



Single-use towels offer the most hygienic way to reduce the risk of the transmission of viruses when drying hands in the washroom

Hand drying with single-use towels least likely to spread viruses

Brussels, Belgium – March 30, 2016 – New independent research has found that single-use paper towels are the most effective way to dry one's hands in the washroom. The study indicates that they help minimise the spread of viruses including ones associated with various diseases, including those causing gastro-intestinal infections such as Norovirus and Rotavirus.

Single-use towels disperse fewer microorganisms into the environment than jet air dryers and warm air dryers and also help reduce the risk that viruses are blown into the faces of small children accompanying adults in the washroom. The findings have serious implications for washroom facility managers in settings such as hospitals and restaurants where hygiene is paramount.

The research outcome

Leading microbiologists, Dr. Patrick Kimmitt and Keith Redway of the University of Westminster, studied the transmission of viruses using three different hand-drying methods: a jet air dryer, a warm air dryer and paper towels. The use of a jet air dryer was found to transmit more virus particles further and at different heights than the other methods, with airborne virus counts also significantly greater. At a range of heights tested, on average the jet air dryer produced over 60 times more viral plaques than a warm air dryer paper and over 1300 times more than paper towels. Combined average results at distances up to 3 metres away from the hand-drying devices showed that a jet air dryer produced over 20 times more viral plaques than a warm air dryer and over 190 times more than paper towels. Air samples collected 15 minutes after use showed that the jet air dryer produced over 50 times more viral plaques than a warm air dryer and over 100 times more than paper towels.

Viruses have been shown to survive on the hands for some time, with Influenza virus lasting from 10-15 minutes, Herpes virus for up to two hours, common cold virus up to one week, and Rotavirus for up to 60 days. Viral pathogens such as Norovirus have a low infectious dose and can be shed in large numbers in faeces.

“Our findings clearly indicate that single-use paper towels spread the lowest number of viruses of all the hand-drying methods we tested,” explained Dr. Patrick Kimmitt. *“It is estimated that cross-infection contributes to 40% of cases of healthcare-associated infections and effective hygiene in hand washing and drying is an essential step in minimising such infections.”*

Spreading the word

The study was presented briefly by Keith Redway at the European Public Health Conference in Milan in October 2015 where it received wide interest. It was subsequently published in a peer-reviewed scientific journal in December 2015 (reference: Kimmitt, P.T. & Redway, K.F. Evaluation of the potential for virus dispersal during hand drying: a comparison of three methods. *Journal of Applied Microbiology*. **120**, 478-486. <http://onlinelibrary.wiley.com/doi/10.1111/jam.13014/abstract>).



Keith Redway will also present the results in full at ISSA/Interclean, Amsterdam on May 11th at 14:00h in a talk entitled “Washroom hygiene: The dispersal of viruses by different hand-drying methods.”

“Good hand hygiene can save lives.” explains Keith Redway. “Minimising infection risk by ensuring proper hand hygiene, includes understanding what may compromise that. Our research and results over the years have revealed time and again that single-use towels are the safest way to dry one’s hands in the washroom. This virus study delivers further proof that when it comes to hygiene, drying one’s hands with a single-use paper towel is the safest way to reduce the spread of viruses after a visit to the washroom.”

Previous research undertaken by the Universities of Leedsⁱ and Westminsterⁱⁱ has also found that jet air and warm air hand dryers can spread more bacteria and other microbes in a washroom environment than paper towels.

“Our industry places great emphasis on hygiene and studies have consistently shown that paper towels offer the most effective way to limit the spread of microbes in the washroom,” commented Roberto Berardi, chairman of the European Tissue Symposium. “This latest research not only focuses on viruses for the first time, but it was also undertaken by microbiological experts at the University of Westminster and thus serves to further underline our message. Although there are no official guidelines on proper hand drying hygiene, it is rewarding to see markets and industries turning to single-use towels again to avoid compromising hygiene standards in washroom facilities.”

Ends

About ETS

ETS is the European Tissue Paper Industry Association. The members of ETS represent the majority of tissue paper producers throughout Europe and around 90% of the total European tissue production. ETS was founded in 1971 and is based in Brussels. For more information:

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ⁱ *Microbiological comparison of hand drying methods: the potential for contamination of the environment, user and bystander.* E.L. Best,1 P. Parnell,1 M.H. Wilcox 1,2 – Microbiology Department, Old Medical School, Leeds General Infirmary, Leeds Teaching Hospitals NHS Trust1 & University of Leeds,2 Leeds LS1 3EX, UK.
<http://europeantissue.com/hygiene/studies/potential-for-contamination-of-the-environment-study-2014/>

ⁱⁱ *Comparison of different hand-drying methods: the potential for airborne microbe dispersal and contamination* Keith Redway (Department of Biomedical Sciences, Faculty of Science and Technology, University of Westminster, London W1W 6UW, UK) and E.L. Best (Microbiology Department, Old Medical School, Leeds General Infirmary, Leeds Teaching Hospitals NHS Trust, Leeds LS1 3EX, UK)
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