

The Innovation Nutrition: An international journal of nutrition science

Editorial Team*

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The journey of nutrition begins in prehistoric times, when our ancestors first learned to distinguish edible from toxic plants, harness fire to cook food, and domesticate crops and animals. These early practices, rooted in survival, laid the groundwork for what would later evolve into nutritional science. Ancient civilizations, from China's "medicine and food homology" to Greece's humoral theory, recognized the profound link between diet and health, documenting empirical observations that remain relevant today. The early 20th century marked a golden age of nutritional discovery: the identification of vitamins, minerals, and essential amino acids transformed nutrition from a vague concept into a precise science, eliminating deficiency diseases like scurvy, and beriberi, and dramatically improving global health. At the heart of this scientific revolution lies the tricarboxylic acid (TCA) cycle, also known as the citric acid cycle or Krebs cycle, a discovery that stands as one of the most important milestones in the history of biochemistry and nutritional science. In 1953, Krebs was awarded the Nobel Prize in Physiology or Medicine for his discovery of the citric acid cycle. The TCA cycle provides the theoretical framework for understanding how nutrients are utilized, how metabolic dysregulation leads to disease, and how nutritional interventions can modulate cellular function.



Today, we stand at a pivotal moment in nutritional science when the global nutritional landscape has undergone a profound transformation and innovative technologies such as artificial intelligence (AI) and wearable devices are emerging as critical tools to address the new challenges we face. For most of the history, global nutritional challenges were dominated by widespread hunger and nutrient deficiencies. Now, we confront a dual burden of malnutrition in many low-income countries and overnutrition in high-income nations, fueling a global surge in obesity, type 2 diabetes, and other metabolic diseases. This paradox highlights a fundamental imbalance that our food systems are misaligned with both human health needs and planetary sustainability. It is in this context that the concept of the Planetary Health Diet has emerged, advocating for a dietary pattern that nourishes both humans and the planet by prioritizing plant-based foods, limiting animal-sourced products, and reducing food waste. Yet, these complex interconnected chal-

lenges demand innovative approaches that go beyond traditional nutritional research paradigms. Fortunately, AI and wearable devices have emerged as powerful tools, offering new ways to understand, monitor, and intervene in nutritional health.

AI algorithms have revolutionized nutritional research by enabling the integration and analysis of complex, heterogeneous big data. They can process vast amounts of information, including genetic data, metabolic profiles, gut microbiome sequences, dietary intake records, and wearable device data, to build personalized predictive models. For example, AI can analyze an individual's genome to identify genetic polymorphisms that influence nutrient metabolism. By integrating gut microbiome data, AI can recommend specific dietary interventions that modulate microbial composition, such as increasing fiber intake to promote beneficial bacteria like *Bifidobacteria* and *Lactobacilli*. Clinical studies have shown that AI-driven personalized nutrition interventions significantly improve outcomes in individuals with type 2 diabetes and cardiovascular disease.

The wearable devices, including smartwatches, continuous glucose monitors (CGMs), fitness trackers, and flexible biosensors, has transformed nutritional monitoring from a periodic, laboratory-based process to a real-time, continuous practice. These devices capture physiological data such as heart rate, energy expenditure, sleep quality, and postprandial glucose levels, providing a dynamic picture of an individual's metabolic response to diet and physical activity. CGMs, for instance, allow users to track glucose fluctuations in real time, identifying which foods cause rapid spikes or drops in blood sugar and enabling personalized dietary adjustments. Smartwatches can monitor energy expenditure, allowing individuals to balance caloric intake with output and maintain healthy weight. Wearable sensors that detect biomarkers in sweat or interstitial fluid are emerging as powerful tools for monitoring nutrient status and metabolic health. Together, these wearable devices create a closed-loop system for nutritional management, where data-driven insights guide actionable interventions.

In response to the paradigm shift from one-size-fits-all to precision nutrition and intelligent health, we introduce **The Innovation Nutrition**, a new peer-reviewed international journal dedicated to bridging the gap between nutritional basic research, clinical translation, population-based research, and engineering innovation. We particularly encourage submissions in key areas, including: clinical studies and trials focusing on nutritional interventions (such as those for cancer, cardiovascular diseases, maternal and infant nutrition, sports nutrition, and critical care nutrition); evidence-based clinical guidelines and expert consensus statements; large-scale population-based studies (encompassing obesity, metabolic diseases, aging, food policy, and social determinants of nutrition); and high-quality interdisciplinary work that bridges foundational science with clinical application.

Our journal covers a wide spectrum of topics, from clinical nutrition in specific disease settings to mechanistic studies on vitamins, minerals, energy metabolism, and gut microbiota; from public health nutrition and epidemiological research to innovative tools, AI applications, nutraceutical research, and nutritional assessment models. We welcome diverse publication types, including original research, clinical trials, systematic reviews and meta-analyses, guidelines, consensus statements, commentaries, letters, and translational patents. Through rigorous yet efficient peer review and immediate open-access dissemination, we aim to serve as the leading international platform for innovative research that shapes the future of nutrition practice and improves human health worldwide.

Our vision is to create a world where evidence-based, personalized nutrition is accessible to all, enabling individuals to optimize their health, prevent chronic diseases, and manage metabolic conditions through targeted dietary interventions.

Welcome to **The Innovation Nutrition**. Let us see the unseen and change the unchanged.