

# Pediatric Allergies Q&A



## FACULTY

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## Q: Do probiotics reduce allergy?

**A:** There have been a number of studies that suggest they do. The problems are the timing of their use and the probiotic formulation. There have not been any studies that directly address allergy prevention through the use of interventions during in-utero existence and lactation. But there is clear evidence that is evolving to suggest probiotics may have a significant role in this regard.

## Q: Could donor breast milk be used to decrease allergy risk?

**A:** First, breastfeeding is best. Certainly we could use donor breast milk, but there are no data I know of showing that using donated breast milk—if you cannot breastfeed—has that effect or would be as effective as using hydrolyzed formula to decrease allergy risk.

## Q: What is the optimum time for introducing dairy products, including cheese and yogurts?

**A:** Nutrition experts say, “Do not introduce whole cow’s milk until age 1,” but that has nothing to do with allergy. It has more to do with low iron intake and higher renal solute load. There is no reason why you cannot introduce cow’s milk products like yogurt and cheese before age 1 year when the child is developmentally ready to do so.

The progression to adding highly allergenic foods needs to be logical. The first complementary foods should not be highly allergenic foods. Infants should consume more typical weaning foods like rice cereal or pureed fruits or vegetables first to make sure they are developmentally ready to wean. Infants 4 to 6 months old will not tolerate eating straight peanut butter, but peanut butter could be mixed with a cereal or pureed food. Whole peanuts and tree nuts should not be given to infants because of the risk of choking. Fish and shellfish, unless pureed, would not likely be tolerated until infants are consuming meats.

There is no reason to delay highly allergenic foods until 2 to 3 years of age, as we were recommending 15 years ago, but the infant needs to be developmentally ready to eat certain staged foods before you introduce them.

## Q: Could you clarify about using extensively hydrolyzed formulas and partially hydrolyzed formulas to prevent allergy?

**A:** The GINI (German Infant Nutrition Intervention) study was a government-funded study for which data up to 10 years have been published to date. The formulas used in the study for partially hydrolyzed whey (pHF-W) and extensively hydrolyzed casein (eHF-C) are similar to Good Start Gentle and Nutramigen, respectively, but the formulas used in the study were those available in Europe at the time. We do not have similar data

for other hydrolyzed formulas, because formulas used in the GINI study are not identical to ones currently available. Data from the GINI study and other earlier studies support the recommendation that if an infant cannot be exclusively breastfed for the first 4 to 6 months, then use of a pHF-W or eHF-C may reduce the risk of developing atopic dermatitis. Again, hydrolyzed formulas currently available are not identical to ones previously studied, but still may provide the allergy risk reduction described, if infants cannot exclusively breastfeed for 4 to 6 months.

**Q: If you have a 2-month-old baby who comes to your office who has been exclusively breastfed and has significant atopic dermatitis, would you consider advising that mother to stop nursing? How would you approach the subsequent feedings of that child?**

**A:** The first step would not be to have the mother stop breastfeeding. If that mom is really anxious to find out which particular food in her diet may be contributing to atopic dermatitis, the question is, "How is testing going to help?" When you send your patients to your allergy consultant, it is critical to appreciate that negative skin tests done properly have a high negative predictive value. Positive tests may be falsely positive half the time.

If a PCP orders food-specific, allergen-specific immunoglobulin E (IgE) tests, often a food allergen profile that is a combination of multiple foods is ordered as well. In a patient with significant atopic dermatitis, many of the blood tests may come back positive due to elevated total IgE levels in such patients. The chance of a 4 month old being truly allergic to everything in that profile is not likely, even if they have severe atopic dermatitis, because there is a short list of foods that cause the majority of IgE-mediated food allergy in children that could contribute to clinically meaningful eczema in a child. Allergists can help interpret the blood tests, perform skin tests selected based on the clinical history, and then decide if food challenges are warranted. Food challenges are the most definitive way to determine if a food allergy exists or not, but should only be done by professionals experienced in performing them.

If the patient tests positive or has a high likelihood of having an allergy to milk, egg, or some other foods, the general recommendations are not to have the mother stop breastfeeding, unless removing many foods would jeopardize the mother's and/or infant's nutrition to the point where starting a formula would be warranted to complete the infant's diet to maintain growth and development. However, it is recommended to eliminate from the mother's diet those foods to which the child is allergic. Working with a nutritionist is very important, because if major allergens like dairy are removed from the diet, you need to make sure the mother is eating other things to make up for the nutritional deficiencies that could result from removing many foods.

**Q: Why is C-section delivery more allergenic than vaginal delivery?**

**A:** The increased risk of food allergy in patients born by C-section demonstrates how the hygiene hypothesis may play a role in the development of food allergy. By vaginal delivery, a child is exposed to healthy and potentially protective bacteria. If a child does not go through the birth canal, it is not exposed to these bacteria, which may result in the child's increased risk of food allergy.

**Q: Is goat's milk a good cow's milk substitute in infants?**

**A:** Goat's milk has high cross-reactivity (similar proteins) with cow's milk in about 90% of patients, so it is essentially like giving cow's milk. For patients who are cow's-milk allergic, you cannot give them goat's milk, or 9 out of 10 of them may react. Horse milk has about 10% cross-reactivity, but this type of milk is not recommended either for a cow's-milk-allergic patient.

Also, using goat's milk could result in folic acid deficiency, so if a patient is on a goat's milk diet, you need to supplement with folic acid.

**Q: Is there research ongoing about reducing shellfish allergy?**

**A:** Shellfish allergy has not been studied as much in children compared to milk, egg, and peanut allergies. There is one study showing that if fish is introduced into an infant's diet earlier than 9 months of age, it reduces the risk of eczema. Given what we are learning with early introduction of milk, egg, and peanut, there are no current data to support delaying the introduction of other major food allergens, such as fish and shellfish.

**Q: Are rice milk and almond milk useful in patients with cow's milk allergy?**

**A:** Rice milk, coconut milk, and almond milk may be safe substitutes for patients allergic to cow's milk, as long as they are not allergic to these foods. These substitutes, while usually containing sufficient amounts of calcium and vitamin D, do not have as much protein as cow's milk or soy milk, which have 7 to 8 grams of protein per serving, compared to about 1 gram per serving in these alternative milks.

Working with a nutritionist experienced in food allergy can ensure that the patient is getting enough protein, fat, and other nutrients to replace foods that have to be removed.

**Q: Is there a potential role for introducing gluten at 4 to 6 months of age to reduce the likelihood of celiac disease?**

**A:** Celiac disease is not IgE-mediated. We now know that there are genetic markers for celiac disease, so we are able to identify individuals by genetic risk. It is intriguing with celiac disease that people are exposed to wheat proteins and glutes at varying times through their life, but they may not manifest clinical celiac disease during childhood at all. In fact, probably 70% of people with celiac disease had minimal to no symptoms as a child. To my knowledge, no study has been done in the United States to introduce small doses of wheat early in a child that has a positive family history of celiac disease, because of the risk of causing very early and very dramatic celiac disease.

The studies need to be done, but doing a randomized controlled trial in the United States is not as easy as doing the studies that are going on in Europe and Australia, which is where most of these randomized controlled trials with food introductions are happening. But while those studies may be helpful in those populations, they may not have the same effects in the United States.

**Q: Does dry roasting peanuts make them more allergenic?**

**A:** When you dry roast peanuts, it reportedly makes them more allergenic. In China, they tend to eat boiled peanuts, which may be less allergenic, but the prevalence of peanut allergy in China is likely due to a number of factors other than just eating boiled peanuts versus dry-roasted peanuts. A similar multifactorial process is likely involved with the increased prevalence of peanut allergy in the United States and other countries.