i>How and when to reintroduce excluded food?</i>	
Reintroduce at home after specified time	11 (22.4)
Wait for repeated SPT/specific IgE	22 (44.9)
Reintroduce in hospital after specified time	2 (4.1)
Other	14 (28.6)
Eczema reported to be exacerbated by food, but no known positive food allergy test	
<i>How to advise dietary exclusion?</i>	
Exclude all foods suspected from history/re-introduce each, one-by-one	30 (61.2)
Exclude/reintroduce a standard set of foods, one-by-one	4 (8.2)
Sequentially exclude/reintroduce single foods from a standard set	9 (18.4)
Other	5 (10.2)
Did not answer	1 (2.0)
<i>How long to exclude each food for?</i>	
< 2 weeks	0 (0.0)
2-4 weeks	18 (36.7)
4-6 weeks	29 (59.2)
> 6 weeks	2 (4.1)

* regardless of history or if food is eaten or not; **multiple-answer question; n=49

Table 2: Dietary advice for breastfed infants with eczema according to food allergy testing

Eczema and positive allergy test to ≥ 1 food	n (%)
<i>Advise maternal dietary exclusion?</i>	
Always	5 (10.9)
Sometimes	39 (84.8)
Never	2 (4.3)
Eczema reported to be exacerbated by food, but no known positive allergy test	
<i>Advise maternal dietary exclusion?</i>	
Always	2 (4.3)
Sometimes	40 (86.9)
Never	4 (8.7)
<i>How to advise maternal dietary exclusion?</i>	
One food at a time	4 (8.7)
Several foods at a time	3 (6.5)
Varies a lot depending on history	37 (80.4)
Other	2 (4.3)
<i>How long to advise maternal exclusion for?</i>	
<2 weeks	0 (0)
2-4 weeks	22 (47.8)
4-6 weeks	23 (50.0)

> 6 weeks	0 (0)
Did not answer	1 (2.2)

*3 respondents excluded as they only saw adults; n=46