

Hidden hunger- A few examples of contemporary challenges

Weiguo Zhang

Independent physician-scientist, USA

According to Sustainable Development Goals (SDGs) of the United Nations, zero hunger should be realized by 2030. While this promises the intake of macronutrients (carbohydrates, protein and fat), inadequate/insufficient intake or bioavailability of micronutrients (vitamins and minerals) which is called hidden hunger, may be improved or unnecessarily improved consequently. Hidden hunger is caused by established risk factors and can be worsened by emerging factors that are specifically highlighted in this presentation. First, air pollution has become as a public health threat globally, as inhalation of airborne pollutants provokes body's pathophysiology including oxidative stress and inflammatory response. Investigation showed that although the nutrition intake profiles were almost indistinguishable - so was presumably the vitamin E intake, those who exposed to air pollution was with reduced circulating level of vitamin E (alpha-tocopherol) than those without. The vitamin E depletion phenomenon was because more alpha-tocopherol was consumed to counteract reactive oxygen species and chronic inflammation and was corrected

after the subjects received vitamin E and C supplementation. Second, carbon dioxide (CO₂) represents the most significant long-lived greenhouse gas in Earth's atmosphere. Increased CO₂ emission was accompanied by decreased contents of micronutrients including Zn, Fe, and B vitamins in the crops, making the nutritional values of these crops compromised. Third, the world has been continuously facing the threat of reduced population of pollinators that are not only important for agriculture output, but for the contents of micronutrients in the crops. If animal pollinators were completely lost, there would be additional 71 million people at risk for vitamin A deficiency and addition 173 million for folate deficiency. These few examples reflect the contemporary challenges for the efforts in the fight against hidden hunger. Given the irreplaceable roles of micronutrients in health and well-being as well as in the pathogenesis of non-communicable diseases (NCDs), it is warranted to understand the landscape of hidden hunger, to analyze all potential causes, and to take preventive actions accordingly from public health perspective.

e: weiguoza@yahoo.com