

Cleaning and disinfecting in a pandemic - hazards, “hygiene theatre” .. and less, for our health



Dorothy Wigmore
MFL OHC, December 14, 2021



What question would you ask the researchers?

WATERLOO REGION

Low risk of getting COVID-19 from grocery store surfaces: Guelph study



By **Johanna Weidner** Record Reporter
Tue., Oct. 5, 2021 | 2 min. read

"People were very worried about that," said food science Prof. Maria Corradini. "**We didn't find anything.**"

The team led by Corradini and PhD student Maleeka Singh concluded there's a low risk of exposure from a contaminated surface when stores follow recommended cleaning protocols.

"**All the measures we have in place are working,**" Corradini said.

Those measures include limiting the number of people in a store, wearing masks and sanitation protocols that either prevent the virus from getting onto surfaces or clean it off. Either way, a shopper doesn't have to worry too much about the coronavirus ending up on their hands and then potentially making them sick.

"**If you touch the surface, the virus isn't there,**" she said.

Cleaner: Removes germs, dirt, and impurities from surfaces or objects. Soap/detergent, water and friction physically **remove** dirt and germs from surfaces. Effective disinfecting and sanitizing means **cleaning must be done beforehand.**

Sanitizer: Reduces **bacteria** on surfaces to levels considered safe for public health, used as the label directs. Less effective than a disinfectant.

Disinfectant: Destroys almost all infectious germs on a surface, including **viruses**. No effect on dirt, soil, or dust. Must be used at the specific **dilution/ concentration** and left **glistening wet** for the full **dwell or contact time**. Health Canada registers as “drugs” so no data sheets or labels required under WHMIS



COVID-19 IN MANITOBA
Archived since March 2020

COVID-19 / Restoring / Guidance to Retail Food and Grocery Stores / last updated July 27, 2020 / Archived

Guidance to Retail Food and Grocery Stores – Spring 2020

NEW Last updated: July 27, 2020

Sanitize high-touch surfaces such as pay stations, bagging areas and carts or hand baskets between each customer and use and encourage tap payment or PIN pad use.
(https://www.gov.mb.ca/asset_library/en/covid/archives/restoring/grocery-stores.pdf)

Hygiene Theater Is a Huge Waste of Time

People are power scrubbing their way to a false sense of security.

JULY 27, 2020

Derek Thompson

Staff writer at *The Atlantic*; July 27, 2020

"This is not a significant risk,".. "Not even a measurable risk."

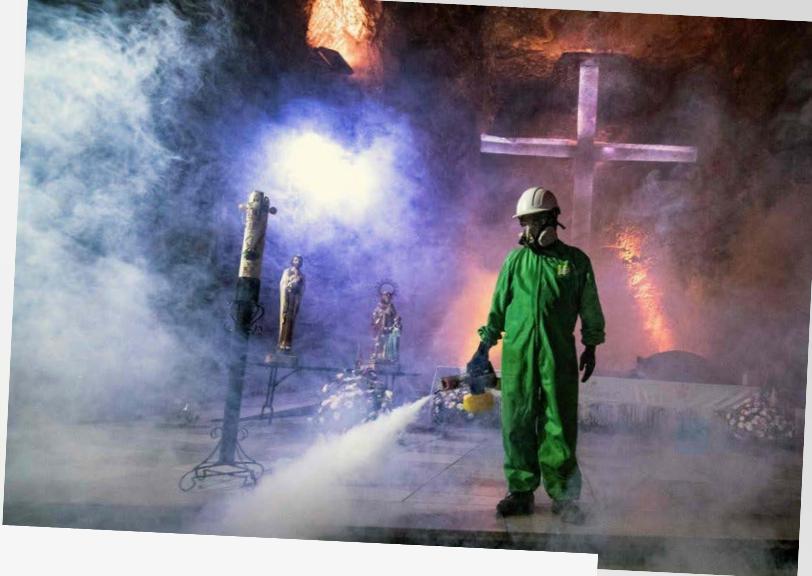
Why it may be harder to catch COVID-19 from surfaces than we first thought (July 11, 2020)

Emanuel Goldman, Professor of Microbiology,
Biochemistry and Molecular Genetics, Rutgers
University

<https://www.cbc.ca/news/health/coronavirus-surfaces-groceries-packages-playgrounds-1.5645602>



Comically excessive scrubbing of surfaces not doing a whole lot of good: experts



GTA

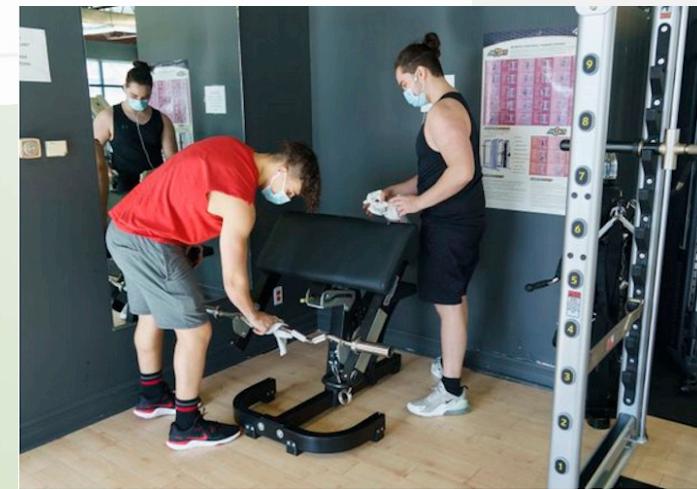
Still wiping your groceries: Is it 'hygiene theatre,' a reassuring ritual, or is there a (low) risk of COVID?



By Urbi Khan Staff Reporter
Sun., March 14, 2021 | 6 min. read
Article was updated Mar. 15, 2021

Why it's time to stop wiping down groceries and other COVID-19 cleaning measures that don't reduce transmission risk

SERENA MAROTTA
PUBLISHED MAY 25, 2021



<https://www.cp24.com/news/> August 12, 2020

► Cleaning and Disinfecting Surfaces

It is possible for people to become infected with COVID-19 if they touch surfaces where the virus has landed and then touch their nose, mouth, or eyes. In most situations, the risk of infection from touching a surface is low and not the primary way COVID-19 is spread.

- Enhance your cleaning plan and schedule. Increase cleaning and disinfection of commonly contacted areas.
 - Develop and post a cleaning and disinfecting schedule for commonly touched surfaces, including workstations, door handles, and common areas.
 - More frequent cleaning may be required for surfaces frequently touched by young children, like door knobs and handles. If you are unable to perform hand hygiene immediately after touching these surfaces, you may also choose to use a different type of personal protective equipment (PPE) such as gloves or a mask.
- Common touch areas include locations that are accessible to operators, staff, volunteers, organizers, attendees and customers. Surfaces in these locations should be cleaned and disinfected at least twice a day, or as needed using:
 - Use diluted household chlorine bleach i.e. 20 milliliters (four teaspoons) for every litre of water. Allow solution to contact surface for at least 10 minutes. Rinse well and air dry or use a clean cloth to dry.
 - Use alcohol-based disinfectants according to manufacturer's instructions.
 - Use hydrogen peroxide (H₂O₂) according to manufacturer's instructions. A list of approved disinfectants can be found on the Canadian Partnership for Clean Solutions website.
- Ensure cleaning staff are trained on proper steps for cleaning and disinfecting surfaces.
 - Always follow directions on the product label when using these products.
 - Use personal protective equipment (PPE) such as gloves, glasses or goggles if required based on the risks when using those chemical products.
 - Ensure thorough hand hygiene before and after each change of PPE such as gloves.
- Signage encouraging hand hygiene before and after cleaning and disinfecting should be posted nearby.
- Ensure adequate ventilation is available when using cleaning and disinfecting products.
- Cleaning and disinfection supplies should be available for any common use item or frequently touched surfaces.
- Shared personal equipment should be cleaned and disinfected after each use. If shared personal equipment cannot be cleaned and disinfected between uses it should not be used.

Manitoba is out of step: It's still saying “clean and disinfect”, ignoring OHS law

“Cleaning with products containing soap or detergent reduces germs on surfaces by removing contaminants and may also weaken or damage some of the virus particles, which decreases risk of infection from surfaces,” the CDC added in an update on its website. “When no people with confirmed or suspected COVID-19 are known to have been in a space, cleaning once a day is usually enough to sufficiently remove virus that may be on surfaces and help maintain a healthy facility.”

Fortune, April 5, 2021;
<https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface-transmission.html>



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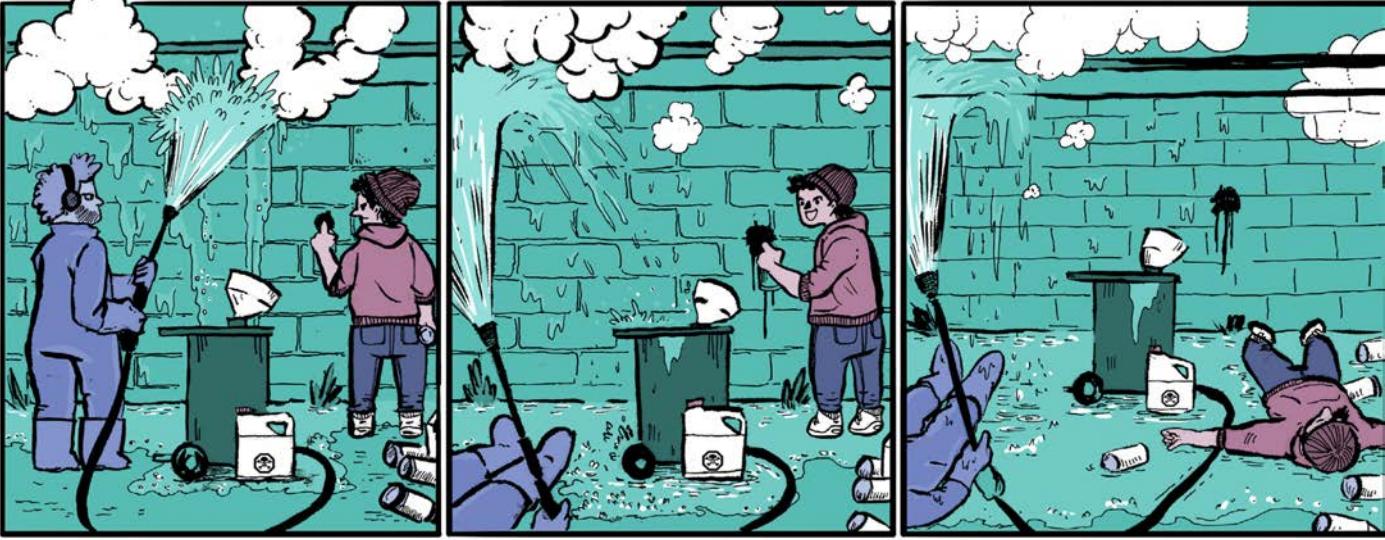
Disinfecting (using U.S. Environmental Protection Agency (EPA)’s List N disinfectants) kills any remaining germs on surfaces, which further reduces any risk of spreading infection.

CDC, June 15, 2021

Cleaners and disinfectants are linked to many health hazards

Short-term effects include:

- irritating, itchy or burning **eyes**;
- **skin rashes, allergies and burns**;
- **dizziness and headaches**;
- **nose bleeds**; and
- sore **throat**, coughing, wheezing, **shortness of breath**.



Studies show that -- depending on the chemical(s) ingredients can:

- cause new cases of **asthma**, trigger attacks
- harm the **brain, nervous system, reproductive organs, kidneys and liver**;
- cause breathing problems and illnesses
- disrupt/act like hormones (**endocrine disruptors**)
- lead to **cancer**
- be linked to **cardiovascular** problems.

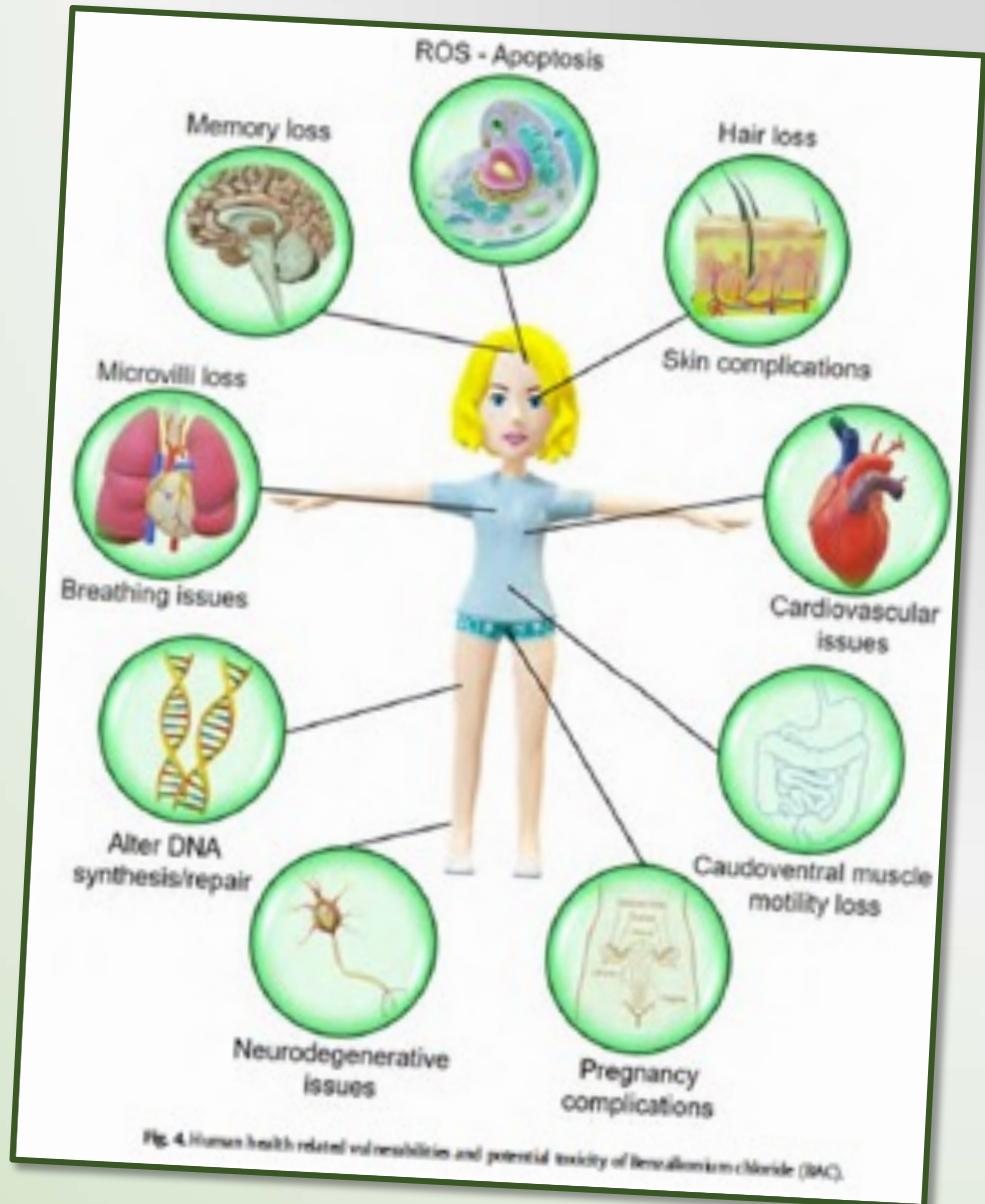
Quats/QACs are everywhere

Found in

cleaning products,
disinfectants (most common
these days), “anti-bacterial”
hand soap, eye drops, asthma
inhalers, textiles, and more –
look for ...onium chloride



- are **astmagens** (like bleach), many other health effects
- the “smell” or perfume likely is toxic too
- recent study found **highest indoor concentrations of quats compared to other things**, linked to pandemic disinfecting
- still Health Canada/EPA approved



Bilal, M & Iqbal, H.M.N. (2019) "An insight into toxicity and human-health-related adverse consequences of cosmeceuticals — A review", *Science of the Total Environment*, 670: 555–568.

If disinfecting is needed, what should be done?



https://osha.washington.edu/sites/default/files/documents/FactSheet_Cleaning_Final_UWDEOHS_0.pdf



Cleaning for Healthier Schools—Infection Control Handbook
(Informed Green Solutions; prepared for TURI, 2010 and 2020)



Products must be EPA registered as disinfectants or hard surface sanitizers, and contain only the following active ingredients: **Hydrogen peroxide, citric acid, lactic acid, or caprylic acid**. Products must not contain **quaternary ammonium compounds or alkylphenol ethoxylates**. Concentrated products must be adapted for use in a closed-loop dilution system.

<https://www.sfapproved.org/disinfectants>

	AVOID		USE WITH CAUTION				PREFERRED		
Disinfectant Characteristics	Bleach - sodium hypochlorite	Quaternary Ammonium Compounds – QACs or Quats	Thymol** (e.g. Benefect®)	Hydrogen Peroxide - H2O2 and Peroxyacetic Acid - PAA (e.g. Oxycide Daily Disinfectant Cleaner)	Hypochlorous Acid*** (e.g. Brutabs /PurTab/CDiff ViroTab Tablets)	Hypochlorous Acid*** (e.g. Force of Nature, Envirocleanse A)	Hydrogen Peroxide (e.g. Oxivir TB)	Ethanol (e.g. Purell Professional Surface Disinfectant)	Citric Acid (e.g. CleanCide and Betco GE Fight Bac- same product privately labeled)

<https://www.informedgreensolutions.org/cleaning-for-healthier-schools-infection-control-handbook>

Search the Health Canada database

-- less toxic
products are
there

<https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html>

Identification Number (DIN) ↑↓	Product name ↑↓	Company ↑↓	Active ingredient(s) ↑↓	Product form ↑↓	against SARS-CoV-2 (COVID) ↑↓	Approved use areas ↑↓
02436795	Prevail Animal Premise Disinfectant Cleaner & Deodorizer Ready To Use	Virox Technologies Inc.	Hydrogen Peroxide	Liquid	Indirect	Barn, Food Premises, Hospital/Hc Facilities, Institutional/Industrial
02436809	Prevail Animal Premise Disinfectant Cleaner & Deodorizer Concentrate	Virox Technologies Inc.	Hydrogen Peroxide	Liquid	Indirect	Barn, Food Premises, Hospital/Hc Facilities, Institutional/Industrial
02441039	D7	Decon7 Systems Llc	Benzalkonium Chloride; Hydrogen Peroxide	Kit; Solution	Indirect	Hospital, Food Premises, Barn
02446812	Maguard 5626cn	Mason Chemical Company	Hydrogen Peroxide; Peracetic Acid; Acetic Acid	Solution	Indirect	Domestic, Industrial, Hospital, Food Premises, Barn
02447592	Rescue Gel Sporicidal	Diversey Inc.	Hydrogen Peroxide	Gel	Indirect	Domestic, Industrial

What about just soap and water?



- With a 90% cleaning removal rate, and hand washing:
 - 99.99% reduction

Disinfection reduces virus by 99.9999%

Jason Marshall, Toxics Use Reduction Institute
Cleaning Laboratory, November, 2020;

<https://www.turi.org/content/download/13387/204949/file/Marshall+Session+A+Cleaning-Disinfecting+101.pdf>

.. and microfibre materials?

- ✓ Can get rid of 99% of bacteria with plain water.
- ✓ Require less water and cleaning chemicals, clean more effectively, and cause fewer worker injuries than traditional alternatives.
- ✓ Act like dirt magnets, capturing more dust and germs than string mops (95% versus 68%, according to a U.S. EPA [case study](#)). Used dry, also very effective for dusting floors or surfaces.



<https://www.sfapproved.org/microfiber-cleaning-products>

SAFER CLEANING PRACTICES

For the Workplace



Hazardous chemicals are common in cleaning, sanitizing, and disinfecting products. Some chemicals cause or trigger asthma such as bleach (sodium hypochlorite) and quaternary ammonium compounds (sometimes called quats and may be listed as "ammonium chloride"). Some chemicals cause immediate issues such as skin damage. Long-term exposure to some chemicals can harm reproductive health or other body systems, and may even cause cancer. Employers should provide less toxic products as well as information and training to ensure safer cleaning practices that protect workers' health.

THE BASICS

1. Cleaning, sanitizing and disinfecting all do different things.

Often a good cleaning is all that is required, and cleaning is always the first step before sanitizing and disinfecting.

2. Employers are responsible for providing healthy and safe jobs.

That includes providing less toxic methods or products and plans for cleaning, sanitizing, and disinfecting. Those plans must be part of a health and safety program. Joint workplace health and safety committees or representatives must be involved in developing, evaluating, and updating the program and its plans.

3. Workers must be trained about the hazards of any product they use, how to use it properly, and how to use personal protective equipment (PPE) if it's needed.

Any PPE must fit the individual worker, and be properly maintained and cleaned or disposed of.

4. The most effective ways to deal with hazards is prevention

Things like good ventilation, work procedures, and less toxic products are good ways to reduce harm. Personal protective equipment is the last resort.



What are the differences?

CLEANER: Removes germs, dirt, and impurities from surfaces or objects. Works by using soap/detergent, water and friction to physically remove dirt and germs from surfaces. Cleaning before disinfecting reduces the spread of infection more than disinfecting alone.

SANITIZER: Reduces germs on surfaces to levels considered safe for public health.

DISINFECTANT: Destroys almost all infectious germs, when used as the label directs, on a surface. No effect on dirt, soil, or dust. Should be used where required by law, in high-risk and high-touch areas, or in case of infectious disease.

*Products must be registered with Health Canada or the US EPA and should be approved to kill coronavirus.

START WITH LESS TOXIC PRODUCTS OR METHODS

Ask your employer to purchase products and materials that protect the health of cleaning workers and other people in the spaces being cleaned or disinfected.

Less toxic products are available for cleaning, sanitizing, or disinfecting.

Cleaning and scrubbing with soap, water and microfibre or cotton cloths, removes dirt and germs from surfaces. Soap breaks down the corona virus' protective coating. That inactivates the virus, stopping it from spreading.

Disinfectants are widely overused and misused, sometimes without being diluted properly or left on surfaces long enough. Cleaning is always the first step before sanitizing or disinfecting; otherwise those efforts won't work. Sanitizers and disinfectants must be registered with Health Canada or the US EPA. With thorough cleaning, disinfection is only needed in places where people may be sick with a virus or bacteria, high-touch spots in areas before people can wash their hands, or where required by law.

"Environmentally preferable" products are independently certified to contain fewer harmful chemicals than traditional ones. Look for Green Seal, UL Ecologo and Cradle to Cradle (silver or gold levels).



 Choose products where the active ingredients are ethanol, isopropanol (isopropyl alcohol), hydrogen peroxide, l-lactic acid and citric acid.

 Avoid products with quaternary ammonium (listed as "benzyl" or "ammonium chloride"), alkylphenol ethoxylates, and bleach (sodium hypochlorite).

Microfibre Cloths and Mops

Microfibre cloths and mops are a good option, especially for cleaning. They don't kill bacteria, viruses and other germs the way chemicals do. Instead, they physically remove germs from surfaces. They can get rid of up to 99% of germs, including some viruses. The microfibers are measured in denier, the diameter of each fiber. The smaller the "denier" measurement, the better; the best ones are 0.13 denier.

Mops or cloths can be washed and re-used. Wet once, they can be used for one room, and then replaced with a clean mop or cloth. Use colour coding for different tasks.

USE HEALTHY AND EFFECTIVE CLEANING PRACTICES

Good practices include:

✓ A plan with what to clean, sanitize, and disinfect and when. Logs should be used to keep track of what is done, by whom, and when.

✓ Lots of ventilation to dilute vapours and germs in the air.

✓ Clean and disinfect when spaces are empty, if possible. Go from the cleanest to the dirtiest area within rooms and buildings.

✓ Use the right product for the right surface. Most cleaning and disinfecting products are for hard surfaces. What works on stainless steel will not necessarily work on fabrics.

✓ Dilute products safely. Many products must be diluted before use. Closed loop systems are the best way to do this. The original container is connected indirectly to the container for the diluted product. Workers do not come into contact with the original cleaning product and it is diluted with water to the right concentration. Follow the instructions. Do not try to make the final version stronger.

✓ Pour diluted liquids directly onto a cloth or into water. If it's in a spray bottle, spray directly into a cloth. When products are sprayed, it's more likely to inhale the vapours.

✓ If you only have bleach for disinfecting, dilute it to an effective concentration. That means a 0.05% solution for most surfaces (e.g., 1:100 if the starting concentration is 5%). For toilets and cleaning materials/equipment, use 0.1%. Mix fresh solutions each day.

✓ Clean high-touch surfaces regularly. Disinfect only if necessary.

✓ Use disposable or dedicated cleaning equipment and materials. Properly store and clean non-disposable ones.

✓ All containers need proper labels. This is especially important if you are using diluted chemicals. Include the product name, names of ingredients and any special instructions for using it.

PERSONAL PROTECTIVE EQUIPMENT MATTERS TOO

Check to make sure you have all the PPE you need (e.g., gloves, respirators for toxic products). The product label or safety data sheet should state what protection is required. So should the plan for cleaning and disinfecting. If there are not specific instructions, ask your employer to find out what's needed.





WEC, NJEA, HSN Alert

Disinfecting

can be hazardous to all staff & students

What are some best practices for disinfecting?

<https://assets.njea.org/njea-media/Disinfecting.pdf>

- ✓ dilute concentrates in **closed loop systems** to avoid spills and splashes
- ✓ **clean** surfaces beforehand to remove dirt
- ✓ use fragrance-free soap and water with microfiber materials to clean surfaces
- ✓ **target** only areas where and when needed, **evaluating** needs regularly
- ✓ apply disinfectants in **unoccupied spaces**, with effective ventilation and re-entry times
- ✓ follow “**dwell time**” requirements (usually three to 10 minutes)
- ✓ maximize **ventilation** during and after disinfecting to avoid accumulating vapours in the air
- ✓ go from furthest spot to door (**don’t get trapped**)
- ✓ clearly communicate information about **safe re-entry** times for other staff and students
- ✓ the employer provides **effective, fitted protective gear**

The take-aways?

Hygiene theatre is unacceptable and unnecessary.

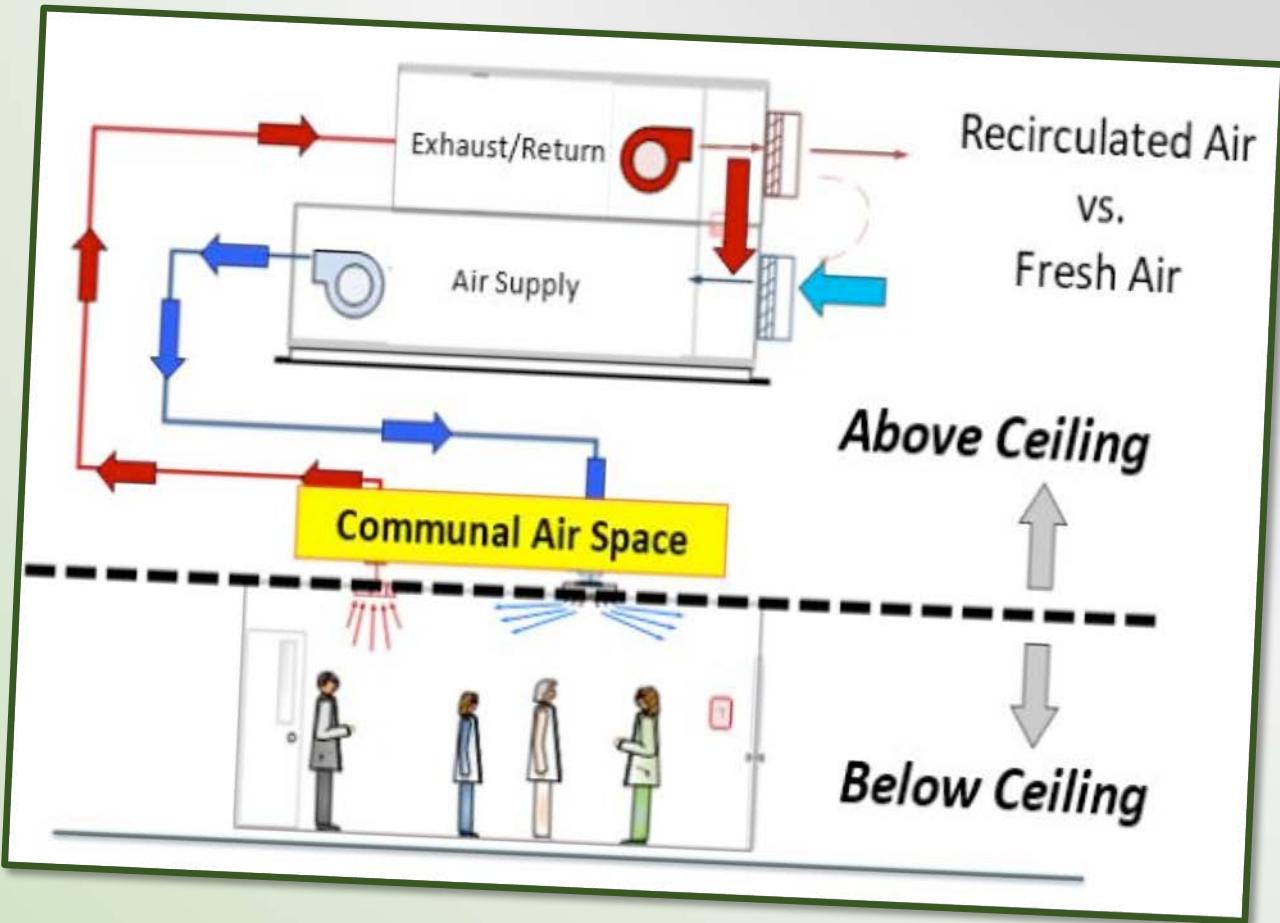
Our health and anti-microbial resistance are at stake.

Stop wasting money.

Clean the air, not surfaces.

Use the least nasty method or product (informed substitution).

Protect workers' health.



What are your questions?



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