

## Vitamin A supplements and diarrheal and respiratory tract infections among children in Dar es Salaam, Tanzania

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- [Wafaie W. Fawzi, MBBS, DrPH](#)
- [Roger Mbise, MD, MMeD](#)
- [Donna Spiegelman, ScD](#)
- [Maulidi Fataki, MD, MMeD](#)
- [Ellen Hertzmark, MA](#)
- [Godwin Ndossi, PhD](#)

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### Abstract

**Objective:** To determine the effect of vitamin A supplementation on the risk of diarrhea and of acute respiratory infection. **Design:** Double-blind, randomized, placebo-controlled trial. **Setting:** Dar-es-Salaam, Tanzania. **Subjects:** Six hundred eighty-seven children, 6 to 60 months old, hospitalized with pneumonia, who received vitamin A or placebo at baseline and at 4 and 8 months after discharge from hospital. **Main outcome variables:** Incidence and duration of episodes of diarrhea and respiratory tract infections during the year after discharge from the hospital. **Results:** Relative to those receiving placebo, children receiving vitamin A had a significantly smaller risk of severe watery diarrhea (multivariate odds ratio = 0.56, 95% CI = 0.32-0.99,  $P = .04$ ) but a higher risk of cough and rapid respiratory rate (multivariate odds ratio = 1.67, 95% CI = 1.17-2.36,  $P = .004$ ). Vitamin A supplementation was also associated with increased risk of acute diarrhea among normally nourished children or children with stunted growth but was relatively protective among children with wasting disease (  $P$  value for interaction = .01). The apparently increased risk of respiratory tract infection was limited to children who were seronegative for human immunodeficiency virus (HIV) (  $P$  value for interaction = .07). **Conclusions:** Vitamin A supplements provide a low-cost intervention against morbidity in HIV-infected and undernourished children. Supplements may also have serious non-lethal adverse outcomes in well-nourished individuals. Whether these apparent detrimental effects of vitamin A are transient or long-term needs to be examined. (J Pediatr 2000;137:660-7)