

A Micronutrient-Fortified Beverage Prevents Iron Deficiency, Reduces Anemia and Improves the Hemoglobin Concentration of Pregnant Tanzanian Women

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The Journal of Nutrition, Volume 133, Issue 5, May 2003, Pages 1339–1346,
<https://doi.org/10.1093/jn/133.5.1339>

Abstract

Maternal malnutrition continues to be a major contributor to adverse reproductive outcomes in developing countries, despite longstanding efforts to fortify foods or to distribute medicinal supplements to pregnant women. The objective of this study was to test the effect of a micronutrient-fortified beverage containing 11 micronutrients (iron, iodine, zinc, vitamin A, vitamin C, niacin, riboflavin, folate, vitamin B-12, vitamin B-6 and vitamin E) on the hemoglobin, iron and vitamin A status of pregnant women in Tanzania. A group of 259 pregnant women with gestational ages of 8 to 34 wk were enrolled in a randomized double-blind controlled trial in which study women received 8 wk of supplementation. Hemoglobin, ferritin and dried blood spot retinol were measured at baseline and at the end of the supplementation period. The supplement resulted in a 4.16 g/L increase in hemoglobin concentration and a 3 µg/L increase in ferritin and reduced the risk of anemia and iron deficiency anemia by 51 and 56%, respectively. The risk of iron deficiency was reduced by 70% among those who had iron deficiency at baseline and by 92% among those who had adequate stores. The micronutrient-fortified beverage may be a useful and convenient preventative measure, one that could help improve the nutritional status of women both before and during pregnancy and thereby help avoid some of the potential maternal and fetal consequences of micronutrient deficiencies.