

New analysis suggests that further trials of vitamin D have little chance of showing health benefits

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A new study concludes that evidence is lacking for substantial health benefits of vitamin D—and that results of several multi-million-dollar trials currently underway are unlikely to alter this view.

The study, published in *The Lancet Diabetes & Endocrinology*, examines existing [evidence](#) from 40 randomised controlled trials – the gold standard for proving cause and effect – and concludes that vitamin D supplementation does not prevent heart attack, stroke, cancer, or bone fractures in the general population by more than 15%. Thus, vitamin D [supplements](#), which are taken by nearly half of US adults, probably provide little, if any, health benefit.

Previous observational studies have shown that vitamin D deficiency is strongly associated with poor health and early death. However, evidence from [randomised controlled trials](#) now indicates that this association is not causal – that is, that supplementation is not likely to have any benefit. In line with this idea, the results of a large systematic review by Philippe Autier and colleagues, published in December 2013, also in *The Lancet Diabetes & Endocrinology*, suggested that low levels of vitamin D are a consequence, not a cause, of ill health.

In the new study, Dr Mark Bolland of the University of Auckland, New Zealand, and colleagues build on this evidence using several types of meta-analysis, including a 'futility analysis', which predicts the potential

of future study results to sway existing evidence. The results of their study indicate that the effect of vitamin D, taken with or without calcium, on heart attack, stroke, cancer, and total fracture lies below a 'futility threshold'. For hip fracture, the results of some trials even suggested increased risk with vitamin D supplementation. The authors' analysis of whether vitamin D supplementation can reduce mortality by 5% or more was inconclusive.

Writing in a linked Comment, Professor Karl Michaëlsson, of Uppsala University in Sweden, concludes that, "Without stringent indications—i.e. supplementing those without true vitamin D insufficiency—there is a legitimate fear that vitamin D supplementation might actually cause net harm."

More information: [www.thelancet.com/journals/lan ... \(13\)70212-2/abstract](http://www.thelancet.com/journals/lan... (13)70212-2/abstract)

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