

## Food Protein-Induced Enterocolitis Syndrome (FPIES)

Food protein-induced enterocolitis syndrome (FPIES), is an adverse food reaction involving the immune system, that mainly affects infants and young children. It is caused by an allergic reaction to one or more ingested foods, which results in inflammation of the small and large intestine.

Symptoms of profuse vomiting (and sometimes diarrhoea), most commonly occur two to four hours after eating a food that has been recently introduced into the diet. Some children may become pale, floppy, have reduced body temperature, and/or blood pressure during a reaction.

Avoidance of the trigger food protein/s is currently the only effective treatment option. However, most children will outgrow their FPIES in the preschool years.

### How is FPIES different to many common food allergies?

It is possible for a child with FPIES to also have Immunoglobulin E (IgE) mediated allergies to other foods and to have other allergic diseases such as eczema and asthma. However, FPIES is **not** caused by IgE, and:

- Is usually a delayed reaction.
- Reactions only involve the gastrointestinal system.
- No hives, welts or swellings are seen on the face or body.
- Is not associated with anaphylaxis.
- Adrenaline (epinephrine) autoinjectors are **NOT** used to treat the reaction.

### Which foods can trigger FPIES?

The most common FPIES triggers are rice, cow's milk (dairy), and soy. However, almost any food can cause an FPIES reaction, including cereals such as rice, oats, eggs, legumes, and meats such as chicken and seafood. FPIES rarely occurs in exclusively breastfed infants.

### Is it possible to have FPIES to more than one food?

Some children have FPIES to more than one food protein. For example, some children with FPIES to cow's milk have been noted to react to soy, and some with FPIES to rice have also reacted to oats. Children with FPIES to chicken may react to other poultry such as turkey.

### Symptoms of FPIES

A typical FPIES reaction begins with profuse vomiting around two to four hours after ingesting the trigger food/s, often followed by diarrhoea which can last for several days. Occasionally a shorter time frame may be seen.

In the most severe FPIES reactions, vomiting and diarrhoea can cause serious dehydration. Children with FPIES can have poor growth if they continue to ingest trigger food/s.

### How is FPIES diagnosed?

There are no laboratory or skin tests which can confirm a diagnosis of FPIES. This makes diagnosis difficult.

- During an FPIES reaction some children may have an elevated white cell and platelet count, and may be mistaken for having an infection.
- Skin tests or blood tests for allergen specific IgE to the food protein/s are not helpful.
- Medically supervised oral food challenges can be useful when the history is not clear, or when other foods from similar food groups are being introduced into the diet for the first time.
- Medically supervised oral food challenges can be useful to establish when a child has outgrown FPIES.

### How is FPIES treated?

Currently the only specific management option for FPIES is avoidance of the trigger food/s.

Infants who have reacted to cow's milk and soy formulas will usually be trialed on extensively hydrolysed formula (eHF), or amino acid based formula (AAF), if eHF is not tolerated.

Most families of children with FPIES will be given a letter to present to emergency departments explaining their child's condition and the appropriate treatment. Treatment during an FPIES reaction may include:

- Intravenous (IV) fluids, because of the risk of dehydration.
- Corticosteroids and in-hospital monitoring, for more severe symptoms

There is no role for the use of adrenaline (epinephrine) autoinjectors in the management of FPIES.

### Does FPIES resolve?

Most children outgrow FPIES by about three to four years of age. However, this varies between individuals and foods. Only 40-80% of children with FPIES to rice, and 60% to dairy, tolerated these foods by the ages of three to four. The best way to determine whether a child has outgrown their FPIES is by a medically supervised food challenge.

For patient support organisations go to [www.allergy.org.au/patients/patient-support-organisations](http://www.allergy.org.au/patients/patient-support-organisations)

### © ASCIA 2019

ASCIA is the peak professional body of clinical immunology/allergy specialists in Australia and New Zealand.

ASCIA resources are based on published literature and expert review, however, they are not intended to replace medical advice. The content of ASCIA resources is not influenced by any commercial organisations.

For more information go to [www.allergy.org.au](http://www.allergy.org.au)

To donate to allergy and immunology research go to [www.allergyimmunology.org.au](http://www.allergyimmunology.org.au)