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Dietary nicotinamide supplementation enhances adipose energy metabolism and favorably influences inflammation in mice

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Vitamin B3 is commonly found in living beings as different molecular forms. In the last decade, different experimental studies have suggested that the treatment with some forms of vitamin B3, including nicotinamide (NAM), nicotinamide riboside and nicotinamide mononucleotide confers protection against body weight gain and adiposity by directly boosting energy metabolism in treated mice. Interestingly, compeling evidence also supports the concept that these vitamin B3 also NAM also confer protection against oxidation and inflammation in different experimental settings. In this seminar, experimental evidence on the favorable effect of nutritional intervention of NAM on adiposity and its relationship with global dysinflammation will be shown. Our data will show the mechanisms underlying NAM-mediated prevention of body weight gain in diet-induced obese (DIO) mice. Dietary supplementation of NAM reduced adiposity in treated mice. The latter was mainly due to enhanced adipose tissue energy metabolism and beiging. Because adipose tissue and inflammation are also closely related in obesity, we also assessed the favorable influence of dietary NAM in protecting against one of the main adverse outcomes of obesity, i.e., atherosclerosis, in treated mice. Particularly, development of aortic atherosclerotic plaque in NAM-treated mice was decreased up to 50% compared with untreated mice and related to lower oxidability of ApoB-containing lipoproteins and dysinflammed aortas. These data may suggest that dietary supplementation with NAM would confer protection against obesity and development of atherosclerosis, thereby opening new therapeutic venues to combat atherosclerotic cardiovascular diseases in cardiometabolic conditions, such as obesity.

Biography

Josep Julve got his PhD degree in Biology (2000) at the University of Barcelona. He is currently employed as a researcher at the Research Institute of the Hospital de la Santa Creu i Sant Pau His research focus is on the evaluation of different interventions (nutritional, pharmacological, surgical) on energy and lipid metabolism and their relationship with the progress of obesity and diabetes mellitus and their main complications (non-alcoholic fatty liver, cardiomyopathy, among many others) in patients and appropriate experimental models (http://orcid.org/0000-0002-6531-2246).

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Ensuring Food and Nutrition Security by 2050: Challenges and Options

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Ending hunger, achieving food and nutrition security and promoting sustainable agriculture are the priority goals of United Nation's Sustainable Development Goals (SDGs) by 2030. The advent of the novel corona virus has worsened the problem of malnutrition. Before the pandemic, more than 820 million people were suffering from hunger. Currently world is not on track in terms of ensuring food and nutrition security. Economic downturns due to COVID 19 pandemic have been major factor for increasing world hunger. This cannot be ruled out that catastrophic events like COVID 19 pandemic will not take place in next three decades. Food systems can experience vulnerabilities due to conflict, climate variability and extremes and economic slowdowns etc. In context of current scenario world is likely to experience many changes in future. It is projected that by 2050, the global population will increase from 7.1 to 9.1 billion. The 70 percent of the world population will be urban (compared to 49 percent at present). Due to increased global population the demand of water will increased by 20-30 percent in coming three decades. In order to meet SDGs commitments certain transformative pathways have been identified to boost production of food systems. However, beyond 2030 adversities of agriculture land, soil nutrition and availability of enough water will increase several folds. Increased population, accelerated urbanization, industrial growth, network of transport and communication will likely to shrink agriculture land by 2050.

Conventional methods of agriculture and even exhaustive farming will not be able to ensure food and nutrition security. To meet food and nutrition security the alternative sources (viz, functional food, sea food, protein extracts, Nutraceuticals etc.) have to be brought in food baskets. Besides this paradigm shift, due emphasis should be given for up scaling health system and safe environment. Universal access to nutrition security implies absence of geographical, financial, organizational, socio cultural and gender based barriers for provision of nutrition security. At micro level distribution issues need to be addressed for optimal dividends in terms of ensuring food and nutrition security. These call for coherence in sectorial policies and actions. Transforming food system is the need of the hour; its importance will further increase over the years due to increasing impending forces. There should be interface between food industry and policies and programs. Food and Nutrition Organization (FAO) and other lead international organizations have rightly called for integrated food system solutions, investments and targeted interventions to transform food systems for food and nutrition security and affordable healthy diets for all. Interfacing industry with all stake holders involved in ensuring food and nutrition security, agricultural reforms, inclusive growth and sustainable development are critical and relevant not only in the present context but they will likely to be major driver in coming decades.

Biography

Priya Keshari has done her graduation and post-graduation with specialization in food and nutrition from Banaras Hindu University (BHU), India. She has been awarded PhD from BHU in the year 2017. She completed post graduate diploma in public health nutrition from Indian institute of public health, Delhi, India. Since July 2018 she is working as a assistant professor in the department of family and community sciences, faculty of science, university of Allahabad, prayagraj, India, she is teaching food and nutrition to undergraduate and postgraduate students and guiding scholars for their PhD degree. Her major research interest areas are socioeconomic deprivation, food insecurity, nutritional status, self-reported morbidities and physical dependence as well as psychosocial status in geriatric subjects. Non communicable diseases and nutrition, growing menace of fast food consumption in India. Evaluation of national health and nutrition programs, metabolic syndrome and non-pharmacological intervention for nutritional wellbeing and quality of Life.

She has several publications in national international journals and contributed several modules as a co-author for e-PG pathshala (an initiative of UGC, India) for the subject social medicine and community health. She has presented many significant research papers at the international and national forums and also delivered talk as invited guest lecture. She is recipient of 2 national and 2 international awards for outstanding work in different facets of geriatric health. She is life member of several academic bodies (viz., nutrition society of India, home science association of India, Indian public health association and Indian journal of preventive and social medicine) and served as invited reviewer for reputed national and international journals. Her expertise in the field of public health nutrition provided her an opportunity to serve as a session chair of the third international conference on public health 2020 "moving public health research to policy and practice: lessons learned".

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Immunity and nutrition – prevention and management of COVID-19

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Coronavirus disease (COVID-19) is an infectious disease caused by a novel corona virus called SARS-CoV-2. The symptoms of COVID-19 are respiratory problems and breathing difficulty. The patient experiences flu like symptoms. Immunity is basically acquired by the body in two ways; one is the innate immunity while the other one is adaptive immunity. Innate immunity or the native immunity has its existence from the genes and is not induced artificially through drugs or other external stimulation. It is of two types as: Non-Specific innate immunity, which provides resistance to all general infections. Specific innate immunity is the inborn resistance to a particular kind of microorganism. Adaptive immunity is what is acquired through time and contact with a disease-causing agent, by introduction to deliberate actions such as vaccination.

The aim of this review paper is to find out the efficacy of Nutritional Interventions against the infections caused in the body due to pathogens. Further the recommendations can be made for further researches based on the evidence collected. To collect the data electronic databases such as Scopus, Pub Med, NCBI and web of science have been used. All the studies supported the role of Nutrients in preventing and curing the infection caused by the pathogens such as bacteria's and Viruses. The Dietary Interventions in any form were proven to have a positive effect on strengthening the Immune system and also the curing the disease.

The results are supporting that the Adaptive immunity can help a person to fight with COVID-19. Mostly the adaptive immunity is built by vaccinations or certain medications. But many researches showed that a diet filled with nutrients and right choices of food can help to build adaptive immunity. This kind of immunity is also built up by taking certain vitamins and minerals. Many hospitals treated or managed COVID-19 through nutritional supplements and diet modifications.

Biography

Luxita Sharma is presently working as associate professor and head of department of dietetics and applied nutrition, Amity University, Haryana, India; she has 15 plus experience as researcher and as an academician. She is UGC-NET & Ph.D. in food and nutrition.

She has received International award in the category of contribution to education community & outstanding accomplishments by Asian education awards and IAPEN-Indian Association of Enteral and Parenteral Nutrition. She is also conferred upon national nutrition health education award and society development award by NNHSA. She has filed nine patents, three patents are published. She has published seventy five research papers in national and international journals. She has published ten books and several book chapters with national and international Publishers. She has been speaker at many national and international conferences and seminars.

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Food properties of sarda and bobby muskmelon and effect of processing on the nutritional properties, polyphenols and antioxidant activity of muskmelon (Cucumis melo.)

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Cucumis melo L. is underutilized fruit of the Reticulates type, usually called muskmelon belongs to the family Cucurbitaceous. In this study two selected varieties of Muskmelon i.e., Sarda and Bobby Muskmelons were taken as sample. All the edible parts as well as the wastage parts from muskmelon are studied. In this study, the wastage as well as nutrition loss through the waste part is observed and different processes are used to preserve the parts of muskmelon and their effect on the parts were studied. Various food properties were determined such as Engineering, Organoleptic, Physico-chemical, Nutritional and Functional Properties. Engineering properties such as Physical (geometric and gravimetric), Frictional, Optical, Textural properties were evaluated of whole fruit and seed. Sarda has shown higher results than Bobby. In case of Organoleptic properties overall rating was 7 for Bobby and 2 for Sarda was given on the basis of appearance, shape, color, aroma, taste, texture and juiciness.

Physicochemical properties of Muskmelon juice of both varieties such were also analyzed. Both the varieties have shown almost similar results. Further effect of processing on Nutritional and Functional properties was studied which includes pigments, proximate composition, Total phenolic content, Total Flavonoid content, Total Antioxidant capacity, Ferric Reducing Power, Tannin content which shows that lyophilization preserve more nutritional and bioactive components than oven dried. Both the varieties have shown significant results. Lastly, wine is developed from muskmelon and a Physico-chemical and Functional property of wine was determined.

Biography

Manpreet Kaur is a post graduate student at I. K. Gujral Punjab Technical University, Punjab, India, pursuing masters of technology in food technology. She has done bachelors (B.Tech) in biotechnology. She has worked on many different academic projects in my bachelors such as algal biodiesel production; food technology and probiotics development; detection and enumeration of various pathogens from various raw materials, finished products, raw materials and environmental samples; verification of qualitative methods; 5-S – sort, straighten, shine, standardize and sustain. In M.Tech she has worked on in silico drug designing and drug development; and engineering properties of legumes. Her recent project for M.Tech dissertation is to study food properties of sarda and bobby muskmelon and effect of processing on the nutritional properties & polyphenols and antioxidant activity of muskmelon (Cucumis melo).

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Towards a Vegan diet: Nutrition and Food Science perspective

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Food systems have the potential to promote human health and environmental sustainability; however, the current food systems are jeopardizing both. To achieve the United Nations' sustainable development goals (SDGs) of eradicating global hunger (SDG #2) and ensuring sustainable consumption and production (SDG #12), a worldwide transformation of the food system is urgently needed. In recent years, vegan or plant-based diets have gained popularity among consumers, which can help reduce environmental impact while enforcing healthy eating habits. People are increasingly seeking greater varieties of plant-based foods and this trend has prompted pioneering food manufacturers to develop innovative vegan food products for niche markets, thus accelerating the food sector's transition to sustainability. Hence, the present talk aims at exploring the health effects of a vegan diet from a nutritional standpoint. It also discusses the opportunities and challenges of research in food science while producing plant-based foods. Finally, the talk outlines the importance of an integrative framework combining nutrition with food science to provide essential support for a sustainable and healthy food transformation.

Biography

Towhid Hasan is serving as a Lecturer in Department of Food Technology and Nutrition Science, Noakhali Science and Technology University, Noakhali, Bangladesh. His research interests are varied, with focus on human nutrition as well as food science. He is involved in research on public health, nutrition and dietetics and clinical nutrition. His focus in food science includes thermal behavior of fats, food emulsions, food product development and waste conversion to value-added products.

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