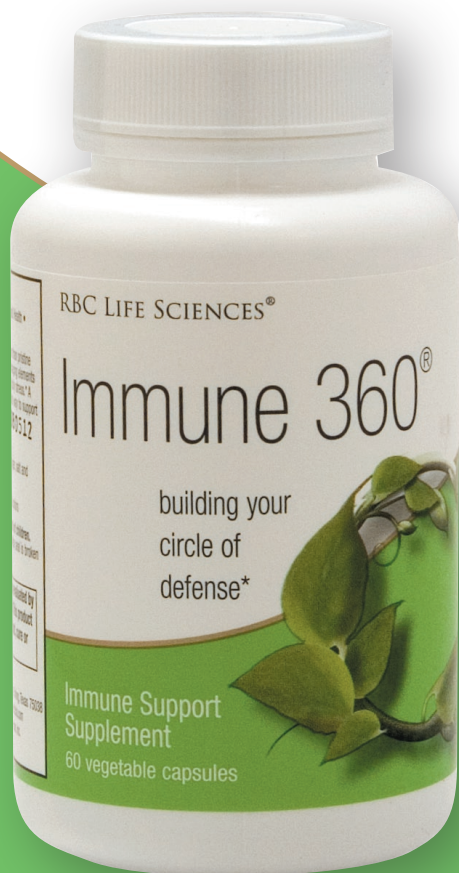


Doctors Share

# THE SCIENCE BEHIND

# Immune 360<sup>®</sup>

A compilation of the  
latest nutritional information  
from medical experts



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# Doctors Share the Science Behind Immune 360®

Immune 360 is a cutting edge immune product designed by RBC Life Sciences to nutritionally support the immune system with a variety of natural, research-backed ingredients. It contains legendary herbs now verified by scientific studies, including ashwaganda, astragalus, maitake mushroom, aloe vera, larch arabinogalactan, and beta glucan. It contains the widely acclaimed plant-derived polysaccharides, which have been shown to powerfully support the immune system, above and beyond many other nutrients. Immune 360 also contains RBC Life Sciences exclusive Phycotene® Complex, a mixture of special carotenes extracted from spirulina and dunaliella algae. We have also included impressive new ingredients such as ellagic acid, lycopene and astaxanthin, along with time-tested nutrients including selenium, zinc, and vitamins A, C, and E.



Each of these ingredients have been extensively reported in peer-reviewed literature because of positive immune function activities. There is no other product on the market that has the combination of historically trusted and scientifically verified ingredients contained in Immune 360.

## Why do I need to support my immune system?

There is little doubt that in modern society we are exposed to a variety of chemicals that our bodies were not designed to recognize, much less eliminate. Substances including additives, preservatives, pesticides, herbicides and dyes find their way into our bodies through the foods we eat.

We breathe in various industrial pollutants such as those from incinerated hazardous wastes, polyurethane fumes, gasoline and oil by-products along with manufacturing wastes from plastic, steel, and paint production. On top of this we are exposed to constant seasonal changes that bring pollens from trees, shrubs, flowers and indigenous plants. This exposure causes all types of annoying and inconvenient symptoms, such as sneezing, coughing, and congestion. It can disturb our sleep and make us feel miserable.



As if these factors aren't enough, we are constantly exposed to foreign organisms from social contact in washrooms, shopping malls, workplaces, hospitals, airplanes and schools. Our defense system against this massive invasion of our bodies is our immune system. This is why it is vitally important to give yourself a complete circle of defense with the nutrients found in Immune 360.

# Why is my immune system important to my health?

The immune system is more important and more intricate than many people realize. It includes millions of specialized cells, proteins, and hormones that form intercommunicating networks. They are activated to protect and defend the body against invading toxins and mutated cells. If it is working optimally, the immune system actually neutralizes and eliminates foreign substances that have entered the body. Many health care professionals believe that wellness is directly related to the function of a healthy immune system.

The immune system is activated when the body is exposed to harmful organisms, which often occurs during the cold and flu season. Specific cells of the immune system secrete protein molecules called immunoglobulins (Ig), which recognize foreign material. These immunoglobulins encode special configurations in order to neutralize foreign invaders. The immune system is also activated during processes that threaten the survival of healthy cells. When normal cells become damaged, the immune system recognizes them as “foreign” or different, and seeks to eliminate them so they will not continue to thrive and spread. If these cells are left unchecked it can cause great disruption in normal tissue formation and function.



## How was Immune 360 developed?

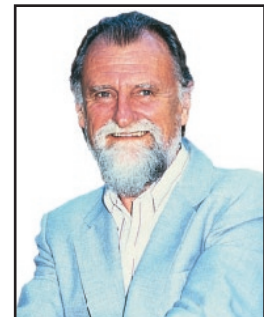
In the late 70's and early 80's, two scientists independently conducted research on natural ingredients they believed had special properties that would nutritionally support the immune system. The results of their research made history and surpassed their expectations.



**Clinton Howard, Founder**

The founder of RBC Life Sciences, Clinton Howard, formed a research team that discovered the active constituents in the aloe vera plant. His research revealed the polysaccharides in aloe vera that enhance immune cells and nutritionally support the body's natural healing processes when used both topically and orally.

Dr. Christopher Hills, known as the “Father of Spirulina,” discovered a powerful combination of extracts from spirulina and dunaliella algae, which he named Phycotene®. This amazing new compound was researched at Harvard University, and it demonstrated the ability to protect healthy cells from toxic damage and enhance immune system function.



**Dr. Christopher Hills**

These two scientists laid the foundation for RBC Life Sciences, and their powerful discoveries have now been combined with historic herbs and newly recognized nutrients to create the most effective immune support product on the market.

## Each ingredient has been specifically selected for its immune supporting qualities:



### **Aloe vera**

This native African plant has been used for centuries for its many therapeutic properties. In the last several decades research conducted under the supervision of RBC's founder Clinton Howard provided the evidence to support the long-held belief in aloe vera's amazing properties.

Aloe was shown to stimulate immune cells such as macrophages, which are the cells that attack and eliminate foreign matter. The active components of aloe were found to be the polysaccharides (long-chain sugars), which were shown to enhance immune responsiveness in both cell cultures and in animals. Research also showed that aloe vera supports tissue repair when taken internally.

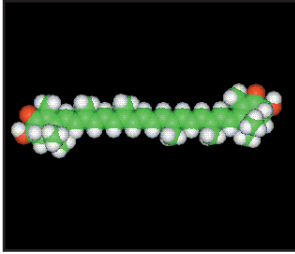
In addition to its immune support properties, aloe vera provides powerful support to the digestive system. It helps maintain the proper pH level in the gastrointestinal tract and optimizes beneficial flora. Aloe vera has also been shown to reduce yeast formation in the colon. In addition, it can help to enhance the absorption of both vitamin E and C when taken with these vitamins.

### **Ashwaganda**

Ashwaganda, or Indian ginseng, has been an important Ayurvedic herb for more than 3,000 years. It is referred to as a "rasayana" herb, meaning it promotes physical and mental health. This herb helps to support the body in resisting assaults from adverse environmental factors. According to tradition, it revitalizes the body and helps increase stamina.

Ashwaganda has been scientifically shown to provide support from both chemical and physical stress. Chronic stress symptoms such as high cortisone levels, cognitive deficits, suppressed immune system and male sexual dysfunction have been significantly alleviated with ashwaganda. Research also shows that this herb can improve white blood cell and red blood cell counts.





## Astaxanthin

Astaxanthin is a red carotenoid pigment that has demonstrated a remarkable ability to protect a variety of cells from destructive oxidative damage. It has been the focus of a growing number of research studies because it is one of the most potent and bio-active antioxidants found in nature. Astaxanthin enhances the release of interleukin-1 and TNF alpha, and it enhances immunoglobulin production.

Research has shown that astaxanthin provides protection to healthy cells, and because it neutralizes the superoxide free radical, it may be more potent than other traditional antioxidants like vitamin C. It has demonstrated specific protection towards the neurons of the retina, brain, and spinal cord. As a powerful antioxidant, astaxanthin supports the immune system by neutralizing free radicals, which could otherwise lead to mutated cells.



## Astragalus

Astragalus root is one of the most important health-promoting plants in Oriental medicine. This herb has been traditionally used to restore depressed immune function. It contains numerous polysaccharides, which have been shown to improve the activity of the immune system, particularly natural killer and T cell function. These cells are responsible for destroying and neutralizing foreign invaders. The polysaccharides in astragalus have also been shown to support the immune system by stimulating B cells and macrophages.

The many benefits of astragalus include restoring healthy circulation and strengthening the body's resistance through its powerful support of immune system cells.

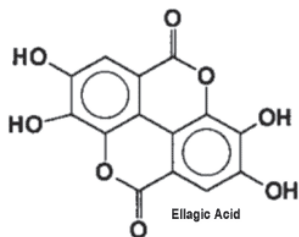
## Beta Glucan

Beta glucan is a nutrient found in many common foods such as oats and mushrooms. It has been studied for many years in Japan and is now being researched in other countries as a nutrient that directly supports the immune system.

Beta glucan is currently being used extensively by health care professionals in Japan as an immune supportive agent. Beta glucan is one of the most extensively studied immune enhancing plant extracts with over 300 published articles on its various functions in both clinical and laboratory studies.

Some health care professionals and scientists believe that beta glucan may be the most important active immune agent known at this time. Studies reported in the Annals of Surgery have shown that it can increase the killing activity of leukocytes. Numerous scientific reports have shown that it increases macrophages, which are the immune cells responsible for eliminating damaged cells and foreign material. It also increases other important immune signaling proteins such as interleukin.

Beta glucan may be  
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## Ellagic Acid

Ellagic acid is found in many foods such as pomegranate, red raspberries, strawberries, blueberries and walnuts. Ellagic acid is a phenolic compound with strong antioxidant properties. It has received tremendous attention lately from the medical community such as the Memorial Sloan Kettering Institute.

Because of its powerful effects as a nutritional supplement, numerous studies have been conducted to prove the effectiveness of ellagic acid. In cell studies, it appears to block the reaction of certain toxins that damage the DNA molecule.

Studies have shown that ellagic acid may help prevent mutational damage from occurring, which could otherwise lead to cellular abnormalities. Ellagic acid has been shown to have a protective affect on breast, prostate, pancreas, skin, colon and esophageal cell types in vitro. It was also shown to help protect mice from chromosome damage during radiation therapy. An additional study in mice showed that ellagic acid protected and maintained the integrity of normal cells. Ellagic acid appears to support the destruction and inhibition of the replication of mutated cells.

## Larch Arabinogalactan

Larch arabinogalactan is a polysaccharide derived from the wood of the larch pine tree, which is comprised of approximately 98% percent arabinogalactan. It has been shown to help increase the body's production of short-chain fatty acids, principally butyrate and propionate, which help protect the intestinal tract. Evidence also indicates that consumption of arabinogalactan also significantly enhances beneficial microflora in the gastrointestinal tract, including bifidobacteria and lactobacillus bacteria.

Larch arabinogalactan has demonstrated the ability to help build a more responsive immune system. Studies have shown that it enhances natural killer cell activity. It also enhances a vast array of cytokines. These special proteins, including interferon, interleukins and lymphokines are secreted by various cells involved in cell-to-cell communication, coordinating antibody and T cell immune interactions, as well as amplifying immune reactivity. Larch arabinogalactan has also been shown to help decrease the generation and absorption of ammonia, which is a toxic byproduct of protein metabolism.





## Lycopene

Lycopene is a special carotenoid pigment that imparts a red color to many fruits and vegetables. Lycopene has received a great deal of attention in recent years because it has proven to be a very powerful antioxidant, even stronger than other carotenoids. Increased consumption of lycopene rich foods has been shown to support heart and prostate health.

As an antioxidant, lycopene provides a variety of cells with protection from destructive oxidative damage. Lycopene research shows that it plays an important role in supporting processes that inhibit the progression of altered and damaged cells in the breast, prostate, and endometrial tissue. Lycopene has been shown to protect cells from harmful mutations. Replenishing the body's level of lycopene can bolster our defense system. A wide variety of antioxidants are necessary to keep the immune system strong and healthy.

## Maitake Mushroom

The maitake mushroom is a highly regarded Japanese mushroom known for both its culinary and nutritional properties. Although it has become over-harvested in some parts of Japan, it is now being cultivated in the forests of Europe, North America, and Asia.

Maitake is increasingly being recognized as a potent source of polysaccharide compounds with dramatic health-promoting potential. The mushroom has specific glucans (1,3 branched chains and 1,6 linkages) that increase immune-competent cell activity.

Animal studies, cell studies and some human trials have demonstrated a promising role for the use of maitake mushrooms in supporting the destruction of abnormal cells. Animal studies have shown that maitake mushroom activates the immune system by increasing cytokine production. In a study with cultured prostate cells, maitake mushroom has caused apoptosis, which is the killing of unhealthy cells.

Maitake mushroom extract is referred to as an Immunocutical, which is a substance that has demonstrated immune enhancing properties when it is consumed. Immunocuticals are non-toxic and are very well tolerated. Virtually everyone can take them without adverse reactions. Immunocuticals are sometimes used as nutritional supplementation during medical treatments, such as chemotherapy or radiation, to support the immune system without harming the individual.



## Phycotene Complex

Phycotene® is a unique carotene extract, exclusive to RBC Life Sciences. Phycotene contains a wide range of powerful carotenoids and pigments from spirulina and dunaliella algae. These include:

- Alpha Carotene
- Bixin
- Cryptoxanthin
- Myxoxanthophyll
- Xanthophyll
- Beta Apo 8 Carotenal
- Canthaxanthin
- Echinenone
- Neoxanthin
- Zeaxanthin
- Beta Carotene
- Chlorophyll
- Lycopene
- Violaxanthin

When Phycotene was put to the test, researchers were astounded. They discovered that Phycotene was able to target damaged tissue with no toxic effects to healthy cells.

When Phycotene was put to the test, researchers were astounded. They discovered that Phycotene was able to target damaged tissue with no toxic effects to healthy cells.

Published studies conducted at Harvard School of Dental Medicine in 1988 showed that when Phycotene was injected underneath mouth cells exposed to toxins, it stimulated macrophage activity to destroy damaged cells. Phycotene supported these beneficial immune processes better than controls receiving no intervention and better than vitamin A. In the same experiment, Phycotene showed a superior ability to protect cells than beta-carotene or canthaxanthin alone.



## Selenium

Selenium is an essential trace mineral in the human body. It is a critical nutrient for the normal functioning of the immune system and the thyroid gland. Selenium is an important part of antioxidant enzymes that protect cells against the effects of free radicals produced during normal oxygen metabolism. Antioxidants, such as selenium, help control levels of free radicals that can otherwise

damage cells and contribute to the development of some chronic diseases. Selenium is being studied world wide for its effects on protecting the body from damage due to its immune supportive properties.

## Spirulina

Spirulina is one of the world's most nutrient-dense foods. It contains 65% easily digestible, complete protein. Spirulina is rich in carotenoids, B vitamins and minerals. It has been the focus of a great deal of research involving the immune system. Spirulina appears to powerfully support immunity in both human and animal studies.

Research has shown that spirulina enhances the body's levels of the immunoglobulins IgG and IgA, which are critical for immune function. It also tends to normalize levels of the immunoglobulin IgE, which is the immunoglobulin responsible for allergy symptoms. Other research has demonstrated that spirulina can improve both the non-specific function of cellular immunity and the specific humoral immunity. Spirulina appears to support the immune response by stimulating macrophage functions, phagocytosis, and interleukin production.



One of the most impressive nutrients found in spirulina is a blue pigment called phycocyanin. Scientists are amazed by its profound antioxidant properties and its ability to protect red blood cells from free radical damage. Phycocyanin has been shown in peer reviewed studies to enhance immunity, protect nerve tissue, support joint health, and protect the liver from toxicity.



## Vitamin A (Beta-carotene)

Vitamin A plays many important roles in the body, one of which is to support immune system function. Many research studies have shown that vitamin A helps to improve health, particularly supporting respiratory health. Illness can deplete the body's levels of vitamin A and therefore it is important to consume this nutrient before, during, and after the onset of any possible sickness.

Because large doses of vitamin A can be toxic, it is best to supplement with beta-carotene, which is converted into vitamin A in the body as it is needed. In addition to converting into vitamin A, beta-carotene has its own unique antioxidant properties that warrant its inclusion in any immune support formula.



## Vitamin C

Vitamin C is the most well-known immune support nutrient, and no immune formula would be complete without it. Vitamin C is an important antioxidant vitamin that is necessary for the optimal function of the immune cells. Vitamin C works to prevent free radical damage, and it helps keep other antioxidants potent so they can do their job in the body.

It has been reported that approximately 25% of men and women in the United States do not consume adequate levels of vitamin C and about 10% of adults consume less than half the recommended amount.

Linus Pauling, the two-time Nobel prize winning biochemist, stated that immune cells are bigger than normal cells, and because of their activity, they can require up to 40 times more vitamin C than other cells in the body. An abundant supply of vitamin C in the body helps to stimulate the production of lymphocytes, which are important cells of the immune system. Vitamin C is required by the thymus gland, and it increases the mobility of phagocytes, which destroy harmful invaders.

## Vitamin E

This widely popular nutrient is a powerful antioxidant and immune support nutrient. Studies have shown that supplying the body with high levels of vitamin E helps to enhance resistance to poor health, including joint discomfort and autoimmune symptoms. Vitamin E also appears to play a role in supporting the health of the eyes, breast, heart, and nervous system.



In nature, vitamin E contains 4 different substances called tocopherols. Vitamin E supplements often contain only alpha-tocopherol because it is the most active form. However, research is now showing that it is best to consume mixed tocopherols, to obtain all the benefits of vitamin E in its most natural form. Immune 360 contains mixed tocopherols, providing a potent source of vitamin E.

## Zinc

Zinc is an essential mineral found in almost every cell of the body. It supports a healthy immune system, plays a role in wound healing, helps maintain your sense of taste and smell, and supports DNA synthesis. Zinc stimulates the activity of approximately 100 enzymes, which promote biochemical reactions in your body to accomplish energy functions and waste removal. They also repair cells and build substances necessary for cellular health.

Studies have shown that a lack of zinc in the diet can impair overall immune function while adequate levels of zinc help support the body's resistance to infection.

# Building Your Circle of Defense

Our bodies wage a daily battle to keep us healthy. The more we do to strengthen our immunity, and to build an impenetrable circle of defense, the better our chances to live long, healthy, and vibrant lives. Immune 360 contains ingredients studied world wide to help you build and support your immune system to give you the best protection for your health.

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