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Immunity's rise

**Surging demand,
industry innovation**



Key ingredients in immune health

Probiotics

A review published in the journal *Current Opinion in Gastroenterology* noted, “The beneficial effects of probiotics have been demonstrated in many diseases.⁴ One of the major mechanisms of probiotic action is through the regulation of host immune response.” Although further research on this relationship is needed, the article concluded, “Probiotics may provide novel approaches for both disease prevention and treatment.”

Vitamin C

“Vitamin C helps to mature and activate T-cells,⁵ leading to increased numbers and functional capacity of natural killer (NK) cells with optimal viral immune response,”⁶ Menolascino said. He added vitamin C has been “clinically shown to prevent and treat systemic and respiratory infection in several clinical trials.”⁷

Vitamin D

Potential links between an individual’s immune health and their vitamin D levels are being studied. Information on [Harvard’s School of Public Health](#) website noted one such positive correlation. A randomized controlled trial in Japan tested whether taking a vitamin D supplement would prevent seasonal flu.⁸ The results of the study were encouraging; children who took vitamin D supplements were 40% less likely to experience the seasonal flu than those who didn’t.

According to the article “[Understanding the Role of Nutrients in Human Immune Response Metrics](#)” from Natural Alternatives International (NAI), significant research has been done on vitamin D and immune function. Co-author and NAI CEO Mark A. LeDoux wrote most immune cells express vitamin D receptor and some can produce 1-alpha-hydroxylase (an enzyme that enables vitamin D conversion to its active form).

“The result of this unique situation is both systemic and locally generated vitamin D in a biologically active form can act on VDR [vitamin D receptor] expressed by immune cells in endocrine, paracrine and autocrine manners,” the article explained. The authors noted vitamin D has shown a great impact on immune cells in both the innate and adaptive immune system, as well as the antigen-presenting cells that link both arms of immunity.⁹

Zinc

The relationship between immune health and zinc is interesting. One study comparing zinc-deficient individuals with those who had proper levels of zinc stated, “Zinc is a potent mediator of host resistance to infection.”¹⁰ The researchers went on to mention that zinc affects multiple areas of immune health, from the barrier of the skin to gene regulation.

Colostrum

According to a 2018 review published in *Frontiers in Nutrition*, “It was first shown in the 1960s that bovine colostrum immunoglobulins protected calves against gastrointestinal [GI] bacterial and viral infections.”¹¹ That discovery led to human clinical studies, a large number of which the review noted “have now shown efficacy of bovine immunoglobulins in preventing natural infection in humans as well as in animal infection models.”

Yeast and beta-glucans

Beta-glucans and yeasts—often found in foods like shiitake mushrooms, cereals and baker’s yeast—are proving useful in supporting a healthy immune system. A 2021 study from *Molecular Nutrition & Food Research* concluded, “There is emerging evidence that dietary components, including yeast-derived beta-glucans, can aid host defense against pathogens by modulating inflammatory and antimicrobial activity of neutrophils and macrophages.”¹²

Omega-3s

A 2019 review noted that a healthy and balanced diet is important to help support the immune system—calling out the benefits of omega-3s specifically.¹³ It elaborated, “The impact of dietary polyunsaturated fatty acids (PUFAs) on the immune system has been investigated for decades, with special focus on the omega-3 PUFAs alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)... Both omega-3 and omega-6-derived metabolites have important immune-regulatory functions.”

Hopeful new human clinical research

While more information is available to consumers than ever before, the sheer amount of it—some of which is difficult to translate into laymen’s terms—can quickly become overwhelming. Still, many individuals are seeking alternatives to traditional medications and therapies, particularly products offering scientific support to back their claims.

According to the proprietary “Kerry Global Consumer Survey – Digestive & Immune Health, 2019,” individuals are significantly more likely (39%, on average) to purchase a health-promoting product if it’s based on research or clinical studies. That number was slightly higher at 40% in Asian countries.

Larsson and the team at Probi AB are strong supporters of science-backed ingredients. “We have been developing strain-specific probiotics for the last 30 years,” he said, “and although the science still is emerging, there is a clear link between the intestinal microbiota, specific probiotics and immune health.” Larsson pointed to one study he said indicated “a combination of the probiotic strains *L. plantarum* HEAL9 and *L. paracasei*

