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**Lyme Disease**

Lyme disease is an infection by the bacterium Borrelia Burgdorferi that is carried by ticks. It can easily produce chronic infection and be difficult to eradicate if not treated early. Lyme has particular affinity for nerves, the brain, joints, and the heart. Thus, it can cause chronic pain, nerve pain, joint pain, muscle pain, neurologic and brain disorders, cognitive dysfunction, immunologic disorders, and fatigue. The spectrum of diagnoses can include chronic fatigue syndrome, fibromyalgia, paresthesia, degenerative disc disease, anxiety, depression, multiple sclerosis, Lou Gehrig's disease, rheumatoid arthritis, and systemic lupus erythematosis (lupus).

There is a huge schism in medicine about how to diagnose and treat Lyme disease. Many in the field state that Lyme is easy to diagnose, easy to treat, not seen in many areas of the country, and does not become chronic. Yet there is clear and often incontrovertible evidence that Lyme can take on a myriad of forms and masquerade as many other things; we have Lyme carried in ticks here in Florida and the whole southeast (Dr. Kerry Clark, PhD at the University of North Florida doing research on Lyme disease, finds Lyme DNA in 2% of Lone Star ticks and 5% of black legged ticks from the Southeast.); that Lyme can be present even when it does not meet the Center for Disease Control (CDC) criteria; and that despite supposedly adequate treatment, Lyme becomes chronic and can leave people with chronic illness and severe debility.

Many factors contribute to Lyme's ability to evade eradication. Antibiotic resistance is a problem, just as with MRSA (methicillin resistant staph aureus). The Lyme organism has the ability to convert into cysts (round form) that help it survive in hostile conditions as when antibiotics are present. It can be complicated by other co-infections: Babesia, Bartonella, Ehrlichia, Chronic Epstein-Barr virus, and others. Especially when certain co-infections exist, Lyme spirochetes can form a biofilm that helps all the organisms survive and evade the immune system and antibiotics. Borrelia burgdorferi can burrow into cells and escape detection and treatment. When a person is fatigued, in pain, and has multiple infections, the immune system is so overwhelmed that it can't effectively fight. Worst of all is that people can be unaware that their symptoms of fatigue, pain, cognitive dysfunction, neurologic disorders, and immunologic problems can be from Lyme disease (or physicians have told them their problems aren't from Lyme disease), and so the infection goes untreated and unchecked for weeks, months, and years.

Thus, education and awareness of the existence of Lyme disease as a possible causative agent is the first hurdle to recovery. Next, adequate diagnostic testing and knowledgeable interpretation of the results is necessary. At the Mandarin Wellness Center, we commonly perform a Western Blot for Lyme (not an antibody screen for Lyme, as this misses far too many cases) and a CD 57 count. The Western Blot tests for antibodies to various proteins in the Lyme organism. Some of these proteins are very specific (unique) to Lyme – bands 18, 23, 31, 34, 37, 39, 83, and 93 are referred to as Lyme specific bands. The remaining bands are to proteins that may be produced by other organisms, and so may not represent Lyme infection. According to The Center for Disease Control (CDC), 5 bands out of 10 of the IgG antibodies tested or 2 bands out of 3 of the IgM antibodies constitute a diagnosis of Lyme disease. (However, the CDC's fine print does state that Lyme is a clinical diagnosis – taking into account the constellation of symptoms and the laboratory testing.) IgM antibodies form in the first six weeks following exposure and IgG antibodies form after the first six weeks. It would seem that the IgM antibodies need not be tested in someone with symptoms for more than a few months, but this proved not to be so in my experience. I suspect that because Borrelia burgdorferi can wall up inside cysts, form

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biofilms, and burrow intracellularly (inside cells), it can be invisible to the immune system's detection; or the immune system may be so embattled with high levels of Lyme bacteria, multiple co-infections, poor health, and chronic pain/fatigue that no antibodies will form even with infection. Then a heightened immune response or an antibiotic can kill spirochetes, releasing the proteins into the body fluids and cause formation of new antibodies of the IgM class. There have been instances when I was strongly suspicious that a person had Lyme, even though their Western Blot failed to show any (antibody) bands. I would then initiate a trial of antibiotics to assess whether the individual had a response to the antibiotics (strong evidence of infection) and as a stimulus to generate antibody. I would then retest the Western Blot after at least several weeks. On a number of occasions, I have seen this intervention result in the new development of IgM bands on the Western Blot.

The CD 57 count tests the number of a certain subset of white blood cells that are often selectively reduced in Lyme disease. Only Lyme (and perhaps AIDS) will depress the CD 57 count, so a level below 60 is diagnostic of Lyme. The CD 57 count needs to be above 200 when antibiotics are discontinued, or the Lyme will likely relapse. So, this test is useful (if it is low) in diagnosis, and helps mark improvement with treatment, and lets us know, when someone is symptom-free that antibiotic therapy can be ended.

At Mandarin Wellness Center, we use a panoply of treatment modalities. Certainly, antibiotics kill bacteria, and I consider them a mainstay of treatment for many people. However, there are so many cases of people who develop chronic Lyme disease, even with adequate antibiotic treatment, that I consider them to be insufficient all by themselves. Healthy diet (with plenty of fruits and vegetables, low in fat, sugar, and processed foods) is important. Antioxidants, B vitamins, Magnesium, nutrients for liver support, and supplements to boost energy are often helpful. Electromagnetic therapies such as the Rife machine, acupuncture, and frequency specific microcurrent often produce clear evidence of response to Lyme disease. Though more expensive, IV vitamin C and glutathione are quite supportive of energy and physiology, and highly effective for Lyme. When pain is present, massage therapy generally produces notable reduction in pain and spasm. There are herbal treatments such as Samento, Banderol, and Cumanda (used in the Cowden Protocol), the Byron White herbals (A-L, A-Bab and A-Bart), and Teasel that have shown to be effective in clinical trials and/or clinical practice.

Another favorite of mine is low dose Naltrexone, which lightly blocks the opiate/endorphin receptor to fool the body into making more endorphins. The immune system is chock full of endorphin receptors, so it functions better with low dose Naltrexone (LDN). All the things that stress makes worse; endorphins make better. So, sleep, mood, energy, allergies, anxiety, depression, and infections are often better with LDN. Naltrexone and opiate pain medicines cancel each other out. Anyone on regular doses of pain medication would be thrown into withdrawal with LDN and should not take it until their pain improves and opiate intake is minimal.

Borrelia burgdorferi produces neurotoxins that cause cognitive dysfunction, neurologic disorders, pain, and also block production of energy in the body's energy factories, the mitochondria. Treatments aimed at binding neurotoxins often help pain, depression/anxiety, cognitive dysfunction, neurologic symptoms, and fatigue. Additionally, when Lyme spirochetes die, they release these neurotoxins into the body. This toxic uck from the dying bacteria results in flu-like symptoms of body aches, malaise/fatigue, headaches, and muscle aches which is a die-off or Herxheimer reaction (Herx for short). An effective treatment for Lyme disease should cause a Herx (die off) reaction, so often the success of a therapy in a specific person can be gauged by this Herx reaction. (Some of the co-infections do not cause a Herx.)

Diagnosing and treating Lyme disease requires suspecting that Lyme could be the cause,

testing for Lyme, a multifaceted treatment approach including more than just antibiotics, and following clinical and laboratory response. While it may not be guaranteed to cure all late-stage severe Lyme, many people are curable and all can improve.

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**Resources:**

**Books:**

- Lyme Monograph by Joseph Burrascano: Advanced Topics in Lyme Disease 16th edition October 2008
 <http://www.lymenet.org/BurrGuide200810.pdf>

- Cure Unknown by Pam Weintraub

- The Top 10 Lyme Disease Treatments by Bryan Rosner

- The Lyme Diet – Nutritional Strategies for Healing from Lyme Disease by Dr. Nicola McFadzean

- Insights into Lyme Disease Treatment by Connie Strasheim

**Video:**
Under Our Skin purchased for $40 on the internet

**Support Groups & Sites:**
- Florida Lyme Friends on Facebook

- Lyme Disease Group on Facebook - https//www.Facebook.com/FloridaLymeDiseaseAssociation

- Florida Lyme Disease Association - [www.flda.org](http://www.flda.org/)

- Lyme Support Group Mandarin Methodist Church; 3rd Thursday of each month at 7pm
 11270 San Jose Blvd Kathy Krull – contact via Facebook group for Northeast Florida Lyme

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