



# THE FAST & POWERFUL

# *Human*

# IMMUNE SYSTEM BOOSTING

B L U E P R I N T



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**THE 4  
ESSENTIALS  
TO IMPROVING  
YOUR IMMUNE  
RESILIENCE**

# *Essential #1*

## **THE HUMAN IMMUNE FUNCTION: FACTS AND REALITIES ON HOW TO SUPPORT YOUR IMMUNE SYSTEM FOR TODAY AND ALWAYS**



As everyone in the world comes to grips with the realities of the COVID-19 pandemic I thought it would be a good time for us to remind ourselves of how important our immune system is, how much we take it for granted and how much it is dependent upon our ability to provide it with the nutrition it needs to deliver its highest level of protection. This is a message that has never been more appropriate than right now.

Science has proven beyond doubt that our immune function is nutrition dependent. That the absence or presence of important nutritional components has a profound impact on our immune capacity, its ability to protect us and thus our survival. When nutrition is poor our immune systems are compromised, when nutrition is good our immune systems are good. When our nutrition is great our immune systems can reach their highest potential to protect us from the widest array of challenges.

It is never too late to work on maximizing your immune system's ability to protect you! Focusing on immune boosting and immune balancing nutrition is something everyone can do. It is not a question of if it is possible, it is only a question of how strongly we all embrace it.

Here are a few key points about nutrition and immune function that are important to understand. First a few fundamental definitions:

**Nutrition** – is the nourishment or energy received from the foods and nutrients delivered by the diet to support and promote health and growth.

**Malnutrition** – is over consumption or under consumption of nourishment or energy needed to support health and growth and resulting in a negative health impact.

Let's focus on the impact of undernutrition, and the dietary deficiencies and inadequacies it represents, on immune function.

- **Undernutrition is a form of malnutrition where intake fails to meet needs.**
- **Undernutrition results in immune dysfunction or compromise.**

There is powerful evidence to support the strong role that nutrition plays towards our health. And what in life is more precious to us than our health, and that of our family! We must all do the maximum to build up and protect our health.

Together our immune system provides biological, biochemical and even chemical weaponry to keep our body defended and to help it repair and recover from challenges. We need to improve our RESILIENCE as much as we can! Optimum nutrition plays a powerful role here.



Our body is equipped with first-line defenses such as our skin and the lining of our respiratory tract and digestive system.

These are protective barriers and we call these our first-line defenses and they contribute to what we know as our innate or built-in immunity. Thankfully, we also have many second-line defenses which function inside our body.

There are many team players that play a role in our second-line defenses. White blood cells are very important immune cells. We have B-cells and T-cells, which talk to each other and have a variety of different jobs to do. These

specialized cells also help orchestrate the recovery process of the body and provide us with memory cells which retain the ability to combat certain infectious agents if we encounter them again. This ability is known as our adaptive immunity. This all requires a lot of energy and nutrients!

Even though we have these first- and second-line defenses, the body often gets damaged by illness or injury and the immune system is equipped to deal with this – to help the body repair itself and RECOVER to get back to normal.

Our immune system works together with processes of inflammation in the

recovery process as well. Inflammation is part of the immune response to potentially harmful agents, with the aim of neutralizing and then repairing the damage. Immune cells receive signals and go to the site of damage. When everything works well, we could compare the immune system to a finely-tuned orchestra—all players work together in perfect harmony or synchrony and the conductor is a good one!

But at times things can go wrong, and in these instances, it seems that our immune system is out of balance or not well-tuned anymore! At these times there can be persistent, or chronic,

low-level inflammation. Lack of good quality nutrition as well as poor diet and lifestyle contribute directly to harmful chronic inflammation and cause the immune system to underperform.

In what ways is your body experiencing malnutrition where you are not getting enough of the nutrients your immune system needs? List them.

**Example:** I eat fast food twice a week and snack on a lot of processed foods during the week. I also do not eat a good amount of fruits and vegetables in my daily meals.

### How about you?

1)

2)

3)

4)

5)

# *Essential #2*

## **THE ESSENTIAL ROLE OF PHYTONUTRIENTS IN IMPROVING OUR IMMUNE RESILIENCE**



A strong, well-functioning immune system is the cornerstone of good health. I want to focus on the role of Phytonutrients in improving our immune resilience. These powerful food components play an important role in our health, supporting and modulating immune function to keep us healthy and prevent specific diseases.

Phytonutrients are natural compounds that can play active roles in our body. "Phyto" refers to the Greek word for plant, phytonutrients thus are found in plant foods like fruits, vegetables, nuts and spices and plant derived beverages like tea, coffee and wine. While not considered essential nutrients like vitamins and minerals, they play specific roles in our body and are beneficial to human health.

Phytonutrients are responsible for much of the color, aroma and flavor of fruits and vegetables. Each phytonutrient comes from a variety of different plant sources, and also has different benefits and effects on our body. Many work synergistically with one another.

Scientists estimate there are over 10,000 phytonutrients in plant foods and thousands of them have been identified. They have been classified according to their chemical structure into different groups. The most studied are the Carotenoids; the large polyphenol family that includes the Flavonoids, and the sulfur-containing compounds, like Allicin in garlic and Sulforaphane in broccoli.

Exactly how they work in our body to protect health and prevent disease is yet to be understood and is an area of active research. Some studies point to their antioxidant and free-radical scavenging activity as possible mechanisms for protecting our cells from damage. Others to their ability to inhibit DNA and RNA synthesis and to their antibacterial and antiviral properties.

Specifically looking at the immune system, some phytonutrients can regulate immune responses, increase the number of specific immune cells and enhance immune activities.

With so many phytonutrients, and different activities it is impossible to isolate specific compounds to try to protect our health. Luckily most plant foods each contain dozens of phytonutrients. We should try to eat a wide variety in order to consume as many different phytonutrients as possible.

Phytonutrients are often color-specific, where foods that have the same color often have similar types of phytonutrients. For this reason, many leading health organizations such as the American Institute for Cancer Research, the American Heart Association and the World Health

Organization recommend “Eating A Rainbow” — many kinds of colorful fruits, vegetables, legumes, nuts, and seeds to ensure we are benefiting from a broad variety of phytonutrients.

There is a great and growing body of evidence that whole food nutrients play critical roles in immune function.

Their presence or absence modulates our immune capacity. We know that a balance of all the key nutrients involved in human health are essential for optimum immune response. The way in which some nutrients benefit the immune system is only just beginning to be understood from the exciting field of “Immuno-nutrition.”

What Phytonutrients can you begin to eat to make your immune system resilient by eating more of the rainbow?

**Example:** Everyday I will eat Kale, Apple, Orange, Banana, Broccoli and Mango with my meals.

**How about you?**

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These are amazing key nutrients you want to be adding to your daily diet to develop a resilient and powerful immune system:



"You only want to eat whole food nutritional products that are Juice extracted, dehydrated, organically grown, human whole food. That has human clinical trials published in peer reviewed medical journals proven it's not going to hurt you but help you, and is produced under pharmaceutical controls. These amazing solutions by NeoLife far surpass the world's highest standard of cellular nutrition."

### 1. Carotenoids:

- Carotenoids are a great example. These lipid soluble, colorful components that make carrots orange or peppers red are well documented in scientific literature to be Immune Modulators. Remember, modulation means when carotenoids are low in the diet immune capacity is suppressed. Conversely, when they are abundant in the diet, immune capacity is elevated. This immune modulating effect



has been shown in powerful clinical studies, including those done on [NeoLife Carotenoid Complex](#) and published in the American Journal of Clinical Nutrition. Many, many research studies have shown that optimal levels of carotenoids in the diet are important to the proper functioning of our immune system. Studies of NeoLife Carotenoid Complex studies showed that Carotenoid Complex dramatically increased both immune cell levels and overall immune cell response by up to 37% in just 20 days!

- [Carotenoid Complex](#) was formulated to bridge the gap in our dietary intake of these important phytonutrients. From its conception we recognized that carotenoids work synergistically and that each carotenoid may have a specific function in the body. Carotenoid Complex is therefore a broad-spectrum supplement delivering the carotenoids that would be present in an optimal serving of carotenoid-rich fruits and vegetables.
- Carotenoid Complex is among the most researched nutrition supplements in the market. In a series of clinical trials conducted between 1993 to 2001 by various research institutions Neo Life showed that carotenoids in the Carotenoid Complex are bioavailable—they are efficiently absorbed into the bloodstream. They also showed that supplementation with Carotenoid Complex lowers markers of oxidative damage and enhances parameters of immune function.
- Specifically, these studies showed that Carotenoid Complex dramatically increased both immune cell levels and overall immune cell responsiveness. Supplementation with Carotenoid Complex boosted levels of a particular type of white blood cells, the lymphocytes, which are the body's first immunologic line of defense against disease. Supplementation with Carotenoid Complex also increased the level of another type of immune cell: natural killer cells. These cells are very important in fighting off virally infected cells.

## 2. Flavonoids

- Polyphenols, which include Flavonoids, are another example of immune modulating whole food nutrients. Amongst a growing body of evidence of immunological benefit, a 2018 review article in the Journal of Immunology Research titled "Regulation of Immune Function by Polyphenols" points out in their opening comments that Polyphenols

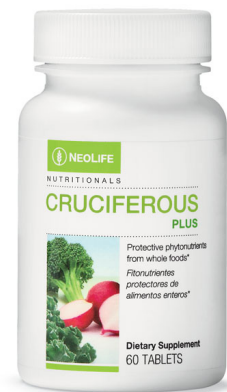


promote immunity to foreign pathogens via various pathways. Different immune cells express multiple types of polyphenol receptors that recognize and allow cellular uptake of polyphenols, which subsequently activate signaling pathways to initiate immune response.

- **Flavonoid Complex** was NeoLifes' first polyphenol supplement. **Neo Life Flavonoid Complex** contains flavonoids representative of all flavonoid classes — flavones, flavanols, flavanones, anthocyanins, and catechins — just as they naturally occur in whole fruits and vegetables. NeoLife's exclusive blend of flavonoid-rich extracts and concentrates is derived from cranberries, kale, green tea, beets, elderberries, red and black grapes, oranges, lemons, and grapefruit. Each tablet provides the phytonutrient value of an optimal serving of flavonoid-rich fruits and vegetables.

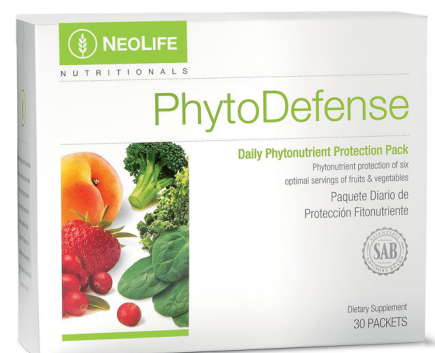
### 3. Cruciferous Plus

- **Cruciferous Plus** provides an optimal serving of phytonutrients from selected cruciferous vegetables— broccoli, radish, kale, black mustard, brown mustard and watercress. Inside **Neo life Cruciferous Plus** the vegetables are unique in that they are a rich source of sulfur-containing compounds that impart their pungent aroma and bitter taste. In our body these compounds have a number of activities that promote health and prevent disease.



### 4. PhytoDefense

- **PhytoDefense** is a daily phytonutrient protection with the power of 6 optimal servings of fruits and vegetables to support your body's natural defenses. Containing 3 Carotenoid Complex, 2 Flavonoid Complex and 1 Cruciferous Plus delivering a broad range of powerful phytonutrients from whole food sources. **Neo Life PhytoDefense** It is formulated to deliver the different classes of carotenoids, flavonoids and cruciferous vegetable health protective compounds



as you would find in six servings of phytonutrient rich fruits and vegetables. rings you support from 3 products in a convenient daily pack; giving you the powerful phytonutrient protection of six optimal servings of fruits and vegetables. It combines carotenoids together with flavonoids from fruits and vegetables as well as phytonutrients from cruciferous vegetables to support and boost immune function.

## 5. Omega-3 Fatty Acids

The role of omega-3 fatty acids in immune function has not gotten the same level of attention as other nutrient groups. They are known more for their heart-healthy, anti-inflammatory benefits.

NeoLife research first touched on omega-3's and immune function in our 2007 clinical trial that showed inflammatory balancing benefits. That was followed by evidence showing promotion of biomarkers of inflammation resolution and healing. More recently, evidence has emerged regarding their critical roles as signaling molecules, helping to coordinate and regulate the activity of immune cells. There are many good research papers demonstrating the key role of omega-3 fatty acids to our overall immune balance and capability. Our own 8-week human study with [Omega-III Salmon Oil Plus](#) demonstrated the ability to alter membrane composition of cells in a way which reduced the inflammatory index by up to a massive 68% in that short length of time. [Neo Life Omega-III Salmon Oil Plus](#) is clinically proven formula of ultrapure, concentrated fish oil with all 8 omega-3s to support heart health, joint comfort and inflammation balance.



**How will you take priority of your health and include the world's best phytonutrients as part of your immune health daily?**

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# *Essential #3*

## **BUILDING RESILIENCE & RECOVERY:**

### **WHY GETTING ESSENTIAL VITAMIN AND MINERALS ARE SO IMPORTANT**



The relationship between nutrition and immune function has been well and clearly established by decades of scientific investigation. Undernutrition or deficiency of key essential vitamins and minerals is known to result in immune dysfunction or compromise. Immune-compromising vitamin and mineral deficiencies include Vitamins A, D, C, E, B6, and B12, folic acid, zinc, iron, copper, and selenium.

An article published in the January 2020 issue of the journal *Nutrients*, titled "A Review of Micronutrients and the Immune System-Working in Harmony to Reduce the Risk of Infection" was timely and strongly reaffirms this well-known reality. They state, "Adequate amounts are essential to ensure proper function of physical barriers and immune cells; however, daily micronutrient intakes necessary to support immune function may be higher than current recommended dietary allowances."

The presence or absence of these immune-centric vitamins and minerals "modulates" your immune capability and strength. Simply stated that means when they are low in the diet, immune power is compromised or suppressed. Conversely, when they are abundant in the diet, immune power is elevated. Sadly, most people are deficient in one or more of these key essential nutrients.

### Essential Vitamin and Mineral Complex

With the Essential Vitamin and Mineral Complex you have a full spectrum of vitamins and minerals to add to the nutritional support for optimum immune balance and function.

#### 1. Vitamin C

- **Super C Threshold Control** provides a slow release of vitamin C for over 6 hours and delivers more vitamin C than 8 small oranges. It contains NeoLife's Neo-Plex Concentrate, rich in whole food bioflavonoids for additional immune support. Vitamin C is known to work together with zinc to shorten recovery time, for example, and also to assist wound healing.
- **Neo Life Super C Threshold Control** is a delicious chewable cherry flavor vitamin C for both adults and children. It provides the vitamin C equivalent of 4 oranges. It also has NeoLife's Neo-Plex Concentrate, plus rosehips and acerola cherries.



## 2. Zinc

- **Neo Life Zinc Chelate** provides a unique high-purity and high-potency zinc as the amino acid chelate for improved bioavailability. Zinc is a classical nutrient with many functions such as helping to build our DNA and protein and supporting our antioxidant enzyme functions. It reduces the severity and duration of common cold symptoms, and the healing of wounds, working in partnership with Vitamin C.



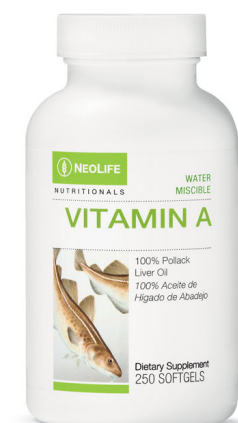
## 3. Vitamin E

- **Vitamin E Plus** A powerful, fat-soluble antioxidant, to support overall health. Delivers all 8 forms of natural vitamin E for a broad spectrum. Protection. Vitamin E supports heart, brain and prostate health and promotes lung, colon and immune function as well as youthful looking skin. Helps inhibit plaque formation from oxidation of cholesterol because of its powerful antioxidant effects. Improves immune function, especially in the elderly. Whole food sourced natural vitamin E is full spectrum and more potent than synthetic forms.
- **Neo Life Vitamin E Plus** Provides the entire vitamin E family of tocopherols and tocotrienols—not just alpha-tocopherol — in balanced ratios that occur in natural foods. Having a unique water-miscible formulation quickly disperses into small particles that are easily absorbed. Is also cold-pressed containing unrefined wheat germ oil and is combined with high potency soy lipid extracts.



## 4. Vitamin A

- **Vitamin A** provides the body with sharp eyesight and radiant skin.
- **Neo Life Vitamin A** supports healthy



vision, bones, and skin, and acts as a natural antioxidant. This amazing solution of Vitamin A offers a water-miscible formula from one of nature's finest sources of Vitamin A: pure liver oil from pollack (a species of cod) that contains essentially no vitamin D.

### 5. Vitamin B

- **Vitamin B** plays an important role in promoting a healthy cardiovascular system and is crucial to immune response and mental acuity.
- **Neo Life Super B Threshold Controlled** contains all 8 B vitamins in sustained release delivery form to support stress, energy, and a healthy metabolism. Promotes the active conversion of all food into energy and assists in synthesis and reenergizing of cells and tissues throughout the body.



Provides maximum metabolic support to help meet high nutrient demands during exercise and periods of stress. This amazing solution provides a sustained release of B-complex nutrients over a period of six hours having a high potency – for optimum metabolic support.

There is a great deal more to the importance of nutrition to optimal health and immunity. Thousands of articles and books have been written on the topic. The importance of the wide array of nutrients these essential vitamins and minerals can contribute to lifelong health and vitality is an irrefutable reality of human biochemistry. I strongly advise making these whole foods the dominant components of your diet, for all the many benefits they provide, including immune strength. It remains however that most people are unable to get that done. These amazing whole food pharmaceutical grade solutions are a perfect choice to help bridge those immune compromising nutritional gaps.

**How will you be including these Essential Vitamins and Minerals inside your daily diet? Take the time to write it down.**

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# Essential #4

## GET DEFENSIVE: IMMUNITY & EXERCISE



We all know the drill: wash your hands, avoid touching your face and eyes, stay at home, and stay at least 6 feet apart when in public to maintain physical separation.

These along with other guidelines are in place for our own safety in an effort to stop the spread of the coronavirus. But wait!! What about one of our best defenses against illness? Exercise!

Regular moderate to vigorous activities like walking, jogging, and dancing adding up to 150 minutes weekly play a critical role in supporting your immune system and protecting your body against illness caused by bacteria and viruses. In fact, staying fit (or getting fit) during this pandemic may be your ticket to staying healthy at this critical time and even after the acute threat passes.

Your immune system is a complex collection of defensive mechanisms your body has in place for rapid response at a moment's notice that halt invading pathogens – including viruses. Think of your immune system like a military operation with various layers of protection: reconnaissance units, specialized forces on constant patrol and other units that specifically attack known enemies. The immune system's "soldiers" come more in the form of various immune cells and compounds that can act immediately or build up protection over time. Killer T-cells and Lymphocytes along with Cytokines are just a few of the specialized immune cells and compounds in the body's immunity army.

To make matters worse, research shows that the body's ability to mobilize an effective strike on invading pathogens is actually impaired when we are experiencing stress created by the pandemic's current isolation orders. Cortisol levels (the stress hormone) are elevated during periods of isolation and confinement, along with feelings of uncertainty and heightened anxiety, all of which in turn impairs the body's ability to fight off infections.

Sounds like a catch-22 – right? We are isolating to stop the virus from spreading but this in fact impacts our stress levels which indirectly impairs our ability to stay healthy. Yikes!!

But let's not lose hope here because staying or getting physically active has a profound impact on your immune forces and potentially may help you stay healthy as well as assist in easing feelings of stress and anxiety and boost feelings of well-being and mood.

Here's how exercise will powerfully benefit your immune system and build resilience to your health:

- **A single session of exercise**, moderate to vigorous effort such as a very brisk walk or jog, stimulates literally an instantaneous mobilization of billions of immune cells from spleen and bone marrow into the blood and then various tissue sites including the lungs. These immune cells, such as white blood cells, are primed to fight and can attack cells that have been infected by a virus.
- **A single session of exercise** also prompts immune cells' recirculation between the blood and tissues acting as enhanced surveillance for pathogens and ability to thwart an infection.
- **A single session of exercise** also enhances specialized body proteins called cytokines such as interleukin-6 (IL-6) which helps direct immune cells to the site of the infection. The elevation of IL-6 and other cytokines can help calm inflammation. Great news as inflammation is the hallmark of many viral infections!

When performed consistently, routine aerobic exercise adds up to an enhanced immune capacity and may effectively reduce a person's susceptibility to, and speed of recovery from illness.

- Studies show that people who participate in moderate daily exercise have approximately 50% lower risk of contracting an upper respiratory tract infection.
- Research shows regular physical activity is associated with lower death rates from infection with influenza and pneumonia. While it's much too early to know whether routine exercise protects against the coronavirus, researchers suspect physically fit individuals may have a lower mortality rate from COVID-19.
- Exercise, particularly aerobic such as indoor cycling and jogging, also improves lung function, which in turn may assist with improved airflow in the advent of an upper respiratory tract infection or another related upper airway illness.
- Routine exercise also has been shown to improve feelings of well-being and enhance mood while calming anxiety and stress. Routine exercise appears to impact specific neurotransmitters and other neurologically "feel good" compounds in the brain.

## Start Your Defensive Plan Today!



Read [This Article](#) on how to stay active during this pandemic season. I know what you're thinking, **"How can I start or even keep up a fitness plan with clubs closed and access to other forms of traditional exercise is extremely limited??!"** or **"I'm home with kids so exercising is out of the question!"**

### **Desperate times require creative measures!**

Finding new ways to stay or get fit is doable, surprisingly accessible and even fun for the entire family.

### **A great Exercise Goal is 150 minutes or more a week!**

5 days at 30+ minutes or you can add up 5 or 10 minutes here or there of vigorous activity. Doing moderate activity such as dancing to music with the kids at home to reach your 30+ minute daily goal rather than doing 30+ minutes at once.

Here are four great ideas you can apply at the comfort of your own home:



1. Follow along with exercise classes online or on TV – there is a wide array from yoga to high Intensity workouts as well as video workout for kids and whole families.
2. Structure activity with your “isolation unit” (family or few friends) such as a morning walk or afternoon bike ride (while observing community guidelines for distancing and face masks).
3. Set up an outdoor fitness course on your sidewalk, front lawn or elsewhere with stations that you run/walk to and perform different calisthenics.
4. Dust off that home cardio equipment such as a treadmill or stationary bike and use it (listen to podcasts or watch TV to pass the time).

With this brief look at the workings of our immune system, we can see that our first and second-line defenses play an important role in protecting our body from harmful foreign substances. We need to ensure that our bodies are RESILIENT to combat the many challenges it may face—we need optimal nutrition and a defensive exercise plan! A well-balanced diet together with additional support from NeoLife Nutritionals and consistent daily exercise can help provide optimal levels of all nutrients, strengthen your immune system, and pave the way for your resilient journey!