



COMMUNICATION BRIEF

# Mouths Matter More Than You May Know

**Oral Health's Connection to Overall Health**



Each year, researchers report more evidence showing that what happens in people’s mouths is connected with their overall health — and vice versa.

These findings strengthen the case that improving someone’s oral health could impact their systemic health. The CareQuest Institute for Oral Health has monitored research and analysis, revealing links between oral health and overall health. In this brief, CareQuest Institute for Oral Health summarizes key findings from recent research.



## Heart Disease and Heart Attack

Researchers report that tooth decay and other oral infections in children might contribute to atherosclerosis in adulthood, a disease in which the inner wall of the arteries becomes clogged with plaque. In a 2019 study, [researchers concluded](#) that “childhood oral infections may be a modifiable risk factor for adult cardiovascular disease.”

People with periodontal disease (PD) — also called “gum disease” — have a [28% higher risk](#) of suffering their first heart attack than those without this disease. Evidence suggests that having a high level of C-reactive protein (CRP) in one’s blood is linked to a greater risk of heart attack, and patients with PD also have [higher circulating levels of CRP](#) than those without PD.



## Diabetes

Experts report that PD and diabetes have a [two-way relationship](#), meaning that diabetes may raise the risk and severity of PD, and vice versa. [Researchers report](#) that treating PD in people with diabetes is “particularly important” because of the link between managing gum disease and improving diabetic patients’ ability to manage their blood sugar levels.

Macroalbuminuria — an excessive amount of protein in someone’s urine — [can be an early sign of kidney disease](#). Studies of people with type 2 diabetes found that the incidence of macroalbuminuria was at least twice as high among those with moderate or severe PD or those who had lost their teeth, compared with diabetics who had mild or no PD. People with PD have a risk of diabetic neuropathy that is three times higher than those without PD. [Diabetic neuropathy](#) can be painful and disabling, causing a variety of health issues, such as digestive problems and nerve damage in the legs and feet.



## Stroke

Research shows that people with PD have [more than double the risk](#) of a stroke resulting from posterior circulation disease. This higher risk persisted after researchers adjusted for age, race, smoking status and other risk factors. In addition, people with PD have a much higher rate of stroke due to intracranial atherosclerosis — sometimes called “hardening of the arteries” — compared to those without PD.

Subclinical carotid atherosclerosis is [a leading risk factor](#) for stroke. Researchers in Finland [found a link](#) between oral infections (PD and tooth decay) in childhood and the development of this type of atherosclerosis 27 years later. Even after researchers adjusted their analysis to consider 31 other potential risk factors, oral infections remained an independent risk factor for this form of atherosclerosis.



## Respiratory Health

In a patient guide, the [American Thoracic Society](#) explains that teeth and gums are “reservoirs for germs that can travel down to the lungs and harm them.” The Centers for Disease Control and Prevention [calls](#) Chronic Obstructive Pulmonary Disease (COPD) “one of the most urgent health concerns facing Americans.” [Researchers](#) have identified PD as a “significant and independent risk factor” of COPD.



## Pneumonia

Pneumonia is one of the [leading causes](#) of death, especially among older adults. [Research](#) links a higher number of dental cavities and missing teeth with a greater risk of pneumonia. Receiving dental care is a key factor identified by researchers. [A review](#) of various studies revealed that improved oral hygiene can reduce the incidence of pneumonia in hospitalized and nursing home patients.

A study of more than 9,279 Medicaid patients found that [roughly 1 in 7 on mechanical ventilation](#) were diagnosed with [ventilator-associated pneumonia](#) (VAP). This form of pneumonia — the leading cause of death from hospital-acquired infections by critically ill patients — develops 48 hours or longer after mechanical ventilation is given. Research shows that more preventive dental visits before hospitalization decreased the likelihood of acquiring VAP compared to patients with fewer preventive visits, and having at least one preventive dental visit within the past three years reduced the odds of a VAP diagnosis by 22%.

Pneumonia accounts for nearly 1 in 4 hospital-acquired infections in the United States. [Non-ventilator pneumonia](#) (NVP) comprises 61% of all pneumonia cases that occur in hospitals, and the costs of treating NVP are 81% higher than the costs of VAP. For non-ventilated patients, [research has linked](#) better oral care with lower levels of oral bacteria and fewer episodes of pneumonia.



## Pregnancy Outcomes

Pregnancy is an exciting time in a woman’s life. Yet evidence has linked PD with adverse pregnancy outcomes, including preeclampsia or delivering a preterm or low birthweight baby. Researchers who [examined the evidence](#) say this link “is now sufficiently established for the field to start moving beyond” epidemiological studies and systematic reviews by gaining insights to develop targeted therapies and preventive strategies.

After reviewing the research, a committee of the American College of Obstetricians and Gynecologists (ACOG) [adopted a statement](#) declaring that “oral health care during pregnancy is safe and should be recommended to improve the oral and general health of the woman.” The ACOG statement urged OB-GYNs to discuss oral health with all patients, including those who are pregnant or in the postpartum period.



## Human Papillomavirus (HPV)

People with oral HPV are more likely to rate their oral health as fair or poor. [Researchers report](#) that poor oral health is a risk factor of oral HPV infection.

HPV is believed to cause [70% of throat cancers](#), which occur in the oropharynx — the tongue, the rear of the mouth, and the upper portion of the throat. Symptoms of oropharyngeal cancer include pain when swallowing and a long-lasting sore throat. Dental providers should take notice if their patients mention these symptoms. In addition, dental offices [should recommend to parents](#) that their boys and girls receive the HPV vaccine at ages 11–12 years.



## Blood Pressure

A study about efforts to keep blood pressure under control reported that “the [severity of periodontal disease](#) affects the odds of treatment failure.” Those who delayed dental care during their teens and early adult years [were more likely to be diagnosed](#) with high blood pressure (hypertension) as adults.



## Kidney Disease

Researchers reviewed a national database of more than 4.5 million people to explore the link between [oral health and end-stage kidney disease](#) (ESKD). After adjusting for other potential factors, these researchers found a strong association between tooth loss and ESKD. A study of [kidney dialysis patients](#) revealed that PD is independently associated with a higher risk of death from pneumonia.



## Dementia

Researchers in Japan studied more than 1,500 older adults and found that [tooth loss was a risk factor](#) for dementia. Another research paper concluded that tooth loss “[may be a predictor](#)” of dementia.

# What This Means for States

The growing evidence connecting oral health with overall health provides helpful insights to inform state policies. This evidence indicates that the oral health policies developed by states could affect the prevalence and cost of other health conditions.

Consider the impact of diabetes. In 2013, state Medicaid programs [spent nearly \\$26 billion](#) in direct medical costs for treating diabetes. Perhaps this explains why the average medical costs for patients with diabetes who received appropriate PD care [were \\$1,799 lower](#) than the costs for patients who had not obtained such care.

The University of Iowa Public Policy Center examined the impact of integrating oral health into broader health strategies. [In its 2018 report](#), the Center wrote that preliminary research “has demonstrated overall cost savings” when people with chronic medical conditions have dental coverage. The Center specifically cited the potential for cost savings by targeting oral health improvement in patients with heart disease.

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## CareQuest Institute for Oral Health

CareQuest Institute for Oral Health is a national nonprofit championing a more equitable future where every person can reach their full potential through excellent health. We do this through our work in grantmaking, research, health improvement programs, policy and advocacy and education as well as our leadership in dental benefits, care delivery and innovation advancements. We collaborate with thought leaders, health care providers, patients and local, state and federal stakeholders, to accelerate oral health care transformation and create a system designed for everyone. To learn more, visit [carequest.org](https://carequest.org).

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