Teens who vape are more likely to smoke cigarettes later

Teens who start vaping are nearly three times more likely to go on to smoke cigarettes than their peers who don't use any type of tobacco product, a new study finds. The results are alarming for both medical experts – who would rather kids not smoke – and for the e-cigarette industry, which is increasingly marketing its products as smoking-cessation tools for adults.

Today's study, published in the journal *JAMA Network Open*, couldn't say whether vaping *caused* the kids to go on to smoking. But the study authors did find some pretty strong associations between vaping and later cigarette smoking, particularly for kids who would normally be considered "low risk" for substance use: the ones that aren't big on thrill-seeking, drinking, or misusing prescription drugs. The findings are especially timely in light of the Food and Drug Administration's recent announcement that 3.6 million high school and middle school students used e-cigarettes in 2018.

The paper comes on the heels of a major clinical study that showed e-cigarettes helped a small proportion of adult smokers quit cigarettes. The back-to-back publications show the tightrope on which regulators and the e-cigarette industry are walking: on one hand, e-cigarettes may wind up being a useful tool for helping adults stop smoking. On the other hand, there's a growing body of evidence that they act as what FDA commissioner Scott Gottlieb has called an "on ramp" to the more dangerous, combustible kind of cigarette.

“The conundrum public health policymakers are faced with”
Today’s study adds a new link in that worrying chain of correlation. “These two papers highlight the conundrum public health policymakers are faced with,” says Gideon St. Helen, a tobacco researcher at the University of California, San Francisco who was not involved in the research, in an email to *The Verge*. There *are* a few limitations, including that the study looks at a window of time *before* Juul really took off, says Michael Ong, a professor of medicine and public health at UCLA who didn’t participate in the study. That means the results aren’t a perfect window into the e-cigarette market of today. Still, he says, “This study probably gives us the best estimates yet of what we might expect in terms of individuals who use electronic cigarettes as youth, and what might happen to them.”

The massive Population Assessment of Tobacco and Health (PATH) study — a long-term, nationwide survey of tobacco product use — provided the data for the study. Researchers led by Andrew Stokes, an assistant professor of global health at Boston University, analyzed survey responses from more than 6,100 12- to 15-year-olds between 2013 and 2016 who answered questions about their families, their tolerance for risk, and what they liked to smoke or vape. About 8.6 percent said the first tobacco products they used were e-cigarettes, 5 percent said they tried other tobacco products like hookah or cigarillos first, and 3.3 percent said they started with cigarettes.

“This by itself is noteworthy.”
By the end of the study, the percentage of kids who tried at least one or two puffs of cigarettes had grown to 20.5 percent. Kids who started out trying e-cigarettes were roughly four times more likely to go on to *try* cigarettes, and nearly three times more likely to have used cigarettes in the past 30 days compared to their classmates who didn’t vape or smoke anything. The odds were similar for the other non-cigarette tobacco products, but fewer started out with them.

The link between e-cigarette use and eventual cigarette use was especially strong for low-risk kids. Those are the kids who aren't big on thrill-seeking, who don't drink or take prescription drugs without a prescription, and who thought they'd say no if their friends offered them a smoke. "This by itself is noteworthy," St. Helen says. Even more surprising is that specific link wasn't true for the kids who started with other types of tobacco, like hookah or cigarillos: all the kids, from low- to high-risk, were about as equally likely to go on to try cigarettes. "There seems to be something unique about e-cigarettes that leads to this increased risk of smoking initiation among low-risk youth," St. Helen says.

"We're all concerned it would lead to more use."

The study authors don't get into why that might be. Maybe starting out with vaping gets otherwise low-risk kids hooked on nicotine, or maybe it normalizes smoking behavior so they're less turned off by cigarettes later on. But the researchers *do* run the numbers for how their results might shake out across the US. They estimate that more than 43,400 young cigarette smokers might have started with e-cigarettes over a two-year period between 2013 and 2016.

That's assuming the link is causal, however, which the study can't say for sure. (It's a major limitation of the study.) Plus, the survey didn't ask *which* e-cigarettes the kids were using, so the researchers couldn't say if specific types of e-cigarettes predisposed kids more to using cigarettes later. And even if it had, the results are already outdated because Juul started dominating the market *after* the survey started. Future studies will have to investigate how the rise of Juul has changed those results, Ong says. In the meantime, he says, "We're all concerned it would lead to more use because they're going to be addicted to a greater degree given that the amount of nicotine in one Juul pod is equal to about 20 cigarettes."

"Is there value to these products?"

The medical community has been looking forward to these

results, which give regulators another reason to try to curb youth vaping, Ong says. “The hard thing is that there’s going to always be this counterbalance of, ‘Is there value to these products?’” St. Helen agrees, calling today’s study a “well-done, rigorous analysis” that highlights the difficult balance the FDA will have to strike as it decides how to go forward with regulating the growing e-cigarette industry.

https://www.theverge.com/2019/2/1/18206902/vaping-cigarettes-smoking-health-teens-students-epidemic-jama