

E-Cigarettes and Policy Changes



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California Youth Advocacy Network (CYAN)

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California Youth Advocacy Network

The California Youth Advocacy Network changes the tobacco use culture in California's high schools, colleges and universities, military installations, and other youth and young adult communities by providing knowledge, skills, and tools to create local change for healthier communities.

CYAN offers the following:

- Technical Assistance
- Trainings
- Statewide Advocacy and Policy Campaigns
- Educational Materials and Publications
- Opportunities for Networking

Presentation Overview

- Overview of e-cigarettes
- Regulation of e-cigarettes
- Use of e-cigarettes
- Summary of science on e-cigarettes
- Discussion on the use of e-cigarettes for cessation
- Policy responses to e-cigarettes
- Concerns about e-cigarettes

Overview of electronic nicotine delivery devices

BACKGROUND



What Are E-Cigarettes?

- Electronic Nicotine Delivery Systems (ENDS), Electronic Smoking Devices, Digital Vapor Cigarette, Vapes, etc.
- ENDS, including electronic cigarettes (e-cigarettes) are novel nicotine delivery devices.
- They do not contain tobacco; however, the nicotine may be derived from tobacco.
- Solution contains 3 main ingredients:
 - Propylene Glycol or Vegetable Glycerin (Humectant)
 - Nicotine
 - Flavor (fruit, candy, tobacco, coffee, bacon, mix and match)

What Do E-Cigarettes Look Like?

- Variety in appearance
- Customizable
- Homemade “mods” with bigger batteries produce more vapor
- Some e-cigarettes are disposable, others are rechargeable/refillable



Sometimes Conventional

May look like regular cigarettes, might come in a “pack” that serves as a storage box and battery charger.



Sometimes Glamorous

Some are decorative, feminine, and unique.



Sometimes Modern

E-cigarettes often do not look like cigarettes.



Sometimes “Stealth”

E-cigarettes have been fashioned to look like other products such as asthma inhalers, beverage containers, and other common products.



Drip Tips

Hollow tube which attaches to e-cigarette and acts as a mouthpiece.

E-liquid is dripped through tube on to atomizer.



E-LIQUID

GREAT TASTE, WITHOUT THE FANCY NAMES.



E-Liquids/ E-Solids

Refill cartridges or drop fluid into drip tips.

Refilling an E-Cigarette



Hookah Pen



- Also called a “Shisha Stick” or “Shisha Vape”
- E-Cigarette made with hookah flavor

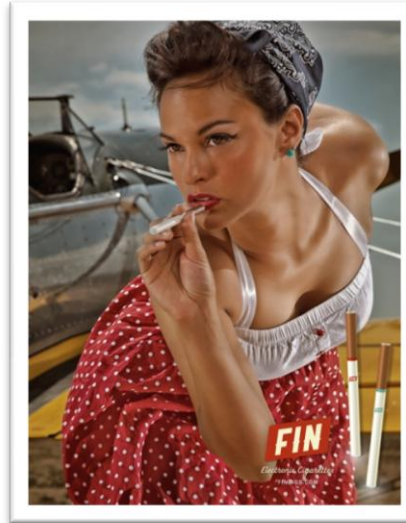
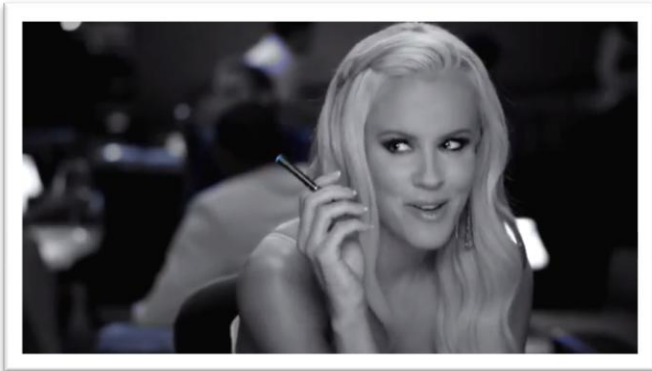
Current status of e-cigarette regulation at the federal level.

E-CIGARETTE REGULATION

Federal Regulation

- In 2010 it was decided that the FDA could not regulate e-cigarettes as drug delivery devices.
- April 2011, the FDA announced plans to regulate e-cigarettes as a tobacco product under the 2009 Family Smoking Prevention and Tobacco Control Act.
- Not currently regulated by the FDA.
 - FDA has announced its intention to regulate ENDS as tobacco products.
 - More information on regulation was expected from the FDA by the end of October 2013.
 - 40 Attorneys General sent a letter to FDA urging them regulate e-cigarettes the same way it regulates tobacco products.

Unrestricted Marketing



E-Cigarette Advertising Online

Review of e-cigarette retail websites (Grana and Ling, 2014)

- 95% of websites made explicit or implicit health-related claim
- 64% had a smoking cessation-related claim
- 76% claim e-cigarettes don't produce secondhand smoke
- 88% state the product can be smoked anywhere
- 73% had youthful appeals including images or claims of modernity

Tobacco Companies and E-Cigarettes

In 2014:

- **Altria** subsidiary acquiring Green Smoke

In 2013:

- **Altria** developed and began selling MarkTen (limited market)
- **British American Tobacco** developed and began selling Vype
- **Imperial Tobacco** acquired Dragonite International

In 2012:

- **Lorillard** bought Blu
- **RJ Reynolds** created Vuse (limited market)
- **Swisher Sweets** developed e-cigarillos (e-swisher)



Growth of E-Cigarettes

Market share projections

The Big 3 tobacco manufacturers — Altria Group Inc., Reynolds American Inc., and Lorillard Inc. — are projected to each hold about a 25 percent market share in the electronic cigarette sector by 2023. Only Lorillard, of the three, currently has national distribution with its blu eCigs product.

▶ Electronic cigarette market share in percent

Manufacturer	2013	2015	2017	2019	2021	2023
Altria Group Inc.	0	5	20	20	25	25
Lorillard Inc.	30	28	25	25	25	25
Reynolds American Inc.	2	15	20	20	25	25

▶ Electronic cigarette revenue (in billions)

Manufacturer	2013	2015	2017	2019	2021	2023
Altria Group Inc.	\$0	\$0.1	\$1.3	\$2.1	\$4.0	\$5.2
Lorillard Inc.	\$0.2	\$0.5	\$1.8	\$2.9	\$4.4	\$5.8
Reynolds American Inc.	\$0	\$0.2	\$1.3	\$2.1	\$4.0	\$5.2

▶ Traditional cigarette revenue (in billions)

Manufacturer	2013	2015	2017	2019	2021	2023
Altria Group Inc.	\$14.9	\$14.8	\$13.1	\$11.6	\$9.5	\$7.4
Lorillard Inc.	\$4.7	\$4.8	\$4.3	\$3.8	\$3.1	\$2.4
Reynolds American Inc.	\$6.4	\$6.1	\$5.4	\$4.8	\$3.9	\$3.1

Source: Wells Fargo Securities

CASSANDRA SHERRILL/JOURNAL

Growth of E-Cigarettes

- Web Searches conducted between 2008-2010 in Australia, Canada, US, UK
 - Compared ENDS searches with Snus, NRT, Chantix, Champix
 - Searches were several hundred-fold greater for ENDS than other products
 - Areas with stronger tobacco laws yielded more ENDS searches
 - 50-75% of searches were for shopping, not information seeking

Use and prevalence of e-cigarettes

USE



Adult Use Estimates

- 2012 National estimates of ENDS:
 - Ever-use prevalence of 11.4% for smokers
 - 2% for former smokers
 - 0.8% for never smokers
- Suggest that in absolute numbers
 - Roughly 5 million smokers and more than 1 million former and never smokers have ever used ENDS

“E-cigarette use is growing rapidly. There is still a lot we don’t know about these products, including whether they will decrease or increase use of traditional cigarettes.”

– CDC Director Tom Frieden, MD, MPH

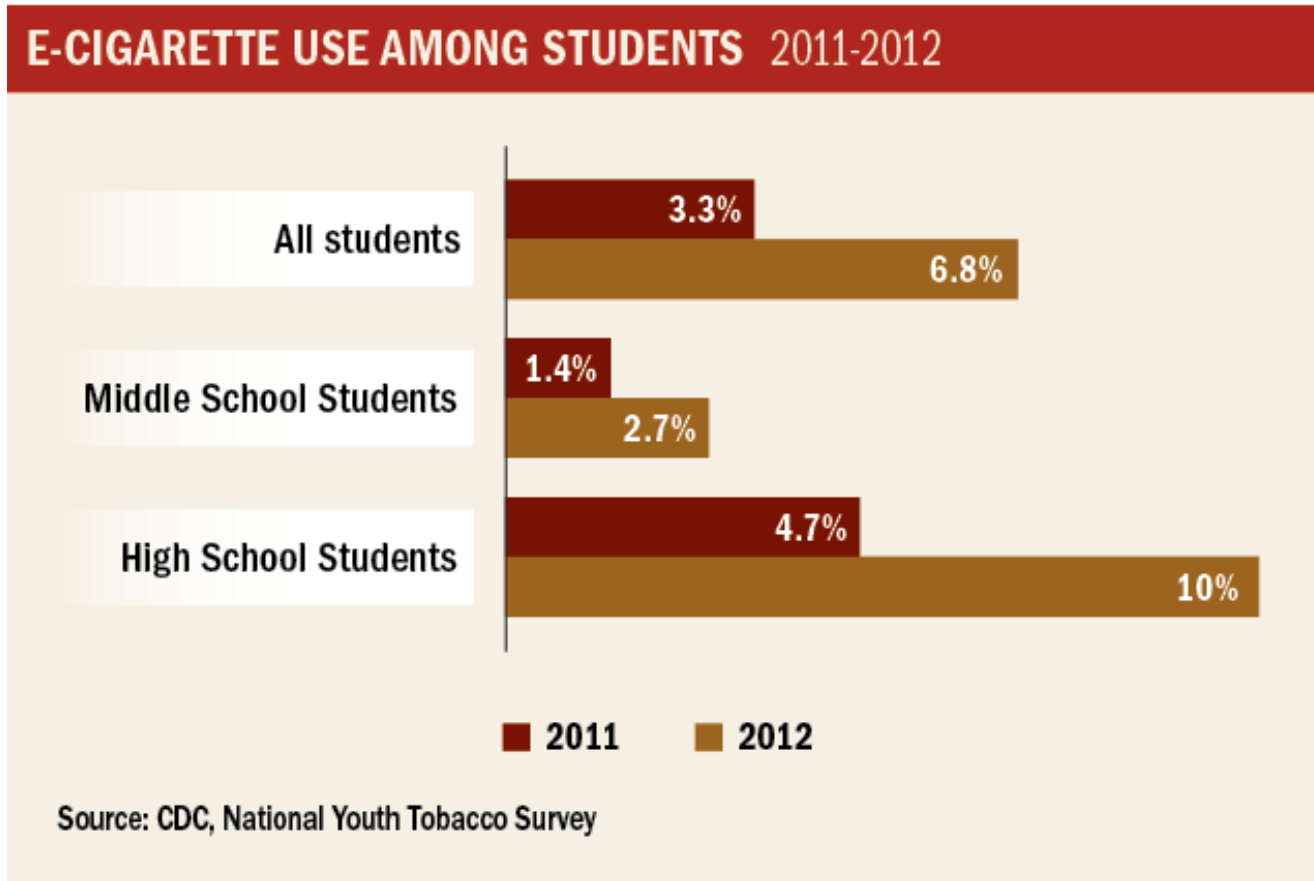
Use of E-Cigarettes

- E-cigarettes are used predominantly by
 - Smokers
 - Smokers considering cessation
 - Former smokers
 - Young Adults
- It is suggested that use is popular among those with a college degree
- 44% of smokers who used an e-cigarette were Millennials (born between 1977 – 1994 per study)
- Of smokers who use e-cigarettes, 56% are male and 44% are female
- Even though few never-smokers use e-cigarettes, the products may bring them closer to smoking conventional cigarettes

Youth E-Cigarette Use Doubled

- During 2011-2012, among US students in grade 6-12
 - **Ever e-cigarette use** increased from 3.3% to 6.8%
 - **Current e-cigarette use** increased from 1.1% to 2.1%
 - **Dual use** of e-cigarettes and conventional cigarettes increased from 0.3% to 0.7%
 - More than 1.78 million middle and high school students reported trying e-cigarettes in 2012.

Youth E-Cigarette Use



Youth E-Cigarette Use

- E-cigarettes as a gateway drug? (Dutra and Glantz, 2014)
 - First analysis of relationship between e-cigarette use and youth smoking
 - Ever e-cigarette use was associated with:
 - higher odds of ever cigarette smoking
 - higher odds of established smoking
 - higher odds of planning to quit smoking among current smokers
 - (among experimenters) less likely to abstain from tobacco cigarettes
 - Conclusions:
 - E-cigarettes may contribute to nicotine addiction and are not likely to discourage tobacco cigarette smoking among youth

Willingness to Try E-Cigarettes

- National sample of 11-19 year old males
- Majority of youth had heard about e-cigarettes, even if they hadn't tried one
- 1 in 5 males were willing to try e-cigarettes
 - Smokers more willing to try e-cigarettes
 - Nonsmokers who had a negative belief about a typical smoker were less willing to try e-cigarettes

A summary of the science on e-cigarettes

RESEARCH

Lack of Standardization

- Consumers do not have reliable information on product quality
 - Poor Quality Control (no manufacturing standards)
 - Technical Flaws (leaking cartridges)
 - Variable Nicotine Delivery (inconsistent dose)
- Also:
 - Unsubstantiated health claims
 - Erroneous nicotine content labeling



May Contain Toxic Contaminants in Fluid and/or Vapor

- Formaldehyde
- Diethylene Glycol
- Nickel
- Chromium
- Cadmium
- Lead
- Fine and Ultrafine Particles
- TSNAs
- VOCs
- Heavy Metals
- Silicate Particles
- Acetaldehyde
- Acrolein
- Benzene
- Isoprene
- Nicotine
- Toulene

* Items in RED: On CA prop 65 list of carcinogens and reproductive toxins

Toxicity

- E-cigarette refill fluids vary greatly in toxicity.
- Researchers found that toxicity in e-cigarettes may be due to the chemicals used to flavor the products.



Commonly Reported Health Effects

- Throat Irritation/ Sore Throat
- Mouth Irritation/ Dry Mouth/ Mouth Ulcers
- Dry Cough
- Dizziness
- Headache
- Nausea
- Allergic Reactions

- Long term health effects are unknown

Health Effects – Secondhand Vaping

- The consumption of e-cigarettes causes emissions of aerosols and VOCs, flavoring substances, and nicotine, into indoor air.
- Overall, the e-cigarette is a new source of VOCs and ultrafine/fine particles in the indoor environment.
- Therefore, the question of “passive vaping” can be answered in the affirmative.
- However, with regard to a health-related evaluation of e-cigarette consumption, the impact of vapor inhalation into the human lung should be of primary concern.

Schripp, T., Markewitz, E., Salthammer, U. (2012). Does e-cigarette consumption cause passive vaping? Indoor Air.

Explosions

Exploding e-cigarette could have killed my dogs and cats, terrified Atlanta woman says



 **Dylan Stableford, Yahoo! News** September 4, 2013 12:19 PM
The Sideshow



LATEST NEWS

Man Loses Teeth and Part of Tongue in Electric Cigarette Explosion

MELISSA NELSON, Associated Press
February 15, 2012 4:07 PM

3-Year-Old Boy Catches Fire When Mom's E-Cigarette Explodes

Sep 24, 2013 | By Ruth Manuel-Logan

 Share 150  Recommend 59  Tweet 44  Email  Share 75

Poisonings

Liquid nicotine can poison kids

8:46 AM, Nov 12, 2012 | 29 comments

Electronic Cigarette Kills Toddler in Israel

Posted on May 29, 2013 by Karin Kloosterman in Cities with 24 Comments

"If you look at the container that the liquid is for the electronic cigarettes, it's in a small, almost looks like an eyedropper container or even some of those candies, have you seen, that you drip into your mouth," said Julie Weber, the Missouri Poison Center Director. "And just 1 milliliter is enough to cause a problem in a young child."

Puppy dies from acute nicotine poisoning after chewing up its owner's E-CIGARETTE

Discussion on the use of e-cigarettes for cessation

CESSATION

E-Cigarettes and Cessation

What We Know

- May reduce the number of conventional cigarettes a person uses (switching).
- People may use both e-cigarettes and conventional cigarettes (dual use).
- People may believe that e-cigarettes are healthier than conventional cigarettes, or completely harmless.
- People may believe e-cigarettes are recommended for cessation, or will help them quit.

E-Cigarettes and Cessation

What We Do Not Know

- More research is needed to determine potential benefits and harms of e-cigarette use.
- The efficacy and safety of these products is unknown.
- Whether “mimicking smoking” may help those trying to quit or may make it more difficult to completely quit is unknown.
- The impact on a person’s ability to successfully quit tobacco is unknown.

E-Cigarettes vs. Conventional Cigarettes

- In 2011, researchers at the University of Geneva in Switzerland assessed e-cigarette user satisfaction, found:
 - 89% of the e-cigarette users they questioned said it was easy to abstain from smoking while using an e-cigarette.
 - 79% feared they would relapse to smoking if they stopped using it

University of Auckland RCT (Lancet)

- Researchers at the University of Auckland, New Zealand studied e-cigarettes for cessation compared with nicotine patch and nicotine-free e-cigarettes



[E-cigarettes show promise in helping smokers quit - The University ...](http://www.auckland.ac.nz/uoa/home/template/news_item.jsp?cid=586888)

www.auckland.ac.nz/uoa/home/template/news_item.jsp?cid=586888

Sep 9, 2013 - The first ever trial to compare e-cigarettes with nicotine patches shows ...
ers to quit. Researchers at The ...

Electronic Cigarettes Help You Quit Smoking As Well As Nicotine Patches: Study

The Huffington Post | By Amanda Chan  
Posted: 09/07/2013 6:01 pm EDT

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E-cigarettes to quit smoking? They're as good as nicotine patches

September 09, 2013 | By Karen Kaplan

University of Auckland RCT

- **The study actually says:**
 - “Achievement of abstinence was substantially lower than we anticipated for the power calculation, thus we had insufficient statistical power to conclude superiority of nicotine e-cigarettes to patches or to placebo e-cigarettes.”
 - No difference in the the 6 month quit rates among the three groups
- Measured “quitting/abstinence” as not using “tobacco cigarettes” (switching)
- May have been biased against the patch
- NRT delivers nicotine with much lower levels of accompanying toxins than e-cigarettes

Helpline Study

- Participants from six state quit lines were invited to take a survey about e-cigarette use between June 2011 and March 2012.
- In a survey of callers, those who reported using e-cigarettes in a 7-month follow up survey were significantly less likely to quit than those who hadn't used e-cigarettes
- 30-day point prevalence quit rates:
 - 21.7% among callers who used on month or longer
 - 16.6% among those who used less than one month
 - 31.4% among never users

Helpline Study

- The most common reported reason for using e-cigarettes was to cut down on or quit traditional tobacco use.
- People may be looking for a new way of quitting.
- The use of these products may suggest that a person is interested in quitting, and may facilitate a conversation on FDA approved cessation pharmacotherapy, and current best practices for cessation.

Alternative Use and Cessation

- National study investigating the frequency of alternative tobacco/nicotine product use (smokeless, snus, dissolvable, e-cigarettes) and association with quit attempts and intentions.
- Results: Use of alternative products was not associated with successful quit attempts.
- Conclusion: Alternative products attract smokers interested in quitting; however, data did not show products promote cessation.

E-Cigarettes and NRT

- People may use e-cigarettes instead of or in conjunction with NRT and other cessation support.
- Unlike NRT, e-cigarettes do not deliver a standardized dose.
- The FDA does not have the authority to approve e-cigarettes as cessation aids unless an e-cigarette is marketed as a cessation product.
- E-cigarettes are not NRT.
- E-cigarettes can not be recommended as a cessation strategy at the present time.
- Mayo Clinic recommends use of nicotine inhaler over e-cigarettes for help in quitting smoking.

How and why communities and schools are responding to e-cigarettes.

POLICY RESPONSES TO E-CIGARETTES

Current Policy Definitions

- Smoke-Free means the use of cigarettes, pipes, cigars, and other “smoke” emanating products are prohibited on all campus grounds.
- Tobacco-Free means the use of cigarettes, pipes, cigars, smokeless tobacco, snus, and other tobacco products are prohibited on campus.
- Electronic cigarettes are not generally covered by 100% smoke or tobacco-free policy unless explicitly stated in the policy.

E-Cigarette Restrictions

Laws and policies prohibiting use of e-cigarettes:

- 3 states – North Dakota, New Jersey, Utah
- States prohibiting use in schools – Arkansas, Colorado, New Hampshire
- States prohibiting use in all state buildings and properties – Delaware, Oregon
- Nationally, 108 jurisdictions prohibit use of e-cigarettes in smoke-free locations (as of January 2014)
 - Over 44 in California prohibit e-cigarette use in certain locations (as of Nov 2013)
 - New ordinances in Los Angeles, Long Beach, Beverly Hills

Sources:

Americans for Nonsmokers' Rights

American Lung Association of California

Impact on Educational Institutions

- Use of e-cigarettes on campus is not prohibited by law.
 - E-cigarettes can be used indoors and outdoors on campuses if campus policy does not include language on e-cigarettes.
- Sale of e-cigarettes on campus is not prohibited by law (college campuses only).
- Policy terms such as “smoke” and “tobacco” do not necessarily include e-cigarettes.

Policy Options for Schools

- Update tobacco use policy to include e-cigarettes
- Broaden policy definitions to include e-cigarettes and other nicotine products not regulated by the FDA for cessation purposes
- Adopt policy specific to e-cigarette
- Classify e-cigarettes as a nuisance or drug paraphernalia

Dialogue on current and potential problems with ENDS

CONCERNS

Concerns

- High-tech image and variety of flavorings may potentially **attract youth and young adults**.
- ENDS could be a **starter/gateway product** for combustible tobacco.
 - Dual use is a dominant pattern among US youth. Swedish study of youth followed into late adolescence found dual use of cigarettes and snus predicted progression to current smoking by age 18.
- May serve as a **dual use product**.
- May **lure former tobacco users** back to nicotine dependence.
- May **delay cessation** among current tobacco users.

WHAT YOUR FAVORITE E-CIG FLAVOR SAYS ABOUT YOU

Sweet or sour, strong or subtle, your e-cig flavor of choice provides a glimpse into your personality. What is your flavor revealing about you?

<p>Confident</p> <p>Swagger</p> <p>You are confident, make bold decisions and know exactly what you want out of any situation.</p>	<p>Carefree</p> <p>Candy Apple</p> <p>You like to have a good time, aren't afraid of what others think about you and live the life of the party.</p>	<p>Easy Going</p> <p>Apple Pie</p> <p>You aren't afraid to let your hair down and relax, you are always down to have a good time with friends and family.</p>
<p>Creative</p> <p>FRESH PINEAPPLE</p> <p>You are creative, innovative and inspirational. You have great people skills and people like to be around you.</p>	<p>Unique</p> <p>Curious George</p> <p>You are intriguing, hesitant to let your guard down and are unique. You march to the beat of your own drum.</p>	<p>Down to Earth</p> <p>Apple Pie</p> <p>You are the master of chill, never lose your cool and are great at managing stress. You can handle just about any situation appropriately.</p>
<p>Fierce</p> <p>BLACK MAMBA</p> <p>You're an intense and complex person with sophisticated tastes. You are also fiercely loyal to those closest to you.</p>	<p>Intriguing</p> <p>Happy Ending</p> <p>You're sweet and mellow on the surface, but once people get to know you, they see that you're actually quite complex.</p>	<p>Classic</p> <p>ESSENCIA</p> <p>You value tradition and tend to see the world in black and white. You have simple tastes, you are uncomplicated and calm.</p>

Visit Peak Pure Vapors at www.peakpurevapors.com for a complete list of flavors.

Concerns

- May enable individuals to **avoid smoking restrictions**.
- **Renormalizes smoking**.
- **False advertising** does not accurately inform consumers.
- Promoted through **youth-dominated channels** such as online social media and social networking sites, as well as on TV and Radio.
- Even if these products are eventually found to be less harmful than combustible cigarettes, they may **still pose a risk to the public's health**.
- It has been reported that people **use these devices to vaporize other drugs** such as marijuana, cocaine, and heroin, or alcohol.





Suggested Reading



Log In | Register

Youth

College

Military

Suggested Reading: Electronic Nicotine Delivery Systems

Also referred to as ENDS, electronic cigarettes, or e-cigarettes

ENDS and Cessation

Although e-cigarette consumption may reduce the number of conventional cigarettes a person uses, the use of these products can not be recommended as a cessation strategy at the present time. The efficacy and safety of ENDS is unknown. Additionally, little is known about their impact on a person's ability to successfully quit tobacco. More research is needed to determine potential benefits and harms of e-cigarette use.

[Effect of an Electronic Nicotine Delivery Device \(e-cigarette\) on Smoking Reduction and Cessation: A Prospective 6-Month Pilot Study \(BMC Public Health, 2011\)](#)

[Electronic cigarettes for smoking cessation: a randomized controlled trial \(The Lancet, 2013\)](#)

[Use of Electronic Cigarettes Among State Tobacco Cessation Quitline Callers \(Nicotine & Tobacco Research, 2013\)](#)

Use of ENDS

E-cigarette use is increasing, especially with youth and young adults. Current smokers of conventional cigarettes try and use e-cigarettes, and dual use of conventional cigarettes and e-cigarettes is often seen. Former smokers and those who have never smoked have been found to initiate e-cigarette use as well. Research on the use of electronic cigarettes is sparse and continues to emerge, but certain trends have been identified including high youth and young adult interest in these products. A recent issue of the CDC Morbidity and Mortality Weekly Report, stated that e-cigarette use among middle and high school students in the US doubled between 2011 and 2012.

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Stanford University

http://tobacco.stanford.edu/tobacco_main/ecigs.php



Tobacco Related Disease Research Program (TRDRP)

<http://www.trdrp.org/ecigarettes.php>

E-Cigarettes: The Vapor This Time?
A Live Webcast Panel
Thursday October 3, 2013
1:00pm - 4:00pm PDT
UCSF Health Sciences West 301



Expert researchers will present the state of the science on electronic cigarettes. A question and answer discussion period will follow presentations.

Jean-Francois Etter, PhD, University of Geneva, Switzerland
 Monique Williams, ABD, University of California Riverside
 Natalie Walker, PhD, University of Auckland, New Zealand
 Prudence Talbot, PhD, University of California Riverside
 Discussant: Stanton Glantz, PhD, University of California San Francisco
 Moderator: Phillip Gardiner, Dr. P.H., TRDRP

Resources

Policy Options

- Tobacco Control Legal Consortium
<http://publichealthlawcenter.org/topics/tobacco-control/product-regulation/e-cigarettes>
- ChangeLab Solutions (California)
<http://changelabsolutions.org/tobacco-control>

Policy Updates

- Americans for Nonsmokers' Rights
www.no-smoke.org
- Center for Tobacco Policy and Organizing
<http://center4tobaccopolicy.org/tobacco-policy/electronic-cigarettes/>




Questions or Comments?

California Youth Advocacy Network page 1 of 2

E-cigarettes

WHAT ARE E-CIGARETTES?
Electronic cigarettes, also called electronic nicotine delivery systems (ENDS), are designed to mimic the size, shape, and use of a conventional cigarette. A battery powers a heater, or atomizer, that vaporizes a solution usually containing nicotine and flavor additives suspended in propylene glycol or glycerin. Many e-cigarettes are rechargeable and users purchase replacement cartridges or refill vials.



KEY POINTS:

- More than 400 e-cigarette brands are available for sale in the U.S.¹
- There have been no national prevalence studies. The Tobacco Vapor Electronic Cigarette Association claims there are 4 million users in the U.S. and an estimated \$1 billion in sales annually.²
- E-cigarette awareness among U.S. adults increased from 16.9% in 2009 to 32.2% in 2010 and ever use quadrupled.³
- The U.S. Food and Drug Administration (FDA) has the authority to regulate e-cigarettes as tobacco products, but has not yet done so.¹
- E-cigarettes may undermine current prevention and cessation efforts by normalizing the action of 'smoking' or 'vaping', triggering relapse and encouraging initiation.
- FDA has not approved e-cigarettes as cessation devices. There are other proven safe and effective methods to quit smoking.¹

WHAT ARE THE RISKS?
There are limited independent published studies on the safety and risks of e-cigarettes. Some studies have indicated that:

- Quality control and labeling of nicotine levels is inaccurate, including detectable nicotine levels in "no nicotine" labeled e-cigarettes.¹
- Exhaled vapor is a mixture of water, propylene glycol and low levels of nicotine, tobacco specific nitrosamines, and other impurities.⁴ In one study, vapor did slightly increase particulate matter levels in indoor air.⁵
- Metal and silicate particles have been found in cartomizer fluid and aerosol.¹²
- One study showed increased short-term airway resistance after use of an e-cigarette.⁶
- Some e-cigarette users refill their own cartridges. Exposure to dangerous concentrations of nicotine through skin contact, inhalation, or ingestion is a possible risk.⁷

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