

Letter to the Editor

To the Editor

The work of Eigenmann and Sampson (1) addresses questions of major importance to food allergists. The clinical interpretation of skin prick tests (SPT) has an economical corollary as, from the diagnostic assessment of these tests, decisions are made to order RAST, mount a challenge or prescribe an elimination diet. Some methodological aspects, however, need to be clarified. There are few published rationales behind the choice of cut-off points in assessing the diagnostic accuracy of food SPT in the literature, and even diagnostic guidelines opt for arbitrary values (2). A cut-off point is selected to minimize the proportion of false-positive interpretations generated by a test but implies a compromise in terms of sensitivity. Ideally, this trade-off would be based on a distribution analysis of the population sampled. An analysis by means of a receiver operating curve (ROC) varying cut-off points also improves the assessment of the diagnostic and screening value of a CAP system for food allergens (3). The device adopted by Eigenmann and Sampson, however, i.e. 'less than the upper 95% confidence interval', as the cut-off point in a sample of patients negative during double-blind placebo-controlled food challenge (DBPCFC) may be acceptable on clinical grounds, but does not reflect the distribution of the condition across the sampled population. If the cut-off point were calculated on the basis of a distribution analysis, the accuracy of the tests would be different. Moreover, we believe that the discussion among allergy researchers would benefit from the use of universally accepted statistical methods (one- or two-tailed hypothesis test, order of contingency table values...). Given the impossibility of standardizing extracts and DBPCFC in a mechanical fashion, every effort should be made to devise an allergological *koiné* for allergists to report their findings. The two methodologies evaluated in the paper by Eigenmann and Sampson compared mean weal diameter and weal surface for scanning as outcome measures, and the authors find them both to be equivalent. However that may be, the interpretations these results generate are not equivalent, and the questions of interest in allergy practice remain: facing a test result, when can I make or exclude a diagnosis, and on the basis of which range of values distributed across what patient spectrum

defined by what cut-off point? Handling these issues requires other data (and recording thereof) than that provided by the study by Eigenmann and Sampson. Sensitivity, specificity and predictive values are characteristics of the tests which may not be reproduced (c.f. the problem of standardization) in the general population. In order to achieve universal value, the prevalence of the individual allergies should be known among children SPT-positive for the tested food allergens and factored with the test performance accuracy of the procedures. What we really need at this point is a better assessment of cut-off points.

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Reply

The comments by Fiocchi et al. address crucial issues regarding screening tests for food allergy, namely whether cut-off points for 'clinical positivity' can be defined for all patient populations, and, if possible, how they should be defined. Skin prick tests (SPT) need to be interpreted in view of several variables (e.g. age of the patient, quality of allergen extracts, technique of the investigator). Owing to the variability of the reagents and methods utilized, it is likely that diagnostic cut-off points will remain rather arbitrary for food allergens.

Although we concur with the concerns raised by Fiocchi et al., the aim of our work (1) was primarily to compare two different methods of measuring SPT results with the widely utilized cut-off point criteria proposed by Bock et al. (2).

The 95% confidence interval (CI) was applied to a uniform study population utilizing the same reagents applied by the same study nurse, and can therefore be used to compare the two measurement methods. Our cut-off was quite low, compared to using two standard deviations, for example. However, choosing the 95% CI limit increased the sensitivity of the SPT, allowing us to detect patients requiring further diagnostic evaluation. We would like to re-emphasize that, at this time, SPTs and food-specific IgE antibody measurements remain a screening tool. The definitive diagnosis of food allergy can only be established by standardized food challenges.

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