

# Studies Show Hand Washing May Be More Effective Than Sanitizer

*With flu season around the corner, research suggests washing hands with running water is the best defense.*

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Hand sanitizer might not be as effective as people think—especially against the flu. In a [new study published by mSphere](#), researchers found that hand-washing under running water removed the flu virus from hands faster than did a dab of alcohol sanitizer, as [previous studies](#) have suggested.

There have been other studies that suggest [hand-washing is the superior method](#) against germs, but the results are not easily applicable to real-world scenarios. The study compared putting hand sanitizer on (without rubbing it in) to using running water and soap (while rubbing hands together). The study did find some interesting results between the two, but it did not factor in how rubbing your hands together while using sanitizer or soap may affect results, said the study's author, Ryohei Hirose, M.D., Ph.D., at the Kyoto Prefectural University of Michigan in Japan.

While hand hygiene is imperative in preventing the spread of germs, colds, and viruses like the flu, scientists have long debated the effectiveness of hand-washing compared to sanitizer. mSphere's study suggested, even with its limitations, that using hand sanitizer can remove the flu virus, but it took much longer than hand-washing did. The main reason? The mucus from the mouth and nose—which carries the flu virus if you're infected—is not easily penetrated by the alcohol-based sanitizer.

"We had predicted that the virus in mucus would be somewhat resistant to alcohol disinfectants," says Hirose. But it seemed to shield the flu virus from the hand sanitizer even more than expected.

While this is just the beginning of studies comparing hand sanitizer and hand washing, there is more to understand. Here are the main takeaways from the study, how to keep your hands clean, and how to protect yourself against the dreaded cold or flu.

## The Study's Findings

For most people, the choice between sanitizer and hand-washing with soap is a matter of convenience. Employees in hospitals and healthcare settings are required to wash their hands

multiple times a day, and sanitizer is sometimes the quickest and closest option after meeting a patient.

In this study, researchers exposed samples of flu virus in saline and flu virus in mucus to 80 percent alcohol hand sanitizer. This is different than earlier research, and earlier studies tended to test hand sanitizer on flu samples that were thin, watery fluid only; researchers in this study wanted to also test mucus because it's thicker and what people encounter in real life.

In the saline samples, it took roughly 30 seconds for the sanitizer to eliminate the flu virus, but in the mucus samples, it took more than 4 minutes.

Next, researchers tested the effects of sanitizer and hand-washing on people's hands. Scientists applied flu-infected mucus to the fingertips of 10 volunteers in two rounds. The first round, the mucus was allowed to dry completely (for 40 minutes), and the sanitizer eradicated the virus within 30 minutes. The second time, though, the sanitizer was applied when the mucus was still wet. This time, the sanitizer took about 4 minutes for the virus to be completely eliminated.

Hand-washing had a different effect, however. When the volunteers washed their hands under running water, the virus was eradicated after 30 seconds, whether the mucus was wet or dry. This held true even though the volunteers used no soap while hand-washing. Just the act of running hands under water and rubbing them together proved more effective than a dab of sanitizer, the researchers found—and were surprised by.

Hirose does not fail to recognize that this study did not account for the act of rubbing hands together when using hand sanitizer. The scientists speculate that the act of rubbing sanitizer in might speed up the distribution of the alcohol across your skin. Hirose says his team is working to clarify how much rubbing might improve sanitizer's effectiveness.

### **What Does this Mean?**

For people who don't need to clean their hands multiple times a day during the workday, the [CDC recommends](#) washing them with soap and water when available and using sanitizer if it's not. This study's results would support that recommendation, said Allison Aiello, Ph.D., a professor of epidemiology at the University of North Carolina Chapel Hill and who was not involved in the new study.

When in doubt, it's best to [use soap and water](#), say experts. Other studies have shown that soap and water remove germs more effectively than washing with water alone, said Aiello

### **Ways to Prevent the Flu**

There is a science to washing your hands well, it turns out. The CDC recommends scrubbing with soap and water for at least 20 seconds. Be sure to clean the back of your hands, between your fingers, and under your fingernails.

Use hand sanitizer (with at least 60 percent alcohol) as a second result, if a sink is unavailable. It is important to remember that sanitizer do have some effect on cold and flu viruses, but they do not eliminate all types of germs from hands. One example is [Clostridium difficile](#), a “superbug” that can occur as a side effect of antibiotics and is not combated with hand sanitizer.

Avoiding the flu virus is not just about hand-washing. Because the flu is commonly spread through the air, it’s important to avoid contact with people who are sick. If you do get sick, stay home to avoid infecting others. But the number one way to reduce risk of catching the flu is actually getting [vaccinated](#). The CDC recommends vaccination before the end of October so you’re protected before the peak flu season ramps up.

To read more, visit Catherine Roberts’ [Consumer Reports’ article](#) on the study.

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