

# Study documents secondhand exposure to vapors from electronic cigarettes

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Electronic cigarettes, when used indoors, may involuntarily expose non-users to nicotine, according to a study led by Maciej Goniewicz, PhD, PharmD, of Roswell Park Cancer Institute (RPCI) and published by the journal *Nicotine and Tobacco Research*.

Electronic cigarettes ([e-cigarettes](#)) are consumer products designed to generate nicotine aerosol, or vapor, without the combustion of tobacco. When an e-cigarette user takes a puff, the nicotine solution is heated, and the vapor is taken into the lungs. Researchers examined e-cigarette vapor from three different brands of e-cigarettes using a smoking machine in controlled exposure conditions. They also compared [secondhand smoke exposure](#) of e-cigarette vapor and [tobacco smoke](#) generated by dual users.

"To our knowledge, this is one of the first studies to measure the air concentrations of nicotine and [volatile organic compounds](#) and compare the emissions from electronic and conventional tobacco cigarettes," said Dr. Goniewicz, a researcher and Assistant Professor of Oncology in RPCI's Department of Health Behavior. "Our data suggest that secondhand exposure to nicotine from e-cigarettes is on average 10 times less than from tobacco smoke. However, more research is needed to evaluate the health consequences of secondhand exposure to nicotine from e-cigarettes, especially among vulnerable populations including children, pregnant women and people with cardiovascular conditions."

Study observations also include:

- This study focused on nicotine and a limited number of chemicals released from e-cigarettes. Future research should explore emissions and exposures to other toxins and compounds identified in e-cigarettes such as formaldehyde, acetaldehyde and acrolein.
- Data also are needed to determine whether secondhand exposure to e-cigarette vapors results in reinforcement of nicotine addiction.
- More research is needed to investigate whether the vapor from e-cigarettes is deposited on surfaces to form 'thirdhand' e-cigarette vapor.

"Questions remain regarding the health impact of e-cigarettes among smokers and nonsmokers. It remains unclear whether young people will see e-cigarette use as a social norm and if e-cigarettes will be used as sources of nicotine in places with smoking bans, thus circumventing tobacco-free laws," said Andrew Hyland, PhD, Chair of the Department of Health Behavior at RPCI. "This study and others can guide policymakers as decisions are made about the regulation of the nicotine delivery devices."

**More information:** The complete study can be found here:  
[ntr.oxfordjournals.org/content ... /10/ntr.ntt203.short](http://ntr.oxfordjournals.org/content.../10/ntr.ntt203.short)

Provided by Roswell Park Cancer Institute

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