

Practitioners' Choices for Immune System Support

By Leonid Ber, MD, Protocol Senior Medical Scientist

It is widely accepted that an optimally functioning immune system is fundamental to maintaining optimal health, and that diet and nutritional intervention are the major exogenous factors modulating individual immunocompetence.

At the core of immunity, there is a process of recognition of compounds representing genetic information foreign to the host. It is primarily carried out by phagocytic cells that, upon recognizing the invasion, are capable of engulfing foreign cells or particles, breaking them down and then presenting the portions suitable for developing a "custom" response to the next adaptive tier of the immune system. This initial non-specific portion of the immune system is the most basic and biologically ancient mechanism for getting rid of genetically foreign material.

An example of nutrients capable of supporting phagocytic function are polysaccharides found in mushrooms (Immune-Renew™) and yeast cell walls, particularly the ones comprised of branched beta-glucans. The current understanding of their mechanism of action is that they signal to the non-specific immune cells the presence of a fungal skeleton structure. This molecular configuration is well recognized by macrophages via their beta-glucan receptors and "alerts" them to be more vigilant and functionally active. The interesting part of this process is that even when the presentation of beta-glucan is made via gastrointestinal macrophages, the level of activity of phagocytes residing in the remote tissues is also upgraded. This is made possible due to the network of cytokines, -specialized signaling molecules that allow the immune system to coordinate its own function.

The optimal performance and longevity of macrophages is a critical part of the non-specific immune function. Among other factors, it depends on the ability of macrophages to withstand the effect of the caustic enzymes and free radicals they produce to destroy engulfed cells and particles. Thus, an activated macrophage is extremely reliant on the level of intracellular antioxidants, particularly vitamin C. "Too little and too late" is how immunologists typically describe the effect of ascorbate supplementation in situations where the outcome depends on the adequate function of macrophages. Since humans are among the species that lost the ability to synthesize their own ascorbic acid, food and supplements are the only sources of this essential antioxidant. Among vitamin C based supplements, ProtoSorb C™ deserves a special mention. Research is under way to demonstrate its unique role in supporting re-uptake and re-cycling of vitamin C. These functions are particularly important to the immune cells since their optimal performance depends heavily on their antioxidant status.

Another important player in non-specific, or innate immunity is a group of cells called Natural Killer (NK) cells. They are a special class of lymphocytes that earned this interesting name due

to the discovery that they do not require the presence of MHC (Major Histocompatibility Complex) in order to be activated and become cytotoxic. NK cells are the "elite forces" of the non-specific immune system. NK cells are capable of destroying mutations such as neoplastically transformed cells on contact. They are also responsible for eliminating cells infected with a variety of viral pathogens by recognizing subtle changes in the chemical makeup while the infected cells are still functional but already harvest viral particles inside. A significant activation of NK cells accompanied by an increase in circulating phagocytic cells has been demonstrated for a supplement called Activated Hexose Correlated Compound, or AHCC®. This standardized extract of *Lentinula edodes* mycelia of the *Basidiomycete* family has an α -1,4-linkage structure which is different from polysaccharides found in Immune Renew™ that predominantly contain β -1,3-glucan configuration.

Unlike innate immunity, the adaptive portion of the immune system produces highly specialized factors such as antibodies that target specific antigens. In most cases, these antibodies do not cross-react with other antigens. However, there are exceptions. Sometimes an antibody produced to fight a specific invading microorganism would react with the body's own structures. The resulting auto-immune inflammation can be devastating for the target tissue or organ. More and more disorders are being uncovered to have an underlying auto-immune mechanism. The list now includes cardiovascular disease, diabetes and many of the neurological disorders. Unfortunately, no reliable nutritional interventions have been yet offered to fight the auto-immune component of these conditions.

Lately, particular attention has been paid to the imbalanced specific immune response that predominantly follows either a Th1 or Th2 pattern (thymus dependent helper lymphocytes). Th1-dominated responses include cellular-type immune processes accompanied by extensive lymphatic infiltration of the affected tissue. A Th2-type immune reaction follows a humoral, fast-acting pattern mostly typical for allergic reactions such as hay fever. Hopefully, we are approaching the time when physicians will have safe and effective tools to modulate immune response toward one or another type when a particular disbalance is diagnosed.

In anticipation of these promising interventions, a practitioner can still tremendously help his or her patient by helping to create a beneficial internal environment free from deficiencies in nutrients, vitamins, antioxidants and essential building blocks used by the immune system. Digestive competence and probiotic balance are essential components of immune health. Foundational elements of particular importance include vitamins A, D, E, C, minerals Zn, Fe, Cu, Se and also macronutrients (found in our Ortho Multi™ softgel) - essential fatty acids and proteins. Last but not least, the significance of sufficient physical activity and adequate sleep cannot be underestimated.

Immune Renew™ Organic Mushroom Formula

Protocol For Life Balance™ Immune Renew™ is a potent immune system supporting formulation containing standardized Astragalus Extract and a High Beta-Glucans Proprietary Mushroom Formula. Astragalus has been shown in non-clinical studies to support a number of aspects of healthy immune function, including the enhancement of T-Cell and Natural Killer Cell activity. Natural Killer cells are so named because they destroy unhealthy cells in the body virtually on contact. Our proprietary formula of eight organic mushrooms provides additional immune support due to its high 1,3 Beta Glucan content. 1,3 Beta Glucans are especially valuable to immune system response. They are increasingly lacking in today's typical diet. Scientific studies have demonstrated that the 1,3 form of Beta Glucans found in mushrooms possesses remarkable abilities to support both innate and adaptive immunity. A strong, responsive immune system is the foundation of good health. Use Immune Renew™ to help support healthy immune function seasonally and throughout the year.*

Maintaining a strong, vital immune system is considered by many to be the foundation of good health. The human immune system is a network of cells and tissues, which work together to defend the body against attacks.

Protocol for Life Balance™ Immune Renew™ contains standardized Astragalus Extract, an important herb used for centuries in the traditional Chinese system. Numerous modern scientific studies on Astragalus have documented its beneficial immune supporting properties. These studies indicate that Astragalus exerts its effect on the immune system by supporting healthy T-Cell and Natural Killer Cell activity.*

For increased immune support we've included a proprietary blend of eight highly potent organic mushrooms, which provide a very significant 1, 3 Beta Glucan content. Beta Glucans have also been recognized for their positive effects on immune function.*

Supplement Facts	
Serving Size 1 Vcap®	
Amount Per Serving	
Organic Mushroom Formula (Optimized Mycelial BioMass) (Proprietary Formula of <i>Trametes versicolor</i> (Turkey Tails), <i>Agaricus blazei</i> (Sun Mushroom), <i>Grifola frondosa</i> (Maitake), <i>Cordyceps sinensis</i> (Cordyceps), <i>Phellinus linteus</i> , <i>Hericium erinaceus</i> (Lion's Mane), <i>Ganoderma lucidum</i> (Reishi) and <i>Lentinula edodes</i> (Shiitake))	200 mg
Astragalus Root Extract (<i>Astragalus membranaceus</i>) (min. 70% Polysaccharides)	200 mg

Code Size
P3055 90 Vcaps®

Vitamin D's

With more patients avoiding exposure to the sun's UV rays, many are being deprived of the vitamin D they need for optimal health. In addition to its structural support benefits, researchers have examined its effect on dental, colon and breast health, cell abnormalities, nervous system function, mental health, and immune system function.* Accordingly, supplementation has proven to be a safe and effective way to ensure that the body is receiving an adequate supply.

Protocol for Life Balance™ offers Vitamin D₃ liquid softgels in 3 potencies: 1,000 IU, 2,000 IU or 5,000 IU. These small softgels are an easy-to-swallow, convenient way for your patients to get your recommended dosage of Vitamin D₃.

We also have a Liquid Vitamin D₃. This neutral tasting liquid has the advantage of a variety of controlled dosages. Each drop contains 100 IU of Vitamin D with 5,000 IU per dropper. It can be taken on its own or added to juice, protein drinks or other healthy beverages. This liquid Vitamin D₃ is also suitable for those who wish to avoid pork or beef gelatin.

Supplement Facts		D₃ 2,000 IU
Serving Size 1 Softgel		
Amount Per Serving		
Vitamin D ₃ (as Cholecalciferol)	2000 IU	

Code	Description	Size
P0365	D ₃ 1,000 IU	120 Gels
P0367	D ₃ 2,000 IU	120 Gels
P0372	D ₃ 5,000 IU	120 Gels
P0370	D ₃ 5,000 IU Liquid	2 oz

Zinc Glycinate softgel

Zinc is a mineral co-factor in hundreds of enzymatic reactions related to protein and carbohydrate metabolism, RNA/DNA synthesis and intercellular signaling. Zinc is essential to the normal function of many organs and systems within the body by supporting healthy immune, skeletal, neurological, and endocrine functions as well as a healthy prostate. Dietary bioavailability of zinc is relatively poor, so PFLB™ Zinc Glycinate is chelated to improve absorption and bioavailability. PFLB™ uniquely offers Zinc Glycinate in a softgel capsule with Pumpkin Seed Oil as a healthy synergist.*

Supplement Facts	
Serving Size: 1 Softgel	
Amount Per Serving	
Zinc (from Zinc Glycinate) (Amino Acid Chelate) (TRAACS®) (Albion®)	30 mg
Pumpkin Seed Oil (Cold-Pressed)	250 mg

Code Size
P1554 120 Gels

Code	Products	Size
P0105	5-HTP 100 mg	90 Vcaps®
P0108	5-HTP 200 mg + Tyrosine	60 Vcaps®
P1811	A - Biotic™ Enteric Coated, Potent	60 Gels
P0076	Acetyl-L-Carnitine 500	100 Vcaps®
P3344	Adrenal Cortisol Support™	90 Vcaps®
P3032	AHCC® 500 mg	60 Vcaps®
P3282	Aller-All™ Seasonal Support	60 Tabs
P3036	Aloe Vera 5,000	100 Gel
P3042	Alpha Lipoic Acid 250 mg	90 Vcaps®
P3046	Alpha Lipoic Acid 600 mg Plus	60 Vcaps®
P0030	L-Arginine 500 mg	180 Caps
P2958	BioCore® Enhanced Enzymes	90 Vcaps®
P0471	Biotin 5000 mcg	90 Vcaps®
P1228	Bone Strength™	180 Caps
P1720	Borage/GLA 1050 mg	60 Gels
P3303	Brain Regain™	60 Vcaps®
P3063	Brocco Immune™	60 Vcaps®
P2943	Bromelain 2400 gdu/500 mg	90 Vcaps®
P1268	Cal-Mag, Liquid, Lemon	16 oz
P3308	C.Away™	90 Vcaps®
P1675	CardioTri-Plex™ NEW!	120 Gels
P0072	L-Carnitine 500 mg Carnipure®	60 Caps
P3019	Celadrin® Joint Liposome Lotion	4 oz
P9470	Protocol Celadrin® Tabletop Display NEW!	12 Bottles
P1415	ChromeMate® 200 mcg	90 Caps
P1731	CLA Away™	90 Gels
P0405	CoEnzyme B Complex	60 Tabs
P3163	CoQ10 60 mg + Fish Oils	90 Gels
P3208	CoQ10 100 mg Softgels	90 Gels
P3196	CoQ10 200 mg Lozenges	60 Loz
P3198	CoQ10 400 mg Softgels	60 Gels
P3182	CoQ10 600 mg Softgels	60 Gels
P3185	CoQ10 Liquid 100 mg/tsp	1 oz
P3186	CoQ10 Liquid 100 mg/tsp	4 oz
P3158	CoQ10 100% Pure Powder	1 oz/28g
P3145	Ubiquinol CoQH-CF™ 50 mg	60 Gels
P4638	Curcumin 665 mg 95% Extract	60 Vcaps®
P3121	D-Flame™ Cox-2 Formula	90 Vcaps®
P2956	Dairy Digestion™	90 Vcaps®
P4704	EGCg 400 mg/50%	90 Vcaps®
P2963	Enzymes-HCl™ NEW!	120 Caps
P1770	Flax Seed Oil 1000 mg Organic	120 Gels
P0498	Flush Free Niacin 500 mg	90 Vcaps®
P4683	Ginkgo Biloba 120 mg/24% Plus	100 Vcaps®
P3048	GliSODin® 100 mg/Wheat Grass	90 Vcaps®
P3170	Gluc/Chond/MSM Caps	90 Caps
P3172	Gluc/Chond/MSM Caps	180 Caps
P3243	Gluc/Chond 2 per day, Extra Strength	120 Tab
P3130	Gluc & MSM, Vegetarian 1000 mg	120 Vcaps®
P3175	Liquid Glucosamine, Chond, MSM	16 oz
P3318	Glucose Balance™	90 Caps
P0094	L-Glutamine 1000 mg	120 Caps
P3274	Grape Seed OPC 250 mg Extract	90 Vcaps®
P3055	Immune Renew™ (Org. Mushrooms)	90 Vcaps®
P3134	Joint-UC™ Collagen NEW!	60 Vcaps®
P1625	Krill Oil 500 mg	60 Gels
P2448	Liver Detox™ - Dr. Verghese	90 Caps
P3062	LYC-O-MATO® 20 mg Lycopene	60 Gels
P2811	D-Mannose Urinary 500 mg	90 Caps
P3258	Melatonin 3 mg Lozenge & B-6	120 Loz
P3326	MetaboEnergetics™	90 Caps
P0495	Methyl B-12 1,000 mcg	100 Loz
P0496	Methyl B-12 5,000 mcg	60 Loz
P4739	Milk Thistle 300 mg/80% Plus	90 Vcaps®
P2120	MSM 1,000 mg	180 Caps

P0085	NAC N-acetyl cysteine 600 mg + Antioxidants	100 Caps
P3140	Nattokinase 100 mg/2000 FU units	60 Vcaps®
P3301	Ocu Support™ Clinical Strength	90 Caps
P1659	Omega-3 Lemon Liquid /Molecularly Distilled	7 oz
P1656	Omega-3/Enter 180/120 /Molecularly Distilled	90 Gels
P1657	Omega-3/Enter 180/120 /Molecularly Distilled	180 Gels
P1661	Ultra Omega-3 500/250/Molecularly Distilled	90 Gels
P3281	Ortho Detox™	90 Caps
P2912	Ortho Dophilus™ 8 Strains, 4 Billion	60 Vcaps®
P0950	Ortho-E™ NON-GE	60 Gels
P3788	Ortho Multi™ Greens NEW!	180 Vcaps®
P3772	Ortho Multi™ Liquid - Iron Free/Xylitol	16 oz
P3816	Ortho Multi™ Softgel w/ Flax 400 mg	90 Gels
P3878	Ortho Multi™ for Men Caps	90 Vcaps®
P3875	Ortho Multi™ for Men Tabs	90 Tabs
P3798	Ortho Multi™ for Women Caps	120 Vcaps®
P3796	Ortho Multi™ for Women Tabs	90 Tabs
P3340	Ortho Prostate™	90 Gels
P3368	Ortho Thyroid™	90 Vcaps®
P1413	OsteoBoron® 3 mg, Natural Form/base	90 Vcaps®
P0487	Pantethine 300 mg Co-enzyme A	60 Gels
P4727	Peppermint Oil G.I.™ Enteric	90 Gels
P3345	PepZin G.I.® Soothe™	60 Tabs
P2385	Phosphatidyl Serine 100 mg & Ginkgo 60 mg	60 Gels
P3338	Progesterone Cream Pump - 20 mg	3 oz
P5955	ProtoClear™ Berry Flavor	2.3 lbs
P5956	ProtoClear™ Info Card & Sample - Berry	27.5 g
P5957	ProtoClear™ Orange Flavor	2.3 lbs
P5958	ProtoClear™ Info Card & Sample - Orange	27.5 g
P5960	ProtoClear™ Vanilla Flavor	2.3 lbs
P5961	ProtoClear™ Info Card & Sample - Vanilla	27.5 g
8931	ProtoClear™ Premium Shaker Cup	12 oz
P0716	ProtoSorb™ C 500	100 Vcaps®
P0726	ProtoSorb™ C 1000	100 Tabs
P2928	ProtoDophilus™ 50 Billion/Cap NEW!	50 Vcaps®
P3277	Pycnogenol® 60 mg & Rutin	50 Vcaps®
P3321	Red Yeast & CoQ10 30 mg, ALA	90 Vcaps®
P3500	Red Yeast Rice Extract 600	90 Vcaps®
P3353	Resveratrol 200 mg Extra Strength NEW!	60 Vcaps®
P2147	D-Ribose Powder NEW!	300 g
P0138	SAME 200 mg Enteric + B Complex	60 Tabs
P4756	Saw Prostetto™ 320 mg/85-95% Extract	90 Gels
P1485	Selenium 200 mcg, Yeast-Free	90 Vcaps®
P2954	Serrazimes® 33 mg/20,000 units	90 Vcaps®
P1905	Slimaluma® Plus	60 Vcaps®
P6957	Stevia Complete Packets	100/box
P6955	Stevia Non-Bitter Liquid, Sweet	2 fl oz
P6960	Stevia Non-Bitter Powder, Sweet	1 oz
P3507	Sytrinol® Cholesterol Formula	60 Vcaps®
P0142	Taurine 1000 mg Caps	100 Caps
P3380	True Balance™ Multi	120 Caps
P0166	L-Tryptophan 500 mg	60 Vcaps®
P0167	L-Tryptophan 500 mg	120 Vcaps®
P0169	L-Tryptophan 1000 mg NEW!	60 Tabs
P3123	Vein Integrity™ with Trunorin®	90 Vcaps®
P2168	Virility For Men with LJ100®	60 Vcaps®
P0452	Vitamin B-12 Liquid Tri-Formula 5,000 mcg	4 oz
P0690	Vitamin C-1000 Cap+100 Bioflavonoids	120 Caps
P0365	Vitamin D-3 1,000 IU	120 Gels
P0367	Vitamin D-3 2,000 IU	120 Gels
P0372	Vitamin D-3 5000 IU	120 Gels
P0370	Vitamin D-3. Liquid 5000 IU	2 oz
P0906	Vitamin E-400 20% Mixed + Selenium	120 Gels
P1554	Zinc Glycinate NEW!	120 Gels

ProtoDophilus™ 50 Billion, 10 Strains

Probiotics are microflora consisting of beneficial bacterial strains that colonize the gut and form a protective biofilm. This helps to maintain the integrity of the intestinal lining; thus supporting proper digestion, detoxification, immune function, and absorption of nutrients. Additionally, probiotic bacteria produce metabolites such as lactic acid that help to support healthy pH levels throughout the GI tract; as well as producing natural vitamins. These cultures were grown specially for sensitive individuals without dairy, gluten, or other common allergens and are tested for stability as well as yeasts, molds, and other contaminants.*

Supplement Facts

Serving Size 1 Vcap®

Amount Per Serving

Proprietary Blend of 10 Strains of Probiotic Bacteria: 50 Billion Organisms*

Lactobacillus acidophilus, Bifidobacterium bifidum, Lactobacillus plantarum, Lactobacillus salivarius, Lactobacillus casei, Lactobacillus paracasei, Lactobacillus rhamnosus, Bifidobacterium breve, Bifidobacterium longum, Streptococcus thermophilus

Other ingredients: Cellulose, Cellulose (capsule), FOS (Fructo-oligosaccharides), Ascorbyl Palmitate and Silica.

Code Size
 P2928 50 Vcaps®

Free of Common Allergens:
 Dairy, Wheat, Gluten, Soy, Egg & Shellfish



*These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease.