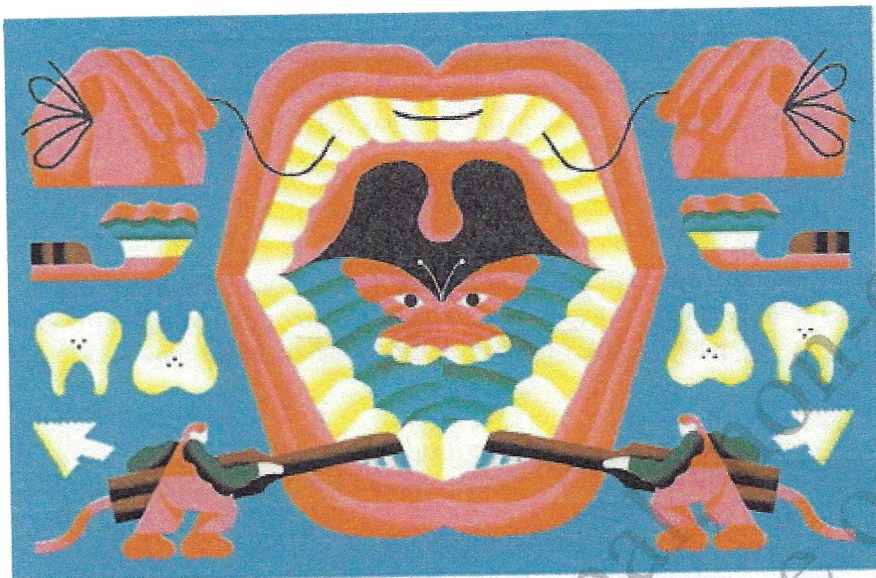


Efforts aim to narrow the medical-dental divisions.



FLORIAN GALLOU FOR WSJ

Your Mouth Could Hold Secrets to Longer Life

Scientists link oral bacteria to heart disease and cognitive decline

BY LAURA LANDRO

The eyes are a window to the soul, but the mouth may reveal just as much about a person's health—and the diseases that shape how we age.

Scientists are studying how issues that start in the mouth may contribute to chronic inflammation elsewhere in the body. They are examining how bacteria from diseased gums, and the immune response they trigger, may contribute to conditions including heart disease, diabetes, cognitive decline, arthritis, respiratory disease and chronic liver disease.

The emerging science poses a challenge for healthcare, given the traditional divide between medicine and dentistry—fields that have long been divided by separate training, records and insurance systems.

But that is changing. Dental schools, which have taught how diseases like diabetes affect the mouth, are also placing greater emphasis on how oral disease can affect the rest of the body. Medical-education leaders have called on medical schools to better integrate oral health into physician training.

At the Harvard School of Dental Medicine, the Initiative to Integrate Oral Health and Medicine is researching how oral-health policy and health-system design can better support “whole-person care,” according to its director, Dr. Lisa Simon, who is a dentist and a physician.

With better coordination, including shared medical and dental records, experts say, primary-care doctors might increasingly refer patients with diabetes or at high risk for heart disease to a dentist or periodontist for evaluation and treatment of gum disease.

More dentists may identify signs of uncontrolled diabetes and coordinate care with the patient's physician.

• Longevity link

The growing understanding of the mouth-body connection is also leading to new diagnostic tools, prevention strategies and treatments. And it is intensifying calls for more widespread coverage for preventive dental procedures, especially for older adults.

The Centers for Disease Control and Prevention says nearly half of all adults aged 30 years and older have periodontitis, the more serious type of gum disease that involves bone loss around teeth. But federal data also shows prevalence increases with age, when close to 60% of those 65 or older have some level of disease—just as people become more vulnerable to conditions that can dramatically affect a healthy lifespan. In turn, conditions such as diabetes can make gum disease more severe or harder to treat.

• The plaque connection

At the heart of current research is the oral microbiome, the community of hundreds of bacteria, fungi and other microbes that live in the mouth. Most are part of a healthy ecosystem, but a smaller group can thrive below the gumline, inflame the gums and drive diseases such as gingivitis and periodontitis. Over time, severe gum disease can destroy the tissue and bone that hold teeth in place.

A big challenge is dental plaque, a protective structure known as a biofilm that helps bacteria adhere to teeth and makes them more resistant to removal by saliva, mouth rinses and some antimicrobial agents. When plaque builds up, it can harden into tartar and trigger chronic gum inflammation.

Periodontists often manage patients with deep cleaning and scaling, and occasionally lasers. The procedures remove plaque below the gumline and disrupt bacterial biofilms that contribute to gum inflammation.

But plaque can shed bacteria or bacterial products into the bloodstream, says Dr. George Hajishengallis, a professor at the University of Pennsylvania's dental school specializing in microbiology and immunology. Most of the time, the immune system clears them quickly. With periodontitis, inflamed gums can weaken the body's usual barriers, and ordinary activities such as chewing, brushing or flossing can allow small amounts of bacteria or bacterial products to enter the bloodstream repeatedly, potentially adding to inflammation elsewhere in the body.

Research by Hajishengallis and another Penn professor, immunologist John Lambris, led to an experimental drug applied into gum tissue, aimed at calming the immune response. In an early trial in people with gum disease, the drug was reported to reduce gum inflammation for several months. While the researchers say it won't replace traditional dental cleaning, it could be used along with such cleanings to keep gum-disease inflammation at bay.

Amyndas Pharmaceuticals, a company founded by Lambris and spun off from Penn, is planning larger trials, says Lambris.

• A dose of prevention

More startups are entering the oral-health field, developing new approaches to preventing and managing disease, such as reducing harmful bacteria in the mouth while preserving helpful ones, and controlling biofilms before they cause lasting damage.

One approach would block destructive enzymes that break down gum tissue; another would help the body naturally turn off inflammation once it has done its job; and a third would slow the loss of gum tissue and bone that keep teeth firmly in place.

• Better care, records

A big challenge is the lack of dental-care insurance for those 65 and older, according to Dr. Frank A. Scannapieco, a professor at the University at Buffalo School of Dental Medicine. A study he co-wrote, published in 2023, found that a preventive dental visit in the year before hospitalization was associated with a 10% lower risk of a type of pneumonia that strikes hospitalized patients, while periodontal therapy within six months was associated with a 30% lower risk.

And a review of research he cowrote concluded that the addition of dental benefits to the Medicare program for diagnosis, prevention and control of oral diseases could improve health and potentially reduce medical costs.

Meanwhile, there are efforts to overcome a behind-the-scenes barrier between doctors and dentists: records systems. Very often, the two types of caregivers use different digital systems to store patients' vital information, and those systems can't talk to each