Ashford and St. Peter's Hospitals
NHS Foundation Trust

Guidance for the Management of Egg Allergy in Children

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Guideline History		
Date	**Comments**	**Approved By**
20/02/2023		Paediatric Guidelines Group
03/07/2026	Review and minor changes	Paediatric Guidelines Group

Contents

1. Guideline
    a. Introduction
    b. Background
    c. Diagnosis
    d. Resolution of Egg Allergy
    e. Management
        i. Mild reaction
        ii. Moderate reaction
        iii. Severe/potentially severe reaction
        iv. Persistent egg allergy
        v. Delayed reaction
        vi. Egg never consumed
    f. Introduction of egg
    g. Vaccinations
2. Supporting References
3. Supporting Trust Guidelines
4. Guideline Governance
    a. Scope
    b. Purpose
    c. Duties and Responsibilities
    d. Approval and Ratification
    e. Dissemination and Implementation
    f. Review and Revision Arrangements
    g. Equality Impact Assessment
    h. Document Checklist

Title of Guideline

Introduction

Egg allergy is a common problem in children. This guidance is intended to support the management of children with egg allergy. This is applicable both in the general setting (general clinic, ward, A&E) as well as in the Paediatric Allergy Clinic.

Background:

Egg allergy affects about 1-2% of children[1]. It most commonly presents during infancy following the first exposure to egg during weaning[2]. Eczema is a known risk factor for the development of egg allergy[2]. Most reactions are immediate (IgE mediated) reactions. Delayed reactions to egg can occur.

Baked egg (sponge cake baked at 180C for 20mins) is less allergenic than cooked egg (scrambled, boiled). Raw egg is the most allergenic. The egg white is more allergenic than the yolk. Ovoalbumin is the most abundant egg white protein. It is heat labile and associated with reactions to lightly cooked and raw egg. Ovomucoid is heat stable and associated with reactions to all types of egg.

The majority of immediate reactions to egg are mild. Reactions often include an urticarial rash (80-90% of reactions) and gastrointestinal symptoms such as vomiting (10-44% of reactions)[2]. More severe reactions, involving the respiratory system, are less common. Sometimes young children develop floppiness and pallor.

Egg allergy can resolve and hence the management should include avoidance advice, emergency medication and consideration of when and how re-introduction may occur.

Diagnosis:

A diagnosis can usually be made from the clinical history ie erythema, urticaria, angioedema and/or vomiting usually within minutes (but within 1 hour) of egg ingestion[2]. Children with a clear history and a mild reaction DO NOT need further investigation or referral to the Allergy Clinic. These children can generally be managed in primary care.

Where the history is not clear or the reaction was moderate-severe, allergy tests may support a diagnosis and help guide resolution. Changes in the size of the skin prick test wheal over time can indicate resolution of egg allergy[2]. Skin prick testing and egg specific IgE should only be used if there is a clinical suspicion of egg allergy. These are poor screening tools for egg allergy[2]. However, if a child has strongly positive skin prick tests and/or egg specific IgE and they have never eaten egg, a referral to Allergy clinic is needed.

Skin prick testing should be performed with egg reagent. The interpretation of skin prick testing to raw egg is not standardized.

If there is a typical history of a reaction to egg, a skin prick test wheal size of >3mm is diagnostic of likely egg allergy[2].

Egg components Ovoalbumin (Gal d 2) and Ovomucoid (Gal d 1) can be measured. High levels of Ovomucoid ((Gal d 1) a heat-stable egg protein) specific IgE are associated with the persistence of egg allergy.

In younger children small skin prick test wheals and lower specific IgE values are more predictive of egg allergy than in older children. The size of a skin prick test wheal does not correspond to the severity of a reaction. For example, a small wheal does not guarantee a mild reaction and a large wheal does not predict anaphylaxis.

Resolution of Egg Allergy:

Egg allergy resolves in the majority of children. Resolution is more likely in children who have only developed a rash after eating egg and who have smaller skin prick test wheals or lower specific IgE[3]. Persistence of egg allergy is more likely in children who have had multi-system reactions, other food allergy and atopic disease.

Resolution of egg allergy occurs in stages starting with tolerance to well-cooked/baked egg (cake) then lightly cooked egg (scrambled) finally followed by raw egg (mayonnaise). Tolerance to well-cooked/baked egg broadens the diet and makes egg avoidance less onerous. Studies have shown that up to 70% of patients with mild egg allergy will be able to tolerate well-cooked/baked egg[4]. Some studies have suggested that eating well-cooked/baked egg promotes tolerance to other forms of egg[6], other studies have suggested that it does not make a difference[7].

The rate at which egg allergy resolves is variable. Children grow out of allergy to well-cooked/baked egg twice as quickly as they outgrow allergy to lightly cooked egg[1].Children who have had a mild reaction (rash only) after significant exposure (mouthfuls of scrambled egg) often tolerate baked egg at 2-3 years old and cooked egg at 3-4 years old[2]. Of all children with egg allergy approximately 1/3 will have resolved allergy to well-cooked/baked egg at 3 years and 2/3 at 6 years[1]. Resolution of allergy to egg may continue in teenagers[1].

Re-introduction should be individualized. Re-introduction should not be attempted within 6 months of a reaction[2]. If there is a reaction at any stage the previously tolerated diet should be recommenced and further attempts at re-introduction considered after a further 6 months[2].

Figure 1 – Examples of foods containing baked egg, well-cooked egg and raw egg. From BSACI 2021 guidance.

Stage 1. Baked/well cooked egg, (low egg / with matrix)	Stage 2. Well cooked egg dishes and loosely cooked egg	Stage 3. Raw egg products
Early-stage introduction: Cake (1egg/8 cake recipe) Hard Biscuits TUC crackers Mini Frozen Yorkshire pudding Pastry containing egg (sausage roll, pie, Choux) Trifle sponge/Jaffa cake Breadcrumb coating e.g. fishfinger, nugget Wheat free bread/bread sticks Later stage introduction: Bread containing egg e.g., Brioche, Croissants, Buns, Panettone, Naan, Focaccia, *Cake (standard recipe), *Muffins, madeleines Scotch pancakes, *blinis, Welsh cakes Soft cookies Toasting waffles, waffle cones Egg pasta and dishes with pasta, Cooked egg glaze, Prawn crackers,	Early-stage introduction: *Home-made Pancakes, crepes, and waffles Batter, *Homemade Yorkshire pudding Egg noodles Scrambled egg (firm) Hard Boiled /fried/poached egg. Scotch egg Omelette/ frittata Egg fried rice. Quiche and flans *Duchess potato Heated sauces e.g., Hollandaise sauce Egg custard, Crème caramel Crème Brulée Nougat and Nougat confectionary e.g., mars *Hard Meringue/pavlova Later stage introduction: *Loosely cooked scrambled egg or omelette *Carbonara Sauce *French toast *Welsh rarebit	Mayonnaise and mayonnaise - based sauces, e.g., Horseradish sauce, tartar sauce, ranch dressing Salad cream, coleslaw Dippy/uncooked boiled/fried/poached egg. Sorbet, Cold / hot Souffle Luxury and fresh ice cream e.g., BenJerry, Haagan Daaz Soft meringue (lemon meringue, pavlova) Fresh Mousse and other uncooked desserts Sushi Tartare steak Confit Egg, Florentine pizza, eggs benedict Soft Mallow e.g., snowball, teacake Royal and fondant icing /decorations Raw cake mixture Homemade marzipan Fondant confectionary e.g., crèmeegg Uncooked egg white powder Cocktails / drinks e.g., Advocaat
*Egg as binder e.g., burger, meatball -well cooked Quorn		Pasteurised egg

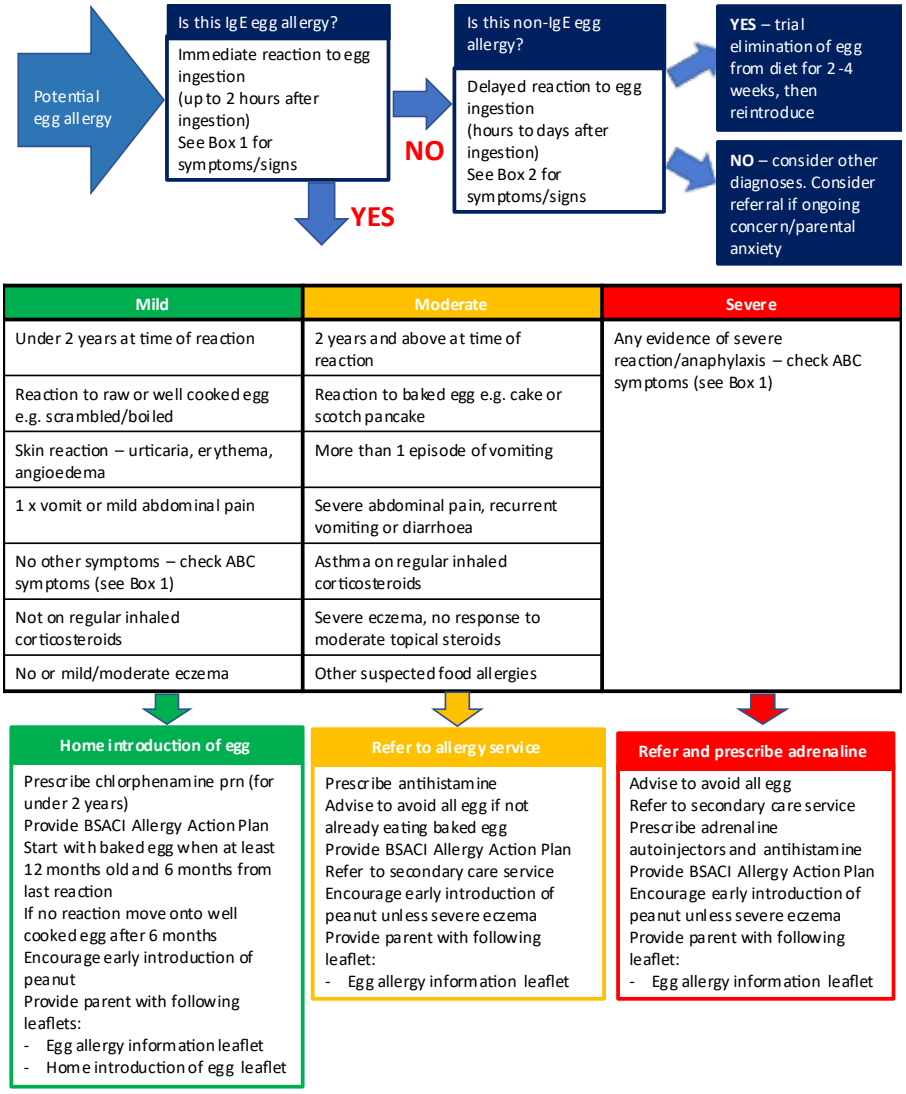
- Each stage to be tried in small amounts first. Reduce to lower stage/smaller amount if symptoms.
- * these foods may cause allergic reaction depending on degree of cooking (fully cooked = less allergen)

Management:

All children with an egg allergy require avoidance advice, including advice about foods that may be continued (for example those foods currently tolerated, see Figure 1), provision of emergency medication and an Allergy Action Plan. Allergy Action Plans can be downloaded from the BSACI website: https://www.bsaci.org/professional-resources/resources/paediatric-allergy-action-plans/.

The exclusion of egg does not cause nutritional deficiencies therefore the majority of children with a single egg allergy do not require a referral to the dietitian. Children who are vegetarian may require advice about alternative sources of protein and iron. Egg protein in food may be referred to by unusual terms especially on imported foods. Examples are: egg lecithin, albumen, albumin, ovalbumin, globulin, ovoglobulin, livetin, ovomucin, vitellin and ovovitellin. Where the labelling is in Latin, the words for egg are OVUM or OVO. The proteins in eggs from other birds are very similar to those in hens' eggs and should be avoided too.

Figure 2: Egg allergy management in non-specialist settings



Box 1 – IgE Egg Allergy

Typical symptoms

- Urticaria, angioedema, erythema within minutes
- GI symptoms – vomiting, abdominal pain, diarrhoea within 2 hours

More severe reactions are much less common but symptoms include:

- Airway - **hoarse voice/cry, persistent cough, stridor, excessive drooling, swollen tongue**
- Breathing – **wheeze, cyanosis, breathlessness/increased work of breathing**
- Circulation - **pale, floppy, dizzy, unusually and profoundly sleepy, loss of consciousness**

Box – Non-IgE Egg Allergy

- Typically presents 4- 36 hours after egg ingestion with flare of eczema or GI symptoms
- If suspected trial egg exclusion for 2-4 weeks and then reintroduce looking for resolution and recurrence of symptoms
- If diagnosed - gradually reintroduce egg after 6 months starting with baked and moving to well cooked if tolerated. If egg is not tolerated, continue to avoid and try again in another 6 months
- Dietician referral generally not required unless excluding dairy or multiple other foods

Mild reaction:

A mild reaction is characterised by cutaneous symptoms (erythema, urticaria, angioedema) and/or a single vomit on significant exposure (eg teaspoon of scrambled egg).

Mild egg allergy can usually be managed in primary care as long as children are under 2 years at time of reaction, they reacted to raw or well-cooked (NOT baked) egg, they are not on regular inhaled steroids and they have no or only mild-moderate eczema (Figure 2). Information leaflets about egg allergy (It's all about eggs) and egg reintroduction should be provided. These can be found on Trustnet under Dietetics Department or on https://ashfordstpeters.net/paediatric-allergy/eggs-allergy.html. A BSACI Allergy Action Plan (https://www.bsaci.org/professional-resources/resources/paediatric-allergy-action-plans/) should be completed and given to families. Figure 2 shows which patients should be referred to Allergy Clinic.

Generally, egg should be avoided until at least 12 months old and at least 6 months from the last reaction. Egg reintroduction can then be tried following the egg ladder. See Figure 2. An Egg Reintroduction leaflet is available on the Paediatric Allergy website (https://ashfordstpeters.net/paediatric-allergy/) or on Trustnet under Dietetics Department.

Moderate reaction:

A moderate to severe reaction is characterized by a hoarse cry/change in voice pitch, persistent cough, stridor, wheeze or appearing pale and floppy (Figure 2). These children should be seen in a Paediatric Allergy Clinic. Information about egg avoidance (It's all about eggs leaflet) should be given prior to the child being seen in clinic, this can be found on the Paediatric Allergy website (https://ashfordstpeters.net/paediatric-allergy/eggs-allergy.html) or on the Trustnet under Dietetics Department. A BSACI Allergy Action plan should be completed and given to families prior to their clinic appointment (https://www.bsaci.org/professional-resources/resources/paediatric-allergy-action-plans/).

Children with any of age >2 years at time of reaction; reaction to baked egg; >1 episode of vomiting, severe abdominal pain; diarrhoea; asthma on inhaled steroids; severe eczema or multiple food allergies; should be managed as per the moderate reaction pathway (see Figure 3). This pathway is not for children who had anaphylaxis to egg.

Children with a moderate reaction to egg should have skin prick testing (SPT) performed. If SPT<=5mm, baked egg should be introduced at home. After 6 months introduce well-cooked

whole egg – provide the home egg reintroduction leaflet. This can be found on https://ashfordstpeters.net/paediatric-allergy/eggs-allergy.html or on Trustnet under the Dietetics Department.

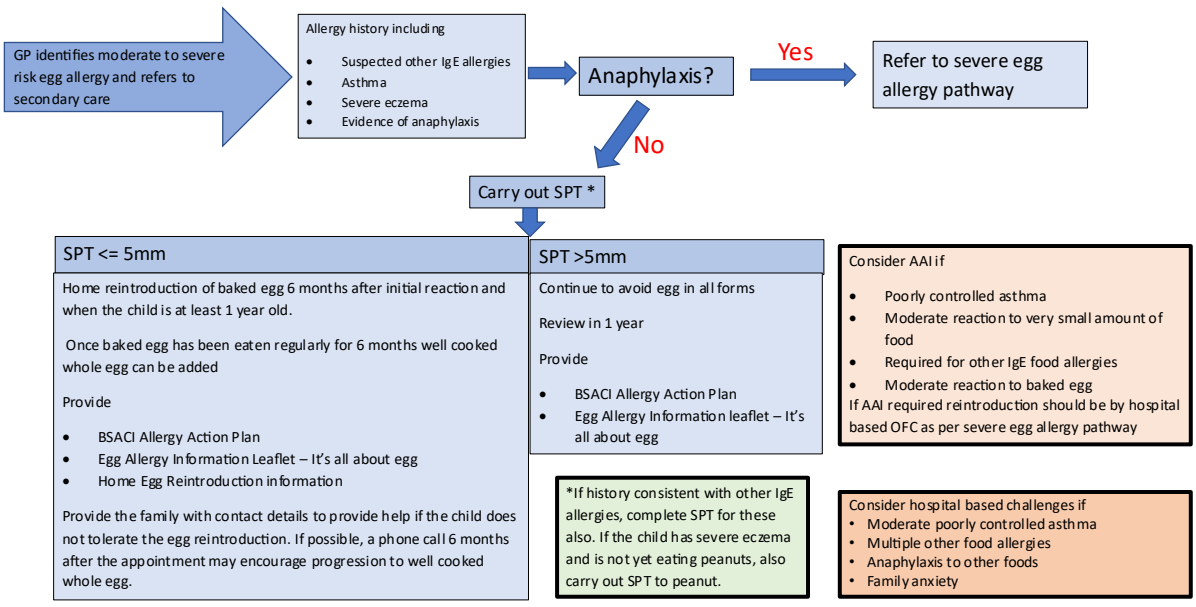
If SPT>5mm, continue to avoid all egg for a further year and then review with SPTs. If the history is consistent with other IgE allergies, complete SPT for these also. If the child has severe eczema and is not yet eating peanuts, also carry out SPT to peanut.

Consider adrenaline autoinjector (AAI) if the child has any of: poorly controlled asthma; moderate reaction to very small amount of food; required for other IgE food allergies; moderate reaction to baked egg.

Consider hospital-based challenges with any of: poorly controlled asthma; multiple food allergies; anaphylaxis to other foods; family anxiety, need for AAI.

In general, advise initial avoidance of lightly cooked and raw egg. If well-cooked/baked egg is tolerated it should not be excluded from the diet. Supply anti-histamines for use in allergic reactions and provide a personalised BSACI Allergy Action Plan (https://www.bsaci.org/professional-resources/resources/paediatric-allergy-action-plans/). Teach the family/carers to recognize and manage severe reactions.

Figure 3: Moderate egg allergy pathway



Severe/potentially severe immediate reaction:

Children with any suggestion of anaphylaxis to egg should be managed as per the severe egg allergy pathway (Figure 4). There may be multi-system features such as cardio-respiratory involvement (anaphylaxis) or severe gastro-intestinal symptoms. A reaction to only a trace amount of egg or to well-cooked/baked egg indicates a potentially severe reaction may occur.

Perform skin prick testing in these patients. If SPT <=5mm with anaphylaxis to baked egg and the severe reaction occurred within 2 years of this result, bring back for repeat SPT in 1 year before considering baked egg oral food challenge (OFC). If the severe reaction occurred over 2 years ago and the SPT is <=5mm – consider a hospital-based baked egg OFC.

Children with SPT SPT <= 5mm with anaphylaxis to well-cooked whole egg can have a hospital-based baked egg challenge.

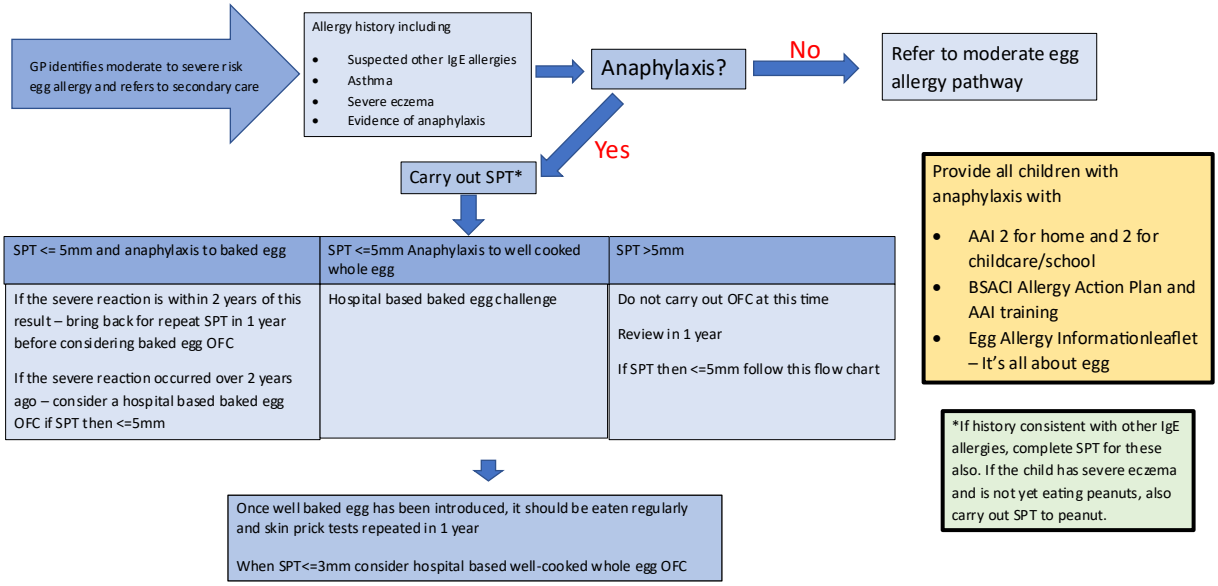
If the SPT is >5mm, do not carry out OFC at this time. Review in 1 year and if the SPT is then <=5mm, consider baked egg OFC.

If the history is consistent with other IgE allergies, complete SPT for these also. If the child has severe eczema and is not yet eating peanuts, also carry out SPT to peanut.

Once baked egg has been introduced, it should be eaten regularly and skin prick tests repeated in 1 year. When SPT<=3mm, consider hospital-based well-cooked whole egg OFC.

Provide all children with anaphylaxis with AAI, BSACI Allergy Action Plan (https://www.bsaci.org/professional-resources/resources/paediatric-allergy-action-plans/) and AAI training. All patients should be given the "It's all about eggs" leaflet. This can be found on https://ashfordstpeters.net/paediatric-allergy/eggs-allergy.html or on the Trustnet under Dietetics Department.

Figure 5: Severe egg allergy pathway



Persistent egg allergy:

Children with egg allergy that persists beyond usual resolution (6-7 years) should be referred to Allergy clinic. Periodical review may be required and attempts at re-introduction are likely to require hospital-based food challenges.

Delayed reaction:

Consider delayed egg allergy in the differential diagnosis and assessment of factors contributing to eczema and gastro-intestinal symptoms. Egg may cause eczema to flare up and worsen the severity of eczema in some children. A trial of egg exclusion for 4-6 weeks is required to make the diagnosis. Egg may be re-introduced at home if there is no evidence of IgE sensitization. Well-cooked/baked egg should be re-introduced before lightly cooked egg.

Egg never consumed:

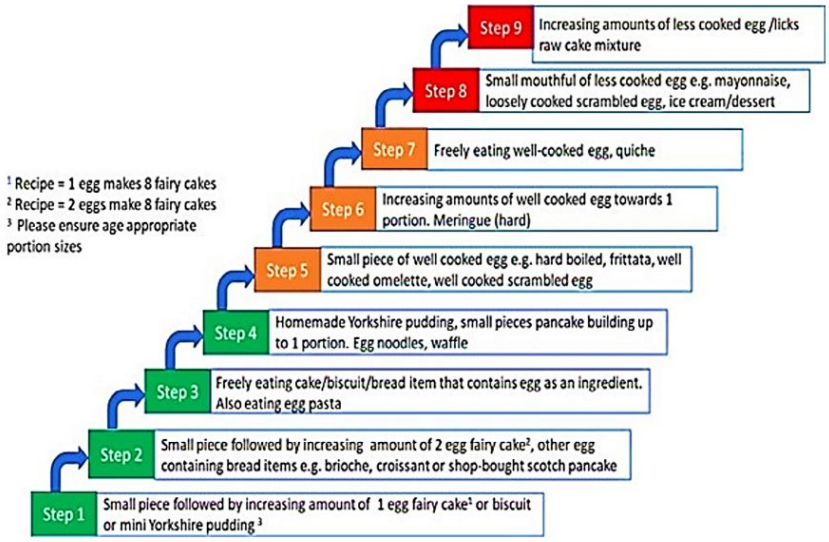
Some children will never have consumed egg because of suspicion of allergy. Egg may be detected in breast milk and some children will have reacted after maternal egg consumption. Egg may not have been introduced because of multiple food allergies or eczema. If there is a true likelihood of egg allergy, allergy tests should be performed prior to introducing egg and a referral to Allergy clinic can be made.

Occasionally children have never eaten egg but do not have an increased likelihood of egg allergy. Allergy tests are not usually required however it is advisable to introduce well-cooked egg/baked egg prior to cooked egg.

Introduction of egg:

In a home introduction, baked egg is gradually introduced over days or weeks. We have a leaflet to guide families how to do this safely. Less well-cooked forms of egg can then gradually be introduced as per the "Egg Ladder" which is included in the same leaflet. Figure 6 below depicts how gradual home introduction can be done.

Figure 6 - Egg ladder taken from BSACI 2021 guideline



Vaccinations:

MMR: There are no contra-indications and MMR should be given in primary care.

Influenza: The Joint Committee on Vaccination and Immunisation has advised that children with egg allergy can safely be vaccinated with Fluenz Tetra in any setting (including primary care and schools)[5]. This includes children with previous anaphylaxis to egg[5]. The only exception is for children who have previously had an anaphylaxis to egg so severe that they required ventilation on an intensive care unit as a result. Inactivated (injected) influenza vaccines that are egg free or have an ovalbumin content of < 0.12 µg/ml may be used safely in individuals with egg allergy, in primary care[5]. Further information can be found in DoH Green Book (updated 2017).

Yellow Fever: This is contraindicated in egg allergy. If essential discuss with the Allergy team.

2. Supporting References

1. Clark A, Islam S, King Y, Deighton J, Szun S, Anagnostou K, Ewan P. A longitudinal study of resolution of allergy to well-cooked and uncooked egg. Clinical & Experimental Allergy. 2011 May 1;41(5):706-12.

2. Leech SC, Ewan PW, Skypala IJ, Brathwaite N, Erlewyn- Lajeunesse M, Heath S, Ball H, James P, Murphy K, Clark TA. BSACI 2021 guideline for the management of egg allergy. Clinical & Experimental Allergy. 2021 Sep 29;51(10):1262-1278.

3. Boyano-Martínez T, García-Ara C, Díaz-Pena JM, Martín-Esteban M. Prediction of tolerance on the basis of quantification of egg white-specific IgE antibodies in children with egg allergy. Journal of allergy and clinical immunology. 2002 Aug 1;110(2):304-9.

4. Lemon-Mulé H, Sampson HA, Sicherer SH, Shreffler WG, Noone S, Nowak-Wegrzyn A. Immunologic changes in children with egg allergy ingesting extensively heated egg. Journal of Allergy and Clinical Immunology. 2008 Nov 1;122(5):977-83.

5. BSACI Influenza vaccine recommendations for children with egg allergy. Updated Nov 2017

6. Leonard SA, Sampson HA, Sicherer SH, Noone S, Moshier EL, Godbold J, Nowak-Węgrzyn A. Dietary baked egg accelerates resolution of egg allergy in children. Journal of Allergy and Clinical Immunology. 2012 Aug 1;130(2):473-80.

7. Netting M, Gold M, Quinn P, El-Merhibi A, Penttila I, Makrides M. Randomised controlled trial of a baked egg intervention in young children allergic to raw egg but not baked egg. World Allergy Organization Journal. 2017 Dec;10(1):22.

8. Wessex Allergy Network Group Egg Allergy Guidelines 2022

3. Supporting relevant trust guidelines

Adrenaline autoinjector guideline

Anaphylaxis guideline

2. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for all children from 0-18 years old across the emergency department, inpatient ward and outpatient department.

Purpose

i. This guidelines aims to facilitate a common approach to the management of egg allergy in children. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

b. Duties and Responsibilities

All healthcare professionals responsible for the care of all children 0-18 years should be aware of practice according to this guideline.

c. Approval and Ratification

This guideline will be approved and ratified by the Paediatric Guidelines Group.

d. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Paediatric Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Paediatric Department for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

e. Review and Revision Arrangements

a. This policy will be reviewed on a 3 yearly basis by the appropriate persons.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Paediatric Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

f. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Author and the supervising consultants.
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
All groups of staff and patients were taken into consideration and there is no bias towards or against any particular group.
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
There is no evidence of discrimination.
Conclusion • Provide a summary of the overall conclusions
There is no evidence of discrimination.
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment
This guideline is appropriate for use.

g. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document: Guidance for the Management of Egg Allergy in Children

Policy (document) Author: Dr Klara Liddell

Executive Director: N/A

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?	**Yes**	
	Is it clear whether the document is a guideline, policy, protocol or standard?	**Yes**	
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?	**Yes**	
	Is the purpose of the document clear?	**Yes**	
	Are the intended outcomes described?	**Ye**	
	Are the statements clear and unambiguous?	**Yes**	
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?	**Yes**	
	Who was engaged in a review of the document (list committees/ individuals)?		**Paediatric allergy team, Paediatric Guideline Group, sent to entire Paediatric department for comments**
	Has the policy template been followed (i.e. is the format correct)?	**Yes**	

		Yes/No/ Unsure/NA	Comments
4.	**Evidence Base**	**Yes**	
	Is the type of evidence to support the document identified explicitly?	**Yes**	
	Are local/organisational supporting documents referenced?	**Yes**	
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?	**Yes**	
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?	**n/a**	
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	**Yes**	
	Does the plan include the necessary training/support to ensure compliance?	**Yes**	
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?		
8.	**Review Date**		
	Is the review date identified and is this acceptable?	**Yes**	
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination,	**Yes**	

		Yes/No/ Unsure/NA	Comments
	implementation and review of the documentation?		
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?	Yes	

Committee Approval (Paediatric Guidelines Group)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair	**Dr Alexandra Jones**	**Date**	**03/07/2026**
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			