

Heart TALK

Heart-healthy and Stroke-free Living with Dr. Amy L. Doneen, DNP, ARNP

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Thoughts from Dr. Amy

Can a Healthy Mouth Help You Avoid Alzheimer's Disease?



Your mouth harbors more than 700 species of bacteria, including those that cause periodontal disease (PD). Also known as gum disease, this chronic oral infection affects the majority of Americans over age 30, many of whom are undiagnosed. Not only can PD lead to tooth loss if untreated, but new studies have also linked it to increased risk for Alzheimer's disease (AD), a memory-robbing disorder that affects one in ten Americans ages 65 and older and one in three of those ages 85 and up.

Periodontal bacteria have also been linked to increased risk for other forms of dementia. These findings suggest that taking excellent care of your teeth and gums — and seeing your dental provider regularly — may be one of the best ways to keep your memory sharp. Here's a look at the latest discoveries, plus expert BaleDoneen tips to help you safeguard your oral-systemic health.

What Is the Oral-Systemic Connection?

A landmark 1954 study was the first to show that oral bacteria, such as those

that cause PD, frequently enter the bloodstream and quickly spread throughout the body. Among the ways this can happen are through periodontal cleaning, tooth extractions, tooth brushing and even chewing food.

The spread of these germs throughout the body can result in [chronic inflammation](#), a fiery process linked to many dangerous disorders, including heart disease, type 2 diabetes, rheumatoid arthritis, pregnancy complications and even some forms of cancer. A [landmark,](#)

[peer-reviewed BaleDoneen study](#) was the first to identify periodontal bacteria as a contributing cause of cardiovascular disease (CVD), the leading killer of American men and women.

Earlier research, including a scientific statement by the American Heart Association, has shown a strong, independent association between PD and CVD (which is also called heart disease). Indeed, a [2016 analysis of studies](#) involving more

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than 7,000 people found that those with periodontitis were 2.5 times more likely to suffer heart attacks than those with healthy gums!

What's the Link Between Gum Disease and Memory Loss?

In July 2020, a study of more than 6,000 Americans reported that those with signs of gum disease and oral infections developed Alzheimer's disease at a higher rate than those with good oral health. Conducted by the National Institute of Aging, the study tracked participants for up to 26 years.

All participants received a dental exam at the start of the study. They also received blood tests to check for antibodies against a gang of 19 bacterial species known to cause gum disease. The researchers looked for a correlation between antibody levels and risk for being diagnosed with AD, dying from it, or developing any form of dementia. Of the 19 bacterial villains studied, *Porphyromonas gingivalis* is the most common culprit in PD.

The researchers reported that among people ages 65 and older, those with antibodies against *P. gingivalis* were at the greatest risk of being diagnosed with AD or dying from it. The team also reported that *P. gingivalis* can gang up with other high-risk oral bacteria, such as *Campylobacter rectus*, *Prevotella melaninogenica*, *Fusobacterium nucleatum* and *Streptococcus intermedius*, to further magnify those risks.

How Can Oral Bacteria Harm Memory?

Recently, researchers from the University of California San Francisco [uncovered a link](#) between periodontal bacteria and the development of AD. They discovered that a toxin secreted by *P. gingivalis* destroys brain neurons and may contribute to the development of

beta-amyloid plaques. Many scientists believe that accumulation of this sticky compound in the brain is the primary cause of AD, with the buildup initially disrupting communication between neurons and ultimately killing them.

According to this theory, known as "[the amyloid hypothesis](#)," the development of the amyloid plaques that are the hallmark of AD activates immune cells, leading to inflammation that eventually destroys brain cells. Inflammation (the body's immune system response to bacterial invaders) and oxidative stress have also been linked to the buildup of brain deposits of beta-amyloid.

Commenting on the research, Richard Kao, DDS, PhD, president of the American Academy of Periodontology, says, "These recent findings present strong evidence on how periodontal disease can impact the pathogenesis of Alzheimer's disease and should highlight how crucial it is to manage periodontal disease, especially in older adults or individuals who have increased risk for dementia."

The findings add to earlier research linking PD and poor oral health to increased risk for dementia. [In a 2016 study](#), people with severe gum disease were 70% more likely to develop Alzheimer's disease, [while another 2016 study](#) found that in people who already had the memory-robbing disorder, cognitive decline progressed six times faster in those with PD.

Do Oral Bacteria Pose Other Serious Health Threats?

A [landmark BaleDoneen study](#) was the first to identify certain periodontal bacteria as a contributing cause of cardiovascular disease, the leading killer of Americans. Published in the peer-reviewed journal *Postgraduate Medical Journal*, the study reported that harmful cardiovascular effects of gum disease are due to a few high-risk bacteria: *Aggrega-*

tibacter actinomycetemcomitans, *P. gingivalis*, *Tannerella forsythia*, *Treponema denticola* or *Fusobacterium nucleatum*.

Other studies have linked gum disease to increased risk for a wide range of dangerous disorders, including type 2 diabetes, rheumatoid arthritis, pregnancy complications and even certain types of cancer.

What's the Best Way to Get Checked for Gum Disease?

To find out if you have PD, ask your dental provider to do a painless exam using a mirror and periodontal probe to check for signs of oral infection. It's also important to find out if you have high-risk oral bacteria.

Instead of only evaluating the severity of a patient's symptoms — such as how deep the pockets of infection are, how much the gums bleed, or how loose the teeth are — the BaleDoneen Method recommends using available tests from companies that measure oral pathogens through DNA analysis, including OralDNA, OraVital and Hain Diagnostics.

Treatments for PD include nonsurgical periodontal therapy, a daily program of oral care to follow at home, prescription mouthwashes, dental trays with antibacterial gel (PerioProtect), and in some cases, a short course of antibiotics. Regardless of which treatment is prescribed, the BaleDoneen Method recommends repeating the DNA testing to make sure the treatment was successful.

What Kind of Home Care Helps Keep Your Mouth Healthy?

A recent study of more than 5,600 older adults found that one of the simplest — and most effective — keys to a long life and lower risk for chronic diseases is combining regular dental checkups with excellent self-care, including daily brushing and flossing.

If you smoke, here's even more

Hearty and filling, this easy, gluten-free recipe is perfect for a festive winter dinner. Acorn squash is rich in heart-healthy nutrients, including fiber; vitamins A, B1, B6 and C; potassium; magnesium; iron; folate; and antioxidants. Studies suggest that acorn squash may protect against heart disease, high blood pressure, type 2 diabetes and certain cancers. Both savory and sweet, this beautiful winter fruit is low in calories and high in vitamins and minerals that boost eye, skin and bone health. To increase the protein in the recipe, add a 15-ounce can of chickpeas (drained) to the quinoa stuffing mixture. Left-over stuffing can be used for a tasty lunchtime salad.

INGREDIENTS

- 2 medium acorn squash, halved and seeded
- 2 tablespoons olive oil, divided
- 1 yellow onion, chopped
- 2 cloves garlic, minced or pressed
- 1 cup quinoa, rinsed
- 2 cups vegetable broth
- ¼ cup dried cranberries
- ½ cup chopped walnuts, pumpkin seeds, pecans, almonds, pistachios or sunflower seeds
- ¼ cup chopped flat-leaf parsley, plus 2 tablespoons for garnish
- 1 tablespoon lemon juice
- ½ teaspoon dried thyme
- ½ teaspoon dried sage
- ¼ teaspoon black pepper
- ¼ teaspoon cinnamon



PREPARATION

Preheat oven to 400F. Brush the acorn squash flesh with one tablespoon of olive oil. Bake squash cut side down on a baking pan for 30 minutes, until fork tender. Meanwhile, heat the other tablespoon of olive oil in a large frying pan. Add onion and garlic and sauté until the onions are translucent and fragrant (about 5 minutes). Add quinoa and broth. Bring to a boil over medium-high heat. Cover pan, reduce heat and simmer until broth is absorbed (10 to 15 minutes). Turn off heat and stir in all remaining ingredients. Using a large spoon, divide mixture evenly between the four squash halves, packing it firmly into the wells of the squash. Transfer stuffed squash to a serving dish and garnish with remaining two tablespoons of minced parsley. Serve hot and enjoy!

motivation to snuff out the habit: It's a leading risk for developing gum disease. We also advise these measures to optimize your oral health:

- **Brush and floss twice a day.** Although you may have seen headlines claiming there's not much science to support flossing, [in a nine-year study of 5,611 older adults](#), people who never flossed had a 30 percent higher death rate than those who flossed daily!

- **Go to bed with a clean mouth.** The study found that never brushing at night raised mortality risk by 25 percent, vs. nightly brushing. Since your mouth produces less saliva to wash your teeth and gums when you're sleeping, it's

particularly crucial to floss and brush thoroughly before bed. We recommend brushing with a sonic toothbrush for best results.

- **Get a dental cleaning every 3 months, or as advised by your dental provider.** The study also found that people who hadn't gone to a dentist in the previous year had a 50 percent higher mortality rate than those who went two or more times annually, leading the researchers to conclude that good oral health promotes longevity by helping people avoid lethal systemic diseases sparked by infections and chronic inflammation, such as CVD and possibly, Alzheimer's disease.