

# Role of Zinc Administration in Prevention of Childhood Diarrhea and Respiratory Illnesses: A Meta-analysis

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## Abstract

**BACKGROUND.** The quantified effect of zinc supplementation to prevent childhood diarrhea and respiratory illnesses is unclear. We conducted a meta-analysis of randomized, controlled trials on the subject.

**METHODS.** We searched PubMed, Science Citation Index, and the Cochrane Database of Controlled Trials and hand-searched the reference lists of identified articles. All randomized, controlled trials of zinc supplementation for  $\geq 3$  months for children  $< 5$  years of age, using blinded assessment, were eligible. The outcome measures studied were number of episodes of illness, number of days with illness, and number of episodes of severe illness. Data from 17 studies were pooled by using random-effects and fixed-effects models for data with and without significant heterogeneity, respectively.

**RESULTS.** Children who received a zinc supplement had fewer episodes of diarrhea (rate ratio: 0.86) and respiratory tract infections (rate ratio: 0.92) and significantly fewer attacks of severe diarrhea or dysentery (rate ratio: 0.85), persistent diarrhea (rate ratio: 0.75), and lower respiratory tract infection or pneumonia (rate ratio: 0.80) than did those who received placebo. They also had significantly fewer total days with diarrhea (rate ratio: 0.86) but not days with respiratory illness (rate ratio: 0.95). Published studies showed a publication bias and significant heterogeneity; however, no cause for the latter could be identified.

**CONCLUSIONS.** Zinc supplementation reduced significantly the frequency and severity of diarrhea and respiratory illnesses and the duration of diarrheal morbidity. The relatively limited reduction in morbidity and the presence of significant heterogeneity and of publication bias indicate the need for larger, high-quality studies to identify subpopulations most likely to benefit.

Key Words:

- [diarrhea](#)
- [respiratory illness](#)
- [meta-analysis](#)
- [nutrition](#)
- [supplementation](#)
- [zinc](#)
  
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