



## Issue 205: Flu Fighters

It's flu season again, and there's no shortage of advice on how to avoid it or manage it. It's no wonder, either, because the flu is a health hazard to be reckoned with. Some flu seasons are worse than others, but on average each year, five to 20 percent of the U.S. population will contract the flu, and more than 200,000 will be hospitalized with flu-related complications. Unfortunately, approximately 51,000 people also die from all causes related to the flu.

Practical suggestions such as washing your hands frequently, coughing or sneezing into the fold of your arm by your elbow, eating right and getting adequate exercise and sleep are all helpful.

However, you may be interested in these nutrients and studies surrounding them, too, this flu season.

For starters, probiotics are helpful to your health year-round, but a medical journal study presented results that one strain of probiotics, *Bacillus coagulans*, when tested, increased the body's immune response to the flu virus. The study indicated significant increases—to the tune of 1,709 percent—in T-cell production of TNF-alpha, a key immune marker, upon exposure to influenza A in healthy adults who consumed *Bacillus coagulans* for 30 days. While more research is needed to see if these findings also translate into fewer hospitalizations or deaths from the flu, the researchers agree that *Bacillus coagulans* is a low-cost, healthy and proactive measure people can take against the flu—and it has no risks associated with it.

Interestingly, *Bacillus coagulans* has a strong ability to survive typical conditions—such as adverse manufacturing conditions, extreme temperature variations, and the harsh journey through the stomach and digestive tract—that can potentially kill other probiotics before their beneficial effects take place. In short, probiotics must arrive at their destination *alive* in order to produce their health benefits—and *Bacillus*

*coagulans* is among those that can do that.

Next up is vitamin D. In the past, it's been thought that a deficiency in vitamin D—which about 75 percent of our population has—might contribute to susceptibility to infections, including the flu. Likewise, it's known that vitamin D is what *activates* our immune system's T cells so that they can destroy infectious agents. Without adequate vitamin D levels, those T cells remain inactive—with no immune response—and those invaders can march right on in and gain a foothold.

Japanese researchers have taken these findings a step further and have found, in a double-blind, placebo-controlled study trial, that supplementing with vitamin D dramatically cuts the incidence of seasonal flu (influenza A) among children.

Vitamin D boosts production in white blood cells of an antimicrobial compound, called *cathelicidin*, which defends the body against germs, including bacteria, viruses and fungi. Cathelicidin literally “targets the bad guys,” by killing them—punching holes in the external membrane of a microbe, making its insides leak out. That's what researchers suspect helps guard people from the flu. One researcher puts it this way: In our experiments with the white blood cells, “nothing turned on the cathelicidin gene to any degree except vitamin D. And it really turned that gene on—just cranked it up.”