

## Flu Can Be Spread Simply by Breathing

*By Ralph Morris, M.D., M.P.H.*

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As the seasonal flu spreads across the country, a new study demonstrates that flu can be transmitted from person to person by simple breathing. Researchers have concluded that inhaling the exhaled breath of an infected individual may be all it takes to spread the flu virus. Coughing and sneezing are not required. This finding lends new urgency to the advice to *stay home when you have the flu*.

### *What the Researchers Found*

A University of Maryland School of Public Health team led by Dr. Donald Milton “captured and characterized” flu virus in the exhaled breath of 142 people with confirmed cases of flu, according to a [news release](#) from the university. Exhaled breath samples from the first, second and third days following the onset of symptoms were analyzed.

The study shows flu causes people to generate and exhale tiny droplets that stay suspended in the air for a long time (up to a few hours), even when they are not coughing, and especially during the first few days of illness. The exhaled breath of 11 of the 23 breath samples collected had “detectable *viral RNA*” (the genetic material of flu viruses) and eight of these contained infectious virus. Interestingly, the researchers reported that sneezing did not contribute significantly to flu virus “shedding.”

Experts have commonly supposed that the flu is spread by larger droplets projected when infected individuals sneeze and cough. The new research clues us in on a much simpler mechanism of spreading flu: The virus can simply hang in the air in a



*A flu-infected study participant sits in the Gesundheit II machine, which was used by Dr. Milton and his research team to collect and analyze exhaled breath*

*Photo credit: University of Maryland School of Public Health*

fine mist, waiting to be swooshed up the nose of someone nearby! This is consistent with the observation that flu spreads mostly in colder months when people are likely to be in close, indoor contact.

### *The Take Home Message is a Stay Home Message*

Currently, most states are reporting widespread flu activity and some hospitals have been overwhelmed with flu patients. The basic flu prevention advice remains perfectly relevant (see below), and the “stay home” message is confirmed and reinforced by the new research. If you must go out, consider wearing a face mask. Interestingly, people with respiratory infections in Japan have for decades worn a face mask whenever in public. Foreigners generally thought they were being worn to protect the wearer from infections, when it was actually *to protect others* from infection.

- Get vaccinated (No, it is not too late and it can help reduce the severity of symptoms if you do get the flu.)
- **\*Stay home and limit contact with others when sick with the flu; consider wearing an anti-viral face mask\***
- Cover coughs and sneezes
- Wash hands frequently and thoroughly
- Disinfect frequently touched surfaces during flu season<sup>1</sup>
- If you have a loved one who is at high risk of flu complications and they develop flu symptoms, encourage them to get a medical evaluation for possible treatment with flu antiviral drugs
- Maintain a healthy lifestyle to optimize your immune system defense

We congratulate Dr. Milton and his team for their timely contribution to understanding how the flu is spread. We hope you can use their insight and the recommendations above to strategically avoid the flu virus this season!

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<sup>1</sup> Clean surfaces first with detergent and water and then sanitize using 2½ tablespoons of high strength household bleach (8.25%) per gallon of water or ¼ cup regular strength (5.25-6%) bleach. Alternatively, wipe down surfaces with disposable pre-moistened wipes containing chlorine bleach.