

Can e-cigarettes help smokers quit?

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Matthew Carpenter is the co-director of the Tobacco Research Program at the Hollings Cancer Center. Credit: Sarah Pack/Hollings Cancer Center at MUSC

As e-cigarettes become more popular, fewer people are taking up smoking traditional cigarettes. But can e-cigarettes, an electronic nicotine delivery system, help people quit smoking altogether? That was the focus of a recent study led by a Hollings Cancer Center researcher.

The study found that smokers who are willing to use e-cigarettes tend to smoke less and have increased quit attempts, said Matthew Carpenter, Ph.D., a tobacco control and addiction expert at the cancer center at the Medical University of South Carolina (MUSC).

"Combustible cigarettes are the most harmful form of nicotine delivery. Alternative delivery of nicotine, through e-cigarettes, could significantly reduce harm and the risks of cancer and other diseases to smokers," he said.

In the pilot study, funded by the National Institutes of Health, Carpenter evaluated e-cigarettes in terms of usage, product preference, changes in smoking behaviors and nicotine exposure. Sixty-eight smokers were evaluated: 46 were

randomized to use e-cigarettes however they wished, and 22 were randomized to a control group.

Those in the e-cigarette group were given a device with either high or low doses of nicotine. Everyone was followed over a period of four months. The study was published in *Cancer Epidemiology, Biomarkers & Prevention* in November and is one of the few randomized studies in the U.S. to examine the effects of e-cigarettes and quit attempts.

Results showed that when smokers were given e-cigarettes without any accompanying instructions or requirements for use, uptake was strong, and many participants went on to purchase their own e-cigarettes. This suggests that e-cigarettes might give smokers a suitable alternative to combustible cigarettes. Those who used e-cigarettes smoked less and were more likely to quit smoking, as compared to those in the [control group](#).

"The results are consistent with trials done outside the U.S.," Carpenter said. "Many people rated the e-cigarettes similar to their usual product, which further suggests that these products might promote switching. Anything that gets smokers off combustible cigarettes is a good thing."



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Of the two [e-cigarette](#) models used in the study, the more powerful device, with a higher dose of nicotine, showed stronger outcomes. People using e-cigarettes throughout the study smoked an average of 37 percent fewer cigarettes, showing a positive effect when making the switch and potentially serving as a tool to help smokers quit.

That's good news for Carpenter and his colleagues at the Hollings Cancer Center. Smoking is the leading cause of cancer and has a negative impact on the effectiveness of cancer treatments. People who quit smoking, regardless of their ages, have substantial gains in life expectancy compared with those who continue to smoke.

Carpenter cautions that while e-cigarettes may help people smoke less or even quit, they are not for everyone. "It is important to protect non-smokers, particularly adolescents and young adults, from starting any nicotine-containing product. This is something we need to really guard against."

E-cigarettes are sometimes seen as a gateway to conventional cigarettes, the most harmful form of [nicotine delivery](#). Studies have shown that e-cigarettes offer significantly less exposure to harmful toxicants, as compared to traditional cigarettes. "We know e-cigarettes are safer than traditional cigarettes, but that doesn't mean e-cigarettes are completely safe." says Carpenter.

More than 1,500 varieties of e-cigarettes are now available, including different looks, high-tech power settings and many flavors, which can make them more appealing to kids. Newer devices can be customized in many ways that will draw in more [smokers](#), but that means they also can entice kids, he said.

"We've gotten very good at the public health messaging of conventional smoking and prevention efforts for adolescents, but now kids see a new technology-based product that is supposedly safer, flavored and isn't a cigarette. These are all these things that raise our alarm bells for adolescents, and, in fact, e-cigarettes are more popular than conventional cigarettes among youth."

E-cigarettes were only recently regulated by the Food and Drug Administration. Largely manufactured overseas, the quality control process varies, he says. Without enough information to answer the long-term public health issues of e-cigarettes, researchers like Carpenter are aware of the importance of further studies on the latest tobacco trends. Combustible cigarettes have been around for many decades. E-cigarettes have not, and the science has a lot of questions left to answer, he said.

More information: Matthew J. Carpenter et al, A Naturalistic, Randomized Pilot Trial of E-Cigarettes: Uptake, Exposure, and Behavioral Effects, *Cancer Epidemiology Biomarkers & Prevention* (2017). [DOI: 10.1158/1055-9965.EPI-17-0460](https://doi.org/10.1158/1055-9965.EPI-17-0460)

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