

Abstract

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Vitamin D from dietary intake and sunlight exposure and the risk of hormone-receptor-defined breast cancer.

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BACKGROUND: Evidence has emerged for a role of vitamin D in the development of breast cancer, and there is some suggestion that its antiproliferative effect is greater in hormone-receptor-positive cells.

OBJECTIVE: Few epidemiologic studies have considered the association between vitamin D and hormone-receptor-defined breast cancer, and the results are conflicting.

METHODS: Considering 759 cases and 1,135 controls from a case-control study (Ontario, Canada, 2003-2005), the authors examined the association between vitamin D intake at specific ages and combined estrogen-receptor- (ER) and progesterone-receptor- (PR) defined breast cancer.

RESULTS: While increased intake of vitamin D (from the sun and diet) was most consistently associated with a significantly reduced risk of ER+/PR+ tumors (e.g., odds ratio = 0.76, 95% confidence interval: 0.59, 0.97 for use of cod liver oil during adolescence), comparable nonsignificant associations were found for receptor-negative (ER-/PR-) (odds ratio = 0.74, 95% confidence interval: 0.53, 1.04) and mixed (ER+/PR-) (odds ratio = 0.79, 95% confidence interval: 0.51, 1.22) tumors.

CONCLUSION: This study suggests that vitamin D is associated with a reduced risk of breast cancer regardless of ER/PR status of the tumor. Future studies with a larger number of receptor-negative and mixed tumors are required.

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