

The Heart Attack & Stroke Prevention Center of Central Ohio



Complete Health Dentistry of Columbus



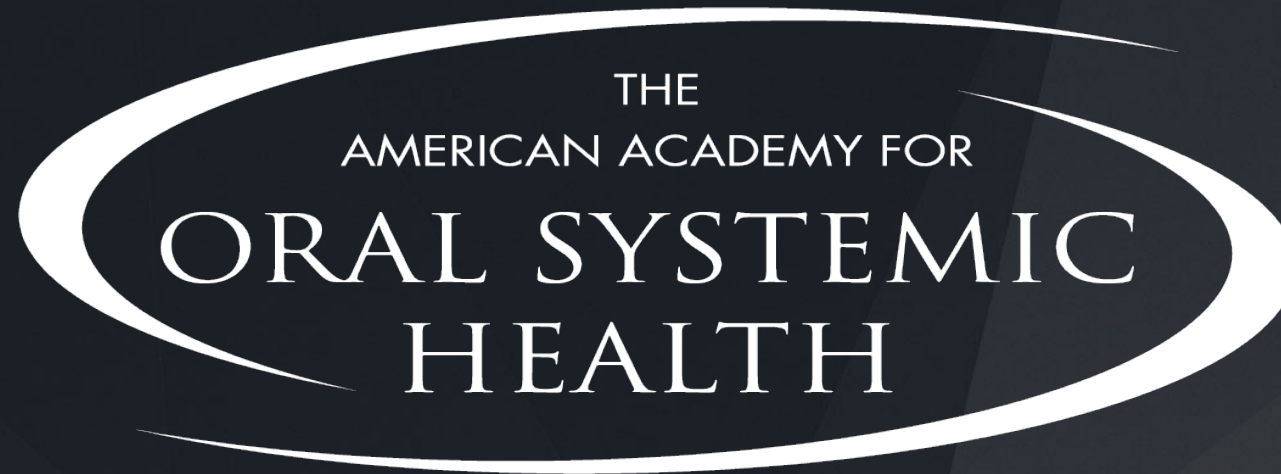
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Are Your Patients at Risk for a Heart Attack or Stroke?

Objective Testing Tells the Story



Conflict of Interest Declaration

No financial support or sponsorship received associated with this presentation by speaker nor speaker's business affiliates and family.

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Eric A. Goulder, MD, FACC

Barbara L. McClatchie, DDS

Background

- I am a board-certified cardiologist with 35 years of practice as a standard of care physician.
 - Barb is a Pankey trained complete health dentist. She practices general dentistry as well as being one of the first dentists certified in Dale Bredesen's Recode program.
-
- We are both BaleDoneen Method Preceptor and providers
 - We are founding members of AAOSH



Choose Wisely



Your path begins decades before disease....

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THE
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ORAL & SYSTEMIC
HEALTH

WORLD LEADERS IN PROACTIVE HEALTHCARE COLLABORATION

Main Tenets of BD Method

-  Education
-  Disease
-  Fire (inflammation)
-  Root Causes
-  Optimal Goals
-  Genetics



Do your Patients have Evidence of Arterial Disease?

The standard of care approach is to do a stress test if there is a question of arterial disease.

Actually, a stress test can only tell us if you have blockage of 65-70% or more.

If you have a negative stress test you get a “pat on the back” and you’re told your heart is fine; you may need further tests to find the source of your pain

The stress test is a good test if you are looking to see if someone has disease so severe that they need a stent or bypass to fix it.

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Do your Patients have Evidence of Arterial Disease?

However, if we are going to slow down, halt and reverse the arterial disease process, we want to know if you have even mild disease, that a stress test cannot pick up.

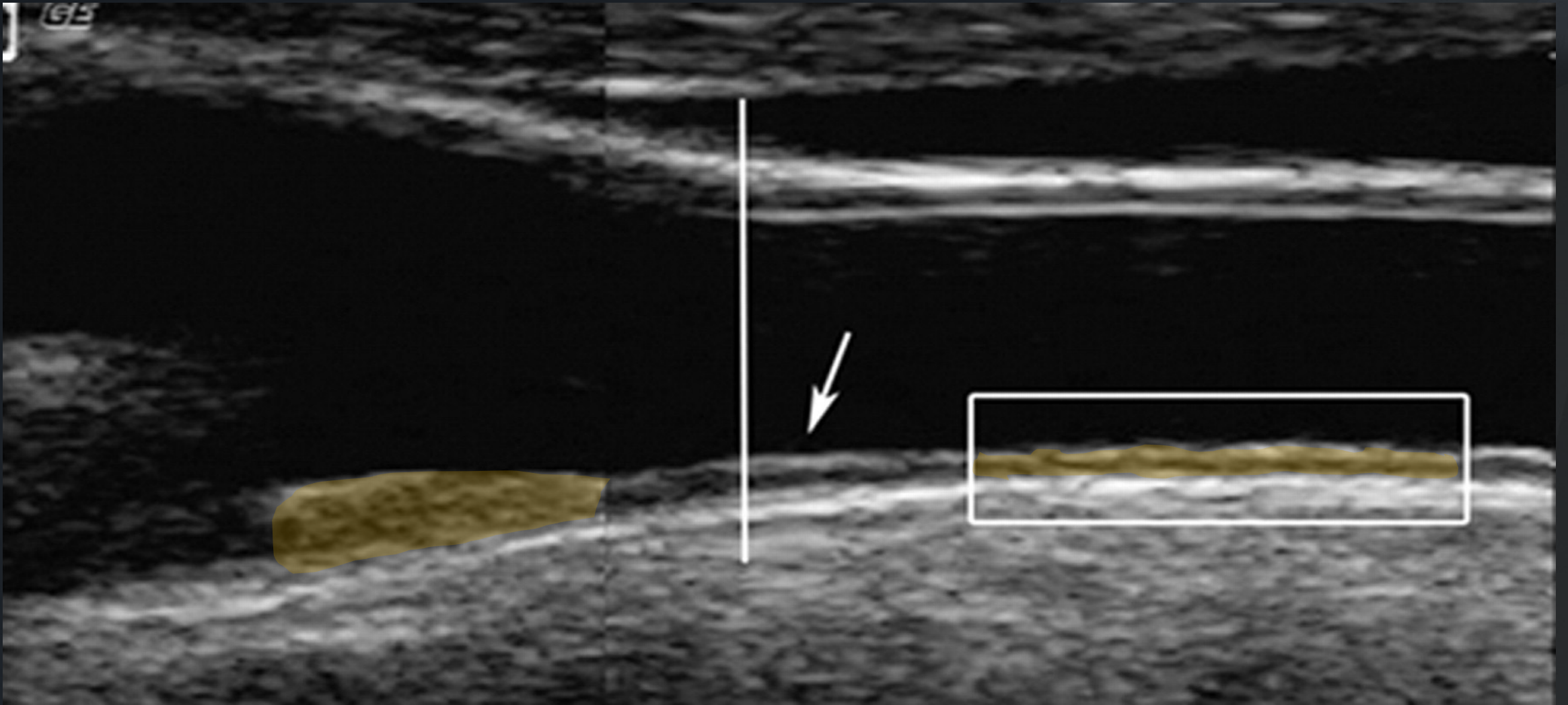
A better test to look for arterial disease is the Carotid Intima Media Thickness scan (CIMT): a simple ultrasound evaluation of the carotid arteries in the neck.

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Polak J F et al. Stroke 2011;42:3017-3021



And then if you have disease...

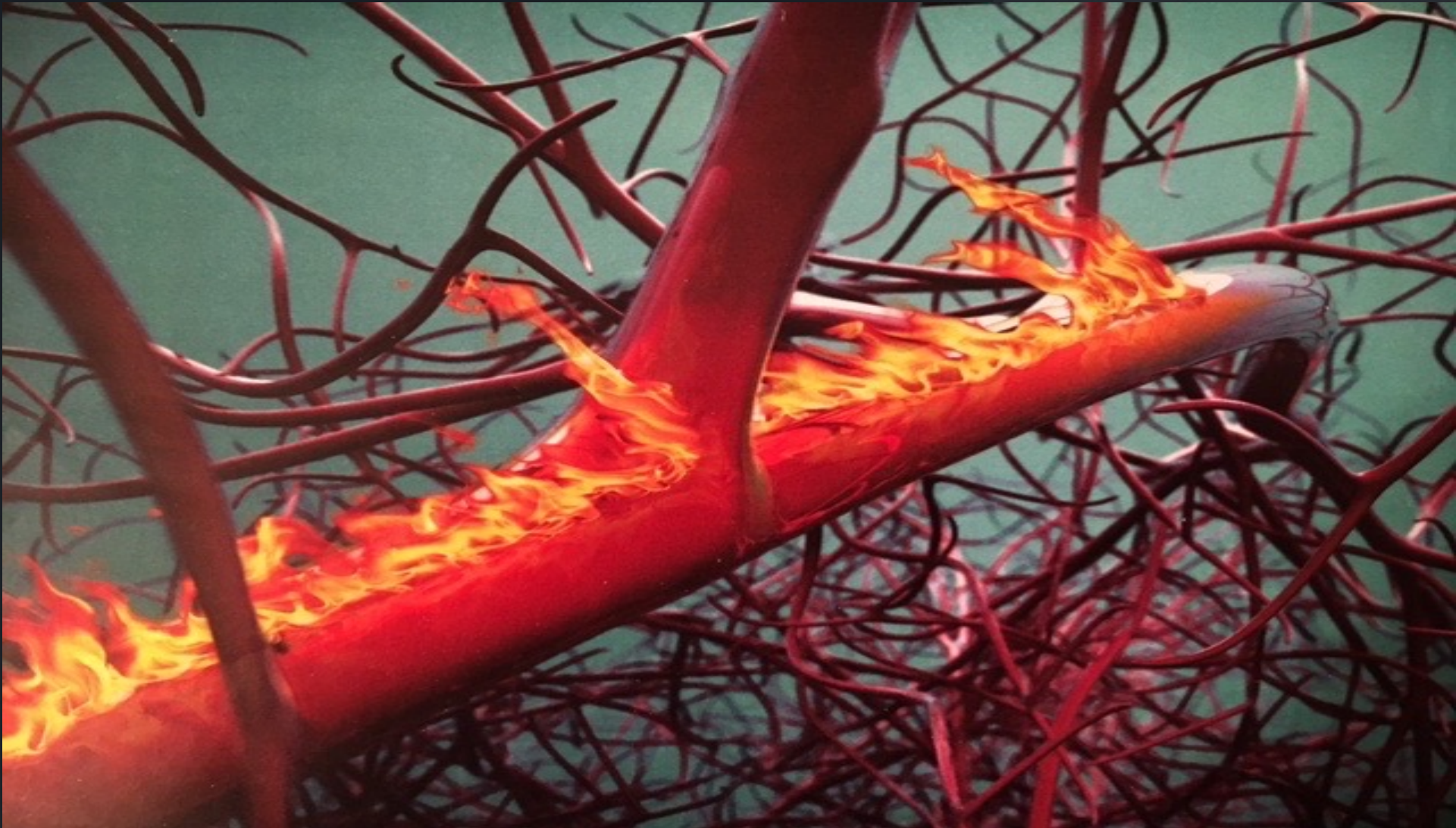
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Are your Arteries Inflamed ??



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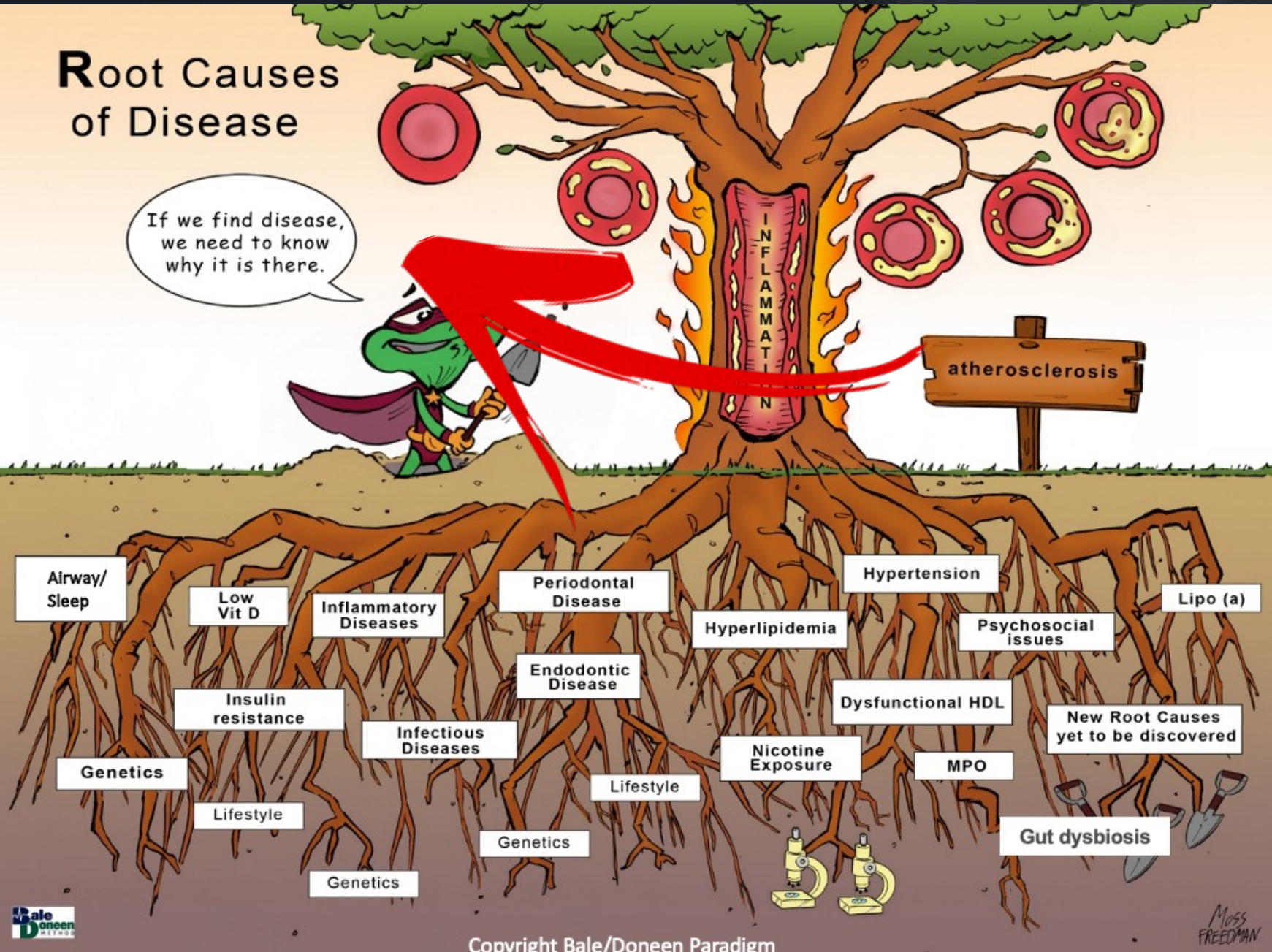


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Root Causes of Disease

If we find disease, we need to know why it is there.



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Rudolf Virchow 1821-1902

Circulation

Volume 105, Issue 9, 5 March 2002; Pages 1135-1143
https://doi.org/10.1161/hc0902.104353

CLINICAL CARDIOLOGY: NEW FRONTIERS

Inflammation and Atherosclerosis

Peter Libby, MD, Paul M. Ridker, MD, and Attilio Maseri, MD

ABSTRACT: Atherosclerosis, formerly considered a bland lipid storage disease involves an ongoing inflammatory response. Recent advances in basic established a fundamental role for inflammation in mediating all stages of initiation through progression and, ultimately, the thrombotic complications. These new findings provide important links between risk factors and atherogenesis. Clinical studies have shown that this emerging biomarker predicts outcomes of patients with acute coronary syndromes, and damage. In addition, low-grade chronic inflammation, as indicated by inflammatory marker C-reactive protein, prospectively defines risk complications, thus adding to prognostic information provided by traditional lipid lowering with statins, this anti-inflammatory effect does not appear to correlate with reduction in low-density lipoprotein levels. These new insights into inflammatory atherosclerosis not only increase our understanding of this disease, but also have practical clinical applications in risk stratification and targeting of therapy for this scourge of growing



American Heart Association

Antiinflammatory Therapy with Canakinumab for Atherosclerotic Disease

Paul M. Ridker, M.D., Brendan M. Everett, M.D., Tom Thuren, M.D., Jean C. MacFadyen, B.A., William H. Chang, Ph.D., Christie Ballantyne, M.D., Francisco Fonseca, M.D., Jose Nicolau, M.D., Wolfgang Koenig, M.D., Stefan D. Anker, M.D., John J.P. Kastelein, M.D., Jan H. Cornel, M.D., et al., for the CANTOS Trial Group*

Article 39 References 1110 Citing Articles Letters 4 Comments
Comments open through September 27, 2017

Abstract

BACKGROUND

Experimental and clinical data suggest that antibody targeting interleukin-1 β may reduce the risk of cardiovascular disease and atherothrombosis has remained unproved.

METHODS

We conducted a randomized, double-blind trial of canakinumab, a therapeutic monoclonal antibody targeting interleukin-1 β , involving 10,061 patients with previous myocardial infarction and a high-sensitivity C-reactive protein level of 2 mg or more per liter. The trial compared three doses of canakinumab (50 mg, 150 mg, and 300 mg, administered subcutaneously every 3 months) with placebo. The primary efficacy end point was nonfatal myocardial infarction, nonfatal stroke, or cardiovascular death.

RESULTS

At 48 months, the median reduction from baseline in the high-sensitivity C-reactive protein level was 26 percentage points greater in the group that received the 50-mg dose of canakinumab, 37 percentage points greater in the 150-mg group, and 41 percentage points greater in the 300-mg group than in the placebo group. Canakinumab did not reduce lipid levels from baseline. At a median follow-up of 3.7 years, the incidence rate for the primary end point was 11.2 events per 100 person-years in the placebo group, and 3.90 events per 100 person-years in the 150-mg group, and 3.65 events per 100 person-years in the 300-mg group. The hazard ratios as compared with placebo were as follows: in the 50-mg group, 0.93



The NEW ENGLAND JOURNAL of MEDICINE

Metrics

September 21, 2017
N Engl J Med 2017; 377:1119-1131
DOI: 10.1056/NEJMoa1707914

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EDITORIAL SEP 21, 2017
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Virchow R. Cellular Pathology. London: John Churchill; 1858.

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FEBRUARY 23, 2004

BUSH'S
MILITARY RECORDS
IS DISNEY MOUSETRAPPED?

TIME

THE SECRET KILLER

- The surprising link between **INFLAMMATION** and **HEART ATTACKS, CANCER, ALZHEIMER'S** and other diseases
- What you can do to fight it

www.time.com AOL Keyword: TIME

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How Does this Preventive Approach Work?

-  We look to see if there is any evidence of arterial disease
-  The next question is there any evidence of arterial inflammation.
-  We have a group of inflammatory markers we usually employ to tell us if there is inflammation, and at what level of the arterial wall it exists
-  We treat all the inflammatory root causes optimally to turn off the inflammation.
-  We use the inflammatory markers quarterly to ensure that the inflammation remains under control
-  The arterial wall then heals as the plaque maybe shrinks some, but mostly without inflammation the plaque scars down and then calcifies and becomes stable



Basic Inflammatory Tests (Fire Panel)

- Myeloperoxidase (MPO)
- F2- Isoprostane
- hsCRP
- Fibrinogen
- Lp-PLA2 (Lipoprotein Associated Phospholipase A2)
- Microalbumin Creatinine



So, again, why are a dentist and a cardiologist working together?

Beside the fact that they are married

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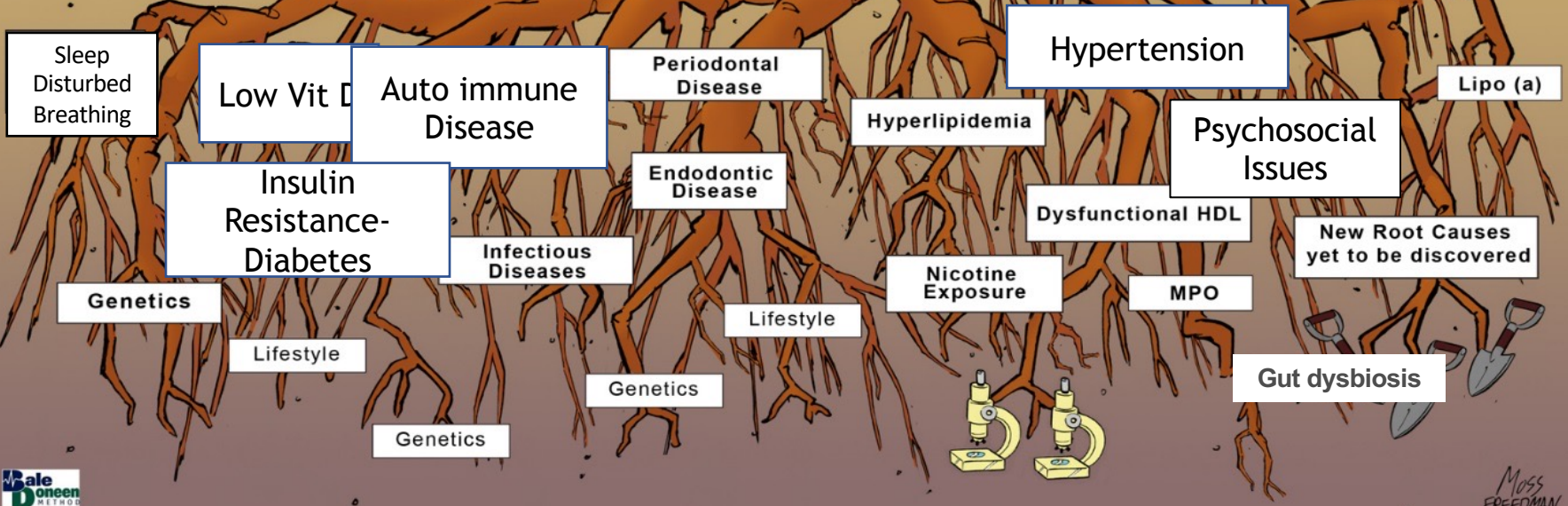
Root Causes of Disease

If we find disease, we need to know why it is there.



atherosclerosis

INFLAMMATION



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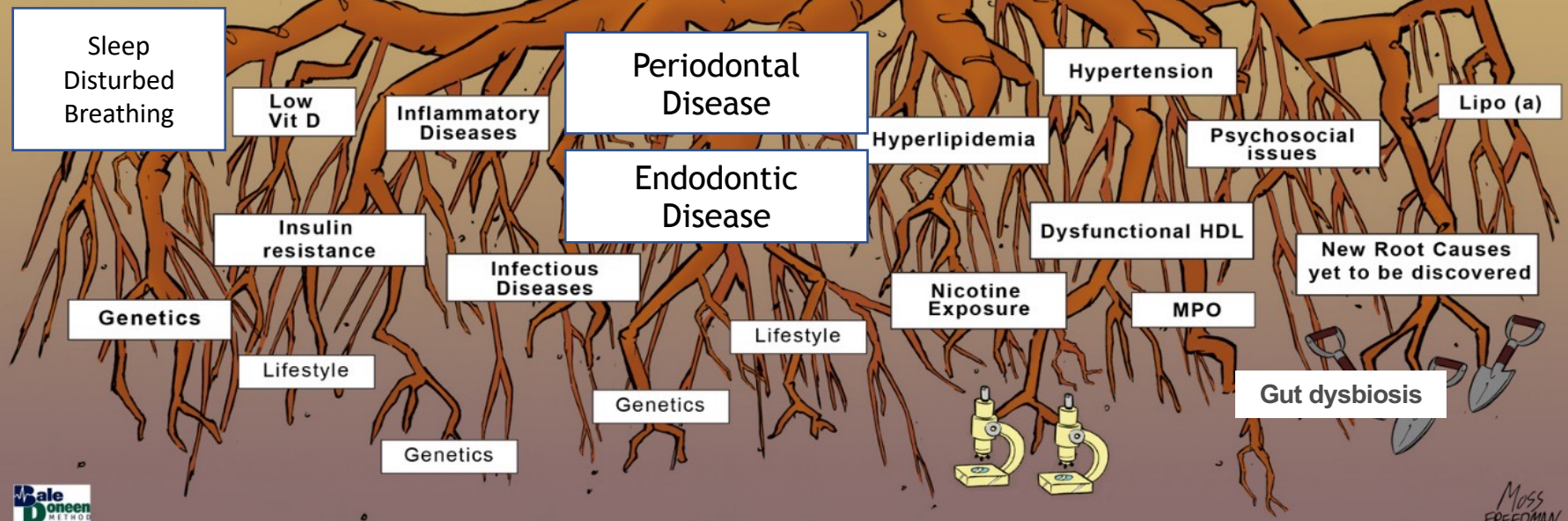
Root Causes of Disease

If we find disease, we need to know why it is there.



INFLAMMATION

atherosclerosis



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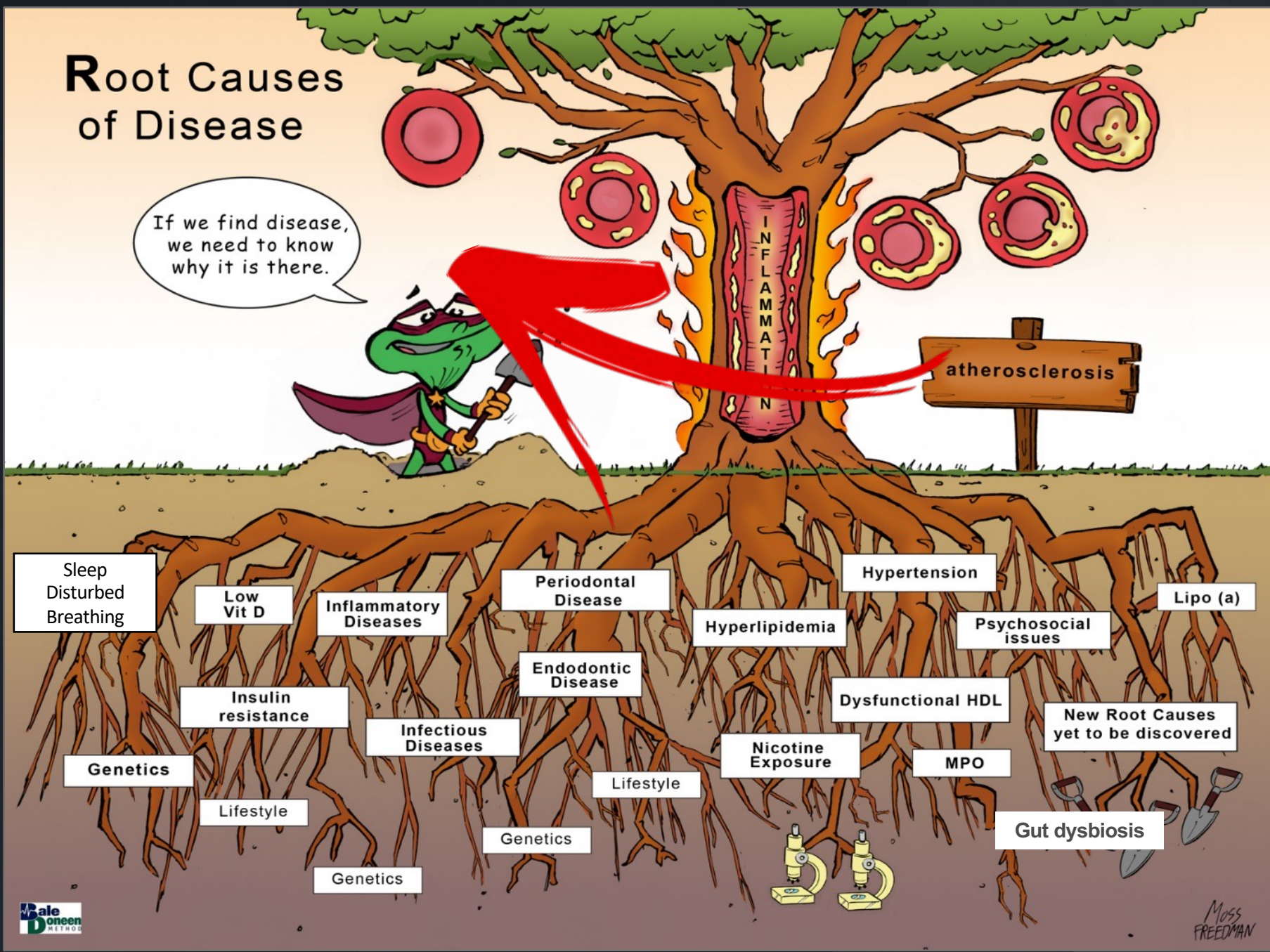


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Root Causes of Disease

If we find disease, we need to know why it is there.



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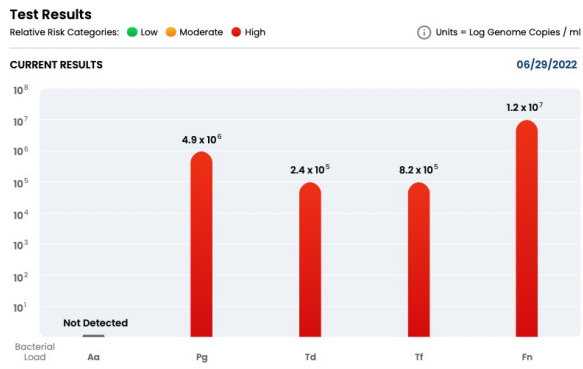
High-Risk Periodontal Pathogens

DX DIRECT DIAGNOSTICS

Test Name: **HR5**
SPECIMEN SOURCE: Saliva
TEST TYPE: PCR

Patient Name: [Redacted]	Primary Clinician: Eric Goulder, MD	Clinic Name: Heart Attack & Stroke Prevention Center of Central OH
Date of Birth: [Redacted]	Testing Clinician: Eric Goulder, MD	Address: 350 W Wilson Bridge Rd, Ste 320 Worthington, OH 43085
Patient ID: [Redacted]	Date Collected: 06/28/2022	Phone Number: 6143968703
Accession: BV0071	Date Reported: 06/28/2022	

Thank you for entrusting us with your High-Risk Pathogen Test. This unique and important medical test qualifies the most serious and high-risk oral pathogens that cause Periodontitis (tooth loss), Peri-implantitis (implant loss), and Systemic Inflammation throughout the body. Based on the most recent medical Analysis's and reviews, these High-Risk Pathogens are high risk for both Oral & Systemic Health factors. Learn more by visiting www.directdiagnostics.com



- Systemic Health Risk Factors**
- Systemic Inflammation
 - Cardiovascular Diseases
 - Heart Attack & Stroke
 - Pregnancy Complications
 - Dementia & Alzheimer's
 - Diabetes
 - Airway
 - Rheumatoid Arthritis
 - Certain Cancers

- Oral Health Risk Factors**
- Bleeding gums (gingivitis)
 - Periodontal Disease
 - Tooth Loss
 - Implant Failure
 - Chronic Inflammation
 - Oral Cancer

Your oral health professional will explain your results and discuss personalized treatment options. When used in conjunction with other health related risk factors, your clinician can design a personalized treatment plan to reduce these pathogens to an acceptable level; thus, preventing tooth loss, implant loss, and systemic exposure.

Pathogen Description and Ranges

Aa *Aggregatibacter actinomycetemcomitans* ← 10² →

Oral Health: Rapid Alveolar Bone Loss, Dental Decay, Severe Periodontitis, Dental Implant Failure.
Systemic Health: Cardiovascular Disease, Ischemic Stroke, Pregnancy Complications, Dementia/Alzheimer's, Brain Abscesses, Oxidative Stress, Immune dysfunction.

Pg *Porphyromonas gingivalis* ← 10² →

Oral Health: Alveolar bone loss, Severe Periodontal Disease, Dental Implant Failure.
Systemic Health: Heart Attack, Ischemic Stroke, Pregnancy Complications, Cancer, Diabetes, Dementia/Alzheimer's, Rheumatoid Arthritis, Inflammatory & Immune Diseases, Oxidative Stress, Immune dysfunction.

Td *Treponema denticola* 10³ ↔ 10⁵

Oral Health: Periodontal Disease, Dental Implant Failure.
Systemic Health: Cardiovascular Disease, Arterial Plaque, Joint Replacement, Pregnancy Complications, Dementia/Alzheimer's, Oxidative Stress.

Tf *Tannerella forsythia* 10³ ↔ 10⁵

Oral Health: Periodontal Disease, Dental Implant Failure.
Systemic Health: Dementia/Alzheimer's, Heart Disease, Arterial Plaque, Pregnancy Complications, Cancer, Diabetes, Aneurysm & Stroke.

Fn *Fusobacterium nucleatum* 10⁵ ↔ 10⁷

Oral Health: Periodontal Disease, Dental Implant Failure.
Systemic Health: Pregnancy Complications, Heart Disease, Dementia/Alzheimer's, Cancer, Arthritis, Alters Immune Response & Enables Other Pathogens.

This test was developed and performed by Direct Diagnostics, 3055 Hunter Rd, San Marcos, TX 78666. CLIA# 45D219010 and CAP# 908853. Performance characteristics for this laboratory-developed qPCR test (LDT) were established and determined to be accurate and precise with a limit of detection (LOD) for Pg & Aa at 10 genome copies/ml & for Td, Tf, & Fn at 100 genome copies/ml. Results should not be used as the sole basis for patient management decisions and must be combined with clinical observations and patient history. The U.S. Food and Drug Administration has not approved or cleared this test. FDA clearance or approval is not currently required for clinical use as the laboratory is registered and regulated by the Clinical Laboratory Improvement Amendments of 1988 (CLIA) 42 U.S.C. § 263a to perform high complexity testing. Lab Director: Christine Bulot, Ph.D. HCLD(AB) NPI# 1892096289

MYPERIOPROGRESS
COMPARISON OF RESULTS



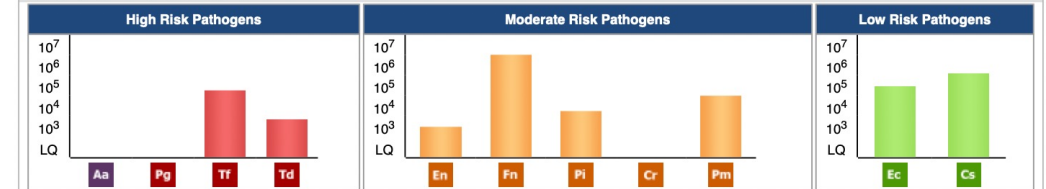
Previous Test
Specimen#: 5100046475
Accession#: 202005-17499
Specimen: Oral Rinse(P)
Collected: 05/04/2020 PC

Current Test
Specimen#: 5100053835
Accession#: 202008-54093
Specimen: Oral Rinse(P)
Collected: 08/24/2020 PC

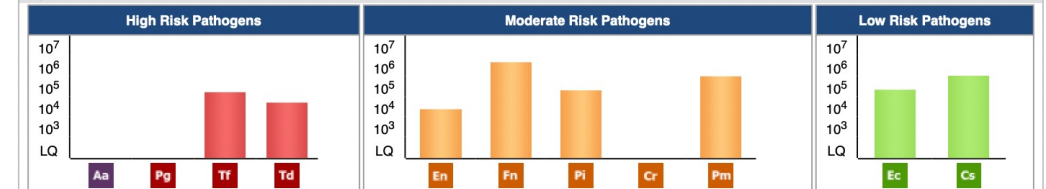
Gender: Male
Patient Id: [Redacted]
Patient Location: Heart Attack and Stroke Prevention Center

COMPARISON OF TEST RESULTS

MyPerioPath - Previous Result



MyPerioPath - Current Result



Summary of Results

Total Bacterial Load Since patient's last test on 05/05/2020:

7% Increase

- Notably, since the last test submitted 3 months 20 days ago, the clinical management of this patient has achieved a 7% change in periodontal pathogen (burden) load.
- The results show the following red (Tf, Td), orange (En, Fn, Pi, Pm) and green (Ec, Cs) complex pathogens are still present. The persistence of these bacteria may be due to their refractoriness to the given treatment.

- These results may or may not be associated with a reduction in oral and systemic inflammation. Consequences of high pathogenic bacteria present for years and decades add significantly to the risk of life threatening diseases beyond the mouth.
- For most treatment protocols, the maximal reduction in pathogen (burden) load is observed when follow-up testing is performed between 6-12 weeks. This sample was collected at 16 weeks from the previous test.

A follow-up test is recommended to monitor the effectiveness of current treatments and to determine the type and frequency of future care.

Clinical Comparison	Previous 05/05/2020	Current 08/25/2020
Total # Bacteria Present	8	8
Total # Bacteria Above Threshold	4	8
Deepest Pocket	--	--
Localized Infection	<input type="checkbox"/>	<input type="checkbox"/>
Generalized Infection	<input type="checkbox"/>	<input type="checkbox"/>
Inflammation/Redness	<input type="checkbox"/>	<input type="checkbox"/>
Bleeding on Probing	<input type="checkbox"/>	<input type="checkbox"/>
Bone Loss	<input type="checkbox"/>	<input type="checkbox"/>
Discharge	<input type="checkbox"/>	<input type="checkbox"/>
Halitosis/Malodor	<input type="checkbox"/>	<input type="checkbox"/>
Not Provided	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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OPEN ACCESS

High-risk periodontal pathogens contribute to the pathogenesis of atherosclerosis

Bradley Field Bale,¹ Amy Lynn Doneen,¹ David John Vigerust²

¹Texas Tech Health Science Center, School of Nursing, Lubbock, Texas, USA

²Department of Neurological Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee, USA

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bbale@baledoneen.com

Received 7 June 2016

Revised 1 November 2016

Accepted 5 November 2016

ABSTRACT

Periodontal disease (PD) is generated by microorganisms. These microbes can enter the general circulation causing a bacteraemia. The result can be adverse systemic effects, which could promote conditions such as cardiovascular disease. Level A evidence supports that PD is independently associated with arterial disease. PD is a common chronic condition affecting the majority of Americans 30 years of age and older. Atherosclerosis remains the largest cause of death and disability. Studies indicate that the adverse cardiovascular effects from PD are due to a few putative or high-risk bacteria:

Aggregatibacter actinomycetemcomitans, *Porphyromonas gingivalis*, *Tannerella forsythia*, *Treponema denticola* or *Fusobacterium nucleatum*. There are three accepted

The most common were *Pg* and *Aa*. Sixty-four per cent of those atheromas had two or more pathogens. Only one of the atheroma from a patient without PD demonstrated any oral pathogens.³ In 2011, 42 carotid endarterectomy specimens were analysed for oral pathogen DNA. Every atheroma had at least one pathogen, and many had multiple pathogens. Again, the most common bacteria were *Pg* and *Aa*.⁴ Oral pathogens create bacteraemia, and those bacteria, especially the high-risk microbes, are frequently associated with atherosclerotic lesions.

The American Heart Association (AHA) stated after an extensive review of the literature that PD was independently associated with arteriosclerotic vascular disease (ASVD). This relationship was

Bale, B. F., Doneen, A. L., & Vigerust, D. J. (2016). High-risk periodontal pathogens contribute to the pathogenesis of atherosclerosis. *Postgraduate Medical Journal*. doi:10.1136/postgradmedj-2016-134279

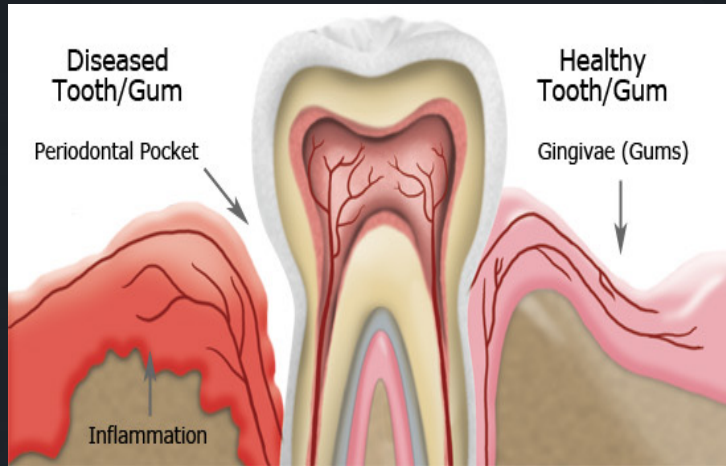
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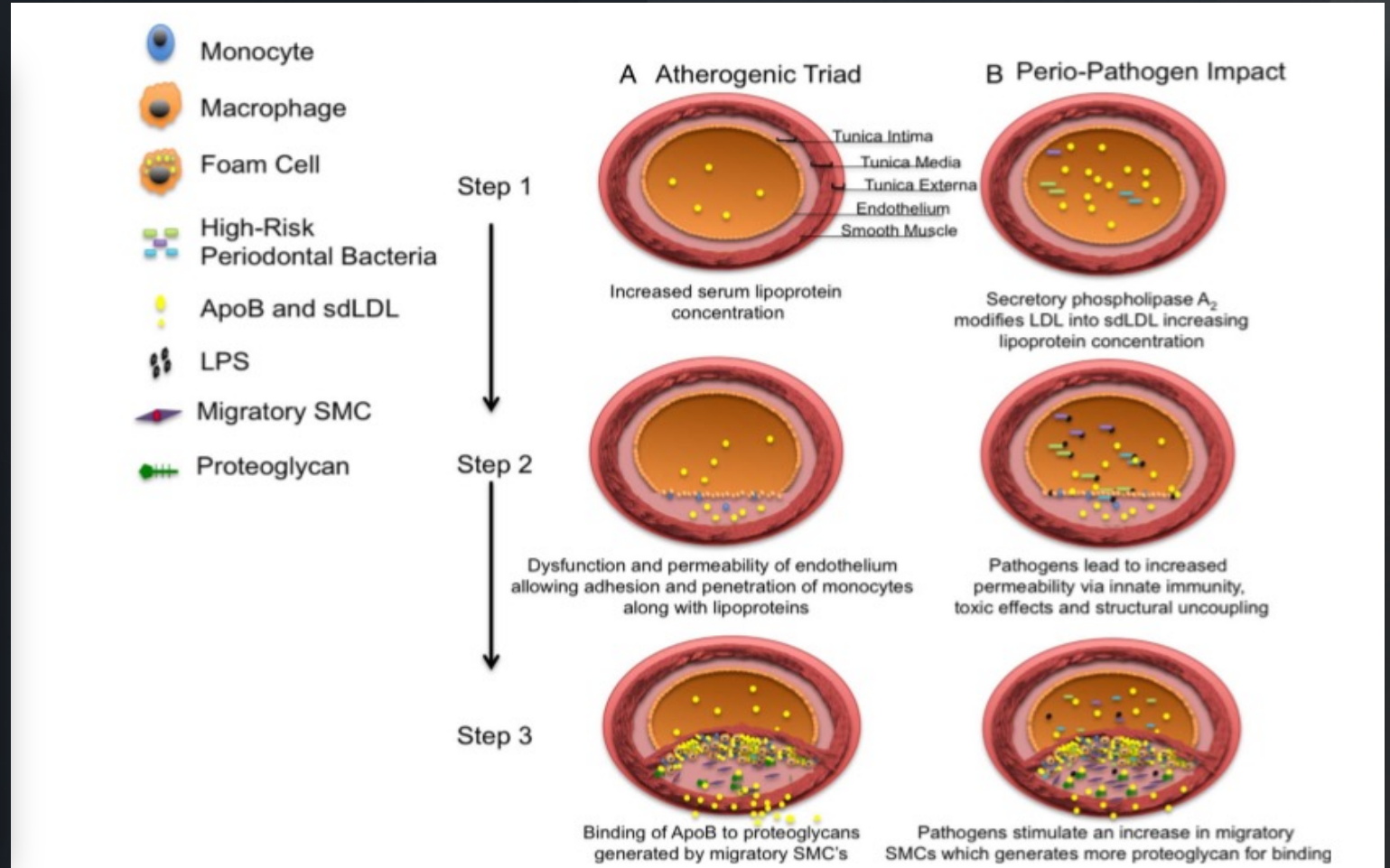
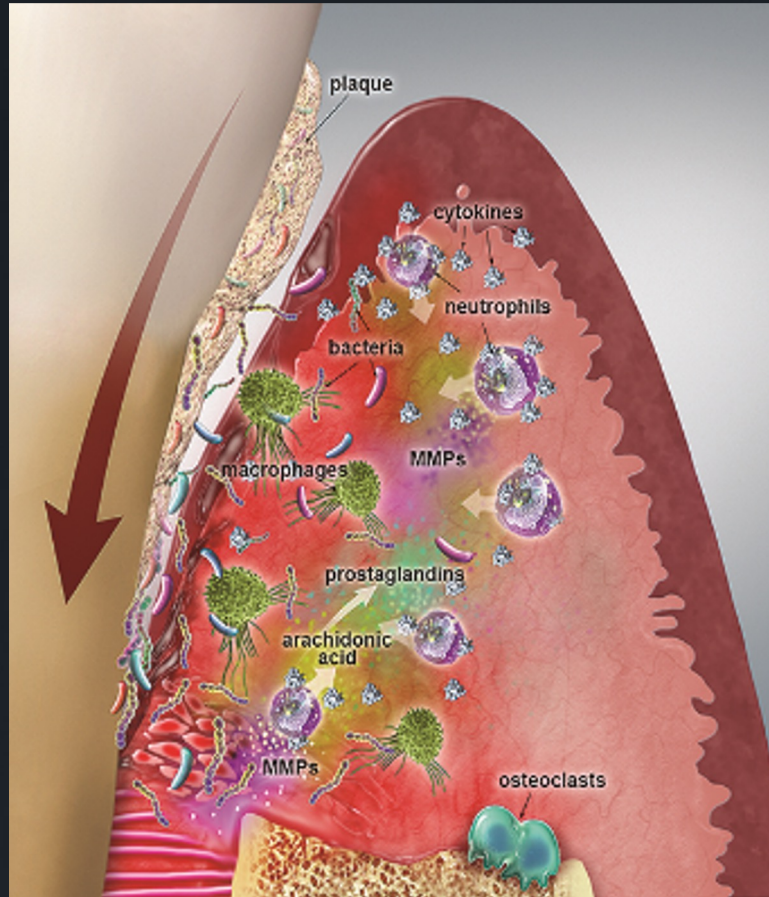
The Oral-Systemic Connection is Tightly Linked to the Atherogenic Triad



- ♥ Increased serum lipid concentration
- ♥ Increased endothelial permeability
- ♥ Increased binding of lipids to the intima



High-risk Periodontal Pathogens Contribute to the Pathogenesis of Atherosclerosis



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Bale, B. F., Doneen, A. L., & Vigerust, D. J. (2016).
Postgraduate Medical Journal. doi:10.1136/postgradmedj-2016-134279

Mechanism of Action

- *Agregatibacter actinomycetemcomitans*: kills endothelial cells and prevents the growth of new endothelial cells
- *Porphyomonas gingivalis*: causes a mutation in contractile smooth muscle cells converting them to migratory smooth muscle cells which produce polyglycans to which ApoB binds
- *Tanerella forsythia*: direct endothelial toxin
- *Treponema denicola*: direct endothelial toxin
- *Fusobacterium nucleatum*: competes with endothelial binding sites, causing them endothelium to open up allowing lipids, toxins and bacteria into the intima



Take Homes

- ♥ Inflammation drives the atherosclerotic process
- ♥ By looking for all the potential sources of inflammation and getting them optimally treated we can turn off inflammation and allow the arteries to heal
- ♥ Periodontal disease and endodontic disease are huge as sources of inflammation since they are so common in our population
- ♥ I cannot do my job of preventing CV events without your help in treating the dental sources of inflammation



Take Homes

- ❗ You as dentists and dental hygienists need to be on the lookout for silent asymptomatic arterial disease in order to help your patients prevent a CV event
- ❗ You as dental health professionals are not just making pretty smiles, you are also instrumental in saving lives by finding that asymptomatic arterial disease and sending those patients to a like-minded BaleDoneen provider
- ❗ The easiest first step to see if you or your patients have arterial disease is to get a CIMT done.



WHY WE STARTED COLLABORATING TOGETHER!



Together we can be better advocates for our patients' health

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OUR VISION

IS TO MERGE MEDICINE AND DENTISTRY
TOGETHER INTO ONE HEALTHCARE SYSTEM,
MAKING US BETTER HEALTH CARE ADVOCATES
FOR OUR PATIENTS

50% of Heart Attacks are
Triggered by Oral
Pathogens!

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PERIO PATHOGENS FOUND IN CAROTID ATHEROMA

- *Aggregatibacter actinomycetemcomitans* (66.67%, 28/42)**
- *Porphyromonas gingivalis* (78.57%, 33/42)**
- *Tannerella forsythia* (61.90%, 26/42)**
- *Fusobacterium nucleatum* (50.00%, 21/42)
- *Campylobacter rectus* (9.52%, 4/42)
- *Eikenella corrodens* (54.76%, 23/42)

42 carotid endarterectomy specimens analyzed via DNA for PD pathogens

All had at least one; many had multiple pathogens

**** resistant to scaling and root planing**

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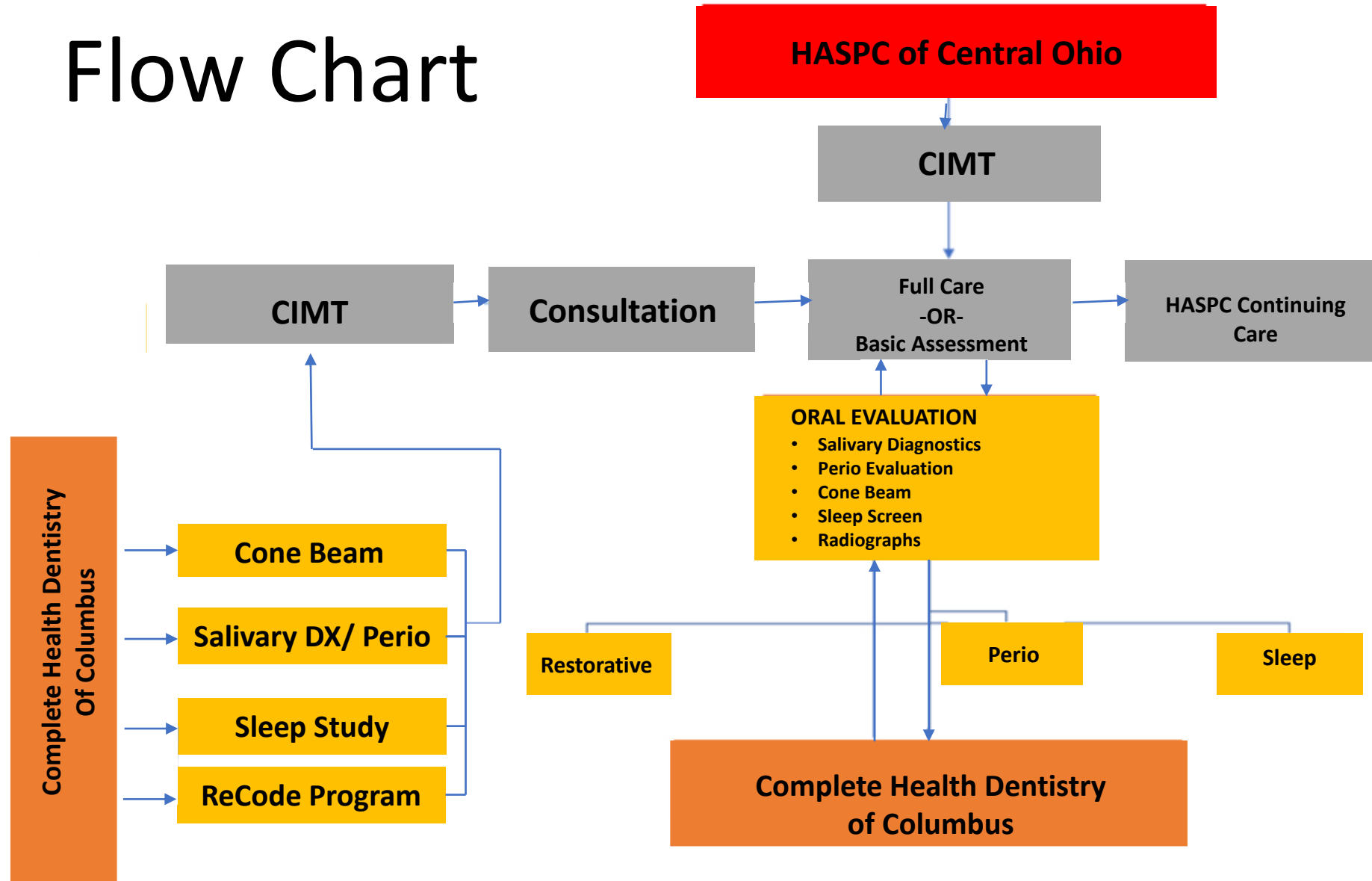
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Figuro, E., DDS, et. al. Journal of Periodontology; 8/2011. DOI: 10.1902/jop.2011.100719 Copyright Bale/Doneen Paradigm



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Flow Chart



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Cone Beam

Salivary DX/ Perio

Sleep Study

ReCode Program

Restorative

Perio

Sleep

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HASPC of Central Ohio

CIMT

CIMT

Consultation

Full Care
-OR-
Basic Assessment

HASPC Continuing
Care

ORAL EVALUATION

- Salivary Diagnostics
- Perio Evaluation
- Cone Beam
- Sleep Screen
- Radiographs



Benefits for the Patients of our Working Together

- ♥ Convenience of a single visit to see like minded dental/medical providers with the same philosophy and BD education
- ♥ The patients can flow from one practitioner to the next without feeling like they need to relay information from one doctor to another. They don't feel like they must educate one doctor or the other on what each side is doing
- ♥ Getting comprehensive based dental care for BD treatment using products and testing

Benefits for the Patients of our Working Together

- ♥ The patients get all of their testing done at one venue at one time: saliva testing, blood tests, 3D Cone beam, CIMT, dental and medical exams
- ♥ The patient's treatment plan and directives are based on both the medical and dental findings to better personalize their care
- ♥ We can often have a (non BD dental) patient get an *ad hoc* CIMT at the time of a dental visit which can help with conversion to BD Method

Benefits for the BD Dentist of our Working Together

- ♥ Being in the same office, we know each other's goals and expectations of testing and treatment
- ♥ We both are learning so much about each other's specialty that we didn't learn in school
- ♥ By having access to inflammatory testing and genetics, I understand the patient's risk and can then tailor the level of periodontal treatment to their situation (antibiotics, products, re-care intervals)
- ♥ I can now see objective evidence of the patient's improvement with inflammatory testing

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“On a good day we save a
smile, but on a great day we
save **a life**”

Tracy's Health History

- Age 61 male
- Dx with RA (2019) about 1 yr ago and feels like it is progressing
- Taking methotrexate, humira injections, folic acid
- BP today was 151/88, p 69
- Mother is diabetic
- Hx of CVD with paternal grandmother
- All items on his HH were marked negative



Tracy's Testimonial



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[VIEW VIDEO](#)



Tracy's Journey

1. Tracy was diagnosed with Rheumatoid Arthritis and had an infection in his gums and teeth

2. Medical professionals failed him – Tracy was still experiencing pain one-year post diagnosis

3. Referred to us; we conducted a periodontal eval, blood test and saliva test

4. In a matter of weeks, the implementation of our comprehensive treatment plan led to his recovery and relief from daily health issues



Saliva Test Results—Pre-Treatment

8/2020

MYPERIOPATH®

FINAL REPORT



Gender: Male
Patient Id:
Patient Location: Heart Attack and Stroke
Prevention Center

Ordering Provider

Barbara McClatchie DDS
350 West Wilson Bridge Road Ste 320
Worthington, OH 43085
614-885-3602

Sample Information

Specimen#: 5100053677
Accession#: 202008-47353
Specimen: Oral Rinse(P)

Collected: 08/06/2020
Received: 08/10/2020 10:00
Reported: 08/12/2020 14:48

MYPERIOPATH MOLECULAR ANALYSIS OF PERIODONTAL AND SYSTEMIC PATHOGENS

Results



Legend: The result graphic displays the bacterial level in genome copies/milliliter in log10 values. The limit of quantification (LQ) is the lowest bacterial level that can be repeatedly measured.

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Where do we go from here?

- ❗ Knowing he has high-risk perio pathogens, multiple bleeding sites, and systemic inflammation due Rheumatoid Arthritis...
- ❗ We took a CBCT to gain more insight into any additional sources of sources of infection/inflammation.



CBCT Summary

- ❗ Left sinus –mucus retention cyst
- ❗ hypodensities associated with #5, #6/#7, #26/#27,-endo or lateral periodontal infection
- ❗ Existing endos #12 & #18 have apical lucencies
- ❗ #24/25 –severe bone loss
- ❗ Airway measures 50.8 mm²-in need of sleep study for ? osa
- ❗ Calcifications in left carotid artery- increased risk for cv event- needs referrals



Team Consult with Hygienist/DDS/MD

- ❖ The dentist/hygienist/ and cardiologist sat down and discussed the extent of his oral infection and his risks for a CV event
- ❖ High risk bacteria present
- ❖ 5 infected teeth showing apical lucencies- are they active?
- ❖ Has calcifications in his carotids which confirms he has CVD
- ❖ Saliva test confirmed that he is “high risk” systemically not just with ra, but with high-risk cardiovascular oral pathogens
- ❖ Becky (pt advocate) asked if he was willing to have an inflammatory panel done as a starting point
- ❖ Want to know how perio therapy impacts his inflammation
- ❖ Took impressions for Perio Protect Trays
- ❖ REFERRAL TO ERIC FOR CIMT and INFLAMMATORY PANEL



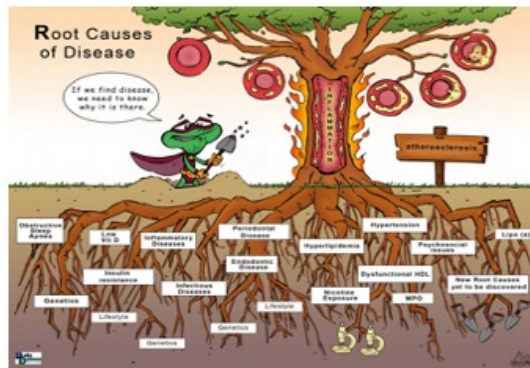
Patient name: Tracy
 Patient phone number: _____ Email: _____
 Referring doctor: Dr. Barb McClatchie

Please check below red flag areas of concern:

- Periodontal disease
- Oral pathogens on saliva test
- Endodontic disease / abscess
- Calcifications on panorex / CBCT
- Soft plaques / CIMT risk
- Sleep apnea
- Heart disease
- Insulin resistance / diabetes
- High blood pressure
- High cholesterol
- Low vitamin D
- Inflammatory diseases
- Genetics
- Other

Please check below referral for:

- Initial assessment
- CIMT
- MPO test
- Cone beam
- Sleep test
- Consultation
- Other



The Heart Attack & Stroke Prevention Center of Central Ohio

A partnership in medicine and dentistry

Welcome to The Heart Attack and Stroke Prevention Center of Central Ohio, lead by Dr. Eric Goulder, a board-certified cardiologist. Here at the center our focus is simple – PREVENTION & WELLNESS.

We believe you do not have to suffer the devastating effects of a heart attack, ischemic stroke or type 2 diabetes. We are dedicated to optimal wellness through a paradigm of individualized care.

We look forward to partnering with your referring healthcare provider to achieve the best outcomes. Call us today to help you reach a new level of health **614-396-8703**.

We are located at:
 350 W Wilson Bridge Rd, Suite 320
 Worthington, OH 43085
 CALL 614.396.8703

Preliminary Findings

Rheumatoid Arthritis Case 8-2020

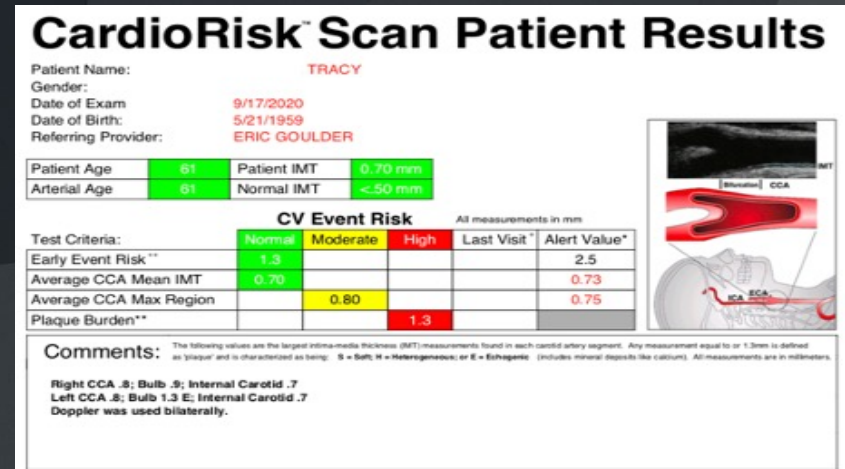
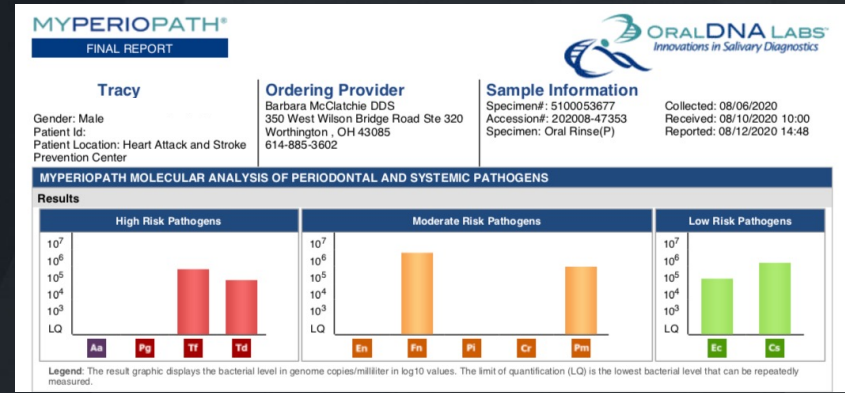
Patient ID: 6689
Exam Date: 8/6/2020

MOB	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PD	2 2 5	5 3 6	4 2 5	4 2 6	4 2 3	7 4 3	3 3 6	4 3 5	5 3 7	7 3 6	6 3 6	6 3 6	6 2 6	6 4 5		
GM	2 3 1	2 2 2	3 1 -2	-2 -1 -2	-2 -1 2	-3 -2 -2	-3 -1 -3	-3 -1 -3	-3 -1 -3	-3 2 2	1 -3	-3 -1 -2	-3 3 2	-1 1 1		
CAL	4 5 6	7 5 8	7 3 3	2 1 4	2 1 5	4 2 1	2 3	1 2 2	2 2 4	4 5 8	7 3 3	3 2 4	3 5 8	5 5 6		
MGJ																
Bcl	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○
FG	Y	2	2										2	2	Y	
Ling	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○
PD	5 3 6	6 3 6	5 4 5	5 4 8	5 3 6	6 3 5	4 3 4	4 3 5	5 3 6	4 3 5	6 3 6	6 3 6	6 5 6	6 4 4		
GM			1 3	-3 -1 -2	-2 -2 -2	-2 -2 -3	-3 -1 -3	-3 -1 -3	-3 -1 -2	-2 -1 -3	-3 -1 -3	-2 1 -3	-3 -2 -3	-3 -1 -2	-2 -2 -2	
CAL	5 3 6	6 4 9	2 3 3	3 2 6	3 1 3	3 2 2	1 2 1	1 2 3	3 2 3	1 2 2	4 4 3	3 1 3	3 4 4	4 2 2		
MGJ																
Tooth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

MOB	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
PD	6 4 7	7 3 6	5 3 5	4 3 4	5 4 8	8 4 5	5 3 6	8 3 4	4 3 5	5 3 5	5 3 6	7 4 6	5 4 5	5 4 4		
GM	-2 -2 -3	-3 -2 -3	-3 -2 -3	-3 -2 -3	-3 -2 -3	2 3 2	3 3 2	1 2 3	4 4 2	-1 -1 -3	-3 2 -3	-3 -3	-3 -1 -3	-3 -3		
CAL	4 2 4	4 1 3	2 1 2	1 1 1	2 2 7	10 7 7	8 6 8	9 5 7	8 7 7	4 2 2	2 5 3	4 4 3	2 3 2	2 4 1		
MGJ																
Ling	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○
FG		1	1											1	1	
Bcl	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○	○○○
PD	4 3 6	6 3 6	6 2 6	6 3 5	5 2 6	8 7 6	6 4 6	8 4 6	6 3 6	6 3 6	5 3 5	5 3 5	5 4 6	6 3 3		
GM	-2 -1 -3	-3 1 -3	-3 -1 -3	-3 2 -3	-3 -1 2	3 1	1 4	4 1 2	2 3	-3 -1 -3	-3 1 -3	-3 1 -3	-3 1 -3	-3 -3		
CAL	2 2 3	3 4 3	3 1 3	3 5 2	2 1 8	11 8 6	6 5 10	12 5 8	8 3 9	3 2 3	2 4 2	2 4 2	2 5 3	3 3 3		
MGJ																
Tooth	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Summary Information

Date	Bleeding		Suppuration		Furcation		Mobility		PD > Alert		CAL < 0		CAL 1-3		CAL 4-5		CAL 6+		
	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	
8/6/2020	28	168	16	68	8	10	8	28	94	28	94	0	0	24	97	21	36	13	34



hs-CRP	<1.0	1.0-3.0	35.2
LpPLA ₂ Activity	<180	180-224	>3.0 mg/L
MPO ¹	<470	470-539	≥225 nmol/min/mL
			609
			≥540 pmol/L

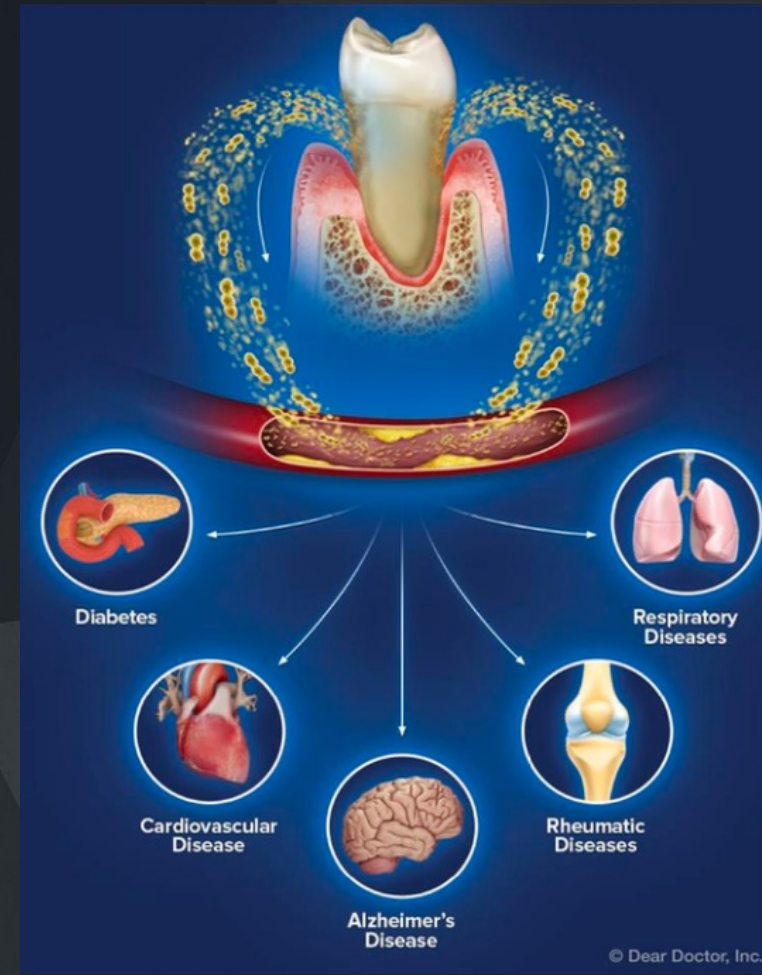
Perio Therapy- 4 Hrs

- ♥ Discuss the findings of the saliva test with pt
- ♥ 5 tip ultrasonic therapy to disrupt the biofilm
- ♥ Rx- metronidazole 500 bid; and amoxicillin 500 TID- for 10 day
- ♥ Sonicare toothbrush
- ♥ ProbioraPro[®] oral-care probiotics
- ♥ Stella life mouth rinse for healing
- ♥ Gut probiotics
- ♥ Seated perio protect trays- bid for next 3 weeks



Correlations: Oral Health and Systemic Health

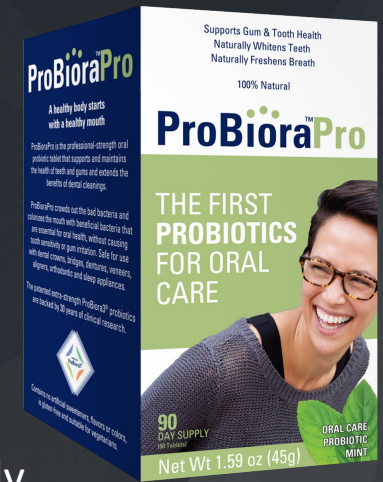
- ♥ Heart disease
- ♥ High blood pressure
- ♥ Stroke
- ♥ Head and neck cancer
- ♥ Diabetes
- ♥ Alzheimer's disease
- ♥ Pancreatic and kidney cancer
- ♥ Rheumatoid arthritis
- ♥ Pregnancy health



ProBioraPro® Probiotics For The Mouth

WHAT ARE PROBIOTICS

- ❖ Competes for both nutrients and space with the undesirable bacteria in the mouth
- ❖ Targets A.a., P.g., T.f, P.i., C.r., and Strep mutans
- ❖ Both good and bad bacteria are destroyed during treatment
- ❖ It is critical to reestablish the good bacteria within the mouth so that the oral microbiome can properly heal
- ❖ The proprietary strains within ProBioraPro® do just that and help prevent the need for further treatment
- ❖ Other benefits include: fresher breath and whiter teeth
- ❖ Melt in mouth nightly for 90 days or ongoing maintenance
- ❖ Replenishes the natural microbial balance in the mouth, supporting gum and tooth health
- ❖ Produces minute, continuous amounts of a natural by-product of hydrogen peroxide
- ❖ These beneficial bacteria inhibit the growth of the harmful bacteria that cause gum disease and tooth decay
- ❖ 3 species consist of *S. rattus*, *S. oralis*, *S. uberis* that crowds out harmful bacteria around teeth and gums



- 84% of population saw a decrease in the levels of *S. mutans* (16/19 $p=0.0029$) within a month of use
- 100% of population saw a decrease in the levels of *Campylobacter rectus* (19/19 $p<0.001$) within a month of use
- 71% of carriers saw a decrease in the levels of *Porphyromonas gingivalis* (10/14 $p=0.1088$) within a month of use

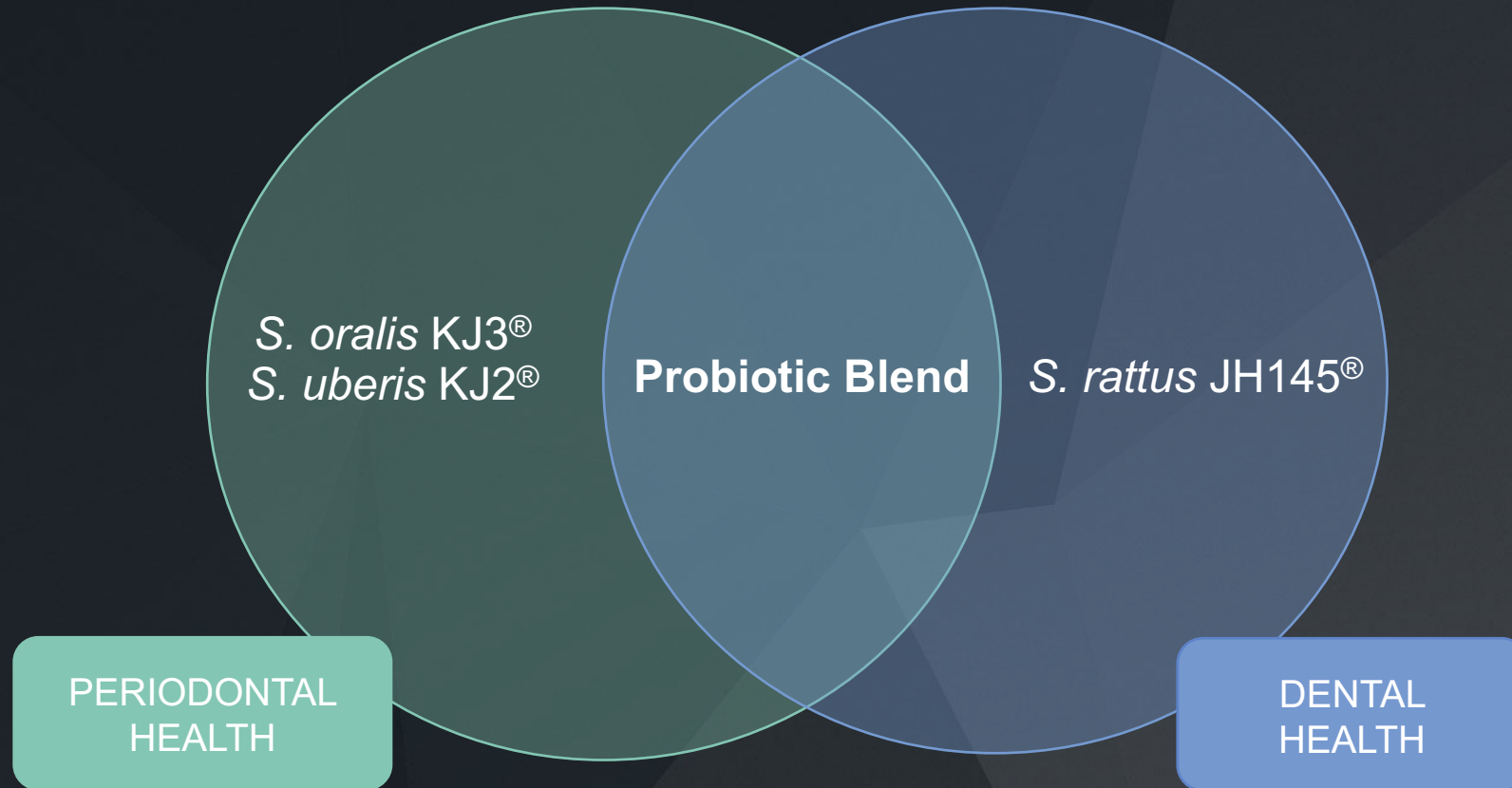
Microbe	Decrease Response ²	Lower Confidence Interval for Decrease (%)	Upper Confidence Interval for Decrease (%)
<i>A. actinomycetemcomitans</i>	2/2 (100%)	15.81	100.00
<i>C. Rectus</i>	19/19 (100%)	82.35	100.00
<i>P. Gingivalis</i>	10/14 (71.4%)	41.90	91.61
<i>P. Intermedia</i>	8/19 (42.1%)	20.25	66.50
<i>S. Mutans</i>	16/19 (84.2%)	60.42	96.62
<i>T.forsythia</i>	1/1 (100%)	2.50	100

¹ *Journal of Applied Microbiology*, 2009; 107: 682-690.

² number of patients responding over the total number of patients that were colonized (and percentage)



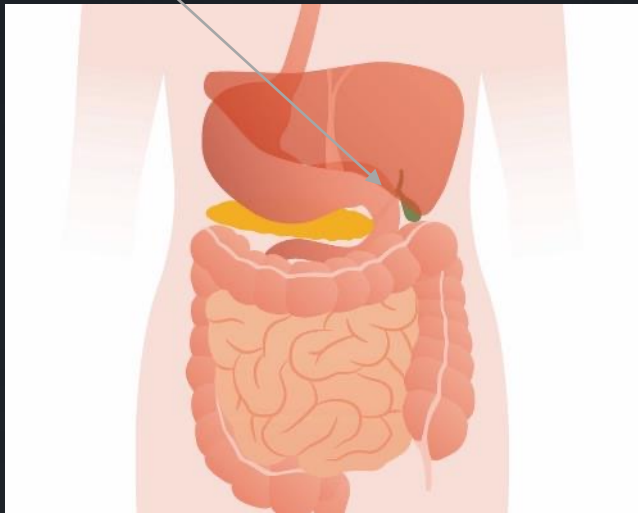
Patented Probiotic Ingredient Blend



Tropism of Probiotics

Digestive

Lactobacillus reuteri,
Lactobacillus brevis,
Lactobacillus plantarum,
Lactobacillus rhamnosus,
Lactobacillus salivarius



Patented Probiotic Blend

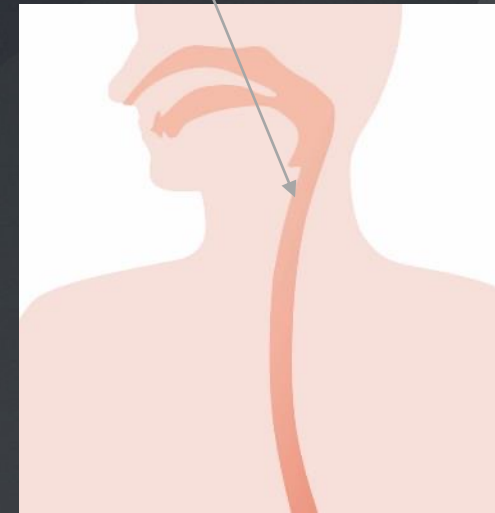
Streptococcus rattus JH145®

Streptococcus oralis KJ3® &
Streptococcus uberis KJ12®



Throat and Sinus

Blis K12/ M18
Streptococcus salivarius





Prescription Perio Trays deliver and maintain medication deep into periodontal pockets

- Homecare solution
- 10-15 minutes a day
- Customized and comfortable
- Manages bacterial loads
- Reduces bleeding and inflammation
- Reduces pocket depths
- Makes your results better and last longer
- Whitens teeth
- Freshens breath
- Implant care
- Prevention

The Heart Attack & Stroke
Prevention Center of Central Ohio



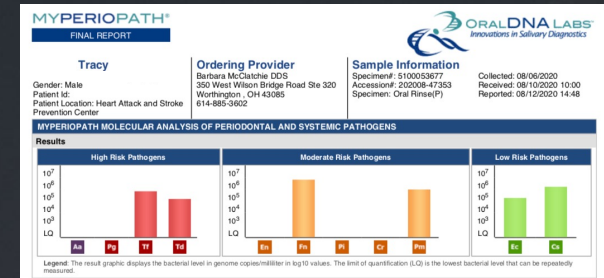
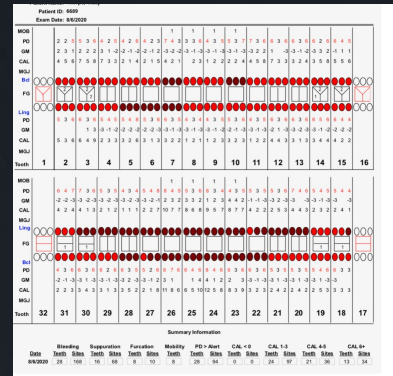
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Tracy over 3 Months

Preliminary Test

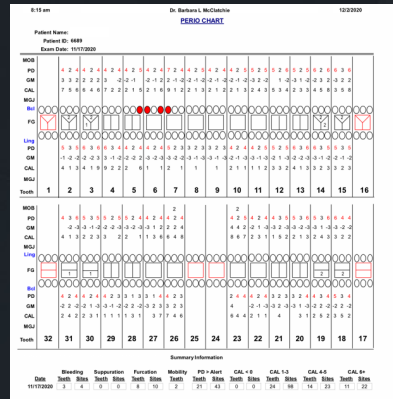
hs-CRP			35.2
LpPLA ₂ Activity	<1.0	1.0-3.0	>3.0 mg/L
	142		
MPO ¹	<180	180-224	≥225 nmol/min/mL
			609
	<470	470-539	≥540 pmol/L

8/24/2020

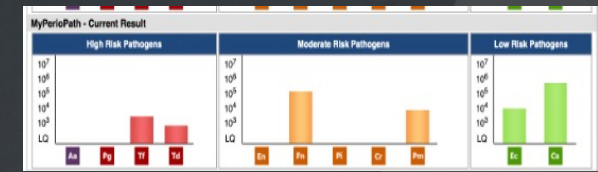


hs-CRP			26.6
LpPLA ₂ Activity	<1.0	1.0-3.0	>3.0 mg/L
	154		
MPO ¹	<180	180-224	≥225 nmol/min/mL
			490
	<470	470-539	≥540 pmol/L

9/10/2020



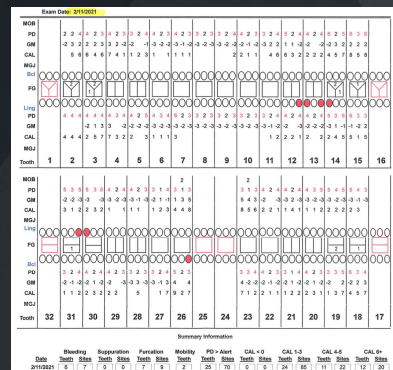
10 wk post test, post perio Tx and extraction #24 and 25



11/1/2020

hs-CRP		1.5	
LpPLA ₂ Activity	<1.0	1.0-3.0	>3.0 mg/L
		208	
MPO ¹	<180	180-224	≥225 nmol/min/mL
			415
	<470	470-539	≥540 pmol/L

12/8/2020



5 mo post test, 2 endos completed
And 2 crowns placed



1/25/2021

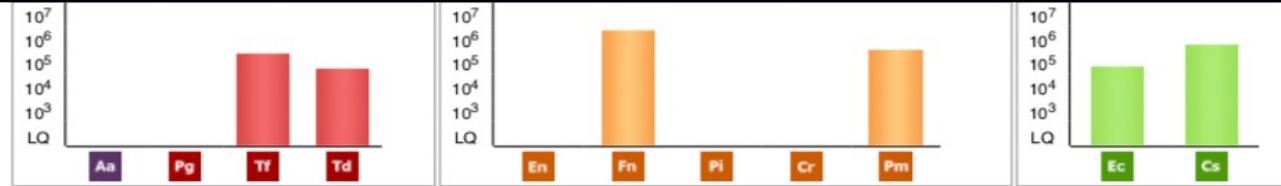
Inflammatory Testing

DATE	Normal	8.31.2020	9.10.2020	12.8.2020	5.4.2021
hs-CRP	<1.0	35.2	26.6	1.5	7.5
LpPLA2 Activity	<180	142	154	208	164
MPO	<470	609	490	415	324



Oral Saliva Testing

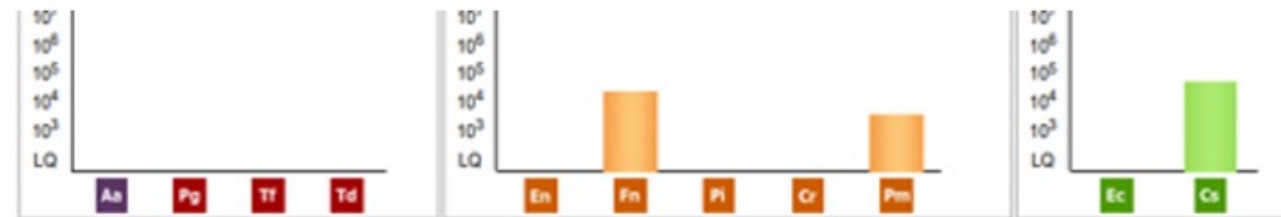
Initial Test
8/5/20



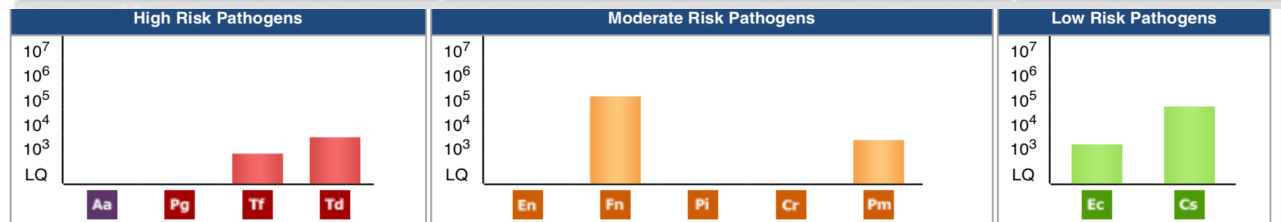
10-week post SRP
30% Reduction



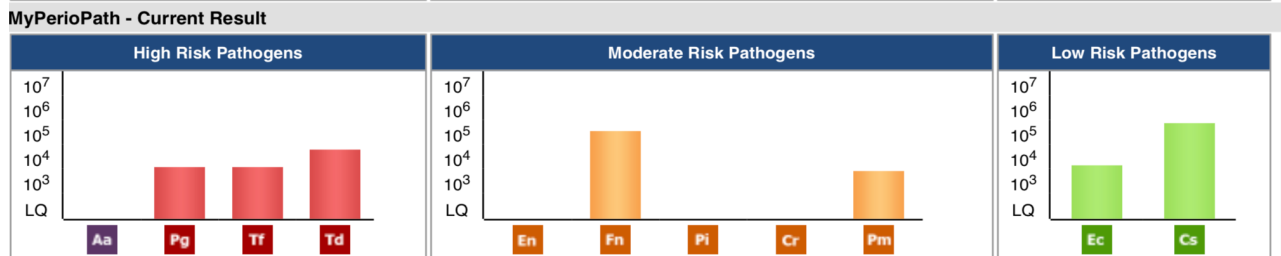
4 Month
60% Reduction



10 Month
6/1/21



12 Month
8/11/21



The Heart Attack & Stroke
Prevention Center of Central Ohio



Complete Health
Dentistry of Columbus

THE
AMERICAN ACADEMY FOR
ORAL & SYSTEMIC
HEALTH
A COMMITMENT TO PROACTIVE HEALTHCARE COLLABORATION

• MAY 2021

Patient ID: 6689
Exam Date: 6/16/2021

MOB																	
PD	2	2	3	3	2	4	4	2	3	3	2	3	3	2	3	3	
GM	2	1	2	2	2	3	3	1	-2	1	1	2	-2	-1	-2	-3	
CAL	4	3	5	5	4	7	7	3	1	4	3	5	1	1	1	1	
MGJ																	
Bcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FG																	
Ling																	
PD	3	2	3	3	2	4	4	2	3	4	2	3	3	2	3	3	
GM	-2	-2	-2	-2	-1	3	3	1	-2	-2	-2	-3	-3	-1	-3	-3	
CAL	1	1	1	1	7	7	3	1	1	1	1	1	1	1	1	1	
MGJ																	
Tooth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
MOB																	
PD	4	3	5	5	2	5	5	2	4	4	2	4	4	2	2	1	
GM	-3	-2	-3	-3	-2	-2	-2	-3	-3	-2	-3	-3	-1	-2	2	3	
CAL	1	1	2	2	3	3	2	2	1	1	1	2	6	5	7	1	
MGJ																	
Ling																	
FG																	
Bcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PD	3	2	3	3	2	3	3	2	3	3	2	4	5	2	3	3	
GM	-2	1	-2	-2	1	-3	-3	1	-3	-3	2	-3	-3	-1	-3	3	
CAL	1	3	1	1	3	3	4	1	7	8	2	6	7	1	2	6	
MGJ																	
Tooth	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	
Summary Information																	
Date	Bleeding		Suppuration		Furcation		Mobility	PD > Alert		CAL < 0		CAL 1-3		CAL 4-5		CAL 6+	
6/16/2021	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites	Teeth	Sites
	3	3	0	0	6	7	2	21	42	0	0	26	92	11	15	7	14

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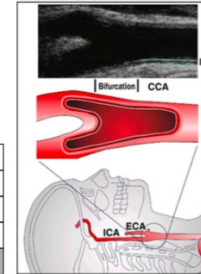


CIMT

CardioRisk™ Scan Patient Results

Patient Name: **THORPE, TRACY**
 Gender: **F**
 Date of Exam: **9/17/2020**
 Date of Birth: **5/21/1959**
 Referring Provider: **ERIC GOULDER**

Patient Age	61	Patient IMT	0.70 mm
Arterial Age	61	Normal IMT	<.50 mm



CV Event Risk

All measurements in mm

Test Criteria:	Normal	Moderate	High	Last Visit*	Alert Value*
Early Event Risk**	1.3				2.5
Average CCA Mean IMT	0.70				0.73
Average CCA Max Region		0.80			0.75
Plaque Burden**			1.3		

Comments: The following values are the largest intima-media thickness (IMT) measurements found in each carotid artery segment. Any measurement equal to or 1.3mm is defined as 'plaque' and is characterized as being: **S = Soft; H = Heterogeneous; or E = Echogenic** (includes mineral deposits like calcium). All measurements are in millimeters.

Right CCA .8; Bulb .9; Internal Carotid .7
Left CCA .8; Bulb 1.3 E; Internal Carotid .7
Doppler was used bilaterally.

** Early Event Risk refers to a patient's increased risk of having an event in the next 5.1 years ± 2.3 years. It does not suggest the patient will have an event in that time frame, only that the hazard ratio significantly increases (from 1 to between 4.1 and 6.7 depending on the patient's Framingham risk score) (D'Allessandro et al / Atherosclerosis xxx 2006 xxx-xxxx)

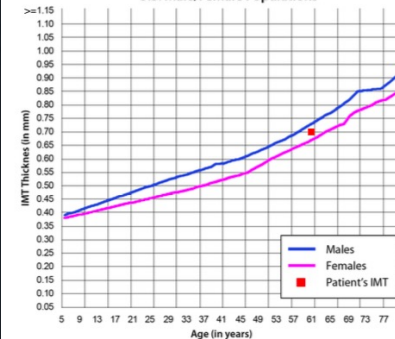
* A progression rate of .034 mm or greater in the thickness of the mean IMT per year, increases the risk of future events significantly. (Hodis HN, et al / Ann Intern Med 1998;128:262-9)

* The Alert Value is the threshold measurement at which this patient's risk is inflated beyond a 'Normal' reading.

** Plaque Burden is the sum of the plaques found and measured. It does not have an Alert Value because plaques of any size are atherosclerotic and increase patient risk. The Plaque Burden score is intended to help physicians track progression of disease over time.

Patients with values in yellow or red on ANY risk test criteria have inflated risk.

Patient Arterial Age Compared to U.S. Male/Female Populations



Your Doctor should interpret the results from this report in conjunction with your other risk factors. Medical decision making takes a multitude of factors into account, and risk factor modification should be made in consultation with your Doctor. Arterial Age™: The mean distal 1 cm common carotid artery (CCA) IMT measured looks like the average same gender person in a general population which had no coronary heart history expressed as Arterial Age above. The risk assessment data provided above should be used with caution. Data from five different studies which used different criteria for participation, different training methods, and different scanning and reading protocols (A: Tonstad, S (1996) Arterioscler Thromb; B: Urbina, E (2002) Am J Cardiol; C: Oren, A. (2003) Arch Intern Med.; D: Tonstad, S. (1998) Eur J Clin Invest; E: Aminbaksh, A (1999) Clin Invest Med) were used to create an approximate arterial age compared to normal populations found in these studies.

Regression analyses was used to estimate population age over time based on the cited studies above. In a careful literature review, the data cited above is an approximation of the relationship between CIMT and age in epidemiologic studies. The above data relating age to CIMT is useful in comparing a single patient's result with a population mean, and takes on additional meaning when comparing a current CardioRisk CIMT score with a previous CardioRisk CIMT score on the same patient. It is important to note that these studies do not account for the highest risk patients, those who died from the disease.



CardioRisk Laboratories
 At the Heart of Good Health

9677 South 700 East Suite A Sandy, UT 84070 Office: 801.855.6775 Fax: 801.858.4512 www.cardiorisk.us

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**ORAL & SYSTEMIC
 HEALTH**

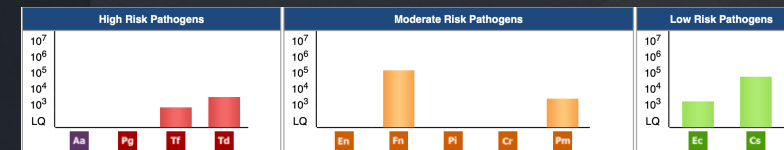
WORLD LEADERS IN PROACTIVE HEALTHCARE COLLABORATION

Testing

5/4/2021

hs-CRP			7.5
	<1.0	1.0-3.0	>3.0 mg/L
LpPLA ₂ Activity	164		
	<180	180-224	≥225 nmol/min/mL
MPO ¹	324		
	<470	470-539	≥540 pmol/L

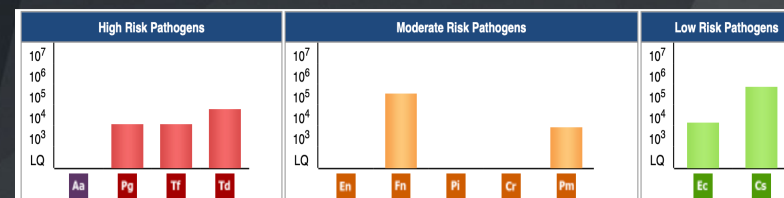
6/1/2021



2/15/2022

hs-CRP		2.3	
	<1.0	1.0-3.0	>3.0 mg/L
LpPLA ₂ Activity	143		
	<180	180-224	≥225 nmol/min/mL
MPO ¹	320		
	<470	470-539	≥540 pmol/L

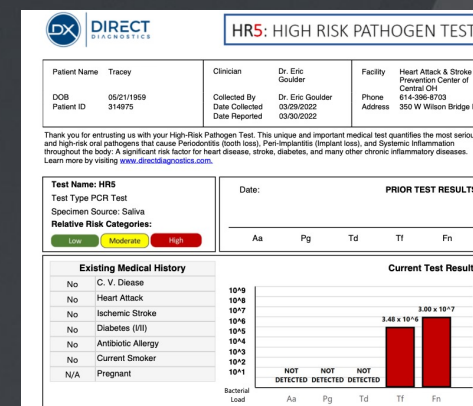
8/11/2021



5/10/2022

hs-CRP		1.4	
	<1.0	1.0-3.0	>3.0 mg/L
LpPLA ₂ Activity	162		
	<180	180-224	≥225 nmol/min/mL
MPO ¹	239		

3/29/2022



The Heart Attack & Stroke Prevention Center of Central OH



Complete Health Dentistry of Columbus



WORLD LEADERS IN PROACTIVE HEALTHCARE COLLABORATION

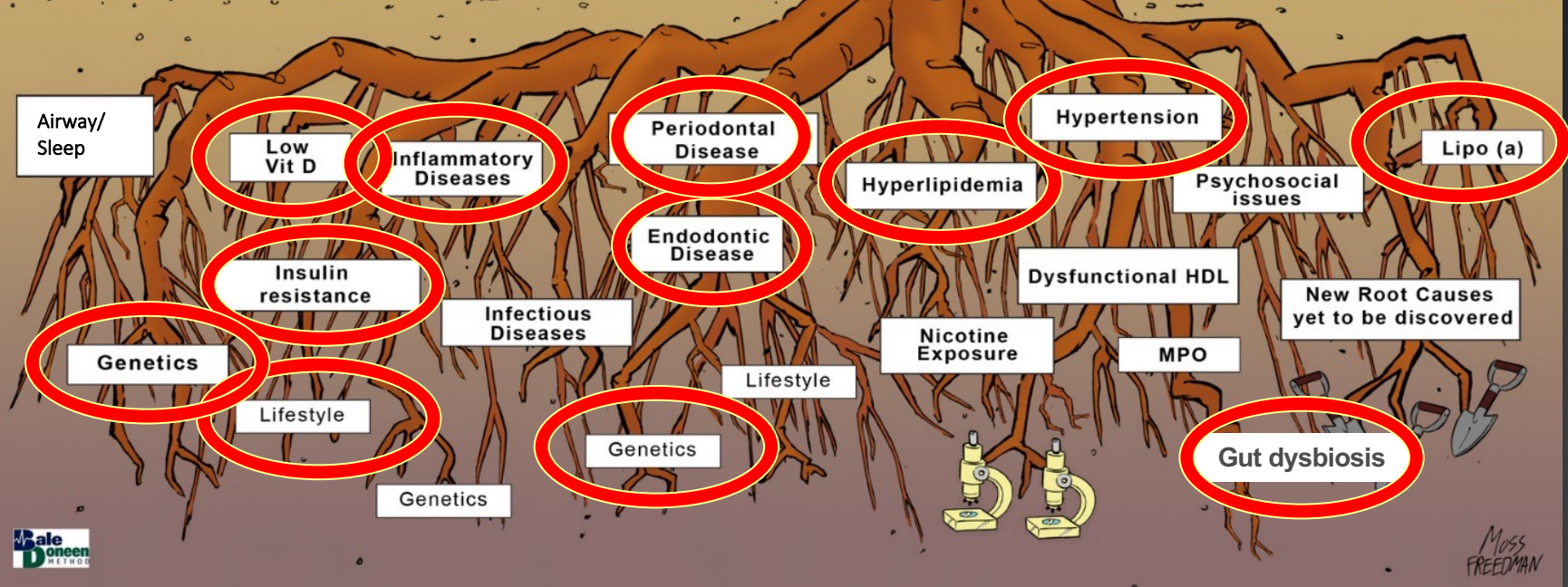
Tracy's Goals Accomplished

- ♥ Patient fulfilled his wishes to help his kids on their farm with the harvest
- ♥ Has lost the pain in his hands, knee pain has diminished
- ♥ So much more energy vs laying in bed so much of his day prior to our meeting
- ♥ Very grateful for our continued phased care
- ♥ Tracy will start with Eric for his CVD care as well as a sleep study ASAP



Tracy Personal Root Cause Tree

If we find disease,
we need to know
why it is there.





The Heart Attack & Stroke
Prevention Center of Central Ohio



Complete Health
Dentistry of Columbus

[VIEW VIDEO](#)



Sean's History

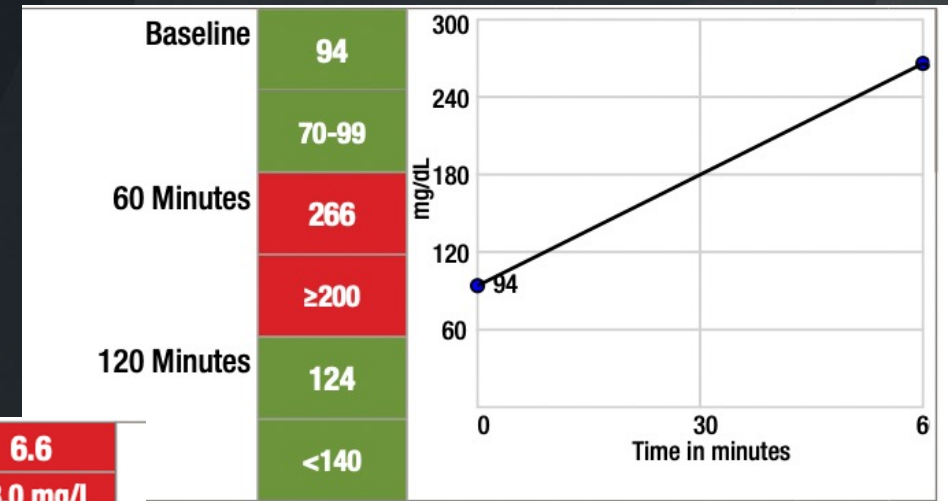
- ❗ 52 y/o gentleman. Recent chest discomfort: saw a cardiologist. He was worried about his CV health as he was moving to Dominican Republic
- ❗ Echocardiogram normal; LVEF 66%
- ❗ Hypertension recent
- ❗ Hyperlipidemia all his life
- ❗ Atypical Migraines
- ❗ 16 pack-years smoking; quit 4/2022
- ❗ Gingival Bleeding for 1 year; last saw a dentist 2011 (son has brain CA and Sean spent all his money on his son's health
- ❗ Snores. Negative sleep test 2004; No restless legs, daytime fatigue
- ❗ Family History: Twin brother had an MI in 2014



Sean has a lot of Issues

Total Cholesterol			299
Direct LDL-C	<200	200-240	>240 mg/dL
			214
HDL-C	<100	100-160	>160 mg/dL
			40
Triglycerides	>50	40-50	<40 mg/dL
			135
Non-HDL-C	<150	150-200	>200 mg/dL
			259
ApoB	<130	130-190	>190 mg/dL
			177
VLDL-C	<80	80-120	>120 mg/dL
			45
Lp(a)	<30	30-40	>40 mg/dL
			137
Lipid Ratios	<30	30-50	>50 mg/dL
			7.5
TC/HDL-C	<4	4-6	>6
			7.5

hs-CRP			6.6
LpPLA ₂ Activity	<1.0	1.0-3.0	>3.0 mg/L
			246
MPO ¹	<180	180-224	≥225 nmol/min/mL
			560
Fibrinogen	<470	470-539	≥540 pmol/L
			466
Albumin/Creatinine Ratio (Urine)	<370	370-470	>470 mg/dL
			18
		<30	≥30 mg/g
F2-Isoprostane/Creatinine	0.66		ng/mg <0.86
ADMA	97		ng/mL <100



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Sean's Testing

CIMT: Arterial Age ~93 (+41). Plaque in each common carotid, each bulb and each internal carotid artery. 10.1 mm total, all H

Lipids: 299/214/40. Lp(a) 137. ApoB 177 TC/HDL 7.5

Inflammation: hsCRP 6.6, Lp-PLA2 246, MPO 560, MACR 18

2-Hr OGTT: 94/266/124. A1c 5.7

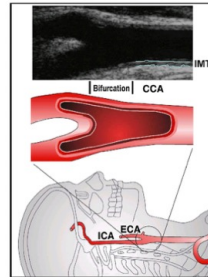


CIMT

CardioRisk™ Scan Patient Results

Patient Name: **SEAN**
 Gender: **M**
 Date of Exam: **5/19/2022**
 Date of Birth: **1/20/1970**
 Referring Provider: **ERIC GOULDER**

Patient Age	52	Patient IMT	1.09 mm
Arterial Age	>80	Normal IMT	<.50 mm



CV Event Risk

All measurements in mm

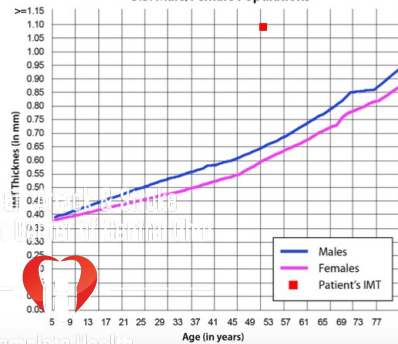
Test Criteria:	Normal	Moderate	High	Last Visit*	Alert Value*
Early Event Risk**			2.2		2
Average CCA Mean IMT			1.09		0.73
Average CCA Max Region			1.30		0.75
Plaque Burden**			8.3		

Comments: The following values are the largest intima-media thickness (IMT) measurements found in each carotid artery segment. Any measurement equal to or 1.3mm is defined as 'plaque' and is characterized as being: **S** = Soft; **H** = Heterogeneous; or **E** = Echogenic (includes mineral deposits like calcium). All measurements are in millimeters.

Right CCA 1.3 H; Bulb 2.2 H; Internal Carotid 2.2 H
 Left CCA 1.2; Bulb 1.3 H; Internal Carotid 1.3 H
 Doppler was used bilaterally. Incidental finding of heterogeneous plaque in mid right CCA measuring 1.8 mm and in mid left CCA measuring 1.8 mm, outside of protocol area.

- ** Early Event Risk refers to a patient's increased risk of having an event in the next 5.1 years ± 2.3 years. It does not suggest the patient will have an event in that time frame, only that the hazard ratio significantly increases (from 1 to between 4, 1 and 6, 7 depending on the patient's Framingham risk score) (D Baldessare et al / Atherosclerosis xxx 2006 xxx-xxxx)
 - * A progression rate of .034 mm or greater in the thickness of the mean IMT per year, increases the risk of future events significantly. (Hodis HN, et al / Ann Intern Med 1998;128:262-9)
 - * The Alert Value is the threshold measurement at which this patient's risk is inflated beyond a 'Normal' reading.
 - ** Plaque Burden is the sum of the plaques found and measured. It does not have an Alert Value because plaques of any size are atherosclerotic and increase patient risk. The Plaque Burden score is intended to help physicians track progression of disease over time.
- Patients with values in yellow or red on ANY risk test criteria have inflated risk.

Patient Arterial Age Compared to U.S. Male/Female Populations



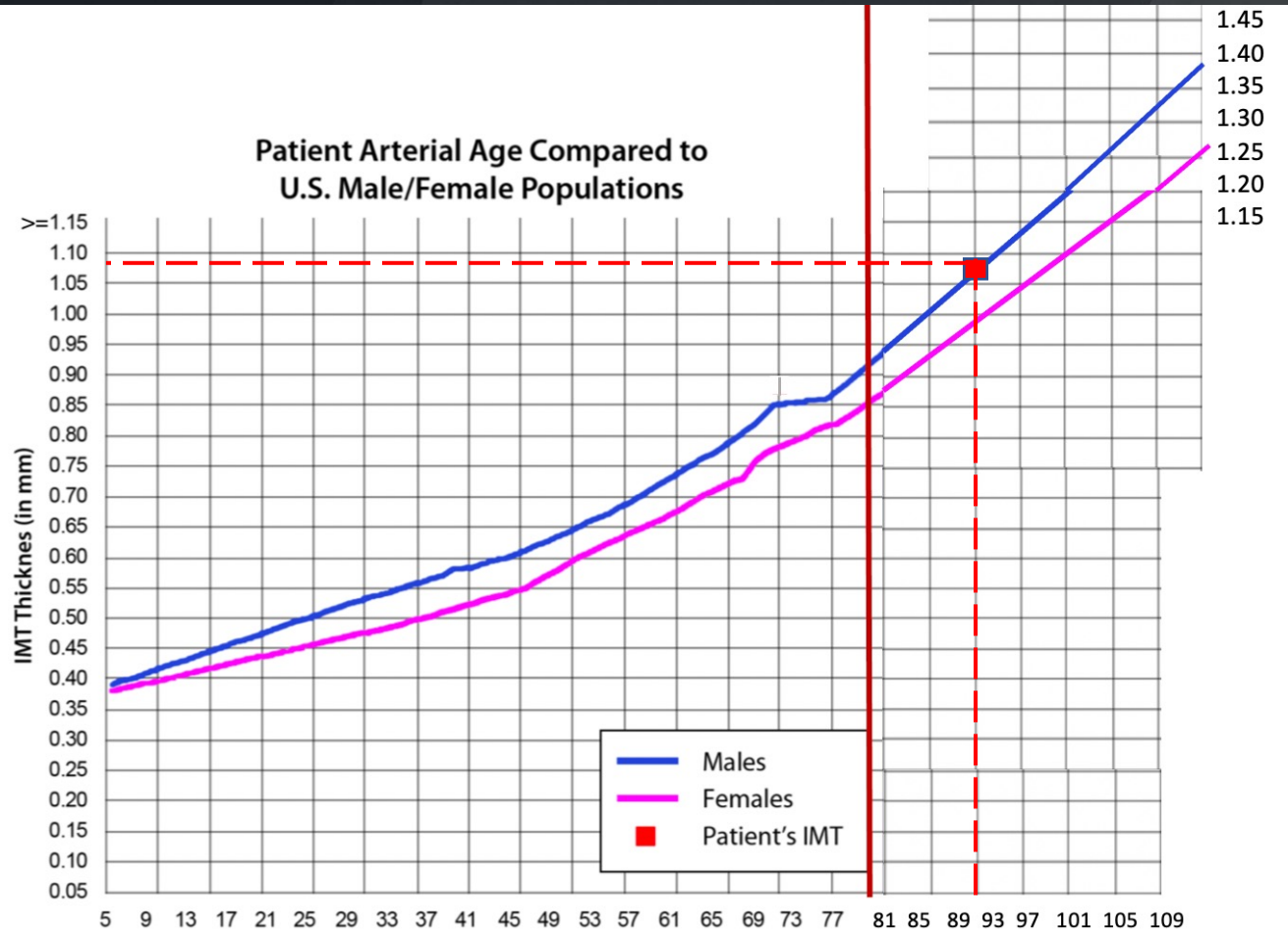
Your Doctor should interpret the results from this report in conjunction with your other risk factors. Medical decision making takes a multitude of factors into account, and risk factor modification should be made in consultation with your Doctor. Arterial Age™: The mean distal 1 cm common carotid artery (CCA) IMT measured looks like the average same gender person in a general population which had no coronary heart history expressed as Arterial Age above. The risk assessment data provided above should be used with caution. Data from five different studies which used different criteria for participation, different training methods, and different scanning and reading protocols [A: Tonstad, S (1996) Arterioscler Thromb; B: Urbina, E (2002) Am J Cardiol; C: Oren, A. (2003) Arch Intern Med.; D: Tonstad, S. (1999) Eur J Clin Invest; E: Aminabhavi, A. (1999) Clin Invest Med] were used to create an approximate arterial age compared to normal populations found in these studies. Regression analyses was used to estimate population age over time based on the cited studies above. In a careful literature review, the data cited above is an approximation of the relationship between CIMT and age in epidemiologic studies. The above data relating age to CIMT is useful in comparing a single patient's result with a population mean, and takes on additional meaning when comparing a current CardioRisk CIMT score with a previous CardioRisk CIMT score on the same patient. It is important to note that these studies do not account for the highest risk patients, those who died from the disease.



CardioRisk Laboratories

At the Heart of Good Health

Patient Arterial Age Compared to U.S. Male/Female Populations



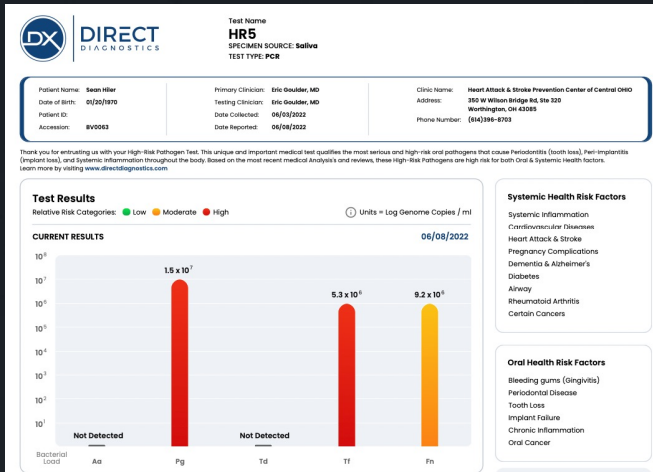
Sean's CBCT Summary

 #3 has pulpal involvement

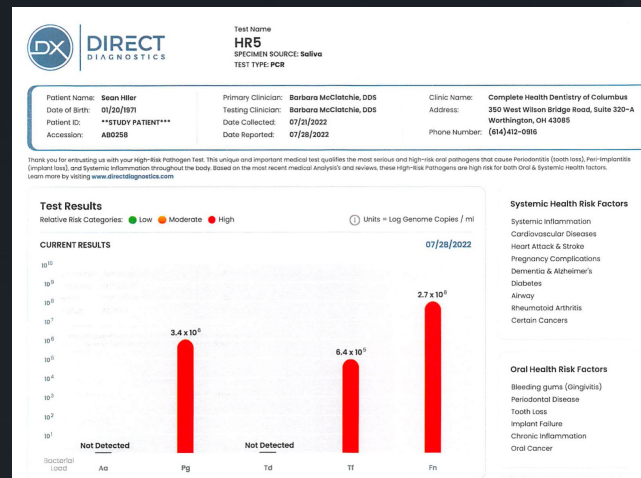
 #14 has advanced vertical bone loss

 Carotid calcifications are present putting hi at high risk for a cardiovascular event

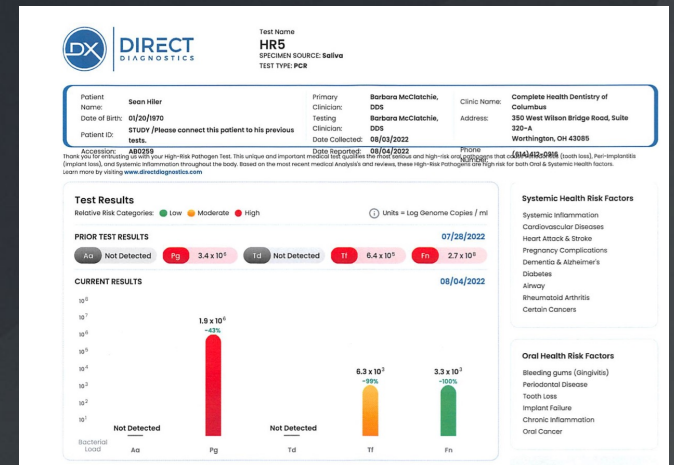




6/3/2022



7/21/2022



8/3/2022

hs-CRP	6.6	9.4	2.4
LpPLA ₂ Activity	246	219	255
MPO ¹	560	485	428
Fibrinogen	466	569	456

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HEALTH**

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Who are Your High-Risk Patients?

- ❗ Look at the patient's health hx--review all items checked yes!
- ❗ List of medical specialists they see
- ❗ Medication List
- ❗ Elevated Blood Pressure
- ❗ Previous Surgeries- CA
- ❗ Active chronic perio disease
- ❗ Presence of high-risk Red Zone pathogens
- ❗ Hx of endodontic procedures
- ❗ Sleep disorder breathing
- ❗ Look for those with the red flags for CVD

❗ Discuss family hx





Do the best you can
until you know better.

Then when you know
better, do better.

Maya Angelou

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