Nutrition Guideline
Food Allergies

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Recommendations

- A food allergy is an adverse immunological response to a food protein.
- The most common food allergens are milk, egg, peanut, tree nut, shellfish (crustaceans, molluscs), fish, wheat, sesame seed, and soy.
- The most common lifelong food allergies are peanut, tree nut, fish, and shellfish.
- Some allergens, which are commonly outgrown in childhood or by teenage years, include: egg, milk, soy, and wheat.
- Food allergies are managed by allergen avoidance. Oral immunotherapy has become more commonly used in select individuals especially for milk and peanut allergies with promising impact. It is not a yet a standard of care.
- Referral to an allergist is important to confirm the diagnosis of a suspected food allergy.
- Information required to support a diagnosis includes medical history, physical examination, and tests to confirm or refute suspected food allergies (oral food challenges to be performed by an allergist). The food elimination diet and food/symptom diary are used in cases that are unlikely to be food allergies.
- Once an allergy has been diagnosed the following is recommended to avoid food allergens:
  - Always read food labels and ingredient lists on pre-packaged foods.
  - Modify the diet to ensure adequate nutrition is provided while avoiding potential allergens.
  - Ensure proper hygiene prior to eating and preparing all foods.
  - Ensure family members, school, and friends are aware of the allergy.
  - Inform restaurant staff of food allergies when eating out.
  - Consider wearing a medical identification bracelet that provides information about the food allergy.
  - If required, always carry medication and/or epinephrine auto-injector that can treat an allergic reaction.

Background

Food allergy affects 6% of children and up to 4% of adults worldwide.[1] Food allergy is an important public health problem that affects both adults and children and may be increasing in prevalence.[2] Food allergies are an immune response to food and can be IgE-mediated and non IgE-mediated.

Despite the risk of severe allergic reactions and even death, food allergies are managed by allergen avoidance. Oral immunotherapy has become more commonly used in select individuals especially for milk and peanut allergies. The diagnosis of food allergies can be difficult given that non-allergenic food reactions, such as food intolerance, are often confused with food allergies.[2]

This guideline will give an overview of food allergies but will primarily review common food allergens and provide some common food sources. This guideline will not discuss celiac disease which is an inherited autoimmune disease.[3] For more information, refer to *Nutrition Guideline: Gluten-free Diet.*

Avoiding many foods or entire food groups may lead to nutritional inadequacy. This is particularly important in the case of infants and children. Ideally, a dietitian with expertise with food allergies should be consulted.[4]

Key Questions

What are the differences between food intolerances and food allergies?

A food intolerance is a food sensitivity that does not involve the individual's immune system. Unlike food allergies, where a small amount can cause a reaction, it generally takes a more normal sized portion to produce symptoms. While symptoms of a food intolerance vary and can be mistaken for a food allergy, food intolerances are more likely to develop in the gastrointestinal system.

One common food intolerance is lactose intolerance, which is the inability to properly digest milk sugar (lactose) into the monosaccharides, glucose, and galactose, due to a deficiency in the enzyme lactase. People with lactose intolerance may experience abdominal pain and bloating, diarrhea and flatulence after lactose consumption.[5]

A food allergy involves the immune system and can be immunoglobulin E (IgE) or non IgE-mediated.

Atopic disorders include conjunctivitis, atopic dermatitis, immune-mediated urticaria, immune-mediated angioedema, acute latex allergy, asthma, and allergic rhinitis. Atopy is an IgE mediated immune response.[6] Children with atopic disorders tend to have a higher prevalence of food allergy.

What is a food allergy?

The term food allergy is used to describe an adverse immunologic response to a food protein.[1] An allergy is defined as a hypersensitivity reaction initiated by proven or strongly suspected immunologic mechanisms.[7]

Food allergies are broadly categorized as being mediated by:
- immunoglobulin E (IgE) mechanisms
- non IgE-mediated mechanisms

IgE-mediated allergic responses are the most widely recognized form of food allergy. They are characterized by the rapid onset of symptoms (minutes to several hours) after ingestion.[1]

Non-IgE-mediated food allergies have a slow onset (2–6 hours after consumption) and typically involve only the gastrointestinal tract.[8]

While virtually any food could induce an allergic reaction, only a small number of foods are responsible for most IgE-mediated reactions in children and adults. The foods most commonly associated with food allergy in children are milk, eggs, and peanuts.[9] The foods responsible for the majority of significant allergy in adults are peanuts, tree nuts, fish and shellfish (crustaceans, molluscs).[8]

Food allergies are unique because there are currently no proven pharmaceutical interventions to prevent potentially fatal allergic reactions. Food-allergic individuals must be extremely vigilant as treatment is typically avoidance of food.[8] Oral immunotherapy is being used in selected individuals.[10] Oral immunotherapy is a form of desensitization designed to treat food allergies performed under strict medical supervision.[11]

What is an IgE Antibody?

Food allergies develop when a person consumes or comes in contact with their allergen, and the immune system makes an antibody called immunoglobulin E (IgE). IgE then circulates through the blood and attaches to immune cells called mast cells and basophils.

The initial exposure does not cause an allergic reaction but subsequent contact with the same allergen may allow previously created IgE antibodies to recognize it. This recognition then launches an immune response that can result in a severe allergic reaction.[12]

What are the most common symptoms of a food-induced allergic reaction?

Skin reactions are the most common allergic reactions to foods and include hives, swelling, eczema, and redness of the skin. Gastrointestinal symptoms are very common, including nausea, cramping or abdominal pain, vomiting, and diarrhea, especially in children. Typical respiratory tract symptoms include laryngeal edema, rhinorrhea (mucus secretion from nose), and bronchospasm.[1]

Table 1. Symptoms of Food-Induced Allergic Reaction[2]

Target Organ	Immediate Symptoms (typically IgE mediated)	Delayed Symptoms (typically cellular mechanisms)
Cutaneous	• Erythema (redness) • Pruritus (itchiness) • Uriticaria (hives) • Morbilliform eruption (resembles eruption of measles)	• Erythema • Flushing • Pruritus • Morbilliform eruption • Angioedema • Eczematous rash
Ocular	• Pruritus • Conjunctival erythema • Tearing • Periorbital edema	• Pruritus • Conjunctival erythema • Tearing • Periorbital edema
Upper respiratory	• Nasal congestion • Pruritus • Rhinorrhea (discharge from the nose) • Sneezing • Laryngeal edema • Hoarseness • Dry staccato cough	

Target Organ	Immediate Symptoms (typically IgE mediated)	Delayed Symptoms (typically cellular mechanisms)
Lower respiratory	• Cough • Chest tightness • Dyspnea (difficulty breathing) • Wheezing • Intercostal retractions (retraction of muscles between the ribs responsible for controlling movement of the ribs) • Accessory muscle use (muscles of the shoulder girdle and chest wall that (in addition to the intercostal muscles and the diaphragm) are utilized for breathing)	• Cough dyspnea and wheezing
GI (oral)	• Angioedema of lips, tongue, or palate • Oral pruritus • Tongue swelling	
GI (lower)	• Nausea • Colicky abdominal pain • Reflux • Vomiting • Diarrhea	• Nausea • Abdominal pain • Reflux • Vomiting • Diarrhea • Hematochezia (bloody stools) • Irritability and food refusal with weight loss (young children)
Cardiovascular	• Tachycardia – rapid heart action (occasional bradycardia – slow heart action in anaphylaxis) • Hypotension • Dizziness • Fainting • Loss of consciousness	
Miscellaneous	• Uterine contractions • Sense of impending doom	

Can an allergic reaction be potentially life threatening?

Yes, the most severe allergic reaction is an anaphylactic reaction.[1]

Anaphylaxis is defined as a serious allergic reaction that is rapid in onset and may cause death. The more rapidly anaphylaxis develops, the more likely the reaction is to be severe and life-threatening. Although any substance has the potential to cause anaphylaxis, the most common causes of IgE-mediated anaphylaxis are foods, particularly peanuts, tree nuts, shellfish and fish, cow's milk, eggs, and wheat.[13] While food allergies are more common than drug allergies, drug allergies are the most common cause of fatal and near-fatal IgE-mediated anaphylaxis.[10]

What are the most common food allergies?

Although a food allergy can arise to any food, the allergens responsible for more than 85% of food allergy are: milk, egg, peanut, tree nut, shellfish, fish, wheat, sesame seed, and soy. These are referred to priority food allergens by Health Canada because they are the substances most frequently associated with food allergies and allergic-type reactions. There are labelling regulations that require them to be identified on pre-packaged food product label.[1] Other Health Canada priority allergens include mustard, sulphites, and triticale. Sulphites, a food additive, are also included in this list even though they do not cause true allergic reactions; however, individuals with a sulphite sensitivity may experience allergy-like symptoms when exposed to sulphites.[14]

The following food allergies are lifelong in the majority (80%) of people:[15]

- peanut
- tree nut
- fish
- shellfish (crustaceans and molluscs)

Twenty percent (20%) of individuals may outgrow a peanut allergy.[1]

The following allergies are outgrown by the teenage years in 80% of people:[15]

- egg
- milk
- soy
- wheat[16]

For food allergic infants, approximately 80% will reach tolerance by the 5th birthday.[7]

Are certain individuals more susceptible to developing a food allergy?

Children with atopic disorders (a hereditary disposition to the development of immediate hypersensitivity reactions[17]) tend to have a higher prevalence of food allergy.[1] An infant with a parent, sister, or brother (i.e. a first degree relative) with a history of allergic rhinitis (hay fever), asthma, eczema, or food allergy is at greater risk for developing food allergy. Egg allergy is the most common food allergy children with eczema.[7]

How is a food allergy diagnosed?

Referral to an allergist is important to confirm the diagnosis of a suspected food allergy. The diagnosis of a food allergy requires the following: detailed medical history, physical examination, and diagnostic tests.

Oral food challenges are often required to confirm or refute suspected food allergies. The double-blind placebo controlled food challenge is the gold standard;[2] however, oral food challenges are often performed as a valid alternative.[10] An individual's report of food allergy must be confirmed.

- *Medical history*: this would include the type of food induced allergy reaction and the potential causative food.
- *Physical examination*: This is to look for evidence of atopy or other allergic diseases often associated with food allergy. This exam is also useful for examining the overall nutritional status and growth in children.
- *Methods to confirm or refute the suspected trigger food*: It is recommended that these tests be performed by an allergist.
  - *Skin prick test (SPT):* This is a rapid, safe, and sensitive method to assist in diagnosing a suspected IgE food allergy. A positive SPT appears as a wheal and flare reaction when the responsible food is applied to the skin and pricked. A positive SPT alone is not sufficient for diagnosing a food allergy. The patient must also have a supportive history.
  - *Allergen-specific serum IgE*: This test assesses the presence of IgE antibodies against specific foods. It identifies sensitization but not necessarily clinical allergy. It is less sensitive, more costly than SPTs, and can be used if SPT cannot be performed or is not available. Alone, these tests are not diagnostic of food allergies.
  - *Oral food challenges:* These involve gradual feeding of the suspected food with careful medically supervised assessment of any symptoms. In the event of symptoms, feeding is discontinued and the individual is treated where appropriate. Food challenges should only be conducted in clinics or hospitals with both the personnel and equipment needed to treat anaphylaxis.

If a food allergy is suspected, the food should be avoided, an epinephrine auto-injector should be prescribed when appropriate, and the individual should be referred for an allergy assessment.[1]

What to do once a food allergy has been diagnosed?

General Recommendations

- Managing a food allergy involves avoidance of the allergen and being prepared to treat the allergic reaction if needed.[16] Education is important to avoid the allergens. Patients, their families, close relatives, and caregivers should be aware of risk situations and instructed on how to avoid food allergens inside and out of the home.[4] Cross contamination or cross contact can happen when a small amount of the allergen gets onto another food accidentally or when it is present in saliva, on a surface, or an object. A small amount of an allergen may cause an allergic reaction.
- Recognize symptoms of a food allergy.
- For individuals who have experienced anaphylaxis or are deemed to be at increased risk for anaphylaxis, carry an epinephrine auto-injector and ensure the individual or caregiver has been shown how to use it properly.
- Consider a Medic Alert tag or bracelet in case of loss of consciousness in an allergic reaction.
- Read food labels and the ingredients list on food packages. Avoid foods that contain the allergen of concern.
- If any of the priority food allergens, gluten sources, or added sulphites are part of the product formulation, they must be declared on the list of ingredients OR in a separate “Contains” statement immediately following the list of ingredients. For example, if a tree nut like almonds were the allergen, it could be listed in the ingredients or be emphasized in a “Contains” statement. Tree nuts must be declared using their specific names: almonds, Brazil nuts, cashews, hazelnuts, macadamia nuts, pine nuts, pistachios, and walnuts.[18]

Ingredients: Whole grain oats, sugar, canola oil, almonds, salt, natural flavour.	OR	Ingredients: Whole grain oats, sugar, canola oil, almonds, salt, natural flavour. Contains: almonds

- Contact food manufacturers about the potential presence of allergens if unsure.
- Discuss precautionary or defensive labelling with a physician before avoiding all foods that contain or may contain any sources of a potential food allergen. Precautionary labelling is a declaration on a food label that there may be a possible presence of an allergen in the food product. The precautionary label that appears on food labels as "May contain [X]" where X is the name by which the allergen is commonly known.[19]
- If an individual is unsure if the food contains an allergen, it is best for them to avoid eating the food and talk with their physician and/or allergist.
- It may be important to work with a qualified health professional (e.g. Registered Dietitian) to ensure an individual's diet is nutritionally adequate. This is particularly important in infants and children with multiple or staple food allergies since avoidance of some foods can result in nutritional deficiencies and can impact quality of life. Staple foods would be ones typically consumed in the diet. Examples include milk, wheat, eggs, and soy.[20] Regular growth monitoring of children is recommended.[4]

Peanut Allergy[21]

- Peanuts are a type of legume and not a nut; however, individuals with a peanut allergy may also react to tree nuts and other legumes (beans, peas, lentils, soy),[22] as could anyone with any food allergy. There is no direct increased risk of a tree nut allergy in peanut allergic kids. The statistical increase appears to entirely result from precautionary avoidance resulting in a missed opportunity to develop tolerance. Although some individuals with a peanut allergy react to other legumes, this is not very common.[2] Before excluding these foods, they should speak with a physician or an allergist.

Food and ingredients to avoid If the individual has a peanut allergy and sees this on a list of ingredients, the product should be avoided.	
• Beer nuts • Arachnis oil • Goober nuts • Goober peas • Ground nuts	• Kernels • Mandelonas • Nu-Nuts™ • Nut meats • Valencias

- Individuals need to be aware that many nut butters and seeds (sunflower seeds) may be produced on equipment used to process peanuts in the same facility.
- They must be aware that many ethnic foods dishes and/or sauces (Chinese, Indonesian, Thai, and Vietnamese) contain peanuts; therefore, there may be a high potential for cross-contamination.
- While refined peanut oil does not present a risk to the vast majority of peanut-allergic individuals, the enhanced allergen labelling regulations will identify the source of the oil "peanut", whether highly refined or not.[23]
- Non-food sources include ant baits, bird feed, mouse traps, pet food, pet bedding, cosmetics, sunscreens, craft materials, medications, vitamins, mushroom growing medium, stuffing in toys.

Tree Nut Allergy[24]

Food and ingredients to avoid:	
Nuts of concern include but not limited to: • Almonds • Brazil nuts • Cashews • Hazelnuts	• Macadamia nuts • Pecans • Pine nuts • Pistachio nuts • Walnuts
If the following is noted on the ingredient list, the food should be avoided:	
• Anacardium nuts • Filberts (hazelnuts) • Nut meats	• Pinon • Queensland nut (macadamia)

- Individuals should be aware that many nut butters, natural flavourings/extracts (e.g. almond extract), and nut flavoured coffee/liqueurs (e.g. amaretto) may be produced on equipment used to process a variety of nuts/seeds.
- Many ethnic foods dishes and/or sauces (Chinese, Indonesian, Thai, and Vietnamese) often contain nuts, therefore, there may be a high potential for cross-contamination.
- Examples of foods that often contain tree nuts are baked goods, granola bars, marzipan, pralines, vegetarian dishes, and tree-nut oils (unrefined or partially refined tree nut oils e.g. cold-pressed).
- Peanut is part of the legume family and is not a tree nut; however, while peanuts and tree nuts are different, in some cases people with a tree nut allergy may also be allergic to peanuts. They also may be roasted and processed in the same facility, therefore, there is a cross contamination risk. This risk is very small.[10] Consult your allergist before eating peanuts unless well-tolerated.
- Neither coconut nor nutmeg are tree nuts. Both are seeds that come from a fruit (coconut) or tropical tree (nutmeg). Most often people with a tree nut allergy tolerate coconut and nutmeg, however, it is best to talk with a qualified health professional before trying these products.
- Non-food sources of tree nuts include bean bags, kick sacks/hacky sacks, bird seed, cosmetics, hair care products, sun screens, massage oils, and pet food.

Milk Allergy[25]

Food and ingredients to avoid:	
Milk from: • Cow • Goats • Sheep • Deer • Buffalo and other ruminants have a protein similar to cow's milk; therefore, it is essential to avoid goat's milk and any related products containing animal milks until a knowledgeable physician and/or allergist is consulted.	Common sources of milk: • Butter, buttermilk • Cheese, curds • Cream, ice cream • Ghee and butter fat • Kefir (milk drink) • Kumiss (fermented milk drink) • Sour cream • Yogurt
If the following is noted on the ingredient list, the food should be avoided:	
• Beta-lactoglobulin • Casein • Rennet casein • Caseinate (ammonium caseinate) • Calcium caseinate • Magnesium caseinate • Potassium caseinate • Sodium caseinate • Delactosed or demineralized whey • Hydrolyzed casein	• Lactalabumin and lactalbumin phosphate • Whey and whey protein concentrate • Lactoferrin, and lactoglobulin. • Sodium caseinate • Delactosed or demineralized whey • Hydrolyzed casein • Lactalabumin and lactalbumin phosphate • Whey and whey protein concentrate • Lactoferrin, and lactoglobulin.

- Deli slicers found at any grocery store or butcher have a high potential for cross-contamination as this equipment is frequently used to slice cheese products.
- Restaurants may add milk, cheese, or milk derivatives to many of their foods. For example, mashed potatoes may be made with cream, milk, and/or butter. Individuals should always inquire with their server before ordering.
- Additional sources of milk include but are not limited to baked goods, cereal, crackers, frozen yogurt, sherbet, coffee whitener, non-dairy creamer, granola bars, soup mixes, and tofu.
- In some recipes, milk can be substituted in equal amounts with water, fortified plant-based beverages or 100% fruit juice.
- Some milk-allergic children may be tolerant to milk in baked goods. Talk to the child's doctor or dietitian before giving baked goods containing milk to children with milk allergies.

Egg Allergy[26]

Food and ingredients to avoid:	
Avoid all food and products that contain egg.	
If the following is noted on the ingredient list, the food should be avoided:	
• Albumin • Albumen • Conalbumin • Egg substitutes (e.g. Egg Beaters®) • Globulin • Livetin	• Lysozyme • Ovo (means egg, e.g. ovotransferrin, ovalbumin, ovomucin) • Silico-albuminate • Vitellin

- Be aware that foam and milk topping on many coffees, specialty drinks, desserts, and egg substitutes may contain and/or have been made from eggs or egg white.
- Many commercially prepared types of pasta either contain eggs or have been processed on equipment that was used for egg-containing pastas.
- Additional sources of egg and egg protein include but are not limited to, battered/fried foods, creamy salad dressings, mayonnaise, many baked foods/desserts (angel food cake), quiche, soufflé, soups and some alcoholic drinks such as beer.
- Measles, mumps, rubella, and flu vaccines do not contain sufficient egg protein to trigger an allergic reaction. Most vaccines are safe for individuals with egg allergies, however, the yellow fever vaccine specifically can pose a risk for individuals with an egg allergy.[10]
- Some egg-allergic children may be tolerant to eggs in baked goods. Talk to the child's doctor or dietitian before giving baked goods containing eggs to children with egg allergies.
- Non-food sources of egg include craft materials, hair-care products, medications, some vaccines

Fish Allergy[27]

- Fish, crustaceans, and molluscs are sometimes collectively referred to as seafood, although they are in fact unrelated to one another. People with allergies to one type of seafood like fish, crustaceans (lobster, crab, etc), and molluscs (oysters, clams) are usually not allergic to other types of seafood. For example, some people can eat fish safely but react to crustaceans such as crab and lobster.
- It is possible to react to different species of fish, including freshwater and salt water fish, and not others but this varies from person to person. An allergist can test for this. It would be best for an individual to consult one if allergic to one type of fish before trying others, unless already well-tolerated.
- Seafood must be declared on the label using the common name of the fish, such as tuna or halibut, although mislabelling of fish has been a common problem in the industry.[10] Individuals should be cautious when consuming packaged fish products and consult with their allergist before consuming them.[28]

Food and ingredients to avoid:	
Examples of common fish include:	
• Anchovy • Basa • Bass • Bluefish • Carp • Catfish • Char • Chub • Cisco • Cod, eel • Flounder • Grouper • Haddock • Hake • Halibut • Herring • Mackerel • Mahi-mahi • Marlin • Monkfish • Orange roughy	• Perch • Pickerel • Pike • Plaice • Pollock • Pompano • Porgy • Rockfish • Salmon • Sardine • Shark • Smelt • Snapper • Sole • Sturgeon • Swordfish • Tilapia • Trout • Tuna (albacore, bonito) • Whitefish • Whiting
Examples of other foods or products that contain or often contain fish:	
• Combination foods e.g. fried rice, paella, spring rolls (from rolls or sauce) • Gelatin • Marshmallows • Garnishes e.g. antipasto • Pizza toppings	• Salad dressings • Sauce e.g. marinara/puttanesca, Nuoc Mam, Worcestershire Spreads, e.g. taramsalata • Sushi • Deli meats hot dogs (from gelatin) • Fried foods (from contaminated frying oil)

- Examples of other foods or products that contain or often contain fish: combination foods (e.g. fried rice, paella, spring rolls, gelatin, marshmallows), garnishes (e.g. antipasto, pizza toppings), sauces (e.g. marinara/puttanesca, Nuoc Mam, Worcestershire), spreads, sushi, deli meats, hot dogs (from gelatin), fried foods (from contaminated frying oil).
- Many restaurants often cook with seafood and it is possible cross-contamination could occur from the handling of fish.
- Allergic reactions to fish oil are not documented in the medical literature. In general, oils derived from fish are highly refined are not considered a source of fish protein. Where the refining process has removed fish protein, the refined fish oil is not subject to the allergen labelling guideline regulations. If a fish oil was not highly refined, the allergen regulations would apply.[23]
- Non-food sources of fish include compost or fertilizers, fish food, lip balm, lip gloss, pet food, and bedding.

Crustaceans and Molluscs[29]

- Fish, crustaceans, and molluscs are sometimes collectively referred to as seafood. Crustaceans and molluscs are sometimes referred to collectively as shellfish.
- Crustaceans are aquatic animals that have joined legs, a hard shell, and no backbone.
- Molluscs have a hinged two-part shell.

Food and ingredients to avoid:
Examples of crustaceans
• Crab • Crayfish • Lobster • Prawns / shrimp
Examples of molluscs
• Clams • Mussels • Oysters • Snail • Squid
Examples of other foods or products that contain or often crustaceans and molluscs:
• Combination foods e.g. fried rice, paella, spring rolls (from rolls or sauce) • Garnishes e.g. antipasto, caponata (Sicilian relish) • Sauces e.g. alle vongole, marinara, oyster sauce • Sushi Possible sources include: • Dips, spreads • Fried foods (from contaminated frying oil)

- Crustacean and mollusc allergies predominantly affect adults and are less common among young children. These allergies tend to develop later in life than common childhood allergies. Allergies to crustaceans and molluscs are usually lifelong conditions.
- Avoid all food and products that contain the species of crustaceans and molluscs to which the individual is allergic.
- If a crustacean or mollusc is part of the product formulation, the specific species of crustacean or mollusc must be declared in the list of ingredients.
- Many restaurants often cook with seafood and it is possible cross-contamination could occur from the cooking vapors and/or handling of fish.
- Non-food sources include compost or fertilizers, lip balm, lip gloss, pet food, and pet bedding.

Wheat and Triticale Allergy[30]

Triticale is a hybrid grain created by crossing wheat and rye. Individuals with a wheat allergy should avoid triticale as well.

Food and ingredients to avoid:	
• Breads • Baked goods • Batter-fried food • Beer • Cereals • Cereal-based coffee substitutes • Chicken and beef broth • Falafel • Flour	• Gravy mixes • Gluten • Host (communion, altar bread, wafers) • Hydrolyzed plant protein • Imitation bacon • Pasta • Pie fillings and puddings • Sauces e.g. chutney, soy, tamari, sauce • Seasonings
If the following is noted on the ingredient list, the food should be avoided (other words for wheat)	
• Atta • Bulgur • Couscous • Durum • Einkorn • Emmer • Flour • Farina	• Fu • Graham • High-gluten and high-protein flour • Kamut • Seitan • Semolina • Spelt (dinkel, farro)

- Other possible sources of wheat include but are not limited to: ice cream, hot dogs, modified starches, seasonings, condiments like mustard and ketchup, deli meats, or cream based soups may contain and/or may be made from white/wheat flour.
- It is important to note that diagnosis of a wheat allergy differs from the diagnosis for celiac disease, and their clinical presentations are quite different. With a wheat allergy, the individual is allergic to one of several wheat proteins (most commonly omega-5-gliadin) and are usually not allergic to other grains and their derivatives. With celiac disease, an individual has a non-IgE-mediated immunologic reaction to the protein gluten. Many grains (barley, oats, rye and wheat) contain gluten and therefore are avoided after diagnosis of celiac disease. If the individual is unsure whether he/she has an allergy or celiac disease, consult an allergist or physician.
- Non-food sources of wheat include cosmetics and haircare products, medication, vitamins, modelling compound, pet food, pet bedding, and wreath decorations.

For ways to replace wheat flour in recipes, please refer to: *Gluten Free: The Definitive Resource Guide* (2016). Shelly Case RD. https://shelleycase.com/product/gluten-free-the-definitive-resource-guide/

For more information refer to *Nutrition Guideline:* Gluten-free Diet

Soy Allergy[31]

Food and ingredients to avoid:	
• Soybean sprouts • Bread crumbs, cereals and crackers, breaded foods • Hydrolyzed plant protein (HPP) • Hydrolyzed vegetable protein (HVP) • Infant formula, follow-up formula, nutrition supplements for toddlers and children • Meal replacements • Meat products with fillers e.g. burgers and prepared ground meat products	• Miso • Nutrition Supplements • Sauces (soy), shoyu, tamari, teriyaki, Worcestershire • Simulated fish and meat products, e.g. surimi, imitation bacon bits, vegetarian burgers • Stews , e.g. in gravies • Tempeh • Vegetarian dishes
If the following is noted on the ingredient list, the food should be avoided (other words for soy):	
• Bean curd (dofu, kori-dofu, soybean curds, tofu) • Edamame • Kinako • Natto • Nimame	• Okara • Soya • Soja • Soybean • Soybeans • Yuba

- For more examples of food and products containing soy see www.canada.ca and type Soy - A Priority Food Allergen in the search box. https://www.canada.ca/en/health-canada/services/food-nutrition/reports-publications/food-safety/priority-food-allergen.html.
- Individuals with a soy allergy may not need to avoid soy oil. Soy oils tend to be refined enough to remove the proteins which trigger allergic reactions.[31] Soybean that is not highly refined (i.e. cold pressed, expelled, or extruded) should be avoided and will need to be treated as food allergen unless the produce can provide sufficient evidence that the oil will not pose a risk for soy allergic customers.[23]
- Soy lecithin is a food additive derived from soy bean oil and generally does not contain sufficient protein to cause allergic reactions to individuals allergic to soy.[31] Consult with an allergist for questions relating to consuming foods with soy lecithin.[20,31]
- Non-food sources of soy include cosmetics, soaps, craft materials, glycerin, milk substitutes for young animals, pet food/pet bedding, and vitamins. This list is not complete and may change. Purchasing items in other countries through the Internet may not use the same labelling standards in Canada.

Mustard Allergy[32]

Examples of foods and products that contain or often contain mustard:	
• Condiments • Salad dressings (vinaigrettes and crudites) • Spices and seasonings • Sauces (barbeque, curry, ketchup, etc.) • Pickles • Processed meats	• Vegetables with vinegar • Dehydrated soups • Potato salad
Other possible sources of mustard	
• Some appetizers (like devilled eggs) • Dehydrated mashed potatoes • Some baby/toddler pre-packaged food • Sprouted seeds	

- Mustard belongs to the same plant family which includes canola, broccoli, cauliflower, cabbage, Brussels sprouts, and turnip.
- Canola oil is not considered to pose a risk for people with a mustard allergy, as it is highly refined and does not contain any detectable amounts of protein.

Sesame Allergy[33]

Examples of foods and products that contain or often contain sesame	
• Bread (such as hamburger buns) • Melba toast • Muesli • Dips and spreads (hummus, chutney) • Sesame oil • Tahini	• Tempeh • Combination foods e.g. flavoured rice, noodles • Shish kebabs and stir fries • Snack bars (such as protein, granola bars)
If the following is noted on the ingredient list, the food should be avoided (other words for sesame)	
• Benne • Benne seed • Benniseed • Gingelly • Gingelly oil • Seeds	• Sesamol • Sesamolina • Sesamum indicum • Sim sim • Til • Tahini (sesame paste)
Other possible sources of sesame include:	
• Baked goods • Dressings, gravies, marinades, salads, sauces, and soups • Herbs, seasoning, flavourings, and spices,	• Snack foods • Vegetable pates • Snack foods • Vegetable oil (may contain sesame oil)

- Non-food sources of sesame seeds include some of adhesive bandages, cosmetics, soaps, sunscreens, drugs, perfumes, hair care products, ointments, and pet food may contain and/or been made from sesame.

Sulphite Sensitivity[14]

- Sulphites are compounds that naturally occur in some foods and in the body, but can be used as a food additive for preservation of food colour, prolonging shelf-life, preventing the growth of micro-organisms, and to maintain medication potency.
- Individuals with a sulphite sensitivity may react with allergy-like symptoms if they come into contact with sulphites, even though it is not a food allergy. Sulphites can trigger asthma, and in very rare cases, cause symptoms of anaphylaxis.

Examples of foods and products that contain or often contain sulphites:	
• Alcoholic and non-alcoholic beer • Wine, vinegar, and wine vinegar • Dried fruits and vegetables (apricots, coconut and raisins, sweet potato) • Canned and frozen fruits and vegetables • Cereal, cornmeal, cornstarch, crackers, and muesli • Condiments (e.g. coleslaw, horseradish, ketchup, mustard, pickles, relish, and sauerkraut) • Dried herbs and spices	• Fresh grapes • Fruit fillings and syrups, gelatin, jams, and jellies, marmalade, molasses, pectin • Fruit and vegetable juices • Glazed and confit (candied fruits, e.g. maraschino cherries) • Starches • Sugar syrups • Tomato pastes, pulps, and purees
If the following is noted on the ingredient list, the food should be avoided (other words for sulphites)	
• E 220 • E 221 • E 222 • E 223 • E 224	• E 225 • E 226 • E 227 • E 228
Other possible sources of sulphites include:	
• Baked goods (especially with dried fruits), deli meats, hot dogs and sausages, dressings, gravies, guacamole, sauces, soups and soup mixes, fish, crustaceans and molluscs, noodle and rice mixes, and soy products.	

- Sulphites that are permitted to be added to foods are potassium bisulphite, potassium metabisulphite, sodium bisulphite, sodium dithionite, sodium metabisulphite, sodium sulphite, sulphur dioxide, and sulphurous acid, however, they can be listed simply as sulfites, sulphites, sulfiting agents or sulphiting agents.
- Non-food sources of sulphites include bottle-sanitizing solutions for home brewing and cellophane

Are there any handouts or resources on food allergies I can use with my patients?

Refer to approved provincial Alberta Health Services nutrition handouts to support individual education. For more information, contact Nutrition.Resources@ ahs.ca

Health Canada has developed information about food allergies for the public. Visit https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-allergies-intolerances/food-allergies.html

Food allergy websites:

- Food Allergy Canada: foodallergycanada.ca/
- Food Allergy Research & Education: foodallergy.org
- American Academy of Allergy Asthma & Immunology:aaaai.org
- Food Allergy and Anaphylaxis Network and Food Allergy Initiative: allergyready.com
- Centers for Disease Control and Prevention: cdc.gov/healthyschools/foodallergies/
- Asthma and Allergy Foundation of America: Kidswithfoodallergies.org

Access to referenced Nutrition Guidelines can be found at:
https://www.albertahealthservices.ca/info/Page3505.aspx

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