

# THE GIFT OF KNOWLEDGE

UNDERSTANDING AND BUILDING YOUR IMMUNE SYSTEM



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## Winter Wellness: Tips and Tricks for Boosting Your Immune System

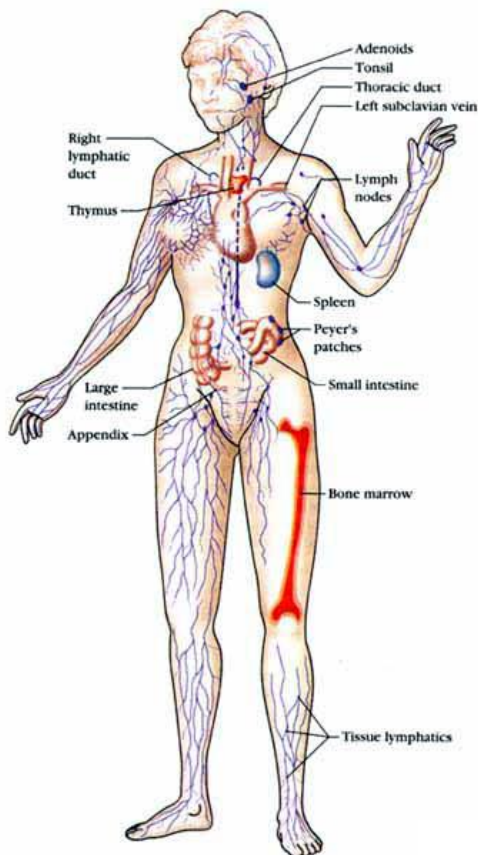
Before one can boost and improve their immune system, it's crucial to first understand what it is and what it does. Fortunately, the importance of our immune system has been showcased by actual instances where people were born either without a functional defense system, or parts of it just didn't work properly. This condition is called immunodeficiency. While unfortunate for those affected, it has allowed this fundamental, biological process to be studied efficiently.

So, you may be wondering... How do those with immunodeficiency function in comparison to those with healthy immune systems?

Well, some individuals with immunodeficiency are completely unable to fend off infections, and sometimes this can be fatal. Such individuals may have to live their entire lives in a sterile environment. This means that they must also limit their contact with the outside world and its inhabitants.

Thankfully, however, many individuals can be helped with a bone marrow transplant, which allows them to develop a working immune system. Because bone marrow is a great source of stem cells, it can help those in need to develop a new, healthy system. The only drawback to this treatment is the fact that finding a donor can be difficult.

Luckily, there are other promising treatments being perfected, such as replacing 'faulty' genes with working ones to correct the immunodeficiency problem.



### What is the Immune System?

Now that we understand the importance of the immune system, it's time to learn more about what it actually does when it's in working order.

In simple terms, the human immune system is tasked with fighting off disease and maintaining a healthy balance in the body.

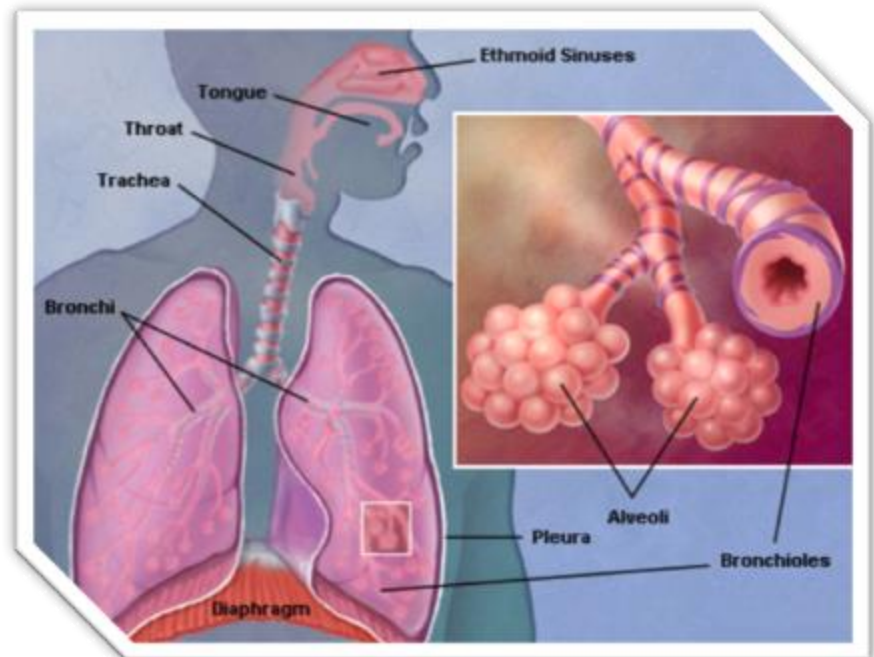
It works to protect the body effectively against bacteria and viruses known as germs. Without these invaders inhabiting our bodies, the potential for disease and infection are at an all-time low.

Fortunately, our body has a number of defenses that it can deploy to protect us. One of the simplest and most effective ways it does this is through the use of physical barriers.

For example, the skin is very effective at blocking germs. In addition, certain substances produced by the body such as saliva and tears contain molecules that can neutralize germs, further enhancing the barrier effect.

Organs of the body can be at a greater risk due to contaminated environments and polluted air, especially if entered into the lungs, since the body needs clean and fresh air in order to maintain the thin layer of tissue that separates air from the bloodstream. This can easily become a route for harmful bacteria and viruses to enter the body.

To limit entry into the body, there is a sticky substance called mucus which coats the lining of our lungs. Its primary function is to help capture germs and other foreign particles that attempt to invade our bodies. Once captured, cilia, which are small moving hairs that line the airways, are tasked with removing any and all harmful molecules from the sensitive areas of the lungs.



Understanding how the immune system works has allowed us to develop amazing life-saving operations to safely transplant organs such as kidneys, hearts, lungs, and livers.

Immune research on diseases such as rheumatoid arthritis, diabetes, asthma, allergy, cancer, and infectious diseases such as HIV/AIDS and tuberculosis has made important breakthroughs as to how these diseases develop, giving us the foresight to develop new vaccines and therapies for cures and treatments.

Whenever your body is affected with a germ, harmful bacteria, or virus, your immune system increases its potential to fight the invaders and eliminate the infection. By having a healthy diet, your body becomes stronger, giving your immune system the ability to remain alert 24/7 and provide proper defense towards harmful particles.

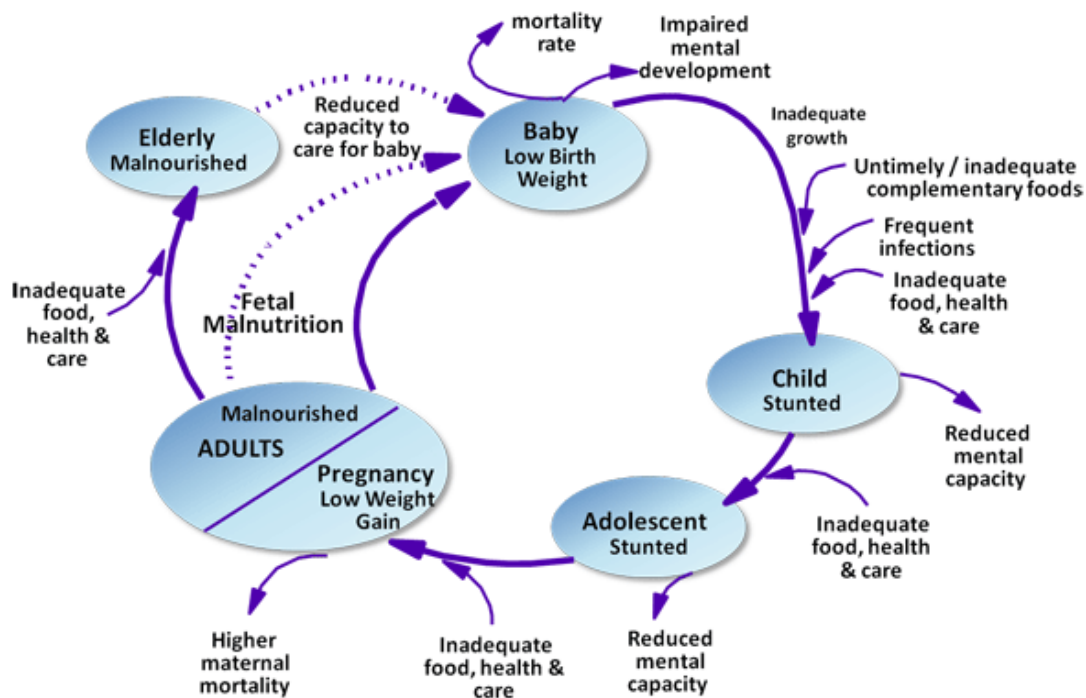
When our immune system is unable to protect our body, we become ill.

## The Dangers of Undernutrition

The immune system needs a lot of the body's resources to function, so any decline in essential nutrients will have a negative effect on the body's ability to fight infection.

Undernutrition occurs when people do not eat (or absorb) enough nutrients to cover their needs for energy and growth, or to maintain a healthy immune system. Micronutrient deficiencies are a sub-category of undernutrition and occur when the body lacks one or more micronutrients (e.g. iron, iodine, zinc, vitamin A, folate, etc.).

These deficiencies usually affect growth and immunity, but some cause specific clinical conditions such as anemia (iron deficiency), hypothyroidism (iodine deficiency), or xerophthalmia (vitamin A deficiency).



Undernutrition is an important underlying cause of illness and death in Africa, especially among women and young children. It is estimated that malnourishment contributes to more than half the deaths of those under the age of five.

While these statistics are upsetting, they are crucial to understanding what causes undernutrition and how to combat it. A healthy immune system starts with a healthy diet, but that's not all it'll take to get your body's defense systems back to full strength.

Let's take a look at what causes undernutrition and how to fight it.

## What Causes Undernutrition?

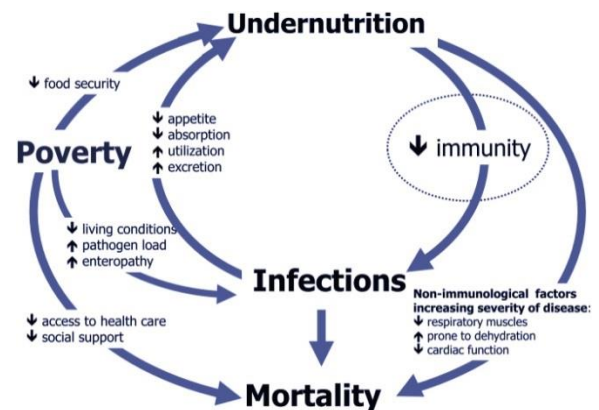
While some are more common than others, it's important to understand the three different causes of undernutrition. Until you know and understand why you're undernourished, fixing the problem may be improbable.

### Immediate Causes

- Poor diets. Meals may be low in quantity, nutrient density or variety or eaten infrequently. Infants may get insufficient breastmilk.
- Disease, particularly HIV/AIDS, diarrhea, respiratory tract or ear infections, measles, hookworms, and other intestinal parasites.

### Underlying Causes

- Family food insecurity
- Inadequate care of vulnerable household members, such as insufficient food for the family.
- Unhygienic living conditions, such as poor water supplies and poor sanitation.
- Inadequate Health Services



### Basic Causes

- Poverty
- Lack of information, education, political interest, economic insecurity, and social awareness.
- War
- Lack of resources at all levels, unequal status of women, and/or natural disasters.
- Infections increase the risk of undernutrition because sick people eat less, absorb fewer nutrients, lose nutrients (e.g. in diarrhea), and/or have increased nutrient needs (e.g. fever).
- The body lacks anti-oxidants; to clean out harmful free radicals, and the nutrients needed to maintain immunity.
- The linings of the intestinal and respiratory systems are weakened and pathogens can easily invade.

## Understanding Undernutrition at Different Ages

Because our bodies change so much throughout our lives, age can play a pivotal role in how malnourishment and undernourishment can affect a person. Let's take a look at how poverty and hunger can affect various age groups.

### Unborn and Newborn Infants

The period during which undernutrition has the most severe consequences, and in most cases cannot be fully reversed, is from conception to the age of two years old.

Undernutrition in the womb can result in retarded growth and low birth weight (<2500g). A fetus is at risk if the mother was undernourished or anemic before conception or if, during pregnancy, her diet is inadequate or she suffers from malaria, HIV or other infections.

Specific maternal micronutrient deficiencies in early pregnancy can lead to severe disabilities such as brain damage of varying degrees, lack of iodine and neural tube defect – lack of folate.

### Low Birth Weight

- Increases morbidity and mortality among neonates and infants
- Slows emotional and intellectual development
- Leads to permanently stunted height
- Predisposes newborns to nutrition-related chronic diseases such as obesity, diabetes and cardiovascular disease in later life



### Infants and Young Children

- Undernutrition below the age of six months is rare unless a baby is not adequately breastfed or the baby or mother is HIV positive.
- Inadequate Breastfeeding
- Breastfeeding is infrequent or the duration is too short
- Breast milk has been completely or partially replaced with a breastmilk substitute such as infant formula or cow's milk. This carries a high risk of undernutrition due to over-dilution or infection arising from unhygienic methods of preparation. Cow's milk also provides the wrong balance of nutrients for young babies.

- Undernutrition and anemia are common between the ages of six – 24 months old.
- At the age of six months old, breastmilk alone is insufficient for a baby's nutrient needs, especially iron.
- Family Foods; such as complementary or weaning foods, may be started too late or are unsuitable for young infants.
- Foods may not be adequately increased in nutrient needs if they are not nutrient dense (i.e. are too watery) or are fed infrequently. Babies have small stomachs so need foods of high nutrient density and to be fed often.
- The risk of infection increases in Infants
- Lose immunity acquired from their mothers while still developing their own.
- Having new diets which are contaminated or lacking the proper nutrition

The result of undernutrition in children is that growth slows and common childhood infections prolong and are more frequent and serious. Undernourished children are at high risk of permanently stunted growth and development which can cause or contribute to an individual's physical, sensory, intellectual or mental health disability, and cause less interaction with others, reduction of appetite, and emotional stress causing severe acute malnutrition.

Micronutrient deficiencies are also common at ages between new born and two year old children. The predominant manifestations are deficiencies of vitamin A which can lead to xerophthalmia and always decrease immunity; Iron – a leading cause of anemia; Zinc - which reduces immunity and Iodine – which causes hypothyroidism and so affects learning.

### **Children: Ages 3 to 14 Years Old**

Undernutrition is less common at this age because children, have developed immunity to common infections and, until puberty, have relatively low nutrients needs for body weights.

Can ask and seek for food

Have stomachs and appetites large enough for meals of low nutrient-density to satisfy nutrient needs

Even so, many school-age children grow slower than they should, are anemic and may lack other micronutrients. Many children are hungry, and hungry children are less able to learn, play and do physical work. At puberty nutrient needs increase dramatically due to rapid growth and increased activity. Anemia is common especially among girls puberty cycle commence. Adolescent still-growing girls who become pregnant are at high risk of undernutrition.



## Adults

- Undernutrition: women of reproductive age are at great risk due to the lack of high quantity and quality of nutrient that is needed for the pregnancy.
- Lack of iron which requirement is increased during pregnancy and blood is lost during menstruation and childbirth – so anemia is common.
- Adequate food, eating habits and maintaining balanced diets
- Maternal undernutrition increases the risk of morbidity and death and having undernourished babies. The higher energy needs; poor appetite and sometimes lack of food, means any adult who is HIV positive is at risk of undernutrition. Undernutrition may increase the rate at which HIV progresses to AIDS. When food is scarce an adult may become thin, undernourished, have lowered immunity and lack energy.

## Elderly Adults

It is often thought that undernutrition among older people is rare, but many elders are thin and/or anemic.

Older adults are at risk of undernutrition if they:

- Have poor appetites – often resulting from illness or depression (e.g. due to loss of status in the family or death of a relative)
- Have eating difficulties because of lost teeth, sore gums, etc.
- Are poor, sick, mentally confused or disabled especially if there is no-one to shop, cultivate or cook for them.
- Have heavy workloads and/or are caring for young or ill relatives.



## What can be done to Improve Nutrition?

### Education

Share and discuss information. This will enable others to freely and openly discuss their problems, needs, and ideas. Together, we can identify their needs and help them make changes to their daily nutrition that are practical, easy, and acceptable.

### Social Awareness

Social competencies, empathies, and understanding other peoples' needs and concerns can bring awareness and understanding to the importance of nutrition.

### Political Interest

The relations between state, society, and citizens are of utmost importance for change. Governments must focus on the basic necessities of its people and fulfill these necessities beyond the seven virtues of humanity. These virtues include: faith, hope, charity, prudence, justice, temperance and courage. Food and human sustainability are essential to human well-being and the existence of humanity.

### Abject Poverty

Some people live in the lowest extremes imaginable and are associated with misery and humiliation. This is abject poverty; the lowest, most hopeless form of poverty that exists. This often means looking for food in less than desirable conditions, such as in garbage cans, or sleeping on park benches or in cardboard boxes. Those in abject poverty often lack access to things that many of us take for granted, such as schools, electricity, and clean water.

For a baffling number of people all over the world, finding the necessities to live is an everyday struggle. Imagine living somewhere where scavenging for the tiniest bit of food and searching for a soft place to lay your head at night is the norm.

Abject Poverty creates social epidemics, undernutrition, immunodeficiency, infections, illness and death.

### Humanity

Help when you can. Offering just a little support to someone in need can make a huge impact on their life, so get out there and lend a hand! Volunteer work in all disciplines is needed, such as education, health, and social development. This will allow for nutritional improvement in families, schools, and the community as a whole.

## Tips for a Healthy Immune System

### Nutrients and Antioxidant

Most nutrients with antioxidant capacity (e.g. Vitamin C, E, selenium, beta-carotene, and other carotenoids) are associated with enhancing immune function—particularly in the elderly. In terms of dietary advice however, care should be taken not to exceed upper levels of normal dietary intakes, as this may in fact have a detrimental effect.

Although Vitamin D used to be associated solely with developing strong bones, there is mounting evidence that it could play a role in the prevention or treatment of certain diseases through its effect on the immune system, including beneficial effects for respiratory health. Vitamin D is created naturally in the skin by the body through the action of UV light. Recent concerns about the development of skin cancer through over exposure to sunlight are important to note as long as exposure isn't excessive and appropriate protection is applied.

Stress can affect immune function and respiratory tract infections when the immune system is suppressed. Depressed individuals have also experienced suppressed immunity as the nervous system can directly interact with immune cells, known as Neuroimmunology, which can be eliminated with exercises to overcome stress and improve a person's mood.



## A Closer Look at the Human Immune System

Now that we've learned what the Immune System is, why it's important, and how to improve it with nutrition and exercises, we should take a closer look at what actually makes this the best defensive system in our bodies.

As we learned earlier, the immune system is a network of cells, tissues, and organs found throughout the body that work together to combat infectious disease and germs.

What we have yet to learn, however, is what that actually means. Did you know that the immune system is divided into two categories? This consists of innate and adaptive immune responses. Let's take a look at what they are and why it's important to understand them.

### Innate Immunity

The innate, meaning present from birth, is part of the immune system with a number of set strategies for recognizing and dealing with certain kinds of infection without needing to be trained to identify them. This generally involves certain immune cells identifying germs via signs in the bloodstream. They then follow the trail to the site of the infection and neutralize the invaders with special chemicals before destroying them entirely – a process known as phagocytosis.

Such cells are generally called white blood cells (WBCs), also called leukocytes, and are an important part of the immune system. These cells help fight infections by attacking bacteria, viruses, and germs that invade the body. White blood cells originate in the bone marrow and circulate throughout the bloodstream. There are five major types of white blood cells:

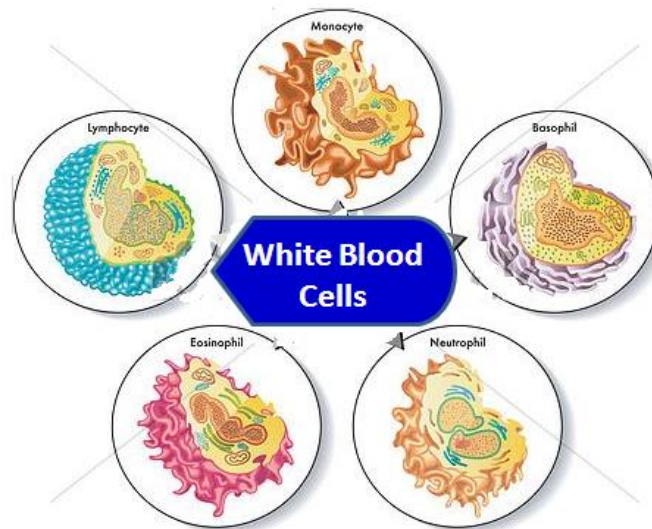
1. Neutrophils
2. Lymphocytes
3. Eosinophils
4. Monocytes
5. Basophils as Macrophages and Neutrophils.

This approach is very effective for many infections, but certain germs have developed ways of avoiding detection. For instance, viruses can be particularly difficult to detect and target because they are much smaller, even than bacteria, and can actually hide and multiply within body cells.

During infections, signs such as swelling and inflammation of the skin are often indications of immune activity as they help the immune system by allowing blood which is carrying immune elements to flow more easily to the site of infection. However, if uncontrolled, inflammation can itself cause damage, so it has to be carefully controlled.

## Adaptive Immunity

The other part of the immune response is called the adaptive immune system. Unlike the innate immune system, it isn't able to respond instantly to infections as it needs time to adapt (or learn) to recognize them.



Once it has learned however, it is extremely effective and is also able to remember particular germs that have previously infected the body, so that when (or if) they try to infect the body again, the next response is rapid, accurate, and effective.

Doctors can trick the body into producing a memory to a particular infection by using vaccines, which are harmless versions of germs, to create immune memory. This gives the body protection without having to experience the dangers of a real infection.

An advantage of the adaptive immune response, once it has developed, is that it utilizes further specialized types of white cells, called lymphocytes, which coordinate and focus the immune system's response and also produce specialized molecules to target the infection.

These include an incredibly elegant molecule called the antibody, which is produced in huge numbers during an adaptive response and moves through the bloodstream during an infection, targeting germs with incredible accuracy.

It is thought that the human body can create enough different antibodies to recognize over one billion different targets.

As previously mentioned, the only disadvantage with the adaptive immune responses is that it takes time to develop initially and it can take several days for the primary response to be detectable, and longer still for it to become effective. The innate response is therefore still extremely important for controlling infection whilst the adaptive response builds up.

## **On Patrol for Signs of Trouble**

A further aspect of the adaptive immune system worth mentioning is its role in monitoring body cells to check that they aren't infected by viruses or bacteria, or in order to make sure that they haven't become cancerous. Cancer occurs when certain body cells go wrong and start dividing in an uncontrolled way.

Body cells usually divide in an extremely regulated pattern in a localized region, while the cancerous cells often spread to other parts of the body. It is an extremely dangerous disease so it is important to catch it before it develops.

Certain lymphocytes patrol the body, checking cells for signs that something is wrong, and so the immune system plays an important role in preventing tumors from developing.

## **Immunity in the Stomach**

As mentioned earlier, certain areas of the body such as the lung and stomach can be more difficult for the white body cells to monitor because they have to be more open to certain elements in the environment. The stomach in particular, because of its role in absorbing food, has an enormous surface area. The small intestine alone has a surface area some 200 times that of the skin. For the immune system, this represents a big challenge to police just in terms of area.

In addition, it must also be remembered that the food we eat could be a potential target for the immune system, because it is foreign to the body, not to mention the other considerations we deal with below.

## **The Mucosal Immune System**

The immune system may be viewed as an organ that is distributed throughout the body to provide host defense against pathogens wherever these may enter or spread.

Within this 'organ,' a series of anatomically distinct compartments can be distinguished, each of which is specially adapted to generate a response to pathogens present in a particular set of body tissues. The general principles underlying the initiation of an adaptive immune response in the compartment is comprised of the peripheral lymph nodes and spleen. This is the compartment that responds to antigens that have entered the tissues or spread into the blood.

A second compartment of the adaptive immune system of equal size to this, and located near the surfaces where most pathogens invade, is the mucosal immune system, commonly described by the acronym MALT. Two further distinct compartments are those of the body cavities – peritoneum and pleura, and the skin. Two key features define these compartments; the first is that immune responses induced within one compartment are largely confined in expression to that particular compartment.

The second is that lymphocytes are restricted to particular compartments by expression of homing receptors that are bound by ligands, known as addressins, which are specifically expressed within the tissues of the compartment.

An illustration of the concept of compartmentalization of the immune system can be made by considering the mucosal immune system. The mucosal surfaces of the body are particularly vulnerable to infection. They are thin and permeable barriers to the interior of the body because of their physiological activities in gas exchange (the lungs), food absorption (the gut), sensory activities (eyes, nose, mouth, and throat), and reproduction (uterus and vagina). The necessity for permeability of the surface lining these sites creates an obvious vulnerability to infection, so it is not surprising that the vast majority of infectious agents invade the human body through these routes.

Another important thing to keep in mind when considering the immunobiology of mucosal surfaces is that the gut acts as a portal of entry to a vast array of foreign antigens, otherwise known as food. The immune system has evolved mechanisms to avoid a vigorous immune response to food antigens on one hand, and on the other, to detect and kill pathogenic organisms gaining entry through the gut.

To complicate matters further, most of the gut is heavily colonized by approximately 10<sup>14</sup> commensal microorganisms, which live in symbiosis with their host. These bacteria are beneficial to their host in many ways. They provide protection against pathogenic bacteria by occupying the ecological niches for bacteria in the gut. They also serve a nutritional role in their host by synthesizing vitamin K and some of the components of the vitamin B complex.

However, in certain circumstances they can also cause disease. For instance, the gut also has nutrient-rich fluid derived from the things we eat, continuously flowing through it as part of the food absorption process.

Due to the food-rich environment, the gut is a particularly attractive environment for bacteria. It is estimated that over 500 microbial species live in the human gut, contributing some two pounds (about one kilogram) to the body's overall weight. It is also estimated that over 90% of exposure to microorganisms occurs within the gut. Many of these bacteria (known as commensals) are a perfectly normal part of the gut population and do not cause disease; in fact, they often perform some very useful roles such as aiding in the digestion of food.

If the immune system were simply to treat all of the many gut microorganisms as targets, especially in such a delicate environment, the immune response itself could cause more harm than good by producing excessive inflammation and damaging the gut surface.

Instead, the immune system does an extremely clever job of regulating itself so that it doesn't react to harmless food or overreact to commensals whilst still performing the vitally important role of targeting really harmful germs when they infect.

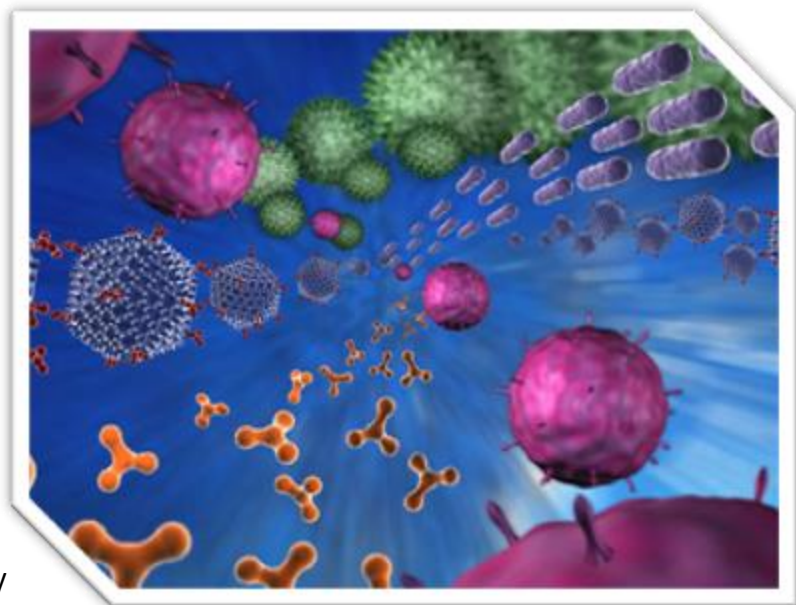
It is also known that the process is further helped by the fact that a healthy population of commensals in the gut can help to prevent colonization of harmful bacteria by crowding them out and not allowing them take hold. Certain commensals have even developed particular substances, called colicins, which neutralize other bacteria. Due to certain differences in the way commensal behave, compared to disease-causing species, it seems that the immune system is able to tell the difference between the two.

Evidence for the importance of commensal bacteria is found when oral antibiotics are taken by people to counter harmful bacterial infections. These can also drastically reduce the population of commensal bacteria in the gut. Although the population grows back again, it has been noted that the gut is temporarily more vulnerable to infection with harmful bacteria, due to the breaking of the commensal barrier.

It seems that in the gut, as in other aspects of life, it pays to cultivate a healthy group of friends to protect the body diseases.

The antibody is a key molecule in the adaptive immune response and is incredibly specific in targeting particular germs. Millions of different antibodies can be made each with unique targets.

Vaccines use adaptive immunity to trick the body into creating an adaptive response, without the danger of a real infection. Millions of lives have been saved as a result. The Father of Vaccination is Edward Jenner, and his development of a smallpox vaccine led to an effective treatment for this terrible disease and eventually, its eradication in 1979.



The lungs and the gut are key areas for the body to protect as they are so vulnerable to infection. In these areas, the immune response has to be effective, but controlled to prevent damage. This is an important balancing act for the immune system.

People born without immune systems are extremely vulnerable to infection, and people infected with HIV/AIDS can experience similar symptoms because the virus targets the immune system. This clearly illustrates the importance of a functioning immune system.



## Tricks for Boosting Your Immune System

### Eat These Superfoods

**Cauliflower** is a super food of the cruciferous family that gets overlooked for its health benefits simply because it lacks the chlorophyll-induced color. It is on the immune boosting list because it is rich in glutathione, an essential molecule, and prevents aging, cancer, heart disease, and dementia, and also contains indole-3-carbinol, a substance that enhances estrogen metabolism in females.

**Cinnamon** does more than boost the immune system. It actually fights the pathogens that cause illness. Cinnamon is one of the easiest nutrient rich foods to add to your diet. It enhances the flavor of coffee, perks up your morning oatmeal, and livens up the taste of fresh fruit. It is also on the Super Food list for foods that help to prevent diabetes.

**Garlic** has a wide range of well-documented effects including helping to fight infection and boosting immune function. It is packed with vitamin C, B1, B6, iron, phosphorus and Alliin, which converts to Allicin; this is the major antibacterial constituent of garlic. To activate garlic's immune boosting enzymes, peel chop and let sit for at least 20 minutes before eating.



**Mushrooms** such as white button mushrooms, are a major source of zinc, a known immune boosting mineral. In addition, this lowly mushroom not only activates natural killer cells that destroy viruses, but it may be higher in antioxidants than more exotic types of mushrooms such as Maitake.

**Eggs** are the highest quality protein of any food, and the compound choline found in eggs helps to ward off autoimmune diseases like Crohn's and colitis. Egg yolks also contain zinc and selenium which are important minerals that enhance the immune system. In fact, studies show that the slew of nutrients in an egg yolk is so comprehensive that it may offer better insurance than a multi-vitamin.

**Kale** is a food that greatly boosts your immune system. Kale tops the list of immune boosters for many reasons. Here are just a few: it is high in fiber with 49 different flavonoids, tons of antioxidants, and loaded with vitamins C and K; two powerful vitamins that do much to keep the body in good health.

**Watermelon** has a large concentration of lycopene, and that wonder molecule glutathione found in the red pulpy flesh near the rind makes it a bonafide immune booster. Glutathione is a key player in intermediary metabolism, immune response, and overall health.



**Nuts** are extremely good for you. So, let's not just choose one type! A blend of nuts and seeds are high in fiber, dietary phenols, and protein that nourish probiotics—the good bacteria that live in our digestive system.

And, thanks to recent studies, we now know that to have a robust immune system, we need to have a healthy digestive system.

## [Use Transcendental Meditation to Strengthen Your Immune System](#)

Transcendental meditation is a natural way to focus attention deep into our minds, far from what we would consider the physical realm. The idea is to tap into the source of thought.

When you focus your awareness like that, you can open the door to an altered state of consciousness.



Once this is achieved, your breath becomes rhythmic, your heart beat begins to steady, your mind stills, and your body relaxes. Brain scans of people in these states have revealed that the mind's waves are calm. Some report discomfort; others report the sensation of floating.

Techniques like meditation and mind practices can, in fact, boost your immune system. Studies on mind-body therapies found that yoga, tai chi, meditation, and qi gong increase anti-viral related immune responses and reduce inflammation.

Stress and negative psychological states can contribute to a person getting ill. Stress is recognized as a major risk factor for upper respiratory tract infections which produce immunity called Secretory Immunoglobulin A (SIgA). It protects against disease and often reduces chronic stress.

People who practice transcendental meditation regularly for an average of seven years showed significantly different levels of lymphocytes (immune cells) in the blood compared to a control group who had no meditation experience.

**So, now that you know about the immune system and how to improve and boost it, try putting these tips into practice and let us know how much your health and happiness improves!**

## About Us

*This book was written by:*

**Dr. Mervyn Maastricht Carl McYearwood**

**Director - Doctors Across Borders**

DOCTORS ACROSS BORDERS is a registered Non-Profit Organization in South Africa that practices Integrated, Functional, and Alternative Medicine.

Doctors Across Borders are committed to finding solutions beyond conventional offerings and availability. We combine knowledge from various modalities of life, medical and natural, to overcome day to day challenges of health, disease and living.

More often than not, conventional supplies, medicines and/or equipment or a wide spectrum of foods simply are not accessible or affordable. “Our approach is to empower the individual, the family, the community through addressing the cause of disease, to educate on natural self-care, better nutrition and how to grow/prepare foods and remedies within the continuum of what is custom. We are cleaning up environment, lifestyle, body and attitude.”

This book was created in partnership with the Humanus Foundation, comprised of a large cross-section of sector professionals with over 2,000 combined years of experience. Together, Humanus, Phoenix Voyage, Doctors Across Borders, and many more organizations are working toward a better future and a better world.

If you’d like to learn even more about the immune system and how it affects our health, please check out a list we compiled of helpful sites that can teach you that and much, much more. <http://www.phoenixvoyage.org/immune-system.html>

“We listen and we take action as is appropriate to address Project needs through innovative solutions, and aggressive business planning. Our strength is our people. Hundreds of like spirited and like-minded individuals performing much needed global environmental remediation from Fukushima to Brown Areas to the air we breathe, and in parallel, cleaning our waters, looking after our kids and seniors, building shelters, growing food, and other critical sectors that need to be addressed. We are here purely to be of Service, and give a helping hand as best we can.”

