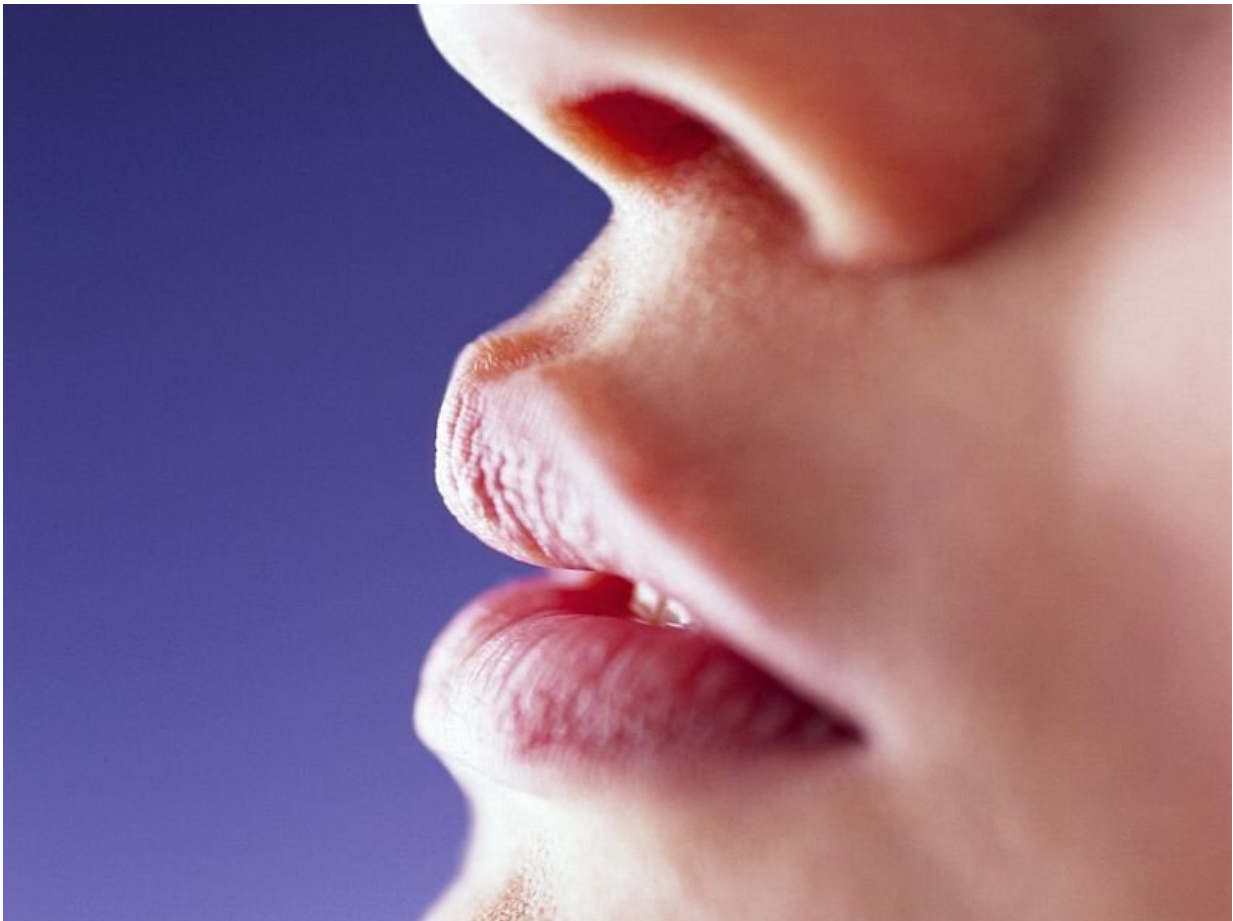


Breath analysis shows promise for COVID-19 detection

March 1 2023, by Elana Gotkine



Breath analysis seems promising for COVID-19 detection, according to

a study published online Feb. 28 in *JAMA Network Open*.

Ruchi Sharma, Ph.D., from the University of Michigan in Ann Arbor, and colleagues examined the diagnostic accuracies of [breath analysis](#) for detecting patients with COVID-19 during periods of delta and omicron prevalence between April 2021 and May 2022. A total of 205 [breath samples](#) from 167 adults were analyzed; 77 patients had COVID-19 and 91 had non-COVID-19 illness.

Overall, 41 samples were from patients infected with delta or other variants in 2021 and 53 samples were from patients infected with the [omicron variant](#) in 2022. The researchers found that four [volatile organic compound](#) (VOC) biomarkers differentiated between COVID-19 (delta and other 2021 variants) and non-COVID-19 illness with 94.7 percent accuracy. When these biomarkers were applied to the omicron variant, accuracy dropped to 82.1 percent. Four new VOC biomarkers could differentiate the omicron variant and non-COVID-19 illness with 90.9 percent accuracy. Omicron could be distinguished from earlier variants with accuracy of 91.5 percent and COVID-19 (all variants) from non-COVID-19 illness with 90.2 percent accuracy using breath analysis.

"When the entire pattern library and models were combined, the overall performance on all participants attained accuracies that could potentially make breath analysis a viable and rapid testing alternative," the authors write.

Several authors disclosed financial ties to the [biotechnology industry](#); one author holds a patent for a component of the portable gas chromatography device used in the study.

More information: Ruchi Sharma et al, Portable Breath-Based Volatile Organic Compound Monitoring for the Detection of COVID-19 During the Circulation of the SARS-CoV-2 Delta Variant and the

Transition to the SARS-CoV-2 Omicron Variant, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.0982](https://doi.org/10.1001/jamanetworkopen.2023.0982)

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