

# The *Holistic* Approach to Manage Today's Periodontal Patient



Samuel B Low, DDS. MS, MEd  
[slow@dental.ufl.edu](mailto:slow@dental.ufl.edu)

# Disclosures...

*Samuel B Low, DDS,MS, MEd: is a Consultant with ProBiora, EMS, Florida Probe, and PerioProtect.*

## Disclosures of Commercial Support Received

*Commercial Support for this CE Program provided by ProBiora.*

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# What You May Take Home...

- Understand today's definition of holistic care.
- Learn an approach for managing inflammation as a systemic and local immune response with antioxidants.
- Examine AI and new salivary diagnostics.
- Incorporate the new paradigm of periodontal medicine into the practice.
- Consider genetics, oral probiotics and nutraceuticals as variables in controlling disease.

THE LINE OF  
**DC**  
SUPER-STARS



IN THIS  
ISSUE:

ACTION-PLUS WITH:  
**GREEN ARROW**

**20¢**  
NO. 434  
APR.  
30410



# ACTION COMICS



HOW CAN THE  
**MIGHTIEST MAN ON EARTH**  
BE OVERCOME BY A MERE  
**TOOTHACHE?**

FOR THE  
ASTONISHING  
ANSWER, READ...

**"THE KRYPTON  
CONNECTION!"**

**The role of the dental profession  
including industry in the transformation  
from “oral health” to “total health”**

Patients will diagnose  
their disease condition...  
and WILL treat themselves...

**Thank you, GOOGLE...**

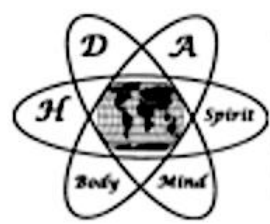
# Holistic Dentistry

**Holistic dentistry** also called **biological dentistry, biologic dentistry, alternative dentistry, unconventional dentistry, or biocompatible dentistry** is the equivalent of complementary and alternative medicine for dentistry.

THE  
AMERICAN ACADEMY FOR  
ORAL & SYSTEMIC  
HEALTH



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Nationally Approved PACE Program Provider for  
IAGD/MAGD credit.  
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7-05-22 to 6-30-25  
Provider ID 354219



**HDA** *Holistic Dental Association*  
*Since 1978 Alternative Dentistry for the 21<sup>st</sup> Century*

Improving Overall Health Through Dentistry





# Inflammation is the Key Process Driving Disease

## Diseases linked to Chronic Inflammation

When you have chronic inflammation, your body is in a constant state of high alert. The release of inflammatory chemicals can affect many different systems in your body and be a cause or consequence of multiple diseases.

### EYES

Macular degeneration, retinal degeneration, uveitis

### HEART AND BLOOD VESSELS

Atherosclerosis (hardening of the arteries), heart disease

### LUNGS

Allergies, asthma, COPD, lung cancer

### LIVER

Chronic hepatitis

### DIGESTIVE SYSTEM

Inflammatory bowel disease, including Crohn's disease and ulcerative colitis

### SKIN

Acne, eczema, skin cancer

### BRAIN AND SPINAL CORD

Alzheimer's disease, multiple sclerosis, Parkinson's disease

### THYROID

Thyroiditis

### PANCREAS

Type 1 diabetes

### KIDNEYS

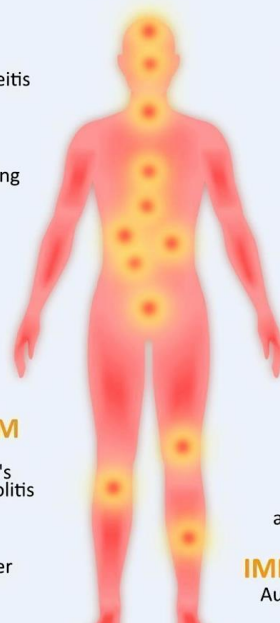
Chronic kidney disease, kidney failure, nephritis

### JOINTS

Some forms of arthritis, including rheumatoid arthritis and psoriatic arthritis

### IMMUNE SYSTEM

Autoimmune disorders such as lupus

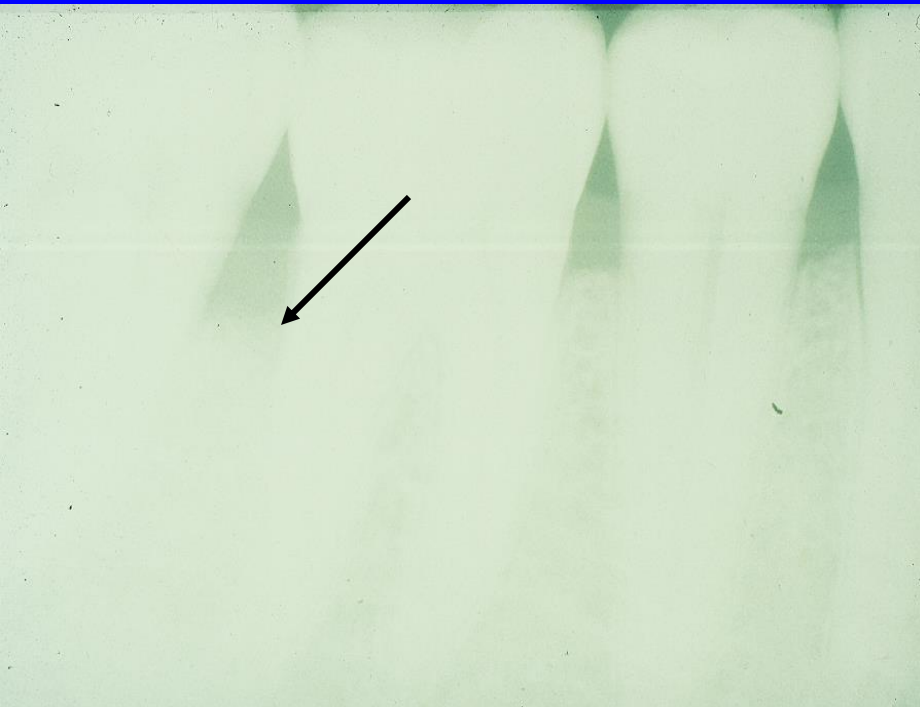


# Periodontal Disease:

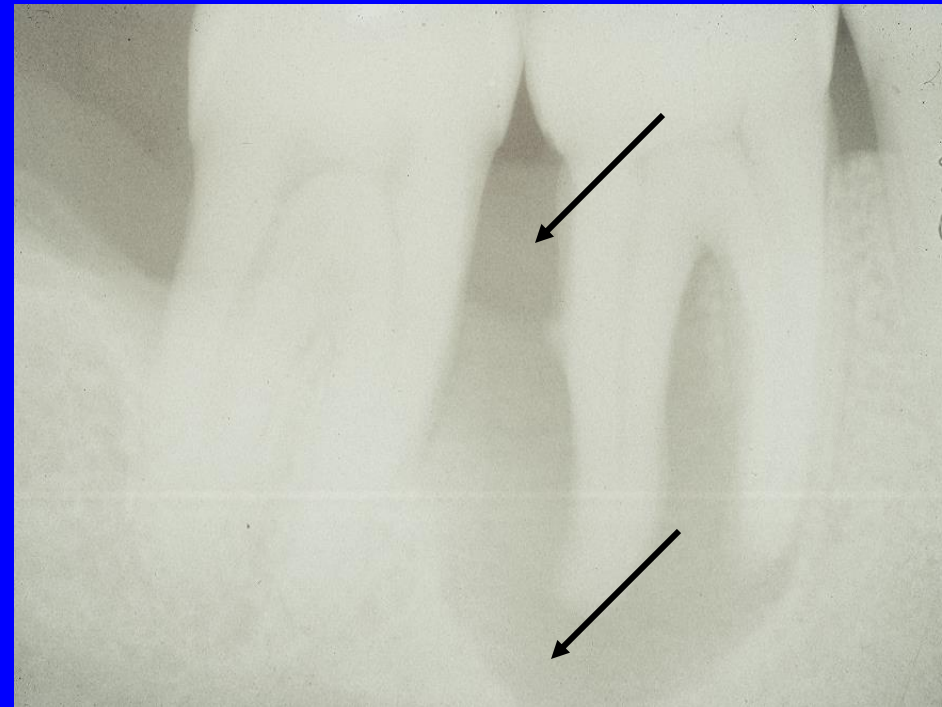
A “Risky” business

# Progressive Periodontitis

2015



2020



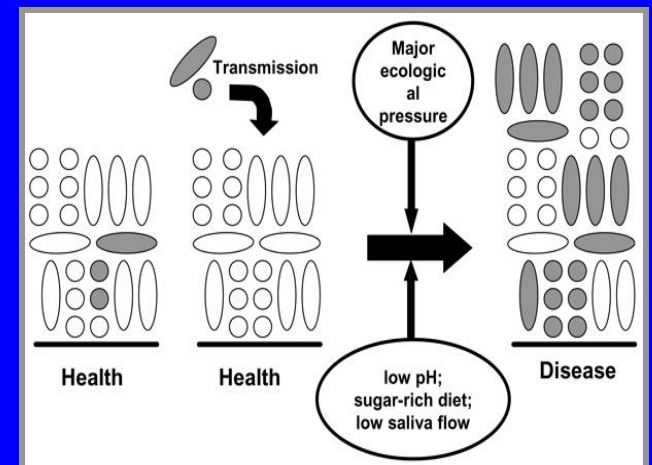
# 'Traditional' Paradigm: Plaque removal

- Non-specific plaque paradigm
  - Total plaque mass is responsible for oral disease.
  - More plaque: **More inflammation**
- Intervention
  - *Total plaque removal* is key.



# 'Latest' Paradigm: Biofilm management

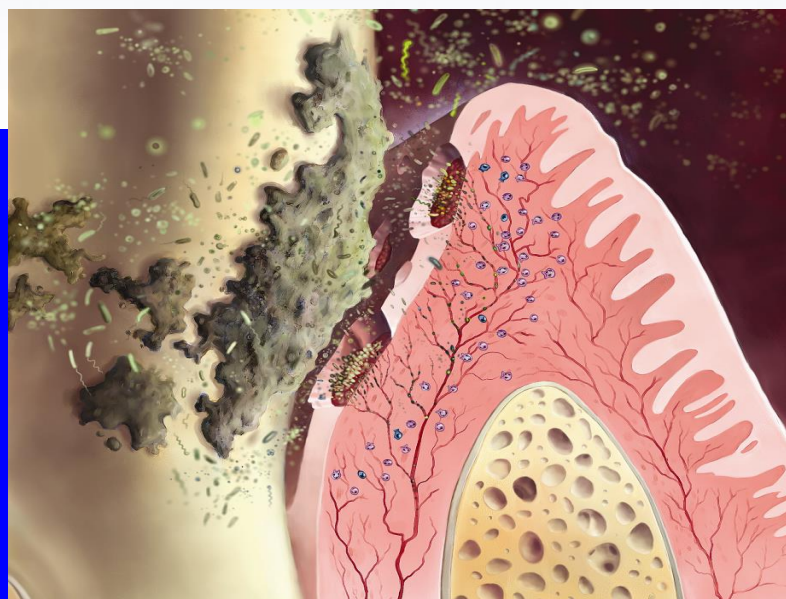
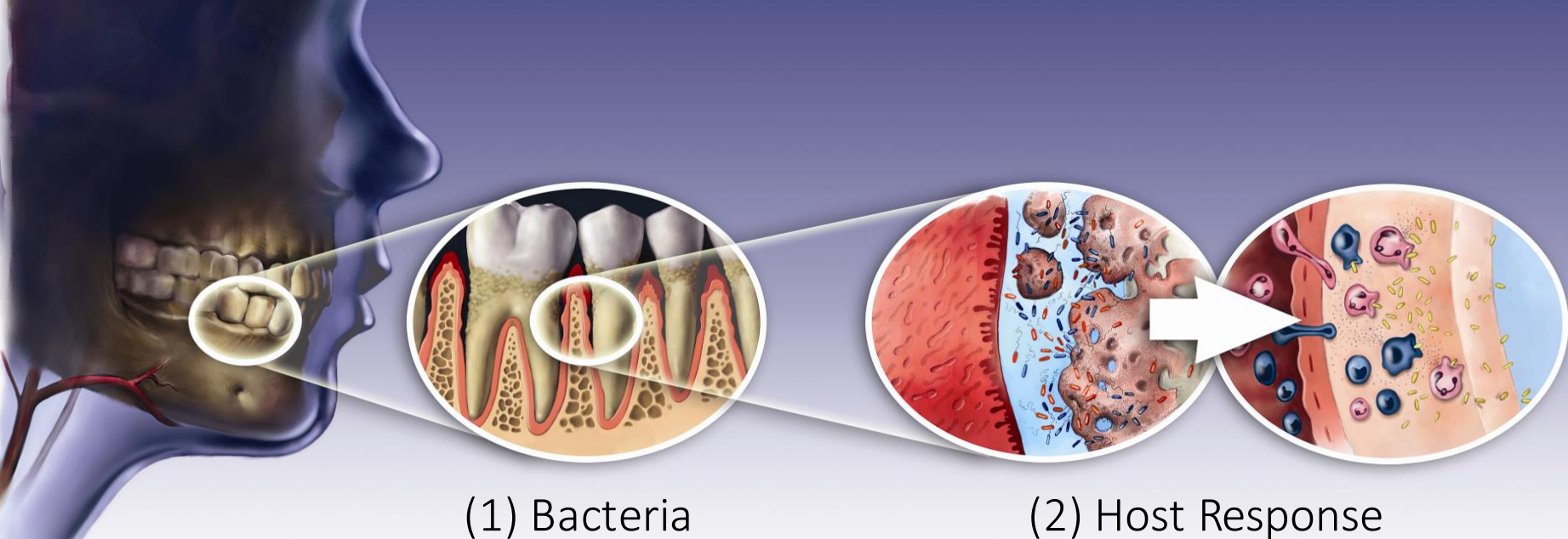
- Ecological paradigm
  - Biofilm is needed for health, and low levels of pathogens are normal.
  - Key is maintaining balance to sustain a 'healthy' biofilm.
- Intervention
  - Restore the balance: Interfere with environmental factors that favor selection and growth of pathogens.



# Periodontal Bacteria Form Dense Biofilms

- The bacteria associated with periodontal disease reside within biofilms above and below the gingival margin.<sup>1-3</sup>
- Biofilms are dense mixtures of organisms resistant to natural antibodies and proteins that the body uses to fight infection.<sup>1</sup>

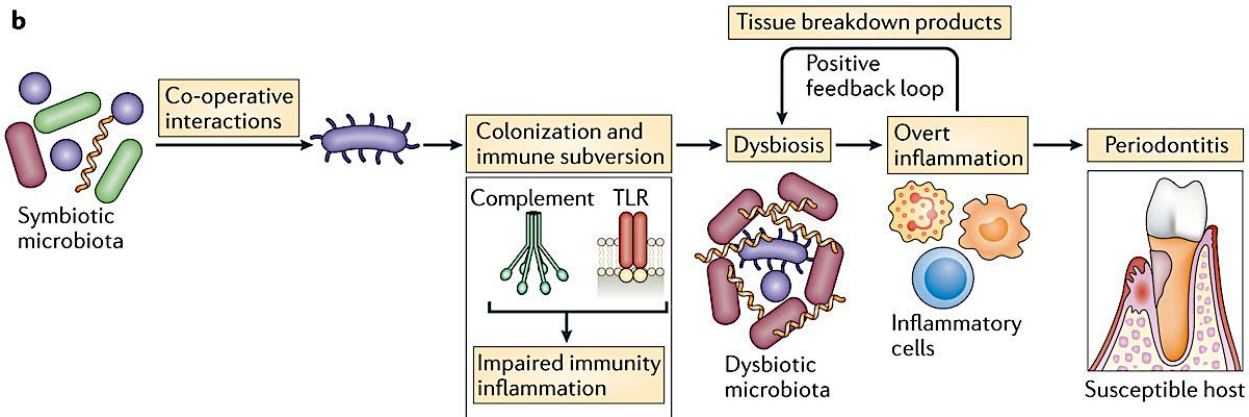
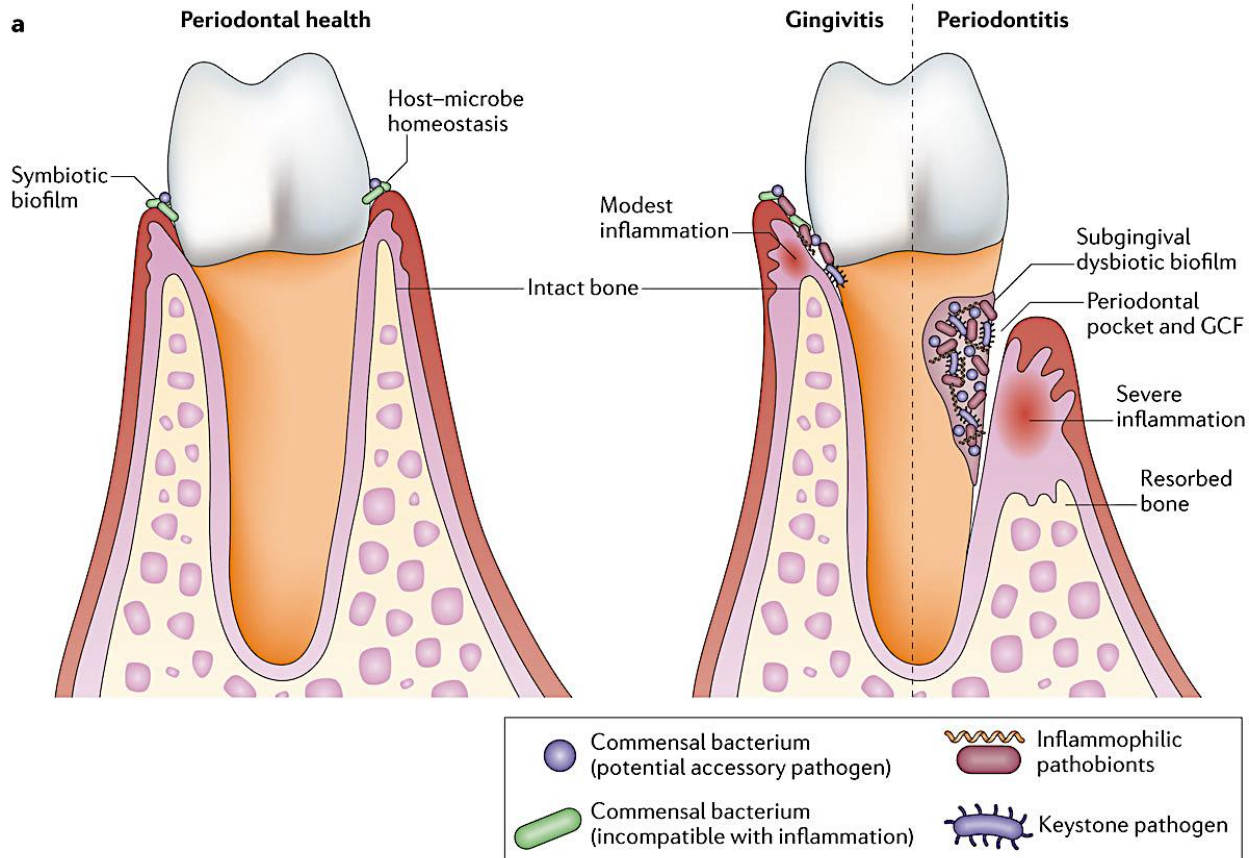




“The challenge of the future is the harnessing of resolution of inflammation for the treatment of chronic inflammatory diseases.”

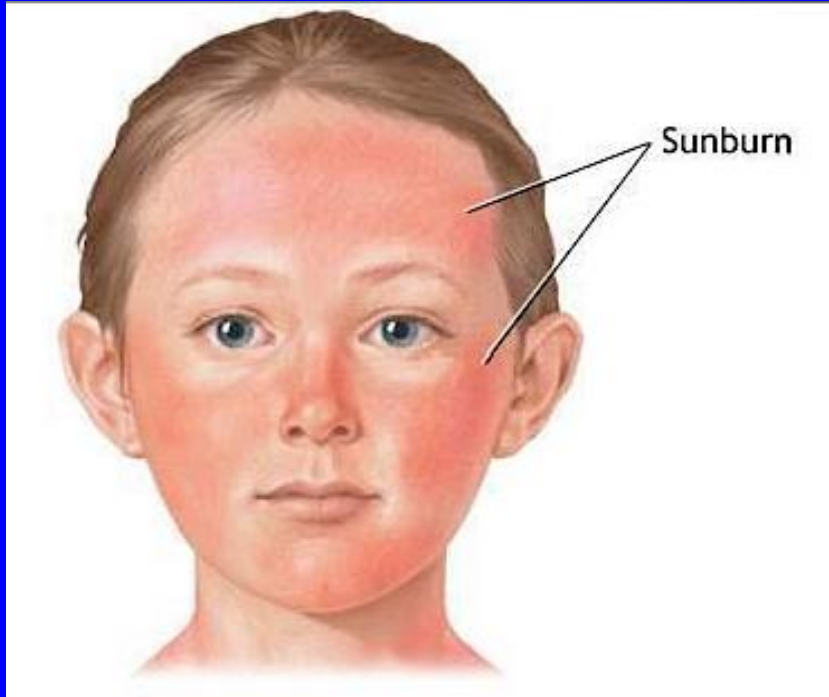
—Thomas Van Dyke, J Periodontal  
April 2014





# Host Modulation!

# What is Inflammation?



**Inflammation—The body's response to any challenge:**

- A sunburn
- A cut on the finger
- An infection

**The first phase of inflammation responses:**

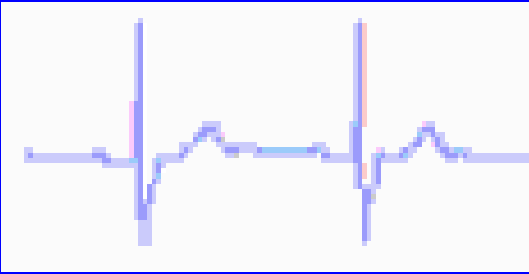
**Signs**

- Redness
- Heat
- Swelling
- Altered function

**Objectives**

- Limit the challenge to the local site.
- Protect the rest of the body.

# The Public Has Heard These Messages... and they are interested



SUNDAY SUN-TIMES  
CHICAGO, IL  
AUGUST 26, 2002  
AUG 11 2002

## Flossing may protect heart

It's not just about losing your teeth—healthy gums might save your life

**By Joe Rives**  
You know that regular flossing along with brushing keeps your gums healthy and can prevent your teeth from falling out. But you still don't do it.  
So consider this: Flossing, according to a growing body of research, might be good for your entire body, not just your mouth. Although not yet definitive, studies are finding evidence that keeping your gums healthy might help prevent heart attacks, premature births, diabetes complications and infections after joint-replacement surgeries.



**Dr. Ken Buelmann**  
"See your teeth."

**Premature births:** According to various studies, pregnant women with periodontal disease are four to seven times more likely to give birth to low-weight, premature babies. The theory is that periodontal disease increases levels of fluids that infect the fetus.  
**Diabetes:** Studies are regularly consistent in showing that diabetics have a higher risk for periodontal disease than do healthy people. In fact, Dr. Alberto Laloy Alvarado of Niles, Ill., for example, has lost several teeth to the disease. He now flosses and brushes daily and gets treated by his periodontist every three months.  
**It's possible** periodontal disease increases blood sugar, putting diabetics at increased risk for diabetes complications. However, the evidence is not conclusive.  
**Surgical infections:** Multiple studies of Buffalo Grove dental patients found that those with periodontal disease had a 10 percent higher risk of infection after hip replacement surgery. It's possible that bacteria from the gums could infect the new joint. So before the operation, he sent her to the dentist for treatment of her periodontal disease.  
It was good advice. The American Academy of Orthopedic Sur-



**Martha Jardin, 18, joins campers and staff of the Lake Geneva (Wis.) Youth Camp attempting to enter the Guinness Book of Records for the most people simultaneously flossing last summer.**

geons says patients getting dental care if necessary.  
**Heart attacks and strokes:** One theory is that bacteria from the mouth flow through the bloodstream to the heart, where they attach to fatty deposits in arteries, contributing to clot formation. Another possibility is that periodontal disease induces inflammation in the arteries, leading to clots.  
Several earlier studies found that people with periodontal disease have a higher risk for heart disease.  
But two recent studies found no significant link.  
"There's just enough evidence yet to list gum disease as a risk factor for heart attacks and strokes," said Dr. Robert Hoover, president of the American Heart Association and chief of cardiology at Northwestern Memorial Hospital.  
Still, it doesn't hurt to floss.  
"It's cheap, it's good for gums, and maybe it's good for the rest of your health, too," Hoover said.  
The best way to prevent periodontal disease is to brush and floss daily and see a dentist twice a year, making sure the dentist checks your gums.  
Flossing helps remove plaque from between teeth where toothbrushes can't reach. These spaces account for about one-third of the surface of the teeth. Plaque comes waxed and unwaxed, regular and flavored, thick or thin. Buelmann's advice was a brand that feels comfortable and doesn't shed.  
"But many people just won't do it," he says.  
"It's human nature," Buelmann said. "Like not dust and vacuum. We know we should do it, but we don't."  
It will take more definitive studies, including some under way, to confirm the effects of periodontal disease on the rest of the body.  
In the meantime, "the prudent thing to do is to make sure your gums are healthy," Buelmann said. "At a minimum, it will save your teeth."

### GUM DISEASE SYMPTOMS

- You have any of these symptoms, see a dentist
- Red or swollen gums
- Gums bleed when brushing or using hard toothbrush
- Gums recede between teeth
- Swollen or tender gums
- Gums pull back, making teeth appear longer
- Pus between teeth and gums
- Changes in the way teeth fit together when you bite



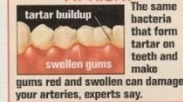
### HOW TO FLOSS

- Remove about 18 inches of floss from container.
- Wrap a few times around one middle finger, then wrap most of the remainder around your other middle finger.
- Leave 1 to 2 inches of floss in the center. Pull taut and pinch between your thumb and index fingers. These fingers will be your guides.
- Slowly and gently work floss between your teeth to the gumline. Do not snap floss into your gums. This can damage your gums.
- Hold the floss against your teeth and scrape away food particles and plaque by moving it up and down the tooth and under the gumline. Do not pull floss back and forth. This can damage your gums.



## THE SURPRISING WAY TO Slash your heart-disease risk

IS GUM DISEASE PUTTING YOUR HEART AT RISK?



gums red and swollen can damage your arteries, experts say.

**While** gum disease, also known as periodontal disease, has always been a menace to our mouths (it's the number-one cause of tooth loss as we age), it's fast emerging as a danger to our hearts as well. "The bacteria that cause gum disease can migrate into the bloodstream and damage artery walls, potentially triggering heart disease and heart attack," explains Kenneth Buelmann, D.D.S., of the American Academy of Periodontology in Chicago. In fact, research suggests that left untreated, gum disease can more than double our risk of heart disease! And studies show that about 75% of

us have it to some degree! But to shut down this hidden health threat:

- 1 Check out your mouth.** "Symptoms of gum disease can be easy to overlook," says Dr. Buelmann. A look in the mirror can help you flush them out. Healthy gums look pinkish; if yours are red and puffy, or bleed when you brush or floss, you could be a sufferer. Your dentist can tell you for sure.
- 2 Get the best treatment.** Scaling and root planing (SRP), a deep-cleaning procedure to remove the plaque that causes gum disease, is the best treatment. But now there are also treatments like Atridox gel, which coat the gums with antibiotics like doxycycline. In trials, they are at least 75% as effective as SRP—with less discomfort.
- 3 Brush it off.** Of course, the best strategy for preventing gum disease is to brush after meals, floss daily and see your dentist once a year. But statistics show 80% of us forget to floss regularly, and more than a third of us don't brush well enough to get rid of gum disease-causing plaque.

**HEALTH TIP**

**CAUTION: "ON THE SIDE" CAN ADD TO YOUR WAISTLINE!**

Asking for sauces, gravies and salad you avoid extra calories—but experts say restaurants may give you twice as much of it when you order this way! Keep dishes diet-light by ladling out only a teaspoon from the container you're given—or dipping the tines of your fork into the dressing between each bite of salad.

WEST BEND JOURNAL  
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## GUM DISEASE CAN BE LINKED TO CHRONIC LUNG PROBLEMS

Due to chronic lung problems, taking that next breath is a challenge for millions of Americans. In fact, lung disease associated with such things as emphysema and chronic bronchitis is the leading cause of death in the United States. People who are concerned about their respiratory health should pay special attention to gum disease, which can make breathing more difficult to fix, according to recent research.

Current research indicates that oral health is not just in your own right, but could be a key to the health of your lungs. Dr. Denise Mann, vice president and director, Delta Dental Plan

of Iowa, says that bacteria from the mouth to the lungs or to other organs and that repeated bacterial infections cause respiratory illnesses to progress. Diminishing the presence of oral bacteria is relatively simple to do through routine care, and ought to be done not just for oral health but for general health.

The connection between oral health and respiratory conditions continues to be studied. One study in the *Pediatric Dentistry* shows that children with asthma have poorer periodontal status and more deterioration on the surface of their permanent teeth than children in the control group who do not have asthma.

Respiratory problems are the latest in the growing list of health concerns - heart disease, diabetes and premature child delivery among them - to be linked to oral health in dentistry journals," concludes Dr. Schooley.

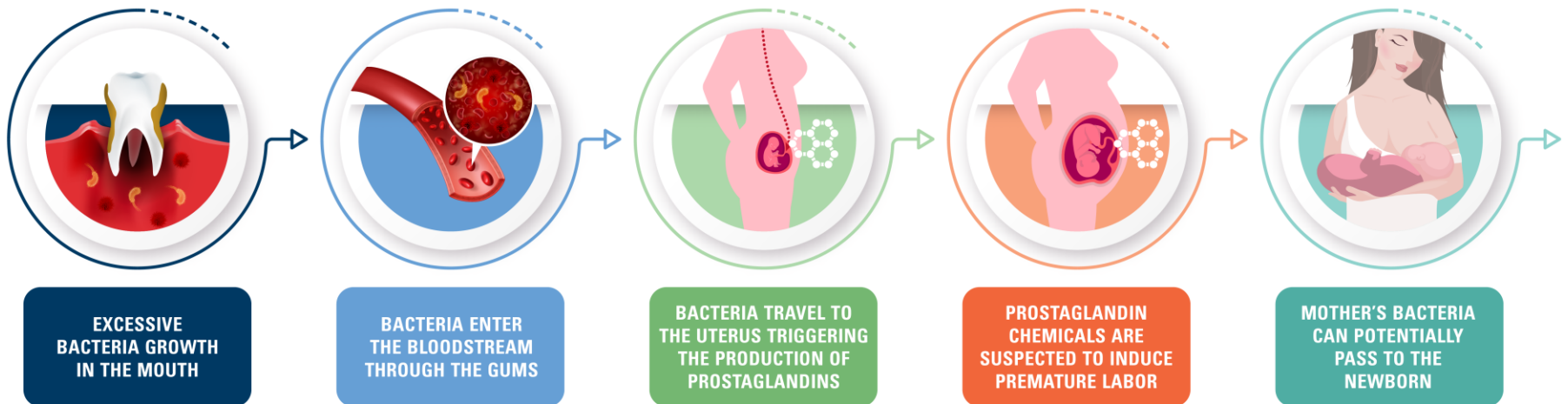
Delta Dental Plan of Iowa is the largest provider of dental insurance benefits in Iowa. It is a member of the Delta Dental Plans Association, a national organization made up of not-for-profit Delta Dental plans, providing groups with dental benefits coverage. The organization is the largest, most experienced dental benefits carrier in the nation. Nationwide, Delta Dental contracts with more than 106,000 dentists in 130,000 locations. Delta Dental provides dental coverage to more than 39 million people in more than 75,000 employer groups across the nation.

It's not clear yet how oral bacteria complicate existing 'breathing problems,' adds Dr. Schooley. "We know that bacteria can migrate from the mouth to the lungs or to other organs and that repeated bacterial infections cause respiratory illnesses to progress. Diminishing the presence of oral bacteria is relatively simple to do through routine care, and ought to be done not just for oral health but for general health."

# Oral Health Can Impact Pregnancy

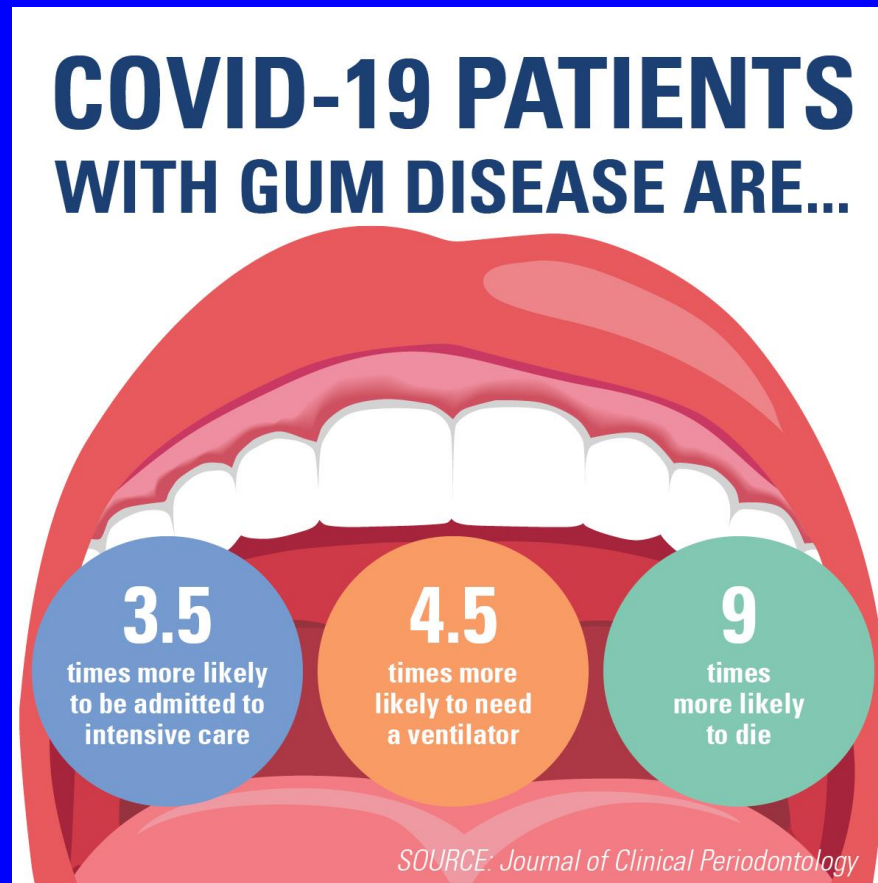
## How Mom's Oral Health Can Be Traced to Baby's Health:

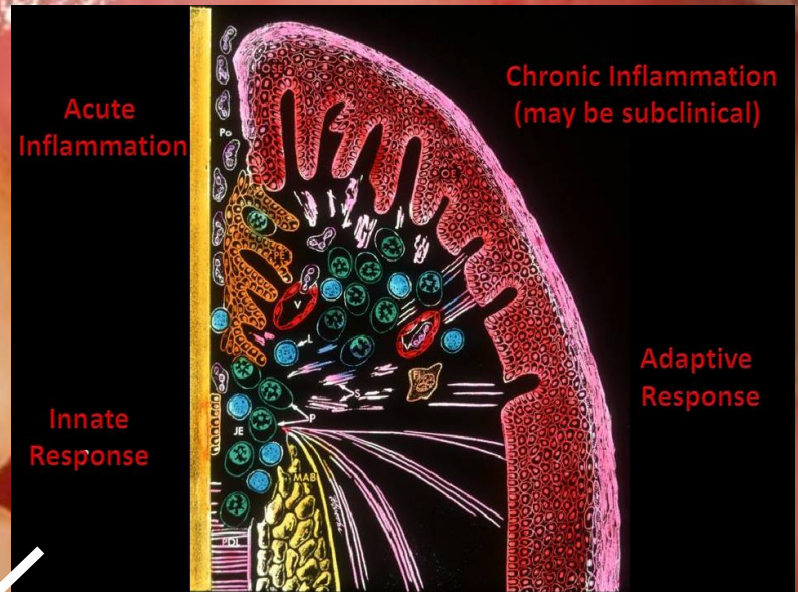
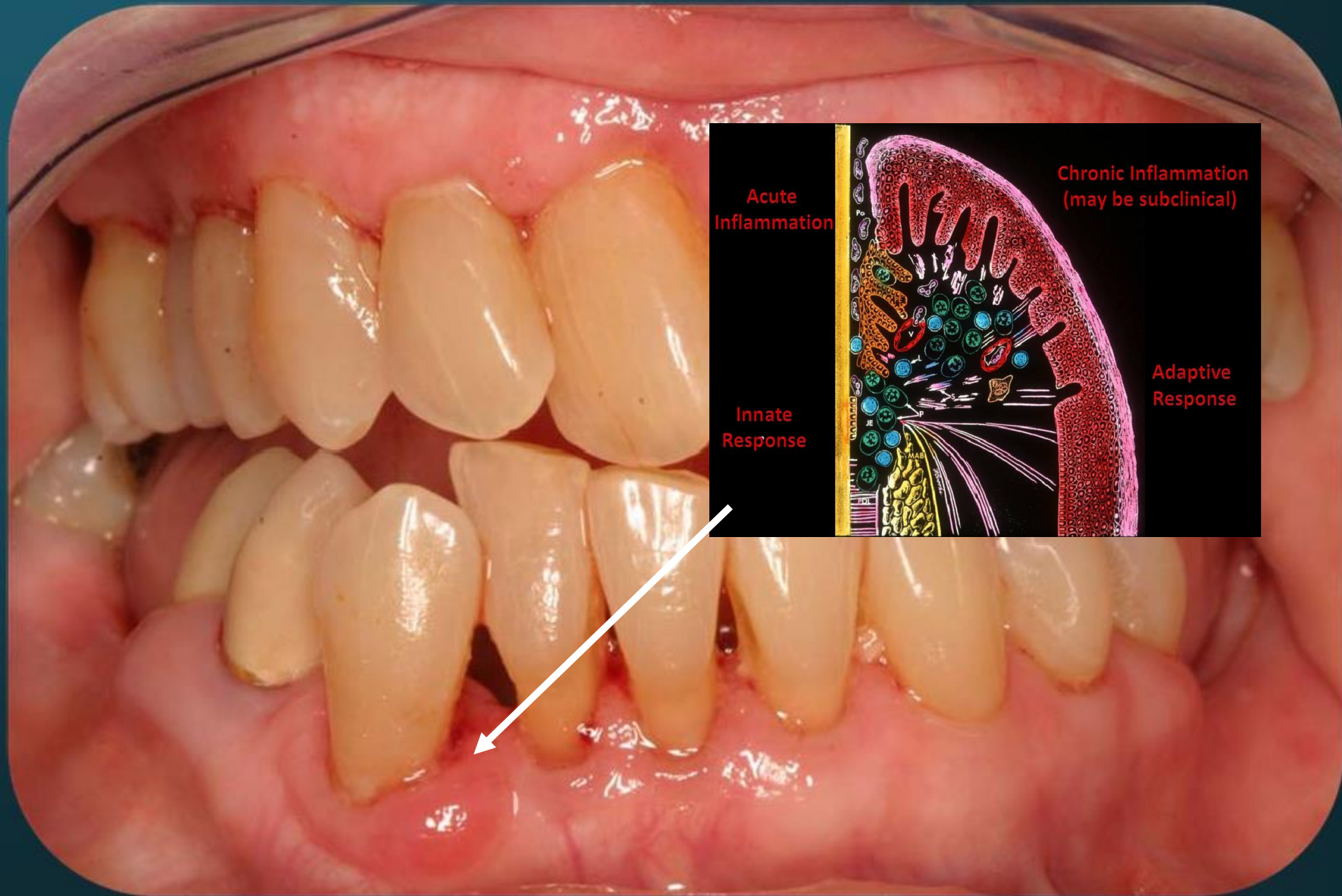
A mom's oral health is connected to the health of her unborn baby — and it can all be traced to the bacteria in her mouth.



Read our blog post here: <https://probiorahealth.com/blog/pregnancy-outcomes-and-oral-health-what-you-need-to-know/>

# Correlations: Oral health and COVID-19



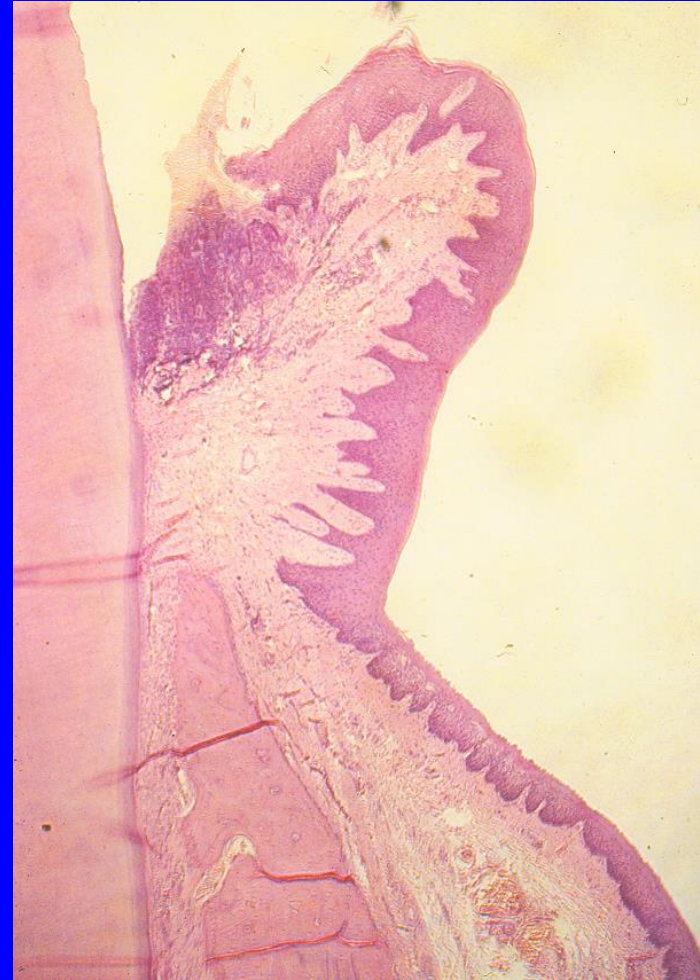
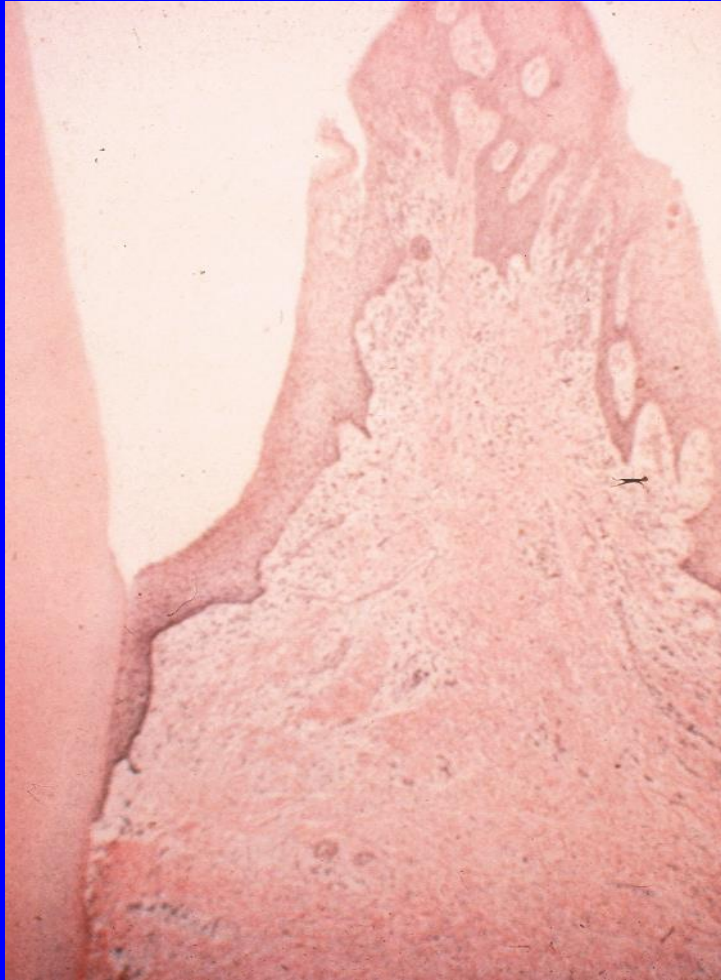


# Activity of the Inflammatory System is at the Center of Major Human Diseases

- Atherosclerotic heart disease
- Asthma
- Alzheimer's disease
- Diabetic complications
- Obesity
- Osteoporosis
- Gastric cancer
- Osteoarthritis
- **Periodontal disease**
- Rheumatoid arthritis



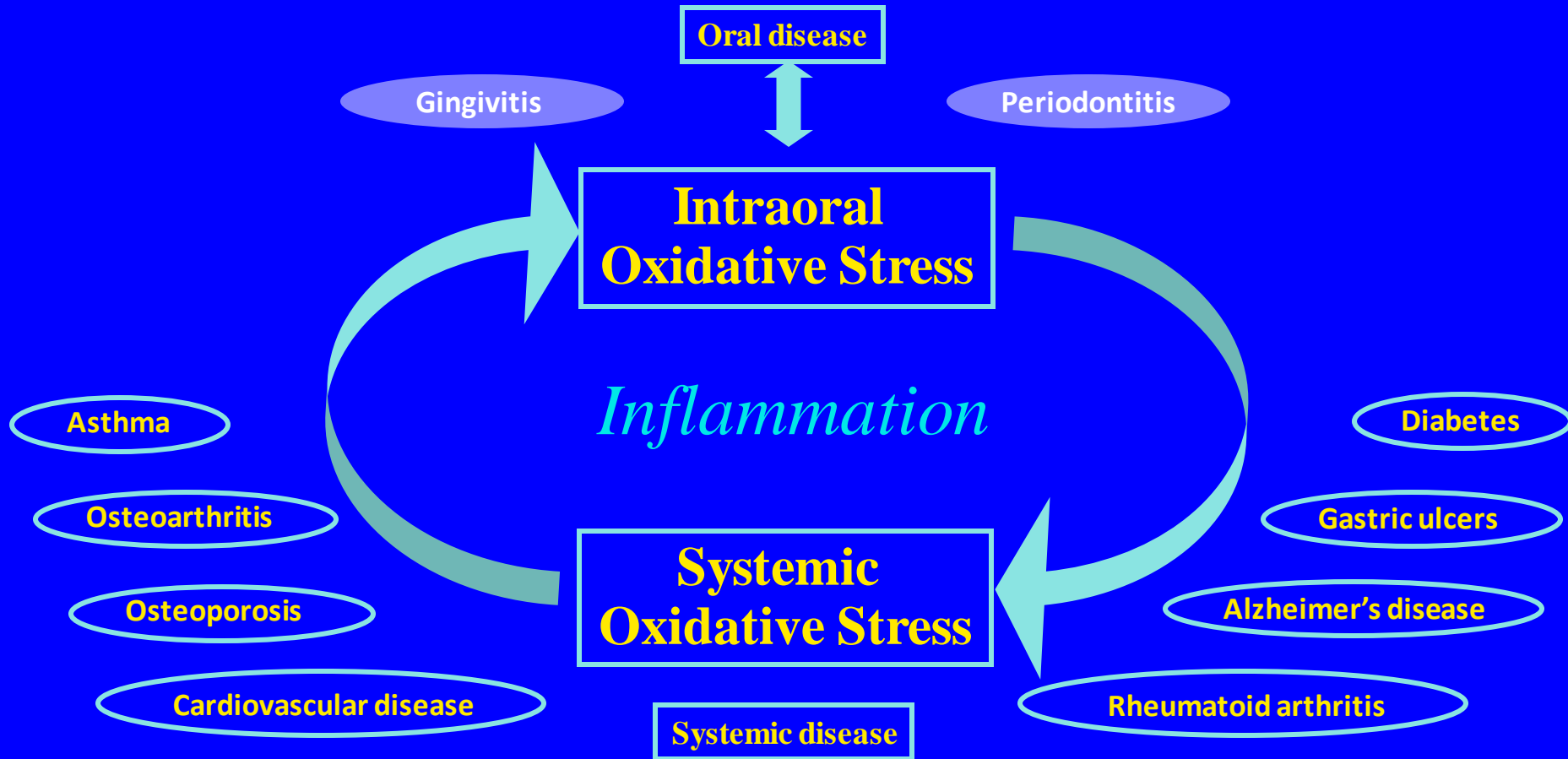
# Periodontal Tissues



# Periodontitis: The “Elevator Speech”

- **Periodontitis** is the body’s reaction to a stimulus resulting in an **overactive** response to produce **inflammatory** mediators that **destroy** its own healthy cells.
- Autoimmune ??

# Periodontal Disease and Systemic Disease Links





# Saliva— **The BODY'S MIRROR**

Salivary diagnostic testing is poised to revolutionize the delivery of health and dental care by providing chairside, noninvasive, and portable disease diagnosis and health monitoring.

By David T. Wong, DMD, DMSC

# Microbiology



FINAL REPORT

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**Sample, Report**

Date Of Birth: 09/24/1980 (38 yrs)  
 Gender: Female  
 Patient Id: 920-C  
 Patient Location: Test Clinic A  
 Maximum Pocket Depth: 7 mm  
 Tooth/Teeth: 5 | 7 | 9 | 15 | 17

**Ordering Provider**

John Doe DDS  
 7400 Flying Cloud Drive  
 Eden Prairie, MN 55344  
 855-123-1234

**Sample Information**

Specimen#: 6001110002    Collected: 10/10/2018  
 Accession#: 201810-12664    Received: 10/11/2018 11:44  
 Specimen: Paper Points    Reported: 10/12/2018 09:26

Clinical Comments: None Reported

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**DNA TEST FOR PERIODONTAL BACTERIA**

**Results: PATHOGENIC BACTERIA DETECTED, 3 ABOVE THRESHOLD**

The result graphic (below) shows the bacterial level for each of the assayed species. The vertical axis displays bacterial genome copies/milliliter in log10. The limit of quantification (LQ) is the lowest bacteria level that can be repeatedly measured. The black lines across each colored bar are the threshold.

Species	Approximate Bacterial Level (log10 copies/mL)	Complex
Aa	10 <sup>5.0</sup>	Aa-Complex
Pg	10 <sup>5.2</sup>	Red Complex
Tf	10 <sup>4.5</sup>	Red Complex
Td	10 <sup>4.8</sup>	Red Complex
Pi	10 <sup>5.0</sup>	Orange Complex
Pm	10 <sup>5.5</sup>	Orange Complex
Fn	10 <sup>6.0</sup>	Orange Complex
Cr	10 <sup>4.8</sup>	Orange-Associated Complex
En	10 <sup>4.2</sup>	Orange-Associated Complex
Ec	10 <sup>4.8</sup>	Green Complex
Cs	10 <sup>5.5</sup>	Green Complex

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**Treatment Considerations: to be determined by the healthcare professional**

- Mechanical/Debridement:** Scaling and root planing (SRP) is a mainstay of therapy to disrupt biofilm, remove plaque and debris compromised tissue. This patient harbors a series of pathogens (Aa, Pg, Tf) that may be refractory to this treatment.
- Systemic Antibiotics:** This patient has indicated allergy(s) to Clarithromycin.
  - Rx** Amoxicillin 500 mg tid for 8-10 days AND Metronidazole 500 mg bid for 8-10 days
  - As always, use antibiotics with care
- Local Antibiotics and Chemical Hygiene:** As an adjunct to SRP, sub-antimicrobial doses of doxycycline hydrate lower collagenase activity and reduce periodontal pocket depth. Alternatively, locally delivered antimicrobial agents (LDA) including minocycline microspheres, doxycycline hydrate in an absorbable polymer, or chlorhexidine in a gelatin matrix have been shown to decrease pocket depth modestly.
- Chemical Antiseptics:** Therapeutic rinses can reduce periodontal pocket depth. Prescription tray application of peroxide gel, as an adjunct to frequent periodontal maintenance appointments for refractory patients, demonstrated significant reductions in bleeding on probing.
- Periodontal Surgery:** For severe and/or refractory periodontitis - surgical approaches such as gum flap repairs, procedures to reduce pocket depth, or other restorative procedures may be indicated.

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**Follow up Recommendations**

- Good periodontal health depends on compliance of a home care regimen as detailed by your healthcare provider. Daily brushing, flossing, as well as attention to nutrition, proper rest and cessation of smoking are essential.
- Follow-up testing between 6-12 weeks with 11-microbes is recommended. Persistence of bleeding on probing is often indicative of unresolved infection. Retesting will identify residual or refractory bacteria.

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Species-specific bacteria (Aa: Aggregatibacter actinomycetemcomitans, Pg: Porphyromonas Ftn: Fusobacterium nucleatum/periodontium, Pi: Prevotella intermedia, Cr: Campylobacter rectus, bacteria (Cs: Capnocytophaga species (gingivalis, ochracea, spirogona)) known to cause in reaction (gPCR). Bacterial levels are reported in log10 copies per mL (e.g. 1x10<sup>5</sup> = 100000 copies/mL) and Capnocytophaga granulosus. This test was performed by Access Genetics in accordance with CLIA requirements. This test has not been cleared or approved by the FDA. If you have any questions, please contact us at 855-123-1234. Approval is not necessary.

Memphis, TN 38501 | Phone: 615.587.2558 | www.microbelinkdx.com 1 of 1



# Meet the HR5 Pathogens

These five bacteria have been designated by the medical, scientific and oral systemic health communities as the most important high-risk pathogens for both oral and systemic issues.



**Aa**

Aggregatibacter  
actinomycetemcomitans



**Pg**

Porphyromonas  
gingivalis



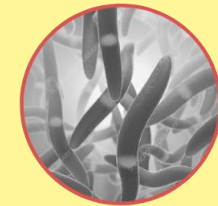
**Td**

Treponema  
denticola



**Tf**

Tannerella  
forsythia



**Fn**

Fusobacterium  
nucleatum

A Key-Stone Pathogen:  
Extremely High-Risk

Red Complex Pathogen.  
Extreme risk for alveolar  
bone loss in children and  
adults.

Extreme risk for CVD,  
ischemic stroke, brain  
abscesses, heart  
infections.

A Key-Stone Pathogen:  
Extremely High-Risk

Red Complex Pathogen.  
A primary cause all forms  
of periodontitis.

Extreme risk for heart  
attack, ischemic stroke,  
T2DM, dementia,  
Alzheimer's disease,  
pregnancy complications,  
and rheumatoid arthritis.

A High-Risk Pathogen

Red Complex Pathogen.  
A primary cause of all  
forms of periodontitis.

Association with  
dementia and  
Alzheimer's disease.

A High-Risk Pathogen

Red Complex Pathogen.  
A primary cause of all  
forms of periodontitis.

Its effect on other health  
issues is similar to other  
oral pathogens listed.

Risk level: Depends on  
genetic variation and  
other pathogen species.  
High concentration  
increases risk.

Highest risk when with Pg.  
Pregnancy risk: preterm  
birth, low birth weight,  
and fetal death. Facilitates  
the maturation of biofilm  
and endothelial  
dysfunction.



# SUMMARY



The Bettmann Archive

*1. If you compare health and disease, you will see different bacterial patterns.*



# SUMMARY



The Bettmann Archive

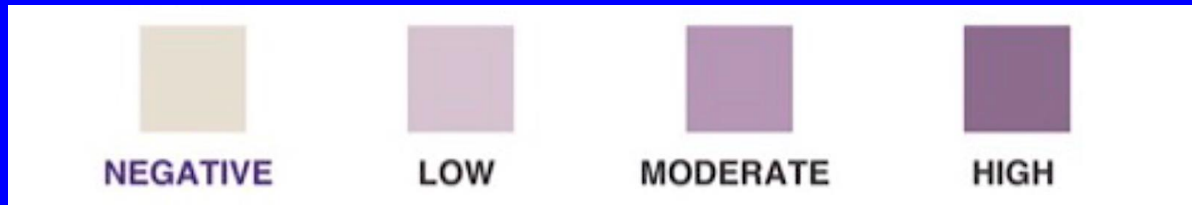
*5. The mere presence of pathogens is not always enough to constitute disease.*

# Oral Neutrophils

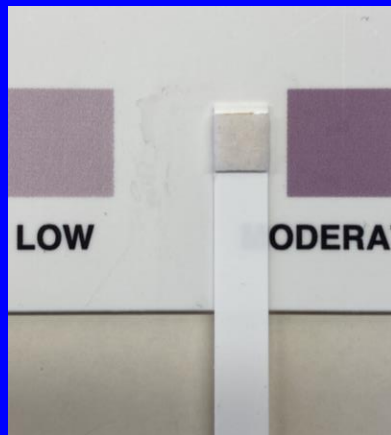
- One of the key signs of active periodontal disease is the presence of oral neutrophils.
- These cells are attracted to the site of inflammation in the mouth and are involved in the immune response to bacterial infections.
- In a healthy mouth, neutrophils are present in small numbers and are well-regulated.
- In a mouth with active periodontal disease, there is an increase in the number of neutrophils, and these cells may be abnormally activated, leading to further inflammation and tissue damage.

# Oral Rinse Test for OIL

*Coming Soon*



Healthy Patient No BOP

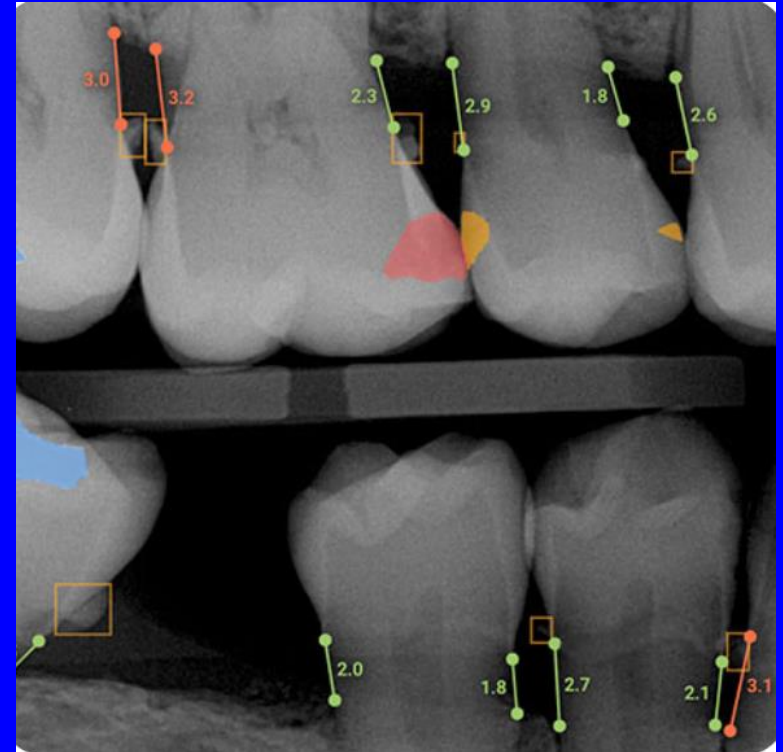


# Dental History is Critical in Formulating a Patient's Periodontal Status

- Familial history
- Medical status
- Smoking habit
- Stress activity
- Parafunctional symptoms

# Artificial Intelligence Models for Diagnosing Gingivitis and Periodontal Disease: *A systematic review*

JPD March 2022



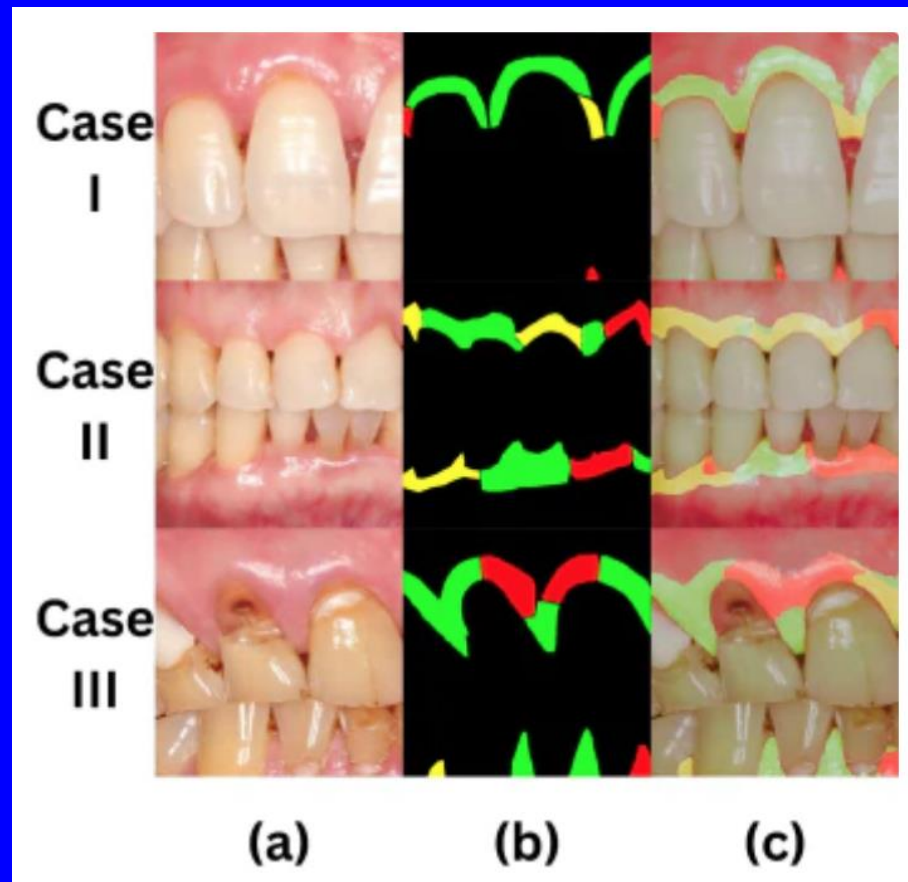
Plaque **73.6%** to **99%**;

Gingivitis from intraoral photographs **74%** and **78.20%**;

Periodontal disease from intraoral photographs **47%** and **81%**;

Alveolar bone loss from radiographic **73.4%** and **99%**.

# Utilizing AI to Measure Gingivitis Severity



FLORIDA PROBE

# VoiceWorks BETA



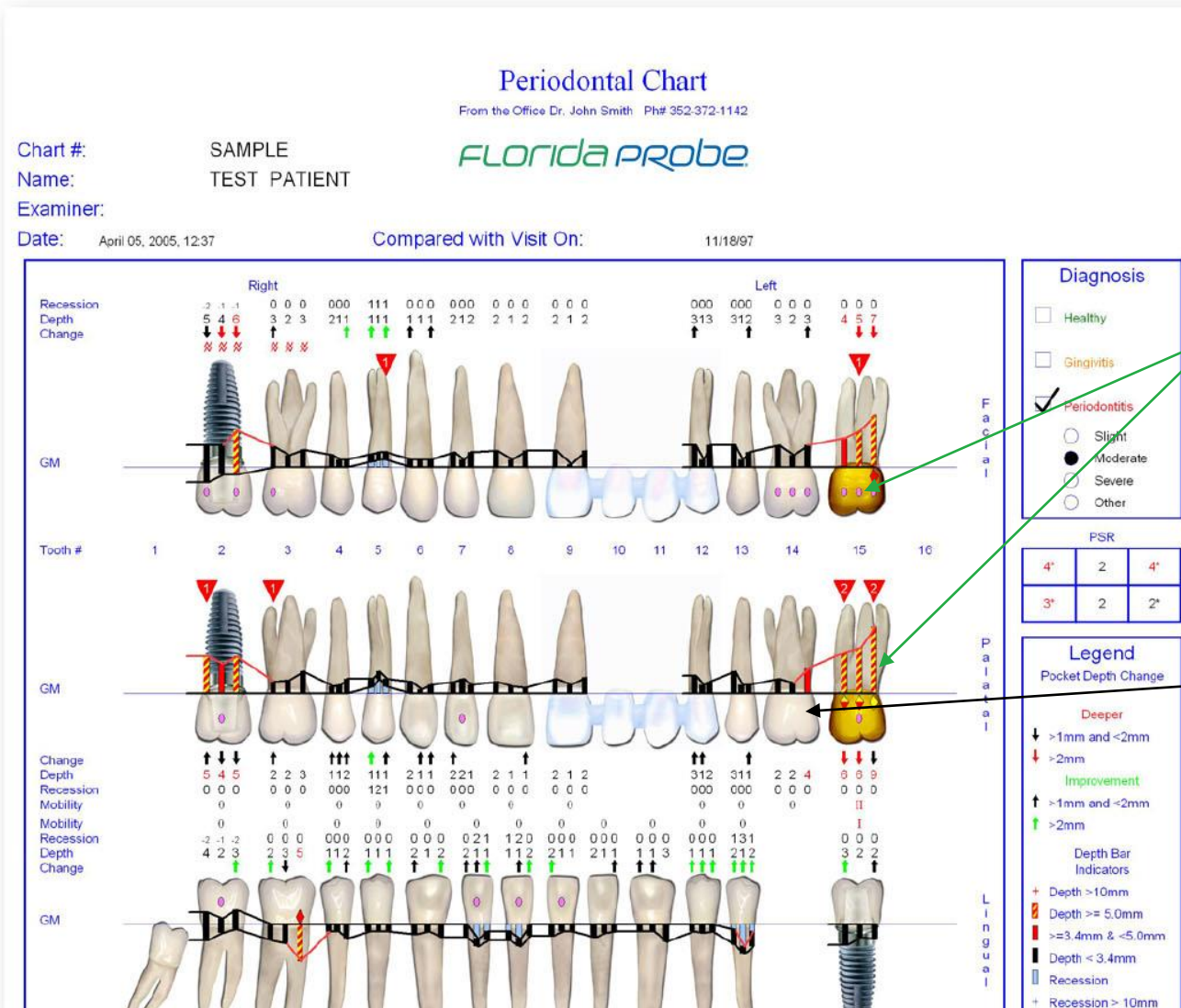
BOLA AI

**DENTRIX**ASCEND<sup>®</sup>



# Identify Treatment Areas Quickly

Use the perio screen and chart to **create a “treatment map”** for scaling and root planing, subgingival antimicrobials or even laser use.



Adjunctive Therapies

Scaling and Root Planing



# *Four* Buckets of Patient Classifications

- Gingivitis: 50% I
- Early Periodontitis: 10% II
- Moderate Periodontitis: 30% III
- Severe Periodontitis: 10% IV

# Step 2: Establish Stage

For mild to moderate periodontitis  
(typically Stage I or Stage II):

- Confirm clinical attachment loss (CAL).
- Rule out non-periodontitis causes of CAL (e.g., cervical restorations or caries, root fractures, CAL due to traumatic causes).
- Determine maximum CAL or radiographic bone loss (RBL).
- Confirm RBL patterns.



For moderate to severe periodontitis  
(typically Stage III or Stage IV):

- Determine maximum CAL or RBL.
- Confirm RBL patterns.
- Assess tooth loss due to periodontitis.
- Evaluate case complexity factors (e.g., severe CAL frequency, surgical challenges).



# Nicotine Ingestion as a Risk Factor for Periodontal Disease...

- Effects neutrophils and monocytes
- Increased oxidative burst
- Impaired phagocytosis and chemotaxis
- Prostaglandins, tissue necrosing factor, collagenase, and elastase increase

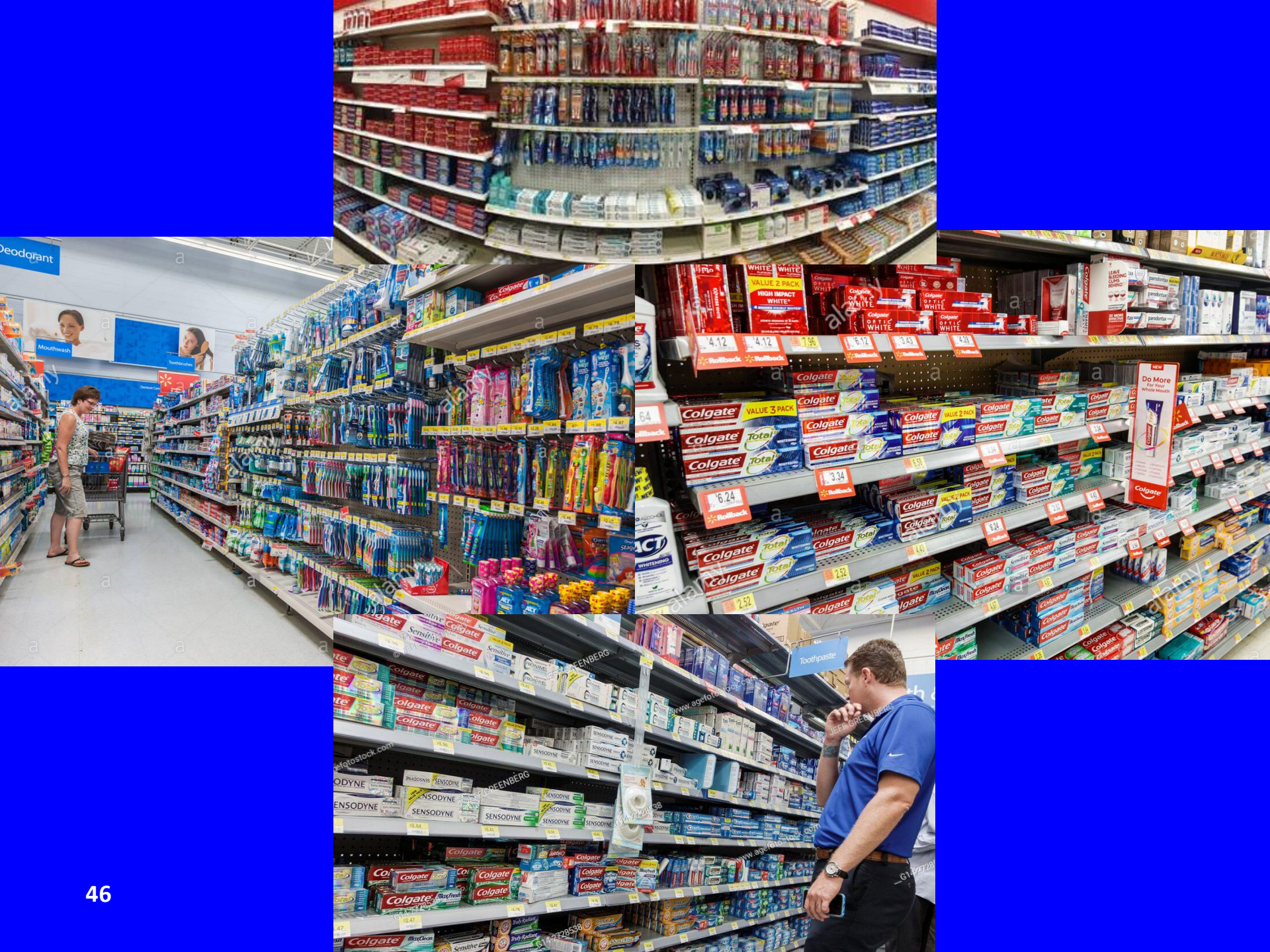
# Diabetes as a Risk Factor in Periodontal Diseases...

- Altered neutrophil and monocyte function.
- Increased oxidative stress.
- Impaired chemotactic and phagocytic function.
- Neutrophils are primed.
- Periodontal infections compromise glycemic control.



Patients will diagnose  
their disease condition...  
and **WILL** treat themselves...

**Thank you, Dr. GOOGLE...**



NEW

# INTRODUCING THE WORLD'S FIRST BLUETOOTH CONNECTED TOOTHBRUSH:

## Two Way Bluetooth Interactivity

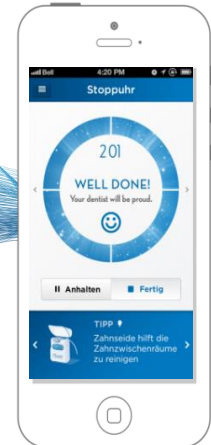


### Brushing Feedback

- Time
- Quadrant
- Excess pressure
- Brushing mode
- Battery status

### Brush Customization

- Personal brushing target
- Preferred modes
- Preferred signaling





**Are you using it?  
Are you doing it 2X day?  
When are you doing it?**



**Roheela Shah**

Email: RoheelaS@gmail.com

Sonicare Model: FlexCare Platinum Connected

Progress report

**ORAL CARE SNAPSHOT**

**Brushing 2x daily**  
per 30 day period

**23<sup>+</sup> days**

Last report: 19/30 days

**Interdental**  
per 30 day period

**17<sup>-</sup> days**

Last report: 22/30 days

**Mouth rinsing**  
per 30 day period

**07<sup>-</sup> days**

Last report: 16/30 days

**Tongue cleaning**  
per 30 day period

**28<sup>+</sup> days**

Last report: 28/30 days

**FOCUS AREAS FOR IMPROVED BRUSHING TECHNIQUE**

Coverage

Pressure

Scrubbing



**What is the Sonicare App?**

With the new Philips Sonicare FlexCare Platinum Connected power toothbrush, your patients have an inspirational coach in the palm of their hand. This brush enables patients to catch their bad habits and improve them in real time. It even establishes small, achievable goals that help them build up streaks of good habits that can improve their entire oral care regimen. A dental professional can't be everywhere, but this connected toothbrush is the next best thing.

Learn more at [phillipsoralhealthcare.com](http://phillipsoralhealthcare.com)

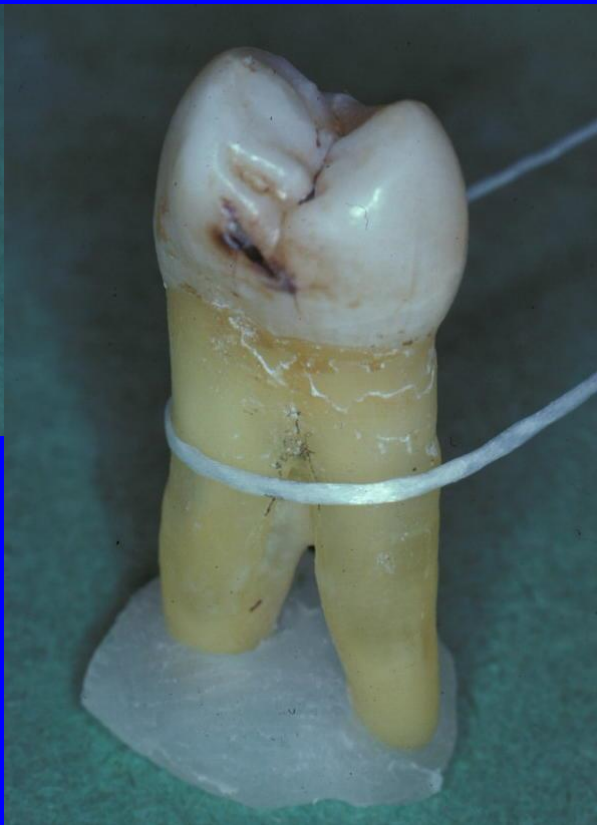
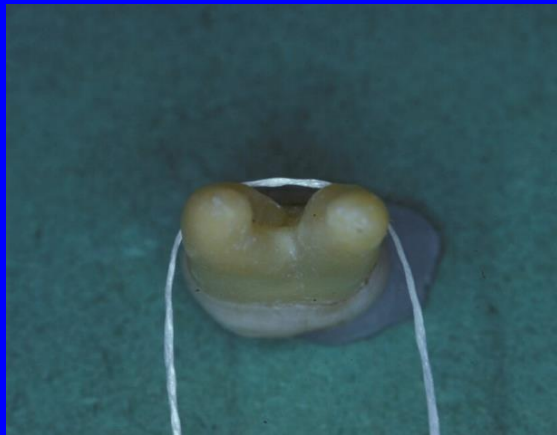


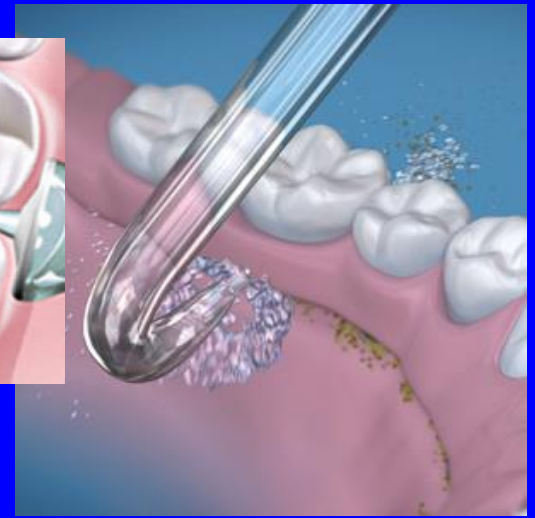
Download on the App Store

Get it on Google play



# Floss Limitations in Periodontal Patients





# Interproximal for Oral Hygiene



- Soft-Picks® remove interproximal plaque and reduce interproximal gingivitis at least as well as dental floss.<sup>2</sup>
- Soft-Picks® were also shown to reduce gingivitis by 33% over 6 weeks.<sup>2</sup>

1. Source: SDM, December 2015 and IRI 52 weeks ending July 10, 2016  
2. Yost KG, Mallatt ME, Liebman J: Interproximal gingivitis and plaque reduction by four interdental products. J Clin Dent 2006; 17: 79-83.

©2016 Sunstar Americas, Inc. P16145

## TePe Easypick™



XS/S      M/L      XL

# Novel Treatment Strategies...

- Promote the resolution of “bad” inflammation while not effecting “good” inflammation.

# Patient Management and Living Well Longer

- Stop smoking and control diabetes—compromise many systems, tissue repair and inflammation
- Reduce direct sources of chronic inflammation
  - Visceral fat
  - Chronic infections, for example, periodontitis
- Activate metabolic control systems (Sirtuin genes)
  - Exercise
  - Reduce calories
  - Resveratrol—red wine
- Activate inflammation resolution systems (Resolvins)
  - Enrich diet with omega-3 fatty acids and low dose aspirin

## **Increased risk of periodontal diseases.**

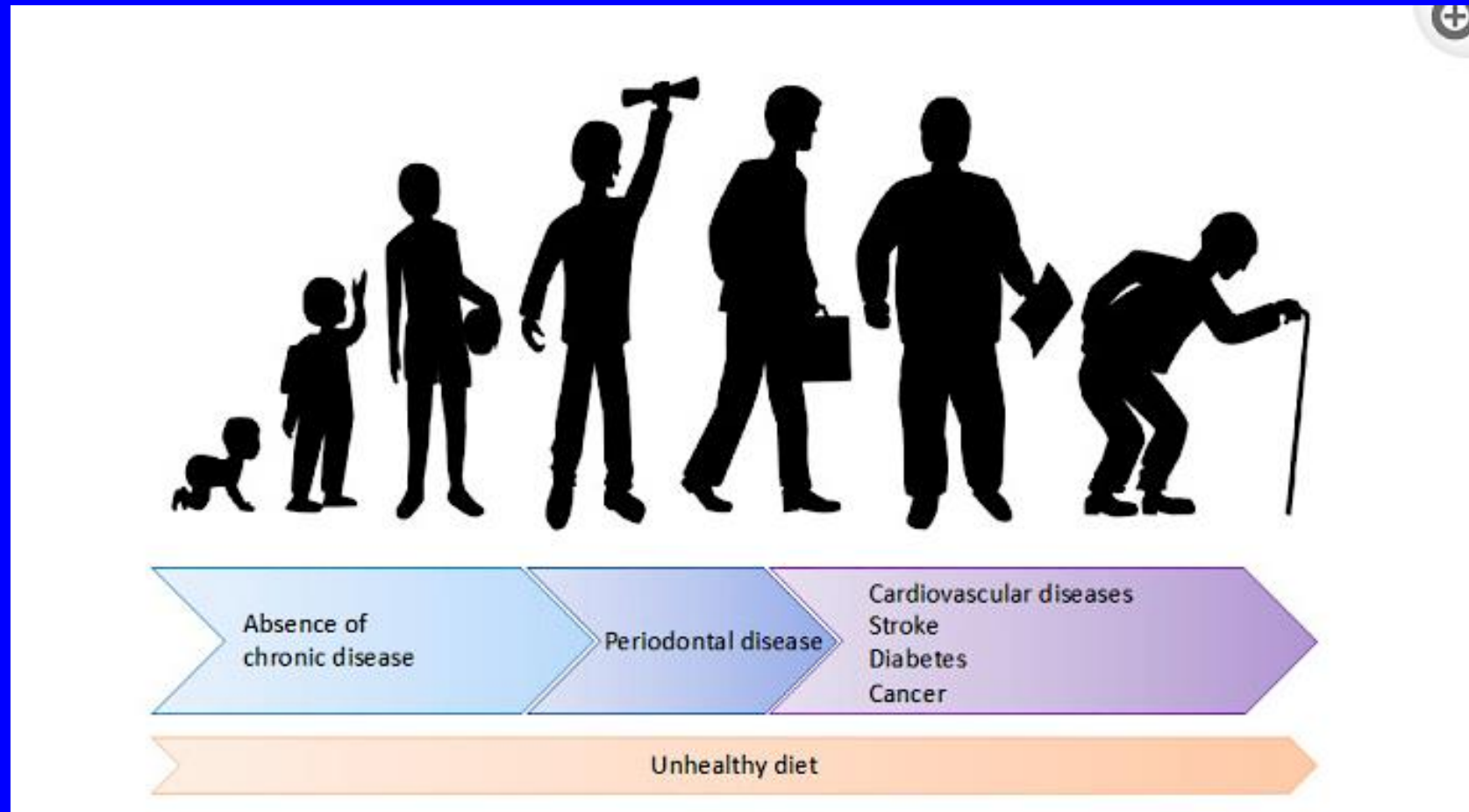
High-sugar, high-saturated fat, low-polyols,  
low-fiber and low-polyunsaturated-fat intake

## **Reduces the risk of periodontal diseases.**

High-fiber and high-omega-6-to-omega-3  
fatty acid ratio intake

# Nutrition as a Key Modifiable Factor for Periodontitis and Main Chronic Diseases

Martinon, et al *J Clin Med.* 2021 Jan; 10(2): 197.

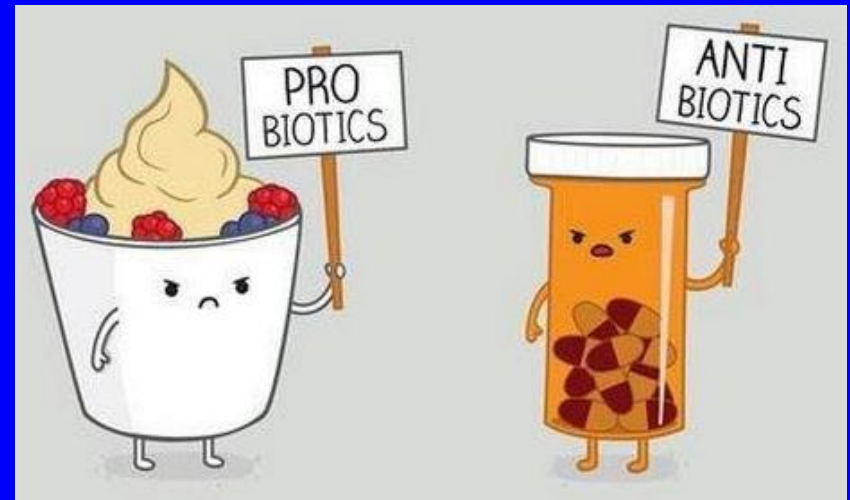


Nutrients		Risk of Periodontal Disease <sup>1</sup>
Macronutrients		
Carbohydrates	Sugars	↑ (●●●●)
	Polyols	↓ (●●●●)
	Fibers	↓ (●●●●)
Fat	Saturated fatty acids	↑ (●●●●)
	Polyunsaturated fatty acids	↓ (●●●●)
Micronutrients		
Vitamins	Vitamin A	↓ (●●●●)
	Vitamin B	↓ (●●●○)
	Vitamin C	↓ (●●●●)
	Vitamin D	↓ (●○○○)
	Vitamin E	↓ (●○○○)
	Vitamin K	Not determined
	Calcium	↓ (●●●○)
	Magnesium	↓ (●○○○)
	Iron	↓ (●○○○)
	Zinc	↓ (●●○○)
	Polyphenols	↓ (●●●●)
	Prebiotics and probiotics	↓ (●○○○)



# What are Probiotics?

- Probiotic literally means “for life.”
- “**Live** microorganisms, which when administered in **adequate amounts**, confer a **health benefit** on the host.”
- **Paradigm shift: From curative care...to preventive care**

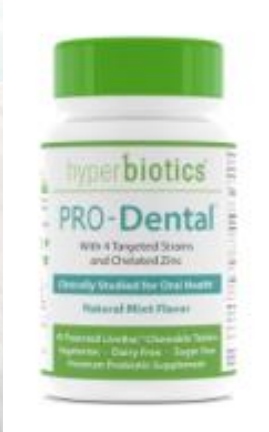


Source: Report of a Joint FAO/WHO Expert Consultation on Evaluation of Health and Nutritional Properties of Probiotics in Food Including Powder Milk with Live Lactic Acid Bacteria (October 2001)



If we all have the same detrimental bacteria in our mouths, **WHY DOESN'T EVERYONE** have serious tooth decay and periodontal disease?

– Dr Jeffery Hillman, 1980 –



**A healthy body starts with a healthy mouth.**



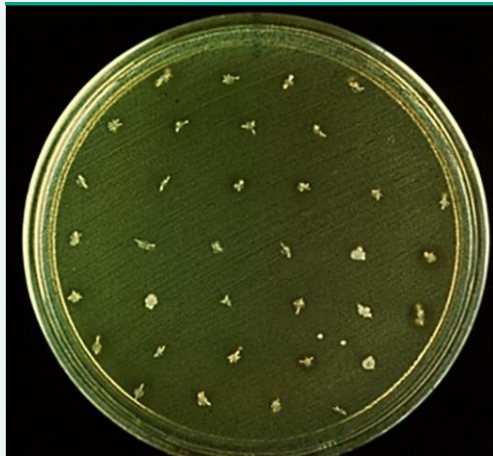
# ProBiora3<sup>®</sup>: Patented probiotic strains



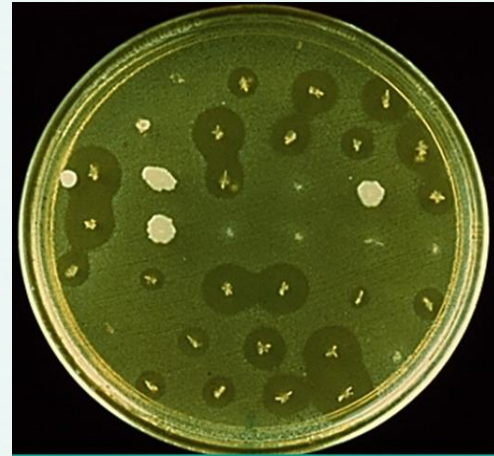
- ✓ Native to teeth and gums
- ✓ Binds to teeth and biofilm
- ✓ Flourishes below the gingival margin

# Repopulate and Replenish with Healthy Bacteria

DISEASED PLAQUE



HEALTHY PLAQUE



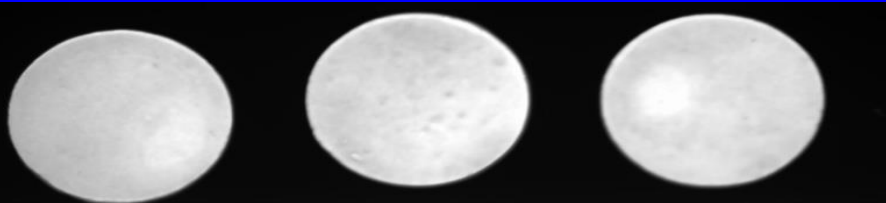
# Before and After



## Hydrogen peroxide production by ProBiora3® strains also provides a whitening effect

Tea and chlorhexidine-stained ceramic chips treated with ProBiora3® or untreated

Treated



Control



*4 Weeks = Average Whitening was 2–3 Shades*



# ProBiora® Professional Strength: Recommended by leading dentists since 2009

- ✓ Easy
- ✓ Effective
- ✓ Safe
- ✓ Backed by 30+ years of research
- ✓ Natural and non-GMO



- ✓ Healthy gums and teeth
- ✓ Whiter teeth
- ✓ Fresh breath
- ✓ Soy-, wheat-, nut-, and gluten-free



# Help Kids Fight Caries: Add ProBiora® Kids to their routine!

- 80% of children worldwide suffer from caries.
- Brushing their teeth is obviously not enough.
- Kids need help.
- Reward them for brushing with tasty ProBiora®.
- All it takes is one tablet dissolved in their mouth after brushing.
- Kid-friendly, orange creamsicle-flavored.
- Gluten-free, suitable for vegetarians, safe to use with sleep aids and dental appliances.

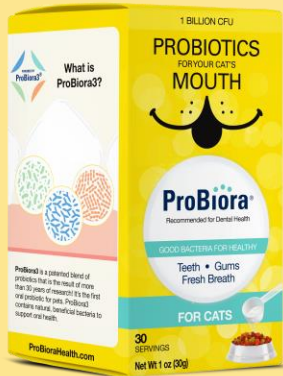
Give kids a new advantage in the  
fight for their oral health!



# ProBiora for your *Furry Family*, too!

## Introducing ProBiora® for Dogs and ProBiora® for Cats

- 30 servings jar and 30 pre-packaged individual serving options in the form of sachets\*
- ProBiora for Dogs and ProBiora for Cats have same formulation as ProBioraPet®



\*sachets pictured to the right of the pouches on the second row

# What is Oxidative Stress?

- Oxidative Stress is the common bad actor in the Oral Systemic Link.
- Oxidative stress represents an imbalance between free radicals and the body's ability to readily detoxify the reactive intermediates or to repair the resulting damage.

# Oxidation is a Natural Process in an Oxygen Rich Environment

## Examples of Oxidation



# Periodontitis: Clinical Evidence



Day 0, AO



Day 21, AO





**Where would we be without spit?**







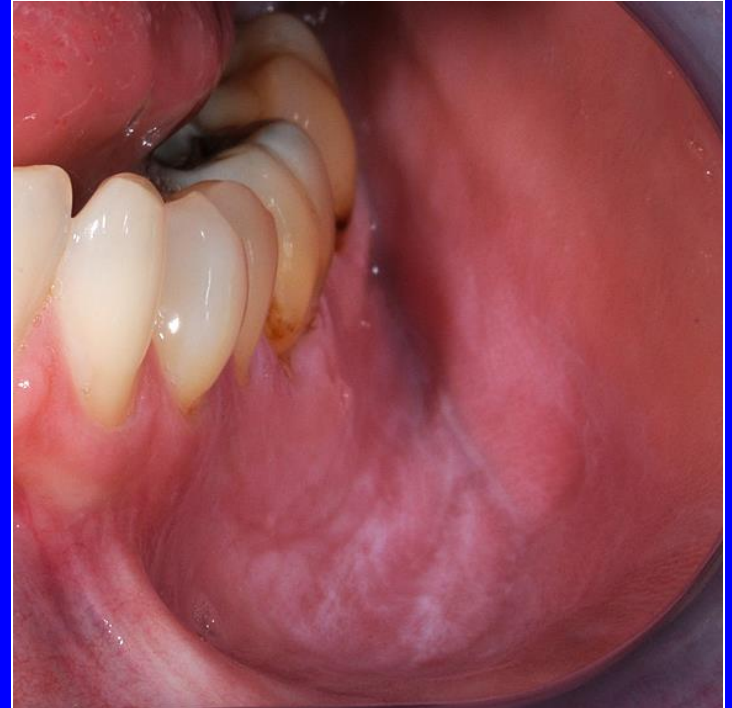
**Initial Exam**



**Three Months after  
Antioxidant Gel**



# Reaction to Nicotine



# Chlorhexidine Kills

- Fibroblast death.<sup>1</sup>
- Inhibitory effect of chlorhexidine on healing wounds.<sup>2</sup>
- Chlorhexidine applied to surgical site prior to wound closure can have serious toxic effects on gingival fibroblasts and negatively affects wound healing.<sup>3</sup>

**1)** Toxicol Appl Pharmacoll, 2009, Faria, et. al.: Chlorhexidine-induced apoptosis or necrosis in L929 fibroblasts: A role for endoplamic reticulum stress

**2)** Int. J. Morphol, 2006, Salami, et. al.; A comparison of the Effect of Chlorhexidine, Tap Water and Normal Saline on Healing Wounds

**3)** J Periodontol, 1999, Mariotti, et. al.; Chlorhexidine-induced changes to human gingival fibroblast collagen and non-collagen protein production

# Antioxidant Technology

## Key ingredients

- Antioxidants Ferulic acid and Phloretin
  - Ferulic acid is found in from seeds and leaves of plants.
  - Phloretin is derived mainly from apples.
  - Polyphenolic antioxidants
- Menthol, Thymol, and Essential Oils
  - Have been shown to support antiseptic activity.
  - Essential oils sage oil and clove flower oil support the effects of menthol and thymol.
- Xylitol
  - Xylitol is specific in its inhibition of strep mutans.

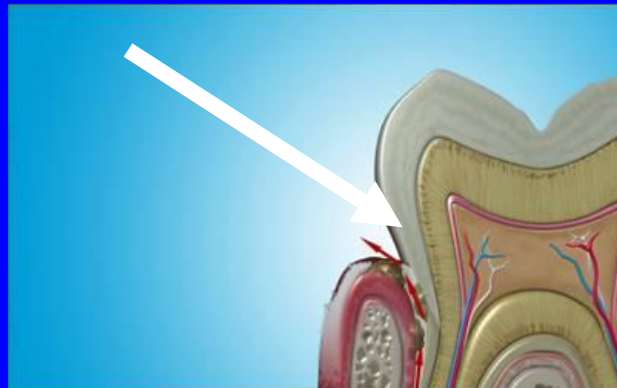


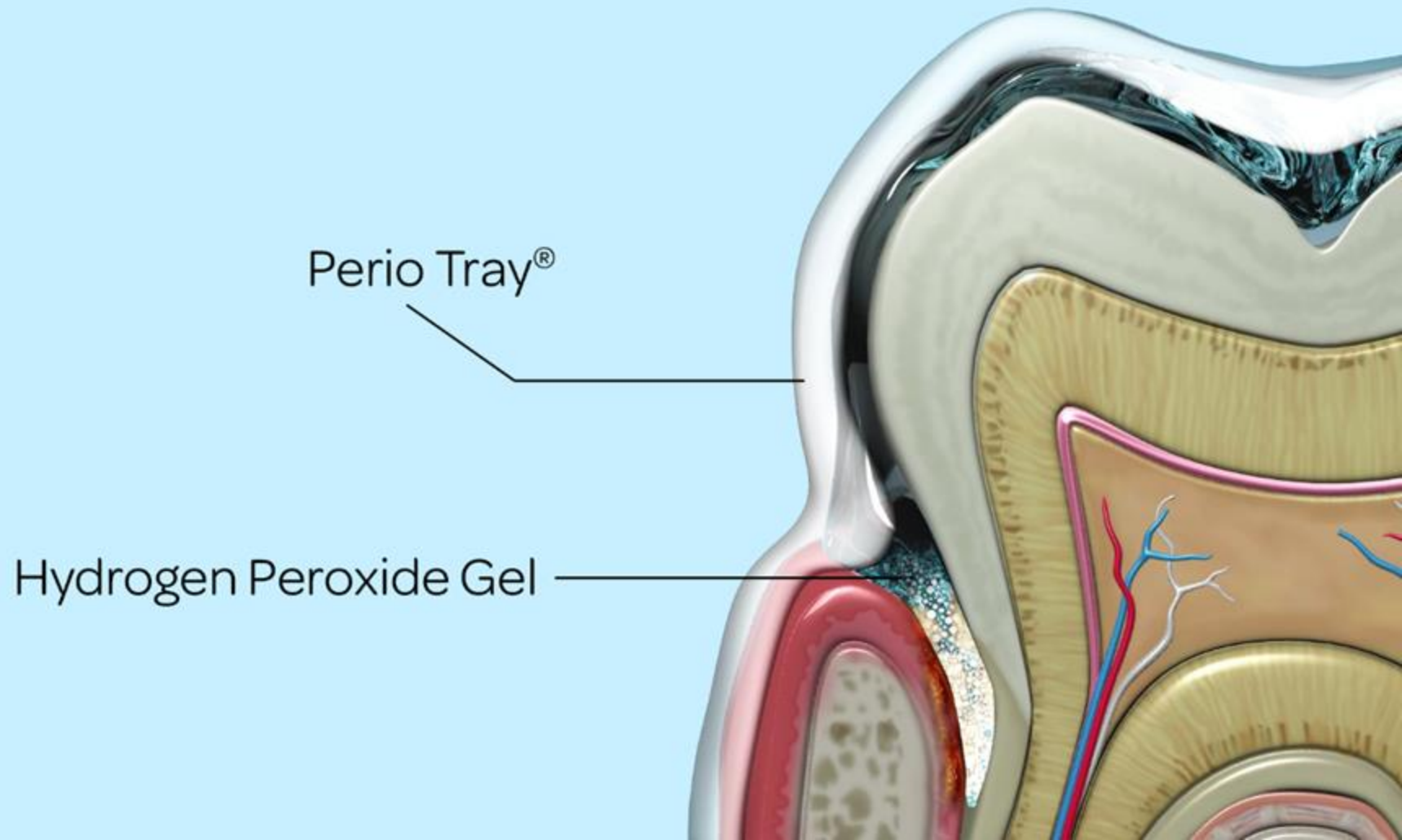
# Non-Invasive Delivery of Medications Periodontal Pockets

PerioProtect



PerioRestore





Perio Tray®

Hydrogen Peroxide Gel

# Treatment Solution for the Post-Antibiotic Age

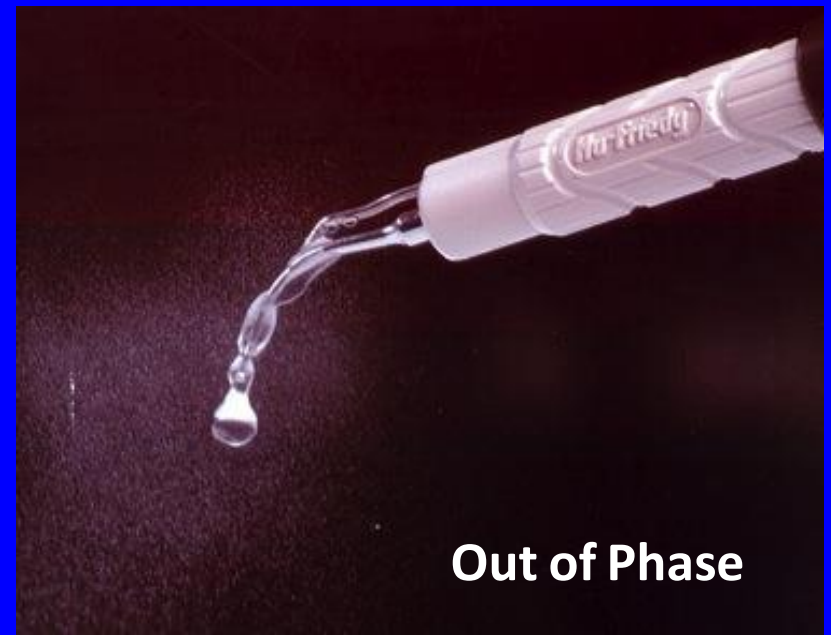


- 1.7% hydrogen peroxide.
- Oral debriding agent and oral wound cleanser.
- Debrides biofilm matrix and bacterial cell walls.
- Oxygenates the subgingival microenvironment so that healthy bacteria repopulate at the expense of pathogens.
- Whitens teeth without sensitivity of high peroxide concentrations.
- Freshens breath.

# Decrease Power. No More Than 33% and Decrease Water!



Decrease water!



Light debris and biofilm removal

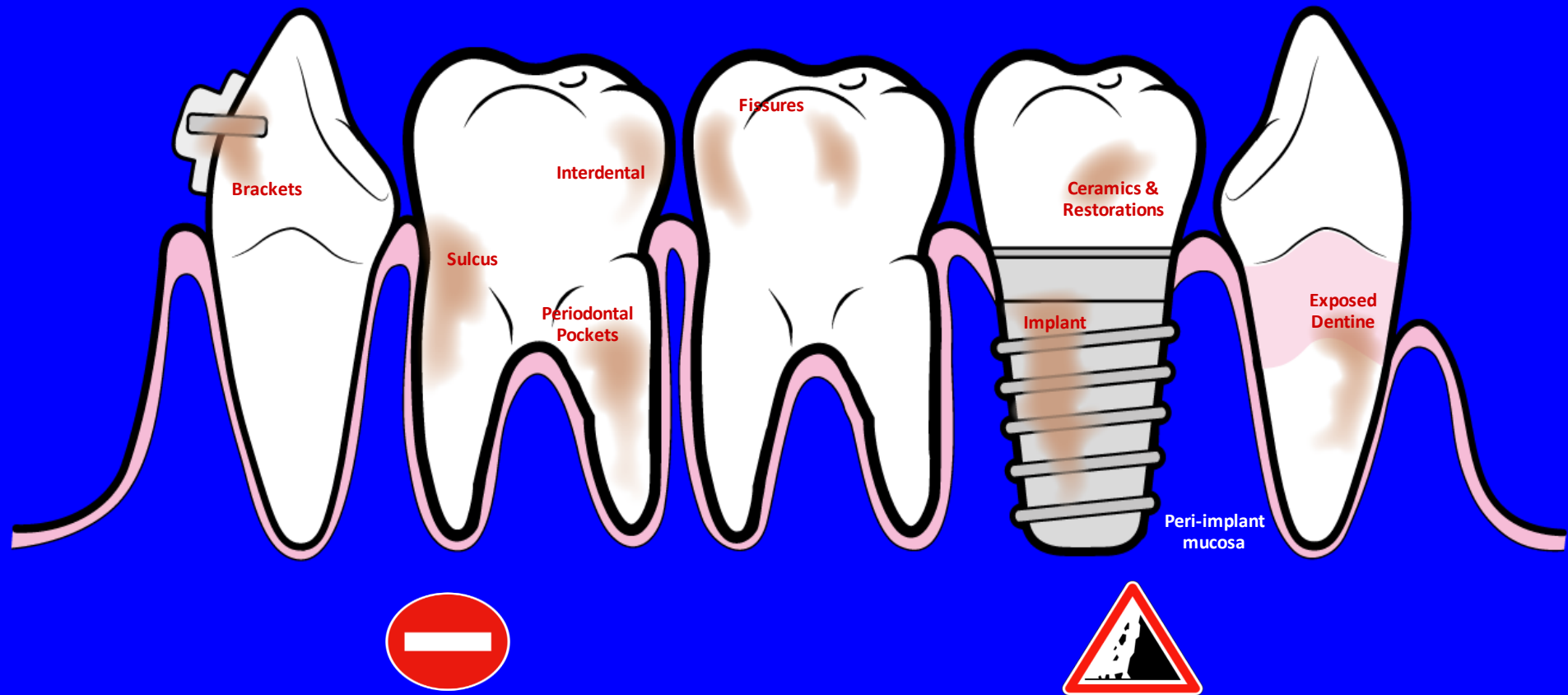


Ref. F00254

10Z



# Inaccessibility to Biofilm

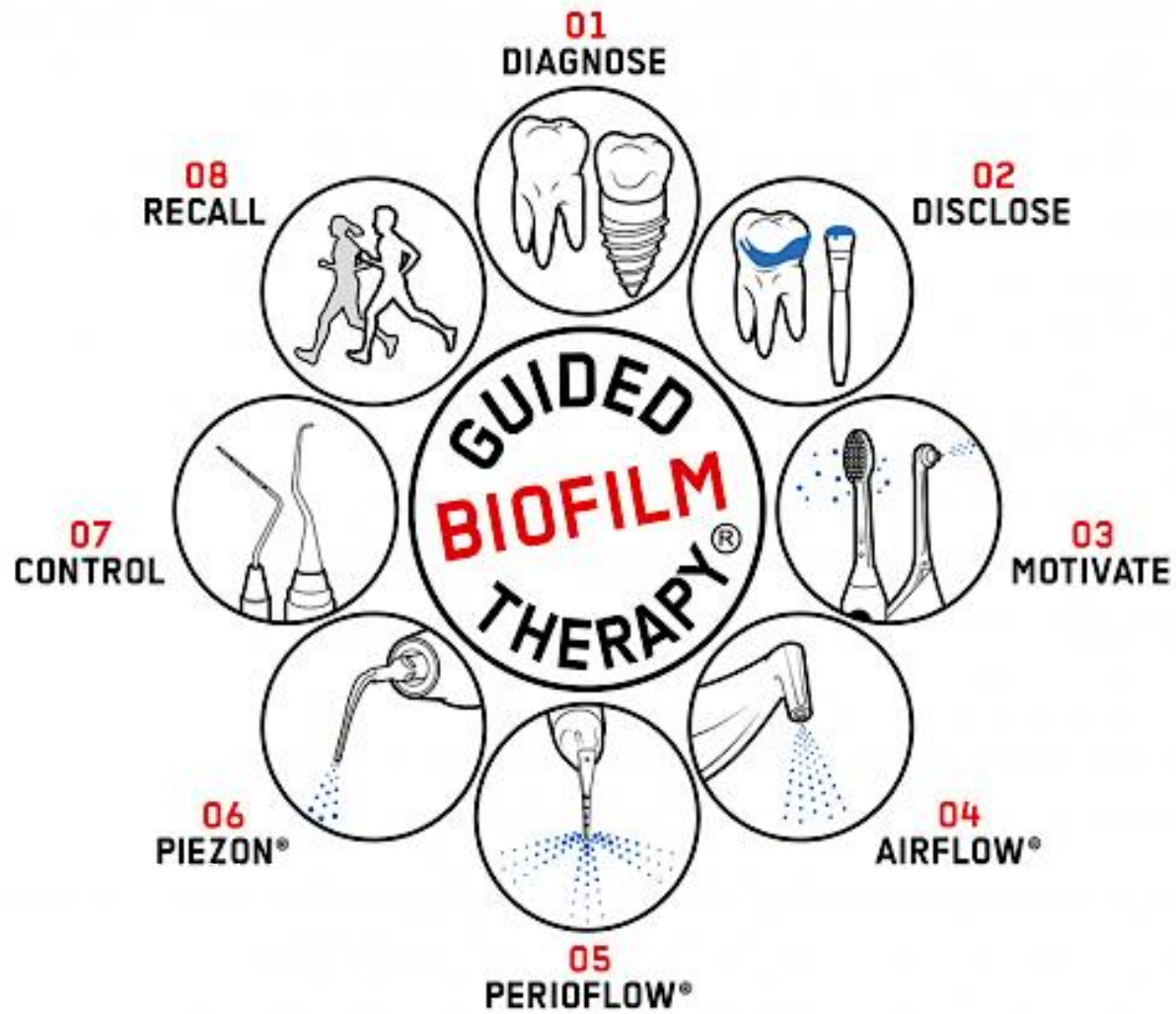


Toothbrushes and rubber cups do not access.

Hand instruments scratch.

# Medicinal AirFlow Devices

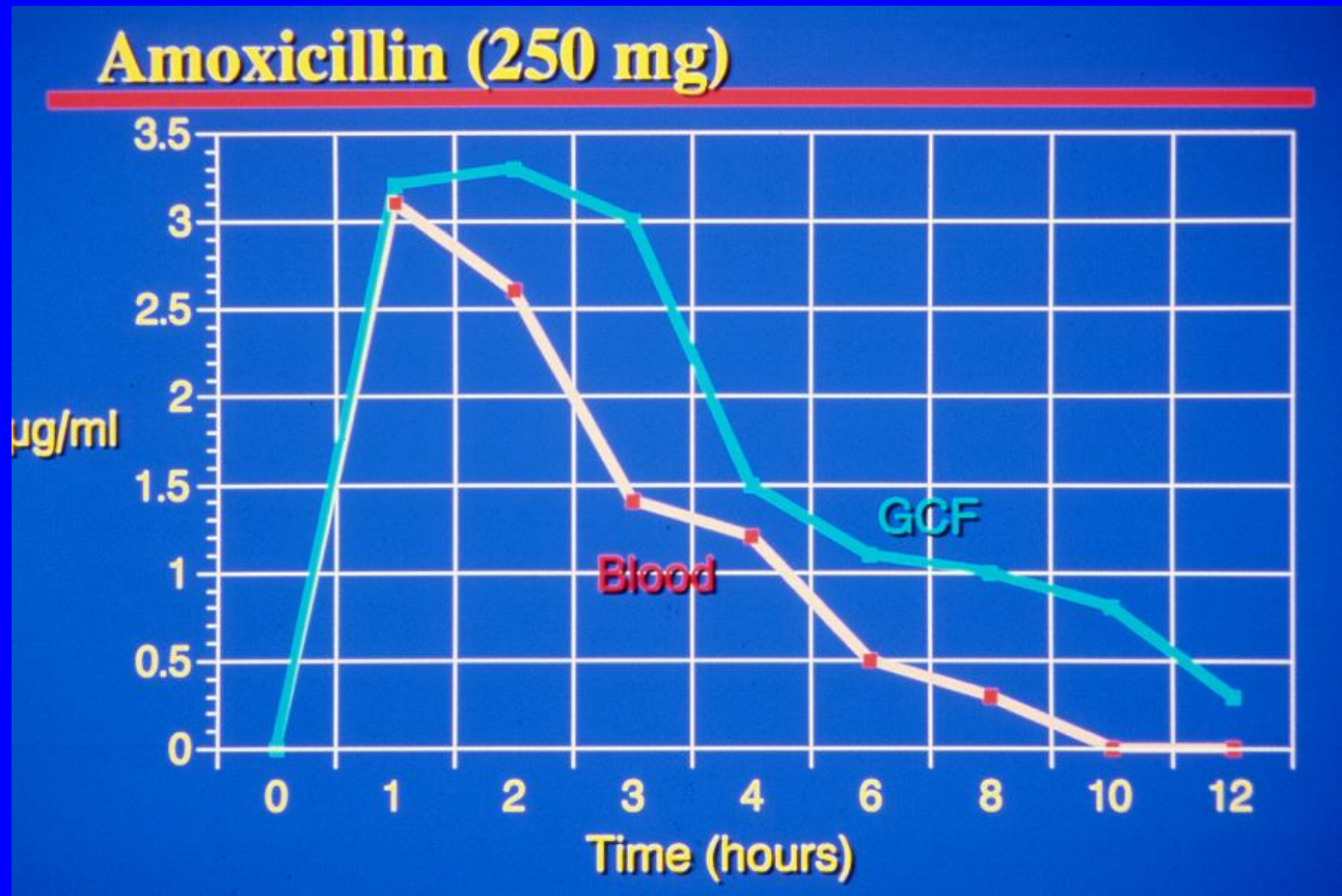






# **Chemotherapeutic Periodontics**

# Systemic Antimicrobial Therapy





**ML  
1999**



# Indications for Systemic Antibiotics

- Juvenile Periodontitis
  - Localized vs. Generalized
- Rapidly Advancing Periodontitis
- Refractory Periodontitis



# Local Delivery Antibiotics

- User-friendly.
- Stays in place.
- Requires no removal.
- Enhances the effect of debridement.

# How to Use:

Place subgingivally

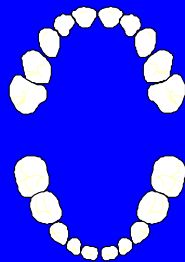


# Managing Inflammation...

- Decrease or change flora.
- Utilize NSAIDs to target lipids and change the pro-inflammatory role.
- Effect the destructive enzymes.
- Modulate the host.

“The goal of my practice is simply  
to help my patients retain their teeth  
*all of their lives* if possible...  
in maximum comfort, function,  
health and esthetics.”

– Dr. L. D. Pankey





- Speaker
- Industry adviser
- Consultant to today's dental practice who desires to enhance periodontics

**[Sam@drsamlow.com](mailto:Sam@drsamlow.com)**

**[www.drsamlow.com](http://www.drsamlow.com)**