

Opening the window in your home will not flush out the chemicals in the air

February 21 2020, by Bob Yirka



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A large team of researchers from across the U.S. and one in Canada has found that simply opening windows will not flush chemicals from the air in most homes. In their paper published in the journal *Science Advances*,

the group describes experiments they carried out with a test home environment and what they learned about the chemicals.

All homes have chemicals in the air that are inhaled by the [home's](#) occupants. The chemicals come from materials such as couches and pillows, and also from products such as hair sprays, room deodorizers and scented candles. Other contributors include cleaning products and fumes from heating or cooking oils. No one really knows if the chemicals in the average home are making people sick, but scientists are looking into it. In this new effort, the researchers wondered if simply opening the windows and doors to a home would reduce the amount of chemicals in the air.

The experiments consisted of testing the air in a model home that has been designed as part of the House Observations of Microbial and Environmental Chemistry field campaign. Afterward, all the doors and windows were opened for a period of time and then closed again. The air was then tested again for the same chemicals. As expected, the researchers found that concentrations of most of the chemicals dropped dramatically when the doors and windows were opened—but they were surprised to see that the chemicals returned to their original concentrations within just a few minutes.

The researchers suggest that the reason opening the doors and windows did not reduce [chemical](#) levels for more than a few minutes was because the chemicals were clinging to the walls and on surfaces in the home. As concentration levels in the air dropped, the chemicals were immediately replaced by chemicals detaching from these surfaces and floating into the air.

The researchers also mopped the floor in the house several times using vinegar, and sprayed ammonia on most of the surfaces in the house to change [surface](#) pH. They found that it only made things worse. Readings

showed that chemical concentrations in the air were higher for a short period of time.

More information: Chen Wang et al. Surface reservoirs dominate dynamic gas-surface partitioning of many indoor air constituents, *Science Advances* (2020). [DOI: 10.1126/sciadv.aay8973](https://doi.org/10.1126/sciadv.aay8973)

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Citation: Opening the window in your home will not flush out the chemicals in the air (2020, February 21) retrieved 2 May 2024 from <https://phys.org/news/2020-02-window-home-flush-chemicals-air.html>

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