

INVESTIGATE • The Briefing: Vitamin D

Sept 2012



Aussie vitamin D shock levels worse than thought - Study

September marks the start of spring but new research reveals it is also the month when Australians' vitamin D levels are at their lowest ebb.

The University of Sydney study also shows vitamin D deficiency affects more Australians and lasts longer than previously believed.

"Our results suggest that the current guidelines for both vitamin D testing and the use of supplements need to be reviewed," said Professor Steven Boyages from Sydney Medical School.

Professor Boyages and his PhD student Kellie Bilinski recently published their findings in [Clinical](#)

[Endocrinology](#).

"This is the largest ongoing Australian study on vitamin D deficiency ever undertaken," said Professor Boyages.

"Vitamin D deficiency is implicated in a number of serious diseases including diabetes and cancer so improving our understanding is critical.

"The fact that the government-subsidised cost of testing for deficiency was \$96.7 million in 2010 and rising is another reason better knowledge is important."

The study looked at vitamin D levels (by studying the presence of a metabolite) in over 24,000 sam-

ples taken from walk-in patients and inpatients in NSW between July 2008 and July 2010. It investigated the effect of age, gender, season, socioeconomic status and remoteness on results.

"Our study indicates that large segments of the Australian population are at risk of deficiency for prolonged periods of the year, particularly during autumn to the end of spring. The prevalence of deficiency was higher and more persistent than previously reported, ranging from 33 percent in summer to 58 percent in spring. The seriousness of the deficiency was also greater than in most other Australian reports."

The study found that vitamin D levels peaked in summer, reaching a maximum in January for women and February for men, before declining gradually in late summer and falling sharply in the winter months. They reached their lowest point not in winter, as previously reported, but in early spring.

"Even by December, the first month of summer, levels were still 46 percent below their peak. Although levels of ultraviolet-B radiation, the body's principal source of vitamin D, would be rising by then, this reflects the time it takes to replenish the body's stores."

Current testing guidelines do not address the need to taken seasonal variation into account.

"Ideally testing would occur in spring when vitamin D levels reach their lowest concentration. If an individual is found to be deficient a subsequent test three months afterwards would see if they have been able to replenish their vitamin D," said Professor Boyages.

"Similarly use of vitamin D supplements currently fail to address this factor of seasonal variation. A modified approach would see the use of supplements commence, or increase, at the end of summer and be maintained until the end of spring when they would either be stopped or reduced depending on an individual's sunlight exposure."

The study also found that a previously unidentified at risk group is females between 20 and 39 years of age. Further investigation is required to determine the underlying cause for the higher prevalence of vitamin D deficiency in this and other groups.

In New Zealand, health officials hide the full extent of vitamin D deficiency by using a definition of deficiency only half that of Australia. NZ's actual deficiency rate is comparable to Australia's.

BREAKING NEWS DEVELOPMENT

Endorsed as TB cure

By New York Times

High doses of vitamin D speed the recovery of tuberculosis patients, according to a new study.

The inspiration for testing the idea, scientists from Queen Mary University of London and other British hospitals said, was that 19th-century tuberculosis patients were sent to the mountains to lie in the sun. Ultraviolet B rays in sunshine convert cholesterol in the skin into vitamin D.

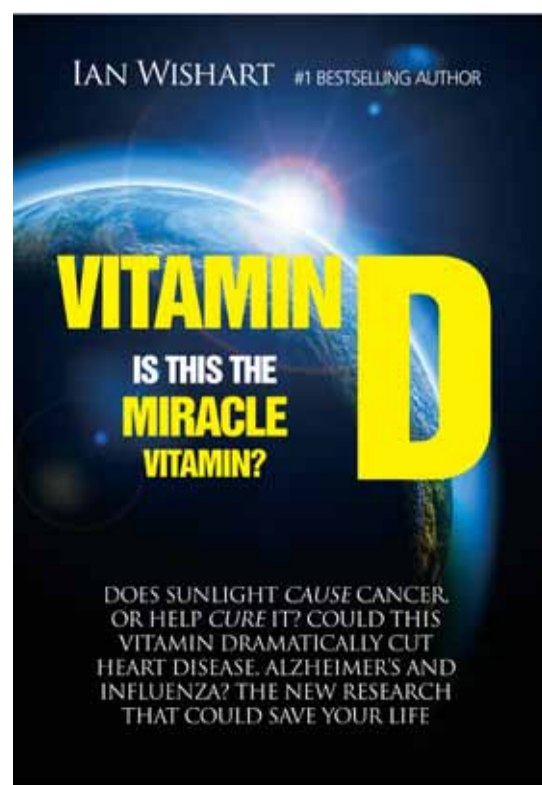
In the decades before antibiotics, doctors knew that TB patients sometimes recovered, or at least lived longer, at high altitudes. Spas for wealthy patients were built in the Alps, the Rockies and other mountain ranges.

Some doctors thought alpine air was the reason TB patients fared better, but others believed in "heliotherapy." Even bedridden patients were wheeled out onto sun decks.

Vitamin D seems to prevent lung damage by slowing down inflammatory responses to the TB bacterium. Since it does not interfere with the action of antibiotics, it may be useful in other illnesses, like pneumonia, according to the authors of the study, published online by Proceedings of the National Academy of Sciences last week.

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But what's embarrassing is that the

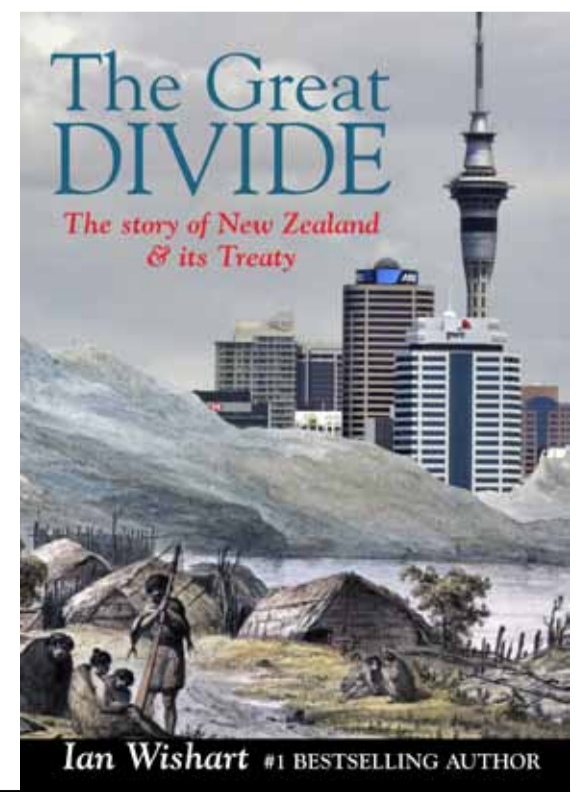
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Sunlight's role in heart health crucial



New research from the University of Copenhagen and Copenhagen University Hospital shows that low levels of vitamin D are associated with a markedly higher risk of heart attack and early death. The study involved more than 10,000 Danes and has been published in the well-reputed American journal **Arteriosclerosis, Thrombosis and Vascular Biology**.

Vitamin D deficiency has traditionally been linked with poor bone health. However, the results from several population studies indicate that a low level of this important vitamin may also be linked to a higher risk of ischemic heart disease, a designation that covers heart attack, coronary arteriosclerosis and angina. Other studies show that vitamin D deficiency may increase

blood pressure, and it is well known that high blood pressure increases the risk of heart attack. Low levels of vitamin D are associated with a markedly higher risk of heart attack. "We have now examined the association between a low level of vitamin D and ischemic heart disease and death in the largest study to date. We observed that low levels of vitamin D compared to optimal levels are linked

to 40% higher risk of ischemic heart disease, 64% higher risk of heart attack, 57% higher risk of early death, and to no less than 81% higher risk of death from heart disease," says Dr. Peter Brøndum-Jacobsen, Clinical Biochemical Department, Copenhagen University Hospital.

The scientists have compared the 5% lowest levels of vitamin D (less than 15 nanomol vitamin per litre serum) with the 50% highest levels (more than 50 nanomol vitamin per litre serum). In Denmark, it is currently recommended to have a vitamin D status of at least 50 nanomol vitamin per litre serum.

The higher risks are visible, even after adjustment for several factors that can influence the level of vitamin D and the risk of disease and death. This is one of the methods scientists use to avoid bias.

The population study that forms the basis for this scientific investigation is the Copenhagen City Heart Study, where levels of vitamin D were measured in blood samples from 1981-1983. Participants were then followed in the nationwide Danish registries up to the present.

"With this type of population study, we are unable to say anything definitive about a possible causal relationship. But we can ascertain that there is a strong statistical correlation between a low level of vitamin D and high risk of heart disease and early death. The explanation

may be that a low level of vitamin D directly leads to heart disease and death. However, it is also possible that vitamin deficiency is a marker for poor health generally," says Børge Nordestgaard, clinical professor at the Faculty of Health and Medical Sciences, University of Copenhagen and senior physician at Copenhagen University Hospital.

The scientists are now working to determine whether the connection between a low level of vitamin D and the risk of heart disease is a genuine causal relationship.

If this is the case, it will potentially have a massive influence on the health of the world population. Heart disease is the most common cause of adult death in the world according to the World Health Organization (WHO), which estimates that at least 17 million people die every year from heart disease.

"The cheapest and easiest way to get enough vitamin D is to let the sun shine on your skin at regular intervals. There is plenty of evidence that sunshine is good, but it is also important to avoid getting sunburned, which increases the risk of skin cancer. Diet with a good supply of vitamin D is also good, but it has not been proven that vitamin D as a dietary supplement prevents heart disease and death," says Børge Nordestgaard.

Latest Vitamin D headlines

Baby's brain health may be linked to mother's vitamin D consumption, according to a new study: [click to read](#)

Children with asthma who have vitamin D insufficiency are at high risk for severe asthma exacerbation, according to a study in Respiratory and Critical Care Medicine.

Study links sickest kids to low vitamin D levels - Most Canadian children need supplements: report: [click to read](#)

NZ health officials claim you don't need much vitamin D, but the rest of the world thinks otherwise. How much vitamin D do you need?: [click to read](#)

A review study in Current Opinion in Neurology suggests that taking vitamin D supplements or getting lots of sun exposure may help prevent multiple sclerosis or prevent the disease from progressing: [click to read](#).

55 percent of patients with localized prostate cancer who were treated with 4000 IU of vitamin D supplements for one year decreased the Gleason score or the number of positive cores.: [click to read](#)

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Ian Wishart, Vitamin D author, clashes with Cancer Society

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