

**PREVALENCE OF VITAMIN D DEFICIENCY IN PATIENTS ATTENDING AN
OUTPATIENT CANCER CARE CLINIC IN BOSTON**

TANGPRICHA V. COLON N. KAUL H. WANG S. BLANCHARD R.
CHEN TC. HOLICK MF.

Vitamin D, Skin & Bone Research Laboratory. Section of Endocrinology, Diabetes &
Nutrition. Department of Medicine. Boston University School of Medicine.

Dear Editor,

Vitamin D is a steroid hormone important for maintaining normal calcium homeostasis and mineralization of the skeleton. Epidemiologic studies and prospective studies have suggested that vitamin D may also be protective against many common cancers in humans including prostate, breast and colon cancer^{1,2}. Furthermore, studies using cancer cell cultures and animal models of cancer have supported the protective role of vitamin D in inhibiting the growth of many types of cancer cells^{3,4,5}. Therefore, it is important to maintain adequate vitamin D nutrition in patients with cancer not only for good bone health but also for its potential anti-cancer activity. In addition, patients with cancer frequently complain of muscle aches and bone pain, which may be symptoms of vitamin D deficiency⁶. A study was conducted to determine the prevalence of vitamin D deficiency in an outpatient cancer care clinic at Boston University Medical Center. After IRB approval, subjects who attended a outpatient cancer care clinic during the summer months of July, August and September were enrolled into our study. A control group of healthy adults without cancer older than 40 years was recruited the previous year during the same months. Subjects gave written informed consent for determination of 25-hydroxyvitamin D (25(OH)D) and completed a dietary questionnaire. The 25(OH)D assay was performed as previously described by Chen et al⁷ and confirmed by the Nichols Advantage chemiluminescent assay. Vitamin D deficiency was defined as a 25(OH)D = 20 ng/ml⁸. Subjects with cancer were a mean age of 59 ± 10 years old compared with healthy controls, 51 ± 10 years old (p<0.05, t-test). Twenty-seven (48.2%) out of 56 subjects with cancer were vitamin D deficient (25(OH)D ≤ 20 ng/ml) compared to only 6 (12%) out of 50

healthy controls were vitamin D deficient, ($p < 0.05$, χ^2 test). The mean 25(OH)D of cancer subjects was 21.3 ± 10 ng/ml vs 33.9 ± 10 ng/ml in healthy controls ($p < 0.05$, t-test). This study revealed that a high percentage of subjects with cancer are vitamin D deficient during the summer, a season where vitamin D deficiency should be less prevalent⁹. Reasons for the high prevalence of vitamin D deficiency among cancer patients include malnutrition due to illness, nausea from chemotherapy or infrequent sunlight exposure. Vitamin D deficiency is easily corrected in these patients by prescribing vitamin D 50,000 IU once a week for 8 weeks then placing them on a daily multivitamin with 400 IU of vitamin D⁸. Restoring adequate vitamin D nutrition should improve the muscle aches and bone pains of these patients^{6,10} and potentially be beneficial in slowing the growth of some cancers.

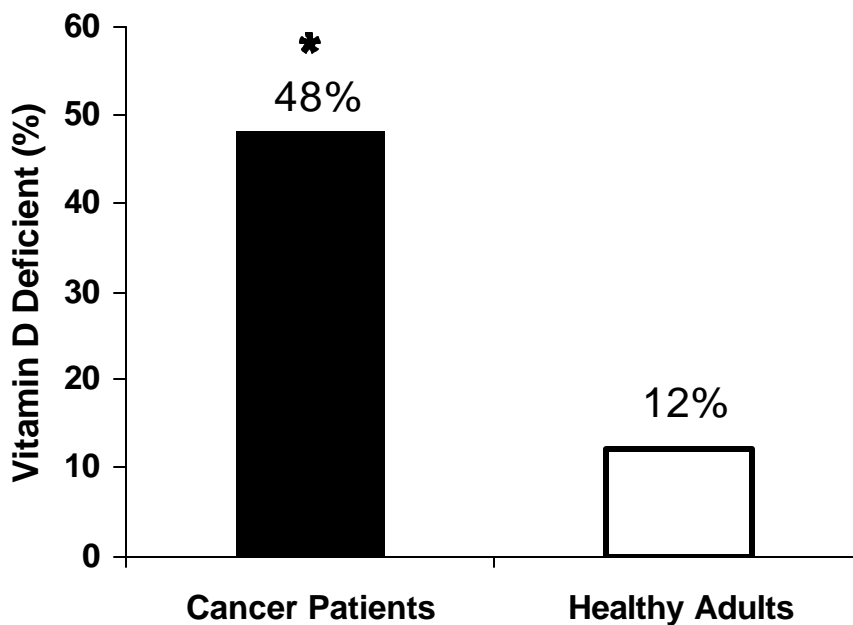


Figure 1

Prevalence of Vitamin D Deficiency in Subjects With Cancer Compared to Healthy Subjects. Subjects who attended a cancer care clinic at the end of summer in Boston, Massachusetts had a significantly higher prevalence rate of vitamin D deficiency

compared to healthy control subjects ($p < 0.05$).

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