

## FACT SHEET

### Transmission of Communicable Diseases on Aircraft

Cases of transmission of communicable disease on aircraft are very rare. The reasons for the apparently low rate of in-flight transmission are not fully determined but are thought to include a combination of the lack of face-to-face contact, and the physical barriers provided by seat backs, along with the characteristics of cabin air flow. As well, at Air Canada, additional measures such as pre-flight screening questionnaires, temperature monitoring and mandatory face coverings are also seen to be effective.

Various government bodies have confirmed the risk of onboard transmission is exceedingly low, which accords with scientific studies on communicable diseases and air travel.<sup>1</sup>

- The U.S. Centers for Disease Control and Prevention says: "Most viruses and other germs do not spread easily on flights because of how air circulates and is filtered on airplanes."<sup>2</sup>
- With respect to Canada, the Public Health Agency of Canada said the "risk of in-flight transmission of COVID-19 on board aircraft is relatively low".<sup>3</sup>
- The International Air Transport Association (IATA) conducted an informal survey of 18 major airlines during Jan-Mar 2020, prior to carriers broadly instituting additional safety measures in response to COVID-19. It found only four episodes of suspected in-flight transmission, all from passenger-to-crew, and a further four episodes of apparent transmission from pilot-to-pilot, which could have been in-flight or before/after (including layover); there were no instances of suspected passenger-to-passenger transmission.<sup>4</sup>

### Biosafety Measures

---

<sup>1</sup> <https://pubmed.ncbi.nlm.nih.gov/19296869/>

<sup>2</sup> <https://www.cdc.gov/coronavirus/2019-ncov/travelers/travel-in-the-us.html>

<sup>3</sup> <https://www.cbc.ca/player/play/1767921219881>

<sup>4</sup> See

<https://www.iata.org/contentassets/f1163430bba94512a583eb6d6b24aa56/covid-medical-evidence-for-strategies-200609.pdf>



In the absence of a single measure that can achieve high-levels of risk reduction, the alternative is to use a combination of approaches to mitigate the risk as far as practical. For this reason, Air Canada has introduced an industry leading biosafety program called Air Canada CleanCare+ to create a multi-layered protective environment for customers and crew. Among its measures, it includes:

- Remote check-in and baggage tag procedures so customers can do these things “touchlessly” at the airport.
- Customers are asked a series of screening questions to ensure they are fit-to-fly and their temperature is taken prior to boarding.
- Face coverings are required throughout the journey.
- Sanitizer and wipes are supplied in individual care kits, and, to the extent possible, during gate and boarding procedures social distancing is promoted.
- Onboard service has been revised to minimize interactions.
- New cleaning protocols, such as electrostatic spraying, have been adopted.
- Air Canada will also notify customers if their flight is relatively full and give them the option to rebook to a less full flight (if available) at no cost.

### **Onboard air quality**

The air on board modern aircraft is a mix of 50% fresh air and 50% cabin air. All aircraft in the Air Canada fleet are equipped with High Efficiency Particulate Air (HEPA) filters to continuously purify the air.

- HEPA filters effectively capture 99.9% of particulates from recirculated air in the aircraft cabin. This includes microbial organisms such as bacteria and viruses.
- These filters are similar to those used in hospital rooms and, like hospital rooms, the air within the cabin is refreshed every 2-to-3 minutes for a total of 20 to 30 total air changes per hour.
- Cabin air flows vertically from the ceiling to floor of the cabin – not horizontally back to front - and then is recirculated through a HEPA filter.

[www.aircanada.com/ca/en/aco/home/about/media/media-features/airbus-cabin-air-refreshes.html](http://www.aircanada.com/ca/en/aco/home/about/media/media-features/airbus-cabin-air-refreshes.html)

## Sitting next to someone on a plane is **low risk**. Why?

It's unlikely an infected passenger will even get to sit next to you

**1** Government health screening and departure biosafety measures minimize this.

Virus-carrying droplets are unlikely to reach you:

**2** Cabin air flows downwards and is fully renewed with fresh air every 2-3 minutes.

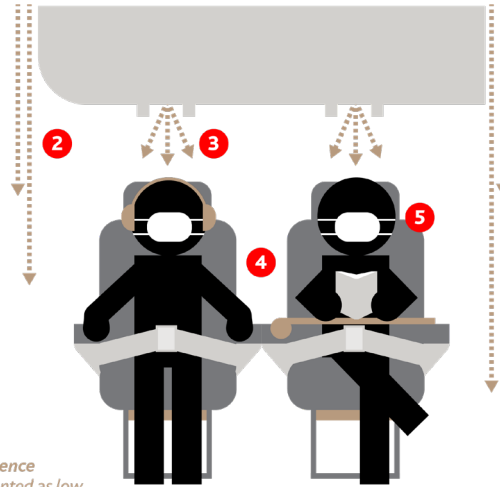
**3** Personal overhead ventilation can strengthen downward air flow.

**4** All passengers face forwards, not at each other.

Face-coverings or masks are a proven and effective barrier

**5** They should be worn throughout the travel process.

*To date, despite independent research, there is still little confirmed evidence of onboard COVID-19 transmission between passengers. The risk is counted as low.*



Source: IATA



AIR CANADA

## How well does **cabin air** compare?

Ventilation Air Rate (VAR) is a standard measure for the exchange of air in a given space - office, shopping mall, airplane...

Here's how an airplane's Ventilation Air Rate compares:

**x2**

Better than a **classroom**



**x3**

Better than a **conference room**



**x8**

Better than a **mall or supermarket**



**x12**

Better than an **office space**



Comparison based on data from ANSI/ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality (2019) and an aircraft operation with the max certificated number of passengers.

Source: IATA

Modern planes are also fitted with HEPA filters

**99.993%**

bacterial/virus removal efficiency rate

Including SARS, which is similar to COVID-19, according to independent testing.

**50/50**

Mix of HEPA-filtered/fresh air onboard

And this is a completely changed 20-30 times per hour.

**2-3 mins.**

Cabin air is fully renewed about every 2-3 minutes

Hospitals = 10 minutes  
Offices = 20 minutes



AIR CANADA



# AIR CANADA

## **Medical collaborations**

Air Canada has undertaken several medical collaborations to advance biosafety across its business, including with Cleveland Clinic Canada in Toronto, a renowned global healthcare leader; with Ottawa-based Spartan Bioscience to explore rapid COVID-19 testing in an aviation environment; and, since last year, with Toronto-based BlueDot, a company that monitors infectious diseases globally in real time to give us valid, relevant information to make business decisions quickly.

Additionally, the airline has full time medical professionals who are specialists in the field of aviation medicine. It has representation or membership in a number of international organizations that meet regularly on health matters and participate regularly in colloquiums, this includes the IATA medical advisory group, the International Airline Medical Association council, the CAPSCA (Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation), and it works with the ICAO medical advisor, including on group call CART (ICAO Council's Aviation Recovery Task Force, which provides guidance to governments and industry operators in order to safely restart the international air transport sector and recover from the impacts of COVID-19 on a coordinated global basis).

## **Audio Visual Resources**

For more information on travelling safely with Air Canada please see <https://vimeo.com/showcase/7259157>

For Information on Air Canada CleanCare+, please see <https://www.aircanada.com/ca/en/aco/home/book/travel-news-and-updates/2020/cleancareplus.html>

For Information on Science-Based decision making please see <https://www.aircanada.com/ca/en/aco/home/about/media/media-features/science-based-alternative.html>

## **Related Articles**

<https://healthydebate.ca/personal-health-navigator/catching-covid-19-airplane-flight>



**AIR CANADA**

<https://www.washingtonpost.com/opinions/2020/05/18/airplanes-dont-make-you-sick-really/>

[www.forbes.com/sites/benbaldanza/2020/07/13/mit-study-on-airline-middle-seat-risk-confirms-view-that-flying-is-safe/#2fff77cf60a8](http://www.forbes.com/sites/benbaldanza/2020/07/13/mit-study-on-airline-middle-seat-risk-confirms-view-that-flying-is-safe/#2fff77cf60a8).

<https://www.readersdigest.ca/travel/travel-tips/recirculated-air-on-airplanes/>

<https://www.theglobeandmail.com/life/health-and-fitness/article-what-are-my-chances-of-catching-covid-19-if-i-take-a-flight/>

<https://www.lapresse.ca/voyage/202005/22/01-5274632-voler-serait-peu-risque.php>