

# ALLERGY

## PATIENT BOOKLET

"This is the where it all  
begins - with you"

**THE END OF  
FOOD ALLERGY**



Patient Information Booklet for  
Allergy Panel 107 Allergen Tests



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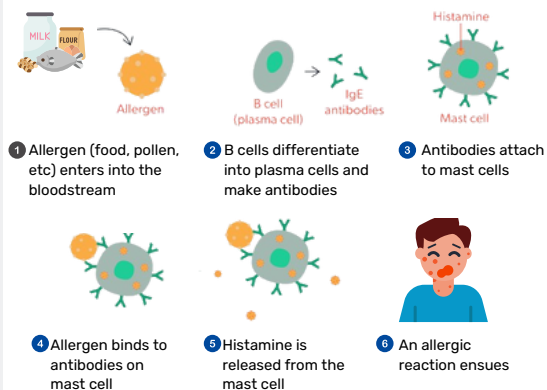


# Introduction

Allergies develop when your immune system mistakenly identifies a substance such as pollen, mold, animal dander, or food as harmful. That substance is referred to as an allergen.

The allergen stimulates immune system cells to release certain chemicals, such as histamine, which then lead to allergy symptoms.

## How Allergies Develop



# EXPLANATION

## CAUSES OF ALLERGIES

Things that cause allergic reactions are called allergens.

### **Common allergies include:**

- tree and grass pollen (hay fever)
- house dust mites
- foods, such as peanuts, milk and eggs (food allergy)
- animal fur, particularly from pets like cats and dogs
- insect stings, such as bee and wasp stings

### **Development of allergic sensitization**

Allergens are proteins or chemicals bound to proteins against which individuals make IgE antibodies. Allergic sensitization is the development of IgE antibodies to allergens that are ingested, absorbed or inhaled.

### **What is an example of a cross allergy?**

If someone is allergic to peanuts, for example, they might react to soya, peas, lentils or beans – food items in the same biological family (legume). Allergic cross-reactions can also happen between certain fruit or vegetables and latex (known as latex-food syndrome), or the pollens that cause hay fever.



# PROTIA-Q 96M

## (107 ALLERGENS)

### PROTIA Allergy-Q 96M panel

is an in vitro diagnostic test for the quantitative determination of allergen-specific IgE concentrations in human serum or plasma using the immunoblotting technique.

### Specification

- Multiple screening 107 allergen including total IgE in one Panel
- Small serum or plasma volume for testing: 100 µL ideal for paediatrics
- Multiplex, Quantitative detection of allergen specific IgE
- On strip Internal Calibration lines
- Integrated CCD marker on each test for improvement interpretation of cross reactions



PROTIA Allergy-Q 96M					
96M panel					
No.	Allergen	No.	Allergen	No.	Allergen
1	Total IgE	38	Sweet vernal / Orchard grass / Common rye / Bent grass	62	Tuna / Salmon
2	House dust	39	Bermuda grass	63	Plaice / Anchovy
3	Q. pteronyssinus	40	Timothy grass	64	Arctic fish
4	Q. larrea	41	Panicum rostratum / Cynodon dactylon	65	Lobster / Pacific squid
5	Cat dander	42	Hazel	66	Eel
6	Dog dander	43	Olive	67	Blue mussel / Clam / Scallop
7	Egg white	44	Maple leaf / Sycamore	68	Salmon pupa
8	Milk	45	Willow	69	Pork
9	Cockroach	46	Cotton wood	70	Beef
10	Peanut	47	White ash	71	Chicken
11	Soy bean	48	White pine	72	Lamb meat
12	Wheat	49	Japanese cedar	73	Cheese
13	Alder	50	Acacia	74	Cheddar type
14	Birch	51	Onion	75	Barley
15	Oak	52	Goats milk	76	Rice
16	Common ragweed	53	Hevea latex	77	Buckwheat
17	Japanese hop	54	Sheep venom	78	Yeast, baker's
18	Mugwort	55	Mackeral	79	Corn
19	Alternaria alternata	56	Cultivated rye	80	Plantain
20	Cladosporium herbarum	57	CCD	81	Russian thistle
21	Aspergillus fumigatus	58	Peach	82	Garlic / Onion
22	Orb	59	Guinea pig	83	Celery
23	Shrimp	60	Apple	84	Cucumber
24	Mackeral	61	Hamster	85	Tomato
25	Cultivated rye	62	Almond / Pine nut / Sunflower	86	Citrus mix
26	CCD	63	Cashew	87	Strawberry
27	Peach	64	Coconut	88	Kiwi / Mango / Banana
28	Apple	65	Coconut	89	Sweet chestnut
29	Sesame	66	Coconut	90	Walnut
30	Almond / Pine nut / Sunflower	67	Coconut	91	Hazelnut
31	Typhlodromus putrescentiae	68	Coconut	92	Almond / Pine nut / Sunflower
32	Coconut	69	Coconut	93	Cacao
Total 107 allergens					

### CCD MARKER ( 1 )

#### What is CCD marker?

CCD (Cross Carbohydrate Determinates) is used technically to interpret the presence of false positives. To medical professionals, this is used to determine if the CCD is causing a reaction rather than a specific allergen.

### TOTAL IgE (1)

#### What is Total IgE?

A total IgE test result that is high means that you may have some kind of allergy. But the results of a total IgE test don't show what you're allergic to or how serious your allergy may be. A specific IgE test result that is high means that you may be allergic to the allergen that was tested.

What is a normal reading IgE level by age?

1 – 5 years: 0 – 60 IU/mL.

6 – 9 years: 0 – 90 IU/mL.

10 – 15 years: 0 – 200 IU/mL.

Adults: 0 – 100 IU/mL.



# INHALANT ALLERGEN

## TREE AND GRASS (27)

Inhalant allergies commonly by outdoor allergens (such as pollen and mold).

### Allergens:

- Sweet vernal G1
- Orchard grass G3
- Common reed G7
- Bent grass G9
- Bermuda Grass G2
- Timothy Grass G6
- Hazel T4
- Olive T9
- Mugwort W6
- Willow T12
- Cottonwood T14
- White Ash T15
- White Pine T16
- Oak T7
- Acacia T19
- Ox-eye daisy W7
- Dandelion W8
- Plantain W9
- Alder T2
- -Goldenrod W12
- -Birch T3
- Russian Thistle W11
- Common Ragweed W1
- Japanese Hop W22
- Japanese Cedar T17
- Maple leaf sycamore T17
- Common Pigweed W14

### CAUSED

by pollen, often from wind-pollinated plants. This lightweight dust can travel hundreds of kilometers. The windier it is, the more widely the pollen is spread, and the higher the concentration. For some people, it only takes a few pollen grains to trigger a severe allergic reaction. For example, six rye pollen grains per cubic meter of air are enough to provoke an allergic reaction in individuals who are sensitized.

### The main allergy triggering pollens come from

- Trees: The pollen from early flowering species such as birch, hazel, alder, and ash is particularly allergenic. Birch pollen allergy is especially common.
- Grasses: Commonly referred to as 'grasses,' they are the primary culprits for triggering grass pollen allergies.
- Weeds: Mugwort and ragweed are highly allergenic.

TRIGGER

# INHALANT

# ALLERGY

## SYMPTOMS

Symptoms occur mostly in the areas that come into direct contact with the pollen allergens: the mucous membranes of the nose, eyes and mouth.

### INCLUDES

- Nose: runny nose with watery mucous, nasal congestion, itchy nose, sneezing
- Eyes: conjunctival redness, itching, tearing
- Mouth/throat: burning, itching
- Ears: itchy ear canals
- Lungs: dry cough (especially at night), wheezing, difficulty breathing (asthma)
- Skin: worsening of atopic dermatitis, in rare cases hives, redness
- General symptoms: fatigue, disrupted sleep, headache

### <sup>1</sup> Tips to limit pollen exposure:



- Check the pollen count using your weather app and plan your day accordingly
- Avoid driving with your windows rolled down, especially in the mornings
- Wear a mask if you need to be outdoors
- Set your car's A/C to recirculate the air, rather than drawing it from the outside
- Consider changing clothes and showering when you arrive home after being outdoors



# INHALANT ALLERGEN

## HOUSE DUST MITES (5)

Inhalant allergies are commonly caused by indoor allergens, such as dust mites. Allergens:

- House dust h1
- d. farinae d2
- d. pteronyssinus d1
- acarus siro d70
- tyrophagus putrescentiae d72

### DO YOU KNOW

**Dust mites** – sometimes called bed mites – are the most common cause of allergy from house dust. Dust mites live and multiply easily in warm, humid places. They prefer temperatures at or above 21°C with humidity of 75 to 80 percent. They die when the humidity falls below 50 percent. They are not usually found in dry climates.

Dust mite particles are often found in pillows, mattresses, carpeting and upholstered furniture. They float into the air when anyone vacuums, walks on a carpet or disturbs bedding and they settle once the disturbance is over.

**Acarus siro** is mainly found in stored cereal-based food products, such as grain and flour, but has also been found in other food products, including cheese, meat, pulses, dried fruit, tea and spices. Storage mites are also found in the home; mattresses, soft furnishings, pets and pet bedding are all sources of storage mites.

### DO YOU KNOW

# INHALANT

# Allergy

## SYMPTOMS

**The Dust mite** allergy symptoms can range from mild to severe. They may include:

### INCLUDES

- runny or itchy nose
- postnasal drip
- itchy skin
- congestion
- sinus pressure (may cause facial pain)

## <sup>2</sup> Tips to limit Dust mite exposure:



- Use allergen-proof bed covers on the mattress, box spring, and pillows. Zippered covers are best. Their tightly woven fabric prevents dust mites from getting into beds.
- Wash all bedding in hot water at least once a week. This includes sheets, pillowcases, blankets, and bed covers. Dry in a hot dryer or in natural sunlight during summer months.
- Use an air conditioner or dehumidifier to keep the relative humidity in your house between 30 and 50 percent.
- Purchase a high-efficiency particulate air (HEPA) filter.
- Buy only washable stuffed toys, and wash them often. Keep stuffed toys off beds.
- Dust frequently with either a damp or oiled towel or mop. This helps minimize the amount of dust and prevents it from accumulating.
- Vacuum regularly using a vacuum cleaner with a HEPA filter. A person with a severe dust mite allergy should have someone else do this task.
- Get rid of clutter where dust collects.
- Clean curtains and upholstered furniture often.
- Replace carpeting with wood, tile, linoleum, or vinyl flooring, if possible.



# INHALANT ALLERGEN

## MOULD (5)

Allergens:

- *Penicillium notatum* M1
- *Candida Albicans* M5
- *Cladosporium herbarum* M2
- *Alternaria alternata* M6
- *Aspergillus fumigatus* M3

**DO YOU  
KNOW**

**Molds** are a type of fungus that exists almost everywhere in the world. The molds that grow inside our houses prefer dark and damp places and can be harmful to some people with immune systems that develop responses against mold. Molds produce spores. (Mold is considered an environmental allergen). About two-thirds of people with asthma also have environmental allergies.

You can be allergic to molds in the air, and you can be allergic to molds in foods. There are also many different types of mold that can cause allergies. Some common ones include \_*Alternaria*, *Aspergillus*, *Cladosporium* and *Penicillium*.

**DO YOU  
KNOW**

# INHALANT

# ALLERGY

## SYMPTOMS

**Mold** allergy symptoms and signs resemble those of other types of respiratory allergies and

### INCLUDES

- Runny nose or nasal congestion.
- Wheezing.
- Itchy eyes and/or throat
- Coughing and sneezing.
- Headaches.
- Skin rash.

### <sup>3</sup>Here are some simple steps to reduce exposure to MOLD:

:

- Prevent mold and mildew build up inside the home.
- Pay close attention to mold in bathrooms, basements, and laundry areas. Be aggressive about reducing dampness.
- Increase air flow in your home. Open doors between rooms, move furniture away from walls, and use fans if needed.
- Use central air conditioning with a CERTIFIED asthma & allergy friendly® filter. This can help trap mold spores from your entire home. Freestanding air cleaners only filter air in a limited area. Avoid devices that treat air with heat, electrostatic ions, or ozone.
- Lower your indoor humidity. Air conditioners and dehumidifiers can also be a source of mold. Choose a high-quality humidifier that you can easily clean and check for mold growth.



# INHALANT ALLERGEN ANIMAL (PETS) (9)

Allergens:

- Mouse E71
- Rat E73
- Rabbit E82
- Horse E3
- Dog E5
- Cat E1
- Guinea pig E6
- Wool, Sheep E81
- Hamster E84

**DO YOU  
KNOW**

**Most** often, pet allergy is triggered by exposure to the dead flakes of skin (dander) a pet sheds. Any animal with fur can be a source of pet allergy, but pet allergies are most commonly associated with cats and dogs.

**Allergens** from cats and dogs are found in skin cells the animals shed (dander), as well as in their saliva, urine and sweat and on their fur.

Dander is a particular problem because it is very small and can remain airborne for long periods of time with the slightest bit of air circulation. It also collects easily in upholstered furniture and sticks to your clothes. Pet saliva can stick to carpets, bedding, furniture and clothing. Dried saliva can become airborne.

**DO YOU  
KNOW**

**DO YOU  
KNOW**

**Rodent pets AND RABBITS** include mice, gerbils, hamsters and guinea pigs. Allergens from rodents are usually present in hair, dander, saliva and urine. Dust from litter or sawdust in the bottom of cages may contribute to airborne allergens from rodents. Rabbit allergens are present in dander, hair and saliva

# INHALANT

# ALLERGY

## SYMPTOMS

### **Pet allergy signs and symptoms caused by inflammation of nasal passages**

#### INCLUDES

- Nasal congestion
- Itchy nose, roof of mouth or throat
- Postnasal drip
- Frequent awakening
- Sneezing
- Cough
- Frequent awakening
- Swollen, blue-colored skin under your eyes
- In a child, frequent upward rubbing of the nose
- Runny nose
- Itchy, red or watery eyes

#### SKIN PROBLEM

- Some people with pet allergy may also experience skin symptoms, a pattern known as allergic dermatitis. This type of dermatitis is an immune system reaction that causes skin inflammation. Direct contact with an allergy-causing pet may trigger allergic dermatitis, causing signs and symptoms, such as:
  - Raised, red patches of skin (hives)
  - Eczema
  - Itchy skin

4

### **How can I prevent pet allergies?**

- Avoid petting, hugging and kissing pets. Try not to let them rub against you.
- Regularly brush and bathe your pets. Brush your pets outdoors.
- Vacuum rugs, carpets and other surfaces regularly. It's a good idea to vacuum at least twice a week.
- Filter the air in your home.





# INHALANT ALLERGEN INSECTS

Allergens:

- Cockroach l6 (1)

## DO YOU KNOW

**The saliva, feces and shedding body parts** of cockroaches can trigger both asthma and allergies. These allergens act like dust mites, aggravating symptoms when they are kicked up in the air. Cockroaches rank with termites as the most important insects that must be dealt with by pest control operators. In Malaysia, In many cases with cockroach allergens, these symptoms become chronic, lasting beyond typical seasonal allergies.

## INHALANT

# ALLERGY

## SYMPTOMS

Cockroach allergy symptoms :

INCLUDES

- Coughing
- Nasal congestion
- Skin rash
- Wheezing
- Ear infection
- Sinus infection

**The best way to treat and prevent cockroach allergies is to eliminate these insects from your home**

5

**Key tips include:**



- Keep your house clean, including kitchen floors, sinks, counters and stoves.
- Keep food containers and garbage cans sealed.
- Fix any leaks that could unknowingly give cockroaches access to water.
- Avoid piles – of newspapers, laundry, magazines or dirty dishes.
- Consult a pest control company or exterminator.



# LATEX ALLERGEN

Allergens:

- Latex K82

**DO YOU  
KNOW**

**A latex allergy** happens when a person's immune system launches an attack against natural rubber latex, which is used in many products. Allergic reactions to latex range from mild to severe, and they can even be fatal. There is no cure. People with this allergy should avoid latex. Many products are made with natural rubber latex, including rubber exam gloves, balloons and condoms.

# LATEX

# ALLERGY

## SYMPTOMS

### Latex allergy symptoms :

:

#### INCLUDES

- Skin irritation: Itching, inflammation, redness and swelling appear after skin contact with latex. For example, you may have itchy lips after blowing up a balloon or vaginal irritation after having sex with a partner who used a latex condom.
- Rash: An itchy rash appears where the latex touched your skin. A latex allergy rash usually occurs within a day after exposure. The rash can spread if it touches skin on other parts of your body. But you can get a rash from other factors, such as using too much hand sanitizer or washing your hands too often.
- Hives, runny nose and sneezing: Itchy, watery eyes and inflammation around the nose and mouth are common. Eyes may become swollen and red.
- Trouble breathing: People who have severe allergic reactions may wheeze or have difficulty breathing. In severe cases, [anaphylaxis](#) may occur. Anaphylaxis can be fatal. If you or someone you know is having an allergic reaction and can't breathe, call 911 or go to the emergency room.

### **6 Here is no cure for latex allergy. If you are allergic to latex, you should:**

- Avoid products that contain latex.
- Tell providers, caregivers, teachers and friends that they're allergic.
- Avoid areas where latex may be in the air, such as a hospital room where providers use latex gloves.
- Talk to your healthcare provider about wearing a medical alert bracelet. In a medical emergency, the bracelet lets others know you're allergic to latex.



# FOOD ALLERGEN

## TREE AND LEGUMES(10)

Allergens:

- Sweet Chestnut F299
- Peanut F13
- Walnut F256
- Hazel nut F17
- Almond F20
- Pine nut F253
- Sunflower K84
- Sesame Seed F10
- Cacao F93
- Soy Bean F14

**DO YOU  
KNOW**

**Tree nut allergy** most commonly affects infants and young children, although adults may also develop it. It is triggered by eating tree nuts or tree nut products such as oils and butters or using topical products containing tree nut oil. The allergy usually lasts for a lifetime, with fewer than 10% of individuals ever growing out of it.

Some alcoholic drinks also contain tree nuts or tree nut flavorings and tree nut oils may be present in lotions, hair products and soaps.

**DO YOU  
KNOW**

**IMPORTANT**

**Tree nuts are commonly found in the following food items:**

- Salad garnishes
- Asian cuisine
- Ice cream topping
- Sauces
- Desserts
- Baked goods
- Breads
- Baking mixes

# FOOD

# ALLERGY

## SYMPTOMS

**The symptoms of an allergic reaction usually arise within 30 minutes of eating the tree nut and may include the following:**

:

:



- Diarrhea
- Difficulty swallowing
- Abdominal cramps and pain
- Nausea and vomiting
- Runny nose
- Nasal congestion
- Itching in the mouth, eyes, throat or other area of the body
- Shortness of breath
- Anaphylaxis

7

**The risk of accidental exposure to food allergic trigger/s can never totally be removed, but some simple precautions will reduce or minimize the risk:**

- The risk of accidental exposure to food allergic trigger/s can never totally be removed, but some simple precautions will reduce or minimise the risk:
- Contact the restaurant, cafe or home cook that you plan to visit in advance, and let them know of the food allergy.
- On arrival at a restaurant or cafe, ask to talk to the manager about any dishes that should be avoided,. Also ask them to let the chef know so they can take extra care in preparing your meal, to reduce the risk of cross contamination.
- Don't rely on the menu descriptions of what is in the food. For example, pesto and dips may have nuts in them, and many salads have nuts or seeds added for texture. Sometimes nuts can be added to gravies and sauces too.
- Think about the cooking methods, possible cross contamination and the likelihood of shared utensils and cookware.
- Teenagers or adults who are eating out can cautiously touch test a small amount of the food on their outer lip before putting it in their mouth. Tell-tale warnings such as a burning, chilli-like reaction, and tingling or swelling, should alert you to the possibility that food allergen is present.



# FOOD ALLERGEN

## GRAINS AND ADDITIVE (7)

### Allergens:

- Wheat F4
- Baker's Yeast F45
- Rice F9
- Barley F6
- Buckwheat F11
- Corn F8
- Cultivated Rye G12

### DO YOU KNOW

**Wheat allergy** is an allergic reaction to foods containing wheat. Allergic reactions can be caused by eating wheat and also, in some cases, by inhaling wheat flour.

**Avoiding** wheat is the primary treatment for wheat allergy, but that isn't always as easy as it sounds. Wheat is found in many foods, including some you might not suspect, such as soy sauce, ice cream and hot dogs. Medications may be necessary to manage allergic reactions if you accidentally eat wheat.

### DO YOU KNOW

### IMPORTANT

**Wheat allergy** sometimes is confused with celiac disease, but these conditions differ. Wheat allergy occurs when your body produces antibodies to proteins found in wheat. In celiac disease, a specific protein in wheat – gluten – causes a different kind of abnormal immune system reaction

# FOOD

# ALLERGY

Some sources of wheat proteins are obvious, such as bread, but all wheat proteins – and gluten in particular – can be found in many prepared foods and even in some cosmetics, bath products and play dough. Foods that may include wheat proteins :

:

:



- Breads and bread crumbs
- Cakes, muffins and cookies
- Breakfast cereals
- Pasta
- Couscous
- Farina
- Semolina
- Spelt
- Crackers
- Hydrolyzed vegetable protein
- Soy sauce
- Meat products, such as hot dogs
- Dairy products, such as ice cream
- Natural flavorings
- Gelatinized starch
- Modified food starch
- Vegetable gum

## SYMPTOMS

**A child or adult with wheat allergy is likely to develop signs and symptoms within minutes to hours after eating something containing wheat. Wheat allergy signs and symptoms :**



- Swelling, itching or irritation of the mouth or throat
- Hives, itchy rash or swelling of the skin
- Nasal congestion
- Headache
- Difficulty breathing
- Cramps, nausea or vomiting
- Diarrhea
- Anaphylaxis

8

## RECOMMENDATION:



- Choose gluten-free grain alternatives like quinoa, brown rice, or buckwheat.
- Eating more produce is a great way to eliminate gluten and optimize your intake of nutrients that may otherwise be lacking in a gluten-free diet.
- Avoid gluten-containing beverages like beer, wine coolers, and some pre-made smoothies. Instead, choose gluten-free beverages like water, coffee, and tea.
- There are many different names for wheat like durum, kamut, and spelt. Evaluate the ingredient list and allergens statement on a food label to identify and eliminate sources of wheat.
- Food manufacturers may add gluten to food products to improve texture and shelf life. Limit processed foods and eat naturally gluten-free whole foods like fruits, vegetables, nuts, seeds, and lean proteins.



## FOOD

# ALLERGEN

## EGG AND MILK (3)

### Allergens:

- Egg White F1
- Milk F2
- Chesse, Cheddar type F81

### DO YOU KNOW

**Allergies** to milk and eggs are two of the most common types of food allergies in children. Milk allergy usually develops in infants before the first birthday.

**When** someone with a milk allergy ingests milk even a trace amount, that person is at risk of a severe allergic reaction, called anaphylaxis. Egg allergies are often associated with skin symptoms such as hives, but anaphylaxis can also occur.

### DO YOU KNOW

### IMPORTANT

**Milk allergy** is the most common food allergy in young children, affecting 2.5 per cent of kids under 3 years old. Egg allergy is the second most common, and is estimated to affect between 1.5 to 3.2 per cent of children.

# FOOD

# ALLERGY

## SYMPTOMS

### EGG AND MILK allergy symptoms :

#### INCLUDES

- Skin inflammation or hives – the most common egg allergy reaction.
- Nasal congestion, runny nose and sneezing (allergic rhinitis)
- Digestive symptoms, such as cramps, nausea and vomiting.
- Asthma signs and symptoms such as coughing, wheezing, chest tightness or shortness of breath.

### Hidden sources of egg products

**Unfortunately, even if a food is labeled egg-free it may still contain some egg proteins.**

**Foods that contain eggs can include:**

- Marshmallows
- Mayonnaise
- Meringue
- Baked goods
- Breaded foods
- Marzipan
- Frostings
- Processed meat, meatloaf and meatballs
- Puddings and custards
- Salad dressing
- Many pastas
- Foam on alcoholic specialty coffees
- Pretzels

**IMPORTANT**

**Several terms indicate that egg products have been used in manufacturing processed foods, including:**

- Albumin
- Globulin
- Lecithin
- Livetin
- Lysozyme
- Vitellin
- Words starting with "ova" or "ovo," such as ovalbumin or ovoglobulin

**IMPORTANT**

### Sources of milk

Obvious sources of allergy-causing milk proteins are found in dairy products, including:

- Butter
- Yogurt
- Ice cream, gelato
- Whole milk, low-fat milk, skim milk, buttermilk
- Cheese and anything that contains cheese

**DO YOU  
KNOW**

**DO YOU  
KNOW**

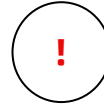
**Milk** can be harder to identify when it's used as an ingredient in processed foods, including baked goods and processed meats. Hidden sources of milk include:

- Ingredients spelled with the prefix "lact" – such as lactose and lactate
- Candies, such as chocolate, nougat and caramel
- Casein
- Protein powders
- Artificial butter flavor
- Artificial cheese flavor
- Hydrolysates
- Whey

# FOOD

# ALLERGEN

## <sup>9</sup> **Milk alternatives for infants :**



- In children who are allergic to milk, breastfeeding and the use of hypoallergenic formula can prevent allergic reactions.
- Breastfeeding is the best source of nutrition for your infant. Breastfeeding for as long as possible is recommended, especially if your infant is at high risk of developing milk allergy.
- Hypoallergenic formulas are produced by using enzymes to break down (hydrolyze) milk proteins, such as casein or whey. Further processing can include heat and filtering. Depending on their level of processing, products are classified as either partially or extensively hydrolyzed. Or they may also be called elemental formulas.
- Some hypoallergenic formulas aren't milk based, but instead contain amino acids. Besides extensively hydrolyzed products, amino-acid-based formulas are the least likely to cause an allergic reaction.
- Soy-based formulas are based on soy protein instead of milk. Soy formulas are fortified to be nutritionally complete – but, unfortunately, some children with a milk allergy also develop an allergy to soy.
- If you're breastfeeding and your child is allergic to milk, cow's milk proteins passed through your breast milk may cause an allergic reaction. You may need to exclude from your diet all products that contain milk.
- If you or your child is on a milk-free diet, your health care provider or dietitian can help you plan nutritionally balanced meals. You or your child may need to take supplements to replace calcium and nutrients found in milk, such as vitamin D and riboflavin



# FOOD

# ALLERGEN

## FISH AND SHELLFISH (16)

Allergens:

- Eel F264
- Blue Mussel F37
- Oyster F290
- Clam F207
- Anchovy F313
- Alaska Pollock F413
- Lobster F80
- Pacific Squid F58
- Scallop F338
- Crab F23
- Shrimp F24
- Mackerel F206
- Codfish (f3)
- Tuna (f40)
- Salmon (f41)
- Plaice (f254)

**DO YOU  
KNOW**

People with seafood allergy may react to fish and/or shellfish. It is one of the most common food allergies in adults, but can also affect children. It may develop at any point in a person's life. It can be caused by a fish or shellfish that has been eaten before with no previous signs of a food allergy. An allergy to either fish or shellfish is likely to be lifelong and is rarely outgrown.

**Cross contact** occurs when one food type comes into contact with another, and their proteins (the allergy causing substance) mix, for example fish and shellfish displayed at a fish counter in the supermarket. Individuals who are highly sensitive to small amounts of these proteins may develop allergic symptoms from eating, inhaling or handling fish and shellfish in the home or work environment. Fish and prawn allergens can be very robust and are not easily broken down by heating or cooking, and can become airborne in cooking vapours or be present in oil used to cook fish or prawns, for example in a fish fryer or in a wok.

**DO YOU  
KNOW**

# FOOD ALLERGY SYMPTOMS

## INCLUDES

**A fish/shellfish allergic** reaction occurs when the body recognises the food protein as harmful and mounts an allergic response. An allergic reaction to seafood can be mild or moderate (swollen lips, face or eyes, itching, tingling mouth, hives, rash, abdominal pain, vomiting) or severe (breathing difficulties, dizziness or collapse). Fish/shellfish reactions have the potential to cause anaphylaxis, which is the most severe form of an allergic reaction. Individuals may experience one or more of the following symptoms:

### Mild to moderate symptoms:

- Nausea
- Vomiting
- Abdominal pain
- Diarrhoea
- Hives (rash)
- Tingling mouth
- Swelling of the lips, face, tongue or throat
- Itching

### Severe symptoms:

- Difficult or noisy breathing
- Wheezing
- Persistent cough

### Foods that most commonly contain seafood include:

- Combination foods like fried rice, spring rolls, and paella
- Dishes that are often prepared with fish-based sauces, like oyster sauce
- Sushi
- Salad dressings
- Sauces, like steak and Worcestershire
- Seafood soups and broths
- Spreads like taramasalata



### Food products that sometimes contain seafood include:

- Deli meats
- Dips, spreads and salad dressings
- Foods that contain gelatin like marshmallows or hot dogs
- Fried foods (from contaminated frying oil)



## FOOD

# ALLERGEN

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### **Tips for following a seafood-free diet**



If you are allergic to seafood, it is best to avoid all food and products that contain fish, crustacean or shellfish that you are allergic to. Keep these helpful tips in mind:

- Always read the ingredient list carefully. The ingredient list will say "Contains: fish, shellfish or crustaceans"(or the specific name of the seafood, like shrimp, lobster, crab) if it contains this ingredient
- Avoid foods that say "may contain" followed by the name of the seafood, like lobster, on their labels.
- Don't take chances. Avoid foods that do not have a clear ingredient list. This includes avoiding imported products, as they do not always have an accurate food label.
- Be careful if you have a fish or seafood allergy. It is possible to experience an allergic reaction from fish or seafood being cooked or steamed even if you don't eat it.
- Instead of fish-based sauces, add low-sodium soy sauce or Tabasco sauce for extra flavour in rice or noodle dishes.



# FOOD ALLERGEN

## MEAT AND POULTRY (5)

Allergens:

- Pork F26
- Beef F27
- Chicken F83
- Lamb F88
- Silkworm Pupa

### DO YOU KNOW

People can be allergic to beef, pork, lamb, or poultry, these meat allergies are less common than other types of food allergies.

Part of the reason for this is that many of the proteins in meat that can trigger an allergy (known as allergens) become less likely to do so when meat is cooked.

### DO YOU KNOW

### IMPORTANT

Meat allergy can develop at any stage in life, and certain people are at greater risk, including those with specific blood types, past infections, tick bites, eczema, or other food allergies.

# FOOD

# ALLERGY

## SYMPTOMS

**An allergic reaction happens when the body releases a chemical known as histamine into the bloodstream. Histamine can trigger immediate and sometimes profound effects, causing blood vessels to dilate and mucus-producing cells to activate.**

:

**This can lead to a cascade of symptoms affecting the skin, digestive tract, and respiratory tract:**

INCLUDES

- Rash
- Hives (urticaria)
- Generalized tissue swelling (angioedema)
- Headaches
- Stomach cramps
- Diarrhea
- Lightheadedness and syncope
- Nausea or vomiting
- Sneezing
- A runny or stuffy nose
- Swollen, teary eyes
- Shortness of breath
- Rapid heart rate

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**RECOMENDATION** simple precautions will reduce or minimize the risk:

!

- Once a meat allergy is diagnosed, the best treatment is to avoid the trigger. Carefully check ingredient labels of food products and learn whether what you need to avoid is known by other names.
- Be extra careful when you eat out. Waiters, and sometimes the kitchen staff, may not always know the ingredients of every dish on the menu.
- Anyone with a food allergy must make some changes in what they eat. Your allergist can direct you to helpful resources, including special cookbooks, patient support groups, and registered dietitians who can help you plan meals.
- There's no treatment other than avoiding red meat and other products made from mammals. If you have a serious allergic reaction, you may need medicine called epinephrine and treatment at the emergency room. Avoid tick bites to prevent alpha-gal syndrome.



# FOOD

# ALLERGEN

## VEGETABLE AND FRUIT (14)

### Allergens:

- Carrot F31
- Cucumber F244
- Mango F91
- Celery F85
- Potato F35
- Tomato F25
- Banana F92
- Kiwi F84
- Garlic F47
- Citrus Mix F33
- Peach F95
- Onion F48
- Strawberry F44
- Apple F49

### DO YOU KNOW

**Fruit and vegetable** allergy is a reaction that occurs soon after contact to fruit and vegetables. These reactions usually occur within minutes after contact, but sometimes can take up to 1-2 hours. The reactions occur against proteins that are in a number of different fruits or vegetables. The Rosaceae (apple, pear, cherry, peach, and plum) and Cucurbitaceae (cucumber, melon, watermelon, zucchini, pumpkin) plant groups and kiwi fruit are particularly likely to cause allergies.

**Allergic** reactions to fruits and vegetables stem from what's called oral allergy syndrome (OAS), a condition that causes a reaction to foods that are structurally similar to allergenic pollens

### DO YOU KNOW

# FOOD

# ALLERGY

## SYMPTOMS

**Symptoms reactions can range from mild to severe.**

**INCLUDES**

**Mild to moderate reactions include the following:**

- hives or welts,
- swelling of the lips, face or eyes,
- tingling of the mouth,
- abdominal pain or vomiting.

**Severe reactions (anaphylaxis) can include the following symptoms:**

- difficulty/noisy breathing,
- swelling of the tongue,
- swelling or tightness in the throat,
- difficulty talking and or hoarse voice,
- wheeze or persistent cough,
- persistent dizziness or collapse, pale and floppy (in young children).

**INCLUDED**

**it is rare (but possible) for severe symptoms to occur alone without hives and/or vomiting**

### Specific Cross Reactions

- The most common type of OAS is birch pollen allergy. Because birch pollen allergy is so common, it is the most widely studied of all OAS associations.
- The following sensitivity associations for birch pollen, grass pollen, ragweed, and mugwort have been noted:
- People sensitized to birch pollen may have OAS symptoms when they eat kiwi, apple, apricot, tomato, celery, carrot, potato, hazelnut, walnut, almond, peanut, beans
- Grass pollen allergies are associated with sensitivities to melon, watermelon, orange, tomato, kiwi, potato, swiss chard, and peanuts.
- Ragweed allergies are associated with sensitivities to watermelon, banana, zucchini, cucumber, and squash.
- Mugwort allergies are associated with sensitivities to peach, lychee, mango, grape, celery, carrot, parsley, fennel, garlic, cabbage, broccoli, coriander, cumin, sunflower seeds, and peanuts.

## FOOD

# ALLERGEN

### <sup>12</sup> **Treatment and Management:**

- The main method of managing OAS is avoiding trigger foods. Some people may only need to avoid their triggers in their raw form.
- You may find that your symptoms are worse when pollen counts are high. During pollen season, you may need to avoid foods that you can tolerate at other times of the year.
- Your healthcare provider may recommend that you take antihistamines or other allergy medication to help control your allergic rhinitis symptoms.



# VENOM

# ALLERGEN

## HONEY BEE VENOM (2)

Allergens:

- Bee Venom I1
- Wasp Venom I3

**DO YOU  
KNOW**

The venom of honeybees, paper wasps, and yellow jackets tends to cause the most severe allergic reactions.

Bees, wasps, and fire ants most commonly cause systemic allergic reactions, which spread all over the body, including to the skin and respiratory system.

**DO YOU  
KNOW**

## VENOM

# ALLERGY

## SYMPTOMS

### INCLUDES

**A severe allergic reaction (anaphylaxis) to bee stings is potentially life-threatening and requires emergency treatment. A small percentage of people who are stung by a bee or other insect quickly develop anaphylaxis.**

#### **Signs and symptoms of anaphylaxis :**

- Skin reactions, including hives and itching and flushed or pale skin
- Difficulty breathing
- Swelling of the throat and tongue
- A weak, rapid pulse
- Nausea, vomiting or diarrhea
- Dizziness or fainting
- Loss of consciousness

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#### **Preventing bee sting allergies**

Those who are allergic to bee stings can take the following precautions to reduce their risk of being stung when outdoors:

- Avoid walking in sandals or bare feet
- Ensure arms and legs are covered
- Avoid wearing clothing that is brightly colored or has a floral print
- Avoid wearing strong perfumes
- Check outdoor areas for bees and other flying insects before eating outside
- Keep windows closed when driving

#### **If you come into contact with bees:**

- Do not swat at bees as they may sting in defense.
  - If a bee flies near you, try to move slowly and calmly away.
  - If a bee lands on you, try to remain calm as it will usually fly away within seconds.
  - If you find a bee or wasp nest in your house or garden, call a local pest control expert.
- Never attempt to remove a nest yourself.



## 1) What is food allergy?

A food allergy is when the immune system reacts to a food (allergen), which is usually harmless. The immune system produces allergy antibodies called Immunoglobulin E (IgE) that can result in symptoms.

A positive food allergy test (skin test or blood test for allergen specific IgE) means that a person's immune system has produced an antibody response to that food. This is known as sensitisation. It is possible to have sensitisation without allergy, which means that the person can eat the food without any symptoms. For this reason, food allergy should be confirmed by a clinical immunology/allergy specialist. The most common food allergens are cow's milk (dairy), egg, peanut, tree nuts, sesame, soy, fish, shellfish and wheat.

## 2) What factors can make allergic reactions to foods worse?

Some factors can make allergic reactions to foods worse, and these include:

- Amount of food eaten.
- Form of the food - liquid may be absorbed faster, and cooked food is sometimes better tolerated.
- Whether it is eaten on its own or mixed in with other foods.
- Intake of alcohol.
- Exercise around the same time as the allergen is eaten.
- Asthma.
- Being unwell.
- Menstruation.

### **3) When does food allergy develop and can it be outgrown?**

Food allergy can develop at any age, but it is most common in children less than five years old. Most children allergic to cow's milk, soy, wheat or egg will outgrow their food allergy.

By contrast, allergic reactions to peanut, tree nuts, sesame seeds and seafood persist in approximately 75% of children affected. When food allergy develops for the first time in adults, it usually persists.

### **4) How can people with food allergy manage their condition?**

People living with food allergy can learn to manage their condition with the guidance of their clinical immunology/allergy specialist. For people who are at risk of anaphylaxis, having an adrenaline injector for Anaphylaxis can provide reassurance, but this is not a substitute for strategies to minimise the risk of exposure. Strict avoidance of confirmed food allergens is essential in the management of food allergy.

It is important for people with food allergy to:

- Know the signs and symptoms of allergic reactions and know what to do when a reaction occurs.
- Read and understand food labels for food allergy.
- Tell wait staff that they have a food allergy when eating out.
- Be aware of cross contamination of food allergens when preparing food.

### **5) Does cooking the food remove the allergen?**

Cooked or baked foods, such as cow's milk and/or egg in muffins, cakes or biscuits, may be tolerated by some people with allergy to cow's milk and/or egg. Unless tolerance to cooked or baked foods is confirmed, this should be discussed with your clinical immunology/allergy specialist before introducing these foods.

## **6) What is Pollen Food Syndrome?**

Pollen food syndrome, also known as oral allergy syndrome, occurs mainly in people with allergic rhinitis (hay fever) who are sensitised to inhaled grass or tree pollens, which contain proteins that are in certain foods.

These allergens are known as cross reactive proteins. Pollen allergy usually develops before pollen food syndrome. People with pollen food syndrome find that some uncooked vegetables, fresh fruits, spices and nuts will make their mouth and throat itchy or swell. If the food is cooked, the protein is usually destroyed, as the cross reactive proteins in pollens and foods are often quite fragile. This is why many people with pollen food syndrome can eat the cooked food without a problem.

## **7) What is the best method of testing for allergies?**

A blood test is appropriate in certain situations. Blood testing is another common way to measure the potential for an allergy. These blood tests look for IgE antibodies in your blood that are specific to a certain food or other allergen. The higher the level of IgE, the more likely you are to have an allergy to that particular food. On the plus side, there's no risk that the test will trigger a severe reaction. Because of this, blood testing is considered the safer option. This is particularly important for people who are at higher risk for a life-threatening anaphylactic reaction, as well as for those with unstable heart disease or asthma AND also be better for anyone with an extensive rash or eczema, which can make skin testing more difficult.

# ALLERGY

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