

# Food and Environmental Allergies



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## KEYWORDS

- Food allergies • Environmental allergies • IgE-mediated reactions • Atopic disease
- Immunotherapy

## KEY POINTS

- Environmental allergies cause nasal and ophthalmologic symptoms that can be debilitating in themselves and exacerbate symptoms of asthma.
- Food allergies can cause a wide range of symptoms, from mild rashes to anaphylaxis. Although the exact incidence is hard to determine, it is likely increasing.
- Food allergies require an accurate diagnosis based on a combination of a comprehensive history and use of either skin-prick testing or food-specific serum immunoglobulin E levels.
- Environmental allergies should be treated with pharmacologic measures and avoidance strategies, with immunotherapy if needed.
- Food allergies should be treated with strict avoidance, and physicians should ensure that patients and their families have access to an autoinjector of epinephrine to keep on hand at all times in case of accidental exposure.

## INTRODUCTION

### *Nature of the Problem*

Allergic reactions to substances in our environment, including food, are important disease entities in and of themselves, in addition to their ability to exacerbate other chronic medical conditions such as asthma and eczema.

The incidence of allergic disease is difficult to ascertain, as there is great variance from study to study, and self-reported allergies are much more common than clinically confirmed allergies.<sup>1</sup> Frequency of disease varies based on location, but in the United States:

- Approximately 10% of individuals younger than 17 years had hay fever in the last year<sup>2</sup>
- Approximately 8% of children ages 6 to 18 years have a food allergy<sup>3</sup>

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Prim Care Clin Office Pract 42 (2015) 113–128

<http://dx.doi.org/10.1016/j.pop.2014.09.010>

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Disease rates of environmental allergies appear to have stabilized<sup>4</sup> after a decade of increasing. However, the incidence of food allergies appears to be increasing.<sup>5,6</sup> Most children will eventually outgrow allergies to milk, soy, wheat, and egg; peanut and tree-nut allergies are more likely to persist into adulthood.<sup>7</sup> Seafood (including shellfish) allergies are more common in adults than in children.<sup>7</sup>

Milk, eggs, and peanuts are the most common food allergens in the United States.<sup>1</sup>

Symptoms of allergic disease can affect nearly any system in the body (see **Table 1**) and nearly any substance can be an allergen, with pollens, foods, drugs, and insect venom being common causes of an allergic response. In addition to symptoms directly related to the allergic disease, an immunoglobulin E (IgE)-mediated response to an allergen can exacerbate other chronic conditions, such as asthma and atopic dermatitis. Many patients experience the “atopic march,” with the development of atopic dermatitis and food allergies in infancy, followed by asthma, then allergic rhinitis in childhood.<sup>8</sup>

Recently, interest in food allergies has been increasing in the general population.<sup>1</sup> Up to 35% of the general population reports personal belief of a food allergy, although the actual incidence is less than 10%.<sup>1</sup> This erroneous belief can lead to unnecessary avoidance of certain foods. Especially in children this can be problematic, as dietary restrictions can cause problems with weight gain<sup>9</sup> and a decrease the child’s and family’s quality of life.<sup>10</sup>

Whereas patients may overdiagnose food allergies, physicians and patients often miss the diagnosis of allergic rhinitis. Often seen as a benign condition, undertreated allergic rhinitis can make asthma control more difficult and have a negative impact on a child’s quality of life.<sup>11</sup>

For all types of allergies, therefore, it is important to make an accurate diagnosis using a combination of history, physical examination, and appropriate diagnostic testing. In patients with one atopic disease, physicians may need to probe for symptoms of a second atopic disease (**Box 1**).

### **Symptom Criteria**

IgE-mediated environmental allergies may present with allergic rhinitis or worsening of underlying asthma or atopic dermatitis. Rhinitis is defined as the presence of 1 or more of the following:

- Nasal congestion
- Rhinorrhea (anterior and posterior)
- Sneezing
- Nasal itching<sup>12</sup>

#### **Box 1**

##### **Definition of allergies**

Allergies are immunologically mediated reactions to a specific allergen (mediated usually, but not always, by immunoglobulin E [IgE]) with symptoms ranging from immediate systemic responses (anaphylaxis) to chronic recurrent symptoms of the respiratory, gastrointestinal, and cutaneous systems.

Individuals are considered allergic when they have both IgE to a specific allergen *and* symptoms that develop after exposure to that substance.

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