



## Educational Announcement And Info On New Immunity Product From Dr. Pappas

As you know we have been closely following the COVID-19 pandemic and have been writing and speaking about this novel virus. Our writings can be found here:

- [Dr. Pappas' Update on Coronavirus](#)
- [COVID-19 Deep Dive Part 1](#)
- [COVID-19 Deep Dive Part 2](#)
- [COVID-19 Deep Dive Part 3](#)

In retrospect, we think they have held up well and remain valuable. However, much has happened since and the science and its consequences are changing at a frantic pace, all of which have given us more knowledge and hope. Furthermore, we have seen the eye of the enemy and have been wrestling with the disease as some of our patients have become infected. Using all of the diagnostic and treatment modalities at our disposal including a resilient and stubborn team, we have thus far effectively engaged the infection. One of these key tools has been antibody testing and we look forward to reporting in more detail in the near future about our extensive beta testing as we make this available for all. Fortunately, we are thankful to report that none of our tribe have needed hospitalization thus far from COVID-19.

We have become simultaneously more respectful of this unique virus but also more confident in our collective abilities to go safely forward. And although we understand the need for and have been early proponents of such important tools as masks and PPEs, physical distancing, new workplace mitigation strategies, and antibody testing; we are convinced that adding personalized tools to community strategies will safely allow us to reconnect with family, friends, and organizations.

**We feel very strongly that we must do all in our power to prevent this infection if possible.**

### **What the Pappas Health team is doing**

As many of you know, the office has remained open throughout the pandemic. We have been able to do so thanks to our patients, advances in online communication, and also due in no

small part to the entire team testing regularly for COVID through PCR and antibody lab work. We are also screening patients for potential viral symptoms before coming to the office, and will be doing temperature and pulse ox checks on every patient upon their arrival. In this way, we are able to mitigate any potential exposure to the team here.

### [Virus Survivors Could Suffer Severe Health Effects for Years](#)

Some recovered patients report breathlessness, fatigue, and body pain months after first becoming infected. Small-scale studies conducted in Hong Kong and Wuhan, China show that survivors grapple with poorer functioning in their lungs, heart, and liver. And that may be the tip of the iceberg.

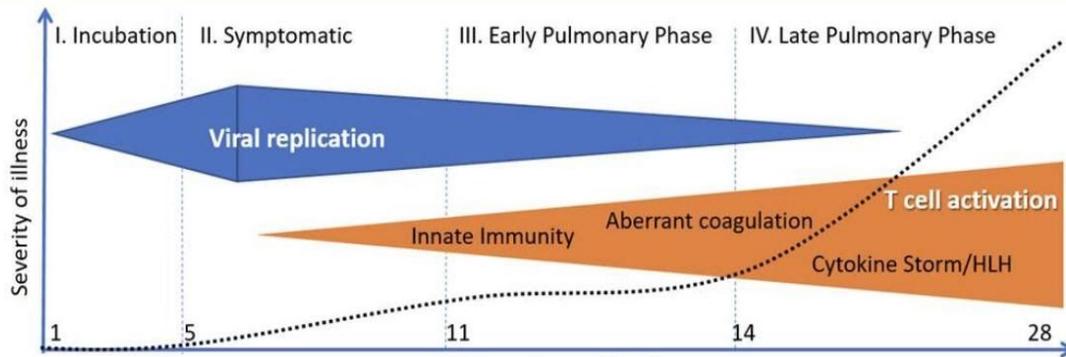
While researchers are only starting to track the long-term health of survivors, past epidemics caused by similar viruses show that the aftermath can last more than a decade. According to one study, survivors of Severe Acute Respiratory Syndrome, or SARS, suffered lung infections, higher cholesterol levels, and were falling sick more frequently than others for as long as 12 years after the epidemic coursed through Asia, killing almost 800 people.

The prospect led Nicholas Hart, the British physician who treated Prime Minister Boris Johnson, to call the virus “this generation’s polio” - a disease that could leave many marked by its scars and reshape global health care.

### **Background to the viral stages**

As Dr. Paul Clayton; *Fellow, Institute of Food, Brain, and Behavior, Oxford* states in the blog post [Covid-19: Where Next?](#):

*The disease progresses through a series of stages. It begins with a viraemia lasting 7 to 9 days, which is associated with relatively nonspecific symptoms such as nasal discharge, sore throat and mild fever. In 80-85% of cases the disease does not progress beyond this point, because the innate immune system succeeds in overcoming the viral challenge. In approximately 15% of cases the innate immune system fails to contain the virus and the disease progresses to a mixed viral and bacterial pneumonia, and finally to a mixed viral, bacterial and fungal pneumonia as the immune system breaks down and inflammation overwhelms the patient.*



Paul E. Marik, MD, FCCP, FCCM, COVID-19 Critical Care

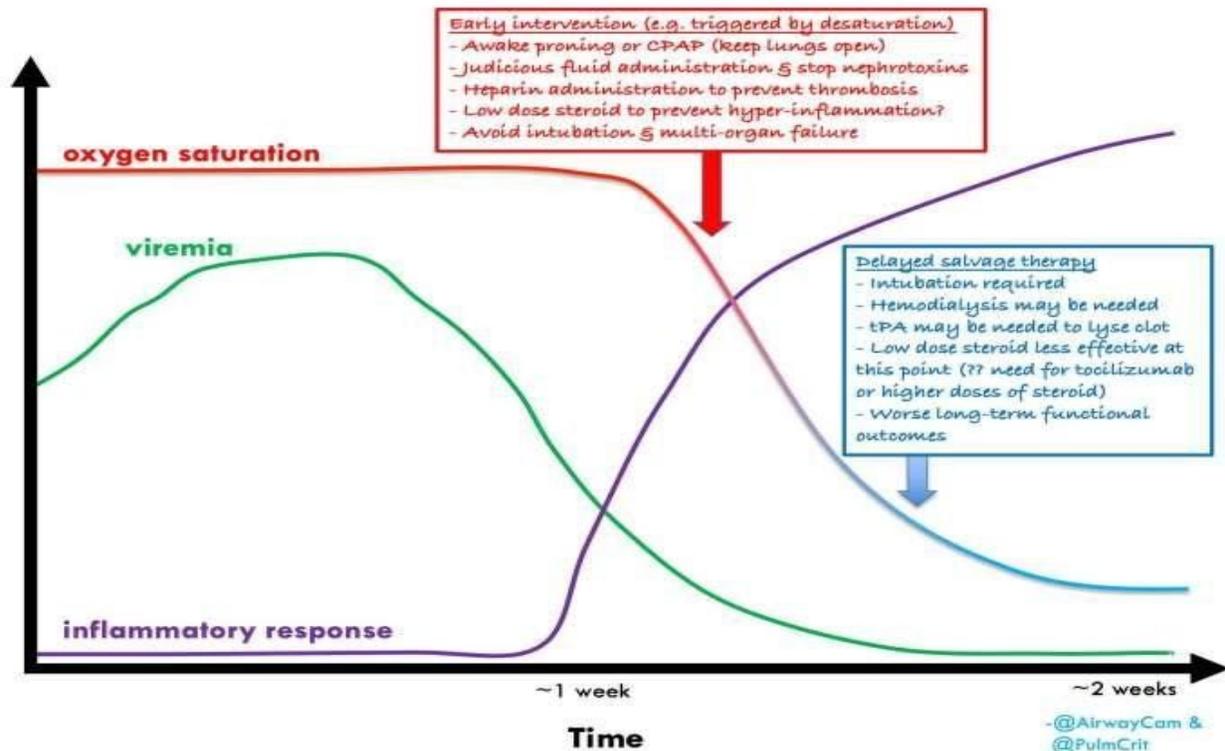
Clayton further elaborates,

*Going back to the basic epidemiology, it is known that 80-85% of infected individuals suffer only minor symptoms and do not require hospitalization. While the size of inoculum may play a role here, the functionality of the innate immune system and the presence or absence of comorbidities appear to be the critical determining factors. In both of these factors, nutritional status plays an absolutely crucial role, and this opens the possibility of using nutritional tools to increase the size of the group who experience only mild illness and reduce the numbers requiring hospitalization to more manageable levels.*

**Although different strategies are needed for both the viral replication and immune activation phases, looking at ways to combat both is essential.**

Another visualization of this concept (see next page):

## COVID therapy: Are we missing the optimal treatment window?



I'll be quoting from the following recently published and comprehensive article which I highly recommend. Even though it's aimed at a healthcare-oriented audience, I believe it's accessible to all, especially their section on the research behind natural treatments for immune support. In our approach to health, we should all be citizen scientists who practice N of 1 experiments on our unique biochemistry.

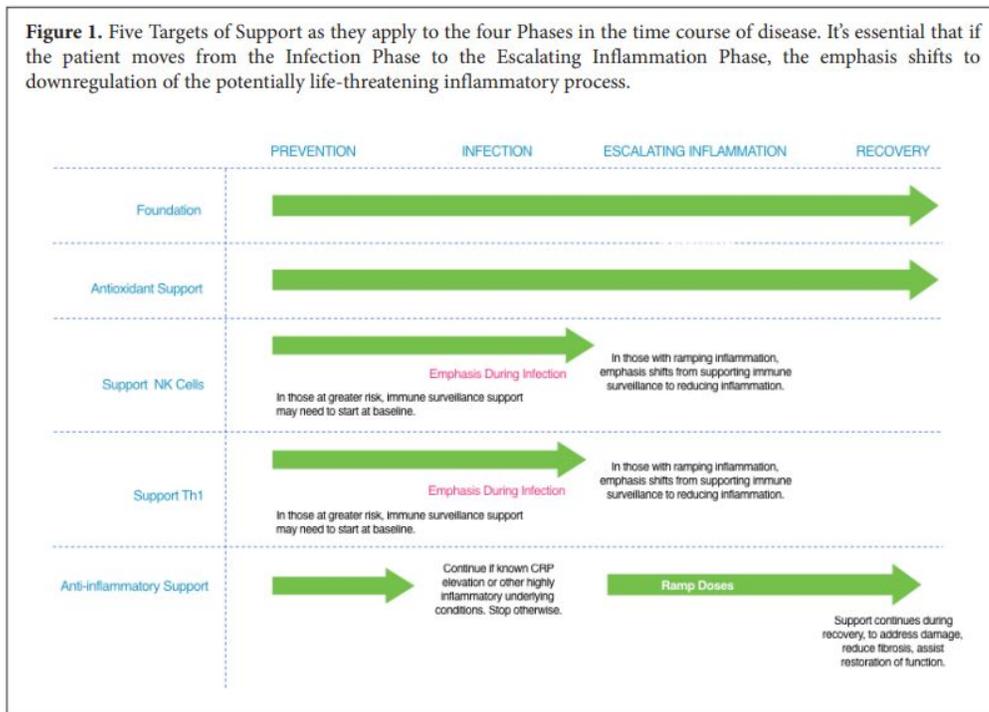
### [Evidence Supporting a Phased Immuno-physiological Approach to COVID-19 From Prevention Through Recovery](#) -Yanuck SF, Pizzorno J, Messier H, Fitzgerald KN

**Four Phases of COVID-19** (as stated in *Integrative Medicine* • Vol. 19, No. S1 • Epub Ahead of Print  
Yanuck—Immuno-physiological Approach to COVID-19)

Clinicians will encounter patients in one of four phases of COVID-19, each requiring its own focus.

- *Prevention* - support is focused on immune surveillance efficiency and reduction of baseline levels of inflammation, to improve outcomes if the patient becomes infected,
- *Infection* - support emphasizes immune activity against infection,
- *Escalating Inflammation* - support is focused on anti-inflammatory measures, and
- *Recovery* - support is focused on resolving inflammation, inhibiting fibrosis and other forms of tissue damage, curtailing losses of function, and restoring and

reoptimizing function. Because patients have been observed to relapse into the Escalating Inflammation Phase, it is essential for clinical surveillance to continue well into what may appear to be the Recovery Phase.



### **Phase 1 – Prevention**

*In the Prevention Phase, in addition to guidance about social distancing, masks, stress reduction, etc., the task is to support the patient in anticipation of the possibility that they'll contract the virus. This is accomplished by A) identifying and addressing ways to reduce baseline inflammation, and B) identifying and addressing deficiencies in key nutrients that are central to healthy, robust immune system activation.*

### **Phase 2 – Infection**

*In this phase, the patient has symptoms that may be presumed to be related to the SARS-CoV-2 virus that causes COVID-19 disease. They may have tested positive for the virus. They may have respiratory or GI symptoms, fever, or other onset of new symptoms. The focus in this Phase is on supporting the components of immune system function that are essential to the patient's ability to fight the infection.*

### **Phase 3 - Escalating inflammation**

*COVID-19 can enter a dangerous phase in which extreme upregulation of inflammatory cytokines can pose a mortal danger. The clinical goal in this Phase is to help the patient*

stay away from manifesting the excessive inflammatory cytokine production and tissue destruction associated with sepsis, ARDS, and cardiovascular events. Natural approaches here are supportive, not primary. The unfolding disease process can escalate rapidly.

#### **Phase 4-Recovery**

*It becomes essential to attend to the patient's potential need for persistent downregulation of inflammasome biology, with the goal of mitigating the risk of additional consequences from non-lethal but nonetheless life-changing sequelae related to lingering inflammatory and fibrotic effects that occur in the tail of the curve after the crescendo of the disease has passed. As mentioned above, because patients have been observed to relapse into the Escalating Inflammation Phase, it is essential for clinical surveillance to continue well into what may appear to be the Recovery phase.*

**Fortunately, there is much we can do in supporting the phases of viral replication and the immune response:**

**Five Targets of Support** (as stated in *Integrative Medicine* • Vol. 19, No. S1 • Epub Ahead of Print  
Yanuck—Immuno-physiological Approach to COVID-19)

*There are five types of clinical support that target specific patient immune functions. Some forms of support are appropriate to all Phases in the time course of the disease. Others need to be emphasized or deemphasized, depending upon the Phase. Taken together, the five Targets of Support represent a strategy that can be deployed across the four Phases in the time course of the patient's illness.*

**These are areas of primary importance and should be practiced by all of us.**

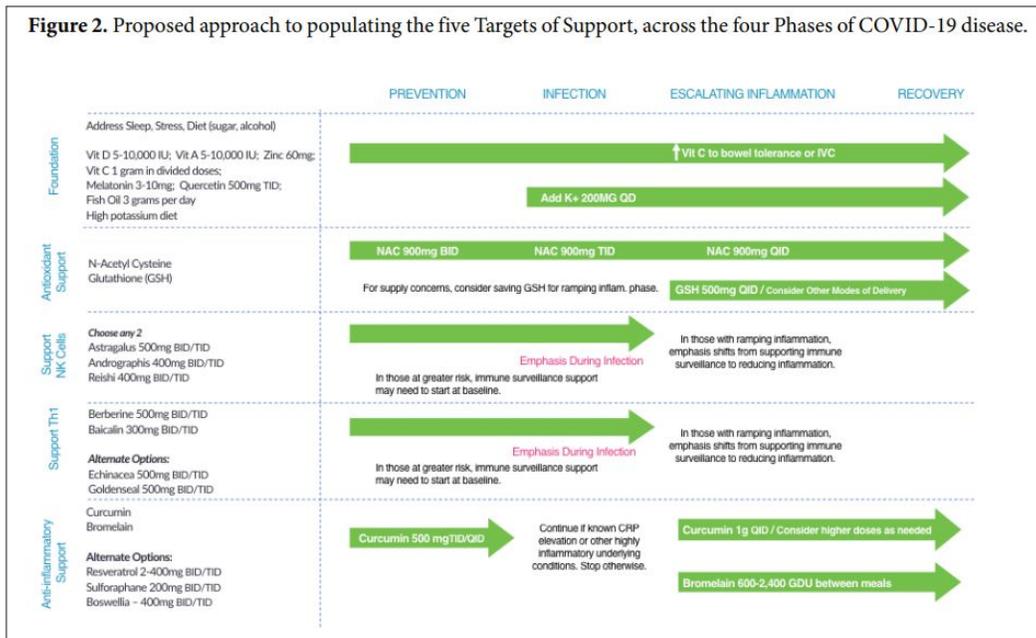
*"Be Prepared - you are always in a state of readiness in mind and body to do your duty."*  
-English soldier, community leader, and Scouting founder Robert Baden-Powell, 1907

#### **1. Target 1 - Foundational Support**

*In addition to core approaches involving isolation, disinfection, and other such factors, foundational support involves several key components:*

- a. **Eliminating factors that can drive non-purposeful inflammation and related dysregulatory impacts on immune function.** *The patient's inflammatory baseline status is influenced by pre-existing inflammatory conditions. An opportunity presents itself in the non-infected patient (and potentially in the infected patient early in the course of the disease) to reduce non-purposeful contributions to their level of inflammation, to mitigate the risk of the patient entering the Escalating Inflammation Phase, should they become infected. Several potential areas of interest should be included in the clinical inventory:*

- i. **Sleep** – Healthy sleep promotes T helper type 1 (Th1) cell response. Th1 cells secrete interferon-gamma (IFN $\gamma$ ) that supports antiviral immune response. Disordered sleep promotes inflammation and Th2 response, at the expense of healthy Th1 response.
  - ii. **Stress** – Stress chemistry is inherently inflammatory. Though the experience of having COVID-19 would itself be considered a source of acute stress, it should be considered that, in many cases, the acute stress is occurring on top of weeks or months of chronic stress associated with social isolation and related factors.
  - iii. **Glycemic control** – Insulin resistance, obesity, and impaired glucose tolerance have all been shown to be associated with inflammation.
  - iv. **Dietary factors** – Improvements in diet are strongly associated with reductions in inflammation.
  - v. **Microbiome Balance** – Both the lung and the GI tract have a normal microbiome and the complex relationship between the microbiota of the lung and GI tract, and its bidirectional influence with the immune system.
  - vi. **Exercise** – Physical activity has long been known to be critical for the proper function of virtually all physiological systems. However, to decrease inflammation the right intensity is critical with moderate levels effective at lowering inflammatory markers while intense exercise does not IL-6 drives significant inflammatory pathology in COVID-19, as discussed here. Skeletal muscle has been shown to produce and release significant levels of IL-6 after prolonged exercise, so caution should be used when considering the form and duration of exercise.
- b. Supporting levels of vitamins and minerals with known immunological roles.



(From "Integrative Medicine • Vol. 19, No. S1 • Epub Ahead of Print Yanuck—Immuno-physiological Approach to COVID-19")

Dr. Paul Clayton has many good points about natural immune approaches, also from blog post [Covid-19: Where Next?](#):

*Food and food components have always played a preventive role in human health and such nutritional approaches can be manipulated to intercept and treat health conditions. Further botanical extracts have played a role in immune health across all traditional medical treatises. For instance, Cinchona gave us Chloroquine that is being considered with great interest in the management of the current COVID19 epidemic. Shikimic acid from Star Anise inspired the development of Tamiflu. Various elements of the innate immune system can be enhanced using such tools as the 1-3, 1-6 beta-glucans to increase competence. Palmitoylethanolamide (PEA) is another such constituent of food-based tool, due to its physiologically appropriate anti-inflammatory properties. PEA as a constituent of food had been studied in clinical trials to help manage symptoms of influenza and common cold thru' its physiological effects on metabolic and cellular homeostasis, and anti-inflammatory and immune-modulating properties. PEA was originally trialed against influenza in the 1970s, with 6 clinical studies showing a degree of prophylactic efficacy.*

*The effectiveness of such programs is not yet proven, but they are supported by circumstantial evidence and unlike the pharmaceutical approaches, they have very wide therapeutic indices. This makes them eminently suitable for general usage, and for consideration as a mainstay of public health strategies going forwards.*

**PEA is a new product we are especially excited about as referenced in [Evidence Supporting a Phased Immuno-physiological Approach to COVID-19 From Prevention Through Recovery](#).**

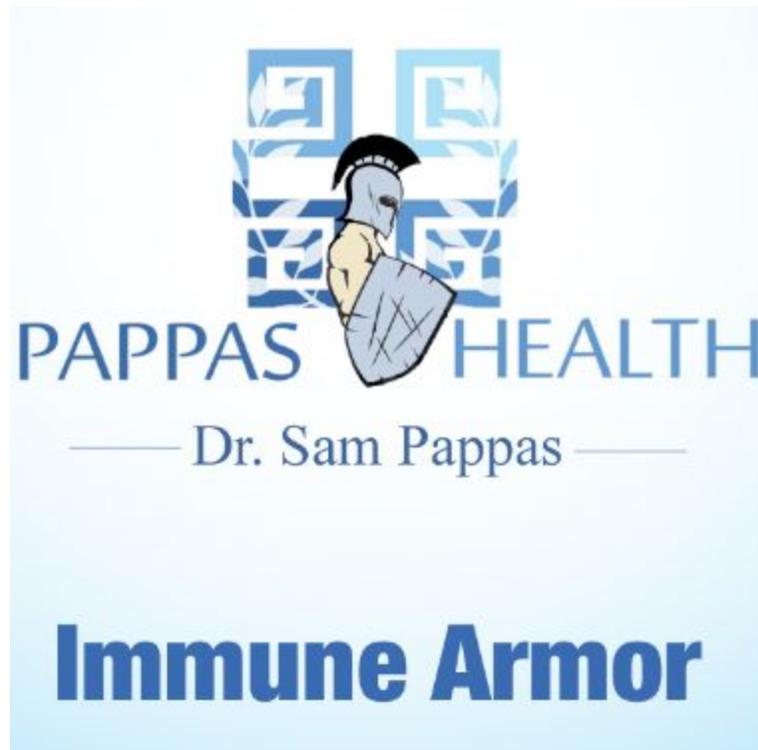
Kara Fitzgerald ND, one of the authors of the paper above states in her blog post [Why are we considering palmitoylethanolamide \(PEA\) for COVID19?](#):

*We have been interested in this molecule for years and have used in our allergy patients (it has well-documented mast cell stabilizing properties), in our pain patients and as influenza treatment and prophylaxis. In this most recent COVID19 pandemic, I think PEA is worth considering, although we recognize the mechanisms of infectivity of influenza and COVID19 do not completely overlap. The best review I've read on PEA is a free, full text by Hesselink, et al 2013*

**PEA's anti-inflammatory and anti-allergy properties, coupled with its endocannabinoid mechanism, painkiller support, and cutting-edge research are some of the many reasons we have been recommending its use and have added it to our new formula. See the following article for more information on human trials in Australia.**

**[Immunity innovation: Gencor to study PEA's immune-boosting effects via human trial](#)**  
Gencor Pacific is embarking on a human trial in Australia to validate the immunity boosting

ability of Palmitoylethanolamide (PEA) against the backdrop of the rising demand for immunity supplements amid the worldwide spread of COVID-19.



*“They say the clothes make the man, so too does the **armor make the man in war.** Although **Achilles** is only partially mortal and one of the greatest warriors already, **his armor sets him apart from other soldiers. His armor comes to represent his power, as other soldiers recognize it as a symbol of him. His enemies fear seeing it, and his comrades cheer at the sight of it.**” -Jacob Belknap, Instructor*

With all of the above in mind and with our extensive experience in preventing and combating Respiratory Viral Infections **we have created a unique and simple formula to help improve our immune systems.**

#### **The advantages of Pappas Health’s Immune Armor:**

- **Convenience-** many fewer pills and bottles. I was able to combine 7 different products I was previously using into this 1 product.
- **Cost-** with the above convenience comes significant cost savings.

- **Safety**- the ingredients are generally well-tolerated and have been used by us and countless practitioners for many years. In fact, we have our teenage children and elderly relatives on it. Can be taken with most prescriptions (**consult with your healthcare practitioner before taking**).
- **Scientific**- backed by science as indicated in the above links and attached document.
- **Experience**- we have been using these ingredients on ourselves and patients for approximately 20 years.
- **Flexible**- can be used for both maintenance, preventive, and in higher doses for 2 weeks in supporting acute infections. It can also be taken simultaneously with any of the variety of possible treatments being used for COVID-19.
- **Comprehensive**- Includes 15 different vitamins, minerals, plant extracts, and nutraceuticals in 1 product.

**This product will be available to all for use, not just our patients. I invite all to share information about Immune Armor to anyone who may be interested.**

**To reiterate a disclaimer from Part 1 of my COVID deep dive:**

It is unlikely that herbal extracts and nutraceuticals hold drug-like “cures” for coronavirus. Four leading supplement industry trade organizations, the American Herbal Products Association (AHPA), Council for Responsible Nutrition (CRN), Consumer Healthcare Products Association (CHPA), and the United Natural Products Alliance (UNPA) stressed that point in [a joint statement on February 11, 2020](#):

*"While research supports the use of certain dietary supplements to maintain immune system health, we are not aware of clinical research that demonstrates using a dietary supplement specifically to prevent or to treat the novel coronavirus. Even if research is conducted and published on the topic, the law that regulates dietary supplements... prohibits marketers in the United States from promoting any dietary supplement product that makes disease prevention or treatment claims."*

We believe there are other products that play a synergistic immune and health role such as fish oil and omega 3 support, probiotics, higher levels of Vitamin D and C, and herbs such as oregano for acute infections, to name a few.

However, as a simple, safe, comprehensive, and effective product that's been road-tested this is a great place to start and highly recommended by our team and families.

**Brief Product Description- Immune Armor**

The immune system defends the body from foreign, invading organisms, promoting protective immunity while maintaining tolerance to self. **Immune Armor** is a well-rounded, versatile, and comprehensive custom formula that addresses complete immune support from every angle. This formula complements the adaptive and innate immune system responses by providing underlying support for inflammation and oxidative stress which can lead to other health complications that arise from certain viral infections. **Immune Armor** provides therapeutic dosing of bioavailable vitamins, minerals, and the most well studied immune-supporting botanicals.

### **Ingredient Descriptions:**

- **Vitamin A** is involved in the development of the immune system and plays a regulatory role in the entire immune process through the modulation of T helper cells, sIgA, and cytokine production. Vitamin A is known as an anti-inflammation vitamin because of its critical role in enhancing immune function.
- **Vitamin C** contributes to immune defense by supporting various cellular functions of both the innate and adaptive immune systems. Supplementation with vitamin C appears to be able to both prevent and treat respiratory and systemic infections. **Immune Armor** offers 1000mg of buffered vitamin C which is more easily digested than other forms.
- **Vitamin D's** effect on the immune system has become clearer in recent years and in the context of vitamin D deficiency, there appears to be an increased susceptibility to infection. Evidence suggests vitamin D supplementation may prevent upper respiratory infections.
- **Zinc** is an essential micronutrient for basic cell activities such as cell growth, differentiation, and survival. A deficiency depresses both innate and adaptive immune responses. New research from Oregon State University displays the importance of this crucial mineral on human health; Zinc appears to affect how the immune system responds to stimulation, especially inflammation. Zinc deficiency could play a role in chronic diseases such as cardiovascular disease, cancer, and diabetes that involve inflammation.
- **Selenium** plays an important role in the health of your immune system. This antioxidant helps lower oxidative stress in your body, which reduces inflammation and enhances immunity. Studies have demonstrated that increased blood levels of selenium are associated with enhanced immune response. On the other hand, deficiency has been shown to harm immune cell function and may lead to a slower immune response.
- **Quercetin** helps promote mast cell stabilization which helps support nasal and respiratory pathways. It is a potent bioflavonoid that acts as an antioxidant and anti-inflammatory natural component to support healthy immunity.
- **BGF-Immune® 1,3-Beta-Glucan 85%** is a unique, high purity source of Beta-Glucan produced via fermentation that delivers 85% minimum of the isolated  $\beta$ -(1→3) linkage which research indicates may help to support immune health.
- **N-Acetyl Cysteine (NAC)** promotes glutathione production, which has been shown to be immune protective. NAC also promotes mucolytic activity to help dispel mucus faster during a cold and therefore promote advanced immune support.

- **Medicinal Mushrooms** such as Cordyceps, Turkey Tail, Chaga Gold, and Reishi are medicinal mushrooms that have been used for centuries. Medicinal Mushrooms have been shown to have the ability to stimulate the Natural Killer Cell activity of the immune system and also modulate humoral and cellular immunity.
- **Elderberry** (*Sambucus nigra*) is seen in many medicinal preparations and has widespread historical use as an antiviral herb. Based on animal research, elderberry is likely most effective in the prevention of early infection with respiratory viruses.
- **PEA**, discussed earlier in this writing, is a naturally occurring anti-inflammatory palmitic acid derivative that interfaces with the endocannabinoid system. There was a significantly favorable outcome in five of six double-blind placebo-controlled trials looking at acute respiratory disease due to influenza. Dosing was generally 600mg three times daily for up to three weeks. There are multiple mechanisms of action associated with PEA, from inhibition of TNF-alpha and NF-kB to mast cell stabilization. In influenza, it is thought that PEA works by attenuating the potentially fatal cytokine storm.

## **Ordering Immune Armor from Pappas Health**

Each bottle of **Immune Armor** will contain 180 capsules for \$85.00 We are currently accepting orders in the office. Please call the office at 703-734-8271 or, for our patients, send us a secure message via your patient portal for more information.