

Applied BioLogics: The Science of Comprehensive Immune Therapy

The modern science of biological medicine is rapidly becoming the new standard of health care in the United States. The US Food and Drug Administration (FDA) regulates biological medicine through the FDA's Center for Biologics Evaluation and Research (CBER), www.fda.gov/cber. The Center for Biologics is charged with the supervision of 5 key areas of biological products and research: Blood Products, Vaccines, Cellular/Gene Therapy, Tissue Transplants, and Devices. The most promising research in heart disease, cancer, diabetes, vision, spine injury and arthritis runs through the center. CBER controls the research investigations into advanced biological medicine. Those important to the Stowe Foundation include:

1. Autologous vaccines (to target and activate the immune system against cancer and infectious micro-organisms)
2. Stem cell transplants (to regenerate tissue in the heart, pancreas, joints and spine)
3. Tissue transplants (to replace cartilage, skin, tendons and ligaments)
4. Blood products (to infuse the immune system with human cell therapy products and immune modulation serums based on cells captured from the blood)
5. Biologic response modifiers (genetically engineered products to modulate the immune system with interleukin, interferon & cytokine compounds plus natural biological response modifiers to activate T-Cells and Natural Killer cells of the immune system)
6. Therapeutic energy devices (to modify or test biological tissue with lasers, magnets, acoustic vibrations, electrical stimulation & thermal energy fields).

Biological medicine is the backbone of advanced immune therapy to help the body heal itself. Pharmaceutical drugs by and large rescue the body from danger, but only the immune system can heal the body. Immune therapy is how healthcare professionals manage or support the immune system. CBER regulates the products and devices behind immune therapy.

Immune therapy is the focus of the most advanced medical research in the country. Dr. Lawrence Stowe, the Founder and Managing Director of The Stowe Foundation, has been involved in the development of cancer vaccines, adult stem cell transplants (not embryonic stem cells), autologous blood products for human cell therapy, biologic response modifiers and therapeutic energy devices; the same technology under review at CBER. He is an expert in the science and technology of immune therapy. Dr. Stowe brings to the Foundation a unique perspective on the body's natural ability to heal itself, which he calls **Applied BioLogics**, which means **A Logical Application of Biological Medicine and Human Cell Therapy to Restore Human Performance.** Applied BioLogics is the medical science behind comprehensive immune therapy to reverse chronic illness and Regenerative Medicine to repair the damage created by the disease process. The combination of Applied BioLogics and Regenerative Medicine is the future of the healing arts.

For Applied BioLogics to be effective, the body must have a robust immune system. This simple fact is often overlooked by conventional medicine and the research scientists

involved in immune therapy. The Foundation enters the field of Regenerative Medicine through biological medicine and comprehensive immune therapy by supplying an advanced line of biological response modifiers to control chronic inflammation, autologous vaccines to eliminate the underlying infections and malignant cells, autologous blood therapy and adult stem cells for tissue repair, clathration therapy to purge low level environmental toxins that suppress the immune system and Nutritional BioTherapy to restore anabolic metabolism. Dr. Stowe established the Foundation to oversee the technology development and the regulatory approval process of Regenerative Medicine and Applied BioLogics. This required the Stowe Foundation to support the research and development of new biological agents, 510k medical devices and CBER approved human cell therapy products to carry out the philosophy of Applied BioLogics and to educate both the public and healthcare professionals in this vital topic of the immune system.

Applied BioLogics is firmly rooted in one central theme, the body's natural ability to heal itself through the proper management of the human immune system. Modern physiology textbooks describe this magnificent ability to heal as the immune system. Applied BioLogics views the immune system as God's gift to man to maintain health and vitality, to repair trauma and injury, and to achieve maximum performance throughout our life. The immune system is how we survive any disease or illness and how athletes build endurance and strength and how we recover from a traumatic injury. By focusing on the immune system, The Stowe Foundation hopes to be the agent of change in moving America away from a total dependence on pharmaceutical drugs for symptomatic relief of the pain and agony of a chronic illness.

To be effective, the immune system requires the biological systems of the body to be in balance. That means the central nervous system must be in balance with the endocrine system, which must be in tune with the autonomic nervous system, that responds to the sensory integration function of the brain, all of which must be properly nourished through the digestive system in combination with nutrient delivery through the circulatory system and supplied with oxygen through the respiratory system so that we can feel good during the day and perform in bed at night or get a good's night sleep. The physiological systems of the body control the performance of the immune system. Applied BioLogics is all about brining peak performance and balance to the human physiologic systems. It is in that environment that the immune system can heal the body.

In layman's terms the mind, body, spirit and emotions must be in balance to achieve maximum performance. These are the four foundations and pillars of true health and Applied BioLogics is based on these factors. In 1998, the US Congress established the National Center for Complimentary and Alternative Medicine (NCCAM) under the National Institute of Health (NIH) as part of the US Department of Health and Human Services to further expand the knowledge of natural healing, www.nccam.nih.gov. This was one small step on the path of progress. The Stowe Foundation hopes to accelerate public awareness of natural healing and the power of the immune system by scientifically validating the power of comprehensive immune therapy (Applied BioLogics) and human cell therapy (Regenerative Medicine) to overcome chronic illness in all of its forms.

Applied BioLogics and Regenerative Medicine is a new and distinctly separate medical philosophy from both conventional Western Medicine based on pharmaceutical drugs and traditional Chinese Medicine based on herbs and plant extracts. The Stowe Foundation's efforts are to establish a new standard of care for chronic illness (i.e.; Diabetes, Cancer, Heart Disease, Arthritis, Stroke, MS, Parkinson's and Alzheimer's) most of which are classified as incurable. The effort to establish new standards of care and hence demonstrate a medical necessity for Medicare and insurance coverage requires the Stowe Foundation to work through the various regulatory agencies (FDA, DHHS, VA) and to meet the highest standards of scientific research and development (NIH).

At the BioTherapy Research Institute, a division of the Stowe Foundation (www.thestowefoundation.org), Dr. Stowe and the Research Associates created an overall model of a distressed immune system. The Foundation calls it the PITTS Syndrome. Each letter refers to a specific action or health concept that can significantly challenge the immune system.

- P** Physical performance: damage to a functional system of the body such as the digestive system, endocrine system or central nervous system can suppress the immune system response. The immune system requires harmony and balance. The immune system must be properly nourished to function and **poor nutrition** is perhaps the single most influential factor in physical performance of the human body.
- I** Infections: viruses, bacteria, parasites, fungi and mycoplasmas can disable specific immune cells, destroy tissue and organs and produce toxins that shut down vital enzymatic pathways.
- T** Toxins: heavy metals, herbicides, pesticides, insecticides, chemicals and metabolic waste trigger the overproduction of damaging free radicals that harm the body.
- T** Trauma: injury, surgery, or extreme emotional distress overwhelms the autonomic nervous system and interferes with the body's regulatory control process.
- S** Stress: anxiety, phobia, fear and worry do not allow the body to rest and relax and it is only during periods of rest that the body can heal itself.

Each client at the Stowe BioTherapy Research Institute, the clinic where Dr. Stowe teaches immune therapy, is evaluated for his or her personal score on the PITTS Syndrome. The test is called a comprehensive immune evaluation. The data on the immune system is then used to generate unique, patient specific immune therapy protocols based on the principles of Applied BioLogics. Conventional medicine is integrated into the protocol as needed. Healthcare professionals are on staff to handle each area of the PITTS Syndrome. According to the principles of Applied BioLogics only an active and robust immune system allows the body to heal and therefore the PITTS Syndrome must be resolved in order to achieve a state of True Health. This applies to even life threatening conditions.

Biological response modifiers, transfer factors, autologous vaccines, clathrating agents, functional foods and biological medicines plus pharmaceutical drugs play a critical role

in resolving the PITTS Syndrome by supporting and modulating the immune system. These immune support methods are coupled with very advanced forms of immune therapy such as dendritic cell therapy, natural killer cell therapy, autologous cancer vaccines and biological medicines such as monoclonal antibodies and low dose naltrexone. The Stowe Foundation actively supports the concepts of integrative medicine. The Foundation has worked with clinical oncologists across the country to develop adjunctive immune therapy programs to compliment chemotherapy and radiation protocols. The path to True Health requires we support the function of the physiological systems, treat all forms of infections, detoxify vital organs and glands, eliminate the effects of both physical and emotional trauma, and take the stress out of life. This is particularly true for a cancer patient. Eliminate the PITTS Syndrome with Applied BioLogics (immune therapy) and the body can heal. While radiation, chemotherapy and surgery attack the tumors and the cancer cells, the concepts behind Applied BioLogics attack the cancer process.

In the philosophy of the Stowe Foundation, the PITTS Syndrome is the root cause of all chronic illness and can cause the body to under perform. Modern medicine refers to the PITTS Syndrome as Metabolic Syndrome. The PITTS Syndrome can keep a gifted athlete from becoming a world champion or a weekend warrior from finishing the double elimination softball tournament. Injuries that will not heal and poor oxygenation of the blood are both direct results of the PITTS Syndrome.

All autoimmune disorders can be traced to the PITTS Syndrome. When the patient does not respond to conventional medical therapy it is usually related to the PITTS Syndrome. If you have conditions that defy medical treatment, such as Chrohn's, chronic fatigue, fibromyalgia and lupus you have the PITTS Syndrome. If you are on a lifetime supply of medication to control blood sugar, blood pressure, cholesterol, depression and inflammation, you suffer from the PITTS Syndrome. If cancer, diabetes or heart disease develops into a life threatening condition you suffer from the PITTS Syndrome. Osteoporosis, osteoarthritis, macular degeneration and other degenerative processes are all related to the PITTS Syndrome.

Understanding the PITTS Syndrome and the concepts of Applied BioLogics is the Rosetta Stone of True Health. The advanced cell therapies, biologic response modifiers, autologous vaccines and energy devices that are being evaluated at CBER will eventually treat nearly every disease known to man, but the Foundation provides access to products and protocols that can help reverse the PITTS Syndrome now and this is a critical part of Applied BioLogics.

The fundamentals of the PITTS Syndrome and hence the methods of Applied BioLogics is best understood by looking in depth at each of the individual letters.

P – Physical Performance

This letter refers to the functional performance of the various physiological systems of the body. The major systems of the body are the digestive system, the central nervous

system, the circulatory system, the endocrine system, the lymphatic system, the reproductive system, the autonomic nervous system, the sensory systems of the brain, the skeleton and the immune system. The physiological systems run the body. Medical specialists exist in each area. We have doctors of gastroenterology, endocrinology, psychiatry, neurology, ophthalmology, internal medicine, allergy, chiropractic medicine, podiatry, oncology, cardiology, osteopathic medicine, surgery, infectious disease, ear nose and throat, etc., etc., etc. However, with Applied BioLogics, we understand that the systems of the body all interact through biological feedback loops. They must all function together and in balance in order for there to be True Health. This is the starting point for immune therapy; bring harmony and balance to the physiological systems of the body. This is a lost art in the era of specialized medicine.

For example, the immune system is strongly suppressed when the adrenal glands of the endocrine system are fatigued. It is called adrenal insufficiency. The overall incidence of adrenal insufficiency in chronic illness is 30 to 40 %. Fatigued adrenal glands are often brought on by chronic stress to the autonomic nervous system.

The sympathetic branch of the autonomic nervous system controls the “fight or flight response” of the body and keeps the adrenal glands producing the stress hormone cortisol. The hormone cortisol controls glycolysis, the conversion of glycogen stored in the liver and muscles to glucose and then to ATP for cellular fuel. The body needs extra energy to sustain the “fight or flight” activity so it calls upon its’ stores of glycogen.

Unfortunately, glycogen is also the energy supply for the brain at night when we are in a fasting state. If it has been used up during the day on a regular basis, then you can anticipate sleep disturbances at night. Chronic elevated cortisol is known to damage the hippocampus region of the brain, which is the prime source of neurotransmitters to regulate the hypothalamus. The hypothalamus releases hormones that regulate the pituitary gland and the pituitary gland regulates the adrenals, gonads and thyroid. The branching continues on and on. We are controlled by biological feedback loops. The era of specialists might actually inhibit the healing process.

The body repairs itself at night during sleep. This is part of the immune system. Without sleep the body degrades. Eventually with chronic stress, the adrenal glands become fatigued and can no longer sustain cortisol production. Now you have chronic fatigue because there is no cellular fuel from glycolysis and major problems with insomnia, even though you may be dead tired. In addition, all energy is diverted from the immune system and you are prone to get sick from the next invading microorganism. We can and often do get sick from the stress and emotional traumas of life that cause adrenal insufficiency. Every medical student studies the extreme case of stress and emotional trauma; it is called Seyles alarm response.

This field of medicine is called psychoneuroimmunology. It is part of the four pillars of True Health. But it is easily understood through the PITTs Syndrome and the theorems of Applied BioLogics. The appropriate immune therapy protocol for chronic fatigue will involve addressing the source of the stress and the associated emotional trauma. This is

the beauty of Applied BioLogics. The concepts of Applied BioLogics allow us to bring the mind, body, spirit and emotions back into balance. But to be successful with chronic fatigue you must also address the physical aspects of rebuilding the functional performance of the adrenal glands and the endocrine system and that will involve biological medicines, not pharmaceutical drugs.

Our physiological systems all feed information to each other. A defect in the endocrine system can have far reaching consequences for the immune system. The pituitary gland of the endocrine system sends hormone signals to three other organs. The pituitary gland regulates the adrenal glands, the thyroid and the ovaries (testicles in men). If toxins have suppressed the pituitary gland there will be systemic problems in energy levels, body temperature, reproduction and sexual performance, stress management and sleep.

The glands and the organs of our body all communicate with each other. A congested liver can fail to metabolize circulating thyroid hormones and totally disrupt the body's metabolism. The digestive system plays a huge role in that every system of the body must be properly nourished in order to function. Hence diet and supplements play an incredibly important role to True Health. Junk food diets and those that lack essential nutrients will set the body up for chronic illnesses and premature aging or outright degeneration. The Foundation provides comprehensive dietary recommendations and nutritional supplements to fortify the immune system and all the life sustaining pathways.

Even with a proper diet we must be sure we are absorbing the nutrients. If not, every system in the body will be compromised. The pancreas not only makes insulin, but it also makes the digestive enzymes that breakdown the food we eat. Most diabetics have digestive and absorption problems. But everyone's immune system can be compromised if the intestinal track is not digesting the food we eat. It is not just eating the right diet. What complicates matters is that the body can lose the ability to digest certain foods, especially when they are removed from the diet on a long-term basis.

The low fat diet craze took many of the fats and oils, the source of essential fatty acids and sterolins, out of the food supply system. During deprivation, the body slowly loses its ability to properly digest fats and oils. The pancreas only produces the digestive enzymes that the digestive system requires. When fats and oils are not being consumed, the pancreas quits producing the enzymes for fats and oils. Severe intestinal distress occurs when the items are added back in. Therefore, the diet must be supplemented with digestive enzymes.

Many women in the United States have fertility and menstrual cycle problems related to the lack of essential fatty acids and sterolins in the diet. These critical foods simultaneously support the reproductive system and the endocrine system, in particular the hormones and prostaglandins that are produced by each system. The hormones and the prostaglandins are the chemical messengers of our body and can only be made from macronutrients like the essential fatty acids and sterolins. Macronutrients must be obtained from our diet; the body cannot make them. That is why they are called essential.

The sad result is we have many young women on birth control pills to artificially control the reproductive and endocrine systems and at the same time eating a low fat diet that does not nourish the body. The negative consequences do not show up until the young woman wants to have a child. Fertility is a very delicate balance between the reproductive system and the endocrine system. Ovulation is the key and this critical step is highly dependent on the nutritional status of the body. PMS is also highly influenced by hormones and prostaglandins and so is menopause. Clinical studies have clearly demonstrated the dangers of hormone replacement therapy; therefore the answer to these powerful women's health issues resides in Applied BioLogics and the use of nutritional supplements such as evening primrose oil, fish oil, sterols and sterolins. It is just how the body works.

Men are not immune from health problems associated with poor assimilation of fats and oils. The incidence of ADD and ADHD is very high in our young boys and male infertility rates are at all time highs. The essential fatty acids found in fish oil, plant oils and seed oils, plus the sterolins found in sprouts are very important to stabilize the cell membrane walls of the brain to control neurotransmitters. They are also critical to maintaining hormone levels and prostaglandins. Unfortunately, the live oils and fats are found predominantly in raw foods (nuts, seeds, sprouts) and fish. How many families in modern America eat raw foods and consume fish. The amount of sprouts consumed on a daily basis is almost zero. The way in which food is prepared also makes a difference. The fish cannot be fried because that converts the fish oil to trans-fatty acids. By eating foods that are highly processed, it is nearly impossible to get a beneficial fat or oil. When the cell membranes of the brain are unstable, you get a metabolic dysfunction in the brain chemistry. It then requires a drug like Ritalin to control the symptoms. But no child was ever born with a deficiency of Ritalin.

The problem is further aggravated because the testicles depend on the adrenal glands to produce the right hormones to make testosterone and estrogen. Males use estrogen to temper the effect of testosterone. It is the function of the endocrine system to keep the hormones in balance. The hormones come from cholesterol and the right cholesterol comes from the sterolins. When the fat was removed from the food and the oils were hydrogenated to preserve shelf life that was a prescription for a nationwide nutritional disaster. The remedy is to add whole food supplements that contain natural sterolins and essential fatty acids back into the diet.

However, the ADHD problem is further complicated when carbohydrates are added to our food products to maintain the flavor of the low fat foods. Carbohydrates are broken down into sugars. This places a stress on the pancreas to produce extra insulin, a hormone, which is competitive with or antagonistic to a wide variety of other hormones. The balance between all hormones is lost when insulin is dysfunctional. Insulin is the master hormone of energy production by every cell in the body. When the cells are deprived of energy, every system in the body malfunctions. That is why diabetics suffer from such a wide variety of problems. The endocrine system goes into over drive trying to compensate for poor blood glucose metabolism. The end result can be hyperactivity or

depression. ADHD is a symptom of poor blood glucose metabolism and many chronic illnesses are associated with blood sugar regulation disorders.

Over time, the cells become tolerant of the extra insulin and that leads to insulin resistance. The cells no longer respond to even the elevated levels of insulin. You do not have to be diabetic to have severe blood sugar regulation problems. Insulin resistance is not the lack of insulin; it is how the body is responding to the insulin, a hormone. The endocrine system tries to keep all hormones in balance. The endocrine system will adjust other hormones, such as testosterone and estrogen, in response to the elevated insulin. Eventually, the pancreas becomes fatigued and does not produce as much insulin, which aggravates insulin resistance, nor does it produce sufficient digestive enzymes. The end result is a severe blood sugar regulation problem, coupled with profound hormone imbalances and poor nutrient assimilation.

Since the brain runs on blood glucose, any problem with blood sugar regulation is going to affect conditions like ADD and ADHD. So the physical performance of the young male brain can be upset by hormone imbalances coupled with blood sugar regulation problems and nutrient deficiencies, all traced to physical performance of the endocrine system and the digestive system. It is these very significant biological feedback loops that conventional medicine often overlooks in the treatment of metabolic disorders. In fact these disorders are now known as metabolic syndrome and adult onset diabetes is the prime example.

The problem with ADD/ADHD is more pronounced in males because of the reliance on testosterone as the controlling hormone. Chronic fatigue, fibromyalgia and lupus are more prevalent in women because of the extreme fluctuations in hormones during the menstrual cycle. What we learn from the study of the immune system is that all of the physiological systems of the body interact and that splitting medicine into a group of specialists has only taken us further from True Health. Each specialist has his own set of medicines to give to control the symptoms in his area of expertise, which does little to address the underlying cause of a nutritional deficiency or problems with the digestive system. Control medications only address the symptoms. Ritalin does not cure ADD/ADHD it only controls the symptoms. We as a society can and must do better than simply drug our kids for life.

There is little doubt that True Health begins in the gut and the digestive tract. Fully 1/3 (33%) of all autoimmune disorders can be traced to Celiac disease, the inability to digest gluten, which is found in many grains, particularly wheat. Celiac triggers inflammation to the gut, which then leads to destroyed membranes of the gut followed by malabsorption of nutrients. Going on a gluten free diet, if you are a celiac patient, can so relieve the stress of inflammation on your gut and immune system that the autoimmune disorders clear up. It is called a spontaneous remission by conventional medicine. Yet Celiac is only diagnosed in 1% of the population. The math suggests that many chronically ill people should at least be evaluated for Celiac.

Whether caused by Celiac or not, nearly 100 % of the immune compromised clients of the BioTherapy Research Institute have inflammation to the gut, so overcoming malnutrition is a factor to restoring their immune system. Each client is tested for food toxicities that may be the source of chronic inflammation. The condition of gut inflammation responds very well to enzyme therapy to assist digestion, coupled with a colon cleanse to purge the intestine of parasites and other pathogenic agents that can trigger gut inflammation and to remove the toxins that catalyze the production of free radicals. Once the gut is free of pathogens and toxins, then you can repair the membrane lining of the gut to insure proper digestion.

The Foundation can provide enzyme therapy, a good colon cleanse and an excellent detoxification program plus anti-oxidants to control a wide variety of free radicals. Also we can modulate the immune system to activate the natural killer cells and T-cells of the immune system to destroy gut infections and then key nutrients to repair the membrane walls of the gut. Inflammation to the gut does not have to predispose your family, friends and neighbors to a weak immune system. It can be treated. In fact it is a critical step on the path to True Health. The BioTherapy Research Institute treats intestinal problems the moment the patient walks in the door. Every chronic illness is associated with intestinal problems. The immune system cannot function without the proper nutrients and the gut controls the assimilation and absorption of the nutrients.

The body must also be properly hydrated in order to perform. All chronically ill people are dehydrated at the cellular level. Dehydration is easily confirmed with the use of a Bio-impedance machine. Most athletes underestimate their hydration requirements. Water and fluids are a critical element to True Health. It is water that delivers nutrients to the cells of the body and water that flushes toxins from the body. Physical performance is compromised at all levels when the cells are dehydrated. Aquaporin channels control the flow of water into and out of the cells. Physiologists and microbiologists have discovered that each physiological system has different hydration needs and these needs are controlled by slight variations in the structure of the aquaporin channels.

Keeping the body hydrated provides the following benefits:

- Mental Clarity is Enhanced
- Joints and Disks are Better Lubricated
- Body Temperature is More Efficiently Regulated
- Muscle Oxygen Tension Levels Increase
- Cells are Protected from Oxidative Stress
- Blood Sugar Regulation Improves
- Kidneys Eliminate Toxins More Effectively

Hydration is a key aspect to the theory of Applied Biologics and it is imperative that adequate water be consumed during the day. Water is the most prominent nutrient in our body. We are basically 75 % water and most of this water is in the category of biologically structured water. Muscles comprise around 75 % water, blood 85%, and our brains 75 to 90% water. A reduction in fluid consumption or absorption of water will

greatly affect the performance and function of our bodies. Keep in mind that your blood also has to carry nutrients and oxygen to the muscles to sustain human performance and to remove the metabolic waste (lactic acid, etc) to prevent the accumulation of toxins. Water plays a critical role in this process. The rules of Applied BioLogics say that dehydration can trump everything else we try to accomplish. You must be hydrated to be healthy.

The presence of toxins can substantially impair the transport of water into and out of the cells. Heavy metals like mercury and lead can easily plug the aquaporin channels that let water flow into the cells. Toxins are the silent enemy of cell hydration. When the aquaporin channels are blocked, metabolic waste accumulates in the cells. This leads to uncontrolled free radical pathology. Free radicals can damage the DNA in the nucleus of the cell and create cancer. The metabolic waste can accumulate in the cell and choke off the oxygen supply, which leads to cell death. All cases are bad news for the body. The humic and fulvic acid formulas of The Stowe Foundation can help detoxify the body and help improve cell hydration. The more the body is detoxified the easier it is to achieve cell hydration. Toxins are completely ignored by the medical community outside of the doctors who practice alternative and complementary medicine. Toxins interfere with cell hydration.

The body must also receive lots of oxygen. Hence exercise or movement to transfer blood around the body and deliver oxygen is life sustaining. Learning some deep breathing exercises can also increase oxygen tension levels. Muscle movement is also critical to moving lymph through the body. It is your lymphatic drainage system that removes toxins from your blood and the lymph system does not have a pump like the heart.

Muscle contractions move lymph. A little exercise everyday is critical to True Health. The body will live 3 to 4 minutes without oxygen, 4 to 5 days without water and 30 to 45 days without food. That should be a very sobering thought when we think about lifestyle choices. Drink plenty of water and get moving; it will dramatically improve your life. See a chiropractor if your back is out of alignment. Back pain is the quickest way to defeat an exercise program, even simple walking. So recognize that the alignment of the skeleton is part of the PITTs Syndrome, get it fixed and get back on the path to True Health.

Infections

When harmful microbes, or germs, enter the body, they multiply and cause disease. This is called an **infection**. Microbes have a multitude of effects on the body and either destroy tissue by feeding on the tissue, take over the cell to reproduce, disable certain cell functions by their presence, or co-exist in the body to steal nutrients. Your body's defenses usually do a great job of stopping harmful microbes. But sometimes germs multiply faster than the body can handle -- and you get sick. At this time the body may need to be rescued by an antibiotic or other drug suitable for the pathogen. Infections must be treated to overcome the PITTs Syndrome. Conventional medicine thinks of each

infectious disease being associated with one specific pathogen. This is a major mistake when looking at chronic illness. The PITTS Syndrome does not assume the body is only attacked by one pathogen at a time. What is very clear is that all pathogens can suppress the body's ability to heal. Applied BioLogics states that immune therapy must try to identify and clear the body of all pathogens that might be present. People come in contact with germs in many ways, including:

- **Skin penetration:** Harmful microbes can enter your blood stream through cuts, insect bites or blood transfusions. Parasites are known to burrow their way in through feet, hands and skin.
- **Infected food or water:** Dangerous microbes can enter through your mouth, stomach and intestine if you drink untreated water or swallow food that's uncooked or unwashed.
- **Disease-carrying animals:** Harmful microbes can enter your body through close contact with infected animals.
- **Air Born:** Dangerous microbes can spread through the air and enter your nose mouth, throat and lungs when you breathe or they can settle in the mucous membranes of your eyes.
- **Poor Hygiene:** Contaminated hands can carry the microbes into mucous membranes by rubbing your eye or cleaning your nose. Microbes can move from you intestinal tract to your reproductive organs by poor hygiene in the anal area.

Your body's first line of defense against germs includes skin, stomach acid, and mucous membranes in your nose, throat, lungs and intestine, tears, the tiny hairs in your nose, bleeding, urinating, and sweating. These protectors block harmful microbes from entering your body, destroy them or wash them away.

When germs get beyond the first line of defense, your blood has a second line of defense called the **immune system**. Germs that enter the bloodstream are attacked by cells called **macrophages** (also known as white blood cells). These cells will gobble up and dissolve any foreign microbes.

Our bodies also produce **antibodies** that go after specific diseases. For example, if you have already had chicken pox, then your body's chicken pox antibodies will make sure that you don't catch that disease again. Antibodies latch on to the invading pathogens and carry them to the liver to be destroyed. Antibodies are also produced by the immune system in response to a vaccine. The quality of the protection against the virus is directly related to how closely the vaccine mimics the virus. The number of antibodies produced is related to the strength of the immune system, primarily the quality of the **B-Cells** and **Plasma Cells**.

It is interesting to note that certain strains of herpes virus attack the B-cells of the immune system and this severely compromises the immune system. Antibodies effectively remember the invading pathogen and can mobilize a full immune response the next time that pathogen enters the body. Antibodies are the memory of the immune system. If B-cells are compromised, the body can be constantly re-infected because no

anti-bodies are ever formed from the B-cells. Ultimately the pathogen will win and establish hold in the body if the rest of the immune system is compromised during a high period of stress for example.

There are times when the pathogen hides in certain tissue and the immune system attacks the area where the infection exits. Healthy tissue ends up being destroyed and producing protein fragments that are abnormal. The immune system will form antibodies to this abnormal protein thinking it is tissue that needs to be destroyed. Unfortunately, the immune system will periodically recognize the protein fragment within otherwise healthy tissue and attack the healthy tissue. This can happen with or without the pathogen being present.

This condition exists with lupus. The immune system attacks an otherwise healthy body. Conventional medicine addresses lupus with drugs to shut down the immune system and steroids to stop the inflammation. That approach brings pain relief, but at the same time exposes the body to the next pathogen. The pharmaceutical approach does nothing to eliminate the antibodies. Immune therapy can stop the production of the antibodies and then the tissue can then heal. Lupus stops when the autoimmune response is brought under control. This is called immune modulation.

The immune system can also attack pathogens with **natural killer cells (NK-cells)** and **T-cells**. NK-cells are the immune systems first line of defense against pathogens. The NK-cells have the ability to recognize a foreign invader (antigen) and kill it by injecting the microorganism with lipid peroxides. The lipids are formed from the fats in the diet. The immune system must be properly nourished to work. Large numbers of NK-cells line the lungs, the intestinal tract and circulate in the blood. They are found in large quantities in the liver. NK-cells can also kill cancer cells and virally infected cells. Blood tests exist to measure the functional activity of the NK-cells

Certain **biologic response modifiers** can activate the NK-cells and this is called natural killer cell therapy. Once the NK-cell has destroyed the target pathogen or abnormal tissue, it will release certain **cytokines** to send a message to the T-cells and **dendritic cells** of the immune system. T-cells are the army of the immune system and dendritic cells are the targeting mechanism. Cytokines (i.e. interleukin & interferon) are the chemical messengers of the immune system.

Dendritic cells are cousins to the macrophages and they digest surface markers of the antigen and present this information to the T-Cells. The T-cells then know what to attack. The body has the ability to produce an army of cytotoxic (cell killing) T-cells when alerted by the NK-cells and programmed by the dendritic cells. The NK-cells are limited in number and cannot be multiplied in time to fight off a major infection. The T-cells join the fight, but in massive numbers. T-cells are produced by lymphatic tissue, programmed by dendritic cells in the area of lymph nodes and matured or activated in the thymus gland. If toxins contaminate any of the glands, your immune system will be severely compromised.

T-cells are drawn to the infection by the cytokines released by macrophages. Macrophages come into the wound site after being alerted by the NK-cells that there is dead tissue to clean up. The penetration of the lymphocytes into the tissue bed causes inflammation. So an immune response always produces inflammation and circulating cytokines. The cytokines not only convey information to the rest of the immune system, such as the bone marrow to produce more white blood cells, but to the endocrine system to help regulate adrenal function. You do not want the body revved up by cortisol and adrenaline when you are trying to fight a disease. The body needs to be controlled by the parasympathetic nervous system (rest and relax) to fight disease. If you are sympathetic dominant (fight or flee) as the result of stress or emotional trauma then you will significantly suppress your immune system. Our faith and spiritual nature is very important to dealing with stress (meditation) and emotions (fear). True Health comes from the four foundations: Mind, Body, Spirit, and Emotions.

AIDS is known as acquired immune deficiency syndrome. It is caused by the HIV virus, which infects T-Cells and takes over the DNA of the T-cell to make more of the virus. When the T-Cell is full of the new virus it ruptures and the freshly made HIV virus spills into the blood and infects more T- Cells. Eventually the immune system is void of T-Cells, the army of the immune system. The immune system can no longer fight off even the most benign bacteria. And certainly it cannot control the formation of cancer. Most AIDS patients die from cancer and viral pneumonia. Without an immune system the body cannot survive.

In 1989, Dr. Stowe created an immune therapy program for AIDS patients based on natural killer cell therapy. Biologic response modifiers from the aloe vera plant and transfer factors from colostrum were used to activate the NK- cells to destroy virally infected T-cells. Specific essential fatty acids from the evening primrose plant and fish oil were found to inactivate the lipid membrane of the HIV virus. By killing the virally infected T-cells, the production of the new viral load was tremendously reduced. The HIV viral load was brought down to manageable levels by the essential fatty acids. This made the progression of the disease very manageable. Once the viral load was reduced, T-cells could make a come back and the AIDS patient gained some semblance of an immune system.

AIDS was actually the first clear demonstration that immune therapy could become a first line therapy. This is not a cure for AIDS, but it does make the disease manageable. The immune modulation properties of the sterolins and the whole food supplements offered by The Stowe Foundation have the same ability to assist in the fight against viral infections. This is an important concept when vaccines are in short supply.

Man is only one species in a world inhabited by many different flora and fauna. Like all other living organisms we inhabit an ecological niche in which we survive. Microorganisms could be considered to be the greatest threat to our survival. But, let's take a look at the balance that is maintained between those microorganisms and our body.

We were created to live in a symbiotic relationship with our environment. Many of the bacteria and yeast we take into our digestive tract actually help us digest our food. We literally cannot live without the beneficial bacteria. Yet, we routinely administer antibiotics without replenishing the beneficial bacteria of the intestines destroyed by the antibiotics. The overuse of antibiotics slowly destroys our immune system by compromising our nutritional status.

Certain bacteria are directly responsible for the production of short chain fatty acids. Even if we are taking in the right dietary fats, the body does not have the ability to produce certain fatty acids without the beneficial bacteria. We degrade over time if we do not take care of our digestive system. We cannot afford to become overrun with the forms of bacteria and yeast that do not support our digestive tract and immune system. Digestive problems are a part of all chronic illness and yeast infections are a big part of all intestinal problems. Yeast infections are the major reason people have their gallbladder removed. It is all part of the PITTS Syndrome.

Microorganisms are organisms that share the property of being sub-microscopic. They existed long before man and we have had to adapt to live in an environment where they are far more abundant. Many micro-organisms do not normally cause disease in man, existing in a state of either **COMMENSALISM**, where there is little or no benefit or harm to man, or in **MUTUALISM**, where there is some benefit gained by both partners. This non-harmful balance exists when the immune system works well, but these same organisms can cause infection when the immune system fails. If this happens, many of these microorganisms can cause infectious disease in a normally “healthy” individual. They become **PATHOGENS**. This process takes place as a silent, but deadly attack. These pathogens fall into five main groups:

- Viruses
- Bacteria
- Fungi
- Protozoa
- Intestinal Parasites

In addition, by convention there are two further classes of small agents that are often included in the study of MICROBIOLOGY:

- Ticks and mites
- Mesozoa and leeches

These latter organisms cause infestations rather than infectious disease, but are still a concern to the quality of life an individual can enjoy.

The normal result of an interaction between a microorganism that is not commensal and man is **INFECTION**. Infection is the invasion or colonization of the body by pathogenic organisms. This change in the state of health is called **DISEASE**. The manner by which the disease develops is called **PATHOGENESIS**.

Infectious disease is by far the greatest cause of morbidity and mortality worldwide. Indeed respiratory infections and gastrointestinal infections cause more deaths worldwide than all other diseases added together. Keeping our NK-cells activity high in this international world where pathogens like the SARS virus can spread from China to the world in one plane ride is our best defense against communicable disease. The consequences of infectious disease are variable. They range from the common cold to ulcers to cancer and heart disease to AIDS. No system of the body escapes infection. Therefore it is vital that man maintain a healthy robust immune system. This is our best and most affordable option.

We know that ulcers are directly related to the H-Pylori bacteria. HIV causes AIDS and cervical cancer in women is caused by HPV (human papilloma virus). A new virus transmits the flu every year. There is growing evidence that heart disease and cardiovascular disease are related to Chlamydia pneumonia a nanobacteria. Mad cow disease is an infection of prions. Research scientists keep finding that pathogens are the trigger for most chronic illnesses. Viruses have been linked to adult onset diabetes, chronic fatigue, obesity, liver cancer (hepatitis B & C) and Chrohn's. The immune system remains your best defense against pathogens, until the FDA and CBER approve infectious disease protocols.

The most novel approach to treating pathogens remains the use of energy fields to destroy the pathogen. Pathogens are living microorganisms that have a specific organic structure. Any organic organism can be disrupted with the application of the right energy field.

Royal Rife initiated this field of study in the 1930's. It is not always easy to find the right energy field, nor a safe way to apply the field, but we know that energy fields have been used to destroy cancer cells and a number of pathogens. The application of pulsed electro-magnetic fields, acoustic waves and microwave energy are showing the most promise in laboratory experiments.

Unfortunately, the wrong energy field can be very destructive to the body and we are surrounded by electromagnetic fields all day long. Our cell phones, microwave ovens, overhead power lines, computer screens and geopathic stress zones in the earth's crust all contribute to the body accumulating a perverse energy charge during the day. This is a distinctly modern phenomenon and we are just now getting into the technology it will take to ground the body sufficiently at night to dissipate the effects of perverse energy fields accumulated during the day.

Energy can be either helpful or harmful. Many people are very sensitive to extremely low frequency electrical fields (ELF) and low-density electromagnetic fields (EMF). The concept of energy and its effects on biological tissue is a fundamental part of Applied BioLogics. The Stowe Foundation is testing several of the energy devices for the effects they have on the immune system.

Energized oxygen (ozone) is probably the most active anti-viral substance discovered to date. The immune system itself uses heat (fever) as a means to activate specific immune

responses and activities. Hence the induction of an artificial fever through far-infrared saunas is a good adjunctive therapy offered by the BioTherapy Research Institute. The far infrared treatments are coupled with activated oxygen to create an energy field in the body that is conducive to destroying pathogens. The Institute can provide professional supervision to patients that wish to explore energy medicine as a means to activate the immune response.

Energy fields are being actively investigated as a means to sterilize organs before they are transplanted from the donor to the new host. It seems that fungal infections carried by the transplanted organ are the major source of the host immune systems rejection of the transplant. The host's immune system attacks the transplant because of the fungal spores.

Infections attack the tissues, glands and organs of the physiological systems of the body. This does not have to be life threatening to cause major problems. Many times infections shut down the body's ability to heal. Chronic illness is often triggered by untreated or unresolved infections. The body cannot heal itself in the presence of the infections. The immune system is dysfunctional. Treat the immune system with immune therapy and you restore health and vitality. Biologic response modifiers, such as transfer factors, are a big part of immune therapy because of their effect on the NK-cells and T-cells of the immune system.

Chronic illness is not a disease state where there is one infectious agent per disease. That is why chronic illness defies drug therapy. It may take multiple microorganisms before the body is compromised to the point where it will not heal. Chronic fatigue has been associated with the Epstein Barr Virus (EBV), the Cocksachie Virus, and multiple strands of the Herpes Virus, numerous intestinal parasites, E-coli bacteria and fungal (yeast) infections. Usually, chronic fatigue patients have multiple pathogenic insults. They vary for each individual patient, but infection is almost always part of the equation.

Intestinal parasites can totally disrupt our nutrient intake. They simply consume the nutrients we eat for their own benefit, leaving the physiological systems of the body totally malnourished. Yeast infections feed on blood glucose and trace minerals. That is why you have sugar cravings when you have yeast infections; the microorganisms are hungry. It is also why you become acidic and develop osteoporosis. The fungus or candida in your blood stream and tissues beds consume the trace minerals that keep the body's pH in balance. When trace minerals are low, your body produces acidic metabolic waste. It must be neutralized or the blood will not carry oxygen. You die very rapidly when the blood cannot carry oxygen.

The blood will pull calcium from your bone to make calcium carbonate, an excellent buffering agent. The buffering agent keeps the blood pH in balance. You survive, but the body deteriorates. If the calcium is not enough, then the blood will pull nitrogen from the muscles to create ammonia. This is the classic wasting syndrome experienced by AIDS patients and Cancer victims. The muscles are literally digested to keep the body alive.

It is a toxic waste problem brought on by an infection. Yeast infections almost always start in the gut. They never go away as long as the gut is a breeding ground. Infections are always one living organism fighting another. The immune system is the body's main weapon to win the war.

T - Toxins

Toxins are the silent energy vampires that suck the life from the immune system. Toxins contaminate the enzymes of our body to the point where entire physiological systems quite working. For example, mercury absorbed into the lining of the stomach will displace zinc from the enzymes that produce stomach acid. If the contamination is severe, the production of stomach acid is compromised and two very bad results happen.

First, the digestion of protein is compromised. Stomach acid is essential for protein metabolism. Protein is one of the major building blocks of the body and is the source of all the essential amino acids. The breakdown of protein starts with the digestive enzymes contained in the saliva and is accelerated by the presence of HCL (hydrochloric acid) in the stomach.

The real reason for chewing your food is to get a maximum amount of digestive enzymes mixed into the food and to alert the stomach to start producing stomach acid. You should drink very little fluid with your meals, as you do not want to dilute the fluid content of your stomach. That shifts the pH of the stomach to a less acidic condition. You want the stomach to operate with a very acidic pH to digest protein. You would be surprised by how many digestive problems will go away if you chew your food and drink less fluid at mealtime. That huge glass of water, ice tea, soda or beer is not appropriate for washing down lunch or supper. It is better to create a lot of saliva by chewing the food and it will go down just fine. Sipping a little water to clear the throat is fine. Take a couple of digestive enzymes just before you start eating and after you finish and the acid reflux will be mitigated over time.

The stomach acid is also critical for setting the right pH environment in the upper GI tract. A slightly acidic pH is required for the rest of the digestive enzymes and the bacteria that support protein and carbohydrate digestion. When the contents of the stomach enter the upper GI tract at a less acidic pH value, there is a tendency for the bacteria to produce methane gas. This gas builds up pressure and forces some of the gastric juice to reflux into the esophagus. We know this as acid reflux or heartburn.

The normal response is to take an antacid or a proton blocker to stop acid production by the stomach or to neutralize (buffer) the acid. While temporary relief is obtained, this is really the wrong move, as the real digestive problems of protein metabolism will only get worse. This has long-term health consequences. The drugs should only be used to bring temporary relief. Permanent relief will only come from detoxifying the body and getting the stomach operational again. During the interim time you need to support protein metabolism with proteolytic digestive enzymes, before during and after meals. You may also need to clean the GI tract of pathogens with a good colon cleanse and then

reestablish the colony of beneficial bacteria with probiotics. The antacids (Tums) and proton inhibitors (Nexium) only bring symptomatic relief.

Bad result number one of toxins restricting stomach acid production is acid reflux and poor protein metabolism. This goes against intuition, but is explained by Applied BioLogics and understanding the PITTS Syndrome.

The second bad outcome of no stomach acid is that pathogens will pass freely into the GI tract and cause ulcers plus the severe gut inflammation associated with Crohn's Disease, Irritable Bowel and Diverticulitis. Still other pathogens make it into the circulatory system through the gut and set up shop in remote areas of the body. Stomach acid destroys most pathogens as they try to enter the gut. Without proper levels of stomach acid, the GI tract can be overrun with microorganisms. Yeast infections are prominent among those with weak stomachs.

Recent studies in London have shown that patients taking stomach acid inhibitors for acid reflux have a much greater risk of developing pneumonia. The bacteria is coming from the gut into the circulatory system and traveling to the lungs. Heart disease has been associated with bacterial infections to the coronary artery. The gut is the source of bacteria in psoriasis. We need plentiful amounts of stomach acid to defend our body from infection. Toxins can suppress this vital immune function.

Applied BioLogics says that digestive enzymes like Betaine HCL (a natural source of stomach acid) and other proteolytic digestive enzymes for protein metabolism are much better at ending acid reflux than medication to suppress acid production. The stomach acid must be preserved to fight off invading pathogens.

It is also recommended that patients use a product like Aloe Vera that contains polysaccharides to help heal the damage to the esophagus and to help detoxify the body from the offending toxins. Paramount to the detoxification process is chelation or clathration therapy to remove the heavy metals like mercury. Heavy metals displace zinc from the enzymes that produce the stomach acid. Without zinc the stomach cannot produce enough stomach acid. The lack of stomach acid is really the culprit behind acid reflux. Acid reflux is just another symptom of the PITTS Syndrome. True Health is restored by addressing the underlying cause of the PITTS Syndrome and not by using drugs to get symptomatic relief. Symptomatic relief only brings a lifetime dependence on the drug.

Toxins are not addressed by conventional medicine, unless you approach a lethal dose of toxins. This mentality ignores the fact that the body is a great filter of toxins and great harm can come to the body short of death. Toxins are eliminated from the body through the pathways of elimination. The liver, kidneys, colon and lymphatic drainage system must operate to eliminate toxins from the body. The need to eliminate toxins is best illustrated between the relationship between heart disease and the kidneys.

If the kidneys are compromised in their ability to filter creatinine, a metabolic waste produced by muscle, this will show up as a reduction in the patient's optimum glomerular filtration rate (GFR). A simple blood test and formula based on age, gender and race can determine the GFR. If the GFR is 50% below the optimum rate for the patient, then the risk of dying or experiencing a cardiac event shoots up by 20 to 40%. If the GFR drops down to 25% of the optimum, the patient is 300 times as likely to experience a cardiac event. This information is now being widely disseminated by the National Institute of Diabetes and Digestive and Kidney Diseases. What Applied BioLogics brings is a game plan to correct the GFR back toward optimum.

Conventional medicine never takes into account that toxic heavy metals (mercury, cadmium, lead, arsenic& aluminum) or other toxins such as herbicides, insecticides, pesticides and chemicals can be the cause of the kidney malfunction. It is always described as kidney disease and the answer is dialysis. Again, conventional medicine has focused on the rescue not the cure. Kidney problems and heart disease are related through the PITTS Syndrome. It is paramount to detoxify the body. It is paramount that the kidneys be well hydrated or they do not perform properly. The GFR measurement is a clear indicator that the kidneys ability to filter toxic materials has been compromised.

Clearing the kidney of heavy metals with a clathrating agent is a safe and effective method to improve cardiovascular performance. However, most conventional MD's have zero experience in either chelation therapy or clathration for detoxification, so the Foundation has a long bridge to cross with the cardiology profession. Boosting the detoxification process with biological medicines and hydration with structured water are two keys to success for kidney detoxification. Structured water is the ideal water to maximize intracellular hydration and flush toxins through the kidneys.

In fact, the kidney is the one organ that can stop conventional IV chelation therapy. If the kidneys are not filtering creatinine, then it is considered too risky to administer IV doses of EDTA, the chelating agent. Eventually, the chelated heavy metals are excreted through the kidneys. The fear is that you might induce kidney failure. This is an ironic conundrum in that bad kidneys are probably one of the great indicators that heavy metals need to be removed. The clathration approach to detoxification can be justified just on the concept of improving the kidneys.

However, detoxification starts with the master enzyme glutathione, which is manufactured in the body from the sulfur bearing amino acids. Glutathione is the end result of protein metabolism. Glutathione pumps the metabolic toxic waste created by cellular respiration out of the cells of the body into the venous drainage system. The lymph system picks up the toxins from venous blood and purifies the blood before the blood passes back through the lungs. The toxins are processed through the liver enzymes and eliminated from the body in the form of bile or filtered through the kidneys and dumped into the urine.

Eggs are a natural source of sulfur bearing amino acids along with whey protein and colostrum to make glutathione. The formation of glutathione can also be supported by

organic sources of sulfur, such as the nutritional supplement MSM. Supporting the body's ability to make glutathione is called nutritional biotherapy. It is a critical component of the resolving the PITTs Syndrome and even the process of building glutathione is triggered by the proper levels of stomach acid and protein metabolism. The holistic doctors in Germany believe with good reason that all health disorders begin in the gut.

While everyone who practices alternative and complimentary medicine understands the importance of the pathway of elimination, few recognize that the real culprit is related to the mitochondria and the production of energy in the Krebs cycle. It is during the production of energy that metabolic waste is created. The Krebs cycle is controlled by enzymes within the mitochondria and the flow of electrons through the process called oxidative phosphorylation. This is the location where toxins can do the most damage. It is also where Applied BioLogics can bring about a fundamental change in how the immune system operates.

One of the difficult challenges facing medicine in the new millennium is how to incorporate the rapid advancement of science into our healthcare programs. Our medical system is built on a biochemical model of the body to describe disease and there is almost a total dependence on pharmaceutical drugs to treat illness. This model has served us well to help control bacterial infections, diabetes, inflammation, depression, pain and sexual dysfunction. Nearly everyone can relate to penicillin, insulin, aspirin, Prozac, morphine and Viagra. At the same time, heart disease, diabetes, cancer, viral infections, and arthritis remain major threats to our health. Billions of dollars have been spent in research and development on trying to create a drug to cure these conditions. The results by any subjective evaluation have been disappointing.

It is time to look in a new direction on how to treat the body and resolve chronic illness. That direction needs to be on the energy state of the cell and the functional status of the body. This can be described in medical terms as free radical pathology or inflammation. The body prematurely ages and cells breakdown when free radical pathology is not contained by natural control mechanisms. Modern medicine recognizes the primary role of inflammation in all chronic illness, but only provides symptomatic relief and no cure. Inflammation is the body's response to cell damage caused by free radical pathology. Inflammation can be artificially suppressed with drugs, but a better approach would be to eliminate the trigger mechanism behind the free radicals. The PITTs Syndrome is the source of inflammation.

Eliminate the source of the inflammation and the body can heal. Otherwise, you will be on a lifetime regimen of drugs to control symptoms. Our later years do not have to be dependent on insulin, high blood pressure medication, channel blockers, anti-inflammatory medications, diuretics, pain control, steroids and anti-depressants. We can do better.

A chemical engineer learns that chemical reactions are driven by the activation energy of the thermodynamic equation. If you cannot achieve the right energy state you cannot

drive the reaction. It is an engineering marvel that the body can operate at 98.6 degrees Fahrenheit. Many of the body's chemical reactions, if not most, would not normally occur at such a low temperature. There is simply not enough heat to achieve the activation energy. Muscles are far more efficient in energy and power production than the internal combustion engine, yet both burn hydrocarbons in the presence of oxygen to produce water and carbon dioxide.

The cell energy production circuit is known as the Krebs cycle and is located inside the mitochondria of each cell. A mitochondrion is the organelle that produces energy for the cell and each cell has multiple energy production centers. It is the energy production cycle that produces free radicals such as singlet oxygen that can damage the cell. In order to prevent cell damage, the mitochondria are surrounded with anti-oxidants and specific enzymes, such as super oxide dismutase (SOD) and glutathione, to neutralize and control damaging free radicals. Our life force is maintained by the production of energy, so we are always producing free radicals. Therefore, it is critical that we maintain a high degree of quality control over the energy production cycle. The body breaks down without proper maintenance on the engine.

Peter Mitchell, a British chemist, won the 1978 Nobel Prize for chemistry for helping to clarify how ADP (adenosine diphosphate) is converted into the energy-carrying compound ATP (adenosine triphosphate) in the mitochondria of living cells. ATP is made within the mitochondria by adding a phosphate group to ADP in a process known as oxidative phosphorylation. Mitchell was able to determine how the different enzymes involved in the conversion of ADP to ATP are distributed within the membranes that partition the interior of the mitochondrion. He showed how these enzymes arrangement facilitates their use of hydrogen ions (protons, H^+) as an energy source in the conversion of ADP to ATP. Later scientists have described this phenomenon as the proton motive force and the proton wave effect. The Krebs cycle requires a source of protons (H^+) from proton donors.

The most common proton donor studied in the Krebs cycle, also referred to as the citric acid cycle, is nicotinamide adenine dinucleotide (NADH). NADH is a coenzyme made from vitamin B2 or niacin. It is present in all living cells. As a coenzyme, NADH serves to make the enzymes of the Krebs cycle work. The Krebs cycle is often described more in terms of an electron transport mechanism in which enzymes catalyze sequential oxidation-reduction reactions. The fuel for the Krebs cycle is blood glucose and the agent for oxidation is oxygen. However, hydrogen protons (H^+) are required for the reduction reactions. Therefore, the electron transport required to generate energy can only occur when the sequential oxidation-reduction reactions are coupled together. The coupling mechanism is provided by the proton flux and this requires the presence of proton donors.

Very advanced work by Markus Meuwly and published in the Faraday Discussions suggests that the diffusion of water (H_2O) into the active site of an electron coupled proton transfer is an attractive alternative to direct proton transfer from the protein matrix of ferredoxins. The ferredoxins are proteins that contain one or more iron-sulphur

clusters, which make such proteins eminent in electron transfer reactions. Ferredoxins are a major component of the Krebs cycle. Meuwly's work suggests that the water molecule could serve as a possible proton donor.

Meuwly's work demonstrates why chronic illness is always associated with dehydration at the cellular level. The mitochondria are being deprived of a source of proton donors, cellular H₂O, which is also biomolecular water or structured water. The water in our cells is an active participant in the chemical reactions that occur in our mitochondria. The mitochondria are the original hydrogen fuel cell.

The body uses a complex system of catalysts (enzymes and coenzymes) within the mitochondria to achieve energy efficiency. A catalyst is a compound that can lower the activation energy of a given chemical reaction. In the human body, catalysts are known as enzymes and the coenzymes that make the enzymes work. We know that many coenzymes are derived from the B-vitamins and hence diet plays critical role in health.

A second major factor in the proper function of the enzymes are the metals (trace minerals in nutritional terms) attached to the amino acid sequences that form the basic protein structure of the enzyme. It is the trace minerals that easily transfer electrons from one compound to another. This is the heart and sole of energy production, the transfer of electrons. A fundamental concept in the attachment of a trace mineral or metal to a protein structure is the binding energy of the metal. How easily does the metal or trace mineral attach to the enzyme? Basically, metals are competitive with each other. This has major implications in health.

It is straight forward science that a metal, like cadmium, found in the paper of cigarettes and inhaled with every puff or breathed in through second hand smoke, can displace the biologically active metals of zinc, selenium and magnesium (the trace minerals) from the biologically active enzymes. Cadmium has a stronger binding coefficient for the amino acid structure of the enzyme than the trace minerals. When cadmium or mercury or any other heavy metal displaces a trace mineral like zinc or selenium from the enzyme it does not function properly as a catalyst. Electrons flow undirected through the cellular matrix and free radical pathology can spin out of control. You cannot take enough anti-oxidants to keep up with the free radical production and hence inflammation becomes a permanent part of your life. The energy balance of the body is disrupted. In the oil refining industry they would say the catalyst has become contaminated or poisoned. In that event, the refinery catalyst is replaced with a fresh batch. This is not so easily accomplished in the body.

In the human body, the proper energy balance can only be restored by decontaminating or detoxifying the body. That is, remove the catalytic poisons (like cadmium, lead, mercury, arsenic, aluminum, nickel) that are attached to the enzymes and replenish them with the proper energetic metals like selenium and zinc. This is the essence of clathration therapy and trace mineral replacement. Remove the toxic heavy metals and restore the beneficial trace minerals. Then the mitochondria can function and our life force restored. Through the concepts of Applied BioLogics, we understand the importance and the

science of energy medicine. Making sure the body operates at the right energy levels is pure science and engineering. When enzymes start to fail on a systemic basis, then it is time to look at enzyme therapy, with enzyme supplements to compensate for the dysfunctional pathways. It is also time to look at how to detoxify the body. The body will only be restored to true health when the enzyme poisons have been removed and proper controls put on free radical pathology.

In fact, there are encouraging signs that the concepts of energy medicine are starting to permeate the medical field. Work performed at the Mayo Clinic by Dzeja and Terzic states; “at the level of the mitochondria and the nucleus of the cell, precise coupling of spatially separated intracellular ATP-producing and ATP-consuming processes is fundamental to the bioenergetics of living organisms, ensuring a fail-safe operation of the energetic system over a broad range of cellular functional activities. Mechanisms responsible for communication between spatially separated intracellular ATP consumption and ATP production processes, and their precise coupling over a broad range of cellular functional activity has remained a long-standing enigma. Distribution of cellular energy could be accomplished by altering phosphotransfer enzyme isoform composition and their intracellular localization. In this regard, derangement in cellular energy flow and distribution has been implicated in cardiovascular and neurodegenerative diseases, as well as in determining uncontrolled growth and metastatic potential of tumor cells”.

The cliff note version of these statements is that enzymes contained in the mitochondria, the cytoplasm and the nucleus of the cell are responsible for the energy production, the energy transfer and the energy utilization within the cell. The enzymes must be located a proper distance from each other in order to achieve a balanced flow of energy. When energy flow is disturbed then cells do not function properly and major problems show up, such as heart disease, diabetes, dementia and cancer.

Functional medicine must look at the energy status of the body and this requires a very close examination of the enzymatic pathways of the body. The primary determinant of the spatial alignment of enzymes is cell hydration. Cellular water determines cell volume and whether the cell is swollen or dehydrated. Too much water and the enzymes will be too far apart. Too little cellular hydration and the enzymes will interfere with each other. Cellular hydration plays two critical roles in cell health, the spatial separation of the enzymes and the potential to be a proton donor.

Enzymes that are contaminated with toxins are not going to work. Make no mistake; America is loaded with toxins. The heavy metal toxins are quite prevalent. Mercury is found in the fish we eat and the silver fillings we put in our mouth, cadmium is found in cigarette smoke, arsenic throughout many of the water supplies due to industrial pollution and lead from paints and fuels. Aluminum and nickel are being monitored as contributing factors to Alzheimer and Parkinson's disease. We even use barium in medical diagnostic tests. Exposure to heavy metals is easy to come by and the heavy metals have an affinity to attach themselves to the enzymes. The body will accumulate a toxic load over time. It shows up in our bodies as accelerated aging and chronic illness.

Tissue samples taken from breast cancer patients often show 30,000 times the level of mercury as thought safe.

The FDA and EPA recently released warnings to pregnant mothers to avoid mercury-contaminated fish, which included tuna and swordfish. The reason given was to avoid damage to the developing fetus, in particular, to avoid fetal brain damage. The mother should be well advised that mercury is not selective to the fetus. It will harm her as well as the fetus.

Mercury is even used in laboratory experiments as the toxin most easily applied to disrupt the flow of water into human cells through the aquaporin channels. The aquaporin channels are essentially enzymatic pathways that transport water into and out of the cells and cellular water into and out of the organelles of the cells like the mitochondria.

The aquaporin channels depend on the proper electrical charge on the enzymes to function. Mercury or any heavy metal can easily disrupt the electrical field of the aquaporin channel. Dehydration at the cellular level is common among all chronic illness. This can easily be the result of toxins shutting off the aquaporin channels. Clinical studies show that hydration affects human performance at every level of the body. Toxins interfere with hydration and the enzymatic performance in the cells, the mitochondria and the cell membrane walls. Heavy metals are very nasty enzyme poisons and must be considered a cofactor in every chronic illness. But heavy metals are not the only toxins that can affect enzyme performance.

Most of the chemical toxins we are exposed to in our daily lives, such as herbicides, insecticides and pesticides are chlorine or fluorine based. Agent Orange is probably the best-known herbicide and it is extremely toxic to the human body. Fluorine and chlorine are chemically known as halogens and are extremely reactive substances. We are advised not to swallow our fluoridated toothpaste and to not use it with infants. Exposure to halogens also comes from flame retardant chemicals found on our carpets and upholstery plus baby clothes and cribs. These toxins can also disable enzymatic activity and membrane permeability that leads to uncontrolled free radical pathology and the accumulation of metabolic waste. Toxins are the silent killers.

The liver is the main organ of the human body that eliminates the chemical toxins from the body. It is this organ that fails with a toxic overdose. Certain pharmaceutical drugs and performance enhancing steroids are toxic to the liver and must be used under a doctor's supervision. Fatal damage to the liver is often referred to as toxic shock syndrome.

It only takes small amounts of toxins to have very profound effect on the body. This was amply demonstrated in 1980 when chemicals used to treat female tampons lead to toxic shock syndrome. Many pharmaceutical drugs are toxic to the liver so your doctor will measure the activity of your liver enzymes to see if you can stay on the drug. The liver uses a series of enzymes to accomplish the mission of detoxification. Liver failure is a common result of an overload of toxins. The German government has banned the use of

several flame retardant chemicals used on baby clothing, carpets and furniture because of toxicity problems. There is a large body of evidence that can link the increase in heart disease in the United States with the chlorination of our water supplies. However, not all halogens are toxic.

The halogen that is most beneficial to the body is iodine. The thyroid gland uses iodine to produce thyroid hormones. Goiter, a disease of the thyroid gland caused by iodine deficiency, was eliminated in the US when our salt was iodized. Still in the year 2005 not all third world countries have iodized salt plants and thyroid problems are prevalent. It should come as no surprise that most metabolic diseases associated with exposure to toxic halogen based chemicals come with thyroid problems. Chlorine and fluorine compounds tend to be competitive with iodine in the thyroid. Just like heavy metals are competitive with the trace minerals on the enzymes, halogens are competitive with iodine. Exposure to a chemical toxin does not have to be deadly to have profound physiological effects on the body.

Volatile organics such as formaldehyde are neurotoxins and carcinogenic. The glue that holds your new carpet down emits formaldehyde as it dries. Breathe the fumes and you get a headache and dizzy. You get the hell out of dodge and ventilate the room until the level of formaldehyde drops and plenty of life sustaining oxygen is present. You avoid contact with the deadly fumes to avoid damage to your brain. But things are not always so dramatic or simple to resolve.

The main problem with nutra-sweet, the artificial sweetener, is that it breaks down in the body to formaldehyde. You have no idea you are poisoning your body. But many people get headaches when they use nutra-sweet, but never correlate the two. What we have ignored for too long in this country is how the body actually works. We have no idea how most chemicals affect our biological pathways. Therefore, we are very short on antidotes because we have not truly studied the process of detoxifying the human body and preserving enzymatic function. In fact, detoxification protocols have been widely opposed by our medical authorities. Many alternative and complimentary medical doctors have had their medical licenses threatened by the AMA for using chelation therapy.

Toxins probably produce as many disease states as infections, but our medical system is not trained to think in terms of systemic toxicity, unless blood levels rise to the level of a poison. Therefore, we have standards for lead poisoning and mercury poisoning and fatal levels of arsenic, but nothing that says what to expect when the body simply stops functioning due to low-level metal toxicity. If you accumulated large levels of lead from the leaded gasoline era, then it is still in your body, unless you went through chelation therapy. Cadmium from the cigarette smoke is still in your body compromising the immune system. How many mechanics washed their hands in leaded gasoline because it was such a good degreaser? It is time to take a look at advanced detoxification procedures to preserve health. Because of the effects of toxins on enzymatic activity and hydration levels, it is clear that toxins are the silent killer. It is also the place where science and medicine need to come together. Applied BioLogics offers that opportunity.

The PITTTS Syndrome can only be totally resolved when the body is detoxified. It is the only way to stop free radical pathology and the presence of inflammation. Those are the hallmark symptoms of all chronic illness.

The most studied circulation problem of our time is plaque. The buildup of plaque in the coronary artery is the main reason for bypass surgery. The buildup of plaque in the carotid artery to the brain is the main predictor of stroke. Plaque can shut off blood flow to the feet of a diabetic and lead to such poor circulation that the foot is amputated. The question is what causes plaque and how can it be reversed?

Plaque is fundamentally an internal scab covering a wound or damaged tissue of the artery. Plaque is part of the immune system and is a part of the PITTTS Syndrome. The original wound to the artery is often caused by an infection such as Chlamydia, nanobacteria. The wound, like all wounds, causes the immune system to release cytokines, the chemical messengers of the immune system. Cytokines produce inflammation at the wound site. The bacteria, to vend off the immune system, will form a bioactive film or a cocoon around themselves. The bacteria colony is protected from the immune system, but the inflammation is chronic because the immune system keeps on trying to destroy the bacteria. The immune system will be successful if the right proteolytic enzymes are available to breakdown the bioactive film.

If heavy metals or halogen type compounds are present, the wound site will also produce a great deal of free radical activity. The free radicals breakdown more of the membrane wall of the artery than the original infection. The body cannot stand to have the artery wall rupture or the body will very quickly bleed to death. The liver will produce cholesterol to be a coating that will protect the artery. Free radicals will oxidize a certain portion of the cholesterol to produce LDL. In this case the cholesterol acts like a sacrificial lamb. This is a clear indication that free radical pathology is at a high level. The blood levels of C- reactive protein and homocysteine can measure the inflammation. The vast majority of the cell damage comes from the inflammation catalyzed by the heavy metals and halogen compounds. The entire process was triggered by an infection, but can perpetuate under its own momentum.

Eventually, the heavy metals, halogen compounds and cholesterol react with fibrin elements found in the blood and plaque is formed to seal the wound. It is an ongoing process because the underlying free radical pathology has not been stopped. Plaque builds up until the free radicals are brought under control.

The insidious part is that the inflammation itself can cause tissue damage, which triggers the plaque process. Plaque can significantly reduce blood and oxygen supply to the heart muscle. This triggers a myocardial infarction, a heart attack. This is the setting for bypass surgery. It is a much more dangerous and unpredictable situation if the plaque simply covers up the opening to the small feeder vessels to the heart. The critical issue in both cases is to improve blood flow by stopping the free radical damage that propagates the plaque formation and try to dissolve the restrictions that have already formed. This is accomplished by removing the heavy metals and the halogen compounds.

Heavy metals and halogen compounds react with cholesterol and blood proteins to form the glue that holds the plaque together. The halogens and heavy metals are also the trigger to the free radical pathology that keeps the inflammation active. The custom compounded chelating product is designed to remove heavy metals and halogen compounds from the body. This leads to a major reduction in plaque and inflammation. Blood and oxygen flow to the heart and any other tissue bed restricted by plaque is improved.

Chelation therapy has demonstrated the power of detoxification to avoid bypass surgery and the amputation of limbs in diabetic patients. The most effective form of heart therapy is now chelation therapy combined with antibiotics to treat the underlying infection. Again it is the PITT Syndrome that is the culprit. Plaque is just a symptom.

T – Trauma

Trauma to the body, both physical and emotional, destroys organs, nerves, glands, brain cells, bones, tendons, ligaments and every other type of cell. The discovery of adult stem cells and our ability to transplant these cells to the injured area through autologous blood therapy permits the body to repair damaged tissue. Adult stem cells can regenerate new robust healthy tissue wherever the injury has occurred. Adult stem cells are the missing link in a total immune therapy protocol. Adult stem cells provide an option to heart and liver transplants. Adult stem cells are being evaluated to reduce the need for knee and hip replacements. Stroke victims can anticipate more complete recoveries. Experiments suggest diseased lung tissue can be replaced with healthy vibrant tissue able to transport oxygen like a teenager. Adult stem cells are the immune system's major weapon against physical trauma.

But it is important to keep adult stem cells in context. They are one part of immune therapy. Adult Stem Cells repair and regenerate tissue, they do not cure a disease. Hepatitis C is a viral infection of the liver. You must eliminate the infection before you can apply adult stem cells. Otherwise, the new liver will become infected. You must eliminate the lymes disease, before you can repair the brain damage from the infection. You must eliminate the autoantibodies in the MS patient, before you repair the myelin sheath. These are fundamental truths that come from immune therapy and the understanding of Applied BioLogics. Adult stem cells may prove to be the answer to physical trauma, but they must be used in combination with the immune system to tap their full potential. While the stem cells can bring relief from physical trauma, they cannot heal the wounded spirit.

It is well established that emotional trauma plays a significant role in the performance of the endocrine system. The endocrine system is responsible for producing the hormones that regulate our bodily functions. The endocrine system interacts with the brain and the central nervous system through a complex biofeedback mechanism. Unresolved emotional trauma appears to physically change brain chemistry by releasing excess cortisol from the adrenal gland, which is part of the endocrine system. Excess cortisol

causes physical damage to the hippocampus region of the brain and this shows up as an imbalance in neurotransmitters.

Profound sleep disturbances show up when the neurotransmitter serotonin is depleted by emotional trauma. The body repairs itself at night when the body goes into a deep rest and relaxed state known as sleep. Without sleep the body slowly degrades. Short-term memory loss is an indicator of unresolved emotional trauma and so is mild depression. The problem can be exaggerated if there are membrane stability problems in the brain from the lack of the essential fatty acids. The lack of fatty acids totally disrupts the phospholipid chemistry that creates stable membrane walls in our neurons. Our emotions control how we feel. Our emotions can make us sick. Fear, anger, anxiety, and loneliness are major negative emotions that suppress our immune system. Memories of past emotional traumas can bring on the toxic negative emotions.

Most faiths have the concept of forgiving. This does not mean you forget about the transgression. Forgiving means the memory of the action no longer makes you angry or hurt or anxious. You are no longer controlled by the memory because you forgive the transgression. Anger is like taking a poison pill and expecting the other person to die. The SOB never does. Your faith and spiritual relationship to God can help set you free from emotional trauma. There is a real relationship between your health and your emotions. An MD or a prescription drug can not replace your faith as a means for dealing with emotional trauma.

Anger puts the autonomic nervous system into the fight or flee syndrome. The anger message is communicated from the brain to the hypothalamus of the endocrine system via neurotransmitters. The hypothalamus sends hormone signals to the pituitary, which sends out hormone signals to the thyroid, adrenals and gonads. The adrenals prepare the body to fight or flee. This requires a sudden burst of energy. To achieve an elevated energy state, the adrenals release, adrenaline, cortisol, androgens, and testosterone and other hormones. All energy is directed to the physical actions of the body. The body is now sympathetic dominant.

The body is not designed to sustain this level of output. The fight or flee syndrome is designed to rescue the body from danger. Chronic exposure to these conditions degrades the body. Anger is an emotion that serves a purpose on occasion. Uncontrolled anger is very destructive to the body. Unresolved emotional traumas from our past can leave us an angry person.

When a person is sympathetic dominant, the immune system is temporarily suspended. The immune system can only repair the body when the body is in the rest and relax mode. This is the parasympathetic side of the autonomic nervous system. The emotions control the autonomic nervous system and hence the immune system is highly controlled by the emotional state of the body. The control of the immune system runs through the adrenal glands. When the body is sympathetic dominant all energy is directed to the fight or flee response. MD's know this condition as Seyle's alarm response. It is destructive to health.

The emotions control the relationship between the brain and the endocrine system. I have found that the emotions can be vastly influenced by our spiritual relationship to God, no matter what our religion. True Health emanates from bringing the mind, body, spirit, and emotions into harmony and balance. Many studies show that people of faith do indeed live longer and happier lives. It is not a coincidence.

On the physical side, neurotransmitter imbalances can be significantly corrected by amino acid therapy. Depression is primarily a neurotransmitter imbalance brought on by chronic emotional stress that causes brain damage. Medications usually only control the symptoms. The cure for depression is to repair the damage to the neurotransmitter pathways using amino acid therapy and essential fatty acids for membrane stability. The treatment is much more effective when the patient has access to emotional freedom techniques. A hypnotist trained in emotional freedom techniques, such as psychological tapping, can be very effective in dealing with the deeply buried emotional trauma.

S – Stress

The negative emotions of anxiety, anger, fear, and resentment put the body under a lot of physical stress. The emotions can actually dominate the autonomic nervous system to the extent that the adrenal glands fail, the pancreas is fatigued, the neurotransmitters of the brain are imbalanced and hormones rage out of control. Depression, chronic fatigue, fibromyalgia and lupus all have a high component of stress. The body cannot heal unless the body can rest and relax. Stress and emotional trauma keep the body constantly agitated. You can treat the underlying infections, toxins and nutritional deficiencies for years and not make progress toward true health and happiness. Debilitating stress is a very well understood medical phenomenon, but it is also a clear indication that there is a spiritual disconnect. The medical approach is to prescribe anti-depressants, pain medications, anti-inflammatory steroids, blood pressure medications, diabetic medications and diuretics. The Stowe Foundation believes these should only be temporary medications to rescue the body, not lifetime prescriptions.

Learning to set ourselves free of stress comes from having a healthy relationship with our spiritual beliefs. Spiritual happiness is the answer to stress and it can set you free from emotional trauma. Sometimes the emotional trigger is so deeply buried in our subconscious that we require professional help to identify and correct the imbalance. But this type of professional help should come from physicians, psychologists and other health care providers who understand your spiritual beliefs. True health only comes from balancing the mind, body, spirit and emotions. When there is an imbalance in any one of the four pillars of True Health, we have stress in our lives and stress can put our health in the PITTS.

We bring stress into our lives on a daily basis. In the Aramaic language, sin means to miss the mark. All faith-based religions have guidelines on sin. Accepting the concept that sin means to miss the mark, we can then see that the day-to-day activities that cause us to miss the mark bring stress into our lives.

If you are a married man and you have an affair, you will have missed the mark of fidelity. You will have sinned and brought stress into your life. There will always be the emotional fear that your wife will find out. Even if you are not particularly religious or faithful you will worry about the financial ramifications of divorce. Sin describes the things God knows will make us unhappy. Sin or missing the mark does not make us happy. Cheating on your wife will never make you happy.

If you are a wife that worries that your kids are not wearing designer jeans, then you will put pressure on your husband to make more money. If the money is simply not there, then most families turn to credit. Families that use credit to keep up with the Jones family bring stress into their lives.

Anxiety over finances is probably the most prominent stress factor in America. Learning to live within your means has been destroyed by easy credit. Marketing programs now define our happiness. Why you are not part of the American dream if your house does not overflow with the latest designer jeans, cars, computers, and medications. It is almost a fashion statement to be on the purple pill. The pharmaceutical companies make a great deal of profit having America on a lifetime prescription of drugs. Stress contributes to the demand. Stress contributes to the demand for antidepressant drugs, hypertension drugs, pain medications for migraines, cholesterol lowering drugs and heart medications.

The vast majority of profitable drugs simply control the symptoms of the PITTS Syndrome. There is not a single curative drug in the whole bunch. You stay on the drugs for life. That brings stress to our elderly. How am I going to afford my drugs? That question has even been asked of the President of the United States. If that is the question, we need to change our medical philosophy because we have failed our citizens.

Faith can help you hit the mark, not miss the mark. It is not the jeans the child wears that make us happy; it is the child in the jeans. It is not the car in the garage; it is the family that gets in the car. You can be a super competitive person at work and in the business environment and that is ok. But if you bring that into the home at night and you cannot rest and relax and enjoy your family and kids, they will resent you, because all kids want is your time. Deny them your time and you will create stress for everyone. Stress is nothing more than how we handle our interpersonal relationships. Our spiritual nature can help strengthen our personal relationships.

Applied BioLogics is the signature concept of The Stowe Foundation for reversing the PITTS Syndrome. The PITTS Syndrome describes the five conditions that can compromise the immune system, which is the body's natural ability to heal itself. Applied BioLogics is a form of immune therapy that blends allopathic medicine with holistic and biological medicine to restore the immune system. Applied BioLogics also understands that True Health can only be achieved when the mind, body, spirit and emotions are brought into balance. Applied BioLogics is the science behind True Health.

Applied BioLogics

1. “The rational application of biological medicine to reverse the PITTs Syndrome and to restore the body to health. The PITTs Syndrome being the source of chronic inflammation:

- Poor Nutrition **P**
- Infections **I**
- Toxins **T**
- Trauma **T**
- Stress **S**

2. “The use of immune therapy protocols based on biological response modifiers from plants and herbs to activate the immune system, cytokine therapy applied to the immune system to target the healing response, novel methods to eliminate infectious pathogens and destructive toxins, nutritional biotherapy to nourish the body, creative stress management and emotional freedom techniques to power the mind, body, spirit connection and adult stem cells to repair traumatic tissue damage”.

3. “The use of immune therapy based on biological medicines and techniques to restore the immune system and the body’s natural ability to heal itself; adult stem cells being the missing link to a full restoration of the body’s ability to heal”.

4. “The method to eliminate any chronic illness”.

5. “Natural healing”.

Applied BioLogics as treatment for the PITTs Syndrome

Problem

Answer

P – Poor Nutrition {Nutritional BioTherapy}

Poor Nutrition is eliminated by restoring the integrity of the intestinal tract to improve digestion and absorption. Targeted nutritional supplements are used to reverse any known vitamin and mineral deficiencies and diet is used to control the pH of the body and to properly regulate blood sugar levels. The body must also be properly hydrated and oxygenated. Water and oxygen are the two most important nutrients in the body. Lack of oxygen and water kills the body faster than any other nutritional deficiency. We call the reversal of poor nutrition Nutritional BioTherapy and it includes proper hydration and oxygenation of the cells.

I – Infections {Biologic Response Modifiers}

Infectious microorganism such as bacterial infections, viruses, fungus and parasites must be eliminated. We have created very advanced cytokine therapy protocols and autologous vaccines to focus the immune system’s T-Cells and NK-Cells on pathogenic

agents. These are called dendritic cell therapy and natural killer cell therapy. These are very advanced biological methods used to treat microorganisms that have become resistant to conventional treatment with antibiotics and anti-virals. We eliminate fungal infections and parasites from the intestinal tract with herbs and living cultures of microorganisms that are the natural enemies of the pathogens. We modify the biological response of the immune system to treat infections. The biological medicines used to activate the immune system are called biological response modifiers, transfer factors and immune modulation vaccines.

T – Toxins **{Detoxification}**

Toxins such as mercury, arsenic, lead, aluminum, cadmium and other heavy metals are the most overlooked suppressors of the immune system and biological function. A toxic body can not heal. You must also purge the body of chemical toxins such as insecticides, pesticides, herbicides, fertilizers, flame retardants, and even cosmetics that contain carcinogens. Toxins are a major component of neurological diseases such as Alzheimer, Autism, Parkinson, and Depression. Toxins play a major role in Cancer, Arthritis, Lupus, Fibromyalgia, Heart Disease and Diabetes. The Stowe Foundation has created very advanced detoxification protocols that are so powerful that they must be medically supervised. Bio-oxidative therapy, lymphatic drainage therapy, chelation therapy and clathration therapy are all necessary to eliminate toxins from the body. Toxins promote the generation of free radicals, which are the source of inflammation. Adult stem cells can not permanently repair tissue damage when the organ being treated is still toxic. Chronic inflammation comes from toxins. Inflammation has been called the silent killer. Anti-inflammatory medications only control the symptoms. Detoxification eliminates the source and then the body can heal.

T – Trauma **{Adult Stem Cells}**

Trauma to the body, both physical and emotional, destroys organs, nerves, glands, brain cells, bones, tendons, ligaments and every other type of cell. The discovery of adult stem cells and our ability to transplant these cells to the injured area permits the body to repair damaged tissue. Adult stem cells are the missing link in a total immune therapy protocol. We now have an option to heart and liver transplants. We now have an option to knee and hip replacements. Stroke victims can anticipate more complete recoveries. Diseased lung tissue can be replaced with healthy vibrant tissue for emphysema. Need a new pancreas to control diabetes, grow one. But it is important to keep adult stem cells in context. They are one part of immune therapy. Adult Stem Cells repair and regenerate tissue, they do not cure a disease. Hepatitis C is a viral infection of the liver. You must eliminate the infection before you can apply adult stem cells. Otherwise, the new liver will become infected. You must eliminate the lymes disease, before you can repair the brain damage from the infection. You must eliminate the auto antibodies in the MS patient, before you repair the myelin sheath. These are fundamental truths that come from immune therapy and the understanding of applied biologics. Adult Stem Cells are the answer to trauma. Adult stem cells are a team player in Regenerative Medicine.

S – Stress {Emotional Freedom and Spiritual Happiness}

The negative emotions of anxiety, anger, fear, and resentment put the body under a lot of physical stress. The emotions can actually dominate the autonomic nervous system to the extent that the adrenal glands fail, the pancreas is fatigued, the neurotransmitters of the brain are imbalanced and hormones rage out of control. Depression, chronic fatigue, fibromyalgia and lupus all have a high component of stress. The body can not heal unless the body can rest and relax. Stress and emotional trauma keep the body constantly agitated. You can treat the underlying infections, toxins and nutritional deficiencies for years and not make progress toward true health and happiness. Debilitating stress is a very well understood medical phenomenon, but it is also a clear indication that there is a spiritual disconnect. Doctors prescribe anti-depressants, pain medications, anti-inflammatory, blood pressure medications, diabetic medications and diuretics. These should only be temporary medications to rescue the body, not life time prescriptions. Learning to set ourselves free of stress comes from having a healthy relationship with our creator. Spiritual happiness is the answer to stress and it can set you free from emotional trauma. Sometimes the emotional trigger is so deeply buried in our subconscious that we require professional help to identify and correct the imbalance. But this type of professional help should come from physicians, psychologists and other health care providers who understand your spiritual beliefs. True health only comes from balancing the mind, body, spirit and emotions. When there is an imbalance we have stress in our lives and stress can put our health in the PITTS.