# Allergens

## EU enforced regulations

European Union issued regulations for food related businesses in 2011. The ruling has been in effect ever since and only gets updated over years when more and more information becomes available regarding food safety and allergies.

In product labeling, ingredient list must include any additives and allergen information, they must be listed in descending order of weight. Any allergens (substances or products causing allergies or intolerances used during manufacture or preparation and present in the finished product) present must be highlighted in the list of ingredients, by using a different font, letter size or background color. If there is no ingredients list, any allergens must be included by using ‘contains' followed by the name of the allergen. There are 14 main allergens that are required to be highlighted on labels:

1. **Cereals** containing gluten, namely: wheat, rye, barley, oats, spelt, kamut or their hybridised strains, and products

2. **Crustaceans** and products thereof (prawns, crabs and lobsters).

3. **Eggs** and products thereof.

4. **Fish** and products thereof (except fish gelatin or Isinglass used as fining agent in beer and wine).

5. **Peanuts** and products thereof.

6. **Soybeans** and products thereof (except fully refined soybean oil and fat).

7. **Milk** and products including lactose (except whey used for making alcoholic distillates and lactitol)

8. **Nuts**, namely almonds, hazelnuts, walnuts, cashews, pecan nuts, Brazil nuts, pistachio nuts, macadamia and products thereof (except for nuts used for making alcoholic distillates).

9. **Celery** and products thereof.

10. **Mustard** and products thereof.

11. **Sesame** seeds and products thereof.

12. Sulphur dioxide and **sulphites** at concentrations of more than 10mg/kg or 10 mg/liter.

13. **Lupin** and products thereof.

14. **Mollusks** and products thereof.

## Other Allergens

There are over 4500 allergens across the world, naturally the main 14 do not cover everything, however, the rest a slightly less common. Here are some of the examples of other foods that can cause allergies for certain individuals.

* **Carrot**: Though carrots are nutritious and loaded with beta-carotene, they can cause severe allergic reactions if the person has oral allergy syndrome or an allergy to pollen in certain raw fruits and vegetables. Individuals may experience an itchy throat, mouth, or ears.
* **Avocado**: Avocado allergy may be associated with tree pollen allergy or with latex allergy. Symptoms may develop immediately or up to an hour after eating fresh avocado and may include local reactions in the mouth and throat with itching and inflammation.
* **Bell pepper**: Bell pepper allergy often presents with respiratory symptoms and headaches accompanied by allergic rhinitis, which is a rare symptom of food allergy.
* **Potato**: Potato allergy may cause a reaction from touching, peeling, or eating potatoes. Symptoms vary and can include rhinitis, itchy eyes, a runny nose, and sneezing with red, itchy skin.
* **Pumpkin**: Allergy to pumpkin can be caused either by the ingestion of pumpkin or pumpkin seeds or in rare cases, simply touching pumpkin flesh or seeds.
* **Mushroom**: Allergy to mushrooms can occur at any age even if a person has consumed them for an extended periods of time. Symptoms may vary ranging from mild to severe reactions, which can be experienced within minutes to hours after exposure.
* **Onion**: People who are sensitive to onions are often allergic to other alliums as well, although having a true onion allergy is relatively rare.
* **Spices**: Allergies to spices, such as coriander and garlic, are rare and are usually mild, although a few severe reactions have been reported. Individuals who are sensitive to these environmental allergens have a higher chance of developing a spice allergy.
* **Apple**: Allergy to apple manifests itself majorly as Oral Allergy Syndrome (OAS) with swelling and itching of oral mucosa in throat, lips, itching in the eyes, etc., as allergic rhinitis and asthma in others, and even as severe systemic symptoms like anaphylaxis in some people.
* **Peach**: Peach-sensitive patients may suffer from allergic reactions such as oral allergy syndrome (OAS) symptoms, urticaria and in worst cases anaphylaxis. Individuals with milder symptoms can instead consume pasteurized forms of peach.
* **Kiwi**: A good source of dietary fiber, protein, calcium, iron, various vitamins like B1, B2, B3, B6, B9, and K. However, a green kiwi fruit has green kiwifruit has 13 different allergens. The severity differs geographically. The sensitization is rising in western countries. European countries reported varied kiwifruit sensitization rates. Patients allergic to kiwifruit should avoid ingestion at any cost.
* **Melon**: Peel and flesh of the fruit are the sources of hypersensitivity and allergic reactions; one melon allergen, is considered a pan-allergen due to its common presence in the plant world. Oral allergy syndrome (OAS) are the main clinical presentations of melon allergy. Symptoms tend to remain limited to the oral cavity, however more severe systemic reactions have also been described.
* **Banana**: A common food in human diet worldwide due to its high nutritional content. However, banana is found to cause allergic reactions in some individuals. An increasing trend on the number of cases on hypersensitivity reactions to banana in infants as well as in adults are being reported till date. Ingestion of fresh, uncooked banana fruit is the main cause of allergy. Symptoms range from mild and local to severe anaphylactic reactions, including asthma and gastrointestinal symptoms in rare cases.
* **Tomato**: Very well-known to elicit allergic reactions in sensitized individuals. Tomato allergies are often seen associated with grass pollinosis or other food or related allergies. Symptoms vary from Oral Allergy Syndrome, urticaria, dermatitis, systemic reactions, rhinitis, abdominal pain, and anaphylaxis.

## Sources

Allergen Encyclopedia: <https://www.thermofisher.com/diagnostic-education/hcp/nl/en/resource-center/allergen-encyclopedia.html>

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Top Food Allergies: <https://www.medicinenet.com/what_are_the_20_most_allergic_foods/article.htm>