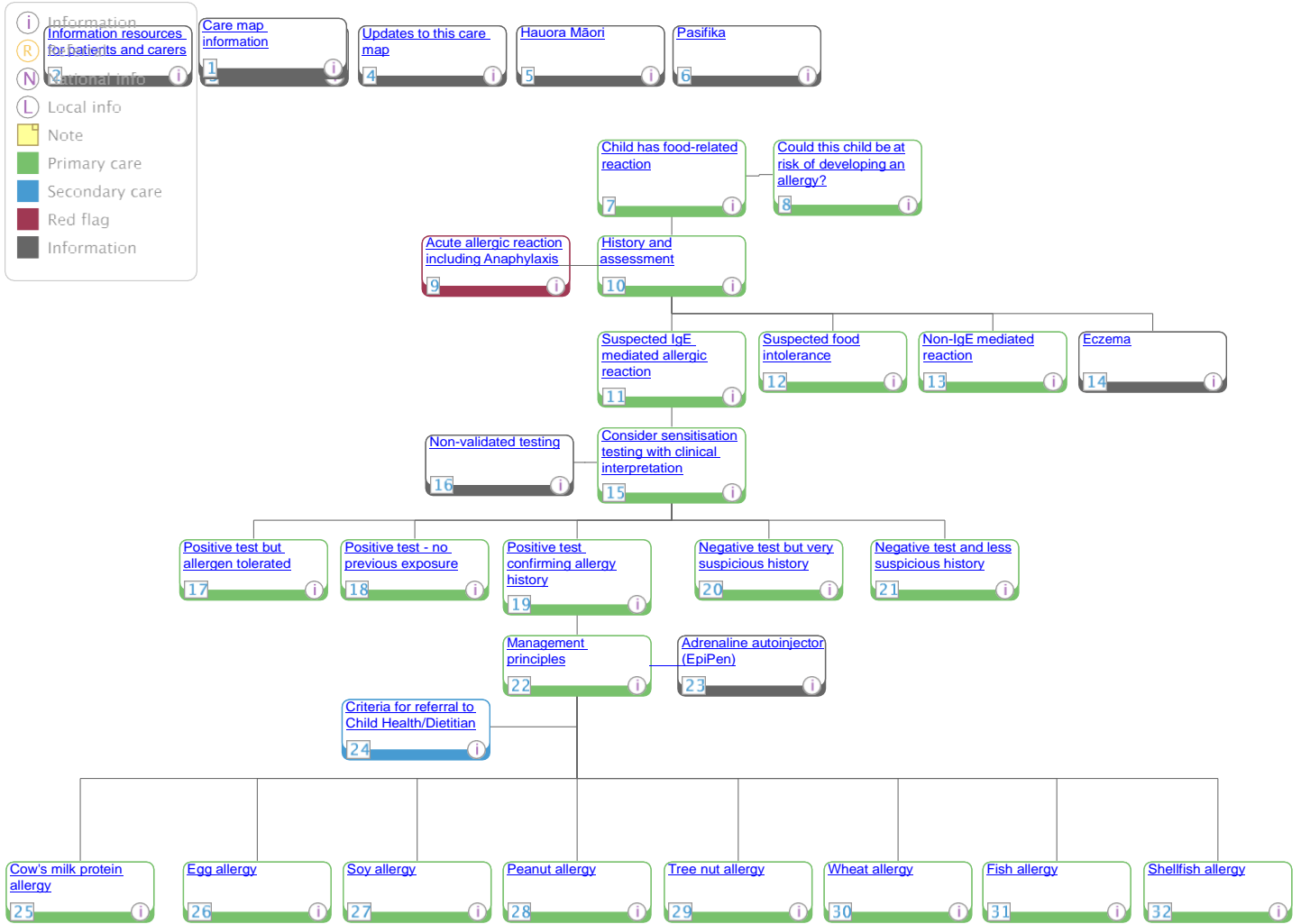


# Food Allergies in Children

Paediatrics > More topics > Food Allergies in Children



## 1. Care map information

This pathway addresses children (0-15 years) who present with an allergic reaction (to a known or unknown allergen).

### In scope:

- diagnosis and management in primary care including referral to secondary care services

### Out of scope:

- food intolerance and non-IgE mediated food allergies

### Definition:

A food allergy is defined as an adverse immunological reaction to a food protein. Many food allergies are IgE-mediated, immediate hypersensitivity reactions, while immunological mechanisms other than IgE also occur. Food intolerance does not have an immunological mechanism.

### References:

See Provenance Certificate for full list of references

## 2. Information resources for patients and carers

### Resources:

- [Infant feeding and allergy prevention](#) (ASCIA)
- [FAQ How to introduce solid foods for allergy prevention](#) (ASCIA) - advice is relevant for all babies, particularly those with severe eczema, or existing food allergy or a family member (parent or sibling) with allergies
- [Event record for allergic reactions](#) (ASCIA)
- [Australian Society of Clinical Immunology and Allergy \(ASCIA\)](#) - allergy.org.au
- [Patient information](#) (ASCIA)
- [Allergic reactions action plan](#) (ASCIA)
- [Allergies \(Ministry of Health\)](#)
- [Going to school with food allergies](#) (Starship Child Health / Auckland DHB)
- ASCIA [travel plan](#) and [checklist](#) - to assist passengers at risk of anaphylaxis, who need to carry adrenaline (epinephrine) autoinjectors on flights
- video link [EpiPen How to Use for Patient](#) (ASCIA) (3.39m duration)
- [Adrenaline autoinjectors FAQs](#)

### Patient support organisations:

- [Allergy NZ](#) offers reliable information, education and support
- [MedicAlert Foundation](#)

### Te Ara Whānau Ora Brochure:

- [Te Ara Whānau Ora Brochure](#)

## 3. Information resources for clinicians

### Resources:

- [Acute management of anaphylaxis](#) (ASCIA Guidelines)
- [Paediatric Anaphylaxis](#) (NZRC Guidelines)

- [Anaphylaxis checklist for General Practice](#)
- [Food Allergy Clinical Update](#) (ASCIA)
- [Allergy myths](#) (Starship Child Health)
- [Food Allergy](#) (Starship Child Health)
- [IgE-mediated food allergy - diagnosis and management in NZ children](#) (NZMA)
- [Appropriate use of allergy testing in primary care](#) (bpac NZ)

#### Action plans:

- [Anaphylaxis Action Plan](#) (ASCIA)
- [Allergic reactions action plans](#) (ASCIA)

#### Training:

- [Health professionals e-training](#) (ASCIA)

#### Referral forms:

- [Public Health Nursing referral form](#)

## 4. Updates to this care map

Date of first publication: June 2018.

For further information on contributors and references please see the care map's Provenance Certificate.

## 5. Hauora Māori

Māori are a diverse people and whilst there is no single Māori identity, it is vital practitioners offer culturally appropriate care when working with Māori Whānau. It is important for practitioners to have a baseline understanding of the issues surrounding Māori health.

This knowledge can be actualised by (not in any order of priority):

- acknowledging [Te Whare Tapa Whā \(Māori model of health\)](#) when working with Māori Whānau
- asking Māori clients if they would like their Whānau or significant others to be involved in assessment and treatment
- asking Māori clients about any particular cultural beliefs they or their Whānau have that might impact on assessment and treatment of the particular health issue ([Cultural issues](#))
- consider the importance of [Whānaungatanga \(making meaningful connections\)](#) with their Māori client / Whānau
- knowledge of [Whānau Ora, Te Ara Whānau Ora and referring to Whānau Ora Navigators](#) where appropriate
- having a historical overview of legislation that has impacted on Māori well-being

#### For further information:

- [Hauora Māori](#)
- [Central PHO Māori Health website](#)

## 6. Pasifika

[Pacific Cultural Guidelines \(Central PHO\) 6MB file](#)

#### Our Pasifika community:

- is a diverse and dynamic population:
  - more than 22 nations represented in New Zealand

- each with their own unique culture, language, history, and health status
- share many similarities which we have shared with you here in order to help you work with Pasifika patients more effectively

The main Pacific nations in New Zealand are:

- Samoa, Cook Islands, Fiji, Tonga, Niue, Tokelau and Tuvalu

Acknowledging *The FonoFale Model (pasifika model of health)* when working with Pasifika peoples and families.

Acknowledging general pacific guidelines when working with Pasifika peoples and families:

- [Cultural protocols and greetings](#)
- [Building relationships with your pasifika patients](#)
- [Involving family support, involving religion, during assessments and in the hospital](#)
- [Home visits](#)
- [Contact information](#)

### **Pasifika Health Service**

The Pasifika Health Service is a service provided free of charge for:

- all Pasifika people living in Manawatu, Horowhenua, Taranaki and Otaki who have long term conditions
- all Pasifika mothers and children aged 0-5 years
- an appointment can be made by the patient, doctor or nurse
- the Pasifika Health Service contact details are:
  - Palmerston North Office - 06 354 9107
  - Horowhenua Office - 06 367 6433
- the [Pasifika Health Service brochure](#)

### **Additional resources:**

- Ala Mo'ui - [Pathways to Pacific Health and Wellbeing 2014-2018](#)
- Primary care for pacific people: [a pacific health systems approach](#)

## **7. Child has food-related reaction**

**This pathway addresses children who present with an allergic reaction (to a known or unknown allergen).**

A food allergy is defined as an adverse immunological reaction to a food protein. Many food allergies are IgE-mediated, immediate hypersensitivity reactions, while immunological mechanisms other than IgE also occur. Food intolerance does not have an immunological mechanism.

Eight food allergens are responsible for up to 90% of allergic reactions to food i.e. cow's milk protein, eggs, peanuts, tree nuts, fish, shellfish, wheat, and soy.

When a child presents with a concern that they've had a food allergic reaction, try to determine if the child has a food allergy (immune mediated) or food intolerance (non- immune food hypersensitivity). Typical IgE-mediated food allergy presents with symptoms within minutes of ingestion see [TABLE 1](#)[1].

Food intolerance typically presents with one or more of:

- diarrhoea with or without mucus and blood
- nausea
- flatulence
- abdominal pain

- malabsorption
- faltering growth
- gastro-oesophageal reflux not responding to full treatment

## 8. Could this child be at risk of developing an allergy?

Concern about potential allergy:

- patient information:
  - [Infant feeding and allergy prevention](#) (ASCIA Guidelines)
  - [FAQ How to introduce solid foods for allergy prevention](#) (ASCIA) - advice is relevant for all infants, particularly those with severe eczema, or existing food allergy or a family member (parent or sibling) with allergies

## 9. Acute allergic reaction including Anaphylaxis

Definition of [anaphylaxis](#) (ASCIA):

- any acute onset illness with typical skin features (urticarial rash or erythema/flushing, and/or angioedema), **PLUS** involvement of respiratory and/or cardiovascular and/or persistent severe gastrointestinal symptoms; or
- any acute onset of hypotension or bronchospasm or upper airway obstruction where anaphylaxis is considered possible, even if typical skin features are not present.

Refer to [Paediatric Anaphylaxis Algorithm \(NZRC Guidelines\)](#)

Non-acute management of anaphylaxis is covered in the other parts of the pathway.

EpiPen prescription must be considered - see 'Adrenaline autoinjector (EpiPen) box'.

[Action Plan for Anaphylaxis](#) (ASCIA) must be given to child/family.

## 10. History and assessment

**Do not offer "allergy" (sensitisation) tests without first taking an allergy-focused clinical history, "the cornerstone of diagnosis".**

- **history of the reaction:**
  - food ingested: type, amount, form (cooked or raw), time to reaction and time to recovery
  - has the food been eaten in past without reaction? Has it been eaten since?
  - specific details of nature of reaction(s): where, when, medical intervention
- **symptoms - differentiate between IgE and non-IgE mediated presentations:**
  - signs and symptoms of IgE-mediated allergic reaction (see [Table 1 - Signs and symptoms of an IgE-mediated allergic reaction](#)) [1]
  - **IgE: SYMPTOMS WITHIN TWO HOURS OF INGESTION:**
    - angioedema, tongue swelling, hoarseness, cough, wheeze, stridor, sneezing, pallor, dizziness, collapse, urticaria, erythema, itch, vomiting, diarrhoea, colicky abdominal pain or cramps
  - **non-IgE Symptoms: SYMPTOMS TWO HOURS OR LATER AFTER INGESTION:**
    - eczema, pruritis, growth faltering, gastroesophageal reflux, diarrhoea, constipation, blood in stools, dysphagia, colicky, abdominal discomfort
- **history of atopic disease:**
  - asthma, eczema, hayfever, known medication or contact allergies
- **family history of atopic disease**
- **medications**

## 11. Suspected IgE mediated allergic reaction

### Clinical features of IgE-mediated allergy

The history of an allergic reaction is important in assessing possible food allergy. Factors to consider include:

- signs and symptoms of IgE-mediated allergic reactions are varied with no single feature always present (see [Table 1 - Signs and symptoms of an IgE-mediated allergic reaction](#)) [1]
- onset of symptoms in IgE-mediated food allergy is often within minutes of exposure to an allergen - delay of symptom onset more than two hours after ingestion is uncommon
- most allergic reactions occur after ingestion of an allergen, with patients having different thresholds to trigger reaction. Skin contact with an allergen may result in local reactions but seldom causes severe reactions. Inhalation in the vicinity of peanut butter is unlikely to cause a reaction. Reactions following inhalation in other situations (e.g. cooking fish) can occur
- most IgE-mediated reactions resolve quickly. Anaphylaxis can be biphasic, with recurrence of symptoms after initial apparent resolution. Persistence of urticaria beyond 6-8 hours makes food allergy a less likely cause unless there is ongoing allergen exposure
- many reactions occur with the first known ingestion of an allergen. If a food allergen is regularly consumed and tolerated then development of allergy to that food is uncommon

### Associated with IgE mediated allergy: Oral Allergy Syndrome (OAS) - Pollen Food Syndrome

Pollen Food Syndrome or OAS, occurs mainly in adolescents and adults with allergic rhinitis (hay fever) who are sensitised to particular inhalant allergens such as pollen, particularly birch pollen;

- affects 10% of those with allergic rhinitis (significant regional variation)
- mediated by cross-reactive IgE responses to allergens present in pollen and other plants
- presents with itchy mouth/throat with eating uncooked fresh fruits, vegetables, spices, sometimes nuts, latex. Most patients will tolerate the food if well cooked. Implicated nuts usually cause symptoms regardless of cooking and therefore should be avoided
- progression to anaphylaxis is rare

## 12. Suspected food intolerance

Food intolerance typically present with one or more of the following:

- diarrhoea with or without mucous and blood
- nausea
- flatulence
- abdominal pain
- malabsorption
- faltering growth
- gastro-oesophageal reflux not responding to full treatment

**Sensitisation testing is not appropriate for these conditions.** Manage these conditions as appropriate.

## 13. Non-IgE mediated reaction

These reactions are generally delayed several hours to days after the food is ingested. Symptoms are predominantly gastrointestinal and must occur reproducibly on exposure.

Clinical presentations:

- coeliac disease
- food protein induced proctocolitis
- eosinophilic oesophagitis

- infantile colic (some cases)
- cow's milk protein induced gastro-oesophageal reflux disease
- food protein induced enterocolitis syndrome (FPIES)

**Sensitisation testing is not appropriate for these conditions.** Manage and refer as appropriate.

## 14. Eczema

A flare of eczema is a separate entity to food allergic reaction. Refer to [Eczema in Children](#) pathway.

Most young children with food allergy have a history of eczema. Young infants with severe eczema have an increased likelihood of also having food allergy. In breast fed infants, transfer of food allergens via breast milk may contribute to eczema.

Most children with eczema are atopic and are thus often sensitised to multiple foods on testing, but in the absence of a suspicious history this may not translate into specific foods being triggers for eczema flares. Screening with large panels of allergens is not recommended in eczema. There has been little benefit from food exclusions for treatment of eczema in trials [1].

## 15. Consider sensitisation testing with clinical interpretation

It is often worth confirming a food allergy by demonstrating sensitisation to that food.

Sensitisation refers to the presence of an allergen-specific IgE antibody. Sensitisation can be detected by skin prick test (SPT) or blood test (RAST/EAST).

IgE-mediated clinical allergy almost always has underlying sensitisation detected, but being sensitised does not mean someone will be clinically allergic to an allergen.

The likelihood of IgE mediated clinical reaction often increases with size of SPT or specific IgE but it does not predict severity.

Allergy testing for IgE mediated food allergy:

- base any test on the patient's history of acute reactions rather than indiscriminate ordering of a large panel of tests:
  - food specific IgE testing should not be performed without a clinical history suggestive of potential IgE-mediated food allergy
- there are no validated tests specifically for non-IgE mediated reactions
- there is no role for measuring total serum IgE

Skin prick testing (SPT):

- to arrange:
  - give family a test form
  - SPT are only performed at PN Hospital or Horowhenua Hospital
  - an appointment must be made by the caregiver:
    - for an appointment at PN Hospital - ring Palms Medlab 06 952 3220
    - for an appointment at Horowhenua Hospital - ring Medlab at Horowhenua Hospital 06 368 5233
  - testing is performed Monday to Friday at 1200,1300, 1400hrs
  - no antihistamine tablets or corticosteroids on site of test for 72hrs prior to testing
  - no antihistamine creams on the day of testing and preferably no other creams or lotions on site of test, ie: arms
  - for further information see [Medlab Central Online Test Collection Guide](#)
  - SPT are not reliable if performed within 4 weeks of an anaphylaxis or acute allergic reaction to food
- a positive skin prick test (SPT) correlates with the presence of allergen-specific IgE (sIgE) bound to the surface of cutaneous mast cells, and produces a wheal (urticaria) usually associated with a flare (erythema)
- some laboratories report the dimensions of both the wheal and flare, however the flare is irrelevant to further management

decisions and can be ignored

- a negative test effectively rules out IgE mediated food allergy and is very useful
- a positive skin prick test = a wheal with a mean diameter 3 mm or *greater*
- the larger the wheal, the greater the likelihood a reaction will occur, however the wheal size does not correlate with the severity of reaction

Specific IgE (RAST/EAST) tests:

- measures allergen-specific IgE in the serum
- useful if SPT cannot be done e.g. extensive eczema, unable to discontinue anti-histamine
- not usually required in addition to SPT
- blood can be taken at [community laboratories](#) and samples forwarded to MedLab
- is more expensive than SPT

Misconceptions about sensitisation testing:

- a positive test result is diagnostic of a food allergy
- the SPT wheal size correlates with the severity and/or duration of an allergy

RAST cut-off:

- see [Table 3 - Allergy tests and food challenge outcomes](#) [1]

## 16. Non-validated testing

There are several methods that claim to test for allergy. These include cytotoxic food testing, kinesiology, Vega testing, electrodermal testing, pulse testing, reflexology and hair analysis. These tests have not been scientifically validated and may lead to unnecessary, costly and (in the case of some changes in diet) dangerous avoidance strategies. The use of these methods is not recommended. [2]

## 17. Positive test but allergen tolerated

Where a sensitisation test has been ordered, but the allergen is known to be tolerated (testing is not recommended in this situation):

- this situation represents sensitisation without clinical reaction and is common
- the tolerated food should continue to be in the diet. **Avoidance is not recommended.**

## 18. Positive test – no previous exposure

Sensitisation testing is usually based on clinical suspicion of allergy; wide ranging testing of sensitisation is not recommended. It is unclear what to do in this situation. Advice depends on severity of previous reactions to other foods and the degree of sensitisation. A discussion with Child Health for advice may be warranted. Cautious introduction of the food in question or a hospital-based food challenge may be necessary.

## 19. Positive test confirming allergy history

A suspicious history and a test demonstrating some degree of sensitisation confirms a food allergy.

## 20. Negative test but very suspicious history

Negative test but very suspicious history (e.g. typical reaction after small ingestion of common allergen):

- consider second test (RAST/EAST if skin prick test negative or vice versa)
- consider Child Health referral if concerning history and negative tests as may need supervised challenge to clarify



## 21. Negative test and less suspicious history

This is almost certainly not an IgE-mediated food allergy. Discuss cautiously retrying the food:

- start with small amounts, one new allergen at a time
- trial when the child is otherwise well, at a time that is convenient for the family to attend for medical attention if a reaction does occur

## 22. Management principles

### Management principles applying to all food allergy groups.

#### Food avoidance is the mainstay of treatment:

- assistance or advice from a dietitian may be required, particularly in very young children, multiple food allergies, foods that are very hard to avoid, a history of severe reactions
- exception in cow's milk and egg - refer to 'Cow's milk protein' and 'Egg' allergy boxes

#### Action Plan (written):

- it is often believed that future reactions will be more severe. This is not borne out in evidence. However, being prepared is important. All children with food allergies should have an appropriate written action plan:
  - [ASCIA action plans for allergic reactions](#)
  - [ASCIA action plans for anaphylaxis](#) (where an EpiPen is considered necessary and has been prescribed)
- see 'Adrenaline autoinjector' box for further information about who should be prescribed EpiPens
- consider a [MedicAlert bracelet](#)
- consider St John membership

#### Education to parent, child, school or preschool:

- advise parents to visit the [ASCIA](#) and [Allergy NZ](#) websites
- any school child who requires a GP approved allergy action plan can be referred to the Public Health Service:
  - the response to this plan is to provide information, education and advice to the school - this includes EpiPen training to the school community
- for a preschool child or infant in Early Childhood Education (ECE) consider referral to the Public Health Service for education of the ECE staff
- [Referral Form - Public Health Nursing Service](#)

#### Manage asthma if present:

- asthma is a risk factor for adverse outcomes in anaphylaxis
- consider prescribing adrenaline autoinjector - refer to 'Adrenaline autoinjector' box

#### Regular follow-up is important because many food allergies in children will resolve with time:

- focus on asthma control
- consider whether the allergy persists or not, consider repeat sensitisation testing and hospital-based food challenge - consider:
  - natural history of allergen
  - family motivation to reintroduce
  - response to accidental exposure
- ensure the action plan and adrenaline prescription are up-to-date
- ensure growth and nutrition are adequate, particularly in those where multiple food groups are being avoided
- address anxieties about food allergies and aversions to foods or fears of trying new foods
- consider setting up an annual recall in patient management system to review if new allergies have developed, if more severe allergic reactions have occurred, and to renew action and travel plans

## 23. Adrenaline autoinjector (EpiPen)

### Who should be prescribed an EpiPen?

- [Guidelines](#) (ASCIA)
- **recommended:**
  - previous anaphylaxis
  - food allergy and co-existing unstable or moderate to severe persistent asthma
- **sometimes recommended:**
  - age (teenagers and young adults)
  - peanut, tree nut, seafood allergy
  - generalised urticaria alone without anaphylaxis in insect stings
  - comorbid asthma
- **not normally recommended:**
  - asthma without history of anaphylaxis
  - if known allergen can be successfully avoided
  - oral allergy syndrome
  - elevated specific IgE only without history of clinical reactivity
  - family history of anaphylaxis or allergy
  - resolved food allergy
  - isolated angioedema

### If EpiPen is prescribed:

- training on delivery of IM injection must be provided:
  - video link [EpiPen How to Use for Patient](#) (ASCIA) (3.39m duration)
- not currently Pharmac funded but available without prescription
- child weighs 10-20kg – prescribe EpiPen Jr® 150 micrograms / 0.3mL:
  - NB: The above script is recommended by ASCIA/NZ experts and differs from the manufacturer's recommendation
- child weighs >20kg – prescribe EpiPen® 300 micrograms / 0.3mL
  - NB: The above script is recommended by ASCIA/NZ experts and differs from the manufacturer's recommendation

### Purchase of EpiPen:

- see [list of pharmacies](#) that offer EpiPen at a discount
- consider also [Zoom online pharmacy](#)
- consumers are advised to ask the pharmacy to:
  - order an EpiPen in (so the consumer gets the longest amount of time for their money)
  - get the best possible price
- [patient information - Adrenaline autoinjectors FAQs](#) (ASCIA)
- ACC cover is decided on an individual basis and requires a clinical diagnosis:
  - entitlements and help with associated costs may vary see [ACC claims - Allergy NZ](#)

### Three WINZ support funding options are available (all means tested):

- Disability Allowance:
  - the total amount of 2 EpiPens is divided by 52 weeks (e.g. 2x \$120 EpiPens / 52 weeks = \$4.60 per week)
  - it is the responsibility of the family to put the money aside to pay for the EpiPen
- Special Needs Grant – upfront payment:
  - does not need to be paid back
  - a family will qualify if already on a benefit

- Recoverable assistance payment – upfront payment:
  - has to be paid back within 2 years (would be \$2.30 per week off their benefit if getting 2x EpiPens)
  - income thresholds apply
  - asset limits (Do not include what you need for day to day living e.g. your home or your car. They do include money in the bank, or things like a caravan or a second property.) Single - assets worth less than \$1, 062.51. Married, civil union or de facto couple (with or without children) or a sole parent – assets worth less than \$1, 770.44.
  - NB: these are subject to change
- NB: the Epi-assist programme no longer exists
- **NB: All 3 options would ideally be accompanied by a letter from a GP or specialist to support application and include the severity of allergy.**

## 24. Criteria for referral to Child Health/Dietitian

There are a number of children with food allergies who do not require referral, for example:

- single well-identified allergy
- mild reaction
- family's confidence to manage/avoid the allergen

Criteria for referral to Child Health:

- in cases of anaphylaxis where the child is <2 years or there is uncertainty about the trigger of the reaction
- allergy to multiple foods (where expert advice may be needed)
- where there is uncertainty about the diagnosis or interpretation of results or about management
- where there is demonstrated sensitisation and where supervised challenge may be necessary to clarify whether there is clinical allergy [e.g. positive test to peanut or nut (where the risk of severe allergic reactions is higher)]

Consider referral to dietetics:

- for education regarding the diagnosed food allergy if the family are not confident with allergen avoidance, or
- where there are concerns regarding nutritional adequacy or growth particularly in very young children
- multiple food allergies
- foods that are very hard to avoid
- a history of severe reactions

If you are considering referral to a dietitian service:

- if child is <12 months of age, refer to Hospital Paediatric Dietitian
- if child is >12 months of age and has a single food allergy, refer to [PHO Dietitian](#)
- If child is >12 months of age and has multiple food allergies, refer to Hospital Paediatric Dietitian

## 25. Cow's milk protein allergy

About 80% of children are likely to outgrow their cow's milk protein (CMP) allergy before they are aged 5.

### Management and Treatment:

- avoid cow's milk, other dairy products, and products containing milk protein; read labels carefully:
  - some children show allergic responses to whole cow's milk but tolerate milk in baking without allergic response. These children should continue the milk-in-baking exposure, there is some suggestion that with continued exposure to baked milk the allergy is more likely to resolve with time
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)
- see [ASCIA dietary management of Cow's Milk Protein Allergy](#) (patient information)

- do not recommend A2 milk, goat's milk, lactose-free milk, sheep milk, due to cross-reactivity

#### On annual review:

- consider repeat sensitisation testing only if this will change your management; cow's milk could be cautiously introduced as a home-based trial if sensitisation is negative
- consider a trial of CMP if previously mild-moderate reactions only
- consider a referral to Child Health if previous severe reactions and sensitisation remains present and family are keen to reintroduce (these children might warrant a food challenge)

#### Children <1 year of age:

- breast fed infant:
  - continue breast feeding
- formula fed infant:
  - infants under 6 months trial:
    - extensively hydrolysed formula (EHF) (Pepti Junior) first
    - if infant reacts to EHF then AA (amino acid) indicated (Elecare or Neocate)
  - infant over 6 months commence soy milk formula initially:
    - if infant reacts to soy formula then trial EHF first and if reacts to EHF then AA indicated\*

\*If parents/caregivers are willing to self-fund non-dairy/soy formula they can order rice-based hypoallergenic formula Novalac Rice from Australia.

#### Children over 1 year of age:

- children can consume fortified soy/ rice/ almond/ oat/ coconut/ almond and coconut milk
- most recipes calling for cow's milk can be successfully substituted using water, juice or one of these milks
- if the child has a soy and CMP allergy then it is recommended to continue an EHF or AA formula until 2 years

#### Patient information:

- [ASCIA dietary management of Cow's Milk Protein Allergy](#)
- [ASCIA patient information - milk, mucus and cough](#)
- Cow's Milk Reintroduction Ladder

## 26. Egg allergy

About 70% of children will outgrow the condition by age 16.

Egg allergy typically presents in young children before the age of 12 months with 80% of infants becoming tolerant by five years of age.

Children become tolerant to cooked eggs before raw egg and may demonstrate tolerance to eggs in biscuits or cake as resolution evolves.

#### Management and Treatment:

- avoid eating eggs; read food labels; use alternatives to eggs in recipes
- eggs are found in many foods, including in many places where they might not be expected:
  - see [ASCIA Dietary Avoidance – Egg Allergy](#)
- certain vaccines contain egg protein in varying amounts
- anyone diagnosed with an allergy to either egg whites or egg yolks should avoid eggs altogether; it is not possible to completely separate the white from the yolk
- people with an egg allergy can sometimes tolerate baked goods and other foods containing eggs that have been heated for a prolonged period at a high temperature - if so, they should continue this exposure as it is associated with earlier resolution of

the egg allergy

- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

**Immunisation Handbook 2017 (MoH):** The measles and mumps components of the MMR vaccine are manufactured in chick embryo cell culture, so there may be trace amounts of egg protein in the vaccine. However, egg allergy, including anaphylaxis, is not a contraindication to measles-containing vaccines. Various studies have confirmed children with egg allergy can be vaccinated safely. Other components of the vaccine may be responsible for allergic reactions. Individuals with egg allergy may therefore be safely vaccinated in primary care.

#### Seasonal Influenza:

- egg-free vaccines and low egg content influenza vaccines are available in NZ:
  - (check with the Immunisation Co-ordinator, 06 354 9107 extn 3400)
- advice regarding which influenza vaccine should be administered to children with an egg allergy should be taken from the Immunisation Co-ordinator (06 354 9107 extn 3400)

#### On review:

- consider repeat sensitisation testing only if it will change your management. Discuss with the family whether they are keen to reintroduce this food. If repeat sensitisation is negative then a cautious home-based trial could be considered, if the family are keen.
- consider a trial of egg if previously mild-moderate reactions only
- consider a referral to Child Health if previous severe reactions and sensitisation remains present and family are keen to reintroduce (these children might warrant a food challenge)

#### Patient information:

- [ASCIA Dietary Avoidance – Egg Allergy](#)
- Egg Reintroduction Ladder

## 27. Soy allergy

A member of the legume family, soy is a common ingredient in infant formulas and many other processed foods. Typically, allergic reactions first appear in infants and children <3, and most of them outgrow the allergy by age 10.

#### Management and Treatment:

- avoid products containing soy; read labels carefully
- soy is found in many foods, including in many places where they might not be expected:
  - see [ASCIA Dietary Avoidance - Soy Allergy](#) (patient information)
- do not consume soy milk, soy yogurt or ice cream, edamame, miso, tempeh and tofu
- most individuals allergic to soy can safely consume highly refined soybean oil
- it is essential to be mindful when eating foods that have been fried in any type of oil, due to the risk of cross-contact
- people with a soy allergy often can eat foods that contain soy lecithin - a mixture of fatty substances derived from soybean processing
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

#### On review:

- consider repeat sensitisation testing only if it will change your management. Discuss with the family whether they are keen to reintroduce this food. If repeat sensitisation is negative then a cautious home-based trial could be considered, if the family are keen.
- consider a trial of soy if previously mild-moderate reactions only
- consider a referral to Child Health if previous severe reactions and sensitisation remains present and family are keen to

reintroduce (these children might warrant a food challenge)

**Patient information:**

- [ASCIA Dietary Avoidance - Soy Allergy](#)

## 28. Peanut allergy

Peanuts can cause a life-threatening reaction in some people.

Peanuts are one of the food allergens most commonly associated with anaphylaxis.

There are several misconceptions about peanut allergies:

- a peanut is a legume (belonging to the same family as soybeans, peas and lentils), not a tree nut;
- and while it was previously believed that an allergy to peanuts was lifelong, research by the [National Institutes of Health](#) shows that about 20% of individuals with a peanut allergy eventually outgrow it.

**Management and Treatment:**

- avoid peanut and peanut-derived products
- generally this should be considered a life-time allergy:
  - if the child/family are wondering if the allergy has resolved, and the sensitisation level has dropped to zero, then there may be an indication for a food challenge - consider referral to Child Health.
- to avoid the risk of anaphylactic shock, people with a peanut allergy must be very careful about what they eat:
  - [ASCIA peanut, treenut and seed allergy](#) (patient information)
  - [ASCIA dietary avoidance - peanut allergy](#) (patient information)
- foods that do not contain peanuts as an ingredient can be contaminated by peanuts in the manufacturing process or during food preparation:
  - people with a peanut allergy should avoid products that carry precautionary statements on the label, such as “may contain peanuts” or “made in a factory that uses nut ingredients.”
  - some families find that their children can eat foods that “may contain traces...” - in that situation, if these foods are tolerated then they should be continued
- some people who can't tolerate peanuts or eat peanut butter can consume other nut or seed butters:
  - keep in mind that these products may be manufactured in a facility that also processes peanuts
- children found to have a peanut allergy may have allergies to other tree nuts (particularly cashew). In cases of severe peanut allergy, generally a child should avoid other nuts they are sensitized to. In cases of peanut allergy where other nuts are known to be tolerated, exposure to those other tree-nuts should continue.
- while some people report symptoms such as skin rashes or chest tightness when they are around or smell peanut butter, a placebo-controlled trial of children exposed to open peanut butter containers documented no [systemic reactions](#)
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

**On review:**

- generally repeat sensitisation testing is not indicated in peanut allergy because the allergy is usually considered to be life-long
- if the family are very keen to trial peanut in the diet, repeat sensitisation could be done prior to considering re-exposure in a cautious fashion
- consider a referral to Child Health if previous reactions and sensitisation remains present and family are very keen to reintroduce (these children might warrant a food challenge)

**Patient information:**

- [ASCIA peanut, treenut and seed allergy](#)
- [ASCIA dietary avoidance - peanut allergy](#)

## 29. Tree nut allergy

There's often confusion between peanuts and tree nuts:

- peanuts are legumes, not nuts
- according to studies, between 25 and 40% of individuals who are allergic to peanuts also react to at least one tree nut

Treenuts can cause a life-threatening reaction in some people.

Treenuts are one of the food allergens most commonly associated with anaphylaxis.

### Management and Treatment:

- avoid nuts and nut-derived products (including nut oils and butters); read labels carefully
- generally this should be considered a life-time allergy:
  - if the child/family are wondering if the allergy has resolved, and the sensitisation level has dropped to zero, then there may be an indication for a food challenge - consider referral to Child Health.
- to avoid the risk of anaphylactic shock, people with a tree nut allergy must be very careful about what they eat:
  - [ASCIA peanut, tree nut and seed allergy](#) (patient information)
  - [ASCIA dietary avoidance - tree nut allergy](#) (patient information)
- people who are diagnosed with an allergy to a specific tree nut may be able to tolerate other tree nuts, but Immunologists usually advise these patients to avoid all nuts
- immunologists generally advise people who are allergic to tree nuts also to avoid peanuts because of the risk of cross-contact and cross-contamination between tree nuts and peanuts in food processing facilities:
- children found to have a tree-nut allergy may have allergies to peanuts or other tree nuts. In cases of severe tree-nut allergy, generally a child should avoid other nuts they are sensitized to. In cases of tree nut allergy where other nuts are known to be tolerated, exposure to those other nuts should continue
- people with tree nut allergies often wonder if they must also avoid coconut and nutmeg:
  - while allergic reactions to coconut have been documented, most people who are allergic to tree nuts can safely eat coconut
  - nutmeg is a spice that is derived from seeds, not nuts - it may be safely consumed by people with a tree nut allergy
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

### On review:

- generally repeat sensitisation testing is not indicated in tree nut allergy because the allergy is usually considered to be life-long
- if the family are very keen to trial the particular tree nut in the diet, repeat sensitisation could be done prior to considering re-exposure in a cautious fashion
- consider a referral to Child Health if previous reactions and sensitisation remains present and family are very keen to reintroduce (these children might warrant a food challenge)

### Patient information:

- [ASCIA peanut, treenut and seed allergy](#)
- [ASCIA dietary avoidance - tree nut allergy](#)

## 30. Wheat allergy

The symptoms of a wheat allergy are usually mild, however in some cases they may be severe and can be life-threatening. About 65% of children are likely to outgrow their wheat allergy by the age of 12.

### Management and Treatment:

- avoid foods and nonfood products that trigger symptoms; read labels carefully:
  - nonfood products include Play-Doh, as well as in cosmetic and bath products
- wheat is found in many foods, including in many places where it might not be expected:
  - see [ASCIA dietary avoidance - wheat allergy](#) (patient information)
- avoid products that carry precautionary statements on the label, such as “made on shared equipment with wheat”, “packaged in a plant that also processes wheat” or similar language
- a wide availability of gluten-free products makes it easier to manage a wheat allergy:
  - gluten is a protein found in wheat, barley and rye
  - a gluten-free product may be safe for those who are allergic to wheat because the product should not contain wheat ingredients. However, because a product marketed as “gluten-free” must also be free of rye and barley in addition to wheat, those who must avoid only wheat may be limiting themselves. Anyone managing a food allergy shouldn’t rely on a “free from” label as a substitute for thoroughly reading the complete ingredient label.
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

#### On review:

- consider repeat sensitisation testing only if it will change your management. Discuss with the family whether they are keen to reintroduce this food. If repeat sensitisation is negative then a cautious home-based trial could be considered, if the family are keen.
- consider a trial of wheat if previously mild-moderate reactions only
- consider a referral to Child Health if previous severe reactions and sensitisation remains present and family are keen to reintroduce (these children might warrant a food challenge)

#### Patient information:

- [ASCIA dietary avoidance - wheat allergy](#)

## 31. Fish allergy

An allergy to fish may not become apparent until adulthood.

Having an allergy to a finned fish (such as tuna, halibut or salmon) does not mean that a patient will also be allergic to shellfish (shrimp, crab and lobster).

#### Management and Treatment:

- avoid fish and fish products; read labels carefully
- managing a fish allergy includes strict avoidance of the fish to which the patient is allergic to - generally, people who are allergic to one type of finned fish are advised to avoid all types:
  - if a patient is allergic to a specific fish but would like to have other varieties of fish in their diet, a Paediatrician/Immunologist may be able to organise a food challenge to test for those varieties - it is not recommended that a patient alters their diet without first seeking advice from the paediatrician.
- see [ASCIA dietary avoidance - fish allergy](#) (patient information)
- while an allergy to fish protein is most common, it is possible to be allergic to fish gelatin (made from fish skin and bones) - people with a fish allergy should consult their doctor before taking fish oil dietary supplements
- even if the patient has been allowed to consume certain types of fish, they need to take extra precautions to avoid eating fish that has come in contact with the type of fish that causes the allergic reaction:
  - due to the high risk for cross-contact during food preparation, it is best for the patient to avoid seafood restaurants in general, even if they plan to order something other than fish. They should stay out of areas where fish is being cooked, as proteins may be released into the air during cooking.
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

#### Patient information:

- [ASCIA dietary avoidance - fish allergy](#)



## 32. Shellfish allergy

Shellfish is among the most common food allergens - it can cause a life-threatening reaction in some people.

Shellfish is one of the food allergens most commonly associated with anaphylaxis.

A shellfish allergy is different from an allergy to fish. Those who are allergic to shellfish do not necessarily have to avoid fish, and vice versa.

An allergy to shellfish typically lasts a lifetime.

### Management and Treatment:

- avoid shellfish; read labels carefully
- to avoid the risk of anaphylactic shock, people with a seafood allergy must be very careful about what they eat:
  - [ASCIA dietary avoidance - shellfish allergy](#) (patient information)
- within the shellfish family:
  - the crustacean group (shrimp, lobster and crab) causes the greatest number of allergic reactions
  - many shellfish-allergic people can eat mollusks (scallops, oysters, clams and mussels) with no problem
  - individuals with shellfish allergy symptoms should be reviewed by their primary health care provider before eating any other kind of shellfish
- although true cross-reactions among shellfish are rare, they appear because various types of shellfish are often stored together in restaurants and markets, causing cross-contamination
- be vigilant when dining out
- allergen immunotherapy (aside from the above) should not yet be used for routine treatment of food allergy – research in this area is ongoing (Choosing Wisely NZ/ASCIA recommendation)

Patient information:

- [ASCIA dietary avoidance - shellfish allergy](#)

# Food Allergies in Children

## Provenance Certificate

[Overview](#) | [Editorial methodology](#) | [References](#) | [Contributors](#) | [Disclaimers](#)

### Overview

This document describes the provenance of MidCentral District Health Board's **Food Allergies in Children** pathway.

This localised pathway was last updated in **June 2018**.

One feature of the "Better, Sooner, More Convenient" (BSMC) Business Case, accepted by the Ministry of Health in 2010, was the development of 33 collaborative clinical pathways (CCP). The purpose of implementing the CCP Programme in our DHB is to:

- Help meet the Better Sooner More Convenient Business Case aspirational targets, particularly the following:
  - Reduce presentations to the Emergency Department (ED) by 30%
  - Reduce avoidable hospital admissions to Medical Wards and Assessment Treatment and Rehabilitation for over-65-year-olds by 20%
  - Reduce poly-pharmacy in the over-65-year-olds by 10%
- Implement a tool to assist in planning and development of health services across the district, using evidence-based clinical pathways.
- Provide front line clinicians and other key stakeholders with a rapidly accessible check of best practice;
- Enhance partnership processes between primary and secondary health care services across the DHB.

To cite this pathway, use the following format:

Map of Medicine. Medicine. MidCentral District View. Palmerston North: Map of Medicine; 2014 (Issue 1).

### Editorial methodology

This care map was based on high-quality information and known Best Practice guidelines from New Zealand and around the world including Map of medicine editorial methodology. It has been checked by individuals with front-line clinical experience (see Contributors section of this document).

Map of Medicine pathways are constantly updated in response to new evidence. Continuous evidence searching means that pathways can be updated rapidly in response to any change in the information landscape. Indexed and grey literature is monitored for new evidence, and feedback is collected from users year-round. The information is triaged so that important changes to the information landscape are incorporated into the pathways through the quarterly publication cycle.

## References

This care map has been developed according to the Map of Medicine editorial methodology. The content of this care map is based on high-quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience. This localised version of the evidence-based, practice-informed care map has been peer-reviewed by stakeholder groups and the CCP Programme Clinical Lead.

1	NZMJ 16 August 2013, Vol 126 No 1380; ISSN 1175 8716. URL: <a href="http://journal.nzma.org.nz/journal/126-1380/5782/">http://journal.nzma.org.nz/journal/126-1380/5782/</a>
2	<a href="https://www.allergy.org.au/patients/allergy-testing/allergy-testing">https://www.allergy.org.au/patients/allergy-testing/allergy-testing</a>

## Contributors

MidCentral DHB's Collaborative Clinical Pathway editors and facilitators worked with clinical stakeholders such as front-line clinicians and pharmacists to gather practice-based knowledge for its care maps.

### The following individuals have contributed to this care map:

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## Disclaimers

### Clinical Board Central PHO, MidCentral DHB

It is not the function of the Clinical Board Central PHO, MidCentral DHB to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness and completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.