Lifting the Lid on Nutrigenomics: Current Applications and the Future of Nutrition

Biography

Dr. Flavia Fayet-Moore is Founder and Director of Nutrition Research Australia (NRA). She is also a registered nutritionist, accredited practicing Dietitian and Honorary Associate of the University of Sydney. Dr. Flavia’s research focuses on the assessment of diet and nutritional status in large population studies and in the field of nutrigenomics. She obtained her B.Sc. (Hons) in Science (Nutritional Sciences Specialist) from the University of Toronto and M.Sc. in Nutrition and Dietetics from the University of Sydney and went on to complete a Ph.D. in Nutrition. Prior to her current position, she is also the Director of Operations at Nutrigenomix Australia and a member of the Nutrition Society of Australia, the Dietitian’s Association of Australia as well as a founding board member of the Australasian Society for Lifestyle Medicine.

Abstract

Nutrigenomics is a branch of nutritional sciences that aims to understand how nutrients interact with our genome to impact health and sports performance. Numerous studies have now shown that variations in certain genes can explain why some individuals respond differently from others to the same foods, beverages and supplements they consume for health. Differences in the rates of absorption, distribution, uptake, utilisation, biotransformation and excretion influence the concentration of a nutrient or bioactive phytochemical at a target site of interest, which ultimately impacts an individual’s response.

Until recently, the effects of disclosing genetic information on diet and lifestyle changes were not known. Recent findings from a randomised controlled trial showed that people who receive DNA-based personalised dietary advice have a greater understanding of their recommendations, greater motivation to change dietary behaviour, and make specific changes to their dietary intake that persist up to one-year post consultation.

There is increasing awareness among researchers, educators, healthcare professionals and consumers that the one-size-fits-all population-based approach to nutritional guidance is inefficient and sometimes ineffective. This awareness has created a growing demand for personal genetic testing services. A number of consumer genetic testing services for wellness and athletic performance are available, but their clinical utility and validity remains controversial.

With increasing consumer demand, there is a need for healthcare professionals to have sufficient knowledge to understand the science behind these innovative tests, determine their benefits and limitations and learn which ones provide clinically actionable information. Advances in the field of nutrigenomics will continue to drive the growing demand for genetic tests for personalised nutrition and healthcare professionals will need to equip themselves with the tools needed to interpret test results that provide clinically actionable information. Nutrigenomics will continue to be part of the healthcare system and may become an integral part of an individual’s health management.