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# WORLD ANTHROPOLOGY CONGRESS-2023

BHUBANESWAR, INDIA | 9-14 AUGUST 2023

**THEME: BIO-MEDICAL, EPIDEMIOLOGICAL, PUBLIC HEALTH AND NUTRITIONAL STUDIES  
SUB-DOMAIN: ANTHROPOLOGY OF FOOD AND NUTRITION**

## PANEL TITLE:

**" MICRONUTRIENT FORTIFICATION AND SUPPLEMENTATION: STRENGTHS AND CHALLENGES "**

**CONVENER: PROF M.P. SACHDEVA**

**CO- CONVENER: PROF K.N. SARASWATHY**

### ABSTRACT

Micronutrient deficiencies are a significant public health concern worldwide, affecting millions of individuals across their lifespans. Micronutrient deficiencies and one-carbon metabolism are complex phenomena that intersect with social, economic, and cultural factors. Anthropological insights can provide a valuable perspective on these issues, highlighting the role of cultural beliefs and practices, socioeconomic disparities, and structural inequalities in shaping health outcomes. The consequences of micronutrient deficiencies can lead to severe health problems, including birth defects, anaemia, cognitive impairment, and cancers. There have been findings that show an association of first and second trimesters hyperhomocysteinemia with adverse pregnancy outcomes and that vitamin B12 deficiency with low-birth-weight babies. In India, pregnant women routinely receive 5 mg of folic acid daily in the periconceptual period till the end of the first trimester, which is 12.5 times the WHO recommended dose (400 µg). It is a matter of concern as foetus is unnecessarily exposed to supraphysiological folate doses in the presence of vitamin B12 deficiency which can have adverse effects on pregnancy outcomes.

In this panel discussion, our expert panellists from anthropology, nutrition, biochemistry, and clinical fields will explore emerging strategies for targeting micronutrient deficiencies and one-carbon metabolism in human health and disease. They will also discuss the cultural and social factors that influence dietary practices and the uptake of micronutrient interventions. For example, in some cultures, certain foods are considered taboo or inappropriate for specific groups of people, such as pregnant women or menstruating women. This can limit the uptake of fortified foods or supplements that may be essential for the health of these populations. The key strategies which will be explored are personalized nutrition, gene editing, and food fortification. Advances in technology, such as genetic testing and metabolomics, have enabled researchers to identify individual differences in nutrient requirements, metabolism, and response to dietary interventions. Recent advances in gene editing technologies, such as CRISPR/Cas9, have opened new possibilities for correcting genetic mutations that underlie certain micronutrient deficiencies. Additionally, the potential of food fortification as a strategy for addressing micronutrient deficiencies will be discussed. It has been successful in improving micronutrient status and reducing the prevalence of deficiencies in populations worldwide. However, challenges remain, such as ensuring the sustainability and scalability of these interventions and addressing potential safety concerns. Socioeconomic disparities and structural inequalities are significant barriers to addressing micronutrient deficiencies and one-carbon metabolism.

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For example, food fortification programs may not be effective if people do not have access to fortified foods or if the cost of fortified foods is prohibitively expensive. The panellists will also discuss the challenges of integrating these strategies into existing healthcare systems and the potential for unintended consequences. They will explore the potential of community-based interventions and public-private partnerships to address these structural inequalities. Broad-based discussion will cover the latest advances in personalized nutrition, gene editing, and food fortification, and the challenges and opportunities associated with their implementation. By the end of the panel, participants will have a better understanding of the potential of these strategies to improve global health outcomes and the multidisciplinary approach needed to address micronutrient deficiencies.

**Keywords:** Micronutrient supplementation, Micronutrient fortification, Vitamin B12, Vitamin B9 (Folate), Homocysteine, one carbon metabolic pathway

## LIST OF PANELLISTS:

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