

Allergies Made Easy

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Allergy**

What is an allergy?

An abnormal reaction to a generally harmless substance, occurring in a predisposed individual.

Caused by an allergen-antibody union, resulting in the release of histamine and other reaction substances.

- Food allergies occur ~ 1-2/100 people (UK)
- Can be confused with food intolerances and food poisoning
 - Although make you ill are not usually harmful in the same way an allergy may be.
- Many different foods can cause allergies.
- More common in young children than in adults
 - Many children outgrow them by school age
 - Can develop as an adult even if you never had allergies as a child
- Cross-Reactivity
 - Nuts, fish
 - Hay fever
 - Latex Allergy

Immunology

- An allergy occurs when your body immune system reacts to an allergen
- An allergic reaction occurs when the immune system mistakes the allergen as a harmful invader and produces antibodies to it.
SENSITISATION - does not always cause symptoms
- The next time you eat the same food, the antibodies are ready to react with it.
This causes an ALLERGIC REACTION, causing a range of physical symptoms.
- Sensitisation does not always result in an allergy.
- Allergens aren't usually harmful and most people aren't sensitive to them.

- Antibodies are immunoglobulins; IgG, IgM, IgA, IgD and IgE
- IgE is responsible for allergic reactions.
- IgE attaches itself to mast cells.
- Histamine is one of the main substances released by mast cells and causes many of the features of an allergic reaction.
- IgE – immediate reactions (within 2 hours)
 - RAST/SPT for diagnosis
- Non IgE - Delayed reactions
 - eg Coeliac disease or CMPI

Most Common Food Allergies

- Cow's milk
- Egg
- Nuts
 - Peanut (groundnut)
 - Tree nuts (cashew, brazil, almond, pistachio,etc.)
- Wheat
- Sesame
- Soya
- Fish
- Shellfish

- Novel foods: kiwi, pulses, chicken

- Co- Morbidity
 - Asthma
 - Rhinitis
- May change with time
- Frequently under-diagnosed

Symptoms of a Food Allergy

- Immediate reaction
 - severe and even life-threatening symptoms, eg. severe peanut allergy
- Delayed presentation
 - symptoms may take longer to develop, eg. gluten allergy.
- Severe allergy caused by:
 - Ingestion
 - Touching the food or a contaminated surface
 - Being near someone who is eating or has recently eaten the food
 - Being in the same room where the food has been
 - Using cutlery or crockery that has been contaminated with traces of the food.

Features (FAST)

- F (Face)
 - itchy or swollen lips, mouth, tongue and throat
 - Eyes: swelling , sore, red and itchy
 - Rash; hive-like, itchy
- A (autonomic):
 - Respiratory (wheezing, coughing, SOB)
 - Cardiovascular (flushing)
 - Sweating
- S (stomach):
 - Abdominal pain, cramps, nausea vomiting and diarrhoea (s/t bloody)
- T (total body):
 - swelling and itching, eczema and flushing
 - Hive-like rash, systemic upset

Acute Reaction



Rash

- hive-like
- itchy
- can occur on any part of the body

Lip and Eye swelling

Other Features

- Eczema
- Asthma, or breathing difficulties/distress
- Coryzal symptoms
- Failure to thrive in children and unexplained weight loss in adults.
- Other rashes which many be intermittent but continue to occur despite treatment

Skin Prick Testing

- Safe
- Where there has been a clear anaphylactic (shock) reaction to a specific allergen ingested then skin testing may not be appropriate
- Almost any age group can be tested, including babies (although response may be smaller than in an adult)
- Usually carried out on the inner forearm (but if the patient has bad eczema the test can be performed on the back)
- Ideally the allergens to be selected should be in accordance with the patient's history

ot indicate the severity of symptoms. The test tells us that a level of anti-bodies are /or are not present w

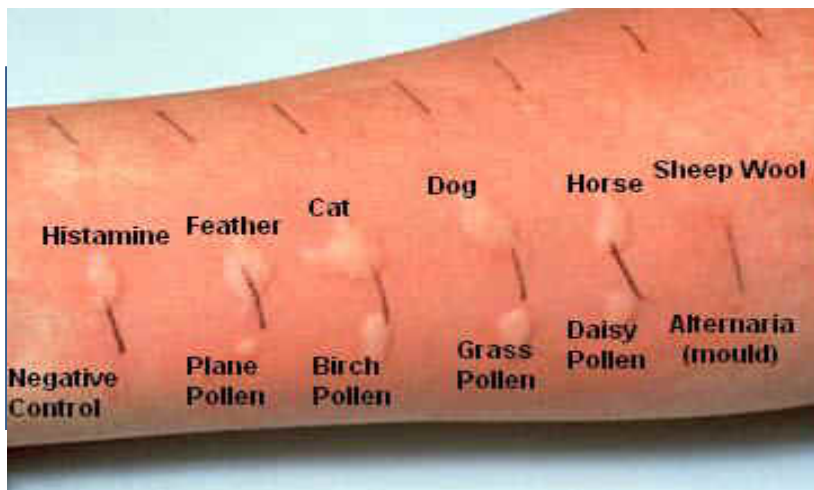
- The arm is coded with a marker pen for the allergens to be tested
- As few as 3 or 4 or up to about 25 allergens can be tested
- Always a positive and negative control
- A tiny droplet of the allergen (extract)solution is placed on the arm, by each code
- The skin is then pricked through the drop using the tip of a lancet. This can feel a little uncomfortable but should not be painful.



Reading the Results

- Check the positive and the negative control
- Positive may not react due to;
 - Bad eczema, poor skin integrity
 - Using antihistamine upto 4/7 previously (dampens the allergic response).
 - Can be problematic during hayfever season
- Negative control may react.
 - Cannot use SPT as this indicates positive dermographism

- With a **Positive Reaction** to an allergen the skin becomes itchy within a few minutes and then becomes red and swollen with a "weal" in the centre.
- The weal has a raised edge, maximum size in about 15-20 minutes.
- The size of the weal DOES NOT indicate the severity of symptoms. The test tells us that a level of anti-bodies are / are not present which may be causing your symptoms



- The "weals" are measured with a ruler to give us a 'mm' reading (in correspondence letters)

When to do a RAST / Sp. IgE

- In children with severe eczema or poor skin, where SPT cannot be carried out accurately.
- Unable to stop antihistamines or other medications which may interfere with the SPT
- Exposure to even a small amount of the allergen may be life threatening
- Check if an allergy is resolving
- Often done prior to food challenges

RAST Scoring 0-6

RAST rating	IgE level (KU/L)	comment
0	< 0.35	ABSENT OR UNDETECTABLE ALLERGEN SPECIFIC IgE
1	0.35 - 0.69	LOW LEVEL OF ALLERGEN SPECIFIC IgE
2	0.70 - 3.49	MODERATE LEVEL OF ALLERGEN SPECIFIC IgE
3	3.50 - 17.49	HIGH LEVEL OF ALLERGEN SPECIFIC IgE
4	17.50 - 49.99	VERY HIGH LEVEL OF ALLERGEN SPECIFIC IgE
5	50.0 - 100.00	VERY HIGH LEVEL OF ALLERGEN SPECIFIC IgE
6	> 100.00	EXTREMELY HIGH LEVEL OF ALLERGEN SPECIFIC IgE

Management

- Avoidance
- Antihistamine (Cetirizine, Chlorphenamine)
- Epi pens
 - Nut allergy
 - Co-existing atopy (asthma, severe eczema)
 - Numerous allergies
- Education
 - Patient Information Leaflets
 - Family, friends and regular carers
- Multi-disciplinary approach
 - Dieticians (multiple allergies in younger children)
 - Other specialties, eg dermatologists

Follow-up

- Initially 6-12 monthly
- Review upto 2 yrs later in children with 'stable' allergies
- Upto age of 12-14yrs as allergies after this time are likely to remain life long.