May is Food Allergy Awareness Month

Food allergies appear to be on the rise in industrialised countries. They have been dubbed "the second wave of the allergy epidemic".¹ Food allergies lessen quality of life and can be life-threatening.²,³

Food Allergy Vs Intolerance

Food allergies are due to an immune response to food or food components and may be IgE- or non-IgE-mediated.³,⁴ Food allergies can present as anaphylaxis. However, food allergy can present with a wide range of signs and symptoms involving the gastrointestinal, cutaneous, and respiratory systems or a combination. Food intolerances, on the other hand, are mainly non-immune mediated reactions and include lactose intolerance, glutamate and aspartame sensitivity, or reactions to preformed toxins or vasoactive amines in foods.

Food Allergies And Medications

There are more than 170 foods known to cause IgE reactions,⁴ but most food allergies are caused by peanuts, tree nuts, seafood (fish and shellfish), eggs, milk, sesame, soy, and wheat.⁵ Medications may contain some of these potential allergens (Table 1). Some medications can worsen allergic reactions to food (Table 2).

Table 1: Potential food allergens found in some medications*
<table>
<thead>
<tr>
<th>Peanut oil, soybean oil, sesame oil (in capsules, depot injections, lipid emulsions, nasal and topical products)</th>
<th>Refined peanut and soybean oils have low allergen content and suggest that ingestion is safe, but since there is no threshold for patients with known allergy, avoidance is still recommended. Data on parenteral administration is lacking and severe allergy to lipid emulsion has been reported. Most sesame oils are not refined enough to be safe.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy lecithin (in capsules, tablets, oral liquids) and egg lecithin (in lipid emulsions)</td>
<td>Although some soy-allergic patients can eat soy lecithin, and egg lecithin seems to be safe in cooked foods, intravenous administration may cause serious reactions.</td>
</tr>
<tr>
<td>Egg protein (in vaccines)</td>
<td>MMR vaccine and Imovax® rabies vaccine are generally safe in egg-allergic patients. Influenza vaccine is not contraindicated in egg allergy administration with trained resuscitation personnel and equipment is recommended. Avoid yellow fever and RabAvert® rabies vaccine.</td>
</tr>
<tr>
<td>Wheat</td>
<td>Wheat allergy is different from celiac disease. Most medicines are gluten-free. Wheat starch is found in some tablets (e.g. Imunovir®, Tardan®). Tardan® shampoo contains hydrolyzed wheat protein.</td>
</tr>
<tr>
<td>Seafood</td>
<td>Protamine (NPH insulin, heparin antidote) is isolated from salmon and may be contaminated with fish proteins. Patients with fish allergy should be treated with caution. Iodine-containing drugs like amiodarone, contrast dyes, or povidone-iodine are not contraindicated in patients with fish or shellfish allergy. Iodine-containing drugs are not the same as sulphonamide allergy.</td>
</tr>
<tr>
<td>Tree nuts</td>
<td>Medications do not contain tree nuts, but paclitaxel is found in hazelnuts. A patient with hazelnut allergy developed hives, itching and dyspnea after a paclitaxel infusion was started.</td>
</tr>
<tr>
<td>Miscellaneous (non-immune reactions)</td>
<td>Salicylates are found in fruits, vegetables, herbs and spices but are tolerated by most patients with ASA sensitivity. Carmine red was the cause of anaphylaxis purported to be due to azithromycin. Sulfite sensitivity is not the same as sulphonamide allergy.</td>
</tr>
</tbody>
</table>

*Not a comprehensive list. Consult specific product information.

Table 2: Medications that can exacerbate food allergies

| ASA and NSAIDs | May predispose to bronchoconstriction. ASA increases food-dependent exercise-induced anaphylaxis (possibly by increasing GI uptake). |

1. Peanut oil, soybean oil, sesame oil (in capsules, depot injections, lipid emulsions, nasal and topical products)
2. Refined peanut and soybean oils have low allergen content and suggest that ingestion is safe, but since there is no threshold for patients with known allergy, avoidance is still recommended. Data on parenteral administration is lacking and severe allergy to lipid emulsion has been reported. Most sesame oils are not refined enough to be safe. 
3. Soy lecithin (in capsules, tablets, oral liquids) and egg lecithin (in lipid emulsions)
4. Although some soy-allergic patients can eat soy lecithin, and egg lecithin seems to be safe in cooked foods, intravenous administration may cause serious reactions. 
5. Egg protein (in vaccines)
6. MMR vaccine and Imovax® rabies vaccine are generally safe in egg-allergic patients. Influenza vaccine is not contraindicated in egg allergy administration with trained resuscitation personnel and equipment is recommended. Avoid yellow fever and RabAvert® rabies vaccine. 
7. Wheat 
8. Wheat allergy is different from celiac disease. Most medicines are gluten-free. Wheat starch is found in some tablets (e.g. Imunovir®, Tardan®). Tardan® shampoo contains hydrolyzed wheat protein. 
9. Seafood 
10. Protamine (NPH insulin, heparin antidote) is isolated from salmon and may be contaminated with fish proteins. Patients with fish allergy should be treated with caution. Iodine-containing drugs like amiodarone, contrast dyes, or povidone-iodine are not contraindicated in patients with fish or shellfish allergy. Iodine-containing drugs are not the same as sulphonamide allergy. 
11. Tree nuts 
12. Medications do not contain tree nuts, but paclitaxel is found in hazelnuts. A patient with hazelnut allergy developed hives, itching and dyspnea after a paclitaxel infusion was started. 
13. Miscellaneous (non-immune reactions) 
14. Salicylates are found in fruits, vegetables, herbs and spices but are tolerated by most patients with ASA sensitivity. Carmine red was the cause of anaphylaxis purported to be due to azithromycin. Sulfite sensitivity is not the same as sulphonamide allergy. 
15. ASA and NSAIDs May predispose to bronchoconstriction. ASA increases food-dependent exercise-induced anaphylaxis (possibly by increasing GI uptake). 
16. |
Beta blockers and alpha blockers | Do not worsen allergies *per se* but may blunt the therapeutic response to epinephrine.\(^3\)

ACE inhibitors | May interfere with production of endogenous vasoconstrictors that help in allergic reactions.\(^3\)

Tacrolimus | Tacrolimus immunosuppression is associated with increased food allergy.\(^21\)

Prevention Of Food Allergies

For patients with known food allergies avoiding the allergen is the goal. Thus, if a patient is suspected of having a food allergy, they must have the diagnosis confirmed and the specific allergen determined. Probiotics have been shown to reduce eczema, but there is insufficient evidence that probiotics prevent or treat food allergies.\(^22,23\)

Treatment Of Anaphylaxis

Details on treatment are beyond the scope of this article - see Additional Resources.

First-line: epinephrine. Guidelines and local experts recommend a 0.3 mg dose for children weighing more than 20 to 25 kg.\(^3,24\) Optimally, patients should have a back-up dose available, and all patients with a severe reaction should be sent immediately to the hospital.\(^25\)

Accidental injection of epinephrine into an extremity such as a finger can cause tissue ischemia. However, such accidents can sometimes be managed at home - contact the Poison Control Centre immediately.

Adjunctive treatments: Bronchodilators can help relieve bronchospasm not responding to epinephrine, but they do not relieve laryngeal edema and **EPINEPHRINE MUST BE GIVEN.** Antihistamines relieve itching and urticaria but do not relieve shortness of breath, wheezing or shock and **EPINEPHRINE MUST BE GIVEN.** Corticosteroids take several hours to work and are not useful for immediate treatment and **EPINEPHRINE MUST BE GIVEN.**\(^3\)

Additional Resources

- Learn more about food allergies and anaphylaxis, and print out a personalised emergency treatment plan at [www.allergysafecommunities.ca](http://www.allergysafecommunities.ca)
• Patients can call 811 and speak to a HealthLinkBC allergy dietician.

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23. Personal communication: epinephrine dosing, information on file (DPIC)


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