



Keep the bugs at bay by drying hands with single use towels

A University of Westminster peer-reviewed and published study suggests single use towels are the most hygienic way to dry hands after visiting the washroom

Brussels, Belgium - April 8, 2015 - New research by the University of Westminster, commissioned by ETS, the European Tissue Symposium, suggests that single use towels are the most hygienic way to dry hands after visiting the washroom. Despite a trend for sophisticated drying machines in recent years it appears that traditional single use towels offer an unsurpassed level of hygiene when drying hands after visiting the washroom.

The study¹ was undertaken by leading microbiologist Keith Redway and looked at the potential for microbial contamination from hand drying and the potential risks for the spread of microbes in the air, particularly if hands are not washed properly. The research used four different hand drying methods and three different test models to compare differences between the drying methods and their capacity to spread microbes from the hands of users potentially to other people in public washrooms.

Thorough examination

Paper towels, a textile roller towel, a warm air dryer and a jet air dryer were compared using three different test models: acid indicator using lemon juice, yeast, and bacterial transmission from hands when washed without soap. The University of Westminster scientists found that the jet air dryer spread liquid from users' hands further and over a greater distance – up to 1.5 m – than the other drying methods. They also recorded the greatest spread of microbes into the air at both near and far distances for each of the tested models. Levels recorded at close distance for a jet air dryer revealed an average of 59.5 colonies of yeast compared with an average of just 2.2 colonies for paper towels. At a distance of 0.2 m the jet air dryer recorded 67 colonies of yeast compared with only 6.5 for paper towels. At a distance of 1.5 m the jet air dryer recorded 11.5 colonies of yeast compared to zero for paper towels.

Spread of microbes affecting adults and children

The peer-reviewed study, published in the March 2015 edition of the '[Journal of Hospital Infection](#)'², also looked at the body height at which microbes were spread by air dryers. It found the greatest dispersal was at 0.6 – 0.9 m from the floor. This is worrying since it equates to the face height of small children who might be standing near the dryer when a parent is drying his or her hands. This suggests that parents should take care to keep children away from the direct air stream of jet air dryers in washrooms to ensure that they are not unintentionally contaminating youngsters.

“These findings clearly indicate that single-use towels spread the fewest microbes of all hand-drying methods,” said Keith Redway. *“Cross contamination in public washrooms is a legitimate public health concern. The extent to which jet air dryers disperse microbes into the washroom environment is likely to have implications for policy guidance to facilities’ managers operating in a wide range of environments from sports venues and airports through to schools and hospitals.”*

Hand drying a crucial component of hand hygiene

“Correct hand drying is crucial in completing the hand washing process and reducing the risk of microbe transmission,” commented Roberto Berardi of the European Tissue Symposium (ETS). *“This latest University of Westminster research builds on previous studies such as last year’s³ research by*

¹ Comparison of different hand-drying methods: the potential for airborne microbe dispersal and contamination. E.L. Best*, K. Redway** *Microbiology Department, Old Medical School, Leeds General Infirmary, Leeds Teaching Hospitals NHS Trust, Leeds UK ** Department of Biomedical Sciences, Faculty of Science and Technology, University of Westminster, London, UK

² Online publication at [http://www.journalofhospitalinfection.com/article/S0195-6701\(14\)00372-7/abstract](http://www.journalofhospitalinfection.com/article/S0195-6701(14)00372-7/abstract)

³ <http://authors.elsevier.com/sd/article/S0195670114002461> and

<http://www.europeantissue.com/hygiene/potential-for-contamination-of-the-environment-study-2014/>

the University of Leeds. Its findings add to the existing body of evidence demonstrating that hand drying using single-use towels is associated with lower numbers of microbes both on the hands and in the washroom environment than with warm air or jet air dryers."

Hand drying – an important part of hand hygiene:



Notes to editors

Methodology

- Three test models and four different hand drying methods were used:
 - an acid-indicator model
 - a yeast model
 - counts of actual bacteria on the hands dispersed by different hand-drying devices at different heights and at different distances.
- paper towel dispenser (Wepa Clou Comfort) for 10 seconds;
- warm air dryer (World Dryer Corporation, model LE48) for 20 seconds;
- jet air dryer (Dyson Airblade, model AB01) for 10 seconds.
- continuous textile roller towel (Cannon Hygiene, UK) for 10 seconds

Key findings

- Due to their air flow, electric hand dryers show a greater potential for the dispersal of microbial contamination on the hands at different heights and to greater distances than towels; a jet air dryer showing the greatest potential.
- The visualization of the air flow from a jet air dryer helps explain the results of this study. Claimed air speeds for jet air dryers of over 600 kph are likely to increase the risk of transmission of viruses and other microbes from the hands of users to other occupants of public washrooms and into the washroom environment.

- 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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