



**Nutrition
Informatics**

SMAART Hub for Informatics enabled Nutrition Education (SHINE™)

Research, Innovate, Policy, Practice, Entrepreneurship

Welcome Message

Welcome to the 17th issue of the Nutrition Informatics newsletter SHINE (May 2023) of the Foundation of Healthcare Technologies Society. This newsletter aims to bring together the advancements in the field of Nutrition Informatics Research, Innovation, Policy, Practice, and Entrepreneurship. The newsletter will also provide recent updates about the various national and International nutrition informatics projects, and highlight some of the major nutritional challenges that can potentially be solved through various nutrition informatics interventions using data, information, and knowledge frameworks. We also highlight some of the student successes in the field of nutrition informatics research and practice. In addition, we bring together stories of the student's learning experience with the real nutrition informatics projects addressing real public health challenges. I encourage you to make a meaningful contribution to this newsletter by sharing data-driven, evidence-based ideas, innovations, and interventions that aim to address nutritional challenges impacting health among individuals, families, and communities across diverse Indian settings.



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ROLE OF NUTRITION INFORMATICS IN ENHANCING THE EFFICIENCY AND EFFECTIVENESS OF THE NUTRITION WORKFORCE

Nutrition Informatics

Nutrition and Informatics – are two primarily important terms that have started to come into use together for quite a long time since their integration is yielding great results. Nutrition Informatics is the effective retrieval, organization, storage, and optimum use of information, data and knowledge for food-and-nutrition-related problem-solving and decision-making. The incorporation of technology-driven behaviour changes in the field of nutrition is growing a lot more now. The fusion of nutrition, information and technology has made it very easy for the nutrition workforce, public health workers and professionals to collect and analyze data. It allows workers to efficiently execute and use their skills and knowledge on the field for better results.

Various Nutrition Workforces

Worldwide there are numerous people in the public health domain who are dedicated and engaged to work in the nutrition sector. This nutrition workforce is responsible for promoting the holistic and optimal health of people through the implementation of various programs, policies and plans. The knowledge and experience that the nutrition workforce uses, help to form interpersonal and individual interventions. They aim to get behaviour changes to improve health outcomes in society.

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**NUTRITION
RESEARCH IN
GLOBAL SETTINGS**



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SUSTAINING PROTEIN NUTRITION THROUGH PLANT-BASED FOODS

Proteins are crucial for human nutrition and can be obtained from animals or plants. However, animal protein, despite being in high demand, is generally considered environmentally unsustainable. To address this, a gradual shift towards plant-based protein is recommended to maintain environmental stability, uphold ethical standards, ensure affordable and safe food, meet consumer demand, and combat protein-energy malnutrition. Plant-based proteins are gaining popularity and are expected to continue growing in popularity for the next few decades. They offer essential amino acids, important macronutrients, and can provide complete protein nutrition.

This review aims to provide an overview of plant-based proteins and their impact on human well-being. It explores their nutritional quality, cost-effective extraction and processing methods, effects on nutrition, utilization of food waste as a plant protein source, and environmental implications. Additionally, the review focuses on emerging technologies that improve the bioavailability, digestibility, and sensory properties of plant proteins, while also highlighting the technological challenges for future research.

Source : <https://www.frontiersin.org>

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APPLICATIONS OF METABOLOMICS TO PRECISION NUTRITION

Precision nutrition is an emerging field that utilizes advanced omics technologies (genomics, proteomics, and metabolomics) to assess an individual's response to specific foods and determine the most effective dietary interventions for preventing or treating specific diseases. Metabolomics plays a crucial role in precision nutrition by characterizing the chemicals in foods, identifying food byproducts in the body, assessing nutrient deficiencies or excesses, monitoring biochemical responses to diets, tracking dietary habits, and guiding the development of nutritional therapies. This review discusses the contributions of metabolomics to precision nutrition, including its role in diagnosing and treating individuals with metabolic disorders, comprehensively characterizing food chemistry, identifying biomarkers of food consumption, and combining omics technologies to develop personalized diets and lifestyle interventions with positive health outcomes.

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Source : <https://karger.com/>



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**EXAMINING GUIDELINES AND NEW EVIDENCE IN ONCOLOGY
NUTRITION: A POSITION PAPER ON GAPS AND OPPORTUNITIES IN
MULTIMODAL APPROACHES TO IMPROVE PATIENT CARE**

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Source : <https://link.springer.com/>

Malnutrition, muscle loss, and cachexia are significant challenges in cancer care, often overlooked and undertreated, with severe consequences for patients. Early nutrition screening and intervention have been shown to improve patient outcomes. Cancer is a complex disease requiring a multimodal approach that integrates nutrition and exercise interventions to enhance nutrient intake, muscle mass, physical function, quality of life, and treatment results.

A collaborative healthcare team following society's recommendations can achieve optimal outcomes. A panel of experts in oncology, nutrition, exercise, and medicine convened to discuss the gaps and opportunities in oncology nutrition and exercise. They recommended five principles to optimize clinical practice: prioritize oncology nutrition in multidisciplinary care, integrate nutrition into cancer care protocols, screen all patients for malnutrition risk, combine exercise and nutrition interventions throughout treatment, and adopt a patient-centered approach in multidisciplinary care.



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