

ASTHMA & ALLERGY ALERT

A Publication of Asthma & Allergy Affiliates of the North Shore

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The Oral Allergy Syndrome

The "Oral Allergy Syndrome" refers to a group of symptoms that occur in pollen-sensitive individuals caused by a variety of foods. In the OAS, the immune system mistakes the food proteins for pollen proteins and causes an allergic reaction to the food. Another term used for this syndrome is "Pollen-Food Allergy."

Mechanism

In OAS, the immune system produces antibodies that are capable of binding to both pollen proteins and certain highly similar food proteins. Consequently, the same immune system response can trigger allergy symptoms in two different situations: hay fever (in the presence of pollen) and food allergy (in the presence of certain foods).



Often, the antibody is directed against a protein that is very heat labile. That means the person with OAS may be able to eat the food when it is cooked, but not when it is raw. Occasionally, the antibody is directed against a heat stable protein so that cooking the food has no effect on its ability to trigger an allergic reaction.

Symptoms

OAS sufferers may have a number of reactions that usually occur very rapidly, within minutes of eating a trigger food. The most common reaction is an

itching or burning sensation in the lips, mouth, and/or pharynx. Sometimes other reactions can be triggered in the eyes, nose, and skin. Swelling of the lips, tongue, and uvula and a sensation of tightness in the throat may be observed. Seldom it can result in anaphylaxis. If a sufferer swallows the food, there is a chance that there will be a reaction later in the gastrointestinal tract. Vomiting, diarrhea, severe indigestion, or cramps may occur.

Treatment

An OAS sufferer should avoid foods to which they are allergic. Peeling or cooking the foods has shown to eliminate the effects of some allergens such as apple, but not others such as celery or strawberry. In the case of foods such as hazelnut which have more than one allergen the effects can be mixed - eliminating one but not the other. Antihistamines may also relieve the symptoms of the allergy by blocking the immune pathway. Persons with a history of severe anaphylactic reaction may carry injectable emergence dose of epinephrine (such as an EpiPen). Allergy immunotherapy has been reported to improve or cure OAS in some patients. A year-long study ending in 2004 indicated that immunotherapy with extracts containing birch pollen has benefit to OAS sufferers of apple or hazelnut related to birch pollen-allergens.



Cross reactions

Allergies to a certain pollen are associated with OAS reactions to certain foods. For instance, an allergy to ragweed is associated with OAS reactions to banana, watermelon, cantaloupe, honeydew, zucchini, and cucumber. This does not mean that all sufferers of an allergy to ragweed will experience adverse effects from all or even any of these foods. Reactions may begin with one type of food and with reactions to others developing later. However, it should be noted that reaction to one or more foods in any given category does not necessarily mean a person is allergic to all foods in that group. Often well-cooked, canned, or pasteurized foods cause little to no reaction due to denaturation of the cross-reacting proteins.

Food Sensitivities related to specific pollens

Birch pollen:

- *Fruit*
 - Apple family: apples, pears
 - Plum family: almonds, apricots, cherries, peaches, nectarines, prunes and plums
 - Other: kiwi
- *Vegetables:*
 - Parsley family: carrots, celery, fennel, parsley and parsnip
 - Other: chicory, coriander
 - Nuts: hazel nuts, and walnuts

Grass pollen: fig, melons, tomatoes, oranges

Mugwort pollen : carrots, celery, coriander, fennel, parsley, peppers, sunflower

Ragweed pollen : banana, cantaloupe, cucumber, honey dew, watermelon, zucchini

- Potential: Dandelions or chamomile tea

Clinical Manifestations

Usually	Itching of the palate, throat, chin and lips Swelling of the lips
Occasionally	Swelling of the gums Eye itching Rhinitis: i.e. runny nose, itchy nose, sneezing
Less Common	Gastrointestinal symptoms: nausea, vomiting, cramping Hives and skin swelling (angioedema) Asthma Allergic shock reaction (anaphylaxis)