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Correspondence: BSACI 2021 guideline for the management of egg allergy

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Dear Editors,

We are writing in response to the British Society of Allergy and Clinical Immunology (BSACI) egg allergy guideline, published earlier this year in your Journal [1]. The guideline includes a section on the home introduction of egg. This makes the point that home introduction is not the same as a food challenge. It further describes which children can reintroduce egg at home, for example those without asthma or with well controlled asthma and only mild to moderate symptoms on previous exposures.

Safety is obviously a major consideration when reintroducing egg into the diet because of the possibility of inducing an anaphylactic reaction. The guideline cites a number of hospital challenge series in support of the safety of home introduction. Specifically it cites a 2% rate of anaphylaxis requiring adrenaline in 236 hospital baked egg challenges [2]; adrenaline was not required in another 181 hospital-based egg challenges [3]; and unpublished data where only two patients of 678 undergoing a hospital challenge who met the BSACI criteria for home reintroduction experienced airway symptoms [1].

However, the approach to home reintroduction is different from hospital challenges in terms of the selected patients, the approach to introducing the egg and the availability of expert staff to recognise and manage any reactions. So we cannot extrapolate from safety data collected during hospital challenges to the home setting. The guideline does

cite data from a series of 211 home baked egg introductions where no anaphylaxis was seen but this is unpublished [1].

We would like to report our experience with the home reintroduction of egg in the Southampton paediatric allergy service. We undertook a service evaluation with a retrospective analysis of patients under 18 years old where home egg reintroduction was attempted from 2013 to 2020. Our criteria for home reintroduction were as per the BSACI criteria. Reintroduction was with baked egg or egg powder, a few patients underwent egg powder reintroduction having succeeded with baked egg reintroduction. Data were collected from the clinical notes and a questionnaire completed by parents; this was analysed with SPSS. Approval for the service evaluation was obtained from the University of Southampton Faculty of Medicine Ethics Committee and University Hospital Southampton NHS Foundation Trust.

A total of 300 patients were included in the service evaluation. The relevant clinical notes were reviewed for all. Additionally information was obtained from 72 (24%) families by questionnaire. A total of 113 (37.7%) were male. The median age at reintroduction was 3.0 years (range 2.1-4.7) with median hen's egg reagent skin prick diameter of 2mm (0-3mm). Of the included patients, 50 (16.7%) had asthma and 183 (61.0%) had another food allergy. A total of 119 underwent reintroduction to baked egg and 185 underwent reintroduction to egg powder.

Baked egg reintroduction was successful in 105 (88%) on first attempt, 5 (4%) on second, 1 (1%) on third. For egg powder, reintroduction was successful for 144 (78%) on first attempt, 19 (10%) on second, 2 (1%) on third and 1 (1%) on fourth one. Five airway reactions were reported – four involved only cough (2 baked egg and 2 egg powder) and might be better described as local given that reintroduction involved oral ingestion. The other one (baked egg) started three hours after ingestion with urticaria and possible respiratory symptoms resulting in adrenaline being given by the emergency department. None of these patients had any at risk features, for example only one had asthma.

The additional information from the parental questionnaire provided feedback from families on their experience with home reintroduction. Introducing a food allergen when a child has previously had an allergic reaction is a stressful experience [4] and 26% families were at least somewhat concerned about their child's health or well-being. A few

(10%) also thought there may have been an impact on their or their child's mental health. However, 80% felt home introduction was a positive experience and few (17%) felt that a hospital challenge would have been better.

Our Southampton data suggests that home reintroduction is safe but does highlight the potential for rare severe side effects. All children with egg allergy are at risk of accidental ingestion and experiencing a severe allergic reaction, even if they are trying to avoid egg. We do not have data in a comparable group practicing egg avoidance but 1 severe reaction in 300 patients might not be unexpected in these circumstances [3]. It does though emphasis the need for healthcare professionals to ensure that families are able to recognise and manage any severe allergic reactions that may be seen during the home reintroduction of egg. Shared decision making principles can also be usefully applied here to make the right decision between home reintroduction and hospital challenges based on each child's allergy evaluation as well as their family's views and circumstances. Our experience suggests that home reintroduction is not the right approach for all families.

Table1: Feedback from parents about the experience of home reintroduction

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
You feared for your child's health/ wellbeing	3 (4.2%)	5 (6.9%)	11 (15.3%)	5 (6.9%)	3 (4.2%)	27 (37.5%)	19 (26.4%)
Reintroducing egg products had a negative impact on you or your child's mental health	1 (1.4%)	0 (0.0%)	7 (9.2%)	2 (2.8%)	0 (0.0%)	25 (34.7%)	37 (51.4%)
Overall the reintroduction was a positive experience	19 (26.4%)	33 (45.8%)	6 (8.3%)	3 (4.2%)	7 (9.2%)	2 (2.8%)	2 (2.8%)
You or your child would have benefited from being reintroduced to egg products in the hospital.	4 (5.6%)	4 (5.6%)	4 (5.6%)	7 (9.2%)	4 (5.6%)	29 (40.3%)	19 (26.4%)

Data from questionnaire survey of families referred for home reintroduction of egg. Responses received from 72 families.

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