AIDAN JIANG

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Date of Birth: 02-16-2017
Biological Sex: Male
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FINAL REPORT

Accession ID: 2507296010

Provider Information

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Report Information

Current Result | Previous Result | In Control | Moderate | Risk

Specimen Information

Sample Type	Collection Time	Received Time	Report	Final Report Date
Blood fingerprick	2025-08-05 17:00 (AEST)	2025-08-08 05:50 (AEST)	Neural Zoomer Plus - P2 Tickborne Diseases 2.0 - P10	2025-08-12 12:03 (AEST) 2025-08-12 12:06 (AEST)

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Neural Zoomer Plus

INTRODUCTION

Vibrant Wellness is pleased to present to you 'Neural Zoomer Plus', to help you make healthy lifestyle and dietary choice in consultation with your healthcare provider. It is intended to be used as a tool to encourage a general state of health and well-being.
The Vibrant Neural Zoomer Plus is an array of neural antigens and genetic tests which offers very specific antibody-to-antigen recognition and potential risk to develop Neurological Autoimmune disease. The panel is designed to assess an individual's IgG, IgA, and IgM sensitivity to these antigens. Neural Zoomer plus aims to reduce the prevalence of neurological conditions by empowering patients and healthcare providers with a vital resource for early risk detection and an enhanced focus on personalized primary prevention.

Methodology:

The Vibrant Neural Zoomer test is a semiquantitative assay that detects IgG, IgA, and IgM antibodies in human serum/DBS for the neural antigens with multiplexed chemiluminescence immunoassay (CLIA) methodology. The Vibrant ApoE genetics test uses real-time PCR methodology. DNA is extracted and purified from blood/saliva samples and a SNP (single nucleotide polymorphism) genotyping assay is performed using real-time PCR to detect the specific allele target.

Interpretation of Report:

The Neural Zoomer summary page provides concise information on the list of antigens with antibody titers that are outside the normal reference range. Reference ranges have been established using 2000 healthy individuals. Vibrant utilizes proprietary reporter-based analysis which is designed to assay specific total IgG (subclasses 1, 2, 3, 4), total IgA (subclasses 1, 2), and total IgM antibodies. Additionally, the previous value (if available) is also indicated to help check for improvements every time the test is ordered.

This is followed by a complete list of all antigens tested including IgG+IgA and IgM antibody titers. A classification of Green denotes a results that is within the normal reference range, the classification of Yellow denotes a result that is moderately elevated titer with respect to the reference range and the classification of Red denotes a result that is elevated with respect to the normal reference range.

The Vibrant Wellness platform provides tools for you to track and analyze your general wellness profile. Testing for Neural Zoomer + panel is performed by Vibrant America, a CLIA certified lab CLIA#:05D2078809 and ApoE Genetics is performed by Vibrant Genomics, a CLIA certified lab CLIA#: 05D2098445. Vibrant Wellness provides and makes available this report and any related services pursuant to the Terms of Use Agreement (the "Terms") on its website at www.vibrant-wellness.com. By accessing, browsing, or otherwise using the report or website or any services, you acknowledge that you have read, understood, and agree to be bound by these terms. If you do not agree to these terms, you shall not access, browse, or use the report or website. The statements in this report have not been evaluated by the Food and Drug Administration and are only meant to be lifestyle choices for potential risk mitigation. Please consult your healthcare provider for medication, treatment, or lifestyle management. This product is not intended to diagnose, treat, or cure any disease.

Please note:

It is important that you discuss any modifications to your diet, exercise, and nutritional supplementation with your physician before making any changes. Pediatric reference ranges have not been established for this test.

Neural Zoomer Plus - Summary

Neural Zoomer Plus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Demyelination Antigens	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Tubulin	13.3	4.8		

Tubulin is a protein that forms microtubules, which are important in maintaining the structure and the integrity of a neuron. These structures also help in the migration and differentiation of neurons. Hence, alterations in the tubulin protein can be associated with various conditions. Low levels of anti-tubulin autoantibodies are a normal component of healthy human sera. High-levels of anti-tubulin autoantibodies could be associated with conditions like Type 1 diabetes, thyroiditis, and viral and parasitic infections. In severe cases, high levels of antibodies against tubulin may be associated with conditions like Guillain-Barre syndrome (an autoimmune condition wherein the immune system attacks the peripheral nervous system resulting in muscle weakness and paralysis) and chronic inflammatory demyelinating polyneuropathy (CIDP) (a long-term autoimmune disease where the immune system attacks the myelin sheath resulting in inflammation).

Brain Inflammation	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Dopamine receptor 1	11.8	8.6		

Dopamine 1 receptor (D1R) is the most abundant dopamine receptor. It gets activated by the neurotransmitter dopamine. Dopamine receptors play an essential role in daily life functions, of which D1R is responsible for memory, attention, impulse control, regulation of renal function, and locomotion. Neuropsychiatric and movement disorders are associated with autoantibodies against D1R. D1R is also associated with the pathogenesis of Parkinson's disease (PD).

Anti-Dopamine receptor 2	10.5	4.9		

Dopamine 2 receptor (D2R) is involved in various functions like locomotion, attention, sleep, memory, and learning. It is activated by the neurotransmitter dopamine. D2R is involved in the neurotransmission of motor control. Children with D2R antibodies develop 'basal ganglia encephalitis', a condition with prominent movement disorders including parkinsonism, dystonia (involuntary muscle contraction), and/or chorea (abnormal involuntary movement disorder). It is also accompanied by neuropsychiatric features like obsessive-compulsive disorder, psychosis, and emotional lability (quick uncontrolled shift in emotions).

Infections	Current IgG	Current IgM	Previous IgG	Previous IgM
Epstein Barr Virus EBNA1	24.2	1.1		

The Epstein-Barr virus (EBV) infection is characterized by symptoms like extreme fatigue, fever, sore throat, head and body aches, swollen lymph nodes in the neck and armpits, swollen liver and/or spleen, and rash. Severe progression of this condition can lead to various central nervous system complications including encephalitis (brain inflammation), meningitis (inflammation of the covering of the brain and spinal cord) , cerebellitis (inflammation of the cerebellum), acute disseminated encephalomyelitis (inflammation and damage to the myelin sheath), transverse myelitis (spinal cord inflammation across its entire width), and radiculopathy (pinched nerve). Silent EBV infection is seen to be involved in the pathogenesis of multiple sclerosis.

Epstein Barr Virus VCA gp125	>30	7.3		

The Epstein-Barr virus (EBV) infection is characterized by symptoms like extreme fatigue, fever, sore throat, head and body aches, swollen lymph nodes in the neck and armpits, swollen liver and/or spleen, and rash. Severe progression of this condition can lead to various central nervous system complications including encephalitis (brain inflammation), meningitis (inflammation of the covering of the brain and spinal cord) , cerebellitis (inflammation of the cerebellum), acute disseminated encephalomyelitis (inflammation and damage to the myelin sheath), transverse myelitis (spinal cord inflammation across its entire width), and radiculopathy (pinched nerve). Silent EBV infection is seen to be involved in the pathogenesis of multiple sclerosis.

Neural Zoomer Plus - Summary

Neural Zoomer Plus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Infections	Current IgG	Current IgM	Previous IgG	Previous IgM
Epstein Barr Virus EA Antigen	13.9	4.3		

The Epstein-Barr virus (EBV) infection is characterized by symptoms like extreme fatigue, fever, sore throat, head and body aches, swollen lymph nodes in the neck and armpits, swollen liver and/or spleen, and rash. Severe progression of this condition can lead to various central nervous system complications including encephalitis (brain inflammation), meningitis (inflammation of the covering of the brain and spinal cord) , cerebellitis (inflammation of the cerebellum), acute disseminated encephalomyelitis (inflammation and damage to the myelin sheath), transverse myelitis (spinal cord inflammation across its entire width), and radiculopathy (pinched nerve). Silent EBV infection is seen to be involved in the pathogenesis of multiple sclerosis.

HHV-6	12.9	3.2		

Human herpesvirus 6 (HHV-6) can target the nervous system, the immune system, and a wide variety of organs. It can remain asymptomatic. Symptomatic manifestations are seen to occur predominantly in children and the immunosuppressed. The infection is characterized by symptoms like fever and roseola (rash). However, severe HHV-6 infection can affect the brain leading to febrile seizures (seizures caused by fever mainly in children), epilepsy (recurrent seizures), and encephalitis (inflammation of the brain). This condition is more life-threatening in the immunosuppressed. HHV-6 is believed to play a role in the pathogenesis of neurodegenerative diseases such as multiple sclerosis and Alzheimer's disease.

Neural Zoomer Plus

Neural Zoomer Plus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Demyelination Antigens	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Tubulin	13.3	4.8		
Anti-Myelin basic protein	7.4	4.1		
Anti-Myelin oligodendrocyte glycoprotein	8.2	4.7		
Anti-Myelin proteolipid protein	7.6	4.8		
Anti-Neurofascin	7.9	4.0		
Anti-MAG	7.0	4.8		

Blood Brain Barrier Disruption	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-s100b	8.0	4.3		
Anti-Glial fibrillary acidic protein	7.9	3.9		
Anti-Microglia	9.0	5.8		
Anti-Glucose regulated protein 78	6.6	5.0		

Optical and Autonomic Nervous System Disorders	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Neuron specific enolase	9.1	4.5		
Anti-Aquaporin4	7.2	5.2		
Anti-Recoverin	7.4	4.2		
Anti-CV2	8.2	7.3		

Peripheral Neuropathy	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-GM1	7.9	5.1		
Anti-GM2	1.6	7.6		
Anti-Hu	7.9	5.2		
Anti-Ri	9.5	6.2		
Anti-Amphiphysin	9.5	5.2		

Neural Zoomer Plus

Neural Zoomer Plus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Neuromuscular disorders	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Acetylcholine receptors	6.9	5.1		
Anti-Muscle specific kinase	4.8	5.5		
Anti-Voltage gated calcium channels	8.2	3.6		
Anti-Voltage gated potassium channels	1.6	5.8		
Anti-Titin	6.8	4.3		

Brain Autoimmunity	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Cerebellum	7.6	4.5		
Anti-Purkinje cell	8.9	4.8		
Anti-Yo	7.7	5.1		
Anti-Amyloid beta (25-35)	8.2	3.8		
Anti-Amyloid beta (1-42)	6.7	4.9		
Anti-RAGE peptide	9.7	3.9		
Anti-Tau	8.2	5.3		
Anti-Glutamate	7.8	4.4		
Anti-Dopamine	7.5	4.0		
Anti-Hydroxytryptamine	7.6	6.3		
Anti-Alpha-synuclein	7.4	5.7		
Anti-α1 and β2 adrenergic receptors	7.8	6.1		
Anti-Endothelin A receptor	8.1	3.6		

Brain Inflammation	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-NMDA receptor	9.1	4.2		
Anti-AMPA receptor	7.0	4.5		
Anti-GABA receptors	7.3	4.2		

Neural Zoomer Plus

Neural Zoomer Plus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Brain Inflammation	Current (IgG + IgA)	Current IgM	Previous (IgG + IgA)	Previous IgM
Anti-Dipeptidyl aminopeptidase like protein 6	8.7	4.5		
Anti-Glycine receptor	5.4	4.4		
Anti-Neurexin 3	7.5	5.1		
Anti-Contactin-Associated Protein-like 2 Antibodies	6.2	5.4		
Anti-Leucine-rich glioma-inactivated protein 1 (Anti-LGI1)	8.7	7.4		
Anti-Ma	8.4	4.8		
Anti-Dopamine receptor 1	11.8	8.6		
Anti-Dopamine receptor 2	10.5	4.9		

Infections	Current IgG	Current IgM	Previous IgG	Previous IgM
Cytomegalovirus EIA Antigen	6.0	3.2		
Cytomegalovirus GlyB	6.5	4.3		
Cytomegalovirus p150	4.6	6.5		
Cytomegalovirus p28	3.5	3.1		
Cytomegalovirus p52	2.6	1.7		
Cytomegalovirus p65	4.0	5.8		
Cytomegalovirus p38	3.8	1.4		
Epstein Barr Virus EA Antigen	13.9	4.3		
Epstein Barr Virus EBNA1	24.2	1.1		
Epstein Barr Virus VCA gp125	>30	7.3		
Epstein Barr Virus p18	9.2	2.2		
Epstein Barr Virus p23	4.3	6.6		
HSV-1	6.1	7.2		
HSV-2	6.6	5.1		

Patient Name: **AIDAN JIANG**
Date of Birth: **02-16-2017** Accession ID: **2507296010**
Service Date: **2025-08-05 17:00 (AEST)**

Neural Zoomer Plus

Neural Zoomer Plus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Infections	Current IgG	Current IgM	Previous IgG	Previous IgM
HHV-6	12.9	3.2		
HHV-7	5.6	4.6		
Streptococcal A	5.7	2.7		

Risk and Limitations

This test has been developed and its performance characteristics determined by Vibrant America LLC., a CLIA certified lab and Vibrant Genomics, a CLIA certified lab. These assays have not been cleared or approved by the U.S. Food and Drug Administration. Vibrant Wellness provides additional contextual information on these tests and provides the report in a more descriptive fashion.

Vibrant Neural Zoomer panel does not demonstrate absolute positive and negative predictive values for any condition.

Vibrant Neural Zoomer panel testing is performed at Vibrant America, a CLIA certified laboratory utilizing ISO-13485 developed technology and Vibrant Genomics, a CLIA certified laboratory. Vibrant America and Vibrant Genomics have effective procedures in place to protect against technical and operational problems. However, such problems may still occur. Examples include failure to obtain the result for a specific test due to circumstances beyond Vibrant's control. Vibrant may re-test a sample to obtain these results but upon re-testing the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report incorrect results. A tested individual may wish to pursue further testing to verify any results.

Genetic testing is helpful in analyzing the risk of various diseases. However, it is important to note that Genetic risk determinants are neither necessary nor sufficient for the development of diseases. Environmental and lifestyle risk factors could also affect the risk of disease development. Results from genetic analysis should always be interpreted along with clinical findings on the individual. Genetic testing evaluates only for the genotypes indicated; it does not test for other genetic abnormalities found elsewhere in the genome. Different genetic variants can be tested by different genetic labs to evaluate the risk for a particular disease, depending on what is tested, genetic risk may not be comparable between labs. It should be realized that there are possible sources of error like any lab testing which include sample misidentification, trace contamination of PCR reactions, technical errors and rare genetic variants that may interfere with analysis.

Some individuals may feel anxious about getting their genetic test health results. If the potential user feels very anxious, such user should speak to his or her doctor or other health care professional prior to collection of a sample for testing. Users should consult with their doctor or other health care professional if they have any questions or concerns about the results of their test or their current state of health. Users of the test are also encouraged to discuss their test results with a genetic counselor, board-certified clinical molecular geneticist, or equivalent health care professional.

The information in this report is intended for educational purposes only. While every attempt has been made to provide current and accurate information, neither the author nor the publisher can be held accountable for any errors or omissions. Tested individuals may find their experience is not consistent with Vibrant's selected peer reviewed scientific research findings of relative improvement for study groups. The science in this area is still developing and many personal health factors affect diet and health. Since subjects in the scientific studies referenced in this report may have had personal health and other factors different from those of tested individuals, results from these studies may not be representative of the results experienced by tested individuals. Further, some recommendations may or may not be attainable, depending on the tested individual's physical ability or other personal health factors. A limitation of this testing is that many of these scientific studies may have been performed in selected populations only. The interpretations and recommendations are done in the context of these studies, but the results may or may not be relevant to tested individuals of different or mixed ethnicities.

Vibrant Wellness makes no claims as to the diagnostic or therapeutic use of its tests or other informational materials. Vibrant Wellness reports and other information do not constitute medical advice and are not a substitute for professional medical advice. Please consult your healthcare practitioner for questions regarding test results, or before beginning any course of medication, supplementation, or dietary changes.

Tickborne Diseases 2.0

INTRODUCTION

Vibrant Wellness is pleased to present Tickborne panel to help you make healthy lifestyle, dietary and treatment choices and aid in the diagnosis of tickborne diseases in consultation with your healthcare provider.
The Vibrant Tickborne Diseases panel tests for IgG and IgM antibodies for Borreliosis/Lyme disease as well as co-infection(s) and opportunistic infections with other tick-borne illnesses along with detection of DNA of the species causing these infections.

Methodology:

The Vibrant Tickborne Immunochip test is a semiquantitative assay that detects IgG and IgM antibodies in human serum/DBS for the tickborne microorganisms with multiplexed chemiluminescence immunoassay (CLIA) methodology. The Tickborne PCR Test is a real-time PCR Assay based on probe-based qPCR and RT-qPCR designed for qualitative detection of infectious group- specific DNA in clinical samples.

Interpretation of Report:

The Tickborne Summary provides concise information on all organisms with representing the list of antigens with positive serology antibody titers that are outside the normal reference range and/or any detected results of the PCR testing for all analytes tested. Reference ranges have been established using a cohort of 2000 apparently healthy individuals. While the summary table provides a quick snapshot of the analytes tested, providers are encouraged to review the comments provided following the summary for a detailed description of the analytes and the tickborne interpretation guideline available in the portal.

This is followed by a complete list of all analytes tested including PCR results IgG and IgM titers for all organisms. For antibody results, the classification of Green denotes a results that is within the normal reference range, the classification of Yellow denotes a result that is moderately elevated titer with respect to the reference range and the classification of Red denotes a result that is elevated with respect to the normal reference range. Additionally, the previous value (if available) is also indicated to help check for improvements every time the test is ordered. The PCR panel reports results as Detected or Not Detected. As with all testing, results should be interpreted considering a patient's history, physical examination, and/or results of other diagnostic testing.

The Vibrant Wellness platform provides tools for you to track and analyze your general wellness profile. Testing for the Tickborne panel is performed by Vibrant America, a CLIA certified lab CLIA#:05D2078809 and Vibrant Genomics, a CLIA certified lab CLIA#: 05D2098445. Vibrant Wellness provides and makes available this report and any related services pursuant to the Terms of Use Agreement (the "Terms") on its website at www.vibrant-wellness.com. By accessing, browsing, or otherwise using the report or website or any services, you acknowledge that you have read, understood, and agree to be bound by these terms. If you do not agree to these terms, you shall not access, browse, or use the report or website. The statements in this report have not been evaluated by the Food and Drug Administration and are only meant to be lifestyle choices for potential risk mitigation. Please consult your healthcare provider for medication, treatment, diet, exercise, or lifestyle management as appropriate. This product is not intended to diagnose, treat, or cure any disease or condition. Vibrant Wellness does not provide clinical consultations for Lyme Disease treatments.

Please note:

It is important that you discuss any modifications to your diet, exercise, and nutritional supplementation with your healthcare provider before making any changes.

Tickborne Diseases 2.0 - Summary

Tickborne Diseases 2.0

Panel Name	Organism	Positive Serology IgG	Positive Serology IgM	PCR
Lyme disease	Borrelia burgdorferi	VlsE1, C6 peptide, p34 (OspB), B31 strain WCS, 297 strain WCS	B31 strain WCS	
	Borrelia afzelii		DbpA	
	Borrelia spielmanii		DbpA	
	Borrelia bavariensis	p58		
Tick Borne Relapsing Fever (TBRF)	Borrelia turicatae		Borrelia turicatae	
Other Borrelia species	Other Borrelia species	Borrelia andersonii, Borrelia californiensis	Borrelia andersonii	
Bartonella infection	Bartonella henselae	26 kDa		
	Bartonella vinsonii	Bartonella vinsonii		
Epstein Barr Virus	Epstein Barr Virus	EA Antigen, EBNA1, VCA gp125		
Parvovirus B19	Parvovirus B19	VLP VP2		
Human herpesvirus 6	Human herpesvirus 6	HHV-6		

Tickborne Diseases 2.0

Lyme disease

Borrelia burgdorferi

Borreliella burgdorferi is one of the pathogens of the Borreliella burgdorferi sensu lato complex causing Lyme disease. Lyme disease is a zoonotic, vector-borne disease transmitted by the Ixodes tick. Clinical presentation of Lyme disease is known for the characteristic bull's-eye rash (also known as erythema migrans) but can also include myocarditis, cardiomyopathy, arrythmia, arthritis, arthralgia, meningitis, neuropathies, and facial nerve palsy depending on the stage of infection.

Comment

VlsE1 - Variable major protein like sequence E1 protein (VlsE1) is a borrelial surface protein which is the most sensitive protein for IgG antibody detection in all stages of Lyme disease. It is particularly valuable for diagnosis of Lyme disease during early manifestations (EM and acute neuroborreliosis).

C6 peptide - C6 peptide refers to the sixth invariant region (C6) of the variable major protein-like sequence-expressed (VlsE) lipoprotein of B. burgdorferi may be more sensitive in patients with erythema migrans.

p34 (OspB) - Outer surface protein B (OspB) is one of the major proteins in the outer membrane of this B. burgdorferi. OspB was found to be critical for B. burgdorferi adherence and survival within Ixodes ticks.

Borrelia afzelii

Borrelia afzelii is a species of Borrelia, a bacterium that can infect various species of vertebrates and invertebrates. B. afzelii and B. garinii are the primary causes of Lyme disease in Europe and Asia. Coinfection by this Borrelia species with one or more pathogens can occur, carried by the vector, which appears to be in most cases the tick. In Europe the related genospecies Borrelia afzelii is associated with both EM and acrodermatitis chronica atrophicans (ACA), and several European studies have found compelling evidence for B. afzelii infection in patients with morphea.

Borrelia spielmanii

Borreliella spielmanii is a gram-negative bacterium belonging to the pathogens of the B. burgdorferi sensu lato complex causing Lyme disease. B. spielmani has an exceptionally narrow host specificity for a particular reservoir and differentiates it from all other Lyme disease. B. spielmani was detected in ticks feeding on garden and hazel dormice, in questing ticks, and in patients in France, Germany, The Netherlands, and the Czech Republic. It is one of the several species that have been less frequently isolated from symptomatic patients.

Borrelia bavariensis

Borrelia bavariensis, found in Europe and Asia, is a spirochete belonging to the Borrelia group and utilizes rodents as reservoir hosts. Europe B. bavariensis strains were frequently associated with Neuroborreliosis. B. bavariensis strains were frequently included into the species B. garinii in epidemiological and clinical studies in Asia; therefore, their overall medical significance is at present difficult to judge. It is also possible that B. bavariensis is divided into an Asian and European subpopulation.

Tick Borne Relapsing Fever (TBRF)

Borrelia turicatae

Borrelia turicatae is the primary cause of tick-borne relapsing fever in southwestern United States. It is transmitted by the vector, Ornithodoros turicata, an extremely fast feeder among ticks, making it difficult to track transmission. O. turicata can be found in caves and ground squirrel or prairie dog burrows in the Plains regions of the Southwest. The epidemiological evidence for B. turicatae causing human infections is strong. Along with fever, patients may experience an incredible range of nonspecific symptoms. The clinical features of relapsing fever may include recurring febrile episodes, chills, nausea, headache, muscle and joint aches, vomiting, lethargy, thrombocytopenia, etc.

Tickborne Diseases 2.0

Other Borrelia species

Other Borrelia species

The 'Other Borrelia species' encompass a group of spiral-shaped bacteria related to those causing Lyme disease and relapsing fever. These species, including Borrelia andersonii, Borrelia maritima, Borrelia californiensis, Borrelia bissettiae, Borrelia lusitaniae, Borrelia valaisiana, Borrelia yangtzensis, and Borrelia turcica, are lesser-known compared to Borrelia burgdorferi, the primary Lyme disease pathogen, but still pose significant health concerns globally. Typically transmitted by ticks, infections by these Borrelia species can result in a range of symptoms, including fever, headache, joint pain, and fatigue. Due to the diversity and non-specific nature of these symptoms, diagnosing infections from these pathogens can be challenging. Recent studies indicate that some of these other Borrelia species may be linked to health issues that are not yet fully recognized. Therefore, further research into these species is crucial for public health and disease prevention.

Bartonella infection

Bartonella henselae

Bartonella henselaeis, a member of the genus Bartonella, is a proteobacterium that is the causative agent of Bartonellosis, including Cat Scratch Disease (CSD) and Bacillary Angiomatosis (BA). Most bartonellosis is transmitted to humans by companion animals (dogs and cats), typically through a bite or scratch. B. henselae infection can appear up to ten days after exposure to the microbe. Symptoms start with a papule at the site the microbe enters, followed by lymphadenopathy, usually in the axillary node. Half of patients also get aches, nausea, abdominal pain, and malaise.

Comment

26 kDa - The p26 protein is an immunodominant antigen that is expressed during infection in cats as a preprotein and is subsequently cleaved to form mature P26. It has been recognized as an immunoreactive protein by the humoral immune system during infection with B. henselae.

Bartonella vinsonii

Bartonella vinsonii, a member of the genus Bartonella, is a proteobacterium that is the causative agent of Bartonellosis. The pathogen has been isolated in immunocompetent patients with endocarditis, arthritis, neurological disease and neoplasia . From animal studies it appears that Bartonella henselae is well adapted to felines or cats while Bartonella vinsonii is well adapted to canines or dogs though each species can infect both.

Epstein Barr Virus

Epstein Barr Virus

The Epstein–Barr virus, also called human herpesvirus 4 (HHV-4), is one of the causes of infectious mononucleosis (glandular fever). It is a double-stranded, enveloped, linear DNA virus. Lyme disease and infectious mononucleosis are common illnesses that share similar clinical presentations and hence its useful to test together.

Parvovirus B19

Parvovirus B19

Lyme disease and Parvovirus B19 infections produce arthritis, rashes, and a systemic illness that may be thought to represent a chronic rheumatic disease . Cases of co infections have also been reported in literature. Additionally, it has been shown to be a good candidate for differential diagnosis in cases of arthopathy where Lyme disease has been suspected .

Tickborne Diseases 2.0

Human herpesvirus 6

Human herpesvirus 6

Human herpesvirus 6 is a herpes family virus that can stay in your body for life usually in a dormant state. Most commonly it can affect people who have a compromised immune system. Research has linked HHV-6 with various neurological conditions. It has also been an important candidate in the chronic fatigue syndrome population

Tickborne Diseases 2.0

Lyme disease

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Borrelia burgdorferi	Current IgG	Current IgM	Previous IgG	Previous IgM
Borrelia burgdorferi VlsE1	15.7	7.2		
Borrelia burgdorferi C6 peptide	12.4	7.3		
Borrelia burgdorferi p18 (DbpB)	3.6	3.0		
Borrelia burgdorferi p23-25 (OspC)	8.4	5.4		
Borrelia burgdorferi p28	4.3	4.3		
Borrelia burgdorferi p30	3.8	5.8		
Borrelia burgdorferi p31 (OspA)	4.5	7.0		
Borrelia burgdorferi p34 (OspB)	11.8	5.1		
Borrelia burgdorferi p39 (BmpA)	5.8	4.5		
Borrelia burgdorferi p41	6.7	7.9		
Borrelia burgdorferi p45	8.1	7.6		
Borrelia burgdorferi p58	4.1	5.7		
Borrelia burgdorferi p66	3.2	4.5		
Borrelia burgdorferi p83-93	8.5	4.3		
Borrelia burgdorferi B31 strain WCS	11.2	12.6		
Borrelia burgdorferi 297 strain WCS	10.1	4.7		

Borrelia mayonii	Current IgG	Current IgM	Previous IgG	Previous IgM
Borrelia mayonii	9.2	5.1		

Borrelia afzelii	Current IgG	Current IgM	Previous IgG	Previous IgM
Borrelia afzelii BmpA	5.0	6.2		
Borrelia afzelii DbpA	5.5	17.4		
Borrelia afzelii OspA	5.3	5.8		
Borrelia afzelii OspC	2.4	5.7		

Tickborne Diseases 2.0

Lyme disease

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

	Current		Previous	
Borrelia afzelii	IgG	IgM	IgG	IgM
Borrelia afzelii p100	1.7	4.7		
Borrelia garinii	**Current**		**Previous**	
	IgG	IgM	IgG	IgM
Borrelia garinii DbpA	5.5	3.2		
Borrelia garinii OspC	5.2	4.7		
Borrelia bavariensis	**Current**		**Previous**	
	IgG	IgM	IgG	IgM
Borrelia bavariensis DbpA	9.1	3.6		
Borrelia bavariensis p58	11.3	4.6		
Borrelia bavariensis VlsE1	9.1	2.0		
Borrelia spielmanii	**Current**		**Previous**	
	IgG	IgM	IgG	IgM
Borrelia spielmanii DbpA	7.4	19.4		
Borrelia spielmanii OspC	9.4	8.9		

Tick Borne Relapsing Fever (TBRF)

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

	Current		Previous	
Borrelia hermsii	IgG	IgM	IgG	IgM
Borrelia hermsii	8.1	7.0		
Borrelia turicatae	**Current**		**Previous**	
	IgG	IgM	IgG	IgM
Borrelia turicatae	10.0	18.3		

Borrelia miyamotoi disease

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

	Current		Previous	
Test Name	IgG	IgM	IgG	IgM
Borrelia miyamotoi	8.7	3.7		

Other Borrelia species

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

	Current		Previous	
Test Name	IgG	IgM	IgG	IgM
Borrelia andersonii	10.2	27.7		
Borrelia maritima	7.6	5.2		

Tickborne Diseases 2.0

Other Borrelia species

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Borrelia californiensis	10.2	7.5		
Borrelia bissettiae	5.5	7.3		
Borrelia lusitaniae	3.3	3.5		
Borrelia valaisiana	2.8	4.3		
Borrelia yangtzensis	7.0	5.1		
Borrelia turcica	6.3	3.4		

Babesiosis

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Babesia microti	Current IgG	Current IgM	Previous IgG	Previous IgM
Babesia microti IRA	4.7	5.9		
Babesia microti p32	4.3	6.3		
Babesia microti p41	5.1	5.6		
Babesia microti WCS	9.5	4.2		

Babesia duncani	Current IgG	Current IgM	Previous IgG	Previous IgM
Babesia duncani	8.7	3.4		

Bartonella infection

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Bartonella henselae	Current IgG	Current IgM	Previous IgG	Previous IgM
Bartonella henselae 17 kDa	5.3	9.1		
Bartonella henselae 26 kDa	11.5	4.3		
Bartonella henselae SucB	7.6	3.4		

Bartonella elizabethae	Current IgG	Current IgM	Previous IgG	Previous IgM
Bartonella elizabethae	6.7	6.8		

Bartonella vinsonii	Current IgG	Current IgM	Previous IgG	Previous IgM
Bartonella vinsonii	11.2	4.2		

Tickborne Diseases 2.0

Bartonella infection

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Bartonella quintana	Current IgG	Current IgM	Previous IgG	Previous IgM
Bartonella quintana	10.0	5.2		

Human granulocytic anaplasmosis (HGA)

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Anaplasma phagocytophilum	Current IgG	Current IgM	Previous IgG	Previous IgM
Anaplasma phagocytophilum Msp5	5.7	5.0		
Anaplasma phagocytophilum Msp2 (p44)	6.4	6.2		
Anaplasma phagocytophilum OmpA	5.9	8.4		

Human Monocytic Ehrlichiosis (HME)

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Ehrlichia chaffeensis	Current IgG	Current IgM	Previous IgG	Previous IgM
Ehrlichia chaffeensis	6.1	3.3		

Rickettsial disease

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Rickettsia typhi OmpB	9.5	6.2		
Rickettsia typhi Surface antigen	8.4	4.6		

Powassan Virus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Powassan Virus	3.7	5.5		

Tickborne Encephalitis Virus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Tickborne Encephalitis Virus	8.0	5.1		

West Nile Virus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
West Nile Virus	7.8	4.7		

Tickborne Diseases 2.0

Chlamydophila pneumoniae

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Chlamydophila pneumoniae	9.1	5.4		

Coxsackie Virus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Coxsackie Virus	4.7	3.8		

Mycoplasma pneumoniae

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Mycoplasma pneumoniae	4.7	6.4		

Cytomegalovirus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Cytomegalovirus EIA Antigen	6.0	3.2		
Cytomegalovirus GlyB	6.5	4.3		
Cytomegalovirus p150	4.6	6.5		
Cytomegalovirus p28	3.5	3.1		
Cytomegalovirus p52	2.6	1.7		
Cytomegalovirus p65	4.0	5.8		
Cytomegalovirus p38	3.8	1.4		

Epstein Barr Virus

Reference Range: In Control: ≤10 | Moderate: 10.1-20 | Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Epstein Barr Virus EA Antigen	13.9	4.3		
Epstein Barr Virus EBNA1	24.2	1.1		
Epstein Barr Virus VCA gp125	>30	7.3		
Epstein Barr Virus p18	9.2	2.2		
Epstein Barr Virus p23	4.3	6.6		

Tickborne Diseases 2.0

Parvovirus B19

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Parvovirus B19 VLP VP2	10.6	5.0		
Parvovirus B19 VLP VP1/Vp2 Co Capsid	10.0	7.1		

Toxoplasma gondii

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Toxoplasma gondii Crude Extract	7.6	3.7		
Toxoplasma gondii MIC3	8.5	5.8		
Toxoplasma gondii p24	7.8	6.5		
Toxoplasma gondii p29	4.4	6.2		
Toxoplasma gondii p30	5.2	5.4		

Herpes simplex virus 1

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
HSV-1	6.1	7.2		

Herpes simplex virus 2

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
HSV-2	6.6	5.1		

Human herpesvirus 6

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
HHV-6	12.9	3.2		

Human herpesvirus 7

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
HHV-7	5.6	4.6		

Tickborne Diseases 2.0

Streptococcal A

Reference Range: In Control: ≤10 Moderate: 10.1-20 Risk: >20

Test Name	Current IgG	Current IgM	Previous IgG	Previous IgM
Streptococcal A	5.7	2.7		

Risk and Limitations

This test has been developed and its performance characteristics determined by Vibrant America LLC., a CLIA certified lab and Vibrant Genomics, a CLIA certified lab. These assays have not been cleared or approved by the U.S. Food and Drug Administration. Vibrant Wellness provides additional contextual information on these tests and provides the report in a more descriptive fashion.

Clinical history and current symptoms of the individual must be considered by the healthcare provider prior to any interventions. Test results should be used as one component of a healthcare provider's clinical assessment.

Vibrant Tickborne panel testing is performed at Vibrant America, a CLIA and CAP certified laboratory utilizing ISO-13485 developed technology and Vibrant Genomics, a CLIA certified laboratory. Vibrant America and Vibrant Genomics have effective procedures in place to protect against technical and operational problems. However, such problems may still occur. Examples include failure to obtain the result for a specific test due to circumstances beyond Vibrant's control. Vibrant may re-test a sample to obtain these results but upon re-testing the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report incorrect results. A tested individual may wish to pursue further testing to verify any results.

It should be realized that there are possible sources of error like any lab testing which include sample misidentification, trace contamination of PCR reactions, technical errors and rare genetic variants that may interfere with analysis.

Some individuals may feel anxious about getting their test health results. If the potential user feels very anxious, such user should speak to his or her doctor or other health care professional prior to collection of a sample for testing. Users should consult with their doctor or other health care professional if they have any questions or concerns about the results of their test or their current state of health. Users of the test are also encouraged to discuss their test results with a genetic counselor, board-certified clinical molecular geneticist, or equivalent health care professional.

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