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How to keep your shoes COVID-19 free — and other pandemic cleaning tips for your home

By **Patty Winsa** Data Reporter

Wed., May 13, 2020 | ⌚ 3 min. read

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You know it's a pandemic when you search for cleaning products online at Walmart and the only "Bleach" available is Nirvana's first album.

Or the hand sanitizer you clicked on and put in your virtual cart is out of stock before you get a chance to pay for it.

It begs the question — if you can't get the products that the experts say you need to keep your hands clean and your home [COVID-19](#) free, what can you use?

The answer is soap and water, says microbiologist Dasantila Golemi-Kotra, an associate professor of biology at York University.

Detergent will work exactly the same way it would work as if you were trying to remove the virus from the skin, she says.

Most soaps used for cleaning around the house, including liquid dishwashing soap and laundry soap, have detergents in them that break down the virus, she says.

And a mixture of soap and water, with enough soap to make a foam, works well at home.

The reason? COVID-19 — SARS-CoV-2 — has a lipid membrane that is like oil, says Golemi-Kotra.

"And the detergent molecule (in soap) has two parts. One part loves oil. The other part loves water," she says. "The part of the detergent that loves oil inserts itself into the membrane of the virus and disrupts it."

The soap and water mixture also removes dirt and saliva that could prevent disinfectants from making contact with the germs on surfaces, as well as oils, which microorganisms can survive in.

"For any disinfectant to work properly you have to wash with detergent first. Then disinfect," says Golemi-Kotra. "You have to have that physical contact between the chemical and any surface you are trying to disinfect to have the desired effect."

(Many hand soaps that have antimicrobial properties have detergents and other disinfectants in them as well, she says, but body soaps, or ones that are soft on hands, may have no detergents and as such their disinfectants properties are less.)

Using soap and water isn't practical in hospitals or other public settings, says Golemi-Kotra, because the viral load is so much higher that to successfully destroy the virus and remove it would take a lot of detergent and cleaning.

"So in hospitals they use disinfectants to destroy the virus and they have the other property quite often that they evaporate and you don't have to deal with wet surfaces everywhere," says Golemi-Kotra. The products they use also typically contain cleaning reagents

that help with the removal of dirt from the surface.

Although Golemi-Kotra says it's fine to use soap and water at home, she does admit to using a mixture of bleach and water to clean the washroom in the home she shares with her husband and children.

The mixture is "an excellent sanitizer or disinfectant. It's quite powerful," she says.

She sprays the solution and scrubs surfaces before rinsing.

And as part of her cleaning routine, she has a regular circuit of surfaces like door handles that she sprays with disinfectant, which she leaves on for 15 minutes before coming back to wipe them clean with a sponge.

"I'm a microbiologist by profession. I work with bacteria and I can get paranoid quite easily. Part of the problem is I understand what can potentially happen," says Golemi-Kotra. "So I go beyond what is really necessary," she says, even if it means she is teased by her husband and kids.



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