

might result in an overly restrictive food-elimination diet.

REVIEWER COMMENTS. Although the retrospective design of the study did cause some limitations, the takeaway point for pediatricians and allergists alike should be that SPTs and immunoassays alone do not definitively diagnose food allergy, especially when evaluating nonanaphylactic symptoms of food allergy (eg, AD). Serum allergen-specific IgE testing, when necessary, should be directed toward relevant allergens only. OFCs performed in a board-certified allergist's office to confirm food-allergy status remain the most reliable test for food-allergy diagnosis. Further prospective studies that examine specific IgE levels and SPT results for suspected food allergy in patients with and without AD are needed.

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Performance of a Component-Based Allergen-Microarray in the Diagnosis of Cow's Milk and Hen's Egg Allergy

D'Urbano LE, Pellegrino K, Artesani MC, et al. *Clin Exp Allergy*. 2010;40(10):1561-1570

PURPOSE OF THE STUDY. Published clinical decision points (CDPs) have improved the accuracy of current allergen-specific immunoglobulin E (sIgE) testing, but the oral food challenge (OFC) remains the gold standard. These researchers sought to evaluate the performance of an in vitro microarray-based diagnostic test for the diagnosis of cow's milk (CM) and hen's egg (HE) IgE-mediated allergy.

STUDY POPULATION. Infants and children ($N = 104$; median age: 4.9 years [range: 0.7-15.1 years]) referred to the allergy clinic with a history of CM or HE consumption and a resultant severe and/or immediate reaction were included in the study.

METHODS. Using the ImmunoCAP system (Phadia, Uppsala, Sweden), sIgE testing was performed to milk, α -lactalbumin, β -lactoglobulin, casein, egg white, and egg yolk. Microarray testing was performed to multiple known CM and HE allergen components. OFCs were performed on all subjects using pasteurized CM and boiled egg. Negative OFCs to boiled egg were followed by an OFC to raw egg. OFCs were discontinued for anaphylactic shock or objective symptoms in 2 or more systems.

RESULTS. For CM allergy, sIgE testing to milk and casein and microarray testing to Bosd8 provided the highest accuracy for predicting OFC outcomes. For HE allergy, results of sIgE testing to egg white and microarray testing

to Gal d1 (ovomuroid) were most accurate. For CM allergy, the milk sIgE 95% CDP (≥ 16.6 kU/L) resulted in a positive predictive value (PPV) of 93% and a negative predictive value (NPV) of 57% compared with the Bosd8 microarray 95% CDP (>0.60 ISU [ISAC standardized units]), which resulted in a PPV of 96% and an NPV of 78%. For HE allergy, the egg white sIgE 95% CDP (≥ 25.3 kU/L) resulted in a PPV of 86% and an NPV of 59% compared with the Gal d1 microarray 95% CDP (>0.86 ISU), which resulted in a PPV of 94% and an NPV of 79%. Sequential use of sIgE and microarray testing for both CM and HE yielded minimally improved results.

CONCLUSIONS. Component-based allergen microarray provides improved PPV and NPV in the diagnosis of CM and HE allergy when compared with standard sIgE testing. The improved accuracy can reduce the number of OFCs that need to be performed and, more importantly, can reduce the number of positive challenge results, thereby decreasing the risk to patients.

REVIEWER COMMENTS. This well-designed, prospective study found strong performance of component-based microarray testing for food allergy. However, the modest additional accuracy of microarray testing, when balanced with its limited availability and its considerable cost, limits its practical benefit. As the authors suggested, it might presently be more suited to large tertiary care centers as a secondary screen after standard specific IgE testing has been performed.

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Serum Immunoglobulin E (IgE) Measurement and Detection of Food Allergy in Pediatric Patients With Eosinophilic Esophagitis

Erwin EA, James HR, Gutekunst HM, et al. *Ann Allergy Asthma Immunol*. 2010;104(6):496-502

PURPOSE OF THE STUDY. To determine the degree of allergic sensitization in patients with eosinophilic esophagitis by using serum immunoglobulin E (IgE) testing and comparing the results to those obtained by epicutaneous skin-prick tests (SPTs) and patch testing.

STUDY POPULATION. This was a cross-sectional study of pediatric patients ($N = 53$) referred for evaluation for biopsy-proven eosinophilic esophagitis at an allergy referral clinic at Nationwide Children's Hospital (Columbus, OH) over a 2½-year period (January 2007 to June 2009).

METHODS. Questionnaires about symptoms and treatment of eosinophilic esophagitis were completed. Serum-specific IgE antibodies to 8 common foods and

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