The Art and Science of Smart Eating - What, Why and How?

Biography

Dr. Chor San Khoo is currently Senior Science Fellow at the North America Branch of the International Life Sciences Institute (ILSI) in Washington DC, USA, where she serves as Science Advisor to the institute’s Executive Director and its scientific programs. She leads the institute’s program on Emerging Science, and authors its bi-yearly Emerging Science Trends and Signals Reports which provide implication insight for the food and nutrition communities. Dr. Khoo is a Co-Editor-in-Chief of the Frontiers in Nutrition and Food Science Technology Journal and has published articles on Food for An Urban Planet: Challenges and Research opportunities; Food Science without Borders; Goals in Nutrition Science 2015-2020; and Grand Challenges in Nutrition and Food Sciences. Prior to ILSI, she held the position of Vice President of Research and Development (Global Nutrition and Health) at The Campbell Soup Company. She has published and presented in many areas of nutrition including nutrition and teenage pregnancy; nutritional intakes of elite athletes; pre-prepared meal regimens and improved health outcomes and compliance to dietary guidelines. She holds six patents on food meal programs for management of at-risk populations. Dr. Khoo received a B.S. in Chemistry from the University of Oregon, USA, and a Ph.D. in Nutrition Science from Iowa State University, USA, with minors in Biochemistry and Physiology. She completed her post-doctoral research training at the University of California, USA.

Abstract

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National dietary guidelines for healthy eating to promote health and disease prevention are developed from scientific evidence and expert consensus. These guidelines provide the foundational principles, and rationales for recommended approaches for healthy or smart eating. Despite long-standing existence of these dietary guidelines, ability to achieve and adhere to smart /healthy eating goals have been challenging and low at individual and population levels. Some contributing reasons that have been reported involve difficulty and inaccuracy in food intake measures, lack of defined specific outcomes, food belief systems, social-cultural and economic factors, food palatability, food experience and behavior, food literacy, genetic variation, personalized benefit value for short- and long-term returns. Technologies now exit that can be applied to improve smart eating at the macro and micro level e.g. smart phones, wearables, geo-locator, cloud data storage, big data processing and artificial intelligence, and new sensory appeal technologies using sensory and visual cues.

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Traditionally smart eating has centered on the link between diet and health. Recently, interest has surfaced to include environmental outcome. In an increasingly VUCA environment, concerns about climate change, shrinking agricultural land mass, environmental pollution, global population growth, demographic shift, longer life span, more women working, double burden of malnutrition and diet-related chronic disease pandemics present new complexity and challenges to current smart eating. An interest to preserve and sustain the planet health has inextricably change our concept of smart eating to link diet and health and environmental sustainability,

This new normal suggests a need to rethink current smart eating practices and consider more pragmatic solutions aim at individual (micro level) retrievable-, memorable messages, measurable outcomes and approaches personalized to meet individual capability, needs and value benefit. To do this will need transformational thinking, applying convergence in science and art approaches for simpler and more resilient solutions for smart eating that benefits at individual and population incorporating nutrition, food appeal, economics, informatics, and achievable health outcomes.