Allergen Management for School Nutrition


Hello. Welcome. My name is Michelle Hill, I am a Culinary Allergen Specialist, working with FoodSafetyGuy and I am here to speak about allergen management for school nutrition. Thank you for joining me today. I am so happy to be sharing this information with you.
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## Bullying behavior around allergy

- 35-45\% of children with food allergies report experiencing bullying.
- Children with food allergies are twice as likely to be bullied compared with children without
- Teasing about the food allergy by classmates at school is the most common experience, but having the allergenic food thrown at them is also reported.
- Teasing and bullying are underrecognized issues and carry significant psychological and physical risk.
- This demonstrates the ongoing need to educate communities about food allergy and the impact of bullying.
- We must address bullying directly and use the incidence to promote a dialogue between students, We must address bulying directly and use the incidence to promote a dialogue between stur
parents, schools, and health care providers to identify and address bullying when it occurs.
- As a society, we must strive to ensure that no one is bullied because of food allergies, and no one dies from food induced anaphylaxis.

When bullying does occur, we need to face it, head on, and use the incident as a chance to open dialog between all parties involved and to find a way to provide acceptance and understanding to this vulnerable individual.
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## Kids with allergy face more challenges

## When I have a first bite, I think, Is this it? ... Will I die? ... Gabe- 15 years old

| Age | Foods most involved and severity of response |
| :---: | :---: |
| $\leq 4$ years old | $\uparrow$ M ${ }^{\text {milk }}$ |
|  | †Egg |
|  | $\uparrow$ Fish |
|  | $\uparrow$ Peanut |
| $4-14$ years old | $\downarrow$ Milk |
|  | $\downarrow$ ¢gg |
|  | $\uparrow$ Peanut |
|  | $\uparrow$ Tree Nut |
| 214 years old | $\uparrow$ Peanut |
|  | 个Tree Nut |
|  | $\uparrow$ Shellish |
|  | $\uparrow$ Fish |
|  | Fruits |
|  | Vegetables |

- Research tells us that children with any chronic condition have $2 x$ the risk of developing mental health issues.
Coping every day with uncertainty = increased anxiety and/or risktaking behaviors.
Living with uncertainty impacts
- A child's sense of control (or lack of control)
- Their beliefs about risk (may be too worried, or not careful enough)
- Their vigilance may wane due to perceived sense of security if no reaction
has occurred
Their confidence in their personal safety and the safety of their Their confidence in their persona
surroundings may be challenged.
Uncertainty is compounded by a general lack of awareness around food allergy and allergens.
Always being aware and alert to the possibility of danger is a heavy burden for children in their everyday lives.
Children respond by beginning a search for normality, an assurance that they are safe, accepted, and understood
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Vegetables $\qquad$
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## Challenges for parents with food-allergic kids

'I am absolutely terified that I will buy something with nuts in it by mistake ... if anything happens, I will never get over it.' (Mother of Treyvonn, age 6)
Many parents say the anxiety associated with the risk of a potential reaction has more profound effects on emotional and social aspects of a child's everyday life than the actual, physical allergic reaction.
Living with a food allergy means constant -

- Reading food ingredient labels.
- Concern for cross-contact.
- Vigilance in a variety of social activities
- Immediate access to an auto-injector.

Parents develop their own logic and validity of allergen controls as they live and cope with food allergy

- Living with risk and coping everyday engenders emotions such as confusion, anxiety, uncertainty, frustration, and sometimes anger.
- Food allergy requires a specialized diet that costs more money to maintain than a "normal" diet - this can be financially burdensome.
- Allergy must be diagnosed by a licensed physician so those with lack of access to healthcare are under diagnosed and do may have an EAI or an Individual Health Plan in relation to allergy.
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## Food Allergy Control = Food Safety

Major factors that impact thinking and behavior around food allergy and safety include

1. Commonality of food allergies $-10 \%$ of the Human population suffer from at least one food allergy
2. Omnipresence of food in our lives
3. Risk of fatal anaphylaxis

How people weigh these odds impacts precautions taken, anaphylaxis management, and psychosocial functioning. (i.e., the perception of the "crazy Mom" who thinks her kid is allergic to everything.)

Rarity of fatal food-induced anaphylaxis can evoke a range of responses in people.

- Some allergic people feel reassured when they realize that fatal anaphylaxis most likely will not happen.
- Others may engage in risky behaviors, such as not carrying or administering epinephrine autoinjectors.
- Knowing fatal anaphylaxis is a possibility can increase stress and anxiety and decrease quality of life.
- The rarity of fatal anaphylaxis can also lead to food allergies being mocked or trivialized.
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## Critical Skills for Allergen Management

1. Recognize the symptoms and possible triggers of anaphylaxis.
2. Know the differences between a food allergy, a food intolerance, and other food-related diseases (i.e., Celiac Disease)
3. Identify the "Big-8" allergens and how they appear in food.
4. Identify personal hygiene best practices to avoid cross-contact.
5. Apply the correct methods for cleaning surfaces and utensils.

## What is Food Allergy?

Food allergy is the immune system's response to the protein structure of a food molecule

- More accurately, food allergy is an immune response to the presence of a specific series of amnio acid More accurately, food allergy is an immune response to the pr
sequences within the protein structure of the allergenic food.
- Specific sets of amino acids sequences are shared among disparate populations of plants and animals, which is the root cause of cross-reactivity.
- When the food is eaten, the immune system mistakenly considers it to be harmful and releases chemicals that cause the symptoms of an allergic response.

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https://www.rsb.org.uk/bioiologist.features/1s8-biciogosisffeatures/1

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## Food Allergy Symptoms

Allergic reactions can be (alone or in combination)

- Nausea, digestive upset
- Abdominal discomfort/pain
- Vomiting and/or diarrhea
- Wheezing or shortness of breath
- Itchy throat
- Hives or itchy rashes (about $50 \%$ of the time)
- Swelling of the body - face, eyes, hands, feet

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## Anaphylaxis Triggers

Immune System (IgE reaction)

- Foods
- Insect bites (bees, wasps ... )
- Medication (antibiotic, NSAIDs, biologics)


## Direct Mast Cell Activation

- Physical factors, including exercise, exposure to heat and cold, and sunlight
- Ethanol (alcohol)
- Medication (opioids

Idiopathic (no apparent trigger)


## Cross reactors and Oral Allergy Syndrome (OAS)

| \% chance of Cross-reactivity | Allergen | Cross-reactors |
| :---: | :---: | :---: |
| 90\% | Cow's milk | Goat's milk Sheep's milk |
| 5\% | Cow's milk | Mare's milk (horse) Donkey's milk |
| 50\% show allergy <br> 5\% suffer a reaction | Peanut Soybean | Beans <br> Lentis |
| 35\% | Peanut | Tree Nuts |
| High | Walnut | Pecan |
| High | Cashew | Pistachio |
| 50\% | Fish <br> (salt or freshwater) | Allergic to 1 , allergy to All |
| 75\% | Crustacean Shellifi | Dust mite dander Cockroach dander |
| 50\% | Latex <br> (natural rubber) | Banana <br> Avocado <br> Kiwi <br> Water Chestnut |

## Cross-reaction can be elicited by any food allergen.

- Some people with 'food allergy' have an aeroallergen that cross-reacts with a food.
- The most common of these cross-reactions is between birch pollen, and tree nuts, apples, and other fruit and vegetables.
- Symptoms can include itching or tingling of the lips, tongue, and roof of the mouth or throat.
- There may be hives around the mouth area where the food came into contact with the skin or swelling of the lips, tongue, and throat tightness.
- In less than $3 \%$ of sufferers, symptoms may become systemic (beyond the mouth or throat) or result in anaphylaxis.
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EAls (epinephrine Auto Injector) is the emergency treatment for life-threatening reactions.

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    EAI - Epinephrine Auto Injector (such as EpiPen" and EpiPen Jro)
    - EAls are used for the emergency treatment of life-threatening allergic reactions (anaphylaxis) caused by
        - Allergens
        Exercise
        Unknown triggers
    - EAls are only available with a prescription for people who are at increased risk for life-threatening reactions.
    - EAls are expensive and are issued in a "win pack" of 2 autoinjectors.
    EAls are intended for immediate use - as emergency supportive therapy only.
    30% allergic people will suffer initial symptoms, followed by a delayed wave of symptoms 2-4 hours later, called a bi-phasic response.
    - Delayed biphasic responses may not respond to epinephrine
    - May not be prevented by IV steroids
    - Most often results in death (especially when epi is not injected ASAP).
    Don't "Wait and see what happens - maybe we don't need to call 911"
    The risk of death due to anaphylaxis outweighs any other concerns, existing studies clearly favor using epinephrine.
    There are no medical conditions which absolutely prohibit the use of epinephrine when anaphylaxis occurs.
    Atter EPP administration, person must be transported by emergency medical services (EMS) to the nearest hospital emergency
        department, even if the symptoms appear to have resolve
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Epinephrine $\rightarrow$ first-line treatment for anaphylaxis


- About $3 \%$ of Americans suffer from peanut allergy
- Starts early in life, between 6 to 24 months of age.
- Only $15 \%$ of people develop tolerance over their lifetime.
- Complete avoidance is necessary as Peanut allergens tend to provoke deadly reactions.


## Relevance to School Nutrition

- School policy on Peanuts - recommend "Zero Tolerance" as peanut allergy tends to provoke anaphylaxis.
- Be able to identify food or drink that is served or sold that contain Peanut protein


## Cafeteria Management

- Awareness that peanuts can readily cross-react with any other legume, such green peas or Red Kidney beans.
- Care in preparation and service is critical to prevent cross-contact between the allergen-free food and the allergenic food. - Peanut butter is very sticky and is difficult to remove from prep surfaces and utensils - pay special attention to clean thoroughly any areas that are visibly soiled with peanut proteins as they can be a potent contact allergen.
Aggressive, physical cleaning (with hot soapy water) prior to sanitizing all food contact surfaces, including high-touch areas (chair backs, table edges) after each use.

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TAKE ACTION!

1. Identify reaction
2. Treat immediately with EAI
3. Call 911
turrey hen Allergy to egg proteins usually presents around 1 year of age,
reflecting the typical age of introduction of egg into a child's diet.

- $2.5 \%$ American 3 -year-olds are allergic
- $2 \%$ remain allergic into adulthood.
- Is seen as a "life-long" allergy.

Tolerance to egg is achieved spontaneously, with resolution in:

- $37 \%$ allergic children by age 10
- $68 \%$ allergic children by age 16


## Relevance to School Nutritio

- At times cooked egg patties are served; hard-boiled eggs may be offered on a salad bar.

Egg as part of a baked good is less allergenic than a whole egg or liquid egg product - careful cleanup is required during and after preparation.
Watch the mayonnaise (it's IS egg)!
Cafeteria Management

- Awareness that egg can be a hidden ingredient in many foods.
- High-touch and common surfaces soiled with egg must be thoroughly cleaned as egg is a potent contact allergen.


## TAKE ACTION!

 1. Identify reaction2. Treat immediately with EAI 3. Call 911
2.5\% of Americans are allergic to Crustacean Shellfish.

- Shellfish allergy is not usually found in kids under 6 years of age.
- It is rare to develop tolerance and this is usually a life-long allergy
- Shellfish protein can act as an aeroallergen that provokes anaphylaxis through inhaled cooking aroma and steam.
- Shellfish cross-react with dust mites and cockroach dander
- Astaxanthin is an algae eaten by shellfish and other animals and the reason for the shell coloring At is also the cross-reactor between Crustaceans (and it appears in farm-raised fish!).


## Relevance to School Nutrition

With the acceptance of Surimi as a protein option, we must now be vigilant when this product is served as it
can readily cross-react for those with a shellfish allergy.
Be aware that shellfish allergy can be triggered by certain vitamins and supplements.
Cafeteria management

- Aggressive, physical cleaning (with hot soapy water) prior to sanitizing all food contact surfaces, including hightouch areas (chair backs, table edges) after each use.

TAKE ACTION!
2. Treat immediately with EAl
3. Call 911
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- Most children display this allergy around 2 years of ase.
- Only around $10 \%$ will develop tolerance over their lifetime.
- Tree nut allergy is frequently triggered by pollen allergies (OAS), especially in those allergic to Birch
- Complete avoidance is necessary as Tree Nut allergens tends to provoke a deadly reaction.

Relevance to School Nutritio

- School policy on Tree Nuts - recommend "Zero Tolerance" as these allergies tend to provoke deadly reactions.
- Many dairy replacements are nut-based (almond milk) and nuts butters are sometimes used in place of peanut butter.
- Nut products often have incomplete or incorrect allergen label information.

Cafeteria management

- Awareness that Tree Nut allergy can be triggered by pollen (important for outdoor events),
- Tree nut allergens can be potent contact allergens and aeroallergens.

Aggressive, physical cleaning (with hot soapy water) prior to sanitizing all food contact surfaces, including high-touch areas (chair backs, table edges) after each use.
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## take Action

1. Identify reaction
2. Treat immediately with EA 3. Call 911

## $\mathbf{5 0 \%}$ of fish-allergic suffer allergy to one or more fish (cross-reactivity).

Fish allergy usually starts in the second year of life.

- Fish allergy is most often a life-long allergy and rarely resolves during puberty.

Offending proteins are Myosin (muscle) and is why salt water and freshwater fish cross-react.
Fish oil supplements can contain enough protein to trigger an allergic reaction.

## Relevance to School Nutrition

With the acceptance of Surimi as a school lunch menu item, we must be vigilant as this product contains Fish proteins (usually Pollock, Cod, Plaice or Haddock)

- Breaded Fish patties (usually Pollock) are sometimes served.
- Fish can appear unexpectedly in bottled sauces, marinades and dressing as it lends an Umami flavor.
- Fish proteins can be aeroallergens and so the aromas and steam from cooking can provoke anaphylaxis.

Cafeteria Management

- Fish can be a potent contact allergen - complete and thorough cleaning of utensils and surfaces is critical.

|  | Wheat |  |
| :--- | :--- | :--- | :--- |


| Accommodation $\rightarrow$ Individual Health Plan |
| :---: |
| School Administrators, Educators, Nurses, Nutrition Workers <br> All must follow the Individual Health Plan (IHP) and help to form and then follow the related Allergen Control Plan. <br> 1. Identify the child's allergens. <br> 2. Specify the nature of the child's allergic reaction. <br> 3. Reduce risk of exposure to the known allergens. <br> 4. Provide emergency treatment to the student, during the school day and at Schoolsponsored activities, in the event there is an unintended exposure to an allergen. <br> 5. Facilitate communication between the school and the student's healthcare provider. |
| Allergen Control - School <br> PLEASE $\begin{array}{l}\text { Encourage children, school staff, and volunteers to wash } \\ \text { hands before and after handling or consuming food or drink. }\end{array}$  <br> $\begin{array}{l}\text { Wash your } \\ \text { hands. }\end{array}$   <br> With parental cooperation, create standard procedures for identifying children with allergies. <br> 1. A recent picture of each child could be kept in a location that is not visible to other children or the public. <br> 2. A food matrix should accompany the photo, indicating the allergens that must be avoided. <br> 3. Procedures for identifying allergic students must follow the requirements in the Family Educational Rights and Privacy Act. <br> Safety Strategies <br> - Consider the children's needs, and be willing to make hard choices when necessary, such as declaring your school to be "Peanut free". <br> - Support an open dialog, with the student and caregivers, around issues concerning allergy. <br> - Planning and prevention are much better than having to respond to a life-threatening reaction. <br> - Create an Allergen Control Plan and actively train staff to understand and follow it. |

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- Know the signs, symptoms and behavior that can occur with allergic reaction


## ALLERGEN AWARE Cafeteria Cafeteria

 we care about eachother- Be able to recognize each student that has a food allergy.
- Use a dedicated terry cloth and freshly-made, wash, rinse, and sanitizer buckets for cleaning always assume there is an allergen present - surfaces should be at least "visually clean".
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- Wash tabletops, table edges, chair seats and backs with soap and water between every use.
- Have rapid access to epinephrine auto-injectors in cases of food allergy emergency and train
$\qquad$ staff to use them.

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## Allergen Control - Food Preparation

Once an allergen is on your hands or clothes, there's a risk that you might have cross-contact with an allergen special order.

To prepare food for an allergic person

1. Designate tools and a prep area for allergen orders to be made.
2. Remove your apron and put on a clean one. If a clean apron is not available, then remove your apron before working on the special order.
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3. Wash your hands and put on fresh gloves.
4. Wash, rinse, sanitize all food contact surfaces and utensils before you begin preparation.
5. Designate the prepared food through agreed upon means, such as colored stickers or flags with the child's name on it.

| CrOSS-contact -versus- CrOSS-COntamination |
| :--- |
| Cross-contact <br> When one food comes into contact with another food, and their proteins mix; as a result each <br> food then contains small amounts of the other food. <br> Only a tiny amount of the offending food protein is enough to cause <br> an allergic reaction in some people. <br> Don't confuse Cross-contact with Cross-contamination <br> Cross-contamination is the transfer of disease-causing organisms, such as bacteria and viruses, <br> from one surface or food to another. |

How to wash your hands

## Clean, Sanitize, Disinfect

## Cleaning

- The removal of visible soil from objects and surfaces.
- Accomplished using water with detergents or enzymatic products.
- Thorough cleaning is essential before disinfection as any materials that remains on a surface interferes with the effectiveness of disinfection.


## Sanitizing

- Reduces pathogens on a surface to safe levels.
- Accomplished using sanitizing agents, such as Quats (quaternary ammonium compounds), mixed with water to the correct concentration


## Disinfecting

- A form of decontamination which eliminates many or all pathogenic microorganisms on inanimate objects. - Accomplished using disinfection agents, such as $5.25 \%$ Sodium Hypochlorite (Chlorine bleach), mixed with water to the correct concentration.
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## Use a fresh set up every single time!

Step 1: Remove visible debris (crumbs, wrappers, etc.)
Step 2: Using a wet soapy wipe pulled from a freshly-made detergent bucket, aggressively wipe any area that are soiled with allergens.

Step 3: Using a fresh wiping cloth pulled from the rinse water bucket, rinse the detergent from the surface, being careful to sop up any extra liquid.
Step 4: Using a fresh wiping cloth pulled from the sanitizer bucket, apply tant to wear and tear. sanitizer solution evenly across the surface.

Step 5: Allow the surface to air-dry.
Recent research has shown that thorough cleaning in this way removes allergens from a surface almost $100 \%$ of the time. The trick is focusing on debris removal and then scrubbing areas with known allergen soiling.
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We are a Village!


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Hydrolyzed plant protein Hydrolyzed vegetable protein教

Extruded


## Peanut - sometimes

| Artificial flavoring | Crumb toppings | Ice creams |
| :--- | :--- | :--- |
| Artificial nuts | Desserts | Lollipops |
| Baked goods | Dried fruit mixes | Mole sauce |
| Biscuits | Egg rolls | Natural flavoring |
| Boiled peanuts | Enchilada sauce | Pesto |
| Breakfast cereals | Ethnic Foods | Praline |
| Candy | Flavoring | Salad/salad dressing |
| Chili | Fried foods | Sauces |
| Chinese dishes | Graham cracker crust | Snack foods |
| Chocolate | Gravy | Soup |
| Cookies | Health food bars |  |
|  |  |  |
|  |  |  |

## Tree Nut - always present in ...



| Artificial nuts | Flavored coffees | Natural nut extract |
| :--- | :--- | :--- |
| Baked goods | Flavoring (natural/artificial) | Nougat |
| Biscuits | Frozen desserts | Pastries |
| Breakfast cereals | Frozen drinks | Pesto |
| Candies | Gianduja (a nut mix) | Pralines |
| Caponata | Gremolata | Salads |
| Cereals | Health food bars | Snack foods |
| Chocolate | Ice cream | Vegan dishes |
| Chocolate spreads | Mandelonas |  |
| Dried fruit mixes | Marzipan |  |
| Dukkah | Mortadella |  |
| Ethnic Foods | Natural flavoring |  |

Crustacean Shellfish - always present in ...

| Abalone | Escargot | Sea urchin (beche-de-mer) |
| :--- | :--- | :--- |
| Calamari | Lagouste/Langoustine | Shellfish |
| Caracoles | Lapas | Shrimp |
| Clams | Limpet | Snails |
| - Cherrystone | Lobster | Squid |
| - Geoduck | Lopihi | Whelks |
| - Little neck | Mollusks |  |
| - Pismo | Mussels |  |
| Cockle | Octopus |  |
| Crab | Oysters |  |
| Crawfish | Periwinkles |  |
| Crayfish | Prawns |  |
| Crevette | Scallops |  |
| Cuttlefish | Scampo |  |
| Ecrevisse | Sea cucumber (beche-de-mer) |  |

## Crustacean Shellfish - sometimes

| Anchovies | Pescatore sauce |
| :--- | :--- |
| (contains protein similar to shellfish) | Prawn chips |
| Ethnic soups and dishes | Prawn crackers |
| Bouillabaisse | Sauces (fish sauce) |
| Calcium supplements | Seafood extender |
| Chitin | Seafood flavoring (clam) |
| Clamato | Squid ink |
| Cuttlefish ink | Surimi |
| Fish sauce |  |
| Fish stock |  |
| Flavoring (natural/artificial) |  |
| Marinara |  |
| Oyster sauce |  |

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|  | Dairy - always present in ... |  |  | Lactose Intolerance |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | - Buking agent in medications |
| Casein |  |  |  | - In most Homeopathic preparations |
| A protein is present in all mammalian milks including those from cows, sheep, goats, and humans. |  |  |  | - Inhalers - causing sinus and airways to inflame |
|  |  |  |  | - Verify Rx with Pharmacist |
| ALWAYS Contains Dairy |  |  |  | - Lactose-free milks and cheeses contain casein and must be avoided these |
| Butter | Chocolate | Hydrolysates | Quark | product are made for the lactose-intolerant and not the |
| Buttermilk | Cream | Ice cream | Rennet | dairy-allergic. |
| Butterscotch | Curds | Imitation milk | Sour cream |  |
| Caramel | Custard | Infant formula | Whey |  |
| Casein \& | Galactose | Kiefer | Yogurt |  |
| caseinates | Ghee | "Lact..." |  |  |
| Cheese (all types) | Half \& Half | Milk |  |  |
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| Dairy - sometimes |  |  |  |
| :---: | :---: | :---: | :---: |
| Basted foods | Dips | Lactose-free products | Sausages |
| Basted meats | Egg replacers | - milk | Seasoned foods |
| Battered foods | Fat substitutes | cheese | Snack food |
| Biscuits | Flavored coffees | - ice cream | Soup mixes |
| Bottled water (silica) | Flavored drinks | Liquid meal replacers | Soups |
| Bread | Flavoring | Margarine spreads | Sports drinks |
| Breadcrumbs | Fried foods | Natural flavors | Supplements |
| Breakfast cereal | Frozen desserts | Nougat | - vitamins |
| Cakes | Fruit juice (orange juice) | Pastries | - minerals |
| Candy | Glazed foods | Probiotics | Whitener (incl. non-dairy) |
| Chocolate | Gluten-free baking mixes | Pudding | Gravy |
| Coated foods | Gluten-free pancake mix | Rotisserie Poultry | Protein shakes |
| Coconut products | Gluten free products | Salad dressings | Stock |
| Cookies | High-protein flour | Sauces and spreads | Smoothies |
| Deli meats | Instant mashed potato |  |  |
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|  | ays present in ... | - Gluten protein <br> - Gliadin protein |  |
| :---: | :---: | :---: | :---: |
| All purpose flour | Durum wheat (Triticum durum Desf.) | Pasta |  |
| Atta flour | Einkorn (Triticum monococcum L.) | Seitan |  |
| Bran | Emmer (Triticum turgidum L. subsp. dicoccon) | Semolina (Triticum | durum Desf.) |
| Bread | Farina | Soy sauce |  |
| Breadcrumbs | Farro | Spelt (Triticum spelta |  |
| Bulgar | Flour | Stoneground Wh |  |
| Burghul | Gluten | Tabbouleh/Tabou |  |
| Cereal extract | Graham flour | Triticale (x Triticose | cale ssp. Wittm.) |
| Club wheat (Triticum compactum Host.) | Kamut (Triticum polonicum L.; Khorasan wheat) | Triticum |  |
| Common wheat (Triticum aestivum L.) | Malt | Wheat |  |
| Couscous | Matzo | Wheatgrass |  |
| Cracker meal | Noodles | Whole wheat ber | ries |
|  |  |  |  |


| Baked goods | Gelatinized starch | Pancakes |
| :--- | :--- | :--- |
| Baking mixes/powder | Glucose syrup | Pasta |
| Battered fried foods | Gravy | Pastry |
| Beer | Hydrolyed vegetable protein (HVP) | Pizza |
| Biscuits | Ice cream, ice cream cones | Processed meats |
| Breakfast cereals | Icing sugar | Sandwich wraps |
| Candies | Instant drink mixes | Sauces/gravy mixes |
| Canned soups/stocks | Malted milk | Seitan |
| Caramel color | Maltodextrin | Snack foods |
| Chips | Marshmallow | Soy, shoyu, tamari, teriyaki sauce |
| Chocolate | Modified food starch | Starch |
| Corn chips | Modified starch | Stock cubes |
| Crumbed foods | Monosodium glutamate (MSG) | Surim |
| Dextrin | Mustard | Textured vegetable protein |
| Flavoring (natural/artificial) | Noodles | Vegetable gum |
| Food starch | Oats | Vegetable starch |
|  |  |  |


Soy - always present in ...

- Cross-reacts with peanuts, peas, green beans, carob (all are legumes).
- Genetically-modified unless labelled as "non-GMO".
- Used a protein booster throughout food supply

| ALWAYS Indicates Soy |  |  |
| :--- | :--- | :--- |
| Edamame (young soybeans) | Soy, Soja, Soya | Soy sauce |
| Hydrolyzed Plant Proteins (HPP) | Soy albumin | Soy starch |
| Hydrolyzed soy protein (HSP) | Soy flavoring | Soy yogurt |
| Hydrolyzed Vegetable Protein (HVP) | Soy flour | Soybean |
| Kinako (roasted soy flour) | Soy gum | Tamari |
| Kouridofu (frozen tofu) | Soy infant formula | Tempeh |
| Miso (fermented soy) | Soy lecithin | Teriyaki sauce |
| Natto (fermented soy) | Soy milk | Textured vegetable protein (TVP) |
| Natural flavors (soy oil is flavor carrier) | Soy nuts | Tofu |
| Nimame (simmered soybeans) | Soy oil | TSP (textured soy protein) |
| Okara (soy pulp as protein extender) | Soy protein | TVP (textured vegetable protein) |
| Shoyu sauce | Soy protein isolate | Yuba |

## Soy - sometimes

MAY Indicate Soy

| Baby foods | Fruit juice (BVO) | Potato Chips |
| :--- | :--- | :--- |
| Baking mixes | Gluten free products | Sauces |
| Bread | High-protein products | Seasoned salt |
| Breakfast cereals | Liquid meal replacers | Snack bars |
| Cakes | Margarine | Soups (canned or packet) |
| Cheese substitutes | Meat products | Vegetable broth |
| Chocolate | - cold cuts | Vegetable oil |
| Commercial fruit products | beef burgers | Vegetable paste |
| Cookies | - meat pastepies | Vegetable products |
| Crackers | minced beef | Vausages/hotdogs |
| Dairy substitutes/replacers | Nut mixes | Vegetable protein |
| Desserts and mixes | Pancake/waffle mixes | Vegetable shortening |
| Egg substitutes | Pasta/pizza bases |  |
| Ethnic Foods | Plant-based meat replacers |  |
|  |  |  |
|  |  |  |


|  | Fish - a | present in |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Anchovies | Fish | Pangasius | Scrod |
|  | Barramundi | Flathead | Perch | Shark |
|  | Bass | Flounder | Pickerel | Smelt |
|  | Bluefish | Grouper | Pike | Snapper |
|  | Bream | Haddock | Plaice | Sole |
|  | Carp | Hake | Pollock | Swordfish |
|  | Catfish | Halibut | Pompano | Tilapia |
|  | Caviar | Herring | Porgy | Trout |
|  | Char | Mackerel | Rockfish | Tuna |
|  | Chub | Mahimahi | Roe | White Fish |
|  | Cisco | Marlin | Salmon | Whiting |
|  | Cod | Monkfish | Sardine |  |
|  | Eel | Orange Roughy | Sashimi |  |



