

# Cleaning and Disinfecting High-Touch Surfaces



## Public Health Reasons

High-touch surfaces are surfaces that are handled frequently throughout the day by numerous people. These surfaces include doorknobs, light switches, phones, sink faucets, and toys. High-touch surfaces can become contaminated by direct contact with bodily fluids or through indirect contact with other contaminated objects, such as inadequately cleaned rags and sponges or improperly washed hands. Pathogens can stay on surfaces if they are not properly disinfected. For example, hepatitis A virus and rotavirus can survive up to one month on hard, non-porous surfaces, while noroviruses can survive up to 42 days on the same types of surfaces. High-touch surfaces have been shown to play a role in the transmission of pathogens both directly by surface-to-mouth contact and indirectly by contamination of hands and subsequent hand-to-mouth contact.

A 2004 study by Barker et al. showed that contaminated fingers could transfer noroviruses to as many as seven clean sequentially touched surfaces. Thus, properly cleaning high-touch surfaces daily is important to limit the spread of pathogens. Cleaning prevents the build-up of soil, dust, or other foreign materials that can carry pathogens and support their growth. If cleaning is not properly performed, there is a risk of spreading pathogens instead of reducing them. Cleaning is removal of debris and involves two steps: (1) washing with a detergent and (2) rinsing with warm potable water.

Water and detergent alone may not be enough to kill all the microorganisms present, so the use of a disinfectant is also necessary. Barker et al. showed that when detergent-based cleaning did not sufficiently kill noroviruses, the wiping cloth used could transfer the virus to a secondary surface. Cleaning with a detergent alone failed to decontaminate the tested surfaces in all but one case, even with a second wiping step. However, when the surface was treated with a disinfecting solution containing 5000ppm available chlorine for 1 minute, noroviruses could only be recovered from one surface.

When decontaminating surfaces, it is important to understand that there are differences between disinfectants and sanitizers. Both sanitizers and disinfectants are products regulated by the U.S. Environmental Protection Agency (EPA). However, there are some differences in the products. Disinfectants are used on hard inanimate surfaces and objects to destroy or irreversibly inactivate infectious fungi, bacteria, and viruses that are listed on the label. On the other hand, sanitizers are used to reduce, but not necessarily eliminate, bacteria and fungi from an inanimate surface to levels considered safe as determined by public health codes and regulations. Generally, sanitizers are used on food-contact surfaces and disinfectants on all other hard surfaces. Fabric can only be sanitized. Also, disinfectants must be able to destroy all microorganisms listed on their label in 10 minutes, while sanitizers must reduce the numbers of bacteria by at least 99.9% in 30 seconds. For high touch surfaces, it is important to use a disinfectant rather than a sanitizer.

# Practices

There are three levels of cleaning and sanitizing/disinfecting surfaces. In increasing rigor, they are routine cleaning, vomit/fecal episode cleaning, and outbreak cleaning. This section covers routine cleaning. Additional measures are required when cleaning after a vomit or fecal episode and during an outbreak.

Clean and disinfect high-touch surfaces every day, even if they are not visibly dirty. If they become visibly dirty, clean the surfaces immediately.

## Cleaning

- Wash frequently touched surfaces with a clean, reusable cloth or a disposable towel dipped in detergent and warm water.
- Scrub vigorously to remove dirt and soil. Use a brush if necessary.
- Rinse surfaces with warm to hot water to remove cleaning products and debris.
- Disposable towels are preferred for cleaning. If using reusable cloths, launder in hot water between cleaning uses.

## Disinfection

- Follow the instructions on the label of the disinfecting solution.

*Do not mix disinfectants and cleaners unless the label indicates that it is safe to do so. The most common inappropriate mixture of cleaning agents is bleach with an acid or ammonia.*

- Prepare a disinfecting solution daily or as needed.
- Using a clean reusable cloth or a disposable towel, apply enough disinfecting solution to cover the surfaces thoroughly.
- Let the solution stand for the contact time given on the label. Make sure there is enough disinfecting solution on the surface to stay wet for the recommended contact time.

*Replace the disinfecting solution and cleaning cloths on a regular basis, such as when the water is visibly dirty, in order to reduce the contamination of other surfaces with dirty cleaning products.*

## Cleaning Electronic Items

- Use disinfecting wipes.
- Wipe the entire surface, paying special attention to keyboards and buttons.
- One may use more than one wipe to keep the surface wet for the given contact time.

### Cleaning Toys

- Toys should be cleaned and sanitized daily.
- Any plastic or rubber toy that enters a child's mouth must be sanitized with 200 ppm bleach (1:250 dilution) and air-dried, or washed at a high temperature (170°F or 76.67°C).

*Be sure to check the manufacturer instructions to determine if the dishwasher will reach the correct temperature for the final rinse. If the dishwasher does not reach this temperature, then sanitize toys using a bleach solution.*

- For toys that can be immersed, pour the sanitizing solution in a large basin or sink. Remove all visible debris from the surface of the toys, and allow the toys to soak for one to five minutes to achieve sanitization.
- For toys that cannot be immersed in sanitizing solution, clean all surfaces of the toy ensuring that clean cloths and solutions do not become contaminated (*do not double dip*). Allow surfaces to remain wet for 1 to 5 minutes to achieve sanitization.
- For soft toys, pre-wash to remove visible debris. Then wash with detergent/bleach. Discard if necessary.
  - Machine-wash the soft toys in hot water (at least 140-160°F or 60-71.1°C) using bleach if fabrics are white.
  - Dry toys in a dryer on the high heat setting.

### Diaper-Changing Stations

- Surfaces should have a plastic covered pad without cracks.
- Use a disposable material to cover the changing table pads. Discard after each diaper change.
- Clean the surface after every diaper change by washing with detergent and water and rinsing with clean water.
- Apply disinfecting solutions, following recommended contact time.
- Let the station air dry before the next use.

### Recommended Disinfectants

See U.S. EPA list of registered products effective against noroviruses.

Follow product labels for use and dilution:

- Ethyl or isopropyl alcohol (70-90%)
- Sodium hypochlorite (5.25-6.15% household bleach diluted 1:10)
- Phenolic germicidal detergent solution
- Iodophor germicidal detergent solution

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