

EUROPEAN TISSUE SYMPOSIUM



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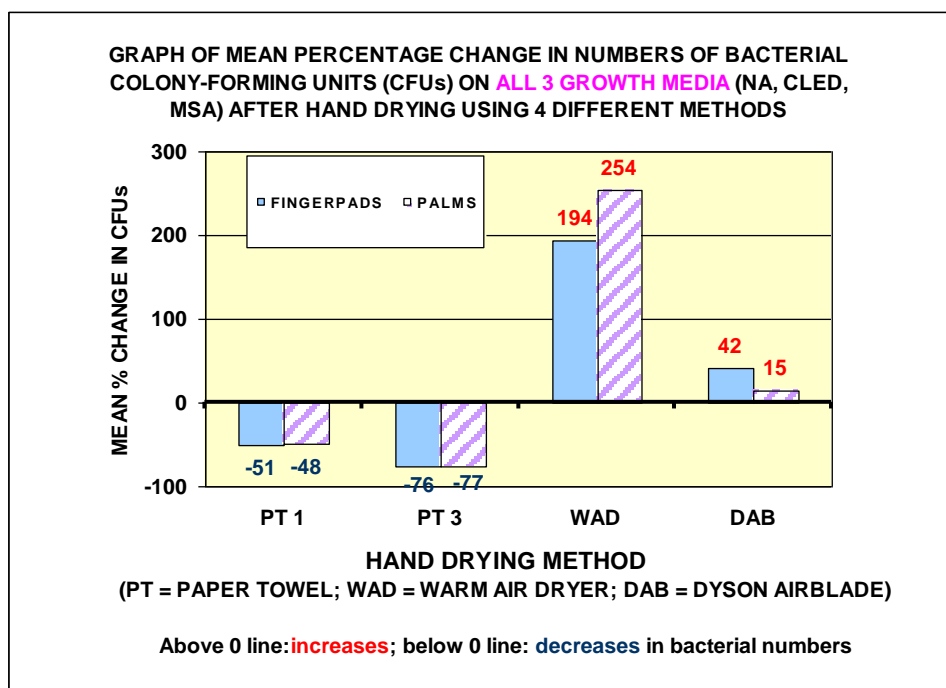
Press Information

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New evidence suggests electric hand dryers in public toilets pose health risk

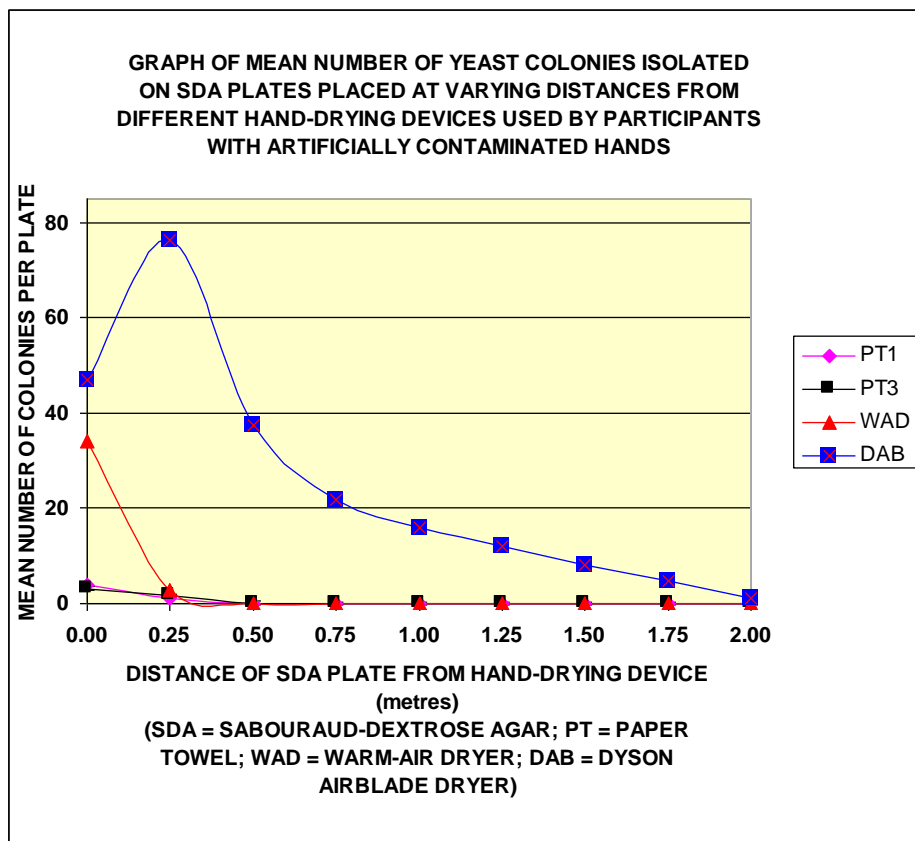
The electric hand dryers found in thousands of public toilets can dramatically increase the number of bacteria on people's hands after washing them and contaminate the washrooms where they are installed.

Scientists at the University of Westminster discovered the shocking findings during a study in which they compared the numbers of bacteria on subjects' hands before and after they had washed them and then dried them in a public washroom using either paper towels, a traditional warm air dryer or a new-style jet air dryer.



During their research, they discovered that:

- after washing and drying hands with the warm air dryer, the total number of bacteria was found to **increase** on average on the finger pads by 194% and on the palms by 254%
- drying with the jet air dryer resulted in an **increase** on average of the total number of bacteria on the finger pads by 42% and on the palms by 15%
- after washing and drying hands with a paper towel, the total number of bacteria was **reduced** on average on the finger pads by up to 76% and on the palms by up to 77%.



The scientists also carried out tests to establish whether there was the potential for cross contamination of other washroom users and the washroom environment as a result of each type of drying method.

They found that:

- the jet air dryer, which blows air out of the unit at claimed speeds of 400 mph, was capable of blowing micro-organisms from the hands and the unit and potentially contaminating other washroom users and the washroom environment **up to 2 metres away**
- use of a warm air hand dryer spread micro-organisms **up to 0.25 metres** from the dryer
- paper towels showed **no significant spread** of micro-organisms.

The results will come as a surprise to many people. Consumers, healthcare institutions and businesses such as restaurants have often been told over the years that electric hand dryers are the most hygienic way to dry the hands after washing them. It's a message which seems to have sunk in: a recent consumer survey found 58% of people in the UK thought electric hand dryers were more hygienic than both textile-based towels and paper towels*¹.

The reality, however, could not be more different, with the University of Westminster research results suggesting people could even be putting themselves at increased risk of illness by using dryers.

Keith Redway, a Senior Academic in the Department of Biomedical Sciences at the University of Westminster, said: "The results of all parts of this study suggest that the use of warm air dryers and jet air dryers should be carefully considered in locations where hygiene is of paramount importance, such as hospitals, clinics, schools, nurseries, care homes, kitchens and other food preparation areas."

"In addition, paper hand towel use is highly beneficial for improved hygiene in any other facilities open to the public, such as factories, offices, bars and restaurants."

He added: "Using paper towels results in a significant decrease in the numbers of bacteria on the hands, a clear advantage compared with the increases observed for both types of electric hand dryer tested in this study. In addition, paper towels are far less likely to contaminate other washroom users and the washroom environment."

¹ *Intermetra, June 2008 – Users' preferences in hand drying systems*

“Indeed, these findings suggest that if either a warm air dryer or jet air dryer is the only drying method available, in terms of bacterial numbers, a washroom user could be better off not washing and drying their hands at all.”

Ends

Notes to Editors

‘A comparative study of three different hand drying methods: paper towel, warm air dryer, Dyson Airblade dryer’ was conducted by Keith Redway and Shameem Fawdar of the School of Biosciences, University of Westminster, London towards the end of 2008. The independent research was commissioned by the European Tissue Symposium (ETS), a trade body representing 90% of Europe’s tissue industry.

For the part of the experiment concerning bacteria on the hands, researchers counted the total numbers of bacteria on both finger pads and on palms. They also tested specifically for staphylococci (bacteria typically found on skin, hair and in the nose) and for coliforms which are faecal or gut bacteria. Following a visit to a public washroom, test subjects were asked to press their finger pads directly onto the surface of various types of agar plates before and after washing with soap and water and drying. Metal formers and swabs were used to sample bacteria from the palms of the hands before and after washing with soap and water and drying. The bacteria were then transferred to agar plates, allowed to grow and the resulting colonies counted.

To establish whether there was any potential for contamination of users and the washroom environment caused by each type of drying method, a model micro-organism (yeast) was used to artificially contaminate the hands of volunteers before they used the different methods of drying. Yeast was used as this would accurately represent the transmission of the harmful bacteria often present on hands without the risk of harming the volunteers.

More details of the study can be viewed on Keith Redway’s University of Westminster web page at: www.westminster.ac.uk/~redwayk

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