

Letter to the Editor

Validity of reaction index and positivity ratio?

Dear Sir,

Thank you for the letter in response to our paper on reaction index (RI) and positivity ratio (PR) (1). We agree completely with Brasch and Geier (2) that the RI and PR depend on a number of variables: the contact allergen, patch test preparation, patch test technique, reading time, scoring system, the dermatologist, and also the patients tested, and the sum of these variables is also the reason for the limited validity of calculated RI and PR. The use of mathematical formulae to calculate statistics based on values with such inherent uncertainties imply accuracy, which is unrealistic. The only thing you can really standardize is the patch you apply to the patient's skin. The other factors can be improved by training and effort. Reading and scoring systems may differ between IVDK clinics and our laboratory. Who is right and who is wrong – that is not the pivotal question because the skin reaction to a diagnostic patch test preparation as such is not the decisive end-point; the patch test response is the necessary tool in the process to determine if the patient has allergic contact dermatitis. In a recent publication comparing Danish and German patch test data, Thyssen et al. (3) from IVDK discuss the possibility of differences in criteria for scoring positive patch test reactions in Germany and in Denmark.

The fallacy introduced by using statistics as RI and PR is that it may give dermatologists the impression that diagnostic patch testing with the majority of contact allergens is a very robust biologic assay. Brasch and Geier propose that the ideal patch test preparation gives negative reactions in non-sensitized individuals and clear-cut positive reactions in sensitized individuals. However, in our view, this is utopian for the majority of environmental contact allergens. Then why bother with these statistics?

Klaus Ejner Andersen and Flemming Andersen
Department of Dermatology, Odense University
Hospital, University of Southern Denmark,
5000 Odense, Denmark
Tel: +45 65412700
Fax: +45 66123819
e-mail: keandersen@health.sdu.dk

References

1. Andersen K E, Andersen F. The reaction index and positivity ratio revisited. *Contact Dermatitis* 2008; 58: 28–31.
2. Brasch J, Geier J. How to use the reaction index (RI) and positivity ratio (PR). *Contact Dermatitis* 2008: in press.
3. Thyssen J P, Uter W, Schnuch A, Linneberg A, Johansen J D. 10 year prevalence of contact allergy in the general population in Denmark estimated through the CE-DUR method. *Contact Dermatitis* 2007; 57: 265–272.