



Indiana Allergy and Asthma

Pooja Oza Patel, MD

Board Certified in Allergy and Immunology

9012 Connecticut Street, Merrillville, IN 46410 | Phone (219) 769 - 6177 | contact@IndianaAllergy.com

Food Protein-Induced Enterocolitis Syndrome (FPIES)

What is Food Protein-Induced Enterocolitis Syndrome (FPIES)?

Food Protein-Induced Enterocolitis Syndrome (FPIES) is a delayed immune reaction in the gastrointestinal system usually diagnosed in infants and young children.

During an FPIES episode, the child will have repetitive, profuse vomiting, and/or diarrhea that typically occurs 1-3 hours after a trigger food is eaten. The diarrhea and vomiting can be so severe that the child experiences dehydration and shock. During and after these vomiting and/or diarrhea episodes, the child may appear pale, ashen, limp, tired appearing, or sleepy. Both liquid and solid foods may trigger FPIES reaction.

How is FPIES diagnosed?

FPIES is diagnosed by an experienced provider who reviews the patient's medical history and determines if the patient meets the criteria for FPIES. Unlike other types of food allergy, there is no skin test or blood test available to help diagnose FPIES.

Which foods are most likely to trigger FPIES?

The most common triggers of FPIES are listed below:

- Milk
- Soy
- Grains (wheat, barley, rice, corn, oat)
- Poultry (chicken and turkey)
- Some beans (green peas, lentils)
- Others: sweet potato, squash, banana

When are children most often diagnosed with FPIES?

FPIES to cow's milk or soy is often diagnosed in early infancy, usually within days to weeks after formula is introduced. It is uncommon in infants who are fed only with breast milk until formula or other foods are started. Milk is the most common form of "liquid" FPIES worldwide.

Children with solid food FPIES are often diagnosed later, between the ages of 4-12 months, when these foods are first introduced. Rice is the most common solid food FPIES trigger in the US.

How is FPIES managed?

FPIES reactions are treated by prompt intravenous (IV) hydration, and possibly with anti-nausea medications. FPIES reactions are not like anaphylaxis and do not generally respond to epinephrine.

The best way to prevent FPIES from recurring is to completely avoid the foods that trigger FPIES in the child. The length of this avoidance depends on the triggering food. Your provider will discuss when your child may be ready to re-try the food in an in-office setting under medical supervision. This is called “an oral food challenge”. It may be recommend you avoid potentially cross-reactive high risk foods.

As there is a lack of awareness regarding FPIES, patients and their families may be provided with a letter explaining FPIES to an emergency room physician or other emergency provider.

Can FPIES be cured?

Many children outgrow FPIES by age 3-4. An oral food challenge is necessary to determine if your child is tolerant to their trigger food. These are only done in a medically supervised setting, not at home.

What is an oral food challenge?

An oral food challenge (OFC) for FPIES is a procedure completed by a trained nurse and supervised by a doctor in a medically supervised setting. The child is given three equal doses of the suspected food over the period of an hour. The child is then monitored for several hours after the last dose for any reactions. The nurse and doctor are available at all times to treat any reaction that may occur. Most reactions can be managed in the office. However, if the reaction is severe, the child may be taken to the Emergency Room via ambulance for further observation and treatment. We will discuss the plan for your child when the challenge is scheduled, and again on the day of the procedure. In some cases, your doctor may arrange for an oral food challenge to be done in the hospital.

What can I feed my child?

Up to 40% of infants with cow’s milk FPIES may also develop soy FPIES, therefore soy milk is generally not recommended as a replacement without first performing an in-office oral challenge. Children with solid food FPIES have a risk of developing other solid food FPIES and this is most commonly seen among rice and other grains. If your child has FPIES, it may be recommended to introduce fruits and vegetables prior to the introduction of grains. The following lists some possible foods to start in your child’s diet; however your allergist and dietitian can help you decide what foods to introduce first.

Fruits:

- Apple
- Apricot
- Avocado

- Banana
- Blueberry
- Melon
- Cherry
- Grape
- Orange
- Peach
- Pear
- Pineapple

Vegetables:

- Carrot
- Cucumber
- Cauliflower
- Broccoli
- Lettuce (including spinach)

Meats:

- Lamb
- Pork
- Beef

Can I continue to breastfeed?

For infants with FPIES, breastfeeding can usually continue without concern. . Rarely, a mother may be asked to remove some foods from her diet, and our center tries to avoid recommending this if at all possible. If this is the case, the food allergy dietitian will work with you to ensure your diet is well balanced for your health and the health of your baby. You may require supplementation for some nutrients.

Infants who are fed only with breast milk will require iron supplementation after 4 months of age per established guidelines by the American Academy of Pediatrics. They may also require calcium and vitamin D supplementation.

What are the formula choices for infants with FPIES?

If breastfeeding is not an option for your child, they will need to be fed with a specialized formula until a soy or milk challenge can be done. Two classes of alternative formulas are typically used.

The first class includes extensively hydrolyzed milk (casein) formulas such as Similac Alimentum® or Enfamil Nutramigen®, which contain milk proteins that have been 95% broken down. These are generally considered safe. However there are children who develop FPIES to even just 5% intact casein (milk) protein.

The safest, most conservative choice are elemental (amino acid) based formulas such as Elecare® or Neocate®, which contain no milk or soy proteins. Your doctor will discuss the most appropriate formula source with you.

The following table has general recommendations for types of safe formula choices:

FPIES Type	Milk formula	Soy Formula	Hydrolysate	Elemental
Milk	Not safe	Possibly safe	Safe*	Safe
Soy	Possibly safe	Not safe	Safe*	Safe
Solid food	Most likely safe	Most likely safe	Safe*	Safe

*There are a few case reports of children with milk FPIES reacting to hydrolysate formula but the majority tolerate this option

How can I support my child’s developmental and nutritional needs?

Although FPIES can make feeding your baby more challenging, providing safe and appropriate food textures will help meet your baby’s nutritional and developmental needs. Creativity with safe foods to provide necessary textures to your child for development is possible even on the most limited diets. Your allergist and dietitian will help guide you in this area.

Feeding Texture Ideas:

- Thin puree
- Thick puree
- Mashed with lumps and bumps
- Soft cooked for finger foods
- Fried to crispy texture

What resources are available for FPIES patients and families ?

- If your child is having recurrent symptoms to multiple foods, it is reasonable to be evaluated by a Gastroenterology specialist
- Consider seeing a Dietitian for advice regarding diet, nutrition, and introducing new foods and textures.
- Increased stress and anxiety are often side effects of an FPIES diagnosis. If you are finding that you, your family, or your child are struggling fear, stress, depression, or anxiety related to FPIES please call our office
- International Association of Food Protein Enterocolitis Website: <https://www.fpies.org/>
- The FPIES Foundation : <https://fpiesfoundation.org/>