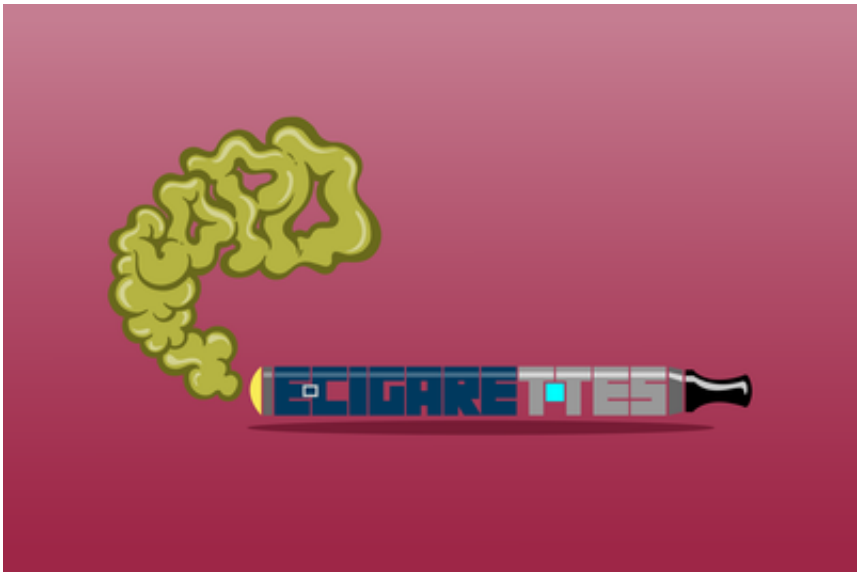
Can E-cigarettes help COPD patients quit smoking and reduce harm to lungs?

September 11 2017



Credit: University of North Carolina at Chapel Hill School of Medicine

E-cigarette use has become increasingly common over the past several years, and some smokers have even employed the flavored vapor in the hopes that it might help them quit, or at least mitigate the negative health consequences of a nicotine habit. For people with chronic obstructive pulmonary disease (COPD), e-cigarettes do neither, according to a new study at the UNC School of Medicine published in the *Journal of General Internal Medicine*.

Because e-cigarettes are so new, there is very little reliable information

about the long-term effects of vaping. And because e-cigarette use is more common among younger smokers, there is even less data on older users, especially those who already have smoking-related health issues, such as COPD – a progressive inflammatory lung condition in which breathing becomes more difficult over time. It affects about 21 million people in the United States.

M. Bradley Drummond, MD, MHS, director of the Obstructive Lung Diseases Clinical and Translational Research Center at the UNC School of Medicine, along with colleagues wanted to better understand how vaping affects patients with COPD. "We've seen a dramatic increase in the use of e-cigs in the United States, and it's unclear what the potential consequences are among smokers at-risk or with COPD," said Drummond, who is also an associate professor in the department of medicine. "But there is virtually no information available on older individuals at-risk or with COPD. So we've leveraged the data that has already been gathered from two existing COPD-focused cohorts as a way to begin to address this lack of information."

His team used data gathered from two observational studies – COPDGene Study and SPIROMICS (Subpopulations and Intermediate Markers in COPD Study).Researchers on both studies gather physiological and demographic data to better understand the underlying causes of COPD and what makes one individual more susceptible to developing the disease than another. In 2014, both studies introduced questions related to e-cigarette use.

"We only have three years of data to work with, but that data represents the best and most recent data available on populations with COPD or at-risk of developing it," Drummond said.

Even with the limited amount of data, some unexpected results emerged.

"We were surprised to find that there was at least an association between e-cig use and negative health status," Drummond said. "We expected to see that folks who quit combustibles would have decreased symptoms because of their decreased tobacco use, but that wasn't the case."

Potential negative health outcomes were even greater among a subset of e-cigarette users that Drummond called dual users—smokers with a pattern of sustained use of both e-cigarettes and conventional cigarettes. The data suggests that these dual users are consuming even more nicotine than those who exclusively use conventional cigarettes.

But even for those who exclusively use e-cigarettes, the results were not promising.

"Nowhere in these data did we see a potential benefit of e-cigarette use."

This includes use of e-cigarettes as a cessation strategy or as a means to help alleviate COPD symptoms.

"Individuals who had tried e-cigarettes as a way to reduce their use of conventional cigarettes were actually less likely to reduce their use or quit combustible cigarettes than those who had never tried e-cigarettes," Drummond said. "The data further suggest that there's no clear benefit of e-cigarettes as a harm-reduction strategy in this population of smokers with or at-risk for COPD."

Drummond stressed that these result are preliminary and that a great deal more work needs to be done to better understand the effects of e-cigarettes in the long-term.

"We can't study these things fully in two or three years," he said. "We need 10 or more years to get the fullest picture possible. We will continue to follow the e-cigarette use patterns in these patients to see if

the trends that we saw in our study continue over time."

Having a clearer picture of the effect of these behaviors will ideally help to guide patients with COPD to make the healthiest decisions possible.

Provided by University of North Carolina at Chapel Hill School of Medicine