E-cigarettes act as gateway to smoking for teens, scientists warn

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7 FEBRUARY 2017 • 11:30PM

Vaping acts as a gateway to smoking, scientists have warned, after finding teenagers who used [e-cigarettes](http://www.telegraph.co.uk/science/2016/12/08/e-cigarettes-unsafe-major-public-health-concern-young-people/) were four times more likely to start smoking tobacco within a year.

Researchers from the University of Michigan say vaping may desensitise youngsters to the dangers of smoking, even when they were initially aware of the harms.

The [new study](http://press.psprings.co.uk/tc/february/tc053291.pdf) 347 teens were questioned about their views on drug use, vaping and smoking and followed up a year later to see if their opinions and habits had changed.

One in three teens who were not smokers during the first survey, but had used e-cigarettes, said they had smoked by the second survey compared to just seven per cent for those who had not vaped in the interim.

Among teens who said they had never smoked by the time of the 2014 survey, recent vapers were four times as likely to move away from the belief that cigarette smoking poses a great risk as those who hadn’t vaped.

Professor Richard Miech, from the [University of Michigan’s Institute for Social Research](http://home.isr.umich.edu/), said: “These findings contribute to a growing body of evidence showing that teens who vape are more likely to start smoking than their peers who don't vape.

"At the very least, teens who vape should be considered at high risk for future smoking, even if they believe they are vaping only flavoring."

Professor Miech warns that teenagers who vape may begin to believe that smoking is not dangerous if they do not detect any immediate health effects from vaping. They are also more likely to join a peer groups of smokers.”

"It is possible that among teens vaping, it could lead former smokers back to smoking," he added.

The study also looked at seniors who had previously smoked cigarettes, but had no recent smoking activity at the time of the initial survey in 12th grade. Among these seniors, those who [vaped](http://www.telegraph.co.uk/science/2016/09/14/e-cigarettes-helped-18000-people-quit-smoking-in-2015-but-long-t/)were twice as likely to smoke in the next year as compared to those who did not vape.

The results also did not find strong evidence for vaping as an effective means for quitting smoking, at least among teens.

Among the 12th-graders who smoked at the initial survey, those who vaped were just as likely to have smoked cigarettes in the following year than those who did not vape.

Prof Linda Bauld, Professor of Health Policy at the University of Stirling, said: "If trying an e-cigarette causes regular smoking, then we should be alarmed.

"However, this study and previous American studies which have made similar assertions have  not  found this, and so we must be very cautious about jumping to such a conclusion on the basis of this study."

The findings were published in the journal [Tobacco Control.](http://press.psprings.co.uk/tc/february/tc053291.pdf)

A separate study led by researchers at the Johns Hopkins Bloomberg School of Public Health found high levels of toxic metals in the liquid that creates the aerosol that e-cigarette users inhale when they vape.

The study, believed to be the first to examine a cross-section of metals in multiple e-cigarette brands, analyzed the liquid in five brands of first generation e-cigarettes for cadmium, chromium, lead, manganese and nickel.

The researchers found all five heavy metals - which can be toxic or carcinogenic when inhaled -- in all five brands, though levels varied by brand. The main source of the metals, the researchers believe, is the coil that heats the liquid that creates the aerosol, which is often but erroneously referred to as vapor.

"We do not know if these levels are dangerous, but their presence is troubling and could mean that the metals end up in the aerosol that e-cigarette users inhale," said study leader Dr Ana María Rule.

"One of the things that is troubling is that the metals in e-cigarette coils, which heat the liquid that creates the aerosol, are toxic when inhaled, so perhaps regulators might want to look into an alternative material for e-cigarette heating coils."

[Scientists and health officials are divided over whether they are safe](http://www.telegraph.co.uk/news/science/science-news/11866220/Scientists-and-health-officials-at-war-over-safety-of-e-cigarettes.html). In 2015 [Public Health England](http://www.telegraph.co.uk/news/health/news/11810284/British-smokers-urged-to-start-vaping-by-health-officials.html) urged smokers to switch to vaping, saying e-cigarettes were far [safer than traditional tobacco](http://www.telegraph.co.uk/news/science/science-news/11830029/E-cigarette-safety-study-was-written-by-industry-funded-scientists-Lancet-warns.html).

But the [World Health Organisation](http://www.telegraph.co.uk/journalists/sarah-knapton/11056964/Ban-toxic-e-cigarettes-indoors-says-World-Health-Organisation.html) and scientists from the London School of Hygiene and Tropical Medicine and the University of Liverpool remain concerned about their safety.

In December America's most senior doctor Vivek Murthy said [e-cigarette](http://www.telegraph.co.uk/science/2016/03/12/e-cigarettes-are-no-safer-than-smoking-tobacco-scientists-warn/) use among young people and young adults is ‘not safe’ and ‘[now a major public health concern.’](http://www.telegraph.co.uk/science/2016/12/08/e-cigarettes-unsafe-major-public-health-concern-young-people/)