Saliva Diagnostics Made Simple.

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SIMPLYPERIO™

A CHAIR-SIDE GUIDE

THE IMPORTANCE OF SALIVA TESTING

SIMPLY TEST TODAY

DISEASE RISKS CONNECTED TO ORAL PATHOGENS

- Alzheimer Disease — Aa Pg Tf Td Fn Pi V
- Heart Disease/Attack — Aa Pg Tf Td Fn Fa Pi Cr Ec Sm Ca V
- Stroke — Aa Pg Tf Td Fn Fa Pi Cr Sm Ca
- Diabetes — Aa Pg Tf Td Fa Sm Ca
- Cancer — Aa Pg Tf Fn Fa V
- Kidney Disease — Pg Tf Td
- Rheumatoid Arthritis — Aa Pg
- Adverse Pregnancy Outcomes — Aa Pg Tf Td Fn Fa Pi Ec Sm
- High Blood Pressure — Aa Pg Tf Td Fn Ec
- Liver Disease — Aa Pg Tf Td Fn V
- Multiple Sclerosis — Pg
- Women's Health — Fa Ec
- Gut Health — Pg Fa Fn V

MADE IN USA

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A Spectrum Solutions® Brand

MKTG-DOC-054v4 07/31/2024

Understanding the potential health risks

offers the opportunities to **STOP** and even **REVERSE** systemic disease progression.

Circulating oral pathogens and inflammatory mediators promote or contribute to these systemic conditions:

- Rupture of susceptible atherosclerotic plaques precipitating [5]0% of strokes and heart attacks.
- Blockage of microvascular vessels in brain and other critical organs and structures.
- They promote organ (colon, etc) and oral cancer.
- They shorten lifespans.
- Have a bidirectional relationships (diabetes, CVD).
- They amplify autoimmune diseases.

Dr. Bradley Bale, MD, & Amy Doneen, DNP, "Healthy Heart, Healthy Brain: The Personalized Path to Protect Your Memory, Prevent Heart Attacks and Strokes, and Avoid Chronic Illness", book published March, [2]0[22].

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of the population

90% HAVE A FORM OF GUM DISEASE

Gone unchecked, pathogens and their toxins can easily move through the bloodstream with far reaching and catastrophic affects on items like the heart, arteries and central nervous system.[1]

95% OF THOSE WITH DIABETES

also have gum disease lowering glycemic control

70% MORE LIKELY TO DEVELOP ALZHEIMER'S

if suffering more than 10 years from gum disease

up to 50% HEART ATTACKS & STROKES ARE

triggered by oral bacteria [2,3,4]

up to 50% GREATER RISK OF CANCER

with gum disease [5]

Source Infographic: The American Academy for Oral Systemic Health (AAOSHI)
[1] https://www.ncbi.nlm.nih.gov/books/NBK[5545]90/
[2] Pessi T, Karhunen V, Karjalainen PP, et al. Bacterial signatures in thrombosis aspirates of patients with myocardial infarction. Circulation. [2]0[13];[127]([11]):[121]9-[1228]. doi:[10].[1161]/CIRCULATIONAHA.[112].00[1254]
[3] Freire MO, Van Dyke TE. The mechanisms behind oral-systemic interactions. In: Glick M, ed. The Oral-Systemic Health Connection: A Guide to Patient Care. Chicago, IL: Quintessence; [2]0[14]:Chapter [5], [10][3]-[11]9.
[4] Leishman SJ, Do HL, Ford PJ. Cardiovascular disease and the role of oral bacteria. J Oral Microbiol. [2]0[10]; [2]. doi: [10].[34]0[2]/jom.[v]2i0.[5781].

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Oral Health is a Medical Problem **With a Dental Solution.™**

Why Test?

Periodontal disease (gum disease) is a polymicrobial biofilm infection that results in the breakdown of tissue, bone, and ultimately tooth loss. This chronic infection will spread. Gum disease may start in the mouth, but it doesn't end there.

90% of the population has a form of gum disease. In some, it may be easy to spot. However, in a vast majority these very dangerous and damaging pathogens, linked to multiple systemic diseases, will present with no symptoms or pain until reaching very severe stages. This makes it easy to miss when only doing a perio probe or visual exam and why saliva testing is so important.

Left unchecked and untreated, these pathogens and their toxins remain hidden and multiplying deep inside pockets and under previous dental work. Not only will they continue to damage more of the surrounding soft tissue and bone supporting the teeth, they will also silently escape into the bloodsream.

Over [1]00M individuals in the U.S. have a chronic infection from elevated pathogens in their mouth. Once these harmful bacteria enter the bloodstream from inside the mouth, they can lead to, and advance, multiple chronic diseases including cardiovascular and liver disease, diabetes, cancer, and Alzheimer's.

Aren't all tests pretty much the same? The short answer is no.

In general, tests provides [3]rd-party, independent evidence that supports an intelligent conversation about the mouth-body connection and delivers adoption of the periodontal treatment that is needed. However, a "good" test will also identify the levels of the causative bacterial burden using laboratory DNA analysis.

In addition, the "best" test also identifies sub species and measure the levels of each pathogen with detection sensitivities that match established therapeutic guidelines. The "best" saliva tests also include both good and bad caries organisms, fungal, and viral targets for bigger-picture host immune status and immune response factoring. This testing not only offers patients early detection, it delivers them the opportunity for a more successful and targeted therapy intervention based on their current immune health and individual test results. **The only single test that offers all of this is SimplyPERIO™.**

- People with a history of gum disease have a [52]% greater risk of stomach cancer and a [43]% greater risk of throat cancer compared to those without gum disease.[1]
- People who have lost [2] or more teeth have a [33]% greater risk of stomach cancer and a [42]% greater risk of throat cancer.[2]
- Cardiovascular disease is the number one cause of death in the U.S., claiming more lives than all types of cancer combined.[3]
- Up to [5]0% of heart attacks and strokes are triggered by oral bacteria that live in your mouth.[4]
- People with an Aa oral infection are at least [5]0% more likely overall to develop pancreatic cancer.[5]
- A Tf oral infection is associated with a [21]% increased risk of esophageal cancer.[6]
- Those with a Pg oral infection have an overall [5]9% increase in risk of developing pancreatic cancer.[7]
- Fn and Pg oral infections are associated with the development of colorectal cancer.[8]

In addition to bacterial pathogens there is evidence of fungal and viral pathogens having a role in the genesis of inflammation and release of cytokines that stimulate bone and tooth loss.

- Periodontal disease and dental caries (cavities) are driven by communities of bacteria rather than individual species.
- Periodontal disease is a known contributor and potential cause of chronic disease pathogenesis such as cardiovascular disease, diabetes, neurodegeneration and metabolic disease.
- Multiple dental associations and networks are advocating the adoption of such a test to become part of the standard of care.

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Testing-to-Treat:
How Does This Change Your Treatment?

Our bodies are complex. Not only are we a multicellular organism composed of our own unique human genome, but by design our bodies are also home to the genomes of other good and bad microorganisms. This cohabitation makes up the normal human microbiome and **it's balance responsible for our health and wellness**. The dysbiosis, or disruption, of the natural microbiome shifts the body from a balanced, health-associated state, to a disease-associated state disrupting the protective benefits of a healthy microbiome.

This dysbiosis of the oral microbiome results in an imbalance in the microbial community of the mouth, which can lead to periodontal disease, dental caries, and many systemic health issues.

Treatment options for diseases associated with dysbiosis of the oral microbiome are multifaceted and aim to restore microbial balance, reduce pathogenic bacteria, and manage symptoms. This is why a targeted "testing-to-treat" protocol is so important and why a pathogen blind shotgun approach to treatment can prove to be more harmful then helpful.

A comprehensive approach tailored to the patient's needs is essential for effective management and prevention of oral dysbiosis-related diseases.

The concept of bacterial complexes in the oral microbiome was developed to categorize different groups of bacteria based on associations with periodontal health and disease. These complexes are color-coded and represent clusters of bacteria that are commonly found together in subgingival biofilm. Each complex is associated with different stages of periodontal disease progression.

Purple & Red Complex

Highly pathogenic, associated with severe periodontal disease. This test includes:

- Aggregatibacter actinomycetemcomitans (AA)
- Porphyromonas gingivalis (PG)
- Tannerella forsythia (TF)
- Treponema denticola (TD)

Orange Complex

Transitional pathogens, involved in moderate periodontal disease. This test includes:

- Prevotella intermedia (PI)
- Camplyobacter rectus (CR)
- Fusobacterium nucleatum (FN)
- Fusobacterium animalis (FA)

Green Complex

Generally less pathogenic, associated with health and early colonizers. This test includes:

- Eikenella corrodens (EC)

HSA, FSA & Insurance Coverage Rationale

HSA and FSA cards can be used to cover the patient cost for testing. Collection, preparation, and analysis of a saliva sample for laboratory diagnostic testing may be indicated as part of a oral disease Risk Assessment and subsequent management. Assessment of salivary flow by measurement may be indicated for individuals with systemic disease, polypharmacy, and radiation therapy to the head and neck. It may also be indicated to monitor the effectiveness of Sialagogues.

The following list of insurance CDT billing codes for saliva testing are provided for reference purposes only and may not be all inclusive. Benefit coverage for the diagnostic health services is determined by a member's specific benefit plan. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment.

CDT Code	Description
D0[417]	Collection and preparation of saliva sample for laboratory diagnostic testing
D0[418]	Analysis of saliva sample
D0[419]	Assessment of salivary flow by measurement

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SPECTRUM SIMPLY TEST™

800 Hudson Way, Huntsville, AL 35806
P: 844-443-6663 | F: 256-327-0981
Testing Performed By Alimetrix · CLIA #: 01D2113023
Medical Director: Dr. Richard V. Spera MD, FACP
simplytest.com

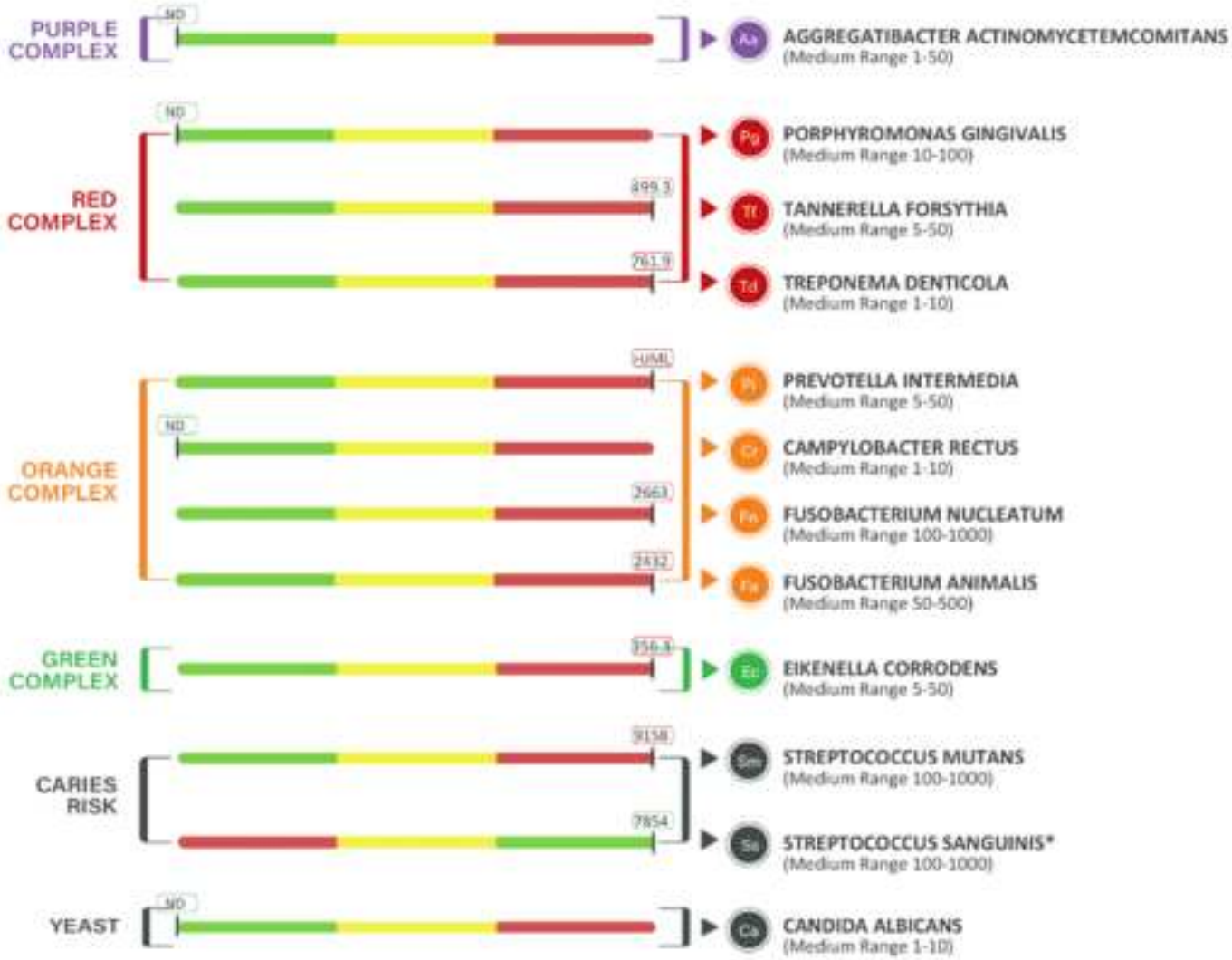
FINAL REPORT

PERIODONTAL PREMIUM
Sample Type: Saliva
Reported: 2024-02-14 20:57

PATIENT INFO	SAMPLE INFO	ORDERING PROVIDER
TEST 5A SEX: FEMALE	Specimen#: FR036007948461 Collected: 2024-02-06T07:09 Received: 2024-02-12 16:19	Sample Test Dentist DDS NPI: 123456789 PHONE: 8015690465

LOW | MEDIUM | HIGH | NON-VIRAL TARGETS *(In Range Results)*

All displayed values are in genomic copies x1000/mL except Fusobacterium nucleatum which is in genomic copies x10,000/mL.



**The presence of Streptococcus Sanguinis is associated with healthy plaque biofilm.*
Reference bar ranges have been normalized for clarity. ND = Not Detected UML = Upper Measuring Limit.

POSITIVE	NEGATIVE	ATTENTION	VIRAL TARGETS PREMIUM ADDITIONS
	✓		HERPES SIMPLEX VIRUS 1 (HSV-1)
	✓		HERPES SIMPLEX VIRUS 2 (HSV-2)
✓		!	CYTOMEGALOVIRUS
	✓		EPSTEIN BARR VIRUS

– OTC Home Care –
30 Days Medicated
Toothpaste + Rinse
Brand A (Antibacterial)

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SPECTRUM SIMPLY TEST™
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Testing Performed By Alimetrix · CLIA #: 01D2113023
Medical Director: Dr. Richard V. Spera MD, FACP
simplytest.com

FINAL REPORT

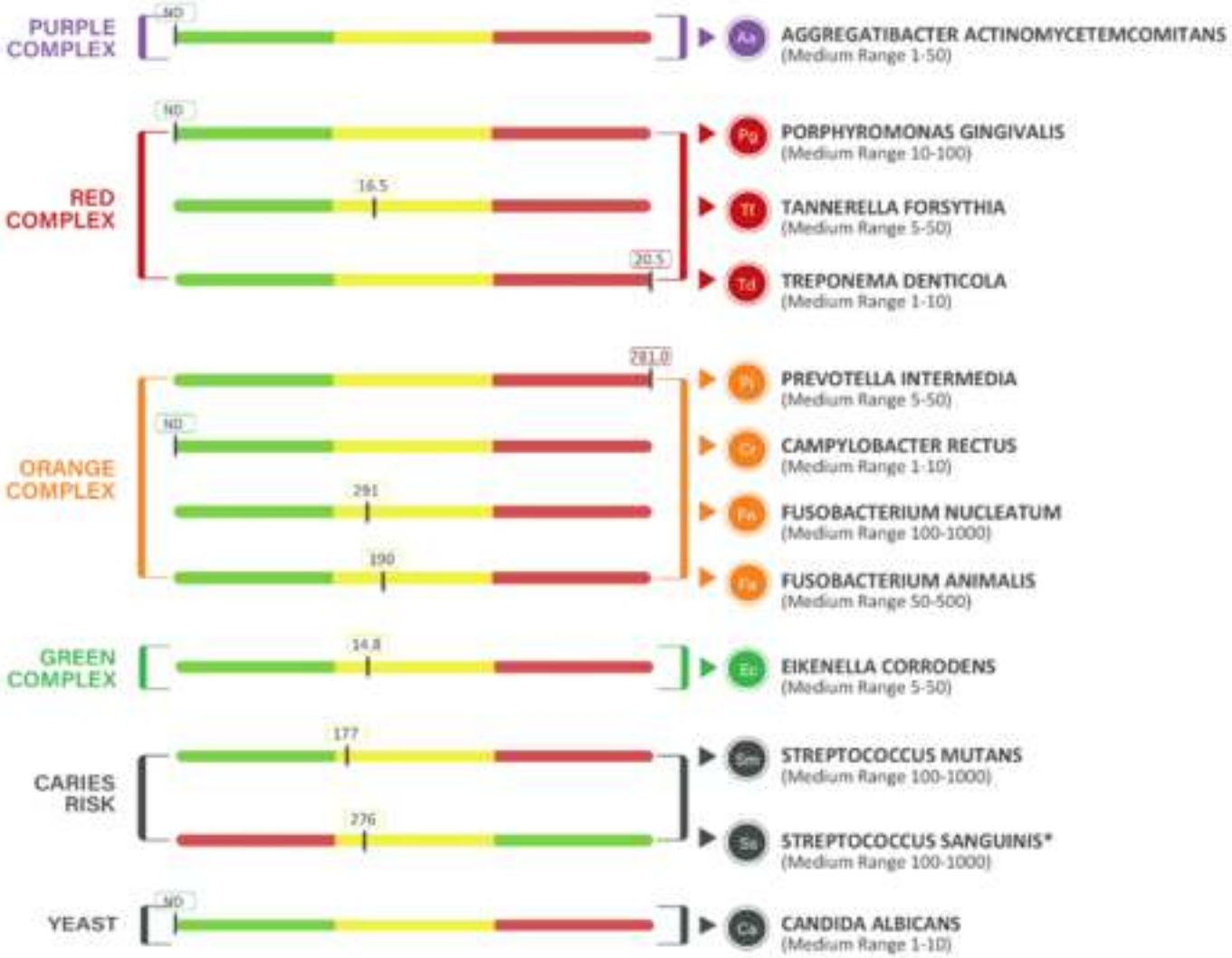
PERIODONTAL PREMIUM
Sample Type: Saliva
Reported: 2024-03-12 16:25

AFTER

PATIENT INFO	SAMPLE INFO	ORDERING PROVIDER
TEST 5B SEX: FEMALE	Specimen#: FR737742171866 Collected: 2024-03-06T16:58 Received: 2024-03-08 14:01	Sample Test Dentist DDS NPI: 123456789 PHONE: 8015690465

LOW | MEDIUM | HIGH | **NON-VIRAL TARGETS** *(In Range Results)*

All displayed values are in genomic copies x1000/mL except Fusobacterium nucleatum which is in genomic copies x10,000/mL



**The presence of Streptococcus Sanguinis is associated with healthy plaque biofilm.*
Reference bar ranges have been normalized for clarity. ND = Not Detected UML = Upper Measuring Limit.

POSITIVE	NEGATIVE	ATTENTION	VIRAL TARGETS PREMIUM ADDITIONS
	✓		HERPES SIMPLEX VIRUS 1 (HSV-1)
	✓		HERPES SIMPLEX VIRUS 2 (HSV-2)
✓		!	CYTOMEGALOVIRUS
	✓		EPSTEIN BARR VIRUS

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Assessment for gingival and periodontal infections

Testing for preclinical and clinical disease is the first step in early detection to prevent and reverse periodontal disease while reducing your overall systemic health risk.

1 Test for Pathogens

Test for the presence of high-risk oral pathogens for preclinical & clinical disease.

2 Assess for Gingivitis

[1-3] mm probe depths with inflammation & bleeding is a clinical tissue infection called gingivitis.

3 Assess for Periodontitis

[4] mm and greater probe depths with bone loss, inflammation, & bleeding is a clinical tissue and bone infection called periodontitis.

4 Staging of Disease

Stage [1]: [1-2] mm CAL and max probe depth of [4] mm
Stage [2]: [3-4] mm CAL, max probe depth [5] mm
Stage [3]: [5]mm or more CAL, probe depth [6] mm & more
Stage [4]: Same as stage [3] with [5] or more teeth missing

5 Grading of Disease

Grade A: Slow with no CAL over [5] years
Grade B: Moderate is [2] mm or less of CAL over [5] years
Grade C: Rapid is [2] mm or more CAL over [5] years

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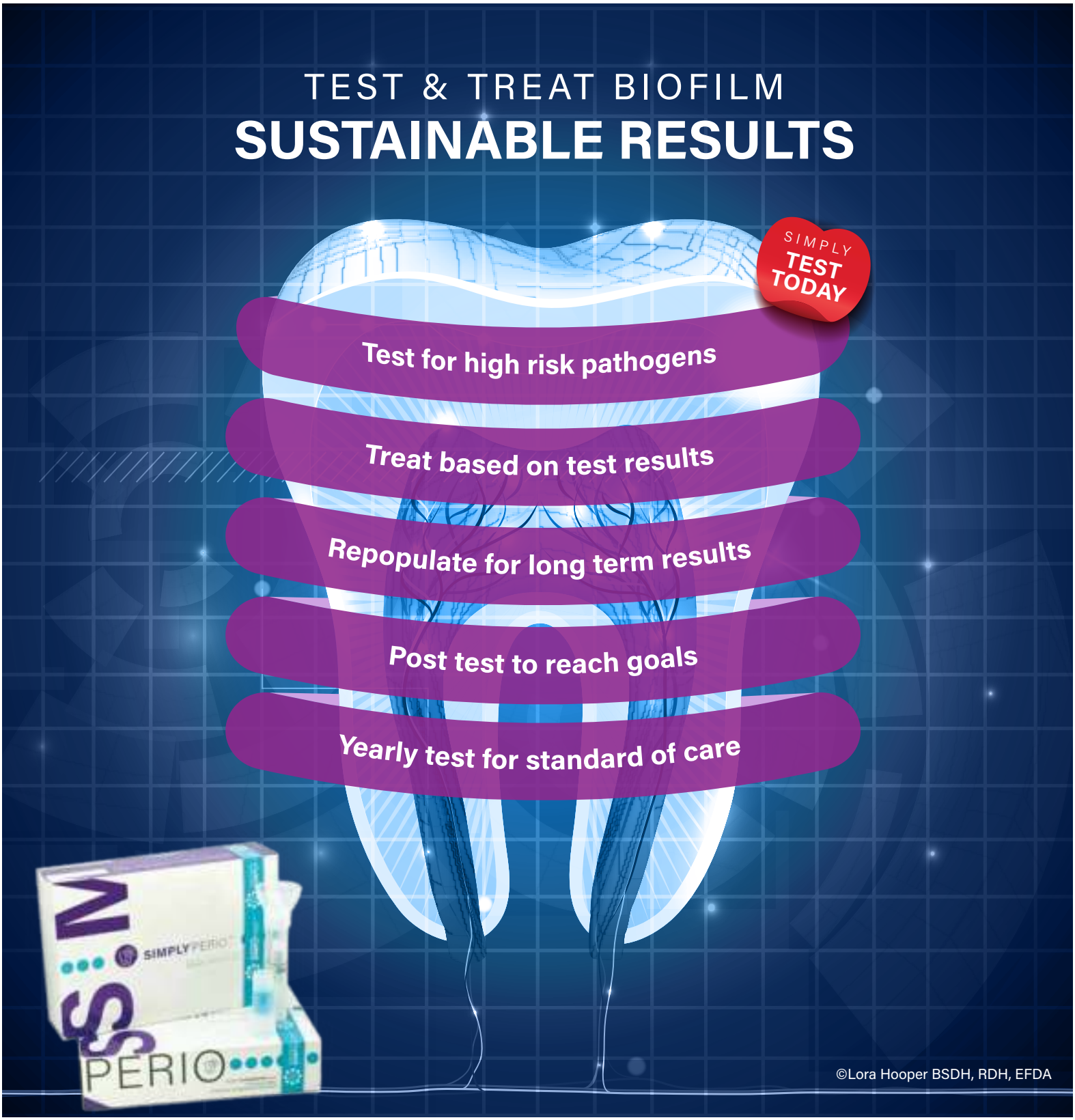
TEST & TREAT BIOFILM
SUSTAINABLE RESULTS



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Aggregatibacter actinomycetemcomitans

Oral: Tissue invasive. Associated with refractory periodontal disease. Initial colonizer for juvenile and progressive periodontitis.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Respiratory Disease*
- *Pregnancy Complications*
- *Diabetes*
- *Endocarditis*
- *Abscesses*
- *Rheumatoid Arthritis*
- *Alzheimer's Disease*
- *Atherosclerosis*
- *High Blood Pressure*
- *Cancer*

High levels of Aa in the oral cavity are significant because of its' association with all forms of periodontal disease, particularly aggressive periodontitis. Aa virulence factors include the production of leukotoxin which targets and destroys white blood cells, weakening the host immune response which allows the bacterium to evade immune defenses. Aa also contain endotoxins which trigger inflammation resulting in tissue destruction. Aa leads to the activation of osteoclasts which result in bone resorption as well as inducing the production of metalloproteinases which further contribute to tissue destruction and bone loss.

This organism possesses a large number of virulence factors with a wide range of activities which enable it to colonize the oral cavity, invade periodontal tissues, evade host defenses, initiate connective tissue destruction and interfere with tissue repair.

Porphyromonas gingivalis

Oral: Pg is an initial colonizer and agent of aggressive and chronic periodontitis, and PERIO-implantitis.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Respiratory Disease*
- *Rheumatoid Arthritis*
- *Kidney Disease*
- *Multiple Sclerosis*
- *Artery Plaque*
- *Fatty Liver*
- *High Blood Pressure*
- *Diabetes*
- *Alzheimer's Disease*
- *Atherosclerosis*
- *Gut Dysbiosis*
- *Cancer*
- *Adverse Pregnancy Outcomes*

Able to enhance oral dysbiosisis, which is an imbalance in the beneficial commensal and periodontal pathogenic bacteria that induces chronic inflammation. This black-pigmented bacterium produces a myriad of virulence factors that cause destruction to periodontal tissues either directly or indirectly by modulating the host inflammatory response.

Pg also activates osteoclasts and metalloproteinases which further contribute to tissue destruction and bone loss.

Tannerella forsythia

Oral: Found in periodontitis, chronic periodontitis, & PERIO-implantitis. High Tf/Fn can mean low nitric oxide stemming from sleep or airway disruption. Studies link restoring nitric oxide production help an individual feel, think, & sleep better, have less anxiety & experience less symptoms of depression.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Artery Plaque*
- *Kidney Disease*
- *Joint Replacement*
- *Heart Attack*
- *High Blood Pressure*
- *Diabetes*
- *Alzheimer's Disease*
- *Atherosclerosis*
- *Cancer*
- *Adverse Pregnancy Outcomes*

Initiates connective tissue destruction and alveolar bone resorption in periodontal disease. It is likely that Tf releases metabolites beneficial for the growth of the other red-complex species. If Tf is present in high numbers and the patient gives a history consistent with sleep disorder, DDS can inform the patients primary care physician of the finding and suggest sleep study. Tf has significant ability to form synergistic biofilms with other dental pathogens. It's also associated with Acute Necrotizing Ulcerative Gingivitis which is characterized by necrosis of gingival tissues, bleeding, and pain.

Treponema denticola

Oral: Td is an initial colonizer for acute necrotizing ulcerative gingivitis. Tissue-invasive, therefore danger of recurrence.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Artery Plaque*
- *Diabetes*
- *Joint Replacement*
- *Alzheimer's Disease*
- *High Blood Pressure*
- *Atherosclerosis*
- *Adverse Pregnancy Outcomes*
- *Kidney Disease*
- *Feeds off of Stress*

A motile and highly proteolytic spirochete bacterium. Td has been associated with periodontal diseases such as complex biofilm production, early-onset periodontitis, necrotizing ulcerative gingivitis, and acute pericoronitis.

Prevotella intermedia

Oral: Advances the destruction of periodontal tissues. Risk factor for severe chronic periodontitis and gingivitis. Ec, Pi, & Cr have been related to perio-inplantitis & root canal infections, and women's health.

Systemic Risk Factors

- *Adverse Birth Outcomes*
- *Cardiovascular Disease*
- *Heart Attack*
- *Alzheimer's Disease*

A pathogenic bacterium involved in periodontal infections, including gingivitis and periodontitis, and often found in acute necrotizing ulcerative gingivitis. It is commonly isolated from dental abscesses, where obligate anaerobes predominate. Seen as the main cause of many periodontal diseases and is often hard to eliminate in infected areas, due to its ability to form biofilms. Its antibiotic-resistant capabilities have serious implications for human health. Pi has been show to be resistant to the antibiotic Clindamycin.

Campylobacter Rectus

Oral: Aggressive and refractory periodontitis. Ec, Pi, & Cr have been related to perio-inplantitis & root canal infections and women's health.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Respiratory Disease*

Cr is implicated as a pathogen in chronic periodontitis, which can induce bone loss. Associated with hypertension together with Prevotella melaninogenica and Veillonella parvula.

Fn

Fusobacterium nucleatum

Oral: Component of destructive periodontal biofilm and link between early colonizers and red complex bacteria. High Tf/Fn can mean low nitric oxide stemming from sleep or airway disruption.

Systemic Risk Factors

- *Cancer*
- *Artery Plaque*
- *Alzheimer's Disease*
- *Atherosclerosis*
- *Gut Dysbiosis*
- *Increase in Vessel Wall Permeability*
- *Enables Bacterial Infections*
- *Sticks to, Invades Endothelial Cells*
- *Pregnancy Complications-Still Births*

Plays a key role in the development of periodontitis and the formation of dental biofilms. Studies have shown that it is enriched in lesions in periodontal diseases, halitosis, dental pulp infection, oral cancer, and systemic diseases promoting the development and/or progression of these conditions. Metabolite agents digest the α chain of IgA, which helps bacteria escape the host's defense system, affect the destruction and healing of periodontal tissues, lead to bone destruction, and affect bone repair.

Fa

Fusobacterium animalis

Oral: Organisms mainly associated with dental plaque biofilms and inflammatory periodontal diseases but are also found in individuals with extra-oral infections.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Pregnancy Complications*
- *Gut related issues*
- *Colon Cancer*
- *Diabetes*
- *Women's health*

An oral opportunistic bacterium that can cause different infections it plays a key role in the development of periodontitis and the formation of dental biofilms. In recent years, studies have shown that it is enriched in lesions in periodontal diseases, halitosis, dental pulp infection, oral cancer, and systemic diseases promoting the development and/or progression of these conditions. Metabolite agents digest the α chain of IgA, which helps bacteria escape the host's defense system, affect the destruction and healing of periodontal tissues, lead to bone destruction, and affect bone repair. Colorectal cancer tumors have isolated oral bacterial strains predominantly belonging to Fn subspecies animalis (Fa).

Ec

Eikenella Corrodens

Oral: Eikenella corrodens is a part of oral symbiosis and a normal flora. Its primary ecologic niche within the oral cavity appears to be dental plaque, both in periodontally healthy individuals and in periodontitis patients. Ec, Pi, & Cr have been related to perio-inplantitis & root canal infections and women's health.

Systemic Risk Factors

- *Head and Neck Infections*
- *Sinusitis*
- *Pulmonary Infection*
- *Arthritis*
- *Endocarditis*
- *Intra-abdominal Infection*
- *Pancreatic Abscesses*
- *Thyroiditis*
- *Vertebral Osteomyelitis*
- *Adverse Pregnancy Outcomes*

Ec is a low incident and low risk pathogen in the oral cavity often considered commensal. If associated with active disease, Ec can be stubborn to treatments. Ec is a common inhabitant of the oral cavity and the intestinal and genital tracts. Its primary ecologic niche within the oral cavity appears to be dental plaque, both in periodontally healthy individuals and in periodontitis patients. Ec is known to be involved in infective endocarditis, an infection of the inner lining of the heart chambers and valves, particularly in individuals with preexisting heart conditions. In addition there is evidence linking Ec to respiratory infections such as aspiration pneumonia.

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Sm
CARIES

Streptococcus Mutans

Oral: Significant contributor to tooth decay impacting the outer enamal layer. Studies show that cavities or dental decay is actually a communicable disease, passed from one person to another.

Systemic Risk Factors

- *Bacteremia*
- *Infective Endocarditis*
- *Cardiovascular Diseases*
- *Acute Ischemic Stroke*
- *Bacterial Pneumonia*
- *Low Birth Weight*
- *Diabetes Mellitus*

Strep mutans can be identified by a chalky white spot on the surface of the tooth indicating an area of demineralization of enamel, which is commonly referred to as a carious lesion. There is evidence linking S. Mutans to endocarditis, as well as respiratory infections.

Ss
CARIES

Streptococcus Sanguinis

Oral: The displacement or reduction of S. sanguinis can lead to an increase in SM numbers. Maintaining a healthy balance of SS is important for preventing dysbiosis.

Ca
FUNGAL

Candida Albicans

Oral: Candida albicans is considered the most common fungal infection of the human oral cavity. The exact mechanism of periodontal contribution is unclear however, candida has been described as contributing to immune evasion of other periodontal organisms.

Ca is typically found is low numbers in the oral cavity and does not cause harm. Overgrowth of Ca can lead to thrush, particularly in the elderly and immunocompromised. It's a major cause of denture stomatitis. Ca also form biofilms which are protective against treatment and which are often polymicrobial harboring Sm and Staphylococcus aureus.

Systemic Risk Factors

- *Cardiovascular Disease*
- *Diabetes*

V
VIRAL

HERPES SIMPLEX VIRUS ^{1} (HSV-^{1})
HERPES SIMPLEX VIRUS ^{2} (HSV-^{2})
CYTOMEGALOVIRUS
EPSTEIN BARR VIRUS

Herpes viruses such as Epstein-Barr virus (EBV), Cytomegalovirus (CMV) and Herpes Simplex ^{1} and ^{2} (HSV-^{1} and ^{2}), are seen in less than ^{5}% of normal periodontal tissues but in excess of ^{5}0% in severe periodontitis. Epithelial infection with Herpes viruses can lead to impaired and inappropriate immune responses that drive immune evasion and tissue destruction.

Viral infection can also alter the expression of proteins in the infected tissues that result in enhanced adherence of bacterial species like Porphyromonas gingivalis and promote active systemic disease. This viral-bacterial synergism is a mechanism of severe disease and should be proactively monitored in dental and medical patients to reduce the burden of morbidity and mortality.

Several of the eight Herpes viruses have been shown to contribute to cardiovascular disease (CVD), Alzheimer's, GI cancers and liver disease.

The major pathogenic determinants of severe periodontitis are active herpes viruses, presence of keystone bacterial species, and chronic production of proinflammatory cytokines (TNF-∞, IL-^{1}, IL-^{6}).

Data demonstrates the frequent presence of EBV and CMV in patients also infected with Pg, Td, and Fn suggesting a synergism that promotes aggressive periodontitis. EBV is associated with the development or oral hairy leukoplakia, particularly in immunocompromised individuals

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Example Decision Tree

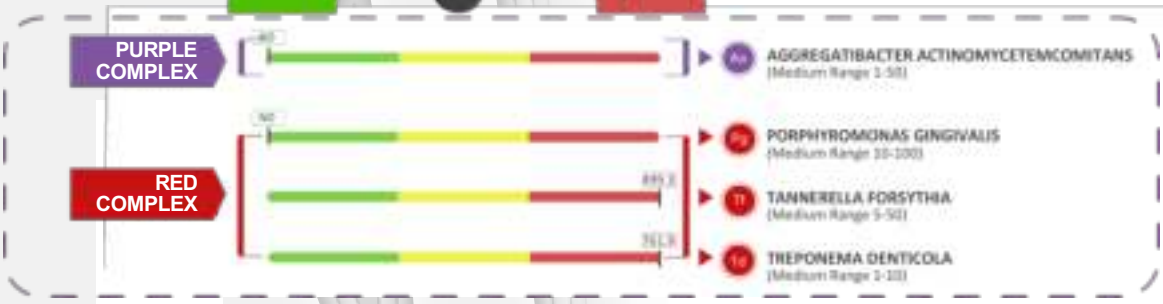
Suggested recommendations at any level must be interpreted by the treating healthcare professional and applied appropriately to individual patients.

1 Treat Purple & Red Complex First

Always start treating the high-risk Purple and Red Complex pathogens first.
This grouping represents the most aggressive and harmful oral bacteria. The higher the levels the greater the direct impact on a patient's overall health outcome. These oral pathogens complicate and compound preexisting conditions and are directly linked to serious systemic diseases. **Any treatment done on this first grouping will positively impact all other groups.**

These are all considered tissue, bone and bloodstream (systemic) invasive microorganisms and can be stubborn to treatment. The microbiological characteristics of these bacteria are virulent and transmissible. Combination therapies should be considered to target these bacteria.

Aa, Pg, and Tf are considered scaling and root planing (SRP) resistant microorganisms and may not respond to in office treatments alone. They are also closely related to antiseptic & antimicrobial resistance.



- *Alzheimer Disease*
- *Heart Disease/Attack*
- *Stroke*
- *Diabetes*
- *Cancer*
- *Kidney Disease*
- *Rheumatoid Arthritis*
- *Adverse Pregnancy Outcomes*
- *High Blood Pressure*
- *Liver Disease*
- *Multiple Sclerosis*
- *Gut Health*

Low Risk

GREEN LEVEL TREATMENT

Green levels are low risk for tissue, bone, and bloodstream invasion. This level will still present a systemic disease risk. Additionally, risk elevates based on existing medical conditions and host response. See report if yeast and or virus is present shielding the immune response.

ND **This marker is the goal and evidence what you are doing is working. ND=Not Detected**

In Office Therapy

Must break up biofilm for treatments, products, and prescriptions to work effectively. Many of these species are resistant to treatments so consider combination therapies.

In Office Treatment

Gingival debridement, SRP, laser, GBT, ozone, irrigation

Support Therapies

Products containing prebiotics, probiotics; oralis, uberis, rattus, sodium bicarbonate, xylitol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

None suggested

Antibiotic

None suggested.

Present Candida or Virus

If candida or virus is present treat accordingly and consider antibiotics based on systemic medical history.

Retest after treatment and then yearly testing

High Risk

YELLOW LEVEL TREATMENT

Patients with one (or more) purple or red pathogens in the yellow zone are considered high risk for tissue, bone and bloodstream invasion. Our goal is to get these markers in yellow moved to green levels.

Consider candida, virus, & medical history. Use previous Green Level treatment recommendation here if present.

In Office Therapy

Must break up biofilm for treatments, products, and prescriptions to work effectively. Many of these species are resistant to treatments so consider combination therapies.

In Office Treatment

Gingival debridement, SRP, laser, GBT, ozone, irrigation

Support Therapies

Products containing prebiotics, probiotics; oralis, uberis, rattus, sodium bicarbonate, xylitol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

None suggested

Antibiotic

Must be administered prior or within 4 hours of treatment. Combination: amoxicillin 500mg t id & metronidazole 500mg bid 10-14 days

Retest after treatment and then every 6 months till low risk in green then move to yearly testing.

Extreme Risk

RED LEVEL TREATMENT

Patients with one (or more) purple or red pathogens in the red zone are considered extreme risk for tissue, bone and systemic invasion. Our goal is to get these markers in red moved to progressively reach green levels.

Consider candida, virus, & medical history. Use previous Green Level treatment recommendation here if present.

In Office Therapy

Must break up biofilm for treatments, products, and prescriptions to work effectively. Many of these species are resistant to treatments so consider combination therapies.

In Office Treatment

Gingival debridement, SRP, laser, GBT, ozone, irrigation

Support Therapies

Products containing prebiotics, probiotics; oralis, uberis, rattus, sodium bicarbonate, xylitol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

None suggested

Antibiotic

Must be administered prior or within 4 hours of treatment. Combination: amoxicillin 500mg tid & metronidazole 500mg bid 10-14 days

Retest after treatment and then every 6 months till low risk in green then move to yearly testing.

INTEGRATIVE DENTAL MEDICINE Scholar Society

Example Decision Tree

Suggested recommendations at any level must be interpreted by the treating healthcare professional and applied appropriately to individual patients.

2 Treating Orange Complex

Having No Purple or Red Complex

Orange Complex pathogens are considered moderate risk and feed Red and Purple Complex pathogens. These are motley tissue invasive, yet some of these are considered tissue, bone and bloodstream (systemic) invasive. When Orange is by itself without red or purple complex it poses lower risk level.

The microbiological characteristics of these bacteria are virulent and transmissible. These oral pathogens can complicate and compound preexisting conditions and are also linked to systemic diseases. Pi is considered scaling and root planing (SRP) resistant microorganisms and may not respond to in office treatments alone. Combination therapies should be considered to target these bacteria.

- *Alzheimer Disease*
- *Heart Disease/Attack*
- *Stroke*
- *Diabetes*
- *Cancer*
- *Adverse Pregnancy Outcomes*
- *High Blood Pressure*
- *Liver Disease*
- *Gut Health*

Low Risk

GREEN LEVEL TREATMENT

Green levels are low risk for tissue, bone, and bloodstream invasion. This level will still present a systemic disease risk. Additionally, risk elevates based on existing medical conditions and host response. See report if yeast and or virus is present shielding the immune response.

ND **This marker is the goal and evidence what you are doing is working. ND=Not Detected**

In Office Therapy

Must break up biofilm for treatments, products, and prescriptions to work effectively.

In O ice Treatment

Gingival debridement, SRP, laser, GBT, ozone, irrigation

Support Therapies

Products containing prebiotics, probiotics; l.reuteri, s.salivarius- Blis K12 M18, sodium bicarbonate, xylitol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

biocides, antiseptics, antimicrobials

Antibiotic

None suggested

Present Candida or Virus

If candida or virus is present treat accordingly and consider antibiotics based on systemic medical history.

Retest after treatment and then yearly testing

High Risk

YELLOW LEVEL TREATMENT

Patients with one (or more) orange pathogens in the yellow zone are considered high risk for tissue, bone and bloodstream invasion. Our goal is to get these markers in yellow moved to green levels.

Consider candida, virus, & medical history. Use previous Green Level treatment recommendation here if present.

In Office Therapy

Must break up biofilm for treatments, products, and prescriptions to work effectively.

In Office Treatment

Gingival debridement, SRP, laser, GBT, ozone, irrigation

Support Therapies

Products containing prebiotics, probiotics; l.reuteri, s.salivarius- Blis K12 M18, sodium bicarbonate, xylitol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

biocides, antiseptics, antimicrobials

Antibiotic

None suggested

Retest after treatment and then every 6 months till low risk in green then move to yearly testing.

Extreme Risk

RED LEVEL TREATMENT

Patients with one (or more) orange pathogens in the red zone are considered extreme risk for tissue, bone and bloodstream invasion. Our goal is to get these markers in red moved to green levels.

Consider candida, virus, & medical history. Use previous Green Level treatment recommendation here if present.

In Office Therapy

Must break up biofilm for treatments, products, and prescriptions to work effectively.

In Office Treatment

Gingival debridement, SRP, laser, GBT, ozone, irrigation

Support Therapies

Products containing prebiotics, probiotics; l.reuteri, s.salivarius- Blis K12 M18, sodium bicarbonate, xylitol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

biocides, antiseptics, antimicrobials

Antibiotic

None suggested

Retest after treatment and then every 6 months till low risk in green then move to yearly testing.

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Example Decision Tree

Suggested recommendations at any level must be interpreted by the treating healthcare professional and applied appropriately to individual patients.

3 Treating Caries Risk

Caries Risk targets are a balancing act, and if off balance can seed other oral bacteria that can become a future problem This grouping represent an important aspect of our oral health that affects cavities, abscesses and implant failures. We can prevent these by eliminating the bacteria s. mutans while controlling the environmental PH to increase the healthy commensals like sobrinus.

The higher the levels the greater the direct impact on a patient's overall health outcome. These oral pathogens complicate and compound preexisting conditions and are also linked to serious systemic diseases.

Good news is that they are typically not resistant and will respond to treatments and products.

- *Bacteremia*
- *Infective Endocarditis*
- *Cardiovascular Diseases*
- *Acute Ischemic Stroke*
- *Bacterial Pneumonia*
- *Low Birth Weight*
- *Diabetes Mellitus*

Low Risk

GREEN LEVEL TREATMENT

Low risk, however, here is still an oral and systemic risk level. This could change based on existing medical conditions and host response. See report if yeast and or virus is present shielding the immune response.

Keep doing what you are doing it is working!

ND This marker is the goal and evidence what you are doing is working. ND=Not Detected

In Office Therapy

Fluoride treatments, reparative chemicals, debridement, laser, GBT, ozone

In Office Treatment

Cavities, endodontic or periapical lesions

Support Therapies

Oral products containing prebiotics, probiotics; sodium bicarbonate, xylitol, erythritol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

None suggested.

Antibiotic

None suggested.

Present Candida or Virus

If candida or virus is present treat accordingly and consider antibiotics based on systemic medical history.

Retest after treatment and then yearly testing

High Risk

YELLOW LEVEL TREATMENT

Moderate risk for both oral & systemic risk level. This could change based on existing medical conditions and host response. See report if yeast and or virus is present shielding the immune response.

Consider candida, virus, & medical history. Use previous Green Level treatment recommendation here if present.

In Office Therapy

Fluoride treatments, reparative chemicals, debridement, laser, GBT, ozone

In Office Treatment

Cavities, endodontic or periapical lesions

Support Therapies

Oral products containing prebiotics, probiotics; sodium bicarbonate, xylitol, erythritol, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

None suggested.

Antibiotic

None suggested.

Retest after treatment and then yearly testing

Extreme Risk

RED LEVEL TREATMENT

High risk for both oral & systemic risk level. At this level combination therapies are recommended.

Take into account candida, virus, & medical history. Use previous Green Level treatment recommendation here if present.

In Office Therapy

Fluoride treatments, reparative chemical treatments, debridement, laser, GBT, ozone

In Office Treatment

Cavities, endodontic or periapical lesions

Support Therapies

Oral products containing xylitol, erythritol, probiotics; prebiotics, sodium bicarbonate, k2/d3, electric brush, interdental cleaner, tongue scraper.

Products

None suggested.

Antibiotic

None suggested.

Retest after treatment and then yearly testing

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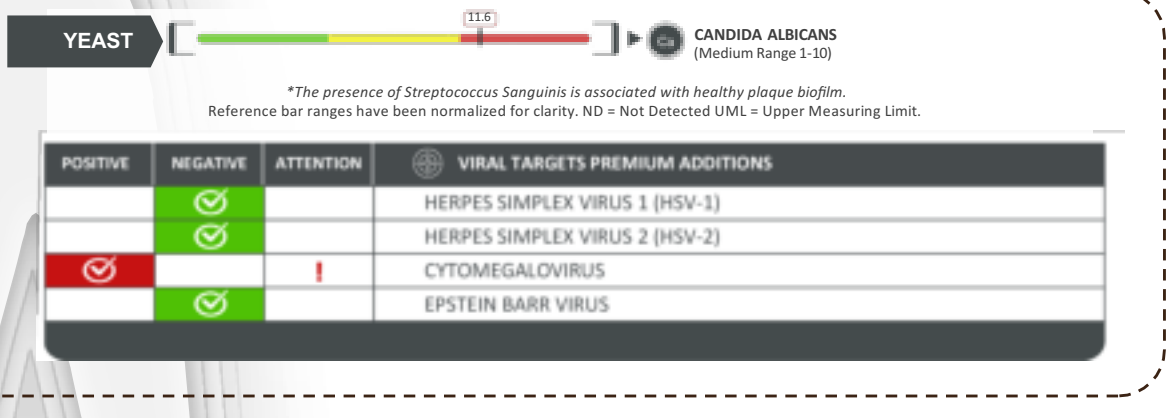
Example Decision Tree

Suggested recommendations at any level must be interpreted by the treating healthcare professional and applied appropriately to individual patients.

4 Understanding Host Response

Why is this on the test and how is it important to treatment?



YEAST

Candida albicans is a pathogenic fungus capable of switching its morphology between yeast-like cells and filamentous hyphae and can associate with bacteria to form mixed biofilms resistant to antibiotics. They can exacerbate both caries, implant and periodontal infections. It is capable of shielding bacteria from the immune system.

- *The bacteria keep the growth of the fungi in check.*
- *If something harms the bacteria and kills it off, the Candida fungi can grow out of control.*
- *Increases perio and caries*
- *Hormonal imbalances are linked to yeast infections (high estrogen)*

Low Risk

Green or Undetected: treat bacterial species and evaluate to see if gone. If not consider Probiotics and antifungal.

High Risk

Yellow is moderate risk; Teat bacterial pathogens first then retest to consider if still present antifungal.

Extreme Risk

Red is high risk and always treat bacteria first and consider starting antifungal. Antifungal choices:

- Nystatin ointment or Nystatin oral suspension rinse
- Ketoconazole 2% cream
- Clotrimazole (10 mg oral troches) 1-5 a day
- Oral fluconazole (100-200 mg daily for 7-14 days)

Source: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6170608/

VIRUS

Interpreting results: when in green it represents that the viral load is not expressing. When it is red it indicated that the virus is expressing and active.

Viruses have the ability to damage periodontal or periapical tissues via lysis of host cells, facilitation of immune-mediated host destruction, or suppression of the immune system. This makes the host less able to resist a bacterial challenge. Always start by treating the bacterial infections first and see if the viral load clears. This can take 2-4 weeks. If virus is still expressing or active, you may refer patient to primary care for evaluation and consider one the following antiviral medications:

1. Acyclovir
2. Famciclovir
3. Valacyclovir

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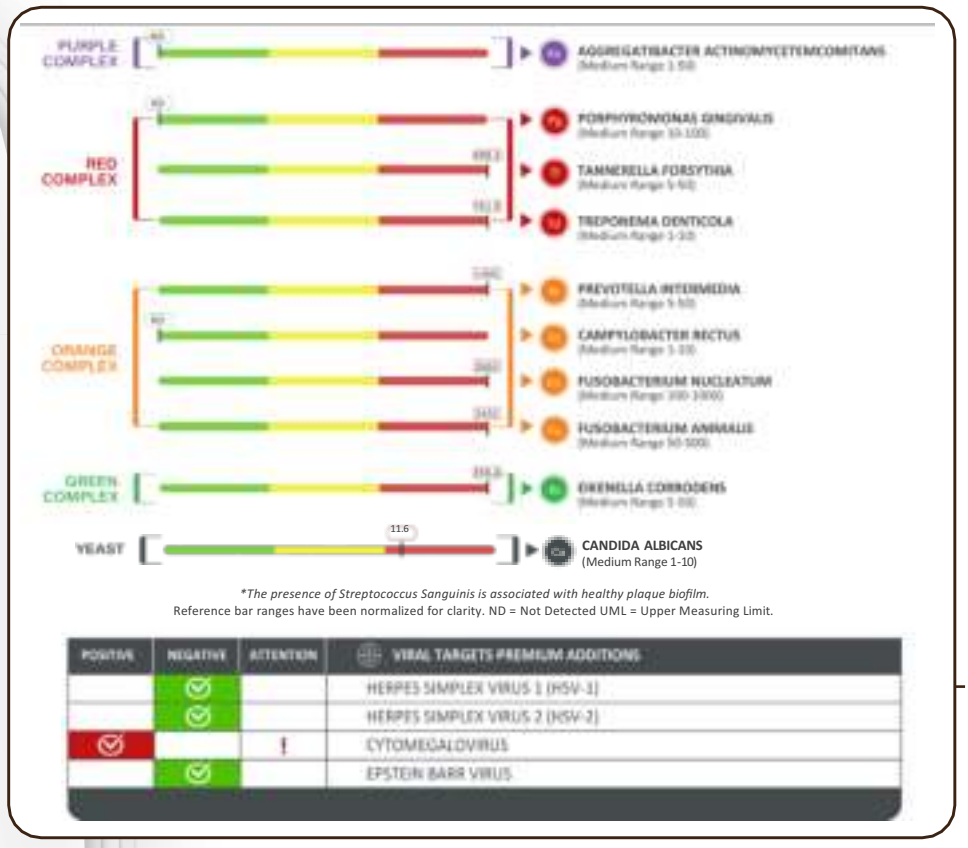
Suggested recommendations at any level must be interpreted by the treating healthcare professional and applied appropriately to individual patients.

Antibiotic Decision Tree

Compare your unique oral bacteria profile with this chart to identify which treatment profile matches your test results.



Understanding Facultative Pathogens:

Aa Ec

Facultative anaerobe, any organism that is able to grow either with or without free oxygen.

Understanding Anaerobic Pathogens:

Pg Tf Td Pi Cr Fn Fa

An anaerobic organism or anaerobe is any organism that does not require oxygen for growth.

Pathogen Treatment Profile

Aa Ec **Purple & Green Complex**	**Amoxicillin** 500 mg tid for 10-14 days
Pg Tf Td **Red Complex**	**Amoxicillin** 500 mg tid for 10-14 days + **Metronidazole** 500 mg bid for 10-14 days
Pi Cr Fn Fa **Orange Complex**	**Metronidazole** 500 mg bid for 10-14 days
Ca **Candida**	**Treat bacteria complexes first.** If Ca persists or is present by itself: **Clotrimazole** Troche 10 mg 1-5 a day for seven days or symptoms have cleared for 2 days + **Nystatin** 6 ml 4 times a day
V **Viral Targets**	**HSV-1 or HSV-2** Antiviral for early onset **Cytomegalovirus or Epstein Barr** has not cleared on its own after 2-4 weeks: acyclovir, famciclovir, and valacyclovir

IF ALLERGY TO

	1st Choice	2nd Choice
Amoxicillin OR Metronidazole	Moxifloxacin	Doxycycline

SIMPLY PERIO™

- Check to ensure everything is provided to complete sample collection
- Please read the entire instructions or watch video before beginning sample collection

1 This **SimplyPERIO test only uses the instructions found on this purple card.** Remove the Saliva Collection Tube with funnel from the blister pack & set aside for use in step 4.

2 Open the Clear Saline Tube with the Clear Saline Rinse (sterile salt water) rinse. Tip the tube up to get it in your mouth.
DO NOT SWALLOW

3 Swish around your mouth for at least 15 seconds. Try to stimulate the gums while you are swishing.

4 **Spit saline solution with saliva into collection tube using the funnel.** Continue to spit into device until reaching the fill line.
(Warnings & safety information can be found inside Device IFU if needed.)

5 Remove the funnel from tube. Screw cap filled with blue solution onto tube and tighten. Once fully tightened, the solution will release and flow into tube mixing with saliva.

6 Tilt the tube back and forth to mix saliva with the preservation solution. Place saliva sample inside bio-bag and seal closed.

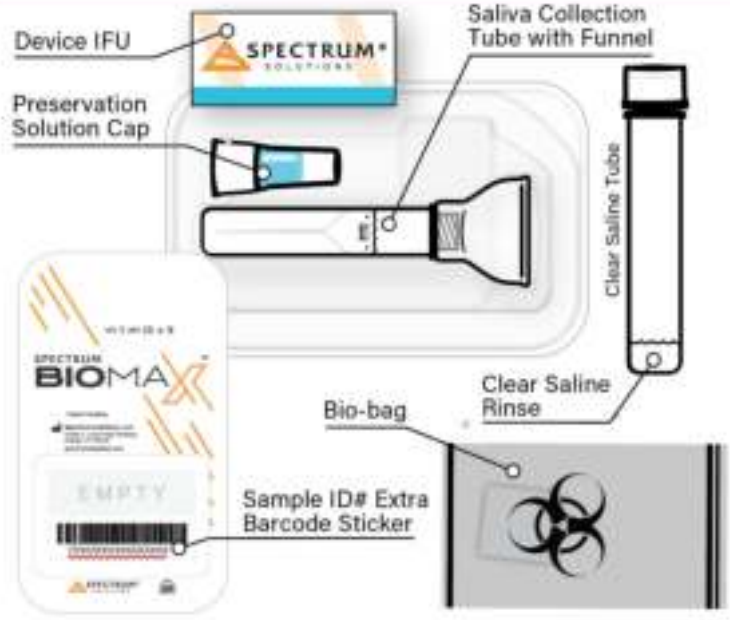
(Continue to step 7 on back of this card.)

SIMPLY PERIO™

WATCH NOW

Scan to view video instructions online

simplytest.com



SENDING SAMPLES TO THE LAB FOR TESTING

7 Remove SimplyPERIO sleeve from box to reveal the prepaid shipping label.

8 Place bio-bag with sample into box and seal box closed.

9 Hand package directly to USPS postman or drop package at Post Office, drop box, or ship center.

P: 844-443-6663 | F: 256-327-0981 | simplytest.com
Testing Performed By Alimetrix - CLIA #: 01D2113023 2023047v4.0 03/14/2024

CAP ACCREDITED

Source: Why Test?

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