

## Common disinfectant wipes expose people to dangerous chemicals, research reveals

### Level 3: Advanced

#### 1 Warmer

a. In pairs or groups, discuss these questions.

1. How often do you use disinfectant products at home?
2. Has this changed since the start of the pandemic?
3. Do you think these products are helpful or harmful? Why?

#### 2 Key words

a. Choose the correct word to match the definitions below. Then find and highlight the words in the article to read them in context.

1. the start of something
  - a. assemble
  - b. transmission
  - c. onset
  - d. exposure
2. a chemical that kills bacteria and is used for making things very clean
  - a. disorder
  - b. disinfectant
  - c. infertility
  - d. inhalation
3. frightening or worrying
  - a. alarming
  - b. persistent
  - c. component
  - d. hazard
4. one of the different parts in a product, machine or piece of equipment
  - a. exposure
  - b. alarming
  - c. persistent
  - d. component
5. build something by putting different parts or pieces together
  - a. resistance
  - b. assemble
  - c. accumulate
  - d. transmission
6. the ability not to be affected or harmed by something, especially a disease or a drug
  - a. outset
  - b. inhalation
  - c. resistance
  - d. exposure
7. something that could be dangerous or cause damage or accidents
  - a. hazard
  - b. disorder
  - c. persistent
  - d. alarming
8. a chemical used for killing insects, especially ones that hurt fruit and vegetable crops
  - a. pesticide
  - b. assemble
  - c. hazard
  - d. accumulate

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9. someone's lack of the physical ability to have children
  - a. inhalation
  - b. disorder
  - c. alarming
  - d. infertility
10. an illness or medical condition
  - a. persistent
  - b. disorder
  - c. pesticide
  - d. transmission
11. the state of being put into a situation where something harmful or dangerous might affect you
  - a. exposure
  - b. inhalation
  - c. persistent
  - d. outset
12. breathing air, smoke, or other substances into your lungs
  - a. transmission
  - b. exposure
  - c. inhalation
  - d. component
13. continuing to exist, especially for longer than you would like
  - a. assemble
  - b. accumulate
  - c. persistent
  - d. pesticide
14. increase in quantity over a period of time
  - a. accumulate
  - b. transmission
  - c. hazard
  - d. disinfectant
15. a process by which a disease spreads from one person to another
  - a. inhalation
  - b. pesticide
  - c. disinfectant
  - d. transmission

#### b. Use some of the key words from task A to complete the sentences.

1. The maintenance team uses \_\_\_\_\_ cleaning supplies in the bathrooms daily.
2. It was a lot of work to \_\_\_\_\_ that bookshelf, even with the instructions!
3. When you get a vaccine, you increase your \_\_\_\_\_ to that disease.
4. Please clean up that spill. It's a \_\_\_\_\_, and someone might get hurt.
5. The couple went to see a specialist who could help them with their problems with \_\_\_\_\_.
6. Rashes and hives are two kinds of skin \_\_\_\_\_.
7. \_\_\_\_\_ to smoke is harmful to the lungs.
8. One \_\_\_\_\_ of that treatment is simply changing one's diet.
9. Look how much dust has \_\_\_\_\_ since we cleaned last week.
10. The rise in the number of measles cases is quite \_\_\_\_\_.

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#### ***Researchers say wipes common in schools and care homes exposing people to dangerous chemical group called 'quats'***

**Tom Perkins**

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- 1 Since the onset of the pandemic, the global use of disinfectants has gone through the roof. Clorox dramatically boosted production of its wipe packs to 1.5m a day by mid-2021, and an industry trade group said 83% of consumers surveyed around the same time reported they had used a disinfectant wipe in the last week.
- 2 But as schools reopened, a group of toxic chemical researchers grew concerned as they heard reports of kids regularly using disinfectant wipes on their classroom desks or teachers running disinfectant machines.
- 3 The researchers knew the disinfectants did little to protect consumers from Covid and were instead exposing kids at alarming levels to what they say are a dangerous chemical group – quaternary ammonium compounds, also known as QACs, or “quats”.
- 4 Quats are common components in popular disinfectant wipes and sprays, especially those that claim to “kill 99.9% of germs”. But in a new research paper, the scientists assembled the conclusions from a fast-growing body of quat studies that point to several main issues: the chemicals are linked to serious health problems, they contribute to antimicrobial resistance, they pollute the environment, and they are not particularly effective.
- 5 The chemicals “might not be efficacious but also harmful,” said Courtney Carignan, a co-author of the paper and toxicologist at Michigan State University.
- 6 “We did the review to answer the question of ‘What do we really know?’ and what was most surprising was there was a lack of health hazard data in the majority of QACs, and the few that have been studied have red flags,” Carignan added.
- 7 The paper – developed by a group of toxics researchers from academia, government agencies and non-governmental organisations – highlights quats’ risks and calls on regulators to eliminate the chemicals for non-essential uses.
- 8 QACs are a class of hundreds of chemicals also used in paints, pesticides, hand sanitisers, personal-care products and more. Among other health issues, recent research has linked them to infertility, asthma, skin disorders and other diseases.
- 9 The main exposure is through disinfectants, and most Americans are thought to have some level of the chemicals in their blood. Recent research that checked more than 200 Indiana residents before and after the pandemic started found quat levels roughly doubled, and while about 83% had detectable levels before the pandemic, 97% did after.
- 10 Humans can end up with quats in their bodies through several routes. The chemicals can be absorbed through the skin or ingested through the mouth after one touches a disinfectant wipe or when they stick around on surfaces after the use of disinfectants. Inhalation is also a risk, especially with spray disinfectants, and the chemicals are also known to attach to dust and go into the air.
- 11 Among the groups most at risk are small children because the wipes are so frequently used in nurseries or schools, the elderly in care homes, healthcare workers, cleaning professionals and others who frequently use disinfectants.
- 12 The chemicals are persistent and thought to accumulate in human bodies and the environment. Quats have been found to be toxic to fish, and “a substantial body of evidence” suggests they probably contribute to the creation of superbugs, which are antibiotic-resistant, the paper states.
- 13 It also calls into question how effective quats really are. Disinfection with quats often has only a small benefit over plain soap and water when it comes to killing germs, research suggests, and neither is thought to be needed to stop the transmission of Covid, which happens through the air.

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- 14 “Disinfectant will get rid of more germs, but there’s a question of ‘How much more?’” Carignan said.
- 15 Still, companies continue to use quats, and consumers buy the disinfectants in high volume, which Carignan said may be a “market demand situation where maybe there’s some confusion about when you need to disinfect versus when you just need a cleaner.”
- 16 Soap-and-water is safest for general cleaning purposes, she added, and some resources offer alternatives to harsh cleaners. Carignan said that disinfectants should generally be reserved for when someone has the stomach flu or other illnesses for which disinfectants are effective, and even then, they should not be used carelessly.
- 17 The paper stresses the need for regulatory agencies to protect consumers. Labelling requirements are inconsistent among product classes – they must be included on pesticide labels, they do not need to be included on paint labels, and they appear to be only sometimes listed on disinfectant labels, Carignan said.
- 18 The paper calls on regulatory agencies to provide more clarity around the chemicals, including more research on quats’ health effects, better labelling and ending non-essential uses.
- 19 “Chemicals of concern should only be used where their function is necessary for health and safety or is critical for the functioning of society and no safer alternatives exist,” the study states.

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#### 3 Comprehension check

a. Answer the questions using information from the article.

1. How many wipe packs did Clorox produce in mid-2021?
2. What is the dangerous chemical group talked about in the article?
3. Why were researchers concerned when schools reopened?
4. What is one of the health issues they're linked to?
5. What is the main way people are exposed to them?
6. After the pandemic, what percentage of Indiana residents had these chemicals in their blood?
7. What are the three ways the chemical can end up in people's bodies?
8. Which groups of people are most at risk?
9. What is the safest thing to use for general cleaning?
10. What does the paper want regulatory agencies to do to protect consumers?

#### 4 Key language

a. Tick all the ways you can use each modal from the article.

modal	permission	possibility	suggestion	recommendation	obligation
can					
may					
might					
should					
must					

b. Complete each sentence with one of the modal verbs above.

1. You \_\_\_\_\_ clean the wound so it doesn't get infected.
2. Yes, of course, you \_\_\_\_\_ stay with me while you're in town.
3. She \_\_\_\_\_ have the flu, so she's going to stay home tonight.
4. You're very qualified, so I think you \_\_\_\_\_ apply for that job.
5. \_\_\_\_\_ I take one of these 'free samples' home?

c. Write the way each modal verb above is being used in each sentence.

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#### 5 Discussion

**a. Discuss these statements.**

- “Even if disinfectants can be harmful, we should still use them to protect ourselves from germs and bacteria.”
- “All products with quats should be clearly labelled for consumers.”
- “When you clean with paper towels or rags, you just push germs and bacteria around. When you use disinfectant wipes, you clean and kill germs and bacteria at the same time.”

#### 6 In your own words

- a. Use an internet search engine to find more information about products that contain QACs or quats. What positive things do they say about their products? Is it clear that they may be harmful? What risks do they mention? Do you think these messages are clear or confusing for consumers? Why?**
- b. Report your findings to the class and share your opinion about the issue.**