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Study linking vitamin D to reduced cold and flu risk is too good to be true

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The Globe and Mail

Published Friday, Feb. 17, 2017 5:26PM EST

Last updated Friday, Feb. 17, 2017 7:20PM EST

It wouldn’t be surprising if pharmacies are seeing a surge in demand for vitamin D tablets. After all, a [new study](http://www.bmj.com/content/356/bmj.i6583) just came out suggesting the sunshine vitamin can reduce the risk of catching a cold or the flu.

“Vitamin D ‘proved to cut risk of colds and flu,’” declared a headline in the Guardian. Medscape said, “Vitamin D may protect against respiratory infections,” while the BBC ran a headline that said: “Vitamin D pills ‘could stop colds or flu.’”

Who wouldn’t be willing to pop a few vitamins in order to ward off the congestion, fatigue and fever that can accompany seasonal colds and influenza? But you may want to hold off before you run out to stock your medicine cabinet.

**The background**

The scientific community has been increasingly interested in the power of vitamin D over the last decade, as some research has found it may help reduce the risk of everything from multiple sclerosis to bone fractures. The problem is that most of the research is conflicting and inconsistent. Despite the promising headlines, the new study linking vitamin D to a reduced risk of respiratory infections is no exception. The paper, published in the British Medical Journal on Wednesday, was a meta-analysis. That means researchers look at a number of different studies on vitamin D and respiratory infections – 25, in this case – and synthesize the results to determine what conclusions can be drawn from the large pool of evidence.

In the new study, researchers concluded that supplements of vitamin D were linked to a 12-per-cent reduction in the risk of catching one acute respiratory infection. They conclude that 33 people would need to take supplements to prevent one respiratory infection. Among those who are severely vitamin-D-deficient, only four people would need supplements to prevent a cold.

However, there are some major caveats to keep in mind.

**If it sounds too good to be true …**

An [editorial](http://www.bmj.com/content/356/bmj.j456) published alongside the new study puts the results in perspective. Yes, the researchers found a risk reduction of 12 per cent. But it was a relative risk reduction, which actually doesn’t tell us much. A relative risk reduction in this instance refers to the difference in the number of people who took vitamin D supplements and got a respiratory infection compared to those who didn’t take supplements and caught one.

It’s much more useful to look at the absolute risk, or the actual numbers, to see how well the supplements performed. It turns out that 42.2 per cent of the non-vitamin-D study participants caught at least one acute respiratory tract infection compared to 40.3 per cent of the people who took supplements – a difference of 1.9 per cent.

“It seems unlikely that the general population would consider a 2-per-cent absolute risk reduction sufficient justification to take supplements,” wrote the editorial authors, who have previously published research questioning the benefits of vitamin D for bone health.

The editorial also points out that there was no single definition of what constitutes a respiratory-tract infection in the meta-analysis. Some studies used lab-confirmed cases of the flu, others included self-reported or parent-reported colds – factors that make it difficult to interpret the study results or apply them to the general population, the authors wrote.

The study authors wrote [their own response](http://www.bmj.com/content/356/bmj.j456/rapid-responses) to the editorial, pointing out their overall skepticism of the benefits of vitamin D in previously published studies. The authors defended their findings and pointed out that only 33 people need supplements in order to prevent one respiratory-tract infection.

**The takeaway**

Dr. James McCormack, a professor in the faculty of pharmaceutical sciences at the University of British Columbia who focuses on the appropriate use of medication, said this study underscores some of the classic problems with attempting to draw sweeping conclusions from a study, particularly when there are impassioned “believers” on both sides of a debate.

“It’s like a bunch of kids fighting in a sandbox,” he said.

And the debate will continue because, as McCormack said, “We just don’t really have great information about this.” While most of the research shows there is unlikely to be any great health perks from taking vitamin D, studies such as the one published in the BMJ may continue to find some small benefits. Often in such cases, the true scope of the benefits can be interpreted in different ways by different people.

To the public watching these debates unfold, the result can be confusing. One week, vitamin D supplements can protect your health. The next, a study says supplements are useless.

“You can make almost any study or add studies together to show anything you want,” McCormack said, adding the real test should be “whether it’s a consistent finding.”