Role of nanonutrients in well-being of elderly

Shraddha Rathi
Dr. Z A Dental College-Alligarh Muslim University, India

During the aging process, physical frailty may develop. A more sedentary lifestyle consequently results in lower energy expenditure and poor dietary intakes are important contributors to the development of a suboptimal nutritional state or multiple micronutrient deficiencies. Nutritional needs of the older individuals are determined by health status; caloric requirements; the ability to digest food and personal food preferences. Such condition can be improved by food fortification, nutritional snacks, nutritional supplements, flexible portion sizes, flexible timing of meals and snacks. The tantalizing potential of nanotechnology is to fabricate and combine nanoscale approaches and building blocks to make useful tools and, ultimately, interventions for medical science, including nutritional science, at the scale of ~1–100 nm. Specific applications of nanotechnology to date in food and nutrition include: Detection of food pathogens and spoilage microorganisms; enhancing nutrition quality of foods; and novel vehicles for nutrient delivery. By reducing the size of a particle at the nanoscale (10⁻⁹), the total surface area in a product is greatly increased. The greater the surface area, greater will be its biochemical reactivity. This results in much greater efficacy. This means that a nutrient in an aqueous formulation becomes readily available for utilization at the cellular and subcellular level with previously unobtainable levels of efficacy. Because of the increased bioavailability along with enhanced efficacy and reduced dosage, majority of essential nutrients and other beneficial chemicals can be combined and given as one or two dosages only. This will also improve the compliance by elderly individuals and thus in-turn improve their overall health & well-being.

Biography

Shraddha Rathi is currently working as Assistant Professor at Department of Prosthodontics, Aligarh Muslim University. Her thrust areas are Geriatric Dentistry and Nanotechnology. Her sole aim of presenting this paper is to relate nanotechnology with nutrition amongst compromised population. She wishes to spread this message that with the correction of micro deficiencies one can improve the health of elderly magnificently.

dshraddharathi@gmail.com

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