

The Mysterious Rise in Food Allergies

Natalie Christie

Food is vitally important for life, but for allergy sufferers it can be deadly. Over the last few decades, there has been a huge increase in the number of people with food allergies. Hospital admissions for children with food allergies have risen by five hundred percent since 1990, with 6-8 percent of children under the age of 3 affected [1]. An incredible forty percent of British children have suffered with an allergic problem at some stage of their life [2]. The question that we should be asking is: What is causing this dramatic increase?

Simply put, an allergy is a hyperactive response from the sufferer's immune system to certain substances foreign to our body. In the case of a food allergy, body's immune system mistakes particular foods as harmful, producing antibodies known as IgEs which then try to attack the food, inciting the body to release chemicals. It is these chemicals which produce the symptoms of the allergy [3]. Food allergies encompass a whole range of symptoms, ranging from an itchy rash, sneezing, stomach cramps or mild fever to more severe symptoms such as asthma attacks, hypertension, and possible loss of consciousness. Common allergens include milk, eggs, peanuts, wheat or soya, but the list is extensive.

Food allergies can have a severe impact on the life of the sufferer. For example, people with allergies have to keep a constant watch on everything they eat; one contaminated mouthful could have terrible consequences. This can cause eating to become very stressful, especially at social occasions and when eating out. Grocery shopping can take a long time, as every label must be read carefully. Labelling rules issued by the European Union have been extremely helpful for sufferers; it has now become a legal obligation to include 14 listed food allergens on all pre-packaged foods.

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However, the most important thing now is to find out why there has been such an increase in the number of allergy sufferers [4]. There has been a vast amount of research into why the allergy incidence has increased, and numerous correlations between allergies and other factors have been found. Although several theories are rather convincing and have a lot of support in the academic and medical world, a single decisive account has not emerged yet. The three most plausible theories are the 'hygiene theory', 'leaky gut syndrome' and the vitamin D theory.

By far the most popular theory is the 'Hygiene Theory', formulated by epidemiologist David Strachan thirty years ago. Strachan first investigated hay fever, an allergic response to pollen. He discovered that increasing family size led to a reduced risk of developing hay fever and postulated

that an increased exposure to infection during childhood prevented the development of the allergy. This theory has now been extended to include all allergies, especially food allergies, and nothing has, as of yet, been found to disprove it. Proponents of the theory believe that modern life has become too clean; children are exposed to so many cleaning detergents, antibacterial soaps and disinfectants that their immune systems cannot develop properly.

The International Study of Asthma and Allergies in Childhood (ISAAC) has discovered that there are very few allergies in poorer countries the prevalence of allergies within a country increases in proportion to its affluence. It has been suggested that this is because children from poorer countries do not have access to such a standard of hygiene and thus live in dirtier environments [5]. Even though many scientists and medical doctors favour this 'hygiene theory', others are apprehensive as much of the theory is speculation at present. Maybe the increase in food allergies is the price that society has to pay for being free of some life-threatening diseases.

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Secondly, there has been link discovered between childhood obesity and food allergies. Results from the National Health and Nutrition Examination Survey 2005-2006 (USA) show that with a rise in childhood obesity there has also been an increase in childhood food allergies [6]. Investigations of IgE responses have shown that children of average weight had no increase in IgE antibodies when tested with

allergens, but there was a huge increase found in obese children. A further study by scientists at GlaxoSmithKline (a pharmaceutical company) sought to find the reason of the correlation [7]. They suggest that bad diets – high in sugar and fat whilst low in fibre – disturb the gut, causing dysbiosis (an unhealthy gut environment), as well as obesity. A disturbed gut environment is thought to cause a ‘leaky gut’, wherein cells in the small intestine are weakened and structurally damaged. This means that food antigens, instead of entering these cells, can sneak past them and into the blood stream, setting off allergic reactions. As well as causing immune reactions, a leaky gut would increase the insulin resistance of body cells, thus promoting poor glucose control and, eventually, obesity. A healthy diet could, in many cases, trigger a decrease in food allergies and obesity.

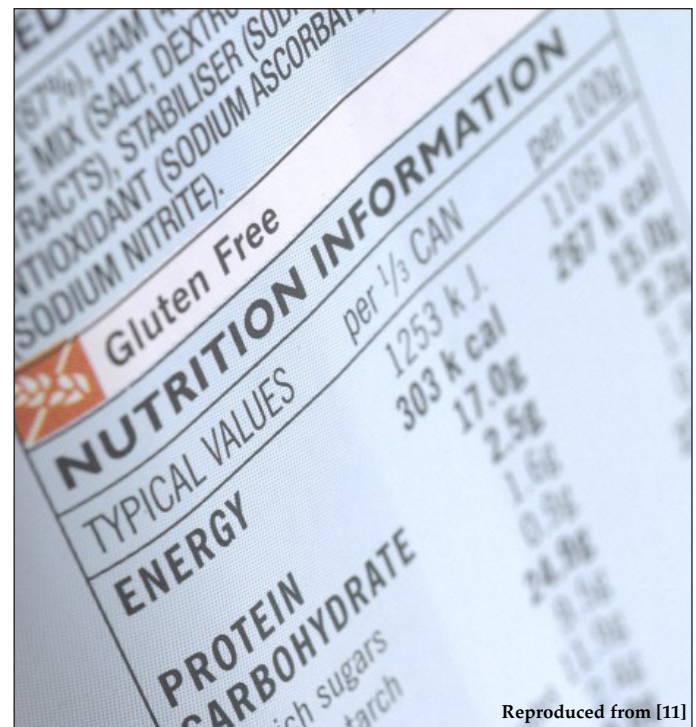
Alternatively, there are many other things that might cause a ‘leaky gut’. Infectious agents, such as yeasts, pathogenic bacteria like salmonella, or an overgrowth of bacteria can increase intestinal permeability, regardless of one’s diet. Parasitic infections have become more frequent with imported foods and greater foreign travel, but they have also risen in close association with heavier use of antibiotics. Antibiotics kill off ‘friendly’ bacteria within the gut, leaving it to be colonised by detrimental yeast and bacteria. Overuse of over-the-counter drugs, such as paracetamol, aspirin, and ibuprofen have also been found to increase gut permeability, which eventually could lead to food allergies [8].

Nevertheless, the idea of the ‘leaky gut syndrome’ remains an area of slight controversy itself. The site of much research at present, the condition is felt by many scientists to fall somewhere between conventional and alternative medicine. Though regularly diagnosed by alternative practitioners, it is still not formally recognised as a medical condition.

If it were assumed that leaky gut syndrome were a true medical disorder, the question as to why the number of food allergies has increased so much would be answered. Recently, there has been a huge rise in the use of paracetamol and other NSAID drugs, as well as antibiotics. Many children do not have healthy diets and eat too many processed foods high in additives and sugar. Babies are born with a higher intestinal permeability than those of adults. If a baby is introduced to cow’s milk and food solids too early on, then the milk will pass through into the blood stream, causing the production of IgE antibodies. This leads to a dairy allergy. If the leaky gut syndrome was found to be the answer, then it would solve the problem of increasing food allergies simply. Unfortunately, this explanation does not address all the issues.

There is still yet another possible solution: vitamin D deficiency. Researchers at the Massachusetts General Hospital in Boston have found a link between food allergies and lack of vitamin D [9]. Over a study of 1002 patients, scientists found that winter babies are more prone to food allergies.

Vitamin D helps the body to fight infections and suppresses the body’s allergy cells, contributing to greater tolerance for allergens. A lack of vitamin D would conversely lead to an increase in allergy occurrences. It is possible that this coincides with the rise in awareness of skin cancer over the past twenty years and the subsequently increased use of sun creams on children, which in turn could lead to a vitamin D deficiency. However, although plausible, one would think that vitamin D deficiency would only account for a small number of food allergies, rather than the huge amount actually seen.



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In conclusion, there is no final answer as to why there has been such an increase in food allergies. The research is still going on, and several plausible explanations and theories exist that could be the answer. However, we need more investigation – especially as a large proportion of work falls in the controversial area between alternative and conventional medicine. Many scientists have not accepted the Leaky Gut Syndrome, although the evidence is building up for it, and if it was found to be correct, it would answer many problems. At present, scientists are focusing on the bacteria found in the gut, working on the Human Microbiome Project to map all of the bacteria found within the body, which may provide some answers, and maybe help decrease the prevalence of food allergies in the future. ■

Natalie Christie is a third year student at St Catharine’s College studying History and Philosophy of Science.

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