

# Poor Oral Health May Contribute to the Risk of Dementia



Many adults recognize the occasional forgetfulness that often accompanies growing older — misplacing a set of keys, walking into a room only to lose track of why they're there, or momentarily blanking out on the name of an acquaintance.

The memory impacts of dementia, however, go well beyond those of [normal aging](#). [Dementia](#) (often referred to collectively as Alzheimer's disease and related dementias [ADRD]) is defined by the Centers for Disease Control and Prevention (CDC) as *"the impaired ability to remember, think, or make decisions that **interfere[s]** with **daily activities**."*

Of the several different types of ADRD, [Alzheimer's disease](#) (also referred to as Alzheimer's dementia) is the most common form. In 2023, approximately [6.9 million adults aged 65 and older](#) — about one in nine older adults — were diagnosed with Alzheimer's disease in the United States (US). Combined with other forms of ADRD, including [vascular dementia](#), [Lewy body dementia](#), and [frontotemporal dementia](#), it is estimated that by 2040, the number of individuals with ADRD in the US could reach [12 million](#).

ADRD has a disproportionate impact across race and gender. Individuals identifying as [Black or Hispanic are at a higher risk](#) of being diagnosed with ADRD than white individuals. While the reasons for these differences are currently unknown, some suggest they may be potentially [due to complex interactions](#) of biological risk factors (e.g., [cardiovascular disease](#)), [implicit biases among health care providers](#) diagnosing Black and Hispanic individuals with ADRD, and the [health effects of racism](#). It is estimated that [by the year 2060](#), the number of Hispanic individuals diagnosed with ADRD will increase by seven times, and by four times among Black individuals, primarily due to

projected [growth in the Hispanic and Black populations](#) over the next few decades. Across all races, [women are nearly twice as likely to be diagnosed with ADRD](#) than men, primarily because women tend to live longer than men.

Overall health is [inextricably linked with oral health](#). Oral health conditions such as periodontal disease have been linked to other systemic conditions, such as diabetes and cardiovascular disease. Recently, researchers have begun to examine the links between poor oral health and the risk of being diagnosed with ADRD. Their findings emphasize the importance of maintaining good oral health throughout a person's life.

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## Poor Oral Health Raises the Risk of Being Diagnosed with ADRD



Compared to adults aged 50–80 without Alzheimer’s disease, **adults of the same age with Alzheimer’s disease have worse periodontal (gum) health** across several markers including **more plaque, deeper gingival (gum) pockets, more bone loss around the teeth, and more gingival bleeding.**



A large, long-term study of periodontal infection and Alzheimer’s disease revealed that **older adults who had antibodies against the periodontal bacteria *P. gingivalis* at baseline were significantly more likely to be diagnosed with ADRD** than those without these antibodies.



A buildup of beta-amyloid protein — or plaques — may occur as a response to infection with the periodontal bacteria *P. gingivalis*. When beta-amyloid protein builds up in the brain, **these plaques can block brain cells from communicating with each other, leading to memory loss and confusion.**



**Tooth loss, often the result of periodontal disease or dental caries (decay), is linked with a higher risk of being diagnosed with ADRD.** This risk increases with every additional tooth lost.

## ADRD Negatively Affects Oral Health and Requires Additional Care



**Individuals with ADRD, particularly ADRD at more advanced stages, are at increased risk of poor oral health** due to problems maintaining or understanding how to complete a regular oral care routine, difficulty in reporting oral pain, or challenges in cooperating with oral health care.



Barriers to adequate oral health care can be more pronounced for individuals with ADRD living in long-term care facilities, due in part to factors such as **insufficient staffing, staff workload, prioritization of other health care needs, and limited access to professional oral health care.**



**Adults with Alzheimer’s disease have higher dental care–related costs**, particularly for restorative procedures (e.g., fillings) and oral surgery–related procedures, than adults without Alzheimer’s disease.



**Social determinants of health, such as lower education levels, social isolation, and lack of access to regular medical and oral health care, can negatively affect oral health and increase the risk of being diagnosed with ADRD.** Addressing factors like these across the lifespan can help facilitate healthy aging.



**Caregivers caring for adults with ADRD should watch for signs of mouth pain** (e.g., difficulty eating) and may need to take a more active role in helping adults with their oral health care as their disease progresses into more advanced stages. This may take the form of reminding them to brush, demonstrating how to brush and floss, or doing the brushing and flossing for them.



For adults with ADRD who are unable to receive dental care in a traditional clinical setting, such as those living in long-term care facilities, **minimally invasive care such as silver diamine fluoride and fluoride-releasing glass ionomer cement may be useful in arresting current caries and preventing future caries lesions (cavities).**

## Questions Remain about the Relationship Between ADRD and Oral Health



**There is evidence that providing oral health care might improve some systemic health conditions.** For example, treatment for periodontal disease is associated with lower HbA1c (blood glucose) levels for individuals with diabetes. At present, researchers do not have conclusive evidence regarding whether providing oral health care can prevent the development of Alzheimer's disease or other forms of dementia, nor if it can improve associated symptoms.



**Similarly, treatment for periodontal disease is associated with decreased diabetes-related health care costs.** Researchers do not yet know whether health care costs associated with managing Alzheimer's disease or other forms of dementia could be reduced by treating periodontal disease.



**Although tooth loss is linked with a higher risk of being diagnosed with ADRD, it is not known whether the risk of ADRD varies by the cause of tooth loss —** i.e., periodontal disease versus caries.

## Research Can Help Fill in the Knowledge Gaps



**Large-scale clinical trials** with sufficient time for follow-up are needed to help **determine whether receiving periodontal treatment can mitigate the risk of developing ADRD or reduce the symptoms.**



Using **medical and dental claims data**, **researchers should examine the association between oral health care and subsequent ADRD-related health care costs.** If these analyses show cost savings, this will provide foundational evidence for the benefit of including oral health care in the management of ADRD.



Studies examining links between tooth loss and ADRD **must distinguish between tooth loss due to periodontal disease and tooth loss due to caries.** Understanding the risks associated with the two types of tooth loss will help guide oral health interventions aimed at preventing ADRD.



Long-term studies of links between poor oral health and ADRD **using comprehensive electronic health records or clinical trial registries** — for example, the [Alzheimer's Prevention Registry](#) — **could allow researchers to examine factors not available through claims data**, such as family risk factors.

While there is currently no cure for Alzheimer's disease or other forms of dementia, new treatments are showing promise for [slowing the progression of symptoms](#). As poor oral health is linked to an increased risk for being diagnosed with ADRD, it is all the more important to determine whether improvements in oral health may prevent or reduce the symptoms of this disease, which affects millions of individuals and their caregivers each year. The link between oral health and ADRD also highlights the critical need to create a more accessible, equitable, and integrated oral health care system that provides high-quality care for all individuals across the lifespan.

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