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"When You Want The Best"

VIRAL SUPPORT

(Extended Information and Product Suggestions)

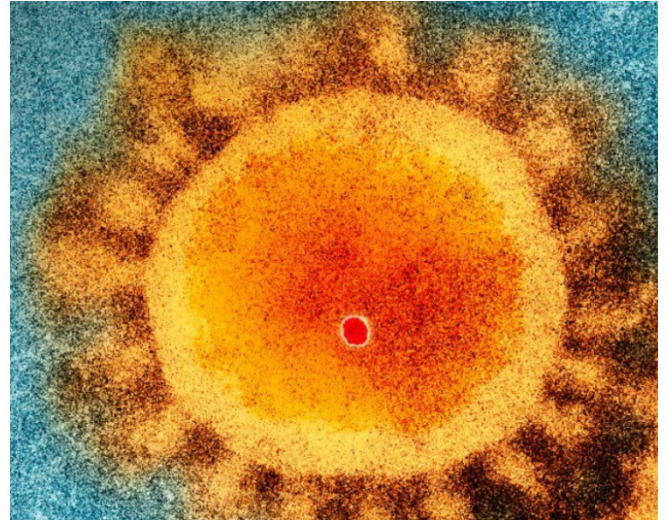
by

Lynn Toohey, PhD & Don Bellgrau, PhD

What to do for viral support has become a common question. There are many nutrients which can be utilized to support the adaptive arm of the immune system, which is the arm that responds to viruses. Ultimately, we want to have a good response to viruses, and keeping our bodies healthy and replete in nutrients helps toward that goal.

Lynn Toohey, PhD provides us with some information on viral support and good health practices. Professor of Immunology Don Bellgrau, PhD provides us with an interesting look at how the immune system responds to viruses, and why that response may be stronger in young children, and particularly weak in the elderly.

Regardless of age, though, there are many components of the adaptive immune system that react to viruses, and those components can be supported with nutrition to make sure the homeostasis of a strong immune system is preserved. One of those prominent components is TH1 helper T cells, which are known for maximizing the efficacy of macrophages, and for facilitating the proliferation of Killer T cells. Research shows that there are particular nutrients that support the TH1 balance in the immune system, and nutrients that target the balance by providing a homeostatic effect on the TH17 pathway, which is a misdirection when the body needs to support TH1.



**IMMU-NITION
FOR VIRAL
POWER!**

Viral Support - Lifestyle and Nutrients

(By Lynn Toohey, PhD)

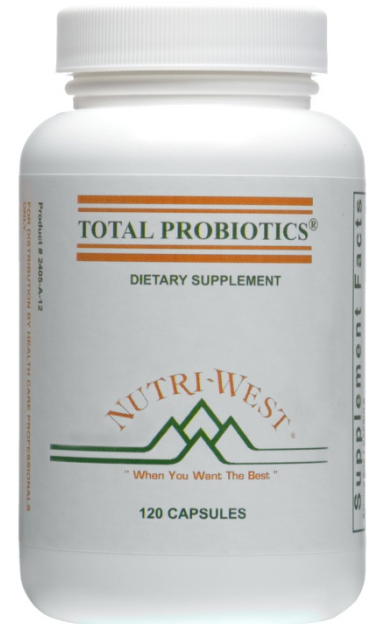
Lifestyle: For a strong healthy immune system, exercise and eat a balanced diet, full of organic veggies rich in darkly colored phytochemicals and antioxidants. Avoid toxic exposures that reduce immune defenses, and don't touch the hands to the eyes, nose or mouth. Protect your microbiomes where a lot of your immune system resides – it has been estimated that the gut represents 70-90% of our entire immune system (*Clin Exp Immunol. 2008 Sep; 153(Suppl 1): 3-6.*), but we also have skin microbiomes and mouth microbiomes. Just this past January, Dan Murphy, DC lectured about the possible harm in destroying all the bacteria in your mouth - some rinses wipe away the good with the bad, and it's like dousing your mouth microbiome with antibiotics. Advice is to wash your hands, however, wash them with soap and water - hand sanitizers could be disrupting the skin microbiome. Sanitize surfaces, not your hands. A survey of 161 long-term care facilities in the United States presented at an American College of Preventative Medicine meeting **revealed an association between the preferential uses of alcohol-based hand sanitizers for routine hand hygiene with an increased risk for outbreaks of norovirus**, the highly infectious virus that causes most cases of acute gastroenteritis.

Staff in facilities that experienced norovirus outbreaks were **six times more likely to use hand sanitizers equally or more than soap and water for routine hand hygiene**, according to the study. (*Am J Infect Control 2011;39:296-301*)

I recommend **Total Probiotics** for a diverse population of probiotics (along with prebiotics) to populate the gut with good bacteria and maintain a healthy balance and microbiome.

To strengthen our immune defenses, Dr. Bellgrau reminds us that any imbalance in the body will ultimately impact the immune system. Supporting all areas of the body that maintain health, especially those out of balance, is crucial to the effectiveness of the immune system. Supporting the whole immune system, innate and humoral, makes sense to keep a balance for appropriate immune response.

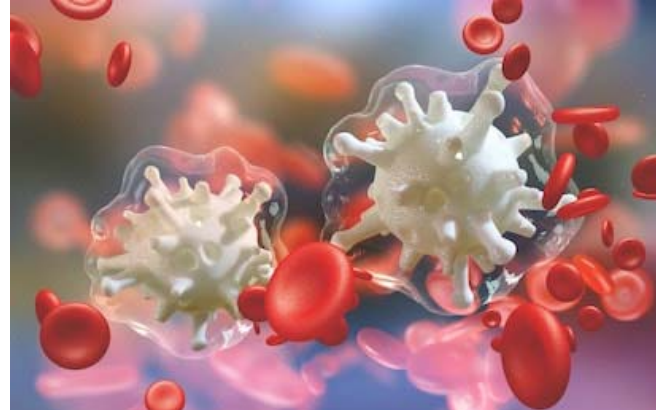
Some of these critical areas include: Stress, sleep, the adrenal glands, antioxidant status, immune organs (thymus, spleen, gut), protein and balance of the TH1-TH17 pathways.



The Immunology Behind Susceptibility to Viral Attack

(By Professor Don Bellgrau, PhD)

When people say that susceptibility to viral attack can be increased with a compromised immune system, that includes people with underlying health conditions. It also includes a propensity, due to genetics or other factors, to respond to immune attacks in an individual manner.



For instance, sometimes, instead of reacting to a viral attack with the appropriate TH1 helper T cell fighting response, the body reacts with an opposing pathway called TH17. This is a pathway that causes inflammation. TH17 is a necessary immune pathway, however a major job of that pathway is to fight bacterial attack, and it can respond inappropriately during viral attack. When this inflammatory response has been initiated, it is not so much that this response is necessarily harmful, it is that the right pathway has not been initiated (TH1). If it were just a matter of quelling inflammation, then attempts to use NSAIDS would make a difference in this scenario, however recent evidence from France shows us that they are not apparently effective in the least.

Think of athletes; one is training for a marathon, and one is training for a weight lifting competition. For the athlete training for the weight lifting, they are not going to be as successful if called upon to run a marathon. Their weight lifting training did not harm them, but they were not as prepared for the event because they were busy with a different response.

Similarly, to be prepared for a viral attack, we want the immune system to have the appropriate response and be as efficient as it can be. Certain nutrients, such as cordyceps, will support what is called the shift from TH17 to TH1, and it is the balance of the pathways that is crucial to optimal health.

Susceptibility of the Elderly:

(By Professor Don Bellgrau, PhD)



The elderly appear to be more susceptible to viral attack. While a simple explanation for this is that the older we get the less efficient our bodies become (which is why professional athletes retire when their bodies no longer function as they once did) a more sophisticated explanation can be made for your immune system and how it changes from when you are very young to when you are much older.

Your immune system does not know what you will confront as you go through life. For example, it does not know when you are born that you will one day travel to West Africa and become exposed to the Ebola virus. To “hedge its bets” the immune system essentially commits each warrior lymphocyte (the source of antibodies and cytotoxic (killer) cells) with a unique targeting ability.

Using the first Star Wars movie as an example, you will recall that Luke and his companions were tasked with destroying the Death Star. Each fighter was assigned a potential target on the Death Star, which in immunologic terms is called an epitope. Since no one knew where the Death Star (the antigen) was susceptible, the approach was to hit it in multiple places. This is analogous to your immune system. Every lymphocyte (fighter white blood cell) has a unique targeting ability to some target epitope. In the movie Luke had insider information provided by the Force that the Death Star could be destroyed by hitting an **obscure vent** (the Death Star’s target epitope). So, while his colleagues were being eliminated by futilely targeting non vulnerable targets Luke hit the right one and destroyed the Death Star. Using this example, when you are young your immune system makes many fighters with the expectation that some among them will be able to target the Death Stars that it will experience as you travel through life. As you get older and many of those fighters never get to engage an enemy they fall into disrepair and you are left with the experienced (memory) lymphocytes that have been to battle and know how to target the virus. The immune systems of older people are dominated by memory lymphocytes that target epitopes that no longer exist while young people still have (naïve) fighters still on the ground that can recognize and attack new targets. And that is why the elderly have a disadvantage during viral attacks. Combine that with being immune compromised and it tends to skew the incidence of death from viruses such as the flu.

So the moral of this story is that if you are young you should do all you can to stay healthy and keep all those potential naïve fighters in good repair because you may be needing them. For older individuals, they should be concentrating on living a healthy lifestyle, and supporting the components of the immune system that will help in a viral environment.

Support for the Critical Areas:

Stress cause major imbalances in organ systems and is known to lower immune defenses. A changing social structure is immensely stressful for all. It is important to incorporate de-stressing mechanisms like relaxation exercises and stress support nutrition.

The **adrenal glands** are known as the stress glands of the body. They produce hormones that help us combat stress.

Proper **sleep** is necessary to mount proper immune attacks. Seven to eight hours of sleep is needed to allow for drainage of toxins from the brain, including amyloid proteins and substances that interfere with immune function.

Antioxidants maintain a healthy cellular environment; damaged cells from free radical damage adversely affect the immune system (*Positive effect of antioxidants on immune system. Hajian S. Immunopathol Persa. 2015;1(1):e02.*) Many immune nutrients like vitamin C and vitamin E are regenerated by antioxidants.

Immune organs: Since the **gut** represents 70-90% of our entire immune system, it is critical to keep it healthy. T cells mature in the **thymus** and become critical to the adaptive immune system, where the body responds to foreign invaders. The **spleen** is the largest organ in the lymphatic system, filtering blood; recycling red blood cells, and storing platelets and white blood cells.

Protein is necessary for the manufacturing of immune components like antibodies, immunoglobulins, cytokines etc.

Boosting the TH1 pathway and supporting balance of the TH17 pathway will help direct our immune defenses appropriately.

Generally **supporting immune function** to keep a balance of appropriate pathways.

The Immune System Support Protocol for Optimal Results:

Stress: Support products include **DSF Formula** (stands for de-stress formula) and **DSF Herbal; Serene Renew; B-Complex** or **Biostress B; Complete MG** (magnesium helps combat the ill-effects of the stress neurotransmitters); **Complete Brain Charge** (precursors for acetylcholine, which supports the non-inflammatory para-sympathetic arm of the central nervous system); **CLM-NRV** herbal tincture; **Anxiolix** homeopathic; **Surgery/Trauma** homeopathic (good for general stress); **Whole System EEP** homeopathic (Electrical and Emotional support).

Adrenal Glands: **Adreno-Lyph 80** and **Adreno-lyph 160; #1-AD** herbal tincture.

Sleep: **SLP Renew; Serene Renew; Total 5-HTP.**

Antioxidants: **Sago-C 500; Pedia-C; Super-Ox; Complete Glutathione; Complete Glutathione Lozenge; E-Tocotrienols; Total Alpha Lipoic Acid.**

Immune System Support Protocol for Optimal Results: (cont'd)

Immune Organs: Total Leaky Gut; Total Probiotics; Complete Neuro; NAC Renew; Hypo-D; Total Enzymes for *Gut* support. Spleno-Lymph or *Spleen* support. Thymo-Lymph for *thymus* support.

Protein: Complete Paleo; Total Green; Complete Whey-G (all protein powders). Complete Paleo is hydrolyzed collagen protein, and hypoallergenic. In addition to providing protein, Total Green offers high powered phytochemical nutrients and greens; while Complete Whey-G raises glutathione in addition to providing protein.

Boosting TH1 Support: *Glycans* are amongst the most potent nutrients known for supporting the TH1 immune pathway. They are found in abundance in mushrooms. “Through testing both cellular and humoral branches of immune reactions, we found that... glucan was consistently the most active molecule strongly stimulating every reaction evaluated”. (*Vetvicka V. & Vetvickova J.A.C Research May 34(5):2275-82*). Other glycans include shiitake, reishi, maitake, Lion’s mane, coriolus versicolor, beta glucans (such as lentinan), all found in **Glycan Renew**.

Balancing TH17: *Cordyceps* and other adaptogens. **NRG Renew** is a proprietary blend (800 mg) of well-known adaptogens, meaning their specialty is in adapting, or helping to maintain homeostasis by regulating to the norm. the adaptogens include: Eleuthero, Panax Ginseng, Schisandra Chinensis, Ashwaganda, Rhodiola Rosea and Gotu Kola.

Cordyceps is an adaptogen that has the ability to support the homeostasis of TH1 equilibrium is captured in the title of an article called “Two-sided effect of Cordyceps on dendritic cells in different physiological stages”, where researchers determined that **cordyceps had the ability to restore a balance of TH1, yet prevented an over-active response**. “This investigation illustrates the Yin-Yang balancing effects of cordyceps sinensis” (*Li CYI, et al. J Leukoc Biol. 2009 Jun;85(6):987-9.*) Cordyceps is a glycan found in **LV Renew, Glycan Renew and Total Protect**, which also contain other supporting nutrients.

Flavonoids: Greens Renew (Chewable and Powder) and Phyto Renew Chewable are extremely high in *flavonoid* content; BP Renew; Rutin Plus; Quercetin-S. *Flavonoids* are known for being able to keep the TH17 path in check (*The Role of Flavonoids Volume 2018 ... Dimitra Kelepouri et al. 2018.*)

Generally supporting immune function: ISB Formula (Immune System Builder); LNG-RSP (tincture); S.O.D. Lozenge; Zinc Lozenge; Vitamin A Emulsion; Multi-Complex; Multibalance for Men; Multibalance for Women; Lacto-Plus; Black Currant Seed Oil; #2-CF (herbal cold and flu support); Total Bac-T (tincture); Total Flu-Cld #1 (homeopathic); Bactoflam (homeopathic); Virex (homeopathic); Chron Sino (homeopathic).

Vitamin D3 supports the immune system, and epidemiological differences are shown in areas with vitamin D3 supplementation during flu season. Complete Hi D3; Vitamin D3

Greens Renew – full of flavonoids!

There is quite a lot of evidence that in addition to balancing TH17, greens are highly supportive of the immune system. (Otsuki T. et al.(2011); Kwak JH. 2012; Bae, MJ et al. 2013; Uchikawa T. et al. 2011; Fornaciari S. et al. 2014; Khuda-Bukhsh, A.R. et al. 2014; Heim K.C. et al. 2012; Mitchell S.C. & Waring R.H. 2014; Aziz et al., 2013; Lukiw, 2013; Carlino et al., 2013; Lu et al., 2013; Mitew et al., 2013; Foster and McVey Neufeld, 2013; Lu et al., 2013; Forsythe et al., 2012; Collins et al., 2013; Douglas-Escobar et al., 2013; deFigueiredo, S.M. et al. 2013; Gawlik-Dziki U et al. 2014; Farzaei MH et al. 2013; Kuo CH et al. 2013; Gerhauser C. et al. 2013; Wang Y. et al. 2014; Conner, TS et al. 2014; Cholewa JM et al. 2014; Szaefer H et al. 2014; Liu JQ et al. 2014; Dias FM et al. 2014)

Imagine all of the health benefits of various high powered green nutrients, all rolled into one convenient chewable tablet, also available as a powder (to put in shakes, mix with food, etc.) Organic complete protein spirulina, combined with the cruciferous veggies and sprouts) and phytochemically packed nutrients from beets and broccoli to other darkly colored vegetables and nutrients, offers the best way to get your greens on the go! It is impossible to try to equate servings of vegetables and vegetables in supplements; however, Greens Renew Chewable and Greens Renew Powder have an outstanding amount and selection of antioxidant-rich greens (along with beta-carotene rich carrot). Each nutrient brings added power to the formulas.

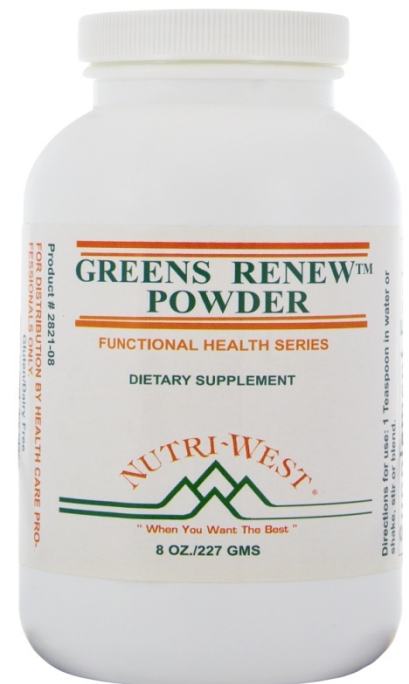


Greens Renew Chewable

and

Greens Renew Powder

Both nutritional supplements are full of greens and high-powered green extracts and highly recommended for immune support.



**Please note: Nutri-West is trying to keep up with the demand for nutritional products, and we appreciate your patience and understanding while we work overtime to supply these to you. We have tried to offer several options; if a product becomes back-ordered, please ask about crossovers that are available.*



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