

A Study into hand-hygiene and hand-drying methods

Cleanliness is the cornerstone of good health, and with disease on the rise, personal hygiene is more important than ever.

Hand-hygiene is the single most important way to prevent the spread of infection.

We wash, rinse and dry our hands so often that an important element of hand care may be overlooked. Washing is only half the job.

Washing and rinsing do not remove all dirt and bacteria from the skin. It is drying that completes the job by removing the residual water, soap, dirt and squamae (dead cells). It is not a matter of more energetic scrubbing. Some bacteria always escape the wash and rinse. These remaining bacteria are the reason it is important to know the best hand drying method.

The three hand drying methods available today are the hot-air dryer, paper towels and cotton towels.

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Hot-air dryer: A big health risk.

A recent scientific study conducted in Great Britain at the University of Westminster shows that the bacteria you

wash down the drain in public toilets can come back to haunt you through a hot-air dryer. Hot-air dryers are not vented to outside air. Their use creates circulation of air-currents within the toilet which takes-up the faecal germs from toilet bowls and urinals. Bacteria on hands were found to increase 500 percent when hot-air dryers were used in public restrooms. The temperature of 60° C of the hot-air is insufficient to kill germs. There is a considerable risk for the user standing in front of the dryer acquiring the bacteria being dispersed in the air current directed towards him. The bacteria may be inhaled, resulting in nasal carriage or may be deposited on other parts of the user's body or clothing, thus making him a mobile source of infection for susceptible persons.

Use of Hot-air dryers creates circulation of air-currents within the toilet which takes-up the faecal germs from toilet bowls and urinals.

The mechanical effect component of the clean wiping process in a hot-air drying system is lacking. Research has shown that negligible satisfaction is attained with the use of hot-air as a hand-drying option, and the desire to have had a clean and dry wipe after a good hand-wash remains unfulfilled in the mind of the user. Further, the drying

process of 50 to 60 seconds is relatively long and this often leads an impatient or busy person to walk away with damp hands, leading him, in many cases, to wipe the remaining dampness off his own clothing. In the remaining cases, there is damage to skin tissues through the drying of alkali soap residues that remain on the hands.

Contrary to popular belief, the usage costs of hot-air hand dryers are relatively expensive, requiring use of large bursts of power for an instantaneous supply of hot-air for the entire duration of use. More air-conditioning to offset the extra heat so generated in the toilets is an added element of cost.

Paper Towels: An environmental abuse

Paper Towels provide a better drying action and greater elimination of bacteria from the hands over hot-air. However, paper-towels do suffer from many limitations.

The major concern over the use of paper toweling is of the environment. Not only does the use of paper deplete our forest resources, it also creates tonnes of solid waste everyday that must be incinerated, recycled or sent to landfills. However, incineration and recycling are only partial answers. Incineration is generally carried-out in refuse incineration plants, giving rise

to various kinds of environmental pollution through release of undesirable flue gases. In Japan, where recycling is long established, even the most effective programmes recycle only 50 percent. When disposed-off in landfills, the volume of paper is much greater and the effect of the unconverted chemicals on the environment is not yet clear.

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The paper industry has discovered that the harmful chemical dioxin is present within the bleaching process of paper. This has led to further admissions by the paper industry of the inevitability of dioxins in products such as disposable diapers, coffee filters, tissue and paper towels.

Paper towels are stiff and a single paper towel cannot individually complete the drying action required after a hand-wash. This encourages the action of multiple paper towel pulls by a person, in some cases even upto 5 or 6. Use of paper towels in such indiscriminate fashion creates heaps of garbage requiring large garbage bins to be kept in public toilets. This results in an unaesthetic appearance of the toilet and requires more janitorial time, thereby disallowing maintenance staff

to be used elsewhere. The fire hazard potential of waste paper also cannot be overlooked.

Paper dispensers provide a totally unrestricted and unlimited supply of paper towels, thereby allowing for unnecessary usage waste and a further burden on the environment. Research has shown that around 25% of the paper towels meant for drying hands are used for other purposes like cleaning shoes, blowing a running nose, cosmetics etc. Adding all these factors together, makes the cost of providing paper towels as a hand drying method a very costly option.

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Cotton Towel: The best option for natural hand-hygiene

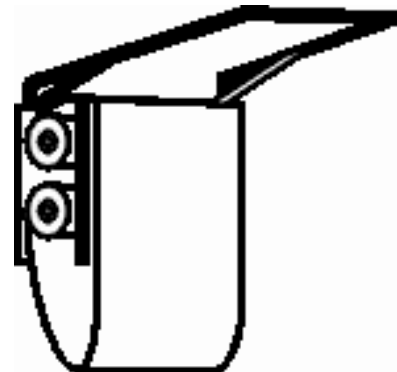
Cotton has always been the most natural means of drying hands. A soft, smooth towel invites use. And the cotton towel is the most pleasant to touch. At home, cloth is used quite naturally. Outside home, it provides us with the same sense of well-being.

A towel must leave our hands clean and dry. Dirt and germs remaining on the hands after the incomplete job of washing and rinsing are removed by a cotton towel due to its

mechanical friction effect on the skin.

Experiments conducted show that cotton fabric removes 10 times more micro-organisms than paper, is less aggressive, softer and better tolerated by the skin, and provides a better frictional action. Using a cotton towel can remove 40% more dirt-residue than a paper towel. Cotton towels absorb more moisture than paper towels thereby achieving the drying effect faster and more effectively.

With cotton towels, the only problem was cross contamination occurring from shared towels. This problem has been eliminated through use of cotton towel dispensers, which provide each user a clean, sanitary portion of the towel roll every time.



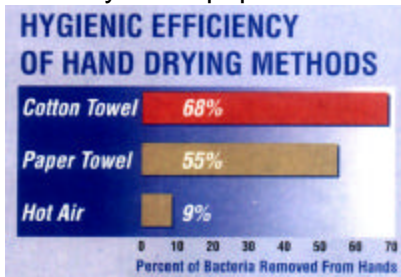
Mechanism of a Cotton roll dispenser

Clean and used portions of the cotton towel roll are kept carefully separated at all times inside the dispenser – an effective protective measure against the spread of disease. With each use, the soiled portion of the towel disappears into the dispenser and a fresh

hygienic portion is presented to the next user. After the complete use of a towel roll, it is processed at high temperatures with anti-bacterial wash formulae in professional industrial laundries with a guarantee of individual hygiene by Towel rental companies.

A thirty-five metre cotton towel roll processed 30 times, replaces over 10,000 single fold paper towels!

A cotton towel can be reused many times over. After that, it can be reused as rags or filling material. This cannot be said of recycled paper towels,



which, because of added chemicals, are no longer recyclable after use. Therefore, a cotton towel results in no solid waste or disposal problems. A thirty-five metre cotton towel roll processed 30 times, replaces over 10,000 single fold paper towels!

Cotton towel dispensers are supplied by an all-inclusive rental service, and use of cotton towels costs much less than paper, apart from being an environmentally responsible alternative.

At the beginning of the 21st Century, public officials around the world are asking

themselves one disturbing question: "Where will all the garbage go?"

In an effort to answer this question, cotton roll toweeling should not be overlooked. Hygiene, the environment, cost and ease of use are significant decision-making factors, and it is now upto the textile rental service industry to make sure that reusable cotton roll towels are one of the solutions considered by commercial and industrial managers.
