

The opinions expressed by correspondents in this column are in no way endorsed by the Editors or The Royal Australian College of General Practitioners.

Overdiagnosis: a necessary part of the learning curve towards excellence

Dear Editor

In a letter to the Editor¹ regarding our article on overdiagnosis (*AFP*, December 2013)² Professor Sinniah describes the experience with screening for neuroblastoma as a necessary part of the learning curve of experience with testing, but we believe this example illustrates the opposite: the need for rigorous evaluation of tests, particularly screening tests, prior to their implementation. Japan introduced screening for neuroblastoma on the basis of benefits seen in observational studies, resulting in the overdiagnosis of neuroblastoma with significant numbers of infants being diagnosed with the disease and being exposed to the harmful effects of treatment.³ The positive effects of screening from the earlier observational studies were due to lead time and length time biases, a fact that was evident on a reanalysis of the data, and should have prevented the implementation of this program.⁴ We support Professor Sinniah's statement that it is the doctor's responsibility to ensure that patients are not exposed to treatments where the risks outweigh the benefits, but believe the same condition should also apply to tests.

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What is the optimal dose of vitamin D?

Dear Editor

The dispute regarding optimal vitamin D levels, variable results depending on the pathology laboratory and the medical risks of low vitamin D are still debateable. The question remains, however, of what to tell patients regarding vitamin D and sun exposure. The following is a summary that fellow general practitioners may find useful and to educate patients:

- Vitamin D from food sources is not sufficient to maintain adequate vitamin D levels. However, foods containing vitamin D (including fish, eggs, meat and vitamin D fortified milk) can still be encouraged.¹
- There is currently no reliable evidence regarding how much sunlight is required to produce adequate vitamin D levels.²
- A rough guideline for sun exposure to maintain adequate vitamin D levels is have unobstructed sun exposure to the face, hands and arms for 5–15 minutes 4–6 times a week.¹
- People with dark skin require 3–6 times the exposure of fair skinned people.¹
- Elderly people need more frequent exposure.¹
- Overexposure to sunlight does not result in more vitamin D production.³
- People at higher risk of vitamin D deficiency (eg. dark-skinned people, elderly people, night-shift workers, people who wear concealing clothing for cultural/religious purposes) may require oral supplementation or increased sun exposure.³
- People who have a high skin cancer risk (including those with a previous skin cancer history, fair skin, family history of melanoma or dysplastic naevus syndrome) may benefit from vitamin D oral supplementation rather than increased sun exposure.³
- With regard to sun protection, sun exposure should be avoided during periods of the day when ultraviolet radiation is high (ie. 11 am to 3 pm); clothing and shade provide better

protection than sunscreen; a sunscreen with sun protection factor of 30+ or 50+ should be used and reapplied regularly.¹

- Educate patients regarding skin awareness, checking for any changes and seeking medical attention if there are any changes or concerns. Performing routine and systematic skin checks on patients is recommended best practice.

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Reply

Dear Editor

Questions still remain as to what general practitioners (GPs) should tell their patients regarding vitamin D and sun exposure. And we need to be cognisant of the level of evidence available and our commitment to 'first do no harm'. The guide for clinicians has several valid points but others require further consideration.

- Vitamin D levels in foods generally consumed by Australians are low and regular intake of foods containing vitamin D should be encouraged (but not to extremes).
- Overexposure to sunlight results in degradation of vitamin D that has been synthesised.¹ This is an extremely important point for GPs to make to their patients. A desire to improve vitamin D status is NOT an excuse to sunbake.

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- People at higher risk of vitamin D deficiency, or with high skin cancer risk, may benefit from oral vitamin D supplementation, aiming to achieve 25(OH)D levels greater than 50 nmol/L.
- There are no reliable data on how much sunlight is required to produce and maintain adequate vitamin D levels. New studies currently underway specifically seek to redress this lack (see www.sedsstudy.org.au). With the assistance of GPs, this study will provide the required evidence base.

Following from the previous point, there is little evidence that the rough guideline provided, of 5–15 minutes 4–6 times a week to the face, hands and arms, will produce vitamin D adequacy, and we have considerable concern about this type of broad-brush statement, for the following reasons:

- The face and neck are the commonest sites for the development of skin cancer. Further, because of its vertical orientation and small exposed skin area, exposure of the face is unlikely to contribute greatly to vitamin D production. It would be preferable to recommend always protecting the face and neck when outdoors.
- The more skin that is exposed, the shorter the time it needs to be exposed to make the same amount of vitamin D;² short, repeated sun exposure is more efficient for vitamin D production than longer (sunbaking) exposures.¹ Protect the face and expose the larger body surfaces such as the arms and legs.
- Australia has highly varying intensity of ultraviolet radiation (UV). A blanket recommendation of 5–15 minutes 4–6 times a week is inappropriate. When the UV index is low (winter and southern Australia), more time outdoors is required to produce or maintain vitamin D adequacy. When the UV index is high (mid-summer, northern Australia year-round), exposures need to be brief (ie. closer to the 5 minutes than the 15 minutes). GPs (and their patients) need to be aware of and

understand the UV index in their location across the year in order to provide appropriate advice. People with dark skin do typically have lower vitamin D levels than people with fair skin. But recent research suggests that at least part of this difference is accounted for by behaviour – some darker skinned people prefer to stay out of the sun and value a fairer skin.³ The true relationship between skin colour and the efficiency of vitamin D production for any level of sun exposure is not at all clear. Certainly GPs should be alert to the risk of vitamin D deficiency in patients with dark skin and ask about sun exposure habits, including the usual use of shade, clothing and other sun protection, that limit the received dose of ultraviolet radiation.

Elderly people typically have lower vitamin D levels than younger people. Evidence suggests that elderly people have lower levels of the vitamin D precursor in their skin.⁴ But sun avoidance is also likely to contribute. Two in three Australians will have a skin cancer diagnosed by age 70 years. Many elderly Australians consequently practice careful sun protection. GPs need to ask about sun exposure behaviour and provide advice to protect the head and neck, but to expose more skin during short casual sun exposure, to maximise vitamin D production, as well as advising on appropriate dietary and supplemental intake if necessary.

The best time of the day to make vitamin D is a very fraught question. Vitamin D is made only following exposure to the shorter wavelengths of ultraviolet radiation (UVB). This is also the most potent wavelength for sunburn. UVB levels are highest in the middle of the day. This means that we make vitamin D most efficiently at midday – but we also suffer DNA damage most quickly. Provided exposures are kept brief – with lots of skin exposed and the face and neck protected – the middle of the day provides an optimal time for vitamin D production. For longer exposures, patients should follow Cancer Council advice to use sun protection – Slip, Slap, Slop, Seek and Slide – when the UV index is 3 or more. Most

importantly, GPs should ask about sun exposure, know about and educate their patients about the UV index, and educate them about skin awareness.

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Letters to the Editor

Letters to the Editor can be submitted via:
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Erratum

Foerster CR. Clubbing should not be attributed to COPD. *Aust Family Physician* 2014;43:89.

Due to a production error, there was a misprint in the final word of this letter to the editor, which should be *empyema*, not *emphysema*. The correction has been made to the HTML version of this article.

We apologise for this error and any confusion this may have caused our readers.