Pasture-Raised
ADVANTAGE
NEW ZEALAND

New Zealand scientists are conducting a ground-breaking research programme to explore the benefits of eating pasture-raised beef and lamb.

Pasture-Raised Advantage (PRA) is the name of a comprehensive new study of the physical, physiological and wellbeing outcomes from eating pasture-raised beef and lamb, compared to grain-finished beef and plant-based alternatives. The work started in 2019 and is being led by researchers from AgResearch, the Riddet Institute and the University of Auckland.

Much of the global research on the nutritional, health and environmental aspects of producing and consuming red meat is based on intensive grain-finished farming systems, as typified by feedlots. In contrast, New Zealand specialises in free-range livestock farming. This emphasises natural pasture grazing and zero treatment with anabolic antibiotics and hormones. Meat from these animals is different and deserves its own research.

This study is supported by Meat Industry Association Innovation Ltd (MIA Innovation) and jointly funded by Beef + Lamb New Zealand Ltd (B+LNZ), the High Value Nutrition National Science Challenge and New Zealand's Ministry of Business, Innovation and Employment (MBIE) Research Partnership Fund.

What we are researching

The Pasture-Raised Advantage study is comparing New Zealand pasture-raised beef and lamb, New Zealand grain-finished beef and an imported plant-based alternative in four aligned projects.

Project 1

Led by Dr Emma Bermingham of AgResearch, is an advanced analysis of the composition of red meat, comparing pasture-raised beef to grain-finished beef and a meat alternative. The analysis will look in detail at lipids (fats), diverse metabolic compounds and key minerals.

Project 2

Led by Drs Mike Boland and Lovedeep Kaur of the Riddet Institute, is a study of how the human digestion system responds to different food compositions to release nutrients for the body to use. The digestion of pasture-raised beef will be compared to grain-finished beef and a meat alternative using laboratory gastric simulation techniques.

Project 3 and 4 are human clinical trials led by Dr Andrea Braakhuis, an Academic Director and Research Dietitian at The University of Auckland.

Project 3

An acute study, looking at the immediate impact of eating a single meal containing red meat compared to a vegetarian meal. A group of healthy, young (20-34 years old) men will eat a series of four single meals over a period of several weeks, that contain either pasture-raised beef, pasture-raised lamb, grain-finished beef or a vegetarian alternative, in a blinded investigation. Repeated blood samples will be collected following each meal so that fatty acids, amino acid profiles, neurotransmitters, minerals, inflammatory markers and biomarkers of general health can be measured to assess the digestive and metabolic effects of the meal. To our knowledge this is the first time a trial of this type has been run to compare the immediate impact on health and wellbeing of eating meals that contain meat or plant-based alternatives.

Project 4

A longitudinal study, comparing the impact of eating red meat or vegetarian diets over a sustained period. A large group of approximately 80 young (20-34 years old) men and women will take part in a two-arm trial over 12 weeks, with a 3-month follow-up. The trial starts with 2 weeks of pre-assessment, then participants are allocated to a diet group. In one group they will eat a serving of red meat (beef and lamb) three times per week for 10 weeks as part of a flexitarian diet, in the other they will eat meat alternatives. Blood samples from the participants will be measured for changes in fatty acids, amino acids, neurotransmitters, biomarkers of minerals status, inflammatory markers and general health. Body composition, physical function tests and questionnaires to assess wellbeing and mental health will be undertaken before, during and 3 months after the study. To our knowledge this is the first trial of this type investigating the overarching health consequences of consuming NZ pasture-raised red meat as part of a healthy diet compared with a meat-free diet.

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What we know already[1]

Red meat is a highly nutritious whole food, rich in protein and minerals and when trimmed of visible fat, it is low in total fat and saturated fatty acids. Beef and lamb from New Zealand's grazing animals is inherently lean.

Including meat in a healthy and balanced diet is an efficient way to ensure nutrient requirements are met, particularly for those with higher nutrient needs. This includes pregnant and breastfeeding women, children and older adults.

New Zealand Ministry of Health guidelines recommend 1-2 portions of meat or meat alternatives per day, to ensure a complete and balanced diet. For healthy adults, the current recommendation is to eat up to 500g of cooked red meat per week (700-750g when raw) as part of a healthy diet and lifestyle.

Red meat...

IS AN EXCELLENT SOURCE OF BIOAVAILABLE IRON AND ZINC and also contains selenium, potassium, manganese, copper, magnesium and phosphorus. Zinc and iron are integral in brain development, fighting fatigue and supporting a healthy immune system.

CONTAINS LONG CHAIN OMEGA 3 FATTY ACIDS.

CONTAINS BIOACTIVE COMPOUNDS including taurine for brain and muscle function, carnitine for energy and creatine for muscle strength and performance.

CONTRIBUTES ESSENTIAL VITAMINS TO THE DIET, including B vitamins, particulalry vitamin B12 to support health and wellbeing, including growth and development.

IS RICH IN PHOSPHOLIPIDS, which are believed to have important roles in health

HAS UP TO 30% PROTEIN, which is highly bioavailable, easily digested and contains all the essential amino acids in suitable balance.

[1] The Role of Red Meat in Healthy and Sustainable New Zealand Diets, March 2020