# Vitamin $B_6$ Intake, Alcohol Consumption, and Colorectal Cancer: A Longitudinal Population-Based Cohort of Women

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Received 6 December 2004; accepted 23 February 2005

*Background & Aims:* Vitamin $B_6$ has a crucial role in 1-carbon metabolism, which involves DNA synthesis and DNA methylation. Aberrations in these processes have been implicated in colorectal carcinogenesis. We examined the association between long-term dietary vitamin $B_6$ intake and risk of colorectal cancer and whether this association is modified by consumption of alcohol, which may disrupt 1-carbon metabolism. *Methods:* Our study population comprised 61,433 women in the population-based Swedish Mammography Cohort. The women were aged 40 to 76 years, had no history of cancer, and completed a food-frequency questionnaire at baseline in 1987–1990. Dietary information was updated in 1997. During a mean follow-up of 14.8 years, 805 incident colorectal cancer cases were diagnosed. *Results:* After controlling for age and other potential confounders, long-term intake of dietary vitamin $B_6$ was significantly inversely associated with risk of colorectal cancer (*P* value for trend = .002). Compared with women in the lowest quintile of vitamin $B_6$ intake, those in the highest quintile had a 34% lower risk (multivariate rate ratio, 0.66; 95% confidence interval, 0.50–0.86). The association was most pronounced among women with moderate to high alcohol consumption. The multivariate rate ratio of colorectal cancer comparing extreme quintiles of vitamin $B_6$ intake was 0.28 (95% confidence interval, 0.13–0.59) among women who consumed ≥30 g/wk of alcohol (approximately equivalent to 2 drinks per week). *Conclusions:* Findings of this study suggest that vitamin $B_6$ may play a role in the prevention of colorectal cancer, particularly among women who drink alcohol.

**Abbreviations used in this paper**: CI, confidence interval, MS, methionine synthase, RR, rate ratio