

## COVID-19 patient infected indoors after 5 minutes and 20 feet away study shows

By Jackie Salo, December 10, 2020;10:32am

A South Korean high school student was infected with COVID-19 within five minutes and from a person 20 feet away while dining indoors, according to a new study.

The case initially stumped contact tracers because North Jeolla province, where the restaurant was located, hadn't reported any infections in a month, according to the report in the Journal of Korean Medical Science.

The high school senior hadn't travelled outside of the region in recent weeks, but cell phone GPS data showed she'd briefly overlapped at a restaurant with a saleswoman who contracted COVID-19 and visited for business.

Both of the cases were confirmed to have been from the same strain of the virus, researchers said.

Dr. Lee Ju-Hyung, a professor at the Jeonbuk National University Medical School, worked to recreate the restaurant's setup with his team and was surprised by how far the pair had been sitting from each other.

Surveillance footage showed the pair never spoke or touched the same cutlery, dishware or any other surfaces — but the movement of a lighting fixture indicated that an air conditioning unit had been on at the time.

Lee and other researchers measured the airflow throughout the restaurant.

"Incredibly, despite sitting a far distance away, the airflow came down the wall and created a valley of wind. People who were along that line were infected," Lee said, according to the Los Angeles Times.

"We concluded this was a droplet transmission, and beyond 6 feet."

The findings determined that the student had likely been infected during a five-minute window while sitting 20 feet away from the saleswoman.

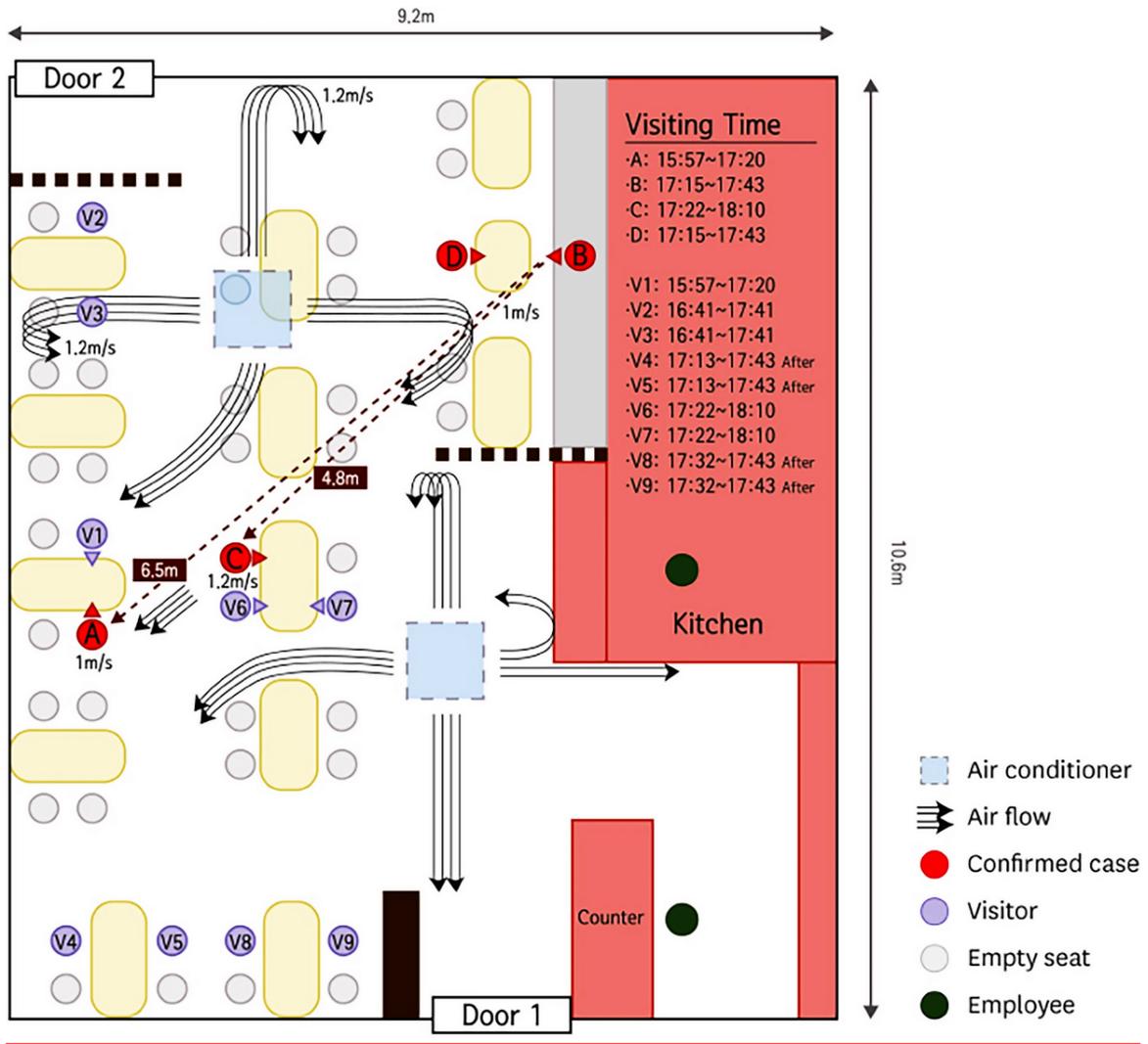
"The student had to get a large dose in just five minutes, provided by larger aerosols probably about 50 microns," Linsey Marr, an engineering professor at Virginia Tech who was not involved in the study, told the Los Angeles Times.

"Large aerosols or small droplets overlapping in that grey area can transmit disease further than one or two meters (3.3 to 6.6 feet) if you have strong airflow."

Marr said the study illustrated the risk that comes with dining indoors — and that being the recommended six feet apart from others might not be enough.

“Eating indoors at a restaurant is one of the riskiest things you can do in a pandemic,” Marr said.

“Even if there is distancing, as this shows and other studies show, the distancing is not enough.”



A schematic diagram of the outbreak restaurant equipped with ceiling-type air conditioners.

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