

New technology links diet to genetic markers

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(Medical Xpress)—A team of researchers looking into links between nutrition and genetics have developed technologies that will revolutionise how food companies validate new products.

The team is a collaboration of scientists from around New Zealand, led by The University of Auckland's world expert in nutrigenetics and [nutrigenomics](#), Professor Lynn Ferguson.

"This new technology ushers in a new phase of sensitivity in [dietary intervention](#) studies, negating a need for testing a wide range of endpoints, which is both expensive and time-consuming," says Professor Ferguson, who is programme leader of the very successful collaborative group, Nutrigenomics New Zealand.

"One of the most useful aspects of these technologies is that the studies can be hypothesis free," she says. "This means that [food companies](#) could use such an approach to discover what their food products or diets are actually doing, which may not be what they were designed to be doing, and which could lead to insights into the mechanism of action of a modified diet."

For the food industry, an immediate application of this technology, is in developing and testing new food products in line with new standards for health claims just published for New Zealand and Australia.

The new food standard regulations published in May are a guide to 'establishing food-health relationships for general health claims.

"For the first time New Zealand has clear regulations for food product health claims and Nutrigenomics NZ has the expertise to interpret these for the industry," says Professor Ferguson.

Links between inflammation and diet are studied by the group based at The University of Auckland together with AgResearch and Plant and Food Research. The initial focus for the programme is on [genetic markers](#) for Crohn's disease and other [inflammatory bowel disorders](#) - about 15,000 people are affected by these disorders in New Zealand.

Inflammation can cause significant health problems and lead to diseases such as Alzheimers, Crohn's disease, some cancers, cardiovascular disease, arthritis, type 2 diabetes and other auto-immune diseases.

"It is important to find ways for sufferers of inflammation to reduce these levels," says Dr Ferguson who is editor of a new book called 'Nutrigenomics and Nutrigenetics in Functional Foods and Personalized Nutrition'.

Dr Ferguson whose paper 'Foodomics to study efficacy of human dietary interventions' is one of five chapters contributed by New Zealand authors to the new book, says that New Zealand is now a major player in functional foods research.

The new book brings together for the first time, information on some of these valuable new technologies. It uses both approaches - nutrigenomic (the effects of diet on gene expression) and nutrigenetic (matching diet to genotype) - to describe how they might be applied to the food industry and to health professions.

"New discoveries in this field will enable foods to be tailored to genotype and enable sensitive monitoring of gene expression changes resulting from [food](#)-gene interactions - both for human and animal

foods," says Professor Ferguson.

In order to keep their dialogue with industry open and active, Nutrigenomics New Zealand is holding a one-day "science-meets-industry" workshop on Friday 23rd August.

The focus of this event will be to hear what industry is wanting, and in turn to show industry how Nutrigenomics New Zealand can assist them in practical, affordable terms with regard to obtaining high-level, science-based health claims.

"Things will move very rapidly, now that the regulations have been finalised", says Professor Ferguson. "It is crucial that industry and science collaborate, in order to provide the best possible products to consumers, and in so doing to grow New Zealand's economy both nationally and internationally".

Provided by University of Auckland

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