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School meal programmes the role of dairy: an essential contributor to nutrition security

Scientific excellence
Industry applicability
Strategic networking
Global influence

School meal programmes play an important role as a public health solution for nutritional adequacy, which supports children’s health and their ability to learn. As countries weigh including environmental considerations within school meal programmes to advance their efforts to become more climate resilient, a holistic approach of food systems taking into account all their dimensions should be considered with a specific focus on the health of kids.

School meals address hunger

According to World Food Programme (WFP), around 418 million children in the world benefit from school meals, 30 million more than in early 2020. However, there are many children that still do not receive any food or drinks at school, unfortunately many of these are the children that would need it the most. WFP estimates that 153 million children and young people in the world are “marching towards starvation” (World Food Programme, 2022).

School meals support health and nutrition – if composed of nutrient dense foods

Research suggests that consuming nutrient-dense foods that are readily available in school meal programmes — such as fruit, vegetables and dairy products — is associated with improved academic and health outcomes among children and adolescents (World Food Programme, 2022).

Dairy is an important component of nutritious school meals, as it provides an abundant supply of high-quality protein, calcium, phosphorus, potassium, iodine, and vitamins B2 and B12 (Food and Agriculture Organization of the United Nations, 2013) thereby providing key nutrients that contribute to nutrition security. Findings from systematic reviews on milk and dairy consumption show that milk and dairy intakes are associated with decreased risk of stunting, increased height, increased bone mineral content and density, and lower risks of overweight and obesity (Abrams, 2021; de Lamas et al., 2019; Dror, 2014; Lu et al., 2016).

The FAO recommends that milk should be promoted – as part of diverse, healthy diets – for young children, school age children and adolescents, with adaptations based on context, for example to account for cultural preferences, background, nutritional status, and dietary patterns (Food and Agriculture Organization of the United Nations, 2023). At the same time, the World Health Organisation (WHO) notes that by the age of 12 months, most children can eat the same types of foods as consumed by the rest of the family, while keeping in mind their need for nutrient-dense foods, including animal-sourced foods like dairy (World Health Organization, 2021).

Considering the environment while maintaining good nutrition

Factoring nutrient density and the nutritional and health benefits of dairy into the discussion of environmental sustainability, including the carbon footprint of various food products, is essential (Smedman et al., 2010).

In late 2021, the FAO published a report which is the outcome of a consensus building project aiming to agree on best practices for environmental and nutritional life cycle assessment (nLCA) methodology of food items, as well as identify future research needed (McLaren et al., 2021). The report made it clear that comparing LCA data of foods on a simple mass or volume-based (i.e., kg) functional unit will create an incomplete picture of a food's contribution to sustainable diets. Instead, the nutrition and health domain should be considered.

School meals can fill a nutrient gap

'Hidden hunger' is emerging worldwide because of widespread nutrient deficiencies of protein as well as micronutrients (five vitamins: vitamin C, vitamin A, vitamin B3, vitamin B6 and vitamin B12; four minerals: iron, zinc, calcium and magnesium) (Wang et al., 2023) which affects person's well-being and development. An elevated percentage of school children worldwide are not meeting country-specific recommended daily intakes of dairy products, especially among adolescents, which may lead to unfavorable long-term health implications (Tambalis et al., 2022). For many children in the world, the milk received in school plays a critical role in their daily nutrient intake. Milk is a good source of many of these nutrients of concerns, easy to consume, highly palatable, affordable, and often locally produced.

Concerns about nutrient gaps were raised for the proposed EAT–Lancet Commission Planetary Healthy Diet (Willett et al., 2019) with specific reference to vitamin B12, calcium, iron, and zinc. Deficiencies in these micronutrients would contribute to substantial public health burdens compared with what would be achievable for a fully nourished population (Beal et al., 2023). Acknowledgement should be given to the importance of the food matrix and how it can positively affect metabolism and health through nutrient absorption, satiety, and the immune system (Beal, Gardner, et al., 2023; Beal, Ortenzi, et al., 2023). Supplementation to close the significant dietary gaps in essential nutrients is not the solution.

Conclusions

Promoting sustainable or 'planet-friendly' meals at school requires a deep understanding of the complex factors and the potential tradeoffs involved. This includes the environmental impacts, but also the need to understand children's requirements and perceptions, as well as their self-efficacy, to encourage active participation in eating sustainably while factoring in the limited resources usually available for school meal programs.

Dairy products can be important in diversifying the diet as they are nutrient-dense and provide high quality protein and micronutrients in an easily absorbable form that can benefit both nutritionally vulnerable people and healthy people when consumed in appropriate amounts. An elevated percentage of schoolchildren worldwide are not meeting country-specific recommended daily intakes, especially among adolescents, which may lead to unfavorable long-term health implications (Tambalis et al., 2022).

Milk and dairy foods are an integral part of global food systems and part of the solution to sustainably nourishing a growing population (Beal et al., 2023). School milk programmes need to continue to be recognized for their contribution to children's health with support from governments, international governmental organizations, NGOs and the private sector.

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