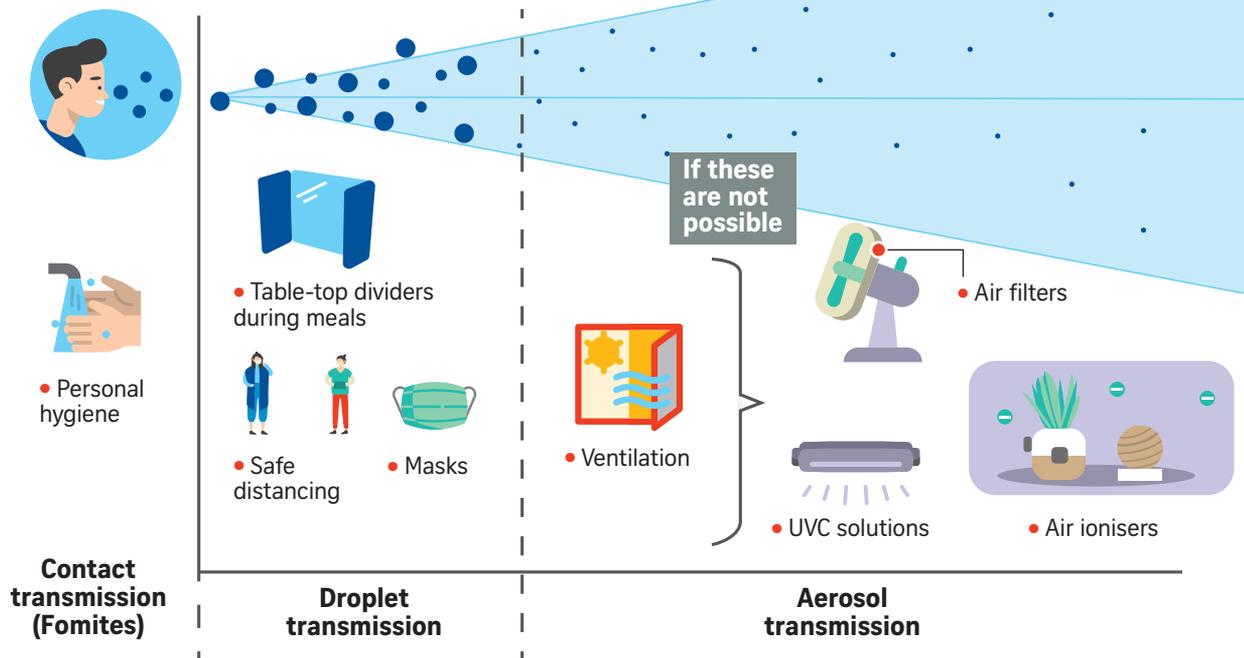


How to minimise transmission of Covid-19 droplets

Social distancing, mask-wearing and good personal hygiene remain the first line of defence in the Covid-19 fight as Singapore moves towards a gradual reopening of its economy. But measures to reduce the transmission of small droplets, known as aerosols, could supplement the fight. The Straits Times looks at some of these suggested measures.



To reduce aerosol and droplet transmission in indoor spaces, it is important to have good ventilation.

- This can be achieved by using fans and opening windows in offices, restaurants and classrooms.
- Rooms which use split unit air-conditioning systems should be ventilated every six hours. This is to allow the air in the room to be refreshed more frequently.

SOME DEVICES WHICH CAN PREVENT THE TRANSMISSION OF AEROSOLS AND DROPLETS:



TABLE-TOP DIVIDERS DURING MEALS

Dividers placed on tables to reduce the spread of respiratory droplets as people go without masks during meals. Mylar films can be placed on the dividers so people can hear one another better without compromising on aerosol spread.

How they work:

- Depending on the ventilation in the space, dividers between 60cm and 70cm in height should be used.
- U-shape and criss-cross dividers are preferred as they are more effective in preventing transmissions compared with other designs.
- Dividers must also be sanitised regularly to prevent the possibility of surface transmission.

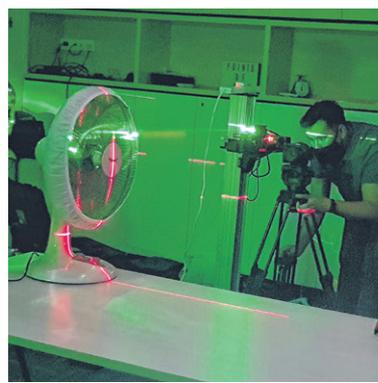


AIR IONISERS

A device which can help reduce the concentration of aerosol particles in poorly ventilated spaces. Plant-based ionisers, which are plants fitted with an electrical ioniser device, are most effective in emitting ions. Researchers found that these ionisers can help to reduce the number of aerosol particles in a room from 4,000 particles per cubic cm to 100 per cubic cm in six minutes, compared with 25 minutes without an ioniser.

How they work:

- Ionisers purify the air by generating negative ions, which charge up aerosol particles.
- The aerosol particles then stick together on surfaces such as floors and walls. These surfaces have to be disinfected regularly to avoid risks of contact transmission.



AIR FILTERS

Filters attached to fans and air-conditioners to reduce the spread of harmful aerosols by purifying indoor air.

How they work:

- Layered antimicrobial filters wrapped around the back of fans and air-conditioners work to reduce the concentration of aerosols smaller than 0.1 micrometre, therefore purifying the air.
- In experiments A*Star conducted using two fans in a typical office meeting room, researchers found that fans fitted with antimicrobial filters cut the time needed to mitigate the aerosols in the room from 15 minutes to 10.5 minutes.



ULTRAVIOLET-C (UVC) LIGHT RAYS FOR DISINFECTION OF SURFACES

UVC light rays work by inactivating different types of bacteria and viruses, making them an effective disinfection for common surfaces.

How they work:

- By exposing coronaviruses to UVC light rays, researchers found that over 99.9% of coronaviruses were inactivated within five minutes at a UVC LED exposure of 30 millijoules per sq cm.
- However, caution is needed as UVC light rays could be potentially damaging to the eyes and skin.