

DR. HYMAN+

Functional Dentistry

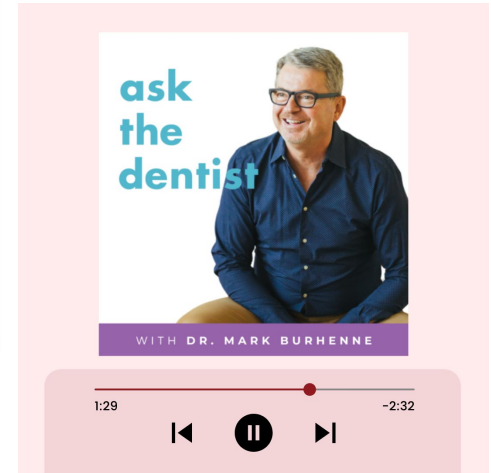
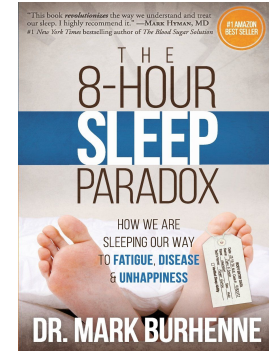
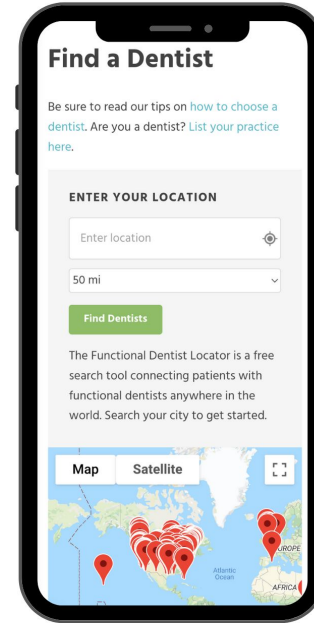
And Why It's Crucial for Overall Health

Mark Burhenne DDS

**“The truth is so rare that it is a true
delight to tell it.”**

Mark Burhenne, DDS

- Known as **@askthedentist** or “Dr. B” around the web
- Creator of the **Functional Dentist Directory**
- Author of ***The 8-Hour Sleep Paradox***
- Dugoni School of Dentistry in San Francisco
- Member:
 - American Academy of Dental Sleep Medicine (**AADSM**)
 - Academy of General Dentistry (**AGD**)
 - American Academy for Oral Systemic Health (**AAOSH**)



As seen on...




**“Dr. Mark Burhenne is a pioneering voice
in the prevention and treatment of
sleep apnea.”
—Mark Hyman, MD**

What does the root cause approach look like in dentistry?

1. **A new way** of looking at your mouth in the context of overall health
2. How this could **affect your overall health** and how this **changes your dental treatment**
3. **Actionable items/habits** to realize the benefits of the functional dental approach



Dr. Mark Burhenne 

@askthedentist



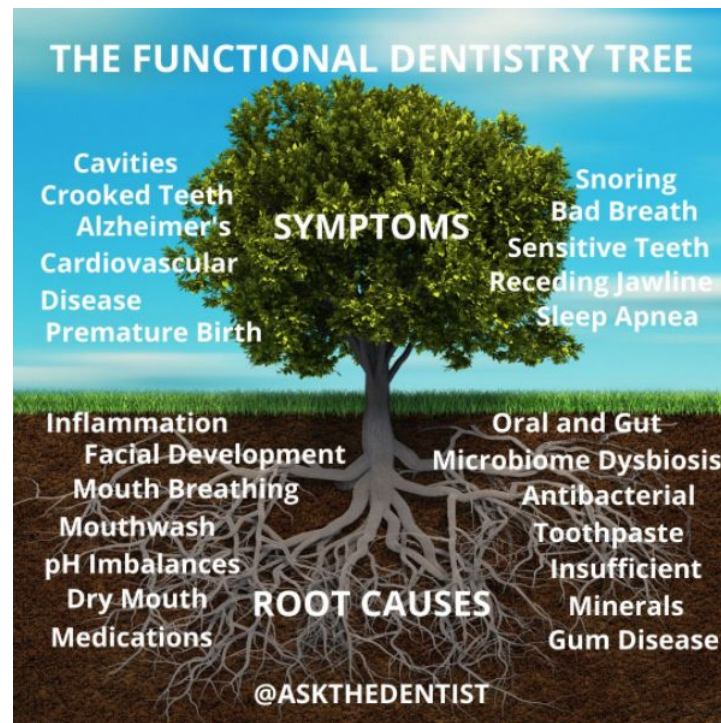
The future of dentistry is...

- 1) Airway health
- 2) Oral microbiome testing
- 3) Inflammation/CRP
- 4) Collaboration with MDs
- 5) Myofunctional therapy
- 6) Nutrition
- 7) Early ortho intervention for facial development

What is functional dentistry?

Functional dentistry is an approach to dental care that:

1. Promotes an all-body and **systemic approach** to dental health, recognizing that the health of the mouth reflects overall health
2. Emphasizes **prevention** for oral disease such as oral microbiome management, treatment of sleep-disordered breathing, and dietary recommendations
3. Using non-toxic, or the **least toxic available**, materials when treating dental issues
4. Focuses on the **root causes** of oral disease and works with each patient to develop an individualized plan of care

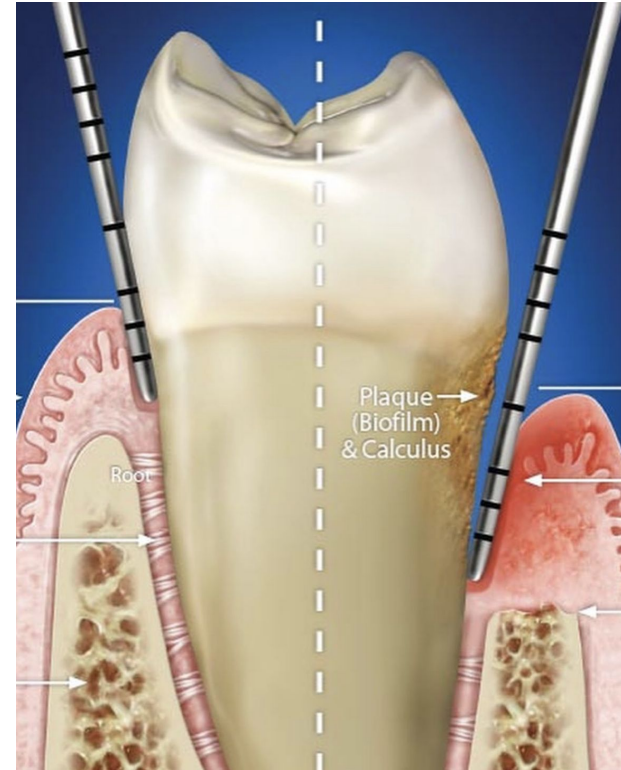


The Oral Systemic Connection

What happens in the mouth
happens in the body

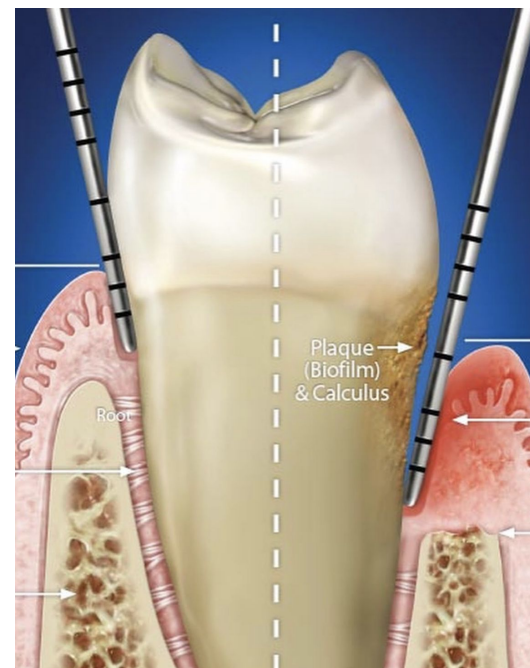
What is gum disease?

- Unique part of the body
- Biofilm (plaque)
- Calculus
- Pocket Dept
- Immune (Cytokine) Response
- Inflammation affecting blood supply
- Destruction of tissues around the teeth (perio)
- Systemic involvement



First, let's **define it**. How exactly does your mouth impact the rest of your body?

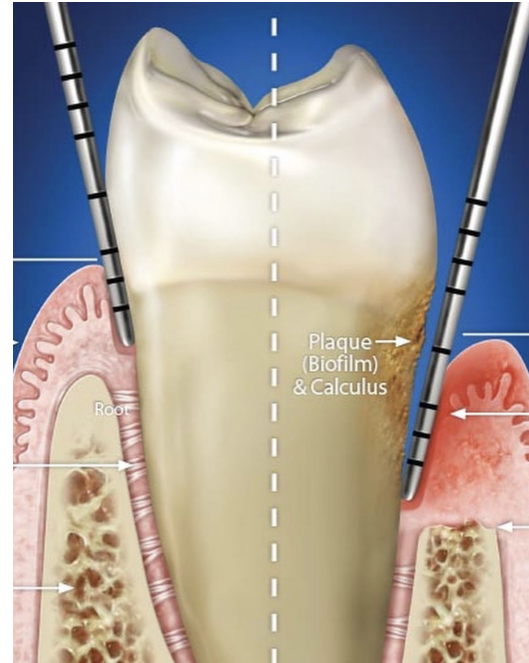
- Unique aspects of the mouth
- Teeth are inanimate objects
- Biofilms role
- Biological width (girdle or gasket)
- Blood supply to gums (the free margin)



What is the **mechanism** of the **oral systemic connection**?

Once you get past that girdle, bacteria get to the rest of the body by:

1. **Infection**
2. **Injury**
3. **Inflammation**



Even in 2020, oral health **nowhere to be found** as a **contributing factor** to dementia

THE LANCET

Log in

THE LANCET COMMISSIONS | VOLUME 396, ISSUE 10248, P413-446, AUGUST 08, 2020

Dementia prevention, intervention, and care: 2020 report of the *Lancet* Commission

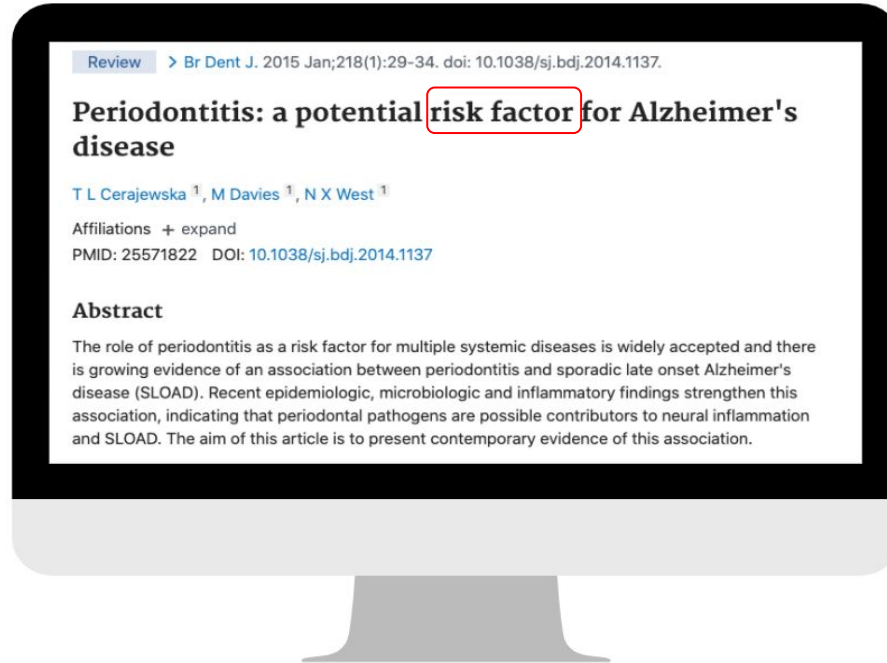
Prof Gill Livingston, MD · Jonathan Huntley, PhD · Andrew Sommerlad, PhD · Prof David Ames, MD · Prof Clive Ballard, MD
Prof Sube Banerjee, MD · et al. [Show all authors](#)

Published: July 30, 2020 · DOI: [https://doi.org/10.1016/S0140-6736\(20\)30367-5](https://doi.org/10.1016/S0140-6736(20)30367-5)

Executive summary

Less education	7.1
Hearing loss	8.2
Traumatic brain injury	3.4
Hypertension	1.9
Alcohol (>21 units/week)	0.8
Obesity (BMI>30)	0.7
Smoking	5.2
Depression	3.9
Social isolation	3.5
Physical inactivity	1.6

Perio as a possible **risk factor** for Alzheimer's



Perio as a possible cause for Alzheimer's

> *Sci Adv.* 2019 Jan 23;5(1):eaa03333. doi: 10.1126/sciadv.aau3333. eCollection 2019 Jan.

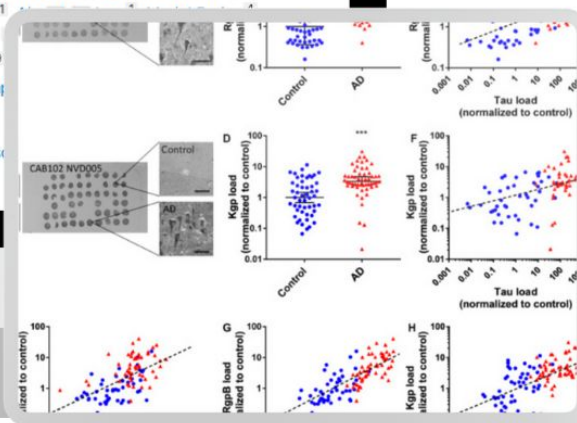
Porphyromonas gingivalis in Alzheimer's disease brains: Evidence for disease causation and treatment with small-molecule inhibitors

Stephen S Dominy¹, Casey Lynch¹, Florian Ermini¹, Malgorzata Benedyk^{2,3}, Agata Marczyk², Andrei Konradi¹, Mai Nguyen¹, Ursula Haditsch¹, Debasish Raha¹, Christina Griffin¹, Leslie J Holsinger¹, Shirin Arastu-Kapur¹, Samer Kaba¹, Barbara Potempa⁵, Piotr Mydel^{2,6}, Annelie Hellvard³, Hatice Hasturk^{7,8}, Glenn D Walker⁹, Eric C Reynolds⁹, Maurice A Curtis^{11,12}, Mike Dragunow^{11,13}, Jan Potempa¹

Affiliations + expand

PMID: 30746447 PMCID: PMC6357742 DOI: 10.1126/sciadv.aau3333


[Free PMC article](#)



Conditions that can be **caused** or **complicated** by an **oral infection** like gum disease:

- IBS
- Breast cancer
- Prostate cancer
- Diabetes
- Weight gain
- Alzheimer's and [dementia](#)
- Cancer
- Cardiovascular disease including stroke, heart attack, infective endocarditis, and thickening of the arteries
- [Low birthweight and premature birth](#)
- Bacterial pneumonia
- Osteoporosis
- Rheumatoid arthritis



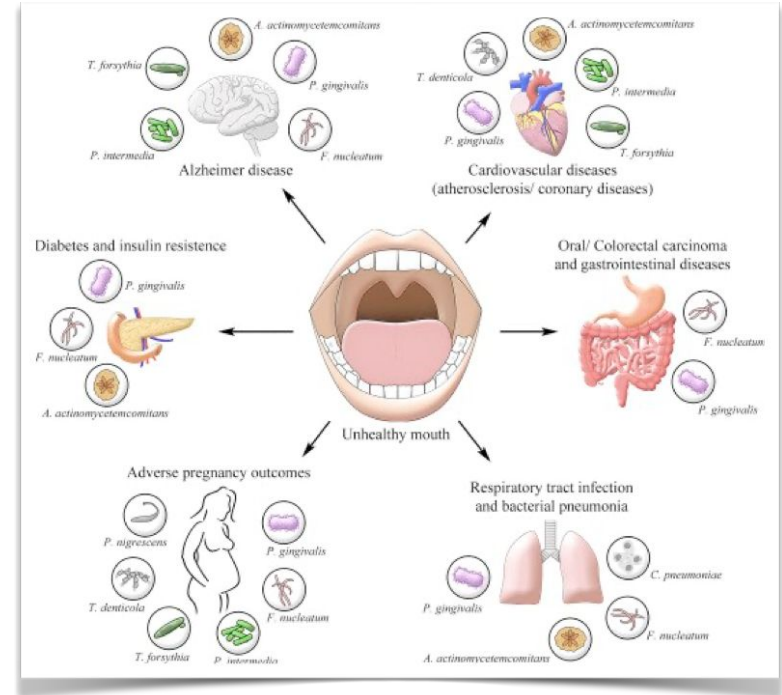
Dr. Mark Burhenne 

@askthedentist

Ever heard of “leaky gums”?
There is a barrier btwn the gums and the rest of the body. This barrier breaks down a little bit every time there is inflammation or infection in the mouth, triggering disease and dysfunction in other parts of the body.

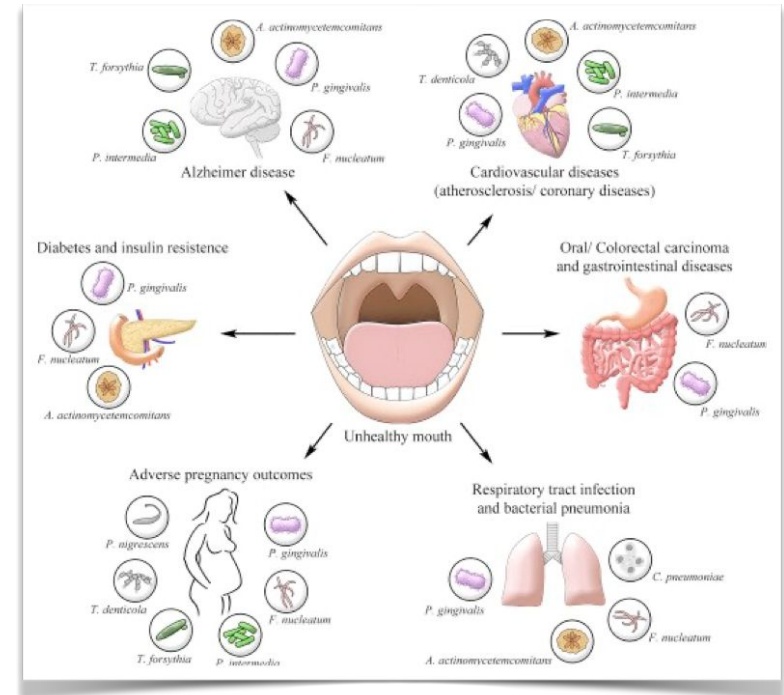
What can an **unhealthy mouth** do?

- **Periodontal Disease**
- 70% of the population affected
- Periodontal disease is the most common cause of tooth loss among adults
- In lay terms, **what is periodontal disease?** The “mother” of all Autoimmune diseases?
- Direct and indirect impact of oral bacteria on overall health.



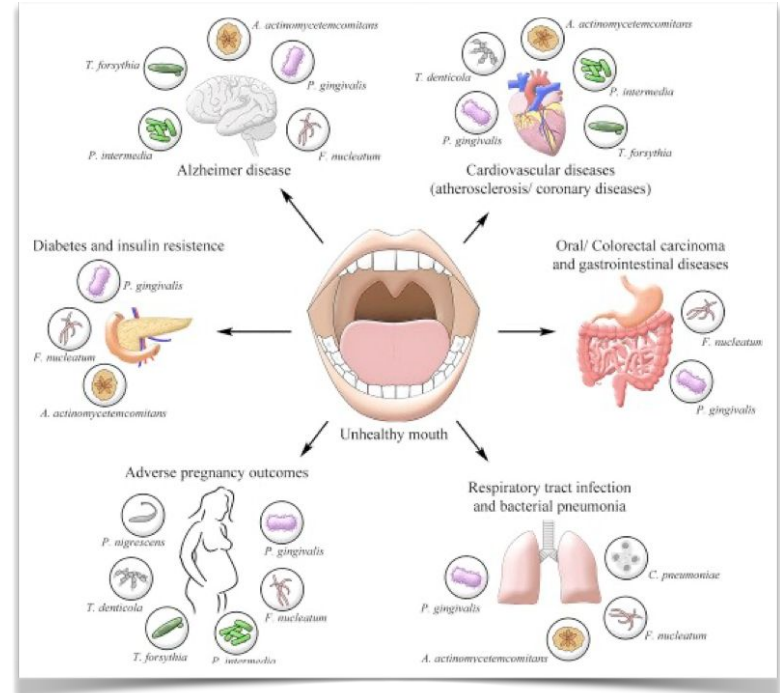
What can an **unhealthy mouth** do?

Recent epidemiological, clinical and experimental studies support the relationship between [bacteremia](#) or inflammation due to [periodontal disease](#) and [systemic disease](#).



What can an **unhealthy mouth** do?

Management of periodontal disease and proper oral care can positively impact the morbidity, mortality, and health care costs associated with non-oral systemic diseases.



Inflammation

Another study in The Lancet reports a **significant reduction** in inflammatory markers in the blood after intensive non-surgical periodontal treatment

A healthier mouth **lowers** systemic inflammation.

The mouth is a **major** source of **inflammatory disease** in the rest of the body

- In 1839, dentistry and medicine separate professionally
- CRP Letter
- A **major** source of inflammation is from the mouth: gum disease
- Periodontitis as an infection stimulates the liver to produce C-reactive protein (marker of inflammation) which will form deposits on injured blood vessels



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What do nearly all modern diseases have in common? Inflammation. What is gum disease? Inflammation.

So when are doctors and dentists going to work together as a team to reduce our patients' inflammation?

The mouth is a **major** source of
inflammatory disease in the rest of the
body

CRP Letter: Free Download on askthedentist.com

Many physicians are treating your chronic illnesses and checking for efficacy using a CRP result, unaware that oral disease is a huge contributor to CRP.

Schism between the medical and dental professions since 1839!



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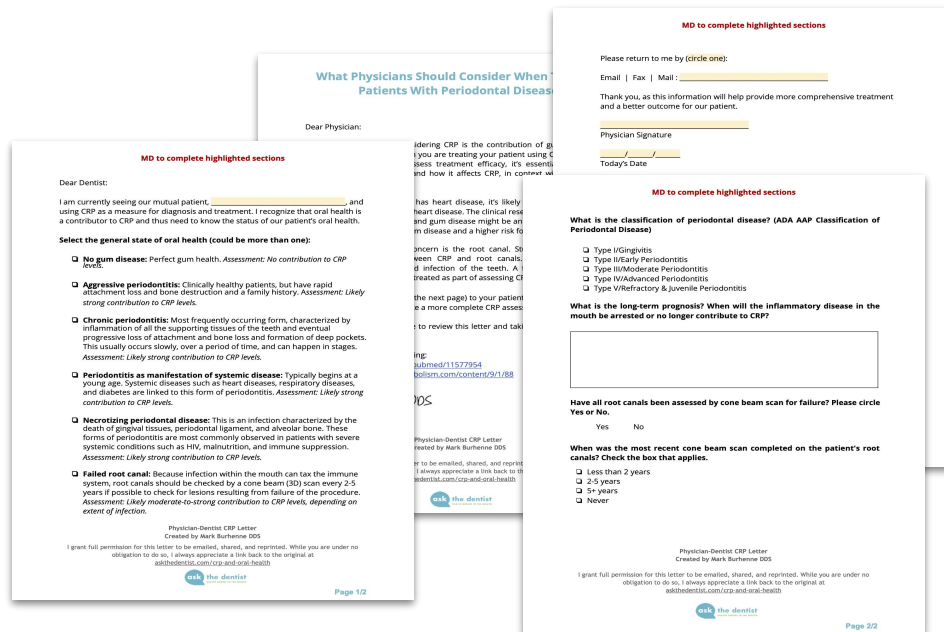
So when are doctors and dentists going to work together as a team to reduce our patients' inflammation?

CRP Letter: Free Download on askthedentist.com

Explanation to MD why letter is important

Classification of periodontal disease (Class I-V)

Assessment of root canal



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The Oral Microbiome

“The mouth houses the second most diverse microbial community in the body.”
**—Mogens Kilian and colleagues; professor,
Department of Biomedicine, Aarhus
University, Denmark**

**“You swallow 140 billion bacteria every day.
The mouth is continuously seeding the
gastrointestinal tract with bacteria.”
—Cass Nelson-Dooley, MS**

What is the oral microbiome?

- ❑ The oral microbiome is responsible for the health of our teeth and gum m
- ❑ Oral microbes imbalances are linked to diabetes, cancer, and Alzheimers, and much, much more
- ❑ A healthy mouth is not bacteria free. It's full of beneficial organisms in balance.
- ❑ The oral microbiome consists of many microorganisms like bacteria viruses and fungi
- ❑ 7 out of 10 inflammatory chronic diseases are caused by oral microbes
- ❑ The oral cavity is the first place that the outside world is being sampled by our immune system
- ❑ There are many micro niches in the mouth, all exhibiting different populations. Specialization of purpose?
- ❑ Good bacteria play a big role. they control saliva pH, helps us digest foods, produce vitamins and nitric oxide, protect us from toxins, and make the neurotransmitters in our brain.
- ❑ One of the most carious (cavity causing) foods on the planet? Goldfish crackers!
- ❑ Historically our diets helped support healthy bacteria. That all changed with the advent of grains sugars and processed foods



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The oral microbiome is the most overlooked aspect of overall health and wellness. We've heard plenty about how much our health depends on the microbes in our gut. But the opening to this intestinal tract—the mouth—has been wholly ignored!

How to **nourish** (not disinfect) the **oral microbiome**

- ❑ <https://pubmed.ncbi.nlm.nih.gov/33280615/>



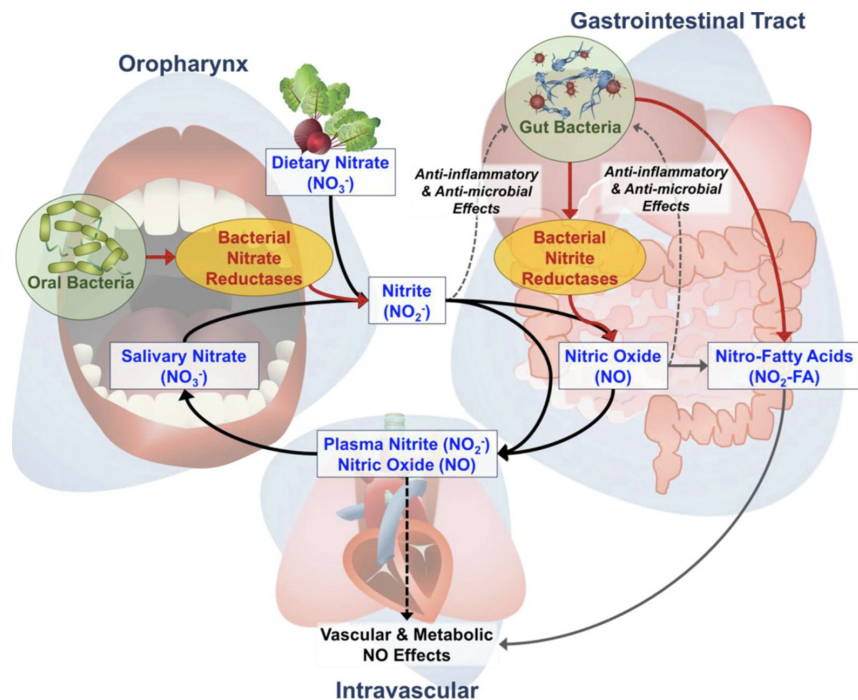
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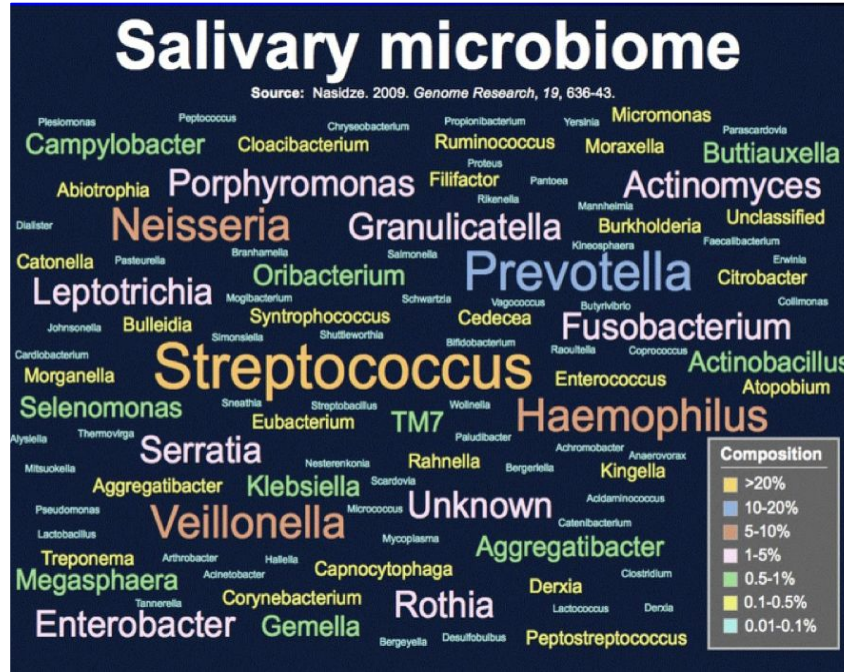
The conventional dentist says,
“You should be disinfecting your
mouth with mouthwash to kill
harmful bacteria.”

The functional dentist says,
“Let’s make sure your oral
microbiome is well-balanced.”

No wonder **mouthwash** can increase **risk of heart attack**



Commensal? Pathogenic? Or **both**?



Toothpaste's **impact** on the **oral microbiome**

- ❑ Basis for modern toothpaste/ Disinfect!
- ❑ Toothpaste should be a mild polishing agent with ingredients that are safe and provide for remineralization and stable salivary pH
- ❑ Active ingredients labeling/Cosmetic product/ADA certification
- ❑ Surfactants, emulsifiers, triclosan, essential oils, **Cetylpyridinium chloride**
- ❑ Fluoride vs non fluoridated vs Hydroxyapatite
- ❑ What is the “acid attack”?
- ❑ Mechanism of remineralization



How to test your oral microbiome

- ❑ Use code **ASKTHEDENTIST15** for 15% off
- ❑ **Measure** all 100+ unique bacterial species in saliva, both beneficial and pathogenic
- ❑ **Understand** how your microbes impact oral health and conditions like cavities, gum disease, and halitosis
- ❑ **Improve** with diet, hygiene, and oral care product and ingredient recommendations
- ❑ **Monitor** your progress over time and track how changes impact your health with subscription testing



Optimize your oral and overall health with comprehensive at-home oral microbiome testing

