

# How to clean surfaces around you



by Indian Scientists Response to Covid

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To control the spread of any disease, in addition to personal hygiene, you should pay special attention to environmental hygiene, and CoViD-19 is no exception. Coronaviruses can remain on different types of surfaces for different periods of time. It is important to be careful to decrease the spread of the infection through these surfaces. You may be wondering which surfaces should be cleaned, how frequently, and what cleaning and disinfecting agents can be used to destroy these viruses. Here are some guidelines.



## Why should we clean spaces and surfaces?

Viruses can get on your hands when you touch such surfaces, and could then infect you if you touch your nose or mouth. To minimize this sort of transfer of viruses, surfaces should periodically be cleaned, especially in shared spaces. It is most important that you try to avoid touching surfaces in general, and touching your face in particular. Make sure to wash your hands with soap and water regularly!

## Viruses last for different periods of time on different surfaces

No virus can reproduce outside the cells of living organisms. Different viruses can last for different amounts of time outside these cells. SARS-CoV-2 (and its closest coronavirus relative SARS-CoV-1) are destroyed naturally in a relatively short amount of time compared to other viruses. However, studies show that these coronaviruses persist for slightly longer on hard surfaces like plastic and stainless steel surfaces compared to porous surfaces like paper and cardboard.



## Are cleaning and disinfecting the same thing?

Cleaning generally means the removal of dust, dirt and impurities. Such cleaning could include anything from dusting the corners to wiping down counters or containers.

Soaps are a part of a group of chemicals known as detergents. Other common household detergents include cleaning agents like clothes and dish-washing soaps. The active chemicals in detergents have two parts: a water-loving part and a water-hating or oily part. Their water-hating part attaches to oily and greasy substances on the surface that you are trying to clean. The water-loving part attaches to water so that you can wash off the detergent along with the attached oily dirt.

Disinfection is usually to destroy “germs,” which include bacteria and viruses. This is usually more critical in hospitals and other common spaces like bathrooms where there is a greater risk finding disease-causing agents. Common disinfectants include household bleach, isopropyl alcohol and hydrogen peroxide.

### **Clean or disinfect to get rid of coronaviruses?**

The outer layer of coronaviruses is made up of molecules that also have a water-loving part and a water-hating or oily part, just like detergents. The detergent molecules interact with the similar molecules in the outer layer to disrupt the neatly ordered structure of the virus to destroy it.

In the case of coronavirus, the most effective way to destroy the virus is with detergent (soap) and water. Cleaning a surface by scrubbing it with detergent destroys the coronavirus, and washing it removes the remaining virus particles. So, with respect to coronavirus, when you clean a surface with soap you are also disinfecting it!

Disinfectants are generally applied on clean surfaces: they are not intended to clean the surface. If a surface is clean (not oily or dirty), then disinfectants can be used. It is important to use other disinfectants in shared spaces like bathrooms because they are effective in destroying other types of disease-causing germs as well. Some disinfectants, like household bleach and isopropyl alcohol, are known to destroy coronaviruses effectively, others are not yet known to do this.

### **Which surfaces should you clean and disinfect?**

First, identify the surfaces that are most commonly used by most people both inside the house as well as in shared spaces outside the house.

Examples inside the house:

Door handles and bolts, window handles and bolts

Doorbell and light switches

Kitchen counters, taps and stove

Bathroom and toilet (taps, sinks, flush handles, toilet seats, rods and hooks, door handles and bolts)

Table tops, sofas, remote controls

Telephones (mobiles and landlines), laptops, tablets, computer mouse

Examples in shared spaces outside house:

Railings on staircases, gate handles, bolts

Shared hand pumps and taps

Shared bathrooms (taps, rods and hooks, door handles and bolts, light switches)

Shared toilets (flush handles, taps, sinks, toilet seat and cover, door handles and bolts, light switches)



## Which disinfectants are effective against coronaviruses?

The most commonly available and most effective chemical to destroy coronaviruses are detergents like bathing soap, laundry soap and dishwashing soap.

Certain other cleaners or disinfectants, like products that contain bleach or isopropyl alcohol (or hydrogen peroxide), have also been shown to be effective on coronaviruses, but we do not know about the efficacy of other disinfectants. Generally, the disinfectant should be applied and allowed to remain on the surface long enough to destroy the virus. If there are children or pets in the house, keep them and others away during application, and until the product is dry and there is no smell.

Household bleach solution (1%) or powder can be used on surfaces. Concentrated bleach is harmful to skin, so avoid skin contact. Bleach can corrode metal surfaces, so care should be taken while using it. Application of bleach releases chlorine gas, which is an irritant. Make sure to allow for proper ventilation before people (especially children and those who may be sensitive or allergic) use the space.

Alcohol wipes or sprays containing at least 70% alcohol can be used to disinfect electronic items. Cover exposed surfaces with the solution and allow it to evaporate.

### How often should you clean/disinfect?

Clean and disinfect all surfaces with detergent at least once a day; depending on the number of people who share the space, it can be done more often. Common spaces like bathrooms and toilets should be cleaned and disinfected after every use by someone suspected to have CoViD-19.

Community facilities like sinks, toilets, common water sources, stairways and common balconies should be cleaned and disinfected more often (at least two times daily) depending on the number of users. Disinfectants other than soap can also be used to destroy other types of germs in bathrooms and toilets.

### What kind of cleaners and disinfectants, where to buy and how to use them?

There are many cleaners and disinfectants in the market to choose from. Make sure you read the labels and understand the active ingredients in the cleaners and disinfectants before you use them. Some of them are soap-based, which helps them to destroy coronaviruses. Others are alcohol-based, but many do not have the required minimum of 70% isopropyl alcohol content that is known to destroy coronaviruses.



Each of these products will come with instructions that should be carefully followed. Liquid bleach can corrode some types of surfaces (e.g. metal). It is important to note that mixing liquid bleach with other cleaning products, such as acids or ammonia, produce toxic fumes. In general, treat bleach like it is toxic and do not get it on your hands (use reusable rubber gloves if possible).

Organic and herbal cleaners (e.g., vinegar, tea tree oil, and other natural products) are not recommended for fighting coronaviruses, unless they also contain detergent. They are not known to be effective against viruses.



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Every attempt has been made for scientific accuracy; in case any inaccuracies are found, please bring it to our notice at [indscicov@gmail.com](mailto:indscicov@gmail.com).