BioDefense: A Natural Alternative to Antibiotics
Antiviral, Antifungal and Antibacterial without Hurting the Good Ones
Excerpts from
Arthur A. Fierro, DC, DACBN, FACCN

Protect Yourself from Viruses, Bacteria and Fungal Infections

How a combination of natural compounds effectively destroys viruses, bacteria, fungi and can even protect or destroy Bio Terrorist Diseases such as Anthrax

After comparing numerous peer-reviewed study reports on nutritional supplements, Dr. Arthur A. Fierro designed a unique natural antiviral, antibacterial and antifungal formula. What is even more special is that it does not harm the good bacteria while eliminating the pathogenic ones.

Nutrition Is Not An Alternative

This formula is designed to deal with important area of health concern from a different approach, i.e., health care rather than the current prevalent one: disease care. Nutrition is not an alternative as the medical establishment wants us to believe. Nutrition, the food we eat and the remedies supplied in them, has been around since our creation. Throughout history, sound nutrition along with lifestyle management governed our health.

The nutritional model is to heal the body, not to suppress the symptoms. If it takes many nutrients in the beginning, they are removed as the patient responds so that in the end they are taking no additional nutrients other than whole foods.

The Problem of Antibiotics and Vaccines

The phenomenal rate of medical prescriptions dispensed for antibiotic use, and to a lesser extent, antiviral has grown exponentially in the past several decades. Antibiotic has limited specificity and generally does not recognize "good" bacteria (often referred to as probiotics or *for life*) from "bad" bacteria (meaning those bacteria that may cause disease.) Antibiotics try to destroy all bacteria and are usually unsuccessful. It is often at this point that more antibiotic therapy is started perpetuating a chronic illness. The cycle of antibiotic therapy may go on for months and months, and repetitious indiscriminate use of antibiotics destroys weak bacteria and sets up the stage for the more virulent bacteria to survive (as in survival of the fittest). The new, stronger, pathogenic bacteria are now "resistant" to the established antibiotic and another antibiotic must be found to fight the new pathogen. We are rapidly approaching that point in history of having super bacteria: disease causing bacteria that are unaffected by any antibiotic. In its failure, antibiotic therapy has taken with it the health of those same individuals it strives to help.

The latest attempt to destroy viruses and bacteria, from the medical community, is to develop vaccines against virulent bacteria such as anthrax. Vaccines have been controversial and remain highly questionable as an appropriate treatment to those of us outside the medical establishment. The introduction of "dead" bacteria into ones body holds the risk of developing the disease which it is meant to prevent. It may have undesirable side effects and is costly. It is known from previous work that vaccines can cause mutation of our DNA, making us susceptible to other diseases. For instance, smallpox vaccinations are even thought to do more harm than good.

According to USA Today reports, 15 per 1,000,000 would develop life threatening complications, such as encephalitis, after vaccination, 1 to 2 per 1,000,000 would die from complications, 530 per 1,000,000 would develop non-lethal complications from touching the vaccine site.

Vaccinations have been shown to actually cause diabetes and asthma, just to name a few complications.

Of concern are preliminary reports that vaccines, given early in life, and/or multiple bouts of antibiotic therapy throughout life, may provide the stimulus for DNA mutations. As a living part of the human body, DNA replicates itself on a regular basis. Mutations, caused by vaccines and/or antibiotics, have been implicated in neurodegenerative diseases later in life, such as Parkinson's disease and Multiple Sclerosis.

Bacteria

Not all bacteria are bad!!! Our body needs many different bacteria for the breaking down of protein, for the fermentation of sugar, the hydrolyzing of urea, the production of hydrogen sulfide, and the liquefaction of gelatin. We need bacteria in the process of manufacturing vitamin K in the intestines. There are also many "bad" bacteria we need to deal with for good health.

Understanding bacteria anatomy is important to the understanding of how natural alternatives succeed.

Bacteria have several protective layers which make them able to tolerate many different and often hostile environments. These layers of protection are what give bacteria the ability to fend off "antibiotics". Inside the bacteria, a **cytoplasmic membrane** seals in the cytoplasm and other structures. The membrane also functions as an additional barrier from outside attack. This membrane is made up of a phospholipid (a form of fat). It is this specific structure that allows bacteria the selective ability to determine what materials may enter or leave the organism. Membranes are asymmetrical, meaning that they have an "inside" layer and an "outside" layer, and each side is different, adding to the challenge of getting through this structure. Within the cytoplasmic membrane is the area where strands of DNA are found. This area, called the nucleoid, is where replication takes place.

In order for an antibiotic to work against a disease causing bacteria, the antibiotic must accomplish 3 tasks: penetrate the pathogens outer membrane, keep its own beta-lactam ring intact and adhere to the bacterial and stop the bacteria from replicate.

Viruses

Viruses are the most peculiar life form with which we have to deal. They are neither plant nor animal. They are not a different form of bacteria. They may be best described as part of the quintessential parasites living kingdom. They are not "living" organisms in the way we think an organism must be. Viruses most have a host to carry out their life functions. Without a host, a virus can't reproduce because they lack the ribosomes necessary for replication; they must use a host's ribosomes. Viruses can't store their own energy, but must take it from the host cell. Viruses will take the host cell's amino acids and use them for their own reproductive needs.

Viruses contain nucleic acid, either as DNA or RNA. They all have a protein coat called the **capsid**, which surrounds the genetic material. Some viruses are also enclosed by protective envelope of fat.

The **Capsid** is a protein envelope that encloses the particular nucleic acid. The shape may be polygonal, or rod shaped. The outer envelope, the capsid, provides special proteins that allow the virion (virus-like nucleic acid organism that is outside a host cell) to penetrate a host cell and possibly inject infectious DNA or RNA. The Capsid also functions to protect its contents of DNA or RNA, and finally the capsid provides special receptors: **spikes** on its surface that allow it to adhere to a host cell.

Viruses may also have an **outer envelope** comprised of a glycoprotein. This outer envelope surrounds the capsid, protecting it from harm. This membrane is composed of fat layers. The inner material of a virus is made up of strands of DNA or RNA.

Fungi

Fungi are simple organisms best described as parasitic life forms. This includes molds, mildew, and yeast. Mushrooms and toadstools are examples of a fungus. Fungi, like bacteria, are not all bad! Many forms are found in our body: in the mouth, intestines, skin, nails, and hair.

Fungi remain relatively harmless if a healthy supply of probiotic bacteria is maintained in the body, if sufficient levels of hydrochloric acid are present in the stomach, and/or sufficient levels of bile salts are manufactured in the gallbladder. Unfortunately the over use of antibiotic medications, immunosuppressive drugs and corticosteroids destroy the "good" bacteria from keeping fungi in check. Without the proper bacteria, fungi start to grow and multiply leading to sickness.

On-going Biological War

The war is against our body: whether it is as a bio terrorist attack with anthrax, or with any number of viruses, bacteria, fungi that we are subject to such as a staph. infection, strep. throat or influenza to name a few of the more common ailments. What we need is a good biological defense. As with any war, we must have the proper defenses to protect ourselves and to go on the attack (biologically) to eliminate the disease. The natural compounds described do just that.

We now have the ability to destroy the disease entity's outer protective membrane, making it vulnerable, and then to move in to split its DNA so that it can't survive. To bolster this armament, we can supply the compounds that starve the disease entity. At the same time, we can build up our own immune system to protect it.

The major natural compounds that do this are monolaurin, extract of olive leaf, IP6, colostrum and beta 1, 3 glucan. The supportive compounds include echinacea, garlic, golden seal, neem leaf extract, MSM, alpha Lipoic acid, L- glutathione, N-acetyl L-cysteine and DMG. There are other natural substances that could contribute to defending our body, but these are backed up with most supportive documentation.

Natural Antibacterial, Antiviral and Antifungal Agents

As we have seen earlier, disease - causing bacteria, viruses and fungi have an arsenal of mechanisms to protect them from attack by medications. They also have an arsenal of mechanisms to go on the attack.

The reemergence of using natural antibacterial, antiviral and antifungal compounds is not new. Herbal, botanical and other nutrients found or isolated from natural sources have been used for centuries prior to what we now call conventional medicine. The ability to research, document and publish the effectiveness of these natural alternatives using the same scientific criteria demanded by the scientific community is new.

Studies and research published in recognized peer - reviewed journals are increasing in volume. Many physicians who, before, would not think about even suggesting anything other than a prescription medication, are interested in reading the new literature and suggesting alternative protocols.

Monolaurin

Monolaurin is a naturally occurring organic compound found in mother's milk and in coconut oil. This monoglyceride is remarkable in its ability to dissolve the outer envelope of viruses, bacteria, fungi, and certain protozoa. Monolaurin is made up of lipids (fats) and phospholipids. Most familiar is the triglyceride tested in cardiovascular risk assessments. Remember in our earlier discussion that the first obstacle in attacking pathogenic bacteria and viruses is getting through their outer protective membrane. Monolaurin does this. By destroying the outer membrane, the bacteria and virus is now rendered vulnerable to further destruction. Antibiotics do not dissolve the outer membrane. Their goal is to get through pores (porins), which can shift position. Monolaurin has also been reported to interfere with bacteria and viral ability to reproduce. This is accomplished by interfering with signal transduction, causing failure for the bacteria or virus cell to replicate (reproduce).

Monolaurin destroys lipid coated (fat coated) viruses and bacteria. This includes Herpes, Chlamydia, helicobacter pyloris, Epstein Barr, and influenza, just to name a few. There are many pathogens against which Monolaurin is effective. A significant pathogen that seems to be susceptible to Monolaurin is HIV. Within the past few years, a number of studies have been under way, studying the highly successful treatment of Monolaurin against the HIV.

There are economic and political reasons why this low cost, safe, and effective natural compound, derived from mother's milk and coconut oil is not known to many. Suffice it to say that it is time to give credit back to coconut oil.

Clinical trials using monoglycerides such as monolaurin for destroying bacteria, viruses and fungi are on the rise. The journal *Antimicrobial Agents and Chemotherapy,* Nov 1999, vol. 43, no. 11 published "*In vitro susceptibilities of Neisseria gonorrhoeae to Fatty Acids and Monoglycerides".* This paper clearly states in the abstract that the susceptibility of Neisseria gonorrhoeae (gonorrhea) to several medium-chain fatty acids and their 1-monoglycerides causes the fastest and most effective killing of all strains of N. gonorrhoeae. Other studies are being prepared as the possibility of using monolaurin for SARS. Most encouraging is the United States Government now actively soliciting patients who have the disease nonbullous congenital ichthyosiform erythroderma to be treated with monolaurin cream.

As you see, monolaurin provides the ability to "get through" the outer defenses of bacteria, viruses and fungi. Clinical studies and published research papers document the efficacy of using monolaurin. The next step in destroying pathogenic organisms is to damage their ability to reproduce.

Extract of Olive Leaf

There are biblical references to the olive leaf. A passage in Genesis states that a dove delivered a freshly picked olive leaf to Noah telling him that the flood had receded. In revelations near the end of the Old Testament, there is an angelic vision of a "tree of life" whose leaves "were for the healing of the nations." The olive tree has had many uses throughout the millennia. We are aware of the oil produced by the olive tree, but its leaves may hold the key to health, as the bible may have been suggesting.

The ancient Egyptians used the olive leaf as part of the mummification process. Published in the *Pharmaceutical Journal* in 1854, the use of the olive leaf is described to treat malaria. A potion was made by boiling olive leaves and its concentrated mixture was drunk. In the early 20th century the compound, **oleuropein**, was isolated and identified as the active ingredient of the olive leaf that provided the antiviral, antibacterial and antifungal potential.

In the "war" against disease causing bacteria, viruses, and fungi, extract of olive leaf, or oleuropein, provides several devastating effects to these pathogens. Olive leaf splits or cleaves their DNA structure, crippling their ability to replicate. Olive leaf interferes with reverse transcriptase and protease production in viruses. This prevents viruses from taking over a host cell. Finally, olive leaf prevents viruses from spreading by stopping their shedding, budding and cellular assembly instructions.

Another active ingredient in the olive leaf, calcium elenolate, has been shown to be ***lethal*** to a number of pathogenic bacteria, viruses and fungi. Research, from *Upjohn* and published in the *J. Antimicrobial Agents and Chemotherapy* list 56 pathogens inhibited by Olive leaf including herpes, parainfluenza, encephalomyocarditis, Newcastle's Disease, some forms of polio, and plasmodium falciparum (virus that causes malaria)

Morton Walker, MD states in his book *"Natures Antibiotic: Olive Leaf Extract"* by Kensington Books, New York, 1997, pps. 65-68 that olive leaf inactivates smallpox, Ebola, plague, Epstein-Barr and is effective against protozoan caused diseases.

Extract of olive leaf is very powerful and has been documented in laboratory tests to destroy anthrax and the plague. When taking extract of olive leaf, care should be taken not to take too much at any given time. It can kill too many bacteria or viruses too quickly, causing a "dying off" effect. This **"Herxheimer reaction"** can make you feel ill but is temporary. Once the reaction subsides, the patient may feel great. In this formula, the appropriate dosage prevents this interesting reaction.

IP6

Inositol hexaphosphate (IP 6) is a naturally occurring polyphosphorylated carbohydrate found in almost all animal and plant cells. It is a component of fiber found primarily in grains and legumes. There are several forms of IP 6: *myo* – Inositol hexaphosphate is found in plants while the *neo*-, *chiro*- and *scyllo*- Inositol hexaphosphate forms are isolated from soil.

With chemical positioning of the phosphate molecule in the axial – equatorial – axial or 1,2,3 positions, IP 6 provides an extremely valuable property in combating viruses, bacteria and fungi: the ability to block their use of ***Iron***. Iron is the **energy** used by pathogenic bacteria, viruses and fungi. It is important to note that IP 6's function to block iron is a significant player in destroying cancer cells that need iron to proliferate.

Iron allows "bad" bacteria, viruses, fungi and cancer cells to grow. As food is to our well – being, iron is to the disease causing pathogens. IP 6 effectively starves bacteria, viruses and fungi to death!

Research as to the role of IP6 as an anticancer treatment follows the same course as for bacteria, viruses and fungi. Cancer uses iron as its energy for spreading itself. IP6 prevents cancer growth and starves it to death by depriving it of "it's" food – iron. It is believed that the pathogen's use of iron leaves a chemical trail. It is this "trail" that allows extract of olive leaf to "find" the disease causing pathogen and destroys it. Several studies have shown how IP6, taken as a supplement, can work against these cancers. Opinions that administered IP6 can't be taken up by malignant cells have been proven wrong.

Like the other natural compounds explained above, IP6 is involved with signal transduction. It prevents the pathogens from replicating themselves. It is an important expectation that a good antibacterial or antiviral therapy affects only the pathogenic cells and tissues while not interfering with healthy tissue. While prescription antibiotics are indiscriminate and destroy all "good" along with the "bad", IP6 does not affect healthy tissues.

Colostrum

As part of the total picture of protecting yourself against disease - causing bacteria, whether it is of the bioterrorist kind, or other bacteria, viruses and fungi, or treating the disease, we want the ability to enhance our own immune system. The immune system is that part of us which goes on the attack to destroy disease causing pathogen(s). The white blood cells, or lymphocytes, are blood cells that "seek and destroy" foreign matter.

Colostrum is the mammary secretion called "mother's milk" supplied to babies within hours after delivery. Colostrum provides a number of beneficial properties. Bovine colostrum, is often used because it is biologically accepted by all mammals. Of all its properties colostrum imparts the immunoglobulins A, D, E, G and M usually written as IgA, IgD, IgE, IgG and IgM. Most of the immunoglobulins are antiviral and antibacterial. They build up our immune system by modulating the Thymus gland, the center of our immune system production. The Thymus gland produces "T" cells and "B" cells.

Approximately 60% of the immune system resides in our "gut". A lowered resistance of the immune system to attack by pathogenic bacteria, viruses and fungi can be attributed to various bowel problems such as irritable bowel, candidiasis, "leaky gut" syndrome, chronic constipation or diarrhea. Many of these bowel problems have their causation as stress induced, or poor dietary habits.

Lactoferrin , contained in colostrum, is an extremely important hormone that helps to regulate the Thymus gland, building our immune system. Lactoferrin is a proline-rich polypeptide (an amino acid). Lactoferrin, by itself, is a powerful antibacterial, anti-inflammatory agent. A significant contribution lactoferrin provides in this overall assault against disease is its ability to bond onto iron, rendering it unavailable for use by the bacterial and viral pathogens. Lactoferrin works much the same as IP 6, by having the ability to "starve" the disease entity to death.

Beta 1, 3 Glucan

Beta 1, 3 Glucan is a polysaccharide; a complex carbohydrate. Usually isolated from brewer's yeast, it is also obtained from some mushrooms and cereals. Because beta 1, 3 glucan does not contain any of the yeast proteins, it is acceptable to people who have sensitivities to yeast. The beta 1, 3 glucan in itself is devoid of those proteins causing allergic sensitivities. Considered to be the most powerful stimulator in activating our immune system, beta 1, 3 glucan is safe, non – toxic and shown to be effective even as an oral administration.

In order for our immune system to function properly, large white blood cells called macrophages (a type of lymphocyte) must be "activated". Macrophages are usually immobile and become activated in the presence of bacteria, viruses or other foreign material. This activation starts with a regulator called "cytokines" which tells Beta 1, 3 glucan to mobilize the white blood to "go on the attack". Once mobilized, the macrophages seek out viruses, bacteria and other foreign material, and destroy them. This is an extremely important defense for our body as there are so many factors that reduce our ability to mobilize our immune system. Suppressed immune systems, from poor dietary habits, antibiotic therapy, stress and other factors, such as the air we breathe and the water we drink, all reduce the efficiency of our immune system to be "mobilized" against those pathogenic bacteria, viruses fungi and other foreign material.

Much of the research on beta 1, 3 glucan is published studies as it relates to cancer cells, but the mechanism is the same: to mobilize our immune system. The specific mechanism is very complex. In a paper published in the *Int. J. Immunopharmacol*, May 22, 200, the authors list a number of activities attributed to beta 1, 3 glucan: Interleukin-6 synthesis of macrophages in vitro; antagonistic effect for zymosan – mediated tumor necrosis factor synthesis for macrophages; augmentation for lipopolysaccharide - mediated tumor necrosis factor and nitrogen oxide synthesis of macrophages; activation of alternative pathway of complement; hematopoietic response on cyclophosphamide induced leucopenia; antitumor effect on ascites from tumor; enhanced vascular permeability; priming effect on lipopolysaccharide -triggered TNF-alpha synthesis, and adjuvant effect on antibody production.

Supportive Nutrients

Goldenseal The rhizome and root of the goldenseal plant contains hydrastine, berberine and a resin – canadine. Berberine seems to be the ingredient that acts as an antibiotic and immune system stimulator. It has a synergistic enhancive effect when taken with Echinacea and/or garlic. Goldenseal actives and mobilize macrophages (the large white blood cells that attack bacteria, viruses, fungi and other foreign matter in our body). It also has the ability to inhibit tumor formation, suggesting anti cancer or anti tumor ability.

Hydrastine and berberine are alkaloids and provide the antimicrobial effects of goldenseal. To perverse goldenseal's dwindling resource, it is added in extremely small and almost negligible amounts just to stimulate the synergistic activity of echinacea and garlic.

Echinacea Echinacea purpurea is a water soluble polysaccharide, a complex carbohydrate, (4-0-methyglucuronylarbinoxylans and acidic arabinorhammogalactans) that increases number of white blood cells, mobilizes the white blood cells of our immune system to "go on the attack", elevates body temperature, stimulates the reproduction of T – helper cells, and stimulates the production of cytokines (cytokines provide the right messages for the mobilization of the macrophages) including interleukin – 1, interleukin – 6 and TNF – alpha.

Garlic Who has not heard of garlic? It seems to fit an old adage that it is "good for what ails you". The botanical name for garlic is allium sativum and is also known as clove garlic or Poor Man's Treacle.

To date, there are at least 33 different compounds found in garlic. The main compounds of medicinal use in garlic are the alliins which are alkylcysteine sulfoxides: allyl-L-(+)-cysteine sulfoxide gamma-glutamyl conjugates which become allicin (diallyl-disulphide-mono-S-oxide, it is the substance in garlic believed to be responsible for garlic's antibacterial effects), cycloaalliin, vinyl dithiins, diallyl-di (This is the "essential oil" of garlic credited as being able to reduce cholesterol and to lower lipid levels in the blood.), trisulphides, alliin (a sulfured amino acid and is considered an antibiotic) and selenium, a strong antioxidant.

Garlic has been shown to be of benefit in many health issues but for the purposes of this discussion the compounds listed above serve to make garlic a supportive natural antibacterial, antiviral and antifungal agent.

Dr. Arthur Stoll, a Nobel Prize Laureate showed in the 1940s that the compound alliian, a sulfur ontaining amino acid in garlic, is a strong natural antibiotic and antifungal agent. Russian studies by Drs. D.B. Dubova and E.P. Leskinov established garlic to be effective against bacteria such as Staphylococcus and escherichia coli (E. Coli.)

Glutathione, N-Acetyl-Cysteine and Alpha Lipoic Acid These are the potent *anti* oxidants in the formula. An antioxidant is any substance that stops the break down of our oxygen molecules. The destruction of oxygen, called *oxidation* poses a most serious threat to our wellbeing. The oxidizing effects from the food we eat, the air we breathe and through the water we drink is the starting point for disease, inflammation and all degenerative changes in our body. The process of oxidation leads to cell death and ultimately to our death. Along the way, we lose our ability to fight disease by suppressing the immune system. This suppression allows bacteria, viruses, parasites, fungal infections and tumors to grow. The medical approach in supplying antibiotics and other drugs may provide some measure of relief from the symptoms, but in the long run often contributes to our death in part due to oxidative stress.

The onslaught of herbicides, pesticides, hormone regulators, preservatives in our food, chemicals and other pollutants in the atmosphere and the newly discovered leaching of antibiotics, antidepressants and hormones in our drinking water we are continually bombarded with toxins that lower our immune system.

Glutathione is a small protein that has been extensively studied. A quick search on Medline on the Internet will reveal over 40,000 scientific papers on the antioxidation effects of glutathione. Glutathione functions ***inside*** all of our cells while N-Acetyl L-Cysteine functions ***outside*** the cell. By combining both antioxidants into one product, all tissue areas are covered.

NEEM Leaf The neem tree (azadirachta India), native to India and Burma, produces a variety of compounds found to be effective ingredients against viruses, bacteria, and fungi. Each part of the neem tree has use either as a medicinal preparation, for cosmetics or for pest control. It is the compounds found in the neem leaf that exhibit remarkable antibacterial, antiviral and anti fungal qualities.

Compounds of the Neem leaf are azadirachtin, gedunin, nimbin, nimdibin, nimibidol, queceretin, salannin and sodium nimbinate. These compounds have been shown to stimulate macrophages (our white blood cells) to attack the foreign virus, bacterial or fungal particles. The macrophages then provide pieces of these pathogens (as antigens) to helper T cells. The T cells then release messenger chemicals (cytokines) to tell the immune system what to attack. It provides interferon-like activity, blocking replication and strengthens the immune system.

BioDefender against Bioterrorist Agents: BioDefender as an Anti - Bioterrorist Supplement

As the idea for this formula was a response to bioterrorist attack, it is certainly a good product for that purpose. All ingredients in this formula are specifically documented to destroy bacteria, viruses and fungi. Other ingredients are provided to protect our immune system or build it up. BioDefender is not only “defending” our body from bio-terrorism, but also goes “on the attack” to destroy pathogens.

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BioDefender Testimonials

1. **ID 1001 – Environmental allergies**: 39 yr. Cauc. Male with environmental allergies every spring. He has been taking Claritin. Took BioDefender and within one week, his allergies ...cleared up”. He stopped taking Claritin, first time he has not needed to use this medication in 4 years.

2. **ID 1002 - Rosacea**: 30 Yr. Cauc. Female with *Rosacea*. Patient has been on tetracycline therapy for 5 years for her skin condition. The tetracycline clears up the skin lesions and when they start to appear, usually within the next month or so, she must return to her MD for another round of tetracycline therapy. The patient started using the BioDefender with the first signs of the skin condition returning. It is usually at this time she must see her MD for tetracycline prescription. Instead she took BioDefender. The skin condition cleared up ("dried up" as her states it) within 4 days and has not returned. She is currently taking one BioDefender capsule a day as prevention. It has been 5 weeks now since she started the supplement and her skin is fine.

3. **ID 1003** – **Arthritis**: 68 yr. old male Cauc. took BioDefender for a "lingering cold" of 6 weeks duration. The cold "cleared up in 3 days. At this time, he showed me that he could raise his right arm over his head and behind his back. These are motions he has not been able to perform for over 5 years due to "arthritis". He claims that taking the BioDefender has resolved the arthritis. (There is a theory that some arthridities may be viral in origin.)

4. **ID 1004** – **H. Pylori**: 55 yr. Cauc. Female with Dx of H. Pylori – Started taking BioDefender and within one week, all symptoms of heartburn, etc. were gone. Will be retesting for presence of H. Pylori.

5. **ID 1005 - Arthritis**: 54 year old Cauc. Female with osteoarthritis pain of many years duration. Her husband dispensed BioDefender and within 1 week, the arthritis pain was gone.

6. **ID 1006** – **Candida Albicans**: 65 Year old Cauc. Male with Candida Albicans overgrowth documented by a comprehensive stool analysis. After 4 weeks on BioDefender, re examination showed no Candidiasis.

7. **ID 1007** – **Lyme Disease**: 68 yr old Cauc. male diagnosed with Lyme Disease. He was bitten in August and started to feel extremely fatigued and ill in October while on vacation. He went to the hospital and blood work identified Lyme disease. He was immediately placed on a course of antibiotic therapy and told that it would take anywhere from 6 months to a year to recover. The patient developed nausea and felt worse after the first day of antibiotic therapy. He stopped the medication and was immediately placed on BioDefender. At the end of two weeks, all of his symptoms were gone. He no longer had the fatigue and weakness, low grade fever, and the other symptoms of Lyme disease.

8. **ID 1008** A **medical doctor having chronic sinus infections** decided to try BioDefender after 3 courses of antibiotic therapy lasting 3 months each time. Within 3 days of taking BioDefender, the sinus infection cleared up. He remained on the BioDefender at ½ dosage for a week thereafter. He has not had an infection now for 6 months.

9. **ID 1009** A 65 Yr. old Medical doctor states that he has had the "start" of a cold 3 times in the past 3 months. Every time, he started on the BioDefender. "Each time I took the BioDefender, the cold cleared up overnight". "I now dispense BioDefender to my patients instead of antibiotics".

10. **ID 1010** 32 Yr old Male having chronicindigestion, bloating, skin rashes. Laboratory diagnosis of **Aeromonas Sobria, a pathogenic (disease causing) bacteria.** Took BioDefender for 2 weeks and ran the lab work again. This time, the test was negative. There were no more pathogenic bacteria in his gut. His symptoms were gone.

11. **ID 1011** 55 Yr old female with ear infection. The patient opened the BioDefender capsules, diluted it in a little water and put a few drops in the infected ear at bedtime. The ear pain and inflammation were gone the next morning.

12. **ID 1012** 60 Yr old female diagnosed by her MD with **"the flu**". The patient refused antibiotics, knowing that the "flu" is viral, not bacterial in origin. She used BioDefender as directed and reported that her symptoms were all gone by the end of the second day when she discontinued treatment.

13. **ID 1012** 19 Yr old male attending college having symptoms of a **"cold":** runny nose, watery eyes, chills, muscle pains, etc. Started taking BioDefender and all symptoms were gone in 2 days.

14. **ID 1013** 38 year male diagnosed with sinus infection. He came to my office feeling "sick". He has had an infection for over 5 weeks and has been on several rounds of antibiotic therapy. He has sinus pressure behind the eye and is unable to sleep due to the pressure and inability to breathe easily. The patient stopped antibiotic therapy as it was not working at all and started BioDefender. After 3 days, the sinus pressure reduced and the symptoms of congestion started to abate. By the end of 5 days, the patient was well. Sinus pressure all gone.

15. **ID 1014 -** 36 year old female. This patient had no health problems until the birth of her fourth child in the Fall of 2005. After delivery, she immediately developed right shoulder pain, then within a few days, left elbow pain. The joint pain started to "spread" and she developed pain in many other joints such as the fingers, wrists, knees, etc. Some of the joint pain would become less while others would increase. Her medical doctor ran blood work to rule out various arthritis possibilities including Lupus. All testing was negative. Because there were no positive findings, no medical intervention was performed. An interesting note on the hospital records stated that there was an internal mixing of fetal blood with her blood during the birthing process. Because all testing has been negative, the suggestion of a viral infection causing polyarthralgia (multiple joint pain) was present. The patient has now suffered with this pain for over 7 months. BioDefender was dispensed for the patient to take, as directed. After 10 days, the patient called my office, very excited, to state that the pains were all going away. She remained on the BioDefender for another two weeks at which time, she no longer had any symptoms and discontinued the supplement