

# Tiny airborne particles may pose a big coronavirus problem

By **Malcolm Ritter**  
The Associated Press

NEW YORK — At a University of Maryland lab, people infected with the new coronavirus take turns sitting in a chair and putting their faces into the big end of a large cone. They recite the alphabet and sing or just sit quietly for a half hour. Sometimes they cough.

The cone sucks up everything that comes out of their mouths and noses. It’s part of a device called “Gesundheit II” that is helping scientists study a big question: Just how does the virus that causes COVID-19 spread from one person to another?

It clearly hitchhikes on small liquid particles sprayed out by an infected person. People expel particles while coughing, sneezing, singing, shouting, talking, and even breathing. But the drops come in a wide range of sizes, and scientists are trying to pin down how risky the various kinds are.

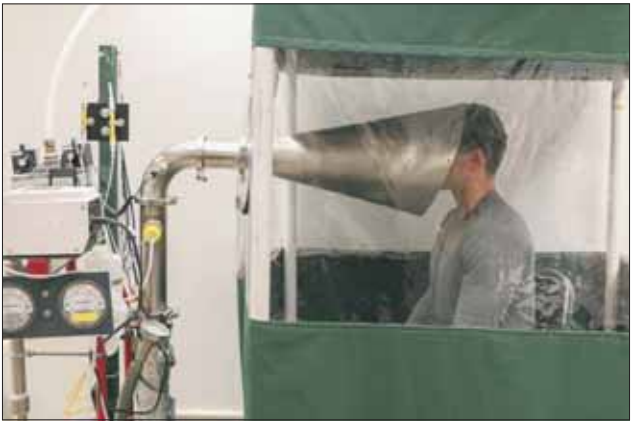
The answer affects what we should all be doing to avoid getting sick. That’s why it was thrust into headlines last month when a U.S. health agency appeared to have shifted its position on the issue, but later said it had published new language in error.

The recommendation to stay at least 6 feet apart — some authorities cite about half that distance — is based on the idea that larger particles fall to the ground before they can travel very far. They are like the droplets in a spritz of a window cleaner, and they can infect somebody by landing on their nose, mouth, or eyes, or maybe being inhaled.

But some scientists are now focusing on tinier particles, the ones that spread more like cigarette smoke. Those are carried by wisps of air and even upward drafts caused by the warmth of our bodies. They can linger in the air for minutes to hours, spreading throughout a room and building up if ventilation is poor.

The potential risk comes from inhaling them. Measles can spread this way, but the new coronavirus is far less contagious than that.

For these particles, called aerosols, “6 feet is not a magic distance,” says Linsey Marr, a leading researcher who is



studying them at Virginia Tech in Blacksburg. But she says it’s still important to keep one’s distance from others — “the farther the better” — because aerosols are most concentrated near a source and pose a bigger risk at close range.

Public health agencies have generally focused on the larger particles for coronavirus. That prompted more than 200 other scientists to publish a plea in July to pay attention to the potential risk from aerosols. The World Health Organization (WHO), which had long dismissed a danger from aerosols except in the case of certain medical procedures, later said that aerosol transmission of the coronavirus can’t be ruled out in cases of infection within crowded and poorly ventilated indoor spaces.

The issue drew attention recently when the U.S. Centers for Disease Control (CDC) and Prevention posted and then deleted statements on its website that highlighted the idea of aerosol spread. The agency said the posting was an error, and that the statements were just a draft of proposed changes to its recommendations.

Dr. Jay Butler, CDC’s deputy director for infectious disease, told The Associated Press that the agency continues to believe larger and heavier droplets that come from coughing or sneezing are the primary means of transmission.

Butler told a scientific meeting in August that current research suggests aerosol spreading of the coronavirus is possible but it doesn’t seem to be the main way that people get infected. Further research may change that conclusion, he added, and he urged scientists to study how often aerosol spread of the coronavirus occurs, what situations make it more likely, and what reasonable steps might prevent it.

Marr said she thinks infection by aerosols is “happening a lot more than people initially were willing to think.”

As a key piece of evidence, Marr and others point to so-called “superspreader” events where one infected person evidently passed the virus to many others in a single setting.

## A look at the impact of the coronavirus By The Associated Press

As it marched from east to west this year, the coronavirus pandemic sank economies and transformed social interactions. It shut schools and businesses, stopped the sports and entertainment industries dead in their tracks, and even brought low the Olympic Games.

And it killed. One million deaths have been recorded worldwide to date, according to data tracked by Johns Hopkins University.

The effects were global — but also personal. The virus changed how people socialized and shopped, worked and dressed. It changed how they cared for their loved ones and how they mourned them.

It even changed the language they used. The word “hero” was employed with more frequency — and the definition expanded to include delivery and sanitation workers, cleaners and waiters. And, of course, healthcare workers, who in China and Italy, Iran and South Africa, the United States and Brazil toiled in hazmat suits for hours on end to treat the sick.

The virus changed how people interacted and how they thought about interaction. People isolated to stay healthy — and then worried about what isolation was doing to their health.

In Spain, one of the hardest-hit countries, nursing home residents were shut off from the outside world for months in an effort to protect them. When visitors were allowed again, husbands and wives pressed lips to plastic sheeting for several minutes; mothers and daughters clutched each other through the film.

Many people were unable to say goodbye to their loved ones because of restrictions at hospitals; others held them in their final moments, draped head-to-toe in protective gear. Funerals were also sterile affairs, if they happened at all.

And still the pandemic is far from over. The toll is climbing. By around 5,000 a day, a death every 17 seconds somewhere in the world.

**TROUBLING TRANSMISSION.** *This February 2018 photo provided by the University of Maryland School of Public Health shows The Gesundheit II machine in Dr. Donald Milton’s Public Health Aerobiology, Virology, and Exhaled Biomarker Laboratory of the university in College Park, Maryland. The device is helping scientists study a big question: Just how does the virus that causes COVID-19 spread from one person to another? Some scientists are focusing on tinier particles of the new coronavirus that are carried by wisps of air. The particles can linger in the air for minutes to hours. (Photo courtesy of the University of Maryland School of Public Health)*

In March, for example, after a choir member with coronavirus symptoms attended a rehearsal in Washington state, 52 others who had been seated throughout the room were found to be infected and two died. In a crowded and poorly ventilated restaurant in China in January, the virus evidently spread from a lunchtime patron to five people at two adjoining tables in a pattern suggesting aerosols were spread by the air conditioner. Also in January, a passenger on a Chinese bus apparently infected 23 others, many of whom were scattered around the vehicle.

Butler said such events raise concern about aerosol spread but don’t prove it happens.

There could be another way for tiny particles to spread. They may not necessarily come directly from somebody’s mouth or nose, says William Ristenpart of the University of California, Davis. His research found that if paper tissues are seeded with influenza virus and then crumpled, they give off particles that bear the virus. So people emptying a wastebasket with tissues discarded by somebody with COVID-19 should be sure to wear a mask, he said.

Scientists who warn about aerosols say current recommendations still make sense.

Wearing a mask is still important, and make sure it fits snugly. Keep washing those hands diligently. And again, staying farther apart is better than being closer together. Avoid crowds, especially indoors.

Their main addition to recommendations is ventilation to avoid a buildup of aerosol concentration. So, the researchers say, stay out of poorly ventilated rooms. Open windows and doors. One can also use air-purifying devices or virus-inactivating ultraviolet light.

Best of all: Just do as much as you can outdoors, where dilution and the sun’s ultraviolet light work in your favor.

“We know outdoors is the most spectacularly effective measure, by far,” says Jose-Luis Jimenez of the University of Colorado-Boulder. “Outdoors it is not impossible to get infected, but it is difficult.”

The various precautions should be used in combination rather than just one at a time, researchers say. In a well-ventilated environment, “six feet (of separation) is pretty good if everybody’s got a mask on” and nobody stays directly downwind of an infected person for very long, says Dr. Donald Milton of the University of Maryland School of Public Health, whose lab houses the Gesundheit II machine.

Duration of exposure is important, so there’s probably not much risk from a short elevator ride while masked or being passed by a jogger on the sidewalk, experts say.

Scientists have published online tools for calculating risk of airborne spread in various settings.

At a recent meeting on aerosols, however, Dr. Georges Benjamin, executive director of the American Public Health Association, noted that preventive steps can be a challenge in the real world. Keeping apart from other

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## Fact check: How can I tell the difference between the flu and COVID-19?

By The Associated Press

How can I tell the difference between the flu and COVID-19?

It’s impossible to tell without a test. Influenza and COVID-19 have such similar symptoms, you may need to get tested to know what’s making you miserable.

Body aches, sore throat, fever, cough, shortness of breath, fatigue, and headaches are symptoms shared by the two.

One difference? People with the flu typically feel sickest during the first week of illness. With COVID-19, people may feel the worst during the second or third week, and they may be sicker for a longer period.

Another difference: COVID-19 is more likely than the flu to cause a loss of taste or smell. But not everyone experiences that symptom, so it’s not a reliable way to tell the viruses apart.

That leaves testing, which will become more important as flu season ramps up this fall in the Northern Hemisphere. Doctors will need to know test results to determine the best treatment.

It’s also possible to be infected with both viruses at the same time, said Dr. Daniel Solomon, an infectious

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## Vancouver Housing Authority

Equal Housing Opportunity

### WAIT LIST OPENINGS

Notice is hereby given that Vancouver Housing Authority will open the following waitlists on October 2, 2020:

**Forest Ridge** located at 207 N Lieser Rd., Vancouver WA  
**Highland Park** located at 5015 NE 66th Ave., Vancouver WA  
**Walnut Grove** located at 7213 NE 58th St., Vancouver WA  
**Arbor Ridge** located at 9503 NE Hazel Dell Ave., Vancouver WA

These 1 bedroom units are in non-smoking buildings that are designated for person(s) age 62 and older. Income limit qualifications range from \$32,250 for a family of one to \$36,850 for a family of two.

**Columbia House** located at 130 W 24th St., Vancouver WA. These 1 bedroom units are in a non-smoking building designated for person(s) age 55 and older. Income limit qualifications range from \$38,700 for a family of one to \$44,220 for a family of two.

**Cougar Homes 3-bedroom** are single family homes scattered throughout Vancouver WA. Applicants must qualify as established by the VHA occupancy standards to remain on the waiting list. Income limit qualifications range from \$66,350 for a family of three to \$91,400 for a family of seven.

**Cougar Homes 4-bedroom** are single family homes scattered throughout Vancouver WA. Applicants must qualify as established by the VHA occupancy standards to remain on the waiting list. Income limit qualifications range from \$73,680 for a family of four to \$91,400 for a family of eight.

Applications will be available for download online from 9:00am on October 2, 2020 through 4:30pm on December 11, 2020.

To obtain an application, visit our website at [www.vhausa.com](http://www.vhausa.com) and you may drop completed application off at the drop box located at our office located at 2500 Main St., Vancouver, WA 98660.

Units are offered to qualified applicants based on the date and time of application. For more information, visit our website at [www.vhausa.com](http://www.vhausa.com) or call (360) 694-2501.

### WAIT LIST CLOSINGS

Notice is hereby given that Vancouver Housing Authority will close the following waitlists on October 2, 2020:

**Fort Vancouver** located at 2509 W Columbia St., Vancouver WA  
**Azalea Place** located at 9002 NE 15th Ave., Vancouver WA

Vancouver Housing Authority welcomes qualified individuals/families of diverse backgrounds and, in accordance with various Federal and State laws or regulations, does not discriminate against anyone based on race, color, religion, sex, age, national origin, disability, familial status, creed, veteran's or military status, sexual orientation, gender identity, or marital status.

Vancouver Housing Authority will make reasonable accommodations to individuals whose disabilities require accommodation in order to enjoy full and equal access to our programs and services. This includes the application process, the informal hearing process and the residency period. Please contact a staff member if you need a reasonable accommodation.