



Information Sheet

WHEAT ALLERGY



What is wheat allergy?

Wheat allergy refers specifically to adverse reactions involving immunoglobulin E (IgE antibodies to one or more protein fractions of wheat, including albumin, globulin, gliadin and glutenin (gluten). The majority of IgE-mediated reactions to wheat involve the albumin and globulin fractions. Gliadin and gluten may also induce IgE-mediated reactions, though rarely.

Allergic reactions to wheat may be caused by ingestion of wheat-containing foods or by inhalation of flour containing wheat (baker's asthma).

It is important to differentiate between Coeliac Disease (mediated by IgA and IgG antibodies) and wheat allergy (mediated by IgE antibodies). For further information on Coeliac Disease see the ALLSA Patient information Sheet on "Coeliac Disease".

How common is wheat allergy?

There are no accurate figures for prevalence of wheat

allergy, though clinical experience suggests that wheat allergy is relatively uncommon. However, it may be more common in certain subgroups; e.g. wheat allergy is responsible for occupational asthma in up to 30% of individuals in the baking industry.

What are the symptoms of wheat allergy?

Allergic reactions to wheat (IgE-antibody mediated) usually begin within minutes or a few hours after eating or inhaling wheat. The more common symptoms involve the:

- (a) skin** - urticaria, atopic eczema, angioedema
- (b) gastrointestinal tract** - oral allergy syndrome, abdominal cramps, nausea and vomiting
- (c) respiratory tract** - asthma or allergic rhinitis

IgE-mediated reactions to gliadin or gluten induced by exercise can also cause urticaria, angioedema or life-threatening anaphylaxis.

Other gluten-containing cereals (rye, oats and barley) may also cause exercised induced symptoms due to cross-reactivity of the allergens.

How is wheat-allergy diagnosed?

The diagnosis may be easy if a person always has the same reaction after eating wheat-containing food, or eats wheat infrequently. But more often the diagnosis is difficult because wheat is a staple food, found in many foodstuffs. Diagnosis usually entails a thorough clinical evaluation (medical history, family history, food history) and this is then supported by appropriate laboratory tests (CAP-RAST tests), or skin prick-tests.

The CAP RAST test for wheat as a food is called f4, or for wheat as a pollen is called g15. Wheat allergen is one of the 6 constituents of the CAP RAST Paediatric Food Mix (fx5) that is frequently used to screen for food allergy in infants and small children. These CAP RAST tests are run on a small blood sample taken by the doctor or at the laboratory, and are covered by Medical Aid.

The CAP RAST test is commonly used to identify the offending food substance (wheat). Confirmation of a positive RAST test is then done by the Elimination-Challenge test. The Elimination-Challenge test remains the most reliable method of diagnosis. This entails the total removal of the suspected offending substance, in this case wheat, from the diet for a period of 2-3 weeks, and a note is made of any symptoms or relief of symptoms. Then the wheat is cautiously re-introduced into the diet and again a note is made of any symptoms. If the symptoms did indeed disappear or lessen significantly during the period of elimination, and re-appeared during the period of challenge, then the diagnosis is confirmed. Though this method is the most reliable, it can be difficult to perform as the total removal of wheat and wheat products from the diet may be difficult, and if the person is allergic to wheat and other foods, then the symptoms may not disappear during the wheat-elimination period.

How is wheat allergy treated?

Avoidance of wheat and wheat-containing foods is the first step in the treatment of wheat allergy. (Table 1) However, because wheat is a staple food product, wheat elimination diets are particularly difficult for a patient and his/her family to maintain. Children on wheat-restricted diets are severely limited in their

selection of foods. Alternatives may be found in special health shops. Treatment must be supervised by a dietitian, who will provide wheat-free recipes and ensure a nutritionally adequate diet. Wheat-allergic patients who have sensitivity to gluten (or gliadin) should also avoid other gluten-containing cereals such as oats, rye and barley.

TABLE 1. Label ingredients that indicate the presence of wheat proteins

Bread crumbs
Bran
Cereal extract
Couscous
Cracker meal
Enriched flour
Gluten
High-gluten flour, high-protein flour
Semolina wheat
Vital gluten
Wheat bran, wheat germ, wheat gluten, wheat malt, wheat starch
Whole wheat flour

Label ingredients that may indicate the presence of wheat proteins

Gelatinised starch
Hydrolysed vegetable protein
Modified food starch, modified starch
Natural flavouring
Soya sauce
Starch
Vegetable gum, vegetable starch

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Written by Professor C. Motala

See the ALLSA Internet site at:
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This sheet is available from:
ALLSA, PO Box 88,
Observatory 7935



THE ALLERGY COMPANY

Laboratory Specialities
P.O. Box 1513
Randburg 2125
Tel: (011) 792-6790
(021) 910-2736

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