Metabolic Health Programme

Principal Investigator: Professor Sally Poppitt, The University of Auckland
Collaborating Organisations: AgResearch, Plant and Food Research, University of Otago/Capital and Coast DHB
Research Investment: $6.5 million over 5 years

The Metabolic Health programme aims to identify food and beverage (F&B) strategies that can prevent adverse metabolic health. The overarching theme is the prevention of type 2 diabetes in susceptible consumers; with a focus on high risk Chinese adults.

In phase 1 the programme investigated the nutritional problem of weight gain and the development of type 2 diabetes in Asian communities; working with New Zealand F&B companies such as the Māori business cluster NUKU ki te Puku™, and Fonterra Co-operative Ltd, targeting improved metabolic health.

"A growing problem in New Zealand and many other rapidly 'westernising' countries, weight gain is of particular concern to Asia. In China alone almost 1 of 3 individuals are struggling with their weight, and across Asia a staggering 300 million people have already been diagnosed with diabetes, many in the new urban mega cities," says Professor Sally Poppitt, High-Value Nutrition team leader of the Metabolic Health programme.

Since type 2 diabetes is a nutritional disease, caused primarily through poor lifestyle habits, it can be prevented successfully through better nutrition. Previously common in the '*over-weight and over-forties*', for many Asian consumers risk increases even whilst young and outwardly quite slim. The cause may lie in deposition of body fat within 'unsafe' stores, such as the important organs of pancreas and liver, which has been termed the TOFI profile where individuals are '*Thin on the Outside yet Fat on the Inside*'.

Identifying early predictive markers of type 2 diabetes is the first step in developing new opportunities for food and beverage (F&B) companies.

F&B interventions will continue as a central focus of phase 2 of the HVN program through 2019-2024; extending studies conducted in Chinese individuals resident in New Zealand through international collaborations with research teams in China.

Phase 1 identified that many in the cohort had early biomarkers of pre-diabetes, plus lipid overspill into the pancreas and liver in a sub-cohort of women. The researchers also found that pancreatic and liver fat may be important early predictors of metabolic health and diabetes risk.

"The programme team will work closely with F&B industry stakeholders to identify priority foods to further grow industry investment in High-Value Nutrition," says High-Value Nutrition National Science Challenge Director, Joanne Todd.

"A desire for high value foods, identified by HVN Consumer Insights in Chinese consumers as 'balanced, light tasting, with high quality ingredients' as part of a 'desire to take control' of their diet and their health, leads this priority research programme in metabolic health," says Ms Todd.