sensitivities to foods and chemicals

Living easily and comfortably in our environment should be something we can all take for granted. However, those who suffer with allergies and intolerances cannot take this state of health for granted and will react adversely to some common elements of their world. This article will examine the causes of allergies and intolerances, the types of reactions and symptoms of both, and some ways of reducing such reactions.

Sources of common pollens known to trigger allergy reactions are:
- Annual Blue/Winter grass
- Australian Pine/She Oak
- Bahia grass
- Bermuda/Couch grass
- Bottlebrush
- Canary grass
- English Oak
- Johnson grass
- Kentucky Blue/June grass
- London Plane tree
- Mango tree
- Wild Oat
- Murray Pine/White Cypress Pine
- Olive tree
- Paper-bark Tea Tree
- Partenium weed
- Paterson’s Curse/Salvation Jane
- Pellitory/Asthma weed
- Plantain
- Ragweed
- Ryegrass
- Silver Birch
- Timothy grass
- Yorkshire Fog/Velvet grass

Primary allergy symptoms induced by food include:
- Hives (a skin rash)
- Stomach cramps
- Nausea and vomiting
- Diarrhoea
- Stuffy nose
- Shortness of breath
- Anaphylactic shock – swelling of the lips, tongue, throat which can lead to suffocation

Secondary food allergy symptoms include:
- Headaches
- Fatigue
- Muscle and joint aches
- Mood disorders – depression, irritability, etc
- Gastrointestinal upsets – constipation, diarrhoea, etc
- Flushing
- Dizziness

The most common food allergies in infants and young children are:
- Cows’ milk, eggs, peanuts and soy products. It is rare for rice to cause an allergic response.

MOUTH AND GUT
Food allergy reactions may affect the mouth and the gut and may cause a wide range of symptoms which include:
- Itching, swelling of lips, tongue, palate and throat, abdominal pain, vomiting and/or diarrhoea
- Infantile colic – food allergy may be associated with approximately 10% to 15% of colic cases.
- Poor appetite, chronic diarrhoea, failure to gain weight (failure to thrive).

NOSE, EYES AND LUNGS
Food allergies may also affect the nose, eyes and lungs, giving the following reactions:
- May cause redness, tears and itching of the eyes.
- Itching, sneezing and watering of the nose may occur.
- Chronic ear infections may also result from food allergy.
- Food allergies may induce asthma in children, though it is believed that it does not do so in adults.

THE SKIN
Common symptoms affecting the skin are:
- Acute urticaria – hives
- Angioedema – swelling of the soft tissues
- Both may occur within minutes of eating the allergic food. Rashes may be red and extremely itchy and may last from minutes to hours following ingestion of the food.
- Contact with foods (skin contact) such as raw meat, raw fish, vegetables and fruits may also cause hives.
- Atopic dermatitis or eczema in infants is often induced through allergies to milk, egg and soy products.
ANAPHYLACTIC SHOCK
The most severe allergic reaction is an anaphylactic response which involves many organs of the body including:
• Nose sneezing, blocked, watering and runny nose.
• Upper airways swelling of the throat and vocal cords making breathing obstructed.
• Wheezing of the lungs and asthma.
• Skin hives.
• Circulatory system - a dramatic drop in blood pressure leading to collapse.
• If untreated, anaphylactic shock may cause death.
• Most common causes are peanuts, other nuts and shellfish.

CROSS-REACtIONS
In many people who are sensitive to some pollens, cross-reactions to foods unrelated to the pollen have been found. A 1982 study in Sweden showed that an allergy to Birch pollen induced a hypersensitivity to various nuts, fruits and roots. Patients with birch pollen allergy were found to be 70% more likely to be hypersensitive to certain foods than patients without birch pollen allergy. Only 19% of patients who did not react to birch pollen exhibited hypersensitivity. The stronger the skin test reaction to birch pollen, the higher the incidence of food hypersensitivity. This finding was not replicated between grass pollen allergy and food hypersensitivity.

A year later, another Swedish study showed that the diagnosis of springtime hayfever, if occurring in patients who showed hypersensitivity to nuts, fruits and roots, supported a diagnosis of birch pollen allergy. The authors found that birch pollen allergy was directly correlated to reactions to apple, carrot and potato in children.

INFANTS AND CHILDREN
Which infants are most at risk of developing allergic diseases?
The identified risk factors for developing allergic diseases include:
• Family history of allergic disease in a parent or sibling (a family history of allergic disease in both parents or a parent and a sibling is associated with a further increased risk).
• Introduction of cows' milk or soy milk formula before six months of age (a risk for eczema and food allergy).
• Introduction of solid foods before 6 months of age (a risk for eczema and food allergy).
• Birth in Spring (a risk for seasonal hay fever).
• Passive exposure to cigarette smoke (a risk for increased respiratory symptoms).
• Some evidence suggests that exposure to allergens such as house dust mite and food allergens in the first 6 months may increase the risk of developing asthma. This however is still hypothetical at present.

For families with a strong history of allergic reactions, the following steps may be helpful in controlling allergic conditions in their children:
• No smoking in pregnancy, and the child should not be exposed to cigarette smoke, especially when playing or sleeping.
• Breastfeeding is strongly recommended for the first 4 to 6 months at least.
• Supplemented with probiotics by the mother during pregnancy.
• Supplementing the infant with probiotics for the first 6 months.
• Infant formula should not be introduced until at least 4 to 6 months.
• If breastfeeding is not possible and the child is not sensitive to cow's milk, then choose a hypo-allergenic (partially hydrolysed) cow's milk or goats' milk formula.
• Solid foods should not be given until the child is at least 4 to 6 months old.
• Reducing exposure to house dust mites, for example, in the coverings of mattresses and pillows and carpet, and reducing the presence of cockroaches in the house.

A Finnish study of the use of probiotics in the treatment and prevention of allergy has recently been published. In this study (April 2008), probiotic bacteria or placebo were given to mothers for one month before delivery, and for the 6 months following birth to infants with a family history of allergy.

Plasma samples were analysed for C-reactive protein (CRP), total IgA and IgE, food-specific IgA, IgG, and IgE, IL-2, IL-4, IL-6, IL-10, TNF-a, and IFN-y. These laboratory tests give information as to immunological and inflammatory changes. The final analysis of such immunological and inflammatory parameters in the children who participated in this trial were analysed at two years of age. It was found that infants receiving probiotic bacteria had higher plasma levels of CRP, total IgA, total IgE, IL-2, IL-4, IL-6, IL-10, TNF-a, and IFN-y. This study emphasises the role of chronic microbial exposure as an immune modulator protecting against allergy. The elevation of the CRP in infants is also protective against the development of eczema.

It is only recently that companies producing formulae for infants who cannot be breastfed began to add probiotics to the formula. Children who received little or no breastfeeding are generally more at risk of allergic reactions than children who were breastfed for at least three to six months of age.

COCKROACH ALLERGY AND ASTHMA
A study in the US tested 476 asthmatic children for sensitivity to cockroach, house dust mite and cat allergens. 36.8% of the children were allergic to cockroach allergen, 34.9% to dust mite allergen and 22.7% to cat allergen.

The children who were both allergic to cockroach allergen and exposed to high levels of this allergen had 0.57 hospitalisations a year, as compared with 0.11 for children with other allergens, and 2.56 unscheduled medical visits for asthma per year, as compared with 1.43 visits for the other group. The higher group also missed more school days, had more nights with lost sleep and more days of wheezing. The combination of allergies to dust mites or cat dander did not give this effect even when high levels of the allergens were present.

Intolerance or Sensitivity Reactions
Intolerance reactions are the result of IgG antibodies becoming sensitised to certain foods. IgG reactions may take between one hour and up to three days following exposure to the allergen before symptoms occur. IgG antibodies don't cause the release of histamine, but they do release other immune chemicals designed to inactivate or destroy invaders in the body. These chemicals can cause damage with resulting inflammation to your bodily tissues in the process.

Symptoms of food sensitivities / intolerances:
• Nasal stuffiness,
• Dry mouth,
• Nausea,
• Fatigue,
• Headache,
• Bloating following meals,
• Feelings of disorientation or depression,
• Muscle spasms,
• Vagueness,
• Sleepiness following meals,
• Strong behavioural problems.

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TESTING FOR FOOD INTOLERANCE

There are several tests available for the detection of intolerance or sensitivity reactions. At Australian Biologics we offer the Cytotoxic Food Intolerance test.

This test is based on the examination of damage to the leucocyte walls when an allergen induces an IgG4/complement activation.

This IgG/IgG4 reaction activates the complement system and results in the disruption of the integrity of the cell membrane by 'drilling holes' through the lipid layer of the cell. At Australian Biologics, we produce our allergens from organic Australian products rather than foods grown overseas. Criticism of this test has generally been based on reproducibility which we have overcome with intensive training of our technicians, the use of stains and with good quality control practices.

Other tests include the ALCAT test, which is a semi-automated version of the Food Intolerance Test. It was developed by Dr. Mark Pasula, who had previously been the director of a large laboratory performing cytotoxic tests.

Testing may also be carried out with IgG testing through the ELISA/EIA method (Enzyme Immuno-Assays). The premise behind this testing is that high circulating levels of IgG antibodies are correlated with clinical food allergy signs and symptoms.

Provocation and Neutralisation

Provocation and Neutralisation is a technique which is offered by some clinical ecologists. The aim is to provoke reactions by injecting small amounts of allergen into the patient. This provocation may produce strong and bizarre reactions, usually mirroring reactions invoked when the substance is consumed. Amounts of the offending allergen are then titrated down until no reactions are experienced. A different dose of an offending allergen is thought to 'neutralize' the reaction.

Elimination/Challenge Diets

Placebo-controlled food challenges and elimination/challenge diets are extremely time consuming for the patient and practitioner and require a high degree of patient motivation and compliance. In this form of testing, orthodox patients are placed on the standard low-reactive diet (mutton/lamb, lettuce, rice and pears) for up to 2 months, then are re-challenged with allergens. After excluding all potential foods from the diet for many weeks, an allergen is given that induces a very observable reaction. The patient then waits several days and a new food is introduced as a challenge. This is a very accurate way to find the offending foods or chemicals, but it does take a long time to check through a wide and varied diet.

Finally, some practitioners utilise Electrodermal testing. This is performed by measuring electrical conductivity at specific acupuncture points and including an allergen to be tested into the vicinity of the circuit. A 2001 British Medical Journal paper, when commenting on a trial of this testing procedure, stated, "Electrodermal testing could not distinguish between atopic and non-atopic participants."

IRRITABLE BOWEL SYNDROME

The mechanism by which food activates the mucosal immune system is uncertain, but food-specific IgE and IgG4 appeared to mediate the hypersensitivity reaction in a subgroup of IBS patients.

Exclusion diets based on the skin-prick test, the RAST for IgE or IgG4, the IgG test and Complement Reaction testing have shown some success in some IBS patients.

Activation of the gastrointestinal mucosal immune system may be one of the causative factors in the development of functional dyspepsia (indigestion) and IBS.

This activation may result from effects of bacterial infection or other factors including commensal microbial flora and food antigens. A diet excluding intolerances is usually helpful for IBS sufferers even when exclusion does not completely rectify the problem.

FOOD INTOLERANCE OR FOOD CONTAMINATION

Microorganisms carry many antigens that cause strong immune responses. Most people have high circulating levels of IgG to a number of common microorganisms. Food that is not washed adequately may contain microorganisms which may cause reactions. It is also possible that reactions are due to the presence of pesticides and organic solvents that have not been rinsed away during preparation.

TREATING ALLERGIES AND INTOLERANCES

To treat, and hopefully reduce, both allergies and/or intolerances, the following suggestions may be helpful. Remember, though, for optimal results, it is best to consult a practitioner.

1. Reduce Inflammation
   - Quercetin
   - Vitamin C
   - Slippery Elm
   - Liquorice
   - Marshmallow

2. Repair Membrane and Leaky Gut
   - Slippery Elm
   - Aloe Vera
   - Marshmallow
   - Liquorice
   - Calendula
   - Colostrum

3. Improve Digestion
   - Bitters
   - Digestive enzymes
   - Probiotics

4. Improve Immunity
   - Vitamin A
   - Zinc
   - Andrographis
   - Astragalus
   - Colostrum

5. Treat for Candida and/or Parasites if Necessary
   - Qing Hao (wormwood/Artemesia annua)
   - Pau D’arco
   - Thyme
   - Black Walnut
   - Cloves
   - Boldo
   - Garlic
   - Neem

6. Provide Nutrients to Repair
   - Organic food
   - Repair the Liver – Silybum, Dandelion, etc.
   - Phase-2 liver support – amino acids, hot water and lemon
   - Schizandra
   - Culvers root
   - Barberry

REFERENCES


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