*Chapter 14*

# Allergies

The word allergy comes from two Greek words, *allos* meaning other, *ergon* meaning energy.

An allergy is an altered reaction to some outside stimulus. Something that provokes such an altered reaction is called an *allergen.*

Another word for an allergic reaction could be hypersensitivity. An allergic response is one that is different from the response of the majority of people. Most people can breathe in grass pollens, only a minority develop hay fever. Most people can happily eat oranges, a few people react to them. The allergies that are easily recognized are: hay fever, asthma, eczema, migraine, skin reactions such as nettle rash, and collapse after bee stings.

Hypersensitive reactions also occur to inhaled chemicals, to traces of chemicals in food and water, or even to apparently harmless common foods. The understanding of different types of allergy has broadened considerably in the last 40 years, the pioneers of observation and research of food and chemical allergies being Dr Albert Rowe in the 1920s, and Dr Theron G. Randolph and his colleagues in the USA in the 1950s.

Estimates of the numbers of people with M.E. who have allergies vary from 20 per cent to 70 per cent.

One explanation is that the immune system's defences initially act against infection, but do not switch off, because the virus becomes persistent. The body's defences thus become overreactive to other foreign substances as well as to the virus.

There is a difference between food allergy and food intolerance. A true food allergy is usually fixed, and may be inherited. The reaction happens very quickly, and even the tiniest amount of the food may provoke a severe response. Symptoms could be asthma, swelling of the face, 'nettle rash', or collapse with vomiting. Food intolerance is less easy to diagnose, as symptoms may not develop for up to 24 hours, and a reaction may depend on the amount eaten. Intolerance to commonly eaten foods may come and go, and if a culprit food is avoided for some weeks, the intolerance may disappear.

Most apparent food 'allergy' in M.E. is in fact food intolerance; however since food allergy is the recognised word, it will be used in this chapter. Not everyone who has multiple allergies has M.E., but in many there is an underlying Candida condition.

Allergens are of three types:

1. Those ingested - foods, liquids, chemicals in food
2. Those inhaled - pollen, house dust mite, moulds, animal fur, chemicals (formaldehyde, petrol, alcohol, aerosols, smoke)
3. Those one comes in contact with - metals (nickel in bra and suspenders) rings, watches; dyes; various chemicals

Recent research by Dr Hunter at Cambridge (Hunter, 1991) has suggested that many cases of food intolerance may be due to the presence of abnormal gut flora plus a lower activity of certain gut enzymes. 'Specific food residues are broken down by colonic microflora with the production of chemicals, which in susceptible people with low concentrations of liver enzymes, pass into the circulation to produce distant symptoms: This is supported by the finding of abnormal colonic bacteria in other diseases - e.g. rheumatoid arthritis, irritable bowel syndrome.

The successful management of allergies is not only to remove the allergens, but to help the immune system to recover. The practical problems arise when a patient is found to be reacting badly to so many things that avoiding them all causes malnutrition, and total isolation from the world. For this reason, very restricted diets in M.E. do more harm than good, and can lead to malnutrition and worsening of the M.E.

Many M.E. symptoms are the same as those resulting from allergic reactions. Signs suggestive of allergies are:

- Symptoms worse after food, such as rapid pulse, wheezing, abdominal pains, bloating, sudden feeling of cold, headache, joint pain, sudden mood change, sweating
- Symptoms improve on fasting
- Feeling worse when in traffic jams, in city centres, on exposure to aerosol spray, fresh paint, etc., suggesting chemical allergies
- Feeling better for being outside in the fresh air, maybe because of indoor air chemical pollution
- Sneezing and itchy eyes - hay fever
- Symptoms improve on change of location

Allergic symptoms are so numerous that there is no point making a list of them. It is the variability of symptoms on exposure to different foods and chemicals that is typical of allergy. If you suspect that food allergies are causing some of your problems, then adding details of what you eat and drink to your diary, or keeping a separate food diary, may help to pin-point culprit foods.

However, there may be foods which you eat every day that are making you ill. Instead of an acute reaction to something rarely eaten, such as swelling and itching after strawberries, you can be chronically unwell by eating something so regularly that it never gets cleared from the system. This is called a *masked allergy,* and is also a form of addiction.

What happens is that repeated exposure to the food leads to general ill health due to the constant stress on the immune system (see stress adaptation Chapter 9).

Avoidance of the allergen for 24 hours or more may lead to withdrawal symptoms, as happens when an alcoholic dries out, or a cigarette smoker stops smoking. These withdrawal symptoms settle down in a few days, then the subject becomes extra-sensitive to the allergen and re-exposure causes more dramatic symptoms than when it was being taken every day - when the reaction was being *masked* through partial adaptation to the substance.

The elimination and provocation-testing method of food allergy detection is based on understanding this masked allergy phenomenon. If you avoid the suspect allergen, allow

it to disappear from your gut (which takes up to five days), and then eat it again, it will cause the symptoms to reappear more strongly. If there are no ill effects, then it is regarded as safe.

The same principle applies to a chemical masked allergy. For example, a woman with chronic headaches, depression and fatigue went on holiday to a small Mediterranean island, and after three days she felt wonderful. On returning home to her kitchen, which had a gas cooker, she felt absolutely dreadful; her depression and headache returned with a vengeance within a few hours of entering the house. Fortunately, the departure to a place of clean air had also sharpened her senses, so that on entering the kitchen she detected a slight smell of gas. After the gas appliance was removed her symptoms cleared up.

The mechanism causing symptoms from exposure to allergens is complex. Frequently it is several allergens combined, plus other stresses, which produce symptoms.

A good model for understanding this phenomenon is to think of it as a barrel of water. If the level of water is too high it overflows, just as, if the level of the sum total of stresses is too high, one further exposure to an allergen produces a reaction.

The final drop of water into the barrel is like the last straw that broke the camel's back. It is the sum total of all stresses that causes symptoms. So then, if one can lower the level of water in the barrel, a further measure of water may be all right and not cause symptoms.

Therefore, symptoms may improve somewhat if the total of stresses on the immune system is lowered. Often the last straw is not an allergen, but a psychological stress. For example, a child with eczema very possibly has a cow's milk intolerance, masked because it is drunk daily; the child dutifully drinks the milk and is chronically miserable and itching. When he or she goes to a new school, or has a row in the classroom, the eczema flares up very badly. Is the mental stress to blame, or the cow's milk? The answer is both, of course. But if the cow's milk is removed, probably the school stress will have less of an effect on the eczema.

It is quite unrealistic for M.E. patients to try and avoid every single thing they react to, and there is some cause for concern if someone who is already ill starves him- or herself on a strict elimination diet. Therefore, much of the management of allergies may rest in compromise.

Let us look at the various stresses and allergens that may be filling up the water barrel:

- Physical exercise
- Mental stress
- Airborne allergens - house dust mite, pet hairs, pollens
- Electromagnetic stress - TV, VDUs, electric cables
- Chemical allergens - traffic fumes, aerosols, gas leaks, fresh paint, perfumes, new carpets, printing ink, etc.
- Food intolerances - e.g. to wheat, milk, egg, pork
- Some ongoing infection

Some of these things you cannot do anything about. What you *should* do is avoid as many of them as you can.

## Detecting Allergies

None of these testing methods is 100 per cent accurate, and in a very sensitive person, allergies can change from day to day. However, the most important sensitivities come up repeatedly on subsequent testing, and these are the ones that the patient needs to avoid. The best - also the cheapest - way to test for foods that cause problems is by an elimination diet.

### *The Elimination, Unmasking and Challenge Diet*

There are various ways of detecting food allergies. The elimination, unmasking and challenge diet is the simplest and probably most accurate method of diagnosing food allergy. The disadvantage is that it is time-consuming. *It should not be undertaken without medical supervision by any child, nor by any patient suffering from depression, epilepsy, or asthma,* because of the possibly dangerous consequence of a severe reaction on food testing after avoidance.

The patient fasts for five days, drinking only spring water, or else eating a few foods which are rarely eaten. Two foods are usually used, for example lamb and pears, or cod and broccoli. During the fast, any symptoms are noted, as well as any cravings for particular foods. If it is not a complete fast, it should be continued for at least a week, to allow symptoms time to clear up. If all the prefast symptoms are still there after a week, either food allergy was not responsible, or one of the few foods used was not safe.

Foods are then reintroduced one at a time, one each day, the less commonly eaten foods first. If there is a reaction on testing, it usually happens within 24 hours, although it may be delayed for 48 hours. All symptoms are noted, including the resting pulse rate before and up to two hours after a test food is eaten. A food that produces no reaction can be reintroduced, and as testing proceeds the patient hopefully develops a gradually wider range of safe foodstuffs.

However, this method requires strong motivation and meticulousness on the part of the patient, and sometimes a delayed reaction may confuse the picture.

### *The Stone Age Diet*

This is a modified elimination diet. It was first used in Britain for allergy testing and treatment by Dr Richard Mackarness, a psychiatrist at Basingstoke.

Our hunter-gatherer ancestors ate a wide range of raw plants, plus a great variety of animal food which included shellfish, birds, rodents, and molluscs.

The introduction of cereal crops, milk, sugar, tea, and coffee, and the pollution of foods by agrochemicals and food additives, are all very recent changes in our diet. Our metabolism and digestion have adapted to these changes with time, but logically the foods that are most likely to give trouble if one's adaptation breaks down are those recently introduced. Wild animals, unlike intensively-reared ones, have little saturated fats, and no

chemical residues. And because the hunter-gatherer ate a wide variety of things according to the seasons, he or she did not eat the same few things every day throughout the year.

So the modern version of the Stone Age Diet aims to cut out the foods *most likely* to cause trouble.

## *Stone Age Diet*

| *Allowed* | *Not Allowed* |
|---|---|
| All meats and fish (fresh or frozen) | Grains (wheat, oats, rye, corn, rice, barley) |
| Fruit | Sugar - all kinds |
| Vegetables (fresh) | Milk and milk products |
| Potatoes | Butter and margarine |
| Fresh shelled nuts | Tea, coffee, alcohol |
| Pulses | Anything tinned, smoked or processed |
| Spring water (glass-bottled) | Eggs |
| Pure vegetable oil | Dried fruit |
| Salt | Tap water |
| Milk-free margarine | |

This system works well if you are not allergic to any of the foods on the 'allowed' list. It is quite possible to follow the Stone Age Diet for months and have complete nutrition. The main things to test, if two weeks or longer on the Stone Age Diet have improved your symptoms, are eggs, milk and its products, tap water, and some grains. A good grain to test early is rice, as it is less likely to cause symptoms than wheat or rye. Eggs are important to test early, as they are an excellent food; and rice, if safe, provides another carbohydrate. Sugar, tea, coffee, alcohol and processed foods are unimportant nutritionally.

If tap water causes a reaction, after testing on its own, then consider getting a water filter which removes the chlorine, lead, aluminium and nitrates. There are cheap ones which need a filter cartridge changed every month, and expensive ones which are plumbed into the main tap. Bottled spring water can be used on outings, but is expensive to use all the time. People living in rural areas with clean air can collect rain-water, but this still needs to be filtered.

Of the grains, wheat (in the UK) and corn (in the USA) are most likely to cause problems. You may be sensitive to the gluten, which is protein, or intolerant of the husk or bran. Some people with wheat intolerance can manage one slice of unprocessed white bread a day or twice a week, but get symptoms if they go back to four slices of wholemeal bread a day. Oats have less gluten, and if tolerated are a better source of fibre than wheat. Rice is rarely allergenic, perhaps because it is not part of our staple diet, and is low in gluten. Unrefined rice is a good substitute for wheat as a starch. There are less common, gluten-free grains - e.g. tapioca, buckwheat that can also be substituted for wheat.

## *Cytotoxic Testing*

A sample of blood is taken, and the white blood cells are separated out. The white cells are exposed to a range of foods and chemicals, and their reaction is examined under a

microscope. The reactions are graded: No reaction; a mild reaction (the cells change shape); severe reaction (the cells die). The correlation between the results of the test and improvement following avoidance is fairly good, but the test is expensive and can only be performed at a few specialised centres. It tends to give a long list of allergens; however in practice one avoids the items which have given a severe or moderate reaction. One advantage is that chemicals can be tested for, whereas an elimination diet only sorts out foods.

## *Intradermal Testing and Neutralization Technique*

This procedure is used by several clinical ecologists. It is expensive and time-consuming, and patients can have reactions which last for hours and confuse subsequent tests.

A minute dose of a solution of test substance in saline is injected into the skin, to raise a small bleb. The diameter of the bleb is measured, and after exactly two minutes the bleb is examined again. If it has increased in size, particularly if there is redness of the surrounding skin, or symptoms in the patient, this indicates a positive reaction. Successive diluted doses of the test substances are injected and measured, until a dilution is reached which causes no reaction. This commonly 'switches off' any symptoms, and calms the reaction in previous blebs. This is then recorded as the *neutralizing dilution,* or end point.

The patient is given drops or injections made up of the neutralizing strengths of the major antigens to use daily. This can be useful for a multiple-allergic subject, who can eat a wider range of foods with this protection. It is also valuable for severely chemically-allergic people, who react to minute amounts of chemicals that cannot be avoided in their environment.

The disadvantages are: a) the time needed to test for everything (one may spend a whole morning reaching the end point of one test substance!), and b) the end points may change after a few weeks, and the desensitising drops may have to be worked out over and over again.

The mechanism by which this neutralisation and desensitisation works is probably electrical, as in highly diluted amounts there may be no original molecules left, as in homoeopathic remedies.

## *Applied Kinesiology (the muscle weakness test)*

In this test, which requires no sophisticated equipment, the test substance itself, or a vial containing a solution of it, is placed in contact with the patient, usually over the centre of the abdomen. The patient is lying relaxed, and first the strength of one or more arm muscles is assessed, then retested after the test substance has been placed in contact with the patient's skin. It is not a trial of strength, and very small movements are tested. If the patient reacts to the item being tested, there is an immediate perceptible weakness in his or her muscles.

This method is fairly accurate in a skilled tester, but not everyone can develop this skill. It has the advantage of being non-invasive, quick, and does not produce unpleasant

symptoms. With a skilled practitioner, the test has almost 100 per cent reproducability if a patient is tested on consecutive days. The patient should not know what substance is being tested each time.

## Treating Food and Chemical Allergies

1. Avoid allergens where possible

2. Correct any nutrient deficiencies, and take supplements to strengthen the immune system

3. Desensitise by using neutralising drops or injections

4. Enzyme Potentiated Desensitisation (EPD)

5. Oral sodium cromoglycate - Nalcrom

### *Avoidance*

For the majority of allergic people, avoidance of a few main foods, and cleaning up the chemical environment as far as possible, combined with nutritional measures, is best. If a major food allergen, such as wheat, is avoided for six months or so, the patient may become less sensitive and may be able to tolerate it if eaten in small amounts once or twice a week. If it is eaten daily and in increasing amounts, then a masked allergy may develop again.

Some allergies are fixed for life, and a long spell of avoidance does not change the sensitivity. There is often some enzyme deficiency associated with these allergies. Most patients find out if they have a life-long allergy to something eaten rarely such as strawberries or shellfish.

Milk allergy is commonly caused by a deficiency of lactase, the enzyme needed to digest lactose. This is usually life-long, is very common in Asians and Africans, and occurs in about 30 per cent of Europeans. Lactose intolerance sometimes develops following some gastro-intestinal infection, such as a bug called Giardia Lamblia (commonly picked up overseas), and also entero-viruses.

Some milk-sensitive people can tolerate milk if it has been treated with a lactose-reducing enzyme. Other milk sensitivities may be reactions to cow's milk protein, in which case the patient may be able to tolerate goat's or sheep's milk. If you are allergic to cow's milk, it is worth asking for separate tests for milk protein and lactose in allergy tests.

Often, avoidance of one or two foods will reduce the overall load and allow you to eat other things to which you are less sensitive. If the less sensitive foods are eaten no more than once every four days, or perhaps twice a week, there is less chance of a masked

allergy developing. This is the principle of the Rotation Diet, which can be used both for managing and diagnosing allergies.

The Rotation Diet means you have different foods each day and allow four days before eating something again. Because of cross-sensitivity, a strict Rotation Diet includes members of the same food family in the four day rule - e.g. if you eat chicken, neither it nor eggs must be eaten for the next four days. A Rotation Diet can be interesting to create on paper, using columns for food groups for each day. In practice it can be quite tedious, and you cannot use up leftovers the next day. It can be quite unworkable if you have to cater for the rest of the family, and makes eating out very awkward (as do most exclusion diets).

## *Enzyme Potentiated Desensitization (EPD)*

This technique was developed by Dr Len McEwan, lately at St Mary's Hospital, London.

A mixture of minute doses of highly purified antigens is combined with an enzyme called *Beta-glucuronidase,* which potentiates the effects of the antigens, plus two other chemicals. This solution is introduced in one of two ways: It can be injected into the skin, to raise a small bleb, or it can be placed in contact with the skin on the patient's inner forearm in a small cup, the skin having been scratched beforehand to break the superficial layers. The solution of antigens and enzyme is left in contact with the skin for 24 hours, or less if a severe reaction develops.

A great number of antigens can be included in the mixture, maybe 70 or more, so it is not necessary to have established the patient's individual sensitivities.

EPD is repeated at monthly intervals for three to four months, but the benefits (increasing tolerance to foods) do not develop for six to twelve months after starting treatment. When it does work, the improvement seems to be permanent, unlike desensitizing drops, or injections. EPD is expensive, however, and the results are not instant; nor is it available at many centres, few of these in the NHS. However, those who complete the course report good results which are more permanent than is true of other methods of desensitisation.

EPD has now been tested in double-blind trials for hay fever, ulcerative colitis and childhood hyperactivity. The EPD trial for hay fever gave a dramatic improvement in patients after only one EPD injection.

## *Sodium Cromoglycate (Nalcrom)*

This drug is better known by asthmatics, who inhale it from a puffer to prevent allergic asthma attacks. The drug works by blocking the reaction of certain cells (called *mast* cells) to the antigen, so that the chemical substances (including histamine) which cause the allergic effects - inflammation, wheezing, headaches, etc. - are not released. Mast cells exist scattered in the membranes lining the nose, throat, lung airways, and also the gut.

Nalcrom can be taken in capsules just before meals, and seems to be effective in preventing food allergy reactions in about two-thirds of the patients who try it. It is not a substitute for sensible avoidance of main food offenders, but could be very useful to someone who is allergic to many foods; also if the allergic person copes well at home, but

has problems travelling or visiting others. It is only available on prescription, comes in 100 mg capsules, and the dosage for an adult is 100-200 mg three times daily. It is safe, although occasionally causes side-effects such as Dausea, joint pains or rashes.

## Suggested Supplements for Allergic People

First, ensure that any supplements you obtain are free from gluten, sugar, yeast, grains, and colourings.

The regime suggested for M.E. (summary of supplements chapter 12) is quite suitable.

The main deficiencies that occur in very allergic people are of B vitamins, pantothenic acid, iron, zinc, magnesium and essential fatty acids.

Dealing with bowel bug overgrowths such as Candida (see Chapter 13) may improve food intolerances quite dramatically.

### A **Word of Caution**

If you have lost weight with M.E., are already underweight, or have severe symptoms, do *not* undertake elimination diets without specialised medical supervision. By further reducing your nutritional intake, you may become worse. If possible, seek advice from a medically-trained clinical ecologist, or a hospital specialist.

If you want to try and sort things for yourself and haven't got medical help, a suggested routine is:

First - follow the diet guidelines outlined in Chapter 11, avoid all chemicals in food, and take the suggested nutritional supplements. This may improve your symptoms after two months.

Second - if you suspect food allergies, try either the Stone Age Diet, eating plenty of vegetables, meat, fish and fruit, or cut out completely either wheat, or cow's milk, one at a time, as these are the most common offenders.

Third - reduce other possible allergens as much as possible, i.e. any chemicals around you.