



ESSENTIAL NUTRIENTS TO BUILD A BETTER IMMUNE SYSTEM

Terry's Bottom Line

My recommendation for immune support is to make sure you get the vitamins and minerals your immune system needs to function at its very best and cut or lower sugar from your diet.

The best forms of vitamins and minerals:

- Reduce your risk of bacterial and viral infections
- Speed recovery time from colds and flus
- Strengthen cells to resist viral invasion
- Activate T-helper cells and other immune system defenders

Our immune system is incredibly complex, and we tend not to think about it much until we get a sore throat, cough, or stuffy nose, or feel the aches, pains, and typical symptoms of a cold or flu. But by then, it's much tougher to get past it. The best plan is to prevent illnesses from getting a foothold to begin with. And, should a cold, flu, or other virus make itself known, have an immune system that can deal with it quickly and efficiently.

Don't overlook these basic nutrients – they can make all the difference for your immune system.



Vitamin A: Vitamin A is frequently cited as a primary nutrient for healthy skin and hair, but it is a much-needed component of an effective immune response.

Vitamin A, especially in the retinol form, moderates the activity of key immune system cells - macrophage and natural killer cells - when we are especially vulnerable to bacterial or viral attack. Vitamin A is a significant factor in healing and immune protection.

Vitamin C: I think that pretty much everyone associates vitamin C with fighting colds. And there's good reason for that: vitamin C really is important. It can reduce your chances of getting a cold by as much as 50 percent when taken as a preventive.

A deficiency in this valuable nutrient will make you more prone to illness, including pneumonia. Vitamin C works through our innate and adaptive immune responses and can also alleviate allergy and other respiratory symptoms, because it has a natural antihistamine effect. It literally helps you breathe easier.

Vitamin C works in synergy with the other nutrients, protecting you from oxidative stress, healing cuts and abrasions, and bolstering overall cellular integrity to help you withstand and repel viruses and bacteria.

Vitamin D3: Often, we don't get the level of vitamin D3 we need through our diets or exposure to sunlight. In fact, anyone who lives in a northern climate, is overweight or obese, works indoors most of the year, or who has darker skin, probably needs a supplemental source of vitamin D3. It seems like such a basic nutrient that it may be easy to forget about. If you figure that milk and other processed foods are fortified with vitamin D, you could be lulled into thinking that you're getting enough. But the numbers show that at least 40 percent of all Americans do not have adequate levels of this critical nutrient.

Additionally, another challenge in getting sufficient vitamin D is the widespread use of cholesterol-lowering drugs. This may come as a surprise, but cholesterol actually has some important roles in the body, and one of them is making vitamin D. So even if you're regularly out in the sun, taking a drug that greatly inhibits your body's production of cholesterol also makes it much harder for your body to make enough vitamin D.

And this is not a minor thing. A vitamin D deficiency is potentially serious. If you're low in vitamin D, you may be more susceptible to allergies, influenza viruses, and other upper respiratory ailments. But with more vitamin D on board, you're much more likely to remain unaffected – at least not suffer severe symptoms. Each significant increase (10 nmol/l) in vitamin D was associated with a 7% lower risk of infection.

There are two forms of vitamin D used in supplements. Vitamin D2, also known as ergocalciferol, is the form of vitamin D synthesized by plants. I prefer the D3 form because it matches what is already found in the body.

Vitamin E: Aside from being known for keeping skin healthy and the cardiovascular system strong, vitamin E is well recognized as being an essential nutrient for the immune system. But what many people may not know is that vitamin E isn't just one simple vitamin. It is actually a collection of components called tocopherols, and you really need the full family of those constituent parts

in order to get the most from vitamin E. These mixed tocopherols – alpha, beta, delta, and gamma – are more effective than a truncated single ingredient, as found in many supplemental formulas.

Vitamin E components are strong free radical scavengers. They prevent damage to the cells, points of entry for viruses, and scientific studies show that vitamin E activates macrophages, white blood cells, and antibody responses as well.

Additionally, vitamin E regulates dendritic cells, which signal between our innate and adaptive immune systems and deliver up antigens – toxins or foreign substances in the body – to T-cells that fight them and protect us from illnesses.

MINERALS THAT MATTER

Selenium: One of the reasons that viruses take hold is because they take advantage of weaknesses in our cells caused by oxidative damage. In fact, they don't just sneak in when our bodies are under stress, they also cause much of the oxidative damage that allows them to replicate.

Selenium strengthens immune resistance by shoring up the structures of our cells and preventing free radical stress to our DNA. Selenium activates a powerful, natural antioxidant enzyme in our body, called glutathione peroxidase (GPx). That's why it is a critical mineral for immune building and restoration. For much of its actions in the body, selenium works through a rare amino acid called selenocysteine. This amino acid is part of a family of selenoproteins unique to this nutrient alone, so even other protective ingredients like vitamin C or vitamin E can't replicate the exact purpose of this mineral. Additionally, selenium promotes your body's own immune defenses to fight bacterial or viral invaders when you are under attack.

But I think that one of the most important things to remember about selenium and your immune system is that deficiency of this mineral puts you at risk, and it is estimated that one in seven people have low dietary selenium intake.

Zinc: Zinc interacts with at least 300 different enzymes and is critical for a number of body functions. When it comes to fighting bacteria and viruses, it is not optional; zinc has been called a "gatekeeper of the immune system" for a good reason. It is a required nutrient for B cells, T cells, and natural killer cells that fight harmful invaders.

Researchers who pooled the results of three clinical studies found that zinc reduced the duration of cold symptoms by 42 percent compared to a placebo. The catch is this: you need to get zinc into your regimen as soon as you start feeling ill, because those great results were seen within the first 24 hours.

Selenium and zinc are critical for immune health. But an estimated 3 billion people worldwide may have zinc or selenium deficiency. Make sure that you aren't putting yourself at risk by being one of them.

To build a better immune system, I would suggest the following nutrients: Vitamin A (as retinyl acetate), Vitamin C (as ascorbic acid), Vitamin D3 (as cholecalciferol), Vitamin E (as d-alpha and mixed tocopherols), Zinc (from Zinc bisglycinate chelate) and Selenium (as selenium yeast) *Saccharomyces cerevisiae*