

EARLY INTRODUCTION OF ALLERGENS: FAQS FOR FAMILIES



RESEARCH & THE RECOMMENDATIONS



1 WHAT IS THE CANADIAN GUIDANCE FOR INTRODUCING ALLERGENS TO BABIES?

The Canadian Paediatric Society (CPS) recommends that allergenic foods be introduced to high-risk infants* by around 6 months of age, but not before 4 months, and are guided by the infant's developmental readiness for food. Allergenic foods include cow's milk, egg, peanut, tree nuts, fish, soy and wheat.

Allergenic foods can be introduced one at a time, to gauge reaction, although there is no data showing this is necessary and some practitioners suggest introducing mixtures of allergenic foods (e.g. mixed tree nut butter). Once introduced, if well tolerated, these allergens should be ingested regularly in order to maintain tolerance.

It's very important to keep feeding the food regularly (i.e., 2-3 times/week) after it has been introduced, as not doing so may lead to the development of food allergy.

For infants at no or low risk of allergy, the guidance has not changed. Parents can introduce allergenic foods starting at about 6 months of age.

2 WHAT RESEARCH STUDIES ARE THESE RECOMMENDATIONS BASED ON?

The recommendations to introduce peanut early are largely based on a recent study called the LEAP (Learning Early About Peanut) study. This study found that eating peanut early could prevent peanut allergy in high-risk infants.

This study randomized 640 infants at high risk of peanut allergy (due to egg allergy, severe eczema, or both) to eating peanut regularly starting at 4-11 months of age, or avoiding peanut until 5 years of age and found a much lower rate of peanut allergy in the group of infants who ate peanut early (3.2%) compared to the group that avoided it (17.2%).

In addition, this study found eating peanut early in life to be safe in this high-risk population, with no severe reactions at first ingestion. A second study, the LEAP-On study, found that if these high-risk children ate peanut regularly until 5 years of age there was no increased risk of developing peanut allergy during their 6th year of life even if they avoided peanuts for that year.

Studies are also emerging that eating cooked egg early may prevent egg allergy in higher risk infants. For example, the PETIT (Prevention of Egg Allergy with Tiny amount InTake) study of 121 Japanese infants found that ingesting heated egg powder beginning at 6 months of age, drastically reduced the rate of egg allergy compared to avoidance until one year of age. A review of the best available evidence further supports that eating egg and peanut early in life can prevent egg and peanut allergy.

3 WILL THESE RECOMMENDATIONS PREVENT ALL BABIES FROM DEVELOPING FOOD ALLERGY?

No, these recommendations will not prevent all babies from developing food allergy, but it has been shown to drop the rates of food allergy quite substantially, with evidence for peanut and egg allergy in higher risk infants.

*High-risk infants are babies with eczema or pre-existing food allergy, or babies with an immediate family history (first degree relative such as mother, father, brother, or sister) of an allergic condition (e.g. eczema, food allergy, asthma).

RESEARCH & THE RECOMMENDATIONS

4 WHY SHOULD PARENTS TRUST THAT THESE RECOMMENDATIONS WILL WORK? THIS SEEMS TO BE THE OPPOSITE OF WHAT WAS PREVIOUSLY RECOMMENDED TO PARENTS.

This new guidance is the opposite of what was said before. Older guidelines recommended avoiding allergenic foods, such as peanut, until three years of age. At that time, it was thought that waiting to eat allergenic foods allowed the gut and immune systems to mature and would help prevent allergies.

Another rationale for waiting was based on the theory that exposure with the allergen was needed for the allergy to develop.

However, once parents started waiting, a few things happened:

- Rates of food allergy were expected to go down, but instead increased – peanut allergy rates increased by as much as three-fold.
- Studies then came out showing that delaying eating allergenic foods may actually increase the risk of food allergy, and children with eczema who were exposed to foods through the skin, rather than by eating them were more likely to become allergic.
- Rigorously designed studies (e.g. LEAP) as described in Q&A #2 have provided strong evidence that early introduction of peanut works.

Our understanding has changed and so has the guidance.

5 DO ANY CHILDREN NEED TO SEE AN ALLERGIST OR HAVE TESTING BEFORE THEY EAT HIGHLY ALLERGENIC FOODS?

In the recently released CPS practice point, there is no mention of a need for any infants to have allergy testing before an allergenic food is offered. In 2013, the CPS position statement discouraged screening due to the high risk of potentially confusing false positive results (i.e. results indicating allergy when there isn't one) and limited access to infant food challenges.

Importantly, infants at no or low risk of food allergy should be introduced to solids, including allergenic ones, at about 6 months at home. Therefore, in Canada we do not recommend screening high-risk infants unless there is strong hesitancy towards home introduction.

Here are the recommendations from other guidelines:

- In 2017, the NIAID (National Institute of Allergy and Infectious Diseases) released a document titled *Addendum Guidelines for the Prevention of Peanut Allergy in the United States* and described high-risk infants as babies with severe eczema, egg allergy or both. These guidelines recommended that allergy testing be strongly considered for peanut in this specific group of infants prior to eating peanut. Any child with a positive allergy test (skin test or blood test) to peanut would also require further evaluation prior to eating peanut.
- Similar guidelines addressing the prevention of peanut allergy from the Australasian Society of Clinical Immunology and Allergy (ASCI) and British Society of Allergy and Clinical Immunology (BSACI) provide arguments against screening due to potential false positive results, and specifically state that testing should not be performed where there is not rapid access to a service that can promptly undertake a supervised food challenge by a specialist to confirm whether or not the child is truly allergic.

6 IF MY BABY IS OLDER THAN THE RECOMMENDED AGE TO INTRODUCE ALLERGENS, WHAT SHOULD I DO?

Peanut can be introduced into their diet at any time, as long as it's in an age-appropriate way (to avoid a risk of choking). Other solids can also be introduced in an age-appropriate way. If you have concerns about introducing peanut, or other allergenic solids, into the diet of your baby, a discussion with a healthcare provider may be helpful.

HOW TO INTRODUCE ALLERGENIC FOODS

7 HOW SHOULD ALLERGENIC FOODS BE INTRODUCED TO HIGH-RISK INFANTS? ARE THERE PRECAUTIONS I SHOULD TAKE?

Introduce complementary foods to infants when they are developmentally ready. These foods should have a smooth consistency and be small enough so that the infant isn't at risk of choking. Allergenic foods can be introduced one at a time, to gauge reaction, although there is no data showing this is necessary and some practitioners suggest introducing mixtures of allergenic foods (e.g. mixed tree nut butter). It's also recommended that these foods are fed to an infant, rather than having the baby self-feed (baby-led weaning).

Offer allergenic foods for the first time at home, and not in another setting (e.g. daycare facility). It's advised that at least one adult be present to give their full attention to the infant and be available for 2 hours afterwards (and at a time the infant is usually awake) in case allergy symptoms develop. Families should not feel the need to go to their local emergency room parking lot to feed an allergenic food for the first time, as feeding this food in non-choking form for the first time in the vast majority of infants is safe and rarely causes a reaction.



Peanut – Take 2 teaspoons of smooth peanut butter and add 2-3 teaspoons of hot water; stir until dissolved and well blended. Allow to cool. This mixture can be offered alone or added to a tolerated infant food (e.g. cereal, pureed fruit). Another option is a peanut puff product (e.g. Bamba), which can be softened for younger infants.



Egg or other allergenic solids – Boil it, puree it, and mix it with a tolerated infant food. Both the egg white and egg yolk can be served.

Once the portion is prepared, offer the infant a small amount on the tip of a spoon. Wait 10 minutes. If no symptoms develop, continue to give the remainder of the allergen-containing food at the infant's usual pace of eating. If an infant appears to be tolerating an allergenic food, keep it in the diet a few times a week to maintain tolerance.

It is not recommended to place the food on the skin first, as the food may cause an irritant effect that could be misinterpreted as an allergic reaction. Skin contact with a food (e.g. applying a food to the skin first to see if there are any skin changes) is **not** a way to determine if it will be tolerated when it is eaten.

Keep in mind that the texture or size of any complementary food should be age-appropriate to prevent choking. Whole peanuts are a choking hazard and should not be offered to children less than 4 years of age.

If your baby seems to be tolerating an allergenic food, keep feeding it to them regularly to maintain tolerance.

It's very important to keep feeding the food regularly (i.e., 2-3 times/week) after you've introduced it, as not doing so may lead to the development of food allergy.

HOW TO INTRODUCE ALLERGENIC FOODS

8 HOW SHOULD FAMILIES WHO HAVE A PARENT WITH FOOD ALLERGY AND/OR ANOTHER SIBLING WITH FOOD ALLERGY INTRODUCE THE ALLERGENIC FOOD TO THE INFANT?

Proper hand washing with soap and warm water for all family members before and after eating will reduce the risk of spreading food within the home.

Many families are successful in offering allergenic foods safely in the home with careful cleaning of surfaces, having designated eating areas (highchairs, tables), and teaching household members not to share foods.

The parent without the food allergy can feed these foods to their baby when a sibling with allergy is not home. Other families, including those where a parent or sibling may have food allergy, choose to offer the allergenic food to their infants outside of the home once it is tolerated, such as at a relative's home that is regularly visited or in an outdoor setting such as a park.

9 WHAT IS THE RISK OF A SEVERE REACTION THE FIRST TIME AN INFANT EATS A FOOD?

The risk of a life-threatening reaction is extremely low. In the LEAP study, for example, about 2% of high-risk infants reacted the first time they ate peanut, and all had mild reactions limited to the skin.

A 2018 study from Chicago suggested that only 2% of infants experiencing anaphylactic reactions had truly severe symptoms. Taken together, this suggests that severe reactions in high-risk infants upon first exposure is less than 0.04% ("2% of 2%"). The risk of a mild reaction (such as hives) is possibly higher, but less studied. Hives around the mouth may be due to irritation from contact with the skin.

10 WHAT DO I DO IF THE BABY HAS A REACTION? WHAT DO I LOOK FOR?

Allergy symptoms usually develop within minutes of eating a food but can occur up to 2 hours after ingestion.

Allergy signs and symptoms can be mild such as a new rash or a few hives around the mouth.

More severe symptoms can include swelling of the lips, eyes, or face, vomiting, widespread hives on the body, breathing symptoms such as repetitive cough, wheeze, or any difficulty breathing, a change in skin color (pale, blue), or sudden tiredness/lethargy/seeming limp. There can also be behavioural changes such as irritability, inconsolable crying or clinging to a caregiver.

If there are any concerns for more severe allergy symptoms, seek immediate medical attention/call 911.

If the junior dose of an epinephrine auto-injector is on hand, it should be administered to an infant who is having an anaphylactic reaction.



ADDITIONAL QUESTIONS



11 I FOLLOWED THE PREVIOUS ADVICE TO AVOID ALLERGENIC FOODS IN MY BABY'S DIET AND HE BECAME ALLERGIC. DID I CAUSE HIS ALLERGY?

No, you did not cause your child's food allergy. Food allergy results from a combination of many factors, including genetic predisposition in addition to the timing of food introduction. Many parents have this same question. The field of medicine is constantly changing, particularly as new research emerges. The previous advice of allergen avoidance was thought to be the best approach to food allergy at that time, and there were no studies on primary prevention of food allergy when that advice was commonly given.

New research from randomized controlled trials (the highest quality of research design) as well as prospective cohort studies (following large groups of children over time) has demonstrated a clear benefit of early introduction of peanut and cooked egg, particularly among infants at high risk of developing food allergy. The field of allergy research continues to grow, and recommendations may change again in the future, the difference now is that recommendations are based on the best available evidence.

12 WHILE I WAS PREGNANT AND/OR BREASTFEEDING, I ATE ALLERGENIC FOODS. DID I CAUSE MY CHILD'S ALLERGY?

No, you did not cause your child's food allergy. Many mothers have this same question and some mothers experience guilt. Rest assured that there is nothing that you did, or didn't do, in pregnancy or while breastfeeding that caused your child's allergy. Women who are pregnant or breastfeeding are encouraged to consume a healthy and varied diet, including allergenic foods, if they enjoy them.

Current research does not support restricting a mother's diet in pregnancy or while breastfeeding in order to prevent food allergy in infants, nor does research support eating allergenic foods more than what the mother usually eats during pregnancy or breastfeeding to prevent food allergy.

13 MY CHILD ATE ALLERGENIC FOODS FROM EARLY INFANCY AND LATER DEVELOPED A FOOD ALLERGY. WHY?

Introducing allergenic foods early in life is key in the prevention of food allergy. Of equal importance is eating these foods often enough in order to maintain tolerance. Food allergy develops in one of two ways. The first is that tolerance to the food is absent from a very early age which results in food allergy being established early in life, such as in infancy. The second way food allergy develops is the loss of tolerance to a food over time, resulting in the development of food allergy at a later point in life.

There are many genetic and environmental factors that contribute towards an individual's tendency to develop food allergy, and therefore every person is unique. For infants and children who appear to tolerate allergenic foods, continued and regular ingestion (ideally several times a week but at least weekly, for example) is recommended.

BACKGROUND

These FAQs are based on the Canadian Paediatric Society's updated recommendations on the specific timing of early introduction of allergenic foods for high-risk infants.

These questions have been answered by Canadian pediatric allergists Dr. Elissa M. Abrams and Dr. Kyla Hildebrand.

If you have any questions, please speak with your physician.

This document has been medically reviewed by members of the Canadian Society of Allergy and Clinical Immunology (CSACI), including Food Allergy Canada's Healthcare Advisory Board members.

WHO WE ARE



Food Allergy Canada is a national non-profit charity and Canada's leading patient organization committed to educating, supporting, and advocating for the more than 2.6 million Canadians living with food allergy.

We focus on improving the daily quality of life of individuals and families by providing education and support needed to effectively navigate food allergy, building informed and supportive communities, and acting as the national voice on key advocacy issues.

Visit foodallergycanada.ca to learn more.



**Canadian Society of Allergy
and Clinical Immunology**

The CSACI is the premier Canadian organization for health professionals in the field of Allergy, Asthma, and Clinical Immunology.

The society provides leadership and expertise in this specialty. It also provides a place for members to interact, network, and learn from each other. The CSACI is a member society of the World Allergy Organization (WAO), as well as the Canadian Medical Association (CMA). It also works closely with patient information organizations to improve the lives of Canadians with allergic and immunologic disease. The CSACI's mission is to advance allergy, asthma, and immunology knowledge to optimize patient care across Canada.

Visit csaci.ca to learn more.

NEED MORE INFORMATION?

For additional support, contact Food Allergy Canada at info@foodallergycanada.ca or 1 866 785-5660.

Visit csaci.ca to find an allergist.

Watch Food Allergy Canada's two recorded webinars on the updated guidance on the early introduction of allergens (for parents and healthcare professionals).

View them at foodallergycanada.ca/webinars.