

Why Oral Hygiene Is Crucial to Your Overall Health

Gum disease has been associated with a range of health conditions, including diabetes, heart disease, dementia and more. Here's what experts say you can do to manage the risk.



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The inside of your mouth is the perfect place for bacteria to thrive: It's dark, it's warm, it's wet and the foods and drinks you consume provide nutrients for them to eat.

But when the harmful bacteria build up around your teeth and gums, you're at risk of developing periodontal (or gum) disease, experts say, which is an infection and inflammation in the gums and bone that surround your teeth.

And such conditions in your mouth may influence the rest of your body, said Kimberly Bray, a professor of dental hygiene at the University of Missouri-Kansas City.

A growing yet limited body of research, for instance, has found that periodontal disease is associated with a range of health conditions including diabetes, heart disease, respiratory infections and dementia.

Exactly how oral bacteria affect your overall health is still poorly understood, Dr. Bray said, since the existing research is limited and no studies have established cause-and-effect.

But some conditions are more associated with oral health than others, experts say. Here is what we know.

The health issues linked with oral health

About 47 percent of people aged 30 years and older in the United States have some form of periodontal disease, according to the Centers for Disease Control and Prevention.

In its early stages, called gingivitis, the gums may become swollen, red or tender and may bleed easily. If left untreated, gingivitis may escalate to periodontitis, a more serious form of the disease where gums can recede, bone can be lost, and teeth may become loose or even fall out.

With periodontitis, bacteria and their toxic byproducts can move from the surface of the gums and teeth and into the bloodstream, where they can spread to different organs, said Ananda P. Dasanayake, a professor of epidemiology at the New York University College of Dentistry.

This can happen during a dental cleaning or flossing, or if you have a cut or wound inside your mouth, he said.

If you have inflammation in the mouth that is untreated, some of the proteins responsible for that inflammation can spread throughout the body, Dr. Bray said, and potentially damage other organs.

Diabetes

Of all the associations between oral health and disease, the one with the most evidence is between periodontal disease and diabetes, Dr. Bray said. And the two conditions seem to have a two-way relationship, she added: Periodontal disease seems to increase the risk for diabetes, and vice versa.

Researchers have yet to understand exactly how this might work, but in one review published in 2017, researchers wrote that the systemic inflammation caused by periodontal disease may worsen the body's ability to signal for and respond to insulin.

In another study, published in April, scientists found that diabetics who were treated for periodontal disease saw their overall health care costs decrease by 12 to 14 percent.

"You treat periodontal disease, you improve the diabetes," Dr. Dasanayake said.

Pneumonia

If large amounts of bacteria from the mouth are inhaled and settle in the lungs, that can result in bacterial aspiration pneumonia, said Dr. Frank Scannapieco, a professor of oral biology at the University at Buffalo School of Dental Medicine.

This phenomenon has been observed mainly in patients who are hospitalized or older adults in nursing homes, and is a concern for those who can't floss or brush their teeth on their own, said Dr. Martinna Bertolini, an assistant professor of dental medicine at the University of Pittsburgh School of Dental Medicine.

Preventive dental care such as with professional teeth cleanings, or periodontal treatments like antibiotic therapy, can lower the risk of developing this kind of pneumonia, Dr. Scannapieco said.

Cardiovascular disease

In a report published in 2020, an international team of experts concluded that there is a significant link between periodontitis and heart attack, stroke, plaque buildup in the arteries, and other cardiovascular conditions.

While researchers haven't determined how poor oral health might lead to worse heart health, some evidence suggests that periodontal bacteria from the mouth may travel to the arteries in vascular disease patients, potentially playing a role in the development of the disease.

And a 2012 statement from the American Heart Association noted that inflammation in the gums has been associated with higher levels of inflammatory proteins in the blood that have been linked with poor heart health.

Some research also suggests that better oral hygiene practices are linked with lower rates of heart disease.

For example, in a study published in 2019, researchers reviewed the health records of nearly 250,000 healthy adults living in South Korea and found that over about 10 years, those who regularly brushed their teeth and received regular dental cleanings were less likely to have cardiovascular events than those who had poorer dental hygiene, formed more cavities, experienced tooth loss or developed periodontitis.

Pregnancy complications

A number of studies and reviews have found associations between severe periodontal disease and preterm, low birth weight babies, Dr. Dasanayake said. Though more research is needed to confirm the link.

In a 2019 review, researchers found that treating periodontal disease during pregnancy improved birth weight and reduced the risk of preterm birth and the death of the fetus or newborn.

And in a 2009 study, researchers found that oral bacteria could travel to the placenta — potentially playing a role in chorioamnionitis, a serious infection of the placenta and amniotic fluid that could lead to an early delivery, or even cause life-threatening complications if left untreated.

Research also suggests that bacteria from your mouth may activate immune cells that circulate in the blood, causing inflammation in the womb that could distress the placenta and fetal tissues.

There is longstanding research that periodontitis may induce preterm birth in animals like mice, and that treating these infections can protect against low birth weights and preterm birth.

Dementia

Researchers have been increasingly interested in the role of oral health in dementia, particularly Alzheimer's disease, Dr. Scannapieco said.

"Bacteria that are found in the mouth actually have been identified in the brain tissue of patients with Alzheimer's," he said, implying a potential role for them in the disease.

In a recent review, scientists noted that oral bacteria — especially those related to periodontitis — could either affect the brain directly via "infection of the central nervous system," or indirectly by inducing "chronic systemic inflammation" that reaches the brain.

However, there's no evidence that oral bacteria alone could cause Alzheimer's, the review authors wrote. Rather, periodontal disease is just one "risk factor" among many for people who are predisposed to Alzheimer's or other forms of dementia.

Other conditions

Oral bacteria have also been robustly linked with a number of other conditions such as rheumatoid arthritis and osteoporosis, Dr. Bray said. And emerging research is starting to link oral bacteria with kidney and liver disease, as well as colorectal and breast cancers.

But more research is needed to confirm all of these links, the experts said. And we still don't know if regular dental care and periodontal treatments may help prevent or improve any of the conditions mentioned above, Dr. Scannapieco said.

What you can do

The best way to maintain good oral health is to follow the classic dental care advice, including brushing your teeth twice a day and flossing every day, Dr. Scannapieco said.

“Not all people really appreciate their oral health, and they're only reminded of it when they have a toothache or some pain,” he added. But it's important to be just as diligent and proactive about your oral health as you are with exercise or diet or any other aspect of well-being.