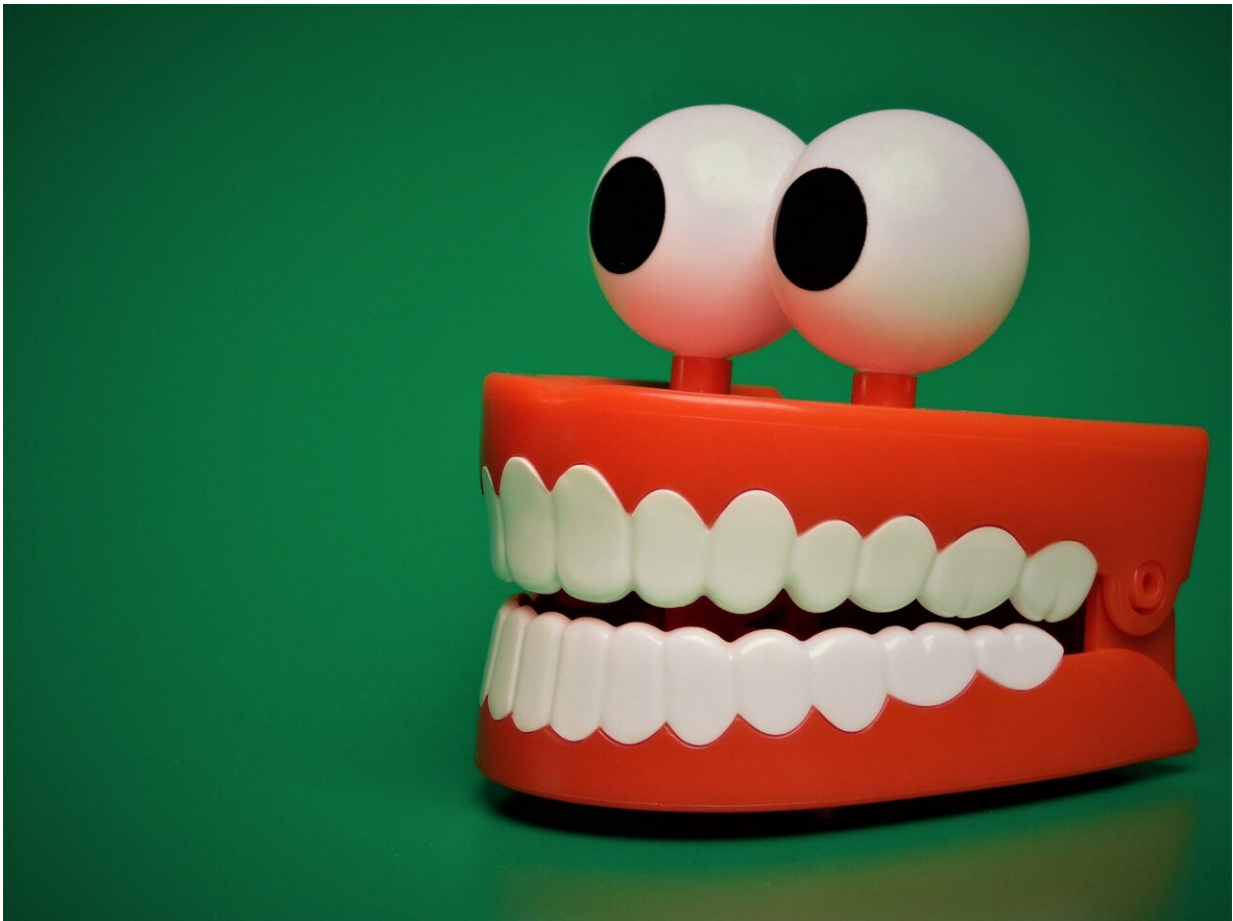


Tip of the iceberg: The oral-overall health link

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When you're sick, you go to the physician. When you have tooth

troubles, you see your dentist. You don't expect the dentist to diagnose you with the flu, or your primary care provider to treat your teeth.

In reality, the divide is not so clear cut. Dentists might not make the diagnosis, but they can be the first to detect an illness in a patient when they notice swollen gums, sores, and lesions that can signal that the body is fighting a disease beyond the mouth.

What's more, brushing your teeth twice a day won't just give you a dazzling smile—study after study has shown that maintaining excellent oral health is critical to staying healthy, especially in older patients.

This link drives the interprofessional nature of the education and research at the UConn School of Dental Medicine, part of a growing trend to better prepare every member of the health care team to treat the overall health of the patient as part of an interdisciplinary collaboration.

What Lies Beneath

At UConn Health, this comprehensive education begins at the start of dental and [medical school](#). Students from both schools participate in a shared biomedical sciences curriculum during their first 16 months.

"The curriculum at UConn Health is very special," says Dr. Douglas Peterson, professor of oral medicine and a lead faculty member for the interprofessional curriculum. "It capitalizes upon high quality basic and clinical science, and positions students and faculty from UConn professional schools to continue to learn how best to treat a medically complex patient based upon the highest quality scientific evidence."

Interprofessional health care is vital to meeting the challenges of health care today. It requires the entire health care team—including but not limited to dentists, physicians, nurses, pharmacists, and social

workers—to collaborate to provide safe and effective treatment. For School of Dental Medicine students, this concept is taught both in the classroom and in the clinics.

"From the dental medicine perspective, our faculty works with dental students in lectures, seminars, and clinical settings throughout the four year curriculum to continually highlight the scientific and clinical relationships between oral and systemic health and disease," says Peterson.

To that end, dental students are trained to notice the ways certain systemic diseases manifest in the mouth. Dentists are often the first line of defense, able to perform testing to either rule out the suspected underlying cause or refer patients to their physicians for further evaluation and treatment when needed.

"The interface between oral health and disease and systemic health and disease is centrally important," says Peterson. "We teach the dental and medical students that, if we detect an oral disorder for which the cause cannot be completely attributed to oral factors, we then need to think about the possibility of a systemic relationship to the oral condition."

In one prevalent example, dentists have become increasingly instrumental in detecting untreated diabetes. More than 21 percent of the 34.2 million people in the U.S. with diabetes were not aware of or did not report having the disease, according to 2020 Centers for Disease Control and Prevention data.

The relationship between diabetes and periodontal disease is one of the best-studied connections between an underlying medical condition and its oral manifestation, says Dr. Rajesh V. Lalla, UConn School of Dental Medicine professor and associate dean for research.

The common and preventable gum disease periodontitis manifests as red, swollen, bleeding gums. A dentist who suspects [poor hygiene](#) is not the culprit could test a patient's blood glucose level to screen them for untreated type 1 or type 2 diabetes.



UConn School of Dental Medicine oral pathologist Easwar Natarajan, BDS, D.M.Sc., examines a sample under a microscope. Credit: Tina Encarnacion/UConn Health

In 2018, general dentistry residents at UConn Health began a pilot study to assess the feasibility and impact of implementing a diabetes screening protocol in UConn's dental clinics. Patients deemed at risk were offered chairside HbA1C testing, which measures average blood glucose levels

over a three-month period.

Nearly 60% of patients tested were found to be in the pre-diabetic range and received referral to primary care for diagnosis and treatment. Early intervention with prediabetic patients has been shown to cut the risk of developing type 2 diabetes in half.

Dentists might also be the first to notice symptoms of HIV or cancer. Oral candidiasis, an oral fungal infection that may signify a weakened immune system, was one of the first diagnostic signs of HIV when the epidemic started in the early 1980s, according to Dr. Anna Dongari-Bagtzoglou, professor and head of the department of oral health and diagnostic sciences at the School, who has been studying oral candidiasis for over two decades.

An unusual lesion or sore detected during a routine check-up could trigger screenings and a biopsy, as it could mean oral cancer.

"It is important to be evaluated by a dental professional on a regular basis. If a potentially serious mouth condition is developing, early diagnosis and treatment is key," says Peterson. "Our dental students graduate from UConn knowing that considering the patient's overall health—rather than just what's going on in their mouth—could make a big difference in a patient's health and well-being."

Two-Way Street

On the flip side, UConn Health researchers also contribute to the growing body of evidence that shows keeping your mouth healthy helps keep the rest of you healthy.

Large-scale studies published by the American Heart Association and American Academy of Periodontology have shown that patients with

poor oral hygiene have been found to be at increased risk of heart attack, heart failure, stroke, and respiratory disease.

A recent paper published in the *Journal of the American Geriatrics Society* by Dr. Patrick Coll, professor of family medicine and medicine at the UConn School of Medicine, with UConn School of Dental Medicine faculty coauthors, examined the links between poor oral hygiene, oral infection, and systemic infection in older patients. It also emphasized the importance of health care providers of all types encouraging proper hygiene.

Bacteria in the oral cavity being released in the bloodstream can have detrimental effects on [older patients](#) with replacement heart valves and prosthetic joints, for one. The bacteria can potentially lead to infections in the area of the implant. "If you have an artificial heart valve, you need to be particularly fastidious with your oral hygiene," says Coll.

Poor oral health and aging can also lead to tooth loss, affecting a person's ability to chew, potentially leading to malnutrition.

Coll and his coauthors recommend eldercare facilities adopt interventions to help combat the barriers older populations face in receiving proper oral care. Patients with dementia may neglect their oral health and be reluctant to see a dental hygienist, for example, and nursing home residents often receive inadequate care despite federal requirements, the UConn experts say. Medicare doesn't currently cover dental care, making it difficult for low-income seniors to see a dentist.

Nursing homes should adopt risk assessment tools to identify patients at high risk for poor oral hygiene and should educate staff on the importance of good oral hygiene and how to provide it, they write.

"There are many aspects to promoting healthy aging, and oral health is

an important piece," Coll says.

Coll says he and the rest of the interprofessional health care team at UConn are committed to providing the very best health care, including oral care, based on the latest research and clinical evidence.

"The overall goal of this line of [health](#) care is centered in the UConn Health mission to achieve and maintain patient wellness," says Peterson.

Provided by University of Connecticut

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