Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Foodomics and COVID-19

Dear Editor,

Our insight for human nutrition is turning from the consideration of foods as merely energy sources to identification of their role in maintaining well-being and in decreasing the risk of different diseases. Foodomics is a concept in which the food domain is considered as a whole and the nutrition domain for reaching the main goal which is the optimization of human well-being and health with the help of OMICs approach [1]. Micronutrient (minerals and vitamins) deficiency conditions are one of the major global public health problems. Mandatory fortification of basic foods by the governments based on epidemiological and geographical requirements and genetic factors, provides a basic necessary intake for the majority and needs to be supported by provision of essential vitamin and mineral supplements for people [2]. As the metabolic effect of micronutrients is modulated by the genotype and metabotype, many variables influence the possibility of reaching a healthy position. Currently, understanding the complex relationship linking nutrition and health in a foodomics vision will be possible only by considering a multidimensional space. Irrespective of dietary patterns, every human being has a core metabolic fingerprint which can be affected by many factors including body composition, host metabolism, physical activity, dietary habits, and the composition of gut microbiota, [3]. These findings underline the importance of considering foodomics in overcoming public health problems. By deciphering how food can interact with genes, and subsequently with proteins and metabolites, foodomics might help to design novel strategies to manipulate phenotypic changes through diet [4].

Future research should focus on deciphering the function and role of different nutrients and metabolites in the pathophysiology of the disease. Such information can be used to formulate an optimal diet to help for management of the disease. Multidisciplinary research teams with appropriate expertise are critical for using foodomics in public health and clinical research. Presently, this approach seems crucial for management of COVID-19 patients since the nutritional strategies to deal with this infection are still only supportive. In the complicated COVID-19 cases with organ dysfunction, a personalized nutritional support, alongside the pharmacotherapy, is the most essential part of any treatment plan, which should be carefully designed and calibrated according to the treatment goal in any situation. Nutritionists should consider comorbidities, nutrient depletions, drug–nutrient interactions, and contraindications for each individual patient because all of these can influence the patient's outcome. Personalized nutrition plays an essential role in the management of comorbidities of COVID-19 such as cardiovascular disease, hypertension, and diabetes [5]. These comorbidities predispose the patients to poor outcomes, increased symptom severity, and even mortality by aggregated inflammation and impaired immune function. By personalized nutritional support, we hope to promote the innate immune response, especially in high-risk patients and reduce the severity of symptom.

Declaration of Competing Interest

The authors declare that they have no competing interests.

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