

Rationale For Immulyn™

Although this monograph will describe the rationale for the use of a specific nutritional supplement designed to provide nutrition for the immune system, it is not meant to deny the complexity of that system and the need to address many other factors which affect immune health. These factors are described in brief in the Optimal Health Program brochure, available from Wysong.

Immulyn™ is designed to synergistically complement the Wysong Foundation Formulas™ and the Wysong Nutrient Support Formulas™ as described in the Optimal Health Program brochure.



PURPOSE:

A nutritional supplement designed to support the health of the cellular and humoral immune system.

INGREDIENTS:

Natural Phytonutrient Extracts and Concentrates of Coriolus, Shitake and Maitake Mushrooms; Whey Protein (source of Glutathione), L-Lysine, L-Arginine, Inositol, Methyl Sulfonyl Methane (MSM), Coenzyme Q₁₀, Beta-1,3-glucans, Colostrum, Dried Thymus (bovine).

- Contains no additives -

DIRECTIONS:

Suggested Dosage: Two capsules twice daily. Immulyn™ is best assimilated if swallowed with meals. For best results, Immulyn should be used as a part of the Wysong Optimal Health Program™.

For long-term usage discontinue two days out of every week and five successive days every month to decrease intolerance potential.



Complexity

The immune system stands between health and disease, life and death. It protects against bacteria, viruses, fungi, parasites, environmental and food toxins, and aberrant tissue growth such as in cancer.

It is comprised of cellular elements such as macrophages and lymphocytes, humoral agents such as antibodies, and communicating biochemicals such as cytokines.

The immune system's trillions of cells are regulated by dozens of enzymes. The cells must recognize foreign invaders, multiply, call for reinforcements, destroy the enemy, call off the troops, and create memory cells. There are macrophages, interferons, killer T-cells, helper T-cells, B-cells, antibodies, suppressor T-cells, memory T- and B-cells. A 1-gram mouse can produce 100 million different antibodies, plus idiotypes.

We are only beginning to understand immunology and with our increasing knowledge it is becoming apparent that it is complex beyond our imagination. The complexity is indeed bewildering, but necessary, and certainly must be respected.

Synergy

In the early 1900's when immune biochemical and cellular detail was discovered, a new discipline emerged, called immunology. As in other scientific disciplines, we believed the closer we looked at the detail of a living system – a philosophical process known as reductionism – the more answers we would learn.

So we isolated cells and biochemicals and described their intricate details as best we could. But as time passed, we found that understanding tissue at the atomic level did not really answer questions such as: Why, when an entire population is exposed to the same disease, some people die, some people become ill and recover, and some

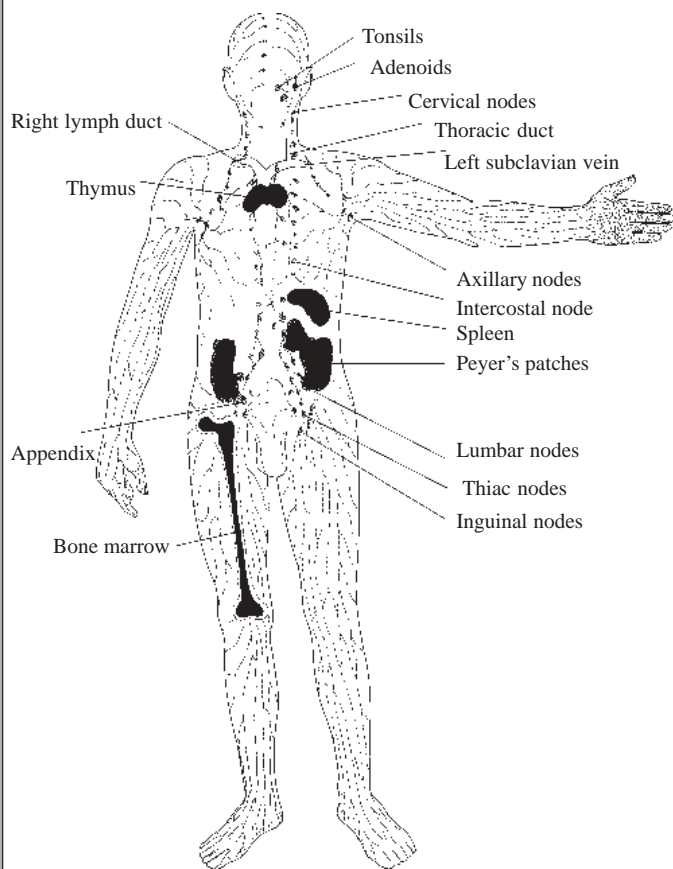


Figure 1. *Organs of the Immune System* - Structurally and functionally diverse organs and tissue of the immune system are interconnected by the blood, lymphatic, endocrine and nervous systems.

From: Jerne NK. *Scientific American*. 229:52, 1973.

explored because science is finding that attempting to solve problems by compartmentalizing facts and looking at any one discipline alone is ineffective.

In time, science will come to discover what many have intuitively suspected all along: that is, the body is one – it is holistic. Attempting to understand any one part without consideration for all the rest is doomed to failure.

Life Choices

Life choices affect our immune system. For example, exposure to light can either enhance or suppress the system. Extreme exposure to light to the point of sun sickness

and sunburn suppresses the immune system. Decreased exposure to light during the winter months in northern latitudes and continuing exposure to artificial light suppresses the immune system. Adequate regular natural sunlight, on the other hand, optimizes the immune system.

Regular exercise can enhance the immune system. Lack of exercise or extreme exercise can suppress it.

Our attitude can affect our resistance to disease. Humor enhances the immune system. A sense of control of one's life also enhances it. But lose control, feel helpless, subject yourself to continuing emotional stress, never have fun, never laugh and the immune system will become depressed and ineffective.

What I want to impress upon the reader is that the answer to health is not in the form of a vaccine, a pill, or anything else that someone else does to you. Rather, it is what we do to ourselves by way of the life choices we all have before us. Essentially everything we subject ourselves to that is unnatural, that puts us out of context with our natural, wild setting is immunosuppressive.

Many drugs suppress the immune system, including over-the-counter drugs such as aspirin. Excess consumption of iron by way of supplements or by cooking in ironware can suppress the immune system. Surgery suppresses the immune system. Sedentary living suppresses it. Not being creative and progressive about life, and not attempting to improve oneself and make a better world, but rather passively allowing ourselves to be subject continually to the will of others are all immunosuppressive.

Age

Age also affects immunity. There is a linear decline in immune resistance with age just as there is a decline in all other body functions. The slope of the graph, however, can either be at a steep decline if we do not take proper care of ourselves, or we can make the slope much more gradual and thus increase the chance of living a full, active, vital, disease-free life. This depends on the choices we make.

The Failure of Medical Measures

Most people think our only immune salvation is in the form of a vaccine or a newly discovered chemotherapeutic agent. We hear reports of how research promises a vaccine for the flu, for cancer, for heart disease, for AIDS and for every other imaginable infectious disease. But no vaccine has ever brought total protection to a population. Additionally, even before vaccines were ever invented,

people are unaffected. It also didn't explain why seasons of the year affect the incidence of disease. Nor did it explain why vaccines and other chemotherapeutic agents worked in some cases, didn't work in others, and actually worsened disease in others.

As science was forced to back away and look with a broader perspective again at the enigmas, it was discovered that immunology is not an isolated discipline describing an isolated body system. Immunity does not occur in a biological vacuum. Rather, the immune system is intricately interconnected with everything else, affects everything else, and is affected by everything else. Thus a new discipline called psychoneuroimmunoendocrinology was formed. Our psyche's relationship to our nervous system, and to our immune system and our endocrine system are being

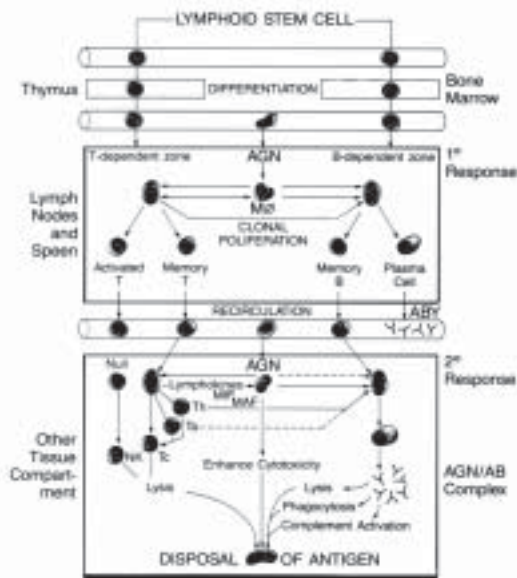


Figure 2. Immune Cells - A small and incomplete glimpse at some of the cellular complexity of the immune system.
From: Erlandsen SL et al. *Color Atlas of Histology*. Mosby-Year Book. St. Louis, MO. 79, 1992.

certain segments of a population subjected to highly virulent diseases were found to be immune or only moderately affected.

It is not modern medical measures such as vaccines that have resulted in an increase in the average life span of the human population, due to the demise of the great epidemics. In the graph in Figure 4, note that when the incidence of various plagues are charted against time, they had already experienced the majority of their decline before the modern medical measure that is now reputed to have caused the eradication of the disease was even introduced. It is easy to take credit for a solution when the majority of the solution has already occurred by the time we step in. It is like saying you are responsible for the receding water line by bucketing water out of the ocean when the tide is already receding.

Contrary to almost all professional, scientific, and popular belief, the health that we enjoy today is not a result of some high tech modern medical measures, but is rather a result of the advent of other

more mundane technologies, such as municipal sewage disposal and improved distribution of foods.

The inherent resistance by certain individuals within a population which permits them to resist disease is something certainly worth exploring before resorting to questionable medical measures.

Certainly genetics plays a role. But there are many other factors in lifestyle such as noted above that are

extremely important in maintaining optimal immune strength. These are not as technologically sophisticated or commercially exciting as developing a vaccine, but they are far more potent and safe. Living a healthy life is indeed the most important defense against disease.

Nutrition

Aside from lifestyle choices, there are important nutritional keys to immune health. In this regard please refer to the Wysong Optimal Health Program as well as the many other publications produced by Wysong to learn how to make proper food choices. The importance of proper food choices is proven by science but downplayed by the medical establishment. Nevertheless, the World Health Organization admits, "The best form of

immunization is good nutrition." Epidemiologists conclude that 2/3 of all deaths of children in developing countries (under the age of five) are due to malnutrition and the susceptibility that results in infection.

Natural, fresh, whole, raw foods eaten as the majority of the diet provide the key. Doing what is natural, what we would do if we were released into the wild, opens the way for maximizing our immune potential. Our spear and arrow have now been replaced with a shopping cart, but certainly every bit of the wit and intelligence necessary to capture prey in the wild is necessary to make the right choices in the grocery aisle.

Mothers should nurse their babies, and be eating properly themselves. These early formative years are critical to the immune system. Mother's milk is raw, fresh, natural and complete. Anything else is an experiment. By keeping children and ourselves away from packaged, processed, refined, embalmed, puffed, dehydrated, steam cleaned, commercial concoctions we give ourselves the best opportunity for the nutrition our immune system needs.

Testifying to the impact nutrition can have are recent discoveries regarding some of the great plagues. For example, in Europe, Russia and

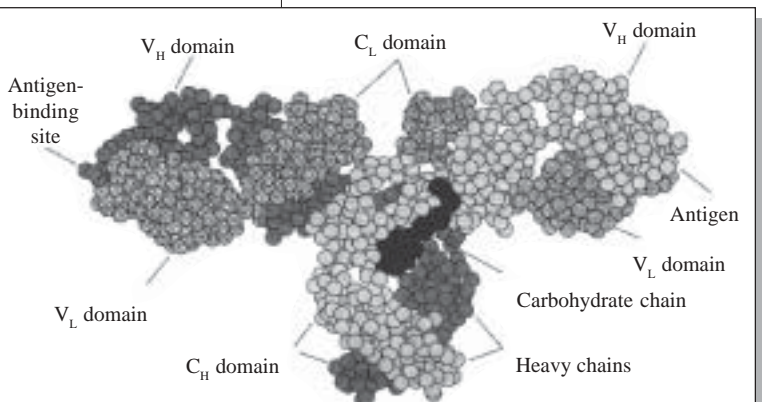


Figure 3. An Antibody Molecule - Each ball represents an amino acid residue. The three-dimensional configuration of each different antibody (there can be tens of thousands) is critical in attacking foreign invaders.

From: Stryer L. *Biochemistry*. WH Freeman and Company, New York. 901, 1988.

MODERN TECHNOLOGY

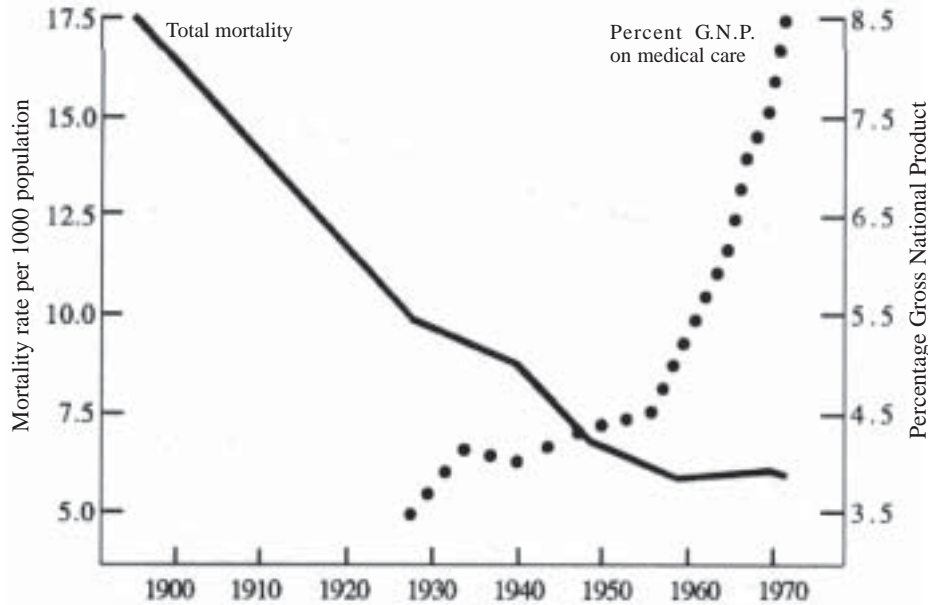


Figure 4. Age and sex-adjusted mortality rates for the United States, 1900-1973. Including and excluding major infectious diseases. Contrasted with the proportion of the Gross National Product expended on medical care.

From: McKinlay JB et al. The Questionable Contribution of Medical Measures to the Decline of Mortality in the United States in the Twentieth Century. *Milbank Mem Fund Q Health.* 55(3):405-428, 1977.

in early colonial America, susceptibility to infectious disease, and aberrant psychological behavior considered to be demon possession and witchcraft, are now believed to be a result of the consumption of improperly stored grains. These grains had molded and produced mycotoxins, and were then consumed in breads. So the plagues were not epidemics caused by infectious agents or lack of vaccines. Mycotoxins are potent immune suppressors, as well as having direct neurotoxic effects. The cause of these historic tragedies was simply immune suppression and toxic exposure from improper food.

Supplements

There are nutrients that specifically enhance immune function. These include a variety of vitamins such as the antioxidants vitamins A, C and E, the B complex vitamins, minerals such as selenium and zinc, and many others. These vitamins and minerals are contained within the natural diet explained in the Wysong Optimal Health Program and also in the Wysong Foundation

Formulas and Wysong Nutrient Support Formulas described there.

Additionally, there are a wide range of phytonutrients such as the flavonoids that are potent antioxidants and which also strengthen

the immune system. These are contained in the Wysong antioxidant supplements in the base supplement program. The essential fatty acids, the enzymes and the probiotics also found in the Foundation Formulas are all important in strengthening the immune system. These base maintenance supplements are designed to provide everyone an excellent spectrum of natural health enhancing nutrients as an insurance policy against the limitations of the modern diet and the added stresses of our modern world.

Immulyn Benefits

Immulyn incorporates a variety of nutrients not found in the Wysong Foundation Formulas which are known to specifically target the immune system. It is important, however, that the Foundation Formulas be taken in conjunction with Immulyn since they are designed to complement effectiveness.

Polyglucoses found in natural foods such as aloe vera and certain nutritional yeasts have the ability to activate immune cells, in particular the

DID MEDICINE VANQUISH INFECTIOUS DISEASE ?

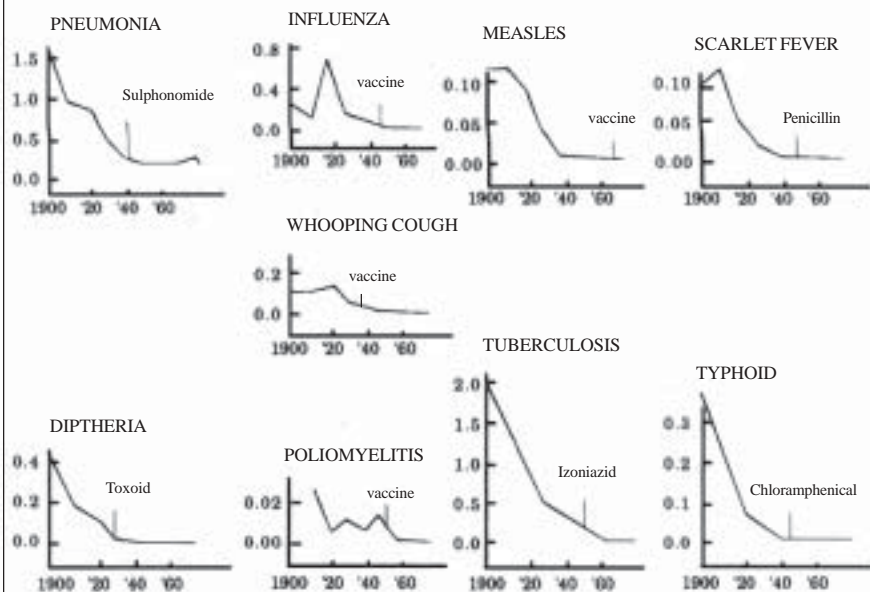
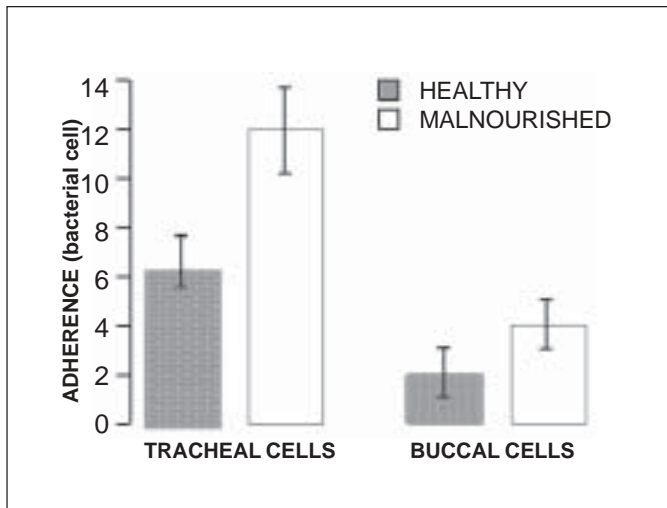
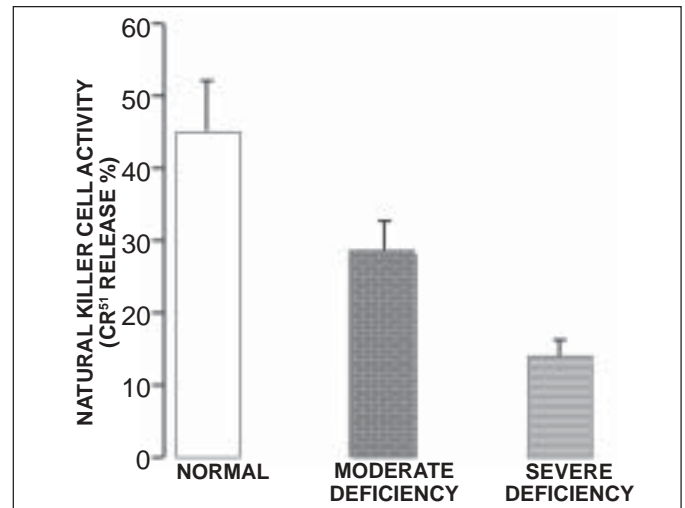


Figure 5. The fall in the standardized death rate (per 1,000 population) for nine common infectious diseases in relation to specific medical measures for the United States, 1900-1973.

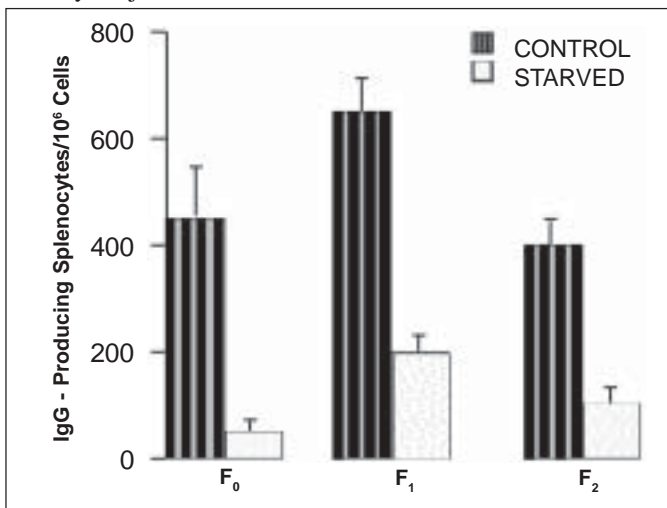
From: McKinlay JB et al. The Questionable Contribution of Medical Measures to the Decline of Mortality in the United States in the Twentieth Century. *Milbank Mem Fund Q Health.* 55(3):405-428, 1977.



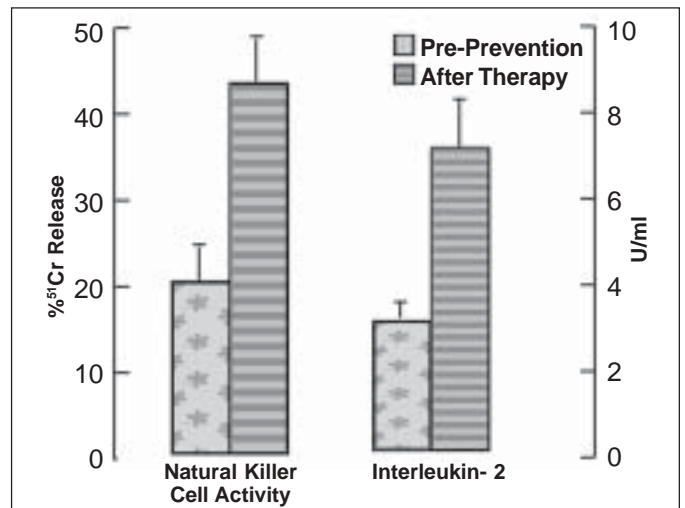
More bacteria adhered to cells of malnourished subjects than healthy subjects.



Iron deficiency leads to decreased immune response.



Starvation leads to decreased immune response of offspring.



Immune response improves after 1 year of nutritional supplementation.

Figure 6. *Graphs demonstrating how immunity is directly linked to proper nutrition.*

From: Chandra RK. Nutrition and immunity: lessons from the past and new insights into the future. *Am J Clin Nutr.* 53:1087-1101, 1991.

macrophage. Beta 1-3-glucan, a specific polyglucose, has receptor sites on macrophages that stimulate them and a host of other immune cells into activity. Cytokines are internal biochemical regulators of the immune system and they are activated by macrophages, which are in turn stimulated by the beta-glucans and other polyglucoses such as polymannose in Immulyn.

The activation of the macrophage by these nutrients is the same as if these immune cells were stimulated by endotoxins produced by bacteria, viruses and chemicals. The effects are similar to that achieved by a vaccine, only the effect is

nonspecific to any particular toxic agent; rather it is an overall stimulant of the immune system. In short, these nutritional polyglucoses create a chain reaction of nutrient-stimulated effects including:

1. Activation of macrophages.
2. Activation and multiplication of T-cells.
3. Activation and multiplication of B-cells.
4. Release of antibodies.
5. Release of tumor necrosis factor.
6. Release of important cytokines such as interleukins 1, 2, 6, and interferon.
7. Release of colony-stimulating fac-

tors which boost the production of immune system cells.

Amino acids, including lysine and arginine, increase the number of neutrophils and IgG antibody levels. They also seem to retard the age-related decline in thymic function. The thymus is important to the production of a variety of immune system components.

Inositol is found throughout nature in the bran portion of wheat and rice, legumes such as soybeans, and essentially every type of mammalian cell. Specifically, inositol is needed by the immune system for the proper function of natural killer (NK) cells,



Figure 7. Normal immune resistance as represented by a protective umbrella comprised of the various elements creating resistance.

From: Chandra RK. Nutrition and immunity: lessons from the past and new insights into the future. *Am J Clin Nutr.* 53:1087-1101, 1991.

which police the body for cells or organisms they recognize as "nonself." This includes viruses, bacteria, fungi, and even the body's own cancerous, malignant cells. This important sugar further fights cancer by causing the cancer cells to behave like normal, healthy cells whose ability to divide and multiply can be properly regulated. Over two dozen recent studies have illustrated the immune-enhancing benefits of this natural compound, particularly when combined with the B vitamin inositol (as found in Immulyl).

Colostrum is a fraction of the first milk provided to newborn babies that is particularly rich in passive immune factors. In addition, colostrum has a stimulatory effect on the immune system in a nonspecific way. Colostrum from one species has been shown to have effects on others with, for example, bovine colostrum having an effect on sheep, pigs, humans, dogs and cats.

Nucleotides are fractions of genetic material that the body is able to produce itself, but also receives in the diet. Increasing dietary intake of nucleotides has been demonstrated to stimulate the

proper development and activation of immune cells such as the T-cells and increase concanavalin A and phytohemagglutinin, which stimulates blastogenesis (the production of immune system cells).

Coenzyme Q₁₀ is a nutrient particularly important for cellular energy production. The immune cells have a high metabolic rate and can easily exhaust Coenzyme Q₁₀ stores since the modern diet is commonly deficient in this nutrient.

Thymic substance contains elements responsible for the development and maturation of the immune system components. Nutrients contained within specific tissues stimulate the corresponding tissue when eaten. Thus, muscle meat fuels muscle growth, cartilage can build joints, pancreas assists digestion, heart provides heart nutrients... and thymus aids the immune system.

Glutathione is an important intracellular antioxidant in all tissues, but particularly within immune cells. The ability of lymphocytes, for example, to regenerate stores of glutathione directly affects their ability to respond to antigenic stimulus. Nutritional precursors to glutathione include the amino acids cysteine, glutamate, and glycine. These precursors are found within Immulyl's milk serum protein concentrate. They have the ability to build intracellular stores of glutathione.

Aside from immunostimulation, glutathione has the ability to detoxify, protect against radiation, and decrease aging-related degeneration. For example, glutathione has been shown to detoxify at least 12 different carcinogens. Diseases of aging such as Alzheimer's, Parkinson's and arteriosclerosis are all characterized by a preceding drop in glutathione levels in the organ systems involved. In some



Figure 8. Nutritional compromise breaks holes in all elements of immune protection.

From: Chandra RK. Nutrition and immunity: lessons from the past and new insights into the future. *Am J Clin Nutr.* 53:1087-1101, 1991.

studies of animals, life span has been increased by as much as 30% by increasing glutathione levels.

Certain mushrooms (such as Coriolus, Maitake and Shiitake) produce nutrients such as lentinan which stimulates maturation and differentiation of immune system cells. Protein-bound polysaccharides from the mycelia of *Coriolus versicolor* are among the most thoroughly studied of all natural biological response modifiers. More than 300 studies and dozens of long-term clinical trials establish the effectiveness of this nontoxic, natural mushroom extract.

These natural mushroom extracts have been shown to stimulate the functional maturation of macrophages, stimulate the scavenging of the cytopathic effects of various infectious agents, improve survival rates in cancer patients, reactivate suppressed immunity, promote antitumor activity, (including increased levels of tumor necrosis factor), increase type B lymphocytes, increase T-cell counts, normalize helper/suppressor T-cell ratios, and increase killer T-cells.

The nutrients in Immulyn have a significant body of scientific research demonstrating their effectiveness in assisting the immune system. The partial listing of scientific references demonstrating the science, effectiveness and safety of these ingredients follows this text.

Immulyn, in combination with the other nutritional supplements in the Optimal Health Program, combined

with appropriate dietary and lifestyle modifications, provides an exciting new natural and safe method to enhance and optimize the immune system. This added immunity protection is critical in a world that increasingly compromises immunity while also increasing potential threats to health.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

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