

Vitamin D deficiency in Sydney skin cancer patients

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TO THE EDITOR: In addition to its well established link with rickets and osteoporosis, vitamin D deficiency has been associated with increased risk of autoimmune, malignant and cardiovascular disease.¹ Marginal deficiency occurs at serum 25-hydroxyvitamin D [25(OH)D] levels of 25–50 nmol/L and frank deficiency at levels <25 nmol/L,² but there is some evidence that levels <80 nmol/L³ or even <110 nmol/L² could be suboptimal. In Australia, vitamin D deficiency is most frequent in nursing home residents, dark-skinned veiled women, and

residents of southern latitudes.² However, those who are instructed to habitually minimise sun exposure following a diagnosis of skin cancer may also be at particular risk.

We recruited patients with a history of non-melanoma skin cancer, who were not taking vitamin D or calcium supplements, from outpatient dermatology clinics at Royal Prince Alfred Hospital, Sydney (latitude, 33° south). Ethics approval was obtained from the Sydney South West Area Health Service and University of Sydney ethics committees, and all participants provided written informed consent. Serum 25(OH)D levels were measured by radioimmunoassay (DiaSorin, Saluggia, Italy)⁴ in both late summer (February 2006 or 2007) and late winter (August 2006), with participants completing a 2-week diary detailing daily sun exposure and sunscreen application before each measurement.

Twenty-five participants (12 men, 13 women; mean age, 64 years; range, 44–78 years) completed both assessments. We found a significant reduction in mean 25(OH)D levels in winter (summer, 69±3.4 nmol/L; winter, 59±6.2 nmol/L; $P < 0.05$). In summer, all but one participant had 25(OH)D levels >50 nmol/L, and eight had levels >80 nmol/L. In winter, 12 participants had 25(OH)D levels <50 nmol/L, two had levels <25 nmol/L, and only three had levels >80 nmol/L (Box). Hence, using the accepted target value of 50 nmol/L,² 12 participants (48%) were vitamin D-deficient at the end of winter, compared with one (4%) at the end of summer.

In summer, the mean reported daily sun exposure was 1 hour (range, 10 min–2.5 h), comprising 40 minutes of off-peak (before 11 am or after 3 pm) and 20 minutes of peak exposure. In winter, the mean daily exposure was also 1 hour (range, 20 min–1.5 h), comprising 30 minutes each of both peak and off-peak sunlight. Volunteers reported wearing sunscreen during about 50% of their summer sun exposure and 27% of their winter sun exposure.

Despite mean reported daily sun exposure falling within recommended guidelines, half of our participants were vitamin D-deficient at the end of winter, with almost all demonstrating reductions in winter 25(OH)D levels. Our findings suggest that vitamin D deficiency may be much more prevalent than expected in these patients, and that vitamin D supplementation might be indicated for this group, at least during winter.

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