BIONEXT
LABORATOIRE D'ANALYSES MÉDICALES

FOOD ALLERGIES
IN ADULTS AND CHILDREN

Because of the heightened prevalence of food allergies, these have become a serious health problem in developed countries. Indeed, while figures vary depending on the food involved, they affect 6 to 7% of children, and 2 to 3% of adults.

Step 1: Clinical history taking

Clinical manifestations are varied and change with age. The main symptoms in children are mostly skin-related (hives, flushing, swelling etc.), whereas they are more often oropharyngeal (oral swelling, nausea, vomiting, oropharyngeal itching etc.).

The **time of appearance of clinical signs** can support the diagnosis of an immune reaction. A true food allergy becomes apparent in 2 to 6 hours of ingestion.

A careful investigation of the circumstances of occurrence and diet can precisely guide the diagnostic tests to prescribe. It is equally important to note the **type of foodstuff involved (raw or cooked)** and any possible signs of respiratory allergies during the various seasons (cross allergies can be a possibility).

Step 2: Biological testing

1 Orientation test

Allergen mixes containing 3 to 6 foods may be used depending on the history, more in young children whose meals are simple in composition. In older children and adults, the clinical history ought to be able to guide the choice of these mixes towards a smaller family of foodstuffs.

If the result is positive, then the content of the mixes will have to be decomposed to find the component involved.
If the result is negative and/or there is a discrepancy with the clinical history, further investigations will be required. That is because the allergen involved may be absent or under-represented in the tested mixes.

To help you in your investigations, the composition of each mix is detailed in our reports.

2 Confirmation test

If the evocative symptoms are related to the ingestion of a clearly identified food, IgE tests specific to that food can be used as a first-line approach, both in children and in adults.
Later on, molecular IgE tests specific to the food are useful in a number of situations:

- Providing information to help predict the clinical severity of the food allergy
- Helping differentiate cross-allergies from primary sensitisation
- Helping differentiate food sensitisation with no clinical expression from sensitisation with a risk of allergy

Indeed, depending on the protein involved, the severity of symptoms, the impact of cooking and interaction with allergies to pollens or other foods may be envisaged.

Note
Multiple allergen tests with a quantitative response per allergen (CLA30®) must not be used as screening tests, since they lack sensitivity and specificity for some allergens, and are trickier to use.

In practice

Prescription procedure

Prescription algorithm:

1. Allergen mix
2. Breakdown into native unit IgE
3. Interpretation in the report recommending the performance of additional IgE tests (native, recombinant, cross-reactions)

Example of peanuts

1 Clinical history taking	**2** Confirmation with diet
3 Prescription of first-line tests **Native allergen: f13**	**4** Interpretation in the report indicating any possible additional prescription
5 If positive: prescription of confirmation tests **Recombinant allergens:** **f423 (rAra h2), f447 (rAra h6),** **f427 (rAra h9) and f352 (rAra h8)**	**6** Overall interpretation

Key points

- Clinical history taking that is as accurate and detailed as possible so as to target a food/food family (considering time, cooking, respiratory allergy or allergy associated with other foods)
- Target the native allergen in association with recombinant allergens so as to pinpoint the specificity and severity of the allergy
- If there is a discrepancy between tests and symptoms, remember to test cross-reactivity (pollens of birch, grasses and stone fruit)
- **CCD marker** (o214 (MUXF3)) in order to help rule out an allergy if there is a discrepancy between native and molecular allergenic reactivity or in case of polyreactivity

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