

Gum Disease Increases Risk of Mental Health Problems by 37%

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

STORY AT-A-GLANCE

- › A collaborative study led by the University of Birmingham discovered patients with periodontal disease have a 37% higher risk of developing mental health illness
- › The study also found gum disease was linked to a higher risk of cardiovascular disease, cardiometabolic disorders and autoimmune conditions, which supports past research
- › Gingivitis is a mild form of gum disease that is reversible. Without treatment, it can advance to periodontitis. Other types of gum disease can occur during pregnancy, around erupting teeth or in response to unique bacterial infections or hormonal changes during menopause
- › Consider taking steps beyond brushing and flossing, such as optimizing your diet for oral health, oil pulling with coconut oil, removing oral fluoride and antibacterial products from your regimen and ensuring adequate levels of vitamins C, D, K2, and magnesium and calcium

A collaborative study^{1,2} 64,379 people's medical records discovered that patients with periodontal disease have a 37% higher risk of developing mental health illness. The research team from the University of Birmingham also found that 60,995 had gingivitis and 3,384 had periodontitis.³ The data from these individuals were compared against 251,161 healthy individuals without any record of gum disease.⁴

The researchers accounted for confounding factors, such as smoking habits, ethnicity and body mass index. In addition to establishing the number of people with and without gum disease who also had mental health disease, they analyzed the data to determine the number in the same groups who developed cardiovascular disease, cardiometabolic disorders or autoimmune conditions.⁵

Gum Disease Raises the Risk of Mental Health Disorders

They discovered patients with a history of gum disease at the beginning of the study were more likely to be diagnosed with one of the health conditions in the following three years when compared against the healthy controls. The risk of mental health illness increased by 37%, autoimmune disease by 33%, and cardiovascular disease by 18%.

The health condition with the lowest risk was cardiometabolic disorder, which increased by 7% and a higher risk of Type 2 diabetes of 26%. One of the researchers, Dr. Joht Singh Chandan from the University of Birmingham, commented on the results of the study and the importance of the information in a press release, saying:⁶

"Poor oral health is extremely common, both here in the UK and globally. When oral ill-health progresses, it can lead to a substantially reduced quality of life. However, until now, not much has been known about the association of poor oral health and many chronic diseases, particularly mental ill-health.

We conducted one of the largest epidemiological studies of its kind to date, using UK primary care data to explore the association between periodontal disease and several chronic conditions.

We found evidence that periodontal disease appears to be associated with an increased risk of developing these associated chronic diseases. As periodontal diseases are very common, an increased risk of other chronic diseases may represent a substantial public health burden."

One of the researchers also noted that the findings suggest effective communication between dental professionals and primary care providers could help improve treatment

plans that target oral health and a patient's overall health.

Common Types of Gum Disease

Since 2009, data on the prevalence of periodontal (gum) disease in the U.S. have shown that between 30% and 47% of the U.S. population have some degree of periodontal disease,^{7,8,9} which has been called a growing epidemic.¹⁰

In their study, the Birmingham researchers enrolled patients who had either gingivitis or periodontal disease,¹¹ two of the largest diagnoses of gum disease. The data revealed an association with health conditions that are linked to an inflammatory response. Others have found this mechanism is also linked to neurodegenerative diseases and some cancers,¹² which can be the result of a chronic inflammatory response in the body.

Gingivitis is a mild form of periodontal disease.¹³ Your gums become red and swollen. They also bleed easily when you brush or floss. Left untreated, it can advance to periodontitis. In this condition, plaque spreads below the gum line. The bacteria produce toxins that irritate the gum tissue and trigger an inflammatory response.

As the disease progresses, the gums separate from the teeth. Bacterial growth in these pockets helps destroy more gum tissue and bone that supports the teeth. Eventually, your teeth can loosen and fall out. Other types of periodontal disease include:

- **Aggressive periodontitis** – This is a destructive disease that involves multiple teeth, fast progression, early onset and the absence of systemic disease.¹⁴
- **Pregnancy gingivitis** – This appears during pregnancy and is related to the hormonal changes associated with pregnancy.¹⁵ Changes in what you eat while pregnant and the amount of saliva produced can also increase the risk of gingivitis.
- **Pericoronitis** – This condition is common in 17- to 24-year-old adults. It appears where the wisdom teeth normally come through the gums and is triggered by infection over or around a partially erupted tooth.¹⁶ This leaves a flap of tissue that can collect food particles and result in an infection. The best preventive strategy is to brush and floss regularly.

- **Desquamative gingivitis** – This is a rare and painful type of periodontal disease that affects the outer layers of the gum. The tissue appears red, glazed and easily torn, causing bleeding.¹⁷ It can be caused by mucous membrane pemphigoid (MMP), oral lichen planus and pemphigus vulgaris. Endocrine disturbances, such as those during menopause, can also trigger the condition.

Data Also Link Gum Disease to Increasing Chronic Illnesses

Caroline Aylott from Versus Arthritis, commented on the importance of the Birmingham study results as they relate to patients with arthritis, especially autoimmune conditions. She said:¹⁸

"Some of the biggest challenges of arthritis, especially auto-immune conditions like rheumatoid arthritis (RA) which affects 400,000 people in the UK, is being able to know who is more at risk of developing it, and finding ways to prevent it. Previous studies have shown that people with RA were four times more likely to have gum disease than their RA-free counterparts and it tended to be more severe.

This research provides further clear evidence why healthcare professionals need to be vigilant for early signs of gum disease and how it can have wide-reaching implications for a person's health, reinforcing the importance of taking a holistic approach when treating people."

Past studies have supported the evidence from the featured study. For example, one study¹⁹ published in 2001 with 1,412 participants found 62.5% of patients with rheumatoid arthritis had advanced forms of periodontal disease. They concluded that moderate to severe gum disease increases the risk of rheumatoid arthritis and vice versa.

A later study²⁰ in 2010 discussed the specific oral bacterial infections that appeared to be linked to RA. The data linking periodontal disease and heart disease is not as

consistent. The featured study found a strong link, as have other studies^{21,22} and literature reviews.^{23,24} However, other papers^{25,26} have not found a positive association.

Several mechanisms have been postulated²⁷ to explain a relationship between periodontitis and cardiovascular disease. These include infection of atherosclerotic plaques by pathogens in the gums, systemic dissemination of proinflammatory compounds from gum disease, the effect periodontitis has on the lipid profile, or the contribution it makes to the development of Type 2 diabetes.

The featured study also found a link between gum disease and cardiometabolic disease.²⁸ This is a group of health conditions that increases your risk of heart attack, stroke and high blood pressure.²⁹ These are consequences of metabolic syndrome, which is a constellation of symptoms that include the following:³⁰

- Belly fat
- High blood pressure
- Impaired glucose tolerance
- High triglycerides
- Low high-density lipoproteins (HDL)

One study³¹ evaluated the medical records of 572 industrial workers who had medical and dental records from 2003 to 2012. The evaluation of the records in 2003 showed normal cardiometabolic values.

The researchers then compared the duration of periodontal pockets, which are a symptom of gum disease, against the progression of cardiometabolic risk factors over nine years. They found that chronic gum disease was significantly associated with these risk factors and suggested cardiometabolic disease may increase in patients who are not treated for periodontitis.

Steps to Protect Your Gums and Your Brain

Dr. Steven Lin is a dentist who uses holistic approaches to care for oral health as well as your overall health. In this short video, he encourages you to think of your mouth as a "gatekeeper" to your gut health and as a reminder to keep your gut microbiome balanced and healthy.

Your gums don't take care of themselves. Eating processed and high carbohydrate foods increases bacterial growth in your mouth and the risk of gum disease. The first step to consider is optimizing your diet for your oral health and mitochondrial function by reducing your intake of carbohydrates.

The American Dental Association³² recommends you brush twice a day with a soft bristle brush and replace that brush every three to four months. You should also regularly floss between your teeth to remove plaque.³³ While these are basic steps for oral care, there are several more you can take to help reduce the growth of bad bacteria and protect your overall health. For example, you will want to:

- **Monitor your vitamin D, K2, magnesium and calcium levels** — These nutrients work synergistically to help protect your gums, teeth and bones. Calcium strengthens your bones and enhances overall skeletal health, but only works when it gets to the right place. Vitamin K2 directs calcium into the bone and prevents it from being deposited along blood vessel walls.

According to Lin, K2 helps mediate gut inflammation in two ways:³⁴ by decreasing fibroblasts that fuel gum disease and activating Matrix GLA protein that prevents calcification of the periodontal ligament and around the body.

Vitamin D deficiency increases the risk of inflammatory diseases and is associated with a higher risk of periodontal disease.^{35,36} You can maintain optimal levels through sensible sun exposure. If you cannot keep your serum levels³⁷ between 40 ng/mL and 60 ng/mL³⁸ you may consider supplementation.³⁹

- **Monitor your vitamin C status** — One study⁴⁰ from the University of Washington found that if your gums are bleeding, you may be deficient in vitamin C. They reviewed data from 15 trials in 6 countries and found when baseline levels of

ascorbic acid (vitamin C) were less than 28 $\mu\text{mol/L}$, supplementation helped reduce gum bleeding. They concluded:⁴¹

"Consistent evidence from controlled clinical trials indicates that setting human AA requirements based on scurvy prevention leads to AA plasma levels that may be too low to prevent an increased gingival bleeding tendency.

Gingival bleeding tendency and retinal hemorrhaging coincide with low AA plasma levels and thus may be reflective of a systemic microvascular pathology that is reversible with an increased daily AA intake."

- **Stop using fluoridated products** – It is important to optimize your oral microbiome. Antibacterial and fluoridated products, such as toothpaste, mouthwash, floss and fluoridated water, negatively affect your oral microbiome.

In the mouth, you don't want to have a "scorched earth policy," nuking all bacteria and hoping the good bugs come back, says biological dentist Dr. Gerry Curatola, founder of Rejuvenation Dentistry. Good bugs basically have a harder chance of setting up a healthy-balanced microbiome when you disturb them, denature them or dehydrate them with alcohol- and chemical-based products.⁴²

- **Consider oil pulling** – A gentle and simple way to help reduce plaque, gingivitis and bad breath is oil pulling using coconut oil. According to Ayurvedic tradition, oil pulling may improve more than 30 systemic diseases including reduced inflammation and bleeding.⁴³

Coconut oil is antibacterial and antiviral and contains 92% saturated fats,⁴⁴ 49% of which is the anti-inflammatory and antimicrobial medium-chain saturated fat lauric acid.⁴⁵ Scientific study has also suggested that oil pulling with coconut oil reduces plaque formation and reduces the risk of gingivitis.^{46,47,48}

Sources and References

• 1, 28 [University of Birmingham, December 20, 2021](#)

- ² [BMJ Open, 2021; 11:3048296](#)
- ³ [Study Finds, December 20, 2021](#)
- ⁴ [University of Birmingham, December 20, 2021, bullet 2](#)
- ⁵ [University of Birmingham, December 20, 2021, para 3](#)
- ⁶ [University of Birmingham, December 20, 2021, Comprehensive Study paras 1,2](#)
- ⁷ [Clinical, Cosmetic and Investigational Dentistry, 2010;2:79](#)
- ⁸ [Journal of Dental Research, 2012;91\(10\)](#)
- ⁹ [National Institute of Dental and Craniofacial Research, Periodontal Disease in Adults, Prevalence of Periodontitis](#)
- ¹⁰ [Journal of Public Health and Emergency, 2020;4](#)
- ¹¹ [University of Birmingham, December 20, 2021, bullet 1](#)
- ¹² [Nature Reviews Immunology, 2021;21:426](#)
- ¹³ [American Academy of Periodontology, Gum Disease Information](#)
- ¹⁴ [Periodontology 2000, 2014;65\(1\):13](#)
- ¹⁵ [What to Expect, October 2, 2020](#)
- ¹⁶ [Columbia College of Dental Medicine, Pericoronitis](#)
- ¹⁷ [Journal of Pharmacy & BioAllied Sciences, 2014;6\(2\):122](#)
- ¹⁸ [University of Birmingham, December 20, 2021, Comprehensive Study](#)
- ¹⁹ [Journal of Clinical Periodontology/ 2001;27\(4\)](#)
- ²⁰ [Arthritis Research & Therapy, 2010;12\(218\)](#)
- ²¹ [Journal of Periodontology, 2006; doi.org/10.1902/jop.2006.050405](#)
- ²² [European Society of Cardiology, August 25, 2021](#)
- ²³ [Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 2003;95\(5\)](#)
- ²⁴ [Journal of General Internal Medicine, 2008;23\(12\)](#)
- ²⁵ [JAMA, 2000;284\(11\)](#)
- ²⁶ [Circulation, 2005;112](#)
- ²⁷ [Biochimica et Biophysica Acta \(BBA\) - Molecular Basis of Disease, 2019;1865\(2\)](#)
- ²⁹ [U.S. Pharmacist, February 16, 2017](#)
- ³⁰ [Translational Research, 2017;183:57](#)
- ³¹ [Metabolic Syndrome and Related Disorders, 2016;14\(10\)](#)
- ³² [Mouth Healthy, Brushing Your Teeth](#)
- ³³ [Mouth Healthy, Flossing](#)
- ³⁴ [Dr. Steven Lin, Can vitamin K2 Prevent and Cure Gum Disease?](#)
- ³⁵ [Journal of Indian Society of Periodontology, 2013;17\(3\)](#)
- ³⁶ [Medicina, 2018;54\(3\)](#)
- ³⁷ [Grassroots Health, D*Action](#)
- ³⁸ [GrassrootsHealth Nutrient Research Institute, January 8, 2019](#)
- ³⁹ [Grassroots Health Nutrient Research Institute, Vitamin D Calculator](#)
- ^{40, 41} [Nutrition Reviews, 2021;79\(9\)](#)
- ⁴² [Jeffrey Bland Interview With Jerry Curatola May 2016](#)
- ^{43, 46} [Heliyon 2020;6\(8\)](#)

- ⁴⁴ Nutrition reviews 2016; 74(4)
- ⁴⁵ Ghana Med J. 2016; 50(3)
- ⁴⁷ European Journal of Dentistry, 2020; 14(4)
- ⁴⁸ Journal of Global Oral Health 2019;2(2)