



# Formulation and Development of Nutrigenomics in Patient Health Care

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## DESCRIPTION

Nutritional genomics is a branch of biology that studies the connection between the human genome, nutrition, and health. Nutrigenomics, also known as nutritional genomics, is the study of the relationship between diet and inherited genes. It was initially proposed in 2001. Nutritional science developed as a study of individuals who have been insufficient in particular nutrients and the consequences, such as the disease hepatitis, which is caused by a lack of vitamin C. As other diet-related diseases, such as obesity, grew increasingly common, good nutrition developed include them as well. Typically, nutrition research focuses on prevention, attempting to determine which vitamins or meals may increase or decrease the risk of diseases and damages to the human body. Nutrition genomics has a wide range of applications. Some illnesses, such as diabetes metabolic syndrome, can be detected by personalized assessment. By screening individuals and determining particular nutritional requirements, nutrigenomics can assist with personalized health and nutrition intake. The focus is on genetic abnormalities and their prevention and treatment.

In their clinical practice, Health Care Practitioners (HCPs) around the world, including dietitians, are facing genetic testing for personalized nutrition (i.e., Nutrigenomics). Although there is a lot of basic research on diet-gene interactions in the literature, there is a less information about how to use nutrigenomics in clinical practice to change dietary outcomes. Despite this, patients are bringing clear nutrigenomics data to their healthcare providers for interpretation, and more healthcare providers are increasingly offering nutrigenomics testing to their patients. However, there are currently no clinical guidance documents in the field of nutrigenomics for HCPs, and numerous steps must be completed before detailed clinical practice recommendations may be produced.

Precision nutrition, according to the National Institutes of Health, is a model that focuses on a number of factors that affect healthcare, including genetics, dietary habits, socioeconomic position, and the microbes, and others. The use of blood biomarkers, genetics, epigenetics, protein abundance,

metabolites, and the gut flora to adjust nutrition recommendations with the goal of enhancing an individual's health is referred to as personalized nutrition in the scientific world. Many consumers have purchased Direct-To-Consumer (DTC genetic tests and brought the results to their HCPs for interpretation due to the increased availability and cost of genetic testing.

The application of genetic information to personalized diet advice is referred to as nutrigenomics. In 2017 Visioning Report, the Academy of Nutrition and Dietetics stated that RDs can assume an increasing importance in the developing public healthcare programmed that focuses on a genetic disposition medical model and disease, disease control, and multidisciplinary health care with respect to personalized nutrition. The American Nutrition Association recently stated that personalized diet is the most effective weapon to prolonged disease. Registered dietitian nutritionists are in a position to develop them as accurate experts in utilizing to personalize care by maintaining clear about available evidence, trying to apply clinical skills and training, and participating in research where possible, according to the Academy's consensus statement.

However, due to a lack of specific clinical guideline publications, the practical application of nutrigenomics as a tool to enhance nutrition and health outcomes remains a bone of contention. However, according to a recent comprehensive review of randomized controlled trials, individualized nutrition interventions can improve dietary behaviour changes more than traditional population-based guidance. Despite the current dispute, nutrigenomics is becoming increasingly prevalent in clinical practice, with data indicating that HCPs and patients have generally good opinions regarding this field of nutrition. Although opinions toward nutrigenomics are generally favourable, and many practicing HCPs are already using it in their clinical practice, questions have been expressed concerning the lack of industry control and scientific validity of some nutrigenomics tests. Furthermore, HCPs' awareness of nutrigenomics varies, and several have emphasized the significance of include more nutrigenomics training in university

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and continuing education curriculum, while RDs have lately indicated interest in completing further nutrigenomics training.

As nutrigenomics has become a more prevalent component of dietetics practice, orienting HCPs toward ethical practice has never been more important. As a result, HCPs will require clinical advice materials. They're employed in a range of health-

care settings, including health management, surgical procedure guiding, and family-centred care. Despite the fact that nutrigenomics is becoming widespread in clinical practice, no care plan for nutrigenomics in health care settings has been produced.