Preventing food allergy in higher risk infants: guidance for healthcare professionals

This information sheet complements current advice from the Scientific Advisory Committee on Nutrition (SACN) and the Committee on Toxicity (Food Standards Agency). It has been developed by the Food Allergy Specialist Group of the British Dietetic Association and Paediatric Allergy Group of the British Society for Allergy & Clinical Immunology. **A separate summary for parents is available at** www.bsaci.org/about/early-feeding-guidance and www.bda.uk.com/regionsgroups/groups/foodallergy/allergy_prevention_guidance

CURRENT ADVICE FOR ALL INFANTS IS:

- Exclusive breastfeeding for around the first 6 months of life
- Complementary foods should be introduced in an age-appropriate manner from around 6 months, alongside continued breastfeeding, at a time and in a manner to suit the child and family.
- The deliberate exclusion or delayed introduction of specific allergenic foods may increase the risk of developing a food allergy to the same foods.

In practice, this means:

- When the infant is ready, at around 6 months of age (but not before 4 months), introduce complementary foods (solids) - usually as pureed foods. Start by offering small amounts of vegetables, fruit, starchy foods, protein. Never add salt or sugar - they don't need it.
- Include foods associated with food allergies that are part of the family's diet: this can include egg, foods containing peanut and tree nuts, pasteurised dairy foods, fish/seafood and wheat.
  Never give whole or coarsely-chopped nuts, as these are a choking risk.
- Aim to introduce these foods before 12 months of age, one new food at a time
- Continue to give the baby these foods regularly as part of their usual diet, unless not tolerated – this may help reduce the chance of their developing an allergy to that food later.

GUIDANCE FOR INFANTS AT HIGHER RISK OF FOOD ALLERGY

Some infants are at a higher risk of developing a food allergy, including those:

- with **eczema** (in particular, early-onset or moderate-severe eczema – see next page), or
- who already have a **food allergy** themselves.

Research has shown that these infants may benefit from the introduction of foods containing egg and peanut from 4 months alongside other complementary foods.

Some infants will already be allergic to these foods when introduced into the diet:

- Parents should not continue to feed their baby something they are reacting to.
- Referral to specialist allergy clinic is recommended for all infants with immediate-type food allergy.
- The benefits of early allergy testing in higher risk infants prior to introducing egg or peanut needs to be balanced against the potential delay due to lack of available testing.

FOOD ALLERGY

Up to 8% of babies will develop a food allergy in the UK. There are two types of food allergy:

Immediate-type food allergy	**Delayed-type food allergy**
Symptoms are caused by IgE antibodies, and usually occur within 30 minutes after eating the triggering food. Mild-moderate allergic symptoms: • Swollen lips, face or eyes • Itchy skin rash e.g. "hives" • Abdominal pain, vomiting Severe symptoms (anaphylaxis): **A**IRWAY: Persistent cough, swollen tongue, hoarse cry **B**REATHING: Difficult / noisy breathing, wheezing **C**ONSCIOUSNESS: Pale or floppy, Unresponsive/unconscious	Symptoms usually happen hours-to-days later, and • resolve when that food is avoided • recur when the food is eaten again Gut symptoms: • Recurrent abdominal pain, worsening vomiting/reflux • Feeding difficulties • Loose/frequent stools (>6-8 times per day) or constipation/infrequent stools (2 or fewer per week) Skin symptoms: • Skin reddening, itching, worsening of eczema Delayed-type food allergy is of particular concern when the baby's growth is also affected. **Delayed-type allergy is not caused by IgE antibodies, and cannot cause anaphylaxis.**

Food allergies should not be confused with food intolerances: these do not involve the immune system and cannot cause allergic reactions

WHAT HAS CHANGED IN TERMS OF WHEN TO INTRODUCE ALLERGENS INTO THE INFANT DIET?

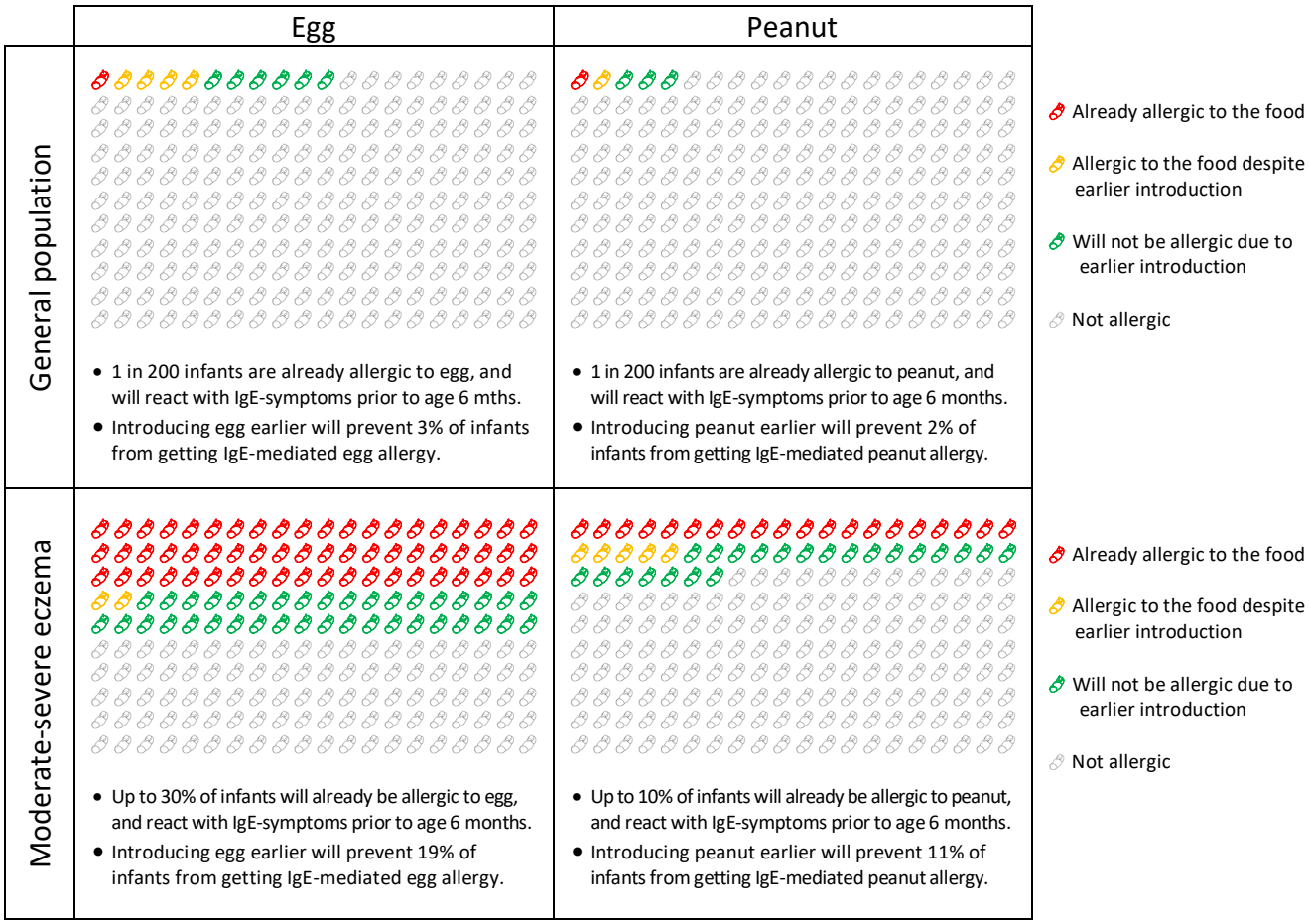
Evidence is accumulating that introducing allergenic foods at the same time as other solid foods may protect infants from developing a food allergy. These data have come from a number of randomised trials around the world, but in particular two UK studies, the LEAP and EAT studies.

The **LEAP study** introduced peanut into the diet of infants between 4 and 10 months of age at high risk of peanut allergy (determined by the presence of significant eczema and/or pre-existing egg allergy). The **EAT study** introduced six allergenic foods (dairy, egg, sesame, wheat, peanut and fish) into the diet of exclusively-breastfed 3 month old infants, recruited from the general population.

These studies have shown that:

- Introducing peanut and egg alongside other solids earlier, or at least by one year of age, may help prevent the development of food allergy.
- Introducing these allergenic foods within the first year of life appears to be safe – there were no adverse effects on growth or nutrition, and though some infants were already allergic at this age, reactions were mild. While more serious reactions might occur if more widespread earlier introduction at a population level was to take place, this needs to be balanced against existing data that life-threatening reactions are extremely rare in this age group and that such a policy would significantly reduce food allergy which can cause fatal reactions in older children and young adults.
- The manner in which the allergen is given is important. Raw egg caused significant reactions in a German study of early egg introduction, whereas cooked egg appears to be better tolerated.
- There may be different windows of opportunity for different food allergens: it may be necessary to commence egg consumption earlier than peanut.

Infants with moderate-severe eczema and/or eczema which began in the first 3 months of life are at greatest risk of reacting to egg and peanut when these are introduced into the diet.
- but where tolerated, these infants will benefit most from earlier introduction:



Data from J Allergy Clin Immunol Pract. 2018;6:367-375. doi: 10.1016/j.jaip.2017.12.015.

Introducing potential allergens into the diet of a child with eczema

Eczema should be well-controlled i.e. cleared prior to introducing allergenic foods, so that it is easier to assess for tolerance and the absence of delayed skin reactions. Refer for specialist advice if the eczema:

- remains uncontrolled
- requires more than 1% topical hydrocortisone daily for over 6 weeks
- requires a more potent steroid, on more than one occasion

Some of these children will get immediate (IgE-mediated) and/or delayed (non-IgE-mediated) symptoms. A positive allergy skin test increases the likelihood of IgE-mediated food allergy. A negative test makes IgE-mediated allergy (and anaphylaxis) unlikely, but does not rule out the possibility of delayed reactions.

No life-threatening reactions to date have been reported as a result of earlier introduction of potential allergens into the infant diet, although anaphylaxis has been reported in some higher-risk infants given raw egg powder.

If eczema becomes difficult to manage after food introduction, stop the allergen and refer for specialist advice.

Are siblings of a child with food allergy at higher risk?

Parents are often concerned about their baby having a food allergy if an older child has a food allergy. However, recent studies have found that this *alone* does *not* significantly increase the risk of food allergy in an infant sibling. In this scenario, parents tend to delay feeding their baby the food allergen(s) – it is this which seems to increase the risk of the baby developing a food allergy.

If someone in the home has a food allergy, families need to plan how to introduce that food into the baby's diet, whilst keeping the person with the food allergy safe. More advice can be found in the accompanying SUMMARY FOR PARENTS leaflet.

What is the optimal timing for introduction?

The UK Departments of Health recommend the introduction of solids – including potential foods allergens – from around 6 months of age. This advice is for the general population.

If a baby is at higher risk of developing food allergy, parents may wish to start solids from 4 months:

- Once the baby is eating solid foods such as pureed fruits and vegetables, introduce foods containing egg (if part of the family's diet), then peanut and then other potential allergens.
- **Babies should only be given foods in an age-appropriate form, to avoid risk of choking**.

Further information on how to introduce foods can be found in the SUMMARY FOR PARENTS leaflet.

Mothers should continue to breastfeed whilst introducing solid foods, if possible. This may support the baby's development of tolerance to new foods and there are many other benefits of continued breastfeeding. If breastmilk is not available, use a standard cow's milk formula rather than a "low allergy" (hypoallergenic) formula, unless the baby is allergic to cow's milk.

Should infants be screened prior to introducing allergenic foods?

Allergy tests are routinely undertaken in infants within allergy clinics, and can provide helpful information to guide introduction of allergenic foods. However, no study has yet assessed the impact of screening at a *population level*, as has been advocated in some guidelines.

Some infants will already be allergic to these foods when introduced into the diet. To date, no life-threatening reactions have been reported in this context; screening is not generally offered in those countries where peanut is introduced in infancy, and this has not caused major public health concerns.

Infants in both the EAT and LEAP studies had skin prick testing undertaken prior to introducing the allergenic food(s), largely as a safety measure in the context of a research trial. There are a number of uncertainties: (1) whether such screening should be undertaken at a population level; (2) if it is, in which infants; (3) what to do if results are "positive".

Allergy testing for individuals	Allergy screening at a population level
In the EAT and LEAP studies, a negative skin prick test was able to predict the absence of immediate-type allergy symptoms in the vast majority of cases. Where skin testing is completely negative (0mm wheal), introduction is recommended at home. A positive skin test, however, does not mean that the infant has food allergy. Up to 50% of positive tests in this age group are false positives. These infants have most to benefit from the earlier introduction of egg and peanut, where tolerated. For this reason, testing should only be performed where there is provision to undertake supervised food introduction promptly. If a child is already tolerating a portion size of a food, then testing is not needed and should not be performed.	Two studies (one in Australia, another in Ireland) have looked at the feasibility of screening higher-risk children for peanut allergy at a *population* level: • Screening all higher-risk infants could require testing up to 16% of all infants • This would detect around three quarters of infants with peanut allergy, but miss those cases in lower-risk infants who have not been screened. • Food challenges would be needed in around 15-30% of screened infants due to positive skin tests. Currently, there is limited provision of allergy care for children in the UK, and in particular, our ability to undertake supervised food challenges in a timely manner where screening tests are positive.

Healthcare professionals should help parents make an informed decision as to when to try introducing potential food allergens. This will depend on their understanding of the potential for an allergic reaction and the availability of allergy testing within the local clinical service, but must be balanced against the risk that a delay in introduction may increase the risk of their infant developing a food allergy.

- If allergy testing is undertaken, it should only be done by someone with the experience and competence to interpret the results. Testing should not be performed where there is not rapid access to a service that can promptly undertake a supervised food challenge.
- Your local allergy clinic may have advice and local pathways regarding the introduction of allergenic foods in infancy, and the availability of testing within their clinical service. Contact details can be found at www.bsaci.org/find-a-clinic

A separate summary for parents is available at
www.bsaci.org/about/early-feeding-guidance or
www.bda.uk.com/regionsgroups/groups/foodallergy/allergy_prevention_guidance

References

- https://cot.food.gov.uk/cotwg/joint-sacn/cot-working-group-on-the-timing-of-introduction-of-allergenic-foods-into-the-infant-diet
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Preventing food allergy in higher risk infants: summary for healthcare professionals

The UK health departments advise exclusive breastfeeding until around six months of life, and to continue breastfeeding throughout the first year.

Infants with a known risk factor for food allergy:
- Eczema*
- Existing food allergy in your baby

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Avoid any foods the baby is known to be allergic to

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These children may benefit from the earlier introduction of cooked egg (and then peanut), alongside other solids

When the baby is ready, consider introducing solid foods – including cooked **egg** and then **peanut** – from age 4 months, followed by other allergenic foods§

*Some infants will already be allergic to these foods: infants with moderate-severe eczema are at greatest risk. To date, no life-threatening reactions have been reported in this context.

Allergy tests can help identify *individual* infants at higher risk, but systematically screening *all infants* with more severe eczema is not currently available in most areas and may not be effective. Families may wish to seek advice from a healthcare professional with expertise in allergy; this should **not** delay introduction of common allergenic foods beyond 12 months of age.

Infants with a household member with food allergy

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Consider how to introduce the food into the baby's diet whilst keeping the food-allergic person safe.

Some families may benefit from reassurance from an allergy specialist but this should **not** delay introduction of allergenic foods.

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No risk factors for food allergy

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When the baby is ready, introduce solid foods at **around 6 months of age** (but not before 4 months). Include peanut, egg and other foods§ that are eaten as part of the family's normal diet

Screening allergy tests are *not* routinely recommended prior to introducing solids

§ Common foods which can cause food allergy include: egg, peanut and other nuts, dairy foods, fish/seafood and wheat

The UK health departments advise that breastfeeding should continue throughout the first year of life, at the same time as introducing solid foods.

Monitor for any symptoms of an allergic reaction:

Immediate-type food allergy

Typically happen within 30 minutes of eating the food:

Mild-moderate symptoms:
- Swollen lips, face or eyes
- Itchy skin rash e.g. "hives", urticaria
- Abdominal pain, vomiting

RARELY**: Severe symptoms (anaphylaxis):

AIRWAY: Swollen tongue, persistent cough, hoarse cry

BREATHING: Difficult or noisy breathing, wheezing

CONSCIOUSNESS: Pale or floppy, unresponsive/unconscious

**risk estimated to be 1-2 per 1000 babies at higher risk.

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- **If any severe symptoms (anaphylaxis), immediately dial 999** for assistance.
- Avoid the trigger food, do **NOT** reintroduce.
- GP review recommended.

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- GP advised to take allergy-focused history: https://www.nice.org.uk/guidance/cg116
- Referral to secondary or specialist care is recommended for all infants presenting with symptoms of immediate-type, IgE-mediated food allergy.

Delayed-type food allergy

Symptoms occur hours after the trigger food:

Gut symptoms:
- Recurrent abdominal pain, worsening vomiting/reflux
- Food refusal or aversion
- Loose/frequent stools (>6-8 times per day) or constipation / infrequent stools (2 or fewer per week)

Skin symptoms:
- Skin reddening or itch over body
- Worsening eczema

NB: Delayed-type allergy cannot trigger anaphylaxis

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- Stop the trigger food, symptoms should resolve after a few days.
- If symptoms are not severe, consider trying the food again 1-2 weeks later.
- Seek GP review If symptoms recur or are severe.

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- GP advised to take allergy-focused history: https://www.nice.org.uk/guidance/cg116
- Seek advice from a dietitian with appropriate competencies, if needed
- Refer any child with persistent delayed-type symptoms (not responding to single food elimination) and/or faltering growth to specialist clinic