

## PedsCases Podcast Scripts

This is a text version of a podcast from PedsCases.com on “**Allergenic Solids amongst Infants at Risk – CPS Podcast.**” These podcasts are designed to give medical students an overview of key topics in pediatrics. The audio versions are accessible on iTunes or at [www.pedscases.com/podcasts](http://www.pedscases.com/podcasts).

### **Allergenic Food Introduction in Infants at Risk – CPS Podcast**

Developed by Dr. Nicole Arseneau, Dr. Elissa Abrams, and Dr. Edmond Chan for  
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#### **Introduction:**

Hello everyone, my name is Nicole Arseneau and I am a first year pediatrics resident from the Stollery Children’s Hospital and the University of Alberta. This podcast was made in conjunction with PedsCases and the Canadian Pediatrics Society. It was developed with Dr. Elissa Abrams, an Allergist and Immunologist at the University of Manitoba in Winnipeg, and Dr. Edmond Chan, a pediatric allergist at UBC/BC Children’s Hospital in Vancouver. For additional information and to view the complete CPS Practice Point, please visit [cps.ca](http://cps.ca). The script for this podcast can be viewed at [pedscases.com](http://pedscases.com).

This podcast will review the CPS Practice Point “Timing of introduction of allergenic solids for infants at high risk”. After listening, the learner will be able to:

1. Review the epidemiology of food allergy in the pediatric population
2. Identify infants at high risk of food allergy
3. Discuss the benefits of early introduction of allergenic foods into an infant’s diet
4. Give practical advice on how to give these foods to infants

#### **Let’s start with a case.**

You are working in a community clinic, seeing Flynn, a 4-month-old boy with his parents for a routine check up. At his last visit, he was diagnosed with mild eczema on his face and chest, and this has improved somewhat with a bathing routine and application of non-scented cream. His father has asthma. His parents tell you that he has been breastfeeding well, and they are pleased to see that he has been gaining weight appropriately. They are interested introducing solid foods soon, but are concerned about the possibility of a peanut allergy. They want to know if it is safe to give Flynn foods with peanuts in it. What do you tell them?

To answer this question, let’s take a step back and talk about **why food allergy is important** in today’s pediatric practice.

Food allergy is very common, and its prevalence is rising. It affects between 2 to 10% of the population, with a recent Canadian survey showing a self-reported prevalence of 7.5%. True IgE-mediated food allergy is life threatening. Children with food allergy have to be very careful about what and where they eat, and this can have a big impact of their quality of life. As such, preventing the development food allergy in children has become an important area of research.

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While any food can theoretically cause an allergic reaction, the most common allergens in children are cow's milk, egg, peanut, tree nuts, sesame, finned fish, shellfish, wheat and soy.

Going back to our case, **is Flynn at risk of developing a food allergy?**

The short answer is yes. It's important to note that any child may develop a food allergy, however there are some risk factors to be aware of. Keep in mind, there is currently no international consensus on the precise definition of these risk factors. For example, for peanut allergy specifically, a personal history of severe eczema and/or egg allergy were found to be the strongest risk factors in one proof of concept study. Yet, children with mild or moderate eczema may *also* be at increased risk of food allergy. The CPS Practice Point identifies children who have either a personal or first-degree family history of atopy as being high risk for developing a food allergy. Atopic conditions include atopic dermatitis (or eczema), allergic rhinitis, food allergy, and asthma. This broad definition aims to identify as many children as possible at elevated risk while recognizing that that some infants with certain conditions may be at even higher risk than others for food allergy. For example, a child with severe, diffuse eczema, a known egg allergy, and a parent with asthma may be at higher risk for peanut allergy than a child with no known eczema and a parent with allergic rhinitis, though both will be at higher risk than an infant with no personal or family history of atopy.

In our case, Flynn is considered to be at high risk of developing a food allergy as he has a personal history of atopy (in his case, eczema), and a family history of atopy (in that his father has asthma).

**Given this, what should we advise the parents to do about introducing foods?**

In short, they should get allergenic foods into his diet! Previous guidelines have recommended that parents delay the introduction of allergenic foods, but new evidence has turned these recommendations on their head. This notion has been widely accepted in popular culture, and it will take some effort to change this perception.

Evidence from randomized trials has increasingly supported the early introduction of allergenic foods between 4 and 6 months of age to prevent food allergy, specifically to peanut and egg, though there is observational data supporting early introduction of other common allergic foods such as wheat and cow's milk.

Now, when talking to parents about an intervention they may be hesitant about, such as giving peanuts to their son who they worry may develop a peanut allergy, it can be very useful to have evidence to back up your claims. So let's talk about some studies!

For peanut, the LEAP study (or Learning Early About Peanut) in the UK has had the biggest impact. This study took 640 high risk infants (with either severe eczema, egg allergy, or both) and randomized them into an early peanut introduction between 4 and 11 months group, or a delayed peanut introduction at 5 years group with further stratification based on skin-prick testing. With early introduction, the relative risk of developing a peanut allergy was reduced by about 80%.

For egg, studies have shown a difference in outcomes depending on whether cooked or raw egg is used. The PETIT study from Japan showed that introducing heated egg powder (equivalent to cooked egg) at 6 months of age in at risk infants greatly reduced egg allergy compared to infants who avoided egg until 12 months of age in a group of 121 infants. A similar study, the Solids Timing for Allergy Research (or STAR) study of 820 at risk infants showed a trend toward lower allergy rates in those introduced to egg powder (equivalent to raw egg) at 4-6 months of age compared towards those introduced after 10 months of age when tested at a year, but this study also showed a higher rate of allergic reactions to the egg powder in the early introduction group. Therefore, the evidence shows that introducing cooked egg early is more beneficial and less risky than introducing raw egg.

So the evidence is pretty good about introducing peanuts and cooked eggs early, and there are more studies to come about other allergenic foods. But what about specific timing? Does it matter?

Most of the studies that have been done have used between 4 and 6 months as the benchmark for “early” introduction, and the CPS newly recommends using “around 6 months but not before 4 months”, while continuing to breastfeed. One study, the Enquiring About Tolerance (or EAT) study looked at introduction at 3 months vs. 6 months for six allergenic foods and found no difference in intention to treat analysis, but a decrease in allergy to egg and peanut with a 3 month introduction of these foods in a per protocol analysis. The problem is, there was a big issue with adherence in this study, with less than 45% of participants adhering to early introduction in the 3 month group for all six included allergenic foods. So, introduction of solids earlier than 4 months is not recommended.

Phew, that was a lot of technical information! Basically, introducing allergenic solids into an infant’s diet around 6 months of age but not before 4 months of age is likely to reduce the development of a food allergy in that infant.

You’ve talked to Flynn’s parents about this and they’re on board with early introduction, but they have an important question: **How can we get our baby to eat peanuts?**

The texture and size of the allergenic food introduced should be complementary to the child’s developmental level, which means that young infants should not be given food that they can choke on. For peanuts, parents can mix smooth peanut butter into other tolerated foods, like breast milk, formula, or purees. In an older child, peanut butter on a spoon, on toast, or as a peanut puff products may be given. Similarly other allergenic foods can be mixed into existing tolerated food to encourage the child to consume it. It’s also important to remember that breastfeeding should be protected, promoted and supported throughout the solid food introduction phase for its developmental and immunological benefits.

Foods should be introduced one at time to see if there’s any allergic reaction, but there doesn’t need to be a delay between new foods. A true allergic reaction should appear within 1-2 hours (but usually within minutes) of consuming the new food.

Once the infant is tolerating a food, it is very important for parents to keep it in the diet regularly, at least a few times a week, to maintain tolerance. Children are at increased risk of developing food allergy if the food in question is introduced and then removed from the diet.

Finally, it's always important to talk about what to do if the infant develops a reaction to a food. If any adverse reaction is observed, parents should be advised to talk with their primary care provider about next steps.

This brings us to the end of this PedCases podcast on the CPS Practice Point "Timing of introduction of allergenic solids for infants at high risk". Let's review what we've learned:

1. The prevalence of food allergy in children is high, and has been increasing over time.
2. Infants with a personal or family history of atopy are at higher risk of developing food allergy than those without.
3. Early introduction of allergenic solids around 6 months but not before 4 months of age in a developmentally-appropriate format may prevent food allergies in high risk infants.
4. Allergenic foods should be kept in the diet a few times a week to maintain tolerance to them.

Thank you for listening! Please tune in to more podcasts on [PedsCases.com](http://PedsCases.com)!