

# 1 in 4 teen E-cigarette users has tried 'Dripping'

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(HealthDay)—One-quarter of U.S. teen e-cigarette users have

experimented with "dripping"—a new vaping method that produces thicker clouds of vapor, researchers report.

Regular electronic cigarettes produce inhalable vapor by gradually drawing liquid into a heating coil through an automatic wick, explained lead researcher Suchitra Krishnan-Sarin.

"Dripping" involves placing drops of e-liquid directly onto the exposed heating coil of an e-cigarette or atomizer, and then immediately inhaling the cloud of vapor produced, said Krishnan-Sarin, a professor of psychiatry at Yale University School of Medicine in New Haven, Conn.

"They say it makes the flavors taste better and gives you a stronger hit," Krishnan-Sarin said.

She said she learned about the practice while talking with teenagers, and decided to ask about it in a survey on e-cigarette use among [high school students](#).

The survey revealed that 26 percent of student e-cigarette users at eight Connecticut high schools had tried dripping at least once.

"I didn't know what to expect," Krishnan-Sarin said. "We didn't know what we would find, because we only had anecdotal evidence based on what kids were telling us."

Experts are concerned that "dripping" could expose users to increased levels of toxins and carcinogens created when the liquid in e-cigarettes is vaporized at high temperatures.

Previous research has shown that "the levels of some chemicals like formaldehyde and other aldehydes, which are known carcinogens, are higher with direct dripping than with conventional e-cigarette use,"

Krishnan-Sarin said.

Dr. Karen Wilson, chief of general pediatrics for Mount Sinai Health System in New York City, said the stronger nicotine hit produced by dripping also could do harm to the developing brains of teenage users.

"Adolescents should not be using nicotine at all," Wilson said. "It changes the brain chemistry, and adolescents are uniquely susceptible to the addictive properties of nicotine."

Out of 7,045 high school students surveyed, almost 1,100 had used e-cigarettes, the researchers found. One out of four e-cigarette users had tried dripping.

Reasons the students gave for dripping included producing thicker clouds of vapor (64 percent), which suggests these users may engage in smoke tricks or vape competitions, the study authors said.

Better flavor was the reason cited by nearly two out of five students who dripped, and simple curiosity attracted 22 percent.

About 28 percent said the practice produces a stronger "throat hit," or the feeling produced on the back of the throat during inhalation.

White students overall and boys were more likely than others to have tried dripping, the researchers said.

Krishnan-Sarin said more research is needed to figure out if dripping is something tried once or occasionally, or if kids regularly drip—a question not asked in the survey.

Instructional guides and videos for dripping can be found on the Internet, the study authors said in background notes. Users can modify their e-

cigarettes for dripping, or they can buy atomizers built specifically for dripping.

"This is one of the reasons why teens seem to like these devices," Krishnan-Sarin said. "They like that they can do these novel things with them."

Paul Billings is senior vice president of advocacy for the American Lung Association. He said the new practice of dripping provides more evidence that federal regulation is needed for [e-cigarette](#), said

The U.S. Food and Drug Administration has announced its intention to regulate e-cigarettes as tobacco products, but hasn't yet rolled out its new rules.

"This points out why we need FDA providing oversight over these products and how they're being used in the real world," Billings said. "The FDA has asserted its authority, but now they need to move forward with product standards."

Gregory Conley, president of the American Vaping Association, responded to the study findings.

"All vapor products, including those that do not contain nicotine, should be kept out of the hands of youth. Nonetheless, it is also important to keep the science in perspective," he said.

The study authors refer to "studies on emissions performed with machines, but ignore evidence that actual human vapers recognize aldehyde production very early in its formation and find it so intolerable that they will quickly take action to ensure that it does not continue," he added.

The study appears online Feb. 6 in the journal *Pediatrics*.

**More information:** Suchitra Krishnan-Sarin, Ph.D., professor, psychiatry, Yale University School of Medicine, New Haven, Conn.; Karen Wilson, M.D., chief, general pediatrics, Mount Sinai Health System, New York City; Paul Billings, senior vice president, advocacy, American Lung Association; Gregory Conley, president of the American Vaping Association; Feb. 6, 2017 *Pediatrics*, online

For more about e-cigarette regulation, visit the [U.S. Food and Drug Administration](#).

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