

Diabetes and MS -

No group of diseases is more insidious than autoimmune diseases where the body systematically attacks itself. The most studied include rheumatoid arthritis, lupus, type 1 diabetes and multiple sclerosis (MS) – diseases which are thought to affect about three per cent of people in the US and probably a similar proportion here.

While apparently having nothing in common, these diseases are often found in the same populations. Type 1 diabetes and MS have nearly identical distribution – the further from the equator you go, the more common they are, with MS being over 100 times more common in the far north than at the equator.

The immune system is astonishingly complex but when it revolts it can mistakenly attack the very cells it has evolved to defend. In the case of type 1 diabetes it is the insulin-making cells of the pancreas and in MS, the myelin sheath, which protects nerves.

The immune system is like an army, with white blood cells the front line. The enemy are protein molecules, often in the form of bacteria or viruses (antigens) and the way the immune system mounts its defence against them is one of the true wonders of nature.

It customises its attack by creating a 'mirror image' protein for each invader, which fits perfectly on to it and destroys it. In effect, the immune system creates a mould for each antigen face it encounters and every time it meets that face again, it uses the mould to capture the invader and destroy it.

It just so happens that some of the foreign invaders look very much like our own cells and if these also fit the mould, the immune system may destroy them, too. The antigens that trick our bodies into attacking our own cells can be in food, often proteins which slip

Time to sacrifice the sacred cow

into our bloodstream from the intestine without being fully broken down. One of the foods that successfully mimics our own body proteins is cow's milk.

Type 1 diabetes

This incurable disease strikes children when the immune system destroys the pancreas's insulin cells and there is some evidence that it is linked to dairy products.

What possibly happens is that a baby is fed cow's milk formula which is not fully digested and fragments of the protein it contains remain in the small intestine, eventually being absorbed into the blood. The immune system then recognises them as invaders and destroys them but unfortunately, some fragments look exactly like the body's insulin-making cells. Cow's milk may cause one of the most devastating diseases that can befall a child.

In 1992, Finish researchers measured the levels of cow's milk antibodies in the blood of diabetic and non-diabetic children. All the diabetic children had higher levels than the non-diabetic children, which implies that either they consumed more cow's milk or that antibodies may be the cause of type 1 diabetes (*New England Journal of Medicine*). The result sent shock waves through the scientific community.

Subsequent research has painted a more complicated picture. It is thought that if children with a specific genetic makeup are weaned from the breast too early on to cow's milk, and perhaps become infected with a virus that corrupts the gut immune system, they are then at risk of type 1 diabetes.

A Chilean study found that genetically susceptible children who were weaned

too early on to cow's milk formula were 13 times more likely to develop the disease than children who didn't have those genes and who were breast-fed for at least three months, minimising their exposure to cow's milk. A US study carrying out similar research came to a similar conclusion, showing an 11 times greater risk.

These increased risk factors are incredibly large (1,000 and 1,200 per cent). To put it into perspective, smokers have approximately a 10 times greater risk of getting lung cancer than non smokers. Other studies show that the greater the consumption of cow's milk, the greater the prevalence of type 1 diabetes. In Finland, for example, diabetes is 36 times more common than in Japan, a country which consumes very little.

However, as with other diseases of affluence, when people move from low-risk countries to high-risk countries and change their diet, their risk increases, indicating that it isn't just about genes, despite the belief of many doctors.

There is now impressive evidence showing that cow's milk is likely to be an important cause of type 1 diabetes. The American Academy of Pediatrics has "strongly encouraged" families where diabetes is more common not to feed infants cow's milk supplements for their first two years of life.

Despite this, you are unlikely to read in any newspaper the headline 'Cow's Milk: the Likely Cause of Lethal Type 1 Diabetes' because the reaction would be so strong and the economic impact monumental. All it takes to make sound science 'controversial' and therefore undermine it, is for vested interests or blinkered scientists to pick

on one unanswered aspect of the research and use it to challenge the whole research. No research answers every question! Sustaining controversy as a means of discrediting findings that cause economic or social discomfort is one of the greatest sins in science.

However, the depth and breadth of evidence now implicating cow's milk as a cause of type 1 diabetes is overwhelming, even though the details are not yet fully understood. Sadly, you'll find no mention of this on the Diabetes UK website – it specifically excludes diet as a possible cause.

Multiple Sclerosis

This disease is presented as another enigma with genetics, viruses and environmental factors listed as possible causes – but there is never any reference to diet despite the research showing that cow's milk appears to play an important role.

Electrical signals carrying messages to and from the central nervous system (brain and spinal cord) are not well coordinated because of damage to the insulating cover of nerve fibres (myelin) causing a kind of short circuiting. This can eventually 'burn' and damage neighbouring tissue and ultimately destroy the body.

The first research showing that diet can have an effect goes back more than 60 years – to Dr Roy Swank, who headed the Division of Neurology at the University of Oregon Medical School. The extraordinary geographical disparity in the incidence of MS – 100 times more likely in the far north than at the equator – made him suspect diet and particularly foods high in animal fats.

Dr Swank recruited 144 MS patients and kept records on them for the next 34 years. He advised them to follow a diet low in saturated animal fat and most did – but many didn't. Progress of the disease was greatly reduced by the low-fat diet and about 95 per cent of the patients who were on it remained only mildly disabled for some 30 years and

only five per cent died. In contrast, 80 per cent of patients on a higher saturated fat diet died of MS.

More recent studies support this but have started to place more emphasis on cow's milk. It was first thought that it might be a virus in milk but meat eaters also had a higher incidence of the disease while fish, containing more omega 3 fat, was associated with low rates of disease.

As for genes, it has to be the usual question – what happens to people who migrate? The answer is the same as for cancer, heart disease and type 2 diabetes – they acquire the risks of the population to which they move, particularly if it is before adolescence. This points the finger at environmental factors rather than genes.

For both MS and type 1 diabetes, there is the same alarming evidence that a Western diet is implicated. Just like Dr Swank and his MS findings, Dr James Anderson found that with type 1 diabetes, medication could be significantly reduced through a largely plant-based diet. Both doctors used a diet that wasn't entirely vegan or wholefood. If that ideal diet had been followed, would there have been even greater success?

Interestingly, on the UK Multiple Sclerosis website there is again no mention of diet.

Other autoimmune diseases

Autoimmune diseases may have similar causes if they show similar characteristics. All are more common in higher latitudes, where there is less constant sunshine, and some have a tendency to afflict the same people. In those diseases where diet has been studied, animal-based foods – especially cow's milk – are associated with greater risk. There is also



evidence that viruses may trigger the onset of some of these diseases.

Sunlight exposure seems to be linked to autoimmune diseases and this decreases the further north you go – just as cow's milk consumption increases the further north you go. Could it be that cow's milk and lack of sunshine are having a similar effect on MS and other autoimmune diseases because they operate through a similar mechanism?

The idea is not so crazy as this mechanism involves vitamin D – with food playing an important role. Sunlight on the skin produces vitamin D which then has to be processed by the kidneys to produce a form that helps repress the development of autoimmune diseases. Foods high in calcium and acid-producing animal proteins, such as cow's milk, can inhibit this vital process.

It is now reasonable to start thinking about how food affects a wide group of autoimmune diseases. More research is needed but the evidence is already striking. With 85,000 people in the UK suffering from MS and some 800,000 with type 1 diabetes, perhaps it's time to sacrifice our sacred cows.

This article is based on a chapter from *The China Study*, a book by Professor T. Colin Campbell. Colin was lead researcher in this largest-ever study into diet and health ever undertaken. The book is available from the VVF at £24.95 (plus £4 postage).