

Early Diagnosis in Children

Too many children with allergic diseases are diagnosed too late

What do
GPs
need
to know?



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of Allergology and
Clinical Immunology

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Allergy care
starts with
early diagnosis



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Working together against allergy

Early Diagnosis in Children

ARE ALLERGIC DISEASES COMMON AMONG EUROPEAN CHILDREN?

Allergic diseases are one of the major causes of morbidity in the westernised world, and their prevalence in some parts of Europe still seems to be increasing. In most European countries, the reported prevalence of asthma symptoms has increased by 200% in children between the mid-1970s and the mid-1990s. This brings the proportions of people affected to between 5% and 20% depending on the age group. The highest rates are among children and teenagers.

Allergic diseases are therefore the most common chronic illnesses of childhood in EU countries today. In some countries, one child in four is affected. However, the variation in rates between the EU countries is substantial.

Over the next 10-20 years, allergic diseases will increase throughout the population of Europe, which will put new demands on the health care systems within EU countries.

HOW DO ALLERGIC DISEASES START, AND WHAT ABOUT "ALLERGY MARCH"?

In infancy, the main diseases of possible allergic nature are atopic dermatitis, gastrointestinal symptoms and recurrent wheezing. The main problems later in childhood are bronchial asthma, allergic rhinitis and conjunctivitis. Adverse reactions to foods, mainly cow's milk protein and hen's eggs, most commonly occur in the first years of life. Allergy to inhalant allergens mostly occurs later.

IgE antibodies to allergens (hen's egg white, cow's milk) in infants predict sensitisation to inhalant allergens and allergy before the age of 7-10 years. However, low levels of specific IgE to several allergens - food allergens as well as inhalant allergens - are a normal phenomenon, especially in early childhood and may have no clinical significance. Eczema early in life also seems to be a predictor for asthma later in childhood.

The first symptoms of allergic disease may be relatively mild, for example eczema and/or a virus-induced wheeze. Some children, especially those without family history of the condition, grow out of the problem. However, many children that have had eczema or recurrent wheezing in infancy are at risk of a more persistent eczema, asthma or hay fever later in childhood. The phenomenon in which some allergic symptoms, or test positivity, predict other allergic diseases later on is called "allergy march".

WHAT ARE THE CHANCES THAT THE DISEASE WILL STAY MILD OR THAT THE CHILD EVEN MAY GROW OUT OF IT?

Allergic diseases may become chronic, creating both a physical and a social handicap. Many children with allergic diseases are diagnosed late due to delays created by both parents and doctors. Since a correct diagnosis is the prerequisite for understanding the disease and appropriate treatment - and since appropriate treatment initiated early after onset may have an influence on the severity of the condition - the most efficient diagnostic tools should be used. In this context, allergy testing is one of the cornerstones in the "tool kit".

WHY IS THERE A NEED FOR ALLERGY TESTING?

Not all children with allergic symptoms need to be allergy tested - but a test is required when symptoms, suspected to be allergic, persist. As is well known, ambient allergens cannot completely be avoided particularly those spread by plants. However, if a child is allergic to an allergen of a particular species, a reduction in exposure will improve the child's health.

Today 1 child in 4 is allergic. Identify who.



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WHY SHOULD CHILDREN WITH SUSPECTED ALLERGY SYMPTOMS BE TESTED?

- For an early identification of infants at increased risk for later development of allergic diseases
- For a specific allergy treatment
 - Specific allergen avoidance measures
 - Relevant pharmacotherapy
 - Specific allergy vaccination

The second reason to test the child is to get a picture of the child's atopic constitution. This will provide information that can be communicated to the parents and the child.

This will help you and the parents understand more about the condition, what to do, how to treat it and so on.

Improving parents' knowledge leads to increased responsibility, which in turn means increased compliance. All this is important for the immediate health and quality of life of the child and family – and it may also have significance for the rest of the child's life!

WHO SHOULD BE TESTED FOR ALLERGY?

Generally, any child with severe, persisting or recurrent possible "allergic symptoms" or anyone in need of continuous prophylactic treatment should be tested for specific allergy, irrespective of how young they are. There is a widespread misunderstanding that infants and very young children cannot be tested. The fact is there is no lower age limit. The limitation is more whether the test can provide the information that is required.

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INDICATIONS FOR ALLERGY TESTING

Gastrointestinal symptoms:
Vomiting, diarrhoea, colic, failure to thrive

Persisting or intermittent symptoms without any other known reason, particularly in the case of other concurrent atopic symptoms.

Atopic dermatitis

Persisting symptoms or allergen-related symptoms, particularly in the case of other concurrent atopic symptoms.

Acute urticaria/angioedema

Severe cases and/or at suspicion of specific allergy.

Chronic urticaria

Urticaria of long duration ≥ 6 weeks.

Children < 3-4 years of age with recurrent wheezing/Asthma

Persisting severe symptoms and in need of daily treatment. Children with long-lasting cough/wheeze/dyspnoea, particularly during play/physical activity and during the night, and children with a reduced level of activity or frequent pneumonias without other known cause.

Children > 3-4 years with asthma

Should always receive allergy testing for relevant allergens. Should be investigated for rhinitis.

Rhinitis

Treatment-resistant cases.
Investigation for concurrent asthma.

Conjunctivitis

Treatment-resistant cases.

Insect sting reactions

Only children with severe systemic reactions grade III-IV should be tested.
Local reaction/urticaria is not an indication for allergy testing.

Anaphylaxis

Should always be evaluated for allergy under special observation.



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PRACTICAL ALLERGY TESTING – WHAT TESTS MAY BE RELEVANT IN GENERAL PRACTICE?

Either the specific serum IgE or the skin prick test can be performed. It is not a matter of one being better than another. It is rather up to you, as the family physician, to choose and become familiar with one of them. The serum IgE test has the following advantage: the higher the specific IgE antibodies, the stronger the association with clinical disease. The advantage with the skin prick test is that the patient receives an immediate result.

In general practice, many children with single, low-degree sensitisation do not have clinical allergy, which reduces the significance of low degree responses. Therefore the clinical relevance of low specific IgE values is often limited and this is not a problem that can be resolved by using the skin prick test.

WHAT SHOULD I USE IN MY TEST PANEL?

Normally, few allergens are needed to get a good idea of the impact of true allergy behind the child's symptoms. This is because many allergens from related species are biologically linked. For example, if the child reacts during the grass pollen season, it is usually enough to test with only one grass species.

When using the serum IgE tests, appropriate allergens are available as single tests or as a combination of allergens. Likewise, when performing skin prick tests, single allergens or a combination of allergens can be tested according to symptoms and age.


ALLERGY TESTING MAY INCLUDE THE FOLLOWING ELEMENTS:

- *Case history*
- *Determination of IgE-sensitisation*
 - specific IgE in serum
 - skin prick test (SPT)
- *Allergen challenges*
 - food allergy
 - inhalant allergy
- *Other tests*
- *Environmental investigations*



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ALLERGY TESTING ACCORDING TO AGE AND DISEASE/SYMPTOMS.
 THE ALLERGEN PANEL USED SHOULD BE ADJUSTED ACCORDING TO ALLERGEN-RELATED SYMPTOMATOLOGY AND LOCAL ALLERGEN EXPOSURE, INDOOR AS WELL AS OUTDOOR

| <i>Disease/symptoms</i> | WHAT TO TEST IN RELATION TO AGE | |
|---|---|---|
| <i>Atopic dermatitis</i> | <i>< 3-4 years of age</i> | <i>> 3-4 years of age</i> |
|  | <p>FOODS (FOR AD-ASSOCIATED FOOD ALLERGY):</p> <ul style="list-style-type: none"> ■ cow's milk ■ egg white ■ (peanuts, wheat, nuts, fish, etc.) <p>INHALANT ALLERGENS (TO TEST THE ATOPIC RISK):</p> <ul style="list-style-type: none"> ■ house dust mites ■ cat, dog and other furry animals ■ pollens | <p>FOODS (IN CASE OF SEVERE PERSISTING AD FOR AD-ASSOCIATED FOOD ALLERGY):</p> <ul style="list-style-type: none"> ■ cow's milk ■ egg white ■ peanuts ■ (wheat, nuts, fish, etc.) <p>INHALANT ALLERGENS (FOR ALLERGEN-ASSOCIATED AD):</p> <ul style="list-style-type: none"> ■ house dust mites ■ cat, dog, and other furry animals <p>INHALANT ALLERGENS (TO TEST THE ATOPIC RISK):</p> <ul style="list-style-type: none"> ■ house dust mites ■ cat, dog, and other furry animals ■ pollens |
| <i>Persistent and intermittent runny and stuffy nose and/or wheezing and persisting cough</i> | <p>FOR ALLERGEN-SPECIFIC DIAGNOSIS:</p> <ul style="list-style-type: none"> ■ House dust mites ■ cat, dog, and other furry animals ■ pollens ■ others | |

IS ONE TEST ON ONE OCCASION ENOUGH?

Allergy tests are considered to be expensive. However, this is not the case if consideration is given to the fact that once the disease is established it will be life long for many children. For the majority of those with allergy, one test on a single occasion may be enough. In individuals with established allergic disease, there are situations when repeated testing must be considered necessary and can provide information regarding progression of disease.

FINALLY

Implementation of evidence-based recommendations for allergy testing in children will differ between countries depending on local organisation of professionals and the level of knowledge within allergology. In general, improved education in allergology is warranted. Furthermore, the strengthening of co-operation between the specialist sector/hospitals, general practitioners and the local home care is recommended for the benefit of the individual patient. This will encourage shared care covering both the primary and the secondary sector. It will also mean that the right children receive the right tests at the right time to ensure the best evidence-based treatment for their allergic disease.

WORKING WITH YOU AGAINST ALLERGY



For more info about the Early Diagnosis Campaign, contact: eaaci.brussels@skynet.be

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"Allergy Testing in Children. Why, Who, When and How" by Arne Høst and co-workers, published in Allergy 2003.

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