

Editorial

Food allergy: a long way to safe processed foods

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The burden of living with food allergies starts as soon as the patient leaves the diagnosing physician's office. In the absence of a proactive treatment of food allergies, the instructions are as follows: "Avoid completely all foods containing the offending allergen."

Current legislation in most of the world does not require complete labeling of ingredients contained in processed foodstuffs. Therefore, processed food and the labeling on packages are one of the major problems sufferers from food allergy face, and many accidental ingestions result from hidden allergens (1–3). There is very often a gap of several years between the identification of such a problem, and the establishment of new legislation, in part due to the requirement by the legislator for scientifically established facts to provide clear guidelines to the food industry.

There are several major issues with regard to processed foodstuff labeling. First, countries of the European Union require that compound ingredients need to be labeled only if they constitute more than 25% of the final product. In the USA and Canada, these guidelines are more stringent, as all ingredients in a food must be declared on the label. The Codex Alimentarius, a consultative, nongovernmental body which sets recommendations for the food industry, suggests that the 25% limit should be lowered to 5%. The European Union has recognized these issues related to allergy and hypersensitivity (14) and aims to meet these requirements within a few years.

However, these guidelines will not prevent reactions in highly sensitive individuals. The Codex has also

established a list of highly allergenic foods which should be indicated on the labeling even if present in only minute quantities. The list includes cereals containing gluten, crustaceans, egg, fish, peanut, soybean, tree nuts, and sulfites in concentration of at least 10 mg/kg. Such a measure will obviously add some degree of safety; however, it might not reflect local characteristics and will need to be adapted to these in individual countries (e.g., celery allergy is common in Swiss adults).

The second problem is possible contamination during food processing. Thresholds of reactivity have been studied for specific foods (e.g., peanut and egg), but these are mostly unknown for most other foods (3, 4). Furthermore, determination of such levels does not represent total safety for all individuals. "Precautionary labeling" is the result of an increased awareness of possible contamination during processing, and consumers are more and more often discovering clauses such as "may contain peanut". Such a label cannot be a substitute for good manufacturing practice, and regulatory authorities should have appropriate scientific tools for control.

In this issue of *Allergy*, Schäppi et al. publish a report which deserves our attention (1). They represent an official food-control authority, and on the basis of governmental legislation requiring "good manufacturing practice", they investigated several processed foodstuffs for the presence of undeclared peanut antigen. A large number of these products contained peanut allergen in various amounts. Most of the food

manufacturers who were contacted investigated on a voluntary basis their production lines for sources of contamination.

Several problems raised by this paper need to be solved before such an action can be extended. The method of detection used, by testing serum from patients allergic to peanuts, is not applicable to the detection of all potentially allergenic foodstuffs and does not allow standardization of the procedure. Furthermore, comparison of different methods of detection by other authors has suggested a limited sensitivity for this assay (5). Production of antibodies to detect contaminating allergens is more reliable and would allow better reproducibility of the results. Antibodies to various major antigenic foods have been produced, and development of sandwich-type ELISA has allowed detection of small contaminating quantities. Using rabbit antibodies to hazelnut, Koppelman et al. (5) and Holzhauser & Vieths (6) found a level of detection as low as 1–2 ppm. By a similar method, almonds were found at the same level of detection (7–9). Processed foods have also been investigated for traces of peanut by using peanut-specific antibodies. Yeung & Collins developed an assay with a

detection limit of 400 ng/g (10), and Holzhauser & Vieths reached a limit of 2 ppm in their assay (11). Besides immunoassays to tree nuts and peanuts, egg proteins might also be detected by a similar method (12, 13). Obviously, methods of detection of other major food allergens need to be developed, and threshold levels for legal action need also to be defined for other allergenic foods. Finally, legislation more appropriate for legal action will be needed.

With the news media increasingly interested in food allergy-related problems, food-allergy patients are also multiplying the number of concerned persons in the community. There is an increased pressure on governmental agencies not only to investigate the freshness of foods, but also to offer safer foods for food-allergic consumers. These agencies will need help from the scientific community to provide reliable methods to perform this “new” task.

We may, then, imagine that internationally set standards will provide food-industry legislation answering to the real needs of sufferers from food allergy, as well as reliable tools to detect potential problems during manufacture.

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