National SCIENCE Challenges

HIGH-VALUE NUTRITION

Ko Ngā Kai Whai Painga

Infant Health Programme

Principal Investigator - Associate Professor Clare Wall, The University of Auckland
Collaborating Organisations: AgResearch, Plant and Food Research, Massey University, Malaghan Institute for Medical Research
Research Investment: $4.4 million over 5 years

Weaning is a period of marked physiological change. Starting solid foods alters babies' gut and immune function, and triggers developmental changes. The weaning period is a great opportunity to introduce foods that optimise a baby's health.

In the first phase of this research, kūmara was identified as a complementary food which could support the development of beneficial microbiota ('gut bugs'). A pilot study was conducted (*Nourish to Flourish*), which recruited 40 babies before they started on solid food. Thirty of these infants consumed the kūmara complementary feeding product - over a six-month period, and 10 infants received a probiotic control. The babies' feeding behaviour, health status and biological samples were collected at three time points (baseline, then three months and six months after commencing solid food).

The pilot study showed that it is feasible to recruit infants, feed a known prebiotic food to infants over a six-month period, and collect biological samples and health information, which allows scientists to measure immune efficacy of the complementary food. The study has also demonstrated the importance of the collaboration of scientists with expertise in clinical research, immunology, metabolomics and microbiomics.

"The phase 2 programme presents opportunities for food and beverage companies to consider the development of other suitable complementary feeding products with known prebiotic properties," says High-Value Nutrition Challenge Director Joanne Todd. These food products can be tested in the planned Randomised Controlled Clinical Trials in New Zealand and Asia in phase 2 through 2019-2024.

"The aim of the new programme is to explore the impact of complementary foods on infant health, focusing on immunity and a reduced number of infections in early life," says Ms Todd.