

Study finds sensory loss in ~100% of active COVID infections, which is twice as high as self-reports

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The loss of smell and taste with a COVID-19 infection during the delta surge was a prevalent symptom and wasn't prevented by vaccination, new

research suggests.

The small Ohio State University study also found that some people with the earliest COVID-19 infections were continuing to experience loss of these senses months later and didn't even realize it.

In participants with active infections during the delta surge, a majority (22 of 25) had been vaccinated. Objective screenings found that 100% were experiencing a diminished or lost [sense of smell](#)—but only 54.5% self-reported any problem with odor detection.

"We're getting this quick communication out as an early warning. We need to continue to take a closer look at COVID infection's impact on smell and taste," said Dr. Kai Zhao, associate professor of otolaryngology in Ohio State's College of Medicine and senior author of the study. "Even if COVID doesn't cause death or hospitalization, it can have long-lasting effects on some of our [sensory functions](#)."

"A lot of people are potentially suffering, which is probably not appreciated by society."

The study is published in the journal *Med*.

Data for this study emerged from a project the researchers began in early 2021 to test the effectiveness of using hard candy as a [screening tool](#) for the loss of taste and smell in populations at risk for exposure to the SARS-CoV-2 virus.

As part of that work, the team used an existing objective screening tool to collect sensory function data from 123 never-infected control participants and 65 people who had previous or active COVID-19 infections. During the delta surge, the researchers became alarmed by what they found.

"At that time, there were a lot of speculations about whether [smell loss](#) is associated with the delta variant and whether the vaccine could protect against these symptoms. So we decided to do this interim data analysis," Zhao said.

In addition, about three-fourths of participants whose mostly mild COVID infections had occurred before delta's dominance reported no ongoing smell and taste losses—however, over half of those participants were found by the objective screening, conducted between 102 and 785 days after their infection diagnosis, to have a [loss of smell](#).

"Many people who had COVID in the past, probably with the original variants of the virus, underwent some degree of smell loss, even if they didn't think they did," said co-author Susan Travers, professor of biosciences in Ohio State's College of Dentistry. "This suggests the long-term impact on sensory function isn't captured by self-reporting."

Beyond these silent smell and taste losses, there were also people who reported that they hadn't regained taste or smell function for longer than six months, said first author Kym Man, a graduate student in food science and technology.

"We're still collecting data on these long haulers, some of whom have been experiencing smell and taste loss for over a year," she said.

Effects on the senses include diminished or complete loss of smell and/or taste, disordered smell and/or taste and, least common, smelling odors that are not present at all.

The sensory function screenings were conducted with a National Institutes of Health tool consisting of a 9-item scratch-and-sniff odor identifier and an intensity rating of bitterness in a sip of quinine. The odor-detection results were adjusted for age—in general, we lose some

sensitivity to smell as we get older, Zhao said.

Beyond affecting the quality of life, the loss of smell and taste has health ramifications that include negative effects on nutrition intake and a reduced ability to detect danger—such as a fire or spoiled food.

"The disease's impact on smell and taste is underreported. This is a public health concern that there may potentially be some broader impacts of COVID-19 that we don't realize are there," Zhao said.

Since submitting this article for publication in January 2022, the team has been consistently collecting data related to sensory loss and is paying particular attention to long haulers.

"There's a substantial number of these people, and we want to characterize how long smell and/or [taste](#) loss lasts," said co-author Christopher Simons, associate professor of food science and technology. "We'd also like to enroll them in the surveillance component of the candy screening study to see if we can track their recovery over time as well."

People interested in more information on the team's ongoing study of hard candy's effectiveness as a screening and surveillance tool can contact the researchers by emailing COVIDCandyTest@osu.edu.

More information: Kym Man et al, Chemosensory losses in past and active likely Delta variant break-through COVID-19 cases, *Med* (2022). [DOI: 10.1016/j.medj.2022.05.004](https://doi.org/10.1016/j.medj.2022.05.004)

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