

Research Showcase:
Unlocking the secrets of
a healthy lifestyle

Helping find foods to tackle New Zealand's weighty issues

The Human Nutrition Unit (HNU) at The University of Auckland is dedicated to the study of dietary components which promote health and prevent disease.

By carrying out tests on volunteer participants, the Unit is able to assess the effects of a wide range of products - from whole foods to food components and bioactives to nutraceuticals.

Nutrition studies can not only demonstrate the positive health benefits of foods, but provide regulators with vital evidence to support products' dietary health claims.

In deciding whether studies can substantiate a claim, an important consideration is their scientific quality. The gold standard for nutrition trials is randomised, double blind, placebo-controlled design such as those performed at the HNU.

Dietary intervention trials can be performed in healthy consumers, individuals with mild/moderate disease risk such as raised cholesterol levels, and in patient populations.

The HNU is in a perfect position to provide consultancy on trial design, develop protocol documents, obtain human ethics approval, and recruit, screen and run intervention studies at the Unit and in the wider community.

Studies are commonly of cross-over design where the participants complete all of the treatments, each separated by a washout period. The size of the study and the number of participants required may be far smaller if subjects cross-over from one treatment to the next.

Studies can be anything from short single day interventions to those which continue for several months. Typically, blood and/or urine samples are collected throughout the trials to assess the efficacy of a food component which may be intended to suppress appetite, to aid weight loss, or to improve blood parameters such as cholesterol and lipids, glucose, or inflammatory/oxidative markers.

Many different types of study can be performed at the HNU such as:

Day stay - single day

These studies usually require small numbers of participants who may undergo blood tests, diet and lifestyle questionnaires and have responses such as behaviour measured.

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Recent studies: Screening for food components which suppress appetite and energy intake.

Medium term - one to four weeks residential and non-residential

This optimum study design involves participants living at the HNU and following a carefully controlled dietary regime. They may still attend work or study and carry their foods for the day with them. Careful control and provision of all dietary components increases both the accuracy of the trial (since precise dietary components can be altered) and the compliance of the participants, and so increases the ability to show beneficial effects.

Recent studies: The cholesterol-lowering effects of novel low saturate lipids and high beta-glucan carbohydrates.

Long term - three to six months

Study participants continue their usual home life but visit the clinic so dietary test components can be collected and for study measurements.

Recent studies: The effect of a dietary fibre on weight loss, and the effect of omega-3 fish oils on blood lipids and other cardiovascular outcomes.



The Human Nutrition Unit can support companies developing new food products in a range of ways, from designing suitable food trials to carrying out the studies required.

HNU studies meet the worldwide gold standard for nutrition trials.

Research areas

Using nutrition interventions for prevention and treatment of diet-related diseases, including:

- Weight gain and obesity; identifying components of our diet to regain control of hunger, satiety and appetite
- Obesity-related consequences such as metabolic syndrome, cardiovascular disease and type II diabetes; identifying components of our diet to control high-cholesterol, blood glucose, inflammation and blood pressure

Potential applications

- Designing new foods for health and wellness
- Generating value-added food products and supporting dietary health claims
- Improving the quality of our diet to target health issues such as obesity, diabetes and heart disease
- Testing wide and varied areas of the diet including whole foods, food components, bioactives, functional foods and dietary supplements

The Human Nutrition Unit

The Human Nutrition Unit (HNU) is a purpose-designed nutrition research facility developed by a collaboration of the Department of Medicine and School of Biological Sciences at the University of Auckland. It is the only long-stay residential nutrition facility within New Zealand and is based in the Auckland suburb of Mount Eden.

The founder and Director is Dr Sally Poppitt who has spent more than 15 years investigating the relationships between diet and health through nutrition intervention trials, and who is Associate Professor in Nutrition at the University of Auckland.

The HNU, which has eight beds, is a day, overnight and long-stay residential facility which also serves as a research centre for large community outpatient trials.

In many studies, volunteers live at the Unit and their food is provided. This allows careful control of the diet throughout the trial and increases the ability to detect small changes in blood markers which may occur in response to the intervention.



The Unit has specific expertise in a wide range of areas including appetite regulation and eating behaviour; obesity and weight control, and obesity-related disorders such cardiovascular disease and diabetes.

The HNU collaborates with many groups both within Auckland, nationally within New Zealand and internationally in Australia, Asia and Europe.

Information on the HNU and copies of trial publications can be found on the website: www.humannutritionunit.auckland.ac.nz

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