

Maximum Wellness 8.19.2020

Immune Support Update

According to the World Health Organization, the worldwide estimate of influenza-related, severe illness is 3 to 5 million cases, which require hospitalizations – with roughly 290,000 to 650,000 deaths annually. Acute respiratory illnesses approximated 2.8 million deaths worldwide in 2016.

Severe, lower respiratory tract infections, such as the SARS-CoV-2 infection leading to COVID-19 disease, were the most common cause of sepsis-related deaths globally from 1990-2017.

Mayoclinic.org says, “sepsis is a potentially life-threatening condition caused by the body's response to an infection. The body normally releases chemicals into the bloodstream to fight an infection. Sepsis occurs when the body's response to these chemicals is out of balance, triggering changes that can damage multiple organ systems.”

Our body's defense mechanisms include the fast, non-antigen (virus) specific innate and the latent, slower antigen-specific (memory of past infection) adaptive immune response. The innate system reacts rapidly to search and destroy “non-self” threats – specifically through an inflammatory response, which is followed by damage repair from the attack.

The adaptive attack comes in the form of T and B lymphocytes, which secrete antibodies that are specific to the infecting pathogen – causing an immunological memory recall for future responses to the same pathogen.

There are specific nutritional strategies, which support optimal immune function. According to Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect Against Viral Infections, which appeared in the journal Nutrients in 2020, “several vitamins, including vitamins A, B6, B12, C, D, E, and folate; and trace elements, including zinc, iron, selenium, magnesium, and copper, play important and complementary roles in supporting both the innate and adaptive immune systems.”

Other nutrients, such as omega-3 fatty acids, also support an effective immune system - specifically by helping to resolve the inflammatory response.

The study authors from the University of Southampton (United Kingdom), Oregon State University, University of Otago (New Zealand), and the University Medical Center (Netherlands), comment that, “vitamin C affects several aspects of immunity, including supporting epithelial barrier function, growth and function of both innate and adaptive immune cells, white blood cell migration to sites of infection, phagocytosis and microbial killing, and antibody production,”

Vitamin D metabolites, note the researchers, “appear to regulate production of specific antimicrobial proteins that directly kill pathogens, and thus are likely to help reduce infection including in the lungs.”

In order to resolve the inflammatory immune response, the omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are sent to the site, “enzymatically converted to specialized pro-resolving mediators (SPMs) known as resolvins, protectins, and maresins. These molecules, along with others, function together to orchestrate the resolution of inflammation and to support healing, including in the respiratory tract.”

As for recommended supplementation, the study authors cite a recent meta-analysis on upper and lower respiratory infections. “Based on this evidence, a daily intake of at least 200 mg/day for healthy individuals is recommended,” for vitamin C. This (level) is above the US RDA of 75 and 90 mg/day for female and male adults, respectively.”

As for Vitamin D supplemental intake, “a daily intake of 2000 IU (50 µg) is recommended.” However, this amount is also above the US RDA of 400–800 IU (depending on age).

For Omega-3 fatty acids, “an intake of 250 mg EPA + DHA per day is recommended - consistent with global, regional, and national expert recommendations,” according to the study.

Let me be clear. Before you make any decision to add or amend your intake of nutritional supplements during times of immune challenges, it's best to get your daily nutrition plan in order. Then, check with your personal physician for guidance – consistent with your personal health profile.