

Diet and eczema in children factsheet

Many parents look to diet as the cause of their child's eczema or the reason why the eczema is getting worse. People often think that diet is easy to change and that this could help their child. However, diet and eczema is a complicated subject and altering or restricting a child's food intake can have negative nutritional consequences. This factsheet aims to give information about how foods can sometimes affect eczema and the appropriate action for parents to take.

Eczema can be made worse by a great many things in the environment, both inside and outside the home. However, **for most children with eczema, food allergy or intolerance is not a factor that influences the condition of their skin**, and children with eczema have only a slightly higher chance of developing a food allergy than children without eczema. Recent research has identified that a weakened skin barrier, which is a main feature of eczema, can lead to food sensitisation **through** the skin – so rather than a food allergy causing the eczema, the food allergy may be a consequence of the child already having eczema.

Some foods irritate the skin by coming into contact with it – for example, acidic, spicy or salty foods, tomatoes and tomato-based sauces can all irritate the skin, but this is not the same as food allergy. Applying emollient as a barrier cream around the mouth before eating can help to protect the skin. Gently washing the hands and around the mouth after eating, and then reapplying emollient, will help to calm it down.

Allergy testing according to type

There are certain criteria required to have a child referred by the GP for food allergy testing on the NHS, which is usually done in specialist allergy clinics. The criteria highlight the need for symptoms other than eczema to be present and for the eczema to be uncontrolled by topical treatments such as emollients (medical moisturisers) and steroid creams and ointments.

The testing available is for one of the two types of food allergy that can affect eczema: 'immediate type' allergic reactions and 'delayed' allergic reactions.

Immediate allergy

Immediate allergies are also known as IgE-mediated allergies (IgE stands for the antibody Immunoglobulin-E). These allergies commonly occur within 30 minutes of exposure to an allergen, but can take up to two hours. Immediate allergies to food most commonly occur in early childhood – usually before the age of two, when children are trying new foods. It is unusual for older children and adults to develop IgE-mediated food allergies. For children with eczema, the most common food allergies are to egg, nuts, cow's milk and sesame. Symptoms associated with immediate allergy are listed in Table 1 (page 3).

There are three tests which are commonly used in allergy clinics to diagnose immediate allergies:

skin-prick testing, specific IgE blood testing, and an oral food challenge.

Skin prick testing: Skin prick testing (SPT) involves placing a drop of the suspected allergen onto the skin. The allergen is introduced into the top layer of the skin by pricking through the droplet with a small metal lancet. This does not hurt or cause bleeding – it is not like a blood test or an injection. The procedure is very safe and rarely causes problems.

If the child is sensitised to an allergen, they may develop an itchy bump and redness at the site of testing. This is called

Diet and eczema in children factsheet

a wheal and flare. The bump takes 10-20 minutes to develop and indicates the child's immune system recognises the allergen.

SPT gives an indication of the likelihood that the child may be allergic to a specific allergen. The results must be considered together with the child's clinical history – on their own, SPT results do not give a definite diagnosis of allergy or indicate the severity of an allergy. The wheal is measured in millimetres and the larger the wheal size, the more likely it is that the child is allergic to that allergen.

Results of SPT are usually obtained on the same day. In most allergy clinics this means the clinician will be able to discuss the results with you and develop a management plan at the same appointment. There are some circumstances where SPT cannot be used – for example, if your child is taking antihistamines or certain other medications which can affect the results of SPT, or if they have very troublesome and widespread eczema. In such cases a blood test (see specific IgE testing below) may be suggested instead.

If your allergy clinic appointment includes SPT, you should stop taking long-acting antihistamines (e.g. cetirizine, loratidine) five days before testing, and short-acting antihistamines (e.g. chlorphenamine) two days before testing. Please check with your allergy clinic for more specific information regarding this.

Specific IgE testing (SpIgE), previously known as the RAST test: This looks for and measures IgE in response to a particular allergen in the blood. Blood is taken from the child and mixed with the suspected allergen in a laboratory, so you may have to wait up to two weeks for the results. Unlike for SPT, medications and medical conditions do not affect the results of SpIgE testing.

SPT and SpIgE testing are not totally accurate tests. Neither can give a definite diagnosis of food allergy, but they do provide an indication that the child is allergic to or tolerant of an allergen. The only way to be certain of a food allergy is to expose the child to the allergen to see if

they have a reaction. If the clinical history does not provide this information, an oral food challenge test (see below) may be needed to get an accurate diagnosis.

Oral food challenge test: An oral food challenge is a type of 'provocation challenge' used to achieve a definitive diagnosis of allergy. The child is exposed to the allergen to see if they have a reaction. An oral food challenge takes place in hospital, so that medical staff, equipment and medication are available in case the individual has a serious allergic reaction. A food challenge can either be incremental (a number of increasing doses of the food are eaten over a period of about two hours) or a 'supervised feed', where the top dose or a portion size is given. Your allergy specialist will discuss which approach is most suitable for your child.

Delayed allergy

Delayed allergies, which are also referred to sometimes as non-IgE-mediated allergies, are harder to diagnose as these do not occur as rapidly as IgE-mediated allergies. It may take several hours to three days for symptoms to appear, which commonly include abdominal pain, bloating, diarrhoea, vomiting or eczema flares. In non-IgE-mediated allergy, the immune system does not act in the same way as it does for IgE-mediated allergy. Exactly what happens in a non-IgE mediated reaction is not known, but it is thought that other cells in the immune system are involved in the allergic response. This makes the testing, diagnosis and management of non-IgE mediated allergies rather hard. Testing for delayed food allergy takes the form of an elimination diet, where one food group is eliminated for 4-6 weeks. The food group is then reintroduced for two weeks to see whether there is an effect on the skin. If you have any queries about a food exclusion diet, speak to your GP, who will be able to give you information that will be helpful in undertaking an exclusion diet and ensuring your child receives all the nutrients they require.

Some people may suffer from both IgE- and non-IgE-mediated food allergies.

Table 1:

Symptoms of immediate ige-antibody-mediated and non Ige-mediated food allergy

Common symptoms ■	Symptoms suggest more sensitive delayed allergy ■	Severe symptoms ■
Immediate IgE-antibody-mediated food allergy	Delayed non-IgE-mediated food allergy	
Usual timeframe of symptom onset – usually triggered within 15 minutes	Usual timeframe of symptom onset – usually triggered between 2 and 72 hours, may last weeks	
Itchy red rash like nettle rash (medical term urticaria)	Reflux causing vomiting, discomfort, incomplete feeds/meals, crying (baby/child)	
Swelling of lips, eyelids or face (medical term angioedema)	Diarrhoea and/or constipation	
Running nose or nasal congestion (medical term rhinitis)	Abdominal pain with or without excessive wind	
Vomiting	Eczema	
Diarrhoea	Severe colic, lasting beyond 3 months of age	
Swollen tongue Ring 999	Repeatedly refusing food/feeds (baby/child)	
Hoarse voice Ring 999	Mucus (stringy slime or blood in stool)	
Difficulty swallowing with choking Ring 999	Difficulty swallowing, food getting stuck	
Difficulty in breathing, coughing, wheezing Ring 999	Faltering growth or losing weight	

Maternal diet in pregnancy

There is currently insufficient evidence to recommend that pregnant mothers of babies at higher risk of developing eczema should avoid allergenic foods or take specific diet supplements. Therefore you should stick to the same dietary advice that is given to pregnant mothers in general.

Supplements including vitamins D, E, C, fish oil, pyridoxine, evening primrose oil, borage oil, zinc and selenium have been studied to see if they can help with eczema prevention, but as yet there is insufficient evidence to routinely recommend any of these.

Research has also examined whether using prebiotics and probiotics in pregnancy and early life may protect against developing eczema by changing gut flora. To date these studies have been small and currently the World Health Organization says that more research is needed before prebiotics and probiotics can be routinely recommended for eczema.

Breastfeeding

Exclusive breastfeeding is considered to benefit a child under six months of age and is the current UK recommendation. There is no evidence to suggest that breastfeeding will prevent a child from developing eczema, asthma or allergies. There is some evidence that babies who are exclusively breastfed may have less severe atopic eczema during adolescence.

For the breastfeeding mother, a balanced diet that includes calcium and protein is important for her health. Removing cow's milk from a breastfeeding mother's diet for more than a few weeks places her at risk of weakened bones, so calcium supplements are advised if this is the case.

Vitamin supplements

Growing children, especially those who don't eat a varied diet, sometimes don't get enough vitamins A and C. It's also difficult to get enough vitamin D through food alone. That's why the Department of

Diet and eczema in children factsheet

Health recommends that all children aged six months to five years are given vitamin supplements containing vitamins A, C and D every day. It's also recommended that babies who are being breastfed are given a daily vitamin D supplement from birth, whether or not the mother is taking a supplement containing vitamin D herself. Babies who have more than 500 ml (about a pint) of infant formula a day shouldn't be given vitamin supplements. This is because formula is fortified with vitamin D and other nutrients. Ask your health visitor or pharmacist about vitamin supplements for babies.

Formula milk

Cow's-milk-based formula is nutritionally the best type to give – unless, of course, a cow's milk protein allergy is known or suspected and the GP recommends a different kind of formula. A study comparing hypoallergenic formula and cow's-milk-based formula showed that hypoallergenic formula resulted in a 50% reduction in developing eczema in higher-risk babies, so if you are concerned, speak to your GP.

The choice of an alternative formula milk depends on several factors including symptoms, the child's age and rate of growth.

What about soya?

Soya formula is not recommended for babies under the age of six months, because of the potential effects of phyto-oestrogens (plant hormones) on growth and development.

Fortified soya milk on sale in supermarket fridges is not recommended for infants under the age of twelve months as it is nutritionally inadequate. Soya yogurts can be given from six months of age, provided the child is not soya allergic.

What about oat or pea milks?

These milks are only to be used in cooking for babies aged six months upwards, and as a milk to drink from two years, as they are not nutritionally adequate for infants.

What about rice milk?

Rice milk is currently not recommended for children under the age of five years due to concerns about inorganic arsenic in rice-based drinks (Food Standard Agency, 2009).

What about goat's or sheep's milk?

Goat's and sheep's milk are not suitable substitutes for a child with a cow's milk allergy. They are nutritionally inadequate and share 95% of cross-reacting allergens with cow's milk (i.e. most babies who react to cow's milk protein are also likely to react to goat's milk protein).

Weaning

Important advice note: *Children with proven allergies must follow the advice of their allergy specialist and what is advised below may not apply to them.*

For babies without identified allergies, it is suggested in the UK that weaning should start at around six months (but not before 17 weeks) and it is important to not delay weaning past six months. Weaning should start with foods such as rice, potatoes, root and green vegetables, apples, pears and bananas, individually or in combination. Continuing to breastfeed while solids are introduced is desirable. There are 14 food groups that are the source of most allergic food reactions. These are listed below:

Peanuts, Tree nuts, Sesame seed, Mustard seed, Cow's milk, Eggs, Fish, Shellfish, Molluscs, Soy, Wheat, Celery, Lupin (also spelled lupine, a legume belonging to the same plant family as peanuts; lupin beans are a traditional food in Mediterranean cuisine), Sulphites (an agent found in dried fruits and wine).

These foods can be introduced at six months' old, but it is recommended that they are introduced in small amounts to begin with, such as half a teaspoon and no more than one allergenic food at a time. Ideally allow three days between each new food group – delayed reactions can

Diet and eczema in children factsheet

take up to three days, so this helps identify if a particular food group is causing a reaction.

By the time your baby is twelve months old, all the major high-risk food groups should have been introduced. It is a good idea to do some planning for this (e.g. map out in your diary the new food group to be introduced each fourth day).

Please note that whole nuts should not be given to children under five years due to the potential choking risk. These potential food allergens can be given as a paste (e.g. peanut butter) or finely chopped in biscuits and cakes.

There have been a number of research studies looking at the link between eczema and food allergy. Most recently, a large study was carried out examining the link between eczema and peanut allergy. Over 600 babies

with eczema were enrolled in the **LEAP** study (www.leapstudy.co.uk) Half of the babies ate peanuts regularly (three times each week) from weaning, and half avoided peanuts. At five years of age the children were tested, and it was found that fewer children were allergic to peanuts in the group of children who had been eating peanuts regularly. This has led researchers to believe that eating peanuts can prevent those at risk of developing peanut allergy from doing so.

Further reading

National Institute for Health and Care Excellence (2011) Food allergy in children and young people: Diagnosis and assessment of food allergy in children and young people in primary care and community settings.

Clinical guideline No. 116. London: NICE

www.nice.org.uk/guidance/cg116

DISCLAIMER

Our publications contain information and general advice about eczema. They are written and reviewed by dermatology experts, with input from people with eczema. We hope you find the information helpful, although it should not be relied upon as a substitute for personalised advice from a qualified healthcare professional. While we strive to ensure the information is accurate and up-to-date, National Eczema Society does not accept any liability arising from its use. We welcome reader feedback on our publications, please email us at info@eczema.org

Factsheet last reviewed January 2019.

© National Eczema Society, June 2019. All rights reserved. Except for personal use, no part of this work may be distributed, reproduced, downloaded, transmitted or stored in any form without the written permission of National Eczema Society.



National Eczema Society is the UK charity for everyone affected by eczema. We help support people with eczema, providing information and advice, which we deliver through our website, social media, campaigns, publications and nurse-supported Helpline. We also provide a voice for people with eczema, raising awareness of the condition, supporting research into new treatments and campaigning for better medical care.

National Eczema Society is a registered charity in England and Wales (No. 1009671) and in Scotland (No. SC043669). Registered Office: 11 Murray Street, London NW1 9RE