

# Handwashing with cool water as effective as hot for removing germs

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The water temperature does not make a difference in removing harmful bacteria, according to a Rutgers-New Brunswick study. Credit: Rutgers University

We all know that washing our hands can keep us from spreading germs and getting sick. But a new Rutgers-New Brunswick study found that cool water removes the same amount of harmful bacteria as hot.

"People need to feel comfortable when they are washing their hands but as far as effectiveness, this study shows us that the temperature of the [water](#) used didn't matter," said Donald Schaffner, distinguished professor and extension specialist in food science.

In the Rutgers study, published in the June issue of the *Journal of Food Protection*, high levels of a [harmless bacteria](#) were put on the hands of 21 participants multiple times over a six-month period before they were asked to wash their hands in 60-degree, 79-degree or 100-degree water temperatures using 0.5 ml, 1 ml or 2 ml volumes of soap.

"This study may have significant implications

towards water energy, since using cold water saves more energy than warm or hot water," said Schaffner. "Also we learned even washing for 10 seconds significantly removed bacteria from the hands."

While the study indicates that there is no difference between the amount of soap used, more work needs to be done to understand exactly how much and what type of soap is needed to remove harmful microbes from hands, said co-author Jim Arbogast, vice president of Hygiene Sciences and Public Health Advancements for GOJO. "This is important because the biggest [public health](#) need is to increase handwashing or [hand](#) sanitizing by food service workers and the public before eating, preparing food and after using the restroom," Arbogast said.

These findings are significant, particularly to the restaurant and food industry, because the U.S. Food and Drug Administration issues guidelines, every four years, to states. Those guidelines currently recommend that plumbing systems at food establishments and restaurants deliver water at 100 degrees Fahrenheit for handwashing.

Schaffner said the issue of water temperature has been debated for a number of years without enough science to back-up any recommendation to change the policy guidelines or provide proof that water temperature makes a difference in hand hygiene. Many states, in fact, interpret the FDA guidelines as a requirement that [water temperature](#) for hand washing must be 100 degrees, he said.

**More information:** Dane A. Jensen et al. Quantifying the Effects of Water Temperature, Soap Volume, Lather Time, and Antimicrobial Soap as Variables in the Removal of ATCC 11229 from Hands, *Journal of Food Protection* (2017). [DOI: 10.4315/0362-028X.JFP-16-370](#)

Provided by Rutgers University

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