

## **Efficacy trials of a micronutrient dietary supplement in schoolchildren and pregnant women in Tanzania**

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Traditionally, the main strategies used to control micronutrient deficiencies have been food diversification, consumption of medicinal supplements, and food fortification. In Tanzania, we conducted efficacy trials using a dietary supplement as a fourth approach. These were randomized, double-blind, placebo-controlled efficacy trials conducted separately first in children and later in pregnant women. The dietary supplement was a powder used to prepare an orange-flavored beverage. In the school trial, children consumed 25 g per school day attended. In the pregnancy trial, women consumed the contents of two 25-g sachets per day with meals. This dietary supplement, unlike most medicinal supplements, provided 11 micronutrients, including iron and vitamin A, in physiologic amounts. In both trials we compared changes in subjects consuming either the fortified or the nonfortified supplement. Measures of iron and vitamin A status were similar in the groups at the baseline examination, but significantly different at follow-up, always in favor of the fortified groups. Children receiving the fortified supplement had significantly improved anthropometric measures when compared with controls. At four weeks postpartum, the breast milk of a supplemented group of women had significantly higher mean retinol content than did the milk of mothers consuming the nonfortified supplement. The advantages of using a fortified dietary supplement, compared with other approaches, include its ability to control several micronutrient deficiencies simultaneously; the use of physiologic amounts of nutrients, rather than megadoses that require medical supervision; and the likelihood of better compliance than with the use of pills because subjects liked the beverage used in these trials.

**Key words:** Iron, micronutrients, powder beverage, pregnancy, supplement, Tanzania, vitamin A