

HOD Fact Sheet

Nutritional Genomics

House of Delegates

July 2008

Though still in its infancy, nutritional genomics has revealed much about the complex interactions between diet and genes. But it is in its potential applications that nutritional genomics promises to revolutionize the ways to manage human health and combat disease in the years ahead.

The backgrounder recognizes that registered dietitians and dietetic technicians, registered work as a team. RDs rely on the support of DTRs. Therefore, it should be noted that when the term RD is used, it assumes the RD/DTR team.

Big Question

How will nutritional genomics transform dietetics practice and how do individuals prepare for these evolving opportunities and professional responsibilities?

Definitions

- “Nutritional genomics” is the field
- “Nutrigenetics” concerns the “goodness-of-fit” of an individual’s genetic makeup with his environment
- “Nutrigenomics” concerns the influence of environmental factors (of which food is a major component) on gene expression.

Why is it Important?

- Nutritional genomics is emerging as central to dietetics.
- Nutritional genomics enhances our ability to make diet and lifestyle choices that may alter disease susceptibility and improve our health potential.
- As genomics is increasingly integrated into health care and nutritional genomics into dietetics, the opportunities for RDs will expand as will our effectiveness as practitioners.
- Nutritional genomics will also have impacts on society – from medicine to agricultural and dietary practices to social and public policies.
- Nutritional genomics is a potential future charter for RDs if we keep up with the science and its implications, and develop products and services that can make use of the new research.
- Nutritional genomics has the potential to impact all areas of dietetics practice. Expect these opportunities to steadily unfold over the next 5-10 years.
 - Nutritional genomics requires a research base from which to develop applications.
 - Nutrition interventions will be based on nutrition and genotype.



- RDs/DTRs working in the food industry will be asked to provide direction for consumer products.
- RD/DTRs will need to incorporate special foods into their food systems as more people have specific dietary requests.

Consumers and Patients

- Based on a survey commissioned by the International Food Information Council in 2005, more than two-thirds of Americans surveyed expressed a favorable opinion toward the idea of using genetic information to develop personalized nutrition recommendations.
- Similarly, 70% were interested in learning more about using genetic information to develop nutrition recommendations aimed at reducing disease risk or optimizing health.

Challenges

- Although advances in genomic medicine for common adult chronic diseases such as heart disease, diabetes, and cancer hold promise for improved prevention, diagnosis and treatment, health professionals and the public are not prepared to *effectively integrate* the research into practice.
- While attitudes about the benefits of the application of nutritional genomics are positive, barriers involving the lack of background knowledge and experts to convey professional expertise may limit the ability of RDs to apply nutritional genomics.
- Although most dietetics education program directors agreed that genetics is an important component of dietetics education, they expressed concerns about already-crowded curricula and lack of time, resources, and knowledge to address nutritional genomics.
- Advance degree programs exist in nutritional genomics and are generally open to all science majors, including RDs and non-RDs.
- In order to make appropriate recommendations, genetic variations and their linkages to health and disease must be known. This requires genetic testing assays be validated and conducted in appropriately credentialed laboratories.



1. Where and how did you first learn about nutritional genomics and what was your initial reaction?
2. How would your area of practice change if nutrition genomics were a tool you used every day?

HOD Delegate Contact Information

Barbara Grant is the delegate for San Diego District and can be contacted at bjgrant@hughes.net, 858 679-1616.

For more information on this topic, visit “HOD Backgrounder: Nutritional Genomics” using the following link www.eatright.org/HODBackgroundersFall2008