

Your mouth, your brain

Panay News · 28 Oct 2022 · 8 · (By Dr. Joseph D. Lim and Dr. Kenneth Lester Lim, BS-MMG, DDM, MSc-OI)

BRUSHING your teeth may help keep not just your teeth healthy but your brain as well. And the rest of your body too. Over 700 different bacteria are found in the mouth, many of them the cause of gum infections. We have written about the link between infections in the mouth and chronic illnesses in other parts of the body. Studies have also shown that oral health issues are diagnosed long before chronic illnesses are seen in other parts of the body, indicating that infections like gum disease may indicate illnesses later on.

According to a 2020 study published in the journal *Neurology*, people with gum disease in midlife are more likely to develop dementia or mild cognitive impairment over 20 years of follow-up when compared with those without gum disease. Those with infections severe enough to cause tooth loss are twice as likely to suffer in brain health.

The study was led by Dr. Ryan Demmer, Associate Professor at the Division of Epidemiology and Community Health at the University of Minnesota in Minneapolis.

“It surprises people that the mouth triggers what’s going on in the rest of the body,” he said in an [medicalxpress.com](https://www.medicalxpress.com) article by Laura Williamson

“As people age, the balance of good and bad bacteria in the mouth shifts, creating an environment more vulnerable to gum disease and other infections associated with a higher risk for illnesses such as Type 2 diabetes, heart disease, stroke and dementia,” the article states. “But whether these germs are causing chronic illness, contributing to its development or just making the body more vulnerable to disease by creating inflammation remains uncertain.”

It doesn’t mean that gum disease causes chronic illnesses.

“We don’t know causality because we don’t know if there is something else that is confounding the relationship between gum disease and the outcome” May Ahmad Beydoun told [medicalxpress.com](https://www.medicalxpress.com).

She is a staff scientist in the epidemiology and population sciences lab at the National Institute on Aging who led a study published last year in the *Journal of Alzheimer’s Disease*. The study showed older adults with signs of gum disease were more likely to develop dementia during a follow-up period of 26 years when compared to people without oral health issues.

There are several theories as to why oral health issues may cause chronic illnesses later on, said Dr. Demmer.

One possible factor why oral health issues lead to chronic illnesses is the imbalance of good and bad bacteria in the mouth produces toxins in the bloodstream. This causes an immune response that in turn causes mild systemic inflammation. The inflammation may cause heart disease, stroke, dementias, and Alzheimer's disease.

Another theory is that beneficial gut and oral bacteria transform dietary nitrates similar to those found in leafy vegetables into nitric oxide which makes blood vessel healthy and lowers blood pressure.

In the elderly, the number of beneficial bacteria may not be sufficient to properly convert nitrates into nitric oxide. When high blood pressure occurs as a result, for example, the risk of getting dementia, heart disease and stroke increases.

Harmful bacteria may also come from the gut, according to Dr. Beydoun. Severe cases of gum disease have shown higher amounts of *Helicobacter pylori* bacteria that lives in the digestive tract and cause ulcers.

The bacteria may also increase the risk of dementia, said Dr. Beydoun who led a study published in *Molecular Psychiatry* that found an increased risk for Alzheimer's disease and other dementias among middle-aged and older men with high levels of *H. pylori*, medicalexpress.com reported.

She led another study published in the journal *Alzheimer's & Dementia* that found an increased dementia risk among older adults with gum disease who had high levels of *H. pylori*, according to the website.

Another factor may be that poor oral health "is probably making a slow contribution over a person's lifespan," said Dr. Demmer.

"There's a lot of work to be done," he said. "We also need to figure out if there are interventions that can prevent the dementias from developing. We are a long way from that. It's going to take many years and a lot of complicated studies."

Dr. Joseph D. Lim is the former

Associate Dean of the College of Dentistry, University of the East; former Dean, College of Dentistry, National University; Past President and Honorary Fellow of the Asian Oral Implant Academy; Honorary Fellow of the Japan College of Oral Implantologists; and Honorary Life Member of the Thai Association of Dental Implantology. For questions on dental health, e-mail jdlim2008@gmail.com or text 0917-8591515.

Dr. Kenneth Lester Lim, BSMMG, DDM, MSc- OI, graduated Doctor of Dental Medicine, University of the Philippines College of Dentistry, Manila, 2011; Bachelor of Science in Marketing Management, De la Salle University, Manila, 2002; and Master of Science (MSc.) in Oral Implantology, Goethe University, Frankfurt, Germany, 2019. He is an Associate professor; Fellow, International Congress of Oral Implantologists; Member, American Academy of Implant Dentistry and Philippine College of Oral Implantologists. For questions on dental health, e-mail limdentalcenter@gmail.com/