

# Damage to vocal cords could cause long-term COVID symptoms

3 November 2020, by Dennis Thompson Healthday Reporter



patient coughing

(HealthDay)—Nerve damage to vocal cords could be the reason why some people recovering from COVID-19 suffer mysterious bouts of shortness of breath for months after shaking off the coronavirus, researchers say.

Vocal cords are meant to constrict across the airway while you're talking, vibrating in the air moving past to create the sound of your voice.

When you're not talking, the vocal cords retract to allow air to more freely flow into your lungs.

But, in some patients, COVID-19 appears to damage the nerve that regulates speech, causing their vocal cords to impede breathing even when they aren't talking, said Dr. Jonathan Aviv, an ear, nose and throat specialist at Mount Sinai Hospital in New York City.

"Think about when you're chit-chatting. Every time you finish a sentence, your vocal cords should open so you can take a breath," Aviv said.

"Imagine if they didn't open. After your third or fourth sentence, you'll feel short of breath. Your airway's closed."

The good news is this sort of breathing problem can be easily treated through a common speech therapy technique, Aviv said.

In a recent paper in the *International Journal of Pulmonary & Respiratory Sciences*, Aviv and his colleagues said they successfully treated 18 former COVID-19 patients through a combination of speech therapy and diet modification—avoiding foods that might exacerbate the nerve irritation.

"All the patients resolve their shortness of breath. You can see it when they come back. Their vocal cords are now moving normally," Aviv said.

The vagus nerve runs from the brain and controls voice, swallowing, breathing and coughing, Aviv said. Previous research has shown that a vagus nerve injury can cause the vocal cords to fail to retract, impeding air flow.

"If the vagus has been towel-snapped by a virus, it's going to not function normally, and one of the manifestations is shortness of breath with or without cough," Aviv said.

Doctors have been confounded by occasional COVID-19 patients who continue to have shortness of breath even though the inflammation caused by the viral infection has gone away and imaging scans show no lasting lung injury, said Dr. Joseph Khabbaza, a pulmonologist with the Cleveland Clinic in Ohio.

"We're seeing a bunch of people that have normal breathing tests and are not responding to asthma inhalers," Khabbaza said. "They've got real symptoms but their testing is coming up normal."

To see if the vocal cords might be the culprit, Aviv

and his colleagues ran a [tiny camera](#) smaller than a shoelace down the noses of 18 COVID-19 "long haulers" to get a closer view of their airway.

Sure enough, the camera showed that people's [vocal cords](#) were failing to pull back properly.

"I show them the video, and they basically fall off the examining chair. They cannot believe what's going on," Aviv said.

This sort of vocal cord dysfunction is treated using "respiratory retraining," a series of exercises designed to improve function of the respiratory muscles, Aviv said.

Aviv also urged patients to avoid highly acidic foods that can irritate the vagus nerve, including flavored beverages from cans or bottles, citrus fruits, tomato sauce, vinegar and wine.

COVID-19 patients who continue to have persistent shortness of breath even after their other symptoms have faded should discuss this possibility with their doctor, Aviv suggested.

After reading Aviv's paper, Khabbaza said he has a couple of patients he plans to check out for possible vocal cord problems.

"If you're stuck with shortness of breath, I think this sounds like something that is worth investigating because we know it responds very well to speech therapy," Khabbaza said. "This vagal neuropathy would be one of those things that would cause shortness of breath but not respond to the most common treatments for [shortness of breath](#) after a COVID infection."

**More information:** The U.S. Centers for Disease Control and Prevention has more about [COVID-19](#).

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APA citation: Damage to vocal cords could cause long-term COVID symptoms (2020, November 3) retrieved 12 October 2022 from <https://medicalxpress.com/news/2020-11-vocal-cords-long-term-covid-symptoms.html>

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