

Optimizing the Diagnosis of Food Allergy



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KEYWORDS

- Diagnosis • Food allergy • Skin prick testing • Food-specific IgE
- Oral food challenge • Component-resolved diagnostics • Epitope
- Basophil activation

KEY POINTS

- Accurate diagnosis of food allergies is vital to identify patients who may have severe, life-threatening allergic reactions, and to exclude suspected allergies that could lead to unnecessary dietary restrictions.
- Traditional tests for food allergy have several limitations; skin prick testing and food-specific IgE levels are excellent tools for detecting sensitization to foods, but, often, positive tests are clinically irrelevant. Although oral food challenges are the gold standard for diagnosing food allergy, they are time-consuming and costly, and they may result in an allergic reaction.
- Recent studies have identified several testing modalities that may improve the ability to identify true clinical reactivity or severity, including component-resolved diagnostics, basophil activation studies, T-cell proliferative responses, and measurement of platelet-activating factor.

INTRODUCTION

An accurate diagnosis of food allergies is necessary to ensure that an individual is avoiding foods that could trigger severe allergic reactions or contribute to chronic symptoms. Importantly, misdiagnosis could also result in unnecessary dietary restrictions that carry social and nutritional consequences. In 2010, the National Institute of Allergy and Infectious Diseases sponsored an expert panel that published recommendations on the diagnosis of food allergy, endorsing use of the medical history and physical examination, elimination diets, skin prick testing (SPT), serum food-specific IgE (sIgE) levels, and oral food challenges (OFCs).¹ These key diagnostic tools, often used together, are essential for arriving at an accurate diagnosis. Unfortunately, they also carry various limitations. For example, SPTs and sIgE levels are sensitive tools for

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identifying the presence of food-sIgE antibodies (sensitization) that can be associated with acute allergic reactions, but sensitization often exists without clinical consequence. Additionally, there are circumstances when these tests are negative despite the presence of a true food allergy. The medically supervised OFC is a very specific diagnostic test, but the procedure is time consuming, costly, and may result in a severe allergic reaction. In recent years, several testing modalities have been investigated that may improve food allergy diagnostics, including component-resolved diagnostics (CRD), basophil activation studies, T-cell proliferation assays, and measurement of platelet-activating factor (PAF).

STANDARD DIAGNOSTIC TESTS

The typical diagnostic routine (**Fig. 1**) begins with a medical history to determine whether the symptoms are potentially related to ingestion of specific foods; whether adverse reactions are allergic in nature; and, if so, the likely pathophysiologic basis. Knowledge of the epidemiology of food allergy and details of the history may identify potential triggers to which simple tests, such as SPT and sIgE, can be applied and interpreted in the context of the history and a knowledge of test limitations. When the diagnosis is uncertain, an OFC can be used as the diagnostic gold standard.

The Medical History

The evaluation for a patient with a possible food allergy begins with a thorough history and physical examination. The history should focus on possible triggers of a reaction, the quantity ingested, the time course of the reaction, whether there were ancillary or facilitating factors around the time of the reaction that might have promoted reactivity (exercise, illness, medications such as aspirin), and the specific

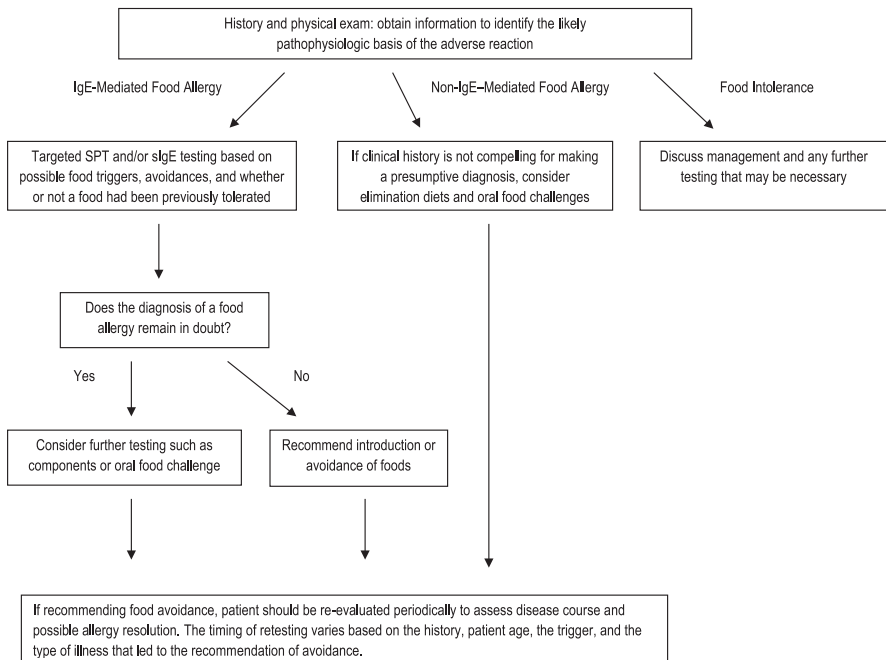


Fig. 1. Food allergy diagnostic algorithm.

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