

Position Paper

Drying Hands in Public Washrooms

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Hygienic hands drying in sanitary rooms – air or paper?



Science decides

[Why drying hands with paper towels is the hygienic method of choice in public washrooms: a summary of the scientific data.](#)

Outside of the medical areas, [washing hands](#) with soap and water is the method of choice to break infection chains. All types of germs can be reduced effectively, so that the risk of transmission is minimised.

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[Systematic handwashing: the right routine](#)

In addition to factors such as soap and the correct method of washing hands, drying the hands is also very important. There are good reasons for it: on the one hand, too much residual moisture on the skin can damage the skin and cause skin diseases, and on the other, this residual moisture promotes the growth and transmission of germs ^{1,2}.

Washrooms usually provide different ways to dry hands, including airflow dryers, cotton towels and paper towels. But which method is the safest and most hygienic, and above all, why?

Numerous scientific studies have been carried out on this subject, the results of which we summarise for you here.

Hygiene with hand drying – that counts

Essentially, hygiene is based on three pillars when drying hands



1. Residual moisture – a risk close to the skin

The first and most important pillar of hand drying is the removal of residual moisture on the skin, because such moisture can lead to skin damage and promote the growth and transmission of germs.

Studies show that the average time a washroom visitor spends drying their hands is only about 10 seconds³. It is therefore crucial that as much moisture as possible is removed from the skin within this short time. Paper towels can absorb 96% of water from the hand within 10 seconds, as shown by another study⁴.

2. Surface hygiene – why the surroundings matter

The second pillar of hand drying is surface hygiene. All washrooms have numerous surfaces that are often heavily contaminated with germs – however, these are not only the handle of the washroom door or the area of the door leaf around the handle. According to studies this also includes the floor, soap dispensers, taps and the housings of airflow dryers^{5,6}.

Touching surfaces contaminated with germs after washing hands impairs the effect of washing. Therefore, when visiting a washroom, touch as few surfaces as possible: this reduces the risk of further spreading existing germs.

This also includes unintentional touching. Especially with jet hand dryers into which the hands are inserted, it occurs up to 13 times per use, as shown by a study from the USA⁷. This is particularly problematic, because over 1,000 times more germs have been detected on jet hand dryers than on paper towel dispensers⁸.

Paper towels, on the other hand, help to minimise risk – even with manual dispensers the paper is only removed from the bottom of the dispenser housing, which significantly reduces the risk of accidental contact.

With the airflow dryer used for this comparison, almost 60% of the water was still present on the hand in the 10-second period; only after 45 seconds of drying time it was able to remove a comparable amount of water.

The study also confirmed that germ transmission decreases with decreasing quantities of residual moisture.



Hygienic towel removal without touching the dispenser

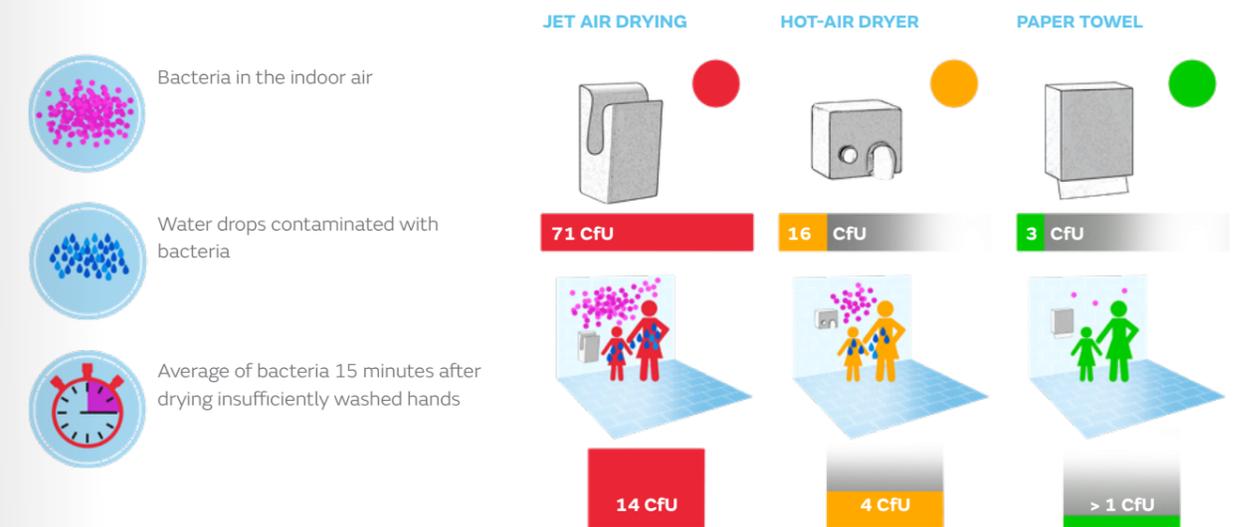
Paper towels can also be used for turning off the tap or operating the door handle, so that the risk of germ transmission is reduced here as well.

3. Air hygiene – the fight against aerosols

The third pillar is air hygiene. Two well-researched germ-spreaders are found in washrooms that release large quantities of germs into the indoor air. One is the toilet flush – when flushing, the toilet lid should always be closed to minimise the risk of infection via aerosols. The other germ-spreaders are electric airflow dryers: when actuated, these powerfully distribute germ-containing air via aerosol in the room^{5,9,10}.

Even directly after washing, your hands are not completely free of germs. In addition to the bacteria in our skin flora, lingering viruses can, if hands are not washed properly, also enter the indoor air via airflow dryers. Since even just a few germs are sufficient for infection with many viral cold- or diarrhoea pathogens, and because viruses remain in the indoor air in an aerosol for several hours, a risk of infection can also arise in this way¹¹.

Spreading of germs after drying insufficiently washed hands



Source: Microbiological comparison of hand-drying methods: the potential for contamination of the environment, user, and bystander, E.L. Best, P.Parnell, M.H. Wilcox (2014)

Many germs could be detected after deposition on horizontal surfaces in the immediate vicinity of airflow dryers (e.g. on the floor). The highest proportion of germs was found in the immediate vicinity (in approx. 1 m radius) of the airflow dryer¹¹.

In contrast to various electric fan dryers, which generate a germ-containing aerosol with high air speeds, this danger does not exist when drying hands with paper towels. Therefore, paper towels are the better choice even from the aspect of air hygiene.

The bottom line:

Everything speaks in favour of paper towels

Based on the very good quality of data on hygiene with hand drying, the German Environment Agency also comes to the conclusion in its current assessment that the use of blower dryers in hygiene-sensitive areas should be avoided¹².

A further aspect: due to the high sound pressure level of jet hand dryers in particular, and in combination with their low mounting heights, the German Environment Agency concludes that these dryers pose a medium risk to children's hearing.

In summary, it can therefore be said that paper towels should not only be favoured due to the high user-friendliness for the general population, but also the scientific state of knowledge. Due to their better hygiene properties, paper towels should be the method of choice for drying hands.

TOPIC:
Advantages of disposable towels

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