



False Alarm

STUCK WITH AN IMMUNE SYSTEM THAT MISTAKENLY TREATS A DEFENCELESS PEANUT, EGG OR GRAIN OF POLLEN AS ENEMY NO.1? DESPITE ADVANCES, THERE IS MUCH THAT REMAINS A MYSTERY WHEN IT COMES TO THE CAUSE OF ALLERGIES. **JENNI HARMAN** LOOKS AT A PROBLEM THAT IS A NUISANCE FOR MOST SUFFERERS, BUT WHICH CAN, IN EXTREME CASES, BE LIFE-THREATENING.

Yelling and throwing up go with the territory if you're a baby. And everyone knows that a happy toddler can be transformed into bright red, screaming misery by someone else's ownership of a damp purple dinosaur, not to mention dissatisfaction with the dinner menu.

So life can be tough when nobody except your mother believes your food is making you unhappy, as baby Claire experienced.

"Right from the beginning, she had been difficult to settle, cried a lot, and often vomited after breastfeeding," says Claire's mother, Lyn. "I felt something was wrong, but all the baby health clinic people kept saying no, it was normal."

Claire was first tried on formula at the age of four months. With only a few drops on her lip, her whole face went red. After speaking to her GP and other mothers, Lyn tried a dairy-free diet and Claire's vomiting settled considerably.

Claire was given her first taste of egg yolk when she was aged 10 or 11 months. "Within a few hours she started screaming her head off and her whole body was turning red," Lyn says. "So we spent the night in hospital, where they gave her antihistamines, and she was OK by the next morning."

Then there was the itchy red rash that developed in all her skin creases, the bouts of painful, burning urine and, later, some mild asthma. Claire was referred to a dermatologist, and skin-prick testing confirmed allergies to eggs and dairy foods – just as her mother had suspected – as well as to cats and dust mites.

The simplest definition of allergy is an immune reaction against substances that don't affect most people. When people who are prone to allergies (atopic) come into contact with a substance to which they are allergic (an allergen) – whether by breathing, touching or eating it – they develop an immune response that leads to inflammation.

It's an overreaction the body is programmed to carry out regardless of its unhelpful consequences, like a false security alert. Imagine an innocent traveller

(the pollen or food) who enters an airport via the normal entry doors (breathed, swallowed or touched), but is immediately spotted by IgE-type antibodies.

For reasons yet unknown, this security force has been highly trained as a crack team whose sole purpose is to recognise that particular intruder's face. In the violent target-and-destroy operation that follows, which involves calling in back-up teams of other cells and chemicals involved in inflammation, bystanders are injured and normal operations disrupted.

The most common types of allergic reactions are hay fever affecting the nose and eyes (allergic rhinitis and conjunctivitis), skin rashes and hives (allergic eczema or allergic dermatitis), and allergic asthma, though not all asthma is triggered by allergy.

Anaphylaxis is a much rarer, life-threatening type of severe allergic reaction, which requires immediate emergency treatment. Peanuts, insect stings, drugs and shellfish are the most common culprits, but only a very small proportion of people who are allergic to these substances will ever develop anaphylaxis.

Even for those who know the plant or food responsible, the immune system can play nasty tricks. Those who sniffle through the birch pollen season, a time of hay fever misery for many in Europe, can also find themselves reacting dangerously to foods such as hazelnut and apple, which contain the same problem protein.

People with latex allergies can try to avoid gloves, but might still risk anaphylaxis from related foods such as banana, avocado, kiwi fruit and pawpaw.

The prevalence of allergies appears to be increasing, says Dr Roger Garsia, Chairman of the RCPA Immunopathology Advisory Committee and senior staff specialist in clinical immunology and allergy at Sydney's Royal Prince Alfred Hospital.



"The reasons are still hotly debated," he says. "Current evidence points to the theory that, for respiratory allergies, a causal factor might be a very sanitised environment with low exposure to infections but with exposure to allergens like dust mite or pollens.

"For some occupational allergens, people are unlikely to become sensitised unless they receive high exposure. For example, very few people would be allergic to mice in the general population, but it's quite common among people working in animal research facilities or breeding mice for pets.

"The causes of allergy are very complex; developing an allergy is partly due to the genetics of susceptibility, partly due to the degree of exposure, and partly dependent on what else is happening to the individual, such as childhood respiratory infections," Dr Garsia says.

An asthma and allergy study in Belmont, NSW, which has followed the same group of people for more than 20 years, suggests that up to 40 per cent of Australians are allergy prone. This might range from mild inconvenience to life-threatening reactions, Dr Garsia says.

"The highly allergic person might have hay fever, sinusitis, asthma and atopic dermatitis, and may even have drug allergies as well. On the other hand, a significant number of people have only one, potentially catastrophic, allergy to bee venom or a particular insect. And then there are a huge number of people with contact dermatitis due to common substances like rubber, nickel, dyes or leather.

"In practice, it's the 'nuisance' allergies that represent the bulk of the problem. They can make you feel lousy and interfere with quality of life. Asthma-related allergies can cause children to miss days of school, and can interfere with sports and other activities."

FINDING THE CULPRIT

Sometimes it takes a while to identify the cause of an allergy confidently, before taking drastic measures to avoid it. In an early episode of *The Brady Bunch*, Jan is thought to be allergic to her new stepfather. Luckily for all, the family's unity is preserved for another 112 episodes when it turns out to be the boys' dog, Tiger.

"Very often the patients do all the detective work themselves," Dr Garsia says. "Nothing can substitute for an intelligent patient's observations, or an observer who has seen a child's reaction and has taken careful notes or recalled when the symptoms occurred."

Sometimes the patient may need referral to a specialist for allergy tests. Skin-prick tests and blood tests are available for a growing range of international and local allergens. Dr Garsia says these must be performed precisely and should be carefully interpreted by an expert, who can determine when further tests might be useful to assess "real life" tolerance for the allergen identified, and avoid recommending unnecessary

The usual suspects

Common causes of allergy in Australia

- X Dust mites
- X Pollen
- X Peanuts
- X Cow's milk
- X Soy
- X Seafood
- X Eggs
- X Furry or hairy pets (cats, dogs, horses, rabbits, guinea pigs)
- X Insect stings
- X Moulds

dietary restrictions that can lead to inadequate nutrition.

"The point is to identify changes that will make a real difference to the patient's health. It's easy, but it's bad medicine, to simply exclude everything that shows up on standard allergy tests."

Immunopathologist and clinical immunologist Dr Karl Baumgart says one of the major advances in allergy testing over the past decade has been the introduction of new techniques that provide precise measurements of the levels of allergic-type antibodies in the blood.

"Research over the past three to five years has allowed us to make better predictions based on blood test results. These studies are enabling us to develop 'threshold values' for specific IgE antibodies to allergens likely to cause anaphylaxis in susceptible individuals," says Dr Baumgart, president of the Australasian Society of Clinical Immunology and Allergy and director of immunology and molecular biology at Douglass Hanly Moir Pathology.

"For the patient, the important question is, 'Does my level of peanut-specific antibody mean that I will have a life-threatening reaction when I eat a peanut?' – Soon, we may have a reliable answer. These advances might offer advantages over skin-prick testing, which is the major type of allergy testing that most clinical immunologists and allergy specialists in Australian use now."

Despite the unpleasant-sounding name, the skin-prick testing was an afternoon's entertainment for Claire. "She had great fun," says Lyn. "She actually enjoyed it. They did it at the Children's Hospital at Westmead in Sydney where, I guess, they've had a lot of experience making it fun. They just drew little marks on her leg and her arm and made jokes as they did it, and when they made the pricks she just laughed.

"So we continued with absolutely no dairy foods or eggs, which is quite difficult with a small child, especially at birthday parties."

The avoidance strategy worked, and Claire's symptoms were kept under control, except for occasional accidents when eating out, which would be followed by a day of misery. Now aged six and a half, Claire is growing out of her food allergies and is even allowed to sample previously forbidden pleasures such as birthday cake.

SNEEZY BUT NOT DOPEY

The complexity of allergies and their diagnosis has left some patients confused and open to exploitation, says Dr Baumgart.

"In Australia, the Medicare rebate to providers of pathology services for allergy testing is very low by European and American standards. The rebate for one episode of allergy testing would barely cover the cost of the test materials for three or four suspected allergens.

"So you might typically afford to screen for dust mite, a grass pollen, an animal and a mould. Unfortunately, this has led to a lot of non-medical testers offering all sorts of magical tests for a huge range of allergens," he warns.

"At a time when we've got really good scientific technologies for allergy testing – skin tests with better quality reagents than ever before, and laboratory test systems that are better than ever before – there's the potential for a lot of patients to be confused and pay large amounts of money for testing that is not very useful."

Dr Baumgart advises against cytotoxic food testing (a method in which the patient's white blood cells are incubated in the laboratory with food extracts, and cell changes are reported as sensitivity to a particular food), and against electrodermal skin tests, in which a computer is connected to the patient and generates a printout of foods to avoid. If in doubt about a test, he recommends that patients check www.quackwatch.com, a website that debunks ineffective medical treatments and tests, or www.allergy.org.au. 🚫

DIAGNOSTIC TESTS

- Skin-prick testing involves putting drops of a range of suspected allergens onto a patch of skin (usually the forearm or back), then lightly pricking the skin through the drop with a needle. Itchy, red, raised skin reactions indicate immediately which substances are causing an allergy. Skin prick tests are very useful for identifying allergies to inhaled substances such as pollen or dust mites, but are less effective for detecting food allergies.
- Specific IgE antibody testing identifies whether the individual's blood carries immunoglobulin E (IgE) antibodies against any specific suspected allergens. The results usually take a few days. (Specific IgE testing is sometimes still called by the name of its predecessor, radioallergosorbent testing, or RAST.)
- Patch tests are used to confirm contact dermatitis (reactions to substances such as nickel or leather, which are not strictly classed as allergies). Samples of suspected allergens are placed on the skin for 48 hours.
- Elimination and challenge tests may be required to confirm suspected food allergies. This approach involves avoiding the foods for a period and then swallowing prepared amounts in a medically supervised test.
- The Australasian Society of Clinical Immunology and Allergy (ASCIA) does not recommend Vega testing, cytotoxic food testing, kinesiology, iridology, pulse testing, Alcat testing or Rinkel's intradermal skin testing.

TREATMENT

- Where feasible, it makes sense to avoid coming into contact with the allergy-causing substance. ASCIA's website (www.allergy.org.au) provides information on avoiding common allergy-causing substances. Asthma foundations and the National Asthma Council also publish fact sheets on minimising exposure to common asthma-causing allergens.
- Antihistamines are commonly used to relieve allergy symptoms, and are available without prescription. While the traditional choice was between suffering and sleeping, the newer antihistamines, such as Claratyne, Telfast and Zyrtec, rarely cause drowsiness. Some people also find nasal sprays and eye drops effective in relieving hay fever symptoms.
- Desensitising treatment (specific allergen immunotherapy) is a long-term treatment that changes the way the immune system responds to allergy-causing substances. It involves a course of treatment with carefully measured amounts of allergen extracts, usually given by injection.

Source: *The Australasian Society of Clinical Immunology and Allergy* (www.allergy.org.au)



Australian Government
Health Insurance Commission

Medicare allied health and dental care initiative

The new Medicare allied health and dental care initiative, introduced on 1 July 2004, allows chronically ill people who are being managed by their GP under an Enhanced Primary Care (EPC) plan access to Medicare benefits for allied health and dental services.

Allied health services

Up to a maximum of five services per patient per 12 month period are claimable for services provided by an eligible allied health professional that is referred by a GP under an EPC plan.

Dental services

Where EPC patients have dental problems that are significantly adding to the seriousness of a chronic condition, they can access three consultations with a dentist with a maximum rebate of \$220 per 12 month period.

Who can participate in the initiative?

Allied health professionals and dentists including:

- Aboriginal health workers
- audiologists
- chiropodists
- chiropractors
- dieticians
- mental health workers
- occupational therapists
- osteopaths
- physiotherapists
- podiatrists
- psychologists
- speech pathologists
- dental practitioners
- dental specialists

How are benefits paid?

- Allied health professionals and dentists must have face-to-face consultations with their patients
- Services must be performed personally by an allied health professional or dentist to attract benefits
- Allied health professionals and dentists must be registered with HIC
- The patient must be managed through an EPC multidisciplinary care plan
- The service must be a referred service from a GP or dentist
- An EPC referral form must be completed by the referring GP and provided to the allied health professional or dentist prior to or at the time of consultation (a completed referral form will identify that the patient is under an EPC plan and eligible to receive the indicated services under this initiative)
- The allied health professional or dentist must provide clinical feedback to referring GPs on the treatment to patients.

For more information on this initiative and how to register, visit HIC's website at www.hic.gov.au/providers or call Medicare on 132 150.