

# Ventilation in Spaces



Ventilation in spaces is effective in reducing droplet and aerosol transmission, in addition to the current safe management measures

## Indoors: Air changes per hour (ACH) matters

### What is Air changes per hour?



How many times the entire volume of air in a room is changed in 1 hour



### Central Air Conditioning

- High efficiency filter
- Fresher air



### Split Unit Air Conditioning

- Fewer air changes per hour

## Outdoors: Wind speed and direction matters

If the wind is blowing in your direction, aerosols can reach you even if others are far away

Wear a mask if not exercising

Outdoor ACH is generally higher than indoors<sup>1</sup>



<sup>1</sup>Yang, Xia, et al. "Integrated assessment of indoor and outdoor ventilation in street canyons with naturally-ventilated buildings by various ventilation indexes." Building and Environment 169 (2020): 106528.

## Indoor Ventilation Tips

Venue	Ventilation Environment	Additional Measures
Offices, Restaurants, Classrooms	Fan Open Windows	None needed
	Split Unit Air Conditioning	Ventilate room every 6 hours

All tests conducted by A\*STAR, IMRE; modelling by A\*STAR, IHPC

## Air changes per hour in Public Transportation



~100% of the air in our trains is changed at least once every six minutes<sup>2</sup>



The air changes per hour (ACH) for fresh air in our train cabins<sup>3</sup> is 10.5 to 17.4, which exceeds the Centers for Disease Control and Prevention's requirements of 6 for healthcare facilities<sup>4</sup>

<sup>2</sup> No evidence of local cases transmitted on public transport, taken from The Straits Times | <sup>3</sup> A study conducted in 2020 by Agency for Science, Technology and Research (A\*STAR) on droplet dispersal on trains | <sup>4</sup> Guidelines for Environmental Infection Control in Health-Care Facilities, taken from Centers for Disease Control and Prevention (CDC)

