Vitamins and minerals are essential for growth and metabolism. The World Health Organization (WHO) estimates that more than 2 billion people are deficient in key vitamins and minerals. Groups most vulnerable to these micronutrient deficiencies are pregnant and lactating women and young children, given their increased nutritional demands. Although direct causal information on the association of micronutrient deficiencies to maternal and fetal malnutrition and child growth are difficult to establish, indirect information related to risk factors and intervention studies does suggest a close relationship between key micronutrients in mothers and children with impaired growth. These include iron, zinc, and multiple micronutrients. Micronutrient deficiency is prevalent in both underweight and obese populations and is linked to pregnancy outcomes. Iron supplementation can protect against low birth weight (relative risk, RR, 0.83, 95% confidence interval, CI, 0.73–0.94 – malaria endemic areas); however, approximately 40% of women between 15 and 49 years of age still have anemia worldwide. Strategies, including iron fortification of food and coadministration of supplements with other interventions, such as intermittent deworming, can improve the iron status of women of child-bearing age but have not been consistently shown to reduce intrauterine growth restriction. In at-risk populations, recent evidence also suggests a possible benefit of replacing iron-folate supplementation with multiple micronutrient supplementation in pregnancy, further reducing the risk of small-for-gestational-age birth (RR 0.91, 95% CI 0.84–0.97). Calcium and zinc deficiencies have been linked to adverse birth outcomes and maternal complications, and supplementation during pregnancy has been found to improve maternal and newborn health outcomes. Similarly, while postnatal micronutrient supplementation and fortification studies in childhood have not shown consistent effects on growth (other than zinc on height [standardized mean difference 0.09, 95% CI 0.06–0.13] and zinc deficiency [RR 0.49, 95% CI 0.45–0.53]), recent data on multiple micronutrient supplementation via micronutrient powders (reduced risk
of iron deficiency anemia: RR 0.43, 95% CI 0.35–0.52) and small-quantity lipid-based nutrient supplements are promising, particularly for the prevention of stunting at 1 year of age in full-term low-birth-weight infants (odds ratio 0.35, 95% CI 0.15–0.84) in a study using micronutrient powder [1].

Several strategies are in use globally to address micronutrient deficiencies in children with focus on survival, but relatively few have addressed growth. These include supplementation as well as fortification of food. This presentation will also summarize the available global evidence of best practices and strategies and discuss next steps in relation to the Sustainable Development Goals.

Reference