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'Thirdhand smoke' may be bigger health hazard than previously believed

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Scientists are reporting that so-called "thirdhand smoke" — the invisible remains of cigarette smoke that deposits on carpeting, clothing, furniture and other surfaces — may be even more of a health hazard than previously believed. The study, published in ACS' journal, *Environmental Science & Technology*, extends the known health risks of tobacco among people who do not smoke but encounter the smoke exhaled by smokers or released by smoldering cigarette butts.

Yael Dubowski and colleagues note that thirdhand smoke is a newly recognized contributor to the health risks of tobacco and indoor air pollution. Studies show that that nicotine in thirdhand smoke can react with the ozone in indoor air and surfaces like clothing and furniture, to form other pollutants. Exposure to them can occur to babies crawling on the carpet, people napping on the sofa, or people eating food tainted by thirdhand smoke.

In an effort to learn more about thirdhand smoke, the scientists studied interactions between nicotine and indoor air on a variety of different materials, including cellulose (a component of wood furniture), cotton, and paper to simulate typical indoor surfaces. They found that nicotine interacts with ozone, in indoor air, to form potentially toxic pollutants on these surfaces. "Given the toxicity of some of the identified products and that small particles may contribute to adverse health effects, the present study indicates that exposure to [thirdhand smoke] may pose additional health risks," the article notes.

More information: "Thirdhand Smoke: Heterogeneous Oxidation of Nicotine and Secondary Aerosol Formation in the Indoor Environment", *Environmental Science & Technology*.

Provided by American Chemical Society

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