

Effects of maternal vitamin supplements on malaria in children born to HIV-infected women

[Eduardo Villamor](#) [Gernard Msamanga](#) [Elmar Saathoff](#) [Maulidi Fataki](#) [Karim Manji](#) [Wafaie W Fawzi](#)

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Department of Nutrition, Harvard School of Public Health, Boston, Massachusetts 02115, USA.

Vitamin deficiencies are frequent in children suffering from malaria. The effects of maternal multivitamin supplementation on the risk of malaria in children are unknown. We examined the impact of providing multivitamins or vitamin A/beta-carotene supplements during pregnancy and lactation to HIV-infected women on their children's risk of malaria up to 2 years of age, in a randomized, placebo-controlled trial. Tanzanian women (N = 829) received one of four daily oral regimens during pregnancy and after delivery: 1) vitamins B, C, and E (multivitamins); 2) vitamin A and beta-carotene (VA/BC); 3) multivitamins including VA/BC; or 4) placebo. After 6 months of age, all children received 6-monthly oral vitamin A supplements irrespective of treatment arm. The incidence of childhood malaria was assessed through three-monthly blood smears and at monthly and interim clinic visits from birth to 24 months of age. Compared with placebo, multivitamins excluding VA/BC reduced the incidence of clinical malaria by 71% (95% CI = 11-91%; P = 0.02), whereas VA/BC alone resulted in a nonsignificant 63% reduction (95% CI = -4% to 87%; P = 0.06). Multivitamins including VA/BC significantly reduced the incidence of high parasitemia by 43% (95% CI = 2-67%; P = 0.04). The effects did not vary according to the children's HIV status. Supplementation of pregnant and lactating HIV-infected women with vitamins B, C, and E might be a useful, inexpensive intervention to decrease the burden of malaria in children born to HIV-infected women in sub-Saharan Africa.