

Vitamin B12 deficiency and folate deficiency.

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Commentary

Folate and vitamin B12 are essential micronutrients that are particularly important during infancy and early childhood, when growth, development, and demand are at their peak. Many children in low- and middle-income countries may be deficient in vitamin B12 and folate; however, data on these deficiencies is scarce. Deficiency in folate and vitamin B12 during childhood may trigger megaloblastic anemia, slow development, and increased infections; however, vitamin B12 deficiency may cause permanent neurologic harm to the developing brain. Vitamin B12 is only present in animal-derived foods like meat, eggs, fish, and milk, and deficiency is caused primarily by insufficient dietary consumption of these foods, unless fortified foods are eaten. Because of the increased demand during pregnancy and lactation, a mother's strict vegetarian diet could be related to vitamin B12 deficiency in both the mother and the new-born.

Vitamin B12 concentrations in breast milk indicate maternal vitamin B12 stores, which are often depleted among women in low-income countries, including up to one-third of women in rural areas. Vitamin B12 concentrations in plasma and serum are a strong predictor of body stores. Folate deficiency is caused by a lack of green leafy vegetables, legumes, and meat in the diet. Folate deficiency is thought to be less common among young children than vitamin B12 deficiency, due to the abundance of folic acid in breast milk, which is independent of maternal stores and consumption, and the widespread fortification of flour and grains with folic acid in many low-income countries.

Under nutrition remains a public health concern, according to the Health Report, as stunting, underweight, and wasting affect 49 percent, 39 percent, and 13 percent of children under the age of five, respectively. This indicates that micronutrient shortages are likely to be a concern, but there is a lack of population-based data on children's micronutrient status. In some subpopulations, different levels of deficiency have been identified. Lactating women have been shown to have poor micronutrient intake, including vitamin B12 and folate, which is partially due to a lack of dietary diversity and a low intake of micronutrient-rich foods. In addition, studies of pregnant women revealed that vitamin B12 deficiency is normal. Despite the urgency of combating child malnutrition, population-based biochemical evidence measuring children's micronutrient status is lacking.

Vitamin B12 deficiency is common in children aged six to 23 months, with deficiency being more common in children aged

six to 11 and 12 to 17 months. It's also possible that it's leading to the high prevalence of anemia among these kids. Since animal-derived foods are the primary source of vitamin B12, avoiding them has been linked to vitamin B12 deficiency. These results may be useful for populations with similar dietary habits, as few population-based studies have assessed vitamin B12 status among young children. Animal-source foods can be avoided for a variety of reasons, including cost, cultural, and religious beliefs. Vitamin B12 deficiency is likely to be a symptom of other underlying public health concerns that should be investigated. Data collected from young children and women of reproductive age at a national level will help to better understand the extent of deficiency in the country and to inform the design of programmes to promote proper infant and child feeding practices.

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