

Vitamin E and Respiratory Tract Infections in Elderly Persons

To the Editor: Dr Meydani and colleagues¹ reported the results of a vitamin E trial involving residents in long-term care facilities. In a post hoc analysis, they observed a slightly lower common cold incidence in the group that was administered 200 IU/d of vitamin E (relative risk [RR], 0.83; 95% confidence interval [CI], 0.68-1.01).

We examined the effect of vitamin E (50 mg/d) on common cold incidence in the Alpha-Tocopherol Beta-Carotene Cancer Prevention Study cohort involving 21 796 male smokers aged 50 to 69 years at baseline.² We found no overall effect of vitamin E on common cold incidence (RR, 0.99; 95% CI, 0.98-1.01). However, in an exploratory subgroup analysis, we found a statistically significant but clinically modest reduction of common cold incidence in city-dwelling participants aged 65 years or older who smoked less than 15 cigarettes/d (RR, 0.72; 95% CI, 0.62-0.83), with no effect among elderly participants living outside cities or smoking more than 15 cigarettes/d (RR, 0.99; 95% CI, 0.94-1.05).

Although these 2 studies suggest that vitamin E might reduce the risk of the common cold by 20% in some subgroups of the elderly population, we consider this a small effect. Given an annual incidence of 1 cold per person, 5 persons would need to take up to 200 IU/d of vitamin E for 1 year to prevent 1 episode of the common cold, which is usually a short and self-limiting nuisance.

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In Reply: There are several major differences in study design as well as reported results between our study and that of Hemilä et al.¹ Their study was designed to determine the effect of vitamin E and beta-carotene on lung cancer in middle-aged and elderly (50-69 years) male smokers; our study was limited to the elderly population (≥ 65 years), included both smokers and nonsmokers as well as both men and women, and had incidence of respiratory tract infection as the primary outcome. Our study used a higher daily dose of vitamin E than their study (200 IU/d of DL- α -tocopherol vs 50 mg/d of α -tocopherol). We used 200 IU/d because this dose had been demonstrated in an earlier study to induce the most robust improvement in immune function in the elderly population.² In their study, the common cold incidence data were based on recall by the partici-

pants during thrice-annual visits; in contrast, we prospectively collected data once a week by means of an interview, focused physical examination, and chart review. Additionally, we assessed compliance with vitamin E supplementation by 3 different methods. Finally, while their study reported a reduction in the incidence of common colds only in elderly male smokers who resided in cities, we found a reduction in risk of acquiring common colds in the elderly regardless of sex or smoking status.

We agree with Drs Hemilä and Kaprio that the reduction in the incidence of the common cold by vitamin E was moderate. However, in addition to decreasing the incidence per participant of common cold, vitamin E supplementation reduced the number of participants acquiring upper respiratory tract infection by 16% among all randomized participants. Given that 34 million elderly people live in nursing homes,³ this would translate into more than 5 million fewer elderly nursing home residents contracting upper respiratory tract infections in a year.

In addition, we disagree that the common cold is a short and self-limiting nuisance in the elderly population. Falsey et al⁴ reported an average of 14 days for rhinovirus/coronavirus infection in frail elderly individuals. Because of the high attack rate, non-influenza-related viral upper respiratory tract infections are responsible for a substantial economic burden in the elderly population.⁵ In addition, there is growing evidence that colds in elderly individuals are often complicated by lower respiratory tract illness,⁶ which may be severe in those with underlying lung disease⁷ and lead to hospitalization.⁸

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