

Paper towels more hygienic than hand dryers, study finds

A new study has found that jet air and warm air hand dryers have a greater potential to contaminate washrooms than paper towels by spreading bacteria into the air and onto users and bystanders.

The study, led by expert medical microbiologist Professor Mark Wilcox, of University of Leeds and Leeds Teaching Hospitals, and funded by The European Tissue Symposium (ETS), compared three commonly used methods of hand drying to aerosolise bacteria. Jet air driers were found to disperse more bacteria-carrying droplets and spread them further than either warm air dryers or paper towels.

Airborne dissemination

In carrying out the study, gloved hands were contaminated with a harmless strain of Lactobacillus, an organism not normally found in washrooms. This was done to mimic the bacterial burden on poorly washed hands. Subsequent detection of Lactobacillus in the air proved that it must have come from the

hands during drying. Researchers measured the air around the dryers and also at distances of one and two metres away. Bacterial counts in the air close to jet air dryers were found to be 4.5 times higher than around warm air dryers and 27 times higher compared with using paper towels. The results of the study were published in the Journal of Hospital Infection and presented at the Healthcare Infection Society International Conference in Lyon, France, in November 2014.

Professor Wilcox said: "We increasingly emphasise the need to wash hands to control the spread of infection, but we have not considered the best way to dry them. Best does not solely mean convenience. Drying hands using electric dryers risks spreading microbes in the washroom, and this is clearly not desirable when trying to limit the spread of bacteria or viruses from person to person."

Roberto Berardi, ETS Chairman, added: "Correct hand drying completes the hand washing process

and reduces the risk of microbe transmission. This research adds to the existing body of evidence demonstrating that hand drying using towels is associated with lower numbers of microbes both on the hands and in the washroom environment than with warm air or jet dryers."

The gloves are off

However, Dyson, manufacturer of the Airblade hand dryer, claims the report is "misleading" and based on "flawed methodology".

In a statement, the company said that the new research was "conducted under artificial conditions and does not reflect real life". This was because gloved hands were covered with unrealistically high levels of bacteria and dried without prior washing. They said: "People wash their hands to remove bacteria before drying them – and they don't wear gloves. When hands are dried properly, it reduces the spread of bacteria up to 1000 times."

Dyson also said that "The

amounts of bacteria retrieved from the air are insignificant and presented without any real life context: more bacteria are released into the air by removing one's jacket or changing one's shoes than found in this study".

Dyson concluded: "The Dyson Airblade hand dryer has been proven to be as hygienic as paper towels, through research commissioned by Dyson and conducted by the University of Bradford (published in the Journal of Applied Microbiology), Institut de Recherche Microbiologique, the College of Medicine (University of Florida), and Campden BRI.

"In 2013, SCA, commissioned a study with Campden BRI – it measured the same factors under more representative conditions. When the research involved a hand washing stage, it concluded that there was: 'no significant evidence of any difference between the methods of hand drying with respect to airborne microbial counts.'"

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