



Dr Bob Anderson and his vaccine

It was just ten years ago that Dr Bob Anderson got the coeliac bug. No, he didn't develop coeliac disease. He became enamoured with the common disorder. Ten years later Dr Anderson and his team initiated the world's first clinical trial to develop a vaccination for coeliac disease. Dr Anderson is a gastroenterologist and PhD researcher working at the Walter and Eliza Hall Institute of Medical Research (WEHI) in Melbourne, Victoria, Australia.

People with coeliac disease cannot digest gluten, the protein in wheat, barley and rye. Today, the only treatment for this common, genetic disorder is following a life-long gluten-free diet. Coeliac affects about six million people in Europe, Australia, and North America, but most of them don't know that it is the cause of their ills. Only recently did coeliac disease begin to receive aggressive research, predominantly in Europe and Australia.

The premise of the vaccination study is to build up a tolerance to gluten in people with coeliac disease, similar to the current desensitisation work that is being done with hay fever and allergies. Already tested and shown to be safe on mice, the vaccine is now ready to be tried on humans. In April the first phase began: forty people comprising Group I are taking increasingly large doses of the vaccine. Dosage and side effects will be ascertained and overall safety for humans will be assured. Once the drug is de-

Eating Gluten Again?

Loretta Jay investigates a possible new vaccine for coeliac disease first flagged at the Coeliac UK conference in December last year and in the January Foods Matter.

termined to be safe, Phase II will begin.

The purpose of Phase II is to determine if the vaccination is effective: will people with coeliac disease be able to eat foods containing gluten after vaccination? Similar to the first group, this group will also take incrementally higher doses of the vaccine but they will also ingest gluten. Coeliac is an autoimmune disease, which means that the body attacks itself when exposed to the trigger, gluten. The hope is that the vaccine will desensitise the reaction to gluten in the person with coeliac disease by changing the body's response from an inflammatory response to a tolerant one.

Dr Anderson's previous research identified dominant toxic peptides as the cause of the immune response in the 80% of coeliacs carrying the DQ2 gene. The vaccination consists of the toxic compound of the vital T-cell stimulatory peptides found in gluten. If successful, the findings of this study may not only be a breakthrough for those with coeliac, but other autoimmune diseases such as Type I diabetes.

It was in 1998 that Dr Anderson became inspired by a group of researchers at Oxford working on a vaccine for malaria. He travelled to Africa to understand the pathogens responsible for triggering malaria's reaction. There was strong evidence with mice indicating that reactions in an autoimmune disorder can be 'turned off'. He wondered if the same principle could be applied with coeliac disease. It seemed possible; coeliac disease is in the unique position of being the only

autoimmune disease with a known trigger (gluten), and is the first with a mapped-out immune response. This was the critical piece that led to Dr Anderson's hypothesis, likening coeliac's immune reaction to someone developing the flu.

Dr Anderson's personal motivation for this project stemmed from his desire to help those diagnosed with coeliac disease, and a frustration over the way the medical community has responded to the disorder. He told this writer that he wants people with coeliac disease to be able to see their future beyond their diet. Initially he received resistance to his efforts to research and to develop a drug, which subsequently led to challenges securing funding. Eventually he formed his own company, Nexsep, to obtain needed finance for his research. Now it is all coming together. Dr Anderson is optimistic and excited, but says there is another ten years to go before the results are realised. Until then people with coeliac disease can begin to visualise their future with wheat in it.

Participation

Participants in the coeliac vaccine study must have biopsy-proven coeliac disease and be following a gluten-free diet. The Centre for Clinical Studies (Nucleus Network) is conducting the trial in Melbourne, Victoria. For inquiries or to register as a study participant please contact The Centre for Clinical Studies at 1800 243 733 or e-mail at contactus@nucleusnetwork.com.au.

Could gluten intolerance be linked to schizophrenia?

Researchers at UHI, the prospective University of the Highlands and Islands have been studying the role of gluten in schizophrenia and diabetes and also links between the two illnesses.

Dr Jun Wei, a senior researcher and reader in genetics, said an individual's inherited genes, together with factors from the environment in which

they have lived, were now considered to be central to development of both schizophrenia and diabetes. He believes that gluten could be one such environmental factor.

More than 30% of schizophrenia sufferers have high levels of antibodies against wheat gluten in their body so he believes that a gluten-free diet

might help to reduce the symptoms of this mental condition. He and his team are also investigating whether gluten could act as a trigger for schizophrenia in people who have a genetic predisposition to it. If so, a simple change in diet might prevent these diseases developing in those who had this disposition.

More at <http://tinyurl.com/d5k6la>