

Study Links Picking Your Nose to Alzheimer's Disease

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STORY AT-A-GLANCE

- › Chronic neuroinflammation may trigger the development of amyloid plaques associated with Alzheimer's disease, and neuroinflammation may be linked to nose picking
- › Other reasons to keep your finger out of your nose include avoiding spreading infection to others, such as asymptomatic colonization with *Staphylococcus aureus* that may lead to opportunistic infections. Changes in the nasal microbiome and damage to the inner tissues and structure of the nasal cavity can also occur when you pick your nose
- › Several strategies can lower your risk of Alzheimer's disease including reducing or eliminating processed sugar, protecting your gut microbiome, ensuring you are not deficient in B vitamins, and protecting your lungs from air pollution, all of which are linked to a decline in memory and cognitive function
- › Strategies to stop picking your nose include keeping your nasal membranes hydrated by using a humidifier, drinking plenty of clean water and using coconut oil to moisten the membranes in your nose

The mechanism of chronic inflammation is at the root of many modern diseases, such as heart disease, cancer, auto-immune diseases and chronic hepatitis.¹ A review of the literature from Western Sydney University has suggested that chronic neuroinflammation triggered by chronic nose picking may contribute to the development of Alzheimer's disease.²

Nose picking is a common practice. One 1995 study³ found that 91% of those asked admitted to picking their nose and 75% felt that "almost everyone does it." In this first

population survey, they found that "it is an almost universal practice in adults but one that should not be considered pathologic for most."⁴

These results were confirmed in a sample of adolescents in which the researchers found that nearly the "entire sample admitted to nose picking, with a median frequency of four times per day."⁵ There are a variety of reasons that people pick their noses, including removing dried nasal mucus, which also goes by the term "boogers," and nervous habits that can become a compulsion falling under the mental health condition of body-focused repetitive behavior.

Like your gut, the nasal cavity has its own microbiome that provides your body with natural protection. The researchers of the featured study⁶ and other studies have theorized that altering that microbiome can influence pathogenic spread to the brain and contribute to chronic neuroinflammation.

A 2022 animal study⁷ found that chlamydia pneumoniae can infect the central nervous system by traveling along the olfactory and trigeminal nerves and thus contribute to an increased risk of Alzheimer's disease.

Currently, data show⁸ that more than 6 million Americans live with Alzheimer's disease and 1 in 3 seniors dies with dementia. In 2023, it was estimated that all forms of dementia cost the nation \$345 billion, which experts estimate could rise to nearly \$1 trillion by 2050.

In the midst of a nationwide health care workforce shortage, the Alzheimer's Association estimates that by 2030 the country will need an additional 1.2 million direct care workers just to care for the growing number of individuals with dementia.⁹

Nose Picking Increases Inflammation and Risk of Alzheimer's Disease

The paper published in *Biomolecules*¹⁰ reviewed data that associated pathogens with Alzheimer's disease, including viruses, bacteria and fungi. After reviewing the data, the

researchers proposed that neuroinflammation found in the brains of people with Alzheimer's disease could be partially triggered by pathogens that entered through the nose and olfactory system.

It appeared to be a plausible route of entry because of the direct anatomical connection. Neuroinflammation is likely a major contributor to the development of amyloid plaques, which are the hallmark characteristic of Alzheimer's disease. The researchers reviewed the different ways that this formation is thought to be linked to neuroinflammation and suggested that while the formation is complex, it's also bi-directional.

The researchers also noted that periodontal infections, which typically triggered dysbiosis of the oral microbiome, are increasingly associated with an increased risk of Alzheimer's disease.¹¹ Several studies that evaluated the oral microbiota of participants with Alzheimer's disease found an altered composition including oral bacteria linked to amyloid beta plaque formation.

In addition to changes in the oral microbiota that may be associated with an increased risk of Alzheimer's disease, the researchers noted that with age, the composition of the nasal microbiome changes to become more like that found in the oropharyngeal area. This influences the nasal microflora and could be a contributor to neurodegenerative diseases, considering the bi-directional association between the nasal microbiota and Alzheimer's disease.

The researchers suggest¹² that pathogens could enter the brain through the olfactory system and contribute to neuroinflammation found in Alzheimer's disease. However, they also state that one of the limitations of their review of the literature was the question of which came first.

Did individuals have a compromised immune system that led to neuroinflammation and Alzheimer's disease, or did increasing age-related inflammation and subclinical Alzheimer's disease trigger unhealthy habits or defects in the immune system that allowed the entry of olfactory pathogens?

The author suggested that this shift in the nasal microbiome may trigger mild brain infections without symptoms, but which also trigger chronic inflammation and protein plaques that contribute to the development of Alzheimer's disease. The New York Post¹³ reports that some of the common pathogens found in the brains of people with Alzheimer's disease include the cat-derived parasite *Toxoplasma gondii*, the herpes virus, and the bacteria that cause pneumonia.

The researchers suggest that until there's a greater understanding of the role of olfactory pathogens in Alzheimer-associated neuroinflammation, improving hand hygiene could be an easy preventive step.

More Reasons to Keep Your Fingers Out of Your Nose

While data from the featured study suggest that nose picking may be associated with the development of Alzheimer's disease, there are other reasons you should keep your fingers out of your nose. This is especially true for those who are sick or may have a weakened immune system.

The nasal cavity is a reservoir for pathogens that can potentially spread. Data have demonstrated that the nasal microbiome changes with age and after exposure to a range of infections and immunological conditions. Your nasal microbiome profile can influence your immune response. Data from 2018¹⁴ showed up to 30% of people are asymptotically and permanently colonized with *Staphylococcus aureus* in their nasal cavity.

Individuals who pick their noses have a much higher risk of colonization,¹⁵ which may lead to opportunistic infections at surgical sites or other infections that increase morbidity, mortality and health care costs.¹⁶ For individuals whose noses are colonized, this can lead to serious infections if your fingernails leave tiny cuts within the nasal tissue, where the bacteria can find their way into the bloodstream.

Nose picking also changes the nasal microbiome as demonstrated in a 2023 study¹⁷ that revealed health care workers who pick their noses had an increased risk of contracting

SARS-CoV-2. Other opportunistic infections can spread and lead to the development of pneumonia, otitis media, asthma and chronic rhinosinusitis.¹⁸

There's a reason that a skin infection called impetigo is more commonly found around the nose and mouth. That's because the bacteria that live in the nose can cause this type of infection. Nose picking can move that bacterium to other areas of the body where there's broken skin and impetigo can develop.¹⁹

Nose picking also increases the risk of damaging the tissues and structures inside the nose²⁰ and triggering nosebleeds. Aggressive nose pickers may damage the septum, which is the bone and cartilage that divides the left and right sides of the nose.

More Strategies to Help Reduce Your Risk of Alzheimer's

The featured study and others have suggested that keeping your fingers out of your nose may help or reduce your potential risk of Alzheimer's disease. However, as I discussed in a previous article on this topic, "[Can Nose Picking Raise the Risk of Alzheimer's and Dementia?](#)" there are more steps you can take to help decrease your risk of Alzheimer's disease and other types of dementia.

- **Sugar** — For many years I have warned about the dangers of processed sugars and high carbohydrate foods. Over the years, there have been several studies that found a significant relationship between a high carbohydrate diet and a significantly increased risk of dementia.
- **Gut microbiome** — Researchers have also found a link between Alzheimer's disease and your gut microbiome, which appears to be related to lipopolysaccharides and two short-chain fatty acids — acetate and valerate — that increase amyloid deposits in the brain.²¹
- **Cholesterol** — While cholesterol has been vilified as something that should be as low as possible to prevent heart disease, it is a crucial component for good health, and levels that are too low can have serious repercussions. According to senior

research scientist Stephanie Seneff, Ph.D., insufficient fat and cholesterol in the brain play a crucial role in the Alzheimer's disease process.

She details the mechanism of this dysfunction in a 2009 paper.²² A 2018 study²³ found those with higher total cholesterol at midlife had a reduced risk for cognitive decline after age 85.

- **Vitamin B deficiencies** – B vitamin deficiencies are known to have an effect on the brain, including the development of depression. They play an important role in cognitive decline and dementia.
- **Air pollution** – Studies have linked exposure to air pollution in Europe and the U.S. with an increased risk of dementia. In "[New Evidence Shows Link Between Air Pollution and Alzheimer's](#)" I discussed the results of a 10-year study presented at the Alzheimer's Association International Conference 2021 that showed how women living in areas of lower air pollution had a slower decline of overall memory and cognitive function.

Tips to Help You Stop Picking Your Nose

Knowing you need to stop a behavior, or even deciding to stop, isn't always enough to make you stop. When nose picking is not related to psychological factors, it's commonly related to dry nasal passages that lead to the increased production of mucus and an urge to pick and clean.

Keeping your nasal passages moist can help reduce mucus production and therefore reduce the urge. You can improve hydration of the mucus membranes in your nasal passages by:

- Using an indoor humidifier, especially during the winter months, to keep the humidity above 40%
- Drink plenty of clean water and stay well-hydrated

- Use a nasal saline spray sparingly, which helps to lubricate the nasal passages, but overuse can contribute to drying it as it tends to wash away the mucus that protects the membranes²⁴
- Use coconut oil on the inside lining of the nostril to help hydrate the membranes and break the cycle of nose picking

Nose picking can also be associated with chronic stress and anxiety. When it becomes compulsive, it's called rhinotillexomania²⁵ and may require the help of a mental health professional to address the stress and anxiety that leads to the compulsive behavior.

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