

# Loss of smell is indicator of asymptomatic cases: Study

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*Dr Abraham, who headed the study, feels the parameters established in the work will facilitate economical olfaction-based screening of COVID patients*

## **IISER researchers measure olfaction function to detect COVID patients who don't show other signs**

A new study by the researchers of Institute of Science Education and Research (IISER), Pune, has reportedly identified a way to measure the olfaction function of a person, which, they claim, can detect asymptomatic COVID-19 infection caused by the SARS-CoV-2 virus.

In view of asymptomatic patients being silent carriers of the disease, the paper published in The Lancet's *EClinicalMedicine* talks about observing the sensation of smell among individuals, which researchers suggest can help detect if one is infected with the novel coronavirus.

The paper studies anosmia (the loss of smell) and hyposmia (reduction in sense of smell) in asymptomatic COVID-19 patients.

The study was conducted by IISER faculty member Dr Nixon Abraham, who had kicked off his study during the lockdown.

Talking about the project, Dr Abraham said, "We tried to concentrate on measuring smell and see how even a layman could detect the loss of smell to identify if one is infected with the virus. Although anosmia is a marker to detect COVID-19, it sets in gradually in a patient."

As more information on the new pandemic began emerging, many patients reported loss of smell as a sideeffect of contracting the virus.

Dr Abraham's work is centred around the neural circuits mediating olfactory-driven behaviours.

Along with PhD student Anindya Bhattacharjee, Dr Abraham set out to test if anosmia/hyposmia could be an indicator of COVID-19 in individuals who test positive for the virus but show no other typical symptoms.

The duo used odorous substances of varying physio-chemical properties that allowed them to collect more than 3,600 readouts from 71 subjects, including normal healthy subjects and asymptomatic COVID-19 patients.

Adopting this screening method, the team analysed detection indices at varying odour concentrations as well as olfactory-matching abilities across various odorous substances.

Bhattacharjee, who along with Dr Abraham took these measurements at BJ Medical College, said, “The process allowed us to generate an olfactory function score, which was unique to each individual tested.”

He added, “We first tested experimental parameters on normal healthy subjects and then assessed olfaction in asymptomatic COVID-19 patients admitted at the hospital.

The method optimised by us identified olfactory dysfunction in 82 per cent of asymptomatic COVID-19 carriers. In comparison, only 15 per cent of the same set of patients reported a loss of olfaction in self-reporting paradigms.”

Talking about how individuals can measure if anosmia has set in, Dr Abraham said, “The paper talks about how thresholds work in analysing loss of smell. People can dilute a strong smell with water and test the same. One can also use asthma inhaler pumps to form their own detection tools and keep a tab on the loss of smell. In case there is a shift in levels of smell, one can get tested for COVID-19.”

Dr Abraham feels the study has laid the necessary groundwork to consider olfactory fitness as one of the prime criteria to identify COVID-19 asymptomatic carriers. “The methods and parameters established by our study can potentially be translated into a sensitive, fast and economical olfactionbased screening method that can be self-administered by a larger population,” insists the researcher.