

Loss of sense of smell may cause changes in breathing patterns, study suggests

Anosmia has been previously linked to a wide variety of mental and physical health challenges, ranging from dulled emotions and depression to a shortened lifespan.

Not having — or losing — your [sense of smell](#) may be linked to changes in breathing that could lead to depression, social isolation or other mental and physical health problems, a new study suggests. It's more evidence of how important this often neglected olfactory sense is.

A new analysis of breathing data from 52 volunteers over a 24-hour period revealed that people with a normal sense of smell had little spikes, or “sniffs,” during each breath that were not seen in those with no sense of smell, according to the report published in Nature Communications on Tuesday.

People can be born with [no sense of smell, a condition called anosmia](#), or they can acquire it, as has been the case with many who had [a Covid infection](#).

The volunteers in the study without the ability to detect odors were all born with the condition.

Nearly 1 in 4 people have anosmia, according to National Institutes of Health estimates. Experts say that number is likely an undercount.

A 2023 report determined that more than 60% of people [diagnosed with Covid developed anosmia](#). About 72% of those completely regained their sense of smell, while about a quarter partially got their sense of smell back. Nearly 4% of people after Covid infection didn't recover their ability to smell.

Even for those in the 4%, there may still be hope, since some get their sense of smell back as late as three years after their infection, experts say. There are treatments that may help, such as smell training or a procedure known as a [stellate ganglion block](#).

The main takeaway from the study is better insight into some of the mental issues that some Covid patients who have lost their sense of smell experience, said the study's lead author, Lior Gorodisky, a Ph.D. candidate in the brain sciences department at the Weizmann Institute of Science in Rehovot, Israel.

The differences in breathing between those who can smell and those who can't are pretty significant. “We are now also able to identify lifelong anosmia just based on the respiratory pattern,” Gorodisky said in an email.

The little inhalations during a breath, known as the “sniff response,” are something that most of us experience unconsciously every day, Gorodisky said. Those little sniffs tell our brains about good and bad smells. “When you go to a bakery or a flower field, once your brain has sensed the good smell of a pastry or a flower, you immediately take a deeper breath,” Gorodisky said.

To determine whether having anosmia might affect respiration, the researchers supplied the 52 volunteers with nasal devices that would monitor breathing as they went about their days.

Previous research has linked anosmia to a wide variety of negative outcomes, ranging from dulled emotions and depression to a shortened lifespan, the authors noted.

Although people in the study with anosmia had had it their entire lives, the researchers believe their findings will apply to others who developed the condition.

Losing the ability to detect odors can lead to impaired memory of events linked to specific smells, Gorodisky said. Because of that, it can take away the joy from daily activities such as eating and socializing with friends and family.

As for shortened lifespans, that could be due at least in part to people not smelling odors that could indicate danger, such as smoke, Gorodisky said.

A [study published in August](#) found that people who lost their sense of smell as a result of Covid had behavioral, functional and structural brain changes.

The number of people with smell dysfunction are "vastly underestimated, said Valentina Parma, assistant director at the Monell Chemical Senses Center in Philadelphia.

She called the new study a "very first step."

"We are piecing together more reasons why we need to pay more attention to the sense of smell," said Parma, who was not involved with the new research.

The value of the sense of smell is often underappreciated.

"For the majority of the world, smell is an afterthought," Parma said. "Covid helped bring it into the mainstream. It was a game changer."

Currently, health care providers often don't ask about or test for anosmia, Parma said. And that needs to change since its development later in life has been linked to the start of a number of [serious disorders, including Alzheimer's](#) and Parkinson's, she said.

The findings underscore the importance of testing for anosmia and finding treatments, said otolaryngologist Dr. Jonathan Overdevest at the Columbia University Irving Medical Center in New York City.

Researchers also need to work out the details of how losing one's sense of smell might affect other aspects of health, Overdevest said. "One thing we do know is that a portion of the brain affected earliest by Alzheimer's is in charge of the sense of smell," he added.

Brain scanning studies have shown that the sense of smell connects with many aspects of thinking, said [Benjamin tenOever](#), chair of the department of microbiology at the New York University Langone Medical Center in New York City.

If there is an odor from a noxious fume, “the neurons in the nose tell the brain that there is something dangerous to avoid,” tenOever said. “And when there is a pleasant smell, the brain tells the nose to increase the amount of air inhaled. It’s not something that’s done consciously, but instead, the brain is hardwired to do it.”

News Source:

<https://www.nbcnews.com/health/health-news/loss-smell-changes-breathing-patterns-depression-research-rcna176503>