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## **MANAGEMENT OF ADVERSE FOOD REACTIONS IN RETAIL FOOD OPERATIONS**

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### **THE PROBLEM**

**Introduction.** Adverse food reactions can be caused by almost any food. Therefore, reducing, eliminating, or preventing the risk of customer adverse food reactions is challenging and complicated.

While the term, "sensitivity," is sometimes used to describe adverse food reactions, it is not unique, and in this paper, adverse food reactions will be divided between allergies and intolerances.

### **Food allergens**

The "Big Eight" and other priority allergens. The United States has established a list of common allergenic foods, the "Big Eight" (Taylor et al., 1989): Cow's milk; Legumes (includes peanuts); Crustaceae, mollusks; Fish; Corn; Eggs; Wheat; Tree nuts. Other countries have other lists of common allergens. Canada's nine priority allergens include some Big Eight items but also list Peanuts, Sesame seeds, Soy, and Sulfites (Canadian Food Inspection Agency), which are recognized as allergens by the U.S. but not as primary allergens.

Allergic reactions. With food allergies, specific foods cause an immediate and often dramatic physical reaction. Severe allergic reactions occur when the body's immune system strongly reacts to a particular allergen protein or irritant. These reactions may also be caused by insect stings and medications.

With a food allergy, a food sets off an "IgE mediated reaction" in the body. Some element in the digested food, usually a protein, sets off a chemical reaction (i.e., creates an IgE antibody) within the body's cells. These antibodies release chemicals, such as histamine, which cause the allergic reaction. The reaction can occur within minutes and rarely takes more than a few hours. It is usually quite severe and, in cases of anaphylactic shock, can be fatal (Foods Matter, 1998). Anaphylactoid reactions also include scombroid fish poisoning (a chemical poisoning) and reactions of individuals after consumption of certain types of cheeses, due to ingestion of large amounts of histamine (a chemical poisoning) in these foods (Snyder, 1999).

Although true allergic reaction to food additives are rare, some food additives that are known to cause allergic / chemical reactions include:

Aspartame	Nitrates / nitrites
BHA	Parabens
BHT	Red #3
Caramel coloring	Sulfites
MSG	Tartrazine (FD&C Yellow #5)

What are the symptoms of an allergic reaction? When someone comes in contact with an allergen, the symptoms of a reaction may develop quickly and rapidly progress from mild to severe. The most dangerous symptoms include breathing difficulties, a drop in blood pressure, or shock, which may result in loss of consciousness and even death. Severe allergic reactions can occur quickly and without warning. A person experiencing an allergic reaction may have any of the following symptoms:

- Flushed face, hives or a rash, red and itchy skin
- Swelling of the eyes, face, lips, throat, and tongue
- Trouble breathing, speaking, or swallowing
- Anxiousness, distress, faintness, paleness, sense of doom, weakness
- Cramps, diarrhea, vomiting
- A drop in blood pressure, rapid heart beat, loss of consciousness

### **Food intolerances**

A food intolerance occurs when the body has difficulty digesting a particular food and reacts against it. In medical terms, the body's reaction to that food is to create IgG – not IgE – antibodies, which do not set off allergic chemical reactions. As a result, there may be no immediate physical reaction to the offending food. Food intolerances can be genetic deficiencies, as, for example, lactose or gluten intolerances, or linked to other health problems and its symptoms are far less defined.

As an example, lactose intolerance is caused by a deficiency of the intestinal enzyme, lactase. The body fails to manufacture the lactase, which is needed to digest the lactose sugar in milk. People who have had their gall bladders removed may have fat intolerance and have diarrhea shortly after eating fatty food, because the body cannot digest the fat. Gluten intolerances have been shown to be prevalent among certain ethnic groups. Foods containing gluten include foods containing rye, oats, barley, rice, and wheat. Other foods and additives that have been suspected to induce food intolerance in some individuals include:

Acids	Green capsicum, capsaicin, chavicine
Alcohol	Histamine, tyramine, other amines
Antioxidants	Nitrates
Benzoates	Paprika (dried capsaicin)
Caffeine	Pepper
Chili	Phenolic substances
Food colorings, Aza dyes	Salicylates
Fructose	Sorbates
Glutamates	Sorbitol, natural sugars

(AllergyDietitian)

In some cases of food intolerance, the stomach or the digestive tract may not be functioning properly. The wall of the digestive tract could have become "leaky," allowing partially digested food to get into the blood stream without being properly processed. This can cause a wide variety of adverse reactions.

Since the body only fails to cope with a particular food because it is not presented to it in the correct form, if the digestive / absorption problems can be solved, that person may no longer have a problem with that food. Hence, food intolerances can improve or disappear completely over time, but solving the digestive problem may be complicated, and damage may be permanent.

With food intolerance, then, the normal pattern of digestion and ingestion of nutrients has been disrupted and may cause problems throughout the body. Depending on the individual and the efficiency of their own body systems, this could manifest itself as a skin rash, a headache, a back ache, wheezing or asthma, hyperactive, disruptive, or even autistic behavior. There is almost an unlimited number of symptoms that do not necessarily have any obvious connection with the stomach or the digestion (Foods Matter).

### **Foods that cause adverse reactions**

Milk

Legumes (includes peanuts, soybeans)

Crustaceae, mollusks

Fish

Corn

Eggs

Wheat

Tree nuts

Sesame seeds

### **Foods that could cause adverse reactions in some individuals**

#### Fruits and vegetables

Apricots

Bananas

Broccoli

Celery, fresh, dried, seeds; blanched celery;  
celeriac; bouquet garni, celery salts,  
pickles

Citrus products

Coconut (not a tree nut allergen)

Melons

Orange juice (casein)

Potatoes

Strawberries

Sweet potatoes

Tomatoes (several glycoproteins)

#### Flavors, spices, thickeners

Cocoa (besides milk?)

Cottonseed (glycoprotein fraction)

Glutadin (see "SOY" but also malt flavoring;  
natural flavorings)

Gums: acacia gum, Arabic gum, carob,  
carrageenan, haraya gum, locust bean  
gum, tragacanth, xanthan, cellulose

Honey

Spices (cinnamon, coriander seeds and leaves)

Umbelliferae (celery, coriander, aniseed, dill,  
caraway, chervil, cumin/cumin, lavas,  
(sweet) cicely/myrrh, parsley, fennel)

Vanillin, ethyl vanillin, natural vanilla, vanilla  
pods

#### Animal foods

Beef

Chicken

Pork

## **PREVENTION / DUE DILIGENCE**

Because there is no cure for food allergies, the only option is complete avoidance of the specific allergen.

**Customer responsibility.** Customers need to know their food allergies or intolerances and be able to communicate this information to the server or other staff member. Staff members have no training as physicians and cannot provide consumers any advice as to whether a food is safe or not. Servers and staff can only listen to a customer's statements that he/she has an allergy to a specific ingredient and then, find out from the chef or manager if that ingredient is in the menu item that the customer would like to eat.

**Management responsibility / due diligence.** Management has a responsibility to protect public health against hazards in the food. The first step is to include allergen awareness training for all employees and train them how to listen to customer concerns and then, obtain enough information from the customer that an accurate menu item food safety analysis can be made. Next, the cooks must be taught how to listen to the server so that an accurate answer can be given. For each item on the menu, they should be able to identify the Big Eight allergens in a recipe.

In addition, the chef / manager must assure that GMPs / SSOPs control the chance of cross-contamination of allergenic ingredients during food preparation. This includes cutting nuts on a cutting board and not washing it thoroughly following use. Note that, while there has been speculation about cross-contamination when frying on a griddle or in a fryer, there has been no evidence of significant risk.

## **HANDLING CONSUMER EMERGENCIES**

**Customer actions.** Appropriate emergency treatment for a severe food allergy reaction includes an injection of epinephrine (adrenalin), which is available in an auto-injector, such as an EpiPen®. Customers who have been diagnosed with a food allergy and prescribed epinephrine should always carry it with them and know how to use it. Adrenalin must be administered as soon as symptoms of a severe allergic reaction appear. Customers must be ready to do this for themselves, because it cannot be assumed that people in the food establishment have the training or will assume the responsibility. The staff in the food establishment do have a responsibility to call 911 in case of a consumer emergency.

**Management actions.** Once the emergency is resolved, the manager should complete an incident report and identify who was affected, who were the staff members involved, and exactly what transpired.

### **References:**

- Canadian Food Inspection Agency. 2005 (updated). Food allergens. Canada.  
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<http://www.foodsmatter.com/What%20is.html>.
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<http://users.bigpond.net.au/allergydietitian/fi/foodintolerance.html>.
- Snyder, O.P. 1999. Managing Food Hazards in Retail Food Operations. 11/04 ed. HITM. St. Paul, MN.
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## Milk

### Other names / Labels that may indicate the presence of milk protein / allergenic milk proteins

Ammonium / calcium / magnesium / potassium / sodium caseinate  
Artificial butter flavor  
Butter  
Butter fat  
Butter oil  
Buttermilk  
Buttermilk solids  
Caramel color  
Caramel flavoring  
Casein / caseinate(s) (ammonium, calcium, magnesium, potassium, sodium) / rennet casein  
Caviar  
Cheese  
Cottage cheese  
Cow's milk [casein,  $\beta$ -lactoglobulin,  $\alpha$ -lactalbumin]  
Cream  
Cream curds  
Curds  
Custard  
"D" on front panel  
Delactosed / demineralized whey,  
Demineralized whey  
Dry milk / dry milk solids  
Fully cream milk powder  
Ghee  
Half & Half  
High protein flavor  
Hydrolysates (casein, milk protein, protein, whey, whey protein)  
Hydrolyzed casein, hydrolyzed milk protein  
Lactalbumin / lactalbumin phosphate  
Lactate / lactose  
Lactoferrin  
Lactoglobulin  
Lactose  
Lactulose  
Malted milk  
Milk / milk derivative / fat / protein / solids (derivative powder, protein, solids, malted, condensed, evaporated, dry, whole, low-fat, milkfat, non-fat, skimmed, pasteurized milk, cow's and goat's milk)  
Modified milk ingredients

Natural flavoring  
Nougat  
Opta™  
Pudding  
Roe  
Simplese® (fat replacers)  
Skim milk powder  
Sour cream / solids  
Sour milk / solids  
Whey (in all forms including sweet, delactosed, protein concentrate, whey protein concentrate / whey powder)  
Yogurt

### Possible sources / Foods that may contain milk protein

Artificial butter, butter fat / flavor / oil, ghee, margarine,  
Baked goods and baking mixes (e.g., breads, cakes, doughnuts)  
Batter-fried foods  
Biscuits  
Bread  
Breakfast cereals  
Brown sugar, high-protein flour  
Buttermilk, cream, dips, salad dressings, sour cream, spreads  
Cakes  
Canned soups  
Caramel coloring / flavoring  
Casein in wax (e.g., fresh fruits and vegetables)  
Casseroles, frozen prepared foods  
Cereals, crackers  
Cheese, cheese curds, cottage / soy cheese  
Chocolate  
Cocoa  
Cocoa butter  
Coffee creamer  
Coffee drinks  
Cookies  
Cream of tartar  
Cream sauces  
Cream soups  
Cross-contamination (e.g., containers, deli meat slicers, food in deep fryers, utensils)  
Custard

Desserts (e.g., custard, frozen yogurt, ice cream, pudding, sherbet, yogurt)  
Egg / fat substitutes  
Fermented ingredients  
Fish in batter  
Flavored coffee, coffee whitener  
Flavorings (natural and artificial)  
Fried foods  
Glazes, nougat  
Gravies and gravy mixes  
Gravy, sauces,  
High protein flour  
Hot dogs  
Ice cream (and "non-milk" fat)  
Imitation sour cream  
Instant mashed potatoes  
Kefir (milk drink), kumiss (fermented milk drink), malt drink mixes  
Luncheon meat  
Macaroni and cheese  
Margarine  
Meats (e.g., canned tuna, deli / processed meats, hot dogs, pâtés, sausages),  
Muesli  
Muffins  
Non-dairy products (e.g., kosher food)  
Packaged soups  
Pies  
Pina colada mix  
Pizza  
Potatoes (e.g., instant / mashed / scalloped potatoes, seasoned French fries / potato chips)  
Puddings  
Rusks  
Salad dressings  
Sausages  
Seasonings  
Sherbet  
Simplese®  
Snack foods (e.g., candy, chocolate, fruit bars, granola bars)  
Soup mixes  
Soups, soup mixes  
Soy cheese  
Sweets  
Tofu  
Vegetarian cheese

### REFERENCES:

Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/labeti/allerge.shtml>.  
Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.  
Steinman HA. 1996; 98. Hidden allergens in foods. J. Allergy Clin. Immunol.. Mosby-Year Book, Inc. (2):241-250. <http://allergyadvisor.com/hidden.htm>

## Legumes (Pulses)

### Examples

Aduki  
Black-eyed peas  
Chickpeas  
Green peas (albumin fraction)  
Kidney beans (cook well)  
Lentils  
Lima beans  
Mung beans  
Peanuts\*  
Soybeans\*\*

### Possible sources

Food gum

### Toxins in Pulses

Consumers should be aware that it is not safe to eat raw or undercooked kidney and soybeans (soya) beans. There is no need to avoid them as long as they are thoroughly cooked.

**Red kidney beans:** Incidents of food poisoning have been reported associated with the consumption of raw or undercooked red kidney beans. Symptoms may develop after eating only four raw beans and include nausea, vomiting and abdominal pain followed by diarrhea. A naturally occurring haemagglutinin is responsible for the illness, but can be destroyed by high temperature cooking, making the beans completely safe to eat. For this reason, kidney beans must not be sprouted. Kidney beans should be soaked for at least 8 hours in enough cold water to keep them covered. After soaking, drain and rinse the beans, discarding the soaking water. Put them into a pan with cold water to cover and bring to the boil. The beans must now boil for 10 minutes to destroy the toxin. After this the beans should be simmered until cooked (approximately 45-60 minutes) and they should have an even creamy texture throughout - if the center is still hard and white, they require longer cooking.

**Soybeans:** Contain an anti-trypsin factor (or trypsin inhibitor), which prevents the assimilation of the amino acid methionine. Soybeans also require careful cooking to ensure destruction of this factor. They should be soaked for at least 12 hours, drained and rinsed then covered with fresh water and brought to the boil. Soybeans should be boiled for the first hour of cooking. They can then be simmered for the remaining 2-3 hours that it takes to cook them.

Reference:

The Vegetarian Society of the United Kingdom. Information Sheet. Pulses. Toxins in Pulses. Altrincham, Cheshire, England. <http://www.vegsoc.org/info/pulses.html#toxin>.

### \*PEANUTS (Canada)

**Other names / Labels that may indicate the presence of peanut protein / allergenic peanut proteins**

Arachin  
Arachis oil  
Beer Nuts  
Cold pressed, expelled, or extruded peanut oil  
Conarachin  
Goober nuts, goober peas  
Ground nuts  
Hydrolyzed peanut protein  
Lectin-reactive glycoprotein  
Mandelonas (peanuts soaked in almond flavoring)  
Mixed nuts  
Monkey nuts  
Nu-Nuts™  
Nut meats  
Nut pieces  
Peanut I  
Valencias

### Possible sources / Foods that may contain peanut protein

Almond & hazelnut paste, icing, glazes, marzipan, nougat  
Artificial nuts (e.g., peanuts that have been altered to look and taste like almonds, pecans and walnuts)  
Baked goods (e.g., cakes, cookies, doughnuts, pastries)  
Candy  
Cereals  
Chili  
Chocolate (candies, candy bars)  
Cross-contamination (e.g., containers, food in deep fryers, utensils)  
Desserts (e.g., frozen desserts, frozen yogurts, ice cream, sundae toppings)  
Dried salad dressing, soup mix  
Egg rolls  
Ethnic foods (including sauces and soups; e.g., curries, egg rolls, satays; African, Chinese, Indonesian, Thai, and Vietnamese)  
Fried foods  
Gravy  
Hydrolyzed plant protein / vegetable protein (source may be peanut)  
Marzipan  
Natural and artificial flavorings  
Nougat  
Peanut oil  
Pesto (when peanuts substitute for pine nuts)  
Snack foods (e.g., dried fruits, energy / granola bars, mixed nuts, popcorn, potato chips, trail mixes)  
Sunflower seeds  
Vegetarian meat substitutes  
Vegetarian dishes

### REFERENCES:

Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/labeti/allerge.shtml>.  
Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.  
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## **\*\*SOYBEANS (Canada)**

### **Other names / Labels that may indicate presence of soy protein / allergenic soy proteins**

2S Fraction  
Edamame  
Gliadin (HVP)  
Glycinin (11S fraction)  
Kunitz trypsin inhibitor  
Miso  
Mono-diglyceride  
Natto  
Okara  
Shoyu sauce  
Soy (albumin, flour, grits, nuts, milk, sprouts)  
Soy protein (isolate / concentrate), vegetable protein  
Soy sauce  
Soya, soja, soybean, soyabeans (granuales, curd)  
Tamari  
Tempeh  
Textured soy flour (TSF), textured soy protein (TSP), textured vegetable protein (TVP)  
Tofu (soybean curds)  
Unidentified 20kD protein  
Yuba  
 $\beta$ -conglycinin (7S fraction)

Soy lecithin  
Spreads, dips, mayonnaise, peanut butter  
Vegetable broth  
Vegetable gum  
Vegetable starch

### **Possible sources / Foods that may contain soy protein**

Note: Avoid all food and products that contain soy in the ingredient list (e.g., soy cheese)

Baby formulas  
Baked goods and baking mixes (e.g., breads, cookies, cake mixes, doughnuts, pancakes)  
Bean sprouts  
Beverage mixes (e.g., hot chocolate, lemonade)  
Bread crumbs, cereals, crackers  
Breaded foods, chili, pastas, stews, taco filling, tamales  
Canned tuna / minced hams  
Chewing gum  
Cooking spray, margarine, vegetable shortening, vegetable oil  
Cross contamination (e.g., containers, utensils)  
Diet drinks, imitation milk  
Dressings, gravies, marinades  
Fermented ingredients  
Frozen desserts  
Hydrolyzed plant protein (HPP), hydrolyzed soy protein (HSP), hydrolyzed vegetable protein (HVP)  
Hydrolyzed protein  
Lecithin  
Monosodium glutamate (MSG) (may contain hydrolyzed protein)  
Natural and artificial flavoring  
Natural flavors (e.g., listed in ingredient lists may be soy derivatives)  
Processed and prepared meats (e.g., beef, deli, pork, poultry)  
Sauces (e.g., soy, shoyu, tamari, teriyaki, Worcestershire)  
Seafood-based products, fish  
Seasoning, spices  
Snack foods (e.g., candy, chocolate, energy bars, fudge, popcorn, potato chips)  
Soups, broths, soup mixes / stock

#### REFERENCES:

Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/labeti/allerge.shtml>.  
Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.  
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## Crustacea, Mollusks / Fish

### Examples / Other names / Labels that may indicate presence of fish or seafood protein / allergenic fish proteins

#### Crustaceans, Mollusks, and Shellfish

Abalone  
Clams  
Cockles (periwinkle, sea urchin)  
Crab  
Crayfish (crawfish, écrevisse)  
Limpets  
Lobster (langouste, langoustine, scampo, coral, tomalley)  
Mussels  
Octopus  
Prawns  
Quahaugs  
Scallops  
Shrimp (crevette) [antigen II]  
Snails (escargot)  
Squid (calamari)  
Whelks

#### Fish:

Finfish (freshwater, saltwater)  
Anchovy  
Bass  
Bluefish  
Bream  
Carp  
Catfish (channel cat, mudcat)  
Char  
Chub  
Cisco  
Cod [allergen M (parvalbumin)]  
Cuttlefish  
Eel  
Flounder  
Grouper  
Haddock  
Hake  
Halibu  
Herring  
Mackerel  
Mahi-mahi  
Marlin  
Monkfish (angler fish, lotte)  
Orange roughy  
Perch  
Pickerel (dore, walleye)  
Pike  
Plaice

Pollock  
Pompano  
Porgy  
Rock lobster  
Rockfish  
Salmon  
Sardine  
Shark  
Smelt  
Snapper  
Sole  
Sturgeon  
Swordfish  
Tilapia (St. Peter's fish)  
Trout  
Tuna (albacore, bonito)  
Turbot  
White fish  
Whiting

### Possible sources / Foods that may contain fish or seafood protein

Cod liver oil  
Coffee  
Cross-contamination (e.g., containers, frying oils, utensils)  
Deli meats (e.g., bologna, ham)  
Dips, spreads, kamaboko (imitation crab / lobster meat)  
Ethnic foods (e.g., fried rice, paella, spring rolls)  
Fish byproducts  
Fish mixtures [e.g., surimi (used to make imitation crab / lobster meat)]  
Garnishes [e.g., antipasto, caponata (Sicilian relish), caviar, roe (unfertilized fish eggs)]  
Gelatin, marshmallows  
Hot dogs  
Imitation shellfish  
Isinglass (fish collagen; clarifying agent in beers, ales, wines, champagnes)  
Pizza toppings  
Salad dressings  
Sauces (e.g., fish, marinara, steak, Worcestershire)  
Soups  
Spreads [e.g., taramasalata (contains salted carp roe)]  
Sushi  
Tarama (salted carp roe)  
Wine

#### REFERENCES:

Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/labeti/allerge.shtml>.  
Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.  
Steinman HA. 1996; 98. Hidden allergens in foods. J. Allergy Clin. Immunol.. Mosby-Year Book, Inc. (2):241-250. <http://allergyadvisor.com/hidden.htm>

## Corn

### Other names / Possible sources

Cereals  
Corn alcohol  
Corn oil  
Corn solids  
Corn sugar  
Corn syrup  
Cornstarch  
Dextrose  
Food starch-modified  
Glucose  
Maize  
Popcorn  
Vegetable starch

### REFERENCES:

Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/labeti/allerge.shtml>.  
Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.  
Steinman HA. 1996; 98. Hidden allergens in foods. J. Allergy Clin. Immunol.. Mosby-Year Book, Inc. (2):241-250. <http://allergyadvisor.com/hidden.htm>

## Eggs

### Other names / Labels that may indicate presence of egg protein / allergenic egg proteins

Albumin / Albumen  
Binder  
Coagulant  
Conalbumin  
Egg dried, powdered, solids  
Egg substitutes (e.g., Egg Beaters®)  
Egg white  
Egg yolk or yellow  
Egg, whole  
Eggnog  
Emulsifier  
Globulin  
Lecithin  
Livetin  
Lipoprotein  
Lysozyme  
Meringue  
Ovalbumin  
Ovamucin  
Ovamucoid  
Ovoglobulin  
Ovolactohydrolyze proteins  
Ovomacroglobulin  
Ovotransferrin  
Ovovitellin  
Provitamin A  
Silico-albuminate  
Simplese®  
Surimi  
Vitellin

### Possible sources / Foods that may contain egg protein

Note: Avoid all food and products that contain egg in the ingredient list, (e.g., powdered egg)

Alcoholic cocktails / drinks  
Artificial egg flavors  
Baby food  
Baked goods (most except some breads) and baking mixes (e.g., breads, cakes, cookies, doughnuts, muffins, pancakes, pastries)  
Baked goods (shiny glaze, yellow-colored items)  
Battered / fried foods  
Batters  
Bearnaise sauce  
Bouillon (in restaurants to clear it)  
Breakfast cereals  
Cake flours  
Candy (see Sweets)  
Confectionary (e.g., candy, chocolate)  
Cookies  
Creamy dressings salad dressings spreads (e.g., mayonnaise)

Creamy fillings  
Cross-contamination (e.g., containers food in deep fryers utensils)  
Custard  
Dessert mixes  
Egg / fat substitutes  
Egg noodles  
Eggnog  
Fish mixtures [e.g., surimi (used to make imitation crab / lobster meat)]  
Foam / milk topping on coffee  
French toast  
Hollandaise sauce  
Homemade root beer malt drink mixes  
Ice cream  
Icing glazes (e.g., egg wash on baked goods, nougat)  
Lecithin  
Lemon curd  
Macaroni  
Malted cocoa drinks (e.g., Ovaltine, Ovamalt) Marshmallows  
Marshmallows  
Marzipan  
Mayonnaise  
Meat mixtures (e.g., hamburger hot dogs meatballs meatloaf salami etc.)  
Meringues  
Muffins  
Natural egg flavors  
Noodles (egg)  
Omelettes  
Orange Julep® (orange juice beverage)  
Pancakes  
Pasta  
Pasta (e.g., egg noodles)  
Pina colada mix  
Processed meat products (e.g., bologna, meat loaf, meatballs, sausages)  
Puddings  
Quiche soufflé  
Salad dressing (creamy)  
Sauces (e.g., béarnaise, hollandaise, newburg)  
Sherbets  
Souffles  
Soups  
Soups  
Spaghetti  
Sweets (e.g., fondant, creams, truffles, marshmallows, etc.)  
Tartar sauce  
Turkish Delight  
Waffles  
Wines (if cleared with egg white)

#### REFERENCES:

Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/labeti/allerge.shtml>.  
Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.  
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## Wheat

### Other names / Labels that may indicate presence of wheat protein

Barley  
Bran  
Bread crumbs  
Bulgur  
Cereal extract  
Couscous  
Cracker meal  
Durum, durum flour, ein korn, emmer, farrow  
Enriched / white / whole wheat flour  
Farina  
Flour (all-purpose, enriched, graham, high gluten, high protein, pastry, soft wheat)  
Gluten  
Graham flour, high gluten / protein flour  
Kamut  
Seitan  
Semolina  
Spelt  
Triticale (e.g., a cross between wheat and rye)  
*Triticum aestivum*  
Vital gluten  
Wheat (bran, germ, gluten, malt, starch)  
Whole wheat berries  
Whole wheat flour

### Possible sources/ Foods that may contain wheat protein

Note: Avoid all food and products that contain wheat in the ingredient list (e.g., wheat germ)  
Baked goods and baking mixes (e.g., breads, cakes, cookies, doughnuts, muffins)  
Baking powder, flour, icing sugar  
Battered / fried foods  
Bread crumbs, cereals, crackers  
Breakfast cereals  
Canned soups (e.g., “thickened” soups, gravy mixes)  
Coffee substitutes made from cereal  
Cross-contamination (e.g., containers, food in deep fryers, utensils)  
Croutons  
Ethnic foods  
Falafel  
Fermented ingredients  
Flour tortillas  
Gelatinized starch, modified starch, modified food starch  
Hydrolyzed protein  
Hydrolyzed wheat protein  
Ice cream  
Meat, fish and poultry binders and fillers [e.g., deli meats, hot dogs, surimi (used to make imitation crab / lobster meat)]  
Natural and artificial flavoring (from malt, wheat)  
Pasta  
Pie fillings  
Prepared ketchup, mustard  
Salad dressings  
Seasonings, spices (e.g., paprika, black pepper)  
Snack foods (e.g., candy, chocolate bars)  
Soy sauce  
Starch (gelatinized, modified, modified food starch)  
Suces (e.g., chutney, soy sauce)  
Surimi  
Vegetable gum  
Xanthine gum

#### REFERENCES:

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## Tree Nuts

### Examples / Other names / Labels that may indicate the presence of nut protein

Almonds  
Anacardium nuts,  
Brazil nuts  
Caponata  
Cashews  
Chestnuts  
Hazelnuts (filberts)  
Hickory nuts  
Macadamia nuts  
Mandelonas (peanuts that have been altered to look and taste like tree nuts)  
Marzipan (almond paste)  
Nougat  
Nu-Nuts™ (peanuts that have been altered to look and taste like tree nuts)  
Nut butters  
Nut meal  
Nut meats  
Nut oil  
Nut paste  
Nut pieces  
Pecans (Mashuga nuts)  
Pine nuts (pinon, pinyon)  
Pistachios  
Walnuts

### Possible sources

Artificial nuts (e.g., peanuts altered to look and taste like almonds, pecans and walnuts)  
Baked goods (e.g., cakes, cereal bars, cookies, doughnuts, energy / granola bars, muffins, pastries)  
Baking mixes, cereals, crackers, muesli  
Barbecue sauce  
Cereals  
Crackers  
Cross-contamination (e.g., bulk bins, coffee grinders, containers, products that contain peanuts, utensils)  
Dressings, gravies  
Ethnic foods  
Gianduja (creamy mixture of chocolate and chopped nuts mixture found in premium or imported chocolate and ice cream)  
Ice cream, frozen desserts, frozen yogurts, sundae toppings  
Main course dishes (e.g., almond chicken, chili, trout amandine)  
Mortadella (may contain pistachios)  
Natural flavorings and extracts (e.g., pure almond extract)  
Nut butter, nut / peanut oil  
Nut-flavored coffee / liqueurs (e.g., amaretto, Frangelico®)  
Pesto  
Salads (e.g., Waldorf salad)  
Spreads (e.g., almond paste, cheese, chocolate nut, nougat  
Nutella®, nut paste)  
Snack foods (e.g., candy, chips, chocolate, popcorn, snack / trail mixes)  
Vegetarian dishes  
Worcestershire sauce

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## Sesame Seeds (Canada)

### Other names

Benne / benne seed / benniseed  
Gingelly / Gingilly Oil  
Seeds  
Sesamol / sesamolina  
Sesamum indicum  
Sim Sim

### Possible sources

Aqua Libra® (herbal drink)  
Baked goods (e.g., breads, cookies, pastries)  
Bread crumbs, bread sticks, cereals, crackers, melba toast, muesli  
Cross-contamination (e.g., barbecue grills, caraway / poppy seeds, containers, utensils)  
Dips, pâtés, spreads (e.g., hummus, chutney)  
Dressings, gravies, marinades, salads, sauces, soups  
Ethnic foods (e.g., flavored rice, noodles, shish kebabs, stews, stir fry)  
Flavor(ing)  
Herbs, seasoning, spice  
Margarine  
Processed meats, sausages  
Risotto (rice dish)  
Sesame oil  
Snack foods (e.g., bagel / pita chips, candy, granola bars, halvah, pretzels, rice cakes, sesame snap bars)  
Tahina  
Tahini  
Tempeh  
Til  
Vegetable Oil  
Vegetarian Burgers

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## Additives

### Examples

Aspartame  
BHA  
BHT  
Caramel coloring  
MSG  
Nitrates / nitrites  
Parabens  
Red #3  
Sulfites\*  
Tartrazine (FD&C Yellow #5)

### \*SULFITES (Canada)

#### Other names

E 220, E 221, E 222, E 223, E 224, E 225, E 226, E 227, E 228

(European names)

Potassium bisulfite / metabisulfite  
Sodium bisulfite / dithionite / metabisulfite / sulfite  
Sulfiting agents  
Sulfur dioxide  
Sulfurous acid

#### Possible sources

Alcoholic / non-alcoholic beer, cider, wine  
Baked goods (e.g., breads, cookies, pastries, waffles)  
Bottled lemon and lime juice / concentrate  
Canned / frozen fruits and vegetables (e.g., mushrooms, sliced apples, olives, peas, peppers, pickles, pickled onions, tomatoes)  
Cereal, cornmeal, cornstarch, crackers, muesli  
Condiments (e.g., coleslaw, horseradish, ketchup, mustard, relish, sauerkraut)  
Cross contamination (e.g., containers, utensils)  
Dressings, gravies, guacamole, sauces, soups, soup mixes,  
Dried fruits / vegetables (e.g., apples, apricots, coconut, papaya, peaches, pears, pineapple, raisins, sun dried tomatoes)  
Dried herbs, spices, tea  
Fish, including crustaceans and shellfish [e.g., shrimp (fresh / frozen)]  
Fresh grapes, lettuce  
Fruit / vegetable juices (e.g., coconut, grape, sparkling grape, white grape)  
Gelatin, jams, jellies, marmalade, molasses, pectin  
Glazed / glacéed fruits (e.g., apples, grapes, maraschino cherries)  
Maraschino cherries  
Pina colada mix  
Potatoes (e.g., dehydrated, mashed, peeled, pre-cut)  
Processed foods (e.g., cheese, deli meats, frozen French fries, frozen dough, hot dogs, mincemeat, sausages)  
Snack foods (e.g., candy, chocolate / fruit bars, tortilla / potato chips, soft drinks, trail mix)  
Soy products  
Starches (e.g., corn, potato, sugar beet; noodles, rice mixes)  
Sugar syrups (e.g., glucose, glucose solids, syrup dextrose)  
Tomato paste / pulp / puree  
Vinegar, wine vinegar  
Wines

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