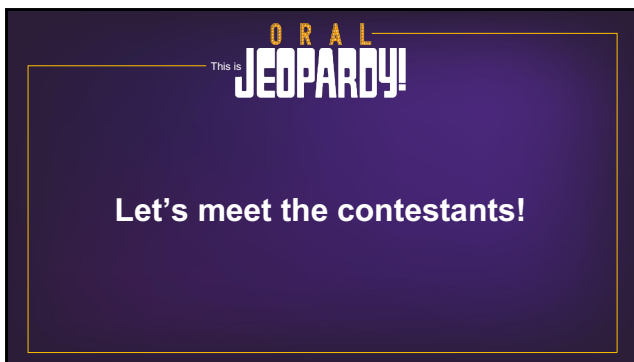


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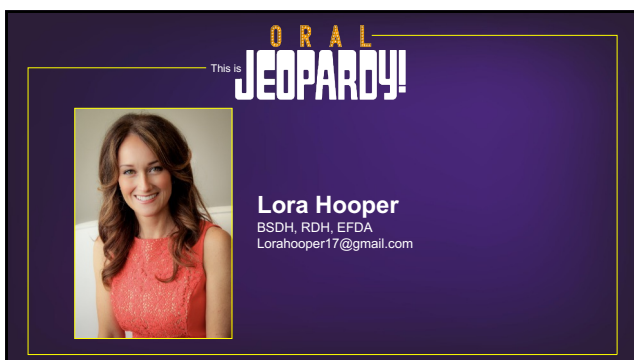
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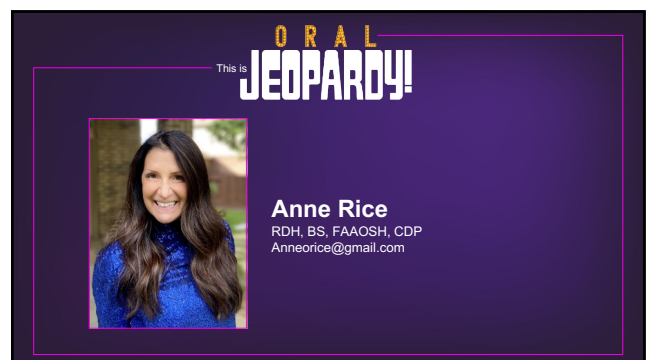
3



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5



6

ORAL  
This is JEOPARDY!



**Peter Maroon**  
Saliva Testing Market Development Consultant  
Pmaroon@impetusdx.com

7

ORAL  
This is JEOPARDY!

### Categories

CONNECTING DOTS   AMMUNITION   END-FLAMMATION   ALLIANCES   WHAT THE HEALTH   MALADIES

Our favorite answer and question game show with a twist

8

Ammunition

**ANSWER:**

Registered Dental Hygienist!

12

Ammunition

**QUESTION:**

Who has the biggest impact in transforming patient lives and clinical outcomes?

13

Ammunition

Measure and treat what we CANNOT see...

- Salivary Bacteria
- Sleep Disordered Breathing
- Blood Glucose

**A Dental Hygienist May Very Well Save Your Life!**

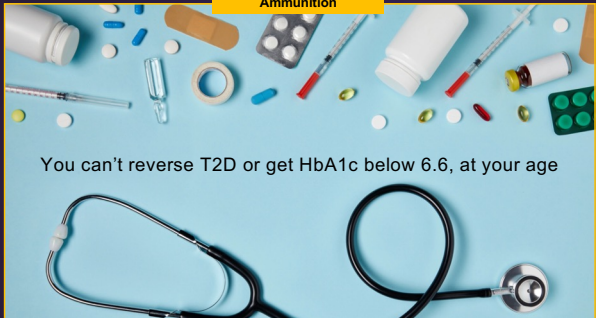


©Gina Pritchard DNP

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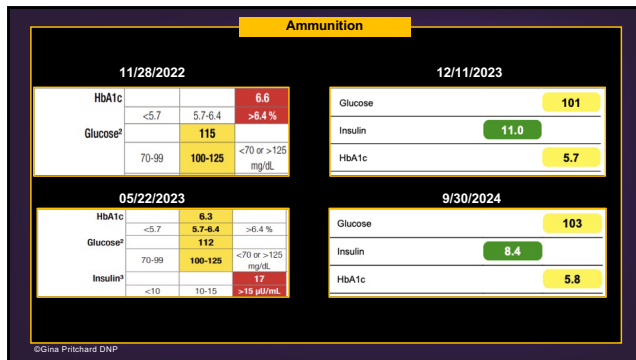
Ammunition

You can't reverse T2D or get HbA1c below 6.6, at your age



©Gina Pritchard DNP

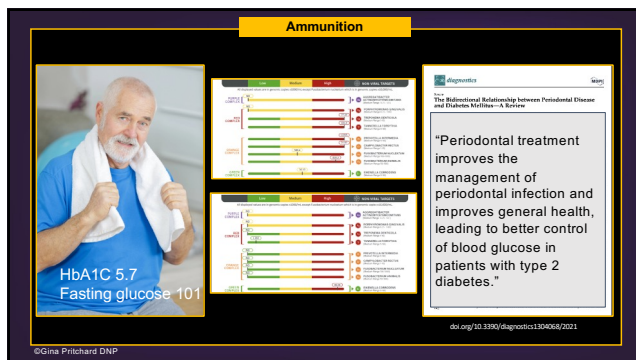
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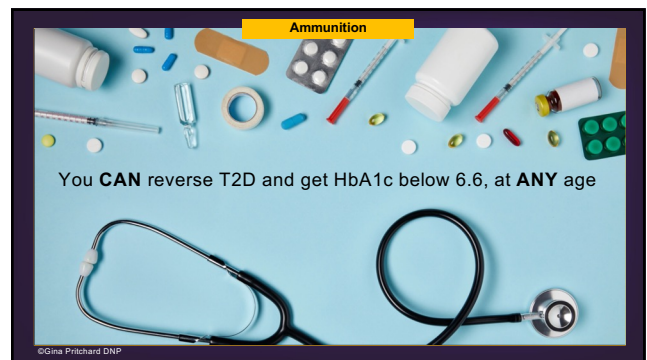
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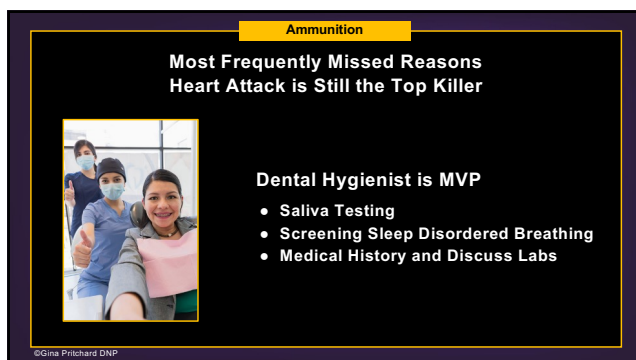
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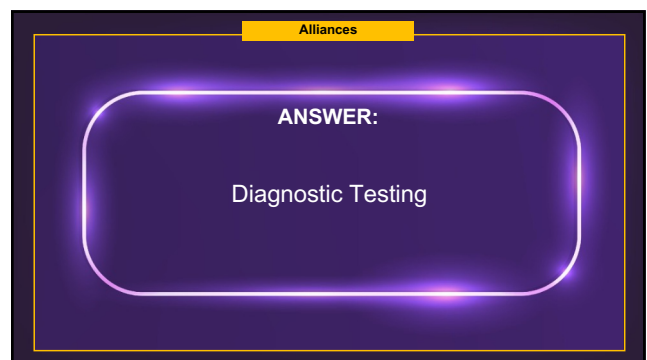
18



19



20



22

## Alliances

## QUESTION:

How do you easily collaborate between dentistry and other disciplines?

23

## Alliances



Bridging the gap between dentistry & medicine

24

## Alliances

## Comprehensive Diagnostic Testing in Modern Dentistry



## Saliva Test

- Oral pathogens
- Inflammatory burden
- Oral-systemic risk



## Glucose Test

- Metabolic risk
- Bi-directional
- Oral-systemic risk

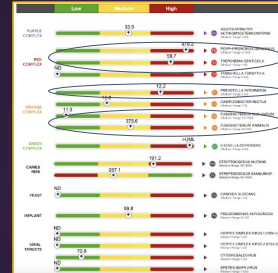


## Sleep Test

- CBCT
- Airway risk
- Oral-systemic risk

25

## Alliances



## Disease Risks Connected to Oral Pathogens



26

## Connecting Dots

## ANSWER:

This is a polymicrobial test measuring bacteria, yeast, and viruses

28

## Connecting Dots

## QUESTION:

What is a saliva test?

29

## Connecting Dots

## Saliva Testing

- Simple Non-Invasive
- Identifies bacteria, viruses, bio-markers, & risk factors
- Insight into oral-systemic health connections
- Routinely used within both dental & medical practices
- Early detection, risk stratification, & personalized care



30

## Connecting Dots

## How it works:

- Collection: Saline, swish & spit
- Analysis: lab based qPCR, Next Gen Sequencing, or POC
- Reports: bacterial, fungal, viral, inflammatory or genetic markers



31

## Connecting Dots

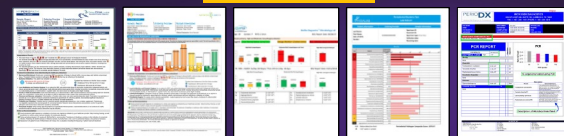
## How Do I Decide?

1. What measurements are on the test
  - Bacteria, Caries, Yeast, Viral, Genetic Markers, etc.
1. What is the LOD (Level of Detection)
  - Start at 250 or 10,000 copies of DNA
1. What is the accuracy
  - 70% - 100%

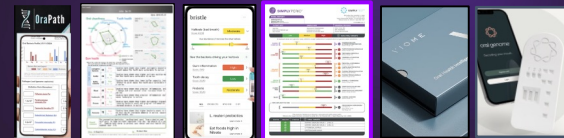


32

## Connecting Dots



11 tests on market and many more everyday...



33

## What The Health

## ANSWER:

This complex of bacteria control the oral microbiome

35

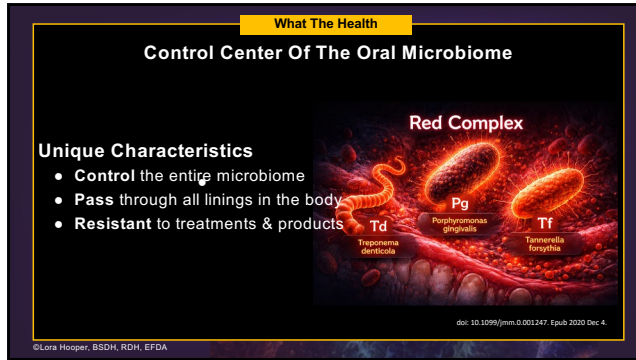
## What the Health

## QUESTION:

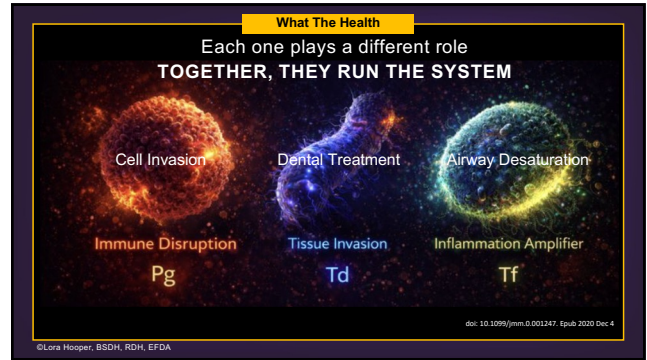
What are red complex?

36

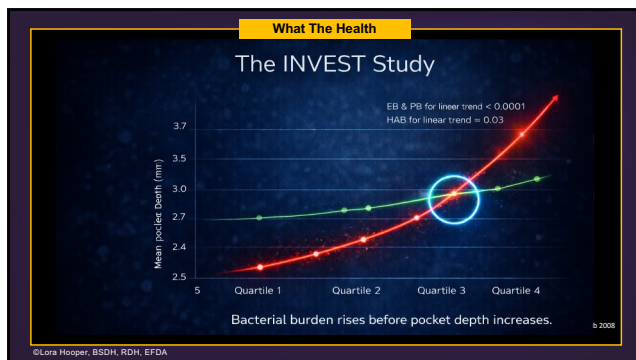




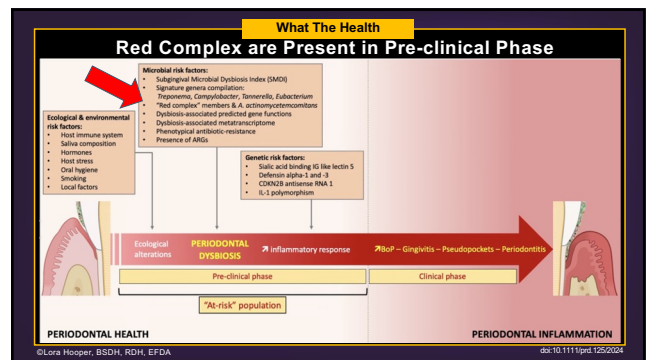
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38



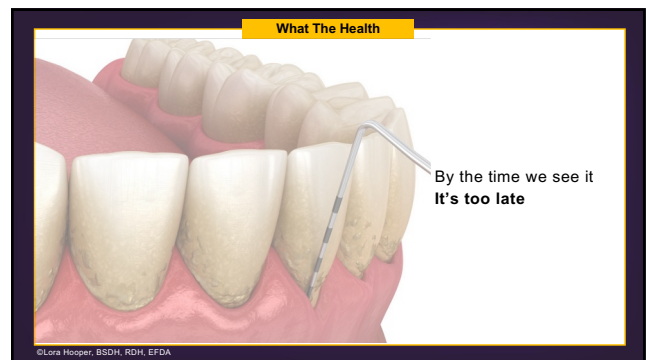
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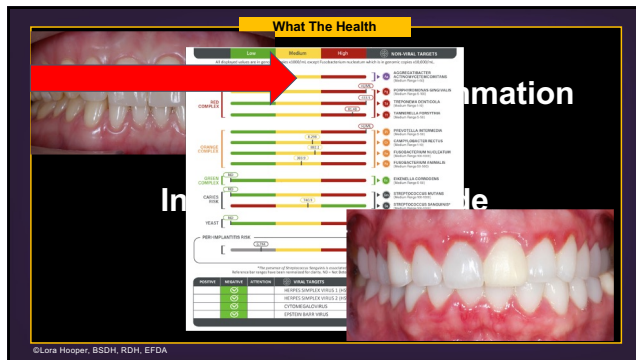
40



41



42



43

**Maladies**

**ANSWER:**

This pathogen's virulence factors are linked to neuroinflammation, complement activation, and the formation of tau tangles in Alzheimer's disease.

45

**Maladies**

**QUESTION:**

What is Porphyromonas gingivalis?

46

**Maladies**

**Bacteremia + Neural Routes + Endothelial Injury Translocation**

- Chronic periodontal pockets drive transient bacteremia, sending Pg into circulation
- OMVs circulate systemically, target vascular endothelium promoting endothelial dysfunction & early BBB stress
- Neural pathways and TLR2/4 activation enable CNS entry & sustained oxidative stress & neuroinflammation

doi:10.1016/j.neuint.2022.105262

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**Maladies**

**Gingipains & BBB Breakdown**

**Virulence Factors**

- Pg gingipains degrade host, structural & immune proteins
- Cleavage of tight-junction proteins (e.g., claudin-5) weakens the BBB & amplifies brain inflammation

BBB - tightly regulated endothelial barrier protecting the brain. TIP: watch BP, sleep, lipid & sugar balance

doi:10.1016/j.neuint.2022.105262  
doi:10.1016/j.jane.2023.02.006

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**Maladies**

**Neuroinflammation, Complement Activation, & Tau Pathology**

**Downstream Effects In the Brain**

- Microglial activation by gingipains & LPS → chronic neuroinflammation (↑ IL-1β, TNF-α, IL-6)
- Complement activation → synapse pruning - hallmark early Alzheimer's pathology
- Pg drives amyloid-β (antimicrobial response) & ↑ tau phosphorylation

doi:10.1016/j.neuint.2022.105262

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## EndFlammation

ANSWER:

Inflammation &amp; Oxidation

51

## EndFlammation

QUESTION:

What is the #1 cause of  
leaky arteries?

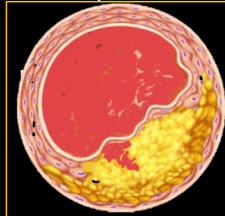
52

## EndFlammation

## Leaky Arteries

Heart Attack, Stroke, Dementia, Kidney Failure...

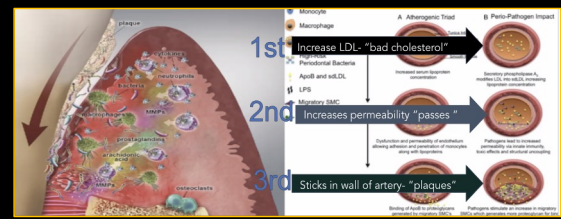
- Permeates the lining
- Formation of plaque
- Increases danger of plaque
- Inflammation & oxidation



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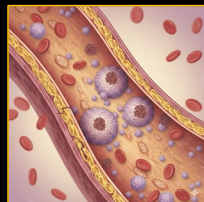
## EndFlammation

Bacteria Have a Direct & Deadly Impact in and on the  
Arterial Wall Aa, Pg, Td, Tf, Fn

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## EndFlammation

It's NOT just about lowering  
Cholesterol, LDL or apoB*Statins and Stents alone aren't reducing the incidence  
of stroke and heart attacks*

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55

## Connecting Dots

ANSWER:

This syndrome causes permeability which  
allows bacterial translocation.

57



## Connecting Dots

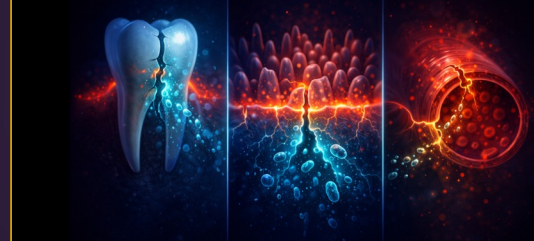
## QUESTION:

What is the leaky syndrome?

58

## Connecting Dots

### When The Mouth Leaks The GI & Body Pays The Price



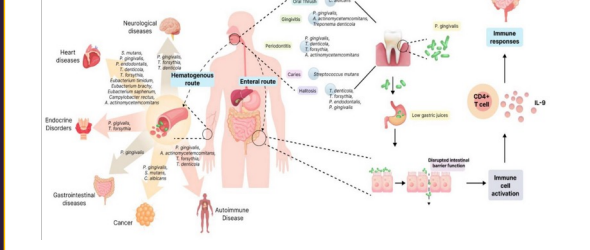
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doi.org/10.3390/microorganisms12091797/2024

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## Connecting Dots

### Leaky Syndrome = Microbial Translocation



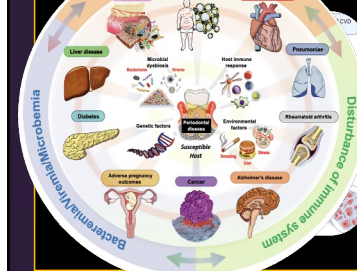
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doi.org/10.3390/microorganisms12091797/2024

60

## Connect Dots

## Leaky Syndrome



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doi:10.1111/jrd.12398/2021

61

Dentistry is entering a permeability era

- This is about barrier failure
- The same inflammatory story throughout the body

## What The Health

## ANSWER:

Patients with periodontal disease, gingivitis, peri-implantitis, heart disease, dementia, cancer, high blood pressure or sleep apnea.

63







## What The Health

## QUESTION:

Who are patients that need a saliva test?

64

**What The Health**

-  Test everyone!
-  Patients with bleeding while charting or treatment
-  Patients with unexplained inflammatory biomarkers like hsCRP
-  All patients pre & post restorative care procedures
-  Those currently pregnant or actively pursuing pregnancy
-  All patients with chronic medical conditions

65

**What The Health**

The secret of getting ahead is getting started.

Mark Twain

66

**What The Health**

**ANSWER:**

This condition, worsened by chronic periodontal inflammation, increases systemic cytokine load & raises the brain's risk for embolic stroke & cognitive decline.

68

**What The Health**

**QUESTION:**


What is Atrial Fibrillation?

69

**What The Health**

**Irregular Heartbeat or Arrhythmia**

Blood Flow  
Cognition  
Periodontal Disease  
Therapy



Treating gum disease in the 3-months after a radiofrequency catheter ablation to correct AFib may reduce recurrence - JAHA 2024

Pg translocated to the heart, when reaching the atria, worsened atrial fibrosis increasing AFib risk - March 2025, Circulation, Miyauchi S. et al

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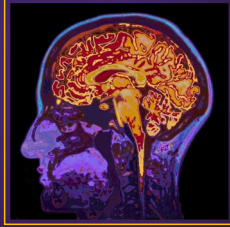
70

**What The Health**

**Vascular & Degenerative Pathways**

**Homocysteine**

- Strong, independent risk factor for dementia & AD (CVD, stroke)
- ↑ OS, DNA damage, apoptosis  
↓ blood flow, stirs inflammation, vessel damage, BBB integrity, brain atrophy



Elevated levels of HCY observed in patients with chronic periodontitis

doi: 10.1038/s41467-022-33024-y/2022  
doi: 10.1126/science.1241224/2013  
doi: 10.1073/pnas.1721694115/2018


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**What The Health**

### Hypertension

- Accelerates brain shrinkage, lesions & inflammation
- #1 preventable factor for CVD, kidney disease, cognitive decline & dementia (TIA, stroke, MCI)
- Direct relationship b/t subgingival bacteria & BP  
Bacterial endotoxins impair NO signaling, stiffen vessels, and raise blood pressure.
- Higher on the arm, feet on the floor, no chatting, NO MORE "A little bit high"



doi:10.1212/WNL.000000000000209715/2024  
doi:10.1002/jamms.12028.2024  
doi:10.1212/WNL.0000000000004602/2019

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**EndFlammation**

### ANSWER

This metabolic marker often misses prediabetes & insulin resistance.

77

**EndFlammation**

### QUESTION:

What is Hemoglobin A1C (HbA1C)?


78

**EndFlammation**

### Hemoglobin A1C

AVERAGE Blood Glucose / 90 days

- 6.4 Very Concerning!
  - Need more data ASAP
- 5.7-6.4 Concerning!
  - Need more data ASAP
- 5.7 is NOT a reassuring number
  - We do not know ???
  - Need more data
  - Insulin resistance, prediabetes, diabetes



doi:10.1007/978-94-007-5111-2342-v/2012

79

**EndFlammation**

### What data do we need to know?

**Blood Panel**

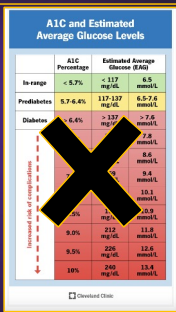
- Fasting glucose: Under 90
- Fasting insulin: Under 6
- Triglycerides: Under 90

Lower Trend: Trending upward is a problem

**Liver Enzymes:** GGT, AST, ALP, ALT

**Measure at Home**

- Glucose readings
- Ketone readings
- Continuous Glucose Monitor: CGM



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**EndFlammation**

Meet your patient where they are!

"I just want to lose weight."

"I am desperate to lose weight."

"I am severely depressed & on many medications for depression because I must lose weight."

Triglycerides & liver enzymes high  
GGT 219, ALT 75  
(normal for both is <40)

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**EndFlammation**



**Collaborative Care**

- Non-surgical Intervention
- Salivary Assessments
- Daily Disease Control
- Dietary Support
- Restorative Care

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**Ammunition**

**ANSWER:**

This sensor is utilized during the treatment of periodontal disease in its bidirectional relationship with diabetes

84

**Ammunition**

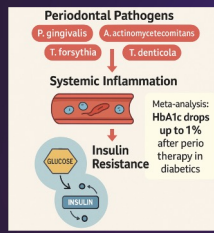
**QUESTION:**

What is a continuous glucose monitor?

85

**Ammunition**

**Glucose Is A Missing Periodontal Metric**



**Bidirectional relationship**

- Diabetes increases inflammation
- Inflammation causes permeability
- Pathogens feed off glucose



doi: 10.1007/978-93-911-2342-y Epub 2011

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**Ammunition**

**Biosensor (CGM) = Real-time Biofeedback**

- Identifies glycemic spikes
- Explains refractory inflammation
- Guides nutrition & treatment planning
- Related to bacteria, sleep, & hormones


doi: 10.1007/978-93-911-2342-y Epub 2011

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**Ammunition**

**10 Glucose Goddess Hacks**



The next charting metric won't be probing depth... It will be metabolic stability

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## Connecting Dots

## ANSWER:

These long-chain lipids improve cognition & reduce risk of cognitive decline while simultaneously lowering pocket inflammation & improving periodontal outcomes.

90

## Connecting Dots

## QUESTION:

What are Omega 3 fatty acids?

91

## Connecting Dots

### Dietary Allies - Mouth and Brain

#### Omega 3 Fatty Acids

DHA - neurotransmission, ↓neuroinflammation  
positive impact on healing & inflammation  
w/NSPT



B vitamins - signal, repair, RBC production, helps  
control HCY, associated w/ brain shrinkage OH -  
epithelial integrity (cell turnover), immunity, collagen

Fiber - ↓inflammation, ↑blood flow  
More fiber = better cognition

doi: 10.1016/j.jada.2010.06.006/2010  
doi:10.1017/gmb.2021.3

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## Connecting Dots

Antioxidant  
Polyphenols  
(berries,  
pomegranate,  
green tea, cocoa,  
olive oil)



Vitamin D (fatty  
fish, cod liver oil,  
egg yolks,  
sunshine  
w/cofactors  
magnesium, K2)



Vitamin A, C, E  
A - liver, eggs, leafy  
greens, C - citrus,  
berries, broccoli  
E - nuts, seeds,  
avocados



Zinc (oysters,  
beef, lamb,  
pumpkin seeds,  
chickpeas,  
lentils, & dairy)



DOI: 10.3945/aj.111.004176/2013

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## Connecting Dots

### Insulin Resistance

#### Glucose

Brain - highly metabolic tissue  
dependent on glucose metabolism -  
energy, neurotransmitter synthesis,  
protection, memory, attention & learning

Earlier the onset T2D higher lifetime  
risk, accelerates grey matter loss,  
speeds up brain aging, smaller  
hippocampal volume

Glucose Rich Foods - turnips, kiwi, grapes, rutabagas,  
red beets, whole grains, onions



doi: 10.1056/NEJMa121574/2013  
doi: 10.2337/6219.2450/2010

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## Ammunition

## ANSWER:

Real Food  
Low Carbohydrate  
Ketosis

96

## Ammunition

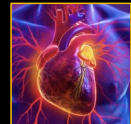
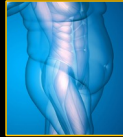
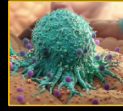
## QUESTION:

What nutritional plan is the #1 most effective & rapid approach to achieving metabolic flexibility & reversing Type 2 diabetes?

97

## Ammunition

## Low Carb/Ketogenic Nutritional Plan



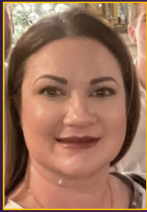
doi.org/10.1390/nut.17061047/2025

©Gina Pritchard DNP

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## Ammunition

## Measure Ketosis



- Mild 0.5 to 1.0 mmol/L
- Moderate 1.0-3.0
- High ketosis >3.0

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## Ammunition

## Real Food:

## Protein Priority. Fat Friendly. Carb Conscious



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## Ammunition

## Low Carbohydrate/Ketosis



≤ 30 g Carbs

1/2 cup Blueberries = 11 grams

1 Medium Apple = 25 grams

12 oz Soda = 39g

12 oz Green Tea or Black Coffee = 0 grams



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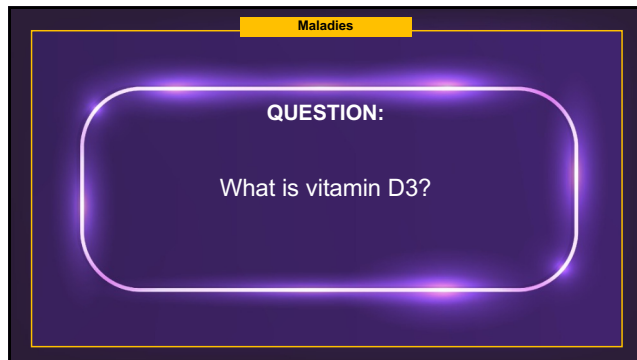
101

## Maladies

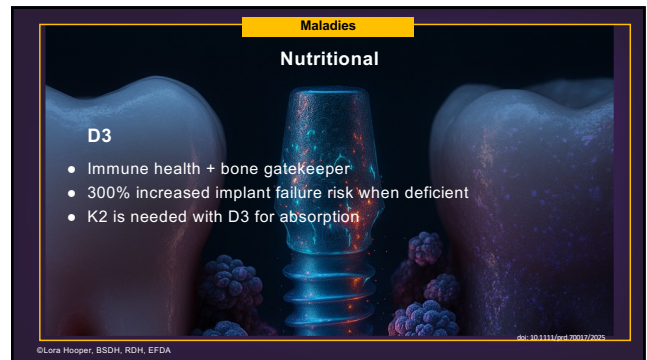
## ANSWER:

This vitamin deficiency puts you at a 300% increase risk for an implant failure.

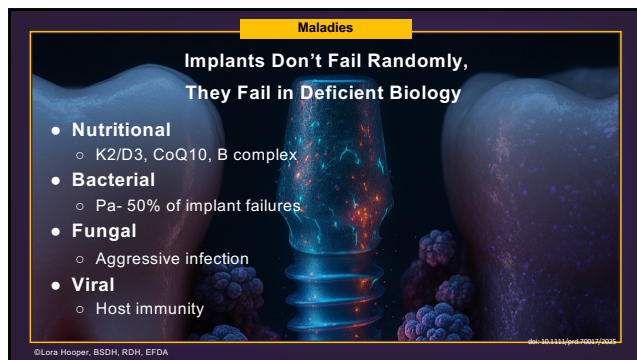
103



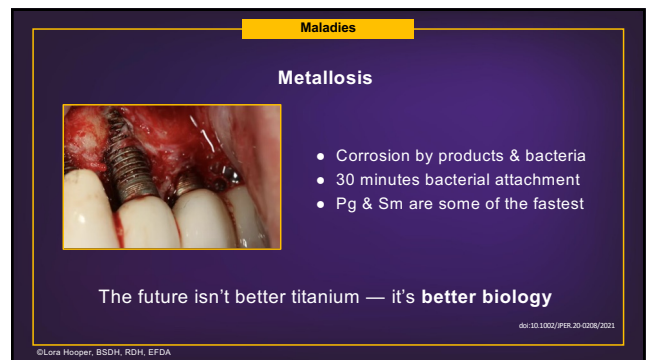
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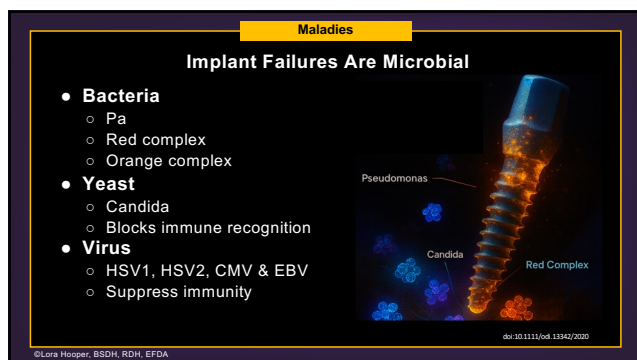
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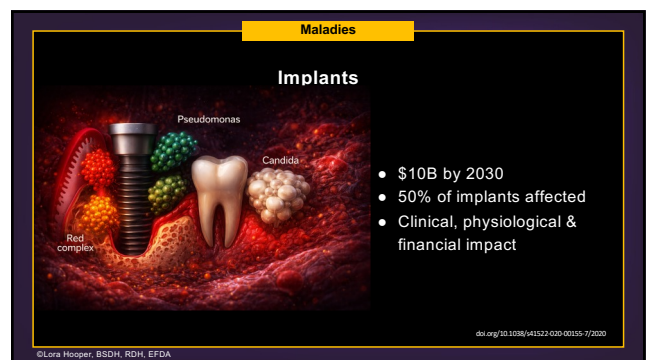
106



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109

**Maladies**

**ANSWER:**

A common virus that targets nerves, stays dormant for life and may trigger brain inflammation.

114



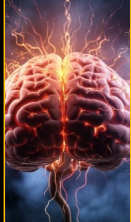

**Maladies**

**QUESTION:**

What is HSV1?

115

**Maladies**

Enter nervous system through peripheral nerves - neuroinflammation

ApoE4 carriers - 12x's greater risk of AD (less viral particle clearance)

Reactivation & cell death - direct neuronal damage

Host genes might determine the response (TLR's, OAS1, HLA, CD8...)

©Anne Rice, RDH, BS, FAAOSH, CDP doi.org/10.3390/jms14176477/2025  
doi:10.3390/jms14176477/2025

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**Maladies**

**I am not a Pharmacist Prescriptions**

Valacyclovir (Valtrex)  
2 g twice in one day, taken 12 hours apart

Acyclovir (Zovirax)  
400 mg 3x daily for 5 days, sometimes  
200 mg 5x's daily for 5 days

Famciclovir (Famvir)  
1.5g once (alternative 500 mg x3 once/day)




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**Maladies**

**How to Help**

- LLLT - doesn't eliminate a virus but can slow replication, reduce pain, duration & possibly interval reoccurrence
- Protect yourself - viruses can enter the respiratory tract from aerosolized droplets
- HSV 1 relies on arginine to replicate (nuts, seeds, chocolate, shellfish, chicken)



doi:10.1007/s10103-022-03653-6/2022  
doi:10.34172/jms.2021.38

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**EndFlammation**

**QUESTION:**

This acid-producing oral bacteria thrives in low-saliva, mouth-breathing patients and is strongly linked to caries risk.

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EndFlammation

**ANSWER:**


**Streptococcus Mutans**

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EndFlammation

***Streptococcus Mutans*, Not Just A Cavity-causing Bacteria**

Oral infections don't stay oral



- Acid production & biofilm formation
- Bloodstream accessible
- Cardiovascular inflammation, endocarditis, & stroke

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EndFlammation

**Dental Caries**

Dental caries is not "routine dentistry"  
it is a **global infectious disease epidemic**

- Most prevalent infectious disease worldwide
- Transmissible, preventable, and often undetected
- Increased over the past 31 years

Measuring the Bacteria Matters

World Health Organization: "Global Burden of Disease Study 1990-2019: Dental caries is the most prevalent health condition worldwide"

123

What The Health

**ANSWER:**

One of the most overlooked root causes of periodontal disease.

125

What The Health

**QUESTION:**

What is sleep disordered breathing?

126

What The Health

**The Airway Drives Microbiome Behavior**

Sleep disordered breathing is a **root cause**, not a side symptom

- Nasal breathing → nitric oxide → vascular support
- Oral breathing → desaturation → pathogen growth



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doi: 10.3390/pathogens10101288/2021

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**What The Health**

### You Can't Heal What You Can't Oxygenate

- Mouth breathing changes environment
- Promotes dysbiosis of oral pathogens
- Tf is first red complex to develop

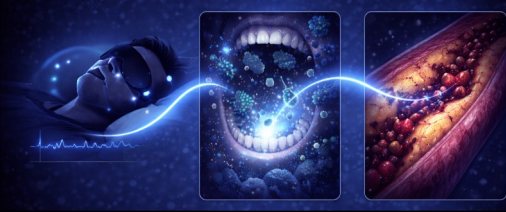


doi: 10.3390/pathogens10021282/2021  
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**What The Health**

### Desaturation Shifts Oral Bacteria Causing Vascular Permeability that contributes to Plaque Formation



doi: 10.3390/pathogens10021282/2021  
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**Alliances**

**ANSWER:**

This essential neurologic state is the brain's cleanup window—without it, Alzheimer's-related waste accumulates.

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**Alliances**

**QUESTION:**

What is Sleep?

132

**Alliances**

### Brain Benefits

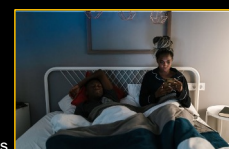
- Consolidates memory & learning
- Clears toxins
- Fatigue skews memory towards negative
- Fuels creativity & problem solving

**DURATION**

30 yr. cohort of 8K, ages 50-70, sleep 6 vs 7 hrs = 30% increased risk of dementia

**TIPS**

Cool the Core, AM Light, Eat Fiber, Ω3's, Cognitive Off-Ramp, Lengthen Exhalation, Right Side Sleep, Nasal Breathing



doi: 10.3390/pathogens10021282/2021  
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**Alliances**

### Deep N3 Sleep Glymphatic System

- Expands interstitial space by ~ 60%
- Aβ ↑ 5% against healthy controls after 1 single night of sleep deprivation
- RCT, SDB participants (no memory loss, no sleepiness complaints) had ↑ amyloid, less grey matter than healthy controls

"These results support the need to screen and treat for SDB, especially in asymptomatic older population, to reduce Alzheimer's risk" - JAMA Neurology 2020




doi: 10.3390/pathogens10021282/2021  
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**Alliances**

### Nasal Breathing

- Oral breathing can interfere with performance of working memory, attention, executive function
- We can absorb ~18% more O<sub>2</sub> as compared to mouth breathing
- Nasal breathing boosts NO, improving cerebral blood flow
- Improves CO<sub>2</sub> retention (stable neuronal excitability) Bohr effect



doi:10.1513/AnnalsATS.2015.05.1784  
doi:10.1186/1745-6215-10-203

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**Maladies**

### ANSWER:

Endothelial Dysfunction/Atherosclerosis, Increased Inflammation & Oxidation, High Blood Pressure, Reduced Blood Flow to Heart & Brain, Brain Fog, Fatigue, Mood Changes, Impaired Sexual Function (Men & Women), Impaired Glucose Uptake - Insulin Resistance, Exercise Intolerance/Poor Stamina, Delayed Wound Healing, Cold Hands & Feet, Poor Circulation

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**Maladies**

### QUESTION:

What are the dangers of low Nitric Oxide?

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**Maladies**

### Mouth Breathing Reduces Nitric Oxide



Low Nitric Oxide reduces vasodilation, increases arterial stiffness, elevates blood pressure, & promotes inflammation

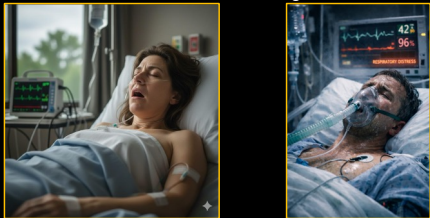
Acts as a catalyst to promote adverse outcomes

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**Maladies**

### Desaturations are Dangerous



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**Maladies**

Goal is not to sterilize the mouth

Daily/twice daily use lowers NO

Acute versus chronic use to maintain balance



doi:10.1056/nejm.2017.09.004  
doi:10.1096/082705.2013.16.0070

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**Maladies**

Goal is not to sterilize the mouth

Daily/twice daily use lowers NO

Acute versus chronic use to maintain balance

"The indiscriminate routine use of antibacterial mouthwash products may cause more harm than good in light of recent studies...suggesting potential detrimental impact of mouthwash use of NO bioavailability, blood pressure and development of diabetes."

doi:10.1016/j.niox.2017.09.004  
doi:10.1016/j.niox.2017.09.004

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**Connecting Dots**

**ANSWER:**

Knowing the species present changes the treatment.

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**Connecting Dots**

**QUESTION:**

Why you need a saliva test?

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**Connecting Dots**

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**Connecting Dots**

- Identify active disease
- Treat based on test results
- Measure treatment effectiveness

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**Connecting Dots**

**Staying Competitive in a Transformative Era**

Clear data drives better decisions, better outcomes, and better business

**Patient Education**

- More efficient treatment plans improving patient outcomes

**Increase Treatment Acceptance**

- Say yes to treatment more often
- First 10 tests are key to success

**Create Referral Stream**

- Educated patients refer more friends to providers they trust
- Medical professionals will create additional referral streams for your office

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# Application

149

## Case

She came in to lose weight...

1. 41 year- old female
2. Successful teacher
3. Doesn't sleep well
4. Depression
5. No pain, beautiful smile



150

## Case

INFLAMMATION	
Myeloperoxidase <sup>(R)</sup>	257
Lp-PLA <sub>2</sub> Activity <sup>(1)</sup>	139
hs-CRP	1.6
Microalbumin/Creatinine	12.7
Microalbumin	17.1
Creatinine, Urine, Random	135
ADMA (Asymmetric dimethylarginine) <sup>(2)</sup>	118

- Inflammatory markers
- PLA2- pathogens
  - CRP- pathogens & sleep
  - ADMA- pathogens & sleep

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## Case

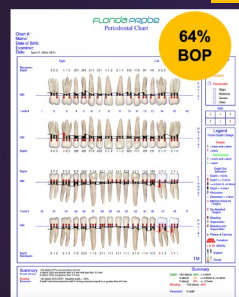
She needed an anti-inflammatory intervention & collaborative care

"Everything looks great. No cavities, healthy gums"



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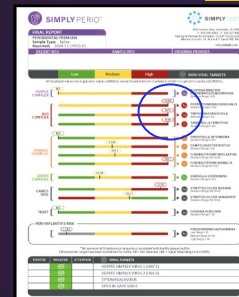
## Case



Compliments of The Present Clinic  
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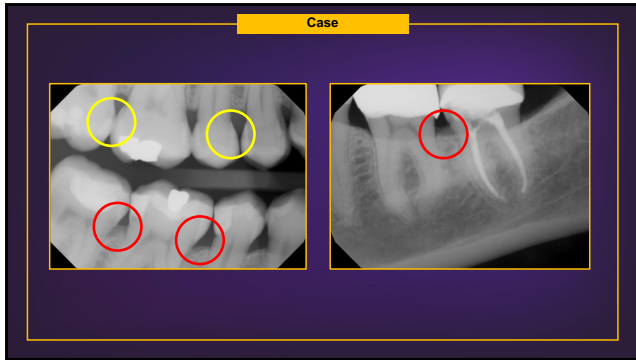
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## Case

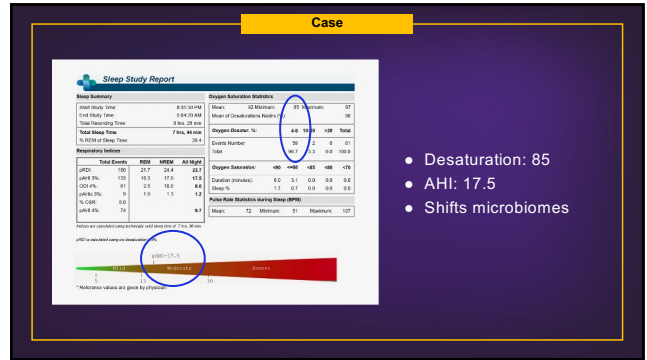


- Pathogen risk: Pg, Td, Tf
  - Trio 40x greater infection
- Caries risk: S.mutans
- GI risk: Fn, Fa

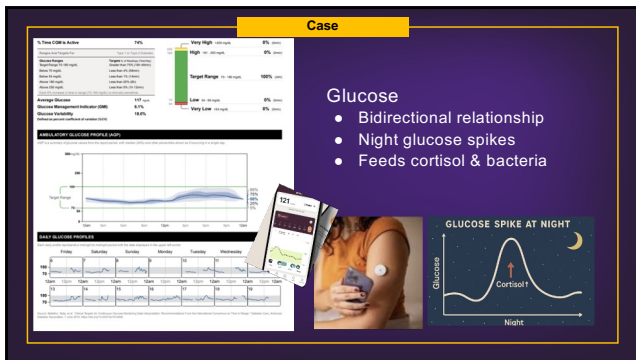
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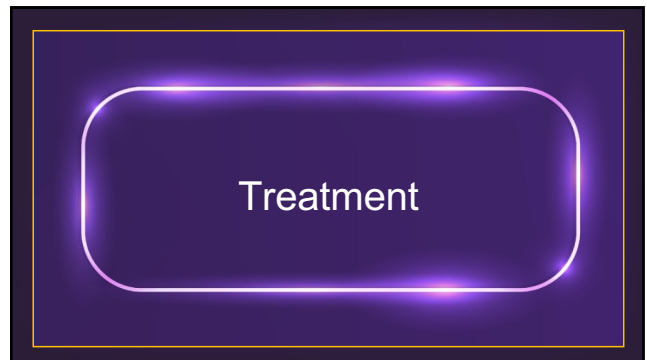
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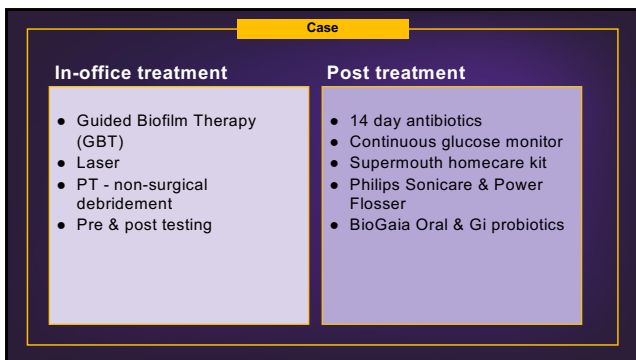
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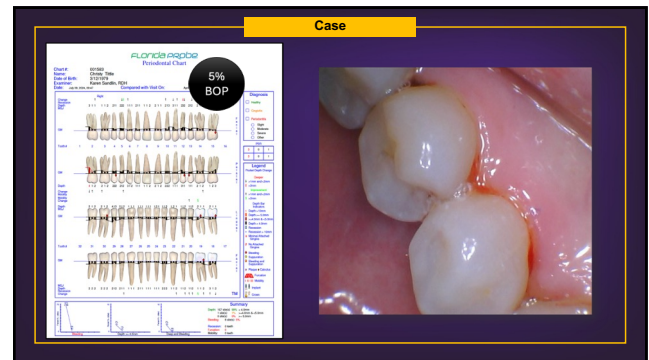


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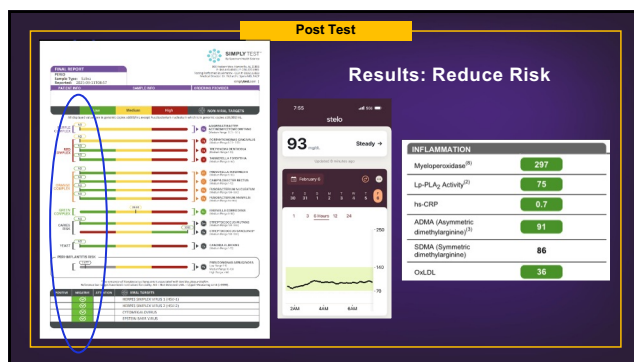


Case		
Nutrient	Why It Matters (Brain)	Why It Matters (Oral / Systemic)
<b>Antioxidants</b> (C, E, carotenoids)	Reduce OS & neuroinflammation	Protect tissues; support collagen & healing
<b>Polyphenols</b> (flavonoids, catechins)	Modulate microglia; improve cerebral blood flow	Reduce biofilm virulence; dampen periodontal inflammation
<b>B Vitamins</b> (B1, B6, B9, B12)	Neurotransmitters, myelin, ↓ homocysteine	High homocysteine linked to periodontal breakdown
<b>Omega-3s</b> (DHA, EPA)	Neuronal membrane integrity; anti-inflammatory	Reduce host inflammatory response in periodontitis
<b>Vitamin D</b>	Neuro-immune regulation; cognition support	Bone metabolism; immune modulation in periodontium
<b>Magnesium</b>	NMDA regulation; stress & sleep resilience	Bone health; wound healing; inflammatory balance
<b>Zinc</b>	Synaptic signaling; immune defense	Saliva, taste, immunity, tissue repair
<b>CsQ10</b>	Mitochondrial energy; ↓ OS	Improves gingival inflammation in studies
<b>Nitrate-rich foods</b>	↑ NO → cerebral blood flow	Oral bacteria convert nitrates → NO (oral-vascular link)

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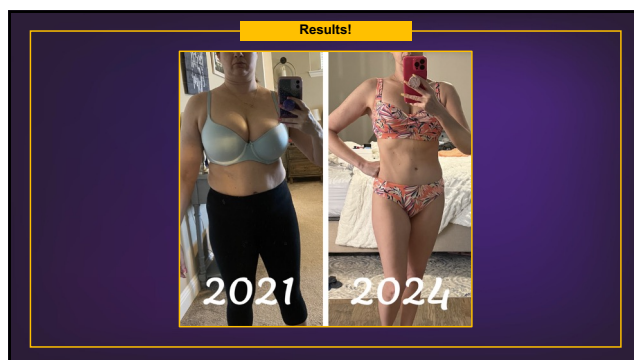
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**Case**

She thought she needed a cleaning...

She realized she needed an oral & systemic rescue

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**ANNE**

**Key Takeaways**

- ✓ Exercise regularly
- ✓ Sleep 7–8 hours
- ✓ Stay socially active
- ✓ Keep learning new skills
- ✓ Know your numbers (BP, cholesterol, insulin)
- ✓ Prioritize oral health
- ✓ Lower inflammation
- ✓ Eat healthy fats & whole foods
- ✓ Get vision & hearing tested

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For More Information  
RetainyourBrain (web, socials)  
[IND.org/learn](http://IND.org/learn)

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LORA

### Key Takeaways

- ✓ Start testing
- ✓ Use microbiome friendly products
- ✓ Repopulate the Oral & GI microbiomes
- ✓ Red complex control entire oral microbiome
- ✓ Break up biofilm for treatment & products to work



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PETE

### Key Takeaways

- ✓ Caries is infectious disease - Not just tooth decay
- ✓ What happens in the mouth doesn't stay in the mouth
- ✓ Pathogens can move from biofilm to bloodstream
- ✓ Chronic oral infection increases systemic inflammatory risk
- ✓ If you don't measure bacteria, you're managing disease blindly

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GINA

### Key Takeaways

- B.L.E.S.S.E.D. Lifestyle  
7 Verbs for Vibrant Health and Longevity
- B**reathe: Slow Nasal Breathing, Hum!
- L**ove: Supportive Relationships, Community
- E**at - Real Food:  
Protein Priority, Fat Friendly, Carb Conscious
- S**leep - Desaturations are Dangerous  
Mild Sleep apnea is NOT Mild
- S**tress - Bliss - Talk with patients about your journey
- E**xercise - Movement is magic  
Squats Between Patient appointments
- D**iscover - Test, Trend, Tweak, Repeat



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Q &amp; A

What's going on in there?



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