



Health Hunters

Newsletter

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Journey to Healing

Finding New Life with Lyme Disease

THE AUTHOR

Michele B.
Riordan Clinic Patient and Co-Learner

“You may have to fight a battle more than once to win it.”
(Margaret Thatcher)

"I keep pinching myself... it has been two months since we left Riordan and I STILL feel amazing!" That's what I said to my husband after coming home from two weeks of intense IV Vitamin C (IVC) and Ultraviolet Blood Irradiation (UBI) treatments at the Riordan Clinic in Kansas.

When the Riordan Clinic asked me to share our experience in writing, I struggled with where to start and how much to share. I gave it quite a bit of thought and finally decided on answering **two** questions:

1. What did I need to hear to convince myself to fly halfway across the country and begin treatment at the Riordan Clinic?
2. Why am I sharing our story?



Michele and her daughter at The Waterfront in Wichita on their last day of treatment in Kansas.

Our journey to healing from Chronic Neurological Lyme Disease (for both my daughter and myself) has taken four years, more than ten doctors, five states, countless blood tests, x-rays, ultrasounds, CT scans, MRIs, EEGs, EKGs, IVIG, special diets and too many pharmaceutical/herbal treatments to count; none of which permanently cured us. Don't get me wrong, our doctors were amazing, brilliant and compassionate people and some of the treatments worked. In fact, some treatments worked amazingly well and literally saved us in a crisis situation (in my opinion, antibiotics do have a place; usually to put out a "fire" and get stable, and getting stable could take a long time). But none of the treatments had consistent long-term lasting power; we always

relapsed at some point. At my worst, I had over 75 symptoms including a seizure, chronic and unbearable pain, electrical shock sensations to my brain, severe anxiety and panic attacks, significant memory issues, extreme cognitive and executive function problems, nerve damage, terrible insomnia and mind numbing fatigue (even sitting was too exhausting some days), just to name a few. Most days were a monumental struggle to endure. I did my best to push through for the first four years, but this past year, that was not possible. After losing both of my parents and struggling to get our daughter

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Riordan Clinic is a not-for-profit 501(c)(3), nutrition-based health facility in Wichita, Kansas. We have integrated lifestyle and nutrition to help you find the underlying causes of your illness. Since our inception in 1975, the mission has been clear and unwavering to "...stimulate an epidemic of health."

Contact the Editor

Please send any comments or suggestions to newseditor@riordanclinic.org.

Thank you for reading,



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Editor

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well, I had zero reserves left. It was a difficult way to function as a wife and mom of a child with Lyme disease and Pediatric Acute-Onset Neuropsychiatric Syndrome or PANDAS/PANS. *Read more at: pandasnetwork.org



I sometimes think that God lets us encounter a particular struggle in our life in order to bring us closer to Him, help us learn something, and to wake us up to get us moving in the right direction - or simply to get us moving at all! After years of eagerly trying MANY treatments in an effort to get well quickly, I was now literally frozen. I was terrified to try even the simplest of natural treatments because by this point I would always have a horrible Herxheimer Reaction

(herx or "healing crisis"); which would leave me struggling to get my balance for months or, worse, reach a new "low" that my body could not rebound from. I was unable to make any move regarding treatment, for fear of becoming even more ill. In case you are wondering if I herxed on treatment at Riordan, the answer is NO! After the first day, I did not have any side effects other than being tired at the end of the day. In fact, some days I had unusual energy after treatment, and each day I saw huge cognitive improvements from the day before. Let me repeat that important note... I had ZERO herxing after DAILY IVC and UBI treatment for two weeks!

As most chronically ill Lyme disease patients know, it is not just Lyme and co-infections. It's much more including methylation and detoxification issues, oxidative stress, nutritional imbalances, heavy metals, GI imbalances, leaky gut syndrome, food and chemical sensitivities, adrenal fatigue, hormones, diet etc. I knew all of this at a very high level (or so I thought) before going to the Riordan Clinic, and even had a significant amount of excellent bloodwork done years earlier. So what could Riordan tell me, or do for me, that I didn't already know or try? What does Kansas have that I cannot find at home in one of the top metropolitan and medically advanced cities in the U.S.? Apparently, A LOT!

The Riordan medical staff is well-versed in all of the components mentioned above, more so than most doctors I had seen by this time. But they also knew about other components and tests that I had never heard of before, which was VERY surprising and life-changing for me. Riordan explained that in some instances while my bloodwork showed I had enough of a certain vitamin or mineral, that based on other factors and symptoms my body wasn't using that vitamin or mineral properly (due to methylation issues) so I needed more of it to get the job done. **But most importantly, they knew how to pull it all together for me and my daughter.** There was no more running around to five different doctors for five different symptoms. While I thought I knew about those key components listed above, I didn't fully understand or "buy into" the fact that they were all equally important and needed tending to; nor did I truly understand how they all impacted my body and brain. Riordan Clinic helped me understand this. You may think you've read everything there is to read, and tried everything there is to try to get yourself well; but I promise you... unless you have been to the Riordan Clinic, you have not tried everything.

So what was the silver bullet? I think for the first time, I was not looking for a silver bullet. I finally understood that I didn't end up this ill overnight, it wasn't just Lyme disease making me feel so miserable; and I certainly wasn't going to get better overnight. **While I was not expecting a miracle at the Riordan Clinic, I actually got one!** For me, IV

Vitamin C (and other nutritionals), IV Glutathione and Ultraviolet Blood Irradiation were the keys that literally unlocked my body and brain and saved me. While it didn't happen overnight, it happened in six days. The changes in my body were shocking. I went from sitting in a chair for four straight months (too fatigued or in too much pain to do simple chores; barely dragging myself through the day) to literally moving ALL day (7 a.m. to 9 p.m.) without sitting. That is a miracle in my book!

If you are thinking this all sounds too good to be true, how can an all natural treatment cure Lyme disease, co-infections, cancer, bacteria, viruses and more without ANY herxing? If I didn't live it, I'd be thinking the same thing and probably not even finish reading this article but indulge me and finish the read.

In simple terms, as explained to me by Dr. Ron Hunninghake, IV Vitamin C works like a Trojan horse. The Vitamin C molecule looks very similar to a glucose (sugar) molecule. The cancer, bacteria, virus, infection, pathogen etc. mistakenly eat the Vitamin C thinking it's sugar and when they eat the Vitamin C, the byproduct is hydrogen peroxide. The hydrogen peroxide oxidizes the cell and kills the bad cells leaving the good cells alone. The bad cells don't want oxygen, so it's basically death by oxygen.



Riordan Clinic nurses Krystal Shaw, Annette Chlumsky, Olivia Nugroho, and Chris Brannon

Since 1928, UBI (Ultraviolet Blood Irradiation) has been a proven medical procedure that kills bacteria and viruses. It assists the immune system and rejuvenates blood properties. It has proven to increase oxygen flow to the tissues, causing vasodilatation and microcirculation. UBI treatment works by extracting a small portion of your blood (about the size of a large syringe), combining it with either

hydrogen peroxide or ozone and then sending your blood through a UV light machine and back into your body in a sterile closed-loop process. This essentially serves to directly kill any disease-causing microorganisms that are circulating in your blood, and also to produce byproducts that can work against any disease-causing microorganisms that are outside of the bloodstream.

Before heading to Kansas, I wanted to know more about IVC, IV Glutathione, UBI and the Riordan Clinic. So I focused my research and ultimately went to Kansas for six reasons:

1. I had a friend graciously share her family's recent experience and their son's dramatic results from 10 days at the Riordan Clinic.
2. I read the "Clinical Guide to the Use of Vitamin C" online.
https://www.seanet.com/~alexs/ascorbate/198x/smith-lh-clinical_guide_1988.htm
3. I read Dr. Thomas Levy's book, "Curing the Incurable – Vitamin C, Infectious Diseases, and Toxins" LivOn Books; 1st edition (September 2002).
4. I watched the 60 Minutes episode of a man with swine flu who was in a coma for 4 months and healed completely via IV Vitamin C (a MUST watch for anyone chronically ill – YouTube: Vitamin C: The Miracle Swine Flu Cure (60 Minutes) Living "Proof").
<https://www.youtube.com/watch?v=twUVWv0fpRc>
5. I believed in the power of IV Vitamin C, IV Glutathione, UBI treatment and the doctors and nurses at the Riordan Clinic.
6. I trusted in God and believed in the power of prayer.

If I had to sum up our experience at the Riordan Clinic I would say I had dramatic, life-changing results at the hands of extremely caring, compassionate and smart doctors

Journey to Healing continues on page 4...

New Riordan Clinic Location:

Kansas City

Grand Opening July 2016

Now Scheduling Appointments!
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Join us
June 24th
1:00 p.m. – 6 p.m.

Presentation: 6 p.m.
by Dr. Ron Hunninghake, CMO

Refreshments will be served!

Meet Dr. Nia!



Dr. Nia attended the University of Illinois at Urbana-Champaign and studied microbiology and chemistry. She will now be accepting Kansas City patients.
(Learn more about Dr. Nia on back.)

21620 Midland Drive
Suite B
Shawnee, KS 66218



Ultraviolet Blood Irradiation

Journey to Healing continued from page 3...

and nurses. In fact, I would go so far as to say my results were shocking – especially to me. I could barely walk into my first appointment at the Riordan Clinic on the first day I was in so much pain, and within six days I was able to think very clearly and smile (something I had not done in a very long time).

The Doctors, nurses and staff at Riordan felt like friends from day one, but 16 days later they felt like family. Dr. Ron Hunninghake and Dr. Jennifer Mead are excellent, thorough and took an incredible amount of time to help us understand what was happening in our bodies and how to fix them. The continued support that we have received from the doctors since being home has been exceptional. During our time at Riordan, the nurses went out of their way to make us feel safe, comfortable and extremely well cared for everyday. They have a very tough job administering and caring for many chronically ill patients at the same time (many patients with cancer and far more ill than we were). ALL of the nurses had unwavering kind hearts, positive attitudes and calm spirits. We feel truly indebted to Dr. Ron, Dr. Jenn and the fabulous nurses at Riordan Clinic. Their care was exceptional; they were gentle, kind, humble and infinitely patient. They all truly have generous hearts and a strong desire to see people get well.



Dr. Ron had an excellent analogy to share with me on our last day. He said, “When you came to Riordan, your body was like a field where the grass had all dried up. What happens when you throw a match on a dried up field? It catches on fire; a BIG fire! Our goal is to make your field green and healthy so that when a tiny spark hits your field, it burns out immediately.” This was a mind shift that, for us, had started about six months before we even

knew about the Riordan Clinic. A shift from focusing on eradicating Lyme disease and co-infections to a mindset of correcting and supporting the deficiencies within the body (whether that be nutrients, enzymes, fixing methylation and detox pathways, healing the GI system, diet, stress etc.) and letting YOUR BODY kill the Lyme. The goal is to support the body so fully that whenever it is under attack, anything from a cold to cancer, the body knows exactly how to respond. I had heard this before and I didn’t believe it; sheepishly, I do now. This does take time and a lot of work and discipline. The hard work and treatment continues at home. Yes, I still have a few symptoms to work out, but none of the debilitating symptoms; those are significantly better or gone. Full healing doesn’t happen in two weeks, but I promise you that the Riordan Clinic brought me back from near dead in six little days! I could not be more pleased or amazed that Riordan got me on my feet with a calm, centered mind and a smile on my face. They far exceeded my expectations and gave me an amazing framework to take back home and continue to build upon. My job is not done, but I can live my life now and trust that my daughter and I will have full happy lives.

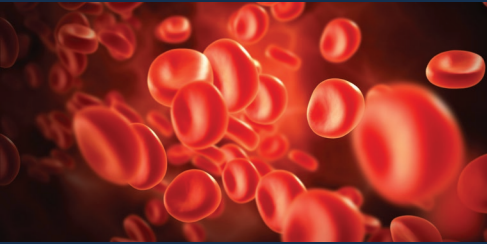
It’s funny, in days after returning from the Riordan Clinic I was going through old paperwork and found notes (from four years ago) that I took after talking to the first person I met who had Lyme disease. In my notes, I had written (and forgotten), “they did not get better until they did IV Vitamin C and salt.” I laughed to myself thinking, “Boy, I sure could’ve saved myself a lot of trouble, pain, heartache, time and money had I listened to that person four years ago.” They say timing is everything. At the time I heard that comment, IV Vitamin C sounded so unconventional and foreign to me. What’s funnier, is that I didn’t think twice about taking synthetic, man-made antibiotics full of

Journey to Healing continues on page 4...

The Riordan Clinic is a not-for-profit 501(c)(3) corporation | Go to www.riordanclinic.org to make your tax deductible donation today.

A safe and natural therapy using light as a natural antibiotic. UBI (Ultraviolet Blood Irradiation) is a procedure that exposes the blood to light to heighten the body’s immune response to kill infections. With exposure to UV light, bacteria and viruses in your bloodstream absorb five times as much photonic energy as do your red and white blood cells.

This means the fragments of the killed infecting agents create a safe, autogenous vaccination-like response. This further activates and directs your immune system to the specific infections your body is attempting to overcome. The net result is the induction of a secondary kill of these infecting agents throughout the entire body. Treating only 35 cc of blood with UBI induces a beneficial systemic response.



What are the benefits?

- Heightens the body’s immune response
- Powerful anti-inflammatory and anti-infection effects
- Improves circulation
- Oxygenation of tissues
- Balancing effect (homeostasis)
- Reduction of tissue pain
- Increased immune and pain tolerance to radiation or chemotherapy
- Cardiovascular protection through increased metabolism of cholesterol, uric acid, and glucose
- Stimulation for production of red blood cells
- Improvement in the flow and properties of the blood

For more information:
[RiordanClinic.org/what-we-do/
ultraviolet-blood-irradiation/](http://RiordanClinic.org/what-we-do/ultraviolet-blood-irradiation/)

fillers, preservatives, stabilizers and food dyes. Which do you honestly think is better for your body and brain? If you don't know, then read up on methylation pathways and MTHFR.

This is where faith, prayer and trust come in. There are two times in my life that I wholeheartedly turned everything over to God and trusted that He would fulfill my request, if it was His will. The first time resulted in the birth of our wonderful daughter; the second resulted in our finding the Riordan Clinic and their fabulous staff.

Whether you are deep into your Lyme disease journey (or any other chronic illness) or just starting out, please go to the Riordan Clinic. If it is not possible for you to travel, then have a phone consult with one of their excellent doctors and do some remote testing. If you are still questioning that phone call, then please read (or watch) the following items that explain and support the success of IV Vitamin C and nutritionals, IV glutathione and UBI treatment:

- Read the excellent information on Riordan's website (the tests they offer, the case studies, the success stories, how IV Vitamin C works to kill cancer and other infections, how UBI works, particularly read "The Clinical Impact of Vitamin C: My Personal Experiences as a Physician" where they outline one woman's experience with Chronic Lyme disease. www.riordanclinic.org
- Read the "Clinical Guide to the Use of Vitamin C" found online. www.seanet.com/~alexs/ascorbate/198x/smith-lh-clinical_guide_1988.htm
- Read Dr. Thomas E. Levy's book, "Curing the Incurable – Vitamin C, Infectious Diseases and Toxins" LivOn Books; 1st edition (September 2002).
- Read the 1949 Time Magazine article regarding UBI treatment in children with Rheumatic Fever (this particularly peaked my interest because Rheumatic Fever is a condition where one's own antibodies attack the heart; PANDAS/PANS is very similar in that the body's own antibodies attack the basil ganglia in the brain and cause terrible symptoms). <http://drsubi.com/bpt/time-magazine-article/>
- Visit the website: www.drsubi.com
- Watch YouTube videos of Dr. Ron Hunninghake (and Dr. Levy and Dr. Rau) discussing the way to cure Lyme disease, cancer and other chronic conditions is to change the body's milieu. www.youtube.com/riordanclinic
- Watch the 60 minutes segment on YouTube entitled, "Vitamin C: The Miracle Swine Flu Cure (60 Minutes) Living 'Proof'."
- Read the article "Elucidating PANDAS; A follow-up Discussion of an Immune-Mediated Mental Illness" in the Naturopathic Doctor News & Review to understand how IVC and IV Glutathione help autoimmune conditions like PANDAS/PANS. http://wholeness.com/Articles/Elucidating_PANDAS.pdf

I sometimes wonder to myself, had I not tried so many different treatment protocols, herxed so terribly, been through so many relapses and been so terribly ill at the end, would we have gone to Kansas? I think not. I don't take a lot of risks, especially with my daughter's health or our finances. I research and want to understand all the variables so I can make the best decision possible and I like to see proof. Well, I got that proof first hand on the sixth day at the Riordan Clinic. I truly hope you do too.

To answer the second question I noted at the start of this article, "Why am I sharing my story?" the answer is simple. Someone shared their Riordan experience and amazing results with me and convinced me to go to the Riordan Clinic and I got well. I have my life back. I could not be more thankful. I want to do the same for someone else.

I'll leave you with a one of the Riordan Clinic's quotes that truly struck a chord with me, **"You may have to fight a battle more than once to win it."** - Margaret Thatcher

High Dose IV Vitamin C

Our primary focus at the Riordan Clinic is the use of High-Dose Intravenous Vitamin C (IVC) to treat a wide variety of conditions. Our approach provides help and hope to individuals struggling with a long-term illness, while focusing on getting and staying healthy, rather than only addressing symptoms. There are many conditions that may benefit from IVC therapy. Some of these are: arthritis, Lyme disease, bacterial infections, viral infections, pain after injury, and more.



There is a great deal of medical research to support the use of IV Vitamin C Therapy. It is one of the best antiviral agents available, with the ability to neutralize and eliminate a wide range of toxins. Vitamin C will enhance host resistance,

greatly augmenting the immune system's ability to neutralize bacterial and fungal infections. The Riordan Clinic Research Team has decades of studies, internationally published articles and has sent speakers worldwide sharing this research with doctors. The National Institutes of Health has published evidence confirming Vitamin C's anti-cancer properties.

Benefits:

- Lessens pain after injuries
- Helps the body heal faster
- Improves energy levels/fatigue
- Resiliency to infections like colds/flu or other viral/bacterial infections
- In cancer patients, IVC is known to improve the response to cancer therapies because it alleviates the effects of traditional therapies, improves appetite and helps patients remain more active

For more information:

RiordanClinic.org/what-we-do/high-dose-iv-vitamin-c/

Learning About Lyme Disease

AUTHOR

Dr. Ola Buhr, MD



In this newsletter I will be covering the topic of Lyme disease. An entire book can be written about the bacterium *Borrelia burgdorferi*, that is the cause of Lyme disease; however I will try to be as concise as possible and include the most pertinent and applicable information for the reader. Within this article, I will discuss the characteristics of this bacterium and its stealth abilities to invade the human host, briefly discuss co-infections that can exist alongside Lyme disease, laboratory testing for this microorganism, post-Lyme disease syndrome (PLDS), as well as the infamous Chronic Lyme disease. Some of this information may sound a little scary, however knowledge is empowering and there are ways we can protect ourselves from this highly adept pathogen. I also want to mention that there is hope out there for those who are affected by Chronic Lyme disease.



Borrelia burgdorferi is an anaerobic (meaning it dislikes oxygen) gram-negative spirochete, which literally means, coiled hair. Under the microscope it looks like a very active little worm with many hairs (flagella) that support its rapid motility and chemotactic properties. This unusual bacterium was discovered in 1981 under the microscope of Willy Burgdorfer Ph.D. who isolated the spirochetes from the *Ixodes* tick. Spirochetes are ancient bacteria and have been around for billions of years. They were even found in “Otzi the iceman” who was discovered in 1991 in the Tyrolean Alps and lived 5,300 years ago. *Borrelia burgdorferi* cannot live without a host. It resides inside of arthropods such as ticks (aka. vectors). Vectors are typically biting insects that spread microbial pathogens from one animal (host) to another. In other words arthropods (such as ticks) are the transport vehicles for these little “parasite-like” bacteria. Here is a rather unsettling piece of information; *Borrelia* species (yes, there are several of them) have not only been found in ticks, but also in mosquitoes, biting flies, mites, fleas, and in arthropod feces. “Transmission to humans has been documented from biting flies

(Connecticut and Germany), from mites (Russia), and to hamsters by mosquitoes.” (Buhner p. 32) More research still needs to be done regarding these other insect vectors and their ability to transmit the bacterium. It is known that the *Ixodes* genus of tick is the most common and most well studied arthropod to transmit *Borrelia burgdorferi* (among other *Borrelia* species).

Borrelia burgdorferi is capable of living in a multitude of environments and is known to use up to 300 different animal species as their hosts. (The white-footed mouse and deer are definitely not the only ones.) Birds are very involved in widely disseminating these microorganisms throughout the world (primarily via their migration routes). Not only do we see this play out internationally, but within North America as well when the birds migrate north to south and back north again. The ticks (which are infected with the spirochetes) drop off the birds just in time to find a new reservoir. These “reservoirs” include many ground-dwelling mammals, lizards, large animals such as bear and elk, as well as farm animals, and our beloved pets (cats and dogs). These spirochetes have been found in seabirds and penguins; they have been documented in the Subarctic and Arctic regions especially since ticks can adapt to very cold environments (-22 degrees Fahrenheit) all the while carrying the *Borrelial* bacteria. Therefore, “there is no land mass on this planet where *Borrelial* organisms do not exist nor act to infect people, their companion animals, or wild animal species.” (Buhner p. 97) Of course there are the notoriously endemic areas where Lyme disease is most prevalent and these include the Northeastern U.S., Northern California, Southeastern U.S., and the Wisconsin/Minnesota region. Just because one doesn’t live in a Lyme endemic area doesn’t mean he or she cannot get Lyme disease, every state is affected.

So what is Lyme disease? Lyme disease was first recognized in the mid 1970s when a group of children began experiencing arthritis in a small town of Lyme, Connecticut. Physicians initially misdiagnosed it as juvenile rheumatoid arthritis until a group of highly concerned mothers pushed for further investigation at Yale University. They found that the organism associated with Lyme disease was the bacteria *Borrelia burgdorferi*. Once *Borrelia* enters its host (via an arthropod vector – most commonly a tick) it can cause a wide range of symptoms that affect many different areas of the body. Most common initial symptoms are flu-like and tend to occur in late spring and summer. We have to remember that a bull’s-eye rash (also known as a target lesion or erythema migrans ‘EM’ rash) only occurs in 30 percent of cases in the initial stages of infection, (this is because only some genotypes of *Borrelia burgdorferi* can actually generate the rash). As I’ve already mentioned above there are other species of *Borrelia* and many of these species cause relapsing fever, and this is different from Lyme disease. The Tick-Borne Relapsing Fever (TBRF) occurs from species such as: *Borrelia miyamotoi*, *Borrelia hermsii*, *Borrelia turicatae* (just to name a few), which are also transmitted by ticks.

Various organ systems can be affected such as joints, the nervous system including the brain, spinal cord, and peripheral nerves, the heart, and even skin. How can so many areas of the body be involved? This is because the spirochetes have an affinity for collagenous tissues; these prime locations provide the best sustenance and growth conditions for the organisms to “divide and conquer.” Lyme disease can mimic many disease complexes such as arthritis, Alzheimer’s dementia, multiple sclerosis, schizophrenia, severe unremitting anxiety and depression, chronic fatigue syndrome, and fibromyalgia just to name a few. This is why Lyme disease is referred to as the “Great Imitator.” Unfortunately, relatively poor diagnostic tests exist, and this can make the condition very difficult to diagnose.

Why is Lyme disease so difficult to diagnose? There are several reasons. “During the first 2-4 weeks of infection only about half of infected people produce measurable antibodies to Lyme spirochetes. The spirochete numbers may be so low that they do not show on even the most sensitive tests; they often cannot be found even with biopsy. Additionally, antibiotic therapies can cause the motile spirochete levels, already low, to drop by a factor of one thousand in the body, making detection of any remaining spirochetes nearly impossible by any means. Antibody response can be weak or nonexistent at different stages of the disease in different people.” (Buhner

Learning About Lyme Disease continues on page 7...

p. 47) Lyme serology testing using the two-tiered testing process (ELISA and western blot) as recommended by the Centers for Disease Control (CDC) is sensitive only 50 to 75 percent of the time. Current studies reveal, "The tests are not reliable and, even at best, only show about a 60 percent positive infection rate even in groups clinically known to be infected." (Buhner p. 50)

Rates of Lyme disease have been increasing steadily. In 2004 the CDC was publishing statements "that only 20,000 new Lyme infections were occurring yearly... [however] in response to tremendous pressure from researchers and Lyme support groups, in 2013 the CDC altered that figure, finally agreeing that, at least, 300,000 infections were occurring every year in the United States." (Buhner p. 38) Why are we seeing a rise in Lyme disease incidence? Well, to be frank, there is a "human-generated ecological disruption" happening on our planet. As a human species we have heavily fragmented our environment through urban development and suburban sprawl. In essence we have encroached upon the habitats of many animals, insects, and microorganisms. Humans have significantly altered the ecological landscape and have dramatically risen in population. Secondly, climate change is becoming more a factor. Cities now form "urban heat islands" which ticks prefer and thrive in; therefore those arthropods can be found in abundance in our city parks, green belts, and cemeteries. A 2014 study by Buczek A. revealed, "microclimate conditions and pollution within urban heat islands can affect the abundance and activity of *Ixodes ricinus* nymphs and females which more frequently attack humans and medium-and large-size animals."



Newer research has revealed that transmission times of *Borrelial* organisms occur much faster than previously thought. Most physicians have the understanding that removing an attached tick within 48 hours will prevent Lyme disease, (unfortunately this knowledge is outdated and was gathered from very early research on the topic). Recent work by scientist Michael Cook in the UK has revealed that *Borrelial* organisms can be transmitted via a tick in as little as 10 minutes and ranging up to 72 hours, also transmission times of

under 16 hours were observed to be the most common. One more scary detail (I'm sorry)... ticks don't always carry just one bacterium. Ticks are able to transmit a variety of coinfections to a host mammal. Coinfections can occur in roughly 20 percent of Lyme disease cases and the most common pathogens are: babesia, bartonella, chlamydia, ehrlichia, mycoplasma, rickettsia, and last but not least anaplasma. Symptoms tend to be more severe and with higher fevers (or even relapsing fevers) when one or more of these little guys happen to hitch a ride.

Another (maybe not so awesome fact) is that *Borrelia burgdorferi* has one of the largest genomes out of any bacterium. Therefore, the more DNA an organism has, the more it can be re-arranged and re-structured forming numerous different strains, genotypes, and subspecies. In other words, the *Borrelia burgdorferi* in Connecticut is different from the *Borrelia burgdorferi* in Wisconsin, which is different than the *Borrelia burgdorferi* in California and so on. This may also be the reason that one antibiotic (or herb) works for one person, but not for another, as well as offers an explanation for creating different symptom pictures among people. Buhner described this perfectly when he stated, "When you get Lyme disease, you don't have just one bacterial species in your body making you sick but rather an infectious swarm of similar but not identical genetic variants." (p. 29) This is one reason why *Borrelia burgdorferi* is such a stealth pathogen; through its various genetic manipulations it can evade, suppress, or even activate different branches of our immune system for its own means. It is also highly motile and a faster little swimmer than our own white blood cells. Not only is it hard to catch and be engulfed by our white blood cells, it has the ability to make biofilms and wall itself off from being captured. These little motile creatures are "designed for swimming through liquid environments such as blood, lymph, cerebral spinal fluid, and for squirming and tunneling through viscoelastic gel environments like the extracellular matrix and other connective tissues." (Berndtson 2013) One more interesting piece of information: when *Borrelial* organisms feel threatened (when they are under attack with antibiotics for example) they can morph into little cysts and stay dormant within the human body for up to ten months. TEN months! It only takes about one minute for them to form into these little round bodies.

Learning About Lyme Disease continues on page 8...

Nutrient Store

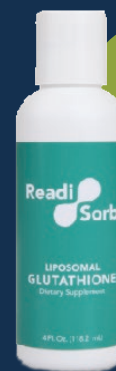
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GLUTATHIONE, a naturally occurring protein, is called a peptide. It is composed of three amino acids: glycine, glutamine and cysteine.

Cysteine contains sulfur and gives glutathione its sulfuric aroma. It also plays a major role in glutathione's antioxidant and detoxification functions.

With its anti-inflammatory properties, glutathione is considered a "key antioxidant" in the functioning of cells. Antioxidant means it helps prevent oxidative stress.

Glutathione plays a critical role in defending cells against this oxidative stress. Therefore, a deficiency of glutathione plays a key role in aging and many disease states.

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There is still a lot of controversy as to whether or not Chronic Lyme or post-Lyme disease syndromes even exist. Extensive national and international research literature describes numerous studies regarding people who suffer from Chronic Lyme and describes how certain people treated with conventional antibiotic regimens relapse into a chronic disease state when those drugs are discontinued. Symptoms tend to improve while people are on antibiotics; unfortunately people stay on antibiotics for many months to years to achieve symptom suppression. Certain groups of people also suffer from something called post-Lyme disease syndrome, which means that they've been "successfully treated with antibiotics but, due to bacterial damage to organ structures, still suffer a range of symptoms." (Buhner p. 66) Therefore the spirochetes damage the collagen tissues within the body especially those in the central nervous system. Nerve cells take a long time to repair themselves (and they also need the proper building blocks to do that adequately). Unfortunately autoimmune processes can also occur in the background setting of Lyme disease. As the Lyme bacteria attack cells in our body those cells break down and release their inner contents. Our white blood cells recognize those contents as foreign (because they're not supposed to belong outside of our cells) and mount an immune attack against our body's own proteins.

What are some things we can do to prevent Lyme disease? Get into the habit of daily routine tick checks during the spring and summer season (remember, it doesn't even need to be a hike in the woods for you to get exposed). Purchase a natural tick repellent and apply it when going outside. (You can make your own at home using a variety of essential oils and 95 percent grain alcohol.) The single most important thing we can do to minimize Lyme disease infection is to keep our immune systems as strong as possible. This means eating a nutrient-dense diet, getting a good amount of sleep, staying away from environmental toxins, and managing stress appropriately (i.e. not burning the candle at both ends).

Treatment regimens are different in acute versus Chronic Lyme disease situations and it is beyond the scope of this article to cover those details. If you are suffering from Chronic Lyme disease and feel as though you may not have had adequate treatment, it would be wise to seek out a 'Lyme literate' practitioner, one who is well versed in both antibiotic and herbal treatments for *Borrelia burgdorferi* and possible coinfections. You can visit the website www.ilads.org for more up-to-date information on the topic. I also strongly recommend the book "Healing Lyme" by Stephen Harrod Buhner to learn everything there is to know about *Borrelia burgdorferi*.

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Welcome Dr. Nia Stephanopoulos-Chichura!

Exciting things are happening at the Riordan Clinic! We are pleased to announce the addition of Dr. Nia to our staff, along with a brand new location in Kansas City!

Ourania T. Stephanopoulos-Chichura, MD, or Dr. Nia, as patients fondly refer to her, is a native of Ohio and a third generation healer in her family. Her great-grandmother, Baba Devitini, was the local village healer and midwife in Greece where Dr. Nia's family originated.

Dr. Nia attended the University of Illinois at Urbana-Champaign and studied microbiology and chemistry. While there she discovered her love of biochemistry and its application to health. She graduated Summa Cum Laude and Phi Beta Kappa with a degree in biology and microbiology along with a minor in chemistry. She chose to attend medical school at KU Medical Center in Kansas City and in Wichita.

Dr. Nia's father taught her at a young age to always ask "why?" and this has served her well through medical school and beyond. She had a desire to find root causes to medical problems by asking "why?" She chose to complete a post-sophomore pathology fellowship while in medical school. She studied cancer and medical laboratory techniques extensively. It was asking the simple question "why?" that eventually led Dr. Nia to Integrative Medicine. While in medical school Dr. Nia was inducted into the Alpha Omega Alpha Society as well as into the Gold Humanism Honor Society.

After Medical School, she joined the Residency program in Internal Medicine at the University of Kansas Medical Center, serving patients at the University of Kansas Hospital as well as veterans at the VA Medical Centers in both Kansas City and Leavenworth. During Residency she was given the Mark Beck Award for Humanism in Medicine and the Medical Student Assembly Professionalism in Residency Award.

After Residency she completed a Fellowship at KU Integrative Medicine under the guidance of Dr. Jeanne Drisko. Dr. Nia then joined the staff at KU Integrative Medicine. Dr. Nia is Board Certified in both Internal Medicine and Integrative Medicine.

Dr. Nia's journey in Integrative Medicine began at the Riordan Clinic! While she was a medical student on rotations in Wichita, a friend suggested she visit the Riordan Clinic to find root causes to diseases. What she found was an approach to the patient as a whole person. This included evaluating for root causes, nutritional deficiencies, and toxicity. Dr. Nia feels that her journey in Integrative Medicine has come full circle with her joining the staff at the Riordan Clinic.

Join us in welcoming Dr. Nia to our team and our new clinic in Kansas City!

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