



News

Study suggests electric hand dryers pose health risk

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Scientists at the University of Westminster have found that electric hand dryers can dramatically increase the number of bacteria on people's hands after washing them and contaminate the washrooms where they are installed. As a result they would not recommend that electric hand dryers are installed in locations where hygiene is of paramount importance.

The research, commissioned by the European Tissue Symposium (ETS), studied three different hand-drying methods: paper towel, warm air dryer and the Dyson Airblade dryer.

There were four parts to the study: Part A looked at the drying efficiency of hand drying method; Part B involved counting the number of different types of bacteria on the hands before and after drying; Part C studied the potential contamination of other users and the washroom environment; and Part D took a bacterial sampling of Dyson Airblade dryers in public washrooms.

Paper towels and the Dyson Airblade were found to be equally efficient at drying hands, each achieving 90% dryness in approximately 10sec. However, the warm air dryer was considerably less efficient, taking 47sec to achieve the same level of dryness.

Twenty subjects (10 male and 10 female) were used in Part B. Three different agar growth media (nutrient, cystine-lactose-electrolyte-deficient and mannitol salt agar) were used to count and identify the bacteria on the fingerpads and palms before and after washing and drying.

Paper towels were found to reduce the number of all types of bacteria on the fingerpads by up to 76% and on the palms by up to 77%. By comparison, the Dyson Airblade increased the numbers of most types of bacteria on the fingerpads by 42% and on the palms by 15%. However, after washing and drying hands under the warm air dryer, the total number of bacteria increased by 194% on the fingerpads and on the palms by 254%.

The Dyson Airblade performed less well than paper towels and the warm air dryer in Part C in which the hands of 10 subjects were artificially contaminated with yeast suspension. During use, open agar plates were placed at 0.25m intervals from the hand-drying device up to a maximum of 2m. Yeast colonies that grew on the plates were counted.

The Dyson Airblade dispersed potential contamination to other users and the washroom environment to a distance of at least two metres, whereas paper towels spread contamination 0.50m and the warm air dryer 0.25m.

Part D showed that the Dyson Airblade dryers in the public washroom sampled were contaminated with large numbers of bacteria, including potential pathogens such as *E. coli*, staphylococcus and pseudomonas aeruginosa, particularly the bottom of the hand drying chamber