

# Are your hands really getting clean when you wash them?

Posted By: Patrick Donovan ■ Date last updated: 1/21/2009 12:23:25 PM

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By Elizabeth Weise, USA TODAY

Cold and flu season is here, filling the streets with a great chorus of coughing, dripping, hacking, sniffing humanity. And there's one cheap, easy, clinically proven way to avoid joining them. Wash your hands.

Here's the drill: Scrub vigorously with water and soap until lather appears, making sure to get between your fingers and fingernails. Use a nail brush if you have one. Briskly dry with a towel.

Do it often and you'll stay a lot healthier - 24% less like to get a respiratory illness and 45% to 50% less likely to get a stomach bug, the World Health Organization says.

Hand washing "has a huge health impact," says Anna Bowen, an epidemiologist at the Centers for Disease Control and Prevention in Atlanta. Water is not the most important part, it's "the friction and duration. You really need to scrub vigorously for about 20 seconds."

## Still not convinced?

"Eighty percent of infections are transported by touch, so hand washing is the No. 1 thing you can do prevent infection," says Michael Smith, WebMD's chief medical editor in Atlanta.

And not just when you're leaving the restroom.

"Take the opportunity to take a hand-washing break," Smith says. "Any time you're touching something that other people frequently touch, it's a good time to wash your hands."

Not that we do. According to an American Society for Microbiology survey in 2007, 92% of Americans say they always wash after using a public restroom. But when researchers actually watched, it turned out only 83% did.

Barely. When people wash their hands, only 33% use soap and only 16% adequately wash. The average hand-washing time was a pathetic 11 seconds, says Charles Peter Gerba, an environmental microbiologist at the University of Arizona in Tucson.

Popular alcohol hand gels aren't as effective as soap and water, but they're better than nothing, Smith says.

Soap and water help dislodge dirt, bacteria and viruses so they "can go down the drain," he says. With gels, "the bacteria has nowhere to go."

On the other hand, don't buy the hype about antibacterial soap. There's little evidence it's any more effective.

## Paper or blower?

Then there's the question of how to dry newly washed hands.

Air dryers first became popular in the 1970s and were developed to reduce paper waste, save energy and cut maintenance costs. But consumers didn't like them, and today they're in only 6% of public restrooms in the USA, according to the consumer research company Mintel.

Which works better, paper towels or dryers, is hotly debated.

Doug Powell, a professor of food safety at Kansas State University in Manhattan, Kan., says numerous papers show that the friction created by using paper towels is actually a key part of the cleaning process. The friction "removes the bacteria, whereas blow dryers tend to disperse them in the air," he says.

A study by the Mayo Clinic in 2000 found that four potential drying methods - paper towel, cloth roller towel, warm-forced-air dryer and "spontaneous room air evaporation" - were all about equal in removing bacteria.

A study at Rutgers found that forced-air drying left slightly more bacteria on hands, while paper towels left slightly less.

Do warm-forced-air dryers breed bacteria, spewing it back over clean hands? Some research has found bacteria colonizing in the machines, though the findings are flatly denied by the hand-dryer industry.

"The only difference between the air going through the hand dryer and the air you're breathing is that it's been heated to 140 degrees," says Darryl Kirksey of Allied Hand Dryer, a distribution and sales company in San Antonio.

### **A mighty wind**

Then there's the question of whether blowers actually get hands dry. A study at the University of Westminster in England in 1993 found that because of the time they took, people generally got their hands to only 55%-65% dryness before giving up, which made cross-contamination more likely later.

There's also anecdotal evidence that people simply don't wash when they see blow dryers because they take so long. "People are busy" and don't want to take the time, says Herbert DuPont, an infectious-disease researcher at the University of Texas School of Public Health.

Still, it's better to wash your hands and then dry them on your pants than not to wash them at all, the CDC's Bowen says. She did research in Karachi, Pakistan, which found that even when people used their clothing to dry their hands, there was still a 50% reduction in the rate of respiratory and diarrheal illnesses.

All of which may be moot with the coming of high-velocity hand dryers that take just seconds.

Two years ago, Mel Schiavelli, president of Harrisburg University of Science and Technology in Pennsylvania, saw an example in the Time-Life building in New York City. Made by the Dyson vacuum company, the devices blow a stream of room-temperature air over hands at 400 mph, drying them in less than 12 seconds.

Schiavelli was literally blown away. "They put out this incredible wind," he says. The university just opened a technology building to house 1,000 people, and he has had the devices installed in every bathroom.

There's one thing a blower can't do, though: It can't be used to open a bathroom door that has been opened by dozens of people who didn't wash their hands.

Says WebMD's Smith: "The paper towel is a very good friend."

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