

## How to Avoid Getting Sick on a Plane: An Air Traveler's Guide

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May 4, 2018*

We're flying more than ever. The [US Department of Transportation](#) reported US and foreign airlines serving the United States carried an all-time high of *965 million* domestic and international passengers in 2017. Airlines do a very good job of delivering us to our destinations, but what are the risks of our contracting an infectious illness as we soar through the air? That depends on several factors:



- Health of passengers and crew
- Airline food and beverage safe preparation and service practices
- Hygiene practices of passengers and crew
- Environmental controls in the cabin

### *The Role of Passengers, Crew and Food Safety*

Although not always easy or possible, the right thing to do if you have a contagious illness is to postpone travel. The fact that most airlines charge a financial penalty for changing a reservation, however, is a significant disincentive to rescheduling. Staying home when sick is even more important for flight attendants who serve us food and beverages and circulate through the aisles, making contact with virtually all of the passengers. The safe preparation of food and beverages by food service workers and flight attendants is also critical, and includes proper hand hygiene of preparers and servers, disinfecting food contact surfaces, heating hot meals to correct temperatures, and providing sanitary beverage ice.

[University of Arizona Professor Charles Gerba tested](#) several surfaces in airplanes and found the three most contaminated surfaces are (in order of worst first): the toilet, seat tray tables, and overhead compartments. Airlines should ensure these surfaces are cleaned and disinfected regularly, but planes are frequently turned around quickly at terminals, leaving little time for more than cursory cleaning. With this in mind, passengers

can travel with disinfecting wipes that they can use to swipe rest room surfaces, their seat tray table, arm rests and the seat belt buckle. It is literally *too much of a stretch* for most passengers to disinfect overhead compartments.

From an infection control standpoint, making a special trip to the airplane rest room *only* to wash hands may not be worth the risk of entering that facility. Passengers may opt instead to stay in their seats and use hand sanitizer containing at least 60% alcohol.<sup>1</sup>

### *A Controlled Environment*

Commercial airlines vent, heat and filter cabin air often using high efficiency particulate air (HEPA) filters that reduce particles and control humidity. A 2005 review<sup>2</sup> of the spread of infectious diseases during commercial air travel described air flow in the cabin as being from side-to-side (perpendicular to the long axis of the plane), as opposed to front-to-back, in the aircraft. Air enters the cabin overhead, circulates across the cabin, and exits near the floor. According to the study authors, this flow pattern limits the presence of airborne particles in the cabin.

HEPA filters remove dust, vapors, bacteria and fungi with an efficiency of 99.97%. Viral particles encased in mucous droplets of greater than five microns<sup>3</sup> are also captured in HEPA filters. Those droplets that have evaporated to less than five microns and still host viruses, however, disperse widely and can remain in the air for indefinite periods of time. The authors theorize that “large droplet and airborne mechanisms probably represent the greatest risk for passengers within the aircraft because of the high density and close proximity of passengers.”

### *Risk to Passengers*

Several studies cited in the 2005 review show that your risk of contracting an infectious illness from a fellow passenger rises if you are sitting within two rows of an infected person for a flight time of more than eight hours. A 2018 [modeling study](#) confirmed a low probability of direct transmission of respiratory viruses to passengers not seated in close proximity to an infectious passenger. One exception was transmission of SARs from an infected flyer to another sitting seven seats away during a three-hour flight. Another event occurred when a flyer with active tuberculosis transmitted the infection to several other passengers.

*Concerned about Sitting Next to a Service or Comfort Animal?*

*If you have allergies to animals or prefer not to sit in the vicinity of one on the plane, you can note that preference with the airlines when booking your flight. If you find yourself seated too close to an animal despite stating your preference, try working with airline personnel to change your seat.*

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<sup>1</sup> Although they don't eliminate all types of germs, according to [CDC](#), hand sanitizers containing at least 60% alcohol are a good option for cleaning hands when access to soap and water is compromised.

<sup>2</sup> Mangili, A. and Gendreau, M.A. (March 12, 2005). “Transmission of infectious diseases during commercial air travel,” *The Lancet*, v. 365. Abstract available online: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(05\)71089-8/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)71089-8/fulltext)

<sup>3</sup> One micron is one-millionth of a meter.

Air ventilation is also extremely important. The authors of the 2005 review point out that transmission of influenza became widespread within all sections of a passenger cabin when the ventilation system was inoperative aboard a grounded aircraft. The authors note that proper ventilation within any confined space is critical and reduces the concentration of airborne organisms by 63% with each air exchange.

### *Takeaways for Flying Away*

To minimize your risk of contracting or spreading an infectious illness onboard a plane:

- ✓ Pack disinfecting wipes in your carry-on luggage for swiping seat belt buckles, tray tables, arm rests, surfaces in the restroom, and even overhead light switches and ventilation controls
- ✓ Pack hand sanitizer containing at least 60% alcohol in your carry-on luggage and use it frequently while onboard the plane
- ✓ Keep the air vent above your seat in the open position for optimum ventilation
- ✓ Cough or sneeze into a disposable tissue (or into your elbow if tissues are not available), not into the cabin air; place used tissues in a purse, clothing pocket, or back pack (not the seat back pocket in front of you) until they can be properly disposed of in a trash bin
- ✓ Don't fly when sick with an infectious illness, and pump up your resistance to pathogens in flight by adopting a healthy lifestyle on the ground

Flying should be a pleasant trip to your destination, and not about getting sick on a plane. Good health and *Bon Voyage!*

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