

## **Immune System**

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It is not unusual for a physician to have patients ask why they seem to have a poor immune system, because they repeatedly are encountering the usual gamut of illnesses such as colds, flu's, hay fever, allergies and recurrent infections. For someone who believes in natural medicines, has made the necessary diet changes, and is taking all of the current herbal preparations, an inability to mount an immune response can be particularly frustrating. This is especially common in those adults whose children respond more quickly and more thoroughly to natural therapies than mom or dad do. At this point the doctor must further educate the person regarding what constitutes the "immune system" and why it apparently doesn't work or functions at a lower level.

Because we are complex beings, there are a number of components of the immune system that are intricately interrelated and, when factored together, comprise optimal immune system function. It is not simply that one of the components must be in place, but rather all of them. Not only must they function coherently when stimulated, but, they must have had proper development and receive appropriate nutrition in order to complete their task optimally. As human beings we have evolved in the natural world and as such can experience difficulties with synthetic or unnatural medicines which act to counter normal homeostatic mechanisms.

### **Stimulation of the Vital Force**

Holistic medicine is build upon the principle of the vital force being the driving impetus behind the healing process. This concept is derived from the vitalist tradition of medicine, which traces its roots to Hippocrates as well as Native American, religious and folk medicine traditions. When we are ill, we experience a disruption in our vital force which presents as the signs and symptoms of illness. These signs and symptoms are often unique to the person presenting with them and should be utilized by the clinician for the purposes of diagnosis and treatment. In medicine this disruption is generally considered to be a lower energy state that remains until the body has been

able to throw off the disease. Upon restoration of health, the person feels better because a higher level of energy has come back.

It is through stimulation of the vital force that the body is learning to respond to those things which we have come to identify as producing disease. Fortunately, the body learns very quickly how to deal with disease producing entities and is one of the reasons that children are more often coming down with colds and flu's as their immune systems are developing. It is nature's way of training the immune system when we are young so that it will protect us throughout life. What is important for us to recognize is what is a protective and healing reaction and what needs to be supported with medications.

### **Development of Immunity**

When we are born our immune systems are not yet fully developed. *In utero* we received the benefits of mom's immune system which continues after birth through breast feeding. However, once we are exposed to the external environment, development of our immune systems begins in earnest, enhanced by continued breast feeding. It is the exposure to viruses, bacteria, yeast and fungi, dietary lectins and other environmental allergens which act to build our immune systems. To varying degrees these substances are not recognized as "self" by the body and the production of antibodies by our immune systems begins.

To help with this, nature has provided certain anatomical traits and protective mechanisms. In particular is the preponderance of lymphoid tissues located primarily in the naso-pharynx region and lining the gastrointestinal tract. These areas are the first to deal with early exposures to foods, viruses, bacteria and yeast that provide immune stimulating properties and aid us in developing life-long immunity. Another is the seemingly immense amount of mucus which is produced by young children. This too protects us from getting too much exposure as well as attenuating the offending agents prior to lymph tissue exposure. Lastly, our ability to develop a fever when faced with an offending agent is one of nature's greatest contributions to development of immunity and the ability to fight disease.

Lymphoid tissue is found in abundance throughout the body and consists of both T and B lymphocytes. In general the T lymphocytes provide the "killer cell" activity by engaging offending agents directly while B lymphocytes produce antibodies against them. Each provides immune function in a different way but work in tandem with one another to overwhelm the invader and provide life-long immunity in the form of cellular memory. Cellular memory of the offending agent is formed so that re-exposure at a later date results in an immediate immune response. As mentioned, the oropharynx and gastrointestinal tract have high amounts of lymphoid tissue compared to other areas simply because these are ports of entry into the body from the external environment.

When we are young and developing immunity, there is an abundance of lymphoid cells because we are born with a thymus gland designed primarily to help in this endeavor. As we age, this gland becomes less important in the development of immune cells and begins to shrink in size having already done most of its work. Once immunity is developed, it remains with us for life. Because of this, children get over illnesses faster than adults provided all facets of immune function are in place. If this mechanism hasn't developed properly in childhood, our ability to deal with offending agents is compromised and it takes longer to combat an illness. Additionally, if it hasn't been allowed to develop properly in childhood, it has to be retrained when we become an adult.

Natural medicine proposes 4 cornerstones in the development of immune function during childhood so that as adults we are able to possess optimal immune function. These deserve mentioning because to listen to advertisements from the purveyors of over-the-counter medicines, they are seemingly unnecessary. In fact, some advertisements go so far as to instill fear that normal body functions can cause harm.

### **Good Nutrition**

After childbirth, good nutrition begins with breast feeding. Breast feeding imparts numerous benefits to the infant and its developing immune system. It also provides additional protection while immunity is being developed.

Guidelines for breast feeding are variable but generally it should be continued through the first year of life. Breast feeding usually decreases in frequency as solid foods are being introduced.

Carefully planned introduction of solid foods is very important because food which the infant is unable to digest will disrupt normal bowel function leading to gas, bloating, colic, constipation and diarrhea. It also impairs the normal immune system development that is derived from the GI tract. This is because development of the infant's digestive tract occurs incrementally and gradually to accommodate increasingly more complex foods. Thus, feeding a child less than 3 years old hamburgers, soft drinks and fast foods will not only disrupt digestion, but tax the immature immune system as well as potentially expose the child to harmful bacterial toxins.

Slow introduction of increasingly complex foods allows the immune system to develop antibodies to the lectins present in a gastrointestinal environment designed to accommodate them. The foods should be fresh, with no sugar or preservatives added, and when possible, organically grown. (see side bar #1) As an additional protective mechanism, during immune system development, an increased number of sialic acid residues are found in the intestinal mucus of infants, imparting increased resistance to offending agents. Later in life, as the immune system matures, the need for this specialized mucous protective barrier becomes less as the person is now able to fight off offending agents.

If proper feeding and introduction of foods does not occur, immune system development becomes compromised at an early age, precipitating an increased number of ear infections, childhood asthma, behavioral problems and frequent colds and flu's.

### **Mucus Production**

Mucus production by the body in response to an insult is one of nature's many protective mechanisms. We are all equipped with an abundance of mucus membranes in our oro-nasopharynx area which, when stimulated, produce large amounts of sticky clear watery mucous. Yet if we are to believe the advertisements in the media, all mucous discharges should be

subject to products which stop their production. What these advertisements don't tell you is that by doing so you are also stopping the production of the immunoglobulin IgA, an immune system globulin which attaches to the virus, bacteria, yeast, fungus, lectin or pollen which stimulated the mucous production in the first place. IgA is produced by the immune system specifically to rid the body of the offending agent before it becomes harmful.

In general, when exposed, a person begins to secrete excess mucus laced with immunoglobulin IgA and other substances. In some persons, particularly blood group A individuals, the amount of mucus secretion tends to be greater than in others. This is evidently an evolutionary development which helps to convey greater protection to blood group A persons and is the reason why some people seemingly secrete more mucus than others. Excess mucus production can also occur because of prolonged exposure to an offending agent, or because the amount of immunoglobulin IgA is so small that the person can not alleviate the infection on their own. This is usually seen in persons who constantly use over-the-counter cold, flu and allergy formulas which suppress IgA. Additionally, improper nutrition compounds the effect because of the lack of vitamins and minerals needed for proper mucus formation.

Mucus production should be encouraged as it will allow the body to get rid of the offending agent faster. Problems arise if it begins to change depending upon the degree of infection. Generally mucus is clear and watery but becomes thicker and whiter as the exposure becomes greater. It next progresses to a yellowish white to yellow as white blood cells begin to infiltrate the mucus to fight the infection. Eventually the mucus production becomes greenish and may even have some blood associated with it. This means that the infection has overcome the mucous protective barrier and reached the cells of the mucous membranes. This signifies that the immune system has been overwhelmed and needs assistance in order to recover.

In persons who have problems with frequent colds, flu's, bacterial infections, sinus infections or reactions to seasonal allergies, there has probably been a history of excessive over-the-counter medication use or other immune compromising history. If the balance is to be restored the

patient must cease using OTC medications and begin re-training the immune system.

## **Fever**

It was Hippocrates who said "give me fever and I will cure all disease"; but fever has been recognized for centuries as nature's healer. The word "fever" is taken from the Latin word *favere* which means "to warm." In adults, the normal body temperature is considered to be 98.6 F (37C), with young children being slightly higher. While the onset of a fever may be frightening, it is not caused by a breakdown of the body's temperature-regulating mechanism as in heat stroke. Rather, it is the body's normal self-preserving mechanism of "hyper functional repair." In other words, a fever is a normally occurring body process that destroys the infecting agent or toxemia and repairs the damage done by these agents. It acts to preserve the status quo of the healthy organism. Fevers rarely get out of control as the body has developed a complex regulation mechanism. It is usually only with repeated use of fever suppressing medicines and/or poor nutrition that fevers can become a problem. (See side bar #2)

Fever may occur for a variety of reasons. It is most often a response to a bacterial or viral infection that has occurred because the body's resistance is lowered. But fever may also occur when toxic wastes have accumulated; the increased temperature serves to neutralize and eliminate the toxemia. In response to the offending agent's influence, an elevated temperature acts to increase resistance to disease and restore the body to health. Fever causes an elevation in the white blood cell count. White blood cells act to bind toxic materials and engulf microorganisms, aiding in their removal from the body. Antibody production is also enhanced during a fever, resulting in a faster response time to neutralize the offending agent.

It is important to support a fever, allowing it to do its work by eliminating the infective agent or toxin and building the immune system. If not allowed to complete its natural course, the body will become progressively weaker, unable to mount the reactive power to overcome disease. Eventually, the inability to develop a fever may predispose a person to other diseases such

as autoimmune disease, cancer, irritable bowel syndrome and arthritis because the body may have been unable to eliminate predisposing factors early on before they had a chance to take hold. Administering agents that block the ability to mount a fever is similar to teaching a child to tie their shoes then never allowing them to do so because someone finishes it for them. When the time comes to do it on their own, they are unable to do a good job as they have not been able to practice and are not well prepared.

### **Overtaxing Your Immune system**

As our immune systems develop gradually while we grow, it makes little sense to over stimulate it early in life. Yet this is what we do by beginning childhood immunizations at such an early age. Not only do we begin them at an early age, but administer multiple vaccinations at the same time. Not only do we administer multiple vaccinations, but do so through the skin, completely by-passing the body's natural route of entry. Thus, rather than gradually adapting to the foreign antigens as the body was meant to do, the immune system has to scramble to catch up to an abnormal dose of antigen. The normal oro-nasal-pharynx route of entry evolved in order to gradually attenuate the foreign antigens. This results in a more complete and lasting immunity.

Childhood immunizations are very controversial and there is dispute even among physicians as to their efficacy and safety. There is some evidence that an overly aggressive immunization program results in a lower overall immune function and does not provide the protection it is designed for. The alternatives, such as oro-nasal sprays and homeopathic immunizations have not received adequate evaluation as to their efficacy. The issue regarding immunizations, not only for children but adults as well, is one that needs to be explored by each individual and I encourage my patients to become well informed before making a decision.

Another area which can overtax the immune systems of both children and adults, is exposure to many of the foods we eat. This is simply due to their lectin content and their ability to promote immune system stimulation through antibody formation and complement system activation. A number of

highly antigenic foods are eaten on a regular basis by most of us, e.g. wheat, corn, tomatoes, peanuts, shellfish and dairy products. While some immune system stimulation is desirable, a prolonged and continued stimulation results in lower overall immune function. Therefore, determining which foods trigger an immune response becomes important. This can largely be determined by allergy testing or following the blood type diet suggested by Peter D'Adamo, N D in **Eat Right 4 Your Type**.

Elimination of exposure to foreign antigens is another way to preserve optimal immune system function. This does not mean living in a sterile environment or using large amounts of antibacterial sprays or cleaning agents. It means breathing clean air in the work place as well as in your immediate environment. It means staying home when you are ill so that you do not expose others. And, it means maintaining good diet and exercise programs to optimize your health, which in turn translates to optimal immune function.

Lastly, the frequent and indiscriminate use of antibiotics will lead to immune system suppression. Basically, antibiotics take over the normal immune functions performed by white blood cells, mucous production and fever, and in the process never allow them to complete the work they began. While every illness has a beginning, middle, end and recovery period, antibiotics only work during one portion of the illness, not allowing for needed tissue repair and recovery. Many people have difficulty recovering from an illness when the healing process has not had a chance to complete itself.

Additionally, prolonged antibiotic use has also developed a new class of antibiotic resistant microorganisms. This poses a more serious threat, especially to the elderly or those already immune compromised.

### **So why doesn't my immune system function well ?**

When asked this question, by adults, I ask them what they do when faced with an immune system stressor. In general people do very similar things. They immediately take some sort of over-the-counter medicine which either

suppresses mucus production or breaks a fever which is attempting to establish itself. These act to alter the normal immune response. Additionally, they disregard their bodies' warning mechanisms that a disease process is occurring. These include a decreased appetite and/or nausea and/or vomiting, weakness and fatigue, irregular bowel function and a general feeling of being ill. Additionally, they continue to eat all sorts of things despite a decreased appetite which makes it more difficult for the immune system to function. They also continue to go to work, regarding rest as something others need to do. Interestingly, these are the same people who at the first sign of an illness keep their children home from school to rest !

These are some common reasons why we suffer from poor immune system function. It is not that there are too few immune cells present, but rather that all of the healing mechanisms have not adequately developed, or they may actually have been suppressed. We can take all of the natural medicines we wish, but unless we heed and support nature's healing mechanisms, they will do little good. What needs to occur is for us to listen to what our bodies are telling us and follow a few simple rules. Doing so can help to restore our natural defense mechanisms and lead to optimal health. At the first sign of an illness:

- 1.) Stay home and rest, read a book, wrap up in a blanket and allow yourself to go through the illness properly.
- 2.) Enhance a fever, do not suppress it. It may take a while to establish the normal fever mechanism after years of suppression, but it will be worth it in the long run. By enhancing a fever you will be re-training the body and in the long run experience fewer colds and flu's. As time goes on, and the fever becomes more efficient, you will get through colds and flu's quicker as well as enhance your ability to fight off other more serious diseases.
- 3.) Don't suppress the production of mucus but support its healing action as it is doing what nature intended it to do. Taking natural medicines and Vitamins such as Echinacea, Goldenseal and Vitamin C and Beta Carotene will improve immune function. While these and other preparations work

well, their ability to eliminate offending agents and stimulate immune function is enhanced if all the other healing mechanisms are in place.

4.) Do not eat excess sugar, refined flour, excess caffeine or alcohol or heavy meals during this time. These substances require considerable energy to breakdown and eliminate from the body, thus robbing the immune system. If anything, fruits, vegetables, soups and salads should be eaten only as they provide nutrients needed for optimal immune function.

5.) As the human body is largely made up of water, be sure to take in lots of fluids in the form of fresh fruit and vegetable juices. Chicken soup is a great home medicine for a variety of reasons.

### **Introducing Solid Foods Schedule**

It is generally recommended that the following foods be introduced into an infant's diet during certain periods of development.

#### **6 Months** (foods high in iron)

Applesauce	Apricots	Bananas	Blackberries
Broccoli	Carrots	Cauliflower	Cherries
Grapes	Jerusalem Artichoke		Kiwi Pears
Peaches	Prunes	Sprouts	Squash
Yams			

#### **9 Months** (foods high in Zinc)

Black strap molasses		Blueberries	Cabbage	Lima
beans				
Millet	Nectarines	Oatmeal	Papaya	
Potato	Split pea soup	String beans	Sweet potato	

#### **12 Months** ( foods high in Zinc & fiber)

Acorn Squash	Asparagus	Avocado	Barley
Chard	Egg yolk	Goats milk	Parsnips
Rice (brown)	Tofu		

#### **18 Months** (foods high in B Vitamins and Calcium)

Beans	Beet greens	Buckwheat	Chicken
Eggplant	Fish	Greens	Kelp
Lamb	Rutabaga	Rye	Tahini

**21 Months** (foods high in protein)

Almond butter	Beef liver	Brewers yeast	Cashew butter
Cornish hen	Cows milk (raw)	Egg	Oranges
Pineapple	Turkey	Walnuts	Wheat

**2 to 3 Years**

Clams	Cottage cheese	Duck	Lamb liver
Lentils	Peanut butter	Sunflower seeds	Soy

**IDEAL FEVER**

Ideally a fever will follow a certain pattern.

There is a period of incubation when the infective agent or toxin has taken hold. This is where we first notice that we are getting a cold or flu and are feeling a bit "under the weather."

Next, there is an aggravation period when temperature elevation occurs. The person tends to go into "adaptive withdrawal" as chilling often occurs.

The destruction period is marked by a sustained high temperature to eliminate the infective agent and toxins. This temperature rarely gets over 104-105 degrees F and usually lasts for a short period of time.

Next is the abatement stage which is characterized by sweating to bring down the fever. The fever is said to have "broken" and the person begins to feel better.

The reconstruction period is the time when one wants to rest and appetite returns as the body uses this time to restore its strength and resources.