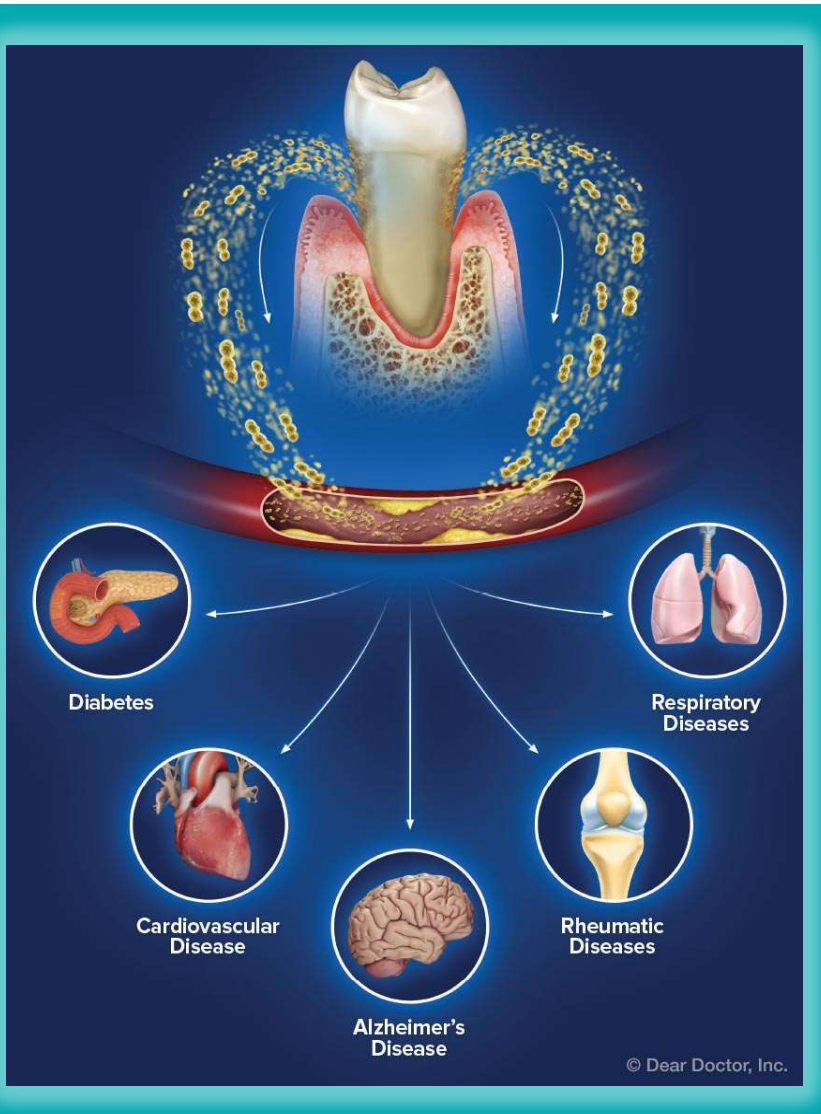


# My First Year As A Dental Hygienist & Dr. John Geis



IHC Rincon Health Center





## Chronic Diseases: Investigating Systemic Health Effects Through Oral Health

TIFFANY WUEBBEN, RDH



## Expert in Dental Practice Growth & Team Success

- **Founder & CEO** of *The Hygienepreneur*
- **Author** of *Hygienepreneur* & Co-Author of *Culture Catalyst*
- **Renowned Speaker** in the Dental Industry Nationwide
- **30 Years of Expertise** in Practice Growth, Leadership & Team Culture



“If a person can take care of their teeth and gums they can extend their life by at least 10 years.”

Dr Charles Mayo  
*Co-Founder Mayo Clinic*



# Objectives



1

**Holistic Health Perspective:** Understand the link between oral health and overall well-being.

2

**Systemic Connections:** Recognize how oral health impacts various medical conditions.

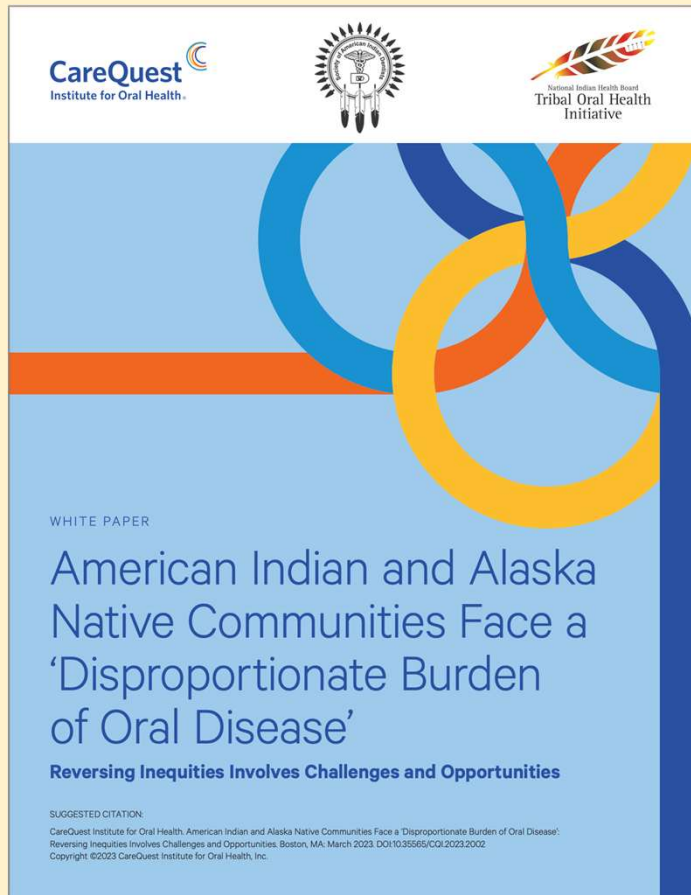
3

**Gateway to General Health:** Learn how oral health reflects overall body health.

4

**Preventive Role:** Discover how oral health maintenance can prevent systemic diseases.

# CareQuest, Society of American Indian Dentists & National Indian Health Board



- Engage in grantmaking, research, and health improvement programs.
- Focus on policy, advocacy, and education.
- Lead advancements in dental benefits and innovation.
- Collaborate with thought leaders, healthcare providers, patients, and stakeholders at all levels.
- Aim to transform oral health care into a system that works for everyone.

CareQuest Institute for Oral Health®

*Nonprofit dedicated to creating a healthier, more equitable future for all.*

For more information visit [carequest.org](https://carequest.org)

# Oral Health/Systemic Health Disparities in Native American & Alaska Native Populations

- **Preschool-aged children:** NA/AN communities have a tooth decay prevalence **3 times higher** than other population.
- **Adults (ages 35–44):** **57% of NA/AN adults** have untreated tooth decay, compared to **28% in the general U.S. population.**
- **Tooth loss:** **83% of NA/AN adults** report tooth loss, compared to **66% of the general U.S. population.**
- **Life expectancy:** NA/AN individuals have a life expectancy **5.5 years shorter** than the general U.S. population (73.0 vs. 78.5 years).



Data Collected from *Pew Research* and *CareQuest Institute* (2023)

# Why Do Oral Health Disparities Exist?

## Systemic Challenges

- Impact of historical events and unequal opportunities

## Social Factors

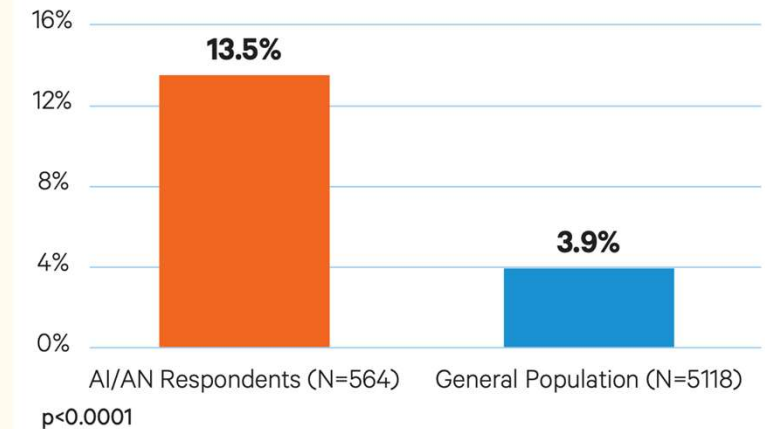
- Limited access to nutritious food, housing, and care

## Health Inequities

- Higher rates of tooth loss and untreated decay

**Figure 3: Percentage of AI/AN respondents reporting visiting an ED for dental care**

In the last year, have you visited a hospital emergency department (ED) or an emergency room (ER) for dental care or pain/discomfort in your mouth? (Yes)



CareQuest Institute for Oral Health. American Indian and Alaska Native Communities Face a 'Disproportionate Burden of Oral Disease': Reversing Inequities Involves Challenges and Opportunities. Boston, MA: March 2023. DOI:10.35565/CQI.2023.2002  
Copyright ©2023 CareQuest Institute for Oral Health, Inc.



# Building Pathways To Equity

## **Representation**

Recruit and support NA/AN dental professionals

## **Access to Care**

Expand community programs and dental therapy

## **Systemic Change**

Invest in NA/AN-led policies and initiatives

What Are Your Experiences?  
What Are Your Thoughts?



# Strategic Recommendation

## **Data Accuracy**

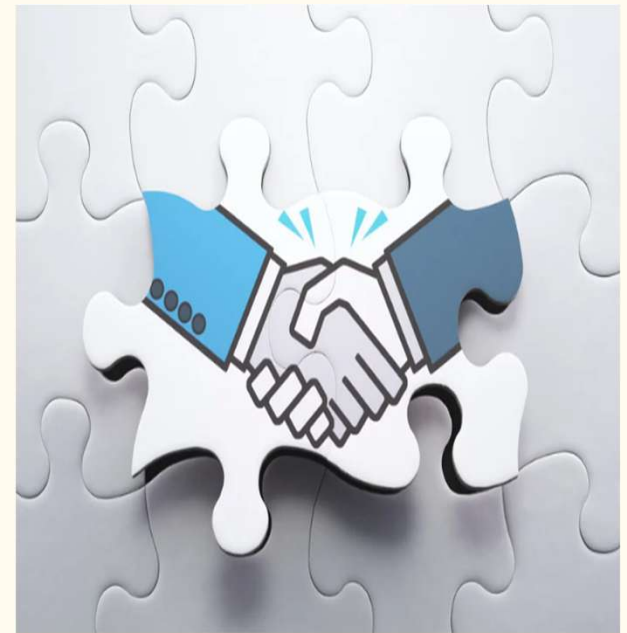
- Better data collection to reduce misclassification

## **Prevention**

- Support child-focused community care

## **Policy Collaboration**

- Work with tribal leaders to shape health policies



# Oral-Systemic Health Connections

## Link Between Oral and Systemic Health:

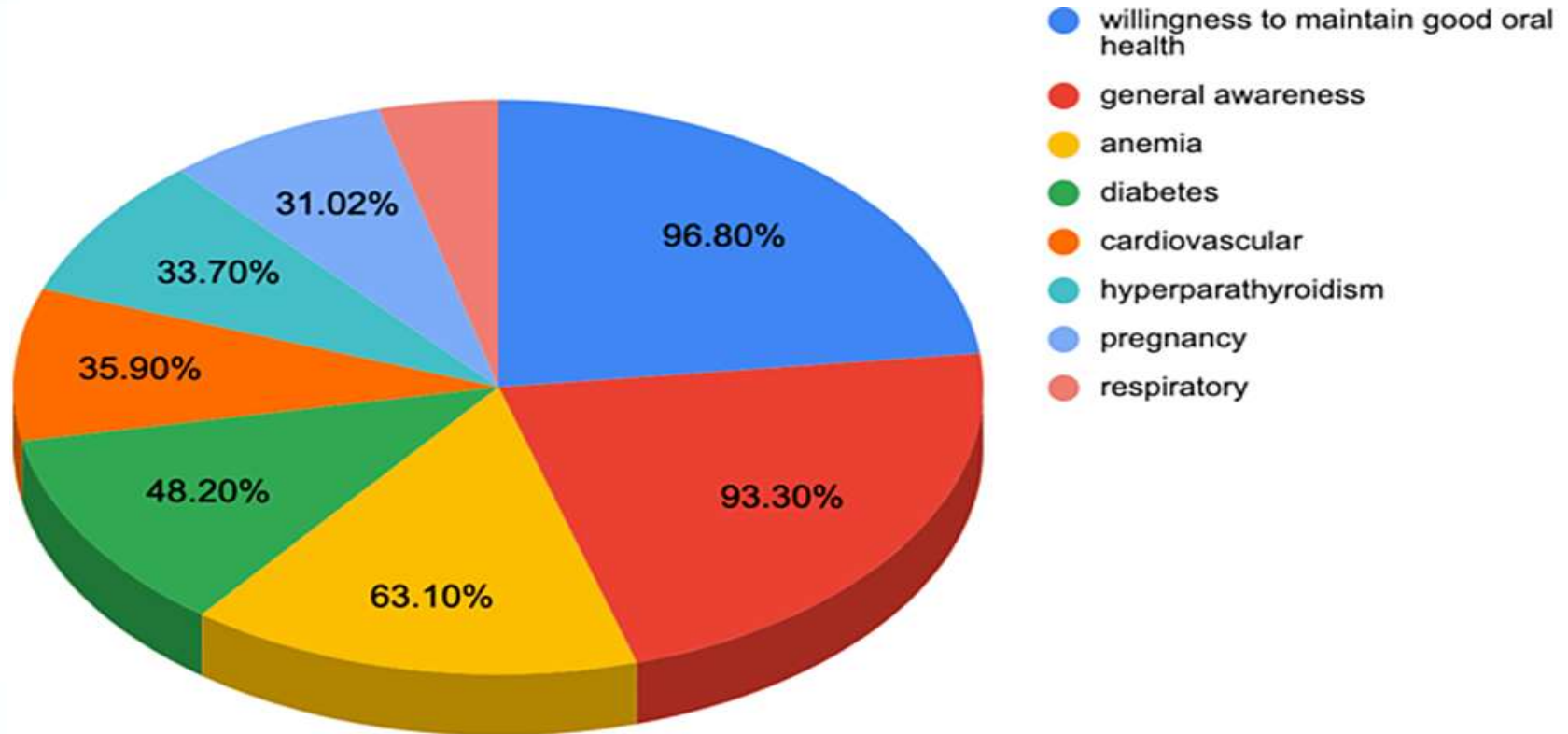
- ✓ Poor oral health is associated with systemic conditions like cardiovascular disease and diabetes.

## Impact of Oral Diseases:

- ✓ Oral diseases can lead to pain and disability, affecting overall quality of life and contributing to systemic health issues.



# Do People Know About The Connection?

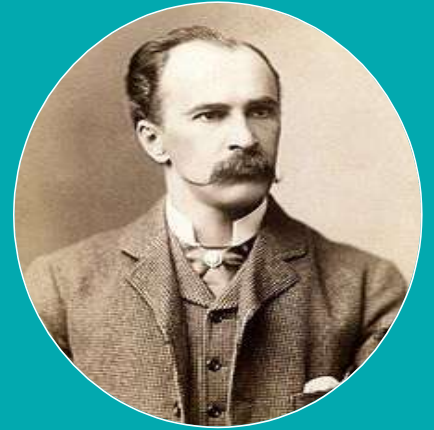


# Medical Doctors Point of View



Robert W. Steves III, MD  
The Town Doctor  
Lebanon, TN

“As a young student of medicine, I quickly learned, from the numerous pearls given to us from Sir William Osler, that the oral cavity is a mirror to the rest of the body.”





## Dentist's Point of View

**“By now, I believe the dental community, as a whole, has adopted the findings from current research and accepted the strong oral systemic health connection.”**

**K. Pat Brown, DDS  
Temecula, CA**



# What is Oral Health?

The condition of the teeth, gums, tongue, and other oral structures that enable functions such as chewing, speaking, and swallowing



**Teeth**  
**Gums**  
**Jawbone**  
**Salivary Glands**  
**Hard Palate**



**Soft Palate**  
**Tongue**  
**Oral Mucosa**  
**Periodontal Ligament**  
**Oral Microbiome**

# Common Oral Health Issues



# Tooth Decay



**Definition:** Breakdown of tooth enamel caused by acids produced from bacteria



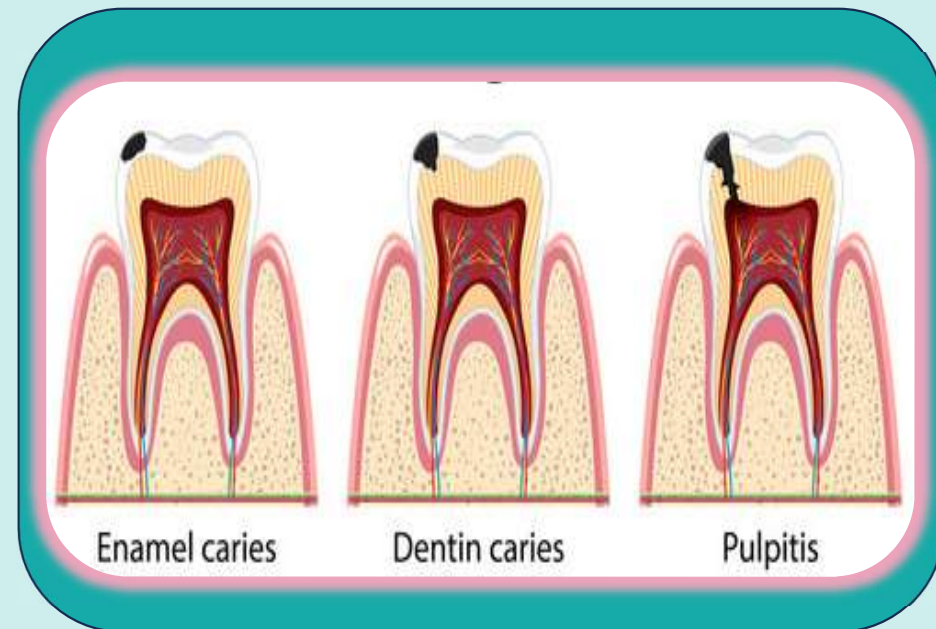
**Cause:** Poor Oral Hygiene, Poor food choices, Bacteria



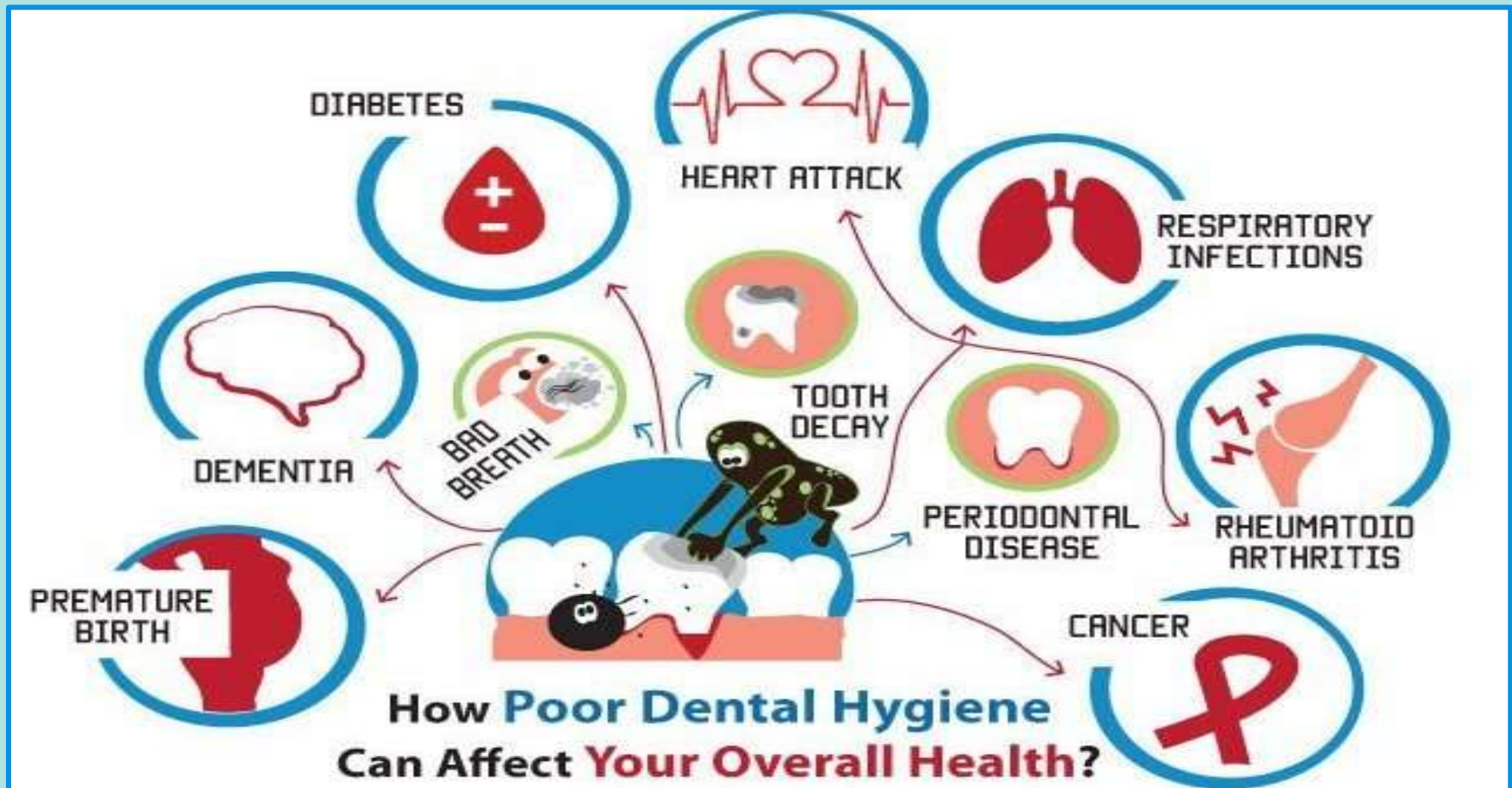
**Symptoms:** Toothache, sensitivity to hot or cold, visible holes or pits in the teeth



**Prevention:** Brush & floss regular, limit sugary snacks & drinks, fluoride care, regular dental check-ups



# Tooth Decay Systemic Connection





# 1950's Bucky Beaver Promoted 6 Month Cleaning Schedule

“Brush twice daily  
and visit the  
dentist twice a year.”  
~ Bucky Beaver



Mr. Decay Germ

Brusha, brusha, brusha. Get the New Ipana—it's dandy for your teeth!

# Gum Disease

Inflammation and infection of the gums & supporting structures



1

## Mechanisms

Poor Oral Hygiene  
Plaque Build-up  
Smoking & Genetics

## Stages

Gingivitis  
Periodontitis

2

## Symptoms

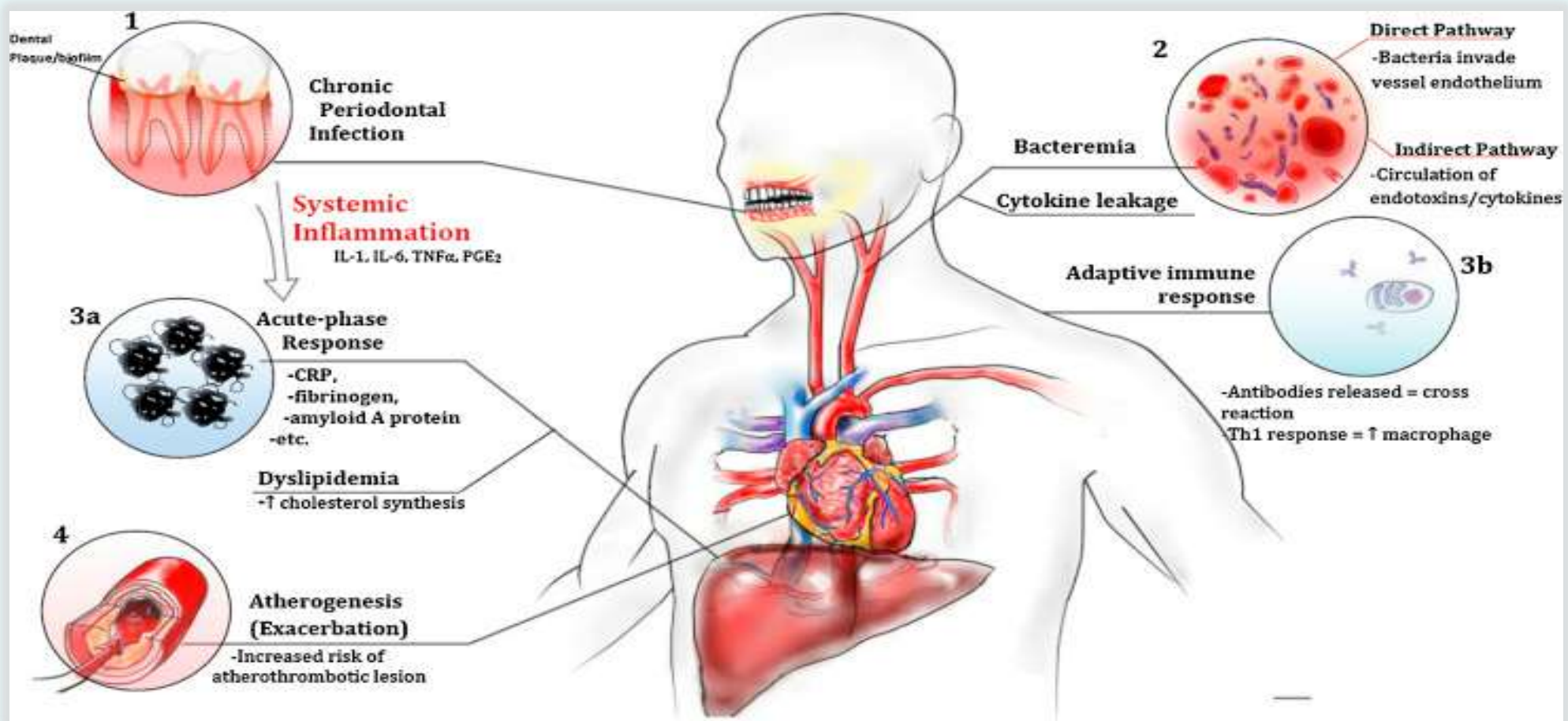
Swollen  
Red  
Bleeding Gums  
Loose Teeth  
Pus  
Bad Breath  
Receding Gums  
Bone loss

3

## Prevention

Proper Brushing  
Flossing  
Quitting Smoking  
Chronic Disease Mgmt  
Regular Hygiene Appts

# Gum Disease Systemic Connection



# Systemic Health Overview



✓ Systemic Health refers to the overall health of the entire body and its systems

✓ It includes all the various bodily systems and their influence on each other

✓ All the systems are interconnected

# The Oral Health & Systemic Health Connection



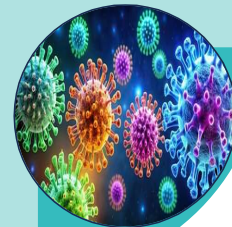
## Bidirectional Relationship

- The Health of one systems affects the other
- Interconnected systems



## Oral Health Systemic Conditions

- Cardiovascular Disease
- Diabetes
- Respiratory Infections
- Pregnancy Complications



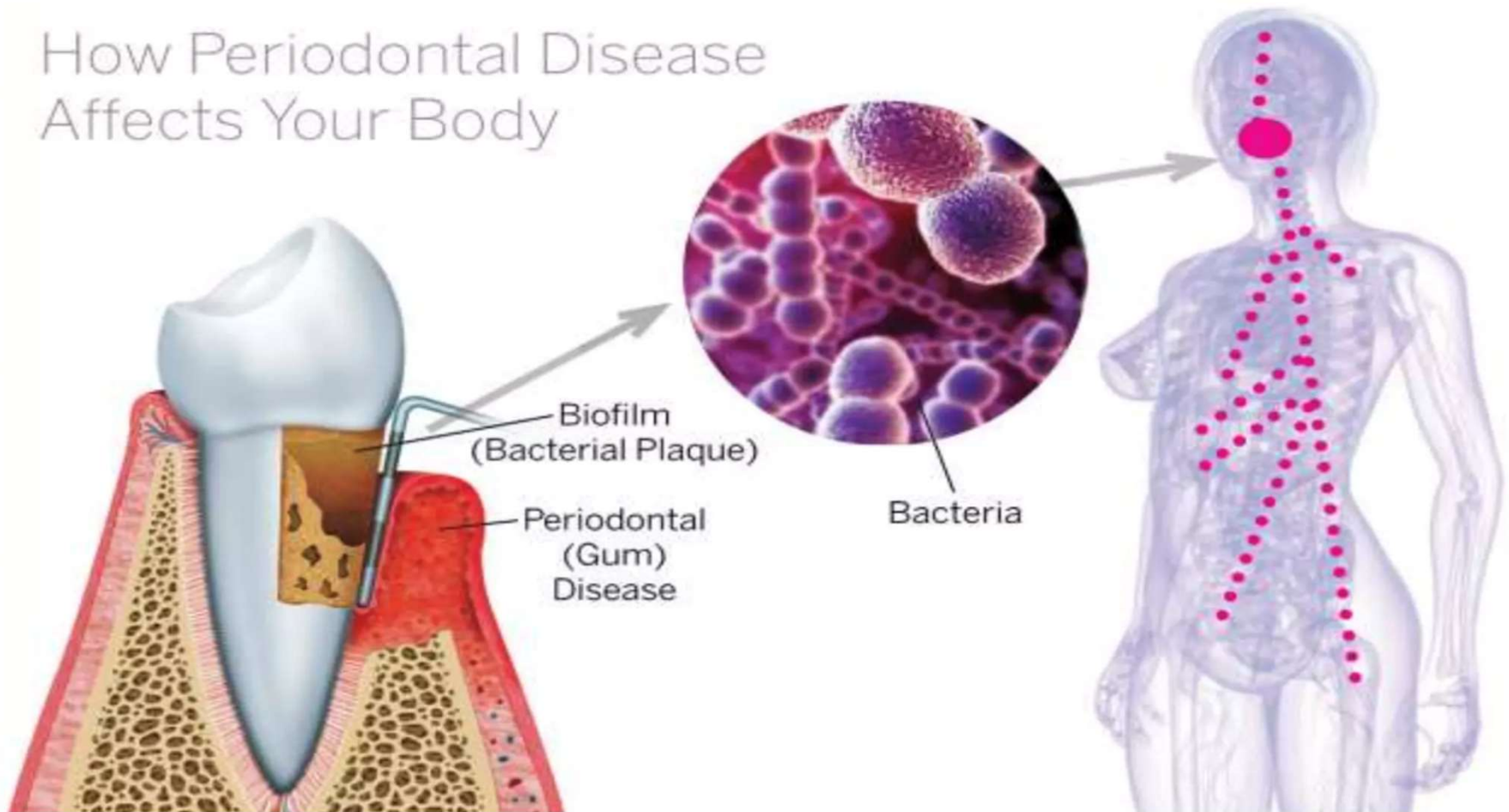
## Contributing Factors

- Inflammation
- Bacteria & Toxins
- Immune Response



# The Oral Health & Systemic Health Connection

How Periodontal Disease Affects Your Body



# The Disconnect

- 111 million people visit primary care annually, but do not see a dentist
- 27 million people visit a dentist annually, but not a primary care provider
- Medical providers lack comfort with performing oral exams and don't have dental referrals available
- Dentists are often less comfortable with young children, pregnant women, or adults with special needs



These are opportunities:  
Better Collaboration  
Learning  
Management

# Healthcare Provider Challenges

*Medical Providers Are Overwhelmed*

**Other Health Issues Come First**

**When Is It Time To Address & Refer**

**Lack Of Training In Oral Health**

**Insurance Coverage Barriers**

**Cost & Lack of Funds**



# Oral Health & Nutrition

## Affects On Nutrition

- Chewing Function
- Impact on Nutrition- Tooth Decay/Missing Teeth
- Diet Quality

## Importance in Chewing & Digestion

- Mechanical Digestion
- Nutrient Absorption
- Digestive Efficiency



## Habits To Promote Proper Nutrition

- Regular Dental Checkups
- Healthy Diet & Good Oral Hygiene



# Healthy Snacks for Healthy Teeth



INDIAN HEALTH  
COUNCIL, INC.  
DENTAL DEPARTMENT

2

Healthy snacks for healthy teeth are those that are low in sugar and starch, as these can lead to tooth decay. Instead, opt for snacks that are rich in nutrients and help clean your teeth. Here are some great options:



## Crunchy Vegetables

Carrots, celery, and bell peppers are excellent choices. Their crunchy texture helps remove plaque from teeth and stimulates saliva production, which naturally cleanses the mouth.



## Dairy Products

Milk, cheese, and yogurt are high in calcium and protein, which strengthen tooth enamel and help prevent cavities.



## Leafy Greens

Spinach, kale, and other leafy greens are packed with vitamins and minerals, including calcium, which is essential for healthy teeth.



## Nuts

Almonds, walnuts, and cashews are great because they are low in sugar and high in fiber and calcium. Chewing nuts also stimulates saliva production.



## Fruits

Apples and pears are particularly good because their fibrous texture stimulates gums and increases saliva flow, reducing the risk of cavities.



## Water

While not a snack, drinking plenty of water helps wash away food particles and bacteria, keeping your mouth clean and reducing the risk of tooth decay.

By incorporating these snacks into your diet, you can help maintain healthy teeth and gums while enjoying delicious and nutritious foods!

**Let us know your favorite healthy snack when you  
call to schedule your appointment at 760-749-1410!**



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COUNCIL, INC.  
EMPOWERING NATIVE WELLNESS



# Aging and Oral Health



## Common Issues

Tooth Loss  
Gum Disease  
Dry Mouth  
Oral Cancer



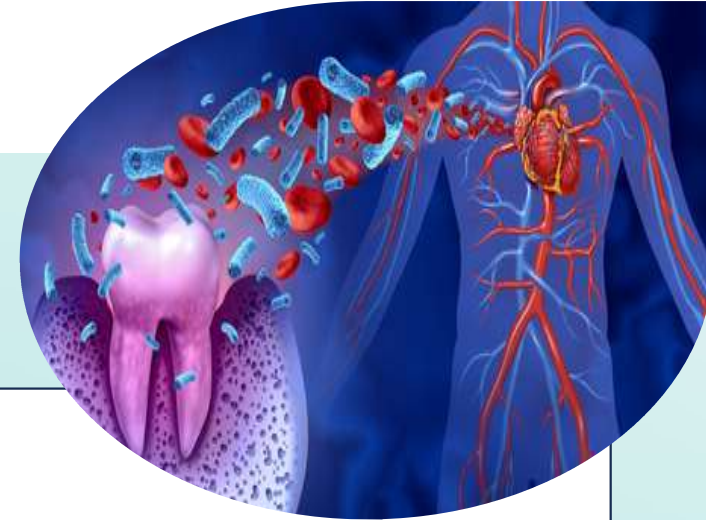
## Impact: Quality Life

Chewing  
Speech  
Pain  
Self-Esteem

**Solvers- Regular Dental Visits, Denture Care & Maintaining Oral Hygiene**

# Cardiovascular Health

*Research links gum disease & heart disease  
Oral bacteria can affect the heart & risks of stroke*



## **Evidence**

Numerous studies have shown the association

## **Statistics**

Periodontal disease linked to higher heart disease risk

## **Mechanisms**

Inflammation, bacteria and blood clots, immune response

# Oral Bacteria's Impact On The Heart



## **Endothelial Dysfunction**

Oral bacteria harm blood vessel cells, causing inflammation

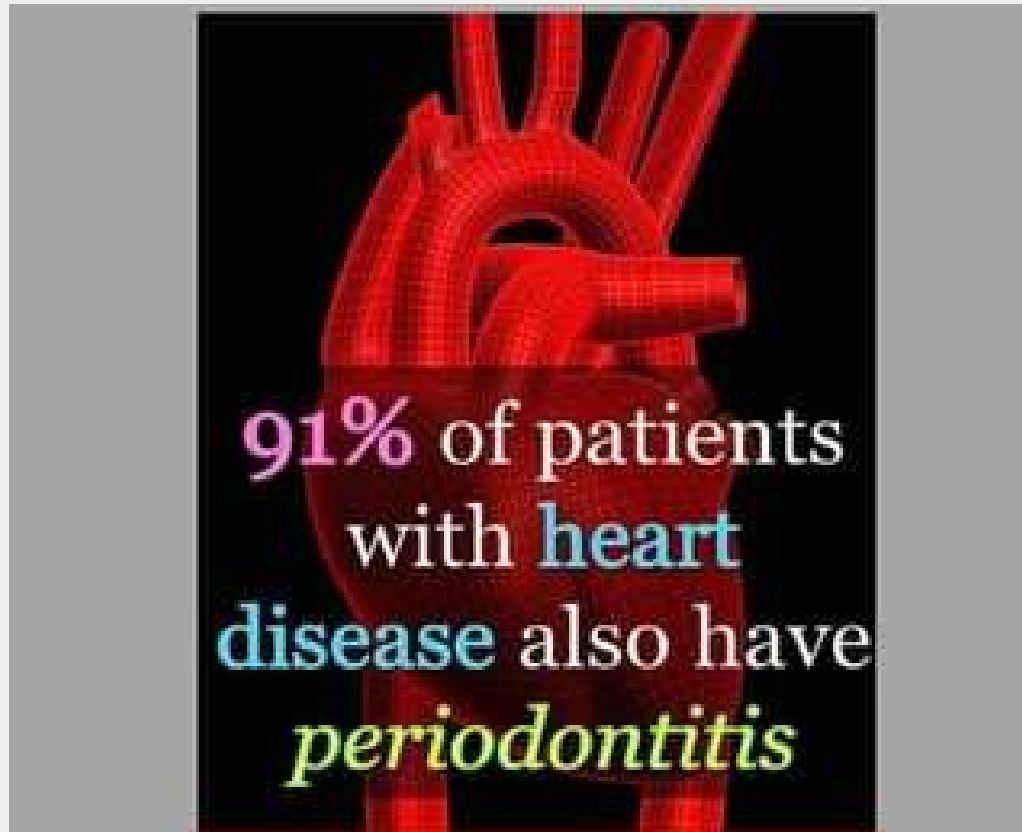
## **Direct Effects on Heart Tissue**

Oral bacteria toxins harm heart tissue and function

## **Impact on Blood Pressure**

Gum disease inflammation raises blood pressure, straining the heart

## Connection Statistics



# Diabetes:

*What is the impact of Diabetes on Oral health?*

## **Dry Mouth**

- Diabetes reduces saliva production
- Heightened risks of decay
- Increase cases of gum disease, and infections

## **Periodontal Disease**

- Impaired blood sugar control
- Promotes bacterial growth
- Increase risk of inflammation & Infection

## **Delayed Wound Healing**

- Reduces healing ability
- Oral wounds
- Injuries to the gums

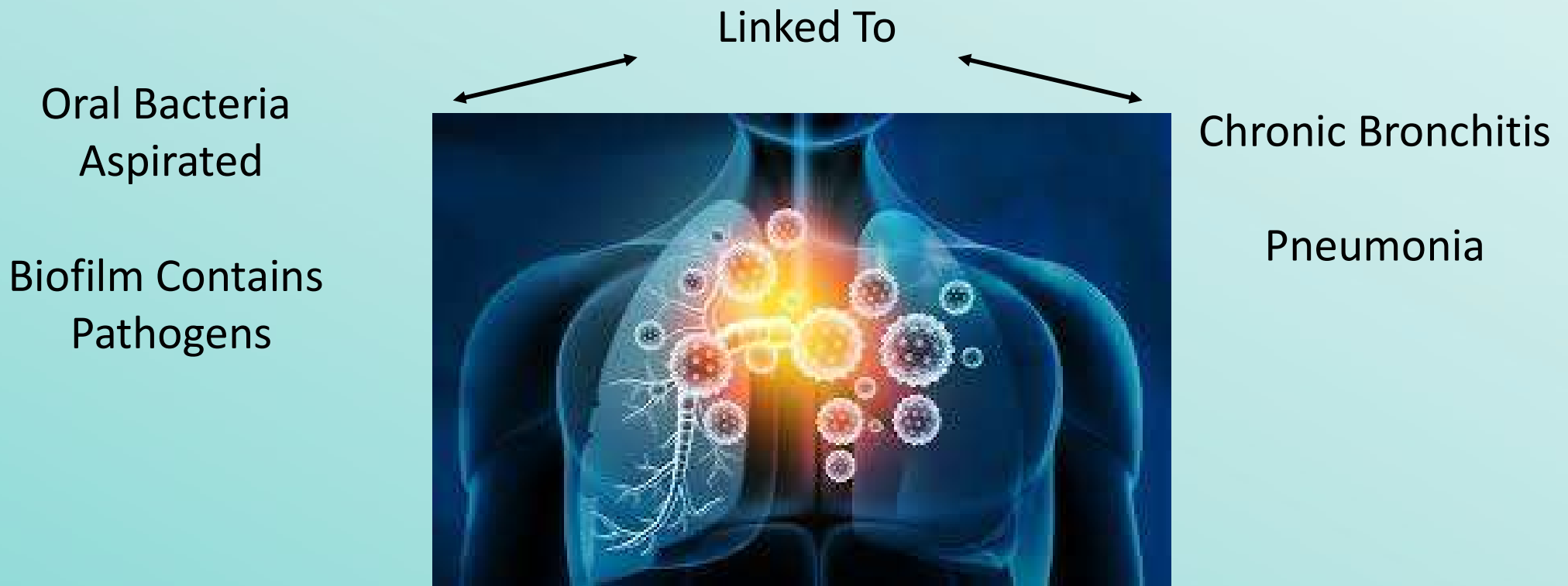
# Oral Health & Blood Sugar Control

- 1 **Bi-Directional Relationship-** health of the mouth can affect blood sugar
- 2 **Periodontal Disease and Insulin Resistance-** severe gum disease may contribute to insulin resistance
- 3 **Inflammation and Blood Sugar-** Oral inflammation → Systemic inflammation → Worsen insulin resistance & Blood sugar control
- 4 **Importance of Dental Care-** Maintaining good oral health is essential to managing blood sugar levels



# Respiratory Health

*What is the connection between oral bacteria & respiratory infections?*



# Respiratory Infections Prevention



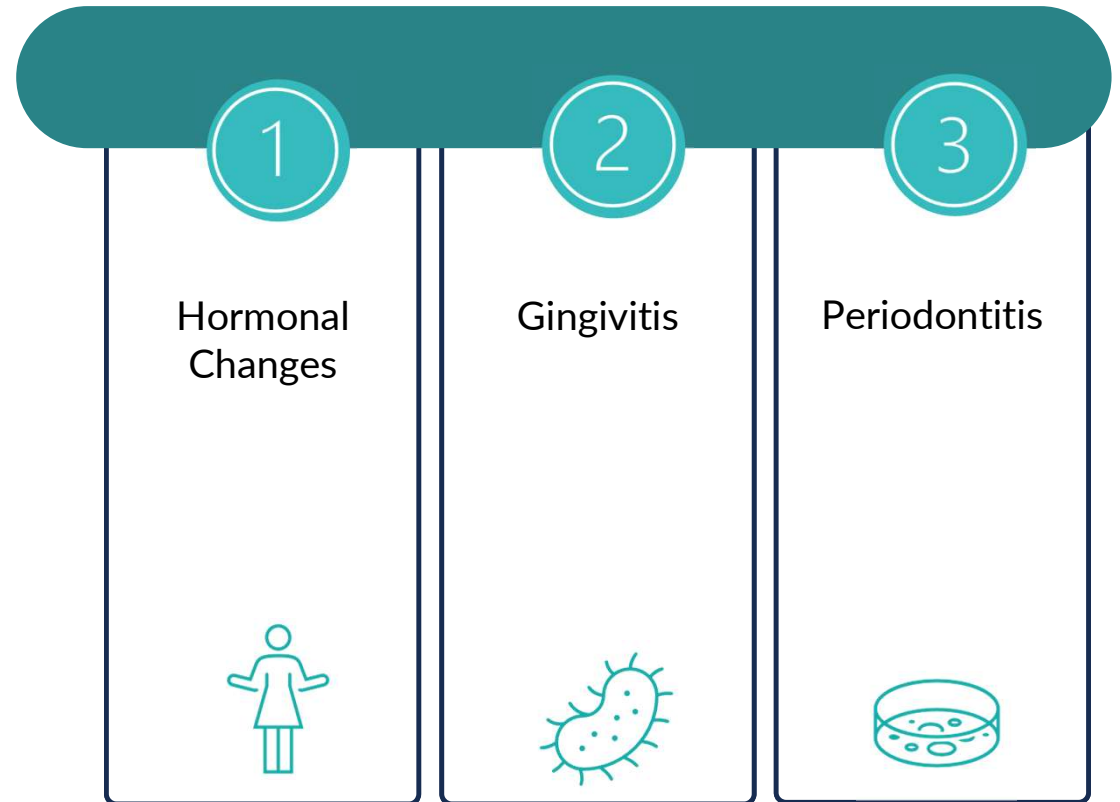
# Pregnancy Outcomes

## *Effect of Oral health on Pregnancy*

- Preterm Birth/Low Birth Weight
- Gestational Diabetes
- Preeclampsia- HBP



# Risks of Gum Disease During Pregnancy



# Reduce The Risk of Adverse Pregnancy Outcomes

## Preventive Measures

1



Regular Dental Visits

2



Home Care

3



Multi Doctor  
Consultation

# Mental Health

## Link Between Oral Health and Mental Health

### Negative Affects



- Impact of Stress
- Psychological Impact
- Bi-Directional Relationship

### Can Escalate To:



- Depression
- Anxiety
- Social Isolation

### Problem Solving Strategies



- Integrated Care
- Behavioral Intervention
- Patient Education



# Oral Health and Immune Response



## What Role Does It Play?

- Barrier Function
- Immune Surveillance
- Inflammatory Response



## Oral Infections Weaken the Immune System

- Systemic Impact
- Bacteremia
- Compromised Immunity



## For A Strong Immune Function

- Regular Dental Care
- Effective Oral Hygiene
- Healthy Lifestyle

# Oral Health and Cancer

## Oral Cancer

Poor Oral Hygiene  
Alcohol & Smoking

## Pancreatic Cancer

Certain Oral Bacteria  
Associated with  
Periodontal Disease



## Esophageal Cancer

Linked to Poor Oral  
Hygiene & Gum  
Disease

# Importance of Oral Hygiene in Cancer Patients



• **Prevention of Infections**  
(Chemo & Radiation)

• **Management of Side Effects**  
(Dry Mouth, Mouth Sores)

• **Early Detection**  
(Maintain Routine Dental Visits)

• **Promote Oral Health in Cancer Care**  
(MD/DDS Collaborate, Educate & Support)

# Some Facts About Oral Cancer

## 10 Facts about Oral Cancer



# Oral Health and Neurological Disorders

## Alzheimer's Disease & Neurodegenerative Diseases



Oral Bacteria from  
Gum Disease Can  
Migrate to the Brain  
Contributing to  
Neuroinflammation



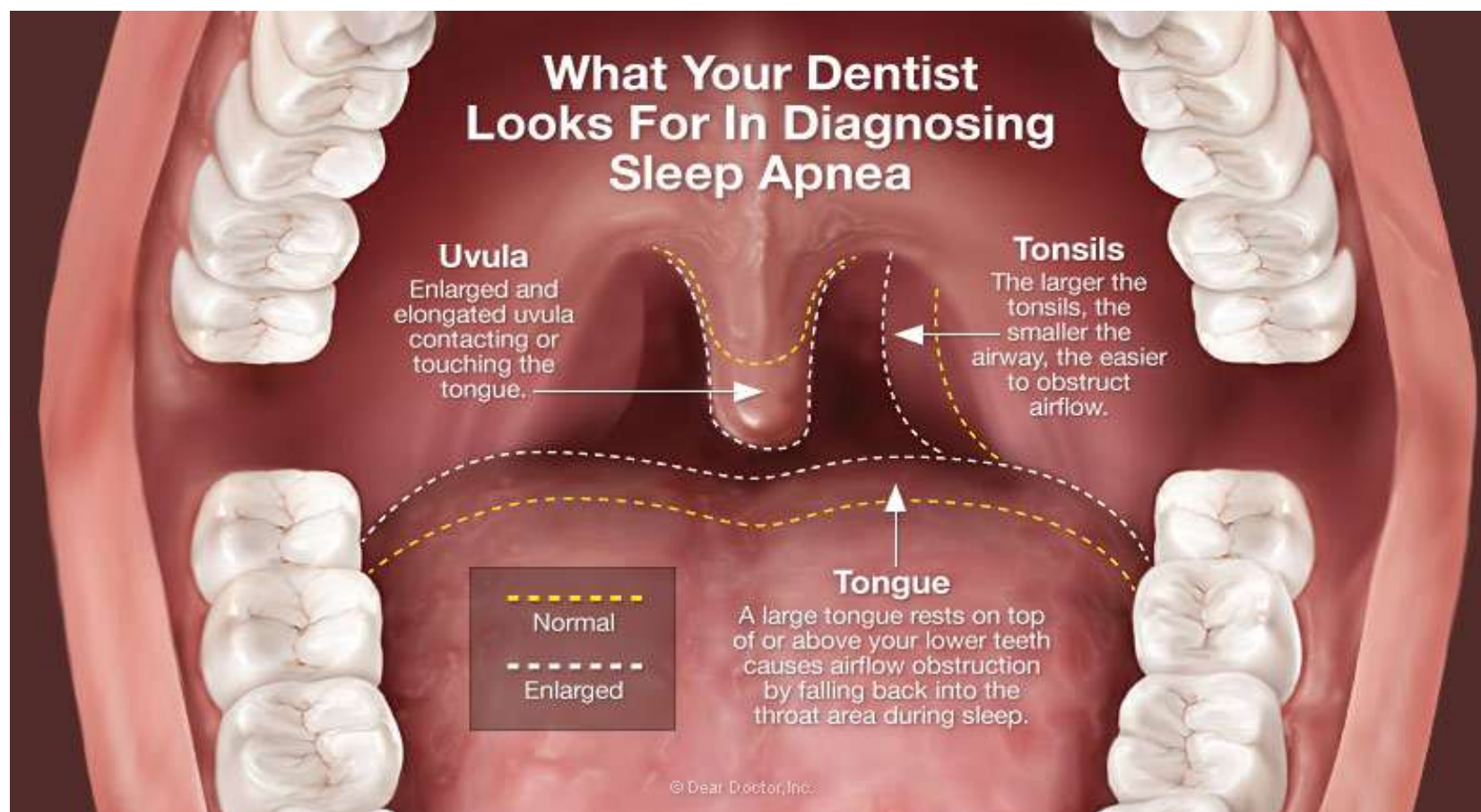
Shared Risk Factors  
& Mechanisms  
Are Age, Genetics,  
Inflammatory Processes



Observational Studies  
Show That Individuals  
with Poor Hygiene  
May Be At Increased  
Risk of  
Cognitive Decline

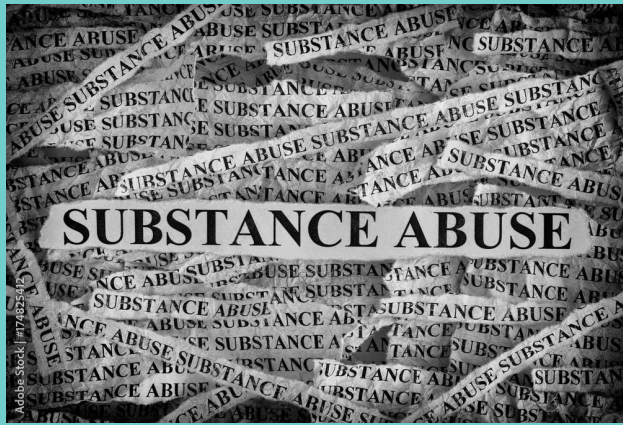


# Oral Health and Sleep Disorders





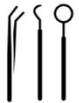
# Oral Health & More Systemic Diseases



# Oral Health Promotion Strategies



## Importance of Regular Dental Visits Tips For Maintaining Good Oral Hygiene



### Preventive Care

Early Detection of Cavities  
Gum Disease & Oral Cancer



Professional Cleaning  
Removes Plaque &  
Tarter



Brushing & Flossing  
Healthy Diet  
Avoid Tobacco

# Medical Provider Oral Health Training



Oral Disease Screening

Systemic Risk Factor  
Review

Medication & Medical  
History Review



Oral Health Maintenance

Anticipatory Care

Early Referral



Oral Hygiene Instruction

Fluoride

Oral Health Tools

# Added Roles & Skills For Primary Care



## Counsel Patients

- Oral Health Promotion
- Perform Screenings & Learn Clinical Dental Emergency Skills
- Facilitate Referrals



## Oral Health Assessment

- Prenatal
- Infants & Children
- Elderly



## Develop Programs

- Fluoride
- Collaborate w/Schools
- Promote Community Oral Health

# The Dental/Medical Systemic Health Test

## Caries Risk Assessment & Diabetes Risk Assessment

Identify health issues before they begin!

**oral genome**  
ORALGENOME.COM  
info@oralgenome.com

**UNLOCKING HEALTH INSIGHTS FROM SALIVA**

The Oral Genome saliva test utilizes adaptive learning to identify oral health conditions, offering a customized preventive oral healthcare plan.

- Multiple health markers tested with saliva, not blood
- Scan test on your smart phone for results in minutes
- Calibrated, individualized care recommendations

**Oral Health Report**

**CRA** **DRA** **Cavity**

**Diabetes Risk Assessment (DRA)**  
Low Risk

The American Diabetes Association (ADA) Diabetes Risk Test assesses an individual's risk of developing type 2 diabetes. The test provides an estimate of the person's risk for diabetes. While not a diagnostic tool, it serves as an awareness and educational resource.

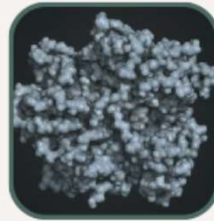


# Biomarker Insights and Data Include:



## **Porphyromonas Gingivalis (Pg)**

Research shows a connection between Pg and nearly every chronic illness



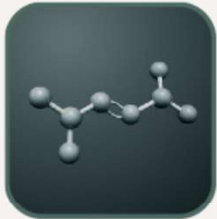
## **Matrix Metalloproteinase (MMP-8)**

Associated with tissue breakdown due to its role in degrading collagen



## **Salivary buffering capacity & pH**

Acidic saliva is less concerning if the patient is able to buffer it well



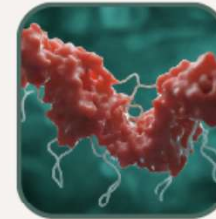
## **Nitric Oxide**

Insights into the mouth's ecosystem:  
Helps fight anaerobic pathogens,  
supports healthy blood flow and p  
immune response



## **Glucose**

Research correlates salivary glucose  
to generalized caries & root surface  
caries High glucose is associated with  
increased risk of diabetes

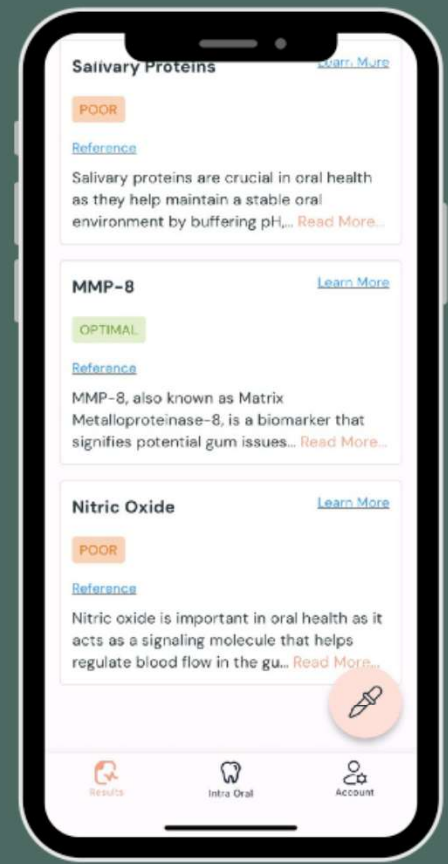
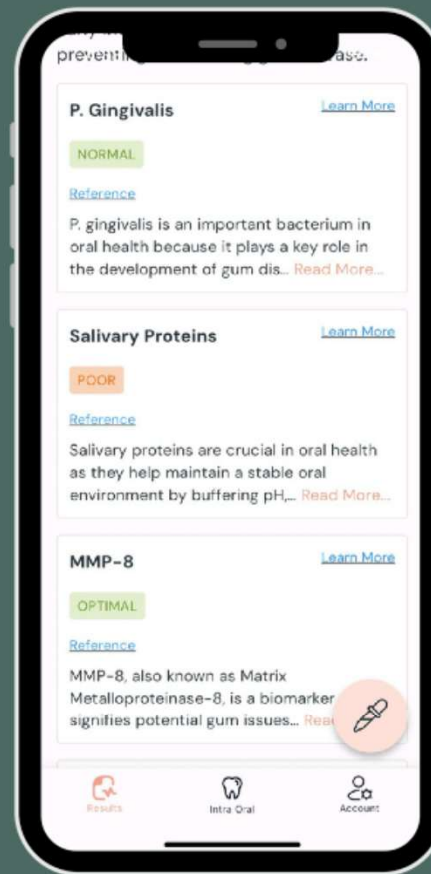
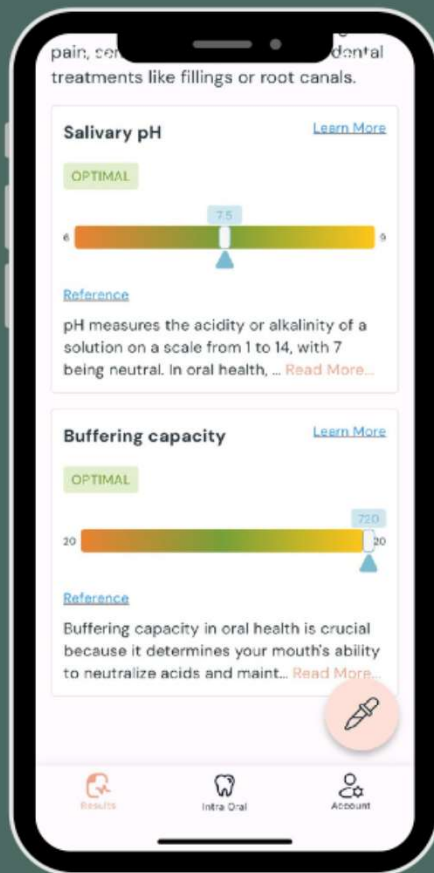
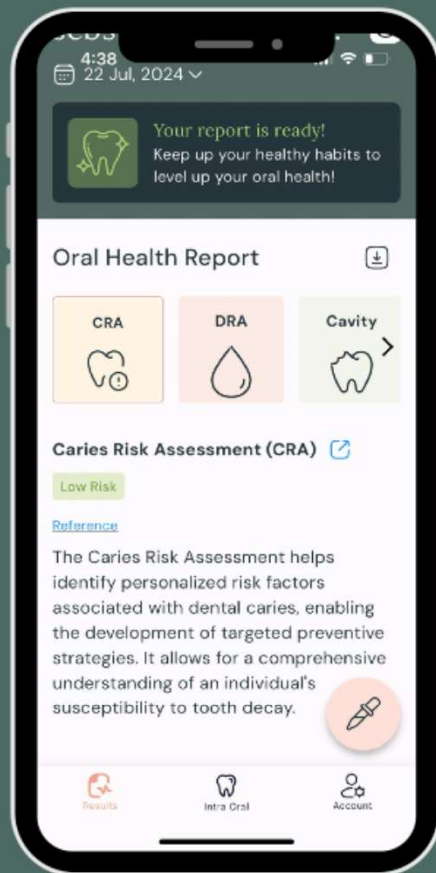


## **Proteins**

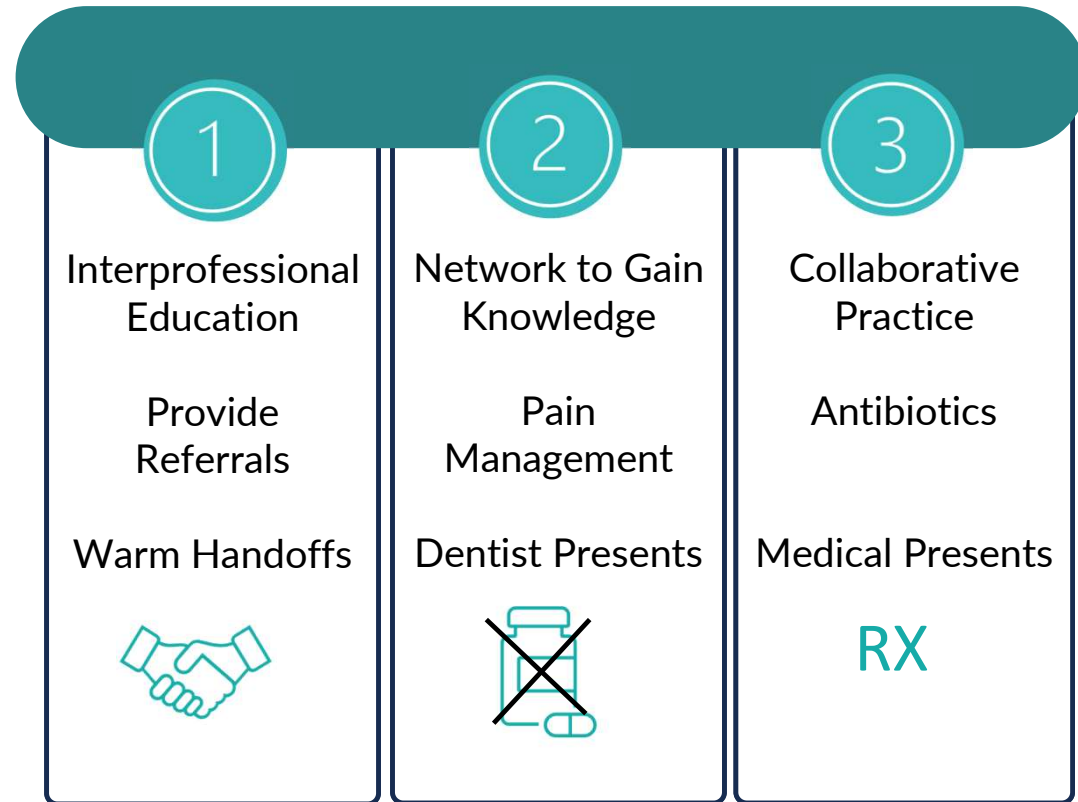
Serving crucial roles in digestion,  
oral health, and immune defense.



# View Your Oral Health Report



# Uniting Medical and Dental Care for Better Health



# Where It Begins: Building Health in the Classroom

1. Incorporate oral health into health & science curriculum.
2. Host dental professional visits & interactive workshops.
3. Establish school-based preventive programs (fluoride, sealants, screenings).
4. Encourage parents and educators to model good habits.
5. Make oral health a *normal part of the wellness conversation*, not a separate topic.



Nearly 80% of IHS/tribal schools have oral health programs — now's the time to enhance them with deeper education and stronger family involvement.

# Key Takeaways



Periodontal Disease Is Preventable & Treatable



Practice Good Oral Hygiene Habits



Schedule Regular Dental Visits



Discuss Risk Factors with Your Medical & Dental Providers



Early education in schools is the first step to lifelong oral and systemic health.



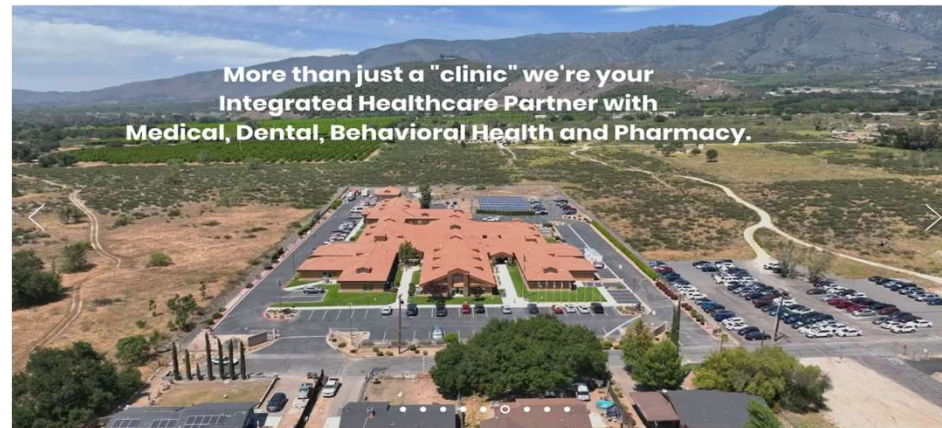
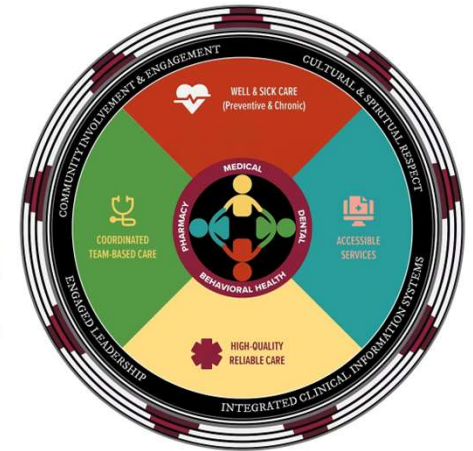
# Indian Health Council, INC.

## *Empowering Native Wellness*



## Your Integrated Care Partner

IHC's Integrated Care concept was designed to represent the four clinical areas of IHC: Medical, Dental, Behavioral Health and Pharmacy. At the center of all our efforts is our patients. IHC provides a continuum of care that integrates a sense of community involvement and engagement, cultural and spiritual respect, integrated information systems and engaged leadership that works in partnership with our patients to provide them with the highest quality of care and service.



# Supporting the Health of Native American and Alaska Native Tribes Communities

CDC Tribal Health - Partnering with Tribes



National Indian Health Board (NIHB)



Public Health Programs, Advocacy, and Resources

THANK YOU  
FOR COMING!



[TheHygienepreneur.com](http://TheHygienepreneur.com)





## Instant Download: Chronic Diseases – Investigating Systemic Health Effects Through Oral Health

