

What's the problem with bleach?



Bleach (sodium hypochlorite) is one of the most commonly used disinfectant in early care and education (ECE). It is inexpensive and effective at killing germs when used properly.

Why is bleach a problem?

- ◆ We now know that exposure to bleach can make asthma worse in people who already have asthma.
- ◆ Research shows that workers who are exposed to bleach can develop new asthma from exposure to bleach over time. In 2012, the Association of Occupational and Environmental Clinics (AOEC), named bleach an asthmagen, which means it can cause asthma, not just trigger an asthma attack in someone who is already asthmatic.
- ◆ Children are at greater risk from breathing bleach vapors because their lungs are still developing.
- ◆ Bleach can irritate the skin and eyes.
- ◆ Bleach was the cause of 31,224 calls to U.S. Poison Control Centers in 2019; 11,000 of them were for children under the age of 5. In 2020, from January to March (in the beginning of the COVID-19 pandemic) calls to Poison Control Centers for disinfectant exposures increased 16.4% and exposures among children younger than 5 represented a large percentage of those calls.

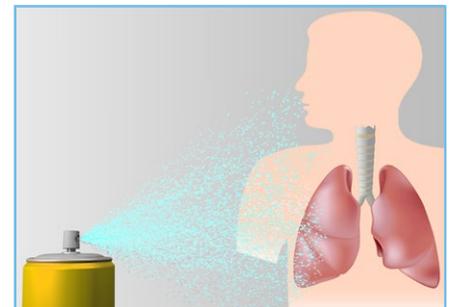


- ◆ Bleach has a short shelf life, so you should only purchase what you will use within 3 months and solutions should be mixed daily.
- ◆ Mixing bleach with other chemicals containing ammonia, quaternary ammonium compounds (found in other disinfectants), vinegar or other acids can create toxic gases.
- ◆ Bleach corrodes many metals. It should never be used on stainless steel, aluminum, copper, brass, marble, or granite.
- ◆ Bleach is neutralized by dirt and other organic material, so it isn't very effective when used on a surface that hasn't been cleaned.

Bleach is used many times a day in ECE, especially in programs that care for infants and toddlers where diapers are changed often. Child care licensing regulations require the use of a disinfectant in other places as well to reduce the risk of infectious diseases in ECE. Some programs report bleach use as often as 90 times a day in a single classroom. This frequent exposure of ECE staff as well as young children to the health effects of breathing bleach is worrisome. We don't want to cause asthma while we are preventing the spread of infectious disease.

ECE staff members are exposed to bleach's harmful effects while diluting the concentrated form of bleach for daily use. The undiluted bleach is very strong. It can irritate your skin and eyes as well as your lungs.

There are also health effects from using bleach in a spray bottle. When you use diluted bleach in a spray bottle, you create small droplets that can be inhaled



into the lungs by the staff and children nearby. This is called an aerosol. The aerosol form of bleach is able to get into your airways where it can cause asthma or trigger asthma attacks.

What are our choices when it comes to sanitizing and disinfecting?

If bleach were our only option for preventing infectious disease, it might be worth the risk to our health. But there are safer, effective products for disinfecting available. Many of these products have a shorter contact time, an important consideration in ECE. See Section 9 of the *Green Cleaning, Sanitizing and Disinfection Toolkit* curriculum booklet for more information on choosing safer products in ECE. For information on safer disinfecting products, go to EPA's [Design for the Environment Disinfectants Program](#)

Differing concentration of EPA-registered bleach products make diluting bleach correctly more confusing and difficult. More concentrated bleach products also expose staff to more bleach vapors when diluting the products.



Resources

2013 Update: [Bleach-free Disinfection and Sanitizing for Child Care](#)
The San Francisco Asthma Task Force: [Child Care Center Toolkit](#)
San Francisco Department of Public Health Video: [Bleach Free Child Care](#)
Michigan State University: [Resource on Bleach](#)