

Allergic, Pseudoallergic, and Autoimmune Dietary Pathogens Workshop Applied to Food Labels and Case Studies

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Asthma triggers

- **Allergens:** Pollen, mold, animal protein, house dust/dust mites, cockroaches, foods.
- **Health Conditions:** Respiratory infections, sinusitis, gastroesophageal reflux disorder (GERD), anxiety & stress.
- **Irritants:** gases, smoke, perfumes, chemicals (aspirin, NSAIDs, food additives, cleaning, paint, coal, chalk dust, talcum powder), pollutants, weather conditions (temperature, barometric pressure, humidity, wind).
- **Exercise:** Inhaled cool and dry air causes hydrostatic pressure changes, airway edema, inflammation, mucous production, & histamine release. Higher risk in distance runners, winter sports, swimmers (from chlorinated pools), and skaters (from ice-rink resurfacing carbon monoxide and nitrogen dioxide gases).

Food Dependent Exercise Induced Anaphylaxis (FDEIA) triggers

- **Western:** Celery, legumes, and wheat (*WDEIA*)
- **General:** Cheese (and mold in foods), milk products, peanuts & tree nuts, peaches, seeds (mustard, sesame)
- **Other Cultures:** Shellfish (*Japan*), Tomatoes (*Italy*)
- **Nonspecific FDEIA:** Gastric distention from any food ingestion
- **Co-triggers:** Aspirin (even low dose) in place of exercise, NSAIDs, alcohol, environmental conditions (pollen, cold/hot weather), stress, menstruation, or food temperature (in persons with co-existing cholinergic urticaria).
- **Dietary protection:** Wait 4-6 hrs to exercise after eating & avoid co-triggers

Allergy

- **Top 8 food allergens:** milk, eggs, peanuts, tree nuts, wheat, soy, fish, and shellfish.
- **Leading allergens causing anaphylaxis:** peanut, tree nut, egg, cow's milk. >160 reported food allergens.
- **Dietary protection:** Read food package labels. Ingredients are listed in descending order by weight or volume. The Food Allergen Labeling and Consumer Protection Act of 2004 requires manufacturers to plainly list the top 8 allergens if present in their food product. If a food is manufactured with any of these food allergens, the manufacturer must note the risk of cross contamination on the food package label. **Note:** consumers should apply all food label reading skills to all products put both in and on the body (foods, drugs, supplements, and cosmetics (lotion, shampoo/conditioner, lip balm, make-up)).

USDA Certified Organic Foods: No pesticides, fertilizers, sewage sludge, genetically modified organisms (GMO), irradiation, hormones, or antibiotics. Produced in a sustainable way.

Oral Allergy Syndrome:

- **Birch tree allergy:** Kiwi, apple, pear, plum, prune, peach, nectarine, apricot, cherry, celery, carrot, parsnips, parsley, dill, anise, cumin, coriander, caraway, fennel, potato, tomato, green pepper, lentils, peas, beans, peanut, hazelnut, walnuts, almonds, sunflower seeds
- **Grass allergy:** Melons, tomato, orange, kiwi
- **Ragweed allergy:** Melons, bananas, zucchini, cucumber
- **Mugwort allergy:** Apple, melons, celery, carrot
- **Brazil nut allergy:** Cherry, apricot, plum, peach
- **Latex allergy:** Avocado, banana, chestnut, kiwi, potato
- **Dietary protection:** Practice a seasonal rotational diet. Avoid cross-reactive foods during the pollen season involved. Cook the implicated food to reduce or possibly eliminate the symptoms (except with celery & nuts).

Pseudoallergens:

- **Histamine Containing Foods:** Sauerkraut, pineapple, red wine, yeast, aged cheeses, pickled herring, and tuna.
- **Histamine releasing foods:** Strawberries, tomato, pineapple, and alcohol.
- **Salicylic acid (aspirin) containing foods:** Moderate (2-5 mg/100 gm): almonds, berries, cherries, dates, liqueur, oranges, pineapple, and water chestnuts. High (6-10 mg/100 gm): raisins, currants, pickles, licorice, honey, some spices (allspice, cardamom, caraway, ginger, mint, sweet paprika). Extremely high >10 mg/100 gm: ground spices aniseed (23), canella (43), celery seed (17), cinnamon (15), cumin (45), dill seed (94), garam masala, mustard (26), oregano (66), hot paprika (203), rosemary (68), sage (22), tarragon (35), turmeric (76), thyme (183).
- **Dietary protection:** Avoid high intakes of psuedoallergens causing adverse reactions or practice a rotational diet with possible omission during allergy season. Consider the total load on the person's body at a given time.

Chemical sensitivity to food additives: Asthma, headache, hives, behavior changes.

- Sulfites (naturally occurring or added) are associated with inducing asthma and are in dried fruits, wine, sauerkraut, white grape juice, dried potatoes, fresh shrimp, relishes.
- Artificial colorants such as FD&C yellow #5 (Tartrazine)
- Sodium benzoate (benzoic acid)
- Monosodium glutamate (MSG)
- Many others such as artificial and natural flavoring, carmine (cochineal extract), casein (sodium caseinate), hydrolyzed vegetable protein (HVP), mycoprotein (quorin), and vanillin (ethyl vanillin).

Lactose Intolerance: Dietary protection involves the use lactaid, probiotics, and/or aged cheeses to tolerate milk and dairy products or avoidance of all milk/dairy products.

Gluten Intolerance: celiac disease, gluten-sensitive enteropathy, dermatitis herpetiformis (DH).

- Gluten Free Certification developed by the Gluten Intolerance Group (GIG). <10 ppm gluten/5 ppm gliadin.
- Consumer needs to avoid cross-contamination by shared facility/equipment, crop rotation, crop location/proximity, harvesting, and transportation.

Dietary protection:

Gluten Free Grains/Starches	Gluten Containing Grains/Starches	Overlooked Gluten Sources
<ul style="list-style-type: none"> • Amaranth • Arrowroot • Buckwheat • Corn • Flax • Flours made from nuts, beans and seeds • Millet • Montana™ • Potato starch/flour • Quinoa • Rice (all varieties) • Sago palm • Sorghum • Soy (soya) • Tapioca • Teff 	<ul style="list-style-type: none"> • Barley (malt/extract) • Bulgur • Couscous • Farina • Graham flour • Rye • Semolina • Triticale • Wheat (all varieties such as durum, emmer, einkorn, kamut, spelt • including wheat bran, germ, & starch) 	<ul style="list-style-type: none"> • Beer, Lagers, Ales • Breading, Communion Wafers, Croutons & Stuffing • Candy (some types) • Luncheon Meats & Imitation Meats • Broth, Soup Base • Pasta • Roux • Sauces, Soy Sauce • Marinades • Supplements • Medications • Cosmetics • Play Dough

CASE STUDY: KATERRA

Katerra is a female track athlete of African American ethnicity. She has lactose intolerance, asthma, and is allergic to birch tree, grass, and ragweed pollen.

Determine whether Katerra can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food/ Supplement Item	Yes No Limit	If No, Why? If limit, When & Why?
Uncle Ben’s Rice - Polynesian Chicken recipe	Yes No Limit Yes No Limit	
Teriyaki Chicken Bowl	Yes No Limit	
Cream of Mushroom Soup	Yes No Limit	
Lemon Rosemary Chicken	Yes No Limit	
Easy Mac	Yes No Limit	
Amazon Frosted Flakes	Yes No Limit	
Steel-Cut Oats	Yes No Limit	
Hawaiian Pizza	Yes No Limit	
Mashed Potatoes	Yes No Limit	
Beef Frank	Yes No Limit	
Sesame Blue Chips	Yes No Limit	
Organic Tortilla Chips	Yes No Limit	
Baked Lays	Yes No Limit	
Chex Mix	Yes No Limit	
Half-Baked Frozen Yogurt	Yes No Limit	
Multivitamin for Her	Yes No Limit	
Cal/Mag	Yes No Limit	
Sinuplex	Yes No Limit	
Mega CoQ 10	Yes No Limit	

CASE STUDY: YOSHE

Yoshe is a female ice-skater of Japanese ethnicity. She has allergies to soy, shellfish, and latex.

Determine whether Yoshe can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food Item	Yes No Limit	If No, Why? If limit, When & Why?
Uncle Ben's Rice	Yes No Limit	
- Polynesian Chicken recipe	Yes No Limit	
Teriyaki Chicken Bowl	Yes No Limit	
Cream of Mushroom Soup	Yes No Limit	
Lemon Rosemary Chicken	Yes No Limit	
Easy Mac	Yes No Limit	
Amazon Frosted Flakes	Yes No Limit	
Steel-Cut Oats	Yes No Limit	
Hawaiian Pizza	Yes No Limit	
Mashed Potatoes	Yes No Limit	
Beef Frank	Yes No Limit	
Sesame Blue Chips	Yes No Limit	
Organic Tortilla Chips	Yes No Limit	
Baked Lays	Yes No Limit	
Chex Mix	Yes No Limit	
Half-Baked Frozen Yogurt	Yes No Limit	
Multivitamin for Her	Yes No Limit	
Cal/Mag	Yes No Limit	
Sinuplex	Yes No Limit	
Mega CoQ 10	Yes No Limit	

CASE STUDY: KARL

Karl is a male hockey player of German ethnicity. He was recently diagnosed with celiac disease (gluten intolerance).

Determine whether Karl can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food Item	Yes No Limit	If No, Why? If limit, When & Why?
Uncle Ben's Rice - Polynesian Chicken recipe	Yes No Limit Yes No Limit	
Teriyaki Chicken Bowl	Yes No Limit	
Cream of Mushroom Soup	Yes No Limit	
Lemon Rosemary Chicken	Yes No Limit	
Easy Mac	Yes No Limit	
Amazon Frosted Flakes	Yes No Limit	
Steel-Cut Oats	Yes No Limit	
Hawaiian Pizza	Yes No Limit	
Mashed Potatoes	Yes No Limit	
Beef Frank	Yes No Limit	
Sesame Blue Chips	Yes No Limit	
Organic Tortilla Chips	Yes No Limit	
Baked Lays	Yes No Limit	
Chex Mix	Yes No Limit	
Half-Baked Frozen Yogurt	Yes No Limit	
Men's Multivitamin	Yes No Limit	
Cal/Mag	Yes No Limit	
Sinuplex	Yes No Limit	
Mega CoQ 10	Yes No Limit	

CASE STUDY: VICTOR

Victor is a male soccer player of Italian ethnicity. He has never undergone allergy testing but he has noticed sensitivities to aspirin, sulfites, artificial colorants, sodium benzoate, and monosodium glutamate. He has experienced FDEIA but doesn't know what triggered it.

Determine whether Victor can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food Item	Yes No Limit	If No, Why? If limit, When?
Uncle Ben's Rice	YES or NO	
- Polynesian Chicken recipe	YES or NO	
Teriyaki Chicken Bowl	YES or NO	
Cream of Mushroom Soup	YES or NO	
Lemon Rosemary Chicken	YES or NO	
Easy Mac	YES or NO	
Amazon Frosted Flakes	YES or NO	
Steel-Cut Oats	YES or NO	
Hawaiian Pizza	YES or NO	
Mashed Potatoes	YES or NO	
Beef Frank		
Sesame Blue Chips	YES or NO	
Organic Tortilla Chips	YES or NO	
Baked Lays	YES or NO	
Chex Mix	YES or NO	
Half-Baked Frozen Yogurt	YES or NO	
Men's Multivitamin	YES or NO	
Cal/Mag	YES or NO	
Sinuplex	YES or NO	
Mega CoQ 10	YES or NO	

CASE STUDY: KATERRA **key**

Katerra is a female track athlete of African American ethnicity. She has lactose intolerance, asthma, and is allergic to birch tree, grass, and ragweed pollen.

Determine whether Katerra can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food/ Supplement Item	Yes No Limit	If No, Why? If limit, When & Why?
Uncle Ben's Rice	Yes No Limit	
- Polynesian Chicken recipe	Yes No Limit	
Teriyaki Chicken Bowl	Yes No Limit	Birch season (carrots, green/soybeans, pepper, pineapple)
Cream of Mushroom Soup	Yes No Limit	Contains milk (cream, whey)
Lemon Rosemary Chicken	Yes No Limit	Contains milk powder, birch season limit peas
Easy Mac	Yes No Limit	Contains milk
Amazon Frosted Flakes	Yes No Limit	+ organic food
Steel-Cut Oats	Yes No Limit	Facility processes milk
Hawaiian Pizza	Yes No Limit	
Mashed Potatoes	Yes No Limit	Birch season (potatoes), Na bisulfite & asthma
Beef Frank	Yes No Limit	Birch season (celery juice)
Sesame Blue Chips	Yes No Limit	
Organic Tortilla Chips	Yes No Limit	Facility processes milk
Baked Lays	Yes No Limit	Birch season (potatoes)
Chex Mix	Yes No Limit	Contains milk
Half-Baked Frozen Yogurt	Yes No Limit	Contains milk
Multivitamin for Her	Yes No Limit	
Cal/Mag	Yes No Limit	Birch season (sunflower seeds)
Sinuplex	Yes No Limit	
Mega CoQ 10	Yes No Limit	

- *She could try lactaid for lactose intolerance to see if she then tolerates milk.*

CASE STUDY: YOSHE key

Yoshe is a female ice-skater of Japanese ethnicity. She has allergies to soy, shellfish, and latex.

Determine whether Yoshe can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food Item	Yes No Limit	If No, Why? If limit, When & Why?
Uncle Ben's Rice - Polynesian Chicken recipe	Yes No Limit Yes No Limit	soy sauce, limit pineapple (histamine C/R)
Teriyaki Chicken Bowl	Yes No Limit	Contains soy ingredients
Cream of Mushroom Soup	Yes No Limit	Contains soy ingredients
Lemon Rosemary Chicken	Yes No Limit	Contains soy ingredients
Easy Mac	Yes No Limit	Watch for reactions to artificial colorants
Amazon Frosted Flakes	Yes No Limit	Facility processes soy
Steel-Cut Oats	Yes No Limit	Facility processes soy
Hawaiian Pizza	Yes No Limit	pineapple (histamine C/R), tomato (hist. R)
Mashed Potatoes	Yes No Limit	Potato as latex elicitor
Beef Frank	Yes No Limit	
Sesame Blue Chips	Yes No Limit	
Organic Tortilla Chips	Yes No Limit	Facility processes soy
Baked Lays	Yes No Limit	Contains soy, Potato as latex elicitor
Chex Mix	Yes No Limit	
Half-Baked Frozen Yogurt	Yes No Limit	
Multivitamin for Her	Yes No Limit	Facility processes soy
Cal/Mag	Yes No Limit	
Sinuplex	Yes No Limit	Facility processes shellfish
Mega CoQ 10	Yes No Limit	Contains soy ingredients

CASE STUDY: KARL key

Karl is a male hockey player of German ethnicity. He was recently diagnosed with celiac disease (gluten intolerance).

Determine whether Karl can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food Item	Yes	No	Limit	If No, Why? If limit, When & Why?
Uncle Ben's Rice - Polynesian Chicken recipe	Yes	No	Limit	OK if substitute gluten free soy sauce
Teriyaki Chicken Bowl	Yes	No	Limit	Contains wheat statement (from soy sauce)
Cream of Mushroom Soup	Yes	No	Limit	Contains wheat
Lemon Rosemary Chicken	Yes	No	Limit	Contains wheat
Easy Mac	Yes	No	Limit	Contains wheat
Amazon Frosted Flakes	Yes	No	Limit	
Steel-Cut Oats	Yes	No	Limit	Contains gluten
Hawaiian Pizza	Yes	No	Limit	Contains wheat
Mashed Potatoes	Yes	No	Limit	
Beef Frank	Yes	No	Limit	
Sesame Blue Chips	Yes	No	Limit	
Organic Tortilla Chips	Yes	No	Limit	Facility processes wheat
Baked Lays	Yes	No	Limit	
Chex Mix	Yes	No	Limit	Contains wheat
Half-Baked Frozen Yogurt	Yes	No	Limit	Contains wheat flour in ingredients
Men's Multivitamin	Yes	No	Limit	
Cal/Mag	Yes	No	Limit	
Sinuplex	Yes	No	Limit	
Mega CoQ 10	Yes	No	Limit	

CASE STUDY: VICTOR key

Victor is a male soccer player of Italian ethnicity. He has never undergone allergy testing but he has noticed sensitivities to aspirin, sulfites, artificial colorants, and monosodium glutamate. He has experienced FDEIA but doesn't know what triggered it.

Determine whether Victor can consume the items listed in the table below (circle yes, no, or limit) and using the copy of the food label and ingredients provided.

Food Item	Yes	No	Limit	If No, Why? If limit, When?
Uncle Ben's Rice - Polynesian Chicken recipe	Yes	No	Limit	
Teriyaki Chicken Bowl	Yes	No	Limit	Wheat, alcohol (wait 4-6 hrs to exercise) Ginger, spice and aspirin.
Cream of Mushroom Soup	Yes	No	Limit	MSG, colorants
Lemon Rosemary Chicken	Yes	No	Limit	Wheat, milk (wait 4-6 hrs to exercise) Rosemary and aspirin.
Easy Mac	Yes	No	Limit	Colorants
Amazon Frosted Flakes	Yes	No	Limit	Peanut & facility (wait 4-6 hrs to exercise)
Steel-Cut Oats	Yes	No	Limit	Wheat/gluten (wait 4-6 hrs to exercise)
Hawaiian Pizza	Yes	No	Limit	Wheat (wait 4-6 hrs to exercise). Pineapple and aspirin.
Mashed Potatoes	Yes	No	Limit	Sodium bisulfite
Beef Frank	Yes	No	Limit	Wine vinegar (wait 4-6 hrs to exercise). Celery and aspirin.
Sesame Blue Chips	Yes	No	Limit	Sesame seeds (wait 4-6 hrs to exercise)
Organic Tortilla Chips	Yes	No	Limit	Facilities wheat, peanut, tree nut (wait 4-6 hrs to exercise)
Baked Lays	Yes	No	Limit	
Chex Mix	Yes	No	Limit	MSG, colorants
Half-Baked Frozen Yogurt	Yes	No	Limit	Wheat, milk (wait 4-6 hrs to exercise)
Men's Multivitamin	Yes	No	Limit	
Cal/Mag	Yes	No	Limit	Dates, sesame seeds (wait 4-6 hrs to exercise)
Sinuplex	Yes	No	Limit	
Mega CoQ 10	Yes	No	Limit	