

IMMUNOZEN®

“21st Century Nutrition”

The Next Generation of Intelligent
Immune Support for Health-Wellness



(Key Ingredients and References: Clinical Trials and Studies)

Effective immune function is our single greatest defense against today's countless threats to good health. Without it even minor threats can compromise one's health and wellbeing. In our world of rapid global travel, mutating “super bugs,” and the stresses of everyday life, a vibrant, efficient immune system is the best possible health insurance anyone can have!

IMMUNOZEN®

- ▶ BROAD SPECTRUM IMMUNE ENHANCING COMPLEX
- ▶ MAY BE TAKEN DAILY FOR IMPROVING IMMUNE RESPONSE, PREVENTION, AND IMMUNE MODULATION
- ▶ HELPS SUPPORT HEALTHY INFLAMMATORY RESPONSE, A KEY FACTOR IN OVERALL IMMUNE FUNCTION
- ▶ OFFERS SUPPORT FOR PEOPLE WHO SUFFER WITH SEASONAL ALLERGIES
- ▶ SUPPORTS CELLULAR IMMUNITY IN BOTH ACUTE AND LONG-TERM SITUATIONS
- ▶ HELPS THE BODY DEACTIVATE AND ELIMINATE FOREIGN COMPOUNDS AS WELL AS FREE RADICALS, A KEY TO ALLOWING THE IMMUNE SYSTEM TO OPERATE AT PEAK EFFICIENCY



IMMUNOZEN®

Includes several world-class proprietary, science-backed nutrient blends with

- ▶ **Quercetin Phytosome**
- ▶ **Thymus Gland Extract**
- ▶ **L-Glutathione**
- ▶ **Broad Spectrum Polysaccharide Complex**
- ▶ **Zinc**
- ▶ **GanoZen**

These individually powerful ingredients work together in a dynamic, synergistic way to educate, balance and optimize immune system function. With today's ever-growing health challenges, **ImmunoZen®** supports and maximizes immune system effectiveness and enhances our potential for optimal health.



Quercetin Phytosome

- A “natural Cortisone”, which helps temper activity of several inflammatory signals produced in the body,
 - Directly helps deactivate damaging free radicals
 - An extremely beneficial flavonoid found in such foods as fruits, vegetables, and nuts.
 - Has a positive impact on immunity, circulation, metabolism, inflammation, allergies, and life extension.
 - Quercetin, like many flavonoids, is poorly absorbed. However, Quercefit’s Phytosome of Quercetin is 20 times more bioavailable than standard quercetin.*
- ▶ *Riva A. et al.; Eur J Drug Metab Pharmacokinet (2018).



Quercetin Phytosome continued...

- ▶ Directly helps inactivate damaging free radicals as well as inhibits oxidation of lipids and reduces enzymes that produce free radicals
- ▶ Helps temper activity of several inflammatory signals produced in the body including COX and LOX (cyclooxygenase and lipoxygenase-primary enzymes responsible for pain and inflammation), NF-kB {(Nuclear Factor kappa B)-necessary for immunity but overexpression can lead to inflammation and autoimmune processes}, and cytokine (cellular messengers that cause a variety of effects but with overexpression can lead to severe respiratory issues).
- ▶ Through modulation of the immune system can deter the release of histamines from mast cells and other white blood cells thereby reducing allergic response. Also helps to fight the build-up of IgE (immunoglobulin E), higher levels of which will worsen allergic symptoms.
- ▶ Mazzolani et al.; International Journal of Case Studies in Clinical Research (2022); Volume 6 Issue 3: 10-19.
- ▶ 5Liu, Chan-Min, et al.; Biochimica et Biophysica Acta (BBA)-General Subjects (2012); 1820.10: 1693-1703.
- ▶ 6Mlcek, Jiri, et al.; Molecules (2016); 21.5: 623.



Thymus Freeze Dried Extract

- ▶ The Thymus Extract in Immunozen is derived from grass fed range free animals in New Zealand. It is processed according to the highest standards and is Non-GMO, pesticide free, hormone free, pure and undiluted.
- ▶ Produced using regenerative, humane and sustainable agriculture
- ▶ Produced in a cGMP and FDA registered facility
- ▶ Third party tested for purity
- ▶ Freeze drying can provide up to 97% nutrient preservation and extend shelf life up to 25 years

- ▶ **Thymus gland extracts** have been shown to:
 - ▶ 1) support immune response even in those individuals previously
 - ▶ unable to demonstrate meaningful immune function;
 - ▶ 2) result in improvements within the cellular branch of immunity involving T-cells (helper/inducer, suppressor, cytotoxic, NK cells, K cells and macrophages);
 - ▶ 3) modulate immune function and...
 - ▶ 4) enhance wound healing and general tissue repair after injury.



Thymus Extract



Oral supplementation with bovine thymus extracts, rich in thymus derived polypeptides, is supported by a plethora of research, and has been shown to help provide broad spectrum immune enhancement.



Whole thymus extract also offers a strong holistic benefit in helping to strengthen the user's thymus gland and immune response



Numerous research studies have shown that oral thymus supplementation can provide immune fortification for acute issues, chronic or long-term problems, allergies, and even immune modulation.



A Survey of Cell Biology
Bernadette Griffond, Bridget I. Baker, in International Review of Cytology, 2002



Michael T., Murray ND, in Textbook of Natural Medicine (Fifth Edition), 2020



Med Oncol Tumor Pharmacother. 1989;6(1):31-43. doi: 10.1007/BF02985221. Therapeutic application of calf thymus extract (TFX) A B Skotnicki

Glutathione: Fermented Glutathione

with clinically proven absorption

- ▶ Major antioxidant made in the body produced by the cells participating directly in the neutralization of free radicals and reactive oxygen compounds. It also helps maintain the functional potential of antioxidants we consume in our foods and supplements, such as vitamins C and E, in their reduced (active) forms.

Body's Master Antioxidant and Detoxifier. Essential for the survival of all living organisms.

Glutathione is used in metabolic and biochemical reactions such as DNA synthesis and repair, protein synthesis, prostaglandin synthesis, amino acid transport, and enzyme activation. Thus, every system in the body can be affected by the state of the glutathione system, especially the immune system, the nervous system, the gastrointestinal system and the lungs.

Lower Glutathione levels are implicated in many diseases associated with aging...

Journal of Clinical Epidemiology 47: 1021-28 199

Essential for the immune system to exert its full potential, e.g.

- ▶ Modulating dendritic cell influence on antigen presentation to lymphocytes, thereby influencing cytokine production and the type of response (cellular or humoral) that develops,
- ▶ Enhancing proliferation of lymphocytes thereby increasing magnitude of response,
- ▶ 30 % of Americans have Fatty Liver Disease.
- ▶ Glutathione removes the Toxic Load from the Liver allowing it to restore normal function.



Glutathione References



Lower Glutathione levels are implicated in many diseases associated with aging... Journal of Clinical Epidemiology 47: 1021-28 199

Pompella A, Visvikis A. Paolicchi A, et al. The changing faces of glutathione, a cellular protagonist. Biochemical Pharmacology, 66 (8): 1499–503 (2003)

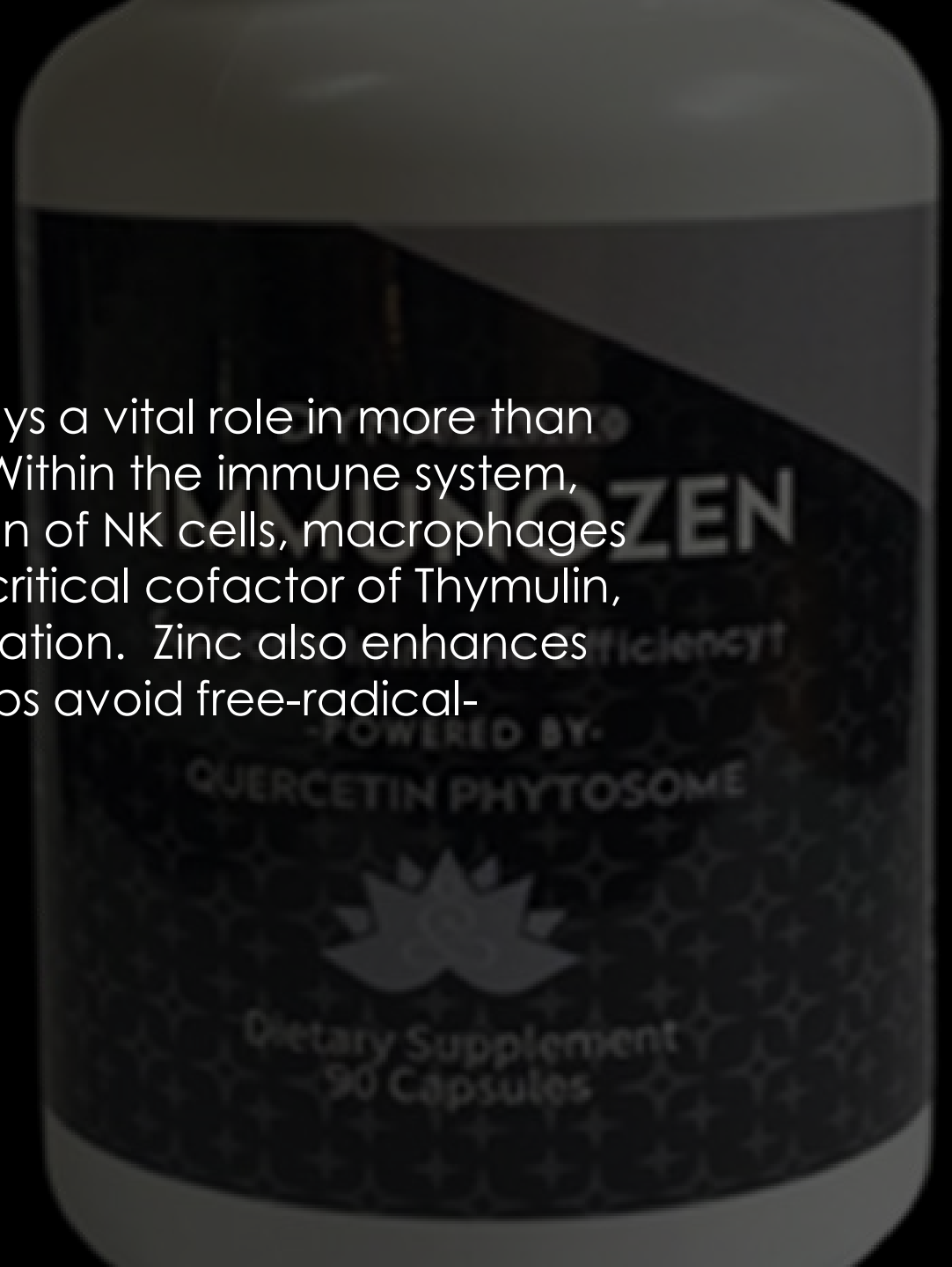
Bounous G and Molson J. Competition for glutathione precursors between the immune system and the skeletal muscle: Pathogenesis of chronic fatigue syndrome. Med Hypotheses. 53(4) (oct): 347–9 (1999) •

Herzenberg LA, et al. Glutathione deficiency is associated with impaired survival in HIV disease. Proc Natl Acad Sci. 94 (5): 1967–72 (1997)

Dröge W and Eggert H. Role of cysteine and glutathione in HIV infection and other diseases associated with muscle wasting and immunological dysfunction. FASEB. 11 (13): 1077–89 (1997)

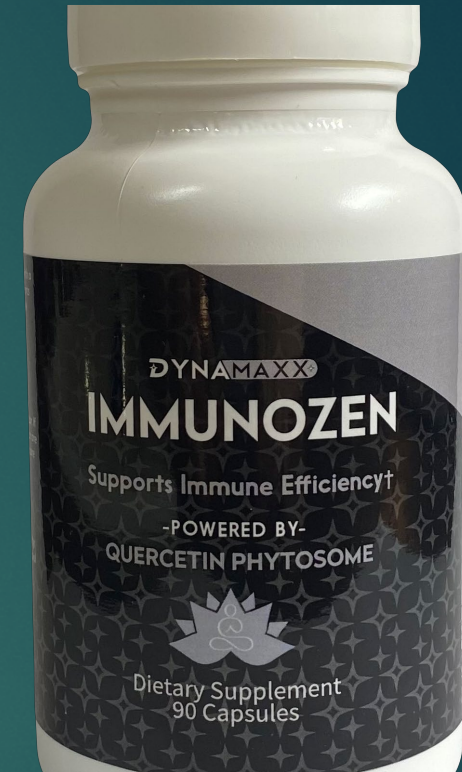
Franco R and Cidlowski JA. Apoptosis and glutathione: beyond an antioxidant. Cell Death Differ. 16 (10): 1303–14 (2009)

► **Zinc** is essential for human health and plays a vital role in more than 300 enzymatic and biological processes. Within the immune system, zinc is crucial for development and function of NK cells, macrophages (large WBCs), T-cells and B-Cells. Zinc is a critical cofactor of Thymulin, a thymic hormone involved in T-cell maturation. Zinc also enhances the body's antioxidant function, which helps avoid free-radical-induced cellular injury.



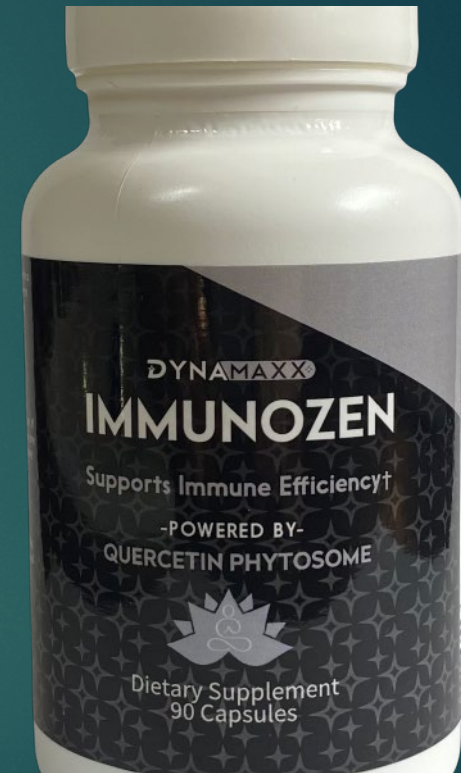
Broad Spectrum Polysaccharide Complex


- ▶ Immunozen delivers a diverse and complementary range of polysaccharides, derived from edible mushrooms and other plant materials, which are well known to safely and effectively modulate immune response
- ▶ Medicinal mushrooms are known to be beneficial for immunity, blood sugar, cardiovascular health, detoxification, liver function, and cellular response to pathogens to name a few.
- ▶ Different mushrooms offer differing benefits, based on their nutritional make-up, molecular weight, and growth environment. This makes it crucial and far more beneficial to provide a broad spectrum specialized mushroom blend concentrated for polysaccharide content.
- ▶ *Molecules*. 2021 Mar 4;26(5):1359. doi: 10.3390/molecules26051359. Mushroom-Derived Bioactive Molecules as Immunotherapeutic Agents: A Review Dinesh K Patel 1, Sayan Deb Dutta 1, Keya Ganguly 1, Seong-Jun Cho 2, Ki-Taek Lim
- ▶ *IntJMedMushrooms*.v19.i4.10.Medicinal Mushrooms in Human Clinical Studies, Part I. Anticancer, Oncoimmunological, and Immunomodulatory Activities: A Review Solomon P Wasser
- ▶ *Carbohydr Polym*. 2020 Feb 1;229:115548. doi: 10.1016/j.carbpol.2019.115548. Epub 2019 Nov 3. Advances in antiviral polysaccharides derived from edible and medicinal plants and mushrooms Xirui He 1, Jiacheng Fang 2, Qing Guo 3, Ming Wang 2, Yongsheng Li 4, Yibin Meng 4, Linhong Huang



Gano-Zen™ is a powerful proprietary blend of:

- 1) Five all-organic mushroom extracts, selected for their exceptional biological potency
- 2) IP-6 (Inositol hexaphosphate), important in regulating vital cellular functions
- 3) Nutritional yeast extract (*Saccharomyces cerevisiae*), a research-backed supporter of overall immune system effectiveness and health;
- 4) Olive leaf extract, proven to provide wide-ranging health-supporting benefits
- 5) Aloe leaf gel extract, recognized for millennia and well-researched for its many health-supporting benefits.






Mushrooms have been used by the Chinese to support healthy immune function and overall well-being for centuries, and for decades the Western scientists have researched the mechanisms of these mushrooms' apparent benefits. This research has provided ongoing growing scientific evidence of their wide-ranging beneficial effects for human health. ImmunoZen's all-organic mushrooms, with selected examples of their benefits, include:

Reishi (*Ganoderma lucidum*) supports healthy immune system function by: 1) strengthening cell-mediated immunity; 2) supporting effective antibody formation; 3) supporting immune cell production; and 4) modulating the functions of Natural Killer Cells.


Cordyceps (*Cordyceps sinensis* Berk.) has unique biochemistry that is extremely bioactive in humans. Among its many benefits, it: 1) supports overall immune responsiveness; 2) enhances NK cell activity, 3) is associated with increased targeted immune function; and 4) evokes a balanced immune response.



Agaricus (Agaricus blazeii) is considered by many to be the king of beneficial mushrooms. Among its benefits it: 1) provides immunomodulating support; 2) supports production of key immune cells; 3) supports production of cytokines (regulatory messengers of the immune system); and 4) provides liver-health-supportive effects.


Maitake (Grifola frondosa) contains grifolan, an important beta-glucan polysaccharide, that has been shown to: 1) support activity of macrophages, large white cells considered among the "heavy artillery" of the immune system; 2) support activation of NK cells; 3) strengthen immune recognition and response to potentially harmful microbes; and 5) support endocrine and cardiovascular health.

Shiitake (Lentinus edodes Berk.) contains a polysaccharide compound called lentinan that has demonstrated powerful support of healthy cell development. Lignins, another component of the Shiitake mushroom, have demonstrated strong support of healthy immune recognition and response to potentially harmful microbes.



2) **IP-6 (Inositol Hexaphosphate)** is found in almost all mammalian cells and is recognized as being very important in regulating vital cellular functions. It contributes significantly to normal cell development, stability and their ability to accomplish the tasks for which they were created. This includes supporting normal circulation and metabolism; and modulating immune function. It is also important in supporting antioxidant protection against toxicity and cellular injury.

3) **Nutritional yeast extract (*Saccharomyces cerevisiae*)** is rich in Beta-Glucans, a well-recognized supporter of immune system effectiveness and overall health. A few examples of benefits include: (1) enhancement of both innate and adaptive immune defense; (2) immune balancing effects, (3) support of natural killer (NK-Cell) function; (4) enhanced immune response against potentially harmful microbes and abnormal cells; (5) support of maintenance of healthy cell structure; (6) notable antioxidant effects; (7) support of healthy cholesterol levels; 8) and support of wound healing.



4) **Olive leaf extract** research results have shown that it supports: 1) healthy cardiovascular function; 2) healthy brain and nervous system integrity; 3) healthy gastrointestinal integrity; 4) normal blood glucose metabolism; 5) protection and maintenance of healthy cells; 6) effective response to abnormal cells; 7) effective response to harmful microbes; 8) healthy wound healing; and 9) healthy response to oxidative stressors.

5) **Aloe leaf gel extract)** Aloe products have been used throughout the world for millennia in support of beauty, health and longevity. Examples of science-backed benefits of Aloe gel extracts include: 1) supporting immune defense mechanisms including: a) supporting effective white blood cell function, b) differentiating normal from abnormal cells; 3) providing broad-spectrum immune function support by stimulating or modulating as needed; 3) supports intestinal health via anti-inflammatory effects; 4) supports normal blood glucose levels and metabolic function; 5) protects healthy liver structure and function against toxicity; 6) supports both clinical (cognition) and physiological parameters toward neurological health; and 7) supports normal healing of skin.