

Mouth breathing while sleeping may increase tooth decay risk

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Mouth breathing during sleep is linked to a more acidic oral environment that may promote tooth enamel erosion and caries, new University of Otago research suggests.

Dentistry researchers from the University's Sir John Walsh Research Institute studied the oral pH levels of 10 healthy volunteers who alternated between sleeping with and without a nose clip that forced them to breathe through their mouths.

Their study's findings, published in the Journal of Oral Rehabilitation, showed that the average pH during [sleep](#) with forced mouth breathing was a mildly acidic 6.6 compared to a neutral 7 when nose breathing.

Study lead author and PhD student Joanne Choi says the research team found a noticeable difference in the pattern of variation of pH and temperature between day and night.

"Intraoral pH decreased slowly over the hours of sleep in all participants, but showed greater falls over a longer period of time when participants were forced to mouth breathe," Ms Choi says.

At times the pH levels fell as low as 3.6 during forced mouth breathing during sleep, well below the critical threshold of 5.5 when enamel starts to demineralise, she says.

"This study is the first to continuously monitor intraoral pH changes in

healthy individuals over several days. Our findings support the idea that [mouth breathing](#) may indeed be a causal factor for dental diseases such as [enamel](#) erosion and caries."

More information: J. E. Choi et al. Intraoral pH and temperature during sleep with and without mouth breathing, *Journal of Oral Rehabilitation* (2015). [DOI: 10.1111/joor.12372](https://doi.org/10.1111/joor.12372)

Provided by University of Otago

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