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## Why e-cigarettes have their own toxic dangers

By Sara Shipley Hiles 8:00 AM Thursday Sep 3, 2015

**A study of English quitters found those who used e-cigarettes were less likely to have successfully quit smoking after 12 months.** <http://onlinelibrary.wiley.com/doi/10.1111/add.12917/epdf>

'Conclusions

Daily use of e-cigarettes while smoking appears to be associated with subsequent increases in rates of attempting to stop smoking and reducing smoking, but not with smoking cessation. Non-daily use of e-cigarettes while smoking does not appear to be associated with cessation attempts, cessation or reduced smoking.'

Wander into a vape shop in the mall or online, and you can find a smorgasbord of flavors: cotton candy, vanilla custard, even Unicorn Milk or Katy Perry's Cherry. Flashy flavors have helped e-cigarettes, designed to vaporise a nicotine solution, grow into an industry with an estimated \$3.5 billion in annual U.S. sales. Less than a decade after the battery-powered devices were introduced in the United States, an estimated 10 percent of American adults and 13 percent of high school students "vape," according to recent surveys. While many users perceive e-cigs as safer than traditional cigarettes, some of the flavorings that make them so enticing may have their own toxic consequences.

**A growing number of studies find that some of the liquids used in e-cigarettes contain flavorings whose inhalation has been associated with lung problems, ranging from irritation to a rare but serious lung disease. For example, diacetyl, a butter-flavored chemical, has been linked to dozens of cases of bronchiolitis obliterans, a life-threatening obstructive lung disease.**

E-cigarettes are unregulated, but that may change. The Food and Drug Administration is considering a rule to extend its cigarette-regulating authority to e-cig devices. **More than 7,700 e-cig flavors are being sold under more than 450 brands, with no labeling or testing requirements.**

Jessica Barrington-Trimis, an epidemiologist at the University of Southern California who studies tobacco's health effects, said that flavorings are particularly worrisome because they **"have a history of being known respiratory toxins."** Barrington-Trimis, who spoke at an FDA panel looking into e-cigs in March, said that **because the devices produce an ultrafine aerosol that goes deep into the lungs**, their flavorings "are a natural target" for further investigation.

**"We need to research this more to understand what chemicals are in these things and what these chemicals may be doing to the lungs of the user,"** she said.

One of the first people to highlight e-cig flavoring concerns was a physician who uses e-cigarettes himself. **Konstantinos Farsalinos**, a researcher at the Onassis Cardiac Surgery Center in Athens, tested 159 sweet e-cig liquids, such as toffee, chocolate and caramel flavorings, and **found that 74 percent of the samples contained diacetyl - the chemical associated with bronchiolitis obliterans - or a chemically similar substitute, acetyl propionyl.**

Among the ones that tested positive, nearly half would expose users to levels that exceed recommended workplace limits for breathing the two chemicals, his 2014 study found.

Diacetyl is found naturally in butter, beer and other foods, and it is added to baked goods, candy and snack foods to impart a buttery or creamy taste. Although it is **considered safe to eat, breathing it may not be.**

In 2002, the National Institute for Occupational Safety and Health, reported that eight workers in a Missouri microwave popcorn plant had developed bronchiolitis obliterans after breathing diacetyl on the job. **Half of them needed lung transplants, and five have died of respiratory causes,** Kathleen Kreiss, a NIOSH expert in occupational respiratory disease, said in an e-mail. Dozens of cases of bronchiolitis obliterans - known in some circles as "popcorn lung" - have since been found at other food and flavorings plants.

**Farsalinos, who has accepted some funding from the vaping industry,** said he believes that e-cigarettes are safer than tobacco cigarettes. Acetyl propionyl and diacetyl are also naturally present in cigarette smoke, Farsalinos said, at levels higher than those he found in e-cigs. Still, **Farsalinos said, "these specific chemicals should be completely removed" from e-cigs. "Why? Because it's a 100 percent avoidable risk."**

Some manufacturers avoid diacetyl. For example, Nicoventures, a division of British American Tobacco, does not use diacetyl in its nine e-cigarette flavorings, Sandra Costigan, a company toxicologist said in an e-mail.

The American Vaping Association, an advocacy group for the industry, believes that diacetyl and acetyl propionyl should not be added to e-cigarette flavorings, association president Gregory Conley said.

In 2012 the Flavor and Extract Manufacturers Association, which represents the U.S. flavorings industry, issued a list of 27 "high-priority" flavoring chemicals that, **while safe in food, may pose a risk of respiratory injury and for which it recommends reducing inhalation exposure. The list includes chemicals found in e-cig liquids, such as diacetyl and benzaldehyde, which is used in almond and cherry flavors.**

**"When we saw flavors were being used in e-cigarettes, we wanted to put the word out right away that it's a possibility that flavors being inhaled through an e-cigarette could also be harmful,"** John Hallagan, the association's senior adviser and general counsel, said in an interview.

**"Flavors are not made to be inhaled," he said.** "In the absence of safety information, what we're saying is we really need to pay attention to this from a safety perspective."

A 2013 study found that several cinnamon-flavored e-cig liquids contained a chemical, cinnamaldehyde, **that researchers said was highly toxic to human cells in lab tests.** A co-author of that study, Prue Talbot, a professor of cell biology at the University

of California at Riverside, said the results corroborated online reports by e-cig users of problems related to cinnamon flavors, including swollen throats and mouth sores.

**Another study examined 30 e-cigarette liquids and found that many flavors - including a cotton candy, a bubble gum and a French vanilla - contained aldehydes, a class of chemicals that can cause respiratory irritation, airway constriction and other effects.** The 2015 paper described two flavors, a dark chocolate and a wild cherry, that **would expose vapers to more than twice the recommended workplace safety limit for the aldehydes vanillin and benzaldehyde.** Different brands and even different batches of e-cig liquids can contain different amounts of flavoring chemicals.

"There's no going by the flavor names as to say what's in it," said James Pankow, a chemistry and engineering professor at Oregon's Portland State University, one of the co-authors of the study.

The FDA's proposed rule on e-cigarettes **would restrict sales to young people and prohibit unsubstantiated health claims.** If e-cigs are brought under the FDA's regulatory authority, the agency would have to go through additional rulemaking to set standards on flavorings, FDA spokesman Michael Felberbaum said in an e-mail. The FDA prohibits adding flavorings, other than menthol, in traditional tobacco cigarettes.

Some e-cig companies are doing their own research on flavorings. Nicoventures, the British company, recently proposed a screening process to avoid liquid flavorings that are classified as respiratory allergens, carcinogenic, mutagenic or toxic to reproduction, among other criteria. The company has rejected diacetyl and acetaldehyde as flavorings and avoided developing a flavor that uses cocoa shell extract because of concerns that it might be a respiratory sensitizer, Costigan said in an e-mail. "We wanted to demonstrate that they [flavorings] could be used responsibly even when there are limitations in data," she said. The company says that flavorings benefit public health by helping smokers transition away from combustible tobacco. However, the science isn't settled yet on whether e-cigs help people quit tobacco cigarettes - or get them hooked. **A recent study, for instance, found that ninth-graders who used e-cigs were about 2 1/2 times as likely as their peers to start smoking traditional cigarettes.**

Conley, of the American Vaping Association, says e-cigarettes flavored with watermelon helped him stop smoking five years ago, and he will fight to keep flavorings on the market.

"There's a reason why the gum, patch and lozenge have such pitiful success rates," he said, referring to some common approaches to smoking cessation. "We have to avoid medicinalizing these products [e-cigarettes] and making them bland and boring," he said.

Even if e-cigarette users are exposed to diacetyl, he asserted, the risk of harm is only a fraction of that from smoking tobacco, which causes 480,000 deaths per year in the United States, according to federal data.

Talbot, who conducted the cinnamon flavoring study, said **the problem is that people are now "inhaling a product into their lungs, and we don't currently know what the consequences or long-term health effects of that will be."** While it is true, she said, that e-cigs contain fewer chemicals than the brew of 7,000-plus that are in traditional cigarette smoke, "it would only take one bad one."

- [Washington Post](#)

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## Health Watchdog Group to Challenge E-Cig Manufacturers in Court



<http://time.com/4020141/health-watchdog-group-to-challenge-e-cig-manufacturers-in-court/>

**The watchdog group found cancer-causing chemicals in most of the 97 e-cigarette products it tested**

A health watchdog group will challenge e-cigarette manufacturers in California court over cancer-causing chemicals in their products. The Center for Environmental Health found one or more cancer-causing chemical in the majority of the 97 products tested by its researchers. The findings, which are detailed in a new [report](#) from the group, are the basis of legal action arguing that cigarette manufacturers failed to inform users of their risk under a California consumer protection law.

“Anyone who thinks that vaping is harmless needs to know that our testing unequivocally shows that it’s not safe to vape,” said CEH Executive Director Michael Green in a press release. “Our legal action aims to force the industry to comply with the law and create pressure to end their most abusive practices.”

**Read More:** [4 Weird Health Effects of E-Cigarettes](#)

The watchdog group purchased 97 e-cigarette products from major retailers and online before sending them to a laboratory for testing. Scientists found high levels of either or both formaldehyde and acetaldehyde in 50 of the products.

Recent research has warned of the [health risks](#) of e-cigarettes, though many argue that they are an improvement on cigarettes. Scientists need to conduct additional [research](#) before a full understanding of their effects can emerge.

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September 2, 2015 <http://tinyurl.com/omqx6w3>

## Health Watchdog Finds High Levels of Cancer-Causing Chemicals in the Majority of Nearly 100 E-cigarettes Tested

*Legal action launched to hold e-cigarette makers accountable for failure to warn consumers*

Oakland, CA-The national nonprofit health watchdog Center for Environmental Health (CEH) today announced that the majority of 97 e-cigarettes and other “vaping” products tested produce high levels of the cancer-causing chemicals formaldehyde and acetaldehyde, in violation of California safety standards. The independent lab testing of products from two dozen e-cigarette makers, including RJ Reynolds (Vuse brand e-cigarettes), Imperial Tobacco/ITG Brands (blu brand), NJoy and other major companies found that 90% of the companies had at least one product that produced high levels of one or both chemicals, above the state safety limit. **A test on one e-cigarette found the level of formaldehyde was more than 470 times higher than the California safety standard.**

The CEH report, “*A Smoking Gun: Cancer Causing Chemicals in E-cigarettes,*” outlines the first-ever large sampling of actual e-cigarettes and vaping products tested simulating real-world use of the products, and demonstrating that the majority of e-cigarettes tested pose a serious cancer risk. CEH is initiating legal action against the companies producing the cancer-causing products for failing to warn consumers, as required under California’s strong consumer protection law known as Proposition 65. This follows CEH’s legal action earlier this year against e-cigarette makers for failing to warn consumers about risks from nicotine in e-cigarettes.

“For decades, the tobacco industry mounted a campaign of lies about cigarettes, and now these same companies claim that their e-cigarettes are harmless. Anyone who thinks that vaping is harmless needs to know that our testing unequivocally shows that it’s not safe to vape,” said Michael Green, Executive Director of CEH. “This is especially troubling given the reckless marketing practices of the e-cigarette industry, which targets teens and young people, and deceives the public with unfounded

health and safety claims. Our legal action aims to force the industry to comply with the law and create pressure to end their most abusive practices.”

CEH purchased e-cigarettes, e-liquids, and other vaping products from major retailers including RiteAid, 7-Eleven, and from many online retailers and Bay Area vape shops between February and July 2015. The nonprofit commissioned an independent lab accredited by the American Association for Laboratory Accreditation to test 97 products, including 15 disposable “cigalikes” e-cigarettes, 32 cartridge devices, and 50 refillable devices, for formaldehyde and acetaldehyde. The two chemicals are known to cause cancer and are also linked to genetic damage, birth defects, and reduced fertility. The lab used standard smoking machines that simulate how consumers use the products.

Almost ninety percent of the companies whose products were tested (21 of 24 companies) had one or more products that produced hazardous amounts of one or both of the chemicals, in violation of California law. The testing showed that 21 products produced a level of one of the chemicals at more than ten times the state safety standard, and 7 products produced one of the chemicals at more than 100 times the safety level. While some consumers believe that nicotine-free e-cigarettes are safe, the CEH testing found high levels of the chemicals even in several of these varieties. **For example, one nicotine-free product produced acetaldehyde at more than 13 times the state legal safety threshold and formaldehyde at more than 74 times the threshold. In all, the majority of the products tested (50 of the 97 products) showed high levels of one or both of the cancer-causing chemicals, in excess of the California standards.**

The e-cigarette industry heavily markets their products as safe, even claiming that e-cigarettes produce nothing more than “harmless water vapor.” A 2014 study of e-cigarette websites found companies market the products as healthier (60% of brands) and cleaner (95% of websites) than traditional cigarettes, and make unsubstantiated claims that the products do not produce secondhand smoke (76%) and can be used where smoking is banned or restricted. The study also found ads featuring doctors approving of e-cigarettes (22%). The industry also claims e-cigarettes are safe smoking cessation devices, but experts say e-cigarettes are more likely a gateway to traditional tobacco: a recent study of high schoolers who used e-cigarettes found that they are almost twice as likely as non-users to start smoking traditional cigarettes.

The e-cigarette industry aggressively markets its products to teens and young people, yet the CEH testing exposing the prevalence of cancer-causing chemicals in e-cigarettes means that teen e-cigarette users are not only being exposed to the addictive, brain-altering chemical nicotine but also to what could end up being a lifetime of exposure to potent carcinogens. E-cigarette use is particularly problematic for pregnant teens and young women, since exposure to nicotine and other chemicals during pregnancy can contribute to small babies, premature birth, and stillbirth.

Many of the products CEH purchased were made with bright colors and/or candy or dessert flavors. Nicotine is especially dangerous for young children: A teaspoon of a typical e-liquid contains enough nicotine to be lethal to an adult; smaller amounts would be lethal to a child. Already one death has been attributed to a child accidentally swallowing e-liquid. Nationwide, the number of cases of child poisoning linked to e-liquids jumped to 1,543 in 2013, and almost 4,000 in 2014.

“Parents should know about the dangers of e-cigarettes and young people should be wary of the industry’s deceptive marketing,” said Green. **“We must not stand by while the tobacco industry preys on a new generation of victims. Consumers need to know that the smoke from e-cigarettes is far from harmless vapor, but is in fact a cancer-causing cocktail of toxic chemicals.”**

*The Center for Environmental Health has a nearly 20-year track record of protecting children and families from harmful chemicals in our air, water, food and in dozens of every day products. CEH also works with major industries and leaders in green business to promote healthier alternatives to toxic products and practices. In 2010, the San Francisco Business Times bestowed its annual “Green Champion” award to CEH for its work to improve health and the environment in the Bay Area and beyond.*

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*at a Fighter in Freeheld*

**TIME HEALTH RESEARCH**

#### **4 Weird Health Effects of E-Cigarettes**

Justin Worland @justinworland at a Fighter in Freeheld

May 17, 2015

Elizabeth Renstrom for TIME

**Banana pudding-flavored ecigs disturbed the lungs, one study found** <http://time.com/3860166/ecigs-research/>

E-cigarette research is heating up, and scientists are starting to show that using e-cigarettes can have some surprising health effects, according to new findings presented at the meeting of the American Thoracic Society.

“Millions of people around the world that are puffing e-cigs,” says Peter Dicipinigaitis, professor at Albert Einstein College of Medicine and one of the authors of new e-cigarette research, “but when you look at the scientific literature about the effects of e-cigs, there’s nothing out there.”

Here are some of the newest findings:

#### **Using e-cigarettes suppresses your ability to cough**

Smoking an e-cigarette makes you less likely to cough, even when coughing would benefit your health, according to research by Dicipinigaitis. Researchers asked 30 nonsmokers to puff an e-cigarette 30 times in a 15-minute period. After puffing, people in the study were less sensitive to capsaicin, a component of chili peppers that induces coughing. You might think stopping a cough would be a positive side effect, but coughing keeps you from choking and removes agents that may cause infection, says Dicipinigaitis. He presumes that those the effects would continue throughout the day for someone who uses an e-cigarette frequently.

#### **E-cigarette temperature may affect how many chemicals you’re exposed to**

People tend to think about the effects of cigarette smoke or e-cigarette vapor when they consider how the products harm their health. But the mechanics of e-cigarettes may also contribute to how much smoking harms your health, according to new research from University of Alabama School of Medicine professor Daniel Sullivan. His research found a correlation between coil temperature and the creation of harmful chemicals like acrolein, acetaldehyde and formaldehyde in the e-cigarette. There are no configuration standards for e-cigarettes, and Sullivan’s research suggests that the lack of consistency makes it hard to assess uniformly the health effects of smoking e-cigarettes.

#### **E-cigarette flavors may have different effects**

Researchers tested the effects of flavored e-cigarette liquid on calcium in the lungs and found that not all flavors had the same effect. Five of 13 flavors tested caused changes to calcium signaling in the lungs, according to a study by University of North Carolina at Chapel Hill researcher Temperance Rowell. Hot cinnamon candies, banana pudding and menthol tobacco were among the flavors that disturbed the lungs.

### **Evidence is growing that e-cigarettes probably aren't an effective way to quit smoking**

E-cigarettes are a popular tool people use to stop smoking, but they may not be the best way, suggests one research review. Using e-cigarettes improved the likelihood that a smoker would quit smoking cigarettes for the first month on the new technology, but the effect dissipated at 3 and 6-month followups, according to a meta-analysis of four studies by University of Toronto researcher Riyad al-Lehebi. He recommended that people who want to quit smoking consider "other more well-established options."

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[http://www.nytimes.com/2014/05/04/business/some-e-cigarettes-deliver-a-puff-of-carcinogens.html?\\_r=0](http://www.nytimes.com/2014/05/04/business/some-e-cigarettes-deliver-a-puff-of-carcinogens.html?_r=0)

**Business Day | The New Smoke**

**Some E-Cigarettes Deliver a Puff of Carcinogens**

By [MATT RICHTEL](#) MAY 3, 2014



A study suggests that e-cigarette vapor can contain toxins. Credit Sandy Huffaker for The New York Times

Electronic cigarettes appear to be safer than ordinary cigarettes for one simple — and simply obvious — reason: people don't light up and smoke them.

With the e-cigarettes, there is no burning tobacco to produce myriad new chemicals, including some 60 carcinogens. But new research suggests that, even without a match, some popular **e-cigarettes get so hot that they, too, can produce a handful of the carcinogens found in cigarettes and at similar levels.**

A study to be published this month in the journal **Nicotine and Tobacco Research** found that the high-power e-cigarettes known as tank systems **produce formaldehyde, a known carcinogen**, along with the nicotine-laced vapor that their users inhale. The toxin is formed when liquid nicotine and other e-cigarette ingredients are subjected to high temperatures, according to the study. A second study that is being prepared for submission to the same journal points to similar findings. The long-term effects of inhaling nicotine vapor are unclear, but there is no evidence to date that it causes cancer or heart disease as cigarette smoking does. Indeed, many researchers agree that e-cigarettes will turn out to be much safer than conventional cigarettes, an idea that e-cigarette companies have made much of in their advertising.

#### **The New Smoke**

Articles in this series examine the multibillion-dollar market for e-cigarettes and the consequences for public health.

##### **Part 1**

[A Hot Debate Over E-Cigarettes as a Path to Tobacco, or From It](#) FEB 23, 2014

##### **Part 2**

[E-Cigarettes, by Other Names, Lure Young and Worry Experts](#) MAR 5, 2014

##### **Part 3**

[Selling a Poison by the Barrel: Liquid Nicotine for E-Cigarettes](#) MAR 24, 2014

##### **Part 4**

[Where Vapor Comes Sweeping Down the Plain: E-Cigarettes Take Hold in Oklahoma](#) MAR 27, 2014

##### **Part 6**

August 30, 2015 <http://www.inquisitr.com/2378144/7-reasons-e-cigarettes-are-bad/>

## 7 Reasons E-Cigarettes Are Bad

Dieter Holger

E-cigarettes, also known as electronic cigarettes, have become a popular alternative to smoking the real deal, but the pros and cons of turning to this futuristic alternative are still under debate. Are e-cigarettes really any better than smoking a cigarette? Here are seven reasons e-cigarettes pose dangers to our health.

### **The effects of e-cigarettes are nowhere near as well-documented as cigarettes.**

The e-cigarette industry is already worth billions of dollars, but there is nowhere near as much information on e-cigarettes as tobacco products. This should raise alarms, as the tobacco industry lived under a veil of scientific obscurity for decades until the detrimental health effects of cigarettes became well-known. Many people think e-cigarettes are a safer alternative, but that belief remains scientifically unproven, and evidence continues to come out saying e-cigarettes have toxic effects.

### **E-cigarettes contain plenty of cancerous chemicals.**

By smoking e-cigarette vapor, people hope to avoid the cancerous chemicals inhaled from burning tobacco. Yet, e-cigarettes carry their fair share of toxic chemicals, too. Here's a summary from the American Lung Association. "In 2009, the FDA conducted lab tests and found detectable levels of toxic cancer-causing chemicals, including an ingredient used in antifreeze, in two leading brands of e-cigarettes and 18 various cartridges. A 2014 study found that e-cigarettes with a higher voltage level have higher amounts of formaldehyde, a carcinogen. It is urgent for FDA to begin its regulatory oversight of e-cigarettes, which would require ingredient disclosure to FDA, warning labels and youth access restrictions."

Also, a 2013 study from the German Cancer Institute detected 8 different toxic chemicals in various e-cigarette liquids. And because the e-cigarette industry remains largely unregulated, the chemicals found in e-cigarettes aren't uniform across the market. Some products may be less toxic than others, but without enough research or regulation it's hard to know.

### **E-cigarettes are just as addictive as smoking tobacco.**

E-cigarettes and tobacco products have the same highly addictive drug: nicotine. E-cigarettes derive nicotine from traditional cigarettes, delivering the same drug in a smokeless (vapor) form. In July, Daily Mail reported on a study by the American University of Beirut and the Center for the Study of Tobacco Products which demonstrated e-cigarettes contained highly addictive forms of nicotine. E-cigarettes might not have the same carcinogenic materials as cigarettes (like tar), but its nicotine still fosters addiction.

### **E-cigarettes have negative effects on lungs.**

A supposed benefit of e-cigarettes is inhaling vapor instead of smoke. However, e-cigarette vapor is turning out to have a destructive effect on lungs. A recent July analysis by the University of Athens claimed that "using an e-cigarette caused an instant increase in airway resistance that lasted for 10 minutes." Put simply, smoking e-cigarettes unhealthily constrains your airways.

Additionally, a study published in May by Indiana University showed that even nicotine-free e-cigarette vapor had damaging effects on the endothelial cells of the lungs. Endothelial cells protect the lungs from infections, so damaging them can't be good for your immune system.

### **E-cigarettes won't help you quit.**

A lot of people vape e-cigarettes because they think it will help them kick their addiction. But recent research, including a comprehensive study by UC San Francisco, show that e-cigarettes don't provide any extra help in quitting smoking. After surveying 849 smokers, the researchers found that users of e-cigarettes weren't more likely to quit smoking.

"We found that there was no difference in the rate of quitting between smokers who used an e-cigarette and those who did not," said head researcher Dr. Pamela Ling, a professor at the Center for Tobacco Control Research and Education at UC San Francisco.

### **E-cigarettes might create the equivalent of secondhand smoke.**

Even if you don't smoke, avoiding smokers is good for your health. But the American Lung Association point out e-cigarettes can also create the equivalent of toxic secondhand smoke, secondhand vapor.

"Also unknown is what the potential harm may be to people exposed to secondhand emissions from e-cigarettes. Two initial studies have found formaldehyde, benzene and tobacco-specific nitrosamines (all carcinogens) coming from those secondhand emissions. Other studies have shown that chemicals exhaled by users also contain formaldehyde, acetaldehyde and other potential irritants. While there is a great deal more to learn about these products, it is clear that there is much to be concerned about, especially in the absence of FDA oversight."

### **E-cigarettes could be a gateway into tobacco products for youth.**

The tobacco industry spends millions of dollars advertising to youth, and it turns out e-cigarettes might be helping convince young people to smoke nicotine. Here's a summary of studies from the American Lung Association.

"The American Lung Association is concerned about e-cigarettes becoming a gateway to regular cigarettes, especially in light of the aggressive industry marketing tactics targeted at youth—including the use of candy flavors and the glamorization of e-

cigarette use. Studies are showing a dramatic increase in usage of e-cigarettes, especially among youth. For the first time ever, a national study released in December 2014 found e-cigarette use among teens exceeds traditional cigarette smoking. The study also found that e-cigarette use among 8th and 10th graders was double that of traditional cigarette smoking. CDC studies have also shown e-cigarette use among high school students increased by 61 percent from 2012 to 2013."

Another study, conducted this August by the [University of Southern California](#), found that teenagers who try e-cigarettes are more likely to smoke tobacco. The researchers sampled 2,500 9th graders who had never had smoked a cigarette, finding those who tried vaping e-cigarettes were 23 percent more likely to smoke a tobacco cigarette over those who had never tried an e-cig. On top of that, one-fourth of the surveyed youth who tried e-cigarettes admitted to smoking tobacco cigarettes within the last 6 months.

Read more at <http://www.inquisitr.com/2378144/7-reasons-e-cigarettes-are-bad/#42EXQCyEkVLU8oz.99>

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## E-Cigarettes Won't Help You Quit, Study Finds

But research design was flawed, critic says

<http://consumer.healthday.com/mental-health-information-25/addiction-news-6/e-cigarettes-won-t-help-you-quit-study-finds-686098.html>

**Please note: This article was published more than one year ago. The facts and conclusions presented may have since changed and may no longer be accurate. And "More information" links may no longer work. Questions about personal health should always be referred to a physician or other health care professional.**



By **Steven Reinberg**

*HealthDay Reporter*

MONDAY, March 24, 2014 (HealthDay News) -- Contrary to some advertising claims, electronic cigarettes don't help people quit or cut down on smoking, a new study says.

Users of e-cigarettes inhale vaporized nicotine but not tobacco smoke. The unregulated devices have been marketed as smoking-cessation tools, but studies to date have been inconclusive on that score, the study noted.

"When used by a broad sample of smokers under 'real world' conditions, e-cigarette use did not significantly increase the chances of successfully quitting cigarette smoking," said lead researcher Dr. Pamela Ling, an associate professor at the Center for Tobacco Control Research and Education at University of California, San Francisco.

These findings -- based on nearly 1,000 smokers -- are consistent with other studies and contradict the claims frequently found in e-cigarette advertising, she said.

"Advertising suggesting that e-cigarettes are effective for smoking cessation should be prohibited until such claims are supported by scientific evidence," Ling said.

For the study, Ling's team analyzed data reported by 949 smokers, 88 of whom used e-cigarettes at the start of the study. One year later, 14 percent of the smokers had quit overall, with similar rates in both groups.

"We found that there was no difference in the rate of quitting between smokers who used an e-cigarette and those who did not," Ling said.

There was no relationship between e-cigarette use and quitting, even after taking into account the number of cigarettes smoked per day, how early in the day a smoker had a first cigarette and intention to quit smoking, Ling added.

However, the researchers noted that the small number of e-cigarette users may have limited the ability to find an association between e-cigarette use and quitting.

The report, published online March 24 in *JAMA Internal Medicine*, also found that women, younger adults and people with less education were most likely to use e-cigarettes.

One expert said the study is flawed and shouldn't be taken seriously.

"It's an example of bogus or junk science," said Dr. Michael Siegel, a professor of community health sciences at Boston University School of Public Health.

"That's because the study does not examine the rate of successful smoking cessation among e-cigarette users who want to quit smoking or cut down substantially on the amount that they smoke, and who are using e-cigarettes in an attempt to accomplish this," Siegel said. "Instead, the study examines the percentage of quitting among all smokers who have ever tried e-cigarettes for any reason." Many of the smokers who tried e-cigarettes may have done so out of curiosity, Siegel said.

"It is plausible, in fact, probable, that many of these 88 smokers were not actually interested in quitting or trying to quit with electronic cigarettes," he said. "These products have become very popular and have gained widespread media attention, and it is entirely possible that many of these smokers simply wanted to see what the big fuss is all about."

Calling that a "fatal flaw" in the research, Siegel said it "destroys the validity of the authors' conclusion."

It would be a tragedy, he said, if policy makers use the study to draw conclusions about the effectiveness of e-cigarettes for smoking cessation purposes.



Erika Ford, assistant vice president for national advocacy at the American Lung Association, said the study confirms what is already clear -- "e-cigarettes are not associated with quitting among smokers."

Ford noted that most e-cigarette companies no longer make claims that their products help smokers quit. "But there is a need for the FDA [U.S. Food and Drug Administration] to begin their oversight of these products. It's time for the FDA to find out which products are making no smoking claims and which ones might be in violation of current law," she said.

The FDA plans to introduce regulations for e-cigarettes, but hasn't yet. In the past, the agency has warned companies about making false claims and for poor manufacturing practices.

#### More information

For more information on quitting smoking, visit the [American Cancer Society](#).

SOURCES: Pamela Ling, M.D., M.P.H., associate professor, Center for Tobacco Control Research and Education, University of California, San Francisco; Michael Siegel, M.D., M.P.H., professor, Department of Community Health Sciences, Boston University School of Public Health; Erika Ford, assistant vice president for national advocacy, American Lung Association; March 24, 2014, *JAMA Internal Medicine*, online Last Updated: Mar 24, 2014 Copyright © 2014 [HealthDay](#). All rights reserved.

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## Even Nicotine-Free E-Cig Vapor Damages Lung Cells

May 27, 2015 | by Janet Fang

<http://www.iflscience.com/health-and-medicine/even-nicotine-free-e-cig-vapor-damages-lung-cells>



Photo credit: Oleg Baliuk / shutterstock.com

In the last couple of years, electronic cigarette use has exceeded that of traditional cigarettes among teenagers. And now, a new study shows how e-cigs aren't necessarily great for lung health either: not only is nicotine damaging for the lungs in any form, but even exposure to vapor from e-cigs that don't contain nicotine may have deleterious effects.

E-cig use among middle and high school students tripled between 2013 and 2014, according to new data from the Centers for Disease Control and Prevention and the U.S. Food and Drug Administration. That's two million high school students and nearly half a million middle school students across the country. "In today's rapidly evolving tobacco marketplace, the surge in youth use of novel products like e-cigarettes forces us to confront the reality that the progress we have made in reducing youth cigarette smoking rates is being threatened," the FDA's Mitch Zeller said in a [statement](#) last month.

Cigarette smoke causes the breakdown of lung endothelial cells – the ones that make up the lining of the paired organ – which can lead to various lung injuries and inflammation. The addictive chemical nicotine is just one of hundreds of components in cigarette smoke and researchers are still trying to figure out which of these are causing the injurious loss of lung cell integrity. [Indiana University's Kelly Schweitzer](#) and colleagues wanted to see if nicotine alone is enough to alter the cellular matrix that supports the shape and function of lung cells. They exposed mice, as well as cells from mice and humans, to cigarette smoke extract and to two kinds of e-cig solution: one containing nicotine, the other being nicotine-free. Nicotine's harmful effects depend on the dose, they found, and result in loss of lung endothelial barrier function, acute lung inflammation and decreased lung endothelial cell proliferation. The team observed these effects in cigarette smoke and in e-cig solutions containing nicotine.

Importantly, the nicotine-free e-cig solutions also contained substances that harmed lung cells. For instance, acrolein targets molecules that hold the lung endothelial cells together.

"The increased use of inhaled nicotine via e-cigarettes, especially among the youth, prompts increased research into the effects on health. This research reports that components found in commercially available e-cigarette solutions and vapors generated by heating them may cause lung inflammation," study co-author [Irina Petrache of IU](#) says in a [news release](#). "The effects described characterize short-term effects of e-cig exposures. Whereas studies of long-term effects await further investigations, these results caution that e-cigarette inhalation may be associated with adverse effects on lung health."

The [findings](#) were published in the *American Journal of Physiology – Lung Cellular and Molecular Physiology* this month. [Via [American Physiological Society](#)]