

Vitamin D supplement fails to lower cholesterol in short term

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Taking vitamin D supplements to compensate for vitamin D deficiency didn't improve cholesterol—at least in the short term, according to new research in *Arteriosclerosis, Thrombosis and Vascular Biology*, an American Heart Association journal.

Researchers studied 151 people with [vitamin D deficiency](#) who received either a mega-dose (50,000 international units) of [vitamin D3](#) or placebo weekly for eight weeks. Participants' cholesterol levels were measured before and after treatment.

Correcting vitamin D deficiencies with high doses of oral vitamin D supplements did not change cholesterol levels, researchers found. This was despite effectively increasing vitamin D to recommended levels. Vitamin D levels nearly tripled in the group that received actual supplements, but were unchanged in the [placebo group](#).

"Our study challenges the notion that vitamin D repletion improves [cholesterol levels](#)" said Manish Ponda, M.D., M.S., study lead author and assistant professor of clinical investigation in Dr. Jan Breslow's laboratory of biochemical genetics and metabolism at The Rockefeller University in New York, N.Y. "These clinical trial results confirm those from a recent data mining study."

The researchers also tested the effect of vitamin D supplementation on more sophisticated biomarker measures of cholesterol, such as particle size and number. "These measures of cholesterol, which are not used in

routine clinical practice, also did not change in response to vitamin D therapy," Ponda said.

As expected, replenishing subjects with high-dose supplements of oral vitamin D decreased parathyroid hormone levels and increased [calcium levels](#)—physical functional changes that were linked to participants' increase in low-density lipoprotein (LDL, [bad cholesterol](#)).

"For example, participants receiving vitamin D who had an increase in calcium levels experienced a 7 percent increase in LDL cholesterol, while those whose calcium levels fell or did not change had a 5 percent decrease in LDL cholesterol," Ponda said.

The study questions the use of vitamin D supplements to improve cholesterol, Ponda said. While the dose of vitamin D in this study was high, it was appropriate for correcting a vitamin D deficiency over an eight week period.

However, longer-term studies on the impact of the changes in LDL cholesterol as a result of high dose vitamin D supplementation are needed to make stronger recommendations. And questions remain about whether increasing vitamin D levels with exposure to sunlight, the predominant natural source, would have a different effect than with high-dose oral supplements.

To address these issues, Ponda and Breslow will begin another clinical trial this fall, comparing the effect of oral vitamin D to ultraviolet light exposure with a longer follow-up period.

Provided by American Heart Association

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