

Smoking E-cigarettes daily doubles risk of heart attacks

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Daily use of electronic cigarettes is associated with nearly a doubling of the odds of a heart attack, according to a new study led by UC San Francisco. This is the first evidence of a substantial, human health impact of the popular devices that were first introduced about a decade ago, indicating that e-cigarettes may be more dangerous than previously thought.

The new study of nearly 70,000 people found that heightened heart attack risk for e-cigarettes is on top of the effects of conventional cigarettes, which by themselves nearly triple the odds of heart attack risk when smoked daily. Together they lead to five times the non-smoking heart attack risk in those who use both conventional cigarettes and e-cigarettes every day.

The [research](#) will be presented February 24 in Baltimore at the 2018 annual meeting of the Society for Research on Nicotine and Tobacco.

"The finding of increased [heart attack risk](#) for [e-cigarette](#) use, in addition to the risks of any smoking, is particularly troubling, because most people who use e-cigarettes continue to smoke cigarettes," said senior author Stanton Glantz, Ph.D., who presented the work. Glantz is a UCSF professor of medicine and director of the UCSF Center for Tobacco Control Research and Education.

The health effects of e-cigarettes have been a contentious topic in the scientific community in recent years, but evidence is mounting that links

them to direct health harms.

Last month, a report from the National Academies of Sciences, Engineering, and Medicine cited a range of health impacts of e-cigarette use, ranging from exposure to nicotine and other toxic substances to "substantial" evidence that e-cigarette use results in symptoms of dependence. The report observed that there wasn't yet evidence of the risks of heart, cancer or respiratory disease in people who used e-cigarettes, but found some support from animal studies that long-term use could increase those risks.

While noting that it could take decades for some health effects to appear, the National Academies report also showed a clear impact of e-cigarettes on young smokers: "Among youth – who use e-cigarettes at higher rates than adults do – there is substantial evidence that e-cigarettes use increases the risk of transitioning to smoking conventional cigarettes." www.nationalacademies.org/hmd/...of-e-cigarettes.aspx

While e-cigarettes deliver lower levels of carcinogens than conventional cigarettes, they also expose users to high levels of ultrafine particles and other toxins that have been linked to increased cardiovascular and non-cancer lung disease risks—which account for more than half of all smoking-caused deaths.

Moreover, studies are increasingly documenting that instead of prompting smokers to switch from conventional cigarettes to e-cigarettes or quitting altogether as some scientists and policymakers had hoped, e-cigarettes are reducing the likelihood that people will quit smoking, while also expanding the nicotine market by attracting more youth to start.

The new study from UCSF and George Washington University drew upon National Health Interview Surveys of 2014 and 2016 involving

69,725 people, and controlled for conventional cigarette use, demographic characteristics such as age, gender and body mass index, and health characteristics such as hypertension, diabetes, and high cholesterol.

When adjusted for other risk factors, daily e-cigarette use was associated with significantly increased odds (Odds Ratio: 1.79) of having had a heart attack (myocardial infarction), as was daily conventional cigarette smoking (OR: 2.72). Former and occasional e-cigarette use were not associated with significant changes in the odds of having had a heart attack, while the same categories of cigarette smoking were associated with smaller increases in risk than for current smokers.

"E-cigarettes are widely promoted as a smoking cessation aid, but for most people, they actually make it harder to quit smoking, so most people end up as so-called 'dual users' who keep smoking while using e-cigarettes," said Glantz. "The new study shows that the risks compound. Someone who continues to smoke daily while using e-cigarettes daily has an increased risk of a [heart](#) attack by a factor of five.

"The good news is that the risk of [heart attack](#) starts to drop immediately after you stop [smoking](#)," he added. "Our study also shows little risk associated with being a former e-cigarette user."

Provided by University of California, San Francisco

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