

CAN THE SARS-CoV-2 INFECTION SPREAD THROUGH THE USE OF AIR CONDITIONING?



According to a recent study, a SARS-CoV-2 infected person releases about 1000 droplets (containing viral particles) within a minute of loud speech. These droplets can remain airborne for at least 8 minutes. Thus, despite physical distancing, the SARS-CoV-2 infection may spread if people share the same air for prolonged periods in confined places with poor ventilation (i.e., without access to fresh air). This also means that centrally air-conditioned rooms may increase risk of infection. This is because A/Cs circulate air back into the same space repeatedly, thereby also circulating any contaminants (like virus particles) in the air.

Many recent reports in centralized air-conditioned environments indirectly point towards this mode of transmission. For example, a study in a restaurant in



Source URL: <https://www.needpix.com/photo/1214884/window-open-two-old-pane-facade-house-former>.

China shows transmission of the SARS-CoV-2 virus from a single presymptomatic patient to not just people on the same table, but also those on the neighboring tables. Even though samples from the A/C filter were negative for the virus, the airflow is believed to have facilitated transmission across tables. Another study in a call centre in South Korea showed clustered infections on one floor of the centrally air-conditioned office. Although there is no experimental evidence on the movement of droplets containing the SARS-CoV-2 virus through air filtration systems and A/C ducts, these and other studies point to the possibility of the virus circulating in confined air-conditioned spaces with poor natural ventilation.

Until proven otherwise, it may be safer to avoid visiting crowded public places with central A/C and poor ventilation, like supermarkets, malls, offices, trains, and restaurants. For domestic use, A/Cs are unlikely to increase the chance of infection because people in a household share their living space, and are in close contact anyway. Regardless, natural and frequent ventilation is recommended. If a family member gets infected, when possible, they should be isolated in a separate room that does not share an A/C with other rooms in the house. In fact, the MoHFW, Government of India guidelines suggest that for an infected person, natural ventilation (through open windows) is preferable to an A/C.

Notes:

1. This response was first published on the Indian Scientists' Response to CoViD-19 (ISRC) website.
2. Source of the image used in the background of the article title: <https://pixabay.com/illustrations/air-conditioner-ac-cool-cooling-4204637/>. Credits: mstlion, Pixabay. License: CC-0.

Indian Scientists' Response to CoViD-19 (ISRC) is a group of more than 500 Indian scientists, engineers, technologists, doctors, public health researchers, science communicators, journalists and students who voluntarily came together in response to the COVID-19 pandemic. This group can be contacted at indscicov@gmail.com.