SB 2222

Measure Title: RELATING TO FLAVORED TOBACCO PRODUCTS.

Report Title: Flavored Tobacco Products; Tobacco Products; Electronic Smoking Devices; Menthol; Penalties

Description: Prohibits the sale, offering for sale, or distribution of any flavored tobacco product, including menthol products and electronic smoking devices, within the State beginning on January 1, 2015.

Companion: HB1788

Package: Keiki Caucus

Current Referral: CPN/JDL, WAM

Introducer(s): BAKER, Galuteria, Keith-Agaran, Ruderman, Shimabukuro

AMERICAN LUNG ASSOCIATION®

OF THE MOUNTAIN PACIFIC

Serving Alaska, Hawaii, Idaho, Montana, Oregon, Washington and Wyoming

Date: February 10, 2014

To: Senator Rosalyn Baker, Chair
Senator Clayton Hee, Chair
Members, Senate Committee on Commerce and Consumer Protection
Members, Senate Committee on Judiciary and Labor

Re: Support for SB 2222: Relating to flavored tobacco products

The American Lung Association of the Mountain Pacific seeks an end to the health toll tobacco takes on our nation and in Hawaii. If current trends continue, 5.6 million of today's youth under age 18 will die prematurely during adulthood from their smoking. To end the tobacco epidemic, it is imperative that we work to keeping youth from ever starting to use tobacco.

Tobacco industry marketing and promotions cause and continue youth and young adult smoking. Flavored tobacco products appeal to youth; these products come in flavors like grape, chocolate, and strawberry. The use of these products may lead to disfigurement, disability and premature death for our youth. SB 2222 takes a step in the right direction to reduce the appeal of these deadly products.

Data shows that 95% of adult smokers begin smoking before they turn 21, and a substantial number of smokers start even younger. If our youth and young adults can make it to their 21st birthday without becoming addicted to tobacco, we are increasing their chances of living a tobacco-free life and are making Hawaii a healthier place to live.

The mission of the American Lung Association of the Mountain Pacific is to save lives by improving lung health and preventing lung disease. Central to our mission is working to ensure our youth never begin using tobacco. SB 2222 is a good step towards doing just that.

Fighting for Air

Thank you for the opportunity to provide testimony.

Kim Nguyen, MSW
Hawaii Director
American Lung Association of the Mountain Pacific

ALA in Alaska
500 W. Int'l Airport Rd. # A
Anchorage, AK 99518
(907) 276-5864

ALA in Hawaii
810 Richards St., #750
Honolulu, HI 96813
(808) 537-5966

ALA in Idaho
1412 W. Idaho St, #100
Boise, ID 83702-5255
(208) 345-5864

ALA in Montana
3919 Heritage Way
Missoula, MT 59802
(406) 728-0368

ALA in Oregon
7420 SW Bridgeport Rd, #200
Tigard, OR 97224
(503) 924-4094

ALA in Washington
822 John St
Seattle, WA 98109
206-441-5100

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S.B. 2222, RELATING TO FLAVORED TOBACCO PRODUCTS
Senate Committees on Commerce and Consumer Protection and Judiciary and Labor
February 11, 2014; 9:30 a.m.

Mahalo for the opportunity to provide testimony in strong support of S.B. 2222, Relating to Flavored Tobacco Products. This measure will prohibit the sale, offering for sale, or distribution of any flavored tobacco product, including menthol products and electronic smoking devices, within the State beginning on January 1, 2015.

The 2009 Family Smoking Prevention and Tobacco Control Act gave the Food and Drug Administration (FDA) authority to regulate certain tobacco products with the goal of protecting public health. The law provides the FDA with regulatory tools for reducing harm to health from products that cause nicotine addiction and disease. It specifically banned flavored cigarettes, except those containing menthol, which account for about 30 percent of the current U.S. cigarette market and the majority of the cigarette market in Hawaii, particularly among Native Hawaiians.

The Act also created the Tobacco Products Scientific Advisory Committee (TPSAC) and charged it with preparing a report on "the impact of the use of menthol cigarettes on the public health including such use among children, African Americans, Hispanics, and other racial and ethnic minorities." The TPSAC concluded that menthol cigarettes damage public health and recommended that "removal of menthol cigarettes would benefit public health in the United States."

The TPSAC further concluded that menthol cigarettes increase the likelihood of addiction and the degree of addiction in new smokers -- commonly youth and young adults – as well as further harming public health by making it more difficult for smokers trying to quit to do so successfully.

The tobacco industry's predatory tactics to entice youth and young adults with flavored products are well documented. The current marketing practices for electronic smoking devices with their flavored products mirror that of the tobacco industry's predatory tactics with cigarettes and other tobacco products, which results in increased experimentation and higher smoking prevalence.

The reality is that smoking, whether menthol, flavored, non-menthol, or unflavored, adversely affects public health with no public health benefits to either smokers or non-smokers who are exposed to secondhand and third-hand smoke. Moreover, given the tobacco industry's history of lies and deception, we can only assume the same is true for electronic smoking devices until all risks or uncertainties are eliminated.

At the very least, any flavored tobacco product, including menthol products should be prohibited from sale, offering of sale or distribution. Likewise, the sale of ESDs should be prohibited until their potential harms are better understood. This is especially true given the current indicators that infer a causal relationship between the use of ESDs and pneumonia. Therefore, the Queen's Health Systems strongly recommends your support relating to SB 2495.

COALITION FOR A TOBACCO-FREE HAWAI'I

To: The Honorable Rosalyn H. Baker, Chair, Committee on Commerce & Consumer Protection
The Honorable Brian T. Taniguchi, Vice Chair, Committee on Commerce & Consumer Protection

The Honorable Clayton Hee, Chair, Committee on Judiciary & Labor
The Honorable Maile S.L. Shimabukuro, Vice Chair, Committee on Judiciary & Labor

Members, Senate Committee on Commerce & Consumer Protection
Members, Senate Committee on Judiciary & Labor

From: Jessica Yamauchi, Executive Director
Date: February 10, 2014
Hrg: Senate Committee on Commerce and Consumer Protection/Judiciary & Labor; Tues., February 11, 2014 at 9:30 a.m. in Rm 229
Re: **Strong Support for SB 2222, Relating to Flavored Tobacco Products**

Thank you for the opportunity to offer testimony in **strong support** of SB 2222, which prohibits the sale, offering for sale, or distribution of any flavored tobacco product, including menthol products and electronic smoking devices, within the State beginning on January 1, 2015.

The Coalition for a Tobacco Free Hawaii (Coalition) is a program of the Hawaii Public Health Institute working to reduce tobacco use through education, policy and advocacy. Our program consists of over 100 member organizations and 2,000 advocates that work to create a healthy Hawaii through comprehensive tobacco prevention and control efforts.

The Coalition supports prohibiting the sale, offering for sale, or distribution of any flavored tobacco product, including menthol products and electronic smoking devices (ESDs) as a means to decrease youth initiation.

Hawai`i should prohibit the sale and distribution of these products to reduce the impact of the tobacco industry in our communities. 5,600 kids in Hawaii try smoking for the first time each year and 1,400 kids in Hawaii become regular smokers each year.[1] 1,100 people die from tobacco use or exposure in Hawaii each year.[2] Tobacco use is extremely addictive and is not easy to quit. Most smokers who ultimately quit make multiple attempts over months or even years before they succeed in quitting.

Flavored tobacco products, including menthol, target youth.

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[1] Hawaii State Department of Health, Tobacco Prevention and Education Program. (2011). *Data Highlights from the 2011 Hawaii Youth Tobacco Survey (YTS) and Comparisons with Prior Years.* Available at http://health.hawaii.gov/about/files/2013/06/2011_HYTS.pdf

[2] Campaign for Tobacco-Free Kids, *The Toll of Tobacco in Hawaii.* http://www.tobaccofreekids.org/facts_issues/toll_us/hawaii

COALITION FOR A TOBACCO-FREE HAWAI'I

"The ability to attract new smokers and develop them into a young adult franchise is key to brand development."[3] Tobacco companies intentionally market to youth and spend about $24.7 million per year in Hawaii on advertising and promotion. Tobacco companies market traditional chewing tobacco in youth-friendly flavors like cherry and citrus and developed new dissolvable and easily hidden products like sticks, strips, orbs that look mints, breath strips and toothpicks.[4] These are used to encourage youth to experiment with tobacco, hooking them to be addicted, lifelong customers.

Youth commonly use other flavored tobacco products, such as smokeless tobacco and little cigars.

Smokeless tobacco has switched from a product used mainly by older men to one used predominantly by young men, coinciding with the development and marketing of smokeless "starter products" with qualities such as pouches and cherry flavoring. 12.8% of high school boys use smokeless tobacco, a 16.4% increase since 2003.[4]

"Flavored little cigars appeal to youth and the use of these tobacco products may lead to disfigurement, disability, and premature death. We need to take comprehensive steps to reduce all tobacco use for all of our youth," states Tom Frieden, MD, MPH, Director of the Centers for Disease Control and Prevention. Tobacco companies have introduced a growing number of little cigars and cigarillos with sweet flavors, colorful packaging, and cheap prices. More than two out of five middle and high-school students have reported using flavored little cigars/flavored cigarettes. Little cigars are virtually indistinguishable from cigarettes with similar sizes, shapes, filters, and packaging but are taxed at a lower rate at the state level. This has resulted in increased sales of 240% from 1997 to 2007, with flavored brands making up approximately 80% of market share.[5]

By passing SB 2222, we are one step closer to saving an entire generation from starting the deadly addiction of tobacco use.

Thank you for the opportunity to testify on this matter.

Jessica Yamauchi, MA
Executive Director

---

[3] 1999 Philip Morris report, "Five-Year Trends 1988-1992." Bates No. 2044895379-484 <*Tobaccofreekids.org*>

[4] Campaign for Tobacco-Free Kids, "Warning to Parents: How Big Tobacco Targets Kids Today." Available at http://www.tobaccofreekids.org/what_we_do/industry_watch/warning_to_parents/.

[5] CDC (October 2013). More than 40 percent of middle and high schoolers who smoke use flavored little cigars or flavored cigarettes. Press Release.

HAWAII FOOD INDUSTRY ASSOCIATION

Executive Officers:
Stanley Brown, ConAgra Foods - Chairperson
John Schilf, RSM Hawaii - Vice Chair
Derek Kurisu, KTA Superstores - Treasurer
Lisa DeCoito, Aloha Petroleum - Secretary
Lauren Zirbel, Executive Director

1050 Bishop St. PMB 235
Honolulu, HI 96813
Fax : 808-791-0702
Telephone : 808-533-1292

TO:
SENATE COMMITTEES ON COMMERCE AND CONSUMER PROTECTION and JUDICIARY AND LABOR
Senator Rosalyn Baker and Senator Clayton Hee, Chairs
Senator Brian Taniguchi and Senator Maile Shimabukuro, Vice Chairs

FROM: HAWAII FOOD INDUSTRY ASSOCIATION
Lauren Zirbel, Executive Director

DATE: February 11, 2014
TIME: 9:30am
PLACE: Conference Room 229

RE: SB 2222

Position: Opposition

The Hawaii Food Industry Association is comprised of two hundred member companies representing retailers, suppliers, producers and distributors of food and beverage related products in the State of Hawaii.

The federal government already has in place adequate regulations regarding flavored cigarettes. This bill would be in contradiction to the existing federal regulations. Tobacco regulations are handled at the federal level for good reason. Enforcing this type of ban on very specific kinds of a product, which are legal at the federal level would require be a potentially logistically difficult and very expensive process.

This bill unfairly targets and penalizes those who choose to use certain types of products, and the business which serve these customers. This type of unnecessary and obtrusive overregulation is not the right choice for our state.

Please vote no on this measure.

Thank you for the opportunity to testify.

February 10, 2013

TO: Chair Rosalyn Baker and Members of the Senate Committee on Commerce and Consumer Protection
Chair Clayton Hee and Members of the Senate Committee on Judiciary and Labor

FROM: Cigar Association of America, Inc.
(William Goo)

RE: **SB 2222** - Relating to Flavored Tobacco Products
Hearing Date: February 11, 2014
Time: 9:30 a.m.

My name is William Goo. I represent the Cigar Association of America, Inc. (CAA).

CAA opposes SB 2222. To the extent that the intent of this bill focuses on the use of tobacco products by youth, Hawaii law already prohibits the sale or furnishing of tobacco products to minors or its purchase by minors. In addition, the legislature last year implemented procedures regulating the sale of tobacco products by requiring a direct, face-to-face exchange between the retailer and the consumer. The banning of flavored tobacco products and specifically flavored cigars would unfairly affect those consumers who have responsibly chosen to use such products. Furthermore, the Food and Drug Administration (FDA) has banned the sale of flavored cigarettes but not other flavored tobacco products. States may be preempted from taking action to ban flavored tobacco products should the FDA decide to exercise jurisdiction to regulate such products.

Thank you for considering this testimony.

Testimony in Strong Opposition to SB2222

Dear Committee,

The Hawaii Smokers Alliance STRONGLY OPPOSES SB2222 relating to attacks on the e-cigarette market.

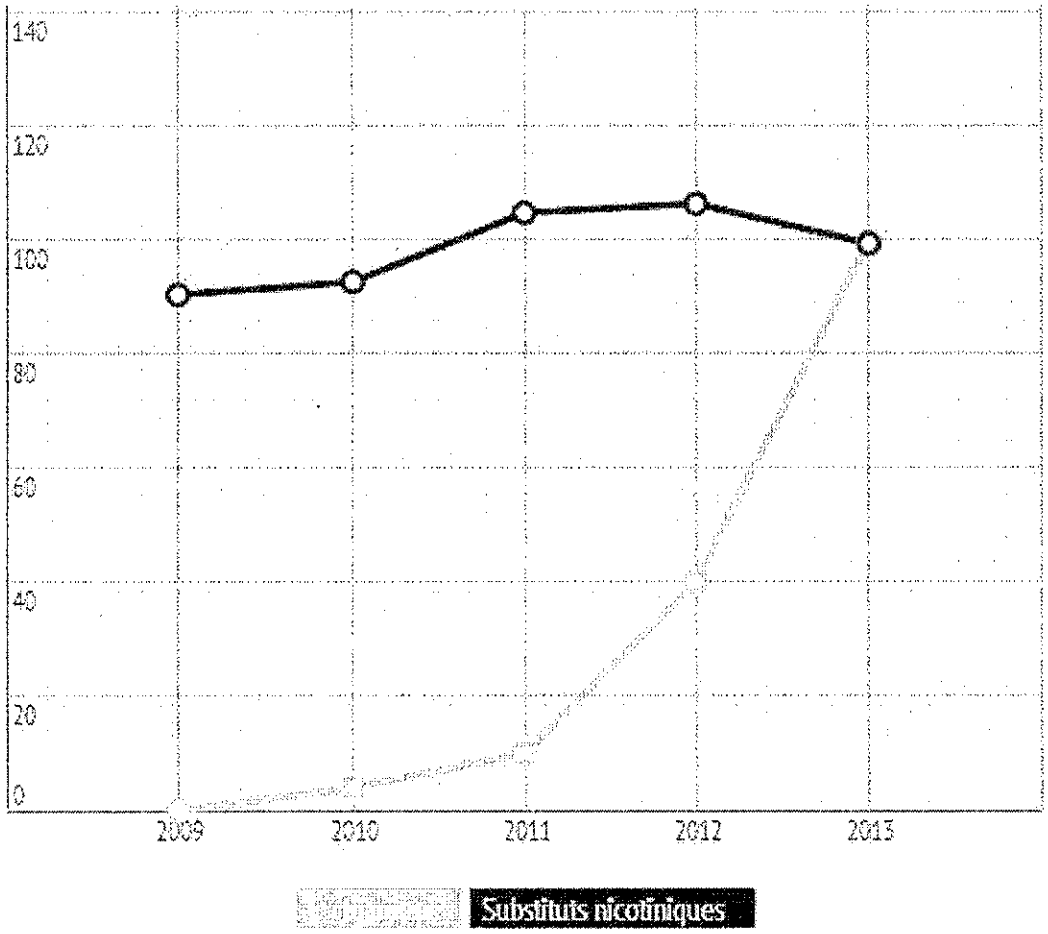
A large number of anti-e-cig. bills are currently being pushed at this legislature, many states on the mainland, and overseas. As the old saying goes, if you want to find out the truth about something – follow the money.

At first it was a little surprising to see the ant-smoking lobby oppose these products that are a safe alternative to tobacco products.

Dr. Carmona, the Former Surgeon General from 2002-2006 recently made this statement. "I believe that it is essential that we provide adult smokers with high-quality, innovative alternatives to traditional cigarettes. The current data indicate that electronic cigarettes may have a very meaningful harm reduction potential, and NJOY [e-cigarettes] is committed to the further development of the science in this area. I look forward to working with NJOY in this important capacity."

However all is not well for giant pharmaceutical companies such as GSK/Johnson and Johnson, Pfizer and so on. Their expensive, unenjoyable, and sometimes dangerous NRT products are getting hit hard in sales by e-cigarettes. Let us keep in mind that the lobbyist ring called "Tobacco Free Hawaii" lists Pfizer as a "Major Funder" for their group. Most of the rest came from the settlement and from tax payers via the health dept. Pfizer is the manufacturer of Chantix, which carries a "Black Box Warning" due to significant dangers being found.

"Sophie Ragot, marketing manager at GSK laboratories [which markets J&J NRT products] confirms the latest figures, and adds that the situation of the NRT market in the last quarter alone is even worse. She claims sales in this time frame have dropped by 17% in general and 35% in the case of nicotine patches. The situation is very similar in other European countries as well, and I'm sure NRT sales in the US aren't what they used to be either."
http://vaperanks.com/how-e-cigarettes-are-killing-the-nicotine-patch-market-in-europe/



This graph in millions of Euros shows the point where e-cigarette sales overtook NRT sales in France. Clearly the big pharma companies are pushing the anti-smoking groups they fund to crack down on the e-cigarette competition using legislation. Clearly this bill is an abuse of the free market system and the State legislative process.

Sincerely,

Michael Zehner, Co-chair of the Hawaii Smokers Alliance.

808-952-0275

Hawaiismokersalliance.net

ALOHA
Petroleum, Ltd.

TO: SENATE COMMITTEES ON COMMERCE AND CONSUMER PROTECTION and JUDICIARY AND LABOR
Senator Rosalyn H. Baker and Senator Clayton Hee, Chairs
Senator Brian T. Taniguchi and Senator Maile S.L. Shimabukuro, Vice Chairs

FROM: Richard Parry
President and Chief Executive Officer of Aloha Petroleum, Ltd.

HEARING
DATE: Tuesday, February 11, 2014
TIME: 9:30 a.m.
PLACE: State Capitol, Conference Room 229

RE: Testimony in Opposition to S.B. No. 2222
Relating to Flavored Tobacco Products

Chairs, Vice Chairs, and Members of the Senate Committees on Commerce and Consumer Protection and Judiciary and Labor, I am Richard Parry, President and Chief Executive Officer of Aloha Petroleum, Ltd. ("Aloha Petroleum").

Aloha Petroleum opposes S.B. No. 2222 relating to flavored tobacco products. The federal government already has in place adequate regulations regarding flavored cigarettes and sufficient protections prohibiting the sale of tobacco products to youths. In compliance with existing laws, Aloha Petroleum does not sell any tobacco products to minors and all tobacco products are maintained behind the sales counter where it is not accessible to customers.

This bill is in direct contradiction to existing federal regulations by defining "characterizing flavor" as including menthol. The October 2006 Reynold's Settlement Agreement, which is referred to in the bill's preamble as the impetus for this bill, specifically refers to only fruit, candy, and alcohol flavored cigarettes and notably expressly excludes menthol flavored cigarettes in its definitions.

Tobacco regulations are handled at the federal level for good reason. Enforcing this type of ban on very specific kinds of products, which are legal at the federal level would be a logistically difficult and expensive process. This bill also unfairly targets and penalizes those who choose to use certain types of products, and the business which serve these customers. This type of unnecessary and obtrusive overregulation is not the right choice for our State. In fact, banning the sale of the legal products sought under S.B. No. 2222 will have serious financial implications for locally run businesses like

1132 Bishop Street, Suite 1700 • Honolulu, Hawai'i 96813
PO Box 500 • Honolulu, Hawaii 96809 • Telephone (808) 522-9700 • Facsimile (808) 522-9707
www.alohagas.com

Testimony of
Aloha Petroleum, Ltd.

S.B. No. 2222
Hearing Date:
Feb. 11, 2014

Aloha Petroleum, who will lose millions of dollars in annual sales revenue. In turn, the lost of annual sales revenue by local businesses will result in significantly less taxes and less revenues for our State.

Please vote no on this measure.

Thank you for the opportunity to testify.

February 10, 2014

To: The Honorable Rosalyn H. Baker, Chair
Members, Senate Committee on Commerce and Consumer Protection
The Honorable Clayton Hee, Chair
Members, Senate Committee on Judiciary and Labor

From: Cory Smith, VOLCANO Fine Electronic Cigarettes®
CEO and Owner

RE: SB2222 – oppose.

Thank you for the opportunity to submit testimony.

VOLCANO Fine Electronic Cigarettes® is the largest manufacturer and retailer of vapor products (commonly referred to as "electronic cigarettes") and vaping accessories here in the State of Hawaii and is widely considered one of the fastest growing companies in the state. We currently own and operate 11 locations statewide and employ over 100 full-time workers to support sales of our products not only here in Hawaii, but to all 50 states as well as Japan and the UK. We stand in opposition to SB2222 for the following:

- SB2222 would decimate the Hawaiian electronic cigarette industry by banning the sale of <u>all</u> electronic cigarette liquids and cartridges. **Every electronic cigarette available on the worldwide market is "flavored."** Because they do not contain tobacco, electronic cigarettes have no "natural tobacco" taste, or any taste for that matter, without the addition of flavorings. Even electronic cigarettes advertised as coming in "tobacco flavor" are actually just the result of the blending of several different flavorings such as vanilla, caramel and nut flavors in an attempt to mimic the flavor of tobacco. To use the language of the proposed statute, every electronic cigarette imparts to the user a "distinguishable or distinctive" aroma or taste other than tobacco. As a result, **SB2222 will act as a de facto ban of the manufacture and sale of all electronic cigarettes.**

- Even if SB2222 permitted the sale of electronic cigarettes flavored to taste like tobacco, its enactment would still ban the manufacture and sale of the vast majority of our products. This would present more than just a competitive disadvantage for local suppliers and retailers. **It would be a death knell for this industry in Hawaii.** Local consumers will either flavor liquids themselves or purchase from out of state, causing a loss of jobs and tax revenues for the state. Similarly, we will be forced to close our stores and move all or most of our business and manufacturing operations to the mainland, taking with us jobs and tax revenue that has grown

every year since our founding.

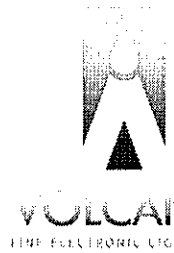
- Enactment of SB2222 will deal a similar fate to our competitors in the electronic cigarette industry. **Between them these businesses have likely created 100 jobs in Hawaii.** All or more of these jobs will be lost as a result of this legislation. Additionally, convenience stores and other businesses that sell electronic cigarettes will feel the impact of consumers purchasing products from the mainland.

- The baseless claims that electronic cigarettes flavors are made to attract children must be weighed against the significant evidence that electronic cigarette flavors are very popular with adult users.[1] The International Journal of Environmental Research and Public Research recently published the most expansive survey performed on the subject. We urge you to read the full text of this study, which we have attached to our testimony. Below are some highlights
    - Researchers conducted an Internet survey of over 4,500 adult electronic cigarette consumers. The participants' average age was 40 years old. The vast majority (90%) of those surveyed were ex-smokers, with the average respondent having been cigarette-free for approximately one year.
    - **Among the survey respondents, the most commonly used flavors were fruits, followed by sweets and tobacco.**
    - Those electronic cigarette users who were still smoking ("dual users") were actually *more* likely to use tobacco flavors than those vapers who had quit smoking.
    - On a scale of 1-5, the average score given by the respondents for the importance of flavor variability in reducing or quitting smoking was 4 ("very important").
    - **Almost 50% of the respondents answered that a lack of flavor availability would increase their cravings for tobacco cigarettes and would decrease their chances of remaining abstinent from smoking.**

- Banning the sale and manufacturing of flavored electronic cigarette liquid would only encourage consumers to experiment with making liquids in their own home. It is widely known that electronic cigarette liquid flavors are created using the same food grade flavorants that can be found in supermarkets and food supply stores nationwide. However, the process for our electronic cigarette liquid manufacturing is governed by strict quality control procedures that cannot be replicated by average consumers.

- The use of flavorings in electronic cigarette liquids is one of the driving factors in helping to

[1] We have attached several articles that examine the truths about youth usage of electronic cigarettes. As the articles indicate, the evidence indicates that almost all youth who experiment with electronic cigarettes do not go on to become regular users. These experimentation rates pale in comparison to the rates of youth usage of alcohol, marijuana, and tobacco products.



prevent former smokers who switch to e-cigarettes from going back to traditional cigarettes. Most users report that after switching to electronic cigarettes and experiencing the pleasant tastes one can enjoy with an electronic cigarette, they no longer find the taste of traditional tobacco cigarettes appealing.

- The U.S. Food & Drug Administration (FDA) has announced its intention to soon issue proposed regulations governing the electronic cigarette industry for public comment. Informing these and future regulations will be studies conducted under the umbrella of the FDA's Tobacco Centers of Regulatory Science, an ongoing program at the FDA that will spend approximately $270 million to research tobacco products and electronic cigarettes over the next five years. Flavors in electronic cigarettes is an issue the FDA has indicated it plans to study and possibly issue regulations with regard to. The Legislature should wait until more evidence is available rather than risk rushing to judgment.

- The text of SB2222 justifies the flavor prohibition by referencing how "tobacco industry" documents have revealed that tobacco companies have used flavors in the past in a concerted effort to market their products to children. SB2222 contains no corresponding finding of wrongdoing by those in the electronic cigarette industry. **We are a responsible manufacturer, distributor and retailer of smoke-free, tobacco-free products that have helped thousands of Hawaii citizens transition away from combustible cigarettes.** We resent having our moral character questioned and our business threatened on the basis of the actions of those in a radically different industry.

- **Enactment of this bill will actually benefit Big Tobacco by eliminating their competition.** Wall Street analysts credit electronic cigarettes -- not government intervention or nicotine replacement therapy -- with causing cigarette sales to experience larger than forecasted declines in the U.S. and Europe. Regardless of the good intentions involved, every step taken to reduce adult access to electronic cigarettes is really a step towards protecting cigarette markets.

Thank you for your time and consideration. If you have any questions, please feel free to contact me or Volcano's representative Celeste Nip at nipfire@me.com.

Sincerely,
Cory Smith
CEO and Owner
VOLCANO Fine Electronic Cigarettes®

1003 Sand Island Access Rd. Suite #1260, Honolulu, HI 96813

VOLCANO

If adults don't like flavors, why is GlaxoSmithKline's nicotine gum not sold without flavors?

VOLCANO

Pictured: Flavored products (coffee creamer, liquor, and nicotine gum) that will not be banned by SB2222.

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Article

Impact of Flavour Variability on Electronic Cigarette Use Experience: An Internet Survey

Konstantinos E. Farsalinos [1,*], Giorgio Romagna [2], Dimitris Tsiapras [1], Stamatis Kyrzopoulos [1], Alketa Spyrou [1] and Vassilis Voudris [1]

[1] Onassis Cardiac Surgery Center, Sygrou 356, Kallithea 17674, Greece; E-Mails: dtsiapras@hotmail.com (D.T.); stkyrz@gmail.com (S.K.); aspirou@gmail.com (A.S.); vvoudris@otenet.gr (V.V.)

[2] ABICH S.r.l, Biological and Chemical Toxicology Research Laboratory, Via 42 Martiri, 213/B-28924 Verbania (VB), Italy; E-Mail: giorgio.romagna@gmail.com

* Author to whom correspondence should be addressed; E-Mail: kfarsalinos@gmail.com; Tel.: +306-977-454-837; Fax: +302-109-493-373.

Received: 19 November 2013; in revised form: 11 December 2013 / Accepted: 12 December 2013 / Published: 17 December 2013

Abstract: *Background:* A major characteristic of the electronic cigarette (EC) market is the availability of a large number of different flavours. This has been criticised by the public health authorities, some of whom believe that diverse flavours will attract young users and that ECs are a gateway to smoking. At the same time, several reports in the news media mention that the main purpose of flavour marketing is to attract youngsters. The importance of flavourings and their patterns of use by EC consumers have not been adequately evaluated, therefore, the purpose of this survey was to examine and understand the impact of flavourings in the EC experience of dedicated users. *Methods:* A questionnaire was prepared and uploaded in an online survey tool. EC users were asked to participate irrespective of their current smoking status. Participants were divided according to their smoking status at the time of participation in two subgroups: former smokers and current smokers. *Results:* In total, 4,618 participants were included in the analysis, with 4,515 reporting current smoking status. The vast majority (91.1%) were former smokers, while current smokers had reduced smoking consumption from 20 to 4 cigarettes per day. Both subgroups had a median smoking history of 22 years and had been using ECs for 12 months. On average they were using three different types of liquid flavours on a regular basis, with former smokers switching between flavours more

frequently compared to current smokers; 69.2% of the former subgroup reported doing so on a daily basis or within the day. Fruit flavours were more popular at the time of participation, while tobacco flavours were more popular at initiation of EC use. On a scale from 1 (not at all important) to 5 (extremely important) participants answered that variability of flavours was "very important" (score = 4) in their effort to reduce or quit smoking. The majority reported that restricting variability will make ECs less enjoyable and more boring, while 48.5% mentioned that it would increase craving for cigarettes and 39.7% said that it would have been less likely for them to reduce or quit smoking. The number of flavours used was independently associated with smoking cessation. *Conclusions:* The results of this survey of dedicated users indicate that flavours are marketed in order to satisfy vapers' demand. They appear to contribute to both perceived pleasure and the effort to reduce cigarette consumption or quit smoking. Due to the fact that adoption of ECs by youngsters is currently minimal, it seems that implementing regulatory restrictions to flavours could cause harm to current vapers while no public health benefits would be observed in youngsters. Therefore, flavours variability should be maintained; any potential future risk for youngsters being attracted to ECs can be sufficiently minimized by strictly prohibiting EC sales in this population group.

Keywords: electronic cigarette; flavours; smoking; tobacco; nicotine; smoking cessation; public health

1. Introduction

Cigarette smoking is considered the single most preventable cause of disease, affecting several systems in the human body and causing premature death [1]. The World Health Organisation predicts more than 1 billion deaths within the 21st century related to tobacco cigarettes [2]. Although there is overwhelming evidence for the benefits of smoking cessation [3], it is a very difficult addiction to break. Currently available nicotine replacement therapy have low long-term success rate, which may be attributed solely to psychological support [4], while oral medications are more effective [5] but are hindered by reports of adverse neuropsychiatric effects [6]. In this context, the tobacco harm reduction strategy has been developed, with a goal of providing nicotine through alternative methods in order to reduce the amount of harmful substances obtained by the user [7].

Electronic cigarettes (ECs) have been marketed in recent years as alternative to smoking products. They consist mainly of a battery and an atomiser where liquid is stored and gets evaporated by energy supplied to an electrical resistance. The liquid contains mainly propylene glycol and glycerol, with the option to include nicotine. A major characteristic of the EC liquid market is the availability of a variety of flavourings. Besides tobacco-like flavours, the consumer can choose flavours consisting of fruits, sweets, drinks and beverages and many more. The availability of so many flavours has been criticized by authorities such as the Food and Drug Administration (FDA), stating that there is a potential to attract youngsters [8]. Such a concern was probably raised by the experience with tobacco products, with studies showing that flavoured cigarettes were more appealing to young users [9]. A recent survey

of electronic cigarette users found that almost half of participants were using non-tobacco flavours [10]. However, no survey was specifically designed to detect the impact of flavourings on EC experience by users. Therefore, the purpose of this survey was to evaluate the patterns of flavourings use and determine their popularity in a sample of dedicated adult EC users.

2. Methods

A questionnaire was prepared by the research team in two languages (English and Greek) and was uploaded in an online survey tool (www.surveymonkey.com). A brief presentation of the survey was uploaded in the website of a non-profit EC advocates group (www.ecigarette-research.com) together with informed consents in English and Greek. If the participant agreed with the informed consent, he was redirected to the questionnaire in the respective language by pressing the "I agree" button. The survey was available online for 15 days. The protocol was approved by the ethics committee of our institution.

EC users of any age, irrespective of current or previous smoking status, were asked to participate to the survey. The survey was communicated in internet social media and several EC users' forums and advocate groups worldwide. The IP address of the participants was recorded in order to remove double entries. There was an option for participants to report their email address for participation in future projects; unwillingness to report the email address was not a criterion for exclusion from the survey. Information about age, gender, country of residence and education level was requested. Past and present smoking status was asked and, based on the latter, participants were divided into two groups for the analysis: former smokers who had completely quit smoking and smokers who were still smoking after initiation of EC use. The questionnaire included questions about the type of flavours used regularly by the participants, whether the variety of flavourings was important in reducing or completely substituting smoking and defining the reasons for using multiple flavours. To assess difficulty in finding flavours of their preference at EC use initiation, the following question was asked: "Was it difficult to find the flavourings of your preference at initiation of EC use?". The answers were scored as: 1, "not at all difficult"; 2, "slightly difficult"; 3, "difficult"; 4, "very difficult"; and 5, "extremely difficult". To examine the importance of flavours variability in reducing or quitting smoking, the following question was asked: "Was the variability of flavourings important in your effort to reduce or completely substitute smoking?". The answer was scored as: 1, "not at all important"; 2, "slightly important"; 3, "important"; 4, "very important"; and 5, "extremely important".

3. Statistical Analysis

Participants were categorised into current smokers and former-smokers according to their reported status at the time of participation to the survey. Results are reported for the whole sample and for each of the subgroups. The sample size varied by variable because of missing data. In some questions, responders were allowed to choose more than one option; in these cases, each answer is presented separately and the sum of responses may exceed 100%. Kolmogorov-Smirnoff tests were performed to assess normality of distribution of variables. Continuous variables are reported as median (interquartile range [IQR]). Categorical variables are reported as number (percentage). Mann Whitney U test was used to compare continuous variables between current and former smokers, while cross tabulations with χ^2 test were used for categorical variables. Finally, a stepwise binary logistic regression analysis

was performed, with smoking status (former *vs.* current smoker) as the independent variable and age, gender, education level, smoking duration, number of flavourings used regularly, and EC consumption (ml liquid or number of prefilled cartomisers) as covariates. A two-tailed P value of <0.05 was considered statistically significant, and all analyses were performed with commercially available statistical software (SPSS v. 18, Chicago, IL, USA).

4. Results

4.1. Baseline Characteristics

After excluding double entries, 4,618 participants were included to the analysis, with 4,515 reporting current smoking status (current *vs.* former smokers). The baseline characteristics of the study group and subgroups are displayed in Table 1. More than 90% were former smokers. The mean age was 40 years, with male predominance. No difference between former and current smokers was observed in age, while more males were former smokers. The vast majority were from America and Europe, with a small proportion residing in Asia and Australia. More than half of participants were educated to the level of university/college. Smoking duration was similar between subgroups. Interestingly, former smokers reported higher daily cigarette consumption before initiation of EC use, although the difference was not statistically significant. Current smokers reported a substantial reduction in cigarette consumption, from 20 to 4 cigarettes per day. The median duration of EC use was 12 months, with higher consumption (ml liquid or number of cartridges) reported by former smokers. Higher nicotine concentration liquids were used by current smokers ($P = 0.005$). In total, 140 participants (3.0%) reported using non-nicotine liquids, 2.8% of former and 1% of current smokers ($\chi^2 = 4.5$, $P = 0.033$); 21 users of non-nicotine liquids did not mention their current smoking status. Finally, more current smokers were using first (cigarette-like) and second generation (eGo-type) devices while more former smokers were using third generation devices (also called "Mods", variable voltage or wattage devices).

4.2. Perceptions in Relation to Flavours

Responses to questions related to flavours are displayed in Table 2. At the time of participation, most commonly used flavours were fruits, followed by sweets and tobacco. Significant differences were observed between subgroups. Characteristically, more current smokers were using tobacco flavours compared to former smokers, while more of the latter were using fruit and sweet flavours. On a regular basis, participants reported using 3 (IQR: 2–4) different types of flavours. At initiation of EC use, most popular flavours were tobacco followed by fruit and sweet flavours. The median score for difficulty to find the flavours of their preference at EC initiation was 2 (IQR: 1–3), with no difference between subgroups. Most participants (68.3%) were switching between flavours on a daily basis or within the day, with former smokers switching more frequently. More than half of the study sample mentioned that they like the variety of flavours and that the taste gets blunt from long-term use of the same flavour. The average score for importance of flavours variability in reducing or quitting smoking was 4 ("very important"). Finally, the majority of participants stated that restricting variability of flavours would make the EC experience less enjoyable while almost half of them answered that it

would increase craving for tobacco cigarettes and would make reducing or completely substituting smoking less likely.

Table 1. Baseline characteristics of the study population and subgroups.

Characteristic	Total	Former Smokers	Current Smokers	Statistic	*P*
Participants, n (%)	4,618	4,117 (91.2)	398 (8.8)		
English translation	4,386 (95.0)	3,915 (95.1)	369 (92.7)		
Greek translation	232 (5.0)	202 (4.9)	29 (7.3)		
Region of residence, n (%)					
America	2,220 (48.5)	2,007 (48.7)	157 (39.4)		
Asia	76 (1.7)	58 (1.4)	16 (4.0)		
Australia	80 (1.7)	75 (1.8)	4 (1.0)		
Europe	2,197 (48.0)	1,939 (47.1)	217 (54.5)		
Education, n (%)					
High school or less	1,037 (22.7)	917 (22.3)	98 (24.6)		
Technical Education	1,099 (24.1)	993 (24.1)	86 (21.6)		
University/College	2,425 (53.2)	2,170 (52.7)	206 (51.8)		
Age (years)	40 (32–49)	40 (32–49)	40 (32–49)	U = 754,278	0.624
Gender (male)	3,229 (71.8)	2,922 (72.7)	246 (62.5)	$\chi^2 = 18.0$	<0.001
Smoking duration (years)	22 (15–30)	22 (15–30)	22 (14–30)	U = 816,534	0.924
Cigarette consumption before EC use (/d)	24 (20–30)	25 (20–30)	20 (19–30)	U = 768,398	0.189
Cigarettes consumption after EC use (/d)			4 (2–6)		
EC use duration (months)	12 (6–23)	12 (6–23)	12 (5–23)	U = 790,219	0.373
EC consumption (ml or cartridges/d)	4 (3–5)	4 (3–5)	3 (2–5)	U = 677,862	<0.001
Nicotine levels in EC (mg/ml)	12 (6–18)	12 (6–18)	12 (8–18)	U = 722,563	0.005
EC devices used, n (%)					
Cigarette-like	84 (1.8)	61 (1.5)	20 (5.0)	$\chi^2 = 25.9$	<0.001
eGo-type	1,123 (24.7)	966 (23.5)	133 (33.4)	$\chi^2 = 19.5$	<0.001
"Mods" [a]	3,348 (73.5)	3,047 (74.0)	237 (59.5)	$\chi^2 = 38.3$	<0.001

Notes: Values presented as median (interquartile range) or number (percentage). Abbreviations: EC, electronic cigarette. [a] New generation devices, usually hand-made or with the ability to manually set the voltage or wattage delivery.

Table 2. Patterns of flavourings use in the study population and subgroups.

Characteristic	Total	Former Smokers	Current Smokers	Statistic	*P*
Flavours used now, n (%) [a]					
Tobacco	1,984 (43.9)	1,773 (43.1)	211 (53.0)	$\chi^2 = 14.6$	<0.001
Mint/menthol	1,468 (31.8)	1,339 (32.5)	129 (32.4)	$\chi^2 = 0.0$	0.964
Sweet	2,836 (61.4)	2,629 (63.9)	207 (52.0)	$\chi^2 = 21.8$	<0.001
Nuts	691 (15.0)	643 (15.6)	48 (12.1)	$\chi^2 = 3.5$	0.060
Fruits	3,203 (69.4)	2,953 (71.7)	250 (62.8)	$\chi^2 = 14.0$	<0.001
Drinks/beverages	1,699 (36.8)	1,562 (37.9)	137 (34.4)	$\chi^2 = 1.9$	0.167
Other	1,028 (22.3)	946 (23.0)	82 (20.6)	$\chi^2 = 1.2$	0.281

Table 2. *Cont.*

Flavours used at EC initiation, n (%) [a]					
Tobacco	3,118 (69.1)	2,846 (69.1)	272 (68.3)	$\chi^2 = 0.1$	0.746
Mint/menthol	1,086 (24.1)	1,004 (24.4)	82 (20.6)	$\chi^2 = 2.8$	0.092
Sweet	1,347 (29.8)	1,251 (30.4)	96 (24.1)	$\chi^2 = 6.8$	0.009
Nuts	203 (4.5)	186 (4.5)	17 (4.3)	$\chi^2 = 0.1$	0.821
Fruits	1,743 (38.6)	1,606 (39.0)	137 (34.4)	$\chi^2 = 3.2$	0.073
Drinks/beverages	808 (17.9)	748 (16.8)	60 (15.1)	$\chi^2 = 2.4$	0.124
Other	302 (6.7)	282 (6.8)	20 (5.0)	$\chi^2 = 1.9$	0.164
Switching between flavours, n (%)					
Daily/within the day	3,083 (68.3)	2,851 (69.2)	232 (58.3)	$\chi^2 = 20.1$	<0.001
Weekly	718 (15.9)	636 (15.4)	82 (20.6)	$\chi^2 = 7.2$	0.007
Less than weekly	465 (10.3)	412 (10.0)	53 (13.3)	$\chi^2 = 4.3$	0.038
At EC initiation, was it difficult to find the flavours of your preference? [b]	2 (1–3)	2 (1–3)	2 (1–3)	U = 760,068	0.054
Why do you feel the need to choose different flavours? n (%) [a]					
Like variety of choices	3,300 (73.1)	3,041 (73.9)	259 (65.1)	$\chi^2 = 14.3$	<0.001
They get "blunt" from long-term use	2,325 (51.5)	2,131 (51.8)	194 (48.7)	$\chi^2 = 1.3$	0.250
Other reasons	342 (7.6)	318 (7.7)	24 (6)	$\chi^2 = 1.5$	0.223
Was flavours variability important in reducing/quitting smoking? [b]	4 (3–5)	4 (3–5)	4 (3–5)	U = 731,547	0.455
How would your experience with EC change if flavours variability was limited? n (%) [a]					
Less enjoyable	3,111 (68.9)	2,886 (70.1)	225 (56.5)	$\chi^2 = 31.2$	<0.001
More boring	2,063 (45.7)	1,901 (46.2)	236 (40.7)	$\chi^2 = 4.4$	0.036
Increase craving for cigarettes	2,188 (48.5)	1,982 (48.1)	206 (51.8)	$\chi^2 = 1.9$	0.168
Less likely to reduce or quit smoking	1,793 (39.7)	1,617 (39.3)	176 (44.2)	$\chi^2 = 3.7$	0.054
No difference	285 (6.3)	253 (6.1)	32 (8.0)	$\chi^2 = 2.2$	0.138

Notes: Values presented as median (interquartile range) or number (percentage). Abbreviations: EC, electronic cigarette. [a] Participants were allowed to choose more than one answers. [b] Score reported (see text for details).

Binary logistic regression analysis showed that male gender (B = 0.373, P = 0.001), EC consumption (B = 0.046, P = 0.044) and number of flavours regularly used (B = 0.089, P = 0.038) were associated with complete smoking abstinence in this population of dedicated long-term vapers, while age, education level and smoking duration were not associated with smoking abstinence.

5. Discussion

This is the first survey that specifically focused on the issue of flavours and their impact in EC use. A substantial number of dedicated EC consumers participated; they reported that flavours play an important role in their EC use experience and in reducing cigarette consumption and craving, while the number of flavours regularly used was independently associated with complete smoking abstinence in this population.

The availability of a variety of flavours has been a controversial issue since the initial appearance of ECs to the market. Most companies offer a variety of flavours, from those resembling tobacco to a large

number commonly used in the food industry. Public health authorities have raised concerns about this issue, and several statements have been released suggesting flavours could attract youngsters [8,11,12]. Such concerns are probably rooted back to the marketing of the tobacco industry for flavoured tobacco cigarettes. Internal industry documents and published surveys indicated that flavoured tobacco products are more appealing to youngsters and may be a gateway to maintaining smoking as a long term habit, while use by adults was quite low [13–16]. This is the main reason why the FDA decided to implement a ban on characteristic flavours in tobacco cigarettes [17]. It was expected that such concerns would be raised for ECs, although current vapers are overwhelmingly adults. Anecdotal evidence from EC consumers' internet forums and results from surveys [10] have shown that different flavours are very popular among dedicated users. The results of this survey confirm previous observations by finding that dedicated users switch between flavours frequently and the variability of flavours plays an important role both in reducing cigarette craving and in perceived pleasure. Moreover, the number of flavours used was associated with smoking cessation. Therefore, flavours variability is needed to support the demand by current vapers, who are in their vast majority adults. This survey also indicated that there is a switch in flavours preference of EC consumers; tobacco is the preferred flavour when initiating EC use, probably because smokers are used to this flavour and feel the need to use something that resembles their experience from smoking. However, different choices are made as time of use progresses. This may be a way to distract them from the tobacco flavour in order to reduce smoking craving; alternatively, it could indicate that they just don't need the tobacco flavour any more, but feel the desire to experiment with new flavours. In some cases, tobacco flavour may even become unpleasant, especially in those who have completely quit smoking. The improvement in olfactory and gustatory senses in these people can lead to both more pleasure perceived from different flavours and an aversion to tobacco flavour (in a similar way that it is unpleasant for a non-smoker); the latter has been reported in EC consumers' forums (http://www.e-cigarette-forum.com/forum/polls/209041-do-you-vape-tobacco-flavors.html). Such a phenomenon may contribute to lower relapse to smoking and may prevent the EC from being a gateway to smoking; however, this should be specifically studied before making any conclusions. Finally, the issue of taste buds "tolerance", which is anecdotally mentioned by vapers, was reported by almost half of the sample as a reason to switch between flavours, although it is most probably a type of olfactory rather than gustatory tolerance.

Besides information on the use of flavourings, this survey provides information on other issues related to EC use. A small minority of participants were using first generation cigarette-like devices. This has been observed in other surveys [10]. There was a higher prevalence of third-generation devices used in the subgroup of former smokers compared to current smokers. Such devices have the ability to provide higher energy to the atomiser, thus producing more vapour and delivering more pleasure to the user [18,19]. Until now, two randomised studies evaluating the efficacy of EC use in smoking cessation have used first-generation cigarette-like devices [20,21]. It is possible that newer generation devices may be more effective in substituting smoking, and this should be evaluated in future studies. Additionally, former smokers were using lower nicotine-concentration liquids compared to current smokers. It has been observed from previous studies that EC users who have completely substituted smoking try to gradually reduce their nicotine use [18]. Despite that, only 2.8% of former smokers were using 0-nicotine liquids at the time of survey participation, indicating that nicotine is

important in smoking abstinence and that EC consumers remain long-term nicotine users. However, the possibility that several vapers may quit EC use shortly after switching to non-nicotine liquids cannot be excluded; such users would not participate to this survey, therefore overestimating the significance of nicotine on EC use. Finally, we observed a male predominance in participation to this survey, which is in line with previous studies [10,18]. In this survey, males were more likely to have completely quit smoking. Further studies are needed to explore this phenomenon and define whether females are less successful in smoking cessation with EC use, are less motivated long-term users or use ECs in the short term as smoking substitutes.

There are some limitations applicable to this study. The survey was announced and promoted in popular EC websites. Therefore, it is expected that dedicated users with positive experience with ECs would mainly participate, and the high proportion of former smokers confirms this. However, it is important to evaluate the patterns of use in smokers who have successfully quit smoking, since this can provide health officials with information on how to educate smokers into using ECs, especially during the initial period of use. Although a significant proportion stated that flavours play a major role in reducing or quitting smoking, this study was not designed to evaluate whether variability of flavours may promote smoking cessation in the general population; moreover our sample is not representative of the general population of smokers, who are generally less educated compared to the population evaluated here [22]. This should be evaluated in a randomised study. Finally, although the fact that flavours are important for existing EC users provides sufficient explanation for their current marketing, it does not exclude the possibility that they may also attract youngsters. However, currently available evidence indicates that regular use of ECs by non-smoking adults or youngsters is very limited [23–25]; thus, any restriction of flavours for the reason of protecting youngsters is currently not substantiated by evidence and no public health benefit would be derived. On the contrary, such a measure could have a negative impact and cause harm in current vapers, who are reporting that they enjoy flavours and that restrictions would make smoking reduction or cessation more difficult and would increase cigarette craving. Therefore, it would be more realistic and valuable to promote restrictions to the use of ECs by youngsters and to properly inform the public that ECs should be used only by smokers as a method to reduce cigarette consumption or completely substitute smoking.

6. Conclusions

The results of this survey indicate that EC liquid flavourings play a major role in the overall experience of dedicated users and support the hypothesis that they are important contributors in reducing or eliminating smoking consumption. This should be considered by the health authorities; based on the current minimal adoption of ECs by youngsters, it is reasonable to support that any proposed regulation should ensure that flavourings are available to EC consumers while at the same time restrictions to the use by youngsters (especially non-smokers) should be imposed in order to avoid future penetration of EC use to this population.

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We would like to thank E-Cigarette Research Advocates Group for promoting the survey in their website (www.ecigarette-research.com). This is a non-profit group of electronic cigarette users with no

relation to the electronic cigarette or other industry. The website does not promote or present any electronic cigarette product and do not accept any advertisements. The sole purpose of the group is to inform about research conducted on electronic cigarettes. Konstantinos E. Farsalinos has been allowed to present studies and post comments concerning electronic cigarette research on this website, without providing or receiving any form of payment. We would also like to thank all other websites and internet forums for promoting the survey and encouraging electronic cigarette users to participate. None of the websites promoting the survey had any access to the data collected from participants. No funding was received for this study.

Conflicts of Interest

The authors declare no conflict of interest.

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E-Cigarettes May Not Be Gateway to Smoking: Study

It found few teens go on to smoke cigarettes, use other kinds of tobacco after 'vaping'

By Brenda Goodman
HealthDay Reporter

TUESDAY, Oct. 29, 2013 (HealthDay News) -- E-cigarettes don't appear to entice teens to try smoking tobacco, a new study says.

The researchers noted that doesn't mean that e-cigarettes are risk-free, but it should reassure parents that teens who try the devices may simply be doing so for the novelty and aren't necessarily setting themselves up for a lifetime of nicotine addiction.

Last month, the U.S. Centers for Disease Control and Prevention warned that "vaping," or inhaling the nicotine vapors from e-cigarettes, might be a dangerous new fad that could set teens up for smoking.

In just one year, the number of kids in grades six through 12 who said they'd ever tried an e-cigarette more than doubled, rising from 3.3 percent to 6.8 percent. Among the 2.1 percent who said they were current e-cigarette users, more than three-quarters said they also smoked regular cigarettes.

Given that overlap, many health experts worried that e-cigarettes might be acting like a gateway drug, sucking kids more deeply into nicotine addiction, and law officials urged the U.S. Food and Drug Administration to regulate e-cigarettes as tobacco products.

The new study suggests that may not be the case.

Researchers surveyed 1,300 college students about their tobacco and nicotine use. The average age of study participants was 19.

"We asked what the first tobacco product they ever tried was and what their current tobacco use looked like," said researcher Theodore Wagener, an assistant professor of general and community pediatrics at the University of Oklahoma Health Sciences Center, in Oklahoma City.

Overall, 43 students said their first nicotine product was an e-cigarette. Of that group, only one person said they went on to smoke regular cigarettes. And the vast majority who started with e-cigarettes said they weren't currently using any nicotine or tobacco.

"It didn't seem as though it really proved to be a gateway to anything," said Wagener, who presented his findings at a meeting of the American Association for Cancer Research, in National Harbor, Md.

Study findings presented at medical conferences are considered preliminary since they haven't been carefully reviewed by outside experts for publication in a medical journal.

E-cigarettes, which use a heating element to vaporize a liquid nicotine solution, are relatively easy for teens to purchase.

While federal rules block the sale of regular cigarettes to anyone under age 18, there are currently no such rules for e-cigarettes. About half of states prohibit the sale of e-cigarettes to minors, but they can also be bought online.

The devices are advertised on TV and popular YouTube videos. They come in sweet flavors that appeal to teens like green apple, watermelon and bubble gum.

"The use of these products is increasing dramatically," while little is known about the risks, said Scott Leischow, who co-leads the cancer prevention and control program at the Mayo

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"It seems like we're in the midst of a national experiment," he said during a Tuesday news conference.

Wagener agreed. He said that most teens and adults who use e-cigarettes seem to be using them to stop smoking or at least to reduce the harm from smoking tobacco.

But he says that parents should be sure to let kids know that e-cigarettes still carry some risk.

"I think parents should be vigilant and talk to their kids and let them know that this not a 100-percent safe product. It's not water vapor. It's nicotine. It has carcinogens in it," he said.

"It might be less than regular cigarettes, but at the end of the day, they're still putting something that has carcinogens and toxins into their system," Wagener said.

More information

For information on electronic cigarettes, head to the U.S. Food and Drug Administration.

SOURCES: Theodore Wagener, Ph.D., assistant professor, general and community pediatrics, University of Oklahoma Health Sciences Center, Oklahoma City; Scott Leischow, co-leader, cancer prevention and control program, Mayo Clinic, Scottsdale, Ariz.; Oct. 29, 2013, press briefing, American Association for Cancer Research conference, National Harbor, Md.

Last Updated: Oct 30, 2013

The Rest of the Story: Tobacco News Analysis and Commentary

...Providing the whole story behind tobacco news.

Monday, September 09, 2013

Electronic Cigarette Experimentation Increases Among Youth, But Use Among Nonsmokers Remains Low and Regular Use Rates are Still Unknown

The Centers for Disease Control and Prevention (CDC) reported last week that the prevalence of youth in grades 6-12 who have experimented with electronic cigarettes in the past month increased from 1.1% in 2011 to 2.1% in 2012. Among middle school students, the prevalence of past month use increased from 0.6% to 1.1%. Among high school students, past-month use increased from 1.5% to 2.8%.

Based on these results, CDC Director Dr. Thomas Frieden proclaimed: "The increased use of e-cigarettes by teens is deeply troubling....Nicotine is a highly addictive drug. Many teens who start with e-cigarettes may be condemned to struggling with a lifelong addiction to nicotine and conventional cigarettes."

In response to the CDC report, Connecticut Attorney General Richard Blumenthal stated as follows: ""Electronic cigarettes as marketed today – with flavors like bubblegum and strawberry – are targeted at young people with the very clear intent of creating a new generation of smokers. Without question, tobacco companies are using the same despicable tactics with e-cigarettes that they used in previous decades with traditional cigarettes to lure youth down a path of nicotine addiction and eventual death."

Senator Markey responded: ""These e-cigarettes are a gateway to tobacco use by children and teens and should not be marketed to youth."

The Rest of the Story

The alarm calls being made by public health officials and politicians are premature. And their conclusions are unsupported by these data.

In no way do these data support the hypothesis that electronic cigarettes are a "gateway to tobacco use" by children and teens as Senator Markey claims. And there is no evidence provided that electronic cigarettes are being "targeted at young people with the very clear intent of creating a new generation of smokers" as Attorney General Blumenthal claims.

It is not at all surprising that youth smokers might experiment with electronic cigarettes. To the extent that these youth are able to switch over to electronic cigarettes, they are most likely reducing their long-term prospects of becoming cigarette smoking addicts. The danger is if **nonsmoking** youth start using these products and then end up becoming addicted to nicotine, causing them to transition to cigarette smoking.

But what do the CDC data tell us about whether the kids experimenting with e-cigarettes are smokers or nonsmokers?

Among youth who experimented with electronic cigarettes in 2012, the overwhelming majority - 90.6% - were smokers. Only about one in ten of the youths who experimented with electronic cigarettes were never smokers. And among the high school students who tried electronic cigarettes, only 7.2% were never smokers. Thus, it is quite clear that the overwhelming majority of the experimentation that is occurring among youth is happening among youth **who already smoke cigarettes**. This is not necessarily a bad thing, on its own, if it can reduce the chances of these youths becoming lifelong cigarette addicts.

The proportion of nonsmoking youth who experimented with e-cigarettes in the past 30 days remains small:

- Overall, only 0.5% of youth were nonsmokers using e-cigarettes in the past 30 days;
- Among middle school students, only 0.4% were nonsmokers using e-cigarettes in the past 30 days; and
- Among high school students, only 0.5% were nonsmokers using e-cigarettes in the past 30 days.

There are three other important points that make up the rest of the story.

1. The survey measured experimentation, but not regular e-cigarette use.

It is not surprising that about 2% of youth would try electronic cigarettes. But the important issue is what percentage of these youth enjoy them enough to become regular users? The CDC survey measured past month use (which is essentially experimentation), but it did not assess daily use, or anything close to regular use. So what we end up with is a measure of experimentation, but no idea of whether youth are actually taking up this behavior and becoming regular vapers.

2. The survey found no evidence that e-cigarettes are a gateway to smoking.

In contrast to the alarming statements of the politicians and the CDC director (who was talking more like a politician), the survey provided no evidence whatsoever that electronic cigarettes are serving as a gateway to cigarette use. Not a single case was documented in which a nonsmoking youth began using electronic cigarettes, became addicted to nicotine, and then went on to become a regular cigarette smoker. So we're still in the realm of unsubstantiated claims.

3. The low rates of youth nonsmoker use of e-cigarettes in light of the high rates of experimentation with e-cigarettes among youth suggest that e-cigarettes are not currently a major problem that is creating a gateway to increased cigarette addiction.

Given that the rate of experimentation with electronic cigarettes is as high as 10% among high school students, the finding that only 0.5% of high school students are nonsmoking, current electronic cigarette users is actually somewhat reassuring. It suggests that this behavior has not caught on among nonsmokers -- at least not yet.

4. Neither this study, nor other evidence, supports the assertion that electronic cigarettes are being marketed with the intention of recruiting youth and/or creating new cigarette smokers from those youth.

It is difficult to refute a statement for which there is no evidence presented in support. Attorney General Blumenthal claims that electronic cigarettes "are targeted at young people with the very clear intent of creating a new generation of smokers." However, he provides not a shred of evidence to support this outcontention. Perhaps in political circles, that flies. But in science, it does not. I cannot make a statement like that with providing at least some supporting evidence.

In fact, the existing evidence refutes Blumenthal's contention, because the clear intention of electronic cigarette marketers is to sell as many electronic cigarettes as they can, not as many cigarettes as they can. In fact, of the more than 250 companies now on the general market, only one even sells cigarettes in the first place. Blumenthal's assertion, therefore, is not only unsubstantiated, but preposterous.

Summary

The rest of the story is that both health leaders and politicians (perhaps being one in the same) are using these data to make false and exaggerated claims that have no basis in science. There is no evidence that regular electronic cigarette use is becoming a substantial problem among youth nonsmokers and there remains no evidence that electronic cigarettes have become a gateway to cigarette addiction. These is also no evidence that these products are being marketed with the intention of turning youth into new cigarette smokers.

Nevertheless, I am in no way arguing here that regulation is not needed. Just the opposite. The FDA needs to step in and do everything it reasonably can to ensure that electronic cigarettes do not become popular among youth, and especially that they do not become a gateway to nicotine addiction and cigarette use.

- Michael Siegel

Dr. Siegel is a Professor in the Department of Community Health Sciences, Boston University School of Public Health. He has 25 years of experience in the field of tobacco control. He previously spent two years working at the Office on Smoking and Health at CDC, where he conducted research on secondhand smoke and cigarette advertising. He has published nearly 70 papers related to tobacco. He testified in the landmark Engle lawsuit against the tobacco companies, which resulted in an unprecedented $145 billion verdict against the industry. He teaches social and behavioral sciences, mass communication and public health, and public health advocacy in the Masters of Public Health program.

The Rest of the Story: Tobacco News Analysis and Commentary

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Thursday, October 31, 2013

First Study to Examine E-Cigarette Gateway Hypothesis Can Find Only One Nonsmoker Who Initiated with E-Cigs and Went on to Smoke

In the first study to examine the hypothesis that electronic cigarettes are a gateway for youth to become addicted to cigarettes, Dr. Ted Wagener from the University of Oklahoma Health Sciences Center reports being able to find only one young person who initiated nicotine use with e-cigarettes and then went on to smoke cigarettes, out of a sample of 1,300 college students.

The study has not yet been published, but it was presented Tuesday at the annual meeting of the American Association for Cancer Research in Washington, D.C.

According to Brenda Goodman's *HealthDay* article summarizing the study: "E-cigarettes don't appear to entice teens to try smoking tobacco, a new study says. ... Last month, the U.S. Centers for Disease Control and Prevention warned that "vaping," or inhaling the nicotine vapors from e-cigarettes, might be a dangerous new fad that could set teens up for smoking. In just one year, the number of kids in grades six through 12 who said they'd ever tried an e-cigarette more than doubled, rising from 3.3 percent to 6.8 percent. Among the 2.1 percent who said they were current e-cigarette users, more than three-quarters said they also smoked regular cigarettes. Given that overlap, many health experts worried that e-cigarettes might be acting like a gateway drug, sucking kids more deeply into nicotine addiction, and law officials urged the U.S. Food and Drug Administration to regulate e-cigarettes as tobacco products."

"The new study suggests that may not be the case. Researchers surveyed 1,300 college students about their tobacco and nicotine use. The average age of study participants was 19. "We asked what the first tobacco product they ever tried was and what their current tobacco use looked like," said researcher Theodore Wagener, an assistant professor of general and community pediatrics at the University of Oklahoma Health Sciences Center, in Oklahoma City. Overall, 43 students said their first nicotine product was an e-cigarette. Of that group, only one person said they went on to smoke regular cigarettes. And the vast majority who started with e-cigarettes said they weren't currently using any nicotine or tobacco."

"It didn't seem as though it really proved to be a gateway to anything," said Wagener, who presented his findings at a meeting of the American Association for Cancer Research, in National Harbor, Md."

The Rest of the Story

This study provides preliminary evidence that electronic cigarettes are not currently serving as a major

gateway to cigarette smoking. Of course, more studies of this nature, as well as longitudinal studies, are necessary to firmly answer this question. And importantly, this only reflects the current situation and things can change at any time. It is important that we remain vigilant and closely monitor youth electronic cigarette use over time.

I should also make it clear that in no way am I arguing that sales and marketing restrictions are not needed. In fact, I am hoping that the FDA will promulgate regulations that do strictly regulate the sale and marketing of electronic cigarettes to youth.

What this evidence does highlight is how unfortunate it was that CDC Director Dr. Thomas Frieden disseminated to the public a conclusion about this research question, telling the public that we already know the answer and that electronic cigarettes are a gateway to tobacco addiction. Dr. Frieden stated that: "*many kids are starting out with e-cigarettes and then going on to smoke conventional cigarettes.*"

Unfortunately, this premature speculation (or conclusion, as the above statement does not seem to be speculative) led to widespread media dissemination to the public of the news that electronic cigarettes are a gateway to tobacco addiction. These articles are already having an effect on policy makers throughout the country.

In a *Forbes* magazine online column today, Jacob Sullum explains how many tobacco control advocates, including Dr. Frieden, "jumped all over CDC survey data indicating that the percentage of teenagers who have tried e-cigarettes doubled (from 3.3 percent to 6.8 percent) between 2011 and 2012." Sullum writes: "'Many teens who start with e-cigarettes may be condemned to struggling with a lifelong addiction to nicotine and conventional cigarettes,' CDC Director Tom Frieden worried. But the survey data [the CDC data] provided no evidence that e-cigarettes are a gateway to the conventional kind, and a new study [the Wagener study] casts further doubt on that hypothesis."

The issue of whether electronic cigarettes serve as a gateway to youth tobacco addiction is a very serious one. It should not be taken lightly. If these products lead to increased cigarette smoking among youth then this harm would offset the benefits of enhanced smoking cessation and electronic cigarettes would no longer have net public health benefits. So this is a crucial research question.

But I emphasize that it is a "question." It does a disservice to the public to draw pre-determined conclusions, as Dr. Frieden did in telling the public that we already have the answer: kids are starting out with e-cigarettes and going on to smoke conventional cigarettes.

Our public policies must be science-based. But when one draws pre-determined conclusions, rather than rely on the scientific evidence, this does not lead to evidence-based policies. My fear is that because of a strong pre-existing ideology against electronic cigarettes because they simulate the physical actions of smoking, tobacco control groups are drawing conclusions based on ideology rather than on science.

- Michael Siegel

Dr. Siegel is a Professor in the Department of Community Health Sciences, Boston University School of Public Health. He has 25 years of experience in the field of tobacco control. He

previously spent two years working at the Office on Smoking and Health at CDC, where he conducted research on secondhand smoke and cigarette advertising. He has published nearly 70 papers related to tobacco. He testified in the landmark Engle lawsuit against the tobacco companies, which resulted in an unprecedented $145 billion verdict against the industry. He teaches social and behavioral sciences, mass communication and public health, and public health advocacy in the Masters of Public Health program.

The Rest of the Story: Tobacco News Analysis and Commentary

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Friday, December 06, 2013

CDC is Exaggerating the Problem of Electronic Cigarette Use Among Non-Tobacco Users

Previously, I discussed a CDC study which found a doubling of the prevalence of current electronic cigarette use among youth from 2011 to 2012. This report has been used to alarm the public and policy makers about the hazards of electronic cigarettes, with the CDC director claiming that these data demonstrate that e-cigarettes are serving as a gateway to a lifetime of youth addiction to smoking.

In my previous analysis, I pointed out that the CDC has been consistently leaving out an important part of the story: despite the doubling of electronic cigarette use, most of the current use is taking place among adolescents who already smoke cigarettes. The real concern would be if non-tobacco users were trying electronic cigarettes, becoming addicted to nicotine, and then progressing to cigarette smoking.

The Rest of the Story

Today, I report that the CDC's misrepresentation of its study results goes even deeper. Dr. Brad Rodu, Professor of Medicine at the University of Louisville, has revealed that the CDC has left out even more critical information.

In its report, the CDC noted that in 2012, 76.3% of middle and high school students who used e-cigarettes in the past month were smokers. Thus, 23.7% of students who currently used e-cigarettes were nonsmokers. However, Dr. Rodu's own analysis of the National Youth Tobacco Survey for 2012 shows that of these nonsmokers, more than half were actually using other tobacco products, such as smokeless tobacco or cigars. And of the remaining half who were not using other tobacco products, about half of that group had already experimented with smoking.

Thus, only 10.8% of electronic cigarette users were non-tobacco users with no previous tobacco cigarette use.

This means that the estimated prevalence of youth in the population who are current e-cigarette users but have never used tobacco products is only 0.25%.

This does not mean that the possibility of youth starting with e-cigarettes and progressing to smoking should not be a concern. What is does mean is that the CDC appears more interested in promoting a particular position on e-cigarettes than in providing the public with the facts.

There is little evidence regarding why youth are using electronic cigarettes. It is possible, for

example, that many youth who are smokers or other tobacco product users may be trying electronic cigarettes in an effort to quit their tobacco use. If this is the case, then experimentation with electronic cigarettes could actually have a net benefit among youth. I emphasize that this is merely a hypothetical possibility. But the point is that we don't understand the reasons behind electronic cigarette use among youth. It does us no good to draw conclusions, as the CDC has done, without the proper evidence.

Dr. Rodu concludes: "CDC director Tom Frieden may wish to use his position as a bully pulpit to oppose e-cigarette use, but abusing the facts is inexcusable."

I agree, but would change the end of the sentence to emphasize that **not providing the relevant facts** is inexcusable.

To be sure, the issue of electronic cigarettes is a complex one, especially as it relates to youth experimentation with these products and how that changes the overall cost-benefit picture. There is room for debate on the issue and it actually helps ensure appropriate policy to have folks who force us to remain vigilant about the possibility that electronic cigarettes could serve as a gateway to established smoking. However, it does not do us a service for public health organizations to hide relevant facts from the public in order to promote a pre-established position. The best and most appropriate policy will come from a full consideration of the facts, not from the hiding of the facts.

- Michael Siegel

Dr. Siegel is a Professor in the Department of Community Health Sciences, Boston University School of Public Health. He has 25 years of experience in the field of tobacco control. He previously spent two years working at the Office on Smoking and Health at CDC, where he conducted research on secondhand smoke and cigarette advertising. He has published nearly 70 papers related to tobacco. He testified in the landmark Engle lawsuit against the tobacco companies, which resulted in an unprecedented $145 billion verdict against the industry. He teaches social and behavioral sciences, mass communication and public health, and public health advocacy in the Masters of Public Health program.

E-cigarettes: Healthy tool or gateway device?

By Jen Christensen, CNN
updated 12:46 PM EST, Thu February 6, 2014

AFP/GETTY IMAGES

Are e-cigarettes bad for your health?

STORY HIGHLIGHTS

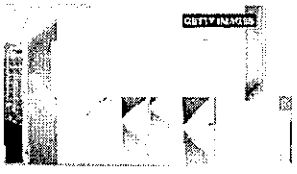
- Smoking is still the leading cause of avoidable death in the United States
- E-cigarettes are being used by more people as a nicotine alternative
- Opponents worry e-cigarettes are being marketed to kids, who may be hooked for life

(CNN) -- If the tiny sample of smokers in a new study in the British journal Lancet are any indication, electronic cigarettes might be slightly more effective than nicotine patches in helping people quit smoking.

Great, right? Except another new study from the Centers for Disease Control and Prevention suggests more children and teens are trying them.

The implications of both these studies means electronic cigarettes have been getting a lot of attention lately. Just what e-cigarettes are and what role they should play in helping people quit smoking depends very much on who you speak with about this topic.

Smoking is still the leading cause of avoidable death in the United States. The devices are not one of the FDA-approved methods to help people quit, but many people are using them this way. A growing number of scientists are studying them to see whether they may be a way to end an epidemic.



GETTY IMAGES

The topic, though, remains as polarizing a health issue as sex education or diet sodas.

An e-what?

The e-cigarette was actually developed by a pharmacist in China.

The pharmacist, Hon Lik, was a three-pack-a-day smoker. That was nothing unusual -- more than 300 million people in China are regular smokers. But when Lik's father, who was also a heavy smoker, died

Sochi

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Watching ice fishing, he was shot in head

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FDA launches teen anti-smoking campaign

of lung cancer, Lik decided he had to come up with an alternative that wouldn't kill him.

Most scientists believe nicotine itself, while highly addictive, is not what causes cancer for smokers or for the people around them who breathe their second-hand smoke. Instead, it's the toxic chemicals that are created when tobacco and filler products burn that are dangerous.

If there was a way to get nicotine addicts their fix without the burn, you just might avoid the health problems. Nicotine then becomes as harmless as any other addictive substance, such as caffeine, some experts say.

So Lik developed an e-cigarette -- a device that uses a small battery to atomize a pure liquid solution of nicotine. Nothing is burned. There is no ash. There is no smoke. There is nicotine, and then there is flavoring added for taste.

Essentially the person using these inhales a kind of vapor that looks like fog from a fog machine. A recent review of all the scientific research done on e-cigarettes by Drexel University professor Igor Burstyn concludes "current data do not indicate that exposures to vapors from contaminants in electronic cigarettes warrant a concern."

In plain language, Burstyn concludes: "It's about as harmless as you can get."

"I wouldn't worry at all if someone was smoking one of these by my kids," Burstyn said. "From a pure health perspective, these are not as bad as a cigarette."

E-cigarettes came to the U.S. market around 2009. The CDC now estimates about one in five American smokers have tried an e-cigarette -- that's about 6% of all adults.

There are e-cigarette stores, but now you can also buy them online or in convenience stores. Some look like regular cigarettes; some look like pens or thumb drives.

First you buy a starter kit, which costs between $40 and $130. In the kit is the e-cigarette, a charger and a few cartridges. The cartridges typically last as long as a 20-pack of cigarettes and sell for around $10. You can also buy a bottle of e-liquid to refile the cartridge yourself.

The anti-e-cigarette camp

Critics point out e-cigarettes come in kid-friendly flavors such as gummy bear, atomic fireball candy and cookies and cream. It makes them worry that e-cigarettes will become a gateway to encourage kids to develop a lifelong nicotine addiction -- or worse, try the real thing.

Only about 20 states specifically forbid the sale of e-cigarettes to children.

Tobacco use has been on the decline with kids; it's about half what it was in the mid-1990s. But the latest CDC study shows a growing number of middle and high school students have tried e-cigarettes.

One in 10 high school students surveyed said they had tried e-cigarettes last year. That's double the number from 2011. One high school in Connecticut banned them after the principal said administrators dealt with at least one incident involving e-cigarettes every day.

CDC director Tom Frieden characterized this trend as "deeply troubling."

But as far as risky behavior goes, it's still a tiny fraction of students. The survey showed about 3% of these kids said they had used one in the last 30 days. By contrast, 39% of students said they drank some amount of alcohol in the past 30 days, 22% binge drank and 24% rode with a driver who had been drinking.

The real problem is that 88% of adult smokers who smoke daily said they started when they were kids, according to the CDC. Kids who start down the path to using e-cigarettes may stick with them for life.

"So much is unknown about them and what the long-term complications could be with their use," said the American Lung Association's Erika Sward. "Bottom line, we don't know what the consequences of using them are, and we are very troubled that kids would find them attractive."

E-cigarettes are unregulated in the United States; no laws make manufacturers tell you what you are actually inhaling. The unknown is one of the many qualities of e-cigarettes that the American Lung Association doesn't like.

It's "a complete unregulated Wild West," Sward said. She wants the FDA to move quickly with regulatory oversight, which she says would make manufacturers disclose what the actual ingredients are in each of the 250 or so brands available.

In 2009, a FDA test on a small number of e-cigarette samples found "detectable levels of known carcinogens and toxic chemicals to which users could potentially be exposed." They found diethylene glycol in one cartridge at a 1% level; this is an ingredient used in antifreeze and can be toxic to humans in large quantities. Diethylene glycol is also found in some dental products and in some pharmaceuticals.

After that study, the FDA banned the sale of e-cigarettes. They warned e-cigarette smokers that they were inhaling "toxic" and "harmful" chemicals. However, in 2010, a court ruled that "the FDA had cited no evidence to show that electronic cigarettes harmed anyone," and stores could go on selling them.

The early e-adopters

On the other side of the debate are the passionate supporters of e-cigarettes. Many who use them say it is the first thing that has helped them stop using cigarettes -- something more than 90% of smokers fail to do with any of the existing FDA-approved methods. There are blogs and message boards dedicated to them. And there are countless impassioned testimonials from the people who use them.

Florida resident Craig Lashley says they've changed his life.

"I got tired of being like that little kid in 'Peanuts' who had the cloud of smoke following him all the time," Lashley said. "I didn't like the way I smelled when I smoked, and I didn't like what smoking said about me, especially to kids."

He discovered the e-cigarette about a year ago and hasn't smoked a regular cigarette since.

He says he smells better, feels better and spends a lot less -- about $10 a week on e-cigarettes. He used to spend about $45 a week on regular cigarettes.

"I like the feel of blowing smoke," Lashley said. "It seems to me like (e-cigarettes are) a healthier alternative."

A growing number of respected physicians and scientists agree, and they say these products could end a major health problem.

"Electronic cigarettes and other nicotine-containing devices offer

massive potential to improve public health, by providing smokers with a much safer alternative to tobacco," the Royal College of Physicians says. "They need to be widely available and affordable to smokers."

The latest study, published in the British journal the Lancet, examined whether people who used them as an alternative to smoking would abstain from using regular cigarettes.

The New Zealand authors studied the behavior of 657 people who were trying to quit. One group got nicotine patches, another got nicotine e-cigarettes and others got placebo e-cigarettes without the nicotine.

Over a period of six months, only a tiny fraction of the people in the study actually quit smoking.

People using the nicotine e-cigarettes quit at a slightly better rate compared with those using the patch, though. Some 7.3% using the e-cigarettes abstained from smoking traditional cigarettes compared with the 5.8% who stopped with the patch. About 4.1% stopped with just the placebo e-cigarettes.

It was such a small number of people who quit that the authors concluded "more research is urgently needed to clearly establish their overall benefits and harms at both individual and population levels."

Dr. Michael Siegel, a physician who has spent the past couple decades working on tobacco control initiatives, has been surprised by the negative reaction to e-cigarettes from so many people in the public health sector. Siegel says the studies he's done have shown e-cigarettes are a help.

"True we don't know the long-term health effect of e-cigarettes, but there's a very good likelihood that smokers are going to get lung cancer if they don't quit smoking," he said. "If they can switch to these and quit smoking traditional cigarettes, why condemn them?"

Siegel theorizes the e-cigarettes might look too much like smoking.

"It's ironic the very thing that makes them so effective ... drives the anti-smoking groups crazy. But what makes them so effective is it mimics the physical behaviors smokers have, which is something the patch can't do."

Siegel does believe there is an urgent need for more regulations.

Ray Story, founder of the Tobacco Vapor Electronic Cigarette Association, agrees. He says his association has also pushed for age verification legislation.

"When you have these companies trying to promote these as something they are not, and you have stores that sell them in the candy aisle, you are going to have a problem," Story said. "If they are officially categorized as a tobacco product, you get an automatic age verification put in place.

"Nicotine is addictive, and we want the federal government to create guidelines and a structure that will confine these to being sold as adult products."

Lashley says no matter what the debate, he will continue to spread the e-cigarette gospel to his fellow adults.

So far, his co-workers have been receptive to the idea. He used to be the only one with an e-cigarette on smoke breaks. Now he says he's got more than a dozen colleagues doing the same.

One colleague, though, complained about it.

"He said 'I'm sick of all these people smoking electronic cigarettes," Lashley said. "When I asked him why he said. 'Simple, now I can't bum any off of them.' "

824 Comments CNN Gregory Cooley

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Join the discussion...

MichiganDodle3695 • [redacted]
Even if kids did get hooked on e-cigs, and I am not saying that they should ever try them, but atleast it wouldn't cause the damage real cigarettes do. I'm relatively young, 25, but have smoked for 8-9 years and am not proud of it. It's something I wish I didn't do. It's very hard to quit. I can't stand to see people getting p*ssed over something that's helping others to quit smoking, making a mountain out of a mole hill.
233 2 • Reply • Share ›

getbackjack ➔ [redacted] • [redacted]
i smoked for about 33yrs when i came across a site called ecig reviews, i chose V2 and have been using them for a couple years now, maybe i'll quit someday but right now i am not coughing anymore, i don't stink anymore, i don't get dirty looks anymore (except from people whose faces are just naturally like that) and i'm not breathing in carcinogens, i feel way better and still get my nicotine, which keeps me calm. i hope these aren't banned because of a bunch of do-gooders who think they have the right to run everybody's life.
59 • Reply • Share ›

Douglas Dixon ➔ [redacted] • [redacted]
I also started with V2 e-cigs, and quit completely within a week!!! Its been about a year and a half now. So 'getbackjack' YOU ARE ON THE RIGHT PATH! Thank you for your comments. Please check out CASSA!
2 • Reply • Share ›

Richard Thethird ➔ [redacted] • [redacted]
The only reason it "keeps you calm" is that you are addicted to it and your body starts screaming out for it after levels in your body have decreased enough. Imagine if you had never started; you'd be calm all the time, without drugs!
7 13 • Reply • Share ›

getbackjack ➔ Richard Thethird • [redacted]
i think i pretty much figured that out over the course of my life, but thanks for the input
32 • Reply • Share ›

Bob Jones ➔ [redacted] • [redacted]
yeah someone smoking for 33 years... probably hadnt figured that out yet... thaaaaaaaaaaaaaanks
19 1 • Reply • Share ›

Kuros ➔ [redacted] • [redacted]
Thanks special agent Dick Hindsight.
10 • Reply • Share ›

Jerk Face ➔ [redacted] • [redacted]
Yeah, Dick, but he did start, and is using e-cigs to "stop coughing" and to "stop breathing in carcinogens". It's not easy to stop smoking...kind of like it's not easy for you to not be such a m0r0nic l05er.

Richard the third.....pleeeeeeaseee....what do you think you're royalty? You probably drive a 1977 chevy nova you Dbag.
7 • Reply • Share ›

jpmc1025 ➔ [redacted] • [redacted]

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Senators:

My name is Nicole Sutton and I am part of REAL: Hawaii Youth Movement Exposing the Tobacco Industry. I am in strong support of SB 2222 to discontinue the sale and distribution of flavored tobacco products in Hawaii.

I am in strong support of this measure because of the powerful impact it will have on preventing youth and young adult tobacco uptake. Over the last ten years Hawaii has made tremendous progress toward reducing youth tobacco use. The 2009 passage of FDA regulation of tobacco products led to the national discontinuation of the sale of flavored cigarettes **BUT other flavored tobacco products such as skoal, cigarillos, and snus are not covered by FDA regulation.** The majority of these loop-hole Other Tobacco Products (OTPs) are owned and marketed by the same Big Tobacco companies that sell cigarettes such as Philip Morris, RJ Reynolds, and Lorillard. These companies are well aware of the loop-hole in the law. Their flavored tobacco products are created and marketed toward youth to promote experimentation with nicotine. Internal tobacco industry documents made public following the Master Settlement Agreement (MSA) candidly reveal the targets of these products are youth. Recent national and state-specific tobacco use data show increases in the use of these products among youth.

The introduction of SB 2222 is the result of youth and young adults with REAL who are asking you, our elected officials, to protect their generation from this aggressive targeting by the tobacco industry. Hawaii would follow Rhode Island, New York City, and many counties in the state of Florida who have already made the sale of these products illegal. Several other states are working on similar measures. Banning the sale of flavored tobacco is considered a "green light" policy by the Tobacco Control Legal Consortium as it has stood-up in Federal Court to legal challenges led by the tobacco industry.

There is no doubt this policy can have great impact on reducing youth and young adult tobacco use because when the products cease to be sold in our stores, the amount of tobacco ads that cover stores in our communities will reduce significantly. Research

strongly supports that reducing the amount of tobacco product promotion in our communities **will result in less youth tobacco users.**

The inclusion of menthol tobacco products may provide significant impact on reducing the disproportionate burden of tobacco-related disease that affects Native Hawaiians and Filipinos who continue to use tobacco at a higher rate and make-up a significant portion of menthol users in Hawaii. Internal tobacco industry documents reveal specific targeting of ethnic minorities as menthol users. Overall Hawaii has one of the highest rates of menthol users inconsistent with any other state. Seeking to include menthol in this law is a huge step forward to addressing health disparities in Hawaii and restricts tobacco industry access to our people with their deadly products.

Our youth are our most precious gems here at home. They carry our profound faith that Hawaii will continue to prosper with improved health and longevity, connection to our cultural identities, and compassion for all of our people. It's time we protect our youth as aggressively as they are being targeted by a predatory tobacco industry. You hold the power to act now. Please pass SB 2222.

Mahalo for your consideration,

Nicole Sutton
REAL: Hawaii Youth Movement Exposing the Tobacco Industry

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

My name is Abrahm Arkin and I am a young adult advocate against tobacco in our communities. I am asking for your support of SB 2222 regarding the discontinuation of sale of flavored tobacco products and menthol.

I believe that these products are especially targeted to youth and young adults. Banning the sale of such products would decrease the appeal to start using tobacco among the younger generations and aid in the prevention of smoking related health risks in the future.

I am asking for your strong support by passing SB 2222.

Sincerely,

Abrahm Arkin

Kailua-Kona, Hawaii

abemaster77@hotmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello Legislators:

I am a 15-year-old boy that lives in Kapolei. I am in support of SB 2222.

I think that tobacco products should be banned in Hawaii. I think this because they mostly do bad than good. The only people they benefit is the tobacco companies and they do not even care who they sell to. Tobacco companies even openly said themselves that they target young people, which is wrong considering young people are not even supposed to be purchasing these products. And if you cannot ban they sale of all tobacco it would still be good to ban flavored tobacco so young people are not drawn to it.

Thank you,

Brandon Hallowary
hollowayb41@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hi.

My name is Benjamin Vining and I am 15 years old. I live in Kapolei, Hawaii. I want to get rid of flavored tobacco products through SB 2222.

If a little kid sees a product of tobacco and they try it and like it they will not stop and it will eventually become the cause of that person's death.

I would very much enjoy it if you would get rid of flavored tobacco products. Please vote yes on SB 2222.

Thanks,
Benjamin Vining

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hello.

My name is Brandt Kohrer. I live in Kapolei, Hawaii and I would like to see the ban on flavored tobacco products with SB 2222.

The reason I would like to see the sale of these flavored tobacco products banned is because there is no benefit to them. I am currently 15 and see many fellow students that are the same age as me smoking electronic cigarettes and these flavored tobacco products and it is stupid and pointless. It is just going to cause problems for them later in life.

Let's get rid of these products now by passing SB 2222.

Thank you,
Brandt Kohrer

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello Legislators:

My name is Kapiolani Iese. I am a 15 years old living in Kapolei, Oahu. This testimony is in support of SB 2222 to ban the sale of flavored tobacco products.

I want to ban these products because if little kids were to some how get their hands on it and smoked it they could get addicted and their lives would be affected by it. And if the flavored tobacco sales are still going to be sold in the future, it could affect the future of our kids and their kids.

My sister used to use tobacco. She became addicted to it and she kind of messed up and did bad things in school. That caused her to have to go to Youth Challenge. So please ban the sale of flavored tobacco so the children in the future does not get affected by it.

Thank you,

Kapiolani Iese
kapiolaniiese@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hi.

I am Izeah Benitez and I support SB 2222.

I believe that tobacco companies abuse and attack the youth. This should be put to a stop because they are trying to get kids under 25 years old to become addicted to their products.

Please stop this by passing SB 2222.

Thank you,

Izeah Benitez
lzeah808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Dear Legislatators,

I am Jonald Eala Jr. and I am from Hawaii. I support SB 2222.

I would like to argue about the flavored tobacco and general tobacco products because I have a younger relative getting addicted to favored tobacco. He assumes that it is good and it tastes like candy. I want my relative to quit what he's doing and for other young teens to learn that tobacco is bad for you're health and may lead to bad situations in the future.

Thank you,
Jonald Eala
jonald_eala@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

I am Tim Jerome Aquino. My age is 15 years old and I live in Kapolei, Hawaii. I am in support of SB 2222.

I want to be protected from tobacco industry targeting through sale of flavored tobacco products. I want these products to become banned for the safety of the children and the teens.

Please pass SB 2222.

Thank you,
Tim Jerome Aquino
aquinot11@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Livan MacDonald. I am 15 years old. I live in Kapolei, Hawaii. I support SB 2222.

I want everyone to know that we need to stop selling flavored tobacco products in our communities. It is affecting the youth and that is why we need to stop it.

I hope you do so.

Sincerely,
Livan MacDonald
Ivnmacdonald@hotmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hi.

I am Kai Chen and a student at Kapolei High School. I support SB 2222.

I do not like flavored tobacco products and I do not want my brother to start using tobacco. I know flavored tobacco is bad for young people. Can you please ban the sale of flavored tobacco products in Hawaii to protect the young generation?

Thank you,
Kai Chen
felixkai@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Dear Legislators,

My name is Chris and I am from Kapolei, Hawaii. I support SB 2222.

I do not appreciate the mischievous actions that the richest tobacco companies are portraying towards the younger crowd. I come to disagree even more because of what tobacco has done to my grandma who is barely alive. I believe that action should be taken to put a stop to tobacco products and especially flavored ones.

Sincerely,

Chris Zaryskes
zaryskescs@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Sean Gresham and I am 17 years old from Kapolei. I support SB 2222.

I think a ban on the sale of flavored tobacco in Hawaii will influence the youth of Hawaii to not touch tobacco at such a young age.

Thank you,
Sean Gresham

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hello.

My name is Justin Nouchi. I am currently attending Kapolei High School and I am 16 years old and living in Makakilo. I want the state of Hawaii to ban the sale of flavored tobacco products.

The reason I want flavored tobacco products to be banned is so that my nephew and little cousins will have a lower chance of ever smoking. I do not want them to start smoking because they should have a good healthy life. Also, I want my family to stop smoking.

Please support SB 2222.

Thank you,

Justin Nouchi

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Dear Legislators,

I am a high school student here in Kapolei. I am originally from Waianae and I see people my age in groups smoking.

What I want is to ban the sale of flavored tobacco products so youth never start smoking. Youth who smoke have problems in school and do not do as well in sports.

Please pass SB 2222.

Thank you,
Jason
jasonmallare@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Dear Legislators,

I am Cadet Leituala from Kapolei High school and live in Makakilo, Hawaii. I support SB 2222.

I want flavored tobacco to be banned from Hawaii because it make it less harmful for us teens and parents. I would not want my family or siblings to get into smoking because of flavors. Plus, if I were to ever have kids later on in my life, I would not want them to experience what teens now are doing because I would not want anything to happen to them.

Please pass SB 2222.

Sincerely,

C/PFC Leituala Lesina

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Mariah Gamatero and I am from Kapolei, HI. I support SB 2222.

I want the tobacco companies to end the sale and marketing of their flavored products and to stop targeting children as their customers. I want this because it is unhealthy for human beings and it is a major cause of death. I think it's wrong and unfair to have children as a target market and to have them growing up to think tobacco is as tasty as candy.

I want the flavored tobacco to end also because it is a sick way to lure young customers into such a bad product. If the flavored tobacco doesn't stop in Hawaii (my home) I will be very disappointed because it can grab the attention of my younger siblings, and it makes them believe that it's okay to use these addictive products.

Thank you for your time. Please pass SB 2222.

Mahalo,
Mariah Gamatero
mariahtaylor@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hello.

My name is Corin Medeiros. I am 14 years old and I live in Kapolei. I want flavored tobacco and advertising for them to be pulled from Hawaii.

I fear one day that my siblings will be influenced by the word "flavor" and if that happens, I will not be able to live with myself.

Please protect the youth today by passing SB 2222.

Thank you,

Corin Medeiros
corinmedeiros@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

My name is Ezra Mo'o from Kapolei, Hawaii. I'm a student from Kapolei High School and I am strongly asking to ban flavored tobacco products in Hawaii.

I am asking to ban all flavored tobacco because I'm sick of watching good friends of mine pull out a "smoke" before and after school.

Please pass SB 2222.

Thank you!
Ezra Mo'o
Djezz808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am writing this letter to notify you of my support to stop the sale of flavored tobacco products.

Companies are enticing the youth in your community to purchase these flavored products. Please consider the ban of these tobacco flavored items as they interfere with the well-being of Hawaii's youth.

Sincerely,
Caleb Lorenzo

Redfixie808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

I am from Kapolei, Hawaii and my name is Kaiana Lee. I'm 14 years old and attend Kapolei High School. I support SB 2222.

I want flavored tobacco to be banned and off our shelved in Hawaii. This is not acceptable because it's there available for everyone that walks in the store. The tobacco companies are doing sweet flavored tobacco on purpose to cover up the effects of it. It's not okay because young children don't know the difference. They target young people for a reason because they know that we don't know any better.

As a high school student, I know that there are many people open to trying new things and experiences. By having it in stores it gives them access to try it. I'm asking for flavored tobacco to be banned because it will lead to the death of many people, its addictive, and it's not right what tobacco companies are doing. If we get rid of flavored tobacco, it will be out of sight and out of mind of people in the community. Tobacco in general is neither necessary.

Please pass SB 2222.

Thank you,
Kaiana Lee
Kaianalee3@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I want the ban of flavored tobacco in the state of Hawaii.

I am a concerned high schooler from Kapolei. I am strongly against the sale and use of any form of tobacco. My grandpa has been an addicted user of tobacco for more than forty years. It disgustingly angers me to know that for more than forty years tobacco companies have been making money on the cause of my grandpa's death. That is why I want to ban flavored tobacco to prevent young kids like my little brother to get hooked on tobacco products like my grandpa.

Please pass SB 2222.

Sincerely,
Laurn Lobaton

Joshua.lobaton@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Hi.

I'm Kyle Denena. I am from Guam, and I have lived in Hawaii for almost a year. I support SB 2222.

I think flavored tobacco products should be banned because it causes excitement by youth and young adults. I am being targeted and put under pressure by these products. This could lead to me becoming a future user.

Please do the right thing by passing SB 2222 to protect youth.

Thank you,

Kyle Denena

Kcadenena1110@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello,

I am 15 years old and I go to Kapolei High School. I am a freshman and I support SB 2222.

I don't like the idea that us teens are the target for tobacco companies. Flavored tobacco should be discontinued because when the flavored tobacco has flavors like apple, cherry, grape, peach and strawberry children and kids will think it's like candy so they will want it.

Tobacco is really bad for you and there for should be banned from Hawaii totally as well as all the other states. But SB 2222 is a good place to start.

Thank you,

Mckenzie Dittmer
mdittmere@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

I am in support of SB 2222.

I would like flavored tobacco items to stop being sold in stores because it is really hurting our young generation.

Thank you for your support,

Kekoa Cruz
Kapolei High School

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am writing in support of SB 2222.

I understand tobacco use can be dated back in history to ancient times, but the problem in our modern time is that tobacco companies want to expand sales with the use of flavored products which the only purpose is to target children.

Without providing information on the effects of tobacco use, tobacco companies attempt to appeal to the young children by exaggerating and saying how good the flavor is. These companies could care less about the keiki but we the people do. Please stop the sale of flavored tobacco products by supporting SB 2222.

Sincerely,
Concerned Teenager, 17 years old
Daniel Vanta, Kapolei/Makakilo
camerinodv@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Rich Xay. I am from the state of Hawaii and currently live on the island of Oahu in the city of Kapolei. I am in support of SB 2222.

The fact that many of the people understand what tobacco does to you body, I have noticed that many of the tobacco companies are trying to target the younger generation with candy-like products. Being the fact that I have many little cousins, I would not like these products to influence them.

Please ban flavored tobacco products.

Rich Xay
rich50589@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

I'm Eleneki Fernandes from Kapolei High School. I support SB 2222.

I want tobacco products to be very difficult to get. I want my many nephews, nieces, brothers, and sisters to never see tobacco products. I don't want them being introduced to such harmful products. I've been around cigarettes my whole life because of aunties and uncles, also my stepmother. But thankfully she quit and is living a healthy life. Other family members can't find the heart to quit. They're trying but can't because companies corrupt them with advertisements.

Passing SB 2222 helps protect people from starting as teens.

Thank you,
Eleneki Fernandes
Eleneki.fernandes@ymail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello,

My name is Pelene Titalii and I am 14 years old from Makakilo, Hawaii. I want flavored tobacco including cigars and anything else to be banned.

I want these products to be banned because it will keep many young people from becoming users, suffering from cancer, and eventually dying.

Thank you for passing SB 2222.

Pelene Titalii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

I am 14 years old and I go to Kapolei High School. I am a freshman and I am here to say that I agree with banning other tobacco products (OTPs).

I want this ban to happen because I don't want to be targeted by these types of products. It gives me chills and worries about what tobacco industries are going to do next with selling and advertising these bad life-changing products. I also don't want our younger generation to have to see these kind of products and ads. Many times they are marketed right next to toys, ice cream, chips, etc. Kids start to get interested in these things at such a young age when they have a whole life ahead of them where they can make a change as well.

Please pass SB 2222 to protect the youth.

Thank you,

Daniella Ragmat
Daniella.ragmat@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

Aloha, my name is Dayne Kaawalauole. I am from Waimanalo, Hawaii and I would like to voice my support for SB 2222 on flavored tobacco.

After receiving information from REAL, I see how dangerous flavored tobacco can be and I am asking that you ban this product for my little brothers and sisters sake.

Thank you,

Dayne K.
daynekaawalauole1@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Kawika Kane. I am 15 years old, I am from Kapolei, Hawaii. I support SB 2222.

All my life, I have seen cigarettes everywhere in stores, in supermarkets, airports, and even around my family. I think flavored tobacco is a bigger impact on the youth. With the banning of flavored tobacco, I believe the amount of youth smoking will diminish, and the future of the youth will never see or experience the bad influences of tobacco.

Please pass SB 2222.

Thank you,
Kawika Kane
kawikakane@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators:

My name is Jennifer Pescador. I have been involved with REAL: Hawaii Youth Movement Exposing the Tobacco Industry for more than ten years. I am in very strong support of SB 2222.

Flavored tobacco negatively targets solely youth. Hooking youth on sweet products is a tactic used by tobacco companies. The products are colorful, tastier than regular tobacco products, easily accessible, and cheap.

Youth use tobacco to feel social acceptance. Marketing of tobacco deeply influences social norms and youth today continue to use tobacco to feel socially accepted. Many don't realize what they are doing to their bodies and use the excuse that they're not hurting their lungs with the use of products like snus and skoal. These products remain tobacco industry's way of getting youth to experiment with nicotine until they are addicted and become regular costumers.

Please protect youth in Hawaii by passing SB 2222 to finally get rid of these deceptive flavored tobacco products once and for all.

Mahalo,

Jennifer Pescador

Kapolei, Hawaii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators:

My name is Adonis Dela Merced. I am 15 years old and in support of SB 2222.

In my opinion flavored other tobacco products are not any different from flavored cigarettes. They are still addictive and will still kill us. So why should flavored tobacco products be treated differently from flavored cigarettes which are already illegal when they still have the same effect? They may look different, but the ingredients haven't changed. Please pass SB 2222 to get flavored tobacco products all treated the same way.

Thank you,

Adonis Dela Merced
Kapolei, HI
adonisdelamerced@icloud.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators:

My name is Kainalu Kealoha and I am 14 years old. I am in support of SB 2222.

My mom is currently using tobacco products. I live in Makakilo, and the products are really affecting her because she took multiple trips to the hospital. It also affects my sisters and I. We really love our mom and we do not want to see her go because of tobacco products. I think we should ban all tobacco but especially flavored tobacco products so that youth never get started using them.

Thank you,

Kainalu Kealoha
kealoha.kainalu@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators:

I am Tea Cece and I am 16 years old and live in Hawaii. I would like to testify in strong support of SB 2222 related to banning the sale of flavored tobacco products.

These products target young adults and children. I disagree with tobacco company's methods to hook children. I have younger siblings and I would hate to see them experiment with harmful products such as flavored tobacco. I learned about how tobacco companies rely on youth getting tobacco products through stealing it from stores. I think it is ridiculous to encourage teens to steal these items and get addicted to it. If the products are banned in Hawaii then youth will never have to see them or feel pressured to try them.

Thank you,

Tea Cece
heece808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators:

My name is Rachael Peters. I am writing in strong support of SB 2222.

I believe flavored tobacco should be banned because it is targeting young children. This is just another way that tobacco companies are recruiting the next generation of smokers. Although the flavored OTPs (other tobacco products) such as snus, flavored cigars, and snuff are not traditional cigarettes, they still contain nicotine which remains a highly addictive drug. Once addicted to nicotine, tobacco companies know young users will continue on to other types of tobacco and nicotine products such as cigarettes and even e-cigarettes.

Please help to eliminate the temptation and risk of handing over the health of more generations to Big Tobacco. Let's get rid of tobacco related deaths and the numbers one most preventable cause of death in the world. Please support SB 2222.

Thank you,

Rachael Peters

Kailua, Hawaii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

My name is Tristan Honda and I am 14 years old and live in Kapolei. I support Sb 2222.

I would like flavored tobacco and tobacco products to be banned because my parents smoke and it irritates me because of the smell. My parents say it is okay and that it is better than regular cigarettes. Therefore, I would also like that cigarettes to be banned as well.

Thank you for your time and consideration.
Tristan Honda

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators:

I am a guy from Hawaii named Abraham Nacino. I am guy who supports SB 2222.

I am a guy who is going against smoking and tobacco because I am a teenager who sees kids my age smoking after school especially e-cigs. My group that I hangout with go to class and see people going out of the restroom to smoke e-cigs.

Please do something about it by passing SB 2222.

Thank you,

Abraham Nacino
mabrahamnacino@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

My name is Lincoln Naiwi-Kotrys and I am a senior at Kapolei High School. I am currently 17 years old and I would like to express my support for SB 2222 related to flavored tobacco in Hawaii.

As a teenager, I understand that I am vulnerable to a lot of flavored products of tobacco companies. I have also been exposed to second hand smoke. I want the ban on distribution of flavored tobacco in Hawaii to help the people who are trying to quit tobacco products. I also really want my fellow family members to stop using tobacco products just because of the fact that there are many health issues that come along with such use.

Thank you for your support,
Lincoln Kaiwi-Kotrys
lkotrys@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

I am Angela Akana and I am 16 years old from Kapolei, Hawaii. I support SB 2222.

I would like the end of flavored tobacco in Hawaii. It is clear that they are targeting the youth and I will not stand to watch my generation and even my siblings possibly become addicted and eventually die. It is not right.

Please pass SB 2222.

Thank you,
Angela Akana
akana.angela44@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

My name is La'alea Maeda and I am from Kapolei, Hawaii. I support SB 2222.

For every youth in Hawaii I have realized a true problem. I have seen this situation occur during school without the discipline to change it. I feel fearful knowing the increasing youth who don't know what is actually inside of tobacco. I see people around my age walking past me smoking by the road where everyone can see. This tobacco disappointments me because I have seen girls and boys in Kapolei Middle School that my younger sister knows who smokes e-cigarettes and were also thinking of purchasing tobacco. This makes an impact on myself and my sister. The only thing I know is that I'm afraid for what might happen next if we don't do something to stop it. I just want this problem to go away from the youth.

Please pass SB 2222.

Mahalo,
La'alea Maeda
lsmaeda@ymail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Justin Fernando of Kapolei High. I support SB 2222.

I have about 20 cousins with me being the oldest. I am a big brother to 2 sisters and 1 newborn brother. I babysit a lot so I grew a care like a parent to watch over them. This law will help protect them from tobacco addiction.

Please ban flavored tobacco in Hawaii.

Sincerely,

C/Put. Fernando
jusbigboi@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Joshua D'Andrea. I am from Kapolei and am a 16 year old sophomore at Kapolei High School. I support SB 2222.

I want the advertising and sale of flavored tobacco products in our stores to be stopped. This advertising and promoting the use of these flavored products are affecting our youth. Flavoring them is even worse because it will attract kids at a younger age because this flavored tobacco seems more appealing. Those who use these products are much more likely to get addicted and die young, which is something I do not want.

We should be working to protect and preserve our youth, but allowing the advertising and sale of flavored tobacco does the opposite. I have had family who had serious health problems because of their use of tobacco products. I do not want anyone else to worry about his or her family. Flavored products will attract kids at a younger age, who will eventually move on to regular tobacco use and then have a much higher chance of dying early. If flavored tobacco is not advertised and sold, then the amount of youth users will be decreased.

Please, make the right decision by supporting SB 2222.

Sincerely,
Joshua A. D'Andrea
joshuaad1297@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Morrisha Holi-Arrington and am 17 years old. I am from Nanakuli, Hawaii and I want to put a stop to flavored tobacco.

I do not want my kids growing up thinking that smoking tobacco is cool, especially with flavored tobacco. I want the future bright and I want my kids to have a good and successful life. I do not want their minds to be corrupted.

Please pass SB 2222.

Thank you,
Morrisha Holi-Arrington
rishaarrington@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

I am writing in support of SB 2222 related to flavored tobacco.

What I want is for the tobacco companies to stop production. I want this because I do not need my life to be any harder than it already is. I do not need any of my friends or family getting their hands on tobacco. My cousins and my sisters do not need to know what tobacco is. My father was a heavy smoker and life at the house is stressing him out and he is getting the urge to smoke again. My older sister has been a victim of second hand smoke and my other sisters do not need to be.

I want the companies to quit selling flavored tobacco so we do not get children influenced by these products. Please pass SB 2222.

Thank you,

Noah Rumbaugh, Makakilo
nrumbaugh558@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislator,

My name is John Wilson. I am 14 years old from Kapolei, Hawaii. I support SB 2222.

I would like the sale of flavored tobacco products to be banned in Hawaii because they continue to influence children to try these products.

Thank you,
John Wilson
jwilson808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I support SB 2222 related to flavored tobacco because I want the government to take action because otherwise tobacco companies actually will take charge.

Please pass the bill.

Thank you,

Britteny Florendo-Clarke
b.fiorendoclarke@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Raymond Ortiz, I am 14 years old and live in Ewa Beach, Hawaii. I am writing this to say that flavored tobacco products should be banned.

By banning flavored tobacco less youth will be starting to use tobacco products. Smokeless tobacco products may not have smoke but are just as dangerous as smoking tobacco. Without youth starting to use tobacco we will see less become addicted.

Please support SB 2222.

Sincerely,
Raymond Ortiz
ray96706@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am 15 years old and I go to Kapolei High School. I support SB 2222.

I think that smoking can cause bad habits and endanger others whether or not it is first or second hand smoke. I know that my family members smoke and endangers everybody but even if they want to won't be to quit because tobacco is addictive and it won't be easy for them to try and quit.

My friends have tried or use ecigs and like it just because of the flavoring and have tried to get me to use it and I think things like this should be stopped.

Please pass SB 2222.

Thanks,

Machaila Pray
MwPray98@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

My name is Noah Riley Wingad. I live in Kapolei, Hawaii and I want a flavored tobacco ban in the state of Hawaii and everywhere.

Personally, I do not want my younger siblings and my future kids to feel like they need to ever smoke.

Please pass SB 2222.

Thank you for your time,
Noah R. Wingad

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislator,

My name is Ethan Salacup and I am 14 years old from Kapolei, Hawaii. What I want is to ban all sales of flavored tobacco in Hawaii and in America.

Tobacco is bad and not beneficial. Tobacco companies only care about money not our health. I do not want the next generation to be hooked on tobacco use.

Please pass SB 2222.

Mahalo,
Ethan Salacup
ethansalacup@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello Legislators:

My name is Paul May and I am a 14 year old boy from Makakilo. What I want is the ban on the sale of flavored tobacco products.

I want this ban because flavored tobacco products do not really help anybody whatsoever except for the people making the product. Flavored tobacco products just help young people get addicted to tobacco sooner.

It is not much to ask but this ban can save many lives from disease and the constraints that associate with tobacco. I have a brother that smokes e-cigs and I worry that he will eventually get addicted to regular smoking. I ask that this ban can go into effect as soon as possible.

Thank you,

Paul May
paulmay3425@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

My name is Nicholas Reyes and I'm 15 years old. I attend Kapolei High School. I would like to address the serious issue of flavored tobacco. I am in strong support of SB 2222.

All flavored tobacco products should be banned because of how appealing it can be to kids of my age. I know first-hand the harmful effects of cigarettes because my grandma used to smoke every day. She is getting weaker and every time she visits, it sickens me to my stomach to see her in so much pain.

I don't want to see anyone start using these products. Please pass SB 2222.

Thank you,

Nicholas Reyes

nreyes954@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello Legislators:

My name is Angel-Blayze Padilla and I am from Oahu, Hawaii. I support SB 2222.

What I want is to ban the sale of flavored tobacco products so that no one in the future will be physically and mentally controlled by tobacco. One of my relatives had a smoking addiction and had a heart attack during his 30's. He dodged a bullet that day and quit smoking, not just for him but also for his friends and family.

Please pass SB 2222.

Thank you,
Angel-Blayze Padilla
angelblayze@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello,

My names Aaron Rasquero and I'm from Kapolei, Hawaii. I support SB 2222.

I want tobacco companies to stop advertising and selling flavored drugs to our generation because I don't want to be a victim of tobacco's side effects. I also want flavored tobacco to be illegal because I also don't want my brother, sisters, and cousins to fall prey to tobacco companies either. Finally, I want this to happen because I know what its like to lose a loved one from tobacco and I don't want others to feel the same way.

Please pass SB 2222.

Thank you,

Aaron Rasquero
Aaron.rasquero@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

To Hawaii Legislators,

My name is Kaiona Kanika Lynn Christiansen. I am age 15. My family, friends and many people call me Kanika. I am in support of SB 2222.

I would like to start by saying, I am not a fan of tobacco. My birth family had a bad history on smoking and drinking which is the reason why I was taken away from them. Also because of their bad choices they had affected my body.

I would like flavored tobacco to be banned. I don't want kids to have the trouble I had. Save lives. Protect youth.

Thank you!

Kaiona Christiansen
kanikalynn@gmail.com

SB2222
Submitted on: 2/10/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Jake J. Watkins	Individual	Oppose	No

Comments: Is this bill is a joke? Because I'm not laughing.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Cole Barber. I am 16 and I live in Kapolei. I want to get rid of flavored tobacco in Hawaii.

The flavored tobacco still has the same damage to your body. The fact that flavored OTPs are even legal is just another loop hole in the law for tobacco companies. The tobacco companies target little kids so that later on they become addicted customers. These companies don't care about any of their customers. All they want is money.

I personally have a close family member that has cancer from smoking. She is only 65 and must have 24/7 medical care. She is bed ridden for the rest of her life. The doctor said that soon the cancer will go to her brain and kill her. It is probably the hardest things to watch because she suffers every day and never gets better. It's just terrible to even try and watch people go through.

Passing this law will protect people. Thank you for consideration.

Sincerely,

Cole Barber
Kidwander12@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

My name is Stephen Tanodra. I am 16 years old, I live in Makakilo, and I go to Kapolei High School. I support SB 2222.

I feel that flavored tobacco should be banned in Hawaii because it is influencing youth to get addicted to other tobacco products, and that is wrong.

Please pass SB 2222.

Thank you,

Stephen Tandora
Stephen.tandora@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Fa'asaulala Laumoli and I live in Kapolei. I am writing in support of SB 2222.

I honestly can't stand it when people smoke around me. I see my close friends who are 16-18 years old and slowly starting to get into this bad habit. All we want is for people to stop using it and for this tobacco industry to not be allowed to sell in Hawaii. Banning tobacco will impact our community in an awesome way.

Please pass SB 2222.

Mahalo,

Fa'asaulala Laumoli
lalalaumoli@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I support SB 2222.

I want tobacco to be gone forever! Many people die every day because of tobacco and I don't like the fact that horrible thing happens every day because of tobacco.

I want you to please ban flavored tobacco sales in Hawaii to protect us.

Thank you,

Noja Ramiscal
nojaramisca@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am writing in support of SB 2222.

Tobacco is an image embedded in my mind. As a child and also throughout my life I walk in Chinatown to shop for Chinese groceries. I see stores with cigarette ads on them, and smokers nearby. The idea of flavored cigarettes, targeted to have young people get into the habit of smoking is not a welcoming thought to me. My grandfather smoked for most of his life and died after 2 years of quitting. To see young people smoking and possibly addicted and die suffering like my grandpa makes me upset.

I personally have seen fellow classmates smoking and to see them do something that would get them killed later in life is not a pleasing sight, especially when your family member has died.

I think this law will protect people from ever starting tobacco. Please pass the law.

Thanks,

Hunter Montol Chan
Yogurt203@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Preston Perlas. I am from Kapolei and age 14. I write this to support SB 2222 that would ban flavored tobacco in Hawaii.

The target of these products is young people. These products shorten the lives of older people of Hawaii because once they get addicted they can't stop. To me, it's not a good thing because it's terrible for the people of Hawaii.

We should also ban these tobacco ads for these products and make sure that the government does it's job to enforce the laws.

So please help us work their way through a healthy proper life by passing SB 2222.

Mahalo,

Preston Perlas
Prestonperlas7675@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello.

I am in strong support of SB 2222.

I don't want to see flavored tobacco everyday of my youth and be curious to how it tastes. It's pretty messed up that tobacco companies continue to make it look more like gum and any other candy products that kids would use any day.

Please stop tobacco companies from selling these products in Hawaii.

Thanks,

Gabriel Wyatt
captnrawr@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Niche Ludy and I am 14 years old. I am from Kapolei, Hawaii. I support SB 2222.

I have family members who use several of these flavored tobacco products. I also have an uncle who is on life support in the hospital because of tobacco related illness. I feel these tobacco companies are attacking the little kids of Hawaii with these products. I want to protect my little sister who is special needs from this influence.

Please pass SB 2222.

Thanks,

Niche Ludy
jdavita@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

I am writing in support of SB 2222.

I see tobacco as a cold-hearted killer. I don't want it to kill my family and friends. Tobacco companies use flavors to attract kids and it's disgusting how they use that to their advantage.

I am for the ban of all tobacco sales and usage in the state, nation, and hopefully the world. For now I strongly support this first step. Please pass SB 2222.

Mahalo,

Brian Gillam
Briangillam97@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am writing in support of SB 2222.

I want to ban sales of flavored tobacco because it targets kids. Tobacco companies try to make kids start using tobacco through these flavored products. It could really effect them throughout their lives. I don't want to see tobacco effect my family and friends.

Please pass SB 2222.

Thank you,

Zachery Aquino
Zachery.aquino@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislature,

My name is Lexus Vallesteros. I am 15 years old. I am from Kapolei, Hawaii. I support SB 2222.

I would like to ban flavor tobacco all around, because what good can it do. The only thing that it's good for is the people who sell it because they're the ones making money off of addiction.

Also it would be better to ban these flavored products so there wouldn't be those ads in the store trying to catch our attention and waste our money on something that can get us addicted and is bad for our health. It would also be better for the kids to not have to see these ads in front of the stores. Research shows that tobacco ads work in getting kids to try to tobacco.

Please pass SB 2222.

Sincerely,
Lexus Vallesteros

lexusvallesteros@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Albert M. Savellano. I am from Waipahu, Hawaii. I am in support of SB 2222.

I believe if we ban flavored tobacco then we'll prevent our next generations from starting to attain or ever use tobacco.

Please pass SB 2222.

Thank you,

Albert M. Savellano.
Aljr808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Kekai Christiansen. I attend Kapolei High School and I am 17 years of age. I am writing to support SB 2222.

I personally feel like flavored tobacco products should be banned. Youth and young adults are all vulnerable to these products especially kids thinking that some of these flavored tobacco products are candy.

Give kids and young adults a chance to live a healthy, cancer-free life. Ban these flavored tobacco products!!!

Mahalo,

Kekai Christiansen

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am in strong support of SB 2222.

Flavored tobacco is just a loophole to existing laws banning flavored cigarettes. This loophole has the potential to influence the youth. This could lead from to health problems, fatal health risks, and then death.

I humbly ask for your support to remove flavored tobacco products from the store shelves in Hawaii.

Sincerely,
Chris Solomon

Yankeepatriotusa123@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Senators:

My name is Angela Sy and I am a professor in nursing and public health. I am in support of SB 2222 to discontinue the sale and distribution of flavored tobacco products in Hawaii.

This policy will have great impact on reducing youth and young adult tobacco use because when the products cease to be sold in our stores, the amount of tobacco ads that cover stores in our communities will reduce significantly. Hawaii would follow Rhode Island, New York City, and many counties in the state of Florida who have already made the sale of these products illegal.

The inclusion of menthol in this bill may provide significant impact on reducing the disproportionate burden of tobacco-related disease that affects Native Hawaiians and Filipinos who continue to use tobacco at a higher rate.

Please pass this measure.

Sincerely,

Angela Sy, DrPH

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am 16 years old from Kapolei, Hawaii. I am in strong support of SB 2222.

I want to inform you that tobacco companies are introducing a growing number of flavored tobacco products that are targeting the youth. As a 16 year old, I feel that flavored tobacco should be illegal. The products are pointless. These tobacco companies who make and market the products are ruining the future of our nation by introducing these products to youth and young adults. The fact is these products are causing diseases and death.

In this case please take the time to think about NOT allowing these products to be sold, especially in Hawaii.

Sincerely,
KamrynMae Kanae

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha,

I am Steven Macas, a private first class in my JROTC platoon. I am writing in strong support of SB 2222.

I come from Kapolei, Hawaii, a growing city on the island. I want cigarette ads in the local stores to cease from their current popularity. These ads could one day influence my siblings with the words like "flavor." They may not realize it and believe these flavored tobacco products are better than regular cigarettes for your health. I wouldn't ever want anything to happen to them. And I just don't like how tobacco ads are shoved in our faces.

Please do something now by banning flavored tobacco in Hawaii so then we don't have to see those ads anymore.

Sincerely,
Steven Macas

itsmrcoolman@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hi.

I'm Hannah Moreau and I go to Konawaena High School. I am in support of SB 2222.

We need your help to stop the sale of flavored tobacco in Hawaii. These products are being targeted towards me as a teen and I don't like that.

Thank you for your support to get flavored tobacco products banned from being sold in Hawaii.

Aloha,
Hannah Moreau
bananamonkeymilkshake@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

To Legislators:

My name is Chloe Delaney and I support SB 2222.

I do NOT want to be targeted by the tobacco companies. I think that targeting youth is wrong, especially when tobacco use is extremely detrimental to our health and will greatly contribute to our premature deaths. So I am against the sale of flavored tobacco in Hawaii because it targets youth primarily.

Thank you for your support.

Sincerely,
Chloe Delaney
Delaney.chloe20@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

To Legislators:

Hello, my name is Chad Alcain. I support SB 2222.

I think that you should ban the sale of flavored tobacco products in Hawaii because it is a bad influence on the youth.

Thank you,

Chad Alcain

chadelement@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Dear Legislators,

I am a resident of Kailua Kona, Hawaii. I strongly support SB 2222.

I would like for you to help to support a discontinuation of sale of flavored tobacco products in Hawaii. This is our chance to severely reduce the chances that our future generations will become enticed and addicted to these horrible cancer-causing product.

Lets not support big tobacco and instead support our keiki for a healthier future!

Thanks you very much!

Alyson Sonneborn
Snosyla@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hi.

I'm Nana Roura. I am a high school student at Konawaena. I support SB 2222.

I would love for you to eliminate the sale of flavored tobacco here in Hawaii. It makes me sick that they are even allowed right now to be sold.

Please pass SB 2222.

Thank you for your support,

Nana Roura
nanitaroura@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Kelly Cygan. I live here in Kailua-Kona and I support SB 2222.

I want to see you stand up for our youth. With your support to discontinue flavored tobacco sales in Hawaii you would be making a major impact on our youth's lives! Please do not support big tobacco on this one.

Please discontinue the sale of flavored tobacco in our Hawaii!!!

Thank you for your support,

Kelly Cygan
hawaiiankelly@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Aloha,

My name is Melia Astronomo. I am a junior at Konawaena High School. I live in Ocean View, Hawaii, I think that the sale of flavored tobacco should be banned in Hawaii.

These products and the companies that make them influence a lot of my friends and I don't like it.

Please pass SB 2222.

Thanks for your support,

Melia Astronomo
I2lovemommy@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators,

My name is Dean Schamber, I live in Kona, Hawaii. I am writing in strong support of SB 2222 to stop the sale of flavored tobacco products in the state of Hawaii.

These products are disguised as candy and deceptively placed and advertised near candy where kids will be sure to see it.

Please support the discontinuation of flavored tobacco in Hawaii.

Mahalo,

Dean Schamber
Deanpaul.schamber@g.austincc.edu

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
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Dear Legislators,

My name is Elizabeth Heppe. I live in Kailua-Kona, Hawaii. I am part of a group called REAL. I strongly support SB 2222.

I am asking for your help in supporting the ban on flavored tobacco in Hawaii. The tobacco industry uses these products and their packaging to lure kids into using their products. The products are strategically placed near gum and candy to make it easily accessible for youth to steal. It's important we take action in order to be able to protect our youth in Hawaii.

Thank you for your support!!!

Elizabeth Heppe
lizheppe@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators,

My name is Amanda Castaldo. I live in Kona, Hawaii. I support SB 2222.

These products our marketed primarily to young kids, whom aren't legally able to purchase them but are still getting access. They are placed near the candy and even look like candy. This strategy works on curious kids that can't yet conceptualize the impact that this one decision will have on the rest of their lives.

I would like for you to help me to support the discontinuation of sale of flavored tobacco products in our state. This is our chance to show 'Big Tobacco' that this truly is our state, and that we care for our keiki.

Help to relieve this pressure from our keiki and place a ban on selling flavored tobacco in OUR state!

Many Mahalos,

Amanda Castaldo
Amanda.Castaldo@FourSeasons.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha.

My name is Lleliena Loynaz and I'm an adult advocate against tobacco in our communities. I am asking for your support of SB 2222 regarding the discontinuation of sale of flavored tobacco products and menthol.

Our communities are a hub for raising our kids. Continuing to allow the tobacco industry to enter our communities, especially to target our youth and young adults through the continuous advertisements and sale of flavored tobacco products right in the places they grow-up in, hang-out, purchase snacks, or simply are just passing by on their way to school is unacceptable. We ask our youth to be responsible in their decision making and you ask us parents and guardians to be Pono and conscious of the things we say and do as we raise our keiki. But don't forget, as our elected officials you also have a responsibility to our keiki, youth and our community, and ultimately YOU are Our Voice in Government. Allowing these companies access to our communities is not a Pono thing to do – it is not responsible.

It has been proven the sale of such products would decrease the appeal to start using tobacco among the younger generations and aid in the prevention of smoking related health risks in the future.

Please be our voice in telling the tobacco industry that we will no longer allow them to target our keiki, our youth or our communities with their harmful products. Please send them a strong and clear message by supporting SB 2222.

Together we have the responsibility to protect our future generations from the predatory actions of the tobacco industry.

I am asking for your strong support by passing SB 2222.

Sincerely,
Lleliena Loynaz - Pearl City, Hawaii - loynaz1@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Sheila Saldaña Santos. I'm 16 years old and am a Junior at Kapolei High School. I am in support of SB 2222.

I would like for flavored tobacco products to be taken away for many reasons. The first reason is because it can cause so many health problems like cancer that can end up leading to death. Also when the tobacco companies advertise tobacco they want teens to buy them and they don't care what happens to youth after...they just want the money.

I myself wouldn't want to get sick at a young age. I have a lot to live for and many things to experience. So that's why I strongly support getting rid of this terrible tobacco products.

Mahalo,

Sheila Saldaña Santos
sheilasaldana2015@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is John Pimentel. I am a college student at Hawaii Community College at Hilo. I am writing in strong support for the discontinuation of the sale of flavored tobacco products (known as Other Tobacco Products) such as flavored cigars, chewing tobacco, and snus with colorful deceiving advertisements and packaging that attracts youth.

I believe these products are disguised as candy and are commonly placed near candy in stores to create marketing towards youth who are not even eligible to use tobacco. I strongly agree to ban these flavored products because we want an environment where our next generation youth can enjoy Hawaii as healthy and tobacco-free.

Thank you for your consideration,

John Pimentel

Hilo-Hawaii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators:

My name is Alana Laanui, I am 17 years old and am a senior at Maryknoll High School. I am writing this testimony to support a ban on the sale of flavored tobacco under SB 2222.

Flavored tobacco is clearly marketed to kids such as me and is used as hooks for kids to continue buying tobacco products. Flavored tobacco confuses kids with their wrapping that mimic things such as candy and gum. Having flavored tobacco in this state tempts the next generation to experiment with nicotine and ultimately become regular users of tobacco products.

Please pass SB 2222.

Thank you for your consideration,

Alana Laanui

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Suzy Takemoto and I live in Kaneohe, Hawaii. I am writing in support of SB 2222.

I think tobacco is very harmful to people and they don't realize the harmful effects it has on the body. And it also doesn't help that young kids and teenagers see ads in the store which encourages them to do it too. I think we should ban the selling of flavored tobacco to get rid of some of the tobacco advertising in our communities and protect youth.

Please pass SB 2222.

Thank you very much,

Suzy Takemoto
Tmtakemoto123@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Officials,

My name is Richard Greve and I would like to testify in strong support of SB 2222 against the sale of tobacco-flavored products.

I live in Kapolei, Hawaii, and want the state of Hawaii to ban the tobacco companies from selling flavored products in the state. Being 17 years old, I understand my age group is a primary target and want to have this law passed so that future generations do not have to deal with the tobacco companies like past generations.

Please pass SB 2222.

Thank you,

Richard Greve

Richard.greve96@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

Hello, my name is Ryan Shin and I am a ninth grader at Mary Knoll School. I live in Honolulu, Hawaii. I am in strong support of SB 2222.

I am very concerned for myself and others because of flavored tobacco products. Companies are trying to lure young kids to use their tobacco products. I don't feel safe. I feel very vulnerable about how they are targeting us and the intention of tobacco companies to increase the number of tobacco users.

Please pass SB 2222 to protect me and my generation.

Sincerely,
Ryan Shin
shinr17@maryknollschool.org

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hi Legislators,

My name is Nicholas Wong. I am a ninth grader attending Mary Knoll High School. I am sharing my testimony in support of SB 2222.

Recently I went to the beach with my friends. After we decided to go to my friend's house and hang out. Then my friend got a call from this other guy. He asked us to go to his house. So we got in the car and drove around the block. When we got there we went inside this kid's room, who I didn't know but my friend did. Inside I saw and old friend of mine and another two kids. They were all smoking cigarettes. I didn't say anything because I didn't want them to think I wasn't "cool." When we finally left I asked my friend what happened to them. He said they got addicted to cigarettes and couldn't quit. My friend from our old school looked different but in a bad way. This made me feel sad and mad that tobacco companies target youth with their products and marketing. I never really cared what happened to teenagers who got addicted to cigarettes until I saw my friends using tobacco.

In conclusion I would like our government to ban flavored tobacco products and hopefully one day soon ban them tobacco completely in Hawaii. We also need better enforcement of laws on sales of tobacco products because my friend who I don't know anymore would bribe the clerk to be able to get cigarettes. So, please, ban the sale of flavored tobacco products by voting yes to SB 2222.

Mahalo,
Nicholas Wong
Nickwong808@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Ulalia. I am 15 years old and from Ewa Beach, Hawaii. I am in support of SB 2222.

As I have been growing up to become a teenager, I have been seeing tobacco around me a lot because my dad smokes and I have been temped many times. One day it came to that point where I picked up a cigarette right after my dad was done smoking. He flew it and I picked it up and took a hit. I was only seven years young. I did this many times but I stopped when I started to play sports because I learned that it could give me lung cancer and it could ruin my breathing. So I tried to talk my dad out of smoking because when he blows the smoke it flies in my face and I breathe it in most of the time. I am very disappointed and tell him stop but he did not and this hurts me. I have no care for tobacco and I want people to stop so we can have a cleaner and safer day of living.

Please do what you can to stop people from ever starting tobacco by passing SB 2222.

Mahalo,

Ulalia Soa
ulaliasoa@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello,

I am Carmen Ah Sam and am from Makakilo. I am 15 years old. I am in strong support of SB 2222.

I would like to say that banning sale of flavored tobacco products is the best idea that the REAL program has ever made because it is the right thing to do for the future generation. These tobacco products really are bad and I know that. Come to think of it, the tobacco industry is not helping the people out but they are definitely killing people.

In conclusion, I say that banning flavored tobacco would help not only people now, but the future generation. Please vote yes to SB 2222.

Mahalo,

Carmen Ah Sam
carmenahsam@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Kayla Lanier and I'm 17 years old. I am from Kapolei and I want a ban on the sale of flavored tobacco in Hawaii.

I feel targeted by these products. I am upset and irritated by the fact that my friends, my siblings, my community are being exposed to these products that are manipulative tactics of tobacco companies who need my generation as customers to continue their businesses.

Flavored tobacco products are made to addict children. They are made of up of fruit flavors and colorful packaging. These products are not aimed at adults tobacco users who already have a brand of choice.

I hope you will take this seriously and move to discontinue the sale of flavored tobacco in the state of Hawaii. Please pass SB 2222.

Thank you for your time,

Kayla Lanier
Kapolei, Hawaii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hi Legislators,

I am Gemma Hayden. I am 14 years old and live in Palolo. I am in strong support of SB2222.

I believe that sale of flavored tobacco products should be banned in Hawaii because I believe they are aimed at youth. I don't believe that youth should be exposed to things like these products because then we want to try them.

It would be great if youth didn't have to see or be exposed to these things. Please pass SB2222.

Thank you,

Gemma Hayden
Honolulu, Hawaii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Bryant De Costa and I am from Kapolei High School. I am in support of SB 2222.

I want tobacco companies to stop trying to influence the younger generation to get us to start smoking. These companies are poisoning the minds of younger children and trying to exploit us while we are still in our developing stages. I am personally against this because I have a younger nephew who is only 3 years old, but he is already imitating my parents who also smoke and it is sad to see that his mind believes that it is cool and alright to smoke.

Please pass SB 2222.

Thank you,

Bryant De Costa, age 16
Decosta_boi65@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Hello,

My name is Allysha Martinez from Ewa Beach, Hawaii. I am 15 years old. I am in support of SB 2222.

I really want the issue of tobacco companies selling flavored tobacco to stop. I really want to see flavored tobacco banned because from what I learned, it does target the young. It's horrible to know that these companies don't have a second thought about how tobacco can affect the lives of others.

I've had friends that started smoking at a young age. Now I see them and they're going through complications. They became rebellious. We need to stop this in Hawaii. There is no point in allowing the purchase of these products because there is no benefit to using them.

Please pass SB 2222 to protect us.

Thank you very much,

Allysha Martinez
mmartinmae@yahoo.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Anthony De Filippo. I am 17 years old and am from Staten Island, New York but now live here in Kapolei, Hawaii. I am in strong support of SB 2222.

When people ask me to be "cool" and "fit in with the crowd" I say "NO!" because they want me to use tobacco products and that is So NOT COOL!!! I think we should ban all tobacco products completely to prevent other kids from trying to "be cool" or "fit in" and have a healthy future for the sake of many more generations to come. Starting this process by banning flavored tobacco is a good start I think.

Please support SB 2222 for the youth generation.

Anthony De Filippo
deflip403@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Kaylyn Titial'ii. I am 16 years old. I am a student at Kapolei High School and am from Kapolei, Hawaii. I am in strong support of SB 2222.

I want the flavored tobacco products to be banned from local stores throughout the state, because they are targeting kids and teenagers. I wouldn't want my 10 year old sister to smoke flavored cigars just because they look and say they taste like candy.

Please pass this law to protect my younger sister.

Mahalo,

Kaylyn Titial'ii
Kaylyn817@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Mathew Delmonico and I'm from Oahu, Hawaii. I am in strong support of SB 2222.

I would like for all tobacco products to be banned within a year or less because the products do kill people and it is very bad for health. The use of tobacco serves no purpose at all. It's just a waste of money and it waste of life.

Please pass SB 2222.

Thank you,

Mathew Delmonico
mathewdelmonico@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

I am Timothy Renon from Oahu, Hawaii. I attend Kapolei High School as a Junior (Class of 2015). I am in strong support of SB 2222.

I believe in this law because overall I believe that the distribution and advertising of tobacco products should be reduced in respect to the community. I feel that this should be reinforced because the pressure that is being exerted upon the community to use tobacco products is unconceivable and reckless. Just having all of the ads out should be illegal. We need some laws to stop the tobacco companies now before it's too late.

Thank you for your consideration.

Timothy Renon
tim.renon15@gmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Heem Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Joslyann Manzano. I am 16 and was born in Puerto Rico but my dad is in the Army and we move every 3 years. I now live in Kapolei. I am in support of SB 2222.

I want every tobacco product to be banned but I know that won't happen anytime soon so I encourage you to ban at least flavored tobacco products and their advertisments. Tobacco companies aren't stopping their targeting of kids and teenagers. Teenagers then think it's cool and some fall into peer pressure and become addicted then ultimately die at a younger age. It ruins lives.

My father smokes cigarettes and I know that it is slowly killing him and he knows it. He says he is trying to quit and he even bought the vapor cigarette because he really wants to quit but he is struggling. Part of the reason he struggles is because he sees the cigarettes. I told my father that when I have kids I don't think they would want to visit their grandfather when he has a hole in his throat and sounds like a monster. His response is, "I won't live that long". It makes me want to cry and I try to help him quit but when he sees his friends or other people smoking he says he has to smoke one and that leads to another pack.

You can stop this from happening! I don't want to bring my children into a world of tobacco. It's disgusting! The tobacco companies don't care about lives. They just care about money. I know none of you would want your kids smoking a cigarette and supporting companies that just want money and neither do I!

I'm asking you kindly to please stop tobacco companies by passing SB 2222. I do wish you would just ban the selling of all tobacco completely but this is a great place to start to protect teens from every starting to smoke.

Thank you very much,

Joslyann Manzano

sexyjoslyann@hotmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators,

My name is Leilani Swartz, I am fifteen years old. The reason I am writing is because I am in support of SB 2222.

I believe that flavored tobacco is harmful to kids. It should not be advertised near the kids candy. It has colorful packaging that makes it seem harmless and not addictive. I know that this is generally for kids because if you are an adult who has been smoking for a long time then you really wouldn't care about candy and fruit flavored tobacco products. The big companies know that if youth get hooked at a young age then you will be most likely to buy it for their lifetime.

OTPs (other tobacco products) are targeted to this generation of youth. Please pass SB 2222 to protect us.

Thank you.

Leilani Swartz.
Pearl City, Hawaii

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Dear Legislators,

My name is Brandon Bonnell. I live in Waipahu, Hawaii. I am in support of SB 2222.

I want to stop the sale of flavored tobacco because I don't want future generations to be affected by the harmful effects of tobacco.

Thank you for reading this. Please pass SB 2222.

Brandon Bonnell

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

Aloha Legislators,

My name is Lance Yamasaki Jr. I am a seventeen year old and I graduated from Hawai'i National Guard Youth Challenge Academy. I am writing in strong support of SB 2222.

The reason I am in support of this law is because I believe that flavored tobacco is harmful to kids. It should not be advertised near the kid's candy or even sold in our local stores. It has colorful packaging appealing to kids which can entice youth to try tobacco products which is hurting the health of the future generation.

Thank you for taking time to read this. Please pass SB 2222.

Lance Yamasaki

To: Senator Rosalyn Baker, Chair

Senator Brian Taniguchi Vice Chair

Committees Members

Committee on Commerce and Consumer Protection

Senator Clayton Hee Chair

Senator Maile Shimabukuro, Vice Chair

Committee Members

Committee on Judiciary and Labor

Dear Legislators:

Aloha, my name is Melissa Chong, I'm 24 years old from Hilo, Hawaii. I've also been a member of REAL since 2005. I care deeply about fighting against the Tobacco Industry that continues to target young people each day in Hawaii and around the world, myself included. Because I care so much that's why I'm writing to you today in strong support of SB 2222.

Please ban the sale of all flavored tobacco products in Hawaii. These flavored products are not aimed at adults but are for youth and young adults who like candy flavors and who are very attracted to the colorful packaging. You might not believe that tobacco products are being targeted at young people but it is. A lot of young people mistaken these flavored tobacco products for candy and try them which is how they become hooked on nicotine, which is exactly what the Tobacco Industry wants. We need to put a stop to this!

If the sale of flavored tobacco products is banned less young people will start to become tobacco users, less people will be harmed by these deadly products and we'll have a healthier generation growing up here in Hawai'i.

Please join me in taking a stand against the Tobacco Industry who brings so much harm to our community. Please ban the sale of flavored tobacco products in Hawaii by passing SB 2222.

Thank you for your consideration,

Melissa Chong
REAL
60 Oliana Street, Hilo, Hawaii 96720
local_girl_121@hotmail.com

To: Senator Rosalyn Baker, Chair
Senator Brian Taniguchi Vice Chair
Committees Members
Committee on Commerce and Consumer Protection

Senator Clayton Hee, Chair
Senator Maile Shimabukuro, Vice Chair
Committee Members
Committee on Judiciary and Labor

Re: Strong Support for SB 2222 – Relating to Flavored Tobacco Products
February 11th, 2014 at 9:30am
Conference Room 229

February 7th, 2014

Aloha Legislators:

My name is Kim Swartz and I work for the Office of Public Health Studies at the University of Hawai'i at Manoa. I am in strong support of SB 2222 which discontinue the sale of flavored tobacco products in Hawaii and protect our youth.

The pretty packaging of these products that the industry came up with is very deceiving. We should all care about the health of our youth. Please let's ban flavored tobacco sales now!

Mahalo,

Kim Swartz
kswartz@hawaii.edu

Dear Chairs Hee and Baker, Vice-Chairs Taniguchi and Shimabukuro, and Members of the Committees,

Thank you for the opportunity to speak out STRONGLY AGAINST SB2222, which would ban the sale of flavored tobacco products and redefine tobacco products to include e-liquid vaporizing products (AKA e-cigarette or vaping products). There is no reason whatsoever for vaping to be included in this law, and its inclusion is against the interests of public health and Hawaii's economy.

The entirety of the justification for this law does not apply to vaping. The language is related to tobacco only; vaping is a completely distinct market and product segment. None of the tobacco settlements apply to vaping, no claims about advertising apply to vaping, and there is no proof of public harm for vaping, contrary to the assertions in the bill.

Vaping is not smoking. Vaping is usually used to *quit* smoking. There is a large and growing body of science showing that vaping produces little to none of the exposure to harmful substances found in tobacco smoke. E-liquids are available that contain no ingredients in common with tobacco, including nicotine.

Flavor bans will increase tobacco use. Making vaping products less palatable, especially making them taste like exclusively like tobacco, would tend to drive users back toward tobacco use. This is against the interests of public health and will literally lead to death and illness.

Flavors are key to the vaping industry. Because e-liquid does not contain tobacco and is not burned, flavors are part of the product per se, and many people vape for flavor more than anything else – even more than nicotine. Banning flavoring effectively destroys the product.

Enforcement will be a problem. Because e-liquid flavors are mostly artificial, the state would have to enact some kind of standard and testing protocol to define exactly what a "tobacco" flavor is. The state will likely find this extremely problematic.

Money will leave the state. Because flavored e-liquids remain legal in the US and worldwide – and are a booming market – consumers will turn to out-of-state sources for their purchases, driving commerce out of the state. E-liquid manufacturers in state will shut down and/or move to other states.

I have attached studies outlining the current scientific knowledge of the safety of vaping, which show 1) toxin exposure to be negligible, 2) that purportedly dangerous "secondhand vapor" does not exist, and 3) that vaping is as effective or moreso than other smoking cessation therapies.

Regarding flavored tobaccos:

Banning menthol and flavors is discriminatory and culturally insensitive. Menthol flavor is preferred disproportionately by adults belonging to ethnic minorities. Native Hawaiian and pacific islanders, and black or African-Americans have the highest levels of preference. Furthermore, non-cigarette and cigar preparations of tobacco, especially shisha (hookah) tobacco, are manufactured almost exclusively around non-tobacco flavors. So this ban would disproportionately affect minorities and minority cultures.

Money will again leave the state. Because menthol and flavored tobaccos like shisha tobacco remain legal in the US and worldwide, consumers will take their business out of state.

Please do not pass this unjustified and discriminatory bill.

P. Kuromoto, Honolulu, HI

Technical Report July - August 2013

Peering through the mist: What does the chemistry of contaminants in electronic cigarettes tell us about health risks?

Igor Burstyn, PhD

Department of Environmental and Occupational Health
School of Public Health
Drexel University
1505 Race St., Mail Stop #1034
Philadelphia, PA 19102
USA
Tel: 215.762.2909 | Fax: 215.762.8846
igor.burstyn@drexel.edu

Abstract

The aim of this paper is to review available data on chemistry of aerosols and liquids of electronic cigarettes and to make predictions about compliance with occupational exposure limits of personal exposures of vapers (e-cigarette users) to compounds found in the aerosol. Both peer-reviewed and "grey" literatures were accessed and more than 9000 observations of highly variable quality were extracted. Comparisons to the most universally recognized workplace exposure standards, Threshold Limit Values (TLVs), were conducted under "worst case" assumptions about both chemical content of aerosol and liquids as well as behavior of vapers. The calculations reveal that there was no evidence of potential for exposures of e-cigarette users to contaminants that are associated with risk to health at a level that would warrant attention if it were an involuntary workplace exposures by approaching half of TLV. The vast majority of predicted exposures are <<1% of TLV. Predicted exposures to acrolein and formaldehyde are typically <5% TLV. Considering exposure to the aerosol as a mixture of contaminants did not indicate that exceeding half of TLV for mixtures was plausible. Only exposures to the declared major ingredients -- propylene glycol and glycerin -- warrant attention because of precautionary nature of TLVs for exposures to hydrocarbons with no established toxicity. Comparing the exposure to nicotine to existing occupational exposure standards is not valid so long as nicotine-containing liquid is not mislabeled as nicotine-free. It must be noted that the quality of much of the data that was available for these assessment was poor, and so much can be done to improve certainty in this risk assessment. However, the existing research is of the quality that is comparable with most workplace assessments for novel technologies. In summary, an analysis of current state of knowledge about chemistry of liquids and aerosols associated with electronic cigarettes indicates that there is no evidence that vaping produces inhalable exposures to *contaminants* of the aerosol that would warrant health concerns by the standards that are used to ensure safety of workplaces. However, the aerosol generated during vaping as a whole (contaminants *plus declared ingredients*), if it were an emission from industrial process, creates personal exposures that would justify surveillance of health among exposed persons in conjunction with investigation of means to keep health effects as low as reasonably achievable. Exposures of bystanders are likely to be orders of magnitude less, and thus pose no apparent concern.

Keywords: vaping, e-cigarettes, tobacco harm reduction, risk assessment, aerosol, occupational exposure limit

Introduction

Electronic cigarettes (also known as e-cigarettes) are generally recognized as a safer alternative to combusted tobacco products (reviewed in [1]), but there are conflicting claims about the degree to which these products warrant concern for the health of the vapers (e-cigarette users). A vaper inhales aerosol generated during heating of liquid contained in the e-cigarette. The technology and patterns of use are summarized by Etter [1], though there is doubt about how current, complete and accurate this information is. Rather conclusive evidence has been amassed to date on comparison of the chemistry of aerosol generated by electronic cigarettes to cigarette smoke [2-8]. However, it is meaningful to consider the question of whether aerosol generated by electronic cigarettes would warrant health concerns on its own, in part because vapers will include persons who would not have been smokers and for whom the question of harm reduction from smoking is therefore not relevant, and perhaps more importantly, simply because there is value in minimizing the harm of those practicing harm reduction.

One way of approaching risk evaluation in this setting is to rely on the practice, common in occupational hygiene, of relating the chemistry of industrial processes and the emissions they generate to the potential worst case of personal exposure and then drawing conclusions about whether there would be interventions in an occupational setting based on comparison to occupational exposure limits, which are designed to ensure safety of unintentionally exposed individuals. In that context, exposed individuals are assumed to be adults, and this assumption appears to be suitable for the intended consumers of electronic cigarettes. "Worst case" refers to the maximum personal exposure that can be achieved given what is known about the process that generates contaminated atmosphere (in the context of airborne exposure considered here) and the pattern of interaction with the contaminated atmosphere. It must be noted that harm reduction notions are embedded in this approach since it recognizes that while elimination of the exposure may be both impossible and undesirable, there nonetheless exists a level of exposure that is associated with negligible risks. To date, a comprehensive review of the chemistry of electronic cigarettes and the aerosols they generate has not been conducted, depriving the public of the important element of a risk-assessment process that is mandatory for environmental and occupational health policy making.

The present work considers both the contaminants present in liquids and aerosols as well as the declared ingredients in the liquids. The distinction between exposure to declared ingredients and contaminants of a consumer product is important in the context of comparison to occupational or environmental exposure standards. Occupational exposure limits are developed for unintentional exposures that a person does not elect to experience. For example, being a bread baker is a choice that does not involve election to be exposed to substances that cause asthma that are part of the flour dust (most commonly, wheat antigens and fungal enzymes). Therefore, suitable occupational exposure limits are created to attempt to protect individuals from such risk on the job, with no presumption of "assumed risk" inherent in the occupation. Likewise, special regulations are in effect to protect persons from unintentional exposure to nicotine in workplaces (http://www.cdc.gov/niosh/docs/81-123/pdfs/0446.pdf; accessed July 12, 2013), because in environments where such exposures are possible, it is reasonable to protect individuals who do not wish to experience its effects. In other words, occupational exposure limits are based on protecting people from involuntary and unwanted exposures, and thus can be seen as appropriately more stringent than the standards that might be used for hazards that people intentionally choose to accept.

By contrast, a person who elects to lawfully consume a substance is subject to different risk tolerance, as is demonstrated in the case of nicotine by the fact that legally sold cigarettes deliver doses of nicotine that exceed occupational exposure limits[9]: daily intake of 20 mg of nicotine, assuming nearly 100% absorption in the lungs and

inhalation of 4 m^3 of air, corresponds to roughly 10 times the occupational exposure limit of 0.5 mg/m^3 atmosphere over 8 hours[10]. Thus, whereas there is a clear case for applicability of occupational exposure limits to contaminants in a consumer product (e.g. aerosol of electronic cigarettes), there is no corresponding case for applying occupational exposure limits to declared ingredients desired by the consumer in a lawful product (e.g. nicotine in the aerosol of an electronic cigarette). Clearly, some limits must be set for voluntary exposure to compounds that are known to be a danger at plausible doses (e.g. limits on blood alcohol level while driving), but the regulatory framework should reflect whether the dosage is intentionally determined and whether the risk is assumed by the consumer. In the case of nicotine in electronic cigarettes, if the main reason the products are consumed is as an alternative source of nicotine compared to smoking, then the only relevant question is whether undesirable exposures that accompany nicotine present health risks, and the analogy with occupational exposures holds. In such cases it appears permissible to allow at least as much exposure to nicotine as from smoking before admitting to existence of new risk. It is expected that nicotine dosage will not increase in switching from smoking to electronic cigarettes because there is good evidence that consumers adjust consumption to obtain their desired or usual dose of nicotine[11]. The situation is different for the vapers who want to use electronic cigarettes without nicotine and who would otherwise not have consumed nicotine. For these individuals, it is defensible to consider total exposure, including that from any nicotine contamination, in comparison to occupational exposure limits. In consideration of vapers who would never have smoked or would have quit entirely, it must be remembered that the exposure is still voluntary and intentional, and comparison to occupational exposure limits is legitimate only for those compounds that the consumer does not elect to inhale.

The specific aims of this review were to:

1. Synthesize evidence on the chemistry of liquids and aerosols of electronic cigarettes, with particular emphasis on the contaminants.
2. Evaluate the quality of research on the chemistry of liquids and aerosols produced by electronic cigarettes.
3. Estimate potential exposures from aerosols produced by electronic cigarettes and compare those potential exposures to occupational exposure standards.

Methods

Literature search

Articles published in peer-reviewed journals were retrieved from *PubMed* (http://www.ncbi.nlm.nih.gov/pubmed/) using combinations of the following keywords: "electronic cigarettes", "e-cigarettes", "smoking alternatives", "chemicals", "risks", "electronic cigarette vapor", "aerosol", "ingredients", "e-cigarette liquid", "e-cig composition", "e-cig chemicals", "e-cig chemical composition", "e-juice electronic cigarette", "electronic cigarette gas", "electronic cigars". In addition, references of the retrieved articles were examined to identify further relevant articles, with particular attention paid to non-peer reviewed reports and conference presentations. Unpublished results obtained through personal communications were also reviewed. The Consumer Advocates for Smoke-free Alternatives Association (CASAA) was asked to review the retrieved bibliography to identify any reports or articles that were missed. The papers and reports were retained for analysis if they reported on the chemistry of e-cigarette liquids or aerosols. No explicit quality control criteria were applied in selection of literature for examination, except that secondary reporting of analytical results was not used. Where substantial methodological problems that precluded interpretation of analytical results were noted, these are described below. For each article that contained relevant analytical results, the compounds quantified, limits of detection, and analytical results were summarized in a spreadsheet. Wherever possible, individual analytical results (rather than averages) were recorded (see electronic **Appendix A**:

https://dl.dropboxusercontent.com/u/4285761/CASAA/eAppendixA.xlsx). Data contained in **Appendix A** is not fully summarized in the current report but can be used to investigate a variety of specific questions that may interest the reader. Each entry in **Appendix A is** identified by a *Reference Manage ID* that is linked to source materials in a list in **Appendix B** (linked via *RefID*: https://dl.dropboxusercontent.com/u/4285761/CASAA/AppendixB.rtf) and attached electronic copies of all original materials (**Biobliography.zip**: https://dl.dropboxusercontent.com/u/4285761/CASAA/bibliography.zip).

Comparison of observed concentrations in aerosol to occupational exposure limits

For articles that reported mass or concentration of specific compounds in the aerosol (generated by smoking machines or from volunteer vapers), measurements of compounds were converted to concentrations in the "personal breathing zone",[a] which can be compared to occupational exposure limits (OELs). The 2013 Threshold Limit Values (TLVs)[10] were used as OELs because they are the most up to date and are most widely recognized internationally when local jurisdictions do not establish their own regulations (see http://www.ilo.org/oshenc/part-iv/occupational-hygiene/item/575; accessed July 3, 2013). Whenever there was an uncertainty in how to perform the calculation, a "worst case" scenario was used, as is the standard practice in occupational hygiene, where the initial aim is to recognize potential for hazardous exposures and to err on the side of caution. The following assumptions were made to enable the calculations that approximate the worst-case personal exposure of a vaper (Equation 1):

1. Air the vaper breathes consists of a small volume of aerosol generated by e-cigarettes that contains a specific chemical plus pristine air;
2. The volume of aerosols inhaled from e-cigarettes is negligible compared to total volume of air inhaled;
3. The period of exposure to the aerosol considered was normalized to 8 hours, for comparability to the standard working shift for which TLVs were developed (this does not mean only 8 hours worth of vaping was considered (see point 4) but rather that amount of breathing used to dilute the day's worth of vaping exposure was 8 hours);
4. Consumption of 150 puffs in 8 hours (an upper estimate based on a rough estimate of 150 puffs by a typical vaper in a day[1]) was assumed to be conservative;
5. Breathing rate is 8 liters per minute [12,13];
6. Each puff contains the same quantity of compounds studied.

$$[mg/m^3] = mg/puff \times puffs/(8\ hr\ day) \times 1/(m^3\ air\ inhaled\ in\ 8\ hr) \qquad Eq.\ 1$$

The only exception to this methodology was when assessing a study of aerosol emitted by 5 vapers in a 60 m^3 room over 5 hours that seemed to be a sufficient approximation of worst-case "bystander" exposure[6]. All calculated concentrations were expressed as the most stringent (lowest) TLV for a specific compound (i.e. assuming the most toxic form if analytical report is ambiguous) and expressed as "percent of TLV". Considering that all the above calculations are approximate and reflecting that exposures in occupational and general environment can easily vary by a factor of 10 around the mean, we added a 10-fold safety factor to the "percent of TLV" calculation. Details of all calculations are provided in an Excel spreadsheet (see electronic **Appendix C**: https://dl.dropboxusercontent.com/u/4285761/CASAA/eAppendixC.xlsx).

No systematic attempt was made to convert the content of the studied liquids into potential exposures because sufficient information was available on the chemistry of aerosols to use those studies rather than making the necessary

[a] Atmosphere that contains air inhaled by a person

simplifying assumptions to do the conversion. However, where such calculations were performed in the original research, the following approach as used: under the (probably false – see the literature on formation of carbonyl compounds below) assumption of no chemical reaction to generate novel ingredients, composition of liquids can be used to estimate potential for exposure if it can be established how much volume of liquid is consumed in given 8 hours, following an algorithm analogous to the one described above for the aerosols (Equation 2):

$$[mg/m^3] = mg/(mL\ liquid) \times (mL\ liquid)/puff \times puffs/(8\ hr\ day) \times 1/(m^3\ air\ inhaled\ in\ 8\ hr) \qquad Eq.\ 2$$

Comparison to cigarette smoke was not performed here because the fact that e-cigarette aerosol is at least orders of magnitude less contaminated by toxic compounds is uncontroversial [2-8].

Results and discussion

General comments on methods

In excess of 9,000 determinations of single chemicals (and rarely, mixtures) were reported in reviewed articles and reports, typically with multiple compounds per electronic cigarette tested [2-8,14-42]. Although the quality of reports is highly variable, if one assumes that each report contains some information, this asserts that quite a bit is known about composition of e-cigarette liquids and aerosols. The only report that was excluded from consideration was work of McAuley et al.[23] because of clear evidence of cross-contamination – admitted to by the authors – with cigarette smoke and, possibly, reagents. The results pertaining to non-detection of tobacco-specific nitrosamines (TSNAs) are potentially trustworthy, but those related to PAH are not since it is incredible that cigarette smoke would contain fewer polycyclic aromatic hydrocarbons (PAH; arising in incomplete combustion of organic matter) than aerosol of e-cigarettes that do not burn organic matter [23]. In fairness to the authors of that study, similar problems may have occurred in other studies but were simply not reported, but it is impossible to include a paper in a review once it is known for certain that its quantitative results are not trustworthy. When in doubt, we erred on the side of trusting that proper quality controls were in place, a practice that is likely to increase appearance of atypical or erroneous results in this review. From this perspective, assessment of concordance among independent reports gains higher importance than usual since it is unlikely that two experiments would be flawed in the same exact manner (though of course this cannot be assured).

It was judged that the simplest form of publication bias – disappearance of an entire formal study from the available literature – was unlikely given the exhaustive search strategy and the contested nature of the research question. It is clearly the case that only a portion of all industry technical reports were available for public access, so it is possible that those with more problematic results were systematically suppressed, though there is no evidence to support this speculation. No formal attempt was made to ascertain publication bias *in situ* though it is apparent that anomalous results do gain prominence in typical reviews of the literature: diethylene glycol[43,44] detected at non-dangerous levels (see details below) in one test of 18 of early-technology products by FDA[22] and one outlier in measurement of formaldehyde content of exhaled air [4] and aldehydes in aerosol generated from one e-cigarette in Japan [37]. It must be emphasized that the alarmist report of aldehydes in experiments presented in [37] is based on the concentration in generated aerosol rather than air inhaled by the vaper over prolonged period of time (since vapers do not inhale only aerosol). Thus, results reported in [37] cannot be the basis of any claims about health risk, a fallacy committed both by the authors themselves and commentators on this work [44].

It was also unclear from [37] what the volume of aerosol sampled was – a critical item for extrapolating to personal exposure and a common point of ambiguity in the published reports. However, in a personal exchange with the authors of [37][July 11, 2013], it was clarified that the sampling pump drew air at 500 mL/min through e-cigarette for 10 min, allowing more appropriate calculations for estimation of health risk that are presented below. Such misleading reporting is common in the field that confuses concentration in the aerosol (typically measured directly) with concentration in the air inhaled by the vaper (never determined directly and currently requiring additional assumptions and modeling). This is important because the volume of aerosol inhaled (maximum ~8 L/day) is negligible compared to the volume of air inhaled daily (8L/min); this point is illustrated in the **Figure**.

A similar but more extreme consideration applies to the exposure of bystanders which is almost certainly several orders of magnitude lower than the exposure of vapers. In part this is due to the absorption, rather than exhalation, of a portion of the aerosol by the vapers: there is no equivalent to the "side-stream" component of exposure to conventional cigarettes, so all of the exposure to bystanders results from exhalation. Furthermore, any environmental contamination that results from exhalation of aerosol by vaper will be diluted into the air prior to entering a bystander's personal breathing zone. Lastly, the number of puffs that affects exposure to bystander is likely to be much smaller than that of a vaper unless we are to assume that vaper and bystander are inseparable.

It is unhelpful to report results in cigarette-equivalents, as in [42], because this does not enable one to estimate exposures of vapers . Moreover, there is no value in comparison of the content of e-cigarette aerosol to cigarette smoke when the two products produce emissions that are orders of magnitude apart. To be useful for risk assessment, the results on the chemistry of the aerosols and liquids must be reported in a form that enables the calculations in Equations 1 and 2. It must be also be noted that typical investigations consisted of qualitative and quantitative phases such that quantitative data is available mostly on compounds that passed the qualitative screen. This biased all reports on concentration of compounds towards both higher levels and chemicals which a particular lab was most adept at analyzing.

Declared Ingredients: comparison to occupational exposure limits

Propylene glycol and glycerin have default or precautionary TLV of 10 mg/m^3 over 8 hours set for all organic mists with no specific exposure limits or identified toxicity (http://www.osha.gov/dts/chemicalsampling/data/CH_243600.html; accessed July 5, 2013). These interim TLVs tend to err on the side of being too high and are typically lowered if evidence of harm to health accumulates. For example, in a study that related exposure of theatrical fogs (containing propylene glycol) to respiratory symptoms [45], "mean personal inhalable aerosol concentrations were 0.70 mg/m^3 (range 0.02 to 4.1)" [46]. The only available estimate of propylene concentration of propylene glycol in the aerosol indicates personal exposure on the order of 3-4 mg/m^3 in the personal breathing zone over 8 hours (under the assumptions we made for all other comparisons to TLVs) [2]. The latest (2006) review of risks of occupational exposure to propylene glycol performed by the Health Council of the Netherlands (known for OELs that are the most protective that evidence supports and based exclusively on scientific considerations rather than also accounting for feasibility as is the case for the TLVs) recommended exposure limit of 50 mg/m^3 over 8 hours; concern over short-term respiratory effects was noted [http://www.gezondheidsraad.nl/sites/default/files/200702OSH.pdf; accessed July 29, 2013]. Assuming extreme consumption of the liquid per day via vaping (5 to 25 ml/day and 50-95% propylene glycol in the liquid)[b], levels of propylene glycol in inhaled air can reach 1-6 mg/m^3. It has been suggested that propylene glycol is

[b] This estimate of consumption was derived from informal reports from vaping community; 5 ml/day was identified as a high but not rare quantity of consumption and 25 ml/day was the high end of claimed use, though some skepticism was expressed about

very rapidly absorbed during inhalation [4,6] making the calculation under worst case scenario of all propylene glycol becoming available for inhalation credible. It must also be noted that when consuming low-nicotine or nicotine-free liquids, the chance to consume larger volumes of liquid increases (large volumes are needed to reach the target dose or there is no nicotine feedback), leading to the upper end of propylene glycol and glycerin exposure. Thus, estimated levels of exposure to propylene glycol and glycerin are close enough to TLV to warrant concern.

Nicotine is present in most liquids and has TLV of 0.5 mg/m^3 for average exposure intensity over 8 hours. If approximately 4 m^3 of air is inhaled in 8 hours, the consumption of 2 mg nicotine from e-cigarettes in 8 hours would place the vaper at the occupational exposure limit. For a liquid that contains 18 mg nicotine/ml, TLV would be reached upon vaping ~0.1-0.2 ml of liquid in a day, and so is achieved for most anyone vaping nicotine-containing e-cigarettes[1]. Results presented in [24] on 16 e-cigarettes also argue in favor of exceedance of TLV from most any nicotine-containing e-cigarette, as they predict >2mg of nicotine released to aerosol in 150 puffs (daily consumption figure adopted in this report). But as noted above, since delivery of nicotine is the purpose of nicotine-containing e-cigarettes, the comparison to limits on unintended, unwanted exposures does not suggest a problem and serves merely to offer complete context. If nicotine is present but the liquid is labeled as zero-nicotine [24,43], it could be treated as a contaminant, with the vaper not intending to consume nicotine and the TLV, which would be most likely exceeded, is relevant. However, when nicotine content is disclosed, even if inaccurately, then comparison to TLV is not valid. Accuracy in nicotine content is a concern with respect to truth in advertising rather than unintentional exposure, due to self-regulation of consumption by persons who use e-cigarettes as a source of nicotine.

Overall, the declared ingredients in the liquid would warrant a concern by standards used in occupational hygiene, provided that comparison to occupational exposure limits is valid, as discussed in the introduction. However, this is not to say that the exposure is affirmatively believed to be harmful; as noted, the TLVs for propylene glycol and glycerin mists is based on uncertainty rather than knowledge. These TLVs are not derived from knowledge of toxicity of propylene glycol and glycerin mists, but merely apply to any compound of no known toxicity present in workplace atmosphere. This aspect of the exposure from e-cigarettes simply has little precedent (but see study of theatrical fogs below). Therefore, the exposure will provide the first substantial collection evidence about the effects, which calls for monitoring of both exposure levels and outcomes, even though there are currently no grounds to be concerned about the immediate or chronic health effects of the exposure. The argument about nicotine is presented here for the sake of completeness and consistency of comparison to TLVs, but in itself does not affect the conclusions of this analysis because it should not be modeled as if it were a contaminant when declared as an ingredient in the liquid.

Polycyclic Aromatic Hydrocarbons

Polycyclic aromatic hydrocarbons (PAH) were quantified in several reports in aerosols [5,6,42] and liquids [7,18,41]. These compounds include well-known carcinogens, the levels of which are not subject to TLV but are instead to be kept "as low as reasonably achievable" (the so called ALARA principle)[10]. For PAH, only non-carcinogenic pyrene that is abundant in the general environment was detected at 36 ng/cartridge in 5 samples of liquid [7]; PAHs were not detected in most of the analyses of aerosols, except for chrysene in the analysis of the aerosol of one e-cigarette[42].

Tobacco-Specific Nitrosamines

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whether the latter quantity was truly possible. High-quality formal studies to verify these figures do not yet exist but they are consistent with report of Etter (2012).

The same risk assessment considerations that exist for PAH also hold for carcinogenic tobacco-specific nitrosamines (TSNAs)[47] for which no occupational exposure limits exist because (a) these exposures do not appear to occur in occupational settings often enough to warrant development of TLVs, and (b) it is currently accepted in establishing TLVs that carcinogens do not have minimal thresholds of toxicity. As expected because the TSNAs are contaminants of nicotine from tobacco leaf, there is also evidence of association between nicotine content of the liquid and TSNA concentrations, with reported concentrations <5 ng/cartridge tested [7]. Smaller studies of TSNA content in liquids are variable, with some not reporting any detectable levels [17,32,34] and others clearly identifying these compounds in the liquids when controlling for background contamination (n=9)[22]. Analyses of aerosols indicate that TSNAs are present in amounts that can results in doses of <ng/day[5,32] to µg/day [8] (assuming 150 puffs/day) (see also [42]). The most comprehensive survey of TSNA content of 105 samples of liquids from 11 manufactures indicates that almost all tested liquids (>90%) contained TSNAs in µg/L quantities [35]. This is roughly equivalent to 1/1000 of the concentration of TSNAs in modern smokeless tobacco products (like snus), which are in the ppm range [47]. The TSNA concentration of the liquids is orders of magnitude less than smokeless tobacco products, though the actual dosage from e-cigarettes vs. smokeless tobacco remains to be clearly understood. For example, 10 µg/L (0.01 ppm) of total TSNA in liquid[35] can translate to a daily dose of 0.000025-0.00005 µg from vaping (worst case assumption of 5 ml/day); if 15 g of snus is consumed a day [48] with 1 ppm of TSNAs [47] and half of it were absorbed, then the daily dose is estimated to be 0.008 µg, which is 160-320 times that due to the worst case of exposure from vaping. Various assumptions about absorption of TSNAs alter the result of this calculation by a factor that is dwarfed in magnitude compared to that arising from differences considered above. This is reassuring because smokeless tobacco products, such as snus, pose negligible cancer risk[49], certainly orders of magnitude smaller than smoking (if one considers the chemistry of the products alone). In general, it appears that the cautious approach in face of variability and paucity of data is to seek better understanding of predictors of presence of TSNA in liquids and aerosols so that measures for minimizing exposure to TSNAs from aerosols can be devised. This can include considering better control by manufactures of the nicotine.

Volatile Organic Compounds

Total volatile organic compounds (VOC) were determined in aerosol to be non-detectable[3] except in one sample that appeared to barely exceed the background concentration of 1 mg/m^3 by 0.73 mg/m^3[6]. These results are corroborated by analyses of liquids[18] and most likely testify to insensitivity of employed analytic methods for total VOC for characterizing aerosol generated by e-cigarettes, because there is ample evidence that specific VOC are present in the liquids and aerosols.[c] Information on specific commonly detected VOC in the aerosol is given in **Table 1a.** It must be observed that these reported concentrations are for analyses that first observed qualitative evidence of the presence of a given VOC and thus represent worst case scenarios of exposure when VOC is present (i.e. zero exposures are missing from the overall summary of worst case exposures presented here). For most VOC and aldehydes, one can predict the concentration in air inhaled by a vaper to be <<1% of TLV. The only exceptions to this generalization are:

(a) acrolein: ~1% of TLV (average of 12 measurements) and measurements at a mean of 2% of TLV (average of 150 measurements)[39,40] and

(b) formaldehyde: between 0 and 3% of TLV based on 18 tests (average of 12 measurements at 2% of TLV, the most reliable test) and an average of 150 results at 4% of TLV [39,40].

[c] The term "VOC" loosely groups together all organic compounds present in aerosol and because the declared ingredients of aerosol are organic compounds, it follows that "VOC are present"

Levels of acrolein in exhaled aerosol reported in [6] were below 0.0016 mg/m^3 and correspond to predicted exposure of <1% of TLV (**Table 2**). It must re-emphasized that all calculations based on one electronic cigarette analyzed in [37] are best treated as qualitative in nature (i.e. indicating presence of a compound without any particular meaning attached to the reported level with respect to typical levels) due to great uncertainty about whether the manner in which the e-cigarette was operated could have resulted in overheating that led to generation of acrolein in the aerosol. In fact, a presentation made by the author of [37] clearly stated that the "atomizer, generating high concentration carbonyls, had been burned black" [39,40]. In unpublished work,[39] there are individual values of formaldehyde, acrolein and glyoxal that approach TLV, but it is uncertain how typical these are because there is reason to believe the liquid was overheated; considerable variability among brands of electronic cigarettes was also noted. Formaldehyde and other aldehydes, but not acrolein, were detected in the analysis one e-cigarette [42]. The overwhelming majority of the exposure to specific VOC that are predicted to result from inhalation of the aerosols lie far below action level of 50% of TLV at which exposure has to be mitigated according to current code of best practice in occupational hygiene[50].

Finding of an unusually high level of formaldehyde by Schripp *et al.*[4] – 0.5 ppm predicted vs. 15-minute TLV of 0.3 ppm (not given in **Table 2**) – is clearly attributable to endogenous production of formaldehyde by the volunteer smoker who was consuming e-cigarettes in the experimental chamber, since there was evidence of build-up of formaldehyde prior to vaping and liquids used in the experiments did not generate aerosol with detectable formaldehyde. This places generalizability of other findings from [4] in doubt, especially given that the only other study of exhaled air by vapers who were not current smokers reports much lower concentrations for the same compounds [6] (**Table 2**). It should be noted that the report by Romagna *et al.*[6] employed more robust methodology, using 5 volunteer vapers (no smokers) over an extended period of time. Except for benzene, acetic acid and isoprene, all calculated concentrations for detected VOC were much below 1% of TLV in exhaled air [6]. In summary, these results do not indicate that VOC generated by vaping are of concern by standards used in occupational hygiene.

Diethylene glycol and ethylene glycol became a concern following the report of their detection by FDA[43], but these compounds are not detected in the majority of tests performed to date [3,14,16,18,22]. Ten batches of the liquid tested by their manufacture did not report any diethylene glycol above 0.05% of the liquid [41]. Methods used to detect diethylene glycol appear to be adequate to be informative and capable of detecting the compound in quantities <<1% of TLV[14,16,22]. Comparison to TLV is based on a worst case calculation analogous to the one performed for propylene glycol. For diethylene glycol, TLV of 10 mg/m^3 is applicable (as in the case of all aerosols with no know toxicity by inhalation), and there is a recent review of regulations of this compound conducted for the Dutch government by the Health Council of the Netherlands (jurisdiction with some of the most strict occupational exposure limits) that recommended OEL of 70 mg/m^3 and noted lack of evidence for toxicity following inhalation [http://www.gezondheidsraad.nl/sites/default/files/200703OSH.pdf; accessed July 29; 2013]. In conclusion, even the quantities detected in the single FDA result were of little concern, amounting to less than 1% of TLV.

Inorganic compounds

Special attention has to be paid to the chemical form of compounds when there is detection of metals and other elements by inductively coupled plasma mass spectrometry (ICP-MS)[8,25]. Because the parent molecule that occurs in the aerosol is destroyed in such analysis, the results can be alarmist and not interpretable for risk assessment. For example, the presence of sodium (4.18 µg/10 puffs)[25] does not mean that highly reactive and toxic sodium metal is in the aerosol, which would be impossible given its reactivity, but most likely means the presence of the ubiquitous compound that contains sodium, dissolved table salt (NaCl). If so, the corresponding daily dose of NaCl that arises from

these concentrations from 150 puffs is about 10,000 times lower than allowable daily intake according to CDC (http://www.cdc.gov/features/dssodium/; accessed July 4, 2013). Likewise, a result for presence of silica is meaningless for health assessment unless the crystalline form of SiO_2 is known to be present. When such ambiguity exists, a TLV equivalence calculation was not performed. We compared concentrations to TLVs when it was even remotely plausible that parent molecules were present in the aqueous solution. However, even these are to be given credence only in an extremely pessimistic analyst, and further investigation by more appropriate analytical methods could clarify exactly what compounds are present, but is not a priority for risk assessment. It should also be noted that one study that attempted to quantify metals in the liquid found none above 0.1-0.2 ppm levels [7] or above unspecified threshold [18]. **Table 1b** indicates that most metals that were detected were present at <1% of TLV even if we assume that the analytical results imply the presence of the most hazardous molecules containing these elements that can occur in aqueous solution. For example, when elemental chromium was measured, it is compared to TLV for insoluble chromium IV that has the lowest TLV of all chromium compounds. Analyses of metals given in [42] are not summarized here because of difficulty with translating reported units into meaningful terms for comparison with the TLV, but only mercury (again with no information on parent organic compound) was detected in trace quantities, but arsenic, beryllium, chromium, cadmium, lead and nickel were not. Taken as the whole, it can be inferred that there is no evidence of contamination of the aerosol with metals that warrants a health concern.

Consideration of exposure to a mixture of contaminants

All calculations conducted so far assumed only one contaminant present in clean air at a time. What are the implications of small quantities of various compounds with different toxicities entering the personal breathing zone at the same time? For evaluation of compliance with exposure limits for mixtures, Equation 3 is used:

$$OEL_{mixture} = \sum_{i=1}^{n} (C_i / TLV_i), \qquad \text{Eq. 3}$$

where C_i is the concentration of the i^{th} compound (i=1,...,n, where n>1 is the number of ingredients present in a mixture) in the contaminated air and TLV_i is the TLV for the i^{th} compound in the contaminated air; if $OEL_{mixture} > 1$, then there is evidence of the mixture exceeding TLV.

The examined reports detected no more than 5-10 compounds in the aerosol, and the above calculation does not place any of them out of compliance with TLV for mixture. Let us imagine that 50 compounds with TLVs were detected. Given that the aerosol tends to contain various compounds at levels, on average, of no more than 0.5% of TLV (**Table 1**), such a mixture with 50 ingredients would be at 25% of TLV, a level that is below that which warrants a concern, since the "action level" for implementation of controls is traditionally set at 50% of TLV to ensure that the majority of persons exposed have personal exposure below mandated limit [50]. Pellerino et al.[2] reached conclusions similar to this review based on their single experiment: contaminants in the liquids that warrant health concerns were present in concentrations that were less than 0.1% of that allowed by law in the European Union. Of course, if the levels of the declared ingredients (propylene glycol, glycerin, and nicotine) are considered, the action level would be met, since those ingredients are present in the concentrations that are near the action level. There are no known synergistic actions of the examined mixtures, so Equation 3 is therefore applicable. Moreover, there is currently no reason to suspect that the trace amounts of the contaminants will react to create compounds that would be of concern.

Conclusions

By the standards of occupational hygiene, current data do not indicate that exposures to vapers from contaminants in electronic cigarettes warrant a concern. There are no known toxicological synergies among compounds in the aerosol, and mixture of the contaminants does not pose a risk to health. However, exposure of vapers to propylene glycol and glycerin reaches the levels at which, if one were considering the exposure in connection with a workplace setting, it would be prudent to scrutinize the health of exposed individuals and examine how exposures could be reduced. This is the basis for the recommendation to monitor levels and effects of prolonged exposure to propylene glycol and glycerin that comprise the bulk of emissions from electronic cigarettes other than nicotine and water vapor. From this perspective, and taking the analogy of work on theatrical fogs [45,46], it can be speculated that respiratory functions and symptoms (but not cancer of respiratory tract or non-malignant respiratory disease) of the vaper is of primary interest. Monitoring upper airway irritation of vapers and experiences of unpleasant smell would also provide early warning of exposure to compounds like acrolein because of known immediate effects of elevated exposures (http://www.atsdr.cdc.gov/toxprofiles/tp124-c3.pdf; accessed July 11, 2013). However, it is questionable how much concern should be associated with observed concentrations of acrolein and formaldehyde in the aerosol. Given highly variable assessments, closer scrutiny is probably warranted to understand sources of this variability, although there is no need at present to be alarmed about exceeding even the occupational exposure limits, since occurrence of occasional high values is accounted for in established TLVs. An important clue towards a productive direction for such work is the results reported in [39,40] that convincingly demonstrate how heating the liquid to high temperatures generates compounds like acrolein and formaldehyde in the aerosol. A better understanding about the sources of TSNA in the aerosol may be of some interest as well, but all results to date consistently indicate quantities that are of no more concern than TSNA in smokeless tobacco products. Exposures to nicotine from electronic cigarettes is not expected to exceed that from smoking due to self-titration[11]; it is only a concern when a vaper does not intend to consume nicotine, a situation that can arise from incorrect labeling of liquids[24,43].

The cautions about propylene glycol and glycerin apply only to the exposure experienced by the vapers themselves. Exposure of bystanders to the listed ingredients, let alone the contaminants, does not warrant a concern as the exposure is likely to be orders of magnitude lower than exposure experienced by vapers. Further research employing realistic conditions could help quantify the quantity of exhaled aerosol and its behavior in the environment under realistic worst-case scenarios (i.e., not small sealed chambers), but this is not a priority since the exposure experienced by bystanders is clearly very low compared to the exposure of vapers, and thus there is no reason to expect it would have any health effects.

The key to making the best possible effort to ensure that hazardous exposures from contaminants do not occur is ongoing monitoring of actual exposures and estimation of potential ones. Direct measurement of personal exposures is not possible in vaping due to the fact the aerosol is inhaled directly, unless, of course, suitable biomarkers of exposure can be developed. The current review did not identify any suitable biomarkers, though cotinine is a useful proxy for exposure to nicotine-containing liquids. Monitoring of potential composition of exposures is perhaps best achieved though analysis of aerosol generated in a manner that approximates vaping, for which better insights are needed on how to modify "smoking machines" to mimic vaping given that there are documented differences in inhalation patterns[51]. These smoking machines would have to be operated under a realistic mode of operation of the atomizer to ensure that the process for generation of contaminants is studied under realistic temperatures. To estimate dosage (or exposure in personal breathing zone), information on the chemistry of aerosol has to be combined with models of the inhalation pattern of vapers, mode of operation of e-cigarettes and quantities of liquid consumed. Assessment of

exhaled aerosol appears to be of little use in evaluating risk to vapers due to evidence of qualitative differences in the chemistry of exhaled and inhaled aerosol.

Monitoring of liquid chemistry is easier and cheaper than assessment of aerosols. This can be done systematically as a routine quality control measure by the manufacturers to ensure uniform quality of all production batches. However, we do not know how this relates to aerosol chemistry because previous researchers have failed to appropriately pair analyses of chemistry of liquids and aerosols. It is standard practice in occupational hygiene to analyze the chemistry of materials generating an exposure, and it is advisable that future studies of the aerosols explicitly pair these analyses with examination of composition of the liquids used to generate the aerosols. Such an approach can lead to the development of predictive models that relate the composition of the aerosol to the chemistry of liquids, the e-cigarette hardware, and the behavior of the vaper, as these, if accurate, can anticipate hazardous exposures before they occur. The current attempt to use available data to develop such relationships was not successful due to studies failing to collect appropriate data. Systematic monitoring of quality of the liquids would also help reassure consumers and is best done by independent laboratories rather than manufactures to remove concerns about impartiality (real or perceived).

Future work in this area would greatly benefit from standardizing laboratory protocols (e.g. methods of extraction of compounds from aerosols and liquids, establishment of "core" compounds that have to be quantified in each analysis (as is done for PAH and metals), development of minimally informative detection limits that are needed for risk assessment, standardization of operation of "vaping machine", etc.), quality control experiments (e.g. suitable positive and negative controls without comparison to conventional cigarettes, internal standards, estimation of %recovery, etc.), and reporting practices (e.g. in units that can be used to estimate personal exposure, use of uniform definitions of limits of detection and quantification, etc.), all of which would improve on the currently disjointed literature. Detailed recommendations on standardization of such protocols lie outside of scope of this report.

All calculations conducted in this analysis are based on information about patterns of vaping and the content of aerosols and liquids that are highly uncertain in their applicability to "typical" vaping as it is currently practiced and says even less about future exposures due to vaping. However, this is similar to assessments that are routinely performed in occupational hygiene for novel technology as it relied on "worst case" calculations and safety margins that attempt to account for exposure variability. The approach adopted here and informed by some data is certainly superior to some currently accepted practices in the regulatory framework in occupational health that rely purely on description of emission processes to make claims about potential for exposure (e.g.[52]). Clearly, routine monitoring of potential and actual exposure is required if we were to apply the principles of occupational hygiene to vaping. Detailed suggestions on how to design such exposure surveillance are available in [53].

In summary, analysis of the current state of knowledge about the chemistry of *contaminants* in liquids and aerosols associated with electronic cigarettes indicates that there is no evidence that vaping produces inhalable exposures to these contaminants at a level that would prompt measures to reduce exposure by the standards that are used to ensure safety of workplaces. Indeed, there is sufficient evidence to be reassured that there are no such risks from the broad range of the studied products, though the lack of quality control standards means that this cannot be assured for all products on the market. However, aerosol generated during vaping on the whole, when considering the declared ingredients themselves, if it were treated in the same manner as an emission from industrial process, creates personal exposures that would justify surveillance of exposures and health among exposed persons. Due to the uncertainty about the effects of these quantities of propylene glycol and glycerin, this conclusion holds after setting aside concerns about health effects of nicotine. This conclusion holds notwithstanding the benefits of tobacco harm reduction, since

there is value in understanding and possibly mitigating risks even when they are known to be far lower than smoking. It must be noted that the proposal for such scrutiny of "total aerosol" is not based on specific health concerns suggested by compounds that resulted in exceedance of occupational exposure limits, but is instead a conservative posture in the face of unknown consequences of inhalation of appreciable quantities of organic compounds that may or may not be harmful at doses that occur during vaping.

Key Conclusions:

- Even when compared to workplace standards for involuntary exposures, and using several conservative (erring on the side of caution) assumptions, the exposures from using e-cigarettes fall well below the threshold for concern for compounds with known toxicity. That is, even ignoring the benefits of e-cigarette use and the fact that the exposure is actively chosen, and even comparing to the levels that are considered unacceptable to people who are not benefiting from the exposure and do not want it, the exposures would not generate concern or call for remedial action.
- Expressed concerns about nicotine only apply to vapers who do not wish to consume it; a voluntary (indeed, intentional) exposure is very different from a contaminant.
- There is no serious concern about the contaminants such as volatile organic compounds (formaldehyde, acrolein, etc.) in the liquid or produced by heating. While these contaminants are present, they have been detected at problematic levels only in a few studies that apparently were based on unrealistic levels of heating.
- The frequently stated concern about contamination of the liquid by a nontrivial quantity of ethylene glycol or diethylene glycol remains based on a single sample of an early technology product (and even this did not rise to the level of health concern) and has not been replicated.
- Tobacco-specific nitrosamines (TSNA) are present in trace quantities and pose no more (likely much less) threat to health than TSNAs from modern smokeless tobacco products, which cause no measurable risk for cancer.
- Contamination by metals is shown to be at similarly trivial levels that pose no health risk, and the alarmist claims about such contamination are based on unrealistic assumptions about the molecular form of these elements.
- The existing literature tends to overestimate the exposures and exaggerate their implications. This is partially due to rhetoric, but also results from technical features. The most important is confusion of the concentration in aerosol, which on its own tells us little about risk to heath, with the relevant and much smaller total exposure to compounds in the aerosol averaged across all air inhaled in the course of a day. There is also clear bias in previous reports in favor of isolated instances of highest level of chemical detected across multiple studies, such that average exposure that can be calculated are higher than true value because they are "missing" all true zeros.
- Routine monitoring of liquid chemistry is easier and cheaper than assessment of aerosols. Combined with an understanding of how the chemistry of the liquid affects the chemistry of the aerosol and insights into behavior of vapers, this can serve as a useful tool to ensure the safety of e-cigarettes.
- The only unintentional exposures (i.e., not the nicotine) that seem to rise to the level that they are worth further research are the carrier chemicals themselves, propylene glycol and glycerin. This exposure is not known to cause health problems, but the magnitude of the exposure is novel and thus is at the levels for concern based on the lack of reassuring data.

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Figure: Illustrating the difference between concentrations in the aerosol generated by vaping and inhaled air in a day. *Panel A* shows black square that represents aerosol contaminated by some compound as it would be measured by a "smoking machine" and extrapolated to dosage from vaping in one day. This black square is located inside the white square that represents total uncontaminated air that is inhaled in a day by a vaper. The relative sizes of the two squares are exaggerated as the volume of aerosol generated in vaping relative to inhaled air is much smaller in the figure. *Panel B* shows how exposure from contaminated air (black dots) is diluted over a day for appropriate comparison to occupational exposure limits that are expressed in terms of "time-weighted average" or average contamination over time rather than as instantaneous exposures (with the exception of "ceiling limits" that do not affect the vast majority of comparisons in this report). Exposure during vaping occurs in a dynamic process where the atmosphere inhaled by the vaper alternates between the smaller black and larger white squares in *Panel A*. Thus, the concentration of contaminants that a vaper is exposed to over a day is much smaller than that which is measured in the aerosol (and routinely improperly cited as reason for concern about "high" exposures).

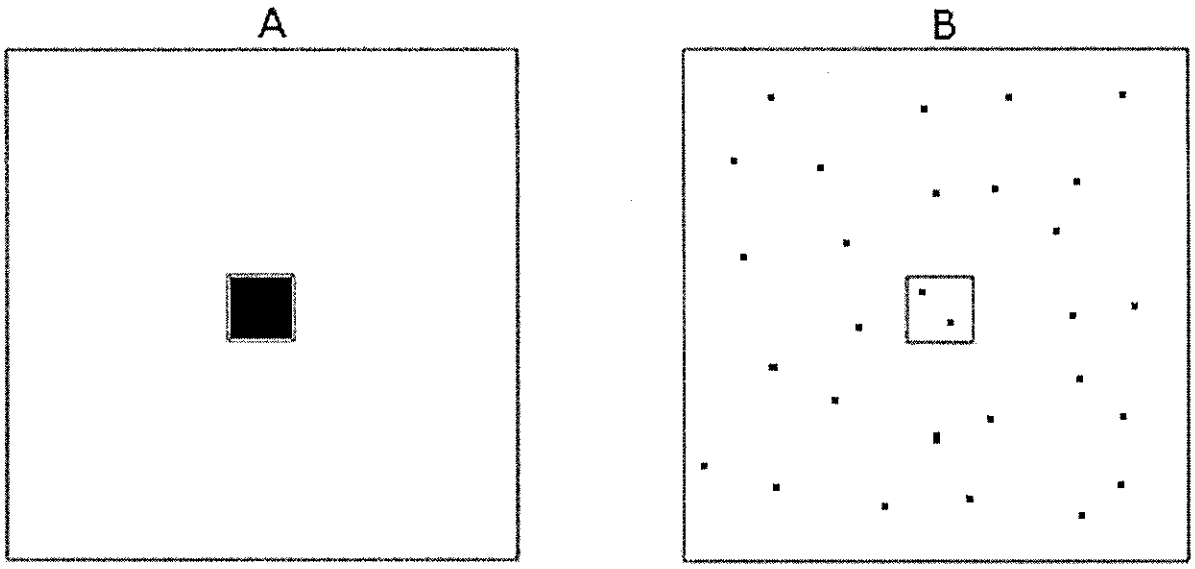

Table 1a: Exposure predictions based on analysis of aerosols generated by smoking machines: Volatile Organic Compounds

Compound	N#	Estimated concentration in personal breathing zone		Ratio of most stringent TLV (%)		Reference
		PPM	mg/m^3	Calculated directly	Safety factor 10	
Acetaldehyde	1	0.005		**0.02**	**0.2**	[5]
	3	0.003		**0.01**	**0.1**	[4]
	12	0.001		**0.004**	**0.04**	[8]
	1	0.00004		**0.0001**	**0.001**	[3]
	1	0.0002		**0.001**	**0.008**	[3]
	150	0.001		**0.004**	**0.04**	[39,40]
	1	0.008		**0.03**	**3**	[37]
Acetone	1	0.002		**0.0003**	**0.003**	[37]
	150	0.0004		**0.0001**	**0.001**	[39,40]
Acrolein	12	0.001		**1**	**13**	[8]
	150	0.002		**2**	**20**	[39,40]
	1	0.006		**6**	**60**	[37]
Butanal	150	0.0002		**0.001**	**0.01**	[39,40]
Crotonaldehyde	150		0.0004	**0.01**	**0.1**	[39,40]
Formaldehyde	1	0.002		**0.6**	**6**	[5]
	3	0.008		**3**	**30**	[4]
	12	0.006		**2**	**20**	[8]
	1	<0.0003		**<0.1**	**<1**	[3]
	1	0.0003		**0.1**	**1**	[3]
	150	0.01		**4**	**40**	[39,40]
	1	0.009		**3**	**30**	[37]
Glyoxal	1		0.002	**2**	**20**	[37]
	150		0.006	**6**	**60**	[39,40]
o-Methylbenzaldehyde	12		0.001	**0.05**	**0.5**	[8]
p,m-Xylene	12		0.00003	**0.001**	**0.01**	[8]
Propanal	3	0.002		**0.01**	**0.1**	[4]
	150	0.0006		**0.002**	**0.02**	[39,40]
	1	0.005		**0.02**	**0.2**	[37]
Toluene	12	0.0001		**0.003**	**0.03**	[8]
Valeraldehyde	150		0.0001	**0.0001**	**0.001**	[39,40]

average is presented when N>1

Table 1b: Exposure predictions based on analysis of aerosols generated by smoking machines: Inorganic Compounds[#]

Element quantified	Assumed compound containing the element for comparison with TLV	N[##]	Estimated concentration in personal breathing zone (mg/m^3)	Ratio of most stringent TLV (%)		Reference
				Calculated directly	Safety factor 10	
Aluminum	Respirable Al metal & insoluble compounds	1	0.002	**0.2**	**1.5**	[25]
Barium	Ba & insoluble compounds	1	0.00005	**0.01**	**0.1**	[25]
Boron	Boron oxide	1	0.02	**0.1**	**1.5**	[25]
Cadmium	Respirable Cd & compounds	12	0.00002	**1**	**10**	[8]
Chromium	Insoluble Cr (IV) compounds	1	3E-05	**0.3**	**3**	[25]
Copper	Cu fume	1	0.0008	**0.4**	**4.0**	[25]
Iron	Soluble iron salts, as Fe	1	0.002	**0.02**	**0.2**	[25]
Lead	Inorganic compounds as Pb	1	7E-05	**0.1**	**1**	[25]
		12	0.000025	**0.05**	**0.5**	[8]
Magnesium	Inhalable magnesium oxide	1	0.00026	**0.003**	**0.03**	[25]
Manganese	Inorganic compounds,as Mn	1	8E-06	**0.04**	**0.4**	[25]
Nickel	Inhalable soluble inorganic compounds, as Ni	1	2E-05	**0.02**	**0.2**	[25]
		12	0.00005	**0.05**	**0.5**	[8]
Potassium	KOH	1	0.001	**0.1**	**1**	[25]
Tin	Organic compounds, as Sn	1	0.0001	**0.1**	**1**	[25]
Zinc	Zinc chloride fume	1	0.0004	**0.04**	**0.4**	[25]
Zirconium	Zr and compounds	1	3E-05	**0.001**	**0.01**	[25]
Sulfur	SO_2	1	0.002	**0.3**	**3**	[25]

The actual molecular form in the aerosol unknown and so worst case assumption was made if it was physically possible (e.g. it is not possible for elemental lithium & sodium to be present in the aerosol); there is no evidence from the research that suggests the metals were in the particular highest risk form, and in most cases a general knowledge of chemistry strongly suggests that this is unlikely. Thus, the TLV ratios reported here probably do not represent the (much lower) levels that would result if we knew the molecular forms.

average is presented when N>1

Table 2: Exposure predictions for volatile organic compounds based on analysis of aerosols generated by volunteer vapers

Compound	N#	Estimated concentration in personal breathing zone (ppm)	Ratio of most stringent TLV (%)		Reference
			Calculated directly	Safety factor 10	
2-butanone (MEK)	3	0.04	**0.02**	0.2	[4]
	1	0.002	**0.0007**	0.007	[6]
2-furaldehyde	3	0.01	**0.7**	7	[4]
Acetaldehyde	3	0.07	**0.3**	3	[4]
Acetic acid	3	0.3	**3**	30	[4]
Acetone	3	0.4	**0.2**	2	[4]
Acrolein	1	<0.001	**<0.7**	<7	[6]
Benzene	3	0.02	**3**	33	[4]
Butyl hydroxyl toluene	1	4E-05	**0.0002**	0.002	[6]
Isoprene	3	0.1	**7**	70	[4]
Limonene	3	0.009	**0.03**	0.3	[4]
	1	2E-05	**0.000001**	0.00001	[6]
m,p-Xyelen	3	0.01	**0.01**	0.1	[4]
Phenol	3	0.01	**0.3**	3	[4]
Propanal	3	0.004	**0.01**	0.1	[4]
Toluene	3	0.01	**0.07**	0.7	[4]

average is presented when N>1

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Characterization of chemicals released to the environment by electronic cigarettes use (ClearStream-AIR project): is passive vaping a reality?[3]

G. Romagna MD[1], L. Zabarini[1], L. Barbiero[1], E. Bocchietto[1], S. Todeschi[1], E. Caravati[1], D. Voster[1], K. Farsalinos MD[2]

September 1, 2012

[1] ABICH S.r.l., biological and chemical toxicology research laboratory, Verbania, Italy

[2] Onassis Cardiac Surgery Center, Athens, Greece

[3] Abstract was accepted and presented as poster at the SRNT meeting 2012 in Helsinki.

Abstract

Background Electronic cigarettes (e-CIG) have been marketed as a safer alternative habit to tobacco smoking. We have developed a group of research protocols to evaluate the effects of e-CIG on human health, called ClearStream. No studies have adequately evaluated the effects of e-CIG use on the release of chemicals to the environment. The purpose of this study was to identify and quantify the chemicals released on a closed environment from the use of e-CIG (ClearStream-AIR).

Methods A 60 m^3 closed-room was used for the experiment. Two sessions were organized, the first using 5 smokers and the second using 5 users of e-CIG. Both sessions lasted 5 h. Between sessions, the room was cleaned and ventilated for 65 h. Smokers used cigarettes containing 0.6 mg of nicotine while e-CIG users used commercially available liquid (FlavourArt) with nicotine concentration of 11 mg/ml. We measured total organic carbon (TOC), toluene, xylene, carbon monoxide (CO), nitrogen oxides (NO_x), nicotine, acrolein, poly-aromatic hydrocarbons (PAHs) glycerin and propylene glycol levels on the air of the room.

Results During the smoking session, 19 cigarettes were smoked, administering 11.4 mg of nicotine (according to cigarette pack information). During the e-CIG session, 1.6 ml of liquid was consumed, administering 17.6 mg of nicotine. During the smoking session we found: TOC=6.66 mg/m^3, toluene=1.7 µg/m^3, xylene=0.2 µg/m^3, CO=11 mg/m^3, nicotine=34 µg/m^3, acrolein=20 µg/ml and PAH=9.4 µg/m^3. No glycerin, propylene glycol and NO_x were detected after the smoking session. During the e-CIG session we found: TOC=0.73 mg/m^3 and glycerin=72 µg/m^3. No toluene, xylene, CO, NO_x, nicotine, acrolein or PAHs were detected on room air during the e-CIG session.

Conclusions Passive vaping is expected from the use of e-CIG. However, the quality and quantity of chemicals released to the environment are by far less harmful for the human health compared to regular tobacco cigarettes. Evaporation instead of burning, absence of several harmful chemicals from the liquids and absence of sidestream smoking from the use of the e-CIG are probable reasons for the difference in results.

Introduzione

La rapida espansione, negli ultimi anni, del mercato della sigaretta elettronica, legata in parte alla possibilità di utilizzarla anche nei luoghi in cui è vietato fumare, ha fatto sorgere alcune perplessità sulla sua sicurezza in questi contesti. Ad oggi però queste perplessità si basano più su ragionamenti di tipo ipotetico che su valutazioni scientifiche. Scopo di questo esperimento, è quello di iniziare a comprendere e misurare qual è l'impatto del fumo elettronico sull'atmosfera di un ambiente chiuso, confrontandolo con il fumo tradizionale.

Protocollo

Per l'esperimento è stata predisposta una stanza, con un volume pari a circa $60\,m^3$, all'interno della quale sono stati allestiti dei sistemi di campionamento dell'aria.

Al fine di garantire una maggiore sensibilità e per rimuovere la variabile legata al ricircolo d'aria, l'esperimento è stato condotto in un ambiente senza rinnovo d'aria esterna.

I parametri analizzati sono stati:

- CO
- NO_x
- Acroleina
- Idrocarburi Policiclici Aromatici (IPA)
- Carbonio Organico Totale (COT)
- Sostanze Organiche Volatili (SOV)
- Nicotina
- Glicerina
- Glicole Propilenico

Alcuni di questi parametri (CO, NO_x, COT) sono stati monitorati in continuo. Per tutti gli altri sono state impiegate delle fiale e delle membrane specifiche per catturare le varie famiglie di composti in esame in modo cumulativo.

Procedura

L'esperimento si è svolto in 2 sessioni, una per i fumatori ed una per i *vaper*[1], della durata di 5 h ciascuna ed ha coinvolto, per ogni sessione, 5 volontari.

[1]Termine anglosassone gergale, utilizzato per indicare un utilizzatore abituale di sigaretta elettronica.

Introduction

The rapid expansion of the e-cigarette market in recent years, due in part to the fact that they can be used also in no smoking areas, has given rise to perplexities on their safety in these contexts. However, thus far, these perplexities are based more on hypothetical reasons rather than scientific evaluations. The aim of this experiment is to understand and to measure what kind of impact e-cigarettes use has on a closed environment atmosphere compared to traditional cigarette smoking.

Protocol

A $60\,m^3$ volume room was used for the experiment. This room was fitted with air sampling systems.

In order to guarantee a higher sensitivity and remove air recirculation-dependant variables, the experiment was performed without renewal of indoor air.

The following parameters were analyzed:

- CO
- NO_x
- Acrolein
- Polycyclic Aromatic Hydrocarbons (PAHs).
- Total Organic Carbon (TOC)
- Volatile Organic Compounds (VOCs)
- Nicotine
- Glycerine
- Propylene Glycol

Some of these parameters (CO, NO_x, TOC) were monitored continuously. For all the other parameters, in order to capture the various types of compounds cumulatively, vials and specific membranes were used.

Procedures

The experiment was divided in two sessions: one for vapers[1] and one for smokers. Each session lasted 5 h and involved 5 volunteers.

Between the sessions the room was cleaned and ventilated for 65 h, in order to restore the original

[1]English slang term indicating an electronic cigarette user.

Tra le due sessioni la stanza è stata pulita ed arieggiata per complessive 65 h al fine di ripristinare le condizioni di neutralità iniziali.

Sessioni di Campionamento

Nel corso delle due prove, dopo aver allestito la stanza per il campionamento e rilevato i parametri di partenza, 5 volontari hanno fumato le loro sigarette o usato la loro personale sigaretta elettronica, a seconda della sessione in corso.

Ai volontari è stato spiegato che avrebbero potuto fumare/*svapare*[2] nelle quantità e nei tempi più adatti alle loro personali esigenze, a condizione di svolgere questa attività sempre all'interno del locale predisposto per l'esperimento.

La permanenza nel locale è stata tassativamente limitata al tempo strettamente necessario a fumare/*svapare*.

L'accesso e la permanenza nel locale sono stati consentiti ad un massimo di 3 volontari contemporaneamente.

La porta della stanza è rimasta chiusa se non per il tempo necessario ad entrare o ad uscire.

Tutti i volontari hanno firmato un consenso informato prima di prendere parte allo studio.

Per la sessione fumatori, si è provveduto ad annotare il numero di sigarette fumate, mentre per la sessione *vaper* è stato valutato il peso del liquido consumato, con una bilancia di precisione.

Volontari

I volontari fumatori avevano un età media di circa 21 anni con una storia media di 6.5 anni di fumo ed un consumo medio giornaliero di circa 17 sigarette. Il contenuto di nicotina delle sigarette fumate era pari a 0.6 mg per sigaretta. Nel corso della sessione di campionamento sono state fumate complessivamente 19 sigarette, che hanno dispensato ai fumatori circa 11.4 mg di nicotina, basandosi su quanto riportato sul pacchetto.

I *vaper* hanno dichiarato di usare la sigaretta elettronica in maniera esclusiva da circa 3 mesi (min 1, max 6) con un consumo giornaliero di liquido[3] pari a 1.5 ml e un contenuto di nicotina medio di 11 mg/ml. Tutti i volontari, hanno usato un liquido commerciale (*Heaven Juice* tradizionale) prodot-

[2]Termine gergale largamente usato, derivato dall'inglese *to vape*, ed impiegato per indicare l'azione di chi fuma una sigaretta elettronica.

[3]Tutti i liquidi per sigaretta elettronica utilizzati nell'esperimento erano del tipo *Heaven Juice Tradizionale* di FlavourArt, contenenti circa il 40% di glicerolo USP, circa il 50% di glicole propilenico USP, da 0.9% a 1.8% di nicotina USP, <1% di componente aromatica, acqua depurata, secondo quanto ricavato dalla documentazione fornita del produttore.

neutral conditions.

Sampling Sessions

For the two tests, the room was initially prepared for the sampling and analyzed for baseline conditions. Then, 5 volunteers smoked their cigarettes or e-cigarettes, depending on the session.

Volunteers were allowed to smoke/vape[2] as much as and whenever they wanted, provided that they used the room set for the experiment.

The time that volunteers spent in the room was strictly limited to smoking/vaping.

Only a maximum of 3 volunteers were allowed in the room at the same time.

The door of the room was opened only to let volunteers in or out.

Informed consent was obtained by all subjects before participating to the study.

During the smokers' session, the number of smoked cigarettes was noted down. During the vapers' session, the weight of consumed liquid, was evaluated using a precision scale.

Volunteers

The mean age of smokers was about 21 years and they were smoking on average 17 cigarettes per day for 6.5 years. The nicotine content in the smoked cigarettes was 0.6 mg per cigarette. During the sampling session, a total of 19 cigarettes were smoked which dispensed about 11.4 mg of nicotine, according to the information on cigarette packs.

Vapers declared that they had been using e-cigarettes exclusively for about 3 months (min 1, max 6), with a liquid[3] daily intake of 1.5 ml, and an average nicotine content of 11 mg/ml.

For e-cigarette users, a commercially available liquid (Heaven Juice traditional) produced by FlavourArt was used, and a commercial EGO Pulse device by Smokie's®.

During the sampling session, 1760 mg of liquid were vaporized, which is equal to 1.6 ml containing

[2]English term *to vape* indicating the act of e-smoking.

[3]Heaven Juice Traditional e-cigarette liquids by Flavour Art were used during the experiment. They contained about 40% of USP glycerol, 50% of USP propylene glycol, from 0.9% to 1.8% of USP nicotine, <1% aromatic component, purified water, according to the information provided by the producer.

Composti Analizzati Analyzed compounds	Supporto di campionamento Sampling medium	Litri campionati (teorici) Sampled liters (theoretical)	Metodo Method
Nicotina **Nicotine**	Fiala XAD-2 XAD-2 vial	600	NIOSH 2544
Glicoli - Glicerina **Glycols - Glycerine**	Filtro in fibra di vetro + fiala XAD-7 Glass fiber filter + XAD-7 vial	600	NIOSH 5523
Idrocarburi Policiclici Aromatici (IPA) **Polycyclic Aromatic Hydrocarbons (PAHs)**	Filtro in fibra di vetro + fiala XAD-2 Glass fiber filter + XAD-2 vial	600	NIOSH 5515
Acroleina **Acrolein**	Fiala di Silica gel + DPNH Silica gel vial + DPNH	60	NIOSH 2018
SOV **VOCs**	Fiala di carbone attivo Activated carbon vial	60	UNI EN 13649

Tab. 1: Metodi utilizzati per il campionamento dei composti. / Methods used for substances sampling.

to da *FlavourArt* e un dispositivo EGO Pulse di Smokie's®.

Durante la sessione di campionamento, sono stati vaporizzati 1760 mg di liquido, pari a circa 1.6 ml e contenenti circa 17.6 mg di nicotina.

Materiali e Metodi

Per le metodiche di campionamento sono state adottate diverse procedure sia della normativa UNI che NIOSH, impiegando differenti fiale SKC specifiche per i diversi componenti da ricercare. Per alcune molecole sono state utilizzate anche delle membrane filtranti in fibra di vetro o in PTFE con porosità di 0.8 µm (Tab. 1).

Ogni fiala è stata collegata ad un campionatore aspirante portatile, calibrato e impostato per aspirare uno specifico volume, in funzione della durata dell'esperimento e delle specifiche della metodica in uso.

A questi sistemi di campionamento cumulativo, sono stati affiancati, un rilevatore di CO, CO_2, NO_x, e un rilevatore di COT a ionizzazione di fiamma FID.

A fine esperimento, le fiale e le membrane sono state sigillate e trasportate presso i laboratori ABICH S.r.l.[4] per le analisi.

Risultati

Le analisi dei campioni hanno evidenziato numerose e sostanziali differenze tra fumo di sigaretta e fumo elettronico, sia in termini di impatto sulla qualità dell'aria, sia anche in termini di tossicità. (Tab. 2).

Per il campionamento sono state impiegate delle membrane in PTFE e siamo rimasti colpiti dal co-

[4]ABICH S.r.l., Verbania (VB), Italia

about 17.6 mg of nicotine.

Materials and Methods

Considering the sampling methodologies different procedures both from UNI and NIOSH have been used. Different SKC vials specific for the different components to search were used. For some molecules, also fiberglass or PTFE 0.8 µm porosity membrane filters were used (Tab. 1).

Each vial was linked with a portable suction sampler, calibrated and set to aspirate a specific volume, depending on the duration of the experiment and on the method details.

In addition to these cumulative sampling systems, a CO and CO_2 and NO_x detector and a FID flame ionization TOC detector were used.

At the end of the experiment, the vials and the membranes were sealed and taken to the ABICH S.r.l.[4] labs for the analysis.

Results

The sampling analysis underlined many and fundamental differences between cigarette smoking and e-cigarette smoking, both in terms of impact on air quality and also on toxicity. (Tab. 2).

PTFE membranes have been used for the sampling. We were surprised by the colour of the mem-

[4]ABICH S.r.l.,Verbania (VB), Italy

Parametro Parameter	Volume Campionato* [L] Sampled Volume*	Concentrazione Media* [mg/m³] Mean Concentration*	
		Sigaretta Tradizionale Traditional Cigarette	Sigaretta Elettronica Electronic Cigarette
Nicotina / Nicotine	600	0.034	< 0.001**
Glicerina / Glycerine	600	< 0.001**	0.072
Glicolene Propilenico / Propylene Glycol	600	< 0.01**	< 0.01**
Acroleina / Acrolein	60	0.020	< 0.0016**

Tempo di campionamento: 300 minuti. / Sampling time: 300 minutes.

* dati relativi alle condizioni operative di riferimento (20°C e 0.101 MPa) riprodotte dall'attrezzatura / values refer to ideal working conditions (20°C and 0.101 MPa) simulated by the equipment

** inferiore alla soglia rilevabile dalla metodica / below the instrument sensitivity

Tab. 2: Sostanze rilevate. / Detected substances.

lore assunto dalle membrane alla fine delle sessioni. Questo, pur non costituendo un dato analitico di per sé, in qualche modo ci ha dato un'idea dei risultati che avremmo ottenuto (Fig. 3 e 4).

branes at the end of the sessions. Even if this does not constitute analytic data as such, it has given us an idea of the results that we could expect (Fig. 3 and 4).

Fig. 3: Membrana in PTFE al termine della sessione di fumo tradizionale. / PTFE membrane at the end of the cigarette smoking session.

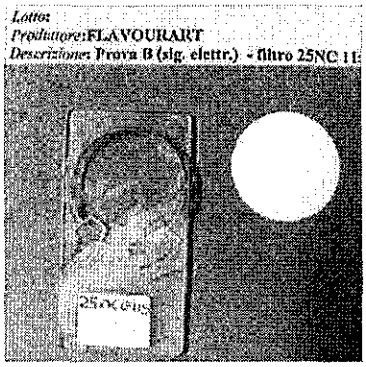

Fig. 4: Membrana in PTFE al termine della sessione di fumo elettronico. / PTFE membrane at the end of the e-cigarette session.

CO (Monossido di Carbonio) [12] Il monossido di carbonio non ha mostrato alcuna variazione con il fumo elettronico, rimanendo al di sotto dei limiti di rilevabilità dello strumento, mentre il fumo di sigaretta ha prodotto un costante incremento della sua concentrazione durante tutta la durata del campionamento, raggiungendo un picco di 11 mg/m^3, valore questo, al di sopra della soglia di legge (10 mg/m^3)[5] (Fig. 5).

Il monossido di carbonio è un gas tossico con una elevata affinità per l'emoglobina, compromettendo

CO (Carbon Monoxide) [12] The levels of carbon monoxide did not show any variation during e-cigarette smoking, remaining below the detection limits of the tool. On the contrary cigarette smoking produced a steady elevation in CO throughout the sampling period. It reached a peak of 11 mg/m^3, which is above the legal threshold (10 mg/m^3)[5] (Fig. 5).

Carbon monoxide is a toxic gas with a high affinity for haemoglobin, compromising its ability to transport oxygen. Smokers, continue to exhale out high levels of CO several hours after smoking their

[5]Decreto Legislativo 13 agosto 2010, n. 155. Attuazione della direttiva 2008/50/CE relativa alla qualità dell'aria ambiente e per un'aria più pulita in Europa.

[5]Legislative decree 13th August 2010, n.155. Application of the directive 2008/50/CE concerning the quality air in the environment for a clearer air in Europe.

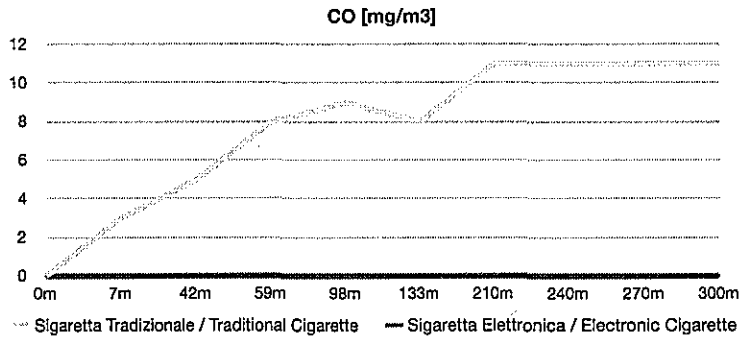

Fig. 5: Concentrazione di CO durante l'esperimento. / CO concentration during the experiment.

la sua capacità di trasportare ossigeno. Un fumatore continua ad emettere elevati livelli di monossido di carbonio, anche molte ore dopo aver fumato l'ultima sigaretta [5].

Nicotina Tra gli aspetti più interessanti, abbiamo osservato che la nicotina, pur presente nei liquidi utilizzati per l'esperimento, non è stata rilevata durante la sessione relativa al fumo elettronico. Per contro sono stati dosati 34 µg/m^3 di nicotina, con il fumo tradizionale. Va precisato che, stando a quanto riportato sui pacchetti, la quota di nicotina inalata dai fumatori, ammonta complessivamente a circa 11.4 mg, mentre i *vaper* hanno inalato nicotina per un totale di 17.6 mg. Tuttavia la quota di nicotina indicata sul pacchetto tiene conto solo della quota inalata, senza fornire alcuna informazione relativa a quella effettivamente presente nella sigaretta e liberata nell'aria durante la sua combustione.

Basandosi sui risultati osservati è possibile dedurre che il fumo di sigaretta produce una contaminazione da nicotina nell'aria, almeno 35 volte superiore a quella del fumo elettronico, il che equivale a dire che servono almeno 35 *vaper* per produrre un livello di nicotina equivalente a quello prodotto da un singolo fumatore.

Se inoltre avessimo bilanciato le prove, chiedendo ai fumatori, di consumare sigarette, in quantità tali da eguagliare il consumo di nicotina dei *vaper*, questi avrebbero dovuto fumare circa 29 sigarette, producendo una concentrazione di nicotina stimata in circa 52 µg/m^3.

Argomentare sulle ragioni di questi risultati è estremamente difficile, si potrebbe ipotizzare che esista per i *vaper* una differente cinetica di assorbimento della nicotina, o più semplicemente che le quantità in gioco siano estremamente contenute se paragonate a quelle effettivamente liberate dal fumo tradizionale. Ma al di là di queste ipotesi, tutte da verificare, il risultato in sé rimane un fatto: 5 *vaper* che utilizzano la sigaretta elettronica, per 5 h, in una last cigarette, even if the last cigarette was put out many hours before [5].

Nicotine Among all, the most interesting aspects we observed was that nicotine was not detected in air during the e-smoking session, although liquids used for experiments contained it. On the other hand, 34 µg/m^3 of nicotine were found during the smoking session. It should be made clear that, according to the information on packs, the amount of nicotine inhaled by smokers was about 11.4 mg, while the amount of nicotine inhaled by vapers was about 17.6 mg. However the amount of nicotine reported on packs is the inhaled amount. This information does not give details about the real amount of nicotine inside the cigarettes and released in the air during combustion and from side stream smoke.

Based on the observed results, we can conclude that cigarette smoking produces nicotine contamination in the air at least 35 times higher than e-smoking. This means that we need at least 35 vapers to produce nicotine level in air similar to the level produced by a single smoker.

Moreover if we had balanced the tests, asking cigarette smokers to consume the amount of cigarettes necessary to match the amount of nicotine used by vapers, the latter should have smoked about 29 cigarettes, producing an expected nicotine concentration of about 52 µg/m^3.

It's extremely difficult to discuss about the reasons for these results. We could suppose that there is a different absorption kinetics for nicotine. Or maybe the amount in play is extremely low, when compared to the nicotine amount released during traditional smoking. However beyond all these hypotheses, which have not been verified, there is one fact: 5 vapers using e-cigarettes for 5 h in a small room without renewal of indoor air do not produce detectable levels of nicotine in the air.

Parametro Parameter	Volume Campionato* [L] Sampled Volume*	Concentrazione Media* [µg/m³] Mean Concentration*	
		Sigaretta Tradizionale Traditional Cigarette	Sigaretta Elettronica Electronic Cigarette
Metiletilchetone / Methylethylketone	60	4.2	4.4
1-etil-3-metil benzene / 1-ethyl-3-methylbenzene	60	0.2	3.4
Limonene / Limonene	60	12.5	0.1
Decano / Decane	60	0.4	4.2
Undecano / Undecane	60	4.2	0.7
Dodecano / Dodecane	60	3.7	0.3
Cedrene / Cedrene	60	0.3	0.9
Longifolene / Longifolen	60	18.3	30.3
Toluene / Toluene	60	1.7	-
O,m,p - Xilene / o,m,p - Xylene	60	0.2	-
1-etil-2-metil benzene / 1-ethyl-2-methylbenzene	60	4.9	-
1,2,4-trimetil benzene / 1,2,4-Trimethylbenzene	60	0.3	-
Mentene / Menthene	60	0.5	-
BHT (Butilidrossitoluene / Butylhydroxytoluene)	60	-	0.4
Terpene / Terpene (u.s.)	60	-	2.3
Longiciclene / Longicyclene	60	-	2.2
Cariofillene / Caryophillene	60	-	1.0
n.i. totali / total u.s.	60	14.7	12.6

n.i. sostanza non identificabile / u.s. unidentifiable substance

Tempo di campionamento: 300 minuti. / Sampling time: 300 minutes.

* dati relativi alle condizioni operative di riferimento (20°C e 0.101 MPa) riprodotte dall'attrezzatura / values refer to ideal working conditions (20°C and 0.101 MPa) simulated by the equipment

** inferiore alla soglia rilevabile dalla metodica / below the instrument sensitivity

Tab. 6: Sostanze Organiche Volatili. / Volatile Organic Compounds.

stanza di piccole dimensioni e senza rinnovo d'aria, non producono livelli rilevabili di nicotina nell'aria.

Glicole Propilenico Altro parametro inatteso è il glicole propilenico, che non è stato rilevato durante la prova con il fumo elettronico, pur costituendo il 50% del liquido[3].

Questo curioso fenomeno è stato osservato anche in un altro studio simile [11]. Anche questo studio non ha rilevato nicotina nel vapore passivo di una stanza sperimentale (significativamente più piccola della stanza da noi utilizzata). Alcuni esperimenti suggeriscono che l'assorbimento del glicole propilenico per via inalatoria sia estremamente rapido [17] e questo potrebbe spiegare perché questa molecola pur così abbondante non è stata rilevata.

Glicerina e Acroleina Non è stata rilevata glicerina relativamente al fumo di sigaretta, mentre ne è stata rilevata una traccia con il fumo elettronico, pari a 72 µg, valore molto al di sotto della soglia di

Propylene Glycol Results on propylene glycol were also unexpected. During e-smoking tests, propylene glycol was not detected, although 50% of liquid[3] consisted of propylene glycol.

This curious phenomenon has also been observed in a similar study [11]. Even in that case, nicotine was not detected in an experimental room of the passive vaping (which was significantly smaller than the room we used). Some studies suggest that propylene glycol absorption via inhalation is extremely rapid [17]. This could explain why this molecule has not been detected even though it was present in significant amounts in the liquid used.

Glycerine and Acrolein No glycerine was detected in air during cigarette smoking. On the other hand, 72 µg/m³ were detected during e-smoking. This amount is much lower than the threshold safety

Parametro Parameter	Volume Campionato* [L] Sampled Volume*	Concentrazione Media* [µg/m³] Mean Concentration*	
		Sigaretta Tradizionale Traditional Cigarette	Sigaretta Elettronica Electronic Cigarette
Naftalene / Naphthalene	600	2.78	< 0.02**
Acenaftilene / Acenaphthylene	600	< 0.02**	< 0.02**
Acenaftene / Acenaphthene	600	0.19	< 0.03**
Fluorene / Fluorene	600	0.47	< 0.06**
Fenantrene / Phenanthrene	600	0.37	< 0.08**
Antracene / Anthracene	600	< 0.04**	< 0.04**
Fluorantene / Fluoranthene	600	0.13	< 0.02**
Pirene / Pyrene	600	< 0.01**	< 0.01**
Benzo(a)antracene / Benzo(a)anthracene	600	< 0.16**	< 0.16**
Crisene / Chrysene	600	5.46	< 0.14**
Benzo(b)fluorantene / Benzo(b)fluoranthene	600	< 0.33**	< 0.33**
Benzo(k)fluorantene / Benzo(k)fluoranthene	600	< 0.74**	< 0.74**
Benzo(a)pirene / Benzo(a)pyrene	600	< 0.62**	< 0.62**
Indeno(1,2,3-cd)pirene / Indeno(1,2,3-cd)pyrene	600	< 1.47**	< 1.47**
Dibenzo(a,h)antracene / Dibenzo(a,h)anthracene	600	< 1.47**	< 1.47**
Benzo(ghi)perilene / Benzo(g,h,i)perylene	600	< 1.60**	< 1.60**

Tempo di campionamento: 300 minuti. / Sampling time: 300 minutes.

* dati relativi alle condizioni operative di riferimento (20°C e 0.101 MPa) riprodotte dall'attrezzatura / values refer to ideal working conditions (20°C and 0.101 MPa) simulated by the equipment

** inferiore alla soglia rilevabile dalla metodica / below the instrument sensitivity

Tab. 7: Idrocarburi Policiclici Aromatici. / Polycyclic Aromatic Hydrocarbons.

azione (TWA-TLV 10 mg/m^3) e ben al di sotto della soglia definita di rischio moderato o irrilevante [4].

Tuttavia, bisogna rilevare che l'acroleina, molecola che si forma della disidratazione ad elevate temperature della glicerina, era presente e ben rilevabile nell'aria della stanza, durante la prova dei fumatori (20 µg/m^3).

È noto infatti che la glicerina viene spesso aggiunta ai tabacchi come umettante e durante la combustione si trasformi in acroleina [3]. L'assenza di processi di combustione nel fumo elettronico, è di fondamentale importanza per comprendere come mai l'acroleina non sia stata rilevata nell'aria durante la prova.

L'acroleina è una sostanza notoriamente molto tossica e irritante, inoltre è attualmente sospetta per avere un ruolo nei processi di cancerogenesi [1].

limit (TWA-TLV 10 mg/m^3) and much lower than the threshold for moderate risk [4].

However, it's important to note that acrolein, a molecule formed by dehydration of glycerine due to high temperatures, was present in the air of the room during cigarette smoking test (20 µg/m^3).

In fact, it is well known that glycerine is often added to moisten tobacco. During combustion glycerine is transformed into acrolein [3]. The fact that no combustion is involved when using e-cigarettes probably plays a fundamental role in the absence of acrolein from indoor air during their use.

As everyone knows, acrolein is a very toxic and irritating substance. Moreover it is currently suspected of having a fundamental role in the carcinogenic process [1].

SOV Dall'analisi delle sostanze organiche volatili, sono state evidenziate fondamentalmente componenti aromatiche, in particolare il longifolene, tipico dell'aroma di pino, era presente in entrambe le prove. È probabile che questo composto facesse parte dei prodotti detergenti o deodoranti impiegati per pulire la stanza prima dell'esperimento. In merito

VOCs During the analysis of volatile organic compounds, aromatic components were detected, in particular longifolen, typical of pine aroma, in both tests. One of the detergents used to clean the room before the test could have contained this compound. Regarding cigarette smoking, xylene and toluene were detected. These are two very common toxic

al fumo di sigaretta, si rilevano comunque tracce di xilene e toluene, due composti tossici, normalmente presenti nel fumo di sigaretta. Il limonene, terpene dell'olio essenziale di limone, è stato rilevato solo durante la prova con il fumo tradizionale ed in effetti questa molecola è stata riscontrata anche da altri studi come componente del fumo di sigaretta [11] (Tab. 6).

IPA Tra i composti più rilevanti, in termini di tossicità cronica del fumo di tabacco, ci sono certamente gli idrocarburi policiclici aromatici. Questi composti, prodotti durante il processo di combustione, sono noti per gli effetti cancerogeni e mutageni.

La prova ha identificato 6 dei 16 IPA ricercati, durante la sessione con il fumo tradizionale, mentre non è stato rilevato nulla con il fumo elettronico (Tab. 7).

COT [15] L'analisi del carbonio organico totale, non ci dà informazioni specifiche sulla tossicità. È un modo per valutare globalmente la quantità di materia organica immessa nell'aria, senza distinguere tra sostanze tossiche e non tossiche. Tuttavia questo parametro ci fornisce una visione globale del grado di contaminazione dell'aria, durante tutta la durata dell'esperimento.

Nel grafico è possibile osservare l'andamento dei livelli di COT nell'aria durante le 5 h di campionamento.

Dal grafico è stato sottratto il valore di fondo presente all'inizio del campionamento (1 mg/m^3).

Due aspetti sono interessanti a mio parere. In primo luogo i livelli massimi con il fumo di sigaretta sono oltre 9 volte più alti che con il fumo elettronico, in secondo luogo, il fumo impiega appena 11 minuti, a raggiungere il valore massimo raggiunto dalla sigaretta elettronica (0.73 mg/m^3), nel tempo di 5 h (Fig. 8).

Conclusioni

L'esperimento su descritto ha evidenziato, limitatamente ai parametri osservati, che il fumo elettronico non comporta l'immissione nell'aria di un ambiente chiuso, di sostanze tossiche o cancerogene in quantità rilevabili. Ulteriori studi sono necessari, per approfondire e meglio definire tutti gli aspetti coinvolti, ma questa valutazione preliminare suggerisce che l'impatto del fumo elettronico passivo, se confrontato con quello del fumo di sigaretta, è talmente ridotto da essere appena rilevabile e non presenta le caratteristiche di tossicità e di cancerogenicità rilevate nel fumo di sigaretta. L'assenza di combustione e la mancanza di fumo secondario (*sidestream smoke*), noto per i suoi effetti tossici [2, 6], sono probabilmen-

compounds in cigarette smoking. Limonene which is an oil lemon terpene, was detected only during the traditional smoking test. In fact this molecule was found as a component in cigarette smoke even in other studies [11] (Tab. 6).

PHAs Polycyclic aromatic hydrocarbons are, without doubt, among the most important compounds in terms of chronic toxicity caused by tobacco smoking. These substances, which are produced during the combustion process, are well known for their carcinogenic and mutagenic effects.

During the traditional cigarette smoking session, 6 out of 16 PAHs were identified. Nothing was identified during the e-cigarette session (Tab. 7).

TOC [15] The total organic carbon analysis does not give us specific information about toxicity. It is a measure of the overall amount of organic matter released in the air. There is no distinction between toxic and non-toxic substances. However this parameter gives us a global view of the degree of contamination of air, throughout the whole experiment.

The chart shows the TOC level trends in the air during the 5 h sampling.

The chart does not contain the original value of air at the beginning of the sample (1 mg/m^3).

In my opinion there are two interesting aspects which should be underlined. Firstly, the maximum levels during cigarette smoking sessions are 9 times higher than the e-smoking session. Secondly, cigarette smoking takes just 11 minutes to reach a value similar to the maximum value measured for the e-cigarette (0.73 mg/m^3), in 5 h (Fig. 8).

Conclusions

The above experiment, within the limits of the observed parameters, has underlined that e-smoking does not produce detectable amounts of toxic and carcinogenic substances in the air of an enclosed space. Further studies are needed to better understand all the involved aspects. However this preliminary assessment indicates that passive vaping impact, when compared to the traditional cigarette smoking, is so low that it is just detectable, and it does not have the toxic and carcinogenic characteristics of cigarette smoking. The absence of combustion and the lack of sidestream smoking, with its known toxic effects [2, 6] are probably the main reasons for the differences observed in air pollution characteristics

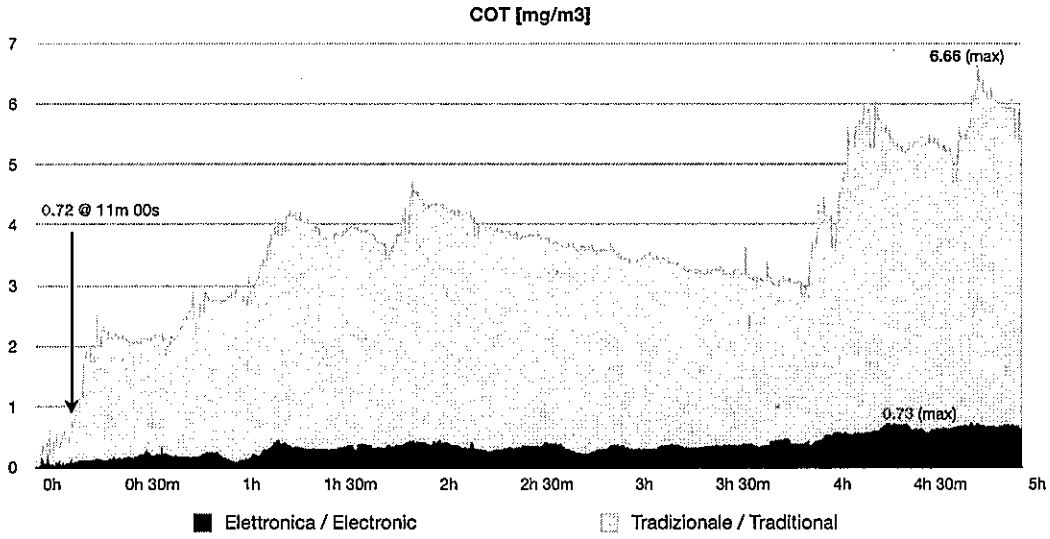

Fig. 8: Carbonio Organico Totale. / Total Organic Carbon.

te alla base delle differenze osservate, in termini di inquinamento dell'aria, tra fumo di tabacco e fumo elettronico.

Come considerazione finale, basandosi sui risultati ottenuti e sui dati dell'ARPA in materia di inquinamento urbano, potrebbe essere meno salutare, respirare l'aria di una grande città nell'ora di punta, piuttosto che sostare in una stanza con qualcuno che usa una sigaretta elettronica.

between e-cigarettes and tobacco smoking.

On the base of the obtained results and on ARPA data about urban pollution, we can conclude by saying that could be more unhealty to breath air in big cities compared to staying in the same room with someone who is vaping.

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[10] *NIOSH 5523, Determinazione dei Glicoli / Determination of Glycols.*

Electronic cigarettes for smoking cessation: a randomised controlled trial

Christopher Bullen, Colin Howe, Murray Laugesen, Hayden McRobbie, Varsha Parag, Jonathan Williman, Natalie Walker

Summary

Background Electronic cigarettes (e-cigarettes) can deliver nicotine and mitigate tobacco withdrawal and are used by many smokers to assist quit attempts. We investigated whether e-cigarettes are more effective than nicotine patches at helping smokers to quit.

Methods We did this pragmatic randomised-controlled superiority trial in Auckland, New Zealand, between Sept 6, 2011, and July 5, 2013. Adult (≥18 years) smokers wanting to quit were randomised (with computerised block randomisation, block size nine, stratified by ethnicity [Māori; Pacific; or non-Māori, non-Pacific], sex [men or women], and level of nicotine dependence [>5 or ≤5 Fagerström test for nicotine dependence]) in a 4:4:1 ratio to 16 mg nicotine e-cigarettes, nicotine patches (21 mg patch, one daily), or placebo e-cigarettes (no nicotine), from 1 week before until 12 weeks after quit day, with low intensity behavioural support via voluntary telephone counselling. The primary outcome was biochemically verified continuous abstinence at 6 months (exhaled breath carbon monoxide measurement <10 ppm). Primary analysis was by intention to treat. This trial is registered with the Australian New Zealand Clinical Trials Registry, number ACTRN12610000866000.

Findings 657 people were randomised (289 to nicotine e-cigarettes, 295 to patches, and 73 to placebo e-cigarettes) and were included in the intention-to-treat analysis. At 6 months, verified abstinence was 7·3% (21 of 289) with nicotine e-cigarettes, 5·8% (17 of 295) with patches, and 4·1% (three of 73) with placebo e-cigarettes (risk difference for nicotine e-cigarette *vs* patches 1·51 [95% CI −2·49 to 5·51]; for nicotine e-cigarettes *vs* placebo e-cigarettes 3·16 [95% CI −2·29 to 8·61]). 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. We identified no significant differences in adverse events, with 137 events in the nicotine e-cigarettes group, 119 events in the patches group, and 36 events in the placebo e-cigarettes group. We noted no evidence of an association between adverse events and study product.

Interpretation E-cigarettes, with or without nicotine, were modestly effective at helping smokers to quit, with similar achievement of abstinence as with nicotine patches, and few adverse events. Uncertainty exists about the place of e-cigarettes in tobacco control, and more research is urgently needed to clearly establish their overall benefits and harms at both individual and population levels.

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National Institute for Health Innovation, School of Population Health, The University of Auckland, Auckland, New Zealand (C Bullen MBChB, C Howe PhD, V Parag MSc, N Walker PhD); Health New Zealand, Lyttelton, Christchurch, New Zealand (M Laugesen MBChB); Wolfson Institute of Preventive Medicine, UK Centre for Tobacco Control Studies, Queen Mary University of London, Charterhouse Square, London, UK (H McRobbie MBChB); and Department of Public Health and General Practice, University of Otago, Christchurch, New Zealand (J Williman PhD)

Correspondence to:
Dr Christopher Bullen, The National Institute for Health Innovation, School of Population Health, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand
c.bullen@nihi.auckland.ac.nz

Introduction

Since their launch in 2004, electronic cigarettes (e-cigarettes), a diverse range of battery operated devices that vaporise nicotine for inhalation, have been purchased by millions of people.[1] Many smokers use e-cigarettes to help them quit (27% of those making a quit attempt in the UK, in May, 2013[2]), and sales are increasing so rapidly that some analysts predict that they will surpass cigarette sales within a decade.[1]

The place of e-cigarettes in tobacco control is controversial,[3,4] and there is a paucity of reliable data to inform debate. Available research suggests that e-cigarettes have the potential to assist smokers to quit or reduce smoking: surveys show that many smokers try e-cigarettes for these reasons,[5,6] and studies show that e-cigarettes are capable of delivering nicotine into the bloodstream and attenuating tobacco withdrawal as effectively as nicotine replacement therapy (NRT).[7,8] Use of e-cigarettes also simulates behavioural and sensory dimensions of smoking. However, a trial in 300 smokers unwilling to quit showed low rates of cessation at 12 months for nicotine e-cigarettes and placebo e-cigarettes.[9] E-cigarettes also have potential to harm: researchers have detected toxins in e-cigarette fluid and vapour,[10] but at much the same concentrations as with NRT and lower than in cigarette smoke;[11] a review deemed e-cigarettes to be very unlikely to pose significant risks to smokers.[12]

In this trial we aimed to assess whether e-cigarettes with cartridges containing nicotine (nicotine e-cigarette) were more effective for smoking cessation than nicotine patches, and included a blind comparison with e-cigarettes containing no nicotine (placebo e-cigarette). We hypothesised that nicotine e-cigarettes would be more effective than patches and placebo e-cigarettes for smoking reduction, tobacco dependence, and relief of withdrawal symptoms, and that they would have no greater risk of adverse events than nicotine patches.

Methods

Study design and participants

We did this three parallel group, randomised controlled trial in Auckland, New Zealand. First randomisation was on Sept 6, 2011, and last follow-up was on July 5, 2013. The published protocol describes procedures in detail.[13] In brief, people were eligible if they were aged 18 years or older, had smoked ten or more cigarettes per day for the past year, wanted to stop smoking, and could provide consent. We recruited via community newspapers, inviting people to call the study centre for eligibility prescreening, done by research assistants, who also completed follow-up assessments. We excluded pregnant and breastfeeding women; people using cessation drugs or in an existing cessation programme; those reporting heart attack, stroke, or severe angina in the previous 2 weeks; and those with poorly controlled medical disorders, allergies, or other chemical dependence. Participants were mailed study information, and consent forms to sign and return. The Northern X Regional Ethics Committee approved the study (Number NTX/10/11/111); the Standing Committee on Therapeutic Trials approved the use of nicotine e-cigarettes because they were not permitted for sale in New Zealand, but could be imported for personal use or research.

Randomisation and masking

Callers who met the inclusion criteria and gave demographic details and information about nicotine dependence (Fagerström test for nicotine dependence [FTND][14]) were randomised by the study statistician (VP) in a 4:4:1 ratio to nicotine e-cigarettes, patches, or placebo

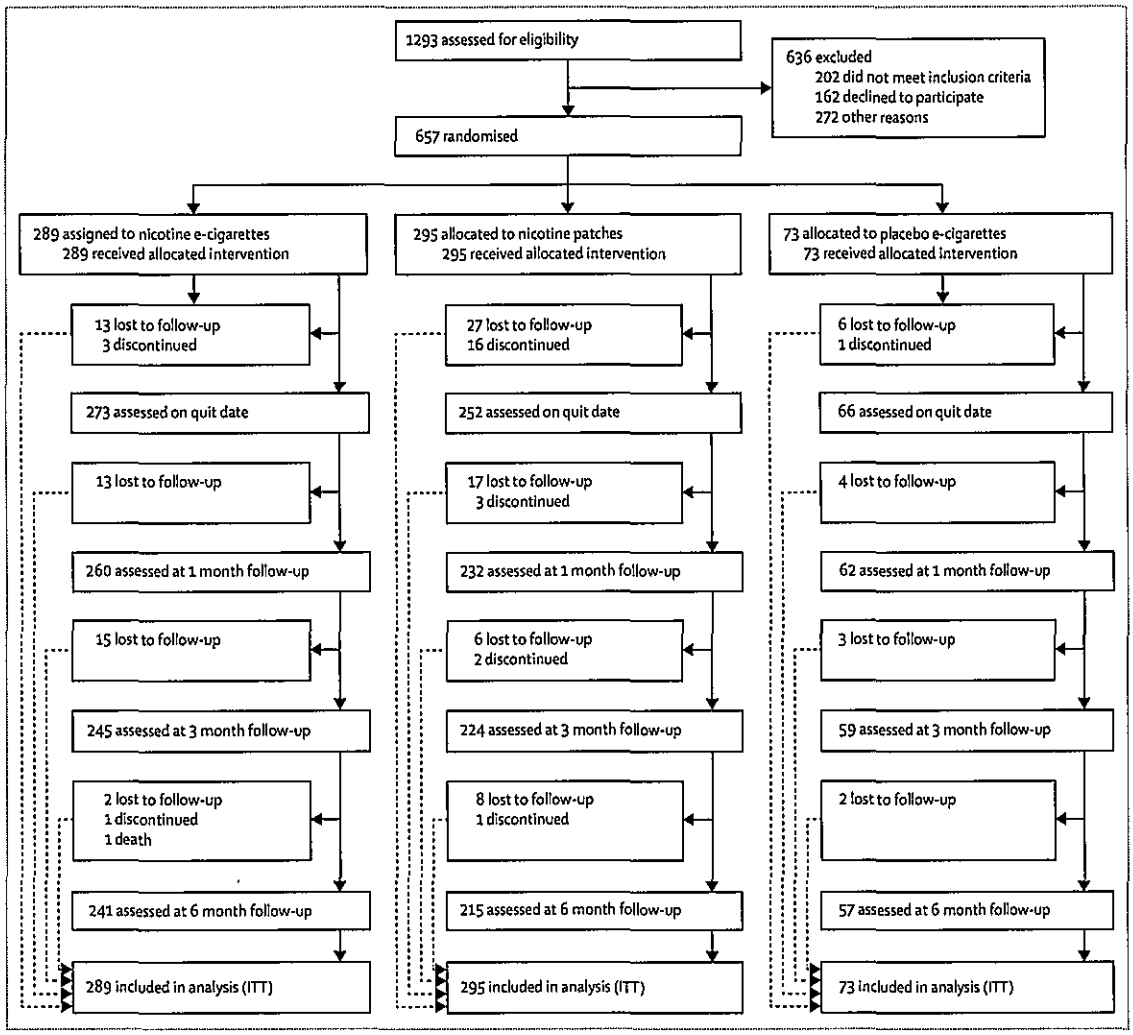

Figure 1: **Trial profile**

11 protocol violations occurred in the nicotine e-cigarettes group (three pregnancies, seven no biochemical validation, one undisclosed medication ineligibility). 11 protocol violations occurred in the patches group (four pregnancies, four no biochemical validation, three undisclosed medication ineligibility). Three protocol violations occurred in the placebo e-cigarettes group (one no biochemical validation, two undisclosed medication ineligibility). ITT=intention to treat.

e-cigarettes, with computerised block randomisation, block size nine, stratified by: ethnicity (Māori; Pacific; or non-Māori, non-Pacific), sex (men or women), and level of nicotine dependence (>5 or ≤5 FTND). It was not feasible to mask participants to allocation to patch or e-cigarettes. Research assistants undertaking outcome assessments used a list generated by the trial database giving no indication of product allocation.

Procedures

Elusion e-cigarettes are among the e-cigarette market leaders in Australasia; in New Zealand, nicotine e-cigarettes are not permitted to be sold, but nicotine-free e-cigarettes are widely available for sale and identical in appearance to nicotine versions. We commissioned analyses of these e-cigarettes: the liquid was free of diethylene glycol (a toxin detected in fluid in one brand of e-cigarettes[13]); nicotine cartridges (labelled 16 mg) contained 10–16 mg nicotine per mL; and placebo cartridges contained no nicotine. Vapour analyses done midway through the trial (using Goniewicz and colleagues' methodology[15]) showed that 300 puffs from one nicotine e-cigarette cartridge delivered 3–6 mg nicotine, equivalent to smoking between one and five tobacco cigarettes. The first 20 participants randomised to the nicotine e-cigarettes group were invited to take part in testing, and four completed the testing regimen. In these four participants, who had been using the nicotine e-cigarettes for at least 1 week, plasma nicotine concentrations were sampled every 10 min for 1 h, and peaked at 10 min after commencement of product use at 3·4 ng/mL, a median increase from baseline of 2·1 ng/mL. We chose nicotine patches (21 mg/24 h) for comparison with e-cigarettes because they are the most popular NRT product in New Zealand,[16] have proven effectiveness,[17] and few known adverse events.[17]

Participants allocated to patches were sent exchange cards in the mail redeemable for patches from community pharmacies, with instructions to use patches daily, from 1 week before until 12 weeks after their chosen quit day, consistent with smoking cessation guidelines.[18] We also supplied vouchers to these participants to cover dispensing costs. Participants in both e-cigarettes groups were couriered an e-cigarette, spare battery and charger, and cartridges (with labels masked to nicotine content), plus simple instructions to use them as desired from 1 week before until 12 weeks after their chosen quit day. All randomised participants were referred (by fax or by a scanned request) to Quitline, who called the participants to offer telephone-based behavioural support. Participants who declined or did not call back were still able to access other Quitline support, such as Txt2Quit (a free SMS support service). Quitline provided us with reports to monitor usage. After randomisation, additional baseline data were collected: education, smoking and quitting history, quitting self-efficacy, medication, withdrawal symptoms and stage of addiction (according to the autonomy over smoking scale, AUTOS),[19] and behavioural dependence (according to the Glover-Nilsson smoking behavioural questionnaire, GN-SBQ).[20]

The primary outcome was continuous smoking abstinence (self-reported abstinence over the whole follow-up period, allowing ≤5 cigarettes in total[21]), 6 months after quit day, verified at that point in time by exhaled breath carbon monoxide measurement (<10 ppm), using Bedfont Micro Smokerlyzers (Bedfont Scientific, Maidstone, UK). Carbon monoxide tests were administered by research assistants at the University of Aukland; participants were not paid for testing, but received transportation costs. Secondary outcomes assessed at 1, 3, and 6 months post quit day were: continuous abstinence, 7 day point prevalence abstinence (proportion reporting no smoking of tobacco cigarettes, not a puff, in the past 7 days), number of tobacco cigarettes smoked per day, proportion of participants reducing tobacco smoking, time to relapse to tobacco smoking, number of patches or cartridges used, use of other cessation treatments, withdrawal symptoms, stage of addiction,[19] smoking latency,[22] and adverse events. Data collection continued as scheduled if participants discontinued study treatments.

Statistical analysis

A sample size of 657 (292 in the nicotine e-cigarettes group, 292 in the patches group, 73 in the placebo

	Nicotine e-cigarettes (n=289)	Patches (n=295)	Placebo e-cigarettes (n=73)
Age (years)	43·6 (12·7)	40·4 (13·0)	43·2 (12·4)
Women	178 (62%)	182 (62%)	45 (62%)
Ethnicity*			
New Zealand Māori	95 (33%)	95 (32%)	23 (32%)
Non-Māori	194 (67%)	200 (68%)	50 (68%)
Education below year 12† or no qualification	150 (52%)	123 (42%)	38 (52%)
Average number of cigarettes (including RYO) smoked per day	18·4 (7·2)	17·6 (6·0)	17·7 (5·6)
Age started smoking (years)	15·6 (4·7)	15·2 (3·8)	15·7 (5·1)
Number of years smoking continuously	25·9 (13·1)	23·5 (12·9)	24·8 (13·7)
Type of tobacco usually smoked			
Factory made only	167 (58%)	167 (57%)	47 (64%)
RYO only	92 (32%)	92 (31%)	21 (29%)
Both	30 (10%)	35 (12%)	5 (7%)
Lives with other smokers	151 (52%)	149 (51%)	42 (58%)
At least 1 quit attempt in past 12 months	158 (55%)	169 (57%)	39 (53%)
FTND score	5·6 (2·0)	5·5 (2·0)	5·5 (2·0)
FTND >5 (high dependence)	157 (54%)	162 (55%)	40 (55%)
GN-SBQ score	20·1 (7·9)	20·1 (8·4)	21·4 (8·6)
Self-efficacy to quit‡	3·7 (1·0)	3·7 (0·9)	3·6 (1·0)
AUTOS total score	22·6 (7·2)	23·1 (7·6)	23·4 (7·3)

Data are mean (SD) or n (%). RYO=roll your own (loose tobacco) cigarettes. FTND=Fagerström test of nicotine dependence. GN-SBQ: Glover-Nilsson smoking behavioural questionnaire. AUTOS=autonomy over smoking scale; higher scores indicate greater dependence. *All non-Māori ethnicity categories aggregated as non-Māori.[15] †Age 16 or 17 years. ‡Self-efficacy to quit=belief in ability to quit this time, measured on scale of 1 to 5, 1=very low, 5=very high.

Table 1: Baseline characteristics of participants

	Nicotine e-cigarettes (n=289)	Patches (n=295)	Difference χ^2 p value	Relative risk (95% CI)	Risk difference (95% CI)
Continuous abstinence					
1 month	67 (23·2%)	47 (15·9%)	0·03	1·46 (1·04 to 2·04)	7·25 (0·84 to 13·66)
3 months	38 (13·1%)	27 (9·2%)	0·12	1·44 (0·90 to 2·33)	4·00 (−1·10 to 9·10)
6 months (primary outcome)	21 (7·3%)	17 (5·8%)	0·46	1·26 (0·68 to 2·34)	1·51 (−2·49 to 5·51)
Sensitivity analyses for 6 months continuous abstinence data					
Complete case analysis*	21/241 (8·7%)	17/215 (7·9%)	0·76	1·10 (0·60 to 2·03)	0·80 (−4·27 to 5·87)
Per-protocol analysis 1†	21/231 (9·1%)	15/207 (7·2%)	0·48	1·25 (0·66 to 2·37)	1·84 (−3·28 to 6·96)
Per-protocol analysis 2‡	20/211 (9·5%)	13/151 (8·6%)	0·78	1·10 (0·57 to 2·14)	0·87 (−5·10 to 6·84)
Per-protocol analysis 3§	12/147 (8·2%)	12/138 (8·7%)	0·87	0·94 (0·44 to 2·02)	−0·54 (−7·00 to 5·92)
Including not biochemically verified¶	30 (10·4%)	21 (7·1%)	0·16	1·46 (0·86 to 2·49)	3·26 (−1·32 to 7·84)
Repeated measures analysis‖					
Overall treatment effect	..	..	0·05	1·61 (1·00 to 2·57)	..
1 month effect	..	..	0·004	1·87 (1·23 to 2·85)	..
3 months effect	..	..	0·12	1·52 (0·89 to 2·58)	..
6 months effect	..	..	0·21	1·46 (0·81 to 2·62)	..
7 day point prevalence abstinence					
1 month	69 (23·9%)	51 (17·3%)	0·05	1·38 (1·00 to 1·91)	6·59 (0·05 to 13·13)
3 months	62 (21·5%)	50 (17·0%)	0·17	1·27 (0·91 to 1·77)	4·50 (−1·88 to 10·88)
6 months	61 (21·1%)	46 (15·6%)	0·09	1·35 (0·96 to 1·91)	5·52 (−0·75 to 11·79)

All analyses are intention to treat unless otherwise specified (assumes participants with missing smoking status were smoking). Data are n (%) or n/N (%) unless otherwise specified. *Complete case analysis: excludes 128 participants with missing 6 month visits (withdrawn or lost to follow-up; 48 in nicotine e-cigarettes group and 80 in patches group), and includes 456 participants (241 in nicotine e-cigarettes group and 215 in patches group). †Per-protocol analysis 1: excludes protocol violations: pregnancy, death, quitters who did not have biochemical verification, undisclosed medication ineligibility, withdrew, and lost to follow-up at 6 months. ‡Per-protocol analysis 2: excludes protocol violations from per-protocol analysis 1 plus: cross-overs, use of other or combined nicotine replacement therapy products, and use of non-nicotine replacement therapy (eg, varenicline). §Per-protocol analysis 3: excludes protocol violations from per-protocol analysis 2 plus: participants still using product to which they were randomised at 6 months. ¶Continuous abstinence including not biochemically verified: eight participants in nicotine e-cigarettes group: one moved, two refused, four did not attend appointment, one adverse event (birth) did not want to attend; four participants in patches group: one moved, three refused. ‖Output for repeated measures analysis is difference in least squares means, not relative risk.

Table 2: **Continuous smoking abstinence and 7 day point prevalence, nicotine e-cigarettes versus patches**

e-cigarettes group) conferred 80% power, with two-sided p=0·05, to detect an absolute difference of 10% in quit rates between the nicotine e-cigarettes group and patches group (1:1 ratio), and a 15% difference between the nicotine e-cigarettes group and placebo e-cigarettes group (4:1 ratio), with expected quit rates of 15% in the placebo e-cigarettes group and 20% in the patches group (based on meta-analyses of NRT trials).[23] We used SAS (version 9·3) for analyses. The primary analyses used the intention-to-treat approach (participants with unknown smoking status were assumed to be smoking). We calculated quit rates, relative risks (RR), and absolute risks for nicotine e-cigarettes versus patches, and for nicotine e-cigarettes versus placebo e-cigarettes. We compared treatment groups using χ^2 tests, with multivariate regression adjusting for other variables as appropriate. The proportions of participants with significantly reduced smoking consumption of at least 25% and 50% were calculated using the same methods. Change from baseline in each of the repeated AUTOS measures and cigarettes smoked per day (in non-abstainers) were analysed using mixed models with a compound symmetry covariance structure including baseline values. We also did per-protocol analyses for the primary outcome, in which participants with major protocol violations (eg, cross-over treatments, withdrawals, and loss to follow-up) were excluded. We assessed consistency of effects for pre-specified subgroups (men *vs* women, ethnicity [Māori *vs* non-Māori]) using tests for heterogeneity. Secondary analyses were done with overall cessation rates corrected for discordance between reported and verified cessation. We used Kaplan-Meier curves and the log-rank test for analyses of time to relapse. Adverse events were defined according to international guidelines, categorised by CB (masked to intervention product) as related or unrelated to the intervention, and analysed as serious or non-serious, by treatment group and association with study treatment, in line with recommended best practice.[24]

This trial is registered with the Australian New Zealand Clinical Trials Registry, number ACTRN12610000866000.

Role of the funding source

The sponsor of the study had no role in study design, data collection, data analysis, data interpretation, or

	Nicotine e-cigarettes (n=289)	Placebo e-cigarettes (n=73)	Difference Fisher's exact p value	Relative risk (95% CI)	Risk difference (95% CI)
Continuous abstinence					
1 month*	67 (23·2%)	12 (16·4%)	0·21	1·41 (0·81 to 2·46)	6·74 (-3·06 to 16·54)
3 months*	38 (13·1%)	5 (6·8%)	0·14	1·92 (0·78 to 4·70)	6·30 (-0·68 to 13·28)
6 months (primary outcome)	21 (7·3%)	3 (4·1%)	0·44	1·77 (0·54 to 5·77)	3·16 (-2·29 to 8·61)
Sensitivity analyses for 6 months continuous abstinence data					
Complete case analysis†	21/241 (8·7%)	3/57 (5·3%)	0·59	1·66 (0·51 to 5·36)	3·45 (-3·35 to 10·25)
Per-protocol analysis 1‡	21/231 (9·1%)	3/54 (5·6%)	0·59	1·64 (0·51 to 5·29)	3·53 (-3·62 to 10·68)
Per-protocol analysis 2§	20/211 (9·5%)	2/46 (4·3%)	0·36	2·18 (0·53 to 9·00)	5·13 (-1·97 to 12·23)
Per-protocol analysis 3¶	12/147 (8·2%)	1/30 (3·3%)	0·70	2·45 (0·33 to 18·13)	4·83 (-2·97 to 12·63)
Including not biochemically verified‖	30 (10·4%)	4 (5·5%)	0·26	1·89 (0·69 to 5·21)	4·90 (-1·39 to 11·20)
Repeated measures analysis**					
Overall treatment effect	..	..	0·13	1·91 (0·83 to 4·37)	..
1 month effect	..	..	0·09	1·80 (0·90 to 3·61)	..
3 months effect	..	..	0·16	2·00 (0·76 to 5·28)	..
6 months effect	..	..	0·23	1·92 (0·65 to 5·66)	..
7 day point prevalence abstinence					
1 month*	69 (23·9%)	12 (16·4%)	0·17	1·45 (0·83 to 2·53)	7·44 (-2·38 to 17·26)
3 months*	62 (21·5%)	12 (16·4%)	0·34	1·31 (0·74 to 2·29)	5·01 (-4·72 to 14·74)
6 months*	61 (21·1%)	16 (21·9%)	0·88	0·96 (0·59 to 1·57)	-0·81 (-11·40 to 9·78)

All analyses are intention to treat unless otherwise specified (assumes all participants with missing smoking status were smoking). Data are n (%) or n/N (%) unless otherwise specified. *Difference from χ^2 test. †Complete case analysis: excludes 64 participants with missing 6 month visits (withdrawn or lost to follow-up; 48 in nicotine e-cigarettes group and 16 in placebo e-cigarettes group) and includes 298 (241 in nicotine e-cigarettes group and 57 in placebo e-cigarettes group). ‡Per-protocol analysis 1: excludes protocol violations: pregnancy, death, quitters who did not have biochemical verification at 6 months, undisclosed medication ineligibility, withdrew, and lost to follow-up at 6 months. §Per-protocol analysis 2: excludes protocol violations from per-protocol analysis 1 plus: cross-overs, use of other or combined nicotine replacement therapy products, and use of non-nicotine replacement therapy (eg, varenicline). ¶Per-protocol analysis 3: excludes protocol violations from per-protocol analysis 2 plus: participants still using product to which they were randomised at 6 months. ‖Continuous abstinence including not biochemically verified: eight participants in nicotine e-cigarettes group who reported quitting did not attend for biochemical verification (one moved, two refused, four did not attend appointment, one adverse event [birth] did not want to attend); one participant in the placebo e-cigarettes group did not attend appointment. **Output for repeated measures analysis is difference in least squares means (not relative risk).

Table 3: **Continuous abstinence and 7 day point prevalence, nicotine e-cigarettes versus placebo e-cigarettes**

writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

Of 1293 people who were assessed, 657 were eligible for inclusion in the study (figure 1). 289 people were assigned to nicotine e-cigarettes, 295 to patches, and 73 to placebo e-cigarettes. Participants' baseline characteristics were evenly balanced between treatment groups (table 1). Overall, loss to follow-up was 22%: 17% (48 of 289) in the nicotine e-cigarettes group, 27% (80 of 295) in the patches group, and 22% (16 of 73) in placebo e-cigarettes group.

Verified continuous abstinence at 6 months after quit day was highest in the nicotine e-cigarettes group (7·3%), followed by the patches group (5·8%), and placebo e-cigarettes group (4·1%; tables 2, 3). Achievement of abstinence was substantially lower than we anticipated, thus we had insufficient statistical power to conclude superiority of nicotine e-cigarettes to patches or to placebo e-cigarettes. 7 day point prevalence abstinence was closer to our estimate of 20%, and the RR suggested

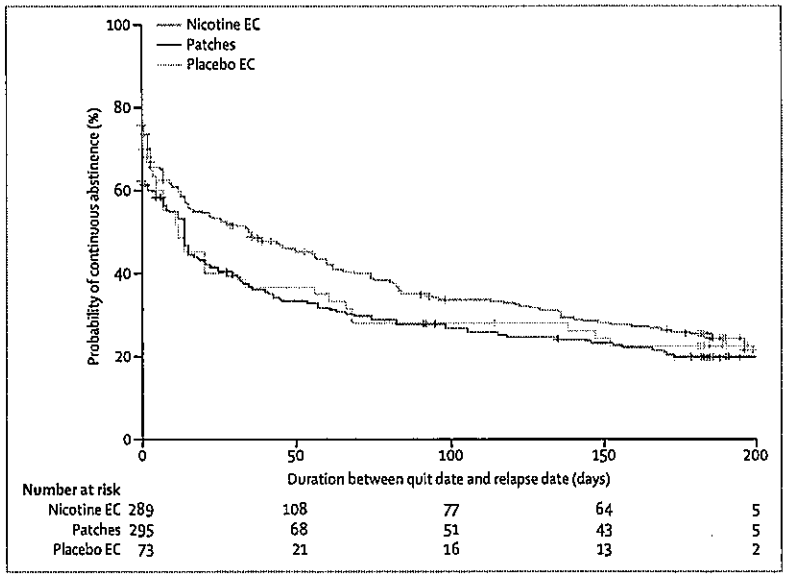

Figure 2: **Kaplan-Meier analysis of time to relapse**
EC=e-cigarettes.

a difference in favour of nicotine e-cigarettes, but was not significant at 6 months. Repeated measures analyses at 1 month and overall also showed a benefit of nicotine e-cigarettes compared with patches (table 2). However, both the point prevalence and repeated measures analyses used self-reported cessation. Subgroup analyses stratified by sex or ethnicity showed no significant differences in primary outcome (data not shown).

Quit rates were initially high then decreased in all groups (figure 2). Most participants relapsed within 50 days. Among those who relapsed, median time to relapse in the nicotine e-cigarettes group was 35 days (95% CI 15–56), more than twice as long as in the patches group (14 days, 95% CI 8–18, p<0·0001) or placebo e-cigarettes group (12 days, 5–34, p=0·09). Mean cigarette consumption decreased by two cigarettes per day more in the nicotine e-cigarettes group than the patches group (p=0·002; table 4). In the nicotine e-cigarettes group, 57% of participants reduced daily cigarettes by at least half at 6 months—a significantly greater proportion than in the patches group (41%; p=0·0002) and non-significantly higher than in the placebo e-cigarettes group (45%; p=0·08).

Over 6 months, AUTOS scores in the e-cigarettes groups halved from baseline compared with a decrease of a third in the patches group (data not shown). The difference between the nicotine e-cigarettes group and patches group in total AUTOS score reduction from baseline to 6 months was significant (1·56, p=0·02), but the difference between the nicotine e-cigarettes group and placebo e-cigarettes group was not significant (1·34, p=0·19). Behavioural dependence, as measured by GN-SBQ, was balanced at baseline, with 36% (105 of 289) of participants in the nicotine e-cigarettes group, 37% (109 of 295) in the patches group, and 42% (31 of 73) in the placebo group scoring "strong" or "very strong" dependence, but we identified no association between score and outcome (data not shown).

A higher number and proportion of adverse events occurred in the nicotine e-cigarettes group than in the patches group (table 5); however, we identified no evidence of an association with study product, and the event rate was not significantly different (incidence rate ratio for nicotine e-cigarettes *vs* patches 1·05, 95% CI 0·82–1·34, p=0·7).

Adherence to study treatments was significantly higher in the nicotine e-cigarettes group compared with the patches group (p<0·0001 at each follow-up assessment) and with the placebo e-cigarettes group (p<0·0001 at each follow-up assessment): at 1 month post quit day, 78% (203 of 260) of participants in the nicotine e-cigarettes group and 82% (51 of 62) of those in the placebo e-cigarettes group were using the allocated product, compared with 46% (107 of 232) of those allocated to patches. By 3 months, 51% (126 of 245) participants in the nicotine e-cigarettes group and 53% (31 of 59) of those in the placebo e-cigarettes group were still using allocated treatments, compared with only 18% (40 of 224) of those in the patches group; at 6 months, 29% (71 of 241) of the nicotine e-cigarettes group and 35% (20 of 57) of the placebo e-cigarettes group persisted with e-cigarette use, with only 8% (17 of 215) of those in the patches group still using patches. Among those in the nicotine e-cigarettes group verified as abstinent, 38% (eight of 21) still used e-cigarettes at 6 months; among non-quitters, 29% (63 of 220) still used e-cigarettes (whether nicotine e-cigarettes or placebo e-cigarettes is unclear). Since average daily use was low, some participants could have been using cartridges allocated at randomisation, others might have purchased cartridges online. Participants using nicotine e-cigarettes reported having used an average of 1·3 cartridges per day at 1 month, 1·1 per day at 3 months, and 0·7 per day at 6 months; in the placebo group participants reported using 1·1 cartridges per day at 1 month, 1·2 per day at 3 months, and 0·7 per day at 6 months. Nicotine patches were used as instructed (an average of one per day). Few participants used other cessation products: at 6 months, in both the nicotine

	Nicotine e-cigarettes		Patches		Difference (nicotine e-cigarettes–patches)		
	Mean	SE	Mean	SE	Mean	SE	p value
Overall	11·1	0·4	9·1	0·4	2·0	0·5	<0·0001
1 month	12·9	0·4	10·5	0·4	2·4	0·6	<0·0001
3 months	10·8	0·4	9·1	0·4	1·7	0·6	0·006
6 months	9·7	0·4	7·7	0·4	1·9	0·6	0·002

*For those reporting smoking at least one cigarette in past 7 days.

Table 4: Change from baseline in cigarettes consumed per day during follow-up period, nicotine e-cigarettes and patches*

	Nicotine e-cigarettes		Patches		Placebo e-cigarettes	
	N	%	N	%	N	%
Total	137	100%	119	100%	36	100%
Event type						
Serious*	27	19·7%	14	11·8%	5	13·9%
Any non-serious event	110	80·3%	105	88·2%	31	86·1%
Relation to study treatment						
Definitely	0		1	0·8%	0	
Probably	1	0·7%	1	0·8%	1	2·8%
Possibly	5	3·6%	4	3·4%	1	2·8%
Unrelated	131	95·6%	113	95·0%	34	94·4%

107 participants in the nicotine e-cigarettes group had a total of 137 events. 96 participants in the patches group had a total of 119 events. 26 participants in the placebo group had a total of 36 events. Event rate was 0·8 events per person month in nicotine e-cigarettes group and patches group, and 0·9 in placebo e-cigarettes group. The difference between the rates in the nicotine e-cigarettes group and patches group were not significant (incidence rate ratio 1·05, 95% CI 0·82–1·34, p=0·7). *Serious adverse event by convention includes: death (n=1, in nicotine e-cigarettes group), life threatening illness (n=1, in nicotine e-cigarettes group), admission to hospital or prolongation of hospital stay (12% of all events in nicotine e-cigarettes group, 8% in patches group, and 11% in placebo e-cigarettes group), persistent or significant disability or incapacity, congenital abnormality, medically important (6% of all events in nicotine e-cigarettes group, 4% in patches group, and 3% placebo e-cigarettes group). No serious adverse events in any groups were related to product use.

Table 5: Adverse events by type (serious or non-serious) and relation to study treatment

e-cigarettes group and patches group, two participants had used bupropion and five had used varenicline in the past month; in the placebo e-cigarettes group, three participants reported using varenicline.

Quitline support was accessed by fewer than half of participants: 40% (115 of 289) in the nicotine e-cigarettes group, 36% (106 of 295) in the patches group, and 36% (26 of 73) in the placebo e-cigarettes groups, but a post-hoc analysis showed no benefit of use of support on the primary outcome for participants in the nicotine e-cigarettes group (p=0·67) or patches group (p=0·16).

There was sustained enthusiasm for e-cigarettes: at 1 month, 88% (230 of 260) of participants in the nicotine e-cigarettes group, and 92% (57 of 62) in the placebo e-cigarettes group stated that they would recommend their allocated product to a friend wanting to quit, compared with 56% (130 of 232) of those in the patches group; at 6 months the figures changed little, being 85% (205 of 241), 88% (50 of 57), and 50% (107 of 215), respectively. Among participants allocated to e-cigarettes, 40% (96 of 241) liked their tactile, cigarette-like qualities, sensory familiarity, perceived health benefits, taste, absence of cigarette odour, and ease of use.

Discussion

13 weeks of nicotine e-cigarette use resulted in increased smoking abstinence at 6 months compared with use of patches or placebo e-cigarettes, but these differences were not statistically significant. Nevertheless, the results were consistent across a range of analyses, and the 95% CIs do not exclude an advantage. In post-hoc analyses using a 5% non-inferiority limit for the risk difference (on the basis of a margin used in our non-inferiority smoking cessation trial of cytisine[26]), nicotine e-cigarettes were at least as effective as patches (the absolute risk difference for the primary outcome was 1·51 [95% CI −2·49 to 5·51]; −2·49 is within the margin of −5). Therefore, we conclude that among smokers wanting to quit, nicotine e-cigarettes might be as effective as patches for achieving cessation at 6 months. We identified no difference in adverse events with e-cigarettes compared with patches.

The strengths of our study include use of a conservative primary outcome measure, and rigorous trial conduct to mitigate risk of bias. We used a pragmatic design because we believe that an assessment of real-world effectiveness of e-cigarettes is a priority for policy development, although it could be argued a trial of a novel intervention should be more explanatory than pragmatic in design. Our study had several limitations. First, the effect size and estimates of abstinence on which the study sample size was calculated were optimistic; hence, statistical power to detect differences was reduced. Second, participants assigned to patches had a higher loss to follow-up and withdrawal rate than those assigned to e-cigarettes. Some of the participants might have agreed to take part in the study to try e-cigarettes, and then lost interest when randomised to patches. Those who reported previously trying to quit with patches or other forms of NRT (about 20% in the past year in each group) might have disadvantaged patches (by being more likely to give up on patches subsequently); however, at 6 months the difference between the results of the intention-to-treat analysis and per-protocol analysis was minimal, suggesting this bias was not a major issue.

Third, the modest abstinence rate for nicotine e-cigarettes is much the same as quit rates shown in studies of NRT products used without behavioural support.[27] Addition of more intensive support might have improved quit rates, but it would also have misrepresented the typically low support environment in which most e-cigarette users attempt to quit. The modest abstinence rates might have been compounded by inadequate nicotine replacement: as noted, the cartridges contained less nicotine than labelled, and delivery was inefficient (not uncommon in other early e-cigarette models[15,28]). Furthermore, users consumed on average just over one cartridge per day, delivering around only 20% of the nicotine obtained from cigarette smoking.[29] Although trials of the effects of early e-cigarettes on withdrawal relief showed that low levels of nicotine delivery attenuated withdrawal symptoms,[7,8] improved nicotine delivery by newer models of e-cigarettes provides greater withdrawal relief,

Panel: Research in context

Systematic review

We searched Medline, PsycINFO, CINAHL, Embase, and the Cochrane library using the terms "e-cig*" OR "elect* cigar*" OR "electronic nicotine", for reports published between Jan 1, 2005, and Aug 23, 2013. The strategy identified 186 articles, of which only one was a randomised, placebo-controlled trial with a cessation endpoint measured at 6 months or more.[9] This previous trial,[9] done between 2011 and 2012, recruited 300 adult Italian smokers unwilling to quit, with 100 randomised to each of three groups: 7·2 mg nicotine cartridges for 12 weeks, 6 weeks of 7·2 mg cartridges followed by 6 weeks of 5·4 mg cartridges, and 0 mg nicotine cartridges for 12 weeks. No behavioural support was provided but nine follow-up visits occurred, with carbon monoxide measures at each. The primary outcome was not clearly prespecified nor were calculations done to estimate power. Analysis was by intention to treat. At 12 months, 39% of participants had been lost to follow-up, a potential source of bias. Of those assessed, 9% had quit (13%, 9%, and 4% in the two nicotine e-cigarettes groups and placebo e-cigarettes groups, respectively) and reduction occurred in 10%, 9%, and 12%; none of the comparisons were statistically significant. The reliability of e-cigarettes was problematic. These results are much the same as those reported in previous trials of unsupported pharmacotherapy with patches[32] and are similar to our trial findings.

Interpretation

In our study, e-cigarettes, with or without nicotine, were modestly effective at helping smokers to quit. Nicotine e-cigarettes might be more effective or of similar effectiveness to patches, but so far studies have not had sufficient statistical power to draw more definitive conclusions. E-cigarette use was associated with few adverse events, similar to patches, but longer-term data are needed. Uncertainty exists about the place of e-cigarettes in tobacco control, and more research is urgently needed to clearly establish their overall benefits and harms at both individual and population levels.

potentially enhancing cessation effectiveness.[8] Trials of such second generation e-cigarettes are needed.

We included the placebo e-cigarettes group to explore the role of behavioural replacement by e-cigarettes, independent of nicotine delivery in cessation.[30] However, our study was underpowered to detect the small effect, and the GN-SBQ instrument, which purports to measure behavioural dependence but has not been widely used in this context, might have been inadequate for this purpose.

A third of the participants allocated to the e-cigarettes groups reported continued product use at 6 months, suggesting that they might have become long-term e-cigarette users. Those who had relapsed to smoking but continued to use e-cigarettes (so called dual use) at 6 months had reduced cigarette consumption. Research has shown higher cessation rates in people using NRT while still smoking;[31] if e-cigarettes act in the same way this would be a positive feature. Further research is needed to explore this area.

Finally, as far as we are aware, our trial provides for the first time adverse event information for 657 people randomly allocated to e-cigarettes or patches. The finding of no significant differences in occurrence of adverse events between groups over the duration of a standard NRT treatment course, and the further 3 months' monitoring, suggests such short-term e-cigarette use is of low risk. However, longer-term use requires more research (panel).

Our study has established benchmarks for performance of nicotine e-cigarettes relative to NRT and placebo e-cigarettes with which to design future, more adequately powered trials. Our findings point to potential for e-cigarettes in regard to cessation effectiveness beyond that noted in the present study. Furthermore, because they have far greater reach[1,2] and higher acceptability (as shown by the present study) among smokers than NRT, and seem to have no greater risk of adverse effects, e-cigarettes also have potential for improving population health.

Contributors

CB, NW, HM, and ML conceived the original idea for the trial, and sought and obtained funding. CB, NW, HM, ML, CH, VP, and JW wrote the study protocol. CH managed the day-to-day running of the trial, including all participant follow-up. VP did the data analyses. This Article was written by CB with input from all coauthors. CB is guarantor for this Article. All authors read and approved the final version.

Conflicts of interest

We declare that we have received no support from any companies for the submitted work and have no non-financial interests that might be relevant to the submitted work. ML, via his company Health New Zealand, previously did research funded by Ruyan (an e-cigarette manufacturer). CB and HM have done research on Ruyan e-cigarettes funded by Health New Zealand, independently of Ruyan. HM has received honoraria for speaking at research symposia, has received benefits in kind and travel support from, and has provided consultancy to, the manufacturers of smoking cessation drugs. NW has provided consultancy to the manufacturers of smoking cessation drugs, received honoraria for speaking at a research meeting and received benefits in kind and travel support from a manufacturer of smoking cessation drugs. JW has provided consultancy to the manufacturers of smoking cessation medications.

Acknowledgments

The e-cigarettes and cartridges were Elusion brand products provided by PGM International, New Zealand. PGM International had no role in the study design, data collection, data analysis, data interpretation, or writing of this report. We thank the participants, research assistants, our colleagues, the Health Research Council of New Zealand, PGM International, and New Zealand Quitline.

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[14] *UNI EN 1232:1999, Atmosfera nell'ambiente di lavoro. Pompe per il campionamento personale di agenti chimici. Requisiti e metodi di prova / Atmosphere in the workplace. Pumps for personal sampling of chemical agents Requirements and test methods.*

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Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
Senator Shimabukuro, Vice Chair
Members, Senate Committee on Judiciary & Labor

Re: Support for SB 2222: Relating to Flavored Tobacco Products
Hrg: February 11, 2014 at 9:30 a.m. in Rm 229

Please pass SB 2222 which will prohibit the sale, offering for sale, or distribution of any flavored tobacco product, including menthol products and electronic smoking devices, within the State and save the next generation from starting the path of tobacco use. Thank you for the opportunity to testify on this matter.

I know, you want to do 'the right thing' for the citizens and the keiki in Hawaii. You have proven this in the past by your very thoughtful support of legislature that makes it more difficult for the tobacco industry to influence and recruit consumers and easier for our people to live healthier and higher quality lives.

Offering tobacco products in different flavors that appeal to kids is a strategy of the tobacco industry to create new markets and to get around the restrictions of marketing to youth which have been put on them in the context of cigarettes. Unfortunately, the nicotine content of these products will create the same forms of dependence that cigarettes cause, it will lead our keiki toward other tobacco products, like cigarettes, and it will plainly shift the threat to our people from cigarettes to other tobacco products rather than minimizing it. As a psychologist and a public health expert working in health promotion and disease prevention, I am deeply familiar with the patterns of use and abuse that go along with such 'addicting' products, and in my professional opinion you would create an enormously positive public health effect by supporting SB 2222.

You will see a lot of resistance against this bill, mostly from smokers who value their menthol-laced cigarettes or people who see restrictions as an attack on their personal freedom - and this can be the same people. I respect every individual's right to make choices in their lives. But what it comes down to is that a group of individuals requests that you allow them to buy a poisonous product in the flavor of their choice. If you support that, you value this higher than the protection of our keiki and the prevention of a rise in tobacco dependence in new generations - and you and I know that this is not 'the right thing' to do. In fact, by supporting SB 2222 and restricting the sale of menthol cigarettes, you may encourage current smokers to give up smoking, i.e. as a health expert I would also expect a positive impact on current smokers, even if they do initially protest the measure.

Tobacco use - and that includes every tobacco product - is extremely addictive and not easy to quit. You have the choice to make a decision that will positively affect the public health in our state for generations to come. I know, you put the highest value on the future of our keiki and the well-being of the people in our state. Supporting SB 2222 means you are exactly doing that: you are following your

values and your aloha for all of us. So, please find it in yourself to do 'the right thing' and support SB 2222. Mahalo!

Stefan Keller
3731 Pukalani Pl.
Honolulu, HI 96816

February 8, 2014

TO: CPN/JDL

FR: Christine Lau

RE: SB2222

I smoked cigarettes for 30 years. When I started, my son was about two years old and my daughter was a few months old. I was 19 years old and a single parent. I turned to cigarettes to relieve my stress.

When I was 19, I became addicted to cocaine and checked myself into a drug treatment program. With the help of 12 step meetings, I'm now 27 years clean and sober. After realizing that I could stop doing cocaine, I tried for years to quit cigarettes. I took classes, had the support of my family and friends, went to funerals for people who had died of lung cancer, and still I couldn't quit. My mother used to cut out articles from the newspaper on the dangers of tobacco and give them to me all the time. I knew the danger I was putting myself in, and the danger I was putting my children in, but I just couldn't quit.

Both of my children became smokers when they became adults. I knew this was my fault. They had been exposed to second hand smoke all of their lives and were probably addicted to it. I felt so guilty.

When my daughter became pregnant, I swore that I would quit when my grandson was born. That day came, and I couldn't quit. I finally accepted the fact that I would be a smoker for the rest of my life.

21 months ago, a friend of mine suggested I try an e-cig. Several of my friends had quit cigarettes using an e-cig but my intention was to have another option to cigarettes, especially when on an airplane. I bought one and since I was a menthol smoker, I bought menthol flavored e-liquid. After three days of using both cigarettes and my e-cigs, I no longer wanted to smoke a cigarette again.

I feel like my e-cig has given me a new life. I'm so much healthier! I can work out longer and harder and my endurance is great. I don't smell like an ashtray anymore and I no longer feel like a second-class citizen. My grandson is so proud of me!

I was spending over $300 a month on cigarettes. I smoked every cigarette down to the filter because it was so expensive. I needed a cigarette to do anything – before I showered, after I showered, before I got up to do something, while I was talking on the phone, while I was driving, while I was on the computer. With my e-cig, I just need one hit to get my nicotine rush. I'm not only saving money, I'm saving a lot of time!

I started with 16 mg. liquid and now I'm down to 6. I use it less and less. For someone who had accepted being a smoker forever, I now feel that one day, I'll put down the e-cig, just like I did with cigarettes. But on this leg of my journey, I'm not breathing in the smoke of chemicals and harmful carcinogens.

I've asked several doctors to tell me how nicotine is harmful. None of them have been able to answer this question. They all agree that what I'm doing now is much better for me than smoking cigarettes.

About a year ago, I started mixing my menthol e-liquid with fruit flavored liquid. This initially caused me great anxiety because I was so addicted to having menthol hit the back of my throat. However, if I'm going to quit my e-cig, I need to switch flavors and wean myself off of menthol. I feel that I'm using the e-cig less and less since I starting mixing my e-liquids and now my mixture is about 20% menthol to 80% fruit.

I have many friends who have stories similar to mine. I have also helped many people quit cigarettes by using an e-cig. I recently helped someone quit nicotine gum with the help of an e-cig. Besides being very expensive, the gum was upsetting his stomach.

Until there is solid research that e-cigs are hazardous, I encourage you to not pass the legislation you're considering. If passed, it will increase the chances of a lot of former cigarette smokers returning to smoking cigarettes, including myself. Some will say that going from cigarettes to an e-cig is just switching addictions. While I agree that my e-cig is another addiction, it is still a vital step on my journey to a healthier life. Please don't take this away from me!

To Whom it may concern,

This is in response to bill SB2222 and HB1788

Measure Title:	RELATING TO FLAVORED TOBACCO PRODUCTS.
Report Title:	Flavored Tobacco Products; Tobacco Products; Electronic Smoking Devices; Menthol; Penalties
Description:	Prohibits the sale, offering for sale, or distribution of any flavored tobacco product, including menthol products and electronic smoking devices, within the State beginning on January 1, 2015.

My name is Devin Wolery, I strongly oppose this bill. For Electronic smoking devices. Prohibiting sale of flavored Eliquid will cause many small business to close, as they are making the Eliquid and selling it in their shops.

The majority of Electronic smoking device, users do not even use normal menthol or tobacco flavored Eliquid.

The other reason, people use flavored Eliquid in, dessert flavors or others. Is because they are not able to eat them normally. Because of diabetes.

Not to mention, because of the way these are produced and the fact that people can make their own Eliquid. By purchasing ingredients from local places (down to earth, wholefoods, Walmart etc) the law itself will only hurt local small business and the livelihood of their employee's.

Thank you,
Devin Wolery

SB2222
Submitted on: 2/10/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Daniel Sherlock	Individual	Oppose	No

Comments: why propose a bill to ban the sale of "flavored" e-cigarette liquid to just tobacco flavor? They sell liquor in a multitude of flavors and I don't see a bill opposing those. What purpose is this bill? I don't smoke cigarettes or e-cigarettes but feel this is just plain ridiculous. What right does the "law" have in telling people what flavor of e-cig they have to smoke? Think you're really over stepping your power and are invading the publics privacy. What next, bill on the sale of different flavor soda? Ban on spices to only salt and pepper?

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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Senate Senate Health Committee,

Please help defeat SB 2222 & SB 2212. The evidence against tobacco and cigarette smoke is far more conclusive than conjecture about vapes. There is some evidence that vaping is more effective than nicotine patches in facilitating quitting smoking. My own son has quit his 20 year smoking addiction and is weaning himself off nicotine by gradually reducing nicotine level in his vapes.

Let's not make it harder for smokers to switch while trying to make it harder for non-smokers to vape.

Sincerely,
Lyle Wilkinson

I am in opposition to HB 1788, SB 2222, HB 1791 & SB 2212,

Flavors in ejuice's for ecigs should not be banned because it's what sets it apart from real cigarettes and keeps us off cigarettes. Not all of us want to be reminded on how tobacco cigarettes taste like by only being limited to tobacco or menthol flavors. Our children are not appealed to the ejuice's that's in the market and parents should be responsible for their "minors" actions. Parents should not let their children use such products if underaged and should be responsible for what they buy and consume. Retailers and online stores have strong policies on servicing ONLY adults and not minors anecdotal asks for ID all the time. As adults, we do enjoy other flavors of such even if it taste like cotton candy we have the right to use them. The intent was not to attract children. If alcoholic drinks can have flavors like pineapple in them I don't see why ejuice's can't be the same. Thank you,

Marques

Sent from my iPad

SB2222
Submitted on: 2/10/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Jessica Chang	Individual	Oppose	No

Comments: Electronic cigarettes benefit people with a safe option to smoking, and menthol makes the product better still. I totally oppose sb2222.

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SB2222
Submitted on: 2/4/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Tina	Individual	Oppose	No

Comments: This bill is way too much.

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SB2222
Submitted on: 2/4/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Mark Dietrich	Individual	Oppose	No

Comments:

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SB2222
Submitted on: 2/3/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Sean Higa	Individual	Oppose	No

Comments:

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SB2222
Submitted on: 2/4/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Kevin	Individual	Oppose	No

Comments:

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SB2222
Submitted on: 2/4/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Javier Mendez-Alvarez	Individual	Support	No

Comments:

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SB2222
Submitted on: 2/9/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Rommel dela Cruz	Individual	Oppose	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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SB2222
Submitted on: 2/9/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Erich Schrottke	Individual	Oppose	No

Comments:

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SB2222
Submitted on: 2/10/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Dustin Andrews	Individual	Oppose	No

Comments:

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SB2222
Submitted on: 2/10/2014
Testimony for CPN/JDL on Feb 11, 2014 09:30AM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Kathy Kim	Individual	Oppose	No

Comments:

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Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
Senator Shimabukuro, Vice Chair
Members, Senate Committee on Judiciary & Labor

Re: Support for SB 2222: Relating to Flavored Tobacco Products
Hrg: February 11, 2014 at 9:30 a.m. in Rm 229

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Please pass SB 2222 and save the next generation from starting the path of tobacco use. Thank you for the opportunity to testify on this matter.

Joan Loke
2586A Kekuanoni Street
Honolulu, HI 96813

Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
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Holly Kessler
PO Box 61681
Honolulu, HI 96839, HI 96822

Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
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Maile Goo
3683 Woodlawn Terrace Place
Honolulu, HI 96822

Senator Baker, Chair
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Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
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Melissa Little
708 Illalo St., Suite 400
Honolulu, HI 96822

Senator Baker, Chair
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Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
Senator Shimabukuro, Vice Chair
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Koa Robinson
3059 Seaview Rise
Honolulu, HI 96822

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Jermy Domingo
894 Queen St.
Honolulu, HI 96706

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Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
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Please pass SB 2222 and save the next generation from starting the path of tobacco use. Mahalo for the opportunity to testify on this matter.

Marilyn Gagen
59-398 Ka Nani Drive
N/A
Kamuela, HI 96743

Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

Senator Hee, Chair
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Erin Bantum
677 Ala Moana Blvd Suite 200
Honolulu, HI 96822

Senator Baker, Chair
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Senator Hee, Chair
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Respectfully submitted,

Ron Fleck

Ron Fleck
75-5660 Kopiko Street, c7-330
Kailua Kona, HI 96740

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Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

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Katherine Freer Moyer

Honolulu, HI 96822

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Kanani Kilbey
642 Ulukahiki Street
Suite 105
Kailua, HI 96734

Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

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Michelle Kwock
814 Kinau St.
Honolulu, HI 96813

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Members, Senate Committee on Commerce & Consumer Protection

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Michelle Schiffl
1655 Kanapuu Dr
Kailua, HI 96734

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Erin Nielsen
1649 Kanalui St.
Honolulu, HI 96816

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Karli Smallwood
227 Mahalani Street, Suite 99
Wailuku, HI 96793

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Barbara Nosaka
2216 Hoonanea Street
Honolulu, HI 96822

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Respectfully,

Patricia Fleck

Patricia Fleck
75-5660 Kopico Street, Ste. C7-330
Kailua Kona, HI 96740

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Members, Senate Committee on Commerce & Consumer Protection

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May Rose Dela Cruz
894 Queen Street
894 Queen Street
Honolulu, HI 96813

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Beau Lani Barker
613 Iliaina St
Kailua, HI 96734

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Jeri Kim
P. O. Box 893624
Mililani, HI 96789

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Pualei Kaohelaulii
8010 Iwipolena Road
P.O. Box 52
Kekaha, HI 96752

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Senator Taniguchi, Vice Chair
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Forrest Batz
34 Rainbow Drive
Keaau, HI 96749

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Please pass SB 2222 and save the next generation from starting the path of tobacco use. Thank you for the opportunity to testify on this matter.

I appreciate your support on this bill. Valerie Yontz

Valerie Yontz
677 Auwina Street
677 Auwina Street Kailua, HI 96734-3430
Kailua, HI 96734

Senator Baker, Chair
Senator Taniguchi, Vice Chair
Members, Senate Committee on Commerce & Consumer Protection

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Michelle Gray
430 Lanipuao Street
Honolulu, HI 96825

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Ron Paik
1717 Mott Smith Drive, #2412
#2412
Honolulu, HI 96822