

# Brush your teeth—postpone Alzheimer's

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For several years, Piotr Mydel has done research investigating how different bacteria are implicated in Alzheimer's disease. Credit: Kim E. Andreassen

Researchers have determined that gum disease (gingivitis) plays a decisive role in whether a person develops Alzheimer's or not.

"We discovered DNA-based proof that the [bacteria](#) causing gingivitis can move from the mouth to the brain," says researcher Piotr Mydel at

Broegelmanns Research Laboratory, Department of Clinical Science, University of Bergen (UiB).

The bacteria produces a protein that destroys [nerve cells](#) in the brain, which in turn leads to loss of memory and ultimately, Alzheimer's.

## **Brush your teeth for better memory**

Mydel points out that the bacteria is not causing Alzheimer's alone, but the presence of these bacteria raise the risk for developing the [disease](#) substantially and are also implicated in a more rapid progression of the disease. However, the good news is that this study shows that there are some things you can do yourself to slow down Alzheimer's.

"Brush your teeth and use floss." Mydel adds that it is important, if you have established gingivitis and have Alzheimer's in your family, to go to your dentist regularly and clean your teeth properly.

## **New medicine being developed**

Researchers have previously discovered that the bacteria causing gingivitis can move from the mouth to the brain where the harmful enzymes they excrete can destroy the nerve cells in the brain. Now, for the first time, Mydel has DNA-evidence for this process from human brains. Mydel and his colleagues examined 53 persons with Alzheimer's and discovered the enzyme in 96 per cent of the cases. According to Mydel, this knowledge gives researchers a possible new approach for attacking Alzheimer's disease.

"We have managed to develop a drug that blocks the harmful enzymes from the bacteria, postponing the development of Alzheimer's. We are planning to test this drug later this year, says Piotr Mydel.

## Facts: Gingivitis

- The bacteria *Porphyromonas gingivalis* (*P. gingivalis*) is one of the main causes to infection in the gums.
- The bacteria causes chronic infection in the gums, but can move to the brain where it can damage nerve cells in the [brain](#).
- About 50 per cent of the population have this bacteria in one or another form.
- About 10 per cent of those having this bacteria will develop serious [gum disease](#), loose teeth, and have an increased risk of developing Alzheimer's disease.
- In addition to Alzheimers, the bacteria is linked to rheumatism, COPD and esophageal cancer.

**More information:** Stephen S. Dominy et al, *Porphyromonas gingivalis* in Alzheimer's disease brains: Evidence for disease causation and treatment with small-molecule inhibitors, *Science Advances* (2019). DOI: [10.1126/sciadv.aau3333](https://doi.org/10.1126/sciadv.aau3333)

Provided by University of Bergen

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