

# How important is speech in transmitting coronavirus?

April 3 2020, by Andy Fell

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Normal speech by individuals who are asymptomatic but infected with coronavirus may produce enough aerosolized particles to transmit the

infection, according to aerosol scientists at the University of California, Davis. Although it's not yet known how important this is to the spread of COVID-19, it underscores the need for strict social distancing measures—and for virologists, epidemiologists and engineers who study aerosols and droplets to work together on this and other respiratory diseases.

Aerosols are [particles](#) small enough to travel through the air. Ordinary speech creates significant quantities of aerosols from respiratory particles, said William Ristenpart, professor of chemical engineering at UC Davis. Ristenpart is co-author on an editorial about the problem published this week in the journal *Aerosol Science and Technology*.

These respiratory particles are about one micron, or one micrometer, in diameter. That's too small to see with the [naked eye](#), but large enough to carry viruses such as influenza or SARS-CoV-2.

## **Some individuals superemitters**

Last year, Ristenpart, graduate student Sima Asadi and colleagues published a paper showing that the louder one speaks, the more particles are emitted and that some individuals are "superemitters" who give off up to 10 times as many particles as others. The reasons for this are not yet clear. In a follow-up study published in January in *PLOS One*, they investigated which [speech sounds](#) are associated with the most particles.

Calculating just how easily a virus like SARS-CoV-2 spreads through droplets requires expertise from different fields. From virology, researchers need to know how many viruses are in lung fluids, how easily they form into droplets and how many viruses are needed to start an infection. Aerosol scientists can study how far droplets travel once expelled, how they are affected by air motion in a room and how fast they settle out due to gravity.

"The [aerosol](#) science community needs to step up and tackle the current challenge presented by COVID-19, and also help better prepare us for inevitable future pandemics," Ristenpart and colleagues conclude.

**More information:** Sima Asadi et al. Effect of voicing and articulation manner on aerosol particle emission during human speech, *PLOS ONE* (2020). [DOI: 10.1371/journal.pone.0227699](https://doi.org/10.1371/journal.pone.0227699)

Provided by UC Davis

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