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PUBLIC HEALTH ALERT

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Mitochondrial Dysfunction and Disease: Loss of Mitochondrial Function in Chronic Diseases and its Reversal with Lipid Replacement Therapy

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***The author has no financial interest in the products discussed in this contribution**

Abstract

Loss of function in mitochondria, the key cell organelle responsible for cellular energy production, can result in cell death, excess fatigue and other symptoms that are common problems in almost every chronic disease. These include: neurodegenerative diseases, diabetes and metabolic syndrome, cardiovascular diseases, autoimmune diseases, neurobehavioral and psychiatric diseases, musculoskeletal and gastrointestinal diseases, fatiguing illnesses, cancer and chronic infections, among others. At the molecular level reduction in mitochondrial function occurs when there is loss of mitochondrial maintenance, resulting in reduced efficiency of the electron transport chain. Lipid Replacement Therapy using an all-natural nutritional supplement mixture containing membrane phospholipids, mitochondrial cofactors and other ingredients can be used to repair mitochondrial damage, improve mitochondrial function and increase the efficiency of the electron transport chain. Recent clinical trials have shown the benefits of Lipid Replacement Therapy in enhancing mitochondrial function, reducing fatigue and improving mood and cognition.

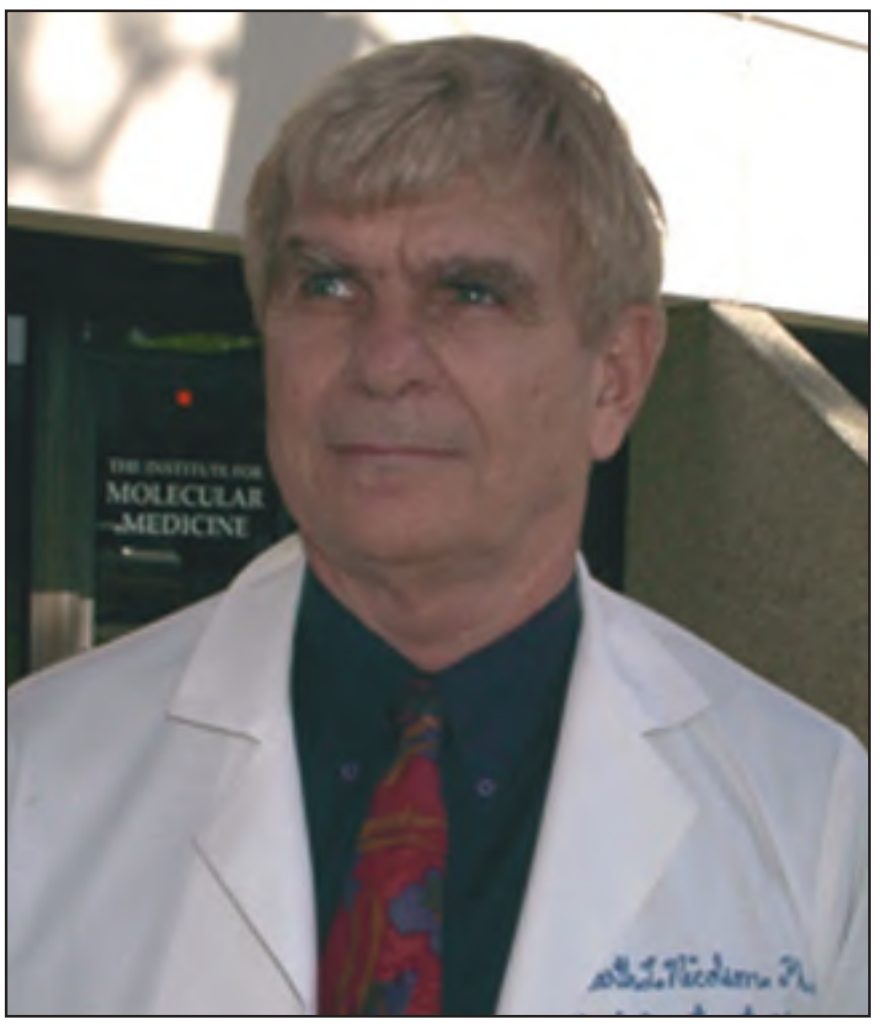
Introduction

Mitochondrial dysfunction, characterized by loss of efficiency in the electron transport chain in mitochondria, the chief organelles inside cells that produce high-energy molecules such as ATP, is a characteristic of aging and essentially all chronic diseases[1-4] The disease list includes: neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Friedriech ataxia; [1, 2, 4, 5] cardiovascular diseases, such as atherosclerosis and other heart and vascular conditions;[6, 7] diabetes and metabolic syndrome;[8-10] autoimmune diseases, such as multiple sclerosis, systemic lupus erythematosus and type 1 diabetes;[11-13] neurobehavioral and psychiatric diseases, such as autism spectrum disorders, schizophrenia, bipolar and mood disorders;[14-16] gastrointestinal disorders;[17, 18] fatiguing illnesses, such as chronic fatigue syndrome and Gulf War illnesses;[19-21] musculoskeletal diseases, such as fibromyalgia and skeletal muscle hypertrophy/atrophy;[22, 23] cancer;[24, 25] and chronic infections.[26, 27]

The ability to produce high-energy molecules like ATP in mitochondria is directly related to the ability of the electron transport chain to pump protons across the inner mitochondrial membrane, creating a transmembrane proton and electrochemical gradient that drives ADP phosphorylation to ATP.[28, 29] A byproduct of this process is the production of Reactive Oxygen Species (ROS), highly reactive free radicals that are produced as a consequence of oxidative phosphorylation and can damage mitochondrial lipids, proteins and DNA by oxidation.[30-32] However, there are mechanisms to control the excess production of ROS, and one of these is to produce a control leak of protons back across the inner mitochondrial membrane by inducing uncoupling proteins that allow protons to flow back across the proton gradient.[29] In the absence of controlled proton leakage, excess oxygen consumption and resulting ROS production can damage mitochondrial membrane lipids, such as the very ROS-sensitive inner mitochondrial membrane cardiolipin. Oxidative damage of inner mitochondrial membrane cardiolipin and other membrane phospholipids can cause increased proton and ion leakage back across the inner membrane and partial loss of the electrochemical gradient-thus causing mitochondrial dysfunction,[33] which is seen as increased ROS generation and reduced ATP production while still consuming oxygen.

Mitochondrial Function, Fatigue and Natural Supplements

In humans mitochondrial function is related to fatigue. Fatigue is considered a multidimensional sensation that is perceived to be a loss of overall energy and an inability to perform even simple tasks without exertion. At the cellular level fatigue is thought to be related to loss of mitochondrial function and production of ATP.[34, 35] Chronic fatigue or intractable fatigue lasting more than 6 months that is not reversed by sleep is the most common complaint of patients seeking general medical care.[36, 37] Chronic fatigue is also an important secondary condition in many clinical diagnoses, often preceding patients' primary diagnoses.[38] Chronic fatigue has been directly related to loss of mitochondrial function[39] and production of ATP.[40]



Professor Garth L. Nicolson, PhD.

Although natural supplements have been used to reduce fatigue, few are considered effective. [41, 42] However, Lipid Replacement Therapy (LRT) or the use of food-derived molecules for the natural replacement of damaged, mainly oxidized, membrane lipids in mitochondria and other cellular organelles has proved very effective at reducing fatigue.[25, 35, 39, 41, 43] To some degree, antioxidant supplements can reduce ROS and prevent some mitochondrial oxidation, but antioxidants alone cannot repair the damage already done to cells, and in particular, to their mitochondrial membranes.[41, 43-45]

Lipid Replacement Therapy and Fatigue

LRT plus antioxidants have been effective in the treatment of certain clinical conditions, such as chronic fatigue.[39, 41, 43, 46,] LRT results in the actual replacement of damaged cellular phospholipids with undamaged (unoxidized) phospholipids to ensure proper function of cellular membranes. Combined with antioxidants, LTR prevents oxidative damage to cellular structures and functions and is useful in the treatment of various clinical conditions.[25, 35, 39, 41, 43] LRT can repair mitochondrial membranes, increase mitochondrial function, and decrease fatigue in chronic fatigue syndrome, fibromyalgia syndrome, and other conditions, including aging (Table 1). When mitochondrial function was followed in parallel with fatigue in a controlled crossover clinical trial, there was a close correspondence between loss of fatigue and gains in mitochondrial function.[39]

Lipid Replacement Therapy with Membrane Phospholipids, CoQ10, and NADH

A new LRT formulation of membrane phospholipids (polyunsaturated phosphatidylcholine, phosphatidylglycerol, phosphatidylserine, phos

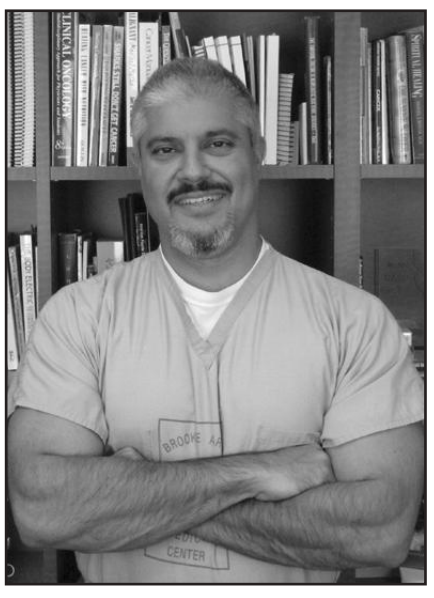
"Mito" ... cont'd pg 5

Table 1. ***Dietary LRT Supplementation Reduces Fatigue Scores in Chronically Ill Patients[a]***

Subjects/patients	n	Average Age	Time on LRT	Piper Fatigue Scale (PFS) fatigue reduction (%)	Reference
Chronic fatigue	34	50.3	8 weeks	40.5**	Ellithorpe et al.[46]
Aging, chronic fatigue	20	68.9	12 weeks	35.5*	Agadjanyan et al..[39]
Chronic fatigue syndrome (and/or fibromyalgia syndrome)	15	44.8	8 weeks	43.1*	Nicolson & Ellithorpe[43]
Aging, fatigue	67	57.3	1 week	36.8*	Nicolson et al.[47]
Chronic illnesses	58	55.0	8 weeks	30.7*	Nicolson et al.[48]

*[3]Modified from Nicolson and Settineri[35] **p < 0.0001, *p < 0.001 compared to without LRT*

A Word on Detoxification



by Dr. Rashid A. Buttar, D.O.

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Congratulations! I applaud you for getting this far and making such an enormous commitment to yourself and your loved ones to take back control of your own health. Embrace the 9 Steps I speak about in my book "The 9 Steps to Keep the Doctor Away" and your life will never again be the same. You've been given a road map to optimum health, regardless of your current health status. It's my sincere desire for you to live the life you deserve, one that's filled with vitality and happiness. Every single person can have this, but it won't be served on a silver platter for you!

Do these 9 Steps always work? In a word, "Yes" . . . they always work! They are not based on theory or even merely my experience. Rather, they are based on natural law-the immutable laws by which the Creator designed the human body and all its self-healing systems. Depending on your current state of health before embarking on the 9 Steps, it may take you longer than others. You may even need the intervention of a competent and experienced physician who can help you get to this point until you no longer need them. In fact, that's always been my primary goal when I treat someone: to get them to a point where their own innate healing mechanisms become functional again and they no longer need me.

If you fall into this category of having a major medical condition or having a condition that has your doctor baffled to the point they're trying one medication after another, desperately trying to get you some relief-then this last chapter will be the most important one for you. I would strongly urge you to review the Three Foundations again, especially the first one, detoxification. I urge you to make the commitment to pursue the proper methods of detoxification indicated for your condition. I also strongly suggest that you begin your journey back to health by, first and foremost, understanding the necessity for proper detoxification. If you don't achieve effective detoxification, you will never regain what you hope to be able to regain.

If anyone's story you've read or heard has ever resonated with you, or if you recognize some of their situations, it's in your best interest to find a doctor who understands the seven toxicities. If your story is nothing like the ones you read or heard except that you could relate to the frustration or hopelessness in cases where all treatments attempted simply failed, or if your story is just that none of the specialists can figure out what's wrong with you, then you especially need to see a doctor who understands the seven toxicities.

No matter what you may be dealing with, be it heavy metals, persistent organic pollutants, or one of the other forms of body burden I've mentioned, there are specific detoxification methods to address each individual concern. By ridding your body of these roadblocks, you can make the journey back to health-to a place that's not just a mere existence but one where you thrive and grow and actually live your life again. If you're going to such great lengths to reclaim your God-given state of natural health, you need all the advantages on your side.

The only thing that can derail your progress is if your body is not properly detoxified. I cannot overemphasize the monumental importance of detoxification in any healing process. Unless the toxic burden is lifted from your body, your body will not be able to mend itself effectively. That's why many people who make a sincere commitment to reclaim their health finally quit, discouraged and bewildered after failing to see the results they expected. The reason they fail is because they either never knew there was a hidden component sabotaging them every step of the way or they didn't know how to effectively eliminate that sabotaging component. Their body wasn't able to divert resources to getting better and healing because it was too busy trying to simply survive, continuously spending all its resources putting out the internal fires of inflammation and oxidation.

There are two routes that you can pursue to determine an effective course of action for your particular situation. First, review the videos on toxicity at www.factsontoxicity.com. Next, get familiar with the 3 Foundations, 9 Steps and 7 Toxicities I teach in my book. It's hard finding the right doctor within a reasonable distance who has special training to help you regain your God-given right to live a happy and healthy life. You can go to www.abcmt.org as one source to choose a certified physician to help you begin your journey back to recovery.

You can also find a listing of physicians who have been personally trained by me at www.centersforadvancedmedicine.com I'll just mention here that I personally handpicked this select list of doctors. They were not able to buy their position on this list, and they were selected not only on the basis of their medical ability but also on their attitude toward healing. Obviously, I can't guarantee they'll be able to help you, but what I can guarantee is that they are exceptional doctors and they will do everything they can to help you get better.

A Word on the Philosophy of Healing

Make sure that you are comfortable with the physician you choose to help you in your journey to recovery and maintain open lines of communication with them. Never compromise on who your doctor is because a good doctor is as rare of a commodity as a good mechanic. When you find one and you "connect" with him or her, you know you're on your way to regaining your health.

Never take anyone's word for anything, especially when it comes to your health. That goes for me as well. Just because I wrote it here, don't take my word blindly. Do your own research and search for the truth. It will become very evident to you as long as you keep your mind and your heart open and receptive. There are far too many doctors, health regulators, politicians, health systems, insurance companies and pharmaceutical corporations who are willing to compromise your well-being for their personal profit. Hopefully, you didn't need to hear this from me and you were already aware of this intuitively. However, what you may not recognize-yet this is essential in order for you to fully recover-is that you must take responsibility. You are ultimately responsible for your own health.

To blame a book, doctor or TV show for advice that may not be accurate for you is just an excuse to shift responsibility to someone else. By doing so, you are essentially giving your power away to someone else. When it comes to your own health, don't blindly believe everything you read or see on TV. In fact, don't believe most of it. Always challenge the source of the information and trust your instincts when it comes to the validity of the message being presented. Never be afraid to question a doctor. Even me! If a doctor is offended that you questioned them, here's a little advice: Find a different doctor! As physicians, we may be wearing the white lab coat and carrying the big title, but you are the expert when it comes to your own body. Only you know how your body reacts and feels "inside."

The most sophisticated piece of machinery God created was the body you're living in right now. Human beings have yet to create anything that comes even close to the intelligence and resiliency of the very body they inhabit. When it comes to sheer efficiency, even the most complex computer systems fade in comparison. Part of the marvel of this machine we call our body is how it was designed to react in certain scenarios. We've come to call the study of these reactions and processes "physiology." Take time to sit quietly and listen to what your body is telling you. Listen to your physiology and let it tell you. Deep down, your body knows what it needs and is speaking to you all the time. Never second-guess it, and always follow your intuition, especially when it comes to asking the questions you need to have answered. Never hesitate to ask and always listen for the answer.

Getting Out of the Way

When the most sophisticated biological organism gives us a message that something harmful needs to be moved out immediately, does it makes sense to block the process? In our arrogance of going against the natural design of the human body, we claim to be more intelligent than the One who created it, and in response, we suffer from the consequences of our meddling. More accurately, the patient suffers the consequences. In a situation where the symptom would last only three to four days before the body "self corrects," we arrest the process of correction, forcing the body to keep the toxins inside where they do more damage over a longer period of time.

Let's look at an example using a very common problem that physicians try to deal with to illustrate this point. Let's use a case of diarrhea, for instance. Typically speaking, diarrhea is a natural response to some sort of gastrointestinal irritation. It could be an infection from a bacteria or a virus, or it could be because something you consumed was not fit to be consumed or going bad. Generally, diarrhea is self-limiting, meaning that it will go away by itself and usually lasts just two to four days. In certain conditions, diarrhea can last for far greater periods if there is a serious underlying issue, but this isn't typical.

In the vast majority of cases, the culprit is a virus or bacteria (food poisoning) and the diarrhea is the body's natural detoxifying response to expel it as quickly as possible. In fact, that's how God designed our systems, with a feedback mechanism built in. If you touch something hot, you immediately pull your hand back. Similarly, when you ingest something that is detrimental to the body, it will respond with vomiting or diarrhea or both to get rid of the offending substance you ingested. Still, doctors just love to prescribe medicines to stop the diarrhea. Why? By doing so, a condition that would have lasted a few days now takes seven to ten days to resolve.

One of the editors reviewing my manuscript commented that the explanation I just presented didn't address why doctors prescribe the medication that causes the condition to last longer. In the interest of clarity, allow me to explain. Doctors don't prescribe to make it (diarrhea, in this example) last longer. Doctors are trained to prescribe, and that makes the condition being treated last longer.

The Warnings

It's this type of approach in medicine that has gained favor in the last fifty years and has come to be known as "symptom management." Masking symptoms with medication is a dangerous trend that has gone on for far too long. If you keep turning up the radio so you don't hear the knocking in your car engine, the motor will eventually burn up completely. Outside of emergency care for broken bones and trauma, modern medicine has made an art form out of getting in the way of the infinitely intelligent processes of the human body-to disastrous effect.

Having said that, however, and in defense of doctors, I have to say that that's all we've been taught to do-how to "block" things. That's why we (doctors) use "beta blockers" and "calcium channel blockers" and so on. In fact, the mechanism of practically every drug is to block something from happening. That's mostly what medicine has become today, getting in the way of the body and preventing it from doing its own work. Common sense dictates that we should allow the "bad stuff " to get out. Who'd want to carry around a backpack full of liquidy, smelly, festering stool for the next seven days?

Yet, that's exactly what tens of thousands of people are doing every day when they are unnecessarily prescribed medication for diarrhea. This holds true for every message your body gives you, whether it's a heartburn, headache, rash, swelling, allergies or anything else. An outward manifestation is always a signal to look deeper and find the cause. To cover up the symptom with a drug is like removing the fuse from the warning indicator on the dashboard of your car.

Sure, you don't see the symptom anymore because the fuse was taken out. We're now lulled into our false sense of security because the flashing light on the dashboard is no longer flashing and annoying us. But it was that very symptom you covered up (removed) that was trying to warn you that your engine is about to blow. And if you ignore the symptom or cover it up, your engine will blow. The body knows what it

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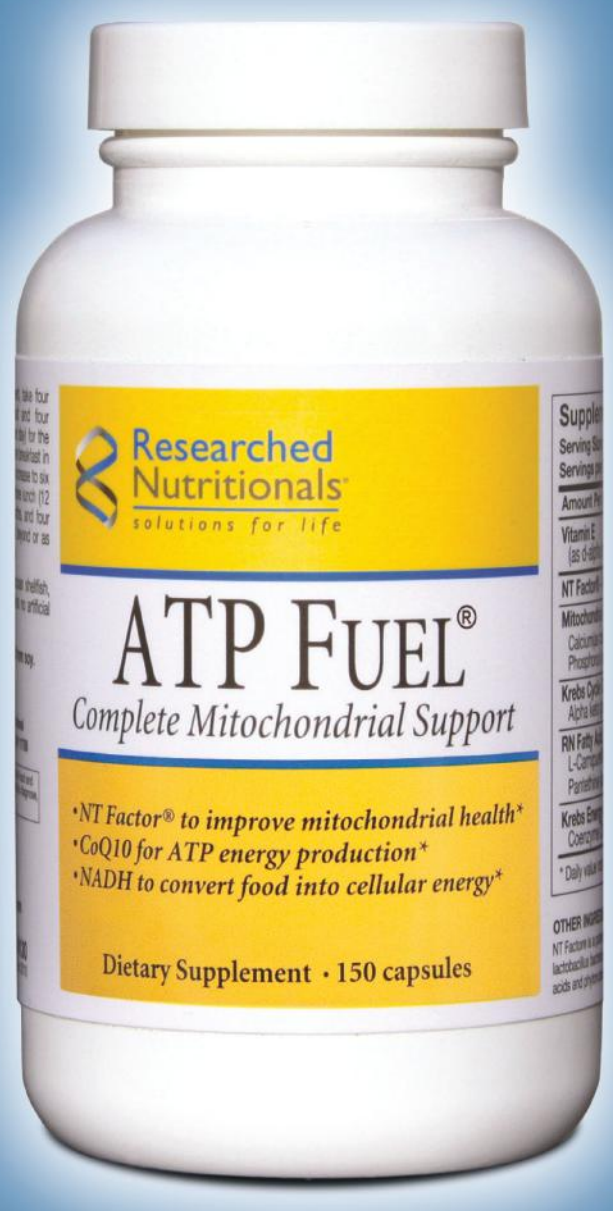

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FEATURE

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needs to do. The problem is most of us keep hitting the override switch of our body's signaling systems, and when that's not sufficient, we go to a doctor and have them override the system with stronger over riders meant to block even more reactions.

The bottom line is that "killing" the messenger (symptom) with a drug is never the smartest or best course of action. In fact, it's the worst possible option you can choose. Listen to your body!

Embrace the signals it's providing. Don't suppress the message by covering it up. And run from any doctor who simply wants to flip you a prescription and push you out the door. You deserve better. And if you want to get healthier and stay healthier, you must demand better.

Good Medicine Is Your Choice

There are many doctors practicing in multiple specialties with long titles. It doesn't matter if the doctor is trained in cardiology, neurology, rheumatology, gynecology, oncology or anything else. There are really only two specialties in medicine-methods that work with the body and methods that work against it. Patients continue to leave conventional medicine in droves for treatments that work with their bodies, treatments that bring real healing. This philosophy has been called a lot of things over the years, from alternative medicine to integrative medicine, from holistic medicine to natural medicine. I simply choose to call it GoodMedicine or more appropriately, Advanced Medicine.

It's true that on the rare occasion (very rare), I may opt to use a drug, but it's always prescribed for a specific limited period of time. Regardless of what I use or how I treat a person, it will always be with the understanding of physiology and the intervention that works with the innate intelligence of the patient's body.

Many people think that when they become healthy, they'll be happy. However, it's the other way around. Happy, joyous people are quite often the healthiest. Your attitude has far more to do with your health than you may even realize. The good news for you is that your state of mind is completely within your own control and you have full power to change it however you see fit.

I once read that happiness is governed by the "3 Cs of Life": compromises, choices and consequences. Most people continuously compromise their entire lives, only to find that the choices they could have made would have prevented them from having to face the consequences of those compromises. Be brave when it comes to your health. Make the bold choice. It may not be the easiest thing to do at the time, but remember, the universe always gives a reward equal to or greater than in proportion to the risk taken.

Take the risk to be happy-really happy! Yes, it is a choice to find the good in your day and focus on it all day. We've all seen a person who has had a life plagued with one misfortune after another and yet greets everyone with a smile. How do they do it?

It's no secret. They just choose to be happy. A happier person has a happier biochemistry and a happier biochemistry means happier cells, which create a healthier body. This may be oversimplifying things, but you get the point.

There's a saying that goes, "What you think of me is none of my business." Wiser words were never spoken. People can think what they want about you. They can even say what they want about you. It happens to me all the time! But just because someone says it, it doesn't make it true. Only you know your truth. Nothing has the power to change that. It reminds me of a line from another children's movie: "No matter how the wind howls and screams, the mountain will never bend to it." Once you're anchored in your truth, no one can ever make you feel any specific way without your permission. When you allow someone to hurt or upset you, it's not their fault. You just violated your own truth. Take your power back and remember who you really are. How you feel is all about you and up to you.

I once read that happiness is governed by the "3 Cs of Life": compromises, choices and consequences.

Empowerment Often Begins in Your Body

One of the added reasons why I emphasize detoxification so often is because by rediscovering and learning to honor the healing power of our bodies, we become aware of something very profound and miraculous within ourselves. Most of us have been raised and (unfortunately) indoctrinated in a way that we've never been conscious of our body's remarkable power to heal itself. To be honest, what makes the biggest difference for my patients is this awareness-that their body is doing the healing. I'm actually nothing more than a glorified trash removal expert, a "sanitation engineer" of the physiology, removing toxicities from the body. The real healing is that my work simply helps them to detoxify; their body's own healing intelligence kicks in and then the miracles take place. It really isn't me at all-and this revelation frees them from depending on me or any other authority for the rest of their lives. If there's one insight you take from this book, I hope it's that your body is a miracle, and it can heal itself from virtually anything. Sure, you may need to assist it by removing toxins or feeding it the right nutrients, but with the right pieces in place, your body will do the healing. Nothing else is necessary-not me, not any drug, not any supplement. Of course, it's one thing to know this and it's another thing to experience it in your own actual life.

That, my friend, is what will change everything for you. I promise! Because once you have this understanding and insight, no one can take that away from you. Not now, not ever. I mentioned a moment ago that true empowerment can begin in your body. What did I mean by that? Well, it's simple: Health is the most basic need we have on this planet. We take it for granted when it's there, but when our health is threatened-as in the case of a terminal illness-it suddenly becomes our number one priority.

If people feel that their health lies outside their hands whether the causes are genetic, environmental or anything else-then they must rely on an authority for the solution. This effectively removes their own power and places it into the hands of others. Instead, what I'm suggesting and promoting-this awareness of your body's own healing intelligence-serves to empower you in a profound way. Once you have this awareness, you don't need anyone or anything. You can never be sold a drug, a supplement or anything else that your body doesn't truly need to heal itself.

What's more, there's no substitute for the confidence that comes from knowing that you have the ability to heal yourself. You no longer have to fear the same health challenges everyone else does, and you will naturally make better choices because you fundamentally understand that you are the one who determines what happens within your own body. Everything-your weight, your appearance, your energy levels-it all comes down to your awareness and your choices. This is the root of your power, and reclaiming your health is often the best first step. You can begin reclaiming your health immediately by implementing these 9 Steps.

When it comes to healing, consistency is the name of the game. Keeping in a consistently positive frame of mind as you go through these 9 Steps on a daily basis is what's going to get you to your goal. Most people see significant improvement within the first three to six weeks. Invariably, however, after a certain time, they usually feel so good that they slowly start to slip, thinking they don't need to live by the 9 Steps any longer, and they begin to revert to the choices that led to their disorder, condition or lack of health in the first place. When these problems begin to resurface and the patient comes back to me, I always ask why they stopped practicing the 9 Steps. I've been amazed at the reply I most often get back. "I stopped doing the 9 Steps because I got better."

Remember, the 9 Steps are not a "symptom management" form of medicine. In fact, the 9 Steps are not any type of medicine. They are a lifestyle! They are a philosophy that is only worth something if you choose to live by it. Can you do this? Of course you can. Anyone can! The question is, "Will you do this?" That's the question that only you can answer. As long as you keep on keeping on with the 9 Steps, you'll continue to enjoy the benefits of vibrant good health. And as you do, let no excuse get in your way. Put yourself first and remember the following pearls I have accumulated over the years:

1. Express your love for those you care about on a regular basis. And express it to them. It's not sufficient to tell others how much you love your children or your wife. Tell your children and your wife or other loved ones. Show them.

2. Live in a state of gratitude. If you can't think of what you have to be grateful for, think of all the people who are homeless, hungry, missing an arm or a leg or all alone . . . and suddenly you'll have much to be grateful about.

3. Show me something you think you desperately need, and I'll show you hundreds of others who get along perfectly well without it.

4. Accept that some days you will be the pigeon, and on other days you'll be the statue. Remember however that regardless of whether you are the pigeon or the statue, everything that happens has a specific purpose. Nothing occurs randomly. Regardless of what you choose to believe, this is fact.

5. Remember that when you think someone else has an attitude problem, it may actually be you who has a perception problem. Look to yourself and see how you can improve. Those around you will automatically change as you do.

6. On the keyboard of life, always keep one finger on the escape key. Choose not to suffer from stress. There is nothing wrong with "healthy" conflict, like arguing which ball team is going to win the game or a spirited

"Detox" ... cont'd pg 8

Public Health Alert

The PHA is committed to researching and investigating Lyme Disease and other chronic illnesses in the United States. We have joined our forces with local and nationwide support group leaders. These groups include the chronic illnesses of Multiple Sclerosis, Lou Gehrig's Disease (ALS), Lupus, Chronic Fatigue, Fibromyalgia, Heart Disease, Cancer and various other illnesses of unknown origins.

PHA seeks to bring information and awareness about these illnesses to the public's attention. We seek to make sure that anyone struggling with these diseases has proper support emotionally, physically, spiritually and medically.

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"Mito" ... cont'd from pg 1

phatidylinositol, and other membrane phospholipids), CoQ10 plus microencapsulated NADH and other nutrients has been developed. This formulation suppressed intractable fatigue in patients with a variety of diagnoses during a two-month trial.[48] The 58 participants in this study had moderate to severe intractable fatigue for an average >17 years and had been to an average of >15 practitioners without resolution of their fatigue. These subjects included 30 patients with chronic fatigue syndrome, 17 with chronic Lyme disease; 16 with other fatiguing illnesses, including fibromyalgia syndrome and Gulf War illness; 4 with autoimmune disease, including rheumatoid arthritis; 2 with cancer; and 2 with diabetes. These patients had tried unsuccessfully many drugs and supplements (average >35) to reduce their fatigue.[48]

Participants in the trial of chronic illness patients took the combination supplement ATP Fuel® (membrane phospholipids, CoQ10, NADH and other ingredients) for 8 weeks, and fatigue was scored using the Piper Fatigue Scale (PFS).[38] The PFS is a validated instrument that measures four dimensions of subjective fatigue: behavioral/ severity, affective/ meaning, sensory, and cognitive/ mood.[38] These were used to calculate the four subscale/dimensional scores and the total fatigue scores.[48] In this study on 58 long-term chronic illness patients with intractable fatigue the initial PFS mean total fatigue score ± SD was 7.51 ± 0.29, and after 8 weeks of supplement this improved to 5.21 ± 0.28, or a 30.7% reduction in fatigue. The mean decrease in fatigue scores was significant by t-test ($p < 0.0001$) and Wilcoxon signed-rank ($p < 0.0001$) analyses.[48]

The PFS fatigue scores can be further dissected into four subcategories.[38] These include: Behavior/Severity subcategory, which deals with completing tasks, socializing, engaging in sexual activity and other activities, and intensity or degree of fatigue; Affective/Meaning subcategory, which determines fatigue/tiredness is pleasant/unpleasant, whether the patient is agreeable/disagreeable, protective/destructive, or feels normal/abnormal; Sensory subcategory, which determines whether the patient is strong/weak, awake/sleepy, refreshed/ tired, or energetic/unenergetic; and Cognitive/Mood subcategory, which assesses whether a patient feels relaxed/tense, exhilarated/depressed, able/unable to concentrate, remember, and think clearly). All of these subcategories showed significant reductions by the end of the 8-week trial ($p < 0.0001$), indicating that there were significant improvements in all subcategories of fatigue.[48] For example, there was a 30.7% reduction ($p < 0.0001$) in severity/behavior of fatigue, indicating that there was a significant reduction in the intensity of fatigue, and a significant increase in the ability to complete tasks, socialize, and engage in sexual and other activities. Also, there was a 28.0% improvement ($p < 0.0001$) in mood and cognitive ability, such as the ability to concentrate, remember, and think clearly.[48]

Regression Analysis of Fatigue Data

To determine if the trends in fatigue reduction over time during the trial on the combination supplement (membrane phospholipids, CoQ10, NADH and other ingredients) were consistent, occurred with a high degree of confidence, and could predict further reductions in fatigue, we conducted regression analyses of the data.[48] The regression analysis of overall fatigue and in each of the subcategories of fatigue indicated significant and consistent downward trends in the fatigue data, suggesting that further reductions in fatigue would have been likely if the trial had been continued. The regression R2 values for the various subgroups were: behavior/severity, 0.956; affective meaning, 0.960; sensory, 0.950; and cognitive/mood, 0.980.

Regression analysis of the overall fatigue yielded a $R2 = 0.960$. This indicated that there was a high level of confidence and reproducibility in the downward trends in all fatigue data. The combination supplement ATP Fuel® was also safe, and there were no safety issues that came up during the trial.[48]

In previous trials using LRT the most severely fatigued subjects showed the greatest reductions in fatigue scores.[39, 43, 46] For example, subjects with initial overall fatigue scores indicating severe fatigue (above 8 in the PFS scale) showed greater reductions in fatigue scores on day 60 (35.3% improvement in overall fatigue) than subjects with lower scores (moderate fatigue, initial PFS score 4-8, 25% improvement).

Examination of scores from patients with chronic fatigue syndrome, Lyme disease, or other diagnosis categories did not reveal major differences in overall fatigue or its reduction by the combination supplement that were dependent on diagnosis.[48]

Effects of CoQ10 and NADH Without LRT

Some but not all previous clinical studies on CoQ10 or NADH reported some positive effects on fatigue. However, in these studies only a subset of patients responded or the response was for a limited time.[49, 50] In a study on chronic fatigue syndrome patients 8 of 26 (30.7%) responded to microencapsulated NADH compared with 2 of 26 (8%) on placebo ($p < 0.05$).[49] These results were not considered significant by others.[50] The use of oral NADH compared to psychological/ nutritional therapy for 31 chronic fatigue syndrome patients revealed that NADH alone reduced fatigue only in the first 4 months of a 12 month trial.[51] After the first 4 months, symptom scores were similar in the NADH and psychological/nutritional arms of the trial. Oral NADH given for two months to chronic fatigue syndrome patients resulted in a decrease in anxiety and maximum heart rate after a stress test, but little or no difference was found in the functional impact of fatigue, quality of life, sleep quality, exercise capacity, or functional reserve.[52]

Cofactor CoQ10 is an important antioxidant and an essential component in the mitochondrial respiratory chain as well as a molecule involved in gene regulation.[53] CoQ10 has been used as a dietary supplement in a variety of chronic illnesses and age-related conditions.[53, 54] In the combination supplement used by us (ATP Fuel®) CoQ10 was used to improve energy transduction and combat oxidative stress.[54]

Summary

We used a combination oral supplement containing a mixture of membrane phospholipids, CoQ10, and microencapsulated NADH to significantly reduce intractable fatigue in patients with chronic fatigue syndrome, fibromyalgia syndrome, Gulf War illness, chronic Lyme disease, and other conditions. These patients had been symptomatic for an average of over 17 years, had been seen by multiple practitioners (>15), and had used many other supplements and drugs (>35) without apparent reductions in their fatigue. The combination supplement was a safe and effective method to significantly reduce fatigue in patients with intractable chronic fatigue.[48]

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Footnotes:

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About the Author

Professor Garth L. Nicolson is the President, Chief Scientific Officer and Research Professor at the Institute for Molecular Medicine in Huntington Beach, California. He is also a Conjoint Professor at the University of Newcastle (Australia). He was formally the David Bruton Jr. Chair in Cancer Research and Professor and Chairman of the Department of Tumor Biology at the University of Texas M. D. Anderson Cancer Center in Houston, and he was Professor of Internal Medicine and Professor of Pathology and Laboratory Medicine at the University of Texas Medical School at Houston. He was also Professor of Comparative Pathology at Texas A & M University. Professor Nicolson has published over 600 medical and scientific papers, including editing 19 books, and he has served on the Editorial Boards of 30 medical and scientific journals and was a Senior Editor of four of these. Professor Nicolson has won many awards, such as the Burroughs Wellcome Medal of the Royal Society of Medicine (United Kingdom), Stephen Paget Award of the Metastasis Research Society, the U. S. National Cancer Institute Outstanding Investigator Award, and the Innovative Medicine Award of Canada. He is also a Colonel (Honorary) of the U. S. Army Special Forces and a U. S. Navy SEAL (Honorary) for his work on Armed Forces and veterans' illnesses.

When You Wrestle With the Question of "Why Me?"

by Harriet L. Bishop
Past President of Texas Lyme Disease Association, 2006 to 2012

When plagued with an endless chronic illness that lays you low undiagnosed for many years, it's quite natural for a person to ponder "Why me? What is the purpose in this pain?" Me, who lived a healthy active outdoor lifestyle, stayed faithful, tried to eat in a healthful manner and tried to love my seemingly unlovable neighbor - why has this happened to me?

As I pondered this question myself it was not with a whine in a self-pity frame of mind, but in a curious exploration of facts and I truly wanted an answer. I had been married nearly 25 years, had five wonderful children in school, and now I lived on a beautiful working cattle ranch in sandy soil where I could indulge my love of gardening while maintaining my steady job as a medical social worker. The unending escalating pain that made each day more difficult than the last had taken its toll, and I could barely sit in my well-padded office chair long enough to record the daily clinic interviews.

And then the younger seemingly unlovable neighbor woman with the devilish eyes invaded my family and over a period of five anguished years took over my place in the household, my place in the kitchen, and in my weak husband's heart. I asked advice from my wise and precious father-in-law but he too could see no easy way out, and he just shook his head sadly.

"How could this happen? Why me?" I prayed to God hoping for an answer. And I did get an answer but not one I wanted to hear. "So you will gain the courage you've lacked to take the action you need to take to remove your children from an emotionally unhealthy atmosphere" came the booming response to my plea.

It took two more long years for the divorce I sought to be contested, with unthinkable threats from the other side causing time delays and increasing the attorney fees every day.

My unceasing prayers to God for help were answered once again when an unlikely visit from a first cousin, recently retired but skilled in corporate negotiation, resulted in him renting a small house nearby for nearly a year, long enough to consult with both sides to bring an end to the costly stalemate.

The happy day came when my friends gathered to help move my belongings to my new place, a ranch of my own, closer to town with a larger, lovelier split level home high on a hill overlooking our 40 acres of grazing pasture. There was space enough for all the children, and of course a big barn for their horses and ponies - dogs, cats, hamsters, and a baby goat to raise. And there was a chicken coop for Rocky and Priscilla, my faithful Plymouth Rock egg layers.

The older three children were in college by then, and the teens were busy with their activities and after-school jobs. Money was tight, but we made it with my huge garden, peach trees, the chickens and my salary. Thank goodness for college loans! I co-signed loans for thousands of dollars, knowing they would grow up to be responsible individuals who would work to pay back every dollar borrowed.
But after a few years when time had eased some of the emotional pain of rejection, I could no longer deny that I was lonely for loving companionship. My daily prayers and hit or miss Bible reading led me to once again search those crinkly pages for an answer to "Why me?"

That answer struck me like a lightning bolt in a passage that said in effect, "So you will seek Me and get the help you need when you ask for it. And then you will tell others of the comfort you have gained from your faith in Me." Simple as that.
Ah-ha! At last I know why I have been through the slings and arrows and the fiery furnace. I must tell others that when I prayed for courage, it came to me. When I prayed for patience, it came to me. When I prayed for help, a long-lost cousin arrived. And when I prayed for loving companionship, my White Knight, the real love of my life, appeared wearing Levis and cowboy boots to our square dancing classes. We "graduated" together, and have been married now for 31 idyllic years. The chronic illness has abated after diagnosis and treatment for Lyme disease and five co-infections.

We enjoy the love of 15 grandchildren and 7 great-grandchildren who bring us the truly great joys of life. We are indeed blessed!

So when the inevitable "Why me?" creeps into your thinking, as daily physical pain causes anguish, seek your own answer in the pages of the Greatest Book Ever Written.

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TEXAS LYME FACTS

•Lyme disease has surpassed AIDS as one of the fastest growing infectious epidemics in our nation, with a cost to society in the billions of dollars.

•Lyme disease is the most common vector-borne disease in the state.

•Lyme disease is endemic in Texas and physicians need to be familiar with it.

•In Texas, there are 11 public health regions. Patients with Lyme disease reside in every public health region in Texas.

•Borrelia burgdorferi, the agent of Lyme disease, has been detected in Texas ticks.

•Epidemiological evidence suggests Amblyomma americanum, the "Lone Star" tick, is the vector of Lyme disease in Texas.

For More Info: www.TxLDA.org

More Case Studies from IDSA Doctor Treating Chronic Lyme Disease

by Burton A. Waisbren, M.D.

Patient First Seen: September 13, 2007

This twenty-four-year-old, single, charming, ambitious young woman gave the following history: She sustained a tick bite with rash in Wisconsin at age seven. She developed severe hives after this and then generalized arthritis. A diagnosis of rheumatoid arthritis was made, but there was never any serologic evidence of this disease.

At age thirteen, she developed hair loss, chronic fatigue, and concentration issues ("brain fog"), all of which had continued until I saw her on August 10, 2008. On physical examination, she had definite ataxia and absent abdominal reflexes. She brought in a questionnaire that she had found on the Internet which had convinced her that she had chronic Lyme disease, and that is why she sought me out.

After an examination, I shared with her my thoughts that:

1. Something indeed was wrong.

2. My differential diagnosis was between multiple sclerosis (which as the reader of these case reports will know, I had found in chronic Lyme disease) and chronic Lyme disease. (essay 11)

3. Chronic Lyme disease.

I felt that there was enough possibility that she had chronic Lyme disease that on a clinical basis, I advised that we should start treatment with oral doxycycline (100 mg twice a day), Ceftin (500 mg twice a - 10 day), and Flagyl (500 mg) once daily for six weeks.

Her laboratory work showed borderline antibodies against Borrelia but no evidence of other tick-related diseases. Her lumbar puncture revealed high globulin, and antibodies against myelin were positive. This is the ninth patient in whom demyelination was suspected in this series.

When seen in six weeks, the improvement was not convincing, perhaps because of her intolerance to Ceftin, which we added at three weeks.

On August 21, 2008, she lost her job and insurance and moved to Indiana, so I sent the following letter: To her Insurance Provider at a Medical Center:

This will introduce (Patient's Name), date of birth November 8, 1994. I am trying to decide whether she has early MS or demyelination due to chronic Lyme disease. There was enough of a response to oral doxycycline, Ceftin, and Flagyl that I have suggested a four-week course (eight weeks if responds) to IV Rocephin (4 grams a day) along with oral erythromycin and Flagyl through a PIC line on an outpatient basis.

I have enclosed the pertinent data from her chart, and since she has moved, I suggested a "fresh start" at an academic institution.

Please send me your evaluation and plan. In my clinical evaluations, I decided that something is wrong and that we are not dealing with a "somatic disease." She and I would deeply appreciate careful consideration of this case.

Sincerely, Burton A. Waisbren, MD, FACP

I called the patient in July 2010, and she has not been able to find a doctor who will take her seriously, although I am not sure how hard she has tried. She still has her presenting symptoms. I, of course, feel badly because in my concept of a "perfect world," she would have somehow received intravenous therapy with a possible chance of a "cure." Summary: A case that suggested Lyme disease and multiple sclerosis.

Patient First Seen: October 4, 2007

On August 10, 2007, a forty-year-old physical therapist was kind enough to summarize her case for me. It follows, although I omitted some of her feelings regarding her previous care. Her summary is in italics, and my comments in text.

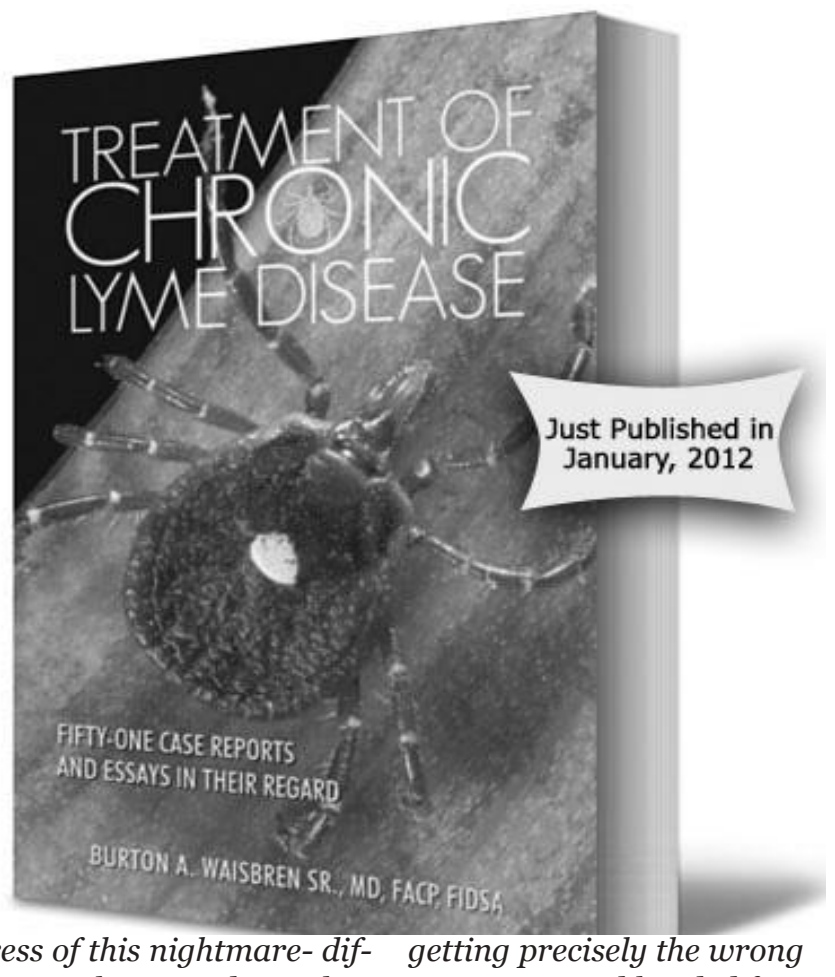
I am a physical therapist. I know my body. I was healthy and fit until June 9, 2007, when I attended an outdoor party in Richmond, Illinois. A day after the party, I noticed a red, circular rash about the size of a quarter on my lower right abdomen. I knew immediately this bite was different than a typical bug bite -it was angrier looking and had a distinctly defined center. I immediately thought of Lyme disease, but everyone I knew who lived in Richmond, Illinois, and all the medical professionals I knew said "no way." It couldn't be Lyme disease. They had never heard of it in Richmond or in Illinois for that matter. So I put it out of my mind.

About four days later, I suddenly felt very sick, faint, and out of it. I had several bouts of diarrhea. My husband rushed to my side and took me to see the obstetrician who had delivered my second baby four weeks before. He said the symptoms were probably nothing or blood poisoning. About the bite, he said he had also had one on his arm, probably from a mosquito.

The feeling of being sick remained, so a week later I saw an internist. He said I absolutely did not have Lyme disease because I hadn't seen the tick, and the tick would have ballooned up with blood to an enormous size. He also said that there was no Lyme disease in our area. He did not advise treatment or studies. Then the muscle twitches began along with the strange traveling paresthesias. Then I noted electric-type currents through my extremities and migrating joint pain.

I continued to seek help and saw two other physicians in my area. They empirically prescribed antibiotics but said that the blood tests that they had run were negative, so I could not have Lyme disease. My symptoms continued and got worse, and then a brain fog set in. I couldn't seem to concentrate. I felt mentally weighed down and fuzzy-headed and mentally depressed and frightened.

I sought another internist who, when my Lyme test came back negative, told me I couldn't have Lyme disease and that I should discontinue the antibiotics. My symptoms remained. I began wondering if it's not Lyme, then what is it? A pinched nerve, carpal tunnel, fibromyalgia, some progressive neurological disease? I was researching and researching and still, the only thing that made any sense was Lyme. Eventually, and logically, my mind wandered towards MS. By this point, I had developed a positive Lhermitte's sign. I referred myself to a chiropractor. I saw him three times, and he was stumped. But we did discuss the possible justification for an MRI. So I didn't appear to be a hypochondriac, I referred myself to a neurologist at another one of Chicago's premier hospitals prior to requesting an MRI. This neurologist, I could tell somewhat reluctantly, gave me the referral. The MRI reveals the cause of many of the symptoms-4 white lesions, 2 in the brain and 2 in the cord. He then referred me for a lumbar puncture, which came back positive for antibodies to "something" and 2 oligoclonal bands. He diagnosed me with, most likely, relapsing-remitting MS. My "Lyme tests" were again negative. My family and I were crushed. We discussed beginning MS drugs. I soon thereafter had my first full-blown neurological event, partially brought on by the



stress of this nightmare- diffuse numbness and muscle spasms, and ended up in the ER, and then in the hospital for a night.

The patient continued her search for help, and more consideration of the possibility of her findings being due to Lyme disease and, through this website, decided to come to see me about her problems. Her history, the white lesions on her MRI, the picture of her tick bite that she showed me, her hyperreflexia, paresthesia, ataxia, and absent abdominal reflexes convinced me that she had Lyme disease masquerading as multiple sclerosis. An empiric course of anti-Lyme disease therapy was started through a PIC line. It consisted of a six-week course of 4 grams of intravenous ceftriaxone and 500 mg of Flagyl given twice a day by mouth. She continued on oral doxycycline and erythromycin. Blood tests done at her first visit did come back suspicious for Lyme disease. They were done by Quest Laboratories and confirmed by Bowen Laboratories. She also had antibodies against Bartonella henselae and Bartonella quintana, which confirmed exposure to ticks. Four months after the completion of the intravenous ceftriaxone, she describes her situation as follows:

I completed a six-week course of IV antibiotics, coupled with some oral medications, and am now in my fourth month of treatment for chronic Lyme disease. I feel immeasurably better. My brain fog has completely cleared. I'm not tripping over my words or losing my train of thought anymore. My paresthesias and muscle twitches are few and far between. My energy level is up. All in all, I feel almost back to normal and most definitely vindicated. And I'm now on a mission to educate others about this often misdiagnosed and mistreated disease. This is a "silent epidemic," as many like to call it. Had I listened to the highly regarded and overly confident neurologist who diagnosed me with MS, I would now be much sicker, getting precisely the wrong treatment, and headed for more debility.

Comment: Of course, a few anecdotes do not establish anything, but each case of an unusual nature that presents itself to an inquiring physician should not be ignored. This buttresses my opinion that cases of an MS-like nature which appear after tick exposure deserve an empiric course of Lyme treatment (see essay 11).

The patient was contacted on September 31, 2009. She stopped all antibiotics by mouth six months after the course of intravenous ceftriaxone (she had been put on Ceftin, Ketek, and Flagyl). She stopped because of persistent gastrointestinal symptoms. Th ey finally subsided after she took probiotics for a month. On September 31, 2009, she felt well and was working full-time. She had some eye complaints which we will check on by an optic nerve potential test. She has no discrete neurologic symptoms.

This case buttressed my opinion that demyelination associated with Lyme disease will sometimes respond to treatment for chronic Lyme disease (see essay 7). She was followed up by e-mail in June 2011 and feels "entirely well."

Patient First Seen: September 13, 2007

This was a patient who on a nature hike in December, 2006, suffered a tick bite.

Chronologic History:

January 2007 Attack of Bell's palsy that responded to one week of oral prednisone therapy.

April 2007 She developed blurred vision, generalized paresthesia, and numbness in her lower extremities. She saw a physician who suspected multiple sclerosis. A lumbar puncture was negative for that disease. A Western blot for Lyme disease showed a positive 41 KG IgG band.

"Case Study" ... pg 8

"Case Study" ...cont'd from pg 7

June 14, 2007 I saw her first on this date. She had gone on outdoor camping trips for the previous ten years in tick country with no recollection of a tick bite. Physical exam showed only hyperreflexia and absent abdominal reflexes. Complaints were of paresthesia, blurring vision, fatigue, and weakness of the lower extremities. I made a clinical diagnosis of Lyme disease (Bell's palsy, paresthesia, weakness, fatigue, and absent abdominal reflexes).

Laboratory studies showed mild hypothyroidism, 41 KG IgM Western blot band, but no evidence of other tick-caused diseases or antibodies against Borrelia. I made a clinical diagnosis of Lyme disease and started her on Armour thyroid and doxycycline (100 mg by mouth three times a day).

July 23, 2007 There was some improvement in the paresthesia and fatigue, but she still felt "sick." I added Ceftin (500 mg by mouth three times a day) and Diflucan (200 mg by mouth per day).

September 19, 2007 When seen, she was essentially asymptomatic.

April 19, 2008 The improvement continued, and she elected to stop all medications.

September 10, 2009 I contacted her husband by phone, and she had just given birth to a healthy baby boy. Her pregnancy had gone well, and she had taken no antibiotics for a year. She had continued to take thyroid medications.

It seems to me that this was a classic case of Lyme disease that showed demyelinating presentation and responded to oral therapy with doxycycline (see cases 1 and 4 and essay 11).

Patient First Seen: October 10, 2007

This forty-eight-year-old male had been in previously good health until July 2007. In June 2007, he had visited a deer farm in Illinois with a female companion, who developed documented Lyme disease soon after.

The history the patient gave me was as follows: A month after the visit to a deer farm, he noted his arm twitching and pain in his calf muscles. By the end of July 2007, he became "fatigued, forgetful, and irritable." On August 2, 2007, he started oral doxycycline (100 mg twice a day). He kept this up, but his symptoms did not improve, and he developed blisters on his feet. The doctor who was treating his female companion for Lyme disease started him on doxycycline, rifampicin, and Zithromax. Because he had not noted improvement, he made an appointment to see me on October 10, 2007. He brought with him a report from IGeneX Laboratory which showed a negative blood test for Borrelia and a Western blot positive for 34 and 39.

During the October 10, 2007, visit to my office, the physical exam was essentially negative for a lupus screen but was positive for the Epstein-Barr virus and CMV virus. Lyme studies by Quest showed anti-Lyme antibodies at a titer of 1.10, but negative Western blot studies (we have seen Western blot positives disappear after therapy). Studies for Bartonella were negative.

Even without the old records but with the knowledge that his female companion had been treated, I felt that a course of intravenous ceftriaxone was indicated. The rationale for this was explained in detail, and he agreed to have a course of intravenous ceftriaxone arranged. His managed-care carrier agreed, and they chose the "Home Infusions Solutions" organization which was affiliated with Rush Medical College as the agency to give the treatment.

The following program was ordered and instituted by this agency for five weeks:

1. Ceftriaxone- 4,000 mg in 100 ml of saline infused by gravity every 24 hours.

2. Lab: weekly CBC, SGPT, and SGOT blood tests; and C difficile in stool.

I saw the patient again on November 12, 2007, and he reported that the response, at best, was equivocal. We decided on continuing for another month, and this was ordered.

During the third week of this period, the patient developed a high fever and chills. He was admitted to the emergency room of Rush Medical Center, where their diagnosis of acute bacterial septicemia was confirmed by several blood cultures that revealed serratia bacteremia that responded to the antibiotic treatment suggested by sensitivity studies. As it turned out, the hospital had been notified at that time that the heparin preparation which they had been using to keep the pic line open, was contaminated with serratia bacteria. The patient responded well to the treatment for septicemia, and the follow-up suggested by the CDC was followed by blood cultures for several months, which remained negative. Of course, the PIC line through which the antibiotics had been given was removed.

The patient was understandably disturbed, and he notified me that the treatment had not helped, and that he was seeking other medical help.

I, of course, accepted this and told him that his next physician might want to treat both his high titers of viral infections as well as Bartonella, the most usual infection associated with Lyme disease that does not respond to intravenous antibiotics.

Patient 7 First Seen: October 16, 2007

This retired seventy-two-year-old army man was bit by a tick in July 2008 in northern Wisconsin. He was an outdoorsman, and his dog had been successfully treated for Lyme disease in the fall of 2007. Two months after the tick bite, which was not followed by a rash that he remembered, he developed generalized joint pain. His doctor, without an involved workup, started him on prednisone (20 mg by mouth twice a day). In spite of this, he continued to have generalized joint pain with swollen fingers and ankles.

There was no clinical response to prednisone. His son, who was a pharmacist, thought he had Lyme disease and referred him to me. He had always been in excellent health and had for years indulged in, what his wife said, was a large amount of alcohol. He had never been seriously ill during many years of military service. On one physical examination, he did have tender, swollen ankles and wrists and an enlarged liver.

He was reluctant to have much laboratory work done and brought in reports that showed a negative test for rheumatoid arthritis and otherwise normal routine blood work. He was on Medicare and said he could not afford the IGeneX Lab studies that I suggested. He did consent to antibody studies for Borrelia, Western blot studies for Lyme disease, a lupus panel, and an Epstein-Barr screen, which was done by Quest. Only Epstein-Barr titers were abnormal. At this point, I can only say that in my experience this Epstein-Barr virus may be a cofactor in chronic Lyme disease.

In a conference with the patient and his wife, I explained to them that I thought there was enough of a possibility that he had Lyme disease that it would be reasonable to initiate the following plan:

1. Taper his prednisone to zero.

2. Try doxycycline, Ceftin, erythromycin, and Flagyl for a month. If there was not a clinical response, start intravenous ceftriaxone in high dosages along with empiric treatment for tick-associated diseases.

He agreed to this plan after talking it over with their son, who is a well-trained pharmacist.
The patient was seen again on December 4, 2008. The oral medications had not seemed to be of benefit. He had been able to wean himself from prednisone. Accordingly, I outlined a plan for six weeks of intravenous ceftriaxone to be given at home by organizations we have in Milwaukee that specialize in home intravenous therapy. This organization had given intravenous ceftriaxone to several patients of mine who I thought had chronic Lyme disease. Their personnel had been impressed with the results in a few patients. I asked the patient to take the plan to his insurer, which he had in addition to his Medicare. To my pleasant surprise, the insurer accepted the plan and we were able to institute it starting in January 2009. Prior to treatment, he was essentially crippled with generalized joint pain, and he started to develop ataxia.

He then received eight weeks of the following daily: Initially a PIC line was inserted at St. Mary's Hospital in Milwaukee. Their radiology department had pioneered the PIC-line technique. Then, with me present and an EpiPen handy, he was given the initial infusion of ceftriaxone at St. Mary's Outpatient Department in the dosage of 6 grams in 50 cc of saline. I have repeatedly found that 6 grams of ceftriaxone is tolerated intravenously for long periods of time.

The home infusion team then went to his home the next day and taught his wife how to give the infusion and how to clear the line with heparin. Infusions were given during a one-hour period. The home-care nurse visited the patient weekly to check on his progress and to draw blood for a basic metabolic panel and blood count and to collect a sample for urinalysis. He had orders for a stool for clostridium difficile if he had any diarrhea. The visiting nurse was present during the first five days and then weekly. The patient's wife kept in touch with me by phone.

Oral erythromycin (2 grams daily) and Flagyl (500 mg daily) were taken as well. They were to treat empirically Bartonella and the cystic phase of Borrelia, respectively.

I saw the patient in my office on April 13, 2009. He had tolerated eight weeks of intravenous ceftriaxone at a daily dose of 6 grams without any complications given for eight weeks. He had gradually lost all joint pains and stated that he was back to "normal." He was continued on doxycycline (100 mg by mouth twice a day) and Flagyl (500 mg once daily). I last saw him on October 12, 2009. He had no complaints. He said he had reduced his alcohol intake and that he had become his "active old self." His Lyme tests were repeated and for the first time showed a positive IgG 30 KD band. I had acquiesced to his wish to stop oral antibiotics in July 2010.

Comment: This case seems almost too good to be true, and it may be. However, we ended up with a well man who was completely disabled before therapy. The okay from his insurance carrier without a "peep" almost seems too good to be true, as well.

pha

More case studies from Dr. Waisbren can be read by purchasing his book Treatment of Chronic Lyme Disase from www.LymeBook.com.

"Detox"... cont'd from pg 4

debate about religion or politics. But if the arguing makes you feel sick, it's no longer a healthy conflict. Do not engage. Nothing is worth getting ill about.

7. When you're worried about your own situation, find someone else to help; invariably, your source of worry will dissipate. There is empowerment in helping others.

8. Never argue with an idiot. They will always drag you down to their level, and then proceed to beat you with experience. Remember that the best revenge is living a good life.

9. When confronted by a difficult problem, you can always solve it easily by reducing the problem to a question, such as, "How would Spider-Man handle this?"

10. The three things that no human has a monopoly on are Love, God and stupidity. So when you encounter someone with more than their allotted share of stupidity, say a prayer of gratitude. Because they just left more Love and God for you.

11. Always do the right things in life. You know what they are. Your body will resonate to them. Use the tool you'll be given at the end of this book to always know what the right answer is when faced with any decision in life.

12. Make it a point to put a smile on someone else's face every day. It will come back to you magnified. Do this as much as possible. Keep count of how many smiles you create and try to exceed that number every day.

Everyone comes to this Earth with a purpose. Find yours and life will begin to taste sweeter. You didn't come here to suffer in order to learn. Knowledge is power, and you now have the tools to re- create the health of your youth or the health you've always dreamed you would like to have. It's all up to you now! Move forward with boldness and the universe will smile upon you. It's guaranteed.

pha

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Lyme-Literate Counselor in the DFW area

Dawn Irons, M.A., LPC-Intern
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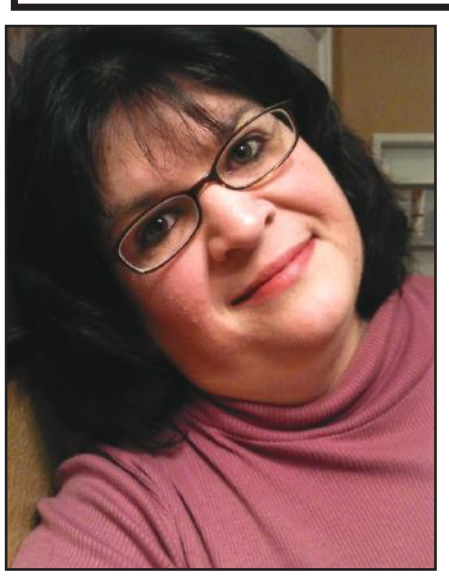

Have you been told, "It's all in your head?"
Are you experiencing the psychiatric symptoms
that are based in the borrelia infection?
Do you feel you have no one who understands?

Dawn was undiagnosed for 18 years before finally getting an answer to her devestating health problems. She has walked the battle of long-term treatment and has experienced remission for the last 3 years.

COWDEN SUPPORT PROGRAM

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Nutramedix was founded in 1993 and currently has facilities in Jupiter, Florida, USA and in Shannon, Ireland supplying highly bio-active nutritional supplements to health care professionals and consumers.

From the beginning, Nutramedix has operated with a unique business model. First, the owners and management work diligently to operate a company according to Biblical principles– with honesty, integrity, value and respect for all people. Its corporate environment is one that works to serve both its customers and its employees, producing one the best customer service teams in the industry. Second, Nutramedix was founded with the goal of using a significant amount of its proceeds to support orphans, widows, Christian pastors and missionaries in economically distressed parts of the world. So as a customer, you are not just purchasing high quality nutritional supplements, you are helping us give back to people in need all around the globe.

ABOUT THE PRODUCTS

Nutramedix has made a significant investment to develop a novel, proprietary extraction and enhancement process used to manufacture its liquid extracts. The result is a highly bio-available whole plant, broad-spectrum extract that is also very cost effective. We were the first to introduce Samento, a rare chemo-type of Cat´s Claw, which has remained one of our signature products. We have since developed a full line of liquid extracts utilizing the same proprietary extraction and enhancement process.

Nutramedix also conducts extensive research to procure the very highest quality raw materials for its powdered capsule products, many of which have been designed to enhance the effectiveness of the liquid extracts. We are committed expanding our line of natural products meeting the highest expectations of health care professionals and consumers.

ABOUT THE FOUNDATION

The owners of Nutramedix have been involved in international Christian ministry since the 1980s. Prior to starting the company in 1993, our Founder and President was a missionary pilot serving tribal groups in Peru. The Kairos Foundation was created in 1995 to fund projects that address both the physical and spiritual needs of people in some of the most disadvantaged areas of the world. The foundation provides ongoing financial support for organizations operating in Africa, Asia, Eastern Europe, North America and South America.

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