

ZINC STUDY 1

ZINC/VITAMIN A...DARK ADAPTATION



Zinc deficiency may result in abnormal dark adaptation or night blindness, a symptom primarily of vitamin A deficiency. During a placebo-controlled trial in Nepal, weekly vitamin A supplementation of women reduced but failed to eliminate the incidence of night blindness during pregnancy, suggesting a role for zinc. The current study⁴ examined the efficacy of daily zinc supplementation in restoring night vision of pregnant women who developed night blindness while routinely receiving either vitamin A, beta-carotene, or placebo in a field trial. Women (n = 202) who reported to be night blind during pregnancy were randomly assigned in a double-blind manner, stratified on vitamin A, beta-carotene, or placebo receipt, to receive 25 mg Zn or placebo daily for 3 wk. Thus, the 6 groups studied were as follows: beta-carotene + zinc, beta-carotene alone, vitamin A + zinc, vitamin A alone (vitamin A + placebo), zinc alone (zinc + placebo), and placebo (2 placebos: one for the vitamin A or beta-carotene study and one for the zinc study). Women underwent a clinic-based assessment that included pupillary threshold testing and phlebotomy before and after supplementation. Supplement use and daily history of night blindness were obtained at home twice every week. Results were that zinc treatment increased serum zinc concentrations, but alone (zinc alone group), failed to restore night vision or to improve dark adaptation. However, women in the vitamin A + zinc group who had baseline serum zinc concentrations <9.9 micromol/L were 4 times more likely to have their night vision restored (95% CI: 1.1, 17.3) than were women in the placebo group and tended to have a small improvement in pupillary threshold scores (by 0.21 log candela/m²; P = 0.09). In conclusion, these data suggest that zinc potentiated the effect of vitamin A in restoring night vision among night-blind pregnant women with low initial serum zinc concentrations

⁴ Christian P, Khattry SK, Yamini S, Stallings R, LeClerq SC, Shrestha SR, Pradhan EK, West KP Jr. Zinc supplementation might potentiate the effect of vitamin A in restoring night vision in pregnant Nepalese women. *Am J Clin Nutr.* 2001 Jun;73(6):1045-51.