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Vitamin D and Reduced Risk of Breast Cancer: A Population-Based Case-Control Study

Julia A. Knight¹, Maia Lesosky¹, Heidi Barnett¹,
 Janet M. Raboud¹ and Reinhold Vieth²

¹ Prosserman Centre for Health Research, Samuel Lunenfeld Research Institute and ² Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, Canada

Requests for reprints: Julia A. Knight, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, 60 Murray Street, Box 18, Toronto, Ontario, Canada M5T 3L9. Phone: 416-586-8701; Fax: 416-586-8404. E-mail: knight@mshri.on.ca

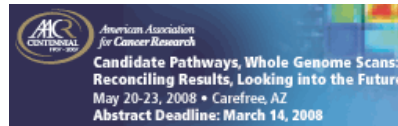
Background: Vitamin D, antiproliferative and proapoptotic in breast cancer cell lines, can reduce the development of mammary tumors in carcinogen-exposed rats. Current evidence in humans is limited with some suggestion that vitamin D-related factors may reduce the risk of breast cancer. We conducted a population-based case-control study to assess the evidence for a relationship between sources of vitamin D and breast cancer risk.

Methods: Women with newly diagnosed invasive breast cancer were identified from the Ontario Cancer Registry. Women without breast cancer were identified through randomly selected residential telephone numbers. Telephone interviews were completed for 972 cases and 1,135 controls. Odds ratios (OR) and 95% confidence intervals (CI) for vitamin D-related variables were estimated using unconditional logistic regression with adjustment for potential confounders.

Results: Reduced breast cancer risks were associated with increasing sun exposure from ages 10 to 19 (e.g., OR, 0.65; 95% CI, 0.50-0.85 for the highest quartile of outdoor activities versus the lowest; *P* for trend = 0.0006). Reduced risk was also associated with cod liver oil use (OR, 0.76; 95% CI, 0.62-0.92) and increasing milk consumption (OR, 0.62 95% CI 0.45-0.86 for ≥ 10 glasses per week versus none; *P* for trend = 0.0004). There was weaker evidence for associations from ages 20 to 29 and no evidence for ages 45 to 54.

Conclusion: We found strong evidence to support the hypothesis that vitamin D could help prevent breast cancer. However, our results suggest that exposure earlier in life, particularly during breast development, maybe most relevant. These results should be confirmed. (*Cancer Epidemiol Biomarkers Prev* 2007;16(3):422-9)

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Cancer Epidemiol. Biomarkers Prev., January 1, 2008; 17(1): 232 - 238.

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