



Nutritional Science Programs Focus on Advancing Nutrition and Health

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Introduction

The Division of Nutritional Science studies human nutrition at levels starting from molecules to populations, drawing upon the chemical, biological, and social sciences to know the complex relationships among human health, nutritional status, food and lifestyle patterns, and social and institutional environments. Understanding these relationships includes the study of the metabolic regulation and performance of nutrients, nutrient requirements through the lifetime, role of diet in reducing risk of disease, nutritional quality of foods, and interventions and policies designed to promote nutritional health of individuals and populations.

Nutritional Sciences programs specialize in advancing our understanding of nutrition and health at the interface of disciplines and sectors by highlighting the areas of: Precision Nutrition: refers to optimizing human nutrition for health, wellness and performance. Individuals respond differently to food and nutrient exposures because of differences in genetics, epigenetics, micro biome composition, other environmental exposures and life-style factors [1].

Description

Lifecycle Nutrition: aims to develop theories and models to further understand somatic cell programming, parental nutritional status influences on fetal, infant and life-long health, also as variable nutritional requirements across developmental stages, including aging. Sustainable Food and Nutrition Systems for Health: applies social science and system approaches to develop sustainable solutions to nutrition and global health problems with a focus on the role of the food system.

Social and Behavioral Nutrition: draws on theories, conceptual models and methods from the social and behavioral sciences to further the understanding of the complexities of food consumption and other nutrition-related behaviors, including physical activity, in order to advance basic knowledge and to design, implement and evaluate innovative and effective interventions and policies [2].

Food as medicine, also known as “food is medicine,” sits at the crossroads of nutrition and healthcare. It may take many forms, including medically tailored meals, medically tailored groceries, and produce prescription programs. ASN Journals support the growing interest in food as medicine, publishing original research articles and reviews that help dietitians, clinicians, and other healthcare providers determine which sorts of food as medicine interventions work, who benefits the most, and how to best implement them.

While poor nutrition has been linked to the development and progression of heart disease, good nutrition has been linked to the prevention and management of heart disease. ASN Journals are at the forefront of research exploring the connection between nutrition and heart condition for many years, providing the underlying science needed to tell public health guidelines as well as individualized nutrition plans for patients [3]. Below are a sampling of original research studies and scientific reviews recently published in ASN Journals that help us better understand the role of nutrition in both the event and treatment

of heart disease.

The Women’s Health Initiative Diet Modification Trial was a randomized clinical test of 48,835 postmenopausal women within the US that sought to work out whether a low-fat dietary pattern (20% of total calories from fat) that included five servings of fruits and vegetables and 6 servings of grains per day would scale back the incidence of carcinoma and colorectal cancers. Coronary heart condition was the designated secondary outcome. In this particular study, ASN member Linda Van Horn et al. focused on how the diet affected disorder risk among women with healthy vital sign and no history of disorder. Previous study results had found that the effect of the diet among women with high vital sign and a history of disorder were confounded by the utilization of antihypertensive and cholesterol-lowering medications [4]. Focusing on the normotensive women, the authors found that “a behaviorally focused dietary intervention advocating reduction of total fat intake through replacement with plant-based carbohydrate and protein foods favorably reduced risk of coronary heart condition with no clear stroke impact.”

Conclusion

Do high glycemic index foods cause a better risk of heart disease? To answer that question, analyzed data from the Prospective Investigation into Cancer and Nutrition, a prospective study that consisted of 338,325 participants who had completed a food questionnaire at baseline. Following a median follow-up period of 12.8 years in which participants’ health status was periodically assessed, the authors concluded, “High dietary glycemic load and glycemic index were associated with greater coronary heart disease risk” [5]. In particular, the authors noted that “body weight may serve as an effect modifier on this association.” For example, they found that dietary glycemic load (i.e., what proportion a serving of food is probably going to extend a person’s blood glucose levels) was significantly related to a greater coronary heart condition risk among overweight and obese persons, but not among those during a healthy weight range. The authors did note a limitation of the study: “most people do not eat single foods, but rather meals and a food’s glycemic index can vary depending on how it is prepared and combined with other foods. It is impossible to require such interactions under consideration employing a food questionnaire.”

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