




# oral genome

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Decoding your mouth <sup>TM</sup>

# Unlocking Health Insights From Saliva



Saliva plays a crucial role in dentistry as it is simple to collect and abundant in health markers, providing valuable information about overall oral and bodily health.

*Non-Invasive  
Oral Health  
Testing*



# Saliva Testing

## What is salivary testing?

Salivary testing involves analyzing saliva to detect health markers like bacteria, enzymes, and hormones, providing insights into a person's overall health and potential diseases.

## How is salivary testing useful?

### Non-Invasive

Quick and easy collection (no needles & blood)

### Oral Health Assessment

Evaluate general oral health associated with caries and periodontal disease

### Infection Detection

Identify antibodies associated with disease

### Advance Research

Identifying new biomarkers, deepening our understanding of disease mechanisms

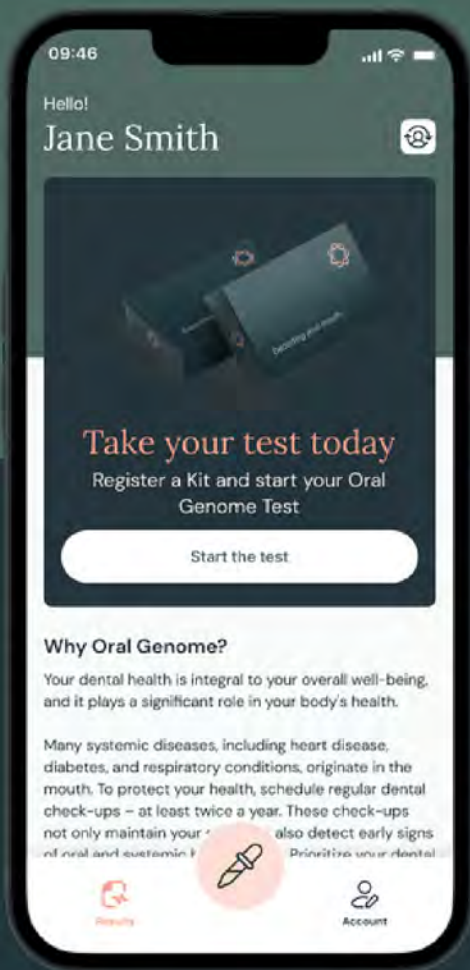
### Systemic Disease Screening

Detect biomarkers for conditions such as diabetes and heart disease, indicating health risks through changes in bacteria, proteins, and enzyme levels



# 3 EASY STEPS

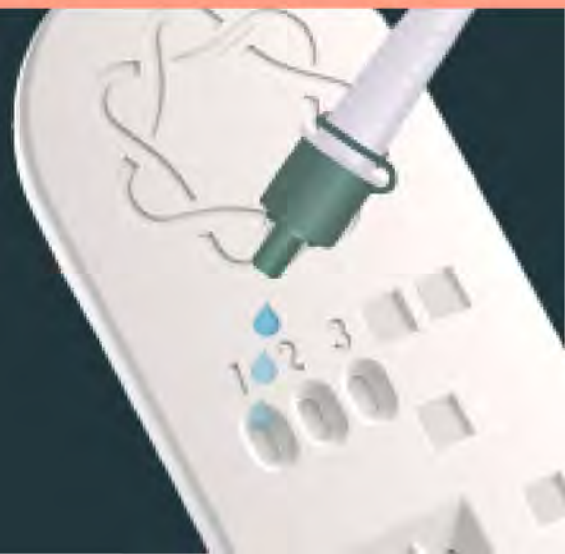
Scan to register your test.  
Collect saliva.  
Place it into test wells.



Take a photo with  
our app to receive  
your dental health  
report.

Receive Personalized  
Results & Insights

oral genome



# Your Oral Health Ally™



## Get Personalized Results Based On Your Test, Risks & Lifestyle

The patient completes ADA Caries Risk Assessment and ADA Diabetes Risk Test.

Each Oral Health Report is tailored to the individual patient's lifestyle and risks.

# Our Biomarker Map

Explore the future of personalized oral care. Using cutting-edge computer vision and machine learning, we analyze a wide range of biomarkers. Our approach customizes oral health care for proactive management.



## Porphyromonas Gingivalis (Pg)

Research shows a connection between Pg and multiple chronic diseases and conditions. Pg can produce toxins that can lead to the destruction of gum tissue and the bone supporting teeth, and it releases volatile sulfur compounds that cause halitosis.



## Matrix Metalloproteinase (MMP-8)

Associated with inflammation, high levels of MMP-8 can result in periodontal tissue breakdown and attachment loss due to its role in degrading collagen. If prolonged, it can lead to the degradation of tissues in other parts of the body, including joints, bones, and organs.



## Salivary Buffering Capacity & pH

Maintaining a balanced pH in the mouth is crucial for oral health, as acidic saliva can lead to tooth erosion and heightened sensitivity. Effective salivary buffering capacity helps mitigate this risk by stabilizing pH levels, safeguarding against cavities and discomfort.



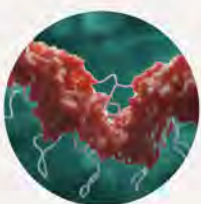
## Nitric Oxide

Helps fight anaerobic pathogens, supports healthy blood flow, and plays an important role in the immune response. Low levels of nitric oxide in the body can increase the risk of hypertension, cardiovascular disease, erectile dysfunction, and a weakened immune system.



## Glucose

High levels of glucose can lead to insulin resistance. Prolonged insulin resistance can lead to increased risk for Type 2 diabetes, cardiovascular disease, inflammation, weight gain, and metabolic disorders.



## Proteins

Salivary proteins are biomolecules secreted by salivary glands, serving crucial roles in digestion, oral health, and immune defense. Their detection and analysis in saliva offer a minimally invasive approach for early oral condition detection.

# The Colorful Science Of Oral Genome

oral genome

Ever wondered how science helps us understand our oral health?

The colorful world of oral genome assays reveals the secrets. These assays use a smart approach, mixing immunochromatography and sandwich immunoassay techniques.

Here's How it Works:

Tiny bead-antibody combos, called nano bead-antibody conjugates, play a big role. Imagine these beads as tiny magnets with special antibodies stuck on them. These antibodies are like keys, each fitting into a specific lock, or biomarker. They're placed in a special spot within our test card.



# The Colorful Science Of Oral Genome

When we introduce saliva with certain antigens (things our bodies react to) into the mix, something cool happens. The antigens connect with the antibodies on the beads, forming a duo called an antigen-antibody complex. This duo travels along the strip through capillary action, like water soaking into a sponge. And when it meets more antibodies waiting within our test card, it sticks, creating a colored line. The darker the line, the more of the antigen is in the saliva.

But accuracy is key. Each batch of test kits undergoes a careful calibration process. This helps us get reliable results every time. Using fancy computer programs and color-based tests, we can pinpoint exactly how much of the antigen is in the saliva. In addition, the color of the line also gives us hints about oral health. It's all thanks to something called colorimetry. This method tells us that the color we see is linked to how much of a substance is there. It's like adding more food coloring to make a drink darker. Beer's Law is a big part of this. It tells us that the color we see depends on what's in the saliva, how much of it there is, and how far light travels through it.

The Oral Genome Salivary Biometrics Test Kit also undergoes validation procedures to guarantee its efficacy. For instance, sample recovery tests confirm the device's ability to retrieve bacteria, proteins, and biomarkers effectively. Precision studies demonstrate the reproducibility of results across different biomarker concentrations, while cross-reactivity assessments ensure specificity by confirming no interference from other oral bacteria or proteins.

So, the next time you delve into the colorful world of Oral Genome testing, remember, it's a journey into understanding the vibrant science behind our oral health, one drop of saliva at a time.





# THE MOUTH EXPERTS™

## mHealth Application

Our mobile health app enhances healthcare by letting patients track their health, access medical-dental info, and connect with care teams. It promotes active health management and collaboration with providers.



### Wellness Report

The mHealth app offers a personalized wellness report that provides users with a comprehensive overview of their oral health based on salivary test results. This enhances their understanding of their oral health status and offers customized advice on steps they can take to improve it. This approach not only educates users but also gives them the power to take their oral healthcare into their own hands.



### Biomarker Insights

This feature informs users about specific biomarkers identified in their saliva and explains the implications of these biomarkers for their oral health and hygiene. By providing detailed information on the presence and significance of enzymes, proteins, and other crucial biomarkers, the app helps users understand potential health risks and the condition of their oral ecosystem, fostering a deeper awareness and proactive management of their oral health.



### Oral-Systemic Health Connections


This app emphasizes the crucial role of oral health in overall well-being. It educates users on how oral health affects conditions like heart and metabolic diseases and provides dietary recommendations for improved health. By promoting a healthier mouth and encouraging lifestyle changes, the app underscores the essential link between oral and general health.

## About the COM-B Framework

The app and its notifications are based on the COM-B (Capability, Opportunity, Motivation-Behavior) Framework, widely employed for behavior change. It enhances users' ability to perform, provides opportunities, and fosters motivation. In oral health, it's shown to improve dental hygiene and patient compliance.



# MARKET INSIGHTS

National Survey: 515 Participants, 18 to 86 years of age,  
Average age 47.5  centiment

72%

Want their dentist or hygienist to use the OG kit at their next appointment.

70%

Who have not seen a dentist in 2 years or more find the device valuable or very valuable



Find the personalized results & advice valuable or very valuable.



Top box scoring on likeliness to use the test kit and smartphone app.



Would switch their dentist to another dentist who provided the test.

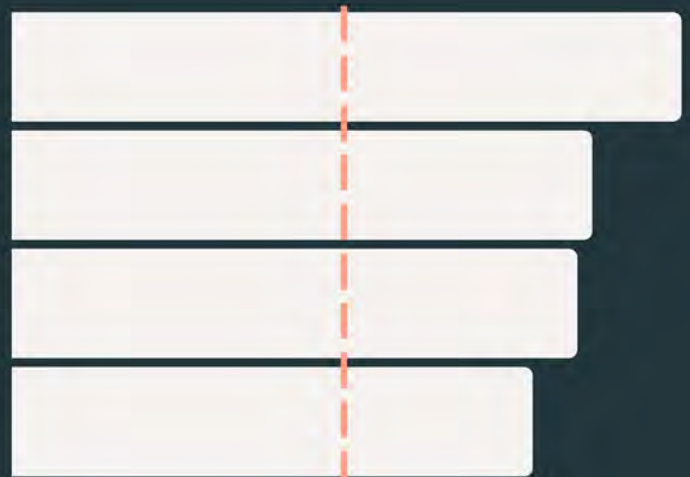
## PERCEIVED BENEFITS

Early detection of conditions

Monitor overall health

Convenience of test

Knowledge empowerment



# RECOMMENDED READING



## Microfluidic Point-of-Care Testing: Commercial Landscape and Future Directions

Sachdeva et al. - Frontiers in Bioengineering and Biotechnology - 2021

## Microbial Analysis of Saliva to Identify Oral Diseases Using a Point-of-Care Compatible qPCR Assay

Paqué et al. - Journal of Clinical Medicine - 2020

## Rapid assessment of salivary MMP-8 and periodontal disease using lateral flow immunoassay

Johnson et al. - Oral Diseases - 2016

## Nitric oxide signaling in health and disease

Lundberg & Weitzberg - Cell - 2022

## Salivaomics, Saliva-Exosomics, and Saliva Liquid Biopsy

Cheng et al. - Salivary Bioscience - 2020

## Accuracy of salivary glucose assessment in diagnosis of diabetes and prediabetes

Fares et al. - Diabetes & Metabolic Syndrome: Clinical Research & Reviews - 2019

## Chair-side saliva diagnostic tests: An evaluation tool for xerostomia and caries risk assessment in children with type 1 diabetes

Pappa et al. - Journal of Dentistry - 2020

## Porphyromonas gingivalis, Periodontal and Systemic Implications: A Systematic Review

Fiorillo et al. - Dentistry Journal - 2019

## Empirical Studies on Usability of mHealth Apps: A Systematic Literature Review

Zapata et al. - Journal of Medical Systems - 2015

## Adopting the COM-B model and TDF framework in oral and dental research: A narrative review

Buchanan et al. - Community Dentistry and Oral Epidemiology - 2021

## DENTISTRY TODAY

### Revolutionizing Dentistry: The Power of Point-of-Care Salivary Testing

Written by Tina Saw, DDS

December 1, 2022 • 8:00 AM

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Almost a decade into my private dental practice, I had an epiphany. Despite running a highly ranked dental practice in San Diego, something felt amiss. My patients desired transparency and a personalized approach to their oral health. Although I strived to meet their expectations, I felt there was a crucial element missing—a tool that could truly customize dentistry and make it more human-centric.

## ADA News

by Mary Beth Versaci

March 08, 2023

### ADA invests in two companies

Companies produce saliva test, AI platform

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The American Dental Association has invested funds in two companies producing technologies that support dentists.

The companies include Oral Genome, which developed a salivary test that detects biomarkers associated with caries and periodontitis, and Overjet, whose artificial intelligence platform detects decay and quantifies bone loss on radiographs in real time. Both Oral Genome and Overjet have other institutional investors.

## DE DENTAL ECONOMICS



PRATT • VIBERT • GRIMALDI • GARDNER • AND BRUNY • FRANKS

Partnering with Gen Z patients to improve their oral and overall health

## Helen Nurturing Human Connections

OCT 18

Personalizing Oral Health with Advanced Technology



Scott G. Brown, DMD, MS, Board of Directors, Helen Health Foundation

Tina Saw, DDS, CEO, Oral Genome

For training, support, and ordering information please email us!

[INFO@ORALGENOME.COM](mailto:INFO@ORALGENOME.COM)

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### *OTHER INFORMATION*

Test kits have a two-year shelf life and should be stored at room temperature.

## Supporters & Collaborators



partner  
network



HALEON