

# Jet air dryers vs. paper towels



The science is clear: single-use paper towels are a more effective and hygienic way to dry your hands after washing.

## Jet air dryers



Using a jet air dryer dispersed **1,300 times** more germ particles than drying with paper towels.



The inner surfaces of jet air dryers can harbor up to **48 times** more bacteria than a toilet seat.

**52%**

Coliform bacteria were found on **52%** of jet air dryers tested.



Jet air dryers can increase the bacteria on fingers by up to **42%**.



When drying your hands with a jet air dryer, water droplets that could contain bacteria and germs are expelled into the air, **traveling as far as 6.5 feet** and lingering in the air for **up to 15 minutes**.

## Paper towels

**77%↓**

Drying your hands with a paper towel can **reduce bacteria on hands by up to 77%**.



The rubbing process of paper towels **physically removes bacteria** along with moisture.



Faced with a choice of drying methods, **90% of people chose paper towels** over jet air dryers in the restroom.



Paper towels are the **recommended hand-drying method** of the World Health Organization (WHO) "Guidelines on Hand Hygiene in Health Care."



Given the **strong preference for using paper towels**, hand hygiene adherence would possibly decrease if paper towels are not available in washrooms, according to a review article in the Mayo Clinic Proceedings.

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# The science is clear:

Paper towels are the most  
hygienic option for hand drying



## Mayo Clinic Proceedings

### The Hygienic Efficacy of Different Hand-Drying Methods: A Review of the Evidence, *Mayo Clinic Proceedings*

A review of 12 studies on the hygienic efficacy of different methods of hand drying published between 1970 and March 2011. Effectiveness was based on the speed, the degree of dryness, the overall effective removal of bacteria, and the prevention of cross-contamination. The conclusions were that, overall, most studies suggest that paper towels can dry hands more efficiently, remove bacteria effectively, and cause less contamination within the washroom than jet air dryers.

» Access the study at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538484/>

## Journal of Hospital Infection

### E.L. Best, K. Redway, "Comparison of Different Hand-Drying Methods: The Potential for Airborne Microbe Dispersal and Contamination," *Journal of Hospital Infection*, 89 (2015)

This study assessed the potential for airborne microbe dispersal of four hand-drying methods (paper towels, cloth roller towels, warm air, and jet air dryer) by using three different experimental models. The study demonstrated the higher levels of airborne microbe dissemination by jet air dryers, particularly if hand washing is suboptimal.

» Access the study at [https://www.journalofhospitalinfection.com/article/S0195-6701\(14\)00372-7/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(14)00372-7/fulltext)

## Journal of Applied Microbiology

### P.T. Kimmitt & K.F. Redway, "Evaluation of the Potential for Virus Dispersal During Hand Drying: A Comparison of Three Methods," *Journal of Applied Microbiology*, 120 (2016)

A comparison of three hand-drying methods – paper towels, a warm air dryer and a jet air dryer – to disperse viruses and contaminate the immediate environment during use, by using a MS2 bacteriophage model. The results of the study show that the use of jet air dryers leads to significantly greater and further dispersal of viral particles from artificially contaminated hands than warm air dryers and paper towels.

» Access the study at <https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/jam.13014>

## Journal of Hospital Infection

### E.L. Best, P. Parnell and M.H. Wilcox, "Microbiological Comparison of Hand-Drying Methods: The Potential for Contamination of the Environment, User and Bystander," *Journal of Hospital Infection*, 88.4 (2014)

This study tested how microbes are spread when using three methods of hand drying – jet air dryers, warm air dryers and paper towels – in a public restroom. Researchers first measured amounts of bacteria in the immediate vicinity, as well as one meter away from all three hand drying devices. This part of the study found that bacteria counts were higher in the air immediately next to the jet air dryers than that of warm air dryers and paper towel dispensers. Bacteria counts were also higher in the air surrounding the jet air dryers, versus the warm air dryers and paper towel dispensers, when researchers tested air samples taken one meter from the devices.

» **Access the study at** <https://www.sciencedirect.com/science/article/abs/pii/S0195670114002461>

## World Health Organization

### WHO Guidelines on Hand Hygiene in Health Care, Published by the World Health Organization

The World Health Organization published global guidelines on hand washing in Health Care settings, is designed to provide health care workers and health authorities with specific recommendations to improve practices and reduce transmission of microbes. These guidelines favor paper towels over other hand-drying methods, and, in fact, the WHO's recommendation for proper hand washing technique advises users to "rinse hands with water and dry thoroughly with a single-use towel."

» **Access the study at** [https://apps.who.int/iris/bitstream/handle/10665/44102/9789241597906\\_eng.pdf;jsessionid=287213E20A0AD5D833B1E277E81CDAD0?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/44102/9789241597906_eng.pdf;jsessionid=287213E20A0AD5D833B1E277E81CDAD0?sequence=1)

## European Tissue Symposium

### Observational Study at ISSA/Interclean Amsterdam 2016, Published by the European Tissue Symposium

This observational study, conducted during ISSA/Interclean Amsterdam in May 2016, found that 90% of people showed a preference for paper towels over jet air dryers when given a choice between the two in public washrooms. Researchers observed 3,879 visitors in a total of four restrooms – two men's and two women's – which were all equipped with both paper towels and jet air dryers, situated directly above one another.

» **Access the study at** <https://europeantissue.com/about-tissue/away-from-home/properties-of-tissue/user-preference-observational-study-issainterclean-amsterdam-2016/>

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Single-use towels offer the most effective and most hygienic hand washing solution compared to jet air dryers.


# Did you know paper towels are the most hygienic option for hand drying?




## Towels are hygienic:


**77%** ↓ Paper towels are critical to proper hand hygiene, as they can remove up to **77% of the bacteria** that remains on hands after washing.


 Jet air dryers blow water droplets containing bacteria from the hands as far as **6.5 feet** and **linger in the air for up to 15 minutes**.

 The inner surfaces of a jet air dryer can harbor **48 times more bacteria** than found on a toilet seat.

 Jet air dryers can actually increase bacteria by **42% on users' fingers** during the drying process

## Towels are preferred:

 **The World Health Organization** recommends single-use paper towels in its patient safety instructions for health care workers.<sup>1</sup>

 **90% of people** show a preference for paper towels over jet air dryers in the washroom.

1. WHO "Hand Hygiene Guidelines for Health Care Workers"

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