THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Health and Social Services

DIVISION OF PUBLIC HEALTH
Director's Office

3601 C Street, Suite 756
Anchorage, Alaska 99503-5924
Main: 907.269.8126
Fax: 907.269.2048

Electronic Cigarette and Aerosol Emissions Product Update and Position

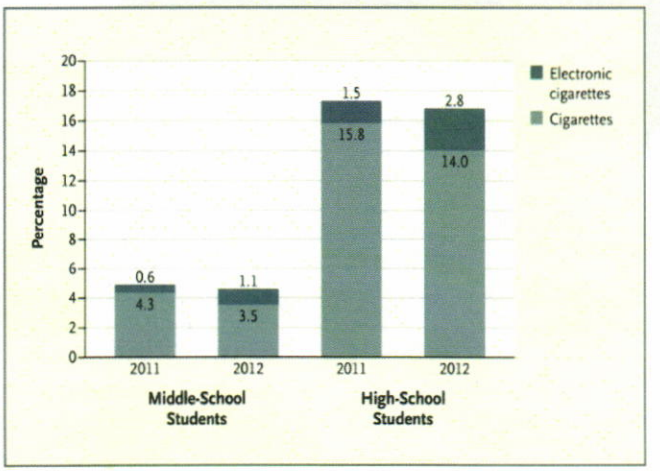
Electronic cigarettes (e-cigarettes, e-cigs, e-hookah or vape pens) are marketed by the Tobacco Industry and other manufacturers as a new nicotine delivery system. These battery-powered devices heat nicotine, flavor additives and other chemicals, to produce an aerosol inhaled by the user. Their production is unregulated and varies widely - recent research and consumer experience reflect questionable product quality, content and safety.[1] With only limited research to date, the presence of toxins and cancer-causing agents as well as the health effects of their use are not yet fully known.

Chemical and Toxin Emissions in E-Cigarette Aerosol

- E-cigarettes do not just emit "harmless water vapor." Secondhand e-cigarette aerosol (incorrectly called vapor by the industry) contains nicotine, ultrafine particles and low levels of toxins that are known to cause cancer.[2] The FDA's initial investigation into the content of e-cigarettes found the aerosol potentially hazardous to the public's health due to tobacco-specific nitrosamines and other volatile organic compounds.[3]
- Studies have shown the presence of heavy metals and carcinogens in e-cigarette aerosol.[4,5,6]
- Propylene glycol, a chemical that is used as a base in e-cigarette solution, is one of the primary components in the aerosol emitted by e-cigarettes.
    - Short term exposure causes eye, throat and airway irritation.[7]
    - Long term inhalation exposure can result in children developing asthma.[8]
- Because they look like traditional cigarettes and emit the aerosol, e-cigarettes have the potential to negatively impact social norms and make smokefree workplace policies harder to enforce. In some states and communities, the public is being protected from potential health harms through local ordinances and regulations prohibiting e-cigarette use in indoor environments.

Industry Marketing and the Rise in Youth E-Cigarette Use

- The U.S. Food and Drug Administration (FDA) does not currently regulate these products.
- Marketers use child-friendly flavors such as "Gumi Bearz" or "Mount N' Do"[9], themes of rebellion, and celebrity endorsements - strategies long used to market traditional cigarettes to children.
- Sales of e-cigarettes in the U.S. have doubled since 2011 to $1.7 billion in 2013.[3]
- Although youth smoking rates have decreased, e-cigarette use has risen across the U.S. and, alarmingly, doubled among middle and high school students between 2011 and 2012.[10]



Use of Cigarettes and Electronic Cigarettes by U.S. Students in 2011 and 2012. Data are from the Centers for Disease Control and Prevention.[7]

Lack of Reliability, Safety Require Regulation and Extensive Research

E-cigarettes contain varying levels of nicotine - a tobacco-derived product – which can initiate and/or prolong nicotine addiction. [1]

- These unregulated products may provide uncontrolled doses of nicotine and other harmful chemicals - users have no way of being certain how much is being inhaled or exhaled. [11]
- Ingestion or skin contact with nicotine solution from a cartridge can lead to nicotine poisoning and can be deadly, especially to children and animals. Accidental nicotine poisonings and lethal doses are a serious concern because the refill "juice" is not sold in child-resistant containers.
- Dozens of Alaskan youth are treated for nicotine poisoning every year.[12]
- Nicotine affects the nervous system and heart, and can negatively affect the developing brain. It should not be made available to minors.

E-Cigarettes are Not an FDA-approved Cessation Device

- The FDA has not approved e-cigarettes as an effective method to help smokers quit.
- FDA-approved tobacco cessation products provide controlled doses of nicotine and have been tested and regulated as cessation products.
- Alaska's Tobacco Quit Line is a free service for all Alaskans ready to quit tobacco. Counseling and FDA-approved Nicotine Replacement Therapies, when used in combination, have been shown to be a safe and effective way to quit. Call 1-800 QUIT NOW or visit www.alaskaquitline.com to enroll today.

Alaska has seen tremendous progress in reducing smoking but we must remain ever vigilant to protect our young people. Because they are unregulated, the e-cigarette industry has grown markedly over the last few years using old tactics like celebrities to promote and glamorize their use, addicting those most impressionable. More research is needed on the long-term health effects, but we can take steps today to protect our young people.

Ward B. Hurlburt, M.D., MPH
Chief Medical Officer, Alaska Department of Health and Social Services

May 21, 2014

[1] US Food and Drug Administration Evaluation of e-cigarettes. 2009. Available at: http://www.fda.gov/downloads/Drugs/ScienceResearch/UCM173250.pdf. Accessed March 4, 2014

[2] Grana, R; Benowitz, N; Glantz, S. "Background Paper on E-cigarettes," Center for Tobacco Control Research and Education, University of California, San Francisco and WHO Collaborating Center on Tobacco Control. December 2013.

[3] Fairchild, Amy L PhD, MPH, Bayer, Ronald PhD, Colgrove, James PhD, MPH, New England Journal of Medicine January 23, 2014; 370: 293-295. Accessed from: http://www.nejm.org/doi/full/10.1056/NEJMp1313940?query=TOC&

[4] Williams, M, Villarreal, A, Bozhilov, K, Lin, S, Talbot, P. Metal and silicate particles including nanoparticles are present in electronic cigarette cartomizer fluid and aerosol. *PLoS ONE.* Sept. 2013.

[5] Goniewicz, ML, Knysak, J, Gawron, M, et al. Levels of selected carcinogens and toxicants in vapour from electronic cigarettes. *Tobacco Control.* 2013.

[6] Schripp, T, Markewitz, D, Uhde, E, Salthammer, T. Does e-cigarette consumption cause passive vaping? *Indoor Air.* 2013.

[7] Wieslander, G; Norbäck, D; Lindgren, T. "Experimental exposure to propylene glycol mist in aviation emergency training: acute ocular and respiratory effects." *Occupational and Environmental Medicine* 58:10 649-655, 2001.

[8] Choi, H; Schmidbauer,N; Spengler,J; Bornehag, C., "Sources of Propylene Glycol and Glycol Ethers in Air at Home," *International Journal of Environmental Research* and *Public Health* 7(12): 4213–4237, December 2010.

[9] Fatboy Vapors: eLiquid Menu http://www.fatboyvaporsalaska.com/#!eliquid-2/c1dyq

[10] Centers for Disease Control and Prevention. Tobacco Product Use Among Middle and High School Students—United States, 2011 and 2012. Morbidity and Mortality Weekly Report 2013;62(45):893–7 [accessed 2014 Feb 14]. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6245a2.htm?s_cid=%20mm6245a2.htm_w

[11] U.S. Food and Drug Administration. "FDA and Public Health Experts Warn About Electronic Cigarettes." July 22, 2009. Available at: http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2009/ucm173222.htm.

[12] Nicotine Exposures, Alaska Poison Control System, State of Alaska DHSS