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# Vitamin Misconception

*Mythbusting the Link between Vitamin C and the Common Cold*



By Alyssa Altheimer  
Artwork by Chloe Deshusses

**I**magine your throat is ticklish and your nose is starting to run. If you're like most people, you'll reach for a vitamin C supplement. After all, vitamin C is supposed to stop a cold in its tracks, right?

The common belief that vitamin C prevents colds is in large part tied to Linus Pauling. In 1970, Pauling published *Vitamin C and the Common Cold*, in which he argued that the common cold could be eradicated in the United States “within a few years” if everyone took 3,000 milligrams of vitamin C every day. Partly because Pauling was a two-time Nobel Prize winner, the public listened. His book quickly became a bestseller and vitamin C sales skyrocketed. By 1975, 50 million Americans were following Pauling's regimen. Today, 67% of Americans still believe that vitamin C alleviates cold symptoms, according to a study by Braum et al.

Based on scientific knowledge, it seems plausible that vitamin C supplements improve immune function. Like every vitamin, vitamin C, or ascorbic acid, is involved in the immune response. Specifically, vitamin C stimulates the production of various immune cells, including neutrophils, lymphocytes, and phagocytes. However, according to the University of Florida's Susan Percival, Ph.D., “Whether these immune system changes translate into less illness is the million dollar question.”

There are two ways to evaluate this “million dollar question”: is it effective when taken year-round, and is it effective when taken at the onset of a cold?

First, let's evaluate vitamin C's effect on colds when taken year-round. A meta-analysis published by the Journal of the American Academy of Nurse Practitioners found that, when taken year-round, vitamin C is not effective at reducing the frequency or severity of the common cold, but may reduce its duration. Another study by a Cochrane review compiled 24 experiments consisting of 11,000 adults and found that taking 1,000 mg of vitamin C reduced the duration of colds by 8%. In other words, taking daily megadoses of vitamin C year-round will reduce a week-long cold by about 12 hours. As Percival summarized, “Large amounts of vitamin C do not prevent colds, but they can shorten the duration if they're taken every day before getting one.”

However, some groups under extreme conditions may develop fewer colds when taking megadoses of vitamin C year-round: people living in sub-arctic winter conditions and frequent marathon runners, for example. But, as the Australian National University in Canberra's Bob Douglas wrote, “Vitamin C does absolutely nothing to prevent colds in most people.”

Next, let's evaluate vitamin C's effect when taken at the first sign of cold symptoms. In a review of seven experiments that evaluated vitamin C's effectiveness when taken at the onset of cold, only one found a decrease in cold duration. The patients in that study took a massive

eight grams of vitamin C — generally, even two grams of vitamin C is enough to cause a range of undesirable symptoms, including diarrhea. In the other six experiments, no statistically significant decrease in cold duration was found. The severity of cold symptoms was unaffected in all seven studies.

**Generally, even two grams of vitamin C is enough to cause a range of undesirable symptoms, including diarrhea.**

Vitamin C's potential to reduce the duration, frequency, or severity of a cold is bleak. But many vitamin C supplements advertise themselves as cold medicines. How is this questionably false advertising allowed? A decision made by the FDA is to blame. In 2000, the FDA stated that vitamin companies can claim that vitamin C “supports,” “maintains,” and “enhances immunity,” even without meaningful evidence because those statements don't allege to “prevent or lessen disease.” Until the FDA changes its guidelines, vitamin companies can continue to claim that vitamin C enhances the immune system and therefore is beneficial to take when ill, despite research supporting this statement.

Are there scientifically-proven ways of reducing the frequency of colds? Yes, and you've heard it all before. First of all, hand washing is “one of the most important steps we can take to avoid getting sick,” according to the CDC. Second, in a study by Cohen et al, people who slept less than seven hours a night were 300% more likely to catch a cold than people who slept more than eight hours a night. Lastly, in another study by Cohen et al, people who faced long term stressors — marital, friend, or work problems for at least three months — were 300% more likely to develop a cold after exposure to a cold virus. Washing hands, getting as much sleep as possible, and reducing stressors have tangible effects on illness. Unfortunately, there is no known magical cold fix.

So when you feel a tickle in your throat or have a runny nose, don't reach for vitamin C. And unless you run hundreds of miles a year or live in Antarctica, taking vitamin C year-round won't do much other than slightly reducing the length of your cold. If you want to prevent colds, wash your hands, get enough sleep, and try to minimize long-term stressors. Your immune system will thank you. ●