

ELECTRONIC SMOKING DEVICES: TRENDS AND IMPACTS ON PUBLIC HEALTH

Ellen J. Hahn, PhD, RN, FAAN
Kentucky Center for Smoke-free Policy
University of Kentucky
College of Nursing
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Bridging Research Efforts and Advocacy
Toward Healthy Environments



OBJECTIVES

- 1) Analyze current science on the health effects of electronic smoking devices.
- 2) Describe the prevalence in the use of electronic cigarettes.
- 3) Describe the best way to talk with patients about electronic smoking devices.



NOT AGAIN, BIG TOBACCO!

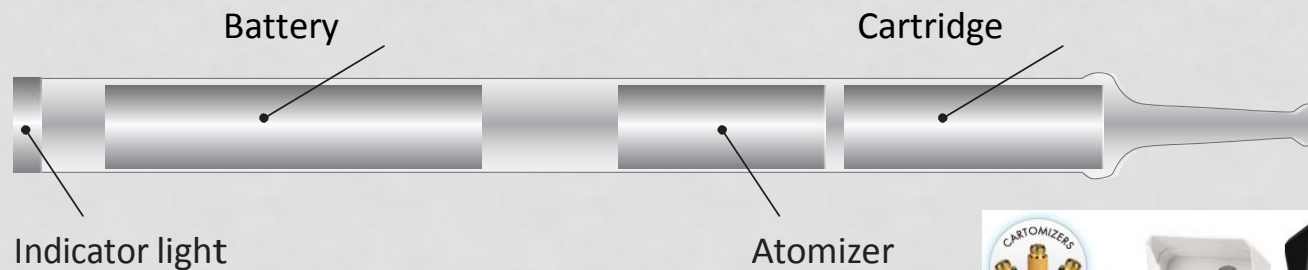
E-Cigarette, the new Cigarette:

- Sold by Tobacco Industry
- Highly Addictive Nicotine
- Toxic & Cancer-Causing Metals & Chemicals
- Secondhand Harm to Others
- Public Use Restricted to Curb



ELECTRONIC CIGARETTES (E-CIGS)

- Cylinder or chamber (tank) with a battery that heats **(over 1,000 degrees Farenheit)** nicotine and other chemicals (e-juice) to produce an aerosol, simulating the visual, sensory, and behavioral aspects of smoking *without* the combustion of tobacco.



THEY MAY NOT BE CALLED E-CIGARETTES

“disposable hookah”

“hookah pen”

“e-hookah”

“vape pipe”

“vape pen”

“mods”

Note. Some e-cigs connect to other electronic devices to play music and answer calls



E- EVERYTHING

- E-Pipes
- E-Cigars
- E-Hookah
- E-?



THE WILD, WILD WEST

- Many 'vape' shops allow the user to custom mix their own solution and use in refillable devices.
- Many different flavor choices (e.g., cotton candy, pina colada, watermelon)



Big Tobacco up to the same tricks

WHY QUIT? SWITCH TO BLU

blu is the smart choice for smokers wanting a change. Take back your freedom to smoke when and where you want without ash or smell. blu is everything you enjoy about smoking and nothing else. Nobody likes a quitter, so make the switch today.

Visit blucigs.com



* New blu Smart Pack

PREMIUM ELECTRONIC CIGARETTE

18+ only. CALIFORNIA PROPOSITION 65 - **Warnings:** This product contains nicotine, a chemical known to the state of California to cause birth defects or other reproductive harm.

Considering all I'd heard, I decided to either quit or smoke True.

I smoke True.

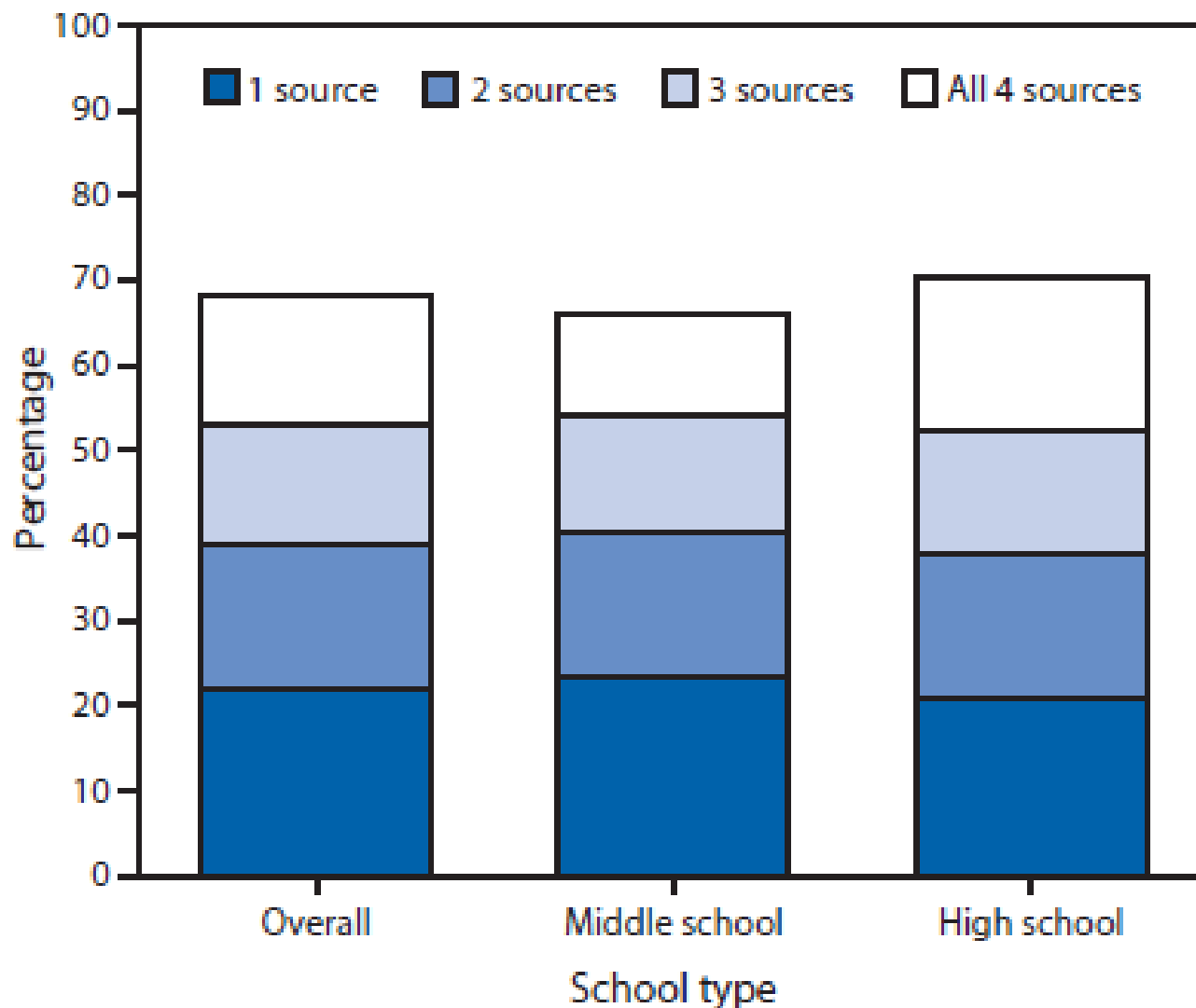


**The low tar, low nicotine cigarette.
Think about it.**

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Kent Regular: 11 mg "tar", 0.9 mg nicotine; 100's: 10 mg "tar", 0.7 mg nicotine; per cigarette by FTC Report Nov. '20.

FIGURE. Proportion of U.S. students exposed to electronic cigarette (e-cigarette) advertisements, by school type and number of exposure sources* — National Youth Tobacco Survey, 2014



* The four sources were retail stores, Internet, TV and movies, and newspapers and magazines.

Big Tobacco Tactics

Common Frames:

“Generally Recognized as Safe (GRAS)” Propylene glycol is GRAS (...for cosmetics and food, but not safe to inhale).

Vaping is no more than breathing water vapor.

- Advertising
- Avoid regulation
- Front groups
- Common opposition frames
- Intimidation



CASAA

THE CONSUMER ADVOCATES FOR SMOKE-FREE ALTERNATIVES ASSOCIATION

E-CIGARETTES ARE A TOBACCO PRODUCT

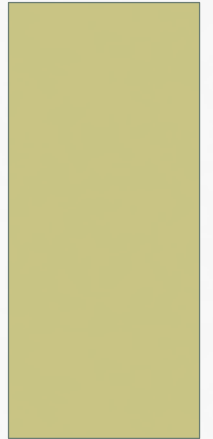
- Sottera Inc. v. Food & Drug Administration, 10-5032, U.S. Court of Appeals, District of Columbia Circuit (Washington)
 - FDA wanted to regulate e-cigarettes as electronic nicotine delivery device, but...
 - Judge ruled in favor of Sottera (maker of N-Joy) that e-cigarettes are a tobacco product.
- E-cigarette industry advocating for less regulation than with other tobacco products.

“What we’re seeing from the e-cigarette companies is disgraceful. They’re working to get another generation of American kids addicted to nicotine.”

Dr. Tom Frieden, Director of CDC
in “E-Cigarette Critics Worry New Ads Will Make ‘Vaping’ Cool For Kids,” *NPR*, March 3, 2014

E-CIG AEROSOL IS NOT SIMPLY 'WATER VAPOR'

VARIABLE LEVELS OF NICOTINE AND OTHER CHEMICALS AND
PRODUCT QUALITY WITHIN AND BETWEEN PRODUCTS MAKES
RESEARCH A CHALLENGE!



E-SMOKING: HEALTH CONCERNS

- E-smoking gives off aerosol, not water vapor. The aerosol contains a mix of **toxic gases and tiny particles**:
 - propylene glycol (lung and eye irritant);
 - formaldehyde and β -nicotyrine (cause cancer);
 - metal & silicate particles (toxic to human cells); and
 - nicotine (addictive; prompts strokes and periodontal disease).
- E-cigs may encourage dual use vs. switching altogether.

E-SMOKING: A DEEPER LOOK

- Lung problems (e.g., lipoid pneumonia, bronchiolitis) from frequent inhalation of glycerin and/or propylene glycol as well as flavorings (e.g., diacetyl)
- No studies have examined the long-term effects of inhaled propylene glycol in humans
- Toxic to cells but varies by brand, within brands, and type of flavoring
- Airborne chemicals, such as volatile organic compounds and nicotine, as well as fine and ultrafine inhalable liquid particles released into the air by e-cigarettes (passive e-smoking or secondhand aerosol)
- Nicotine, classified by FDA as a pregnancy class D drug, is a teratogen with severe adverse health effects on the developing fetus and the heart!
- Dual use may increase addiction potential, making it more difficult to quit

E-CIGS POLLUTE THE AIR INCREASING HEART & LUNG RISKS

- E-cigs give off tiny particles that can be inhaled deep into the lungs.
 - ***Use of electronic cigarettes (e-cigarettes) impairs indoor air quality and increases FeNO levels of e-cigarette consumers***, Schober et al., 2013.
- The size & number of particles emitted from e-cigs are similar to conventional cigarettes.
 - ***E-Cigarettes: A Scientific Review***, Grana et al., 2014.
- Visible aerosol consists of condensed submicron liquid droplets.
 - ***The Hazards of E-cigarettes***, Offermann, ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) Journal, June 2014
- The e-cig aerosol contains metals and silicate particles.
 - ***Metal and Silicate Particles Including Nanoparticles Are Present in Electronic Cigarette Cartomizer Fluid and Aerosol***, Williams et al., 2013
- Irregular heart beat and high blood pressure.
 - ***E-cigarettes and cardiovascular risk: beyond science and mysticism***, Lippi et al., 2014

SAFETY OF E-CIGS HAS NOT BEEN SCIENTIFICALLY DEMONSTRATED

BENEFITS OF E-CIGS HAVE NOT BEEN
SCIENTIFICALLY PROVEN.

E-CIGS DO NOT HELP PEOPLE QUIT

- E-cig users not more likely to quit smoking than non-users
- Ineffective nicotine delivery after acute administration
- E-cig users calling the quitline in six states were less likely to be tobacco abstinent at seven months compared to those who had never tried e-cigs
- A large national survey of middle and high school students found that teens who used e-cigs were more likely to smoke regular cigarettes than teens who had not used them

E-CIG COMPANIES CANNOT MAKE CESSATION CLAIMS

Sottera Inc. v. Food & Drug Administration, 10- 5032,
U.S. Court of Appeals, District of Columbia Circuit
(Washington)

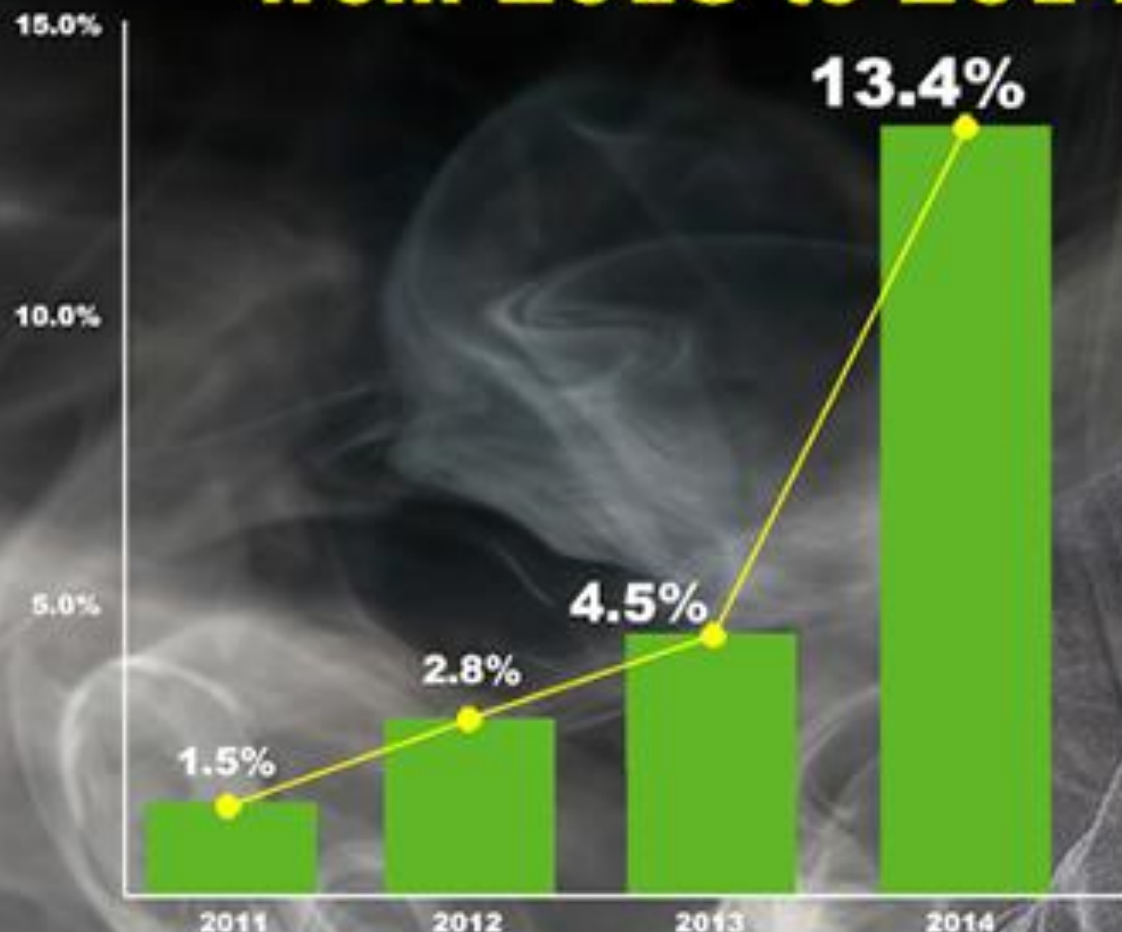
Industry uses citizens and retailers to make claims they
can't legally make

Most of those arguments are anecdotal, not science-
based and are made with many caveats

E-CIG USE BY ADULTS, 2010-2013

- The proportion of nonsmokers who tried e-cigarettes jumped from 3% in 2010 to 8% in 2012, but has remained stable between 2012 and 2013.
- In contrast, current smokers who reported ever e-smoking jumped from 9.8% to 36.5% and former cigarette smokers who used e-cigarettes increased from 2.5% to 9.6%.
- 24% of Kentucky adults have ever used e-cigs.

Youth E-Cigarette Use Tripled from 2013 to 2014



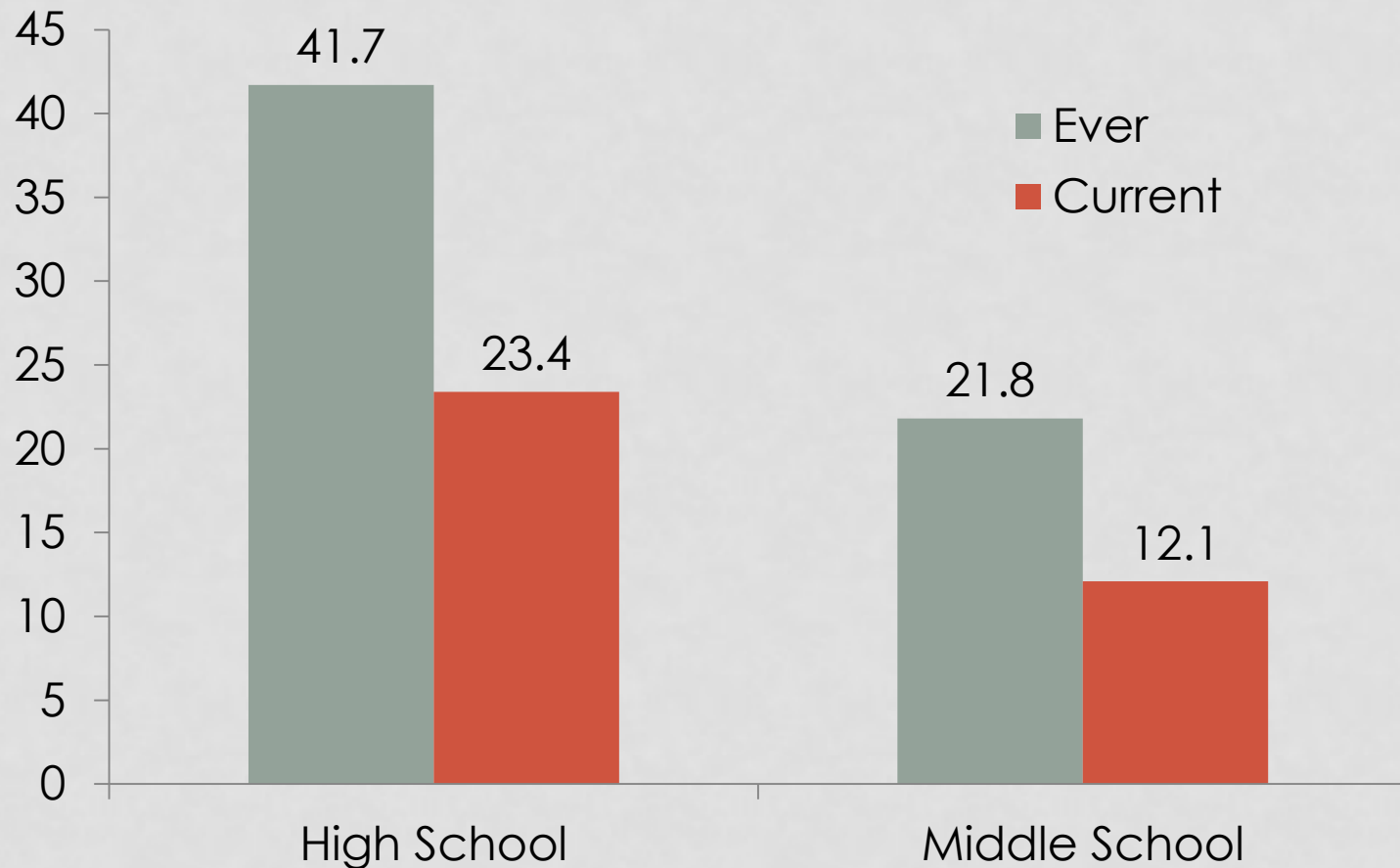
Percentage of High School Students Who Have Used E-Cigarettes in the Past 30 Days
(Source: CDC/PCA National Youth Tobacco Survey)

Our Kids Can't Wait

FDA: Finish the rule to regulate all tobacco products, including e-cigarettes.



E-CIGARETTE USE BY YOUTH IN KY



Youth Risk Behavior Survey, 2015

E-CIGARETTES NEED TO BE REGULATED JUST LIKE TOBACCO SMOKING (ASHRAE & WHO, 2014)



E-CIGARETTES INCLUDED IN THESE 10 SMOKE-FREE ORDINANCES

1. Berea
2. Bardstown
3. Danville
4. Glasgow
5. Lexington-Fayette
6. Manchester
7. Morehead
8. Richmond
9. Versailles
10. Woodford County



HARM REDUCTION?

- Not a safe alternative but some think they may be less harmful than conventional cigarettes
- Nicotine addiction → may lead to conventional smoking
- Majority of e-cig users still use conventional cigarettes. This “dual-use” undermines or eliminates potential health benefits of quitting.

WHAT TO SAY TO PATIENTS

- *“The single best thing you can do for your health is to completely stop using all tobacco products, and I will help you when you are ready.”*
- Medication plus counseling—3 minutes of practical advice can make a difference! USE BEST PRACTICES(see clinical practice guidelines)
- 1-800-QUIT-NOW; www.smokefree.gov; apps and text messaging
- Become a Tobacco Treatment Specialist
<http://attudaccred.org/programs>
- Celebrate every quit attempt
- Share what we know about risks of electronic smoking devices.
- Report adverse events related to ESDs to the FDA:
<http://www.fda.gov/Safety/MedWatch/HowToReport/>.

50 YEARS AFTER THE FIRST SURGEON GENERAL'S REPORT ON SMOKING...

- The same particles and toxic gases in secondhand smoke are also in e-cigarette aerosol.
- These tiny particles and toxic gases cause heart and lung disease, and cancer.
- *“We cannot forget the lessons of the past where modified cigarettes were supposed to be less harmful and instead created greater harm,”* Dr. Leonard Lichtenfeld, deputy chief medical officer, American Cancer Society.
- ***E-cigarettes must be proven to be safe just like any other new product.***

THE BOTTOM LINE

- Most e-smokers still use conventional tobacco, and remain at risk for disease.
 - Electronic cigarettes are not approved as a quit aid by the FDA!
- Youth e-smokers may become addicted and lured into using conventional cigarettes.
 - Keep e-cigarettes out of the hands of minors
- Tax electronic smoking devices at the same rate as conventional cigarettes (devices and e-juice)
- Cover e-cigarettes in all tobacco-free campus policies and smoke-free laws

ASK US!

Kentucky Center for Smoke-free Policy
BREATHE

www.kcsp.uky.edu

kcsp00@lsv.uky.edu

859-323-4587

