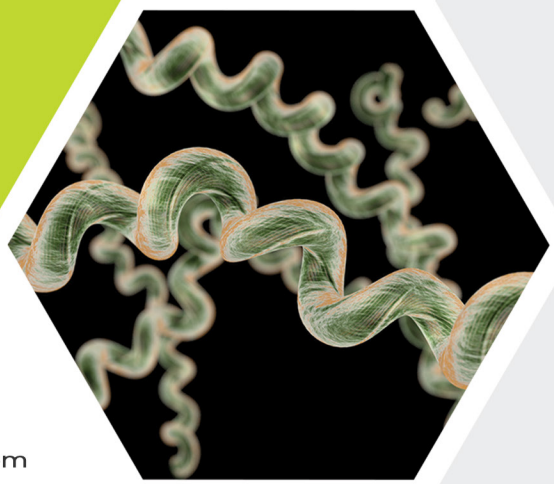
DNA CONNEXIONS®

PRACTITIONER GUIDE



DNA CONNEXIONS®
A BLANCHE GRUBE ENTERPRISES COMPANY
4685 Centennial Boulevard, Colorado Springs CO 80919
Phone: 1(888) 843-5832 Email: info@dnaconnexions.com
www.dnaconnexions.com

International Academy of IAOMT Oral Medicine & Toxicology

iabdm

DNA CONNEXIONS® LYME TEST PANEL NAMED "MOST ACCURATE" AMONG THE BEST AT-HOME LYME DISEASE TESTS OF 2021 AND 2022

"The DNA ConneXions® lab is one of the most trusted laboratories worldwide"

-VERYWELLHEALTH.COM

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INFECTIOUS DISEASES > LYME DISEASE

Best At-Home Lyme Disease Tests

Test yourself

By Stephanie Trovato | Updated on January 28, 2022

Medically reviewed by Marissa Sansone, MD

Fact checked by Sean Blackburn

Our editors independently research, test, and recommend the best products, and articles are reviewed by healthcare professionals for medical accuracy. You can learn more about our review process here. We may receive commissions on purchases made from our chosen links.

Lyme disease is a severe health issue that affects thousands of people each year. It is so common in some places that you can purchase at-home Lyme disease kits now to see if that tick bite from your last camping trip transferred any pathogens that may cause Lyme disease.

For anyone who spends time outdoors, this is excellent news. Tick bites are so stressful, and while there are plenty of ways to prevent them, people still get Lyme disease. Knowing which at-home Lyme disease test to purchase, though, can help you stay healthy no matter what.

Full article available here:
https://www.verywellhealth.com/best-at-home-lyme-disease-tests-5083490

Thank you for considering DNA ConneXions® for your molecular testing needs.

DNA ConneXions® promotes comprehensive healthcare by assisting dental and medical professionals in assessing their patients, allowing a more accurate diagnosis. We provide reliable, definitive, and cost-effective diagnostic assays to aid in dental and medical professionals in identifying disease causation at potentially earlier and more treatable stages.

At DNA ConneXions®, we endeavor to develop innovative tests with a focus on exceptional customer service and a passion for improving the lives of patients. Our mission is to improve the out come of disease by making laboratory diagnostic testing the standard of care throughout the dental and medical professions.

We are a state of the art molecular laboratory utilizing the Polymerase Chain Reaction (PCR), with its high specificity and sensitivity as the cornerstone of our testing methodology. The sensitivity of the test is demonstrated by our ability to detect the DNA, when present, of as few as 1 to 10 microbes.

We are available Monday through Friday 8am to 5pm MST to answer any and all of your questions regarding testing and results. Please feel free to contact us at any time with any questions or concerns you may have. We look forward to working with you and your patients in the near future. Together, we can promote wellness and improve lives.

Welcome to DNA ConneXions®
Call us: (888) 843-5832
Monday-Friday 8-5pm MST
www.dnaconnexions.com

TEST PANELS OFFERED

LYME DISEASE TEST PANEL

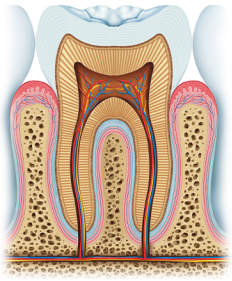
Our urine-based Lyme Disease Test Panel detects (presence/absence) four different genes found in *Borrelia burgdorferi*, the most common cause of Lyme disease in the United States, and ten common Lyme Disease co-infectors.

$650

ORAL TEST PANEL

The Oral Test Panel identifies the presence of 88 pathogens including bacteria, viruses, fungi and parasites in removed teeth, blood, cavitational biopsies, tissue, dental implants, bone, paper points, Super Floss, and other oral samples

$450

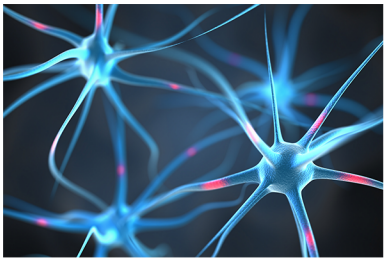


APOE GENTOTYPING TEST PANEL

(Apolipoprotein E)

This test determines an individual's ability to detoxify mercury as well as their propensity to develop Alzheimer's and other neurological conditions based on one's inherited ApoE genetic makeup

$300



GLUTEN SENSITIVITY TEST PANEL

The Gluten Sensitivity Test Panel detects the presence or absence of the Human Leukocyte Antigens HLA tissue typing markers for DQ2 and DQ8 to determine an individual's genetic propensity to Gluten Intolerance and/or Celiac Disease.

$300

PROPENSITY TEST PANEL

The Propensity Test Panel detects (presence/absence) 19 of the most common bacterial species in periodontal diseases, which have also been implicated in the progression of a variety of chronic, systemic conditions, including cancer and neurological disorders.

$425

*Prices are subject to change

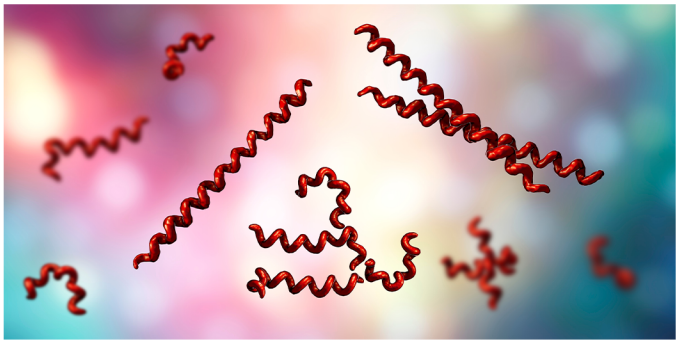
LYME DISEASE TEST PANEL

Traditional diagnostic tests for Lyme Disease look at the patient's immune response to exposure to an organism, which is an indirect test. Utilizing a urine sample, our direct testing method, detects presence/absence of *Borrelia burgdorferi*, the causative agent of Lyme Disease, in addition to 10 common co-infectors. Because we are detecting DNA, not antibodies, if the organism is present in the sample, PCR can detect it regardless of the stage of disease.

The DNA ConneXions® Lyme Disease Test Panel detects four distinct genes of *B. burgdorferi*. The tick that most commonly carries *B. burgdorferi* is not only responsible for Lyme Disease transmission, but can also be responsible for the transmission of other pathogens, called co-infectors. Several co-infectiors are transmitted by other vectors, but are known to be common concurrent infections with similar symptomology.

In addition to *B. burgdorferi*, the DNA ConneXions® Lyme Disease Test Panel also includes:

Borrelia miyamotoi
Borrelia recurrentis
Babesia microti
Babesia divergens
Babesia duncani
Bartonella bacilliformis
Bartonella henselae
Bartonella quintana
Ehrlichia chaffeensis
Anaplasma phagocytophilum



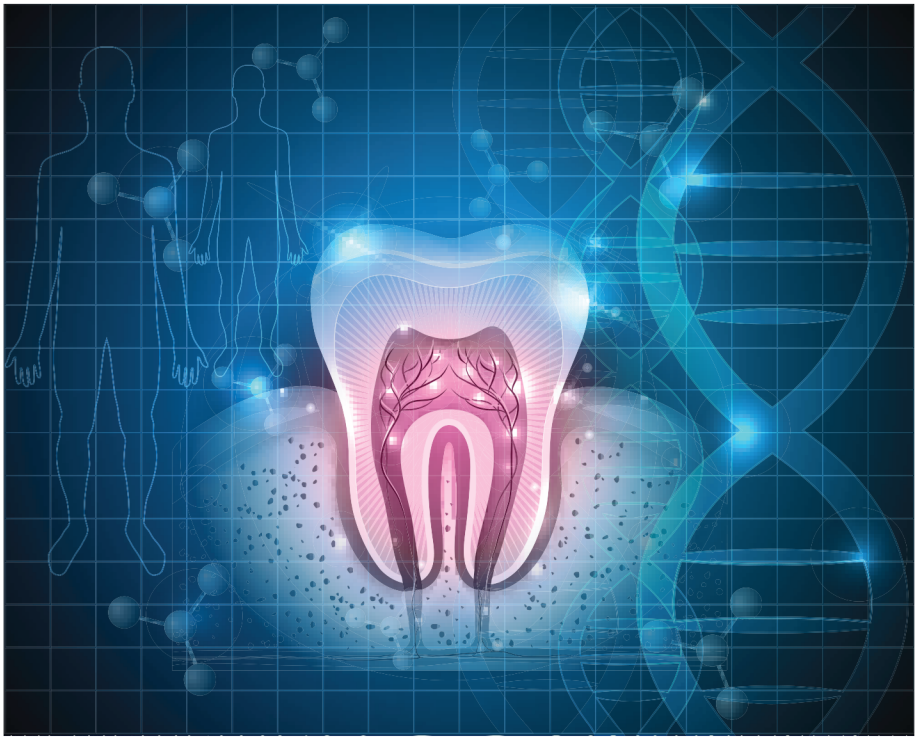
A positive PCR result from the DNA ConneXions® Lyme Disease Test Panel indicates the presence of DNA from *B. burgdorferi* and/or co-infectors.

A negative result does not necessarily indicate a patient is not infected with a vector-borne infection, rather, it indicates the absence of detectable pathogenic DNA. A patient's ability to fight the disease, stage of infection, and timing of courses of treatment protocols are only some of the factors that may affect the detectability of the pathogenic DNA.

ORAL TEST PANEL

Organisms found in the oral cavity range from normal oral commensals to disease causing pathogens. Any pathogen that exists in the oral cavity can cause health problems or disease in other areas of the body if the organism leaves the mouth through oral trauma or other dissemination pathways.

The Oral Test Panel identifies anaerobic and aerobic bacteria, fungi, parasites and viruses in removed teeth, blood, cavitational biopsies, tissue, dental implants, bone, paper point, and Super Floss samples. This PCR based panel screens for 88 microbes in total.



Organisms found in the oral cavity range from normal oral commensals to disease causing pathogens. Any pathogen that exists in the oral cavity can cause health problems or disease in other areas of the body if the organism leaves the mouth through oral trauma or other dissemination pathways.

The Oral Test Panel identifies anaerobic and aerobic bacteria, fungi, parasites and viruses in removed teeth, blood, cavitational biopsies, tissue, dental implants, bone, paper point, and Super Floss samples. This PCR based panel screens for 88 microbes in total.

APOE GENOTYPING TEST PANEL
(Apolipoprotein E)

Oral cells allow us to determine a person's ApoE (Apolipoprotein E) genotype, some of which have has been linked to an increased risk of the development of Alzheimer's Disease, an individual's ability to detoxify mercury, and their genetic predisposition to other neurological conditions by determination of their ApoE genotype.

Everyone has two copies of the ApoE gene and the possible genotypes are: 2/2, 2/3, 2/4, 3/3, 3/4, or 4/4. People with the ApoE genotyped 3/4, 4/4 are potentially have up to 12 times greater risk of developing Alzheimer's Disease compared with those who have the ApoE 2/2, 2/3, 3/3 genotypes.

The differences in these genetic genotypes has also been linked to the body's ability to break down and remove cholesterol, triglycerides, mercury, and other heavy metals.

The DNA ConneXions® ApoE Genotyping Test Panel utilizes a Super Floss sample to determine an individual's ApoE genotype.

GLUTEN SENSITIVITY TEST PANEL

Oral cells allow us to determine an individual's genetic propensity to gluten intolerance and/or Celiac Disease by detecting the presence/absence of four Human Leukocyte Antigens (HLA) genes. This test panel screens for genetic markers, not antibodies, to determine if you may be reactive to gluten, even before symptoms occur.

The presence of any of these HLA markers in the sample indicates a marked sensitivity to gluten, but does not necessarily indicate you have gluten intolerance; nor is it a confirmation or diagnosis of Celiac Disease. The presence of all four HLA genetic markers is indicative of gluten intolerance and highly suggestive of Celiac Disease.

The DNA ConneXions® Gluten Sensitivity test panel utilizes Super Floss to detects the presence or absence of the HLA tissue typing markers for DQ2 and DQB. The presence of any of these genetic markers is 95% predictive for gluten intolerance/sensitivity. The presence of both markers is 95% predictive for Celiac Disease.

PROPENSITY TEST PANEL

The DNA ConneXions® Propensity Test Panel identifies 19 bacterial species not only involved in periodontal diseases, which have also been implicated in the progression of a variety of chronic, systemic conditions.

Periodontal diseases are chronic inflammatory infections of the oral cavity which can affect the structures around the teeth, including the periodontal ligament and alveolar bone structures.

The bacterial species involved in periodontal diseases are often detected in conjunction with one another within periodontal pockets, synergistically to destroy periodontal tissue, and may ultimately spread to a systemic level and contribute to non-oral diseases throughout the body.

Research has shown that presence/absence of the 19 pathogens included on the DNA ConneXions® Propensity Test Panel can lead to their release and dissemination throughout the body. The presence of these opportunistic pathogens has been demonstrated in various chronic conditions and can be of diagnostic value in an individual's susceptibility of systemic conditions, including cancer and neurological conditions.

LYME TEST PANEL
SAMPLE REPORT

PAGE 1

4685 Centennial Blvd.
Colorado Springs, CO 80919

Telephone: 888-843-5832 **Fax: 719-548-8220**
TIN: 47-2642690

Lab Director: Robert McMullen, PhD **Lab Manager: Leslie Douglas, PhD**

Patient: Sample, Sally (1/27/1964) **Lyme Panel**

Provider: **Jane Doe, MD** Test ID: 33524

Sample Collected	Sample Received	Sample Tested	Test Reported
01/01/2020	01/03/2020	01/09/2020	01/11/2020

Sample type: **Urine** Test performed by: L. Douglas

This test utilizes the polymerase chain reaction (PCR) technology to detect the presence of targeted microbial DNA for the causative agent of Lyme disease and common tick-transmitted co-infections. Sensitivity of the test is 1 to 10 microbes with a specificity exceeding 5 x 10^{18}.

The ✓highlighted microbes were detected in the submitted sample:

Borrelia burgdorferi F7
B. burgdorferi Osp A
✓B. burgdorferi Osp B-NPS
✓B. burgdorferi Osp C
Babesia microti
Babesia divergens
Babesia duncani
✓Bartonella bacilliformis
✓Bartonella henselae-NPS
Bartonella quintana
Borrelia miyamotoi
Borrelia recurrentis
✓Ehrlichia chaffeensis-IND
Anaplasma phagocytophilium
NONE

Interpretation of Results Disclaimer: DNA Connexions is not a clinical diagnostic laboratory and cannot provide a diagnosis for disease and/or subsequent treatment. These results are from DNA PCR testing, and indicate the presence of disease-causing agents known to be transferred by ticks. A positive result indicates the presence of DNA from B. burgdorferi and/or other tick-transmitted organisms. A negative result only indicates the absence of detectable targeted organismal DNA in the submitted specimen. The information is supplied as a courtesy to health care providers to aide in an overall assessment. This information alone should not be used to diagnose and/or treat a health problem or disease. All reported results are intended for research purposes only and consultation with a qualified health care provider is required.

LYME TEST PANEL
SAMPLE REPORT

PAGE 2

Interpretation of Results

Positive

A Positive result is indicated by the organism or gene being highlighted in yellow.

When our species-specific primer sets are designed, the expected size of the amplification product (in base pairs) is known. As every patient sample, every positive control, and every negative control are run in duplicate, when a sample produces an amplification product of the expected size on either, or both, of the assay runs, it is scored as a 'positive'.

Non-Predicted Size (NPS)

A NPS result is indicated by the organism or gene being highlighted in yellow, followed by NPS.

When we see an aberrantly sized amplification product, we consider the following: These microbial genomes are small, on the order of a million bp, and tend to reproduce quickly. If a mutation occurs within the genome, something non-deleterious to the organism, the mutation will then be perpetuated in subsequent generations. If this mutation occurs in our target amplification region, the size of the subsequent amplification product will change (small or larger). The product size differential could possibly be due to mutation, degraded DNA, mutation of species, unspecified subspecies, etc. We have found that the NPS are more commonly detected in individuals with long-term infections. To be scored as an NPS, the product needs to be visualized on both runs of the sample. It is at the discretion of a qualified medical provider to interpret NPS results.

Indeterminate (IND)

An Indeterminate result is indicated by the organism or gene being highlighted in yellow, followed by IND.

An Indeterminant result indicates that an amplification product was produced for a particular organism on the panel. However, the amplification product was not the expected size and was only present on one test run of the sample. The explanation for this is the same as the NPS, however the aberrant amplification product was only present on one test run. It is at the discretion of a qualified medical provider to interpret IND results.

APOLIPOPROTEIN E (ApoE) TEST PANEL
SAMPLE REPORT

PAGE 1

DNA CONNEXIONS

4685 Centennial Blvd.
Colorado Springs, CO 80919

Telephone: 888-843-5832
Fax: 719-548-8220
TIN: 47-2642690

Lab Director: Robert McMullen, PhD
Lab Manager: Leslie Douglas, PhD

Patient: Sample, Sally (1/27/64) Doctor: **Jane Doe, MD** **ApoE Panel**

Sample Collected	Sample Received	Sample Tested	Test Reported
01/06/2020	01/08/2020	01/27/2020	01/28/2020

Test ID: 35971

Sample type: **Super Floss** Test performed by: L. Douglas

Your results indicate an ApoE genotype of: ApoE 2/3

ApoE 2/2: Rarest ApoE genotype with the lowest risk for Alzheimer's disease. $ApoE_{2/2}$ is most efficient at removing metals, including mercury from the body; but may clear dietary fat more slowly and therefore may be at greater risk for vascular disease, diabetes, and high cholesterol.

ApoE 2/3: A heterozygous hybrid of two alleles of the same gene. In this case, the associated risk for ApoE 2/2and ApoE 3/3 are combined and averaged.

ApoE 2/4: A heterozygous hybrid of two alleles of the same gene. In this case, the associated risk for ApoE 2/2 and ApoE 4/4 are combined and averaged.

ApoE 3/3: Most common ApoE genotype found in the human population, suggesting "average risk" of diabetes, neurodegenerative and cardiovascular disorders, including Alzheimer's disease, high cholesterol and stroke.

ApoE 3/4: A heterozygous hybrid of two alleles of the same gene. In this case, the associated risk for ApoE 3/3 and ApoE 4/4 are combined and averaged.

ApoE 4/4: Genotype most often in individuals with neurological, cerebral, and cardiovascular disease; the least efficient at removing mercury and heavy metals like barium, aluminum, lead, cadmium, arsenic, copper, and uranium from the body.

APOLIPOPROTEIN E (ApoE) TEST PANEL
SAMPLE REPORT

PAGE 2

Patient: Sample, Sally (1/27/64) Doctor: **Jane Doe, MD** **ApoE Panel**

General Information

Apolipoprotein E (ApoE) is a molecule composed of protein and fats. The ApoE gene creates the precursors to cholesterol molecules, known as chylomicrons, which are the microscopic particles of emulsified fat found in our blood and lymphatic tissues. Chylomicrons are formed during the digestion of fats and are essential for the normal formation and digestion of the fatty proteins that are often referred to as "HDL" and "LDL" (high-density lipoproteins and low-density lipoproteins). ApoE helps carry and metabolize cholesterol and fat; both major components of all cells in the human body; particularly within the nervous system.

The human ApoE gene contains 299 amino acids residues which are joined together by flexible "hinges". There are three common forms of the ApoE gene: $ApoE_2$, $ApoE_3$, and $ApoE_4$; each with differences at amino acid 112/299 and 158/299: ($ApoE_2$ Cysteine112, Cysteine158); ($ApoE_3$ Cysteine112, Arginine158); and ($ApoE_4$ Arginine112, Arginine158). These differences alter the gene's protein and lipid structure. The amino acid Cysteine removes toxins and heavy metals from the central nervous system (CNS) more efficiently than the amino acid Arginine does.

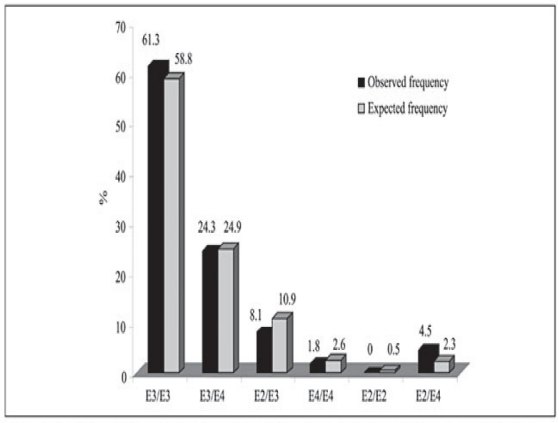


Figure 2. Distribution of observed and expected genotype frequencies of the apolipoprotein E gene polymorphism.

Every person inherits two copies of the gene; creating one of six possible ApoE genotypes. These are $ApoE_{2/2}$, $ApoE_{2/3}$, $ApoE_{2/4}$, $ApoE_{3/3}$, $ApoE_{3/4}$, and $ApoE_{4/4}$. Defects in these variants have been linked to the body's ability to break down and remove cholesterol, triglycerides, mercury, and other heavy metals like barium, aluminum, lead, cadmium, arsenic, copper, and uranium.

The ApoE gene has recently been studied for its role in several abnormal processes which are not directly related to fat, triglycerides, and cholesterol transport. These include amyotrophic lateral sclerosis (ALS); multiple sclerosis (MS); and other disorders including insomnia and depression. In 1993, $ApoE_4$ was identified as a genetic risk factor for Alzheimer's disease (AD), and may be associated with the accelerated development and progression of several other neurodegenerative diseases.

REFERENCES:

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Godfrey ME, Wojcik DP, Krone CA. Apolipoprotein E genotyping as a potential biomarker for mercury neurotoxicity. J Alzheimers Dis. 2003 Jun;5(3):189-95. PubMed PMID: 12897404.

Main BF, Jones PJ, MacGillivray RT, Banfield DK. Apolipoprotein E genotyping using the polymerase chain reaction and allele-specific oligonucleotide primers. J Lipid Res. 1991 Jan;32(1):183-7. PubMed PMID: 2010690.

Robeson RH, Siegel AM, Dunckley T. Genomic and Proteomic Biomarker Discovery in Neurological Disease. Biomark Insights. 2008 Feb 9;3:73-86. PubMed PMID: 19578496; PubMed Central PMCID: PMC2688365.

Scriver C.A. et al The Metabolic Basis of Inherited Disease, 6th ed. McGraw-Hill, New York NY, pp 2349-50 on PFK deficiency. 1989.

Suzuki T. et al eds, Advances in Mercury Toxicology, Plenum Press, New York, 1991.

ORAL TEST PANEL
SAMPLE REPORT

PAGE 1

DNA CONNEXIONS

4685 Centennial Blvd.
Colorado Springs, CO 80919

Telephone: 888-843-5832
TIN: 47-2642690
Fax: 719-548-8220

Lab Director: Robert McMullen, PhD
Lab Manager: Leslie Douglas, PhD

PATIENT: **Sally Sample**

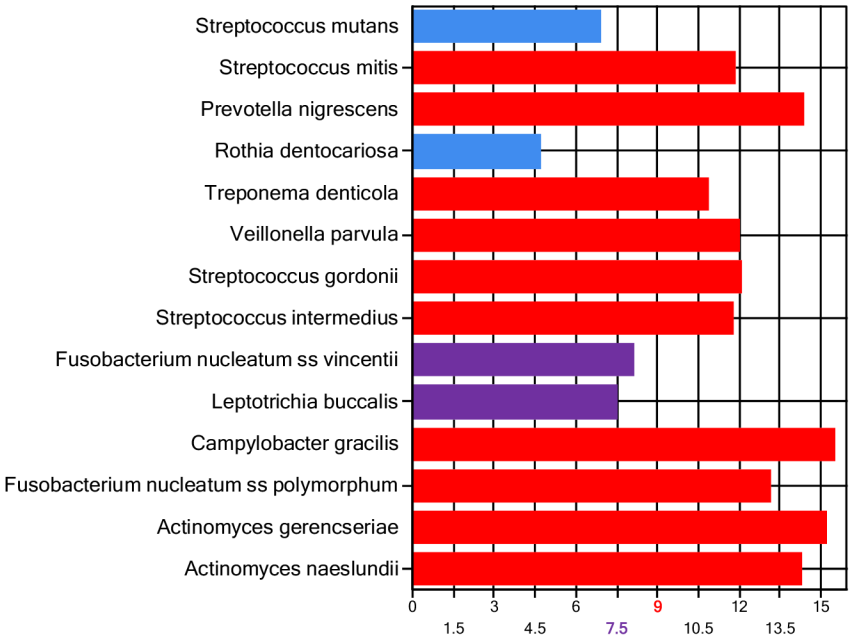
DOCTOR: **Jane Doe, DDS**

Test ID: 013300
Oral Panel

Sample Collected	Sample Received	Sample Tested	Test Reported
01/01/2020	01/03/2020	01/09/2020	01/11/2020

Sample Type: #16 Cavitation - Paper Points

The following microbes were detected in the sample that was submitted for testing:



9 or greater indicates a serious risk

Greater than 7.5 but less than 9 indicates a moderate risk

Total Risk Factor, as reported on the chart above, is the sum of the Pathogen Risk Factor and Measured Risk Factor. Total Risk Factor equal to or greater than 9 is considered a serious risk. Total Risk Factor between 7.5 and 9 is considered of moderate risk.

Pathogen Risk Factor is the innate risk of the microbe based on the biology of the organism, disease causation, and microbial antibiotic resistance. It is reported on a scale of 1-10, with 10 being most serious and 1 most benign.

Measured Risk Factor is the value given to the sample taking into account the quantity and configuration of the pathogen DNA. It is reported on a scale of 1-10, with 10 being most serious and 1 most benign.

Interpretation of Results:
These results are from DNA PCR testing, and indicate the presence of targeted foreign DNA. The verbiage is supplied as a courtesy to health care providers to aide in an overall assessment. This information alone should not be used to diagnose or treat a health problem or disease. Consultation with a qualified health care provider is required.

ORAL TEST PANEL
SAMPLE REPORT

PAGE 2

Sally Sample | **Jane Doe, DDS** | **Oral Panel**

Microbe	Total Risk Factor	Clinical Significance
Actinomyces naeslundii	14.28	**General Description** Actinomyces species are Gram-positive and are normally present in the gingival area. Actinomyces naeslundii is one of the most common causes of infections in dental procedures. **Symptoms of Infection** Many Actinomyces species are opportunistic pathogens of humans and other mammals, particularly in the oral cavity. In rare cases, these bacteria can cause actinomycosis, a disease characterized by the formation of abscesses in the mouth, lungs, or the gastrointestinal tract. **Treatment** Actinomyces bacteria are generally sensitive to penicillin, which is frequently used to treat actinomycosis. In cases of penicillin allergy, doxycycline is used. Sulfonamides such as sulfamethoxazole may be used as an alternative regimen at a total daily dosage of 2-4 grams. Response to therapy is slow and may take months.
Actinomyces gerencseriae	15.20	**General Description** Actinomyces species are Gram-positive and are normally present in the gingival area. A. gerencseriae is one of the most common causes of infections in dental procedures. **Symptoms of Infection** Many Actinomyces species are opportunistic pathogens of humans and other mammals, particularly in the oral cavity. In rare cases, these bacteria can cause actinomycosis, a disease characterized by the formation of abscesses in the mouth, lungs, or the gastrointestinal tract. **Treatment** Actinomyces bacteria are generally sensitive to penicillin, which is frequently used to treat actinomycosis. In cases of penicillin allergy, doxycycline is used. Sulfonamides such as sulfamethoxazole may be used as an alternative regimen at a total daily dosage of 2-4 grams. Response to therapy is slow and may take months.

GLUTEN SENSITIVITY TEST PANEL
SAMPLE REPORT

PAGE 1

4685 Centennial Blvd.
Colorado Springs, CO 80919

Telephone: 888-843-5832
TIN: 47-2642690
Fax: 719-548-8220

Lab Director: Robert McMullen, PhD
Lab Manager: Leslie Douglas, PhD

Patient: Sample, Sally (1/27/64) Doctor: **Patient Request** **Gluten Intolerance Panel**

Sample Collected	Sample Received	Sample Tested	Test Reported
01/01/2020	01/03/2020	01/09/2020	01/11/2020

Sample type: **Super Floss** Test ID: 36225

Test performed by: L. Douglas

Results:

HLA-DQB1*02	HLA-DQA1*0501	HLA-DQB1*0302 Exon2	HLA-DQB1*0302 Exon3
Present	Absent	**Present**	**Present**

Test Information

This test is designed to detect four genes within buccal (cheek) cells that are collected in saliva. The genes are: HLA-DQB1*02; HLA-DQA1*0501; HLA-DQB1*0302 Exon2; and HLA-DQB1*0302 Exon3. HLA stands for a "Human Leukocyte Antigen". A leukocyte is the name for a White Blood Cell (WBC). An antigen is a substance that causes the human immune system to react. Human Leukocyte Antigen (HLA) is a substance that is located on the surface of white blood cells. This substance plays an important role in the body's immune response.

The presence of *any* of the HLA genes in your sample indicates a marked sensitivity to gluten, but does not mean you have a gluten intolerance; nor is it a confirmation or diagnosis of Celiac Disease. The presence of all four HLA genetic markers is indicative of gluten intolerance and highly suggestive of Celiac Disease.

GLUTEN SENSITIVITY TEST PANEL
SAMPLE REPORT

PAGE 2

General Information

Gluten-sensitive enteropathy is an inflammatory disease of the small intestine that is precipitated by the ingestion of gluten in genetically susceptible persons. Gluten sensitivity, including gluten intolerance, is a spectrum of disorders including Celiac Disease, in which gluten has an adverse effect on the body. Gluten is a compound protein that is found in foods processed from wheat and related grain species, including barley and rye. The National Institutes of Health (NIH) reported in 2012 that approximately 1 in 133 people in the nation have a hypersensitivity to gluten[1]; many of these people are completely intolerant to gluten, while others have been diagnosed with Celiac Disease.

Gluten intolerance and Celiac Disease are autoimmune disorders that cause the body's immune system to produce antibodies that target gluten once it enters the blood during the human body's digestive processes. Symptoms include bloating, flatulence, abdominal pain and discomfort, diarrhea, muscular disturbances, headaches and bone and joint pain. Exclusion of dietary gluten often results in healing of the mucosa, resolution of the malabsorptive state, and reversal of most, if not all, effects of inflammation caused by gluten ingestion.

REFERENCES

[1]Clin Gastroenterol Hepatol. 2007 Jul; 5(7):844-50; quiz 769. Epub 2007 Jun 5.

[2]Lancet Neurol. 2010 Mar; 9(3):318-30. doi: 10.1016/S1474-4422(09)70290-X.

[3]Mooney, P. D., Aziz, I. and Sanders, D. S. (2013), Non-celiac gluten sensitivity: clinical relevance and recommendations for future research. Neurogastroenterology & Motility, 25: 864–871. doi: 10.1111/nmo.12216

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[5]Rodrigo L., Celiac Disease. World Journal of Gastroenterology. 2006; 12(41):6585–6593.

PROPENSITY TEST PANEL
SAMPLE REPORT

PAGE 1

4685 Centennial Blvd.
Colorado Springs, CO 80919

Telephone: 888-843-5832 **Fax: 719-548-8220**
TIN: 47-2642690

Lab Director: Robert McMullen, PhD **Lab Manager: Leslie Douglas, PhD**

Patient: Sample, Sally (1/27/64) **Propensity Panel**

Provider: **Jane Doe, MD** Test ID: 36934

Sample Collected	Sample Received	Sample Tested	Test Reported
02/24/2020	02/26/2020	03/03/2020	03/05/2020

Sample type: Test performed by: L. Douglas

The DNA Connexions Propensity Panel utilizes the polymerase chain reaction (PCR) technology to detect the presence of targeted microbial DNA. Sensitivity of the test is 1 to 10 microbes with a specificity exceeding 5 x 10^{18}.

The highlighted microbes were detected in the submitted sample:

	Cardiovascular Disease/Health	Metabolic Health, Diabetes, Insulin Resistance	Pregnancy Health	Cancer Development and Cancer Risk Progression	Dementia and Cognitive Health	Respiratory Tract Infections	Red Complex Periodontal Pathogens	Dermal, Joint, and Musculoskeletal Health
Aggregatibacter actinomycetemcomitans	✓	✓	✓	✓	✓	✓		
Campylobacter rectus					✓			
Capnocytophaga ochracea					✓			
Dialister pneumosintes					✓	✓		
Filifactor alocis							✓	
Fusobacterium nucleatum ss vincentii		✓	✓	✓	✓	✓		✓
Fusobacterium nucleatum ss polymorphum		✓	✓	✓	✓	✓		✓
Fusobacterium nucleatum ss nucleatum		✓	✓	✓	✓	✓		✓
Porphyromonas gingivalis	✓	✓	✓	✓	✓	✓	✓	✓
Prevotella intermedia	✓		✓		✓			
Prevotella nigrescens			✓					
Staphylococcus aureus	✓					✓		✓
Staphylococcus warneri	✓					✓		✓
Streptococcus gordonii	✓					✓		✓
Streptococcus intermedius	✓					✓		✓
Streptococcus mitis	✓			✓		✓		✓
Streptococcus mutans	✓					✓		✓
Tannerella forsythia	✓	✓	✓	✓	✓		✓	
Treponema denticola	✓	✓		✓			✓	

PROPENSITY TEST PANEL
SAMPLE REPORT

PAGE 2

The DNA ConneXions® Propensity Panel identifies 19 of the most common species not only involved in periodontal diseases, but also those microbes which have been implicated in the progression of a variety of chronic, systemic conditions. The ongoing presence and chronic inflammation caused by these microbes can lead to their release and spread throughout the body. Ongoing research is identifying relationships between periodontal microbes and systemic diseases, including cardiovascular disease, gastrointestinal cancers, diabetes, cognitive disorders, respiratory issues and complications relating to pregnancy, among others.

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HOW TO ORDER COLLECTION KITS
KITS FOR MY PATIENTS

DNA ConneXions® makes it easy to acquire collection kits for all of the test panels we offer. All of the kits include everything needed for sampling, packaging and prepaid UPS return shipping. **We will send kits to your practice with no up front fees and will charge for testing only when the sample is received.**

Call Us: You can call (888) 843-5832, Monday-Friday, 8-5pm MST.

Email Us: You can order your kits via email: info@dnaconnexions.com. Please specify practitioner/practice name, kit type, and number of kits requested.

Practitioner Bulk orders via Website (no charge): To place a practitioner kit order with no up front charges, use the "Bulk Order" tab at **dnaconnexions.com** where you can specify the type and number of kits to order.

Drop Ship Requests: DNA ConneXions® offers drop ship services for our established practitioners. Please email us at info@dnaconnexions.com with patient name, address, phone number, and kit type(s) requested and we will ship the requested kit utilizing our standard shipping, UPS Sure Post (typical delivery is 5-7 business days) at no charge.

Drop ship requests requiring expedited/international shipping will incur shipping fees payable when the drop ship request is made:

- UPS 2 Day: $35.00
- UPS Overnight: $50.00
- International: $75.00
- Canada/Mexico: $30.00

Direct Orders/Patient Pay: You can direct your patients to order their kit on their own at dnaconnexions.com and the kit(s) will be delivered to the delivery address specified. Direct orders placed through the website are paid up front at the time the order is placed and are non-refundable.

DNA CONNEXIONS® DISCLAIMER

Upon submission of sample(s) to DNA ConneXions®, I acknowledge that DNA ConneXions® is not a clinical diagnostic laboratory and cannot provide a diagnosis for disease and/or subsequent treatment.

These results are from DNA PCR testing, and indicate the presence of targeted foreign DNA. The CDC recommended treatment protocol(s) are supplied as a courtesy to health care providers to aide in an overall assessment.

This information alone should not be used to diagnose or treat a health problem or disease. All reported results are intended for research purposes only and a consultation with a qualified health care provider is required for diagnosis and treatment.

DNA ConneXions® is subject to Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) certification and maintains a current CLIA license: License #06D2019763 https://www.cms.gov/clia/

OUR SISTER COMPANIES

THE HUGGINS-GRUBE INSTITUTE

The Huggins-Grube Institute was created to honor the legacy of Dr. Hal Huggins. The Huggins-Grube Institute is committed to educating patients and training health care professionals based on the foundation that whole-body health starts in the mouth. It is the parent organization of DNA ConneXions®, BioComp Labs, Huggins-Grube Dental Centers, and Huggins Applied Healing. All of these sister companies work synergistically to maximize health and wellness for the patient. **www.hgdcoffice.com**

BIOCOMP LABORATORIES

Recent years have seen growing concern about toxic components found in many dental materials. Biocomp Labs assays the reactivity to components of over 8500 dental materials. **www.biocomplabs.com**

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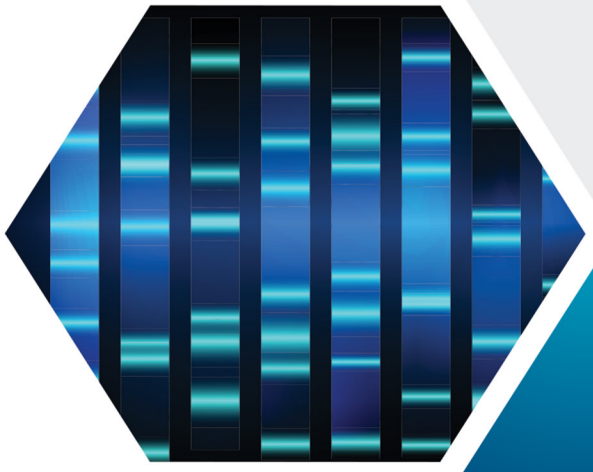

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