

Study finds regular use of common cleaning chemicals decreases lung capacity

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A study conducted by scientists at the University of Bergen in Norway found that the regular use of cleaning sprays that contain common chemicals such as bleach, hydrogen peroxide, and quaternary ammonium (quats) causes severe damage to lung capacity over extended periods of time.

The study was conducted over 20 years to measure the effects of the inhalation of cleaning chemicals over long periods of time. Lung function was measured by the amount of air that participants could forcefully breathe out after breathing in.

The extraordinary findings of the study revealed that for some participants, lung capacity was so damaged after long-term exposure to cleaning chemicals that it resembled that of a habitual pack-per-day cigarette smoker. The study controlled for variables such as smoking that could also cause damage lung capacity. A total of 3,298 of the participants were women and 2,932 were men.

The findings showed that the damage was more prevalent in female participants, but could be due to the fact that more women participated in the study. Occupational cleaners showed the highest amount of lung damage in the study, including cases of asthma. However, participants who used cleaning sprays containing common chemicals to clean their homes at least once per week showed a marked increase of damage to their lung function compared to those who did not.

The results of the Norway study are similar to those of a September 2017 study among nurses in France who used common industrial chemical cleaners to sanitize surfaces at least once per week.

The French study was authored by pulmonologist Oriane Dumas at the French Institute of Health and Medical Research. It followed 55,185 registered nurses

over eight years who had no prior history of chronic obstructive pulmonary disease (COPD). The results of the study showed that nurses who used disinfectants to clean surfaces at least once per week showed a 24 to 32 percent increased risk of developing COPD than those who did not use them as frequently.

The similar findings from both studies, which examined participants in two different countries and across different occupations, suggest that similar studies conducted in other countries and among a diverse participation of workers will yield similar results. The cleaning chemicals that were found to cause the damage are used in many occupations, such as health care, maintenance and janitorial work, retail, food service and hospitality, the sciences, and education. They are also very commonly used in household cleaning, regardless of occupation.

The Occupational Safety and Health Administration (OSHA) in the United States provides bare minimal protection to workers who are required to clean with chemicals that can cause harm. OSHA only provides requirements to employers—which are not laws—on how to protect workers from harsh chemicals. This includes the use of Material Safety Data Sheets (MSDS) on all chemicals used by workers, which provide information on the proper dilution, protective equipment, and risks associated with the chemical being used, and also the requirement that all workers are trained on how to use the chemicals prior to cleaning with them.

OSHA's Hazard Communication Standard is the closest to a real regulation on the books regarding cleaning chemicals. However, this standard is not law and only provides suggestions to employers on how to communicate to workers about the potential health risks of using a chemical and how to properly handle chemicals to reduce the risk of injury when using them.

It is likely that these standards are violated countless times each year, as OSHA remains woefully understaffed after decades of budget cuts since its inception in 1970. In 2015, under the Obama administration, OSHA had only 1,840 state and federal inspectors, that is, only one inspector for every 74,760 workers, making regular inspections impossible.

The Trump administration has vowed to cut funding to OSHA even further. Already understaffed, the agency requires the funding of the federal government to operate, and is tied to the profit interests of the corporations. Slap-on-the-wrist fines are the norm for workers' deaths caused by the cost-cutting practices of businesses of all sizes, and inspectors rarely go out to a site when workers complain of violations, instead addressing issues by calling the company to offer suggestions for improvement with no threat of a penalty if they do not comply.

Both the French and the Norwegian study suggested that the chemicals proven to cause lung damage not be used at all for cleaning, with the Norwegian study suggesting the use of water and microfiber cloths instead of cleaning sprays to remove dirt and bacteria from surfaces. In the US, OSHA also suggests the use of microfiber cloths in place of chemicals.

In 2014, *Newsweek* published a story on Pureti, a product manufactured from titanium dioxide, which was tested with success as a treatment on American stadium surfaces for its potential to act as a self-cleaning agent when sprayed onto a surface and allowed to react with light and air. The compound was shown to be successful as a self-cleaning agent that could last up to five years and is able to absorb toxins from the air itself. The treatment has also been used to clean mold from the crevices of La Pedrera, a Gaudi-designed building in Barcelona, Spain and in hotels around the world. It is used as an alternative to common methods of cleaning and disinfecting such as bleach, ammonia, and power washing of surfaces.

Despite this alternative, the profit interests of the chemical industry prevent the further development and distribution of safe cleaning treatments from being used and regulated worldwide. Clorox, the world's leading manufacturer of bleach, has seen profits soar as its stock price climbed from under \$18 in 1993 to \$127.30 this month. Clorox CEO, millionaire Benno Dorer, sits on the board of the American Cleaning Institute, which

works in liaison with the government and academia to "advance public understanding of the safety and benefits of cleaning products." Powerful chemical giants like Clorox do all that they can to prevent any threat to their skyrocketing profits, even at the risk of the health of millions around the world.

Even though safer alternatives exist, the vast majority of corporations that control the use of cleaning products in their operations will always opt to purchase cheaper options that are of immediate benefit to their bottom line, regardless of the health risks to workers, no matter how serious.

The elimination of the profit system and establishment of worker control over production and distribution of the goods of society are necessary to eliminate the vast harm that is caused by these cleaning chemicals worldwide. The vast profits of the corporations should be expropriated by the working class for the research and development of sanitation methods that will benefit the health of global society.

Government agencies such as OSHA, tied to the profit interests of the corporations, do nothing to penalize companies that put workers in harm's way, and must be replaced by health and safety committees under the democratic control of the working class.



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