

Hello Functional Medicine Discussion Group members:

Our next meeting will be **Thursday March 30 at 6:30** and the topic will be **Lyme Disease** with **Dr. Melanie Gisler**. Dr. Gisler is a very talented Naturopathic Doctor with an expertise at treating Lyme Disease. We will meet in the MultiPurpose room (UPSTAIRS) at the Santa Monica library at 601 Santa Monica Blvd. with the parking lot entrance on 7<sup>th</sup> Street. **Please let me know as soon as possible if you will be able to attend** by sending me an email with **RSVP Lyme** in the subject line. Please come a little early if possible, so we can start as close as possible to 6:30. As usual, Metagenics will be providing some healthy food. If you have not done so already, please join our closed Facebook page, **Functional Medicine Discussion Group of Santa Monica**.

If you have interest in learning more about how to diagnose and treat Lyme Disease, then you should attend this meeting. We will have an interactive discussion, so plan to participate and ask questions.

Here is the story of Lyme Disease from **Unlocking Lyme** by William Rawls, MD:

*"In November of 1975, 51 people (39 children and 12 adults) mysteriously became ill in Lyme, Connecticut, and a new illness was born.*

*The event became newsworthy because a cluster of people, all bitten by ticks, suddenly became ill simultaneously. Interestingly, it was a time when people were moving out of cities and into the suburbs built in the tick-filled, wooded countryside.*

*The illness, typified by arthritis and an unusual rash around the tick bite, was first thought to be viral. By 1981, however, a researcher named Willy Burgdorfer and his colleagues had isolated the now well-known corkscrew-like bacteria (called a spirochete) from the blood of victims. The microbe was named in his honor, *Borrelia burgdorferi*, and the illness was named for the place of origin (Burgdorfer 1984, 1993).*

*...From the very beginning, *Borrelia burgdorferi* frustrated both doctors and scientists. Medical science during that era was focused on snuffing out all the horrible poxes and plagues that threatened the lives of every person on the planet. Great progress was being made with new vaccines and synthetic antibiotics, and optimism was high that someday all threatening infectious diseases would be eradicated from the planet.*

*Borrelia hindered that optimism.*

*Borrelia simply didn't behave like other microbes and other illnesses that medical science was used to dealing with. It made people sick, but not deathly sick. And some people exposed to it didn't get sick at all.*

*The microbes were hard to grow in the lab and extremely difficult to isolate from the blood of people who displayed symptoms (making a definitive diagnosis a real challenge, even today). Though the bacteria were sensitive to most antibiotics in the lab, people often ended up chronically and miserably ill despite antibiotic therapy."*

If you have time, please read Mr. Rawls' book **Unlocking Lyme** prior to the meeting. Dr. Susanne Bennett, one of our regular FMDG members has a great podcast interview with Dr. William Rawls about Lyme Disease on her Wellness for Life podcast: <http://radiomd.com/show/wellness-for-life-radio/item/34801-overcoming-lyme-disease>. As Functional Medicine practitioners, we need to become

knowledgeable enough about this condition to suspect it and know how to test for it, esp. the chronic condition. Such patients may not have any knowledge about having been bitten by a deer tick and the exposure could have been years ago. It is estimated that there are approximately 300,000 new cases of Lyme disease per year in the US. If an infection occurs, 50% or more will develop a rash at the site of the tick bite. Other early symptoms include fever, headache, and fatigue. Later symptoms may include facial paralysis, joint and/or muscle pain, headaches, chest pain, heart palpitations, shortness of breath, ringing in ears, dizziness, eye pain, tooth pain, disturbed sleep, Bell's palsy, and gastrointestinal dysfunction. Despite proper treatment, 10-20% of people develop joint pains, memory problems, and fatigue for at least six months. Diagnosis is based upon symptoms, history of tick exposure, and testing of antibodies. If diagnosed and treated in the earliest stages with antibiotics, preferably within days or weeks after infection by a tick, Lyme disease is supposedly easily cured. The problem is that if it is not detected and treated, it can result in chronic Lyme disease, which is very difficult to test for and to treat. And a percentage of patients who were treated with antibiotics still go on to get the symptoms of chronic Lyme disease. Antibiotics are also sometimes given for chronic Lyme and it is not clear how effective they are.

Chronic Lyme disease is difficult to test for because *Borrelia* is a type of low virulence pathogen that only exists in small numbers in the body, which makes it difficult to detect when testing. The symptoms of chronic Lyme come not from the bacteria itself but from inflammatory cytokines that are produced. Chronic Lyme patients often have co-infections, the most common are with *Mycoplasma*, *Chlamydia*, *Bartonella*, and *Babesia*. *Ehrlichia*, *Anaplasma*, and *Rickettsia* occur less commonly as co-infections.

Dr. Rawls emphasizes that chronic Lyme disease is not so much a chronic infection as **a disease of immune dysfunction**. If there is a healthy functioning human immune system, *Borrelia burgdorfi* infection should be a relatively easy problem for your body to handle. *Borrelia* is not a super virulent pathogen that can kill you, like Ebola or AIDS or Malaria. In Dr. Rawl's words, "the human immune system is an equal or better match for *Borrelia*. A healthy immune system can seek out and destroy it, wherever it may hide." It is the modern lifestyle that has weakened our immune system. He identifies seven categories of immune system disruptors:

1. Unhealthy, processed foods and a grain based, nutrient depleted diet
2. Exposure to toxins
3. Chronic emotional stress
4. Sedentary lifestyle
5. Overexposure to electrical forces (computers, cell phones, microwaves, etc.) that disrupt the energy flow of the body
6. Oxidative stress
7. Microbiome imbalance

A Functional Medicine approach to taking a careful history, a Nutritional physical examination, and doing some lab testing should help you to identify these immune system disruptors, such as leaky gut, heavy metal toxicity, fatty acid imbalance, or other nutritional deficiencies.

When it comes to testing for Chronic Lyme Disease, current testing methods are limited and it is very difficult to definitively detect *Borrelia* in order to diagnose Lyme disease. It would be nice to have

testing covered by insurance, but the basic level of testing that is available through conventional labs via MD prescription is fairly limited. You will most likely need to use speciality labs, which will most likely be paid for by the patient out of pocket. There have been a number of tests developed to directly detect Lyme disease, including PCR based testing of urine to look for microbe DNA

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1182183/> . Most of the commonly used tests measure antibodies that the immune system has mounted to Borrelia or the other co-infections. The Western Immunoblot test, which measures multiple different microbial antigens by measuring different protein bands and has a high level of specificity for Borrelia. Perhaps the most detailed and potentially accurate testing for Lyme antibodies is the testing offered by Dr. Vojdani's Immunosciences Lab that tests for antibodies to Borrelia, antibodies to Borrelia subspecies, as well as antibodies to the three of the more common co-infections: Babesia, Ehrlichia, and Bartonella. Here's a paper written by Dr. Vojdani with a detailed discussion of the some of the testing issues:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2722197/> BTW, Dr. Vojdani is planning to honor us by attending and will be able to explain to us about the issues related to testing for Lyme Disease.

At the meeting we will discuss some treatment modalities as well, including the use of herbal therapies. This is shaping up to be another don't miss meeting! See you there.