

# Cleaning and Disinfecting Bathrooms



*A study at Fayetteville State University found 87 percent of public restrooms surveyed in the city were configured in such a way that washed hands could be re-contaminated in seconds by touching faucets and door handles.*

## Public Health Reasons

Bathroom surfaces can be potential sources of pathogenic microorganisms because fecal material contains large numbers of microorganisms that can be introduced to toilet surfaces upon excretion. One study showed that as many as  $10^{14}$  enteric pathogens (pathogens present in the human gastrointestinal tract) can be excreted in a single bowel movement of 100 grams, and an individual person can produce 100 to 200 grams of feces per day.

If a sick person makes multiple trips to the toilet, it can result in a buildup of pathogens in the toilet both on the exterior surfaces and in the bowl water. While the initial flush of the toilet eliminates most pathogens in the water, enough microorganisms can remain to cause illness, because large numbers of the pathogens adhere to the porcelain surfaces inside the toilet. Some bacteria can even form a protective layer called a biofilm under the waterline that is hard to remove during normal cleaning.

In addition, flushing the toilet results in the production of water droplets that contain pathogens. These are released into the air and can settle onto restroom surfaces. The surfaces closest to the toilet bowl such as the toilet seat, cistern, and nearby shelving are the most effected. In studies where an experimental toilet was contaminated with bacteria and viruses, one to three *Clostridium difficile* colonies, about one *Salmonella* Enteritidis cell, and between 70 and 170 bacteriophage particles were found on the toilet seat after it was flushed. Closing the toilet seat can reduce the number of microorganisms released into the air. However, cleaning and disinfecting of restroom surfaces using chemical and physical processes are essential to preventing the spread of pathogens.

When cleaning and decontaminating bathroom surfaces, it is important to understand the difference between disinfectants and sanitizers. Both sanitizers and disinfectants are products regulated by the U.S. Environmental Protection Agency (EPA). However, there are differences between products. Disinfectants are generally used on hard surfaces and objects in order to destroy or irreversibly inactivate infectious fungi, bacteria, and viruses listed on the product label. Sanitizers are used to reduce, but not necessarily eliminate, bacteria and fungi from a surface. Sanitizers seek to achieve a level considered safe as determined by public health codes or regulations. Generally, sanitizers are used on food-contact surfaces and disinfectants on all other hard surfaces. Disinfectants also require a longer contact time than sanitizers. Disinfectants must be able to destroy

all microorganisms listed on their label in 10 minutes while non-food contact sanitizers must reduce the numbers of bacteria by at least 99.9% in 30 seconds.

## 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 bathroom surfaces *at least twice* a day to reduce the spread of pathogens. If the surface becomes visibly soiled, it must be cleaned and disinfected more often. For example, potty chairs must be cleaned and disinfected after each use.

### Cleaning

- Remove soil from all fixtures using a clean, reusable cloth or a disposable towel dipped in warm water, and a detergent.
- Rinse surfaces with warm to hot water to remove cleaning products and suspended debris.
- Wipe down all doorknobs, toilet seats, flush mechanisms, and faucet handles.

*Wash the least contaminated surfaces first (counters and faucets). Then clean the more contaminated surfaces (toilet).*

### Disinfection

- Follow the instructions on the label of the disinfectant.
- Prepare the disinfecting solution daily or as needed during the day.
- Apply enough disinfecting solution to thoroughly cover the surfaces using a clean reusable cloth or a disposable towel.
- Let the solution stand for the contact time given on the label. Make sure there is enough disinfecting solution on the surface, so it does not dry up before the recommended contact time.
- Let surfaces air dry before the facilities are used.

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

### Cleaning Bathroom Countertops

Most countertops are made of materials that are durable and easy to clean: ceramic tile, plastic laminate, and cultured marble.

- **Cultured marble:** Cultured marble resembles real marble, but cleaning and caring for it is easier. Avoid using abrasive cleaners and steel wool pads because they will scratch the surface, making it difficult to keep clean.
- **Plastic laminate:** Plastic laminate is made of thin layers of plastic superimposed on craft paper and overlaid on particle board or plywood. To clean plastic laminate, use a two-sided scrubbing pad with fiber on one side and a sponge on the other. Moistened slightly with water, the fiber side is just abrasive enough to loosen greasy smears and other soil. Turning the scrubber over, use the sponge side to wipe the surface clean.

### Cleaning the Sink

Scrub the entire surface of the sink from the top to bottom, so mold and microorganisms are not spread to the rest of the sink.

- Start with the trim and work towards the edge of the sink.
- Scrub the faucet making sure to get at the edges where mold and mildew build up.
- Scrub the soap-holding areas working toward the basin and ending with the drain valve.
- Soak the entire surface of the sink with disinfectant using a sponge.
- Start at the edges by soaking the sponge in disinfecting solution, lightly wring it out, and then coat each surface of the sink thoroughly.
- Again, scrub working toward the basin of the sink.
- Be more liberal with the application of the disinfecting solution as you move toward the basin because this is where a majority of the soap scum and mineral deposits are located.
- Let the disinfecting solution sit for the contact time recommended on the label.
- Allow surfaces to air dry.

### Cleaning the Toilet

- Before cleaning toilets, read the label on the cleaning product to determine its exact chemical makeup and how it should be used.
- Always wear rubber gloves when working with toilet cleaners. Be careful not to allow cleaners to remain in the toilet or to touch other bathroom surfaces.
- Clean and disinfect all surfaces of the toilet using disposable towels, including the outside of the tank, flush handle, surface of the seat, underside of seat, and outside of the bowl.
- Disinfect the toilet bowl by pouring a disinfecting solution into the bowl and letting it stand for 10 minutes. Then scrub the inner walls with a brush. Flush the toilet.

*Make sure to clean and disinfect any sponges and the toilet brush thoroughly before using them again.*

### Recommended Disinfectants

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

Follow product labels for use and dilution:

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

**NOTE:** See “Cleaning and Disinfecting High-Touch Surfaces” and “Cleaning Housekeeping Surfaces” fact sheets for information on cleaning door handles and floors.

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