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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.
<http://www.inspection.gc.ca/english/fssa/labeta/allerge.shtml>.
- Foods Matter. 1998. The focus of Foods Matter is food allergy and sensitivity – What are they? London.
<http://www.foodsmatter.com/What%20is.html>.
- AllergyDietitian. 2003 (updated). Introduction to Food Intolerance. Australia.
<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.
- Taylor, S.L., Nordlee, J.A., and Rupnow, J.H. 1989. Food allergies and sensitivities. 255-295. in Food Toxicology: A Perspective on the Relative Risks. Taylor, S.L. and Scanlon, R.A., eds. Marcel Dekker, Inc. New York, NY.

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, β -lactoglobulin, α -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>.
Steinman HA. 1996; 98. Hidden allergens in foods. J. Allergy Clin. Immunol.. Mosby-Year Book, Inc. (2):241-250. <http://allergyadvisor.com/hidden.htm>

****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
β-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>.
Steinman HA. 1996; 98. Hidden allergens in foods. J. Allergy Clin. Immunol.. Mosby-Year Book, Inc. (2):241-250. <http://allergyadvisor.com/hidden.htm>

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>.
Steinman HA. 1996; 98. Hidden allergens in foods. J. Allergy Clin. Immunol.. Mosby-Year Book, Inc. (2):241-250. <http://allergyadvisor.com/hidden.htm>

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:

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>

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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Minnesota Department of Agriculture. <http://www.mda.state.mn.us/dairyfood/allergingred.htm>.
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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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