Why Enzymes Are Essential to a Healthy Immune System

by Dr. Ellen Cutler

Those of us in medicine and health care recognize the importance of maintaining a strong immune system to keep the body disease-free and help all its systems and metabolic processes perform at top efficiency. In my practice, I refer to immune function dozens of times every day. Most people, however, do not realize the central importance that enzymes play in maintaining healthy immune function. Nor the vital role that enzyme therapy can play in reducing or alleviating the painful and debilitating symptoms of chronic immune disorders.

In my 20 years of working with enzyme therapy, I have found that enzymes not only prevent disease but also heal chronic health problems for which many doctors believe we have no medical solutions. My experience has convinced me that no other supplements can offer such dramatic improvements.

What Is an Enzyme?

The majority of us never even give a thought to enzymes, yet without them our bodies could not carry out their most basic functions. In their role as organic catalysts, enzymes make possible the millions of biochemical reactions that take place within us daily. They are the powerful engines that drive every bodily process, including breathing and circulation. They digest food, transport nutrients, carry away toxic wastes, purify the blood, deliver hormones, balance cholesterol and triglycerides, nourish the brain, build protein into muscle, and feed and fortify the endocrine system. On a larger scale, enzymes slow the aging process and support wellness and homeostasis (the body's ability to achieve balance among its many functions).

Enzymes are especially important for healthy immune function. White blood cells are especially rich in enzymes, which help them to digest and destroy any foreign substances - such as viruses and bacteria - that invade the body. Researchers have identified more than 3,000 types of enzymes in the human body, with each one performing a unique function. Every day literally millions of enzymes help to renew, sustain, and protect us, and they themselves renew and change at an incredible rate.

While the body uses its enzymes over and over again, the enzymes can perform only a certain amount of work before they become exhausted and must be replaced. Poor diet, digestive stress, illness, and trauma also reduce them. Aging also reduces the number of enzymes our body produces. This is why we must constantly replenish our enzyme supplies. If we don't, our bodies suffer. When we do not have sufficient enzymes, this takes a toll on virtually every system that depends on enzyme support, especially digestion, immunity, and tissue repair after injury or inflammation.

Enzymes Can Help Maintain a Healthy Immune System

Health practitioners and writers from many different disciplines emphasize the importance and complexity of the immune system and its inter-connectedness with other parts of the body. We all aspire to have a healthy immune defense system. Enzyme therapy is one of the most important tools you can use to achieve this goal.

The immune system does not have one central regulating organ like other body systems. The circulatory system has the heart; the respiratory system has the lungs; and the digestive system has the stomach and intestines. But the immune system's components are located throughout the body, communicating with one another through the immune cells. For example, the bone marrow, thymus gland, and spleen are all considered part of the immune system.

The primary function of the immune system is to stay alert for invasions by disease-causing microorganisms and to distinguish them from the body's own cells. By its standards, anything foreign to the body (a.k.a., an antigen) is a potential enemy. Once the immune system homes in on one of these invading substances, it sets in motion a highly complex response.

The immune system is responsible for maintaining our health when we're well and healing us when we're sick. It is overbuilt to ensure its effectiveness, with hundreds of control mechanisms and backup lines of defense, many of which we're still learning about. Much of the immune system is not yet understood, but we know enough about it to realize that it's essential to our very survival. For this reason, everyone should do what they can to maintain healthy immune function. Enzyme therapy is one important means to this end. Ever since I began taking enzymes more than 25 years ago, I rarely get sick - a sign of an efficient, well-
Enzymes

regulated immune system — and my patients who take enzymes report similar improvements in their health and overall well-being.

Undigested Food Can Weaken the Immune System

There is no way that I can overemphasize the importance of good digestion in maintaining a healthy immune system and protecting the body against disease. In my clinical experience, the two primary underlying causes of immune dysfunction are poor digestion and food allergies, which occur when the body is so sensitive to a particular food that it can’t properly digest it. When this happens, the undigested food finds its way into the bloodstream where the immune system targets it as a foreign invader and attacks.

For a long time, doctors and researchers believed that the intestinal wall blocked these food particles from getting into the bloodstream. Now, we know that this isn’t the case. Studies suggest that people with food sensitivities have leakier intestinal walls than those without sensitivities, which means that a greater-than-average number of food particles can pass into the bloodstream. This seems to create a vicious cycle because the inflammation that occurs with the immune response can make the intestinal walls even leakier, especially if there is a localized allergic response to the undigested food. Over time, this cascade effect can overwhelm the immune system.

While the exact method of detection isn’t yet understood, we know that the immune system senses these undigested food particles (antigens), labels them as foreign invaders, and begins pumping out antibodies, such as immunoglobulin G. These antibodies attack and neutralize these antigens by joining with them to form circulating immune complexes (CICs). The problem is, these immune complexes are highly inflammatory. They can create damage within the body even if they are present for only a brief period of time. Fortunately, the body is aware of this fact and has an built-in defense mechanism, a large number of cells known as macrophages that go into action to extract the CICs from the bloodstream. If the CICs are small enough, the macrophages are usually able to eat them up like Pac Men and transport them to the liver or the spleen. Usually, after only one pass through these organs of elimination, the blood can be largely cleared of these immune complexes — at least in someone who is healthy.

Problems arise when the macrophages become so saturated with CICs that they are no longer able to remove them from the bloodstream. When this happens, the circulating immune complexes tend to deposit their contents into certain tissues and organs, such as the kidneys, joints, and blood vessel walls, where they trigger inflammatory conditions that eventually lead to illness.

Where the CICs settle depends largely upon two factors: (1) heredity and (2) weakness in an organ, organ system, or joint caused by injury or trauma. This is why symptoms of food sensitivities can vary so greatly from one person to the next. While one person might develop joint pain, another might experience migraine headaches. Still others will experience kidney disease or even kidney failure when the kidneys become so scarred that they can no longer function.

Autoimmune Disorders

At their worst, CICs confuse the immune system so it loses its ability to distinguish between what belongs in the body and what doesn’t. It starts attacking perfectly healthy tissues and organs as if they were antigens. This process sets the stage for serious autoimmune diseases, such as multiple sclerosis (MS), rheumatoid arthritis, lupus, thyroiditis, chronic pancreatitis, lung disease, chronic inflammation of the kidney, ulcerative colitis, or Crohn’s diseases. And infection by various viruses and bacteria can lead to auto-aggressive diseases, such as infectious hepatitis and syphilis, which can cause heart muscle inflammation. Enzymes therapy can be very effective in helping the body deal with an overload of CICs. Enzyme preparations can prevent the autoimmune attack by reducing inflammation, breaking down immune complexes, and aiding the macrophages in disposing of them. For example, protease can help break down viruses and other infectants in the body. Individuals with autoimmune disorders should always be screened for poor digestive function, since good digestion and a healthy digestive system are key to keeping the immune system functioning. Using preparations containing enzymes can help repair the damage done by CICs in the body and can strengthen the gut’s ability to digest the foods we eat.

A Healthy Gut Supports a Healthy Immune System

By now it should be clear that the integrity of the intestinal wall and the coating of mucus that protects it are major factors in determining whether food particles get into the bloodstream in the first place. This mucus coating actually serves as an important communication center for the immune system. When harmful substances, such as bacteria, parasites, allergens, and toxins, find their way into the gut, the mucus alerts the immune system to send in forces to defend the rest of the body against damage.

If this coating sustains damage, however, then the intestinal wall becomes too permeable to prevent food particles from passing through it. As we have seen, this sets in motion the chain of events that activates the immune system, prompting production of circulating immune complexes. With this in mind, you can see that one of the most important strategies for maintaining a healthy gut is enzyme therapy to support proper digestion. As long as the food one eats is thoroughly broken down, fewer food particles travel to the intestinal wall (a.k.a., gut-associated lymphoid tissue or GALT) and, from there, leak out into the bloodstream, triggering an immune response.

Taking Probiotics Protects the Gut

There are two main reasons for taking probiotics such as lactobacillus acidophilus to promote gut health. The first is that they increase the production of a substance known as secretory immunoglobulin A (IgA). This antibody binds with food particles in the gut, keeping them from adhering to and passing through the mucous coating. If IgA runs low — which can happen when the intestinal wall is damaged — food particles are more likely to lodge in the GALT. You can increase production of IgA via supplementation with probiotics. In treating my own patients, I have found that taking probiotics, along with supplemental enzyme formulas with deglycyrrhizinated licorice, seems to greatly increase IgA production.

Another reason to take probiotics is to help to maintain a balanced system of microflora in the gut. Several hundred species of bacteria — some two-and-a-half to three pounds of living microorganisms — reside principally in the large intestine, colon, and, to a lesser extent, in the small intestine. These micro-organisms can have a tremendous impact on our health, for better or for worse.

Taking probiotics is the best strategy for maintaining an optimal intestinal environment. Probiotics work with the bacteria present in the gut to create less hospitable conditions for harmful microorganisms and alien substances. When these helpful bacteria are in short supply or are overworked by the fermentation of undigested foods, the
formation of toxic compounds leading to inflammation will be the result.

Maintaining a balance in our intestinal microflora is vitally important because any imbalance (a.k.a., dysbiosis) can have a global effect on the body and its systems, causing all manner of illnesses. On the other hand, a healthy gut supports a healthy body — one that is less vulnerable to serious ailments such as heart disease, cancer, diabetes, and arthritis. It is even believed that a longer life span could be achieved by improving digestion and gut flora health via probiotics.

Bowel Activity and Immune Health

Despite the central role of intestinal health in determining immune health and general well-being, few people feel comfortable talking about this particular area of human anatomy, even with their physicians. Yet bowel problems affect a majority of Americans. And if your bowels don’t function properly, the rest of your body won’t either, and your immunity will be compromised.

When the intestine is functioning correctly, nutrients from food are efficiently absorbed by the body and waste is collected for excretion. When there’s a problem, toxins — such as cellular debris, biochemical waste, hormones, and bile — are released into the body to damage tissue and inhibit the function of disease-fighting white blood cells. Furthermore, nutrient absorption can suffer. The overall result is a weakened immune system and increasing susceptibility to a variety of health problems and diseases. So, while irregular stools may just seem like an inconvenience, they can actually signify bigger problems.

What is a “normal” bowel movement? According to Stephen Holt, MD, author of Natural Ways to Digestive Health, “Basically, you should have a soft, well-formed stool that exits without much straining.” He goes on to say that normal bowel excretion encompasses a range of from three bowel movements a day to three times a week. Stools that appear as small pellets usually mean there’s not enough fiber in the diet. This can be remedied by adding more vegetables to meals.

Flatulence is another sign of intestinal distress that, while embarrassing, may not seem to have major health implications. Every day in my practice, at least one patient says to me, “Do you mean passing gas isn’t normal?” The most common cause of gas is undigested foods in the small intestine. Usually the culprits are carbohydrates — sugars and starches — that don’t break down because of

The supplements recommended by Dr. Ellen Cutler, DC in her book MicroMiracles: Discover the Healing Power of Enzymes

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What Is a Full Spectrum Digestive Enzyme?
A good-quality digestive enzyme will contain a mix of enzymes in the following dosages: amylase (3,000 to 9,000 DU), lipase (150 to 450 LU), cellulase (200 to 600 CU), lactase (75 to 225 ALU), invertase (75 to 300 SU), peptidase (1,000 to 3,000 HUT+), alpha galactosidase (10 to 30 GAIU or 25 to 75 AGSU), glucoamylase (2 to 12 AGU), and malt diastase (75 to 300 DP). Make sure the product also contains pectinase, xylanase, hemicellulase, phytase, and/or beta-glucanase. These enzymes also help process the nutrients from foods.

Strategies for Creating a Healthy Immune System

I have developed several basic strategies over the years to help my patients maintain a healthy digestive system and a strong immune system. I will list some of the most important ones here.

Manage Your Carbohydrate Intake to Strengthen the Immune System

Blood sugar has a powerful influence on the immune system. It has been reported that decreased levels of white blood cells have been associated with the imbalances in blood sugar resulting from a diet high in refined sugars and simple carbohydrates. An overgrowth of yeast and/or bacteria is another common result from eating too many sugars and starches because these micro-organisms thrive on fermented sugars and carbohydrates.

We can avoid highs and lows in our energy and mood by choosing carbohydrates that encourage stable blood sugar levels. I always suggest to my clients that they avoid most grains, including wheat, and refined sugars, such as candy and cakes. Good carbohydrates include all fruits and vegetables, quinoa, buckwheat, wild rice, and corn.

One of the keys to maintaining a balanced blood sugar level is to digest the carbohydrates you eat, which can be accomplished through the use of a good digestive enzyme. Digestive enzymes also help reduce the craving for sweets and other carbs that are not good for you.

We do not have control over many health risks, but we do have control over what we put into our mouths. I cannot say it enough: avoiding sugar and reducing or eliminating refined carbohydrates and grains improves one's health and immune function.

Improve Immune Function by Reducing Your Toxic Burden

Another important factor in creating and maintaining a healthy immune system is to repair and minimize the toxic burden that assaults our bodies every day in the modern industrialized world. When toxins assault us or build up in the body, the immune system's capacity to protect us can be overwhelmed. Food allergies are often the result of these insults.

Changing one's diet and using digestive enzymes are two great strategies to help detoxify the body and return it to a state of balance, or homeostasis. If you want to have a healthy toxin-free body, it is important to stay away from certain foods. I suggest that readers avoid the following items:

- Refined sugars and other refined carbohydrates
- Caffeine – this addictive substance inhibits the body's natural ability to detoxify.
- Alcohol is also addictive and causes degeneration of cells.
- Foods and beverages with a high sodium content – a high salt intake can cause a deficiency of potassium, an important mineral for maintaining healthy muscles, including the heart muscle.
- Artificial sweeteners
- Food additives
- Food coloring
- Genetically altered foods
- Food coloring
- Genetically altered foods
- Most commercial crops are sprayed multiple times with pesticides, fungicides, and herbicides before they ever arrive on your supermarket shelves. Since these toxins can put an extra burden on your digestive processes and your immune system, eating as many organic foods as possible will help your body to perform and function to the best of its ability.

Detoxify from Trauma and Stress

In any discussion of toxins and their impact on immune function, we mustn't overlook how emotional and psychological stress adds to the toxic burden and how enzymes can help reduce our physical vulnerability to these toxic effects. I see it every day in my practice, in patients of all ages.

One place where we experience the physiological effects of stress is in the gastrointestinal (GI) tract. According to Stephen Holt, the GI tract is a huge body of nervous tissue. In fact, the esophagus, stomach, small intestine, and colon are lined with their own nervous system. Scientists consider this system a single entity and even refer to it as the body's "second brain." It makes sense then that emotions play a huge role in healthy digestion.

The medical literature has also explored at length how the suppressed emotions that often accompany stress can contribute to toxicity and set the stage for physical illness. The conscious mind may be able to ignore stressors, but the subconscious mind – and our cells – remember. These subliminal memories wear down the body, specifically the immune, nervous, and endocrine systems. The physical impact is very real.

Since suppressing your emotions can be so harmful, you need to find appropriate venues for expressing them. Build opportunities for release into your life. Here is a list of techniques I share with my patients to help them reduce the toxic burden of stress:

- Practice relaxation techniques such as a meditation and yoga. These practices not only relieve stress and tension, they increase circulation to organs and glands. Meditation does not always need to be formally practiced, it can be done when you stop for a red light or stand in line at the bank. For example, in his book, There's a Spiritual Solution to Every Problem, Dr. Wayne Dyer suggests that when you are stuck in traffic, instead of getting stressed out, use the time to meditate.
- Listen to music or learn to play a musical instrument.
- Laughter is another powerful tool for cleansing and healing, as Norman Cousins discusses in Anatomy of an Illness.
- Write about your life experiences in a journal, where you can say what you like and be who you really are without fear or embarrassment.
- Always seek therapy when it is appropriate. Counseling and psychotherapy are helpful as tools for cleansing and de-stressing both our minds and our bodies.
- I have also used homeopathic remedies and enzymes for emotional health.

In my practice, I routinely recommend enzyme therapy and homeopathic remedies to help restore a mind and body that are under stress. When the toxic effects of negative emotions make us sick, enzyme therapy can make us well again.
**Good Nutrition:**
The Centerpiece of Immune Health

Literally thousands of studies have documented the beneficial effects of lifestyle on immunity. But the centerpiece of a healthy lifestyle is good nutrition, which depends on sensible food choices and, of course, proper digestion and nutrient absorption. The body's systems can't possibly work optimally if they aren't receiving adequate nutritional support. With optimal immune function, your body can defend itself against pretty much anything that comes its way. Enzyme therapy is the key.

Dr. Ellen Cutler has both a chiropractic degree and a medical degree. She is the author of four books including *The Food Allergy Cure and MicroMiracles: Discover the Healing Power of Enzymes*. Dr. Cutler is the founder of the BioSET™ Method which is taught at the BioSET™ Institute in Mill Valley, California. For more information, please visit us at www.bioset.net.

**Resources**
For more information on enzymes and immune function – as well as listings of practitioners in your area who utilize enzyme therapy – please visit my web site, www.bioset.net

**Notes**

**Additional References**