

A Complete Guide to Testing



1771 Honors Lane, Corona CA 92883

www.liafoundation.org

info@liafoundation.org

Testing for Lyme Disease, Borreliosis and multiple-infections can be difficult to understand. We hope that this guide will serve a purpose in narrowing down the lab testing and options available. One thing to keep in mind is that many times the lab testing that our insurance generally pays for is not necessarily the most appropriate or accurate test available.

To avoid needless blood draws, wasted time and resources, we recommend getting the appropriate testing done first so that parents can have a clear picture of their child's infection load prior to starting therapy interventions.

The LIA Foundation is a non-profit 501c3 organization who focuses on Lyme disease, Borreliosis, multiple-infections and their connection to Autism Spectrum Disorder. Our goals include research, awareness and education.

Testing for Lyme/Borrelia and Multiple-Infections

Lyme Disease / Borrelia Burgdorferi, Babesia, Anaplasma, Ehrlichia and Bartonella

Testing for Lyme disease/Borrelia and other infections is not a simple task. A person with a compromised immune system may not make the necessary anti-bodies needed to get an accurate reading. None of the testing is perfect and someone may have the organism(s) in their body and have a negative test, as well a positive antibody test shows evidence of the body's response to an organism, not the organism itself. There may be multiple strains of an organism and we only can test for one- such as Bartonella which has nine pathogenic strains but antibody tests only exist for one or two. Therefore, testing is a piece of helpful information that must be looked at in the context of the patient's history and physical findings.

A Western Blot can be helpful for diagnosis. A positive diagnosis can be strongly considered by having at least one Borrelia specific band and symptoms. The Borrelia specific bands are: 18, 23/25, 30, 31, 34, 37, 39, 83 and 93.

If a band 30 or 31 shows up positive, then a viral panel should be done in order to rule out viruses such as HHV6, Cytomegalovirus, Epstein Barr, etc. A result such as this does not mean that the patient does not also have Borrelia.

The "Lyme Titer" or "ELISA" test that is often first ordered as a "screen" by some clinicians can be very inaccurate. The Lyme/Borrelia "Western Blot" is a more sensitive test. Standard laboratories do not test for all of the "bands" in the Western Blot that are specific to Lyme/Borrelia. Many people will get a false negative from the commercial labs or from a doctor who is not trained to interpret testing properly. It is important to note that if the test comes back stating that it is negative, the results must be deciphered according to the guidelines above. A negative is NOT always a negative. Although the LIA Foundation does not recommend a specific lab, the following is a list of labs which have a superior quality of test in relation to the standard lab. Before using any lab, please check that they are testing for all known strains of Borrelia.

IGeneX

This lab has a variety of panels and individual tests available. Most Lyme literate practitioners will order the Western Blot IgG / IgM for Borrelia (#188, #189); their Western Blot is the only one that tests every Borrelia specific band. They may also choose to order the PCR or IFA as well. IGeneX also offers testing for Babesia (strongly consider the "FISH" test, a direct fluorescent staining of the organism, as well as antibodies for Babesia), Ehrlichia, Anaplasma and Bartonella- an example would be the "complete co-infection panel" (#5090) or the "Western Regional Co-Infection panel" (#5080). A PCR test is best done during a symptom "flare" or during menses if applicable. IGeneX recommends having at least two Borrelia specific bands plus symptoms to make a positive diagnosis.

Phone: 1-800-832-3200 Website: www.igenex.com

27 Reasons why someone could have a false negative Lyme test

www.mentalhealthandillness.com

1. Recent infection before immune response
2. Antibodies are in immune complexes
3. Spirochete encapsulated by host tissue (i.e.: lymphocytic cell walls)
4. Spirochete is deep in host tissue (i.e.: fibroblasts, neurons, etc.)
5. Blebs in body fluid, no whole organisms needed for PCR
6. No spirochetes in body fluid on day of test
7. Genetic heterogeneity (300 strains, 100 in U.S.)
8. Antigenic variability
9. Surface antigens change with temperature
10. Utilization of host protease instead of microbial protease
11. Spirochete in dormancy phase (L-form) with no cell walls
12. Recent antibiotic treatment
13. Recent anti-inflammatory treatment
14. Concomitant infection with Babesia may cause immunosuppression
15. Other causes of immunosuppression
16. Lab with poor technical capability for Lyme disease
17. Lab tests not standardized for late stage disease
18. Lab tests labeled "for investigational use only"
19. CDC criteria is epidemiological not a diagnostic criteria
20. Lack of standardized control
21. Most controls use only a few strains as reference point
22. Few organisms are sometimes present
23. Encapsulated by glycoprotein "S-layer" which impairs immune recognition
24. "S"- layer binds to IgM
25. Immune deficiency
26. Possible down regulation of immune system by cytokines
27. Revised W.B. criteria fails to include most significant

NeuroScience/Neuroimmunology Labs

This lab has 3 panels which includes the standard Western Blot, Anti-body testing and many of the co-infections such as Babesia, Ehrlichia and Bartonella. (Not all specific bands are checked on the Western Blot, only those in the CDC "panels")

In addition, this lab does specialty testing for Autism Spectrum Disorder.

Phone: 715-294-2852 or info@neuroimmunologylabs.com

Central Florida Research

Lyme Antigen Test by Flow Cytometry

Antigen tests detect the organism itself and, unlike antibody tests, antigen tests aren't dependent upon a 'sick' immune system to produce antibodies.

Phone: 863-956-3538 Website: www.centralfloridaresearch.com

Fry Clinical Labs

This lab does direct visual microscopy of a blood sample and thus can identify Babesia, Bartonella and others even when antibodies are not present or at very low levels.

Phone: 480-991-4555

Mycoplasma

According to research done by the Institute for Molecular Medicine and reported on their website www.immed.org, "we have identified systemic infections, such as those produced by *Mycoplasma* species, *Chlamydia pneumoniae* and Human Herpes Virus-6 (HHV-6), in a high percentage of ASD patients, and these infections are likely to be important in determining the treatment strategies for many ASD patients. "

Medical Diagnostic Laboratory (MDL)

Professor Garth Nicolson's work from the Institute for Molecular Medicine found that, 58% of ASD children have multiple-strains of Mycoplasma. The lab recommends the Mycoplasma General PCR test and Mycoplasma Fermentans PCR test. Also, HHV-6 (Human Herpes Virus-6), can be tested here, both antibodies and PCR. In addition, several strains of Bartonella may be tested at this lab by PCR method.

Phone: 877-269-0090, Website: www.mdlab.com

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Viral Testing

It is a good idea to test for HHV-6 as many children have shown to have a significant viral load as well. In addition, a subset of children with autism, have shown improvements by using anti-viral treatments.

ViraCor Laboratories

Direct effects of HHV-6 (Human Herpes Virus – 6) include fever, rash, hepatitis, encephalitis, pneumonitis and delay or suppression of bone marrow engraftment. This test is done by PCR.

Phone: 800- 305-5198 Website: www.viracor.com

Heavy Metal Testing

Urine Porphyrin Testing can give an idea of how heavy of a metal “load” the patient is carrying. Check out: www.labbio.net or www.metametrix.com for more information. In addition, a metals “challenge” test can be helpful.

www.doctorsdata.com

Parasites, Yeast and Gastrointestinal Testing

Many children and adults with chronic illnesses have a great environment for various microbes such as parasites and yeast to thrive. It is important to find out which microbes are causing trouble to prevent more damage. Below is a list of labs which are commonly used for this type of testing.

Diagnos-Techs, Inc.

The GI Health or Expanded GI Health panels test for several types of parasites, food intolerances, gut function and health.

Phone: 800- 878-3787 website: www.diagnostechs.com

Genova Diagnostics

This lab offers several panels that could be useful such as the Parasitology profile, or for a more detailed panel the Comprehensive Stool Analysis.

Phone: 800-522-4762 website: www.gdx.net

Great Plains Laboratory

Many physicians have confidence in this lab due to their specialized testing. For Candida testing, an Organic Acid Test or Microbial OAT Panel can give a clear picture as to the yeast or bacterial overgrowth in the patient.

Phone: 800-288-0383 Website: www.greatplainslaboratory.com

Metametrix Clinical Laboratory

The laboratory can be used for stool cultures, Organic acids, and check for metabolites of bad bacteria and pathogenic yeast, as well as fatty acid,metabolism, Krebs cycle issues, and functional vitamin deficiencies.

Phone: 800-221-4640 Website: www.metametrix.com

Doctors Data Laboratory

A comprehensive stool analysis, parasitology or microbiology panel can be done to investigate the health of the GI tract. In addition, this lab is great for testing of heavy metal toxicity.

Phone: 800-323-2784 Website: www.doctorsdata.com

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