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Lynnette R Ferguson

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Biography

Lynnette R Ferguson obtained her DPhil. (Oxon.) from Oxford University in the United Kingdom, working on DNA damage and DNA repair. After her return to New Zealand, she began working as part of the Auckland Cancer Society Research Centre (ACSRC), using mutagenicity testing as a predictor of carcinogenesis. In the year 2000, she became a full Professor and was invited to establish a new department of Nutrition at The University of Auckland. Since that time, she has split her appointment 50/50 between the ACSRC and The University of Auckland. She has investigated the interplay between genes and diet in the development of chronic disease, with foci on inflammatory bowel disease and cancer.

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NUTRIGENETICS, NUTRIGENOMICS AND INFLAMMATORY BOWEL DISEASES

Inflammatory bowel diseases (IBD) include both ulcerative colitis and Crohn's disease and are both extremely unpleasant conditions, which are highly cancer susceptible. Their symptoms and potential outcomes are affected by diet. They are excellent examples of nutrigenetics, which describes the interplay between genes and diet in the development and progression of diseases. Nutrigenetics describes how human genetic variation results in distinct nutritional requirements. There have been more than 100 genes described which determine the susceptibility to, development and progress of IBD, in association with different diets and lifestyles. The biological mechanisms by which genes interact with one another and with the environment, especially diet, is not often fully understood. Nutrigenomics is the scientific approach which enables the study of these interactions. This involves a range of techniques including transcriptomics, proteomics and metabolomics, that enable an understanding of what is happening, and what the implications are if some of the conditions are not met.