**Do bacteria "move" from the soiled part of the cabinet towel to the clean part?**

After deliberately contaminating the cabinet toweling with high concentrations of different pathogenic bacteria, it has been shown that the bacteria are not transferred from the contaminated portion of the towel to the clean portion of the towel. This study demonstrates the effectiveness of the physical barrier within the cabinet at preventing the transfer of bacteria from the soiled portion of the towel to the clean portion of the towel.[5]

**Does the laundering process kill bacteria on soiled toweling?**

The normal processing of linen with either the use of hot water (160°F or above) or cold water with the use of chemicals (following manufacturer's recommendations) is more than sufficient to destroy the virus that causes AIDS.[6] Low temperature wash procedures eliminated all bacteria groups at least as effectively as did high-temperature procedures.[7]

Bacterial counts and species from low-and high-temperature washed fabrics were comparable. Low temperature washing is therefore as effective as high temperature washing for eliminating pathogenic bacterial from hospital laundry.[8]

A proposed Minimum Tolerance Standard has been recommended as a guide acheivable by commercial and institutional laundries to define "hygienically clean linen."[9]

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# Hand Drying and Hand Hygiene

Hand hygiene is critical for both personal and public health. Food processing, preparation and service with contaminated hands can lead to serious and acute disease. Unfortunately, there is a widespread lack of knowledge concerning the relationship between hand washing, hand drying and hand hygiene in the United States. In contrast, the "clean conscious" countries of Western Europe have thoroughly investigated hand hygiene. Perhaps not coincidentally, they offer their workers and the public the highest percentage of cloth cabinet toweling in the world.

Effective wiping is a very important component of the cleaning process. Soap acts as a surfactant. It loosens soil particles and bacteria present on the surface of the skin. Vigorous scrubbing and thorough rinsing aid greatly in cleaning hands, but normal washing leaves significant numbers of bacteria (as well as soil) on the hands. When comparing drying methods, the primary concern is which method completes the cleaning process most effectively.

This pamphlet was prepared to provide you with a concise overview of current research on the hand drying aspect of hand hygiene. We hope you find it informative.

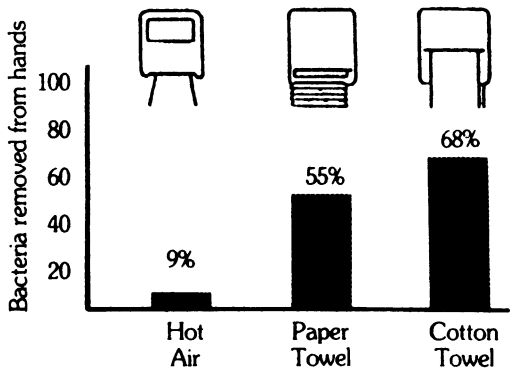
## Questions & Answers

**Which method of hand drying removes the most bacteria?**

Two criteria must be met when choosing a hygienic hand drying method: the efficient removal of bacteria from the hands and the ability to prevent the transmission of bacteria to others.[1]

A comparison of drying efficiency using cabinet toweling, paper towel, and a hot air dryer revealed that an electronically operated hand dryer did not remove significant numbers of bacteria from hands whereas drying with cotton or paper towels markedly reduced bacteria numbers. Results indicated that the most efficient method for removing bacteria from the hands is drying with a cotton towel.[2]

**Comparison of hygienic efficiency of hand drying methods**




**What is the best method of hand drying?**

From a hygienic point of view, the cloth towel seems to be the most advantageous because it absorbs considerably more germs from the hands when drying than the paper towel and the hot air dryer.

• The cloth towel is considered the most hygienic because of its superior qualities in the disinfection of the hands

• The roll dispenser with the cloth towel meets the hygienic requirements in two ways; best possible absorbency of bacteria from the hands and avoidance of germ transfer.

• Cloth towels, being used only once, have proved to the most hygienic drying method because this type of towel absorbs germs from the hand by stronger mechanical friction.

• The various tests showed that (cloth) cabinet towels are up to four times more absorbent than paper towels when comparing areas of like dimensions and that cabinet towels remove significantly more dirt than paper towels. [4]

• Cloth towels are more absorbent and more elastic than paper towels, qualities which make it preferable to the user.

• The use of cloth towels in roll dispensers is to be recommended because it is suitable for hygienic and practical reasons. [3]

• The Hospitality Institute of Technology and Management states that air dryers are known to accumulate fecal pathogens and does not recommend them for hand drying. Cloth roll towels do a better job of removing bacteria and drying of hands in a much shorter period of time. [10]

• On 10/13/05 the ABC Television station broadcast their program called "20/20" with a segment on Restroom Hygiene. They interviewed Dr. Charles Gerba who indicated that people should avoid air dyers in restroom because of the bacteria they blow onto your hands. [11]

**What is the FDA's (Food and Drug Administration, U.S. Department of Health) position regarding cabinet toweling for food service locations?**

According to the response to an official inquiry by the Assistant Director for Interagency Programs, Retail Food Protection Branch, Center for Food Safety and Applied Nutrition (September, 1990):

> *"The 1982 Model Retail Food Sanitation Code specifies in Section 6-503 that '...A supply of sanitary towels or a hand-drying device providing heated air shall be conveniently located near each hand washing facility. Common towels are prohibited.' It is our opinion that properly operating and maintained continuous cloth towel dispensers which provide successive clean towel segments meet this provision of the code."*