

Meta-analysis of Vitamin D, Calcium and the Prevention of Breast Cancer

The journal Breast Cancer Research and Treatment, published online on October 23, 2009, reported a recent finding that vitamin D and calcium intake can prevent breast cancer. By a meta-analysis, PhD candidate Peizhan Chen and his supervising professor, Hui Wang, from the INS found that high intake of vitamin D and calcium could lead to significant decrease in breast cancer risk.

The investigators found that women with the highest quantile of vitamin D intake from diet and supplements had a 9% (RR=0.91, 95% CI=0.85—0.97) decrease in breast cancer risk compared to women with lowest quantile of vitamin D intake. The highest quantile of circulating 25(OH)D, the form of vitamin D stored in the body, was found to be associated with a 45% (OR=0.55, 95% CI=0.38—0.90) decrease in breast cancer when compared to the lowest quantile. No significant association for the circulating $1\alpha,25(\text{OH})_2\text{D}$ level, which is the active form of vitamin D in the body, and breast cancer risk was found. For calcium, a 19% (RR=0.81, 95% CI=0.72—0.90) reduction in breast cancer was found for women with the highest quantile of calcium intake compared to those with the lowest quantile of intake. These findings indicate that vitamin D and calcium have chemo-preventive effects against breast cancer. Women can reduce their risk of developing breast cancer by increasing their dietary and/or supplemental intake of vitamin D and calcium. Modestly increasing exposure to sunlight, which will increase the vitamin D level in the body, may also be helpful.

This study was supported by research grants from the One Hundred Talents Program of the Chinese Academy of Sciences, the Knowledge Innovation Program Pilot Project of the INS, and the National Natural Science Foundation of China.